



Contract CR2005
Provision of Services to Conduct Environmental
Impact Study

Environmental Impact Study (Clementi Forest and Maju Forest)

Study Stage: Final

Volume 5 of 5

Submitted by:
AECOM Singapore Pte Ltd

Submitted to:
Land Transport Authority

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Appendix A

Environmental Impact Register

Environmental Aspect	Description of Receptor		Potential Activities Causing Impact	Minimum Controls (Good practices in addition to LTA's General Safety, Health and Environmental specifications)	Significance of Potential Impact (assumes implementation of minimum controls)			Mitigation Measures	Significance of Residual Impact (with Mitigated Scenario)	Description of Monitoring Required	Close Up Actions						
	Receptor	Value/Sensitivity			Specific Parameter (e.g. Leq 12 hrs/ Leq 1 hr, CO, NO2, PM10, TSS etc)	Time Zone (E.g. Morning / evening/ night)	Impact Significance (with Base Scenario)										
Biodiversity	Clementi Forest (Habitats)	Priority 1, 2 & 3	Loss of habitats Habitat degradation Change in species composition	•Trees that are to be retained within work site would require an arborist to clearly mark out Tree Protection Zones where no works are allowed. The Tree Protection Zones should be set up in accordance with NParks guidelines. •Before vegetation removal, pre-felling fauna inspection should be conducted by an Ecologist to identify wildlife or nesting structures that are being actively used such as bird nests, tree hollows and burrows. •Soil erosion control measures are to be executed once vegetation has been removed and soil is exposed. •Implement soil erosion control measures. •Implement dust control measures. •Proper storage of materials that are likely to leech harmful chemicals and fuel-powered equipment away from waterbodies or areas of high conservation value habitats. •Ensure noise levels are within approved limits. •Ensure vibration levels are within approved limits. •Installation of hoarding to delineate worksite. •Put in place wildlife management protocol with an approve wildlife management Contractor in accordance to Section 10 of Wildlife Act	Flora and Fauna	No requirement	Major - Negligible	Design Phase •Optimisation and shift in worksite. Construction Phase •Ensure there are no works and disturbances to areas outside of work site, especially into areas of high conservation value. •Ensure any associated slope stabilisation and grading works will not impact topography of areas outside work site and, water quality and hydrology of the waterbodies within the Study Area. •To clearly mark out areas and plants with conservation value before the start of works to prevent unnecessary clearing. •To eliminate the need of removing bamboo clusters found within worksites as they are found to be potential roosting sites for the Critically Endangered bamboo bats (Tylonycteris spp.). Proper Tree Protection Zones (TPZs) should be established to ensure proper conservation of these bamboo clusters. •Transplant or harvest trees/saplings of conservation significance if they are to be cleared. •Conduct regular inspections to ensure contractor compliance and identify any impacts/unnecessary clearance in adjacent forest areas. •It is recommended to avoid felling trees and clearing vegetation during the peak bird breeding	Major - Negligible	Arboriculture •Monitoring of the condition of trees at the new forest edge to determine the physiological health and structural stability of trees as edge effects can lead to die back of canopies, and branch and structural failures. •Assessment of physiological health, vigour and structural stability of retained trees. Recommend additional mitigating measures if necessary. •Assessment of the condition of retained trees, if any, to ensure that there has been no deterioration or mechanical damage and to determine if additional tree removal is required. •Where a tree exhibits signs of stress, the Arborist should inspect the tree and advise on strategies to reduce further impacts and rehabilitation measures. Where monitoring indicates that drying out or edge impacts are occurring, remediation measures shall be undertaken. These measures may be temporary (such as carrying out watering when there is seven continuous days without rainfall). Long-term solutions shall be investigated and implemented. •Inspection of the integrity of TPZs. •Identification of excessive or unauthorised tree removal.	ECO, CT, Ecologist, Flora Specialist and Arborist						
	Maju Forest (Habitats)	Priority 1, 2 & 3					Major - Negligible										
	Clementi Forest (Floral Species)	Priority 1, 2 & 3	Mortality Impediment to seedling recruitment				Major - Negligible										
	Maju Forest (Floral Species)	Priority 1, 2 & 3	Competition from exotic plant species Decline in plant health and survival														
	Clementi Forest (Floral Species)	Priority 1, 2 & 3	Loss of/reduction in habitats and food sources Injury or mortality				Major - Negligible										
	Maju Forest (Floral Species)	Priority 1, 2 & 3	Loss of ecological connectivity for faunal movement														
Hydrology and Surface Water Quality	D/S1	Priority 1	Solid & toxic waste generation on water quality on water quality	Site clearance, earthworks and general construction activities at launch/retrieval shafts, the open cut and the C&C works (e.g. clearing and preparation, trench excavation, backfill, soil mixing, compaction, spoil handling and transport, building of permanent structures, utilities diversion including diversion of water pipes and stormwater drains along the Project, etc.) - Development of a Standard Operation Procedure (SOP) for safe handling, transfer, storage and disposal of solid waste; - Effective ECM and monitoring implemented as required in the Code of Practice on Surface Water Drainage to ensure that discharge into the stormwater drainage system does not contain TSS in concentrations greater than the prescribed limits under the Sewerage and Drainage (Surface Water Drainage) Regulations; - ECM measures include but are not limited to minimisation of formation of bare soil, coverage of all bare/erodible surfaces, slope stability, concrete cut-off drains, silt fences/traps along the perimeter cut-off drain, turbidity curtains for works adjacent to watercourses, etc.; - Implementation of CCTV including SIDS at the public drain to monitor the surface run-off discharges from the sites as per the Public Utilities Board of Singapore's (PUB) circular on Preventing Muddy Waters from the Construction Sites (October 2015); - Provision of enclosed bins and waste disposal facilities cleared up as often as necessary to prevent build-up. Housekeeping checks will be carried out once a day to ensure all litter is cleared from site; - Hazardous substances and toxic wastes should be stored on hard stand, under shelter with a kerb around the storage area; - All wastes will be disposed only in the designated waste disposal facilities and appropriately separated, i.e. by trained workers to properly sort and label the different types of waste (reusable and recyclable waste, toxic and non-toxic waste, etc.); and - Appropriate disposal of any waste listed in the Environmental Public Health (General Waste Collection) Regulations by licensed waste operator/collector.	Water Quality - parameters listed in NEA's Allowable Limits for Trade Effluent Discharge for all discharge points; parameters listed in Water Quality Criteria for Aquatic Life for streams (i.e. D/S1 and D/S22).	No requirement	Major	Conserve D/S1, no construction/blockage on top of it or in its vicinity, and with no disturbance on its water quality and hydrology (i.e. 30m buffer from both embankments of the stream)	Minor	- One time monitoring for all water quality parameters at all discharge point locations, stream D/S1 and stream D/S22 before construction works commencement. - One time monitoring for hydrological conditions of stream/drain and discharge locations of construction sites (i.e. capacity and baseflow) before construction works commencement. - Online real time monitoring for total suspended solids (TSS) at the discharge point location at all the construction sites throughout the construction period. - Monthly monitoring for in-situ parameters (i.e. temperature, pH, conductivity, total dissolved solids and dissolved oxygen) at all the discharge point locations at the construction sites throughout the construction period. - Monthly monitoring for ex-situ parameters (i.e. biochemical oxygen demand, chemical oxygen demand, total nitrogen, nitrate, total phosphorus, orthophosphate, oil & grease - total, oil & grease - hydrocarbon, ammoniacal nitrogen, total alkalinity, total organic carbon, lead, zinc mercury and enterococcus) at all the discharge point locations at the construction sites throughout the construction period. In addition to the above monitoring list, Contractor is to ensure that the discharge also complies to NEA's allowable limit for trade effluent discharge - in particular the limits for heavy metals (e.g. through monthly testing). - Monthly monitoring for all the in-situ parameters (i.e. temperature, pH, conductivity, total dissolved solids, total suspended solids, turbidity and dissolved oxygen) at the natural streams of D/S1 and D/S22 throughout the construction period. - Monthly monitoring for all the ex-situ parameters (i.e. biochemical oxygen demand, chemical oxygen demand, total nitrogen, nitrate, total phosphorus, orthophosphate, oil & grease - total, oil & grease - hydrocarbon, ammoniacal nitrogen, total alkalinity, total organic carbon, lead, zinc mercury and enterococcus) at natural streams of D/S1 and D/S22 throughout the construction period. In addition to the above monitoring list, Contractor is to ensure that the discharge also complies to NEA's allowable limit for trade effluent discharge - in particular the limits for heavy metals (e.g. through monthly testing). -Hydrological conditions of drainage system within construction site and at immediate vicinity should also be closely monitored during construction phase. Before draining to public drains or watercourses, surface runoff from the construction site should be drained to the ECM treatment system to be filtered and to reduce peak runoff. The hoarding and perimeter drains should be inspected daily to ensure no surface runoff flowing out from the site untreated and no clogging which would affect the flow capacity of the drains/streams. During heavy storm event, site inspection should be carried out to ensure no flooding. Monthly audit on the site should also be carried out accordingly.	ECO, CT						
		Priority 1					Negligible	Not applicable	Not applicable								
	D/S2	Priority 1						Negligible	Not applicable			Not applicable					
	D/S20	Priority 1						Minor	Not applicable			Not applicable					
	D/S21	Priority 1						Major	Minimize the CR16 worksite to avoid worksite encroachment on D/S21.			Minor					
	D/S22	Priority 1						Major	Flow diversion of D/S22 and discharge water to the main natural stream D/S1. The flow diversion will seek for PUB's approval and the drain design will follow PUB's Code of Practice on Surface Water Drainage. Any storm discharge from worksite to the diverted drain requires to meet NEA Trade Effluent Discharge Limits if applicable.			Minor					
	Natural streams in Maju Forest (i.e. D/S23, D/S24 and D/S25)	Priority 1					Negligible	Not applicable	Not applicable								
	D/S1	Priority 1	Liquid effluent generation and stormwater run-off on hydrology				Construction wastewater resulting from site clearance, excavation, tunnelling, etc. - A full inventory of all anticipated wastewater streams and volumes should be finalised before the onset of the construction works; - No unmanaged discharge of wastewater stream permitted; - Reduce, reuse, and recycle hierarchy principle to be applied to wastewater on-site; - Regular audits on environmental management procedures shall be carried out on site; - No hazardous liquids to be sent to the detention ponds/tanks; - Hazardous wastewater, such as oily water, thinners, solvents, or paints, should be stored on hard stand, under shelter with a kerb around the storage area. The wastewater should be removed for treatment and disposal off-site by an approved Waste Management Contractor. Hazardous liquids to be handled as Hazardous Waste; - Containment pond/kerbs will be of impervious material and be designed with sufficient capacity to hold volumes of wastewater produced on-site, as well as allowance for stormwater runoff and potential fire-fighting wastewater; - ECM tanks/ponds will be designed in sufficient capacity to hold the turbid stormwater prior to treatment at the ECM facility; - Temporary storage volumes should be provided for overflow situations of untreated wastewater. Temporary storage with sufficient capacity will capture any expected additional volumes to ensure untreated wastewater is not released to watercourses unless it complies with Singapore NEA Guidelines on trade effluent discharge concentrations; - A responsible person (e.g. ECO) to be assigned to oversee the efficient operation of the containment pond/kerbs where 'Good Housekeeping' practices would be adhered to. Also, the area would be carefully managed to avoid spills, leaks, and odour issues, with the containment pond/kerbs checked at least daily to ensure proper functionality; - Daily record volume of wastewater, as well as volumes of sludge and other produced wastes; - Contractor will need to seek approval from relevant authorities (i.e. PUB & NEA) as per PUB Sewerage and Drainage (Trade Effluent) Regulations if the wastewater will be disposed to public sewer or NEA's Trade Effluent Discharge Limits to controlled watercourse if the treated trade effluent will be disposed to surface watercourses. If such discharges are not approved, the trade effluent will be stored, treated or recycled on site and finally disposed off-site; - Contractor will seek for comment and approval from relevant authorities (e.g. SCDF and NEA) on the treated wastewater to be used for firefighting purpose - The discharge of pumped dewatered groundwater or other wastewaters to sensitive aquatic habitats shall be prohibited (e.g. natural streams within Clementi Forest and Maju Forest); - Tunnel washing effluent should be discharged to a containment pond/kerbs that manually collected by operator assigned private wastewater collector to be transferred to wastewater treatment plant; - The containment pond/kerbs, as well as wastewater generating areas on-site, to be equipped with spill clean-up kits; - Adequate drainage, cut-off drains, sump pit, road kerb, piping and toe wall shall be designed for channelling of construction process wastewater (e.g. concrete batching, wash water, etc.) and stormwater runoff separately through detailed design for capture and treatment in the containment pond/kerbs. Where applicable (e.g. in the vicinity of liquid storage or refuelling areas), this infrastructure shall include oil-water separators to capture inadvertent spills or leaked oils or greases; - Implement a construction EMMP and ensure full preparation of associated plans and procedures including the following: # EMMP to include SOPs, an Emergency Response Plan (ERP), an inventory of wastewater streams, training of staff as well as an inspection, maintenance and audit schedule; and # Full development of EMMP Wastewater Management Procedures to include dedicated management and monitoring procedures that covers all eventualities related to the proper operation of the containment pond/kerbs, or any other wastewater discharge location/equipment. - Regular and dedicated procedures for the inspection and maintenance of wastewater (i.e. trade effluent) collection, storage, and treatment infrastructure, such as pipes, oil water separators, silt screens, etc.;# Regular and dedicated procedures for the management of stormwater collection, settling, testing and eventual discharge of 'clean' water to watercourses. This should also include associated measures required (e.g. silt curtains) to prevent high sediment concentration stormwater drainage to watercourses; and - A training programme for all on-site workers, including sub-contractors, in relation to	Existing drain/stream capacity, baseflow	Major			Conserve D/S1, no construction/blockage on top of it or in its vicinity, and with no disturbance on its water quality and hydrology (i.e. 30m buffer from both embankments of the stream)	Minor				
		Priority 1										Negligible	Not applicable	Not applicable			
	D/S2	Priority 1											Negligible	Not applicable	Not applicable		
	D/S20	Priority 1											Minor	Not applicable	Not applicable		
	D/S21	Priority 1											Major	Minimize the CR16 worksite to avoid worksite encroachment on D/S21.	Minor		
	D/S22	Priority 1											Major	Flow diversion of D/S22 and discharge water to the main natural stream D/S1. The flow diversion will seek for PUB's approval and the drain design will follow PUB's Code of Practice on Surface Water Drainage. Any storm discharge from worksite to the diverted drain requires to meet NEA Trade Effluent Discharge Limits if applicable.	Minor		
	Natural streams in Maju Forest (i.e. D/S23, D/S24 and D/S25)	Priority 1											Negligible	Not applicable	Not applicable		
	D/S1	Priority 1										Liquid effluent generation and stormwater run-off on water quality	Water Quality - parameters listed in NEA's Allowable Limits for Trade Effluent Discharge for all discharge points; parameters listed in Water Quality Criteria for Aquatic Life for streams (i.e. D/S1 and D/S22).		Major	Conserve D/S1, no construction/blockage on top of it or in its vicinity, and with no disturbance on its water quality and hydrology (i.e. 30m buffer from both embankments of the stream)	Minor
	D/S2	Priority 1													Negligible	Not applicable	Not applicable
	D/S20	Priority 1													Minor	Not applicable	Not applicable
	D/S21	Priority 1													Major	Minimize the CR16 worksite to avoid worksite encroachment on D/S21.	Minor
	D/S22	Priority 1													Major	Flow diversion of D/S22 and discharge water to the main natural stream D/S1. The flow diversion will seek for PUB's approval and the drain design will follow PUB's Code of Practice on Surface Water Drainage. Any storm discharge from worksite to the diverted drain requires to meet NEA Trade Effluent Discharge Limits if applicable.	Minor
	Natural streams in Maju Forest (i.e. D/S23, D/S24 and D/S25)	Priority 1													Negligible	Not applicable	Not applicable
	D/S1	Priority 1													Major	Conserve D/S1, no construction/blockage on top of it or in its vicinity, and with no disturbance on its water quality and hydrology (i.e. 30m buffer from both embankments of the stream)	Minor
	D/S2	Priority 1													Negligible	Not applicable	Not applicable
	D/S20	Priority 1										Minor	Not applicable	Not applicable			
	D/S21	Priority 1										Major	Minimize the CR16 worksite to avoid worksite encroachment on D/S21.	Minor			
D/S22	Priority 1	Major		Flow diversion of D/S22 and discharge water to the main natural stream D/S1. The flow diversion will seek for PUB's approval and the drain design will follow PUB's Code of Practice on Surface Water Drainage. Any storm discharge from worksite to the diverted drain requires to meet NEA Trade Effluent Discharge Limits if applicable.	Minor												
Natural streams in Maju Forest (i.e. D/S23, D/S24 and D/S25)	Priority 1	Negligible	Not applicable	Not applicable													

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	Receptor	Value/Sensitivity			Specific Parameter (e.g. Leq 12 hrs/ Leq 1 hr, CO, NO2, PM10, TSS etc)	Time Zone (E.g. Morning / evening/ night)	Impact Significance (with Base Scenario)				
	D/S1	Priority 1	Improper management of chemical substances on water quality	Use, storage and disposal of chemical substances, refuelling activities; - Development of SOP for safe handling, transfer and storage of toxic waste; housekeeping checks once a day to ensure all toxic waste is cleared from site; - Appropriate tests to ascertain the presence/absence of contamination of the excavated earth and sand; - Appropriate fully sheltered storage area with storage volume to be 110% of the largest volume of chemical substances to be stored (kerb up and enclosed on at least 3 sides, covered and with adequate ventilation); - Appropriate construction material for toxic waste storage containers with leak detection tests conducted periodically; - Provision of secondary containment for all toxic waste stored in bulk as per the requirements in the COPPC/SS593; - Preparation of an emergency response plan, training of the emergency response team (ERT) to be competent in the response mechanism and provision of response kits for any spillages; - Consignment notification/tracking system and transport emergency response plan for transport of toxic waste; and - Appropriate disposal of toxic waste as per required in the Environmental Public Health (Toxic Industrial Waste) Regulations by licensed waste operator/collector.	Water Quality - parameters listed in NEA's Allowable Limits for Trade Effluent Discharge for all discharge points; parameters listed in Water Quality Criteria for Aquatic Life for streams (i.e. D/S1 and D/S22).		Major	Conserve D/S1, no construction/blockage on top of it or in its vicinity, and with no disturbance on its water quality and hydrology (i.e. 30m buffer from both embankments of the stream)	Minor		
	D/S2	Priority 1					Negligible	Not applicable	Not applicable		
	D/S20	Priority 1					Minor	Not applicable	Not applicable		
	D/S21	Priority 1					Major	Minimize the CR16 worksite to avoid worksite encroachment on D/S21.	Minor		
	D/S22	Priority 1					Major	Flow diversion of D/S22 and discharge water to the main natural stream D/S1. The flow diversion will seek for PUB's approval and the drain design will follow PUB's Code of Practice on Surface Water Drainage. Any storm discharge from worksite to the diverted drain requires to meet NEA Trade Effluent Discharge Limits if applicable.	Minor		
	Natural streams in Maju Forest (i.e. D/S23, D/S24 and D/S25)	Priority 1					Negligible	Not applicable	Not applicable		
Soil and Groundwater & Waste	Soil and Groundwater within the Project Site	Priority 3	<ul style="list-style-type: none">• Site Clearance, levelling and land grading works• Construction of shaft, station boxes, facility buildings and other infrastructures• Excavation of cut and cover areas• Stockpiling of excavated soil from cut and cover areas and tunnel boring activities• Improper management and disposal of excavated soils and/or groundwater during excavations and tunnel boring activities• Improper handling, transfer and storage of toxic chemical waste	<ul style="list-style-type: none">• Install piezometers to monitor the changes in groundwater level in compliance with Building Control Regulations 2003 as part of its instrumentation and monitoring plan to be endorsed by the Qualified Professional (QP).• Proper Earth Retaining Stabilising Structures (ERSS) should be selected and designed to limit groundwater settlement.• Identify all types of toxic chemical waste and implement comprehensive waste management system at the site in order to ensure proper disposal and prevent pollution to the environment. This contractor should conduct a construction risk assessment and prepare a comprehensive construction health, safety and environment plan. If health impacts to workers are foreseen due to the handling of such waste, necessary precautionary measures as per the safety data sheets (SDS) including personal protective equipment should be implemented on site.	Toxic Chemical Waste Generation and Improper Management of Excavated Soil and Extracted Groudwater Generation and Improper Handling of Hazardous Chemicals/ Substances	-	Minor	No additional mitigation measures are proposed beyond minimum controls	N/A	Groundwater level continuous monitoring within the development boundary throughout the lifetime of the construction phase as per the instrumentaiton and monitoring plan developed by the QP. Visual monitoring of spoil generated by the TBM to be conducted daily. Refer to Annex 5 and Annex 6 for procedures for screening and disposal of excavated soils and groundwater generated through dewatering. At locations within the project site where toxic chemical waste are stored - Records on chemical waste from the waste generator should be properly kept and records produced when requested.	ECO, CT
	Streams with biodiversity conservation significance where groundwater flow partially supporting the stream ingress from the construction worksites and operational footprints	Priority 2	<ul style="list-style-type: none">• Improper handling, transfer, refuelling and storage of chemicals (e.g. diesel, bentonite, lubricants, oils, grease, paints, solvents, waste treatment chemicals, etc.) generated during construction activities.	<ul style="list-style-type: none">• Inspect all equipment prior to entering the site for fuel/hydraulic lines, leaking tanks, and other potential faulty parts that could potentially cause contamination to soil or groundwater.• Dispose all construction debris (under category C&D) at the gazetted Government dumping grounds or at such other sites or locations as directed by NEA.• Store generated toxic chemical waste under shelter within concrete bund walls or in storage containers with good ventilation. Spill trays shall be provided for all waste containers. Spill trays shall be regularly maintained to						At locations within the project site where hazardous chemicals/ substances are used/ stored - Inspection of hazardous chemicals/ substances storage condition weekly during construction phase. Environmental audits to be conducted monthly during construction phase.	

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	Receptor	Value/Sensitivity			Specific Parameter (e.g. Leq 12 hrs/ Leq 1 hr, CO, NO2, PM10, TSS etc)	Time Zone (E.g. Morning / evening/ night)	Impact Significance (with Base Scenario)				
Air Quality	CR16 Construction Worksite	Priority 1	1. Dust emissions generated by earthworks processes at worksites 2. Dust emissions generated by the construction of new structures 3. Fugitive dust emissions from dumper trucks transporting spoil 4. Fugitive dust emissions from demolition activities 5. Gaseous emission from vehicle exhaust 6. Gaseous emissions from off road diesel engines on-site	The following control measures should be observed during the construction stage to reduce the noise levels: - The construction footprint will be hoarded on all sides; - No demolition of permanent structure is expected as part of the project; and - Road construction or expansion will be completed first and paved before the construction of other development commences.	Fugitive dust emissions, Particulate Matter (PM ₁₀ and PM _{2.5}) and Gaseous Emissions (NO _x and CO)	6am to 10pm (Monday to Saturday)	Moderate to Major	GENERAL MITIGATION MEASURES TO BE IMPLEMENTED THROUGH OUT CONSTRUCTION PERIOD: 1. Develop and implement a stakeholder communications plan that includes community engagement before work commences on site. 2. Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager. 3. Develop and implement an Air Pollution Control Plan (APCP). 4. Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken. 5. Make the complaints log available to the local authority when asked. 6. Record any exceptional incidents that cause dust and/or air emissions, either on-site or off- site, and the action taken to resolve the situation in the log book. 7. Hold liaison meetings with other high risk construction sites within 500m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. 8. Undertake regular (daily frequency recommended) on-site and off-site inspections and record results. The log should be made available to the NEA or other Government Agencies if required. Inspections should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100m of site boundary. Cleaning should be provided if necessary. 9. Carry out regular site inspections to monitor and record compliance with the Air Pollution Control Plan. 10. Increase the frequency of site inspections during prolonged dry or windy conditions. 11. Plan site layout so that machinery and dust causing activities are located away from receptors, where possible. 12. Erect hoarding around dusty activities and at the site boundary wherever possible. Boundary screens should be at least as high as any stockpiles or dust emission sources on site. 13. Fully enclose specific activities where there is a known high potential for dust production and the site will be active for an extensive period of time. 14. Keep site fencing, barriers, and scaffolding clean by cleaning regularly using wet methods (dry methods may give rise to fugitive dust). 15. Remove materials that have the potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site, stockpiled material should be covered, seeded, fenced or enclosed to prevent fugitive dust formation. 16. Ensure all vehicles and engine powered equipment comply with the legislative requirements of Singapore. 17. Ensure all vehicles and equipment switch off their engines when stationary – i.e. no idling vehicles or engines. Clear signs shall be erected at site entrance to inform all visitors. 18. Where practicable, avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment. 19. Impose and signpost a maximum-speed-limit of 25 km/hr on paved or surfaced haul roads and 15 km/hr on unpaved haul roads and work areas. 20. Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials. 21. Only use cutting, grinding or sawing equipment fitted with, or in conjunction with, suitable dust suppression techniques such as water sprays or local extraction e.g. local exhaust ventilation system. 22. Ensure an adequate water supply on the site for effective dust/particulate matter suppression/ mitigation, using non-potable water where possible and appropriate. 23. Use enclosed chutes and conveyors and covered skips wherever possible. 24. Minimise drop heights from conveyors, loading shovels, hoppers, and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate. 25. A stringent "Clean as you go" Policy should be implemented on site to ensure no loose dry material is left exposed when not in use. Equipment should be readily available on site to clean any dry spillages, and cleaning should be conducted as soon as reasonably practicable after the event using wet cleaning methods. MITIGATION MEASURES FOR EARTHWORKS: 1. Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable. 2. Use Hessian, mulches or soil tackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable. 3. Only remove the cover in small areas during work and not all at once. MITIGATION MEASURES FOR CONSTRUCTION (INCLUDING CONCRETE BATCHING PLANT): 1. Avoid scabbling (roughening of concrete surfaces) if possible. 2. Sand and aggregates shall be delivered in a dampened stage and shall be re-wetted before being dumped into storage bunker. 3. Drop heights at transfer points shall be minimized to lessen dust generation 4. Special covered area shall be provided for loading and unloading process 5. Water sprays or sprinklers shall be employed at conveyor transfer points 6. Ensure sand and other aggregates are stored in banded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place. 7. Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery. 8. For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust. 9. Vent shall be provided with efficient fixed filter bags to comply with the dust emissions criteria. 10. Silos shall not be filled up with cement more than 90% of its loading capacity, to avoid overfilling 11. Silos shall be equipped with overfill protection: audible high level sensor alarm and automatic shut-down switch, which could be activated to close when a problem is detected. MITIGATION MEASURES FOR TRACKOUT: 1. Use water-assisted dust sweeper(s) on the access and affected local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use. 2. Avoid dry sweeping of large areas. 3. Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport. 4. Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable. 5. Record all inspections of haul routes and any subsequent action in a site log book. 6. Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsters and regularly cleaned.	Minor	PM10 and PM2.5 monitoring for 1 week prior to site clearance and dust deposition monitoring throughout construction duration at Clementi Forest and Maju Forest	CT/ECO
	Clementi Forest										
	Maju Forest										
	Old Jurong Railway Corridor										
Airborne Noise	Maju Forest	Priority 1, 2 & 3	Noise generated by the use of PME, (such as excavators, generators, pumps, cranes, etc.) for various construction activities. Noise from trucks transporting spoil / equipment.	•Construction prohibition period should be followed, as per fourth schedule of Environment Protection and Management regulation; •Prepare a Construction Noise Management Plan, to establish baseline monitoring prior to site clearance, plan for monitoring during the construction phase, and procedure for complaint handling; •The Contractor shall review the equipment to be used on site and erect localised noise barriers prior to undertaking high noise generating work;	Base Scenario 1 - Cut and cover works and associated activities - Mitigated Scenario 1 - Advance Work	Daytime, Evening and Night Periods	Major	Noise Barrier of minimum STC 20 are proposed at the following area; For Advance work •6 m high noise barrier at the west and south-east construction boundary of CR16 Advance work worksite fronting noise sensitive receptors, •12m high noise barrier at north-east construction boundary of CR16 Advance work worksite fronting noise sensitive receptors after completion of Advance worksite construction,	Major Minor	Before commencement of any construction works (including site clearance) •One-time airborne noise monitoring for 1 week at this location, for establishment of latest baseline (Maju Forest and Clementi Forests) During Construction Phase •Continuous monitoring at this location for the entire duration of	ECO, CT

Environmental Aspect	Description of Receptor		Potential Activities Causing Impact	Minimum Controls (Good practices in addition to LTA's General Safety, Health and Environmental specifications)	Significance of Potential Impact (assumes implementation of minimum controls)			Mitigation Measures	Significance of Residual Impact (with Mitigated Scenario)	Description of Monitoring Required	Close Up Actions
	Receptor	Value/Sensitivity			Specific Parameter (e.g. Leq 12 hrs/ Leq 1 hr, CO, NO2, PM10, TSS etc)	Time Zone (E.g. Morning / evening/ night)	Impact Significance (with Base Scenario)				
			<ul style="list-style-type: none">•Machines (such as trucks) that may be in intermittent use shall be shut down between work periods or shall be throttled down to a minimum;•Only well-maintained plants shall be utilised on-site and plants shall be serviced regularly during the entire construction period;•The number of PME's shall be reduced as far as practicable when construction works are carried out at areas close to the noise sensitive receivers;•Silencers or mufflers on construction equipment shall be utilised and shall be properly maintained during the construction programme;•Behavioural practices including no shouting, no loud stereos/ radios on site, no dropping of materials from height, no throwing of metal items shall be ensured;•Construction respite: Restrict high noise generating drilling activities only in continuous blocks, not exceeding 3 hours each, with a minimum respite period of one hour between each block, if possible;•Periodic noise monitoring by an independent third party, to establish compliance with requirements and to advise on equipment causing concern, and additional potential mitigation measures;•Plan the layout of the site by considering using materials and other large structural equipment as noise barriers;•Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the nearby NSRs; and•Material stockpiles and other structures shall be effectively utilised, wherever practicable, in screening noise from on-site construction activities.•The optimisation of worksite to be situated away from the biodiversity Study Area as far as practicable.•Acoustic sheds should be provided at the locations of the noise generating activity such as operation of hand-held breaker.•All construction works should be conducted within the daytime period. TBM works are to be conducted in the daytime as much as possible.	<ul style="list-style-type: none">•Mitigated Scenario 2- Construction of site office•Mitigated Scenario 3- Demolition of POB•Mitigated Scenario 4 - Main Civil Work•Weekday LAeq(12 hours), and LAeq(5 mins)		Major	<ul style="list-style-type: none">•For Main civil work,•12 m high noise barrier at the west construction boundary of CR16 Main Civil work worksite fronting noise sensitive receptors,•Use the existing 6 m high noise barrier from the south-east construction boundary of CR16 Advance work) and 12m high noise barrier from the north-east construction boundary of CR16 Advance work worksite,•LTA's standard TBM enclosure (one facade opening at northern side) 15m high at boundary of CR16 launch shaft.•Above-ground works not critical for safety reasons to be restricted to weekdays (avoiding works on Sunday and Public holidays)•No night works after 7pm for all non-safety critical activities since the site is next to biodiversity Study Area•Portable noise barrier were highly recommended close to the noisy equipment/ activities•For noisy machinery such as the Secant Pile Auger - that typically operate for long period, the sound proof baffles can be mounted directly on the machine around the engine cowling.	Minor	construction.		
								Minor	<ul style="list-style-type: none">• One (1) location at Maju Forest boundary and closest to worksite• Two (2) locations within Clementi Forest and closest to northern and southern part of worksite		
	Clementi Forest	Priority 1, 2 & 3						Major	Records on noise levels from construction sites should be properly kept and produced when requested.		
								Moderate			
								Major			
								Moderate			
	Maju Forest	Priority 1, 2 & 3									
	Clementi Forest	Priority 1, 2 & 3						Minor			
								Major			
	Maju Forest	Priority 1, 2 & 3						Major			
Clementi Forest	Priority 1, 2 & 3	Major									

Environmental Aspect	Description of Receptor		Potential Activities Causing Impact	Minimum Controls (Good practices in addition to LTA's General Safety, Health and Environmental specifications)	Significance of Potential Impact (assumes implementation of minimum controls)			Mitigation Measures	Significance of Residual Impact (with Mitigated Scenario)	Description of Monitoring Required (Commissioning Phase)	Close Up Actions
	Receptor	Value/Sensitivity			Specific Parameter (e.g. Leq 12 hrs/ Leq 1 hr, CO, NO2, PM10, TSS)	Time Zone (E.g. Morning / evening/ night)	Impact Significance (with Base Scenario)				
Biodiversity	Clementi Forest (Habitats)	Priority 1, 2 & 3	This commissioning phase is for EMMP purpose only, therefore the potential activities from operational phase (see Table 3) are generally applicable.	This commissioning phase is for EMMP purpose only, therefore the potential activities from operational phase (see Table 3) are generally applicable.	Flora and Fauna	No requirement	This commissioning phase is for EMMP purpose only, therefore the potential activities from operational phase (see Table 3) are generally applicable.	This commissioning phase is for EMMP purpose only, therefore the potential activities from operational phase (see Table 3) are generally applicable.	This commissioning phase is for EMMP purpose only, therefore the potential activities from operational phase (see Table 3) are generally applicable.	This commissioning phase is for EMMP purpose only, therefore the potential activities from operational phase (see Table 3) are generally applicable.	Not Applicable
	Maju Forest (Habitats)	Priority 1, 2 & 3									
	Clementi Forest (Floral Species)	Priority 1, 2 & 3									
	Maju Forest (Floral Species)	Priority 1, 2 & 3									
	Clementi Forest (Floral Species)	Priority 1, 2 & 3									
Hydrology and Surface Water Quality	D/S1	Priority 1	This commissioning phase is for EMMP purpose only, therefore the potential activities from operational phase (see Table 3) are generally applicable.	The minimum control measures from operational phase (see Table 3) are generally applicable, where relevant.	Water Quality - parameters listed in NEA's Allowable Limits for Trade Effluent Discharge for all discharge points; parameter listed in Water Quality Criteria for Aquatic Life for sensitive streams (i.e. D/S1 and D/S22) Existing drain/stream capacity, baseflow	No requirement	This commissioning phase is for EMMP purpose only, therefore the impact significance from operational phase (see Table 3) is generally applicable.	The mitigation measures from operational phase (see Table 3) are generally applicable, where relevant.	This commissioning phase is for EMMP purpose only, therefore the impact significance from operational phase (see Table 3) is generally applicable.	Monthly monitoring for all the in-situ parameters (i.e. temperature, pH, conductivity, total dissolved solids, turbidity, total suspended solids and dissolved oxygen) at the main outlets/drains of the project site, stream D/S1 and stream D/S22 in the vicinity of proposed project during the first three (3) months of commissioning phase; Monthly monitoring for all the ex-situ parameters (i.e. biochemical oxygen demand, chemical oxygen demand, total nitrogen, nitrate, ammoniacal nitrogen, total alkalinity, total organic carbon, total phosphorus, orthophosphate and enterococcus) at the main outlets/drains of the project site, stream D/S1 and stream D/S22 in the vicinity of proposed project during the first three (3) months of the commissioning phase; Drainage system within the site and at immediate vicinity should be inspected especially during heavy storm event to ensure no flooding. Monthly audit on the site should be carried out during the first three (3) months of commissioning phase.	CT, EM/ECO
	D/S2	Priority 1									
	D/S20	Priority 1									
	D/S21	Priority 1									
	D/S22	Priority 1									
	Natural streams in Maju Forest (i.e. D/S23, D/S24 and D/S25)	Priority 1									

Environmental Aspect	Description of Receptor		Potential Activities Causing Impact	Minimum Controls (<i>Good practices in addition to LTA's General Safety, Health and Environmental specifications</i>)	Significance of Potential Impact (assumes implementation of minimum controls)			Mitigation Measures	Significance of Residual Impact (with Mitigated Scenario)	Description of Monitoring Required (Commissioning Phase)	Close Up Actions
	Receptor	Value/Sensitivity			Specific Parameter (e.g. Leq 12 hrs/ Leq 1 hr, CO, NO2, PM10, TSS)	Time Zone (E.g. Morning / evening/ night)	Impact Significance (with Base Scenario)				
Soil and Groundwater & Waste	Soil and Groundwater within the Project Site	Priority 3	• Maintenance works and track testing on the alignment, stations and facility buildings	• Store all toxic chemical waste at designated sheltered area provided with access-controlled entrance and concrete bund walls or in storage containers with good ventilation. Spill trays shall be provided for all chemical drum and potentially pollutive substances. Spill trays shall be regularly maintained to prevent rain from washing out the pollutive substances.	Toxic Chemical Waste Generation During Maintenance Work and Track Testing and Improper Handling of Hazardous Chemicals/ Substances	Not applicable	Minor	No additional mitigation measures are proposed beyond minimum controls	Not applicable	At locations within the project site where toxic chemical waste are stored - Monthly monitoring records on toxic chemical waste from the waste generator should be properly kept and records produced when requested during first three (3) months of commissioning phase. At locations within the project site where hazardous chemicals/ substances are used/ stored - Monthly inspection of hazardous chemicals/ substances storage condition during first three (3) months of commissioning phase.	Not applicable
	Streams with biodiversity conservation significance where groundwater flow partially supporting the stream ingress from the construction worksites and operational footprints	Priority 2									
Air Quality	Clementi Forest	Priority 1	This commissioning phase is for EMMP purpose only, therefore the potential activities from operational phase (see Table 3) are generally applicable.	The minimum control measures from operational phase (see Table 3) are generally applicable, where relevant.	Gaseous (NO ₂ and CO) and Particulate emissions (PM10 and PM _{2.5})	Not applicable	This commissioning phase is for EMMP purpose only, therefore the impact significance from operational phase (see Table 3) is generally applicable.	The mitigation measures from operational phase (see Table 3) are generally applicable, where relevant.	This commissioning phase is for EMMP purpose only, therefore the impact significance from operational phase (see Table 3) is generally applicable.	N/A	CT, EM/ECO
	Maju Forest										
	Old Jurong Railway Corridor										
Airborne Noise	Maju Forest	Priority 1, 2 & 3	This commissioning phase is for EMMP purpose only, therefore the potential activities from operational phase (see Table 3) are generally applicable.	The minimum control measures from operational phase (see Table 3) are generally applicable, where relevant.	Leq 5 min and Leq 1hr, Leq 15 min	Not applicable	This commissioning phase is for EMMP purpose only, therefore the impact significance from operational phase (see Table 3) is generally applicable.	The mitigation measures from operational phase (see Table 3) are generally applicable, where relevant.	This commissioning phase is for EMMP purpose only, therefore the impact significance from operational phase (see Table 3) is generally applicable.	Not required	CT, EM/ECO
	Clementi Forest	Priority 1, 2 & 3			Leq 5 min and Leq 1hr					•Three (3) noise monitoring locations boundary of Maju Forest and Clementi Forests •Continuous monitoring for three (3) months of the commissioning phase	
					Leq 15 min					•Six (6) noise monitoring locations at the east, north and south boundary of ventilation shaft building •Continuous monitoring for one (1) day (24 hours) within the commissioning phase, as per NEA's Technical Guideline on Boundary Noise Limits for Air Conditioning and Mechanical Ventilation Systems in Non-Industrial Building	
Ground-borne Vibration	Clementi Forest	Priority 1, 2 & 3	N/A	N/A	Ground-borne Vibration Level, PPV, mm/s	Not applicable	N/A	N/A	N/A	Not required	N/A
	Maju Forest	Priority 1, 2 & 3								Not required	

Environmental Aspect	Description of Receptor		Potential Activities Causing Impact	Minimum Controls <i>(Good practices in addition to LTA's General Safety, Health and Environmental specifications)</i>	Significance of Potential Impact (assumes implementation of minimum controls)			Mitigation Measures	Significance of Residual Impact (with Mitigated Scenario)	Description of Monitoring Required	Close Up Actions
	Receptor	Value/ Sensitivity			Specific Parameter <i>(e.g. Leq 12 hrs/ Leq 1 hr, CO, NO2, PM10, TSS etc)</i>	Time Zone <i>(E.g. Morning / evening/ night)</i>	Impact Significance (with Base Scenario)				
General											
Biodiversity	Clementi Forest (Habitats)	Priority 1, 2 & 3	Habitat degradation Change in species composition	•The maintenance of the system should happen during engineering (0100h to 0400h) and non-engineering hours (operational hours of train line, 0600h to 2300h). •As much as possible, systems that are crucial to daily operational basis will be carried out during non-engineering hours, while electrical services and signalling will be done during engineering hours except at the unlikely event of urgent work required due to failure in mainline.	Flora and Fauna	No requirement	Moderate to Negligible	Design Phase • Optimisation and shift in worksite. • Design to allow for greening up building structures in the operational phase as station building in close proximity to existing forest. By doing so, it might reduce changes in species composition and/or enhance biodiversity. • Substitute certain aspects of the facility building design with bird-friendly building design to reduce risk of bird collision. Operational Phase • Plant more trees along the edge of the forest to serve as a natural barrier to light, noise and dust. • Areas not used should be returned to earth ground and replanted if possible. As a general guide, 400 trees should be replanted for every hectare to be reinstated. Specifically at Windsor, reforestation should be recommended.	Minor to Negligible	• Conduct regular fauna and flora inspections in the initial operational phase (6 months monitoring with an option extending to another 6 months if results are inconclusive) to ensure that proposed planting/mitigating measures are effective and to identify any impacts to the adjacent forest areas.	Not applicable
	Maju Forest (Habitats)	Priority 1, 2 & 3					Moderate to Negligible		Negligible		
	Clementi Forest (Floral Species)	Priority 1, 2 & 3	Mortality				Major to Negligible		Negligible		
	Maju Forest (Floral Species)	Priority 1, 2 & 3	Competition from exotic plant species				Moderate to Negligible		Negligible		
	Clementi Forest (Floral Species)	Priority 1, 2 & 3	Collision with buildings (birds only)				Major to Negligible		Minor to Negligible		
	Maju Forest (Floral Species)	Priority 1, 2 & 3	Injury or mortality Loss of ecological connectivity for faunal movement				Negligible		Negligible		

Environmental Aspect	Description of Receptor		Potential Activities Causing Impact	Minimum Controls (Good practices in addition to LTA's General Safety, Health and Environmental specifications)	Significance of Potential Impact (assumes implementation of minimum controls)			Mitigation Measures	Significance of Residual Impact (with Mitigated Scenario)	Description of Monitoring Required	Close Up Actions
	Receptor	Value/ Sensitivity			Specific Parameter (e.g. Leq 12 hrs/ Leq 1 hr, CO, NO2, PM10, TSS etc)	Time Zone (E.g. Morning / evening/ night)	Impact Significance (with Base Scenario)				
Hydrology and Surface Water Quality	D/S1	Priority 1	Stormwater run-off on hydrology	- Potential increase of peak-flow due to the change in the land use at the new developments can be mitigated by providing detention tanks within the Study Area. Detention tanks can capture stormwater during heavy storm events to reduce the peak runoff. Stored water can then be discharged back to the system after the storm event. As required by PUB, the storage system needs to be in place to reduce the peak flow at the operational phase to be the same or less than that of the existing condition; - Active, Beautiful, Clean Water (ABC) Water Design approach can be considered to reduce the peak-flow as well; and - Geotechnical aspect of site's slope stability (such as ERSS) to be included in detailed design engineering for the operational stage	Existing drain/stream capacity, baseflow	No requirement	Moderate	- Divert D/S22 permanently and discharge water to the main natural stream D/S1. - Incorporating more softscape area into the design of the development to reduce the runoff coefficient which will help to reduce the peak-flow and reduce flood risk at downstream area.	Minor	Not applicable	Not applicable
	D/S2	Priority 1					Negligible	Not applicable	Not applicable		
	D/S20	Priority 1					Negligible	Not applicable	Not applicable		
	D/S22	Priority 1					Moderate	- Divert D/S22 permanently and discharge water to the main natural stream D/S1. - Incorporating more softscape area into the design of the development to reduce the runoff coefficient which will help to reduce the peak-flow and reduce flood risk at downstream area.	Minor		
	Natural streams in Maju Forest (i.e. D/S23, D/S24 and D/S25)	Priority 1					Negligible	Not applicable	Not applicable		
	D/S1	Priority 1	Stormwater run-off on water quality	- Adequate drainage, piping and/or channelling of stormwater runoff to be assured through detailed design [such as Active, Beautiful, Clean Water (ABC) Water Design approach] for capture and treatment before discharge into watercourses; - Regular and dedicated procedures for the inspection and maintenance of stormwater collection, storage, and treatment infrastructure, such as pipes, oil water separation, silt screens, etc.; and - Regular and dedicated procedures for the management of stormwater collection, settling, testing and eventual discharge of 'clean' water to surface waters. This should also include associated measures required to prevent high sediment concentration stormwater drainage to watercourses.	Water Quality - parameters listed in NEA's Allowable Limits for Trade Effluent Discharge for all discharge points; parameters listed in Water Quality Criteria for Aquatic Life for streams (i.e. D/S1 and D/S22).		Moderate	- Divert D/S22 permanently and discharge water to the main natural stream D/S1. - Incorporating more softscape area into the design of the development to reduce the runoff coefficient which will help to reduce the peak-flow and reduce flood risk at downstream area.	Minor		
	D/S2	Priority 1					Negligible	Not applicable	Not applicable		
	D/S20	Priority 1					Negligible	Not applicable	Not applicable		
	D/S22	Priority 1					Moderate	- Divert D/S22 permanently and discharge water to the main natural stream D/S1. - Incorporating more softscape area into the design of the development to reduce the runoff coefficient which will help to reduce the peak-flow and reduce flood risk at downstream area.	Minor		
	Natural streams in Maju Forest (i.e. D/S23, D/S24 and D/S25)	Priority 1					Negligible	Not applicable	Not applicable		

Environmental Aspect	Description of Receptor		Potential Activities Causing Impact	Minimum Controls <i>(Good practices in addition to LTA's General Safety, Health and Environmental specifications)</i>	Significance of Potential Impact (assumes implementation of minimum controls)			Mitigation Measures	Significance of Residual Impact (with Mitigated Scenario)	Description of Monitoring Required	Close Up Actions
	Receptor	Value/ Sensitivity			Specific Parameter <i>(e.g. Leq 12 hrs/ Leq 1 hr, CO, NO2, PM10, TSS etc)</i>	Time Zone <i>(E.g. Morning / evening/ night)</i>	Impact Significance <i>(with Base Scenario)</i>				
Soil and Groundwater & Waste	Soil and Groundwater within the Project Site	Priority 3	• Maintenance works on the alignment, stations and facility buildings	• Store all toxic chemical waste at designated sheltered area provided with access-controlled entrance and concrete bund walls or in storage containers with good ventilation. Spill trays shall be provided for all chemical drum and potentially pollutive substances. Spill trays shall be regularly maintained to prevent rain from washing out the pollutive substances. • Dispose all toxic waste chemicals to licensed TIW collectors for treatment • Store all hazardous substances/chemicals at designated sheltered area provided with access-controlled entrance and concrete bund walls or in storage containers with good ventilation. • Spill trays shall be provided for all chemical drums, plants and machinery and potential pollutive substances used on site. Spill trays shall be regularly maintained to prevent rain from washing out the pollutive substances. • Ensure all hazardous chemicals/substances are labelled its movement is recorded and returned to the designated storage areas when not in use. • Ensure all activities including repair, servicing, engine overhaul works, etc. involving the use of hazardous chemicals/substances are carried out on an area which is appropriately contained (e.g. concreted area and with proper containment/sumps). • Provide emergency spill kits on site in the event of any chemical spillages. The emergency response team shall also be competent in the use of these spill kits. Ensure no trade effluent other than that of a nature or type approved by NEA Director-General shall be discharged into any watercourse or land.	Toxic Chemical Waste Generation During Maintenance Work and Improper Handling of Hazardous Chemicals/ Substances	Not applicable	Minor	No additional mitigation measures are proposed beyond minimum controls	Not applicable	At locations within the project site where toxic chemical waste are stored - Monthly monitoring records on toxic chemical waste from the waste generator should be properly kept and records produced when requested during first three (3) months of operation period. At locations within the project site where hazardous chemicals/ substances are used/ stored - Monthly inspection of hazardous chemicals/ substances storage condition during first three (3) months of operation period.	Not applicable
	Streams with biodiversity conservation significance where groundwater flow partially supporting the stream ingress from the construction workites and operational footprints	Priority 2									
Air Quality	Clementi Forest	Priority 1	During operational phase, since the trains are powered by electricity, they do not emit air emissions as a direct impact to environment through the facility buildings. Gaseous and particulate emissions from vehicle exhaust due to the increased traffic in vicinity of the Project due to Project operation.	No minimum control has been assumed for the purpose of air quality impact assessment during operational phase.	Gaseous (NO ₂ and CO) and Particulate emissions (PM10 and PM _{2.5})	24/7 throughout project lifetime	Minor	No mitigation measures are required during operational phase as only Minor air quality impact significance is expected during project operational phase.	Minor	N/A	N/A
	Maju Forest										
	Old Jurong Railway Corridor										
Airborne Noise	Maju Forest	Priority 1, 2 & 3	Traffic noise due to increase in vehicular volume due to the development of the project and air-conditioning and mechanical ventilation noise from services at the project station and vent buildings.	•Use low air-conditioning and mechanical ventilation system equipment; •Ensure that any exhaust outlet or intake from the mechanical ventilation system is designed to be adequately set back as far as possible from the boundary line of the development; •Acoustic treatment if any to be designed and implemented; •AC system to be designed with the AHU units placed at appropriate locations as set back from the boundary line of the development as possible; and •Acoustic enclosures for outdoor equipment.	Leq 15 min	Records on noise levels of boundary noise during first three (3) months of the operational period	Negligible	•Noise attenuators and other BAT and BEP noise control measures shall be utilised •Traffic noise at the drop-off points and parking areas shall be mitigated with low speed postings, humps and signage	Not Applicable	Not Applicable	Not Applicable
	Clementi Forest	Priority 1, 2 & 3									

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Environmental Parameter	Receptor Sensitivity		
	Priority 1	Priority 2	Priority 3
Biodiversity	Flora, fauna species and habitats of high ecological value (i.e., presence of conservation significant flora, fauna species and habitats; trees of conservation significance and NParks-designated heritage trees).	Flora, fauna species and habitats of moderate ecological value (i.e., mainly native species of flora, fauna and habitats).	Flora, fauna species and habitats of low ecological value (i.e., mainly exotic or cryptogenic flora, fauna and habitats; managed vegetation which can provide crucial habitat for significant species).
Surface Water Quality	Surface watercourses protected and used for drinking supply ¹ , or supporting ecosystems of biodiversity conservation significance in consultant with Biodiversity specialist after surveys ² .	Surface watercourses used for industrial water supply or for recreational purposes, but not used for drinking water purposes and which do not support ecosystems of biodiversity conservation significance in consultant with Biodiversity specialist after surveys.	Surface watercourses not used for any purposes and not protected.
Soil and Groundwater Quality	Groundwater is sensitive (i.e. used for agricultural / irrigation / drinking water purposes or supports ecosystems of biodiversity conservation significance).	Groundwater may be extracted for industrial purpose but not used for agricultural / irrigation / drinking water purposes. Groundwater partially supporting ecosystems of biodiversity conservation significance.	Not sensitive groundwater (i.e. not extracted for any purpose or does not support any ecosystems of biodiversity conservation significance).
Air Quality	Flora, Fauna Species and Habitats of High Ecological Value within 20 m of construction worksite area	Flora, Fauna Species and Habitats of High Ecological Value within 20 m to 50m of construction worksite area. Ecological sites having known sensitive communities within 20 m of construction worksite area.	Ecological sites having known sensitive communities within 20 m to 50 m of construction worksite area. Any other ecological sites within the Study Area of 50 m.
Airborne Noise³	Species that use sound for communication, foraging and breeding or are known to have their behaviours disrupted by sound or are of Conservation Significance.	Species that are less affected by airborne noise but are of Conservation Significance.	Species that are less affected by airborne noise and are not of Conservation Significance.
Ground-borne Vibration^{4, 5} (excluding Ground-borne Noise as it is only applicable inside building)	Fauna species and habitats of high sensitivity towards ground-borne vibration and are of Conservation Significance. Species that inhabit the ground or aquatic environments and live in burrows and/or caves will be more badly impacted by anthropogenic vibrations.	Fauna species and habitats that are less affected by ground-borne vibration and are of Conservation Significance.	Fauna species and habitats that are less affected by ground-borne vibration and are not of Conservation Significance.

¹ Waterbody usage will be determined based on the PUB Water Catchment Map.

² The receptor sensitivity of surface watercourses will be determined based on the biodiversity baseline survey results which will identify whether such surface watercourses are supporting ecosystems of biodiversity conservation significance.

³ The fact is that different species are likely to react differently to disturbance and that will be influenced by various other factors such as how percussive the noise is (e.g. from rock breaking and excavation and piling), how far away the receptor is generally, behaviour of the fauna, and other factors such as whether the species is feeding or breeding/nesting and in particular from the complication of visual disturbance (particularly humans on foot nearby).

⁴ The prioritisation of the fauna receptors is in the order of low, moderate or high sensitivity (Priority 3 to 1) has been broadly given at this stage in Inception report and will be refined in EIS based on the available data/ publication and biodiversity specialist's perception of species' (of conservation interest) sensitivity to ground-borne noise and vibration levels. The exposure limit based on behaviour of the species will be taken into account in this case.

⁵ For ground-borne vibration, urban areas such as houses and existing roads are not assessed and are termed "Not Assessible".

Table 5 - Determine Impact Intensity

Environmental Parameters	Impact Intensity			
	Negligible Intensity	Low Intensity	Medium Intensity	High Intensity
Biodiversity (Construction and Operation) – Habitats	Potential impacts with no detectable changes to viability/function of habitats.	Potential impacts with <ul style="list-style-type: none"> • Small temporal and spatial (localised) scale changes that affects part of the habitat, such that there is no loss of viability/function of habitat • Changes that are reversible 	Potential impacts with <ul style="list-style-type: none"> • Moderate duration and/or over a considerable spatial scale changes that affects part of the habitat but does not threaten the long-term viability/function of the habitat • Changes that are reversible with significant input and mitigation measures 	Potential impacts with <ul style="list-style-type: none"> • Extensive duration and large spatial scale that affects the entire habitat, or a significant proportion of it, and the long-term viability/function of the habitat is threatened • Changes that are non-reversible
Biodiversity (Construction and Operation) – Flora and Fauna	No expected changes to species population	<ul style="list-style-type: none"> • Short duration and small-scale localised spatial changes that could cause minimal changes to species population • Changes are reversible 	<ul style="list-style-type: none"> • Moderate duration and medium-scale spatial changes that could cause moderate reduction in size of species population, but would not threaten species long-term viability • Changes are reversible with mitigation measures 	<ul style="list-style-type: none"> • Extended duration and large-scale spatial changes that could cause substantial reduction in size of species population and threaten species long-term viability • Changes are irreversible
Hydrology (Construction and Operation)	Very minor change to existing hydrology and flow.	Small scale localised changes to existing hydrology or flow.	Medium scale changes to existing hydrology or peak flow.	Major changes to existing hydrology or peak flow.
Surface Water Quality (Construction and Operation)	No contamination; or Likely to be well within regulatory limits.	Small scale localised contamination within regulatory limits.	Medium scale contamination or just exceed regulatory limits.	Large scale contamination exceed regulatory limits by hazardous levels for the habitat/ conservation species.
Soil, Groundwater (Construction and Operation)	None of the construction activities identified will cause contamination nor reduction of groundwater level on site.	Small scale localised contamination which is not likely to extend beyond the construction worksite areas and possible to remediate. Small scale localised groundwater level decrease which is not likely going to extend beyond the	Medium scale contamination which is likely to extend beyond the construction worksite areas but possible to remediate within the construction period timeframe. Medium scale groundwater level decrease that is likely going to extend far beyond the Study Area	Large scale contamination which is likely to extend beyond the construction worksite areas and may require large scale remediation. Large scale groundwater level decrease that is likely going to extend far beyond the Study Area
Air Quality (Construction Phase)¹	-	For Earthworks: <ul style="list-style-type: none"> • Total site area <2,500 m² • Soil type with large grain size (e.g. sand) • <5 heavy earth moving vehicles active at any one time • Formation of bunds <4 m in height • Total material moved <20,000t • Earthworks during wetter months 	For Earthworks: <ul style="list-style-type: none"> • Total site area 2,500 m² – 10,000 m² • Moderately dusty soil type (e.g. silt) • 5-10 heavy earth moving vehicles active at any one time • Formation of bunds 4 m - 8 m in height • Total material moved 20,000-100,000t 	For Earthworks: <ul style="list-style-type: none"> • Total site area >10,000 m² • Potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size) • >10 heavy earth moving vehicles active at any one time • Formation of bunds >8 m in height • Total material moved >100,000t
	-	For Construction: <ul style="list-style-type: none"> • Total building volume <25,000 m³ • Construction material with low potential for dust release (e.g. metal cladding or timber) 	For Construction: <ul style="list-style-type: none"> • Total building volume 25,000-100,000 m³ • Potentially dusty construction material (e.g. concrete) • On-site concrete batching 	For Construction: <ul style="list-style-type: none"> • Total building volume >100,000 m³ • On-site concrete batching • sandblasting
	-	For Trackout: <ul style="list-style-type: none"> • <10 HDV² (>3.5t) outward movements in any one day • Surface material with low potential for dust release • Unpaved road length <50 m 	For Trackout: <ul style="list-style-type: none"> • 10-50 HDV² (>3.5t) outward movements in any one day • Moderately dusty surface material (e.g. high clay content) • Unpaved road length 50-100 m 	For Trackout: <ul style="list-style-type: none"> • >50 HDV² (>3.5t) outward movements in any one day • Potentially dusty surface material (e.g. high clay content) • Unpaved road length >100 m
	-	For Demolition: <ul style="list-style-type: none"> • Total building volume <20,000 m³ • Construction material with low potential for dust release (e.g. metal cladding or timber) • Demolition activities <10m above ground • Demolition during wetter months 	For Demolition: <ul style="list-style-type: none"> • Total building 20,000 – 50,000 m³ • Potentially dusty construction material • Demolition activities 10-20 m above ground level 	For Demolition: <ul style="list-style-type: none"> • Total building >50,000 m³ • Potentially dusty construction material (e.g. concrete) • On-site crushing and screening • Demolition activities >20m above ground level
Air Quality (Operational Phase)	Insignificant increase in air quality levels in the vicinity of stations due to Project operation.	Small scale increase in air quality levels in the vicinity of stations due to Project operation.	Medium scale increase in air quality levels in the vicinity of stations due to Project operation.	Large scale increase in air quality levels in the vicinity of stations due to Project operation.
Airborne Noise (Construction and Operation)	No detectable change to flora, fauna and habitats. Predicted noise level at receptors are within the corrected baseline criteria. For A1-W1 Worksite, predicted noise levels at receptors are below the baseline noise (no correction applied here).	Potential impacts last a short duration, are reversible and/or of a small magnitude for species with low auditory sensitivity level. Predicted noise level exceeds the corrected baseline criteria of up to 3 dB(A).	Potential impacts last for a moderate duration, are reversible with significant input and compensatory measures, and/or of a moderate magnitude for species with auditory sensitivity level. Predicted noise level exceeds the corrected baseline criteria of up to 4 - 6 dB(A).	Potential impacts last for a long time, are non-reversible, and/or of a significant magnitude for species with high auditory sensitivity level. Predicted noise level exceeds the corrected baseline criteria of more than 6 dB(A).
Airborne Noise (Air Overpressure from rock breaking and excavation)	The predicted noise levels are equal or lower than 120 dB.	The predicted noise levels are between 121 to 149 dB.	The predicted noise levels are between 150 to 179 dB.	The predicted noise levels are equal or higher than 180 dB.
Ground-borne Vibration (Structural (Construction) and Behavioural (Construction and Operation))^{3,4}	See Note 5 below			

¹ This impact intensity criterion is equivalent to the Emission Magnitude as defined in IAQM's Guidance.² Heavy duty vehicles (HDV) defined as vehicles with a gross weight greater than 3.5 tonnes.³ The intensity assessment is a multi-prong approach for structural (intensity-based) or behavioural impacts (no worse off than baseline but based on intensity and home range of fauna in a matrix approach)⁴ A threshold of 5 mm/s was used for screening out those activities which will be assessed for structural impact in this study. A criterion of 8 mm/s PPV has been adopted (equivalent to 80% of 10 mm/s PPV) to prevent damage to burrows.⁵ For ground-borne vibration, structural and behavioural assessments are matrix-based. See Figure 1 in Annex 4.

Table 6 - Determine Consequence of Impacts (General)

Impact Intensity		Receptor Sensitivity		
		Priority 3	Priority 2	Priority 1
	Negligible	Imperceptible	Imperceptible	Very Low
	Low	Very Low	Very Low	Low
	Medium	Very Low	Low	Medium
	High	Low	Medium	High

Table 7 - Determine Likelihood of Impacts

Likelihood Criteria	Definition	Definition for Quantitative Evaluation (Construction & Operational)
Unlikely/ Remote*	Would be unlikely or remotely expected to occur during construction and operational phases.	When the frequency of exposure to vibration impacts for fauna is < 5% during the construction or operation phase.
Less Likely/ Rare*	Would less likely/ rarely occur during construction and operational phases.	When the frequency of exposure to vibration impacts for fauna is 5 - 15% during the construction or operation phase.
Possible/ Occasional*	Would possibly/ occasionally occur during construction and operational phases.	When the frequency of exposure to vibration impacts for fauna is 16 - 25% during the construction or operation phase.
Likely/ Regular*	Would likely to occur or would occur on a regular basis during construction and operational phases.	When the frequency of exposure to vibration impacts for fauna is 26 - 50% during the construction or operation phase.
Certain/ Continuous*	Would be certain to occur or would occur continuously during construction and operational phases.	When the frequency of exposure to vibration impacts for fauna is > 50% during the construction or operation phase.

Note:

* The second term (i.e. remote, rare, occasional, regular, continuous) is not applicable to noise/ground-borne vibration.

References:

1. Ecological Impact Assessment (EIA). EIANZ Guidelines for use in New Zealand: terrestrial and freshwater ecosystems. 2nd Edition. May 2018.

2. CIEEM (2018). Guidelines for ecological impact assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal. September 2018.

Table 8 - Determine Impact Significance (General)

Likelihood		Consequence				
		Imperceptible	Very Low	Low	Medium	High
	Unlikely/ Remote	Negligible	Negligible	Negligible	Negligible	Negligible
	Less Likely/ Rare	Negligible	Negligible	Minor	Minor	Minor
	Possible/ Occasional	Negligible	Minor	Minor	Moderate	Moderate
	Likely/ Regular	Negligible	Minor	Moderate	Moderate	Major
	Certain/ Continuous	Negligible	Minor	Moderate	Major	Major

Table 9 - Definition of Final Impact Significance Level

Impact Significance Levels	Definitions
Negligible	Impacts are indistinguishable from the existing baseline environmental conditions, or non-noticeable by the receptor/ habitat as a change. A negligible impact is unlikely to pose concern to the government, communities and organisations.
Minor	Impacts of low magnitude, shorter term, reversible. Minor impacts are usually within accepted limits/standards provided with minimum controls or best practices, and is unlikely to pose concern to the government, communities and organisations.
Moderate	Impacts of medium magnitude, longer term, but reversible. Moderate impacts are manageable within accepted limits/standards after consideration of suitable mitigation measures or can be reduced to a level that is as low as reasonably practicable.
Major	Impacts of high magnitude, exceeds limits/standards, permanent and non-reversible. Major impacts should seek alternatives in design/ location etc. and/ or mitigation measures to avoid/compensate and/or reduce major impacts to as low as reasonably practicable.

Figure 1 - Ground-borne Vibration Impact Intensity Matrix for Construction and Operational Vibration

Area Affected (ha)	Impact Intensity				
6 < area	Negligible	Low	Medium	High	High
4.8 < area ≤ 6	Negligible	Low	Medium	Medium	High
2.4 < area ≤ 4.8	Negligible	Low	Low	Medium	High
1.2 < area ≤ 2.4	Negligible	Negligible	Low	Medium	Medium
0 < area ≤ 1.2	Negligible	Negligible	Low	Medium	Medium
Ambient Level	Ambient to T1	T1 to T2	T2 to T3	T3 to T4	> T4

Figure 2 - Screening and disposal of excavated soils

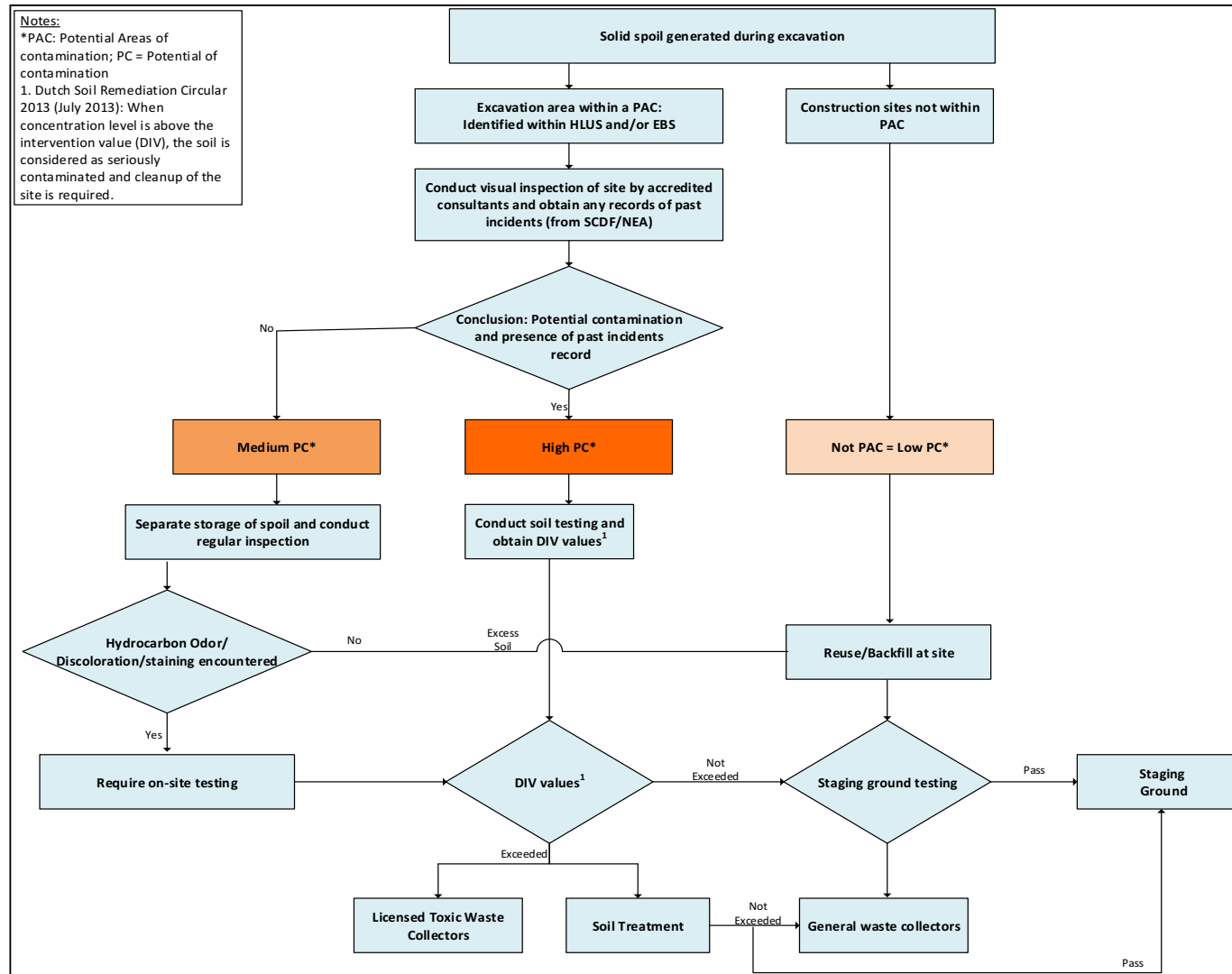
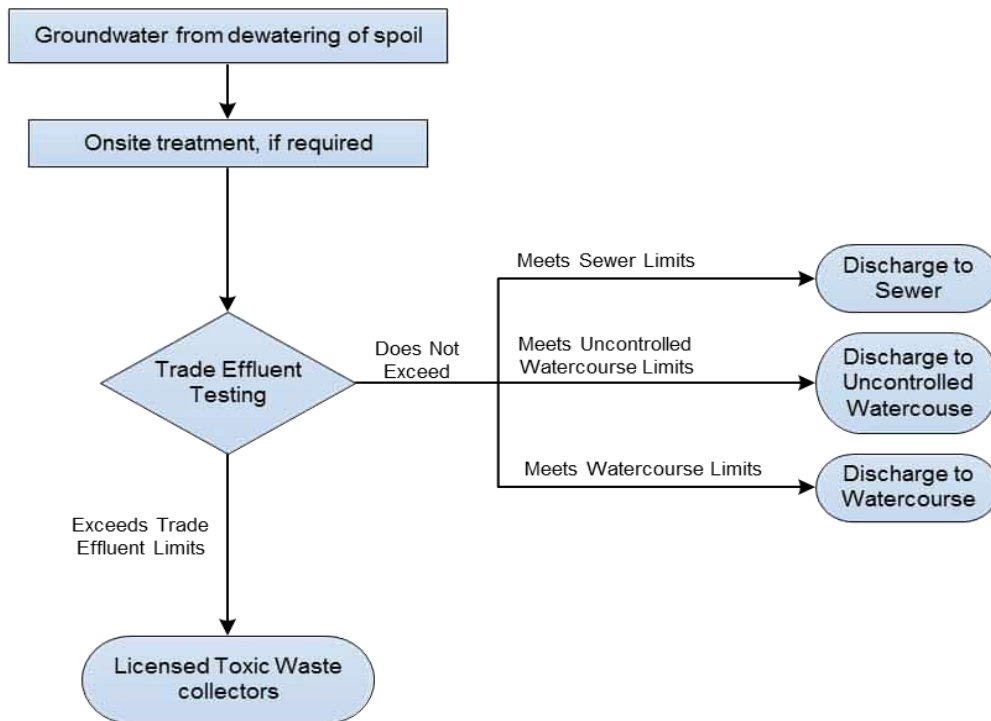


Figure 3 - Disposal of the groundwater generated through soil dewatering

Appendix B

LTA Safety Health and
Environment (SHE)
Specifications

GENERAL SPECIFICATION

APPENDIX A

SAFETY, HEALTH AND ENVIRONMENT

(August 2019 Edition)

August 2019 Edition

The following table serves to highlight new or amended clauses made to this specification (August 2019 Edition) and are by no means exhaustive. Contractor shall read through and comply with all the safety, health and environmental requirements contained in this specification.

S/NO	Clause	Clause Heading
1	Clause 2	Factory Registration replaced by BCA's permit to carry out structural works
2	Clause 11.3, 11.4	Safety Training
3	Clause 20.4	Evaluation, Selection and Control of Sub-Contractors
4	Annex A-a 1.2, 1.14	Lifting Operation
5	Annex A-s	Good Housekeeping photographs replaced by Mobile Elevated Working Platform (MEWP) Usage On Site
6	Attachment A-13	QECF Inspection Report Template

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GENERAL SPECIFICATION

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SAFETY, HEALTH AND ENVIRONMENT

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GENERAL SPECIFICATION

APPENDIX A

SAFETY, HEALTH AND ENVIRONMENT

1. LEGAL REQUIREMENTS

- 1.1. The Contractor shall comply with all applicable legislative safety, health and environmental (SHE) requirements of Singapore including any new acts and regulations which may be gazetted during the Contract period including any amendments or re-enactments thereto.
- 1.2. The Contractor shall comply with all the SHE requirements contained in this specification and supporting documentation, even where these impose a higher standard than that required by current Singapore legislation.

2. BCA'S PERMIT TO CARRY OUT STRUCTURAL WORKS

- 2.1 Upon award of the Contract, the Contractor shall register their works with the Building and Construction Authority (BCA) to obtain BCA's permit to carry out structural works as defined under the Building Control Act and its Regulations. A copy of the BCA's permit shall be submitted to the Engineer.

3. SHE MANAGEMENT SYSTEM (SHEMS)

- 3.1. Within 12 weeks of award of the Contract, the Contractor shall submit a SHEMS in accordance to "SS CP79, Code of Practice for Safety Management System for the construction worksites", and where applicable in compliance with ISO 14001 and OHSAS 18001 or ISO 45001 for his acceptance. The SHEMS shall incorporate all relevant legal and contractual requirements.

4. RESPONSIBILITY

- 4.1. The Contractor shall be responsible for the SHE of all operations in connection with the Contract and shall take all necessary actions to ensure the safety of all persons who may be on or adjacent to the Site.
- 4.2. The Contractor shall be responsible for ensuring that his sub-contractors; interfacing contractors; and all persons entitled to be on the Site comply with all relevant legal and contractual requirements including the Contractor's SHEMS and shall enforce its compliance.

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- 4.3. If the Contractor is working within the site (factory) of an interfacing contractor, the Contractor shall comply with the interfacing contractor's SHEMS.

5. SAFETY ENFORCEMENT

- 5.1. The Engineer may require the removal from the Site of any person who fails to observe safety procedures and that person shall not be again deployed on any of the Authority's projects without the written approval of the Engineer.

6. MONTHLY SHE REPORT

- 6.1. The Contractor shall prepare a monthly SHE report in the format stated in Attachment A-2 and submit to the Engineer within 5 days after the month completion.

7. SAFETY, HEALTH & ENVIRONMENTAL (SHE) PERSONNEL

- 7.1. SHE personnel refer to Workplace Safety and Health Officer (WSHO) registered with the Ministry of Manpower (MOM) and Environmental Control Officer (ECO) registered with the National Environment Agency (NEA).
- 7.2. All SHE personnel in clause 7.1 shall have at least three (3) years post registration and practical experience relevant to the scope of works of the Contract.
- 7.3. Prior to his appointment, the Contractor shall submit the SHE personnel's resume with detailed listing of his past experiences for the Engineer's approval. Upon the Engineer's approval, application for the appointment shall be made to MOM or NEA and submitted to the Engineer.
- 7.4. The Engineer shall require the replacement of the appointed SHE personnel if the performance of the SHE personnel is not up to the Engineer's expectation.
- 7.5. All SHE personnel shall be identified clearly on site with a blue safety helmet.

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- 7.6. The SHE personnel to be appointed on site shall comply with the value stated in the table below:

Contract Value	Full time SHE Personnel
Above S\$1 million to S\$20 million	1 WSHO cum ECO
Above S\$20 million to S\$50 million	1 WSHO & 1 ECO
Above S\$50 million	2 WSHO & 1 ECO

Note: Contract Value for SWC refers to “Value of works carried out in Singapore”. “Value of works” refers to installation, delivery, testing, commissioning and other physical works carried out in Singapore.

- 7.7. Notwithstanding clause 7.6, if deemed necessary by the Engineer, the Contractor shall appoint additional SHE personnel to ensure adequate SHE cover for all Contract related works. In such events, the Contractor shall not be entitled to any claim for compensation
- 7.8. The Contractor shall appoint the WSHO and ECO within one (1) month upon award of contract and subsequent WSHO no later than three (3) months thereafter.
- 7.9. The Contractor shall provide cover for WSHO and/or ECO during their periods of absence due to annual leave, sick leave, National Service and training etc.
- 7.10. Notwithstanding clause 7.6, Contractor with more than one (1) contract with the Authority shall appoint a full time corporate Workplace Safety, Health and Environmental (WSHE) Manager to take charge in ensuring the various contracts achieve and meet the performance standards required by the Engineer. The WSHE Manager shall have (i) at least ten (10) years post registration (with the Ministry of Manpower) practical experience relevant to the scope of works of the Contract, including experience in overseeing environmental management on site. The WSHE Manager shall also be a registered ECO with NEA. The WSHE Manager shall be employed exclusively for LTA contract(s), based full time on site and be stationed at a location as specified by the Engineer and be required to perform his duties until the last Contract achieves its Completion of Whole of Works (CWW).

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8. WORKPLACE SAFETY & HEALTH COORDINATOR

- 8.1. The Contractor shall appoint a minimum of one full time Workplace Safety & Health Coordinator for every S\$10 million or part thereof the Contract Sum subjected to a maximum of four (4) Workplace Safety & Health Coordinators per contract to ensure effective safety supervision on site during all working hours. Notwithstanding, if deemed necessary by the Engineer, the Contractor shall appoint additional Workplace Safety & Health Coordinators to ensure adequate cover for all Contract related works. This may include operating a shift system. Provision shall be made for providing cover at weekends and during periods of absence from site in excess of one day for annual leave, sick leave, National Service training and similar. In such events, the Contractor shall not be entitled to any claim for compensation
- 8.2. The Workplace Safety & Health Coordinator shall have at least two (2) years of relevant experience after gaining his certificate.
- 8.3. In addition, every sub-contractor to the Contractor shall appoint a full time Workplace Safety & Health Coordinator and every sub-sub-contractor who employs more than 20 persons to carry out work at the Site shall appoint a part-time Workplace Safety & Health Coordinator. These part time Workplace Safety & Health Coordinators shall spend at least 15 hours per week exclusively on safety supervision.

9. METHOD STATEMENT

- 9.1. The Contractor shall identify all safety critical activities and ensure that a method statement is prepared for each activity and accepted by the Engineer before commencement of such activities. The method statement submission requirement is provided in Attachment A-4. Risk Assessments conforming to the risk assessment guidelines provided in Attachment A-3 shall be submitted with all method statements.
- 9.2. The Contractor shall address all comments on the method statement arising from the Engineer's review. The Contractor shall fully comply with the method statement approved by the Engineer. If there is any intention to change the method of work, the Contractor shall seek approval from the Engineer.

10. PERMIT TO WORK (PTW)

- 10.1. The Contractor shall implement a PTW system as required by Singapore legislations or by the Authority.
- 10.2. The PTW shall be valid only for the day or shift unless otherwise agreed upon by the Engineer.

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- 10.3. The safety assessor and the occupier's project manager approving the PTW shall be separate persons. In addition, the safety assessor shall be occupier's competent supervisory staff.

11. SAFETY TRAINING

- 11.1. To ensure the whole supervision team have a clear understanding and consistent application of SHE requirements, the Contractor shall ensure his site management team, site supervisors, Safety and Health co-ordinators and WSHOs attend the Construction Safety Management Course at LTA Academy within six (6) months from the award of contract.
- 11.2. The Contractor shall provide a training room capable of providing training to at least 20 workers at a time. The training room shall be provided with all the necessary audio and visual training facilities.
- 11.3. Safety training shall include experiential learning which includes experiencing the simulation of the construction risks/hazards such as (but not limited to):
- (a) Fall from height
 - (b) Work at height
 - (c) Struck by falling object
 - (d) Pinned or hit by a heavy machinery
 - (e) Lifting operation / safe rigging
 - (f) Scaffold / Falsework
 - (g) Confined Space
 - (h) Electrical system
 - (i) Manual handling
 - (j) Hand injuries
 - (k) Traffic / pedestrian safety
 - (l) Trial trench and utility protection
 - (m) Emergency preparedness
 - (n) First aid
- 11.4. Where such safety training as mentioned in clause 11.3 is not available on site, the Contractor shall source for a suitable off-site training centre that provides such training and to send his workers, sub-contractors and other site personnel to attend training there. The Contractor shall keep records of these trainings for audit.
- 11.5. The Contractor shall ensure that no personnel including interfacing contractors commence work on site before the completion of the Contractor's in-house safety induction training and the issuance of a security pass. The Contractor shall ensure that training information is given in languages understood by the trainees. In addition, the Contractor shall have a system to clearly identify new employees and workers for their initial 30 days on site.

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- 11.6. The Contractor shall employ qualified operators for all machineries to be used on Site even if it is not required by legislation. The operators shall possess a Skills Evaluation Certificate (SEC) from the Building and Construction Authority (BCA) Academy or other approved training centre. For machineries where there are no skilled training available in Singapore, the Contractor shall engage the supplier of the machinery to train them and authorise them in writing. Examples of qualified operator include, but not limited to: gantry crane operator, excavator operator, boring / piling Operator and welder.
- 11.7. The Contractor shall ensure that all his supervisory staff (including engineer, supervisor, charge-hand, foreman, kapala and team leader) attained the "Supervise Construction Work in WSH" Certificate or such WSH certificates accepted by the Engineer.
- 11.8. The Contractor shall develop and implement a comprehensive assessment system to ensure the competency of his supervisory staff, lifting crew and machine operators prior to their deployment for works. The assessment system shall include face-to-face interviews and written tests that adequately evaluate their appreciation of safety hazards associated with respective works, Safe Work Practices (SWP) etc.
- 11.9. The Contractor shall ensure that all personnel and in particular new personnel, or personnel transferred to new assignments are given proper safety training relevant to their duties.
- 11.10. The Contractor shall implement an identification system on site to clearly identify all the qualified personnel and operators.

12. SHE COORDINATION MEETING

- 12.1. The Contractor shall conduct weekly SHE co-ordination meetings with his sub-contractors and interfacing contractors to ensure that works are carried out on Site with minimum risk to workers and to the public. The meeting shall plan and co-ordinate all works on site including the handover readiness of rooms and areas within Site, the movement of plant, equipment and hazardous materials and also review SWP, PTW procedures, training, PPE, safety equipment and discussion of incidents, if any. The meeting shall also inform personnel of potentially dangerous work at the Site.
- 12.2. During coordination meetings on Combined Services Drawings (CSD), Structural, Electrical and Mechanical (SEM) and Coordinated Installation Programme (CIP), the following items shall be included in the meeting agenda:
- a) Planning and sequencing of work activities and identification of incompatible works between contractors working in the same area;

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- b) Identification of risks and hazards pertaining to these interfacing works, including conducting site walks to verify these hazards;
- c) Highlighting potential high risk zones during handing over; and
- d) Developing a site map to show delivery routes and designated storage area for the Contractor and interfacing contractors.

13. SHE COMMITTEE

- 13.1. The Contractor shall establish a SHE Committee regardless of the number of workers. The Committee shall comprise of management and safety representatives from the Contractor and his sub-contractors including any interfacing contractors. The Engineer's staff shall be invited to sit in the Committee on an ex-officio basis.
- 13.2. The Committee shall inspect the Site at least one week before each month's meeting.
- 13.3. The Contractor shall adopt the following format for his SHE Committee Meeting.
 - a) Confirmation of Minutes;
 - b) Matters arising;
 - c) Chairman's review of SHE performance / condition;
 - d) Report from the Secretary;
 - e) Report from SHE Representatives;
 - f) SHE Inspection Report;
 - g) Accidents and incidents;
 - h) Reports on status of authorities visits, and discuss follow up actions;
 - i) SHE talk by Committee Members;
 - j) Report from the Engineer; and
 - k) Any other business.
- 13.4. The Contractor shall ensure that all major decisions and actions made at each meeting are effectively communicated for implementation.

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14. TOOL BOX MEETINGS

- 14.1. Tool Box Meetings shall be conducted daily before work commence, and it should be specific to the work performed for the day. Workers shall be briefed on the day's activities, the SHE precautions to be observed, the SWP to be followed, and each individual's PPE will be checked to ensure its suitability, and its correct use explained where necessary.

15. ENGINEER'S PROJECT SAFETY COMMITTEE

- 15.1. The Engineer may require the Contractor's Project Manager and SHE personnel to attend the Engineer's Project Safety and Environmental Committee meeting to review their SHE provisions on site.

16. ACCIDENTS & INCIDENTS REPORTING

- 16.1. Notwithstanding the reporting requirements of the legislation and the Insurance Specification, the Contractor shall notify the Engineer of any accident, incident, Dangerous Occurrence or near miss associated with the Contract. Verbal notification to the Engineer shall be done immediately and followed up by written notification within 24 hours in the format shown in Attachment A-1a, 1b and 1c.
- 16.2. In addition to clause 16.1, failure to provide immediate notification to the Engineer shall warrant deduction in the monthly ESS assessment.
- The deduction shall be based on the number of late notification accumulated throughout the Contract period as follows:
- a) 5 marks for the 1st case,
 - b) 10 marks for the 2nd case,
 - c) 20 marks for 3rd and subsequent cases.
- 16.3. The Contractor shall propose remedial measures to prevent recurrence of the accidents and incidents to the satisfaction of the Engineer.
- 16.4. The Contractor shall submit photos, sketches and evidences related to the incident or accident in soft and hard copies as deemed necessary to the satisfaction of the Engineer.
- 16.5. Amputation of body parts and / or impairment of function shall be reported to MOM as reportable accident. Regardless of the number of days of medical leave granted by a registered medical practitioner, the actual man-days lost shall be determined using the Scheduled Charges shown in Attachment A-1d.

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17. IN-HOUSE SHE RULES AND REGULATIONS

- 17.1. The Contractor shall establish a set of in-house SHE rules and regulations based on industry standards and legislation for the Engineer's acceptance. The Contractor shall display sufficient copies of these rules and regulations on Site, translated into languages understood by the workers.

18. PERSONAL PROTECTIVE EQUIPMENT (PPE)

- 18.1. The Contractor shall provide, maintain and enforce the usage of PPE for all the personnel on site at all times. The following PPE shall be compulsory on site:
- a) Safety helmets with chin strap conforming to SS98 showing the contract number;
 - b) Safety footwear with steel toe cap and steel sole plate conforming to SS513;
 - c) High-visibility vest/clothing conforming to EN ISO 20471;
 - d) Cut-resistance gloves in accordance with EN388 and EN420;
 - e) Safety belts shall be provided for restraining falls or safety harness for fall protection. Safety belts and harness shall comply with SS528 series (Personal fall-arrest systems), SS541 (Restraint belts) and SS570 (Personal Protective Equipment for protection against falls from a height – Single point anchor devices and flexible horizontal lifeline systems).
 - f) Respirators / dust masks of the appropriate standard shall be provided for activities generating dust or fume.
- 18.2. The Contractor shall maintain and update a register of all PPE issued and present it to the Engineer for inspection when instructed.

19. SHE PROMOTION

- 19.1. The Contractor shall develop an annual SHE promotional programme to demonstrate his commitment to advancing the SHE culture on Site and reinforce the concept that SHE and construction are inseparable. The programme shall enhance personal SHE awareness and influence all attitudes and behaviour of all personnel on SHE matters. The programme shall consist of general promotional activities which are carried out as part of a day-to-day activity and high impact promotion activities which are carried out as a campaign to reinforce a particular SHE point at the Site. The SHE promotional programme shall be revised and updated at least once a year.
- 19.2. The Contractor shall organise a minimum of two (2) campaigns covering SHE related topics for each calendar year.

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- 19.3. In addition to clause 19.2, the Contractor shall conduct regular 'Safety Time-out' sessions especially after any serious or fatal accidents on any of LTA's projects. This is to allow Contractor to take stock and refocus on safety, review current work activities and its associated hazards, as well as to identify additional safety measures required to maintain high WSH standards on the Sites. The Contractor may conduct the 'Safety Time-out' sessions on a site-wide basis or to focus on specific work activities or subcontractors at different stages of their Works. The Contractor shall submit a schedule and programme for the 'Safety Time-out' to the Engineer for approval.
- 19.4. The Contractor shall divide the worksites into designated work areas, each lead by his engineers or competent supervisors (including charge-hand / foreman / kapala / team-leader) who will be responsible for the area's SHE performance. The SHE performance for each work area shall be assessed monthly and corrective actions shall be taken to raise the area's safety performance. The monthly SHE assessment shall include, but not limited to accident statistics and substandard practices and conditions recorded at various SHE inspections for the particular work area. The teams that meet SHE targets shall be duly recognised and rewarded. The recognitions shall include both monetary and non-monetary rewards and to be given out at a suitable event attended by the workforce or as directed by the Engineer.
- 19.5. The Contractor shall provide, erect, maintain and finally remove when ordered, an Accident Statistics Board (ASB) 3m x 2m in size written boldly in English, the content of which shall include, but not limited to the following Date, Total man hours Worked; Total lost-time Accidents; Total fatalities; Total crane collapses; Frequency Rate; and Severity Rate.
- 19.6. The ASB shall be erected in a prominent location, preferably near the main entrance to the Site, which shall be to the acceptance of the Engineer. The Contractor shall be responsible for ensuring that the statistics are updated daily to reflect the status of the SHE performance at the Site.
- 19.7. The Contractor shall produce at least two SHE digital videos per year to raise the SHE awareness and standards of its workforce. The topics and contents for the SHE videos shall be decided by the Engineer. The videos shall be professionally produced, be of High Definition (HD) quality and translated into the respective native languages of the workforce. The Engineer shall have the rights to the SHE videos produced.

20. EVALUATION, SELECTION AND CONTROL OF SUB-CONTRACTORS

- 20.1. The Contractor shall include legislative and Authority's site specific SHE requirements in tender packages for their sub-contractor selection and conduct pre-job meetings to address job SHE expectation before awarding them.

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- 20.2. The Contractor shall select sub-contractors who have attained bizSAFE level 4 certification, awarded by the Workplace Safety & Health Council, prior to their work commencement at site. Should there be sub-contractors who are not bizSAFE-certified, the Contractor shall ensure that such sub-contractors be certified to bizSAFE level 4 within a six (6)-month period, upon informing LTA of its intention to engage them. Notwithstanding this, the onus is on the Contractor to have all of its sub-contractors to be bizSAFE level 4 certified as early as possible.
- 20.3. The Engineer may participate in pre-tender meetings, selection process, pre-job meeting and review their SHE performances etc.
- 20.4. The Contractor shall conduct a monthly appraisal of his sub-contractors' Safety, Health and Environmental (SHE) performance using assessment criteria approved by the Engineer. The monthly sub-contractors' SHE performance shall be submitted to the Engineer. The Contractor shall implement suitable programs to raise the SHE performance standards of his non-performing sub-contractor.

21. **SHE INSPECTION**

- 21.1. The Contractor shall carry out internal SHE inspections at least once a day or at least once per shift. In addition, informal spot checks should be carried out more frequently on critical site activities.
- 21.2. A written record shall be kept of the daily inspection findings and the results of inspections should be brought to the line manager having responsibility in the area concerned, together with the necessary remedial action and due date for completion. Any corrective action shall be immediately implemented by the line manager, and followed up by the SHE personnel. The Contractor shall submit records of inspection report as deemed necessary by the Engineer.
- 21.3. Inspection of shoring of formwork, side supports of excavations and trenches, cranes and scaffolds should be carried out after any episode of inclement weather which may affect their stability / integrity.
- 21.4. The Contractor's senior site management shall participate in the Engineer's weekly, monthly, quarterly, and any ad-hoc safety inspections. The Contractor shall close out all inspection findings to the full satisfaction of the Engineer.
- 21.5. The Engineer shall require the Contractor to suspend a part of the Works or the whole of the Works if it is deemed to be unsafe. The Contractor shall be required to rectify the substandard condition or practice to the full satisfaction of the Engineer. In such events, the Contractor shall not be entitled to any claim for compensation or extension of time for completion.

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- 21.6. The Environmental Control Officer (ECO) shall carry out weekly inspections and submit findings and remedial actions with photographs to the Engineer fortnightly.

22. MAINTENANCE REGIMES FOR ALL CONSTRUCTION PLANT, EQUIPMENT AND TOOLS

- 22.1. The Contractor shall assess the SHE risks especially in terms of age, noise, emissions, and condition etc. associated with the plant, equipment or tool and only those assessed with minimal SHE risks shall be brought to the Site.
- 22.2. The Engineer shall stop the plant, equipment or tool from operation or require its removal if he finds that the SHE associated risks to be high. The Contractor shall not be entitled to any claim for compensation or extension of time for completion.
- 22.3. The Contractor shall implement a preventive maintenance programme to ensure that all plant, equipment and tools are maintained in a safe and working order.
- 22.4. The Contractor shall implement a monthly inspection program to inspect all plant, equipment and tools. All plants, equipment and tools that have undergone repair or maintenance shall be inspected and checked before being returned to service. Stickers or tags shall be displayed to indicate its approval for usage, otherwise it shall be indicated as “Not for Use”.
- 22.5. The Contractor shall implement a lockout and tag-out system in accordance with SS571, Energy Lockout and Tagout Procedure.
- 22.6. Job-made or modified tools of any kind shall not be used on site.

23. HAZARDOUS SUBSTANCES AND CHEMICALS

- 23.1. The Contractor shall assess the Safety Data Sheets (SDS) of all the hazardous substances and chemicals prior to its entry to site for its suitability in terms of SHE hazards and consider safer alternatives.
- 23.2. The Engineer may require the removal of any hazardous substance or chemical if there are safer alternatives. In such events, the Contractor shall not be entitled to any claim for compensation or extension of time for completion.
- 23.3. The Contractor shall ensure that all hazardous substance and chemical containers are labelled, their movements recorded and returned to the designated storage areas when not in use.

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24. HAND PROTECTION PROGRAMME

- 24.1. The Contractor shall implement a hand protection programme subjected to the acceptance of the Engineer. The programme will:
- a) Identify activities on site that can cause hand injuries;
 - b) Propose safety interventions such as engineering or administrative measures to reduce the hazard;
 - c) Select, provide and maintain suitable hand protection devices and supervise their use; and
 - d) Review and monitor the programme to test its effectiveness.
- 24.2. In addition to clause 24.1, where hand gloves are used as added protection against hand injury, Contractor shall assess the work hazards and ensure suitable hand gloves are provided and used. The Contractor shall provide minimum cut-resistance safety gloves in accordance with EN388 and EN420 (with a rating of 5 for both cut resistance and dexterity) for all personnel and workers on site for protection against hand injuries.

25. MONTHLY ENVIRONMENTAL, SAFETY AND SECURITY (ESS) ASSESSMENT

- 25.1. The Engineer will conduct a monthly ESS Assessment using the form in Attachment A -5 on the Contractor's ESS provision.
- 25.2. During the Contract period, if the Contractor accumulates monthly ESS scores of less than 65% for three (3) consecutive months; or utility damages based on any of the criteria listed in table below, Contractor's senior management will be called to explain the cause, provide an effective recovery action plan to prevent recurrence, raise safety standards and reinforce their commitment to LTA senior management.

Type of Utility Damages	Total Number of Cases (within any 12 month period)
Results in disruption of service/ system exceeding \$5,000 in repair costs	> 4
Results in disruption of service/ system > 4 hours, or exceed \$10,000 in repair costs	> 3
Results in disruption of service/ system > 24 hours, or exceed \$100,000 in repair costs	> 1
Total number of cases accumulated regardless of types	> 4

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- 25.3. In addition, Contractor with monthly ESS scores of less than 65% for three (3) consecutive months will need to comply with the following requirements:
- a) Send their senior management, project management and site supervisory staff to complete a two (2) days Construction Safety Management Course at LTA Academy at their own expenses within three (3) months.
 - b) There will be increased site visits by LTA senior management. If there are no improvements after three (3) visits, the Contractor's senior management will be called upon to explain to LTA senior management on why there were no improvements.

26. CONTRACTOR SENIOR MANAGEMENT'S SAFETY, HEALTH AND ENVIRONMENTAL (SHE) COMMITMENT PRESENTATION

- 26.1. The Contractor's senior management shall give a presentation on their safety commitments to the Engineer on a six (6) monthly basis or when deemed necessary by the Engineer. Notwithstanding, Clause 26.2 below, the Engineer may make changes to the agenda when deemed necessary.
- 26.2. The agenda for the presentation shall be as follows:
- a) The Proposed SHE targets, goals and strategies in achieving them;
 - b) A brief review on the past safety performance, including accident statistics, incident / accident / near misses reported and ESS performance, with actions taken to address shortcomings;
 - c) An overview of the safety challenges over the next six (6) months including plans and strategies devised to mitigate these risks;
 - d) The SHE hazards arising from these work activities; and
 - e) Any other critical SHE related issues.

27. SAFETY, HEALTH AND ENVIRONMENTAL AUDIT

- 27.1. For contracts with Contract Sums of S\$30 million and above, the Contractor shall appoint a Singapore Accreditation Council (SAC) accredited WSH Auditing Organisation (SAC-AO) to audit their Safety and Health management system every six (6) months.
- 27.2. The SAC-AO engaged by the Contractor shall be accepted by the Engineer. The SAC-AO shall present and submit their audit methodology including detailed resumes of their audit team and audit checklist for the Engineer's acceptance before commencement of any audits. The SAC-AO is required to give a presentation of the audit findings to the Engineer.
- 27.3. The audit report and its corrective actions shall be brought to the attention of all sub-contractors and copied to the Engineer.

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27.4. Contractor with more than one (1) contract with the Authority shall implement cross-audit program across all his contracts. The cross audit program shall include documentation review and physical site benchmarking, to be conducted at least once every three (3) months to ensure consistently good SHE performance. Lesson learnt shall be shared across his contracts. The Contractor's management team, WSHE Manager, WSHO and ECO shall be involved in the program. The Contractor shall submit a report on the findings and recommendations made during the cross-audit program to the Engineer.

27.5. Deficiencies identified during the Engineer's insurance and internal audits shall be corrected by the Contractor to the satisfaction of the Engineer.

28. TEMPORARY ELECTRICAL INSTALLATIONS AT THE SITE

28.1. The Contractor shall obtain licenses for using electrical power from their own generating sets.

28.2. All temporary electrical installations, equipment and tools shall be checked and certified safe for use prior to usage on site by a full-time Licensed Electrical Worker (LEW) and thereafter monthly and after any repairs. The LEW shall provide a sticker on the equipment and tools indicating the date of inspection and that it is safe for use.

28.3. A current photograph of the LEW(s) and their contact number(s) shall be displayed on the outside of all boxes containing electrical DBs for ease of reference. These boxes must be secured with locks to prevent tampering and the keys kept with the LEW / Contractor's Safety Department.

28.4. The Contractor shall ensure that all portable electrical appliances used above and below ground level including are hand held tools and inspection lamps, are rated at 110 volts AC via a step down transformer Centre Tapped to Earth (CTE).

28.5. The Contractor shall ensure that all generators and welding sets in use on Site are adequately and effectively earthed at all times during operation.

29. STORAGE LICENSE FOR PETROLEUM AND FLAMMABLE MATERIALS

29.1. If the Contractor intends to store petroleum and flammable materials on site, he shall obtain a storage licence from SCDF and a copy of the licence shall be submitted to the Engineer.

29.2. The Contractor may store petrol up to a maximum volume of 5 litres on Site provided that it is kept in a suitably constructed store which is licensed by the Fire Safety & Shelter Department of the SCDF.

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- 29.3. All diesel stored on site shall be kept in drums or in bulk tanks which in either case shall be located at a designated place away from any sources of ignition or open drain which does not lead to an interceptor, and shall be properly labelled. A “No Smoking” sign shall be displayed at the storage location and a charged fire extinguisher of correct type kept on standby.
- 29.4. All bulk diesel tanks shall be properly supported in an elevated position to facilitate gravity discharge. They shall stand within a bund constructed to contain a volume of 110% of the volume of the tank. There shall be no breaches in the bund wall, no material shall be stored within the bund and rain water collecting in the bund shall be regularly removed to prevent build-up. The inner face of the bund wall shall be coated with a chemical resistant material. A chemical resistant valve, which shall be closed at all times, except for releasing rainwater into a storm water drain via an oil intercepting system, shall be installed at the outlet situated outside the bund, in accordance with the National Environment Agency (NEA) Code of Practice on Pollution Control.
- 29.5. All drums of diesel on Site shall be in good condition and shall be kept closed with a lid/cap when not being used. They shall be stored on end with the lid / cap facing the top so as to prevent leakage and kept within a tray of sufficient volume to contain the contents of the largest drum in the case of accidental rupture, taking into account the presence of other drums within the tray.
- 29.6. Drums of diesel shall not be rolled along the ground. They shall be transported vertically chained on a trolley; or by a forklift fitted with a drum handling device and not standing unsupported on the forks or on a pallet; or by crane using a safe slinging technique.
- 29.7. Diesel shall be transferred from the storage drum to another container, or to the tank of plant/machinery using a hand pump wherever practicable and at all times a drip pan must be provided. Where the diesel container is light enough to be lifted by one person it can be poured out by hand, using a funnel to guide the liquid.
- 29.8. Any spillage of diesel shall straight away be absorbed using sand or other absorbent materials, which shall be disposed of as contaminated waste. On no occasion should diesel be allowed to enter the Site drainage system unless this is connected to an interceptor prior to the Site waste being discharged into the public sewer system.

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30. WELDING AND CUTTING

- 30.1. The Contractor shall comply with SS510, Safety in Welding and Cutting (and other operation involving the use of heat).
- 30.2. When cylinders are used from a pallet, a safety distance of six (6) metres shall be maintained between pallets.
- 30.3. Minimum quantity of gas cylinders should be kept at work locations on Site, and the remainder moved to the designated storage area at ground level. Cylinders should be secured in a vertical position and individual sets should be chained to trolleys or to a fixed support.
- 30.4. The Contractor shall implement a PTW for all hot works to ensure that the equipment are safe from defects and no incompatible works are carried near the hot work area.
- 30.5. Liquid petroleum gas used below ground shall be subjected to the Engineer's approval. Propane shall be used in a compressed air environment. Oxygen or acetylene cylinders taken underground shall be transported back above ground at the end of each working shift and stored in the designated storage areas.
- 30.6. Workers carrying out welding shall be provided with face shields compatible with safety helmets so that both can be worn at the same time.
- 30.7. Fire blankets shall be provided to contain sparks arising from welding and cutting operations.
- 30.8. Opaque screens shall be securely positioned around any electric arc welding being carried out on Site to protect other workers and passing members of the public, either on foot or as drivers or passengers in vehicles, from the arc. Such screens shall be maintained in good condition.
- 30.9. Cylinder valves shall be protected from damage by protection caps, valve guards or other effective means. Such protective means shall be in place whenever the gas cylinders are not in use or not connected for use.

31. EMERGENCY PREPAREDNESS

- 31.1. The Contractor shall work with the SCDF to establish an emergency preparedness plan to response effectively to emergency situations on site. The plan shall be submitted to the Engineer for his acceptance prior to the commencement of any construction activities and updated at least on a quarterly basis.

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- 31.2. In-house emergency exercises and drills shall be conducted on a quarterly basis. Emergency table top exercises with SCDF and all relevant agencies shall be on a half yearly basis while drills shall be at least once a year. The timing for evacuation of workers and personnel from their work areas shall not be more than 10 minutes.
- 31.3. The Contractor shall design, supply and install proprietary modular tower access with step ladders for access and egress for all work areas including for all excavation works. The design of modular tower access shall be prepared and endorsed by his own Professional Engineer with all necessary calculations, details and drawings. The modular tower access shall be caged with proper LED lighting, handrails, steps and landings, and constructed on proper and stable foundation. The step ladders shall comply with minimum 175mm height riser, 220mm width tread and 1000mm x 2600mm landing area. Any other design proposals that vary from the requirements shall be subjected to the Engineer's acceptance at no additional costs.
- 31.4. There shall be at least 2 modular tower access and egress points at each work areas to ensure safety of workers during emergency evacuations. The Contractor shall conduct regular inspections for the modular tower access at all stages of the Works and shall maintain these accesses throughout the entire period of use until removal. The Contractor shall only dismantle and remove the modular tower accesses as directed by the Engineer. The cost for the supply, installation, operation, maintenance and removal of these modular tower accesses is deemed included in the Contract Price.
- 31.5. The Contractor shall provide LED lights along the Emergency Escape stairways and routes for ease of emergency evacuations.
- 31.6. The emergency preparedness plan shall also include environmental pollution scenarios such as spillages of unauthorised / pollutive materials into sewage, watercourses or land.

32. FIRE SAFETY PLAN

- 32.1. The Contractor shall establish a Fire Safety Plan to ensure that the work on site is undertaken to the highest standard of fire safety. As a basic guide the Contractor shall address the requirements contained in the Joint Code of Practice on the Protection from Fire of Construction Sites and Buildings Undergoing Renovation - under the title "Fire Prevention on Construction Sites" published by the Construction Confederation and the Fire Protection Association of U.K. as well as the "Technical Guidelines For Fire Safety In Temporary Buildings In Construction Sites" issued by the SCDF.

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- 32.2. The plan shall be submitted to the Engineer for acceptance and shall detail as a minimum:
- the role and responsibility of every individual in the worksite on fire safety;
 - general site precautions, fire detection and warning alarm system;
 - fire fighting equipment including types of fire extinguishers;
 - fire safety measures for site accommodation;
 - fire escape and communication;
 - fire brigade access, facilities and co-ordination;
 - fire drills and training including the use of site firefighting apparatus;
 - material storage including flammable liquid and gas, and waste control regime;
 - fire safety measures for construction plant and equipment; and
 - fire safety measures for electrical supply.
- 32.3. The Contractor shall ensure that all procedures, precautionary measures and safety standards stipulated in the Fire Safety Plan are implemented, communicated and complied with by all workers including sub-contractors and interfacing contractors.
- 32.4. The Contractor shall review and ensure the adequacy of the Fire Safety Plan as the Works progress.
- 32.5. The Contractor shall carry out monthly checks of firefighting equipment and test all alarms and detection devices installed on site. Tags / stickers shall be provided to indicate the monthly checks.
- 32.6. The Contractor shall conduct weekly inspections of escape routes, fire brigade access, firefighting facilities and work areas to ensure that the requirements stipulated in the Fire Safety Plan are complied with.

33. **WORK IN CONFINED SPACES**

- 33.1. In addition to the requirements of the Workplace Safety and Health (Confined Spaces) Regulations and SS 568, Code of Practice for Confined Spaces, the Contractor shall also classify manholes, enclosed formwork, culvert drains, excavations more than four (4) metres deep, partially enclosed excavations and tunnels as confined spaces and apply all legislative requirements of confined spaces.

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- 33.2. The Contractor shall have controlled access / egress points to confined spaces to prevent unauthorised access. Where practicable the Contractor shall ensure that there are at least two (2) readily accessible escape routes from each confined space.
- 33.3. The Contractor shall operate a tag system for entry so that all personnel entering the confined space can be accounted for.
- 33.4. The Contractor shall ensure that there is a certified man-riding cage capable of taking a stretcher and two persons, together with an identified crane equipped with rescue equipment, on standby at all times whilst work is carried out in the confined space. Where this is not reasonably practicable a stretcher which is capable of being brought manually out of the confined space should be located at a convenient point.
- 33.5. Gas monitoring shall be conducted by a competent confined space assessor to certify that the confined space is safe for workers to enter and thereafter at every four (4) hours intervals.
- 33.6. In addition, the Contractor shall ensure that suitable atmospheric monitoring devices such as anemometer and wet/dry bulb thermometer are made available for the competent confined space assessor to determine the air flow, ambient temperature and humidity level within the confined space.

34. ILLUMINATION

- 34.1. The Contractor shall provide temporary general illumination with a lighting level of not less than 100 lux for all work areas.

35. WELFARE PROVISIONS

- 35.1. Sanitary and washing facilities shall be provided in accordance with the Code of Practice on Environmental Health and the Workplace Safety & Health Act. Toilet facilities shall be connected to a sewer/temporary septic tank with the approval of the Sewerage Department.
- 35.2. The Contractor shall provide suitable and sufficient temporary facilities on Site which are readily accessible taking into account the number and distribution of workers throughout all work locations.
- 35.3. These facilities shall include:
 - a) Toilets and hand wash areas;
 - b) A supply of clean drinking water; and

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- c) Sheltered rest areas, to include seating, segregated from the worksite so that workers may safely remove helmets and other items of PPE. Such rest areas shall have sufficient waste bins.

35.4. These facilities shall be kept in a clean and serviceable condition and be available for use during all working hours. The locations may need to be air-conditioned if situated at bored tunnel and/or well ventilated if at station area.

35.5. Portable toilets shall be provided and regularly maintained at suitable locations within every underground structure under construction.

36. FIRST AID PROVISIONS

36.1. An approved first aid station shall be provided and maintained at all times. The station shall be fully equipped to treat illness and injuries which can normally be expected to occur in work of the types required by this Contract. Medical supplies shall be stocked in the types and quantities recommended by the designated doctor.

36.2. The first aid station shall be located near the main access to the Site, readily accessible to ambulance service.

36.3. An additional number of trained first aiders and satellite first aid boxes or cupboards shall be provided and maintained to give effective first aid cover to the whole worksite, including any related off-site activities.

36.4. Where work is carried out during extended hours or on a shift system the Contractor shall ensure that there are sufficient trained first aiders on Site to give effective cover at all hours.

36.5. The first aid station and the satellite first aid boxes or cupboards shall be placed under the charge of WSHO who shall be trained in first aid treatment, and he, or a nominated qualified deputy, shall always be readily available during the hours where work is carried out on Site.

36.6. In addition to clause 36.5, Contractor shall provide and maintain Automated External Defibrillators (AED). AEDs shall be readily accessible and all first aiders are to be trained in its correct use.

36.7. Qualified first aiders shall be suitably identified with a logo of a green cross on their safety helmets.

36.8. In addition, an approved first aid box or cupboard, a stretcher and a telephone for each satellite Site shall be provided and maintained so as to be readily accessible.

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37. LADDERS

- 37.1. The Contractor shall use step platforms instead of portable ladders for works at height subjected to the Engineer's approval (examples of step platforms can be found in Annex A-r) and establish a Permit-To-Work system for such works. In addition, for works in excess of three (3) metres, the Contractor shall demonstrate the stability of these step platforms to prevent toppling.
- 37.2. Ladders (step ladders and vertical ladders) shall comply with EN131. They shall be used for access only and shall not exceed three (3) metres in height.
- 37.3. The Contractor shall implement a step platform/ladder inspection procedure requiring an identification method displaying company name, unique number, inspection frequency and inspection status.

38. SCAFFOLDS

- 38.1. The Contractor shall develop a scaffold tagging system acceptable to the Engineer to indicate:
- a) Scaffolds under construction or demolition;
 - b) Scaffolds that are complete but have hazards associated with them; and
 - c) Scaffolds that have been erected and are safe for use.
- 38.2. The Contractor shall envelope all scaffolds with screen nets to prevent debris from falling outside the scaffold.
- 38.3. Scaffold Regulations shall be applicable to the erecting and dismantling of falseworks.
- 38.4. The Contractor shall use only proprietary access ladders and working platforms for system formworks. No mix and match using conventional catwalks and monkey ladders is allowed.

39. GENERAL SAFETY

- 39.1. The Contractor shall provide, erect, maintain and finally remove, when instructed, Danger, Warning, Caution or Information signs, located appropriate to the site layout. The signs shall be no less than 1.5m x 1.0m in size written boldly in the four official languages. These shall be erected on existing footpaths and at points of access likely to be used by the public to warn or inform them of the existence of the Works. These notices shall be in addition to any notices required to be put up to meet statutory requirements.

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- 39.2. The Contractor shall ensure that all roads, pavements and public footpaths are kept clear of dust, silt and debris.
- 39.3. Unless otherwise agreed, the Contractor shall be responsible for the proper fencing, hoarding, lighting, guarding and watching of the Works. The Contractor shall also provide proper temporary roadways, footways, guards, fencing and hoardings so far as the same may be necessary for the accommodation and protection of the owners and occupiers of the adjacent property, the public and others for a like period.
- 39.4. All platforms, covers, ladders, stairways, staging, scaffolding and other provisions for access erected by the Contractor shall be installed in compliance with current legal requirements and made available for use as early as possible during the construction period. In cases where this is impracticable the Contractor shall provide all necessary temporary access facilities which shall be constructed, installed and maintained in a safe and secure manner.
- 39.5. Designated walkways along walers and struts shall be levelled, flushed without tripping hazards and with rigid guardrails and toe boards securely provided.
- 39.6. Fall Arrest System, including but not limited to life lines and anchors, shall be designed by a Professional Engineer (PE) and complied with the requirements of SS 528 and SS570.
- 39.7. The Contractor shall provide capping on all protruding starter reinforcement bars with individual plastic / rubber caps or with hose /tube.
- 39.8. The Contractor shall ensure bar chairs supporting steel reinforcement bars shall be designed by a Professional Engineer. In his design, the bar chair should only be welded to temporary bars incorporated to support the bar chairs. Welding onto permanent bars shall not be permitted.
- 39.9. The Contractor shall ensure that horseplay, practical jokes, scuffling, wrestling or fighting are strictly prohibited at the Site.
- 39.10. The Contractor shall ensure that the sale, keeping or consumption of liquor and prohibited substances on Site is prohibited.
- 39.11. No gambling, prostitution or other illegal or immoral activities shall be allowed anywhere else on Site.
- 39.12. The Contractor shall ensure that the canvas used for covering materials and / or equipment are of fire-retardant type.

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40. SAFETY (ANTI-FALL) NET

- 40.1. The Contractor shall provide and maintain safety net system in compliance to SS292 to catch persons falling whilst working in any location from where he would liable to fall. The net shall be of sufficient size and strength to catch any person for whose protection it is to be used and the net shall be so located to cover the area of the possible fall.
- 40.2. The Contractor shall conduct a sample test on the safety net system, comprising the net and its supporting structures, before it is installed. Subsequent tests shall be carried out when directed by the Engineer.

41. BARRICADE / COVER TO VOIDS, TRENCH, BORED HOLES AND OPEN EDGES OF STRUCTURE

- 41.1. The Contractor shall barricade all excavation, bored holes, voids and open edges of structures under construction where a workman is liable to fall with secured and effective guardrails / barricades / floor coverings.
- 41.2. The Contractor shall provide “Danger” warning signs for barriers and barricades erected. All floor opening covers shall be stencilled or painted with “Danger, Do Not Remove”. For details on the protection to floor openings refer to Annex A-O “Protection of Slab Openings”.
- 41.3. Where traffic flow is to be maintained over temporary road opening or crossing, the Contractor shall provide suitably designed chequered steel cover / decking over it. The Contractor’s Professional Engineer shall design and submit the cover / decking proposal to the Engineer for acceptance prior to commencement of the excavation.

42. 5S HOUSEKEEPING METHOD

The Contractor shall implement a 5S housekeeping method approved by the Engineer. The method shall be based on a Japanese quality management concept based on cyclical methodology. The 5S shall consist of Seiri (Sort / Organise), Seiton (Straighten / Orderliness), Seiso (Sweep / Cleanliness), Seiketsu (Standardise) and Shitsuke (Sustain / Discipline).

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43. BEHAVIOURAL BASED SAFETY (BBS)

- 43.1. The Contractor shall send a site senior management staff and a WSHO to attend the Engineer's in-house BBS training.
- 43.2. The Contractor shall implement a BBS programme based on the training provided by the Engineer. The BBS programme shall be approved by the Engineer before implementation.

- 43.3. The BBS programme shall include:

- a) Conduct a Safety Culture Survey through questionnaires. The Contractor shall ensure that the Safety Culture Survey is conducted effectively and interpreters shall be appointed if necessary;
- b) Training of management staff, site supervisory staff, workers and the appointed observers.

Assigned Observers to conduct observations of safe and unsafe behaviours. The Observers appointed shall base on the ratio of 1 Observer to 50 workers. Each Observer shall conduct regular observations of minimum twice a week with durations of about 20 minutes each.

- c) Direct Observers to input observations into the Engineer's BBS Database System for monitoring and analysis.
- d) Organise goal setting committees chaired by senior site management and introduce intervention strategies to correct the unsafe behaviours for continual improvement.
- e) Submit a monthly BBS implementation progress report within 5 days after the end of each month. The report shall include project profile, executive summary of BBS activities such as types of critical behaviours and intervention strategies, detailed listing of behaviours observed with the respective goals set and statistical analysis of the behaviours supported graphs.

44. CLOSED-CIRCUIT TELEVISION (CCTV)

- 44.1. The Contractor shall implement a surveillance CCTV system, with cameras strategically positioned at high-risk areas for purpose of monitoring site conditions and deterring unsafe work practices. The number and location of cameras deployed shall be subjected to the acceptance of the Engineer.

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- 44.2. The CCTV shall facilitate viewing of live and recorded images. Access to viewing and controlling of all cameras shall be via a standard web browser and/or wireless Local Area Network (LAN) by the authorized users. All cameras shall be weatherproof and come with pan/tilt functions, zoom lens and the ability to operate under low light conditions.
- 44.3. All camera recordings shall have camera ID and location / area of recording as well as date/time stamp which cannot be altered, ensuring the audit trail is intact for evidential purposes. Sufficient storage (hard disk space) shall be provided for all the camera recordings for a period of 30 days or more @ 30 frames per second (FPS), at four (4) common intermediate format (CIF) or better quality using the necessary compression techniques for all cameras. A backup system shall be maintained to protect against server or storage failure.
- 44.4. The storage system should allow retrieval of data instantaneously or any date / time interval chosen through search functionality of the application software. The system shall have the facility to export the desired portion of clipping (from a desired date/time to another desired date / time) onto a CD, DVD or any other device in a format which can be replayed through standard PC based software.

45. TRAFFIC CONTROL AND ROAD SAFETY

- 45.1. The Contractor shall provide, install and maintain all necessary traffic and directional signs, barriers, blinkers, rotating beacons, cones, lane markings etc. in accordance with the requirements stipulated in the Code of Practice for Traffic Control at Work Zone (latest edition) to guide and inform the public of road works or any road lane closure. The Contractor must observe the minimum clearance required between the working area and the trafficked carriageway and ensure that all plants and materials do not intrude into any area reserved for pedestrians, cyclists or other traffic.
- 45.2. The Contractor shall regularly maintain the site road surfaces to keep them free of potholes, unevenness, etc. Mill and patch method shall be required to repair any uneven surface defects.

46. USAGE OF NEW HEAVY EQUIPMENT IN LTA WORKSITES

- 46.1. All new heavy equipment to be used in LTA worksites shall be subjected to approval of the Engineer. Please refer to Annex F for details.

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47. SITE CLEARANCE INCLUDING TREE FELLING AND TRANSPLANTING WORKS

- 47.1. An arborist shall be engaged prior to the commencement of any site clearance or tree felling and transplanting activities. The appointed arborist shall be subject to the Engineer's approval. The arborist shall submit a proposal on the tree type(s) that require his supervision during felling and/or transplanting. For trees that have been identified by the arborist as requiring special attention, specific method statements and risk assessments with detailed diagrams on the tree removal method has to be endorsed by the arborist before the tree removal operation commences.

48. SHE SHARING & SITE VISITS

- 48.1. The Contractor shall facilitate and host visits by other Contractors to his worksites and to share his SHE management experiences with them.
- 48.2. The Contractor's management team shall attend visits to other LTA worksites with good SHE management initiatives and skills when directed by the Engineer and to learn and implement the good initiatives at his site.

49. WORKING IN DEFINED AREAS

- 49.1. Defined Area work comes into effect during the track related installation process (TRIP) which takes place after substantive civil work has been completed. Working in defined areas shall comply with the issued Works Train Manual.

50. RESTRICTED USAGE OF HANDPHONE

- 50.1. All workers / operators are banned from using handphone / MP3 devices at LTA worksites. The handphones are to be surrendered to respective supervisors and stored away at rest areas with lockers. Workers / Operators are only allowed to use their handphones / MP3 during rest times and breaks. Exceptions for specific workers (e.g. surface watchman for tunnelling works) shall be considered on need-to-basis and LTA's approval is required.
- 50.2. For foreman and above, handphone usage is allowed only at designated safe zones. The handphone users needs to adopt safe mode (stop walking and observe surrounding) prior to answering of call.

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51. MOBILISATION AND DEMOBILISATION OF MACHINERY


- 51.1. The Contractor shall ensure that for mobilisation and demobilisation of any machinery on site there is approved method statement and risk assessment conducted. The ramps of trailers used for mobilisation and demobilisation of machinery shall be able to accommodate the width of machinery tracks. The Ramp angle shall adhered strictly to the machinery manufacturer's recommendation (Refer to Annex A-a Clause 4 for details).

52. ANNEXES

- 52.1. The Contractor shall also comply with the following annexes to this appendix.
- a) Lifting Operations;
 - b) Site Transport;
 - c) Site Security;
 - d) Civil Engineering / Deep Excavations;
 - e) Temporary Housing Quarters;
 - f) Approval Procedure for Usage of New Heavy Equipment in LTA worksites;
 - g) Environmental Considerations;
 - h) Biodiversity
 - i) Flooding;
 - j) Marine Works;
 - k) Contaminated Ground;
 - l) D&B Rail Projects Civil Design Safety Submissions;
 - m) Build Only Rail Projects Civil Design Safety Submissions;
 - n) D&B Road Projects Civil Design Safety Submissions;
 - o) Build Only Road Projects Civil Design Safety Submissions;
 - p) Protection of Slab Openings
 - q) Safe Installation and Maintenance of Sliding Gates (both permanent and temporary)
 - r) Photographs showing good SHE practices;
 - s) Mobile Elevated Working Platform (MEWP) Usage On Site;
 - t) Sample Data Logger Report;
 - u) Designed For Safety (DfS) and Designed For Safety Professional (DfS Professional);
 - v) Safe Work Procedure for Controlling Movement of Heavy Machineries;
 - w) Formwork Structures.

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LAND TRANSPORT AUTHORITY SAFETY, HEALTH AND ENVIRONMENTAL MANAGEMENT MANUAL													
ACCIDENT OCCURRENCE REPORT FORM	LTA REF NO : _____												
Name of Main Contractor : _____	Report Ref No : _____												
PART A (Type of Accident) <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;"> <input type="checkbox"/> Accident (<i>MOM reportable</i>) </div> <div style="text-align: center;"> <input type="checkbox"/> Accident (<i>Non MOM Reportable</i>) </div> </div>													
PART B (Details of Accident) PROJECT : _____ CONTRACT : _____ EXACT LOCATION : _____ OCCURRENCE DATE : _____ OCCURRENCE TIME : _____ REPORTED DATE : _____ REPORTED TIME : _____													
PART C (Details of Injured Person) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">NAME : _____</td> <td style="width: 50%;">EMPLOYER : _____</td> </tr> <tr> <td>DATE OF BIRTH : _____</td> <td>NRIC/FIN NO : _____</td> </tr> <tr> <td>GENDER : _____</td> <td>OCCUPATION : _____</td> </tr> <tr> <td>CITIZENSHIP : _____</td> <td>DATE JOINED SERVICE : _____</td> </tr> <tr> <td>RACE : _____</td> <td>PREVIOUS INDUSTRY EXPERIENCE & DESIGNATION : _____</td> </tr> <tr> <td>MARITAL STATUS : _____</td> <td></td> </tr> </table> <div style="margin-top: 10px;"> EMPLOYEE SENT TO <input type="checkbox"/> First Aid <input type="checkbox"/> Home <input type="checkbox"/> Private Doctor <input type="checkbox"/> Hospital : _____ (hospital name) <input type="checkbox"/> Polyclinic : _____ (polyclinic name) </div>		NAME : _____	EMPLOYER : _____	DATE OF BIRTH : _____	NRIC/FIN NO : _____	GENDER : _____	OCCUPATION : _____	CITIZENSHIP : _____	DATE JOINED SERVICE : _____	RACE : _____	PREVIOUS INDUSTRY EXPERIENCE & DESIGNATION : _____	MARITAL STATUS : _____	
NAME : _____	EMPLOYER : _____												
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GENDER : _____	OCCUPATION : _____												
CITIZENSHIP : _____	DATE JOINED SERVICE : _____												
RACE : _____	PREVIOUS INDUSTRY EXPERIENCE & DESIGNATION : _____												
MARITAL STATUS : _____													
PART D (Lost time) <u>Estimated (if actual mandays lost is not available)</u> <div style="display: flex; flex-wrap: wrap; margin-top: 10px;"> <div style="width: 33%;"><input type="checkbox"/> 3 days or lesser</div> <div style="width: 33%;"><input type="checkbox"/> More than 3 days</div> <div style="width: 33%;"><input type="checkbox"/> Hospitalised more than 24 hours</div> <div style="width: 33%;"><input type="checkbox"/> Immediate return to work</div> <div style="width: 33%;"><input type="checkbox"/> First aid given only</div> <div style="width: 33%;"><input type="checkbox"/> Light duty</div> </div> <u>Actual</u> State actual no. of mandays lost : <input style="width: 150px;" type="text"/> Period of Medical Leave : <input style="width: 150px;" type="text"/> State actual light duty mandays (if applicable) : <input style="width: 150px;" type="text"/>													

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LAND TRANSPORT AUTHORITY SAFETY, HEALTH AND ENVIRONMENTAL MANAGEMENT MANUAL																
ACCIDENT OCCURRENCE REPORT FORM																
PART E (Details of Injury)																
Use the following codes :																
<u>Nature of Injury</u>	<u>Injured Bodypart</u>															
ABR : Abrasions / Scratches AMP : Amputation ASP : Asphyxia / Drowning BCC : Bruises / Crushing / Contusions BN(C) : Chemical Burns BN(H) : Heat Burns CCS : Concussion / Internal Injury DEATH : Fatality DIS : Dislocation ELECT : Effects of Electricity EYE : Eye Injury FG : Faint / Giddy FT : Fracture FZ : Freezing / Frostbite / Hypothermia HEAT : Heat stress and strain LC : Laceration / Cut NID : Noise Induced Deafness NUMB : Numbness PERM : Permanent Disability PS : Physical Shock PSN : Poisoning PW : Puncture wound RDT : Effects of radiation SKIN : Dermatitis / Skin disease SS : Sprain / Strain TOOTH : Tooth Injury OTHER : Other Injury NA : Not applicable	BODY : Injury linked to entire body FEET : Feet / Toes HAND : Hand / Fingers HEAD : Head / Face / Neck LOWER : Lower Limbs (Legs) TORSO : Shoulder to Groin / Hip UPPER : Upper Limbs (Arms) NA : Not Applicable															
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;"><u>Nature of Injury</u></th> <th style="width: 20%;"><u>Injured Bodypart</u></th> <th style="width: 60%;"><u>Exact description (state Left / Right bodypart)</u></th> </tr> </thead> <tbody> <tr> <td style="height: 20px;"></td> <td style="height: 20px;"></td> <td style="height: 20px;"></td> </tr> <tr> <td style="height: 20px;"></td> <td style="height: 20px;"></td> <td style="height: 20px;"></td> </tr> <tr> <td style="height: 20px;"></td> <td style="height: 20px;"></td> <td style="height: 20px;"></td> </tr> <tr> <td style="height: 20px;"></td> <td style="height: 20px;"></td> <td style="height: 20px;"></td> </tr> </tbody> </table>		<u>Nature of Injury</u>	<u>Injured Bodypart</u>	<u>Exact description (state Left / Right bodypart)</u>												
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LAND TRANSPORT AUTHORITY SAFETY, HEALTH AND ENVIRONMENTAL MANAGEMENT MANUAL	
ACCIDENT OCCURRENCE REPORT FORM	
PART G (Causes of Accident)	
(1) Direct Causes	
(i) Unsafe Conditions	
<input type="checkbox"/> Absence of safety means <input type="checkbox"/> Congestion / restricted action <input type="checkbox"/> Dressing / apparel hazard <input type="checkbox"/> Environmental hazard (gas / dust / smoke) <input type="checkbox"/> Floor surface hazards (slips / trips / falls) <input type="checkbox"/> Hazardous arrangement <input type="checkbox"/> High temperature hazard <input type="checkbox"/> Improper / faulty equipment <input type="checkbox"/> Inadequate guarding / protection / precaution <input type="checkbox"/> Inadequate illumination <input type="checkbox"/> Inadequate ventilation	<input type="checkbox"/> Inadequate warning system <input type="checkbox"/> Inadequate / improper PPE <input type="checkbox"/> Inclement weather conditions <input type="checkbox"/> Noise hazard <input type="checkbox"/> Poor housekeeping <input type="checkbox"/> Presence of fire / explosion hazard <input type="checkbox"/> Radiation hazard <input type="checkbox"/> Unknown ground conditions <input type="checkbox"/> Unsound structure <input type="checkbox"/> No unsafe condition
Remarks : <hr/> <hr/>	
(ii) Unsafe Practice	
<input type="checkbox"/> Disregard instructions <input type="checkbox"/> Driving / operating error <input type="checkbox"/> Failure to secure / warn <input type="checkbox"/> Horseplay <input type="checkbox"/> Improper use of fail to use PPE <input type="checkbox"/> Improper / unsafe lifting / carrying <input type="checkbox"/> Improper / unsafe use of equipment/materials <input type="checkbox"/> Improper / wrong use of body part <input type="checkbox"/> Intentional motive <input type="checkbox"/> Making safety devices inoperative	<input type="checkbox"/> Not paying attention <input type="checkbox"/> Operating / working at unsafe speed <input type="checkbox"/> Operating / working without authority <input type="checkbox"/> Taking improper / unsafe position or posture <input type="checkbox"/> Taking shortcuts <input type="checkbox"/> Tampering with equipment in motion <input type="checkbox"/> Under influence of alcohol / drugs <input type="checkbox"/> Unsafe loading / mixing / placing <input type="checkbox"/> Wrong working methods <input type="checkbox"/> No unsafe practice
Remarks : <hr/> <hr/>	
(2) Root Causes	
(i) Work Factors	
<input type="checkbox"/> Inadequate equipment being used <input type="checkbox"/> Inadequate / lack of engineering <input type="checkbox"/> Inadequate / lack of maintenance <input type="checkbox"/> Inadequate / lack of supervision <input type="checkbox"/> Inadequate / lack or work procedures	<input type="checkbox"/> Lack of co-ordination / communication <input type="checkbox"/> Poor selection / placement <input type="checkbox"/> Pressure from external influence <input type="checkbox"/> Wear and tear <input type="checkbox"/> No work factors
Remarks : <hr/> <hr/>	

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LAND TRANSPORT AUTHORITY SAFETY, HEALTH AND ENVIRONMENTAL MANAGEMENT MANUAL																	
ACCIDENT OCCURRENCE REPORT FORM																	
<p>(ii) Human Factors</p> <table style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Fatigue <input type="checkbox"/> Foul play <input type="checkbox"/> Illness <input type="checkbox"/> Improper assignment of personnel <input type="checkbox"/> Improper or lack of motivation / interest <input type="checkbox"/> Inadequate capability <input type="checkbox"/> Lack of knowledge </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Lack of skill <input type="checkbox"/> Lack of training <input type="checkbox"/> Needs conflicting with safety <input type="checkbox"/> Not qualified <input type="checkbox"/> Unsafe attitude <input type="checkbox"/> No human factors </td> </tr> </table> <p>Remarks :</p> <hr/> <hr/>		<input type="checkbox"/> Fatigue <input type="checkbox"/> Foul play <input type="checkbox"/> Illness <input type="checkbox"/> Improper assignment of personnel <input type="checkbox"/> Improper or lack of motivation / interest <input type="checkbox"/> Inadequate capability <input type="checkbox"/> Lack of knowledge	<input type="checkbox"/> Lack of skill <input type="checkbox"/> Lack of training <input type="checkbox"/> Needs conflicting with safety <input type="checkbox"/> Not qualified <input type="checkbox"/> Unsafe attitude <input type="checkbox"/> No human factors														
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<p>(3) Weakness of Safety Management System</p> <table style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Safety policy <input type="checkbox"/> Safety training <input type="checkbox"/> Incident investigation and analysis <input type="checkbox"/> Safety promotion <input type="checkbox"/> Safety inspections <input type="checkbox"/> Hazard analysis <input type="checkbox"/> Emergency preparedness <input type="checkbox"/> Occupational health programs </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Safe work practices <input type="checkbox"/> Group meetings <input type="checkbox"/> In-house safety rules and regulations <input type="checkbox"/> Evaluation, selection and control of SC <input type="checkbox"/> Maintenance regime for all machinery <input type="checkbox"/> Control of movement and use of hazardous substances and materials <input type="checkbox"/> Not applicable </td> </tr> </table> <p>Remarks :</p> <hr/> <hr/>		<input type="checkbox"/> Safety policy <input type="checkbox"/> Safety training <input type="checkbox"/> Incident investigation and analysis <input type="checkbox"/> Safety promotion <input type="checkbox"/> Safety inspections <input type="checkbox"/> Hazard analysis <input type="checkbox"/> Emergency preparedness <input type="checkbox"/> Occupational health programs	<input type="checkbox"/> Safe work practices <input type="checkbox"/> Group meetings <input type="checkbox"/> In-house safety rules and regulations <input type="checkbox"/> Evaluation, selection and control of SC <input type="checkbox"/> Maintenance regime for all machinery <input type="checkbox"/> Control of movement and use of hazardous substances and materials <input type="checkbox"/> Not applicable														
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<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2" style="text-align: left; padding: 5px;">PART H</th> </tr> <tr> <th style="width: 50%; padding: 5px;">RECOMMENDATION</th> <th style="width: 50%; padding: 5px;">ACTION TAKEN</th> </tr> <tr><td style="height: 40px;"></td><td></td></tr> <tr><td style="height: 40px;"></td><td></td></tr> <tr><td style="height: 40px;"></td><td></td></tr> <tr><td style="height: 40px;"></td><td></td></tr> <tr><td style="height: 40px;"></td><td></td></tr> <tr><td style="height: 40px;"></td><td></td></tr> </table>		PART H		RECOMMENDATION	ACTION TAKEN												
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RECOMMENDATION	ACTION TAKEN																

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LAND TRANSPORT AUTHORITY SAFETY, HEALTH AND ENVIRONMENTAL MANAGEMENT MANUAL	
ACCIDENT OCCURRENCE REPORT FORM	
PART I (Details of Investigating Person)	
NAME : _____	
DESIGNATION : _____	
COMPANY : _____	
TEL : _____ DATE : _____ SIGN : _____	
PART J (Reviewed By)	
NAME : _____	
DESIGNATION : _____	
COMPANY : _____	
TEL : _____ DATE : _____ SIGN : _____	
PART K (Form Completed By)	
NAME : _____	
DESIGNATION : _____	
COMPANY : _____	
TEL : _____ DATE : _____ SIGN : _____	

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ATTACHMENT A-1b

LAND TRANSPORT AUTHORITY SAFETY, HEALTH AND ENVIRONMENTAL MANAGEMENT MANUAL																																																									
INCIDENT OCCURRENCE REPORT FORM	LTA REF NO : _____																																																								
Name of Main Contractor: _____ Report Ref. No : _____																																																									
PART A (Type of Incident) <input type="checkbox"/> Dangerous Occurrence (MOM Reportable) <input type="checkbox"/> Near miss <input type="checkbox"/> Near Miss (Cat A) <input type="checkbox"/> Damage to property <input type="checkbox"/> Dangerous incident <input type="checkbox"/> Security violation <input type="checkbox"/> Damage to utilities <input type="checkbox"/> Fire <input type="checkbox"/> Environmental harm <input type="checkbox"/> Road incident <input type="checkbox"/> Other occurrence <input type="checkbox"/> Crime																																																									
PART B (Details of Incident) PROJECT : _____ CONTRACT : _____ EXACT LOCATION : _____ OCCURRENCE DATE : _____ OCCURRENCE TIME : _____ REPORTED DATE : _____ REPORTED TIME : _____ COMPANY RESPONSIBLE FOR INCIDENT : _____																																																									
PART C (Persons involved in the Incident) <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;"></th> <th style="width: 33%; text-align: center;">A</th> <th style="width: 33%; text-align: center;">B</th> <th style="width: 33%; text-align: center;">C</th> </tr> </thead> <tbody> <tr> <td>NAME :</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>DESIGNATION :</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>COMPANY :</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> </tbody> </table> <p>Status (you may tick more than one) :</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;"></th> <th style="width: 10%;">Witness</th> <th style="width: 10%;">Incident Reporter</th> <th style="width: 10%;">LTA Personnel</th> <th style="width: 10%;">Main Contractor's Personnel</th> <th style="width: 10%;">Subcontractor's Personnel</th> <th style="width: 10%;">Visitor</th> <th style="width: 10%;">Public</th> <th style="width: 10%;">Self Employed</th> <th style="width: 20%;">Others : _____</th> </tr> </thead> <tbody> <tr> <td>A</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>B</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>C</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>			A	B	C	NAME :	_____	_____	_____	DESIGNATION :	_____	_____	_____	COMPANY :	_____	_____	_____		Witness	Incident Reporter	LTA Personnel	Main Contractor's Personnel	Subcontractor's Personnel	Visitor	Public	Self Employed	Others : _____	A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	B	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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COMPANY :	_____	_____	_____																																																						
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B	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																																
C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																																
PART D (Details of Damage to Property) <input type="checkbox"/> Main Contractor's property <input type="checkbox"/> LTA property <input type="checkbox"/> NOT APPLICABLE <input type="checkbox"/> Subcontractor's property <input type="checkbox"/> Public property <input type="checkbox"/> Others : _____																																																									
PART E (Details of Damage to Utilities) <input type="checkbox"/> Electrical <input type="checkbox"/> Gas <input type="checkbox"/> Sewer <input type="checkbox"/> Water <input type="checkbox"/> Traffic <input type="checkbox"/> NOT APPLICABLE <input type="checkbox"/> Multiple Utilities Damages <input type="checkbox"/> Telecoms <input type="checkbox"/> Others : _____																																																									

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ATTACHMENT A-1b

LAND TRANSPORT AUTHORITY SAFETY, HEALTH AND ENVIRONMENTAL MANAGEMENT MANUAL	
INCIDENT OCCURRENCE REPORT FORM	
PART G (Causes of Incident)	
(1) Direct Causes	
(i) Unsafe Conditions	
<input type="checkbox"/> Absence of safety means <input type="checkbox"/> Congestion / restricted action <input type="checkbox"/> Dressing / apparel hazard <input type="checkbox"/> Environmental hazard (gas / dust / smoke) <input type="checkbox"/> Floor surface hazards (slips / trips / falls) <input type="checkbox"/> Hazardous arrangement <input type="checkbox"/> High temperature hazard <input type="checkbox"/> Improper / faulty equipment <input type="checkbox"/> Inadequate guarding / protection / precaution <input type="checkbox"/> Inadequate illumination <input type="checkbox"/> Inadequate ventilation	<input type="checkbox"/> Inadequate warning system <input type="checkbox"/> Inadequate / improper PPE <input type="checkbox"/> Inclement weather conditions <input type="checkbox"/> Noise hazard <input type="checkbox"/> Poor housekeeping <input type="checkbox"/> Presence of fire / explosion hazard <input type="checkbox"/> Radiation hazard <input type="checkbox"/> Unknown ground conditions <input type="checkbox"/> Unsound structure <input type="checkbox"/> No unsafe condition
Remarks : <hr/> <hr/>	
(ii) Unsafe Practice	
<input type="checkbox"/> Disregard instructions <input type="checkbox"/> Driving / operating error <input type="checkbox"/> Failure to secure / warn <input type="checkbox"/> Horseplay <input type="checkbox"/> Improper use of fail to use PPE <input type="checkbox"/> Improper / unsafe lifting/carrying <input type="checkbox"/> Improper / unsafe use of equipment/materials <input type="checkbox"/> Improper / wrong use of bodypart <input type="checkbox"/> Intentional motive <input type="checkbox"/> Making safety devices inoperative	<input type="checkbox"/> Not paying attention <input type="checkbox"/> Operating / working at unsafe speed <input type="checkbox"/> Operating / working without authority <input type="checkbox"/> Taking improper / unsafe position or posture <input type="checkbox"/> Taking shortcuts <input type="checkbox"/> Tampering with equipment in motion <input type="checkbox"/> Under influence of alcohol/drugs <input type="checkbox"/> Unsafe loading / mixing / placing <input type="checkbox"/> Wrong working methods <input type="checkbox"/> No unsafe practice
Remarks : <hr/> <hr/>	
(2) Root Causes	
(i) Work Factors	
<input type="checkbox"/> Inadequate equipment being used <input type="checkbox"/> Inadequate / lack of engineering <input type="checkbox"/> Inadequate / lack of maintenance <input type="checkbox"/> Inadequate / lack of supervision <input type="checkbox"/> Inadequate / lack or work procedures	<input type="checkbox"/> Lack of co-ordination / communication <input type="checkbox"/> Poor selection / placement <input type="checkbox"/> Pressure from external influence <input type="checkbox"/> Wear and tear <input type="checkbox"/> No work factors
Remarks : <hr/> <hr/>	

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ATTACHMENT A-1b

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SAFETY, HEALTH AND ENVIRONMENTAL
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INCIDENT OCCURRENCE REPORT FORM

(ii) Human Factors

- ☐ Fatigue
- ☐ Foul play
- ☐ Illness
- ☐ Improper assignment of personnel
- ☐ Improper or lack of motivation / interest
- ☐ Inadequate capability
- ☐ Lack of knowledge

- ☐ Lack of skill
- ☐ Lack of training
- ☐ Needs conflicting with safety
- ☐ Not qualified
- ☐ Unsafe attitude
- ☐ No human factors

Remarks :

(3) Weakness of Safety Management System

- ☐ Safety policy
- ☐ Safety training
- ☐ Incident investigation and analysis
- ☐ Safety promotion
- ☐ Safety inspections
- ☐ Hazard analysis
- ☐ Emergency preparedness
- ☐ Occupational health programs

- ☐ Safe work practices
- ☐ Group meetings
- ☐ In-house safety rules and regulations
- ☐ Evaluation, selection and control of SC
- ☐ Maintenance regime for all machinery
- ☐ Control of movement and use of hazardous substances and materials
- ☐ Not applicable

Remarks :


PART H

RECOMMENDATION	ACTION TAKEN

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ATTACHMENT A-1b

LAND TRANSPORT AUTHORITY SAFETY, HEALTH AND ENVIRONMENTAL MANAGEMENT MANUAL	
INCIDENT OCCURRENCE REPORT FORM	
PART J (Details of Investigating Person)	
NAME : _____	
DESIGNATION : _____	
COMPANY : _____	
TEL : _____ DATE : _____ SIGN : _____	
PART K (Reviewed By)	
NAME : _____	
DESIGNATION : _____	
COMPANY : _____	
TEL : _____ DATE : _____ SIGN : _____	
PART L (Form Completed By)	
NAME : _____	
DESIGNATION : _____	
COMPANY : _____	
TEL : _____ DATE : _____ SIGN : _____	

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ATTACHMENT A-1c

LAND TRANSPORT AUTHORITY SAFETY, HEALTH AND ENVIRONMENTAL MANAGEMENT MANUAL																																									
ENVIRONMENTAL INCIDENT OCCURRENCE REPORT FORM	LTA REF NO : _____																																								
Incident Title																																									
Name of Main Contractor: _____ Report Ref. No : _____																																									
PART A (Type of Incident)																																									
<div style="display: flex; flex-wrap: wrap;"> <div style="width: 33%;"><input type="checkbox"/> Water Pollution</div> <div style="width: 33%;"><input type="checkbox"/> Transmission of Vector Borne Disease</div> <div style="width: 33%;"><input type="checkbox"/> Vector Breeding</div> <div style="width: 33%;"><input type="checkbox"/> Air Pollution</div> <div style="width: 33%;"><input type="checkbox"/> Ecological Harm</div> <div style="width: 33%;"><input type="checkbox"/> Land Pollution</div> <div style="width: 33%;"><input type="checkbox"/> Noise Pollution</div> <div style="width: 33%;"><input type="checkbox"/> Others: _____</div> </div>																																									
PART B (Details of Incident)																																									
PROJECT _____ : _____ CONTRACT _____ : _____																																									
EXACT LOCATION _____ : _____																																									
OCCURRENCE DATE _____ : _____ OCCURRENCE TIME _____ : _____																																									
REPORTED DATE _____ : _____ REPORTED TIME _____ : _____																																									
COMPANY RESPONSIBLE FOR INCIDENT _____ : _____																																									
PART C (Persons involved in the Incident)																																									
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">A</th> <th style="text-align: center;">B</th> <th style="text-align: center;">C</th> </tr> </thead> <tbody> <tr> <td>NAME _____ :</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>DESIGNATION _____ :</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>COMPANY _____ :</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> </tbody> </table>			A	B	C	NAME _____ :	_____	_____	_____	DESIGNATION _____ :	_____	_____	_____	COMPANY _____ :	_____	_____	_____																								
	A	B	C																																						
NAME _____ :	_____	_____	_____																																						
DESIGNATION _____ :	_____	_____	_____																																						
COMPANY _____ :	_____	_____	_____																																						
Status (you may tick more than one) :																																									
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">Witness</th> <th style="text-align: center;">Incident Reporter</th> <th style="text-align: center;">LTA Personnel</th> <th style="text-align: center;">Main Contractor's Personnel</th> <th style="text-align: center;">Subcontractor's Personnel</th> <th style="text-align: center;">Visitor</th> <th style="text-align: center;">Public</th> <th style="text-align: center;">Self Employed</th> <th style="text-align: center;">Others : _____</th> </tr> </thead> <tbody> <tr> <td>A</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>B</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>C</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </tbody> </table>			Witness	Incident Reporter	LTA Personnel	Main Contractor's Personnel	Subcontractor's Personnel	Visitor	Public	Self Employed	Others : _____	A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	B	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Witness	Incident Reporter	LTA Personnel	Main Contractor's Personnel	Subcontractor's Personnel	Visitor	Public	Self Employed	Others : _____																																
A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																
B	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																
C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																

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ATTACHMENT A-1c

**LAND TRANSPORT AUTHORITY
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ENVIRONMENTAL INCIDENT OCCURRENCE REPORT FORM

PART E (Causes of Incident)

(1) Direct Causes

(i) Non-Complying Environmental Management Conditions

- | | |
|---|--|
| <input type="checkbox"/> Absence of mitigation measures | <input type="checkbox"/> Improper material storage |
| <input type="checkbox"/> Extreme weather conditions | <input type="checkbox"/> Poor housekeeping |
| <input type="checkbox"/> Faulty equipment | <input type="checkbox"/> Presence of food source |
| <input type="checkbox"/> Inadequate mitigation measures | <input type="checkbox"/> Other: _____ |

Remarks :

(ii) Non-Complying Environmental Management Practice

- | | |
|--|---|
| <input type="checkbox"/> Disregard instructions | <input type="checkbox"/> Not paying attention |
| <input type="checkbox"/> Failure to inform | <input type="checkbox"/> Operating/working without authority approval |
| <input type="checkbox"/> Improper mitigation measures | <input type="checkbox"/> Taking shortcuts |
| <input type="checkbox"/> Improper use of equipment/materials | <input type="checkbox"/> Wrong working methods |
| <input type="checkbox"/> Intentional motive | <input type="checkbox"/> Other: _____ |

Remarks :

(2) Root Causes

(i) Work Factors

- | | |
|---|--|
| <input type="checkbox"/> Inadequate equipment being used | <input type="checkbox"/> Lack of co-ordination / communication |
| <input type="checkbox"/> Inadequate / lack of engineering | <input type="checkbox"/> Poor selection / placement |
| <input type="checkbox"/> Inadequate / lack of maintenance | <input type="checkbox"/> Pressure from external influence |
| <input type="checkbox"/> Inadequate / lack of supervision | <input type="checkbox"/> Wear and tear |
| <input type="checkbox"/> Inadequate / lack of work procedures | <input type="checkbox"/> No work factors |

Remarks :

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ENVIRONMENTAL INCIDENT OCCURRENCE REPORT FORM

(ii) Human Factors

- | | |
|--|--|
| <input type="checkbox"/> Careless attitude | <input type="checkbox"/> Lack of skill |
| <input type="checkbox"/> Fatigue | <input type="checkbox"/> Lack of knowledge |
| <input type="checkbox"/> Foul play | <input type="checkbox"/> Lack of training |
| <input type="checkbox"/> Improper assignment of personnel | <input type="checkbox"/> Needs conflicting with environmental management |
| <input type="checkbox"/> Improper or lack of motivation/interest | <input type="checkbox"/> Not qualified |
| <input type="checkbox"/> Inadequate capability | <input type="checkbox"/> No human factors |

Remarks :

(3) Weakness of Environmental Management System

- | | |
|--|--|
| <input type="checkbox"/> Environmental policy | <input type="checkbox"/> Environmental work practices |
| <input type="checkbox"/> Environmental training | <input type="checkbox"/> Group meetings |
| <input type="checkbox"/> Incident investigation and analysis | <input type="checkbox"/> In-house environmental rules and regulations |
| <input type="checkbox"/> Environmental promotion | <input type="checkbox"/> Maintenance regime for machineries |
| <input type="checkbox"/> Environmental inspections | <input type="checkbox"/> Control of movement and use of hazardous substances and materials |
| <input type="checkbox"/> Environmental impact analysis | <input type="checkbox"/> Not applicable |
| <input type="checkbox"/> Emergency preparedness | |
| <input type="checkbox"/> Environmental management programme | |

Remarks :

PART F

RECOMMENDATION	ACTION TAKEN

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ATTACHMENT A-1c

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ENVIRONMENTAL INCIDENT OCCURRENCE REPORT FORM

PART G (Details of Investigating Person)

NAME _____ :

DESIGNATION : _____

COMPANY _____ :

TEL _____ : _____ DATE : _____ SIGN : _____

PART H (Reviewed By)

NAME _____ :

DESIGNATION : _____

COMPANY _____ :

TEL _____ : _____ DATE : _____ SIGN : _____

PART I (Form Completed By)

NAME _____ :

DESIGNATION : _____

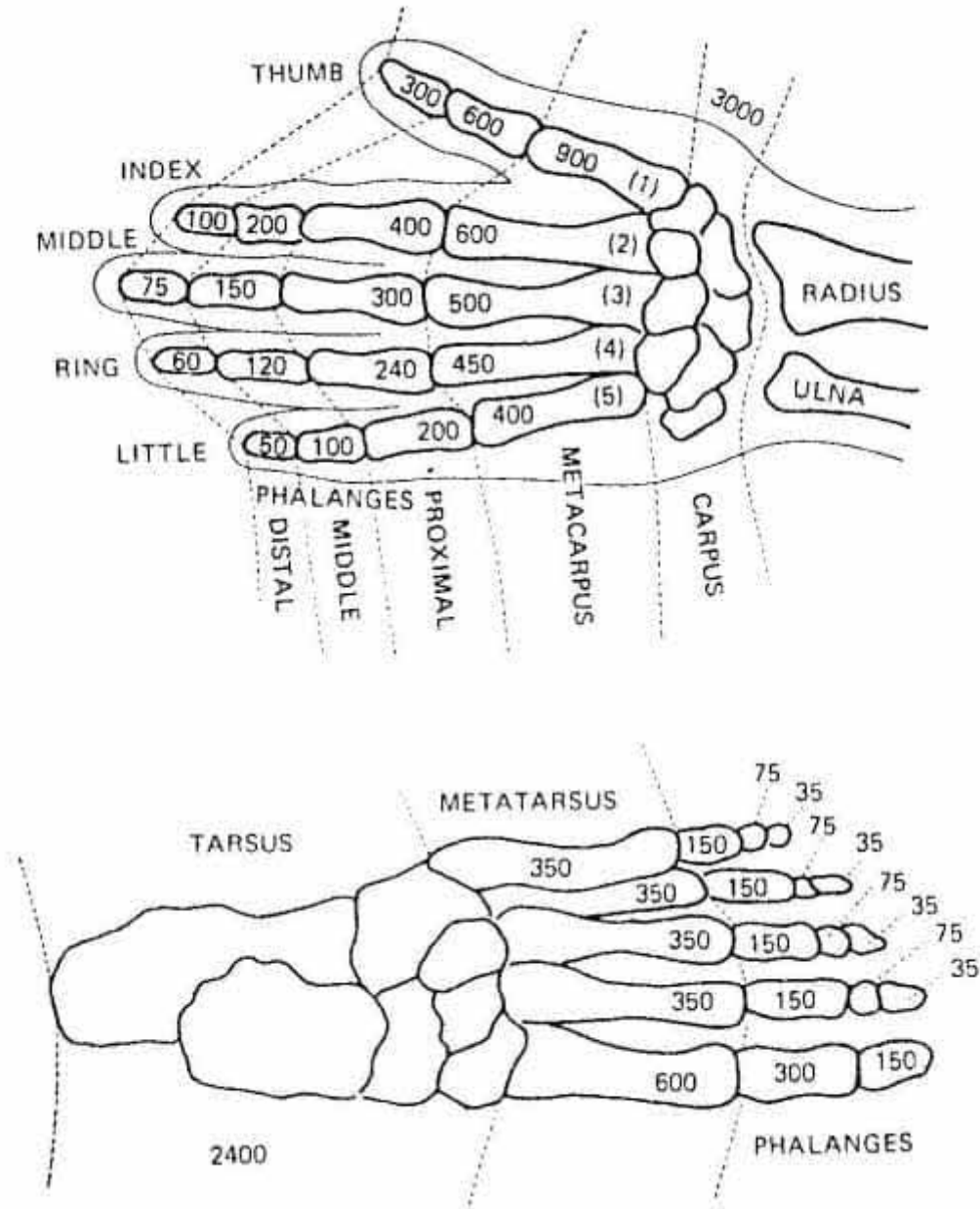
COMPANY _____ :

TEL _____ : _____ DATE : _____ SIGN : _____

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ATTACHMENT A-1d

SCHEDULED CHARGES – FOR LOST OF BODY PARTS



Notes:

Numbers on the bones are the mandays lost involving part or all of the bone.

Source: American National Standard Institute (ANSI) Z16 – Method of Recording and Measuring Work Injury Experience

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ATTACHMENT A-1d

SCHEDULED CHARGES – FOR FATALITY, LOSS OF BODY PARTS OR FUNCTIONS

Description	Mandays Lost
Arm:	
• Any point above elbow, including shoulder joint	4500
• Any point above wrist and at or below elbow	3600
Leg:	
• Any point above knee	4500
• Any point above ankle and at or below knee	3000
Impairment of Function:	
• One eye (loss of sight), whether or not there is sight in the other eye	1800
• Both eyes (loss of sight), in one accident	6000
• One ear (complete industrial loss of hearing), whether or not there is hearing in the other ear	600
• Both ears (complete industrial loss of hearing), in one accident	3000
• Unrepaired hernia (for repaired hernia, use actual mandays lost)	50
Fatal or permanent total disability	6000

Source: American National Standard Institute (ANSI) Z16 – Method of Recording and Measuring Work Injury Experience

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ATTACHMENT A-2

CONTRACTOR'S MONTHLY SAFETY, HEALTH & ENVIRONMENT (SHE) REPORT

The report shall follow the format given:

1. **Project Profile**

A brief description of the project e.g. Contract Title, Contract No., Award Date, Completion Date etc.

2. **Executive Summary**

To give a brief summary of the site SHE events such as any educational, promotional and enforcement activities.

Attachments

The following items shall be attached. Nil return to be indicated if the section is not applicable

- (a) Contractor's Monthly Incident / Accident Return Summary **Table 1.**
- (b) Contractor's Monthly Accident Statistics Report Form **Table 2.**
- (c) Incident Listing - A listing of all incidents / accidents since the beginning of the project with analysis - trend of incidents, root causes, preventive measures etc.
- (d) Updated organisation chart.
- (e) Title listing of all existing method statements.
- (f) Training register based on locations within the contract indicating completed and scheduled.
- (g) Summary of all toolbox meetings.
- (h) Listing of SHE promotional activities carried out during the month.
- (i) Schedule of SHE promotional activities for next 6 months.
- (j) Summary of evaluation carried out on the SHE performance of sub-contractors with actions taken.
- (k) Copies of SHE reports to MOM / NEA, SHE related meetings & WSHO / ECO inspection reports with photos, close-out actions and target date of completion.
- (l) Register of plants, equipment and tools requiring statutory inspection with expiry dates and date of next inspection.
- (m) Register of all plants, equipment and tools with monthly maintenance dates and date of next maintenance.

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- (n) Register of hazardous substance & chemicals with their hazards, location and inventory.
- (o) Listing of emergency drills since the beginning of the project.
- (p) Summary of gas monitoring for the month with reasons for exceeding the limits.
- (q) Audit Schedule and update of the last external safety audit action plan.
- (r) Listing of SHE Awards since project commencement.
- (s) SHE initiatives and best practices (to attach photos)
- (t) Summary of visits by MOM, NEA, PUB or other authorities and its outcome such as fines, warning notices and demerit points. Brief description of follow up actions carried out pertaining to non-conformances found during the visits.
- (u) Listing of environmental non-compliance received since project commencement, including short description of non-compliance, date of occurrence, date of fine received, fine amount and corrective and/or preventive action(s) taken, etc.
- (v) Title listing of all environmental management plans.
- (w) Implementation status of environmental controls, including the following information for the environmental aspects listed from part A to F below:
 - Upcoming activities that will have impact on stakeholders on the following aspects
 - Current and upcoming environmental protection and mitigation measures on the following aspects (include site layout, plans, implementation status where applicable)
 - Inspection and maintenance regime/schedule

Environmental Aspects

- A. Earth Control
- B. Noise Pollution
- C. Vector Control
- D. Air Pollution
- E. Construction Waste Management
- F. Water Management and Conservation

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- (x) Summary of public feedback/complaints, and the investigation and action taken to address the issue
- (y) Summary of noise monitoring data for the month (in weekly graphical comparison format against the permissible noise limits) with reasons for exceeding the limits.
- (z) Summary of TSS monitoring results for the month with reasons for exceeding the limits.
- (aa) Monthly ECM Inspection Report conducted by QECP. (refer to ATTACHMENT A-13)
- (bb) Carbon Assets Inventory Form (refer to ATTACHMENT A-7)
- (cc) ECO Weekly & LTA Fortnightly Environmental Inspection Reports

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ATTACHMENT A-2

Table 1

CONTRACTOR'S MONTHLY INCIDENT/ACCIDENT RETURN SUMMARY			
PROJECT TITLE : _____			
CONTRACT : _____			
CONTRACTOR : _____			
TOTAL NO OF EMPLOYEES (including Sub-contractors) : _____			
REPORTING MONTH : _____ YEAR : _____			
DESCRIPTION	NO OF CASES (this month)	NO OF CASES (last month)	NO OF CASES (this year to date)
MOM Reportable Accident			
Dangerous Occurrence (MOM Reportable)			
Non MOM Reportable Accident			
LTA Personnel Injury			
3 rd Party Injury			
Near Miss/Dangerous Incident			
Damage to Utility			
Damage to Property			
Fire			
Road/traffic Incident			
Security Violation			
Environmental Harm			
Crime			
Compressed Air Sickness			
Notifiable Industrial Disease			
MOM Stop Work Order			
LTA Stop Work Order			
Others :			
FORM COMPLETED BY : _____			
DESIGNATION : _____			
SIGNATURE : _____			
DATE : _____			

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ATTACHMENT A-2
Table 2

CONTRACTOR'S MONTHLY ACCIDENT STATISTICS REPORT FORM											
PROJECT : _____				CONTRACT NO : _____				YEAR : _____			
ITEM MONTH	(A) AVG. NO. OF WORKERS	(B) MANHOURS WORKED	(C) NO. OF FATAL CASES	(D) NO. OF MOM REPORTABLE ACCIDENTS EXCLUDING (C) (mandays lost > 3 days OR hospitalised > 24 hrs)	(E) MANDAYS LOST IN (C) + (D)	(F) NO. OF NON-MOM REPORTABLE ACCIDENTS	(G) MANDAYS LOST IN (F)	(H) AFR (C) + (D) / (B) x 1,000,000	(I) SR (E) / (B) x 1,000,000	(J) DANGEROUS OCCURRENCE (MOM Reportable)	(K) REMARKS
JAN											
FEB											
MAR											
APR											
MAY											
JUN											
JUL											
AUG											
SEP											
OCT											
NOV											
DEC											
ACCUMU LATIVE (YEARLY)											
ACCUMU LATIVE (FROM COMMEN CEMENT)											
<div style="display: flex; justify-content: space-between;"> FORM COMPLETED BY : _____ DESIGNATION : _____ SIGN : _____ DATE : _____ </div>											

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ATTACHMENT A-3

RISK ASSESSMENT GUIDELINES

1. The risk assessment process normally requires baseline information on appropriate control measures, derived from a number to which the Contractor is expected to make reference:
 - Industry standards and codes of practice
 - Experience of individuals
 - Accidents/incidents records
 - Knowledge of processes/activities
2. It is essential that these risk assessments are carried out by teams of appropriately experienced and competent people.

3. General Risk Assessment Procedure

3.1 Breaking Down the Activity into its Constituent Elements

To breakdown an activity the following considerations must be taken into account

- A step by step breakdown of the work activity
- The persons involved in the work
- The duration of work
- The type of equipment/machinery
- The type of material handled
- The work environment

3.2 Identifying the Hazards associated with each step

Consider what could go wrong at each step in order to identify the types of hazards in the work activity

- The hazards a person is exposed to at every step of the work activity, eg. falling from height, material falling from height, slipping
- The hazards associated in operating the equipment / machinery
- The hazards associated in handling the material
- The hazards relating to the work environment

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3.3 Evaluate Accident Frequency

3.3.1 This is based on the judgement of those carrying out the assessment and where possible supported by LTA past projects statistics

3.3.2 TABLE 1: Accident Frequency

Likelihood	Rating	Description
Frequent	I	Likely to occur 12 times or more per year
Probable	II	Likely to occur 4 times per year
Occasional	III	Likely to occur once a year
Remote	IV	Likely to occur once in 5 year project period
Improbable	V	Unlikely, but may exceptionally occur

3.4 Evaluate Accident Severity

3.4.1 An estimation of the likely consequences of the hazardous element occurring in terms of injury or loss.

3.4.2 TABLE 2: Accident Severity

No.	Consequence	Rating	Description(*)
1	Catastrophic	I	<ul style="list-style-type: none"> Single or Multiple loss of life from injury or occupational disease, immediately or delayed; and / or Loss of whole production for greater than 3 days and / or Total loss in excess of \$1 million.
2	Critical	II	<ul style="list-style-type: none"> Reportable major injury¹, occupational disease¹ or dangerous occurrence; and / or Damaged to works or plants causing delays of up to 3 days; and / or Total loss in excess of \$250,000 but up to \$1 million.
3	Marginal	III	<ul style="list-style-type: none"> Reportable injury², occupational disease²; and / or Damage to works or plants causing delays of up to 1 man-day; and / or, Total loss in excess of \$25,000 but up to \$250,000.

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No.	Consequence	Rating	Description(*)
4	Negligible	IV	<ul style="list-style-type: none"> Minor injury³, no lost time or person involved returns to work during the shift after treatment; and / or Damage to works or plants does not cause significant delays; and / or Total loss of up to \$25,000.

Note: (*) If more than one of the descriptions occurs, the severity rating would be increased to the next higher level. Applicable to item numbers 2 and 3 only.

¹ For man-days lost greater than 7 days.

² For man-days lost between 4 to 7 days.

³ For man-days lost between 1 to 3 days.

3.5 Evaluate the Risk Matrix

3.5.1 TABLE 3: Risk Index Matrix

Risk Category			Accident Severity Category			
			I	II	III	IV
			Catastrophic	Critical	Marginal	Negligible
Accident Frequency Category	I	Frequent	A	A	A	B
	II	Probable	A	A	B	C
	III	Occasional	A	B	C	C
	IV	Remote	B	C	C	D
	V	Improbable	C	C	D	D

3.5.2 The definitions of the risk indices determined from the Risk Index Matrix are presented in the Table 4.

3.5.3 TABLE 4: Definition of Risk Index

Risk Index	Description	Definition
A	Intolerable	Risk shall be reduced by whatever means possible.
B	Undesirable	Risk shall only be accepted if further risk reduction is not practicable.
C	Tolerable	Risk shall be accepted subject to demonstration that the level of risk is as low as reasonably practicable.
D	Acceptable	Risk is acceptable.

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3.6 Propose *control measures* to reduce the risk to an acceptable level

Examples of such control measures are emergency stop devices found in certain equipment, use of skilled tradesmen such as a lifting supervisor for lifting operations.

3.7 Repeat Step 3 to 5 to re-evaluate the *residual risk* index with the control measures in place.

This step is essential in monitoring the reduction of the risk after the implementation of control measures.

3.8 A pro-forma for safety and health hazard log which can be used to record risk assessments is attached in Table 5.

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ATTACHMENT A-3
Table 5

SAFETY AND HEALTH HAZARD LOG

ACTIVITY-BASED RISK ASSESSMENT FORM												
Company :					Activity/Process :						Location of work :	
Conducted By (RA team members) :	Name	Designation	Date	Reviewed By :	Name	Designation	Date	Approved By :	Name	Designation	Date	
Last Review Date :					Next Review Date :							

S/No	Description of Work Activity	Hazards Identified	Risk	Existing Control Measures	Initial Risk Index			Additional Control Measures	Residual Risk Index			Risk Owner (Action Officer)		
					F	S	R		F	S	R	Name	Designation	Follow-up Period

Note: F – Frequency of Occurrence; S – Severity of Hazard; R – Risk Index

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ATTACHMENT A-4
(Page 1 of 2)

**METHOD STATEMENT
SUBMISSION REQUIREMENTS***

The checklist below serves as a guideline for Contractors in the submitting of method statement to the Engineer.

This checklist is to be duly completed and submitted together with the method statement.

Method of Work

1. Date, time and duration of works.
2. Site plans / schematic diagrams.
3. Preparatory works.
4. Mode of transportation.
5. Actual work / installation / delivery.
6. Use of special equipment / machine.
7. Lifting operations (including lifting radius).
8. Inspection / supervision.
9. Temporary Traffic Diversion / control.
10. Liaising / interfacing with other Contractors.

Yes	N/A	Remarks

Manpower

1. Organisational / hierarchy chart.
2. List of manpower.
3. Evidence of Site Safety Induction Training.
4. Evidence of competency training (e.g. Trade Cert., Crane Operator's License etc.).

Yes	N/A	Remarks

Health & Safety

1. Hazard analysis.
2. Preventive measures.
3. Safe Work Procedures.
4. Permit To Work system.
5. List of Personal Protective Equipment.
6. Material Safety Data Sheet.
7. First aid / Firefighting equipment.
8. Tool Box Meetings.
9. References to legislations / Code of Practice.

Yes	N/A	Remarks

- Refers to work / activities which are potentially hazardous.

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Tools & Equipment

1. List of approved tools / equipment.
2. 110 volts for hand-held tools.
3. Relevant statutory certifications (e.g. LM Cert., LG Cert., PE Cert. etc.).

Yes	N/A	Remarks

Materials

1. List of approved materials.
2. Schematic diagrams.
3. Safety Data Sheet.

Yes	N/A	Remarks

Emergency Plan

1. Emergency evacuation plan.
2. Emergency reporting procedures.
3. List of essential personnel with contact numbers.
4. Contingency plan.

Yes	N/A	Remarks

Others

1. Method statement endorsed By WSHO

Yes	N/A	Remarks

Remarks:

Submitted By:

Name / Designation / Contact No.

Date

Contractor / Contract No.

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ESS ASSESSMENT FORM ON CONTRACTORS

Year		Contract No.	
Month		Contractor	
Contract Title			

SECTION A - ACCIDENT STATISTICS			
Item		Max Score	Actual Score
*Cumulative Accident Frequency Rate (AFR)	(a) 0	5	
	(b) > 0 but < 1.0	4	
	(c) ≥ 1.0 but < 2.0	3	
	(d) ≥ 2.0 but < 3.5	2	
	(e) ≥ 3.5 but < 4.5	1	
	(f) ≥ 4.5	0	
*Cumulative Accident Severity Rate (ASR)	(a) 0	5	
	(b) > 0 but < 50	4	
	(c) ≥ 50 but < 100	3	
	(d) ≥ 100 but < 150	2	
	(e) ≥ 150 but < 300	1	
	(f) ≥ 300	0	
SUB-TOTAL		10	

* AFR and SR will be reinstated to 0 if a contractor manages to avoid any accident for an 18 month period

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SECTION B - SITE SAFETY PRACTICES AND CONDITIONS			
Item		Max Score	Actual Score
Public Complaints on construction noise, traffic diversions, etc	(a) 0 valid public complaints	5	
	(b) 1 to 2 valid public complaints		
	(c) 3 to 4 valid public complaints		
	(d) 5 and above valid public complaints		
	(e) 100% addressed within required timescale	2	
	(f) 80% addressed within required timescale	1	
	(g) 60% addressed within required timescale	0	
Safety Inspections*	(a) Zero identified substandard conditions / practices per safety inspection	28 (Max)	
	(b) Deduct for each item per safety inspection requiring rectification within 24 hrs	- 3 (per item)	
	(c) Deduct for each item per safety inspection requiring rectification within 3 days	- 2 (per item)	
	(d) Deduct for each item per safety inspection requiring rectification within 7 days	- 1 (per item)	
	(e) 100% of identified substandard conditions / practices at safety inspection rectified within required timescale	5	
	(f) 80% of identified substandard conditions / practices at safety inspection rectified within required timescale		
	(g) Below 80% of identified substandard conditions / practices at safety inspection rectified within required timescale		
SUB-TOTAL		40	

Footnote:-

1. If there are zero valid complaints then scores should not be assigned for rectification but Section B prorated accordingly.
2. If there are zero substandard conditions / practices, then scores should not be assigned for rectification but Section B prorated accordingly.
3. Scores for the number of substandard conditions / practices should be based on the average scores obtained for the safety inspections conducted during the month.

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SECTION C - ENVIRONMENTAL, SAFETY AND SECURITY (ESS) MANAGEMENT			
Item		Max Score	Actual Score
Effective Implementation of ESS Management	(a) Occupational Safety, e.g., Permit-To-Work Systems, Safety Promotion, Safety Training, Control of Subcontractors, Emergency Drills, PPE, Housekeeping, etc. (b) Occupational Health, e.g., Hygiene Hearing / Respiratory protection etc.	10	
	(c) Site Security	5	
	(d) Environmental Management (see attached Annex for breakdown on areas of assessment and their respective weightage on Environmental Management)	20	
Safe Work Practices	(a) Implemented new and effective ESS measures / initiatives beyond legal and contractual requirements eg. BBS, Data loggers etc.	5	
	(b) Method Statement & Hazard analysis conducted on every work operation, accepted by LTA (c) Adherence to safe work procedures as detailed in method statement and hazard analysis during execution of the work operation.	10	
SUB-TOTAL		50	

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ITEM	MAX SCORE	ACTUAL SCORE
Accident Statistics	10	
Site Safety Conditions and Practices	40	
Environmental, Safety and Security Management	50	
SUB-TOTAL	100	
SECTION D - DEDUCTIONS (when applicable)		
(a) Fatality / Permanent Total Disablement Case <i>(50 marks for each case)</i>		
(b) Dangerous Occurrence (DO) as defined in Workplace Safety and Health Act <i>(50 marks for each occurrence)</i>		
(c) Amputations / Cases with ≥ 20 days medical leave <i>(50 marks for each case)</i>		
(d) Stop Work Orders by MOM, NEA or PUB (excluding Fatal/D.O. cases) <i>(50 marks for each case)</i>		
(e) Accident cases with medical leave ≥ 7 but < 20 days medical leave <i>(30 marks for each case)</i>		
(f) Accident cases with > 14 days light duty <i>(5 marks for each case)</i>		
(g) Incidents stated in Annex for Deduction <i>(marks deducted for incidents are as stated in the Annex)</i>		
(h) Fines issued by MOM, NEA or PUB <i>(increase in 5 marks deduction with every environmental non-compliance received within the calendar year i.e. 5 marks deduction for 1st non-compliance received, 10 marks deduction for 2nd non-compliance received etc)</i>		
(i) Fail to provide immediate notification on occurrence of accident or incident <i>[5 marks for 1st case, 10 marks for 2nd case and 20 marks for 3rd and subsequent cases (accumulated throughout contract period)]</i>		
Utility Damages (i) Results in disruption of service / system > 24 hours, or exceed \$100,000 in repair costs <i>(10 marks for each case)</i> (ii) Results in disruption of service / system > 4 hours, or exceed \$10,000 in repair costs <i>(6 marks for each case)</i> (iii) Results in disruption of service / system or exceed \$5,000 in repair costs <i>(4 marks for each case)</i>		
FINAL SCORE		

Note: System refers to a set of parts working together as parts of a mechanism or an interconnecting network to form a complex whole in order to work as intended.

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Completed By Assessor:

Endorsed By Moderator:

Name: _____

Name: _____

Designation: _____

Designation: _____

Date: _____

Date: _____

Signature: _____

Signature: _____

* A copy of this duly completed form to be sent to LTA Safety Division

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ANNEX for Deduction (DEDUCTIONS FOR NON-STANDARD ITEMS)	Marks to be deducted
(a) Collision / runaway of any locomotives / rolling stocks	20 marks for each case
(b) Derail of any locomotives / rolling stocks	5 marks for each case
End of List	

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ANNEX OF ESS ASSESSMENT FORM ON CONTRACTORS

Year		Contract No.	
Month		Contractor	
Contract Title			

Environmental Management			
ITEMS		Max Score	Actual Score
Earth Control Measures	ECM Plan: Reviewed by Qualified Erosion Control Professional (QECF) and updated according to the phase of work.	3	
	Implementation of Plan: ECM facilities implemented according to plan	4	
	Maintenance: Adequate maintenance of ECM facilities	4	
	Compliance with Regulations: TSS of discharge $\leq 50\text{mg/L}$	5	
	Inspection: Inspections conducted frequently by QECF and ECMO / ECO	4	
Solid Waste Management	Site Provision: Adequate management of wastes	2	
	Waste Segregation: Reusable and recyclable wastes are recovered	1	
	Site Observation: Minimal littering observed within the site and in any public area	2	
Water Pollution Control	Site Provision: Provision for containment of pollutive substances	4	
	Site Provision: Management of wastewater with well-maintained facilities	5	
	Site Observation: No sign of pollutive spillages / leakages	3	
	Site Observation: Regular checks on disposal / treated effluent to ensure compliance to regulations	3	

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Environmental Management			
ITEMS		Max Score	Actual Score
Noise Management* (Not applicable if exempted by NEA)	Noise Management Plan: Reviewed by acoustic consultant and updated according to the phase of work.	4	
	Implementation of Plan: Noise mitigation and monitoring measures implemented according to plan	5	
	Work scheduling: No noisy works at night and during no-work period unless approved by LTA	4	
	Deployment: Adequate deployment of sound-reduced machinery and equipment	3	
	Maintenance: Adequate maintenance of noise mitigation measures and monitoring devices	4	
	Compliance with Regulations: Noise levels rarely exceed permissible noise limits	3	
	Stakeholder Engagement: Proactive public relation efforts observed	2	
Vector Control	Vector Control Plan: Plan updated according to the phase of work	3	
	Skilled Resource: Sufficient trained manpower to carry out search and destroy efforts in accordance to schedule	2	
	Source Reduction: Efforts for rodent and fly control	2	
	Source Reduction: Efforts to prevent collection of water	5	
	Remediation Action: Adequate usage of vector control chemicals	5	
	Maintenance: Gravitraps deployed and maintained for monitoring of mosquito	2	
	Compliance with Regulations: No vector breeding observed by LTA	2	
	Inspection: Inspections conducted frequently by Pest Control Operator (PCO) and in-house vector control team	4	

*Not applicable if exemption has been given by NEA stating that the contract / work area is not required to do noise monitoring

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Environmental Management			
ITEMS		Max Score	Actual Score
Air Pollution Control	Site Provision: Adequate provision for dust arresting measures at source	4	
	Maintenance: Adequate maintenance of machinery and equipment	2	
	Site Observation: No black smoke emission from machinery	2	
	Site Observation: Minimal dust emission from exposed earth, transferring and transporting of spoil, etc.	2	
FINAL SCORE		75 100 (With Noise Consideration)	
SCORE converted to 20% (Converted score to be assigned onto Section C item D of ESS ASSESSMENT FORM (under Environmental Management))		Actual Score x 20%	
		Max Possible Score	

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ANNEX A-a

LIFTING OPERATIONS

1 General

- 1.1 The Contractor shall be responsible for ensuring that all lifting operations carried out on site and any rental cranes brought onto site are done so with minimal risk of injury to persons including members of the public or damage to property.
- 1.2 Effective control must be exercised at all stages of a lifting operation through the deployment of a competent lifting supervisor, a qualified signaller, a registered crane operator and sufficiently trained riggers. No person shall be assigned to perform more than one role and the combination of roles during any lifting operation is strictly prohibited.
- 1.3 All lifting machines, lifting appliances and lifting gears used on site must be suitable for the task, used within their rated safe load capacity and must be in good condition.
- 1.4 The Contractor is to submit a weekly list to the Engineer of all cranes permanently deployed on site detailing their ownership, make, identification number, maximum Safe Working Load (SWL) and the corresponding radius, lifting Machine (LM) certificate number and date of expiry.
- 1.5 The Contractor shall ensure that any lorry loader with articulating arm on Site is only used for the delivery to Site and collection / removal from Site of materials within its rated lifting capacity, and not for lowering any materials into a trench or excavation, or for raising any materials to a higher level. However, transporting materials or plant / machinery around Site may be permitted if the lorry loader with articulating arm has been tested on the site by an Authorised Examiner.
- 1.6 All lorry loaders with articulating arm entering into the Site shall have an interlocking system installed to prevent a lorry loader with articulating arm from moving off before its articulated boom is fully retracted back to its “stored” position.
- 1.7 The boom of any lorry loader with articulating arm shall not be used for holding down materials or equipment and it shall be retracted to its “stored” position before it moves off.
- 1.8 Loading / Unloading operations involving lorry loader with articulating arm shall take place over the side of the main body and not in an arc over either the front or rear of the chassis, in accordance with safe working practices.

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- 1.9 No excavator shall be used as a lifting machine on site unless it is originally designed and manufactured to also function as a lifting machine and comply with all MOM stipulated requirements. For excavators used as LMs, the operator to attend the additional training on use of excavator as a LM.
- 1.10 The Contractor shall ensure that a Permit to Lift system is operated to evaluate all routine planned lifting operations generically and all heavy or one-off lifting operations individually. This latter category of lifting operations includes the raising / lowering of items of plant in excavations. Lifting plans shall be submitted to the Engineer for acceptance in advance of any heavy or one-off lifting operations.
- 1.11 Lifting Supervisors and Riggers shall adorn brown and red safety helmets respectively. Riggers and signalmen shall wear red reflective vest and identification tags.
- 1.12 The crane operator is to ensure that the outriggers are fully extended, and any adjustments made to the jacks to level the crane before the lifting operation commences. All lifting machine with outriggers, including lorry loader with articulating arm, shall have steel plates of minimum dimension 1m by 1m by 25mm placed under all the outriggers deployed for a lifting operation unless that crane is entirely sited on hard standing such as a reinforced concrete surface, with no void underneath. Pieces of timber are not to be used.
- 1.13 Lifting of machineries and / or equipments shall be done as per manufacturer's recommendations.
- 1.14 All works using lorry loaders for lifting shall have their outriggers fully extended. For lifting works that require the lorry loader to extend the outriggers partially due to site constraints (eg. working along the public roads), it shall have a Stability Control System that is able to detect the limits of the safe working load and provide automatic cut-off upon detection of overloading, based on the different configurations of outriggers extension.

2 Lifting Machinery

- 2.1 This term includes, but is not limited to, lattice jibbed crawler mounted cranes, hydraulic variable jib mobile cranes, rail mounted gantry cranes, mobile and fixed tower cranes.

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- 2.2 The Contractor shall ensure that before any lifting machine, including lorry loaders with articulating arm used for delivery to site, is brought into use on site the labels on all controls, the details on the safe working load radius chart and any other safety related notices in the cab or on the body of the lifting machine shall be written in English as well as in a language comprehensible to the crane operator.
- 2.3 Before being taken into use on site for the first time, in the case of a lifting machine which undergoes assembly on site, or following the substantial alteration of any type of lifting machine such as the jacking up of a tower crane, the lifting machine must be load tested by an Authorised Examiner and subsequently examined every six months whether it is owned by the Contractor, one of his Subcontractors or by a crane rental company. The Contractor shall make arrangements for the examination by an Authorised Examiner before the expiry date so that there is continuity of cover of LM certificate.
- 2.4 The Contractor shall ensure that no lifting operation shall be carried out on site using the auxiliary hook of a mobile crane unless the SWL of this is shown on the LM Certificate in addition to that of the main hook block, and that this SWL is not exceeded during operation.
- 2.5 The Contractor shall ensure that both the Lifting Supervisor and the crane operator are able to understand the working load chart.
- 2.6 No lifting machine over 15 years old (based on date of manufacture) shall be operated on any LTA Site.
- 2.7 Cranes fitted with a Load Radius Indicator (LRI) shall sound an audible alarm in the crane cab if its SWL is exceeded on either the main or the auxiliary hook. A second alarm connected to the LRI, shall be fitted external to the cab and shall emit a signal of a sufficient volume to make it audible above the ambient site noise levels during working hours. Visual warning shall also be provided externally to indicate safe working range and overload conditions.
- 2.8 LRI shall be fitted with a limiting device, which disables the crane from continuing with any lifting operation under overload conditions. Once disabled, the device should only permit the crane to return to the safe working range. The device shall be tamper proof, with no over-ride to disable it, and shall be maintained in good working order. In instances where there is a bypass switch for the LRI, it shall be secured by a lock and the key kept with the lifting supervisor.

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- 2.9 The LRI shall be calibrated every six (6)monthly by an approved agency and verified by the Authorised Examiner during his six (6)monthly inspections. Records of LRI calibration shall be submitted to the Engineer. If there is any doubt as to the accuracy of the LRI the machine shall be taken out of use until the calibration is carried out to the satisfaction of the Engineer.
- 2.10 If the crane is down rated by the Authorised Examiner during his six (6) monthly inspections then the LRI shall also be calibrated and a new capacity chart should be drawn up and posted in the crane cab. The Authorised Examiner shall highlight the above details on the LM certificate.
- 2.11 A lifting machine shall not be used for any unsafe operation that may affect its overall integrity or stability.
- 2.12 The Contractor shall ensure that lifting machine capable of travelling / tracking and slewing, such as a mobile crane, shall be operated in such a manner that there is always an unobstructed passageway in excess of 600mm between it and any other fixture or machinery.
- 2.13 To address the risk of trapping or crushing of persons working at or near the tracks of a gantry crane, an unobstructed passageway of at least 750mm in width on each side of each rail, shall be maintained parallel to and extending the entire length of the tracks upon which any gantry crane is operated. This requirement is clearly stated in clause 15.3.1 of SS497:2011 and clause 2.11.11 of SS567:2011. Authorised Examiners are reminded to check the compliance of the above requirement during the commissioning of the gantry crane as well as the subsequent periodic statutory examinations.
- 2.14 All lifting machines that operate on LTA sites shall be installed with a rear view camera that enables the operator to have a clear view of the back of the machine.
- 2.15 The use of fly jib on any lifting machines shall be subjected to the approval of the Engineer.
- 2.16 The concurrent use of the crane's main and auxiliary hooks during lifting shall be prohibited.
- 2.17 The Contractor shall engage a specialist contractor with a wire rope inspection device for checking of wire ropes of all service cranes and diaphragm wall machines. The required inspection frequency for the wire ropes shall be based on manufacturer/supplier's recommendation.

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- 2.18 The Contractor shall ensure that weatherproof camera(s) with real-time recording capabilities, enabled optical and digital zoom and linked to monitors in the operator's cabin shall be installed on the crane hook or jib head to effectively assist the crane operator. There shall also capabilities to enable the crane operator to see people and load in dark places such as under shade or night time.

3 Crane Data Logger

- 3.1 All cranes without manufacturer fitted data loggers operating on site shall be retrofitted with data loggers approved by the Engineer.
- 3.2 All cranes with either manufacturer-fitted or retrofitted data loggers shall have their data loggers enabled when operating on sites.
- 3.3 The data recorded by the data loggers shall be monitored, downloaded and interpreted by the Contractor on a monthly basis and submitted to the Engineer in the form of a report. The Engineer may at his discretion require the Contractor to download the data when he deems necessary.
- 3.4 The contractor shall ensure that the data logger is calibrated by an authorised personnel from the data logger manufacturer when the crane is mobilised on site for the first time and subsequently on a six (6) monthly basis. A calibration certificate shall be submitted to the Engineer.
- 3.5 The data logger shall have the following capabilities:
- (a) Detection of overloading, over-hoisting and, over-derricking, as well as bypassing of limit switches;
 - (b) Continuous recording of critical crane operational parameters;
 - (c) Data downloading feature;
 - (d) Data security and anti-tampering features;
 - (e) Real time stamping;
 - (f) Report generation feature; and
 - (g) Real time warning and alert feature.
- 3.6 The data logger shall be able to perform continuous record of the following crane operational parameters whenever the crane is in operation:
- (a) Date, time and duration of the crane's operational hours, (i.e. from the time engine starts till engine shuts);
 - (b) All unsafe lifting operations which includes overloading, over-hoisting, and over-derricking, as well as bypassing of limit switches;
 - (c) Load Moment Indication;
 - (d) Weight of load lifted;
 - (e) Crane operating capacity (Safe Working Load);
 - (f) Slewing angle;

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- (g) Boom angle;
- (h) Boom length;
- (i) Crane operating radius;
- (j) Number of part lines indicating hook configuration (main or auxiliary hook);
- (k) Crane operational hours since installation;
- (l) Faults / settings display and
- (m) Position of jib or boom.

3.7 The monthly data logger report shall include the following details together with the set of recorded operational parameters:

- (a) Project contract number;
- (b) Name of crane operator;
- (c) Name of crane manufacturer;
- (d) Crane's model number;
- (e) Serial number of data logger;
- (f) Type of crane (e.g. crawler or telescopic);
- (g) Crane's LM certificate;
- (h) Crane's LRI chart;
- (i) Summary of overloading, over-hoisting and over-derricking, as well as bypassing of limit switches; and
- (j) Continuous graphical plot of load moment and boom radius data against time.

A sample copy of the required data logger report is appended in Annex A-t.

3.8 The data logger shall have real-time alert function and shall be monitored by Lifting Engineer or the Contractor's safety team on a monthly basis. The Real-time alerts shall send to the Contractor's safety team, Lifting Engineer and the Project Manager.

4 Mobilisation and Demobilisation

4.1 The Contractor shall carry out a risk assessment and establish a Safe Work Procedure for the mobilisation and demobilisation process that is specific to the model of the lifting machine being used on Site. The risk assessment and SWP shall take into account factors such as the limitations of the lifting machinery as stated in the manufacturer's operation manual, physical Site constraints and weather conditions.

4.2 The Contractor shall ensure that the ramps used for the mobilisation and demobilisation of heavy machinery comply with the requirements stated in the manufacturer's operation manual and should not be narrower than the width of the machinery's tracks.

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4.3 The Contractor shall consult the lifting machinery's manufacturer on the appropriate and safe method for mobilisation and demobilisation should critical factors such as angle of slope, direction of travel etc. that may limit the lifting machinery's function are not specified, or the proposed mobilisation and demobilisation method differs from the operation manual.

4.4 The Contractor, as and when necessary, may fabricate a ramp that is PE designed and it should be wide enough to accommodate the width of the machinery's tracks.

5 Temporary Rental Cranes

5.1 At least 24 hours before any rental mobile / crawler mounted crane is brought onto site the Contractor must submit to the Engineer:

- (a) The lifting plan for the operation to be carried out.
- (b) A copy of the current LM certificate for the crane.
- (c) A copy of the crane operator's MOM registration.
- (d) The name of the Lifting Supervisor will be responsible for it, and
- (e) A record of any repairs carried out since the last LM certificate was issued.

5.2 The Contractor shall ensure that, as far as practicable, rental cranes entering site are manned with the same operator, who shall undergo site induction training before commencing operation. If for any reason the crane rental company sends a substitute operator he shall also undergo site induction training.

5.3 Before any crane is accepted onto site for use it must undergo a thorough mechanical check by the Crane Maintenance Supervisor, and the findings verified by the Contractor's WSH Officer.

6 Erection of Cranes on Site

6.1 The Contractor shall engage only Approved Crane Contractors to install, alter, repair or dismantle any parts of a mobile or tower crane which affects the lifting capacity of that crane. A copy of the MOM approval letter shall be retained with the crane erector doing the repair.

6.2 The minimum strength of the team who erects / dismantles any tower crane must be one (1) approved crane erector and five (5) trained assistants, and for a mobile crane is one (1) approved crane erector and two (2) assistants.

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7 Lifting Gear (LG) / Lifting Appliance (LA)

- 7.1 The Contractor shall ensure that every LG / LA brought onto site, including that accompanying rental cranes, lorry loader with articulating arm, excavators, cement buckets, air receivers, skips, welding sets etc. has a valid LG / LA certificate and clearly marked with its SWL. All LG / LA shall be inspected by an Authorised Examiner once every six months.
- 7.2 The Contractor shall ensure that LG / LA is not loaded beyond its SWL and this includes multi leg chain slings being used at variable angles.
- 7.3 The Contractor shall ensure that LG / LA is not used for any purpose other than the raising or lowering of a load. If an excluded activity takes place, such as the use of a lifting chain for towing an item of plant / machinery, then the Contractor shall ensure that this item of LG / LA is no longer used for any further lifting operations.
- 7.4 If an item of lifting gear is inadvertently subjected to a force exceeding that of which it is designed to experience when lifting an object at its SWL then the Contractor shall ensure that it is taken out of use.
- 7.5 The Contractor shall implement an inspection programme to thoroughly check all LG / LA by a Lifting Supervisor prior to its first use on site and thereafter on a monthly basis. A monthly colour coding system shall be adopted. Defective LG / LA shall be discarded immediately.
- 7.6 When not in use the Contractor shall ensure that all items of LG / LA are stored in a rack sheltered from the weather and maintained regularly. Should any LG / LA be exposed to a corrosive material e.g. wet concrete, it must be washed off afterwards and re-greased.
- 7.7 The Contractor shall ensure all the lifting lugs for any equipment used on site shall be PE designed and Non-destructive Testing (NDT) conducted before use on site.
- 7.8 All wire rope lifting gears shall be installed with thimbles to protect the wire rope from wear and tear. No “soft eye” shall be allowed on site.

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8 Lifting Supervisors (LS)

- 8.1 The Contractor shall ensure that a sufficient number of qualified LS are employed on site, whether by himself or by his sub-contractors, to give adequate cover for all lifting operations carried out both by day and by night including loading / unloading. There must be (1) one LS present for one crane including all minor and major operations. In addition, the contractor shall also station at least (1) one additional worker to assist the signaller for lifting operations carried out near public areas.
- 8.2 The contractor shall install warning devices/ flags at least (2) two metres above top of hoarding that are alongside roads, footpaths and adjacent structure.
- 8.3 The LS shall supervise and co-ordinate all lifting operations under his/her charge. The LS shall familiarise himself with the load chart of each crane for which he is responsible and has identified himself to the operator of each such crane as being the only individual whose instructions concerning any lifting operation are to be followed. This includes the positioning of the crane prior to the lift as well as the slinging of the load.
- 8.4 Before any lifting operation involving a mobile or crawler mounted crane is carried out the LS must satisfy himself that the crane is positioned suitably close to the load and its destination to ensure that the operation can be carried out at the safest appropriate radius.
- 8.5 The LS shall ensure that the load is safely rigged, and a tag line is attached if appropriate, before signalling to the crane operator to start the lift. The LS is responsible for the load until it is safely resting at the intended destination either by taking control of the operation himself for non-routine lifts or, for routine lifting operations, by thoroughly briefing the crane operator, riggers and signaller on the safe procedure to be followed.
- 8.6 The Contractor shall put measures in place to discipline any person other than the dedicated LS, or one acting under his close supervision, who attempts to take control of any lifting operation other than those of a routine nature where a safe lifting procedure has already been established.

9 Crane Maintenance Supervisor

- 9.1 The Contractor shall appoint a full time Crane Maintenance Supervisor certified competent by a MOM approved crane supplier company to attend to all the mechanical aspects of operations involving lifting machines, lifting equipment and lifting gear on site.

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- 9.2 The Crane Maintenance Supervisor shall carry out periodic planned maintenance on all lifting machines to ensure that they are in good working order.
- 9.3 The Crane Maintenance Supervisor shall be responsible for ensuring that each crane operator is competent to carry out the checks necessary before the crane is taken into use on any day / shift, and shall carry out his own weekly thorough check of all cranes on site.

10 Crane Operator

- 10.1 The Contractor shall engage only qualified crane operators with at least five (5) years of experience in operating similar types of cranes with no record of crane toppling / failure or barred from any site previously for a crane related incident.
- 10.2 The crane operator shall enter the date, types of maintenance carried out and any malfunction of the crane in a checklist or logbook. He shall not operate the crane until any such defect is rectified, and the crane's use is authorised by his LS.
- 10.3 All cranes shall be checked by its operator at the start of any day / shift using a checklist written in English and in a language comprehensible to the operator. Copies of the checklist together with LM certificate, operator certificate, and permits should be retained in the crane cabin for verification.

11 Lifting Engineer

- 11.1 To ensure that day to day lifting operations are monitored at an appropriate level of management, the Contractor shall appoint a Lifting Engineer from his staff, preferably his site engineer with a minimum of five (5) years site experience to oversee the activities of the various lifting supervisors on site. All issues concerning safety of any lifting operations shall be referred to this appointed Lifting Engineer for a final decision.
- 11.2 The Contractor shall ensure the appointed Lifting Engineers had successfully completed the "Appointed Persons – Lifting Operations Course" conducted by the Institution of Engineers Singapore (IES), or equivalent course approved by the Engineer.

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- 11.3 The Contractor shall ensure that a lifting plan is drawn up and agreed with his appointed engineer responsible for lifting operations before any lifting operation is started. The engineer shall verify that the LS, the crane operator, the signaller and the riggers understand the part they have to play in ensuring that it is carried out safely. The lifting plan shall be forwarded to the Engineer for acceptance.
- 11.4 The Contractor shall ensure that weight of load is conspicuously marked on the load/equipment.
- 11.5 The Contractor shall ensure that crane access routes and working areas are designed by a Professional Engineer (PE) supported by ground evaluation and calculations incorporating a suitable safety factor. The PE shall provide layout plans that highlight any potential danger areas to avoid and indicate access routes and safe working areas for the types of mobile cranes to be used. A valid Certificate of Supervision (COS), ensuring that the deployment location(s) have been prepared in accordance with the design, shall be available.
- 11.6 The lifting engineer is responsible for checking that the proposed location of the crane for the lifting operation is sufficiently compacted to bear safely the force exerted by the crane, taking into consideration the proposed load to be lifted, and any additional forces exerted by the crane slewing or derricking.
- 11.7 The Contractor shall put in place a system for inspecting and upgrading the route over which a crawler mounted / mobile crane is to transit when it is being moved on site before any proposed lifting operation to ensure stability of the crane whilst travelling. Inspections must be conducted at least once a week or after inclement weather. The records of the inspections must be properly documented. This procedure shall also be followed when it is proposed that a crane transits carrying a load.
- 11.8 The Contractor's lifting engineer shall certify in writing, at least once a day that the crane access routes will support the force exerted by each crane and any load it may be carrying. The appointed engineer is to make an entry on a form designed for that purpose, sign it and hand it to the operator to keep in his cab before any crane is transited. Crane access checks shall be repeated after inclement weather as appropriate.

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ANNEX A-b

SITE TRANSPORT

1. GENERAL

- 1.1. All vehicles driven on Site shall be maintained in roadworthy condition and be registered with the appropriate authority in accordance with the Road Traffic Act. Each driver of these vehicles shall hold a valid driving licence authorising him to drive that class of vehicle. Such vehicles include, but are not limited to cement lorries; pick-up and flat bed trucks; lorry loaders with articulating arms; and rough terrain forklifts.
- 1.2. Transportation of personnel on flat bed trucks, cranes, forklifts, dumpers and similar vehicles not designed to carry passengers is prohibited.
- 1.3. Personnel may be transported on Site by pick up trucks, lorries and similar which incorporate seating, for example in the form of planks, in the well of the vehicle, together with suitable handrails and mid-rails around the periphery of the well. Free-standing chairs shall not be used as seating. All passengers must be seated at all times that the vehicle is in motion and shall not have any part of their body outside the vehicle. No more persons shall be carried in the cab of any vehicle than the number for which it is licensed.
- 1.4. An appropriate speed limit shall be set and enforced on site.
- 1.5. The Contractor shall appoint banksman to control reversing vehicles and congested machinery movement. The banksman shall wear a high visibility vest clearly marked "Traffic Controller" or similar and trained in the standard hand signals and always standing to the side of the driver's cab, not to the rear of the vehicle.
- 1.6. Any routes on the Site where headroom is restricted shall have appropriate warning signs posted at the approach to warn of such restriction.
- 1.7. The Contractor shall ensure that the drivers of all delivery vehicles to Site and those removing materials from Site, wear appropriate PPE including, but not limited to, safety footwear and safety helmets at all times that they are outside the cabs of their vehicles.
- 1.8. The Contractor shall ensure that there is daily co-ordination of the movement of mobile plant and vehicles on Site to minimize the potential for an incident.
- 1.9. All Site access roads used by mobile plant / vehicles shall be constructed of hard standing and suitable for its intended purpose.

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- 1.10. No unauthorised parking shall be permitted on the Site anywhere other than at the designated parking area. Only cars bearing the Contractor's permit shall be allowed to park there, and those of authorised visitors.
- 1.11. Site plant / vehicles shall be parked at designated locations only so that they do not cause obstructions to Site traffic.
- 1.12. Consideration shall be given at all times to the safety of the road users and gates should be positioned so that they minimise the additional risk to traffic at such locations as road junctions, bends etc.
- 1.13. A clear line of sight shall be maintained for all drivers of vehicles using the road, taking into consideration the speed limit of that road and the position of existing street furniture and trees / vegetation, to maximise the warning distance of approach.
- 1.14. If deemed necessary by the Engineer suitable mirrors shall be positioned at these points to enhance vision of traffic movement both on the roadway and on entering / leaving the Site.
- 1.15. Where the Site gates lead directly off a public street an effective method of controlling vehicles entering / leaving the Site shall be employed. This shall be manned by workers who have been trained in road safety and who are wearing high visibility vests bearing the wording "Traffic Controller". They should adopt recognisable hand signals and advice should be sought from the Traffic Police if necessary.
- 1.16. If deemed necessary by the Engineer a traffic lane may be coned off to allow for safe deceleration.
- 1.17. During the hours of darkness floodlighting of these Site entrances shall be provided to enhance visibility of such traffic controllers, but care must be taken that these lights do not dazzle any on-coming traffic or pedestrians or cause a nuisance to neighbouring residents. The traffic controllers should utilise hand held batons or gloves incorporating reflective material.
- 1.18. Warning signs in compliance with the Code of Practice for Traffic Control at Work Zone shall be conspicuously displayed at appropriate distances before such gates into the Site as to give all drivers a clear understanding of the traffic hazard ahead.
- 1.19. If vehicles entering / leaving the Site have to cross a public footpath or pavement then a worker must be deployed to control pedestrians as well as road traffic. Suitable warning signs should be deployed to alert pedestrians to possible traffic movement across the footpath.

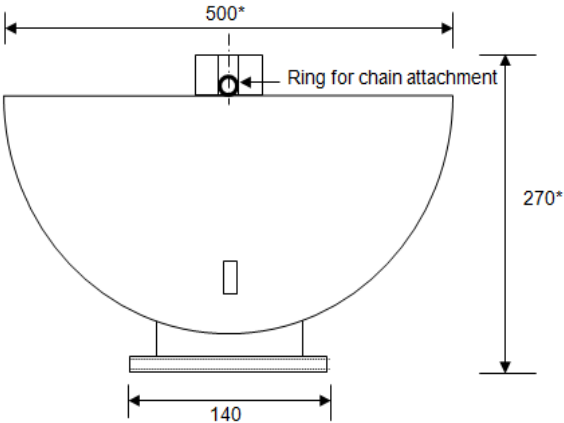
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- 1.20. Truck Mounted Attenuator (TMA) shall be deployed for works on road where legal speed limit is 70km/hr and above regardless of any advisory speed limit imposed on that road.

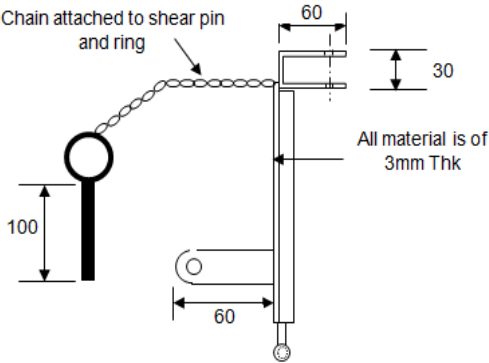
2. SPILLAGES ON ROADS

- 2.1. A paved truck wash bay for washing vehicles leaving the worksite onto a roadway shall be provided and maintained at each vehicular egress point before commencement of works on Site. Each truck wash bay design must be approved by the Public Utilities Board (PUB) as part of the Earth Control Measures (ECM) Plan before it can be constructed on site.
- 2.2. Washwater from the wash bays shall be directed into a water treatment plant for treatment.
- 2.3. Preventative measures shall be taken to limit the incidence of earth droppings from earth moving vehicles. In the event that any earth dropping occurs onto a public road / drain, such earth shall be removed and the roads / drains washed by the Contractor at his own expense to the satisfaction of the Engineer.
- 2.4. The contractor shall assign personnel and establish a system of checks to ensure that all vehicles and trucks leaving the worksite do not have the potential to litter the roads due to its wheels or transportation materials.
- 2.5. Where it is foreseeable that water may drain out from a load of soft marine clay or similar transported wet materials that will contaminate the road surface, the Contractor shall ensure that specially designed and constructed watertight trucks are used to transport these materials.
- 2.6. All cement mixer trucks servicing LTA sites must have a containment system or a flap installed to prevent spillage of cement. Please refer to schematic drawing and photographs below for the installation of the flap.

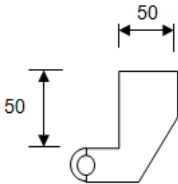
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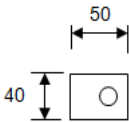
Section of Cover



Elevation of Cover

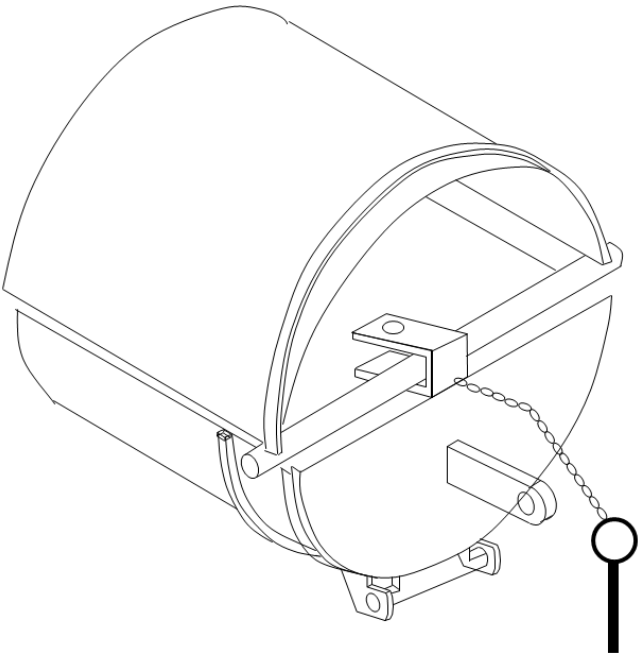


Details of
bracket for cover



Details of
Locking piece

* Dimensions varies depending
on chute cover size



Isometric view of
concrete cover with chute

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Pin plate at the rear for securing the cover when opened



Pin to secure when closed



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ANNEX A-c

SITE SECURITY

1 GENERAL

- 1.1 The Contractor is responsible for the security of the sites, works areas, material storage areas, site offices, facilities and the Works.
- 1.2 Security for the Site and the works shall be maintained throughout the duration of the Contract or the extended period as provided in the Particular Specification.
- 1.3 The Contractor is to provide a detailed Security Plan which includes security proposals for the various phases of the construction of the Works.
- 1.4 The security for the various phases of the Works shall include the set up phase, temporary works phase, structural works phase, E&M works and architectural works phase as well as the completion phase.
- 1.5 For each phase, the Contractor shall detail the security measures, facilities, guards and patrols to be implemented.
- 1.6 Within two (2) months or other specified period from the award of the Contract, the Contractor shall submit a fully detailed Security Plan detailing the Contractor's proposed security measures and facilities he intends to implement throughout the Contract duration. The Security Plan shall include but not limited to the followings:
 - (a) Method of securing all site and works areas; offices and facilities etc.;
 - (b) The security facilities to be set up and its locations;
 - (c) Lightings, alarms, communication equipments, cameras, surveillance equipments etc.;
 - (d) Layout and site plans;
 - (e) Personnel, manpower and the organisation chart;
 - (f) Guards and patrols, numbers, locations and frequency;
 - (g) Security for various phases or stages of the Works;
 - (h) Controls to be implemented for access by authorised personnel / contractors / construction equipment / Plant / vehicles / materials;
 - (i) Control of access points for visitors and their vehicles entering the Site, issue of entry permits and maintaining records for every visitor and vehicle into the Site, including their stated purpose;
 - (k) Monthly review and reports;

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- (l) Incident report and review;
- (m) Audits; and
- (n) Others.

- 1.7 The plan shall include a central security post/ office manned at all times by a competent uniformed supervising security guard and an assistant from a licensed Security Agency at an agreed location. It shall be possible to communicate between each of the satellite security posts/office and the central security post/office.
- 1.8 The Contractor shall update the Security Plan regularly and when the Works enters a new phase to ensure that the Site, facilities, and Works are adequately and sufficiently protected against theft, vandalism, wilful damages, misdemeanours, and other illegal or undesirable activities. Sufficient deterrence shall be implemented to be in tandem with the progress of the Works.
- 1.9 The Contractor shall be aware that there may be other contractors employed or engage by the Authority to carry out works within the Site. Security measures shall cover these works carried out by other contractors, their site storage and facilities.
- 1.10 Security audit shall be carried at six (6) monthly intervals to detect lapses and other inadequacies of the Security Plan. Audit reports and propose corrective actions shall be submitted to the Engineer.
- 1.11 The Contractor shall improve his site security and or implement other measures required by the Engineer when he is of the opinion that the security measures are insufficient or where there are lapses in the security system.

2 HOARDINGS

- 2.1 The safety of vehicular movement onto and off Site shall be planned before the Site hoardings are erected to allow for features to be incorporated maximising public safety in connection with Site activities.
- 2.2 A 2.4 metre high durable metal perimeter hoarding shall be provided and maintained around the perimeter of the worksite and of all satellite locations to the acceptance of the Engineer. The hoarding shall be well designed and secured in place to prevent it being blown over by gusts of wind and shall be sufficiently robust to deter anyone from removing or displacing any panels. Regular maintenance on the hoarding shall be carried out.

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- 2.3 At all work areas; suitable and effective gates shall be provided and shall be locked during non-working hours / days. Guard posts shall be constructed and guards shall be stationed at these posts. It shall be illuminated to enable the guards to carry out inspections at night. The guard shall inspect persons, vehicles, materials and other equipment entering and leaving site. Intercom or other communications shall be provided and maintained between the guard post and the security guard office.
- 2.4 Where it is not practicable to post security guards at gates to satellite locations as only infrequent access is required then these gates shall be kept securely padlocked and the key held by nominated supervisors. These nominated supervisors shall be held responsible for ensuring that the gates are locked after work has ceased there temporarily and the workers have left that location. These remote sites shall be secured and guard-patrolled during non-working hours / days at non fixed intervals.
- 2.5 At strategic locations along hoardings, entrances, guard posts and other facilities, spot lights shall be installed.
- 2.6 There shall be no unauthorised openings in the perimeter hoarding. All access and egress shall be via gates which are manned by 24-hour security guards - see Clause 2.7 below.
- 2.7 If for any reason the Contractor authorises any panels to be moved to create a temporary opening then a guard must be posted to restrict access to authorised personnel / construction equipment / plant / vehicles only. It shall permanently close immediately after works is completed.
- 2.8 Should there be any risk of materials, tools, waste material or similar escaping from any part of the Site either as projectiles or falling objects etc., then an effective extension for the Site hoarding shall be designed and erected to prevent this. Where a public footpath or pavement runs alongside the hoarding, overhead protection must be provided where Site activities pose a foreseeable risk of such occurrences.

3 PERSONNEL ACCESS

- 3.1 The Contractor shall be responsible for controlling worksite security to prevent unauthorised access, maintain public safety and minimise theft, vandalism, wilful damages, arson and other offences.
- 3.2 The Contractor shall ensure that no illegal workers or unauthorised persons are allowed on Site. The Contractor shall conduct both internal and external raids to weed out any illegal workers or unauthorised persons.

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- 3.3 Security of the Site shall also be maintained to ensure that only those persons who have the skills and training to work safely on Site and who are wearing the appropriate Personal Protective Equipment (PPE) may be admitted.
- 3.4 At the main Site office, the Contractor shall set up a fully equipped security guard office at the entrance to the offices. The security guard office shall be at least 6m x 3m with direct view overlooking the entrance. A visitor book shall be maintained to record visitors entering/leaving the site or offices. Workers' security passes shall also be issued to all workers entering the Site. Visitor shall be issued with temporary passes. Ingress and egress of vehicles shall be logged.
- 3.5 A similar security pass system shall also be operated at the main entrance to all the sites. This shall preferably incorporate a turnstile / swipe card reader but any other equally effective means may be utilised with the prior acceptance of the Engineer.
- 3.6 Guard posts erected at the main entrances where access is to be controlled are to be staffed by trained employees of the Contractor or employees of a subcontract licence security agency. Sufficient guards shall be on duty at any one time to give effective 24-hour coverage. These trained guards shall wear uniform to enable easy identifications.
- 3.7 All guard posts shall be equipped with a telephone / radio communication system, a panic button and an audible alarm.
- 3.8 Two-way communication equipment shall be provided to the guards to maintain communication between guards at other security posts or on patrol and the security guard office. A general alarm system shall be installed for use in an emergency. The Engineer's site offices shall be installed with intruder alarms, and protection systems. The site offices surroundings shall be well lit.
- 3.9 The access control system shall cover all staff, direct employees of the Contractor, LTA project staff, interfacing contractors and service providers such as canteen workers, cleaning workers and similar as well as all subcontract staff / workers and those of sub-subcontractors etc. including operators of rental construction equipment / plant.
- 3.10 Each security pass shall bear the photograph of the holder and his NRIC No. / Passport No. and Work Pass / Employment Pass number as appropriate. It shall be issued after completion of site safety induction training via a central registry controlled by the Contractor. Temporary visitor passes may be issued for those personnel on authorised business, in which case their names must be recorded together with times of arrival and departure plus signature.

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- 3.11 The Contractor shall issue first time security passes to the interfacing contractors. The cost of subsequent replacement of security passes will be borne by the interfacing contractors.
- 3.12 Persons not wearing the correct PPE shall not be allowed onto Site, unless they identify themselves as visiting the Site office only and the Contractor has provided a designated safe access route to and from the Site access control point for this purpose.
- 3.13 Control shall also be exercised over authorised workers entering and leaving the Site during non-working hours / days to prohibit any alcohol or illegal substances from being brought into the quarters which could foreseeable lead to fights or to other incidents. Periodic spot checks shall be carried out to deter theft, vandalism, damages or illegal activities.
- 3.14 An accurate headcount shall be kept of all persons entering the worksite so that they can all be accounted for in case of an emergency.

4 VEHICULAR ACCESS

- 4.1 Effective control shall be exercised over materials entering and leaving the Site, to check on the suitability / safety of construction equipment, Plant and materials delivered to Site and to prevent theft. For all materials including waste and salvaged materials, construction equipment and plants leaving the Site a proper record of authorisations given by the respective contractors issuing such removal chits shall be maintained.
- 4.2 Wherever practicable separate access and egress gates shall be provided. The control point for access should be located a short distance inside the main gate to permit a vehicle to pull off the road before halting to be checked.
- 4.3 A security post shall be provided at each vehicular access point, sited so that the checker has a clear view of incoming vehicle registration plates and any passengers in the cabin.
- 4.4 The Contractor shall provide the following at all designated site entrances and exits for vehicular access:-
- a) Illumination of at least 100lux;
 - b) Convex mirror (32 inch / 24 inch) at entrances / exit points adjoining roads;
 - c) Revolving light (complying with BS3143 Part 4 or an approved equivalent, e.g., Code of Practice for Traffic Control at work zone); and
 - d) Vehicle lay-by at all site entrances / exits point where possible.

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- 4.5 Railings or similar should be erected inside the Site to prevent workers and others on Site from walking into the path of vehicles entering / leaving the Site.
- 4.6 To prevent all lifting machines and vehicles from infringing the height limit of 4.5m in public roads. The Contractor shall install effective and robust steel height barriers at all vehicular access. The steel height barrier shall be constructed with a height infringement gauge that limits the height of lifting machines and vehicles to less than 4.5m
- 4.7 Security drop-bars shall be maintained in the closed position at all vehicular entry and exit points to the Site and every vehicle shall be stopped outside the barrier. The barrier should only be raised after authority has been given to the driver of the vehicle to proceed. Hump shall also be constructed at exits.
- 4.8 The registration numbers of all vehicles entering and leaving the Site shall be recorded.
- 4.9 No goods shall be off-loaded at the Site entrance in a manner that creates a hazard to other vehicles entering / leaving the Site.
- 4.10 Vehicles waiting to get in to the Site should be directed to a designated holding area which minimises obstruction to other road users, and called forward by a flagman.
- 4.11 The main gates shall be closed and locked after construction work has ended for the day.
- 4.12 The main gates and control points are to be well lit during the hours of darkness.

5 SITE PATROLS

- 5.1 Security guards shall patrol the Site regularly during the night, non working days and public holidays covering all locations within the Site perimeter to deter, detect and follow up any undesirable event such as theft, robbery, violence, damage to any property, trespass, etc. The areas to be covered shall include, but not be limited to Site offices, housing quarters, canteen area, materials stockyards and perimeter hoarding.
- 5.2 Clocking points shall be installed to record their presence. Guard patrols shall visit designated clocking points within the station and the perimeter of the station site at least four (4) times during the night and extra five (5) times during the day on non working day. A register is to be kept to record the guards visits.

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- 5.3 In addition to the above when the Works are near completion, guards shall patrol inside the station and clock at pre-determined clocking points at fixed intervals. Only one (1) or two (2) access points into the station shall be used and manned. All persons entering or leaving the station shall sign in or out and record their works or purpose. All materials and equipment (including those belonging to the interfacing contractors) brought into or out of the station shall be recorded. No materials or equipment shall be taken out of the station without authorisation.
- 5.4 All incidents shall be recorded and reported to the Engineer. In cases of emergency, the correct persons or appropriate emergency services shall be notified.

6 SECURITY GUARDS

- 6.1 Guards shall wear uniforms so that they can be readily identified. They shall be able bodied, adequately trained, approved by relevant authorities and shall have no criminal records. Guards on patrol shall work in pairs.
- 6.2 Personal Protection Equipment (PPE) shall be provided to the guards by the Contractor and they shall wear them when patrolling or visiting the sites. They shall also attend the safety induction course.
- 6.3 Guards shall be fully trained to handle various situations such as unauthorized entry into site, theft, vandalism, fire, accident, etc.
- 6.4 A full-time guard supervisor/superintendent shall be assigned to supervise and check on the guards. He shall be trained and well versed in security procedures, measures and system, including preparing monthly reports, incident reports, reviews and audits. He shall conduct security briefings, site security campaigns, provide information to workers on security and other preventive measures or deterrents.

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ANNEX A-d

CIVIL ENGINEERING / DEEP EXCAVATIONS

1 Deep Excavations

- 1.1 The Contractor shall appoint sufficient number of banksman to coordinate excavation activities at the pit and the haulage activities from the pit to the bank. The banksman shall be appointed in writing and should have attended signalman training course approved by MOM. The banksman shall be properly identified on site, stationed at-grade and have overall control of the excavation works.
- 1.2 For excavations exceeding four (4) metres in depth, the Contractor shall appoint at least one banksman within 30 metres length of excavation. If deemed necessary by the Engineer, the Contractor shall appoint additional banksman. For excavations exceeding 10 metres in depth, the Contractor shall appoint one (1) banksman for every long-arm or telescopic excavator at the bank.
- 1.3 Proper means of communication in the form of walkie-talkie sets should be established between the banksman and the excavator operators. No one shall be within any excavator's swing radius. In addition, all excavators shall be installed with rear view camera that enables the operator to have a clear view of the back of the machine.
- 1.4 Long arm excavators shall be provided with an extended reflective mirror in front of the operator's cabin to enhance operator's visibility and shall not operate without the presence of the banksman.
- 1.5 Excavators within the excavation pit shall have suitably reinforced cabin roofs capable of withstanding impact from falling objects from the top of the excavation and its movement coordinated by one of its operator, who shall be appointed as a leader by the Contractor.
- 1.6 The designated locations at walers and struts used by the instrumentation contractor for instrumentation reading and monitoring shall be provided with two (2) rows of horizontal rigid guardrails to prevent persons falling from height. Openings within struts are to be covered. The vertical distance between the two (2) rows of horizontal guardrail shall be not more than 600mm. Toe boards are to be provided accordingly.
- 1.7 An alternative source of power and emergency lighting system shall be provided to allow emergency securing operations and evacuation safely in the event of a primary power failure. An adequate number of lamps shall be located at key points underground.

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2 Pipe Jacking

- 2.1 No person shall enter a pipe jack of less than 1,200mm in diameter.
- 2.2 All work within a pipe jack shall follow strictly the procedures for work within a confined space and a permit to enter procedure shall be followed.
- 2.3 All persons shall be out of the tunnel when jacking is taking place and shall not re-enter until the ram is no longer in motion.

3 Hand Driven Tunnels

- 3.1 Excavation by hand of a full tunnel face shall be from the top downwards, taking the face out in steps or benches and securing the top and face as soon as they are exposed. Wherever practicable, an open shield, extended in the crown with a hood, shall be used to provide initial support and protection unless otherwise acceptable to the Engineer. Faceboards held in place by hydraulic jacks may be necessary in soft ground conditions, if applicable.
- 3.2 Rings of segments shall be installed as close as practicable behind the working area in a pre-determined sequence by a mechanical erector, or by hand for smaller diameter drives, and the shield jacked forward off the completed segment lining.
- 3.3 Properly designed and installed working platforms shall be provided close to the face in tunnels over two (2) metres in diameter and work sequence controlled so that workers in the invert are exposed to the minimum of falls of soil or rock.
- 3.4 Hand mucking shall be employed at the face, with mechanical means for muck removal following close behind, where the diameter of the drive permits.

4 Emergency Plan

- 4.1 The Contractor shall identify all possible emergency situations specific to the contract and submit an emergency plan to the Engineer for approval.
- 4.2 The plan shall address the emergencies specifically for the various locations within the contract in terms of assembly areas, emergency equipment, access / egress, and etc. Review levels (alert levels and work suspension levels) from instrumentation monitoring works shall form part of the emergency evacuation criteria.
- 4.3 The Contractor shall work with the Singapore Civil Defence Force (SCDF) to develop the emergency plan. The plan shall be communicated to all the personnel within the Site.

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- 4.4 The Contractor shall, once every six (6) months, organise table top emergency exercises based on likely site scenarios in which the key site personnel work through their emergency response roles. SCDF shall be included in the emergency drills. LTA's Safety Division shall be invited to this exercise as an observer.
- 4.5 The Contractor shall conduct in-house emergency exercises and drills on a quarterly basis and conduct joint emergency exercises and drills with the SCDF at least twice (2) per year.

5 Escape Staircase and Walkways

- 5.1 The Contractor shall provide at least two (2) staircases as a minimum. The staircases shall be positioned in such a manner to facilitate the evacuation of all personnel within 10 minutes from the excavation area.
- 5.2 The emergency escape staircases shall comply with Clause 31.3 (Emergency Preparedness) of Appendix A. The use of similar staircases to the drawing attached in this annex or otherwise shall be approved by the Engineer.
- 5.3 At least two (2) sets of emergency alarm shall be provided from independent power source, such that the second emergency alarm can be activated upon the first alarm failure.
- 5.4 The Contractor shall provide proper walkways along struts and walers for access and egress. Walkways shall also be provided on planned emergency escape routes.
- 5.5 The Contractor shall ensure that all staircases have anti-slip strips / paint to prevent slip and fall. Weekly inspections to be carried out to check and replace all worn out anti-slip strips / paint and damaged steps. Daily housekeeping to keep the staircases clean and free from oil, grease, dirt or mud.
- 5.6 The Contractor shall educate the workforce on the use of 3-point contact when using staircases.

6 Man cage for Emergency Rescue

- 6.1 The Contractor shall provide at least one (1) man cage at each excavation area for emergency rescue operation. The man cage(s) shall be located at a place accessible or available within five (5) minutes from any accident location within the excavation area.

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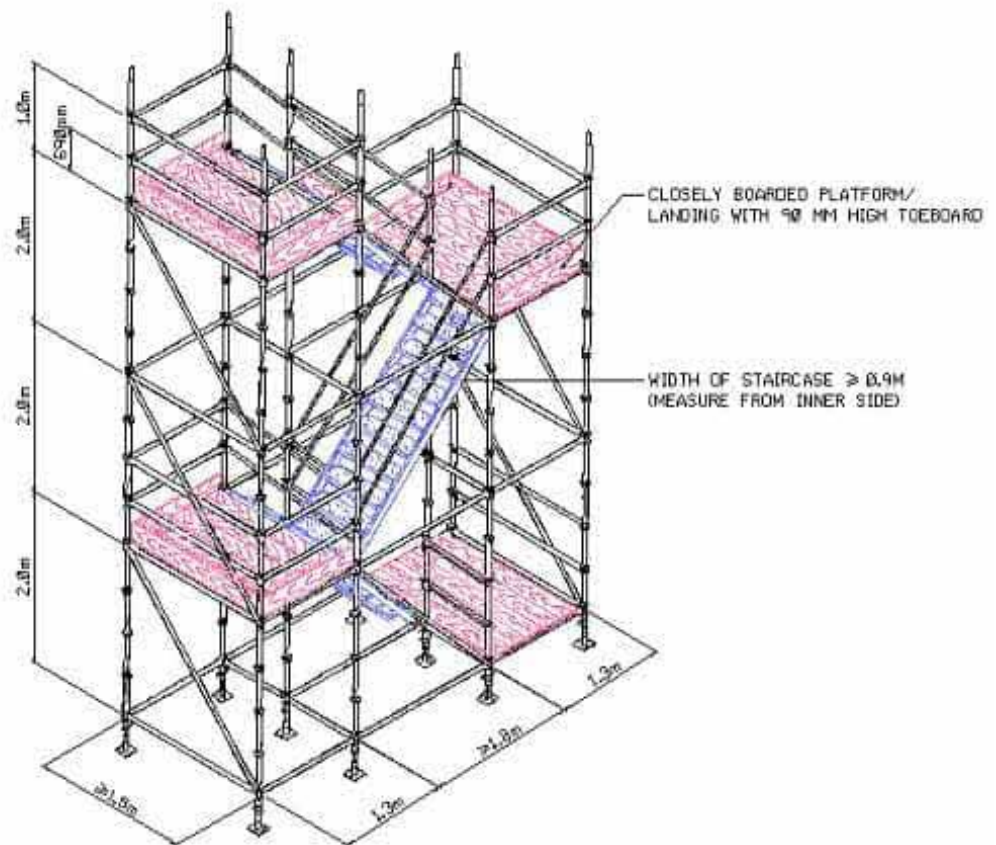
7 Instrumentation and Monitoring Meetings

- 7.1 The Contractor's WSH Officers shall attend all site monitoring meetings to be updated with the instrumentation readings of the Works so that he can advise the Contractor on the appropriate actions to be taken.

8 Radio Frequency Identification (RFID) Tracking System

- 8.1 The Contractor shall implement a RFID based personnel tracking system for all deep excavation works, underground stations and tunnels on site. The system shall track the movement of workers going in and coming out of these areas.
- 8.2 The system shall not require the deliberate action of the worker in order that his presence and movement be sensed, such as close proximity sensing using Ultra High Frequency (UHF) RFID technology, swiping of magnetic strip ID cards. The system shall allow bi-directional tracking at each access point and location tracking with one or more access points to a location. This shall include the tracking of the worker's last known location to facilitate emergency rescue works.
- 8.3 The system shall also provide instant information update and allow users to view the information using standard web browser: real-time count of workers in one or more locations, trace entry and exit timings of workers at access points, duration of stay at each locations for each period for individual workers, the total time that is spent by workers of each trade, additional information such as personnel name, ID, location and entry time stamp.

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KEY DIMENSIONS OF MODULAR STRUCTURAL STAIRCASE FOR DEEP EXCAVATION

NOT TO SCALE

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ANNEX A-e

TEMPORARY HOUSING QUARTERS

- 1.1 The Contractor shall obtain the Engineer's approval before planning to house workers within the boundary of the construction site.
- 1.2 The Contractor's housing quarters shall comply with SS547: 2009, Code of Practice for Temporary Housing Quarters on Construction Sites.
- 1.3 The Contractor shall provide a separate canteen and provide meals for all his workers on site and ensure that workers do not cook within the housing quarters.
- 1.4 The Contractor shall appoint a quarter supervisor and a team of housekeeping workers to maintain discipline, quarter rules and control of illegal workers and housekeeping of all facilities including the washing areas, toilets, bathing facilities etc.

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ANNEX A-f

APPROVAL PROCEDURE FOR USAGE OF NEW HEAVY EQUIPMENT IN LTA WORKSITES

Introduction

- 1 All **New Heavy Equipment** entering LTA worksites shall require approval by the LTA Project Director (PD) before it is mobilized to the Contractor's worksite. The definitions for **New** and **Heavy Equipment** are given below:

- 1.1 **New** refers to:

- i. New machine (not used before in LTA worksites); or
- ii. New model (of an existing brand of machine in LTA worksites); or
- iii. New operator (of an existing model of machine in LTA worksites or change in operator of an existing model of machine in LTA worksites); or
- iv. New modifications (made to an existing model of machine in LTA worksites)

- 1.2 **Heavy Equipment** refers to:

- i. Any equipment with a high Centre of Gravity (CG), including all Lifting Machineries (LM) such as Boring Rigs, Trench Cutters and Grouting Machines (e.g. Deep Soil Mixing Machines, Wet Soil Mixing Machines) etc; or
- ii. Any type of heavy equipment not commonly used in LTA worksites.

Procedure (See also Flow Chart – Annex A-f1)

- 2 If the Contractor intends to use a **New Heavy Equipment**, he will first notify LTA Project Team (PT) of his intention and submit Method Statements pertaining to the **New Heavy Equipment** and type of work involved **at least three (3) months** before work starts. The submissions should include (but not be limited to) the following:

- 2.1 Equipment Details:

- a) Technical specification and operator's manual
- b) Catalogue
- c) Safe Work Procedures¹
- d) Risk Assessment¹
- e) Certification of Equipment by Authorized Examiner (*if any*)
- f) Maintenance Records (*if any*)

¹ Applies for mobilisation, assembly and disassembly, operation and maintenance of heavy equipment

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2.2 Operator and Mechanic Details:

- a) Training materials
- b) Training frequency and duration
- c) Assessment and certification procedures
- d) Names and certification records

The Contractor should also provide any other materials or information which he opines will further support his application.

- 3 The Methods Statements will be reviewed by LTA PT and Safety Division (SD). The Contractor shall also be able to furnish, from time to time, any other materials or information which the PT or SD requires.
- 4 Once the submission is in order, the LTA PT shall notify the Contractor to arrange for a presentation by the **New Heavy Equipment** Manufacturer or Principal Agent on the suitability and safety of the proposed Equipment. The LTA PT, PD, SD, Main Contractor and the approving Authorized Examiner (AE) shall be present during the presentation. The manufacturer or principal agent shall cover (but not be limited to) the following topics in his presentation agenda:
 - a) Safety Features of the Equipment
 - b) Location of Centre of Gravity (CG) (*for Lifting Machineries*)
 - c) Operating radius and limitations
 - d) Previous incidents or accidents involving the Equipment (*if any*)
 - e) Permitted modifications to the Equipment
 - f) Recommended maintenance regime

The manufacturer or principle agent should also include, in his presentation, any other details which he opines will be useful. The manufacturer or principle agent, and the Main Contractor shall be prepared to answer any queries and clarifications posed by LTA PT, PD, SD and / or AE.

- 5 Following the presentation, the Contractor shall arrange for an interview with the proposed operator and mechanic to assess their competency in operating and maintaining the **New Heavy Equipment**. The interview shall be conducted by LTA PT and SD and any other personnel deemed suitable by the interviewers. The operator and mechanic shall be assessed based on the following:
 - a) Competency in operating / maintaining the proposed equipment
 - b) Relevant experience in operating / maintaining the proposed equipment
 - c) Relevant and appropriate training by manufacturer or principle agent
 - d) Any debarment records
 - e) Records of certification for specific model by manufacturer or principal agent

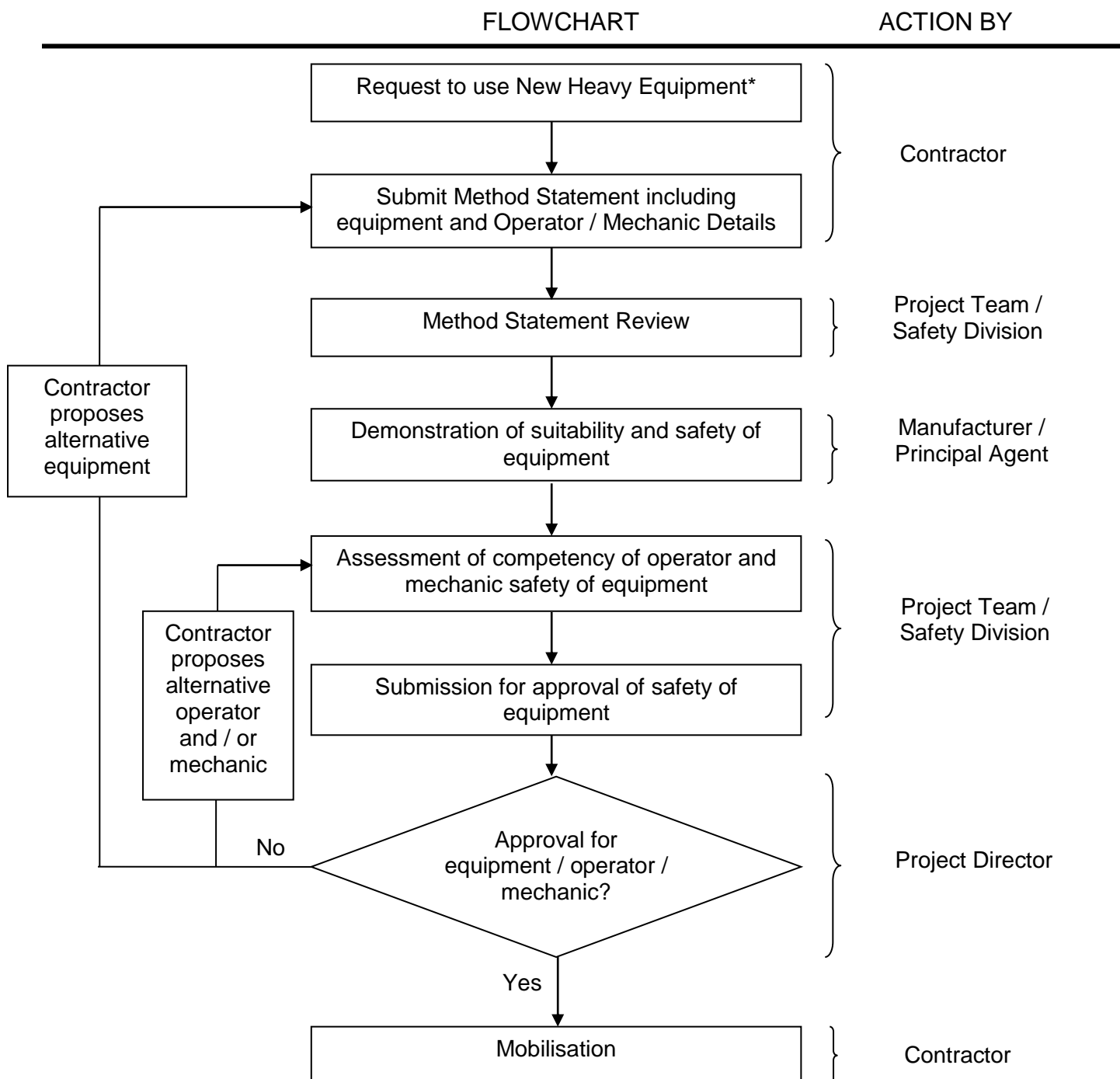
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- 6 Once the above processes have been completed, LTA PT will proceed with the submission for approval. If LTA PM / SPM / PRPM is not satisfied with the Contractor's proposal, he shall reject the application and state the reasons for his rejection. The Contractor shall then either propose an alternative operator or equipment for use, depending on the reasons for rejection.
- 7 If LTA PM / SPM / PRPM is satisfied with the Contractor's application, he shall proceed to complete Part 1 of the **New Heavy Equipment** Application Form (Annex A-f2) and circulate it to SD for review and to fill up Part 2.
- 8 Upon PD's approval in Part 3 of the Form, the LTA PT will then notify the Contractor to mobilise the **New Heavy Equipment** into his worksite. Should there be any discrepancy between SD and PD's decision, the decision of the PD is final.

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ANNEX A-f1

FLOW CHART FOR USE OF NEW HEAVY EQUIPMENT IN LTA WORKSITES



*Heavy Equipment includes Lifting Machineries (LM) such as Boring Rigs, Trench Cutters and Grouting Machines (e.g. Deep Soil Mixing Machines, Wet Soil Mixing Machines).

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ANNEX A-f2

APPLICATION FOR USE OF NEW HEAVY EQUIPMENT	
Part 1 (To be completed by LTA PM / SPM / PRPM)	
Contract No. / Contractor	
The Contractor has effectively demonstrated the suitability and safety of his New Heavy Equipment and the competency of his proposed Operator and Mechanic, and submitted the following documents:-	
<input type="checkbox"/> Justification on the required model of Heavy Equipment; <input type="checkbox"/> RA, SWP, Technical Specifications and Operator's Manual of Heavy Equipment; <input type="checkbox"/> Competency and training certificates of Operator / Mechanic for the Heavy Equipment; <input type="checkbox"/> Training materials for Operator training; and <input type="checkbox"/> Records of past maintenance carried out for the Heavy Equipment <i>(if any)</i> ; Submission is endorsed / not endorsed* (state reasons):	
PM / SPM / PRPM's Name:	Signature:
Contact No:	Date:
Part 2 (To be completed by LTA Safety Division)	
Submission is supported / not supported * (state reasons):	
Reviewed by Name / Signature:	Date:
Verified by DDSA / Signature:	Date:
Part 3 (To be completed by the LTA PD#)	
Submission is approved / not approved* (state reasons):	
PD's Name:	Signature:
Contact No:	Date:

*Delete whichever not applicable

#The Deputy Director may approve on behalf of the PD if there are valid reasons for doing so.

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ANNEX A-g

ENVIRONMENTAL CONSIDERATIONS

1. GENERAL

1.1 The Contractor shall be responsible to identify, manage and mitigate all environmental impacts which result from his construction activities. Such impacts include any form of pollution and excessive noise affecting those outside the site boundary.

1.2 The Contractor shall comply with all relevant Acts, Regulations and Codes of Practice of Singapore including any amendments or re-enactment thereto including but not limited to:-

- Code of Practice on Environmental Control Officer (ECO);
- Code of Practice on Environmental Health;
- Code of Practice for Noise Control on Construction and Demolition Sites
- Code of Practice on Pollution Control;
- Code of Practice on Surface Water Drainage;
- PUB's Guidebook on Erosion & Sediment Control at Construction Sites; and
- NEA's Handbook of Scope of Works for Mosquito Control.

1.3 The Contractor shall adopt the best environmental practices highlighted in the following:-

- Guidebook for Best Environmental Practices: Construction Waste Management at LTA Sites;
- Guidebook for Best Environment Practices: Noise Control at LTA Sites;
- Guidebook for Best Environmental Practices: Vector Control at LTA Sites;
- Guidebook for Best Environmental Practices: Water Resource Management at LTA Sites; and
- All other LTA environmental guidebooks and guidance (e.g. (i) Noise Guidance: Developing a Noise Management Plan in LTA Projects and (ii) Workplace Safety, Health and Environmental Good Practices Handbook)

The LTA guidebooks and guidance are available for viewing during the Tender Stage. A copy of the guidebooks will be issued to the Contractor upon award of the Contract.

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- 1.4 If an Environmental Impact Assessment (EIA) was conducted for the project, the Contractor shall:
- a) Comply with the recommendations in the EIA Report. In the event of differences between the EIA Report and other relevant authorities' requirements, the Contractor shall adopt the more stringent requirements;
 - b) Conduct an Environmental Impact Workshop within the first two (2) months upon the signing of Contract or as subjected to the Engineer's approval to establish site specific environmental management. The Contractor's Project Manager shall organise and lead the Environmental Impact Workshop to update and discuss with the Engineer on what has/will be implemented in response to the impacts and mitigation measures identified in the EIA Report;
 - c) Provide justifications and alternative solutions to reduce the impacts to as low as reasonably practical, subjected to approval by the Engineer in the event that the requirements of the EIA Report cannot be implemented;
 - d) Submit site-specific Environmental Impact Register in the format stated in Attachment A-6, according to the phases of construction. The Contractor shall document the mitigation measures that will/have been implemented to address the environmental impacts identified in the EIA Report; and
 - e) Manage and implement the Environmental Impact Register on a regular basis, or when necessary.
- 1.5 The Contractor shall submit site-specific environmental management plans which takes into consideration the relevant Regulations, Codes of Practice, LTA environmental guidebooks, guidances, and recommendations stated in the EIA Report (if an EIA had been conducted). These management plans shall be submitted to the Engineer for approval within three (3) months of contract award or as subjected to the Engineer's approval:
- a) Air Pollution Control Plan (shall include at minimum, requirements of air pollution control stipulated in Clause 5 of Annex A-g);
 - b) Vector Control Plan (shall include at minimum, requirements of rodent control and mosquito control stipulated in Clause 7 of Annex A-g);
 - c) Waste Management Plan (shall include at minimum, requirements of solid waste management stipulated in Clause 8 of Annex A-g);

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- d) Noise Management Plan (shall include at minimum, requirements of noise control stipulated in Clause 9 of Annex A-g);
- e) Earth Control Measures Plan (shall include at minimum, requirements of ECM stipulated in Clause 10 of Annex A-g); and
- f) Environmental Impact Register (if applicable)

1.6 The details and comprehensiveness of the plans shall be relevant to the complexity and scope of Works.

1.7 The Contractor shall continuously review and revise these management plans and they shall be submitted at least six (6) weeks prior to commencement of work due to:

- Change in site location,
- Change in construction phase,
- Change in construction activities, or
- As and when necessary.

1.8 The Contractor's environmental team shall comprise sufficient workers solely for the purpose of environmental control and maintenance, whereby they shall not be employed to work as part of the construction. These environmental workers shall be easily identifiable by attire, e.g. a different safety vest or helmet. The number of environmental workers to be appointed on site shall comply with the value stated in the table below, unless otherwise specified by the Engineer.

Contract Value	Number of environmental workers to be provided
Above S\$1 million to S\$20 million	At least 2
Above S\$20 million to S\$50 million	At least 4
Above S\$50 million	At least 6

1.9 The ECO shall attend professional courses, trainings, workshops or seminars recommended by the Engineer or published by NEA, PUB, Institute of Engineers, Singapore (IES), other relevant authorities or professional bodies. The ECO must ensure that the team of environmental workers have adequate training and knowledge of their job scope, and training records of these personnel are to be kept.

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- 1.10 The ECO shall be registered with the National Environment Agency (NEA) and have at least three (3) years of post-registration and practical experience relevant to the scope of Works of the Contract. If this requirement is not met, the Engineer may require that the proposed ECO to be employed on a six (6) month probation basis. Commencement of permanent employment is dependent on the performance of the ECO during the period of probation.
- 1.11 The Contractor shall put in place additional measures and resources as required by the Engineer if current measures/ resources are deemed insufficient. The Contractor shall deem to have considered means and included all costs to ensure that their operations are conducted in compliance to local environmental regulations and in an environmentally responsible manner. Any variation claims or claims for extension of time will not be permitted.

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2. RESOURCE CONSERVATION AND MANAGEMENT

- 2.1 The Contractor shall reduce energy and water consumption of the attached site offices by using energy-saving and water conservation appliances and adopting conservational practices.
- 2.2 For contracts above \$20 million, the Contractor shall appoint a Water Controller as per PUB's requirements on site. The Water Controller should at least be of an Engineer level and shall monitor water consumption on site and submit a Water Efficiency Management Plan yearly. The Contractor shall document and maintain all appliances and conservation practices.

Electrical Appliances

- 2.3 Electrical appliances such as refrigerators and air conditioners shall be procured from registered suppliers supplying registrable goods affixed with the Energy Label where the Energy Label shall be affixed only after the NEA has issued the Certificate of Registration (COR) for the model purchased.

Note: Registrable goods refer to goods listed under the Energy Labelling Scheme as specified by NEA.

- 2.4 The appliance shall have its energy efficient rating rated "Excellent".
- 2.5 The Contractor shall ensure that air conditioners are serviced regularly at a frequency of at least once a year to ensure the efficient running of the air conditioner.
- 2.6 Energy efficient lightings shall be used.

Water Efficient Products

- 2.7 The Contractor is required to install water efficient products based on the Mandatory Water Efficiency Labelling Scheme (Mandatory WELS) as well as from the Voluntary Water Efficiency Labelling Scheme (Voluntary WELS) implemented by PUB.
- 2.8 Water efficient products used in site office such as basin taps and mixers, low capacity flushing cisterns, urinal flush valves and shower heads shall be rated "Excellent".
- 2.9 For contracts above S\$20million, the Contractor shall install private water meters at various water usage areas to track and monitor water consumption on site and workers' dormitory (if any) in accordance to Public Utilities (Water Supply) Regulations.

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Paper Saving

- 2.10 The Contractor shall as far as possible, where printing is necessary, print on both sides of the paper.

3. SUBMISSION OF ENVIRONMENTAL INFORMATION

- 3.1 The Contractor shall submit operating and pollution data for his proposed plant and equipment when required by the Engineer.
- 3.2 The Contractor shall also maintain and make available resource usage data of the project. The data shall be in accordance to the scope of assessment defined in Attachment A-7 or as specified by the Engineer.
- 3.3 The Contractor shall be responsible for the accuracy of the data and auditable records shall be kept for verification or as requested by the Engineer.
- 3.4 The Contractor shall submit the data as part of the monthly SHE Report in the format stated in Attachment A-2.

4. CLIMATIC AND TIDAL CONDITIONS

- 4.1 In planning the control measures necessary to minimize environmental pollution, the Contractor shall take into account the climatic conditions in Singapore. Detailed statistics can be obtained from NEA's Meteorological Service Division.
- 4.2 Where the state of the tide would affect the control measures being implemented to minimize environmental pollution, the Contractor shall make reference to the tidal information available from the Maritime and Port Authority (MPA) of Singapore.

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5. AIR POLLUTION CONTROL

- 5.1 The Contractor is required to implement all necessary measures to prevent and control any atmospheric pollution (in the form of smoke, fumes, vapours, dust and other pollutants) on site. Accordingly, the Contractor shall undertake the following but not limited to:
- a) Submit a detailed air pollution control plan with the reporting format as specified in Attachment A-8 within three (3) months of Contract Award or as subjected to the Engineer's approval;
 - b) Ensure all air pollution control requirements such as the concentration and rates of emission of air pollutants are within legal limits;
 - c) Shield and / or arrest air pollutants with appropriate means, e.g. use of mechanical means, at source;
 - d) Pave all vehicular access with suitable materials such as concrete, mill waste or hardcore; and
 - e) Cover all temporary stockpiles with canvas sheets or erosion control blankets.
- 5.2 The Authority reserves the right to request for a newer machine or an emission control device to be installed if any machine or plant is deemed to be producing excessive smoke.

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6. WATER AND LAND POLLUTION CONTROL

- 6.1 No trade effluent other than that of a nature or type approved by NEA Director-General shall be discharged into any watercourse or land.
- 6.2 All activities involving repair, servicing, engine overhaul works etc. shall be carried out on an area which is appropriately contained (e.g. concreted area and with steel plates) and all wastes shall be channelled for appropriate treatment or disposal to meet the regulations. Oil removers/interceptors shall be provided to treat oil waste from workshop areas.
- 6.3 Diesel drums and chemicals shall be stored under shelter within concrete bund walls or in storage containers with good ventilation. Spill trays shall be provided for all drums, plants and machineries and potentially pollutive substances used on site. Spill trays shall be regularly maintained to prevent rain from washing out the pollutive substances.
- 6.4 The Contractor shall put in place a response plan to cater for accidental spillages into any watercourse. This plan shall be communicated to all project personnel.
- 6.5 The Contractor shall conduct an emergency spillage exercise at least once per year.
- 6.6 Emergency spill kits shall be provided on site in the event of any chemical spillages. Emergency response teams shall also be competent in the use of these spill kits.
- 6.7 All accidental spillages and trade effluent discharges shall be investigated and reported to the Authority.
- 6.8 Use of diesel on site shall also follow Clause 29.5 to 29.8 of Appendix A.

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7. VECTOR CONTROL

- 7.1 The Contractor is required to implement comprehensive vector surveillance and control on site, including all necessary measures to prevent the site from becoming favourable to the breeding and harbouring of vectors.
- 7.2 The Contractor shall submit a Vector Control Plan with the reporting format as specified in Attachment A-9 within three (3) months of Contract Award or as subjected to the Engineer's approval. Chemicals to be used for application are subject to the Engineer's approval.
- 7.3 The Contractor shall form an in-house pest control team to carry out vector surveillance and control work. Personnel involved in vector surveillance and control shall undergo relevant trainings which include but not limited to:
- Joint ITE-NEA Certificate in Pest Management for ECO or in-house pest control team supervisor;
 - Joint ITE-NEA Certificate in Pest Control for in-house pest control team; and
 - Trainings on understanding vector-borne diseases, identifying potential vector breeding grounds and measures to prevent the propagation of vectors for general workers.
- 7.4 The Contractor shall engage an external NEA-licensed Pest Control Operator (PCO) to supplement the in-house vector surveillance and control. The PCO shall carry out vector control and surveillance at least once a week. Additional PCO services will be required during epidemic periods and incremental costs to provide for additional PCO services are deemed to have been included.
- 7.5 During the construction period, the Contractor or his hired PCO must maintain a site register which gives an up to date account of surveillance and control work that has been carried out. This register must be made readily available upon request.
- 7.6 Any person found on site to be a carrier of or contracted with the dengue/dengue haemorrhagic fever, zika, malaria, Chikungunya or any other vector-borne disease shall be removed from site to prevent transmission of the disease. The Contractor shall develop a response plan specifying the measures to be taken in the event that any person found on site is discovered to be a carrier of or contracted with any vector-borne disease.

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Mosquito Control

- 7.7 Source reduction shall be the main form of mosquito control on site, which includes but not limited to the following control measures:
- Keep good housekeeping;
 - Construct and maintain a proper drainage system;
 - Dispose unwanted receptacles;
 - Remove stagnant water from canvas sheet, water tanks and containers;
 - Trim excessive vegetation; and
 - Check for defects of potential breeding grounds and rectify (e.g. fill up ground depression).
- 7.8 In the event stagnant water cannot be thoroughly removed, larvae and pupae control shall be carried out to eliminate or prevent mosquito from breeding, through the application of anti-mosquito oil, non-restricted larvicide, and *Bacillus thuringiensis israelensis* (Bti) or equivalent. The Contractor shall ensure control measures are administrated to all potential areas of breeding. Pesticides classified under “Restricted Use” shall only be handled by licensed PCO, and the Contractor’s in-house pest control team shall not be involved in the use of such restricted items.
- 7.9 Prior to the commencement of site clearance, the Contractor shall identify any irregularities within the site for potential pre-existing vector conditions. PCO shall be engaged to review, propose and carry out intervention/supplementary measures for the control of mosquito breeding and rodent infestation. In the event of pre-existing vector conditions, the Contractor shall provide supporting documents and consult NEA for control measures.
- 7.10 The in-house pest control team shall carry out search and destroy activities of any potential breeding grounds, especially after every rainfall, using the “zoning method”. The team shall:-
- a) Divide the construction site into a maximum of three (3) zones for vector control particularly for mosquito control;
 - b) Carry out vector surveillance and control activities in at least one (1) zone per day; and

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- c) Ensure that sub-contractors are carrying out proper housekeeping at their individual work zones to complement the in-house pest control team's effort.

- 7.11 The Contractor shall regularly monitor the adult mosquito population using well-maintained gravidtraps. Gravidtraps shall be placed in an area with good housekeeping, under shade and on a levelled ground for it to be effective. The records shall be documented and submitted to the relevant agency when requested.
- 7.12 Thermal fogging shall only be carried out when there is high population of adult mosquitoes and / or when the sites are located in dengue / zika clusters.. The Contractor shall ensure that the PCO has obtained approval from NEA before fogging is carried out on site.
- 7.13 All site offices / containers must have a sloping / pitched roof installed with the sides adequately shielded from rain. Containers for office or storage purposes on site shall be sited on concrete paved ground with perimeter drains for effective surface water drainage.
- 7.14 The Contractor shall ensure that no puddles of water are formed on the ground by using appropriate cover such as concrete paved, milled waste or steel plates.
- 7.15 The Contractor shall adopt the LTA Dengue Contingency Plan (specified in Section 6 of Attachment A-9) and shall report all suspected dengue / zika cases to the Authority based on the response plan.
- 7.16 In the event where mosquito breeding is discovered on site by NEA, the Contractor is to carry out a Vector Control Time-out. The Time-out shall involve thorough search and destroy effort to eliminate any potential breeding grounds.
- 7.17 The Contractor shall implement a system of tracking and maintain an updated list of all personnel entering the site. The information shall include at a minimum the personnel's nationality and residential address.
- 7.18 The Contractor shall have isolation procedures and a room on site to isolate worker(s) suspected to have contracted dengue / zika. This room shall be designed to prevent mosquitoes from entering and shall also be well-ventilated.

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Rodent and Fly Control

- 7.19 Source reduction shall be the main form of rodent and fly control. Food shall be properly stored in rodent-proof container with close-fitting lids in designated food storage area, and consumption must be strictly restricted to designated canteen or worker rest areas where lidded rubbish bins are available.
- 7.20 Food waste shall be contained in plastic bags before disposal into bins. Food waste shall be removed daily and the bins shall be cleaned regularly to prevent fly and rodent infestation.
- 7.21 In-house pest control team and NEA-licensed PCO shall also look out for evidences of rodents and their burrows during their rounds. Also, the in-house pest control team shall seal up cracks and holes on site to deter rodents' ingress.

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8. WASTE MANAGEMENT

- 8.1 The Contractor is required to identify all types of waste (e.g. tunnelling waste, chemical waste, wood waste, metal waste etc.) and implement a comprehensive waste management system at the site in order to minimise wastage, ensure proper disposal and prevent pollution to the environment.
- 8.2 The Contractor shall submit the waste management plan to the Engineer for comments within three (3) months of Contract Award or as subjected to the Engineer's approval. The waste control plan shall be in line with reporting format in Attachment A-10.

Solid Waste Management

- 8.3 The Contractor shall carry out effective on-site sorting of construction and demolition waste, for example, separate skip bins for construction waste; wood waste; metal waste, etc. (to recover inert, reusable and / or recycle-able portion shall be provided). These skip bins shall be properly labelled.
- 8.4 The system of on-site sorting and temporary storage of construction and demolition waste shall include but not limited to the following:
- a) Metals shall be recovered for collection by recycling contractors;
 - b) Cardboards and paper packaging shall be recovered, properly stockpiled in dry and covered conditions to avoid cross contamination by other construction and demolition materials; and
 - c) Excavated materials shall be sorted to recover inert portions (e.g. soil and crushed rocks) for re-use on site or disposal to designated filling areas.
- 8.5 An adequate number of bins of capacity not less than one (1) cubic metre shall be provided on site for the storage of all inorganic waste such as building debris, scrap metal, dust, dirt and litter.
- 8.6 An adequate number of bins with air-tight covers of not less than 85 litres shall also be provided for the storage of organic waste on site, especially at canteens and rest areas.
- 8.7 All bins containing the site waste shall be cleared regularly to prevent build-up in these bins. They shall be removed from site and replaced / emptied once they have been filled.

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- 8.8 All construction debris (under category C&D) shall be disposed of at the gazetted Government dumping grounds or at such other sites or locations as directed by NEA. Disposal of domestic refuse may be arranged with the Environmental Public Health Division (EHD). The Contractor shall pay all tipping fees at the gazetted dumping grounds.
- 8.9 The Contractor shall conduct housekeeping at least once a day to ensure that all litter is cleared from site.
- 8.10 All waste listed in the Environmental Public Health Regulations (i.e. General Waste and Toxic Waste) shall be disposed in accordance to the regulations and by NEA licensed waste operator/collector. Records of the disposal of these wastes shall be kept for audit purposes.
- 8.11 The Contractor shall not allow animals e.g. dogs to be present on site. All food waste shall also be protected from animals scavenging for food.

Wastewater Management

- 8.12 The Contractor shall ensure that discharge of wastewater complies with all applicable statutory regulations, including the Sewerage and Drainage Regulations and Environmental Protection and Management Regulations.
- 8.13 The Contractor shall submit the process for wastewater management as part of the Waste Management Plan as specified in Attachment A-10.
- 8.14 For wastewater (such as wastewater laden with chemicals from boring, diaphragm wall construction, EPB / slurry tunnelling, washing activities, etc.) generated due to the Contractor's work, the Contractor shall provide adequate separate containment, apart from surface runoff, and either treat in-situ to allowable discharge limits before discharging or dispose via licensed waste collector. The Contractor shall note that Earth Control Measures (ECM) are meant for the containment and treatment of silty rainwater runoff only, and not meant for the treatment of process water, such as oil, grease, cement and bentonite from tunnelling activities.
- 8.15 The Contractor shall minimise the volume of wastewater generated at source. Methods shall include reducing groundwater ingress into work areas, such as station, tunnel and shaft; reducing water usage for washing of tunnel and opting for manual scooping of spilled muck; minimising mixing of rainwater with wastewater; providing secondary containment for chemical drums inside TBM, etc.

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- 8.16 For wastewater that is treated in situ on site, the Contractor shall seek the approval of the relevant authorities, including PUB and NEA, prior to discharging the treated wastewater into the sewer, watercourse or controlled watercourse. The Contractor shall engage a wastewater solution provider to design, install and maintain adequate treatment system to treat the wastewater to meet the respective allowable limits for the relevant parameters, such as pH, total suspended solid, total dissolved solid and chloride, before discharging the wastewater.
- 8.17 The Contractor shall also send samples of the treated wastewater at the final discharge point to an accredited laboratory for analysis to determine compliance with the applicable Environmental Protection and Management (Trade Effluent) Regulations or Sewerage and Drainage (Trade Effluent) Regulations, depending on the location of the discharge point, on a quarterly basis, or as and when requested by the Engineer. The Contractor shall maintain a proper record of all the sampling reports.

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9. NOISE MANAGEMENT

- 9.1 A Noise Management Plan (NMP) relevant to the scope and complexity of the project shall be developed and submitted to the Engineer within three (3) months of contract award or as subjected to the Engineer's approval.
- 9.2 For contracts above S\$20 million, the Contractor shall appoint an acoustic consultant with at least three (3) years of relevant experience, subject to the Engineer's approval, to prepare the NMP on behalf of the contractor and shall adopt the reporting format as specified in Attachment A-11a. For contracts below S\$20 million or subjected to Engineer's approval, the NMP may be prepared by the Contractor as specified in Attachment A-11b.
- 9.3 This NMP shall be developed, where applicable, from making reference to the EIA, where impacts and recommendations are described in the Noise Impact Assessment, as mentioned in clause 1.4. The NMP shall be site-specific and in accordance to the respective construction phases of work. It shall be implemented once approved. The proposed NMP shall include but not limited to the following requirements:
- a) A baseline survey of noise levels conducted on a continuous basis for a period of one week (refer to clauses 9.43 - 9.47). The survey period shall include at least a weekday and a weekend.
 - b) Site-specific mitigation measures (refer to clauses 9.16 - 9.42) including but not limited to acoustic enclosure(s) in accordance with the respective construction phases.
 - c) Noise simulation (for contract sum S\$10 million and above, and of structural and building work scope) by first taking into account the baseline survey of noise levels and Noise Sensitive Receivers (NSRs). Subsequently simulation shall be conducted using sound modelling software such as CadnaA, SoundPlan or equivalent, to determine the predicted noise levels during each construction phase (including major traffic diversion). Finally, simulation shall be conducted to determine the noise levels after the installation of proposed mitigation measures, which shall meet the allowable noise limits for all NSRs.
 - d) A public relations and feedback management plan shall be established.

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- 9.4 The Noise Management Plan shall be submitted and presented to the Engineer for approval prior to the implementation of mitigation measures. If noise levels recorded are found to breach the permissible limits set out by the relevant authority, the mitigation measures shall be reviewed and the Noise Management Plan shall be re-submitted to the Engineer for approval.
- 9.5 The Acoustic Consultant (where applicable) shall propose and conduct regular site inspections on the implementation of the noise mitigation measures. During the inspections, noise monitoring shall be conducted to test the effectiveness of the mitigation measures. A report shall be submitted at the end of every inspection and review of measures shall be done when the measures are deemed inadequate by Consultant.
- 9.6 The Contractor shall monitor and measure the effectiveness of the mitigation measures throughout the construction phase of the project.
- 9.7 The Contractor shall notify the Engineer immediately and keep a copy of all fines/complaints/ stop work orders received.

Consideration for School Examination Periods and Public Feedback

- 9.8 The Contractor shall note that all construction works, which generate substantial noise, shall not be carried out during the school examination periods.
- 9.9 The Contractor shall obtain an official confirmation of the examination schedules from the School Administrator including revision of schedules.
- 9.10 The Contractor shall note that the Engineer has the right to give instructions to stop construction work activities temporarily during school examination periods, near to any educational institutes or schools.
- 9.11 The Contractor shall deem to have scheduled his work programme accordingly so as to avoid delay. Any claim for extension of time will not be permitted.
- 9.12 The Contractor shall commit sufficient resources into public relations work to establish good rapport with the community. The Contractor shall engage stakeholders and the community before commencement of Works and regularly throughout the work duration. Such activities shall be subject to the Engineer's approval.

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- 9.13 The Contractor may be directed by the Engineer to suspend works immediately due to public feedback of noisy activities arising from the Works. The Contractor shall take adequate measures to protect all uncompleted works. Where the relevant works are temporary suspended under this clause, the Contractor shall deem to have included such incidents in his tender accordingly. The Contractor shall not be entitled to any extension of time and any loss and expenses incurred arising from such temporary suspension of the works.
- 9.14 Upon receiving feedback, the Contractor shall provide information with regards to works carried out during the period of time where the complaint was lodged and the additional mitigation measures implemented. This information shall be disseminated to the Engineer as well as to Safety Division.
- 9.15 The Contractor's PRO shall follow up with complainant and the outcome of the engagement shall be reported back to the Engineer as well as to Safety Division.

Noise Mitigation Measures (Source Reduction)

- 9.16 The Contractor shall ensure that excessive noise is avoided at all times to protect nearby residents/ occupants and site personnel.
- 9.17 The Contractor while preparing the programme for the Works, shall take into account the non-working restriction and the site layout in order to minimise noise for as far as possible, including but not limited to the consideration of using materials and other intermediate stages of construction such as noise barriers, etc.
- 9.18 While planning for the Works, the Contractor shall review the working hours and consider the effects of construction noise on personnel working in or around the site as well as the neighbourhood within proximity of the site. The Contractor shall take into account the nature of the land use in the area, duration of works and the effect of lengthening works period or other nuisances which may affect the neighbourhood.
- 9.19 Sensitive receivers shall be identified and mitigation measures implemented before work commences. The Contractor shall take all practicable measures as outlined in this Annex as well as SS 602 to reduce noise arising from site activities to a minimum.

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- 9.20 The Contractor shall note that the construction equipment and methods of work which cause excessive noise will not be allowed to be used on site. The Engineer has the discretion to require the Contractor to take necessary precautions, whether specified herein or not, to maintain or to repair such construction equipment or to instruct their removal from site when it is determined that the noise level generated from the construction works fails to comply with regulations and standards as stated in this Annex. Machinery and equipment shall be enhanced acoustically as directed by the Engineer.
- 9.21 Where available, only sound-reduced machinery and equipment (as per manufacturer's specifications) are allowed to be used on site. Examples include:
- All compressors, generators, welding sets etc. shall be of sound reduced models fitted with properly lined and sealed acoustic covers which shall be kept closed whenever the machines are in use and all ancillary pneumatic percussive tools shall be fitted with mufflers or silencers of the type recommended by the manufacturer.
 - Rotary drills and busters actuated by hydraulic or electrical power shall, where practicable, be used for excavating hard material. Noisy construction plants, such as cement batching plant, shall be sited as far away as possible from occupied buildings with noise barriers erected, specifying the proposed location for the noise barriers.
 - Quieter soil dislodgement methods shall be adopted during bored piling, such as the use of modified auger bucket, auger cleaner, noise dampening Kelly bar etc. (as per Annex A-r).
 - Silencers, where practicable, shall be fitted at the end of the ventilation fan of the type recommended by the manufacturer.
- 9.22 It is the Contractor's responsibility to ensure that the machinery / equipment are maintained and operating to the standards indicated in their respective specifications.
- 9.23 Ventilation fan shall be housed in celcon block walls with built-in rock wool, unless otherwise counter-proposed with better acoustic alternative and subjected to the Engineer's approval. Due considerations for health and safety shall also be given for the usage of rock wool on site.
- 9.24 All machinery in intermittent use shall be shut down or throttled down to a minimum in the intervening periods between works.

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- 9.25 The Contractor shall only use power supplied by PowerGrid. Where this is not possible, the Engineer may require that sound-reduced generator sets housed in acoustic sheds be used.
- 9.26 Care shall be taken when loading or unloading vehicles, dismantling scaffolding or moving materials to reduce impact noise. Access to the working areas shall be such as to ensure minimum disturbance to persons in occupied buildings. The Contractor shall not execute any of the works or carry out maintenance of construction plant in such a manner as to cause nuisance unless the work is absolutely necessary for the saving of life of property or for the safety of the works, in which case the Contractor shall immediately advise the Engineer.
- 9.27 No piling works will be allowed from 10pm to 7am unless both machinery and method are of a quiet nature (as substantiated by manufacturer's specifications and measured noise levels from a trial test where representatives from both the Contractor and the Engineer are present).

Noise Mitigation Measures (Barriers and Enclosures)

- 9.28 The Contractor shall take into account during design stage to avoid holes / gaps, etc. through or beneath the proposed noise barriers or full acoustic noise enclosures as these will affect the effectiveness of acoustic performance. Any damages to the noise barriers or acoustic enclosures during construction resulting in holes/gaps, etc. shall be repaired immediately.
- 9.29 Prior to the erection of full length perimeter noise barriers, temporary barriers with a minimum of Sound Transmission Class (STC) 18, unless otherwise justified to be non-implementable due to site constraint or safety reason to the Engineer, shall be used around noisy activities.
- 9.30 Full length noise barriers shall be erected at immediate site boundaries facing any affected buildings as stated in Environmental Protection and Management (Control of Noise at Construction Sites) Regulations as specified by NEA before work commences, unless otherwise justified and accepted by the Engineer. Such barriers shall have been tested to have a minimum of Sound Transmission Class (STC) 20, erected with a 45 degree cantilever extension at the top of the barriers as per Attachment A-11C. The detailed design will be issued to the Contractor after the award of Contract and upon the execution of a non-exclusive licence agreement with LTA and its collaborator. The barriers shall be at least 12m in height excluding the cantilever or break the line of sight from receiver to noise source.

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- 9.31 Should the noise mitigation measures be deemed inadequate to meet the regulations, the Contractor shall provide additional measures to meet the regulations.
- 9.32 Noisy construction activities arising out of the Works that may exceed the construction noise permissible limits shall be barricaded with localised portable acoustic panels unless otherwise justified and accepted by the Engineer. Such panels shall have been tested to have a minimum of Sound Transmission Class (STC) 18. For piling rigs, a 2-layer localised noise enclosure with a cantilever extension shall be erected to cover the rotary head as per Attachment A-11C. The detailed design of the 2-layer localised noise enclosure with a cantilever extension will be released to the Contractor after the award of the Contract and upon the execution of a non-exclusive licence agreement with LTA and its collaborator.
- 9.33 All launch shafts, including muck pits, and slurry treatment plants shall be housed within a full acoustic enclosure (i.e. top-and-4-side covered), unless otherwise justified non-implementable due to site constraint/ safety reason or not facing any affected buildings as stated in Environmental Protection and Management (Control of Noise at Construction Sites) Regulations as specified by NEA and subject to the Engineer's approval. Where a full enclosure is not possible, an acoustic enclosure with the opened face oriented away from any residential / sensitive premises and covered with retractable acoustic rolling shutters shall be considered. Pipes transporting bentonite shall also be shielded by acoustic materials. Related works such as trucks removing tunnelling waste (slurry / muck) from site shall be carried out during daytime only, unless otherwise approved by the Engineer.
- 9.34 Full enclosures shall be of sufficient height and width to accommodate for machinery / equipment housed within it. It shall regard space requirements related to construction activities carried out within the enclosure and all considerations related to safety and health precautions. This includes but is not limited to: the latest Fire Safety Act and Fire Code issued by Singapore Civil Defence Force (SCDF) and Fire Safety and Shelter Department (FSSD).
- 9.35 The proposed full acoustic enclosures shall achieve noise level reduction by at least 10 db(A) when measured outside the noise enclosure and ensure that the noise level generated during construction works are within the permissible limits set out by the relevant authority.
- 9.36 The design of the full enclosure shall include, but not limited to the following elements: material, dimension and orientation of enclosure. The Contractor shall also specify details of the above factors in the Noise Management Plan (Attachment A-11a or A-11b) and submit to the Engineer for acceptance.

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- 9.37 The layout of the full enclosures shall be designed to facilitate easy means of evacuation during emergencies with exit points clearly marked.
- 9.38 Highly flammable substances shall not be stored within the full enclosures.
- 9.39 Where possible, all permanent work areas shall be housed in an acoustic enclosure with the openings oriented away from any residential / sensitive premises.
- 9.40 Noisy activities such as bore piling works shall be barricaded with localised portable acoustic panels whenever possible.
- 9.41 Preparation for traffic diversion work must be carried out during the day and only the actual diversion will be allowed to carry out at night. Where activities have to be carried out at night (as approved by the Engineer), portable acoustic barriers must be set up in advance of such works. Residents must also be informed in advance of traffic diversion works.
- 9.42 For milling and patching works to be carried out at night, portable acoustic panels / enclosure must be deployed before commencement of such works.

Noise Measurement

- 9.43 The Contractor shall provide all necessary competent and qualified personnel and suitable equipment for all measurements and recordings of noise levels.
- 9.44 Locations of such noise measurements shall be at buildings likely to be affected by the construction works or as directed by the Engineer.
- 9.45 At any time during the Contract period as directed by the Engineer and after the project is completed and opened to traffic, the noise survey or part of it shall be repeated to establish any change in the noise levels.
- 9.46 The Contractor shall ensure that the baseline survey is representative of the baseline situation. Noise measurements taken for baseline survey will be required for buildings within 150m from the boundary of the construction site. Noise levels at buildings shall be measured 1m away from the nearest façade of the building facing the site and readings shall be taken from the location where the real time noise meters will be installed (typically at top storey) or as directed by the Engineer. Noise levels may also be required at locations other than buildings.

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- 9.47 Noise measurements are to be taken at least 1.5m above grade without any obstructions / obstacles in the direction of measurement.
- 9.48 The Contractor shall install real time “live” monitoring devices to monitor the noise levels for the entire construction period, unless exempted by NEA. This system shall be equipped with a SMS “alert” feature when allowable limits are exceeded. Access to the system shall be made available to the Engineer.
- 9.49 In addition, the Contractor shall monitor the noise levels for the whole duration of noisy activities, night works and works carried out over the weekends using portable noise meters. The portable noise meter shall be made readily available for ad hoc monitoring/ upon request.
- 9.50 The real-time, baseline survey and portable monitoring devices shall be of Type 1 standard.
- 9.51 All machinery and equipment on site must have both the noise emission levels of: a) engine noise and b) operational noise under normal operating conditions, clearly indicated on a weather-proof sticker pasted at the side of the machinery. Such emission levels should be measured at source (1m to 3m away).
- 9.52 The Contractor shall monitor and submit in the Monthly SHE Report a weekly graphical comparison of the noise levels recorded against the permissible noise limits for the month.

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10. EARTH CONTROL MEASURES

- 10.1 The Contractor shall be responsible for preventing silt from being washed into public drains by implementing Earth Control Measures (ECM) for the construction site. The discharge into public drains shall not contain Total Suspended Solids (TSS) in concentration greater than the prescribed limits under Regulation 4(1) of the Sewerage and Drainage (Surface Water Drainage) Regulations.
- 10.2 The Contractor shall note that the ECM are for the containment and treatment of silty discharge due to the impact of rainwater. ECM are not meant for the treatment of wastewater due to construction activities (such as slurry from tunnelling, pipe-jacking and bore-piling works) which shall be treated to comply with the requirements under Environmental Protection and Management Act (Chapter 94A).
- 10.3 No earth works shall commence without adequate ECM facilities to ensure no discharge containing TSS in concentration greater than the prescribed limits under Regulation 4(1) of the Sewerage and Drainage (Surface Water Drainage) Regulations throughout the project, especially during the site clearance stage.
- 10.4 In his tender submission, the Contractor shall submit his schematic ECM plans of the construction site for the contract duration taking into account the different phases of construction activities, including site clearance. He shall also provide the name of the Qualified Erosion Control Professional (QECP) who will be endorsing the ECM plan after the tender is awarded.
- 10.5 These schematic ECM plans shall make the Contractor aware of the ECM requirements and the cost to implement an effective ECM. Notwithstanding the submission of these schematic ECM plans, the Contractor shall deem to have priced for the ECM in the contract sum.
- 10.6 Before construction works commence on site, the Contractor shall engage a QECP to plan and design the ECM, and he shall install the ECM according to the QECP's design.
- 10.7 The Contractor shall submit the ECM proposal duly endorsed by his QECP to the Engineer for comments. The comments shall be addressed before submitting to the relevant Authority for records. The ECM proposal shall consist and follow the format seen in Attachment A-12 and shall be submitted within three (3) months of contract award or as subjected to the Engineer's approval.

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- 10.8 The Contractor shall ensure that their engaged QECP conduct monthly site inspection to verify ECM implementation and its effectiveness during construction and submit an ECM inspection report with the format specified in Attachment A-13 unless otherwise exempted by the Engineer.
- 10.9 For construction sites involving earthworks with site area of 0.5ha and above, the Contractor shall have an ECO with Earth Control Measures Officer (ECMO) qualification on site to ensure that the implementation, maintenance and inspection of ECM are in accordance to the QECP's design. The ECMO shall also monitor the effectiveness of ECM throughout the various stages of construction.
- 10.10 The Contractor shall also ensure that a Certificate of Clearance is obtained from PUB and the ECM be installed according to the endorsed plan before commencement of works.
- 10.11 During construction, the Contractor shall ensure the following measures are implemented on site, where applicable:

Erosion Control Measures

- a) Sequence and schedule of the earthworks / demolition works in stages and progressively with the subsequent construction activities and building works;
- b) Minimise site disturbance by keeping site clearance works to a minimum by retaining as much of the existing vegetation as possible;
- c) Pave up bare surfaces and all construction access by concrete or milled waste or other materials deemed suitable by the Engineer;
- d) Protect bare slopes with close-turfing, concrete grouting, erosion control blanket or canvas;
- e) Protect earth stockpiles with erosion control blanket or canvas;
- f) Restore ground cover over disturbed areas, which are or have become bare, as soon as possible;
- g) Carry out trench excavation work in sequence with the progress of permanent works to minimise impact on the environment;

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- h) Identify the exposed bare surfaces and slopes for turfing or paving operation before the start of each phase of the project and restore ground cover over disturbed areas as soon as possible; and
- i) Implement the appropriate covers, such as vegetation, hardcore, milled waste, concrete and erosion control blanket, to minimise the extent of any exposed earth surfaces.

Sediment Control Measures

- a) Minimum C7 precast channel or concrete-lined cut-off drains shall be constructed within the construction sites;
- b) Silt fences shall be erected in front and along cut-off drains. The silt fence shall be embedded firmly into the ground and constructed from an approved geotextile filter fabric to capture the sediment from storm water runoff. The sediment built-up behind the silt fence must be regularly removed;
- c) Intermediate silt traps of suitable size shall be installed at regular intervals along the perimeter lined cut-off drain. Within the intermediate silt traps, suitable geotextile filter fabric or equivalents shall be installed across the full depth and width and / or coagulation-assistance materials shall be placed. Silt traps relying primarily on hardcore, granite chips or sands for filtration are not acceptable;
- d) The bio ball filtration system and / or other appropriate methods as approved by Engineer shall be used as part of the filtration system to control sediment;
- e) Sedimentation basin and / or storage pond/tank of adequate size and sufficient numbers shall be provided before treatment. It shall be minimum concrete lined and designed with storage capacity which complies with the design criteria specified in the Code of Practice on Surface Water Drainage;
- f) Suitable water treatment system / unit of adequate size and sufficient number shall be installed to treat only stormwater runoff before the discharge points into public drain;
- g) Water treatment system shall be equipped with a continuous, real-time, "live" monitoring of turbidity and TSS before any final discharge point and an on-line CCTV system at the public drain downstream of their final discharge outlet(s) to the public drain. This system should consist of a SMS "alert" feature when allowable limits are exceeded. The Contractor shall also submit the monitoring system proposal to the

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Engineer for acceptance. Access to the system shall be made available to the Engineer;

- h) The CCTV system shall comply with the Code of Practice on Surface Water Drainage under Regulation 4(2) of the Sewerage and Drainage (Surface Water Drainage) Regulations;
- i) The TSS monitoring meter shall be calibrated on a yearly basis.

- 10.12 As part of the maintenance regime, the Contractor shall monitor the TSS value of discharged water using a portable TSS meter and compare the reading against the value provided by the real-time TSS meter of the treatment plant to determine if it is working properly. This shall be recorded and made available upon request. The portable TSS meter shall be made available for ad hoc monitoring / upon request.
- 10.13 The Contractor shall ensure all excavated materials and spoils are removed from site by the end of the day.
- 10.14 The Contractor shall ensure the designed and installed ECM is continuously reviewed by the QECP for every stage of the construction and earthworks.
- 10.15 The Contractor shall maintain the ECM for the whole duration of the contract to ensure that it is effective at all times. Proper records detailing the maintenance works, supported by dated photographs, shall be kept by the Contractor for verification.
- 10.16 In the event that there is any accidental discharge of silty water, the Contractor shall immediately activate emergency response measures to prevent the spread and to clean up the affected area. If the silty discharge is discovered by the relevant enforcement authority (i.e. PUB), the Contractor shall follow the PUB-LTA Working Response Protocol Framework (specified in Section 6 of Attachment A-12) to provide prompt investigation reporting to the Engineer and PUB.
- 10.17 The Contractor shall not remove the ECM until all works are completed and upon the advice of his QECP. The Contractor shall inform PUB and the Engineer prior to removal of ECM on completion of the project.

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11. TURBIDITY CURTAIN

- 11.1 For water bodies which are raw water sources for potable water and / or need for recreational purposes, high turbidity of the water in the water body will affect the treatment costs for potable water and / or the recreational use.
- 11.2 For works in such water bodies, turbidity curtains shall be installed. The works including the design, fabrication, and installation of the primary and secondary turbidity curtains shall ensure that the turbidity of water in the water bodies around the works shall not exceed the pre-existing levels or 50mg/l, whichever is greater.
- 11.3 The works in this Specification consists of all construction operations relating to the turbidity curtain. These construction operations include, but are not necessarily limited to the following:
- a) Design, manufacture, install and maintain primary and, if necessary, secondary turbidity curtain(s) around the areas of marine construction, either across the water body to enclose the entire work area, or individual curtains within / around / along the water body to enclose work areas;
 - b) Curtain(s) shall remain in place during excavation, installation of piles, foundations etc and backfilling works. The Contractor shall ensure that the curtain(s) is / are in good working condition for the duration of construction works. The turbidity curtain(s) shall not be removed until all operations have been completed and the water quality within the confines of the turbidity curtain meets the standards; and
 - c) The primary turbidity curtain shall be installed as specified. The secondary curtain(s) shall be installed as and when necessary to meet the requirements of these specifications.
- 11.4 The purpose of the curtain(s) is to meet the water quality standards by minimizing the transport of turbidity and other constituents generated by construction activities in the water body. This includes excavation, wet recovery of micro tunnel equipment, bentonite slurry use, tremie concrete operations, backfill and all other construction activities conducted in or near the water body. The turbidity curtain system shall provide sufficient residence time to allow soil or bentonite slurry particles to fall out of suspension, reduce turbidity, and meet the water quality standards.

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- 11.5 Since it will require time to install additional, secondary turbidity curtain(s), the Contractor shall take turbidity measurements at specified distances from the edge of each outermost installed curtain to allow time to install secondary curtain(s) before the turbidity limit is exceeded.
- 11.6 The Contractor shall develop a plan to monitor the turbidity throughout the water column at three distances from the edge of each outermost installed turbidity curtain. Make initial measurements at a distance of 30m, 60m, and 100m from the edge of the primary curtain with turbidity measured at four (4) depths in the water column, then adjust distance and depth as appropriate based on direction of the plume, plume velocity, and the change in turbidity with distance from the work area. Initial measurement shall be made three (3) times a week.
- 11.7 The Contractor shall ensure the approved design of secondary curtain(s) is available before starting the excavation. Furthermore, for each area surrounded by a primary turbidity curtain, have at least one (1) secondary curtain available onsite and ready for installation after the turbidity limit is exceeded at a distance of 60m from the edge of the installed primary curtain.
- 11.8 The above requirements shall be met before construction activities begin.

Submission

- 11.9 Prior to manufacturing the primary and secondary curtain(s), submit the details of the primary and secondary curtain fabrication including:
- a) Material certifications and data on physical properties and ultraviolet resistance of permeable and impermeable curtain fabrics;
 - b) Shop Drawings for curtain and appurtenances;
 - c) Design analyses and calculations;
 - d) Installation plan and configuration;
 - e) Flotation and anchoring plan;
 - f) Maintenance plan;
 - g) Methods for providing entry and exit through curtain(s) as necessary for construction of all offshore work;
 - h) Manufacturer / Supplier qualifications; and
 - i) Profile of water body bed along curtain alignments.

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Curtain Specifications

- 11.10 Primary Turbidity Curtain
 - 11.10.1 Curtain Section: Curtain shall be a combination of permeable or impermeable materials. Curtain shall be heavy-weight, flexible, nylon-reinforced, polypropylene filter fabric, or flexible nylon reinforced thermoplastic as necessary to control turbidity created during construction, sewn into panels, hemmed, and edges finished to prevent raveling.
- 11.11 Secondary Turbidity Curtain(s)
 - 11.11.1 Curtain Section: As hereinbefore specified for primary curtain or as necessary to control turbidity in the vicinity of the construction.
- 11.12 Connectors
 - 11.12.1 Provide the curtain with appropriate galvanized steel snap hooks and rings for connecting load lines.
- 11.13 Flotation
 - 11.13.1 Provide a sufficient number of expanded polystyrene floats sufficient to keep the top of the curtain above the water surface with a minimum of 150mm of freeboard at all times.
- 11.14 Ballast and Anchorage
 - 11.14.1 Each curtain shall be equipped with a galvanized steel chain integrated into the bottom of the fabric to keep the curtain vertical and in contact with the bottom of the water body. Each curtain shall also be anchored to the water body bed to prevent excessive displacement from wind, waves and currents. The ballast, anchorage, and flotation shall be designed by the curtain manufacturer for the wind and wave conditions, bottom profile, and changes in water level. Anchors shall be spaced as necessary to secure each curtain and keep it stable in all conditions. Anchorage and/or flotation shall be designed to keep the top of each curtain above the water surface when subjected to wind or wave forces.
 - 11.14.2 Design, provide, and install shore anchoring where each curtain is attached to the shoreline. Design, provide, and install marine anchorages as necessary to secure each curtain.

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- 11.15 Load Line
 - 11.15.1 Fit the curtain(s) with galvanized wire rope with vinyl coating of sufficient strength to resist all internal and external loading.
- 11.16 Oil Booms
 - 11.16.1 Oil booms, skimming devices, and pollution containment devices shall be provided as and when necessary to prevent contamination of the water.
- 11.17 Pre-installation Profile
 - 11.17.1 Prior to manufacturing the curtain(s), develop a profile of the water body bed for each curtain location. Verify the depth of curtain, especially if the curtain is to be anchored to the shoreline to confirm the bottom profile at the exact location of curtain placement.
 - 11.17.2 The curtain manufacturer shall use this information to dimension the curtain(s) with allowances for water level changes.
- 11.18 Curtain Design
 - 11.18.1 The curtain and oil boom systems shall consist of a primary impermeable curtain, plus secondary curtain(s) as necessary to meet the water quality standards specified.
 - 11.18.2 Each primary curtain shall have an impervious section that is full depth and is in contact with the bottom of the water body.
 - 11.18.3 Each secondary curtain, if used, shall consist of an impervious section that extends up to a height as necessary to control turbidity.
 - 11.18.4 Design each curtain for a useful life of at least the duration of the project.
 - 11.18.5 Design curtain system for all temperature, wind, wave and current conditions at the project site as well as the anticipated varying water levels.
 - 11.18.6 Design curtain system to meet the water quality standards.
- 11.19 Curtain Fabrication
 - 11.19.1 Each curtain shall be manufactured / supplied by a specialty subcontractor with experience in turbidity curtain design and fabrication.

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- 11.19.2 Design curtain to accommodate expected water level variations. If necessary, provide each curtain with additional longitudinal panels that can be added when the water level rises and with removable panels that can be pulled out when the water level drops.
- 11.19.3 Access Gate: Provide means for movement of equipment or materials through the curtain as may be required for operations.

Curtain Installation

- 11.20 Primary Curtain Installation
 - 11.20.1 The exact locations shall provide sufficient working space compatible with the construction methods and also within the work limits of the contract. Install primary curtain before commencement of any works in or around the water.
 - 11.20.2 Deploy the curtains in conformance with the manufacturer's recommendations.
- 11.21 Secondary Curtain Installation
 - 11.21.1 If the turbidity measured 60m from the primary curtain exceeds the water quality standards, install secondary curtain(s).
 - 11.21.2 Have the assembled curtain materials on site and install secondary curtain within 2 days of the day the turbidity exceeds the water quality standard.

Maintenance

- 11.22 Maintain, repair, and adjust the curtains as necessary throughout all construction activities.
- 11.23 Visually inspect the turbidity curtain(s) at least weekly. A written copy of the inspection report shall be submitted.

Curtain Removal

- 11.24 At the completion of all construction activities remove all turbidity curtains in their entirety. This includes all anchoring devices.
- 11.25 The Contractor shall not remove the curtains until the water inside the enclosed area meets the water quality standard.
- 11.26 The Contractor shall obtain approval before removing curtains.

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ATTACHMENT A-6

ENVIRONMENTAL IMPACT REGISTER

	Description of Receptor		Description of Potential Impact		Proposed Mitigation Measures	Description of Residual Impact	Close Up Actions
Environmental Aspect	Receptor	Value/Sensitivity	Impact	Significance of Potential Impact	Summary of Mitigation Measures	Significance of Residual Impact	Close Up Actions
Category	Brief description of receptor	Very high/High/ Medium/ Low/ Negligible	Brief description of impact	Major/Moderate/ Minor/No Impact/ Positive/Negative	Brief description of mitigation measures	Major/Moderate/ Minor/No Impact	Brief description of close up actions
Water quality	Singapore River	Low	Degradation of receiving water body quality due to discharge of silt from site	Moderate Negative	Minimise bare earth surface areas to 0.1ha at any one time	Minor	Factored into Earth Control Measures (ECM) Plan, Document xxx. ECM plan to be reviewed when there is a change of phase in construction works.
Noise	Blk 51, 52 and 53	Medium	Noise disturbance to residents during construction works	Moderate Negative	Construct 10m noise barrier in front of the block	Minor	Noise barrier will be constructed in front of the blocks by 25 July 2015. Refer to Noise Management Plan Document xxx. NMP to be reviewed when there is a change of phase in construction works.

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CARBON ASSETS INVENTORY FORM

Carbon Assets Inventory

Contract No:	Year:
Main Contractor:	
Person Responsible of Compilation (Designation):	

Important:
To ensure accuracy, please refer to and familiarise with the instructions and definitions before inputting of values.

Contractor shall be responsible for the accuracy of the input. Any assumptions made for estimating purposes should be consolidated under the *Comments* tab.
Information requested covers all resources consumed within the physical boundary of the contract.

ADMINISTRATION															
Offices	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Comments	
1 Grid Electricity	kWh														
2 Water	Litres														
3 Refrigerant (Indicate type e.g. R-422a)	kg														
4 Fuel															
	Diesel	Litres													
	Petrol	Litres													
	Biodiesel	kg													
<i>If using alternative fuel, please indicate here:</i>															

OPERATION															
Machineries	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Comments	
1 Grid Electricity	kWh														
2 Fuel															
	Diesel	Litres													
	Biodiesel	kg													
<i>If using alternative fuel, please indicate here:</i>															
Materials	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Comments	
1 Water	Litres														
2 Asphalt	kg														
3 Mortar (Indicate mix ratio below) e.g. 1:1:6 Cement:Lime:Sand Mix	kg														
4 Ready Mixed Concrete Type: <u>Ordinary Portland Cement</u> Please fill in: (x % replaced with fly ash)															
	Concrete (Grade 20)	kg													
	Concrete (Grade 25)	kg													
	Concrete (Grade 30)	kg													
	Concrete (Grade 35)	kg													
	Concrete (Grade 40)	kg													
	Concrete (Grade 50)	kg													
<i>If using grades not listed, please indicate here</i>															

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	Type: <u>Portland Blast Furnace Cement</u> Please fill in: (x % of OPC replaced with GGBFS)													
	Concrete (Grade 20)	kg												
	Concrete (Grade 25)	kg												
	Concrete (Grade 30)	kg												
	Concrete (Grade 35)	kg												
	Concrete (Grade 40)	kg												
	Concrete (Grade 50)	kg												
	<i>If using grades not listed, please indicate here</i>													
	Type: <u>Others (please indicate: _____)</u>													
	Concrete (Grade 20)	kg												
	Concrete (Grade 25)	kg												
	Concrete (Grade 30)	kg												
	Concrete (Grade 35)	kg												
	Concrete (Grade 40)	kg												
	Concrete (Grade 50)	kg												
	<i>If using grades not listed, please indicate here</i>													
5	Pre-Fabricated Concrete (Compulsory to provide in units of kg)													
	Concrete content	kg												
	Steel content	kg												
6	Steel													
	Fabric Reinforcement	kg												
	Bar Reinforcement	kg												

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ATTACHMENT A-8

AIR POLLUTION CONTROL PLAN

The Contractor shall follow the following reporting format for the submission of the Air Pollution Control Plan. The proposed plan shall include but not limited to the required information as follows.

1 Project information

- Project title and description
- Project location and area

2 Air sensitive receivers

- This section shall include a map highlighting the locations and proximity of potential air sensitive receivers to the sources of air pollution from site.

3 Air pollution sources & controls

- List of all diesel-powered machineries including generators, excavators, piling machines etc., and the respective numbers used on site.
- List of all vehicles including dump trucks, lorry cranes etc., and the respective numbers used on site.
- List of all other air pollutants and dust producing activities such as welding, vehicles travelling on site, operation of slurry treatment plant, stockpiling, boring, hacking activities etc.
- Air pollution control measures for the above mentioned machineries, vehicles and activities shall be provided. Control measures shall be provided and implemented with the following order of hierarchy:
 - a) Elimination method (shall be used whenever possible);
 - b) Substitution;
 - c) Engineering; and
 - d) Administrative (shall be used only when the above methods are not reasonably practicable to implement or used in existence with the above methods)
- Attached inspection and maintenance regime for all fuel-operated vehicles, machineries, power-packs, generators, welding sets etc.
- Specifications, where applicable, for engineering methods shall be included, for example, type and size of dust netting, dust eating machines etc.

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ATTACHMENT A-9

(Page 1 of 5)

VECTOR CONTROL PLAN

The Contractor shall follow the following reporting format for the submission of the Vector Control Plan. The proposed plan shall include but not limited to the required information as follows.

1 Revision page

- List of revision
- Summary of revision

2 Project information

- Project title and description
- Project location and area
- Additional information on whether the site has pre-existing vector conditions and proposed surveillance and control measures prior to commencement of site clearance.

3 Site layout plan (with “zoning method”)

- Attach a site layout plan with indication of zones for vector control; and
- Identify vulnerable or potential breeding grounds such as designated storage area, waste skids, water tanks, ECM treatment plants, sedimentation ponds and sumps etc.

4 Vector control personnel

- In-house Pest Control Team
 - a) Organisation chart
 - b) Duty roster for surveillance and control activities which specifies day, time, zone, assigned worker and activities to be carried out
- Pest Control Operator
 - a) Details of Pest Control Company
 - b) Pest Control Company track record
 - c) Valid NEA license and certificate

5 Vector Surveillance and Control

- This section shall include, at minimum, the surveillance and control measures as specified in Clause 7 of Annex A-g.
- Vector surveillance and control checklist to be included. The Contractor may use the relevant form or checklist found in NEA’s website. The checklist is to be used for routine inspection and breeding grounds found with some descriptions shall be documented.

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ATTACHMENT A-9

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6 Response plan

- This section shall specify the measures to be taken in the event the site is in a dengue / zika cluster or when there is any person found on site to be a carrier of or contracted with any vector-borne disease.
- The response plan shall adopt the LTA Dengue Contingency Plan and reporting format as shown below.

Action Required	LTA Sites located within Dengue Clusters based on NEA Dengue Community Alert			LTA Sites with ≥10 Dengue Cases within 2 Consecutive weeks
	Green (No Active Cluster)	Yellow (Cluster of <10 cases)	Red (Cluster of ≥10 cases)	
Housekeeping	Daily	Daily	Twice Daily	Twice Daily
Search & Destroy by in-house vector team (3-zone method)	One zone daily	One zone daily	Daily for all zones	Daily for all zones
Mass carpet combing for the entire site	Weekly	Weekly	Twice weekly	Daily (till no new reported cases)
Pest Control Operator (PCO) visit for the entire site	Weekly	Twice weekly	Twice weekly	Daily (till no new reported cases)
Trimming of overgrown grass	Weekly	Weekly	Weekly	Weekly
Monitoring of mosquito population using Gravitrap	Weekly	Weekly	Twice weekly	Twice weekly
Monitoring & reporting of Dengue symptoms	-	Suspected patient to report	Compulsory daily temperature check*	Compulsory daily temperature check* and daily reporting to LTA
Applying of insect repellent (3 times daily)	-	Compulsory	Compulsory	Compulsory

* This applies to all personnel entering the site including LTA staff, QPS, Sub-contractors, suppliers and consultants etc.

Figure 1: LTA Dengue Contingency Plan, follow up actions for dengue clusters

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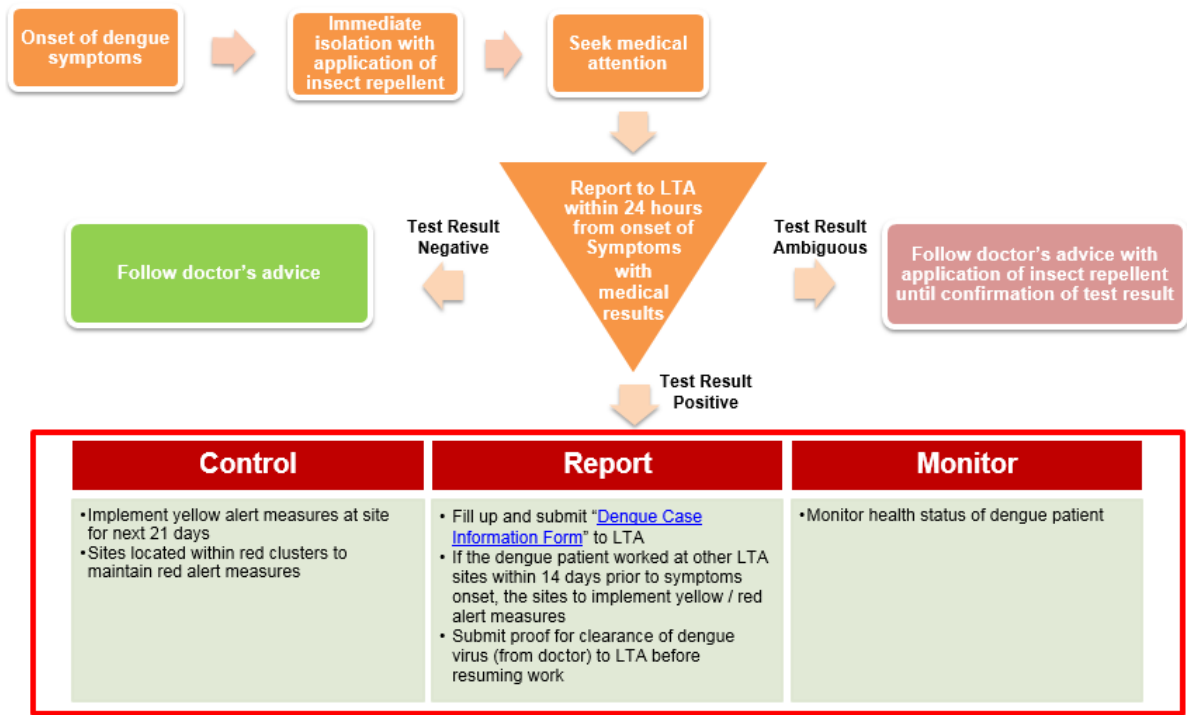


Figure 2: LTA Dengue Contingency Plan, actions required when there is onset of dengue / zika symptoms

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DENGUE CASE INFORMATION FORM				LTA Contract No.	
				LTA Officer-In-Charge & Contact No.	
				Contractor	
				Contractor Officer-In-Charge & Contact No.	
Ref No.					
Date Reported:					
Date of 1st visit to doctor:				No. days of MC:	
Name of Clinic/Hospital:				Clinic/Hospital Address:	
Particulars	Name	NRIC/FIN/WP No.	Date Of Birth	Age	Nationality
	Employer	Designation	Contact No.	Race	Country Of Origin
Potential Location of Occurrence	Countries (cities) visited / lived prior to arrival in Singapore (if stay less than 2 weeks)				NEA Reported Dengue Cluster in past 2 weeks? (Y/N) and indicate alert level?
	Residential Address (i.e. dormitory with block and room number or home address)				Yes <input type="checkbox"/>
	Workplace Address (i.e. construction site); Work location (i.e. station, tunnel, storage yard)				No <input type="checkbox"/>
	Other places have been to in the past 2 weeks (i.e. after working hours/off day)				<input type="checkbox"/>
	No. of working days per week	Working time		Day or Night shift (if applicable) 1-2 weeks prior to develop of dengue symptom	
	Mode of transport to work; Location of taking transport (if applicable)				
Symptoms	Symptom developed in past 1-2 weeks (i.e. fever, headache, body aches, joint pain, loss of appetite, nausea, vomiting and skin rashes)		Onset Date (DD/MM/YY)	Duration (Days)	Any Self -Treatment Taken? (Y/N)
	Blood Test	Date	Location of Clinic/Hospital of Blood Test Taken		Remarks
	1 st				
	2 nd				
	3 rd				
	4 th				
	Any co-workers from same worksite / dormitory with similar symptoms? Co-workers in close relationship with the patient? Please provide details of such individuals				
Date back to work:					

Figure 3: Dengue Case Information Form template

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ATTACHMENT A-9

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7 Training

- All relevant trainings for personnel involved in vector surveillance and control which include but not limited to:
 - a) Joint ITE-NEA Certificate in Pest Management for ECO or in-house pest control team supervisor;
 - b) Joint ITE-NEA Certificate in Pest Control for in-house pest control team; and
 - c) Trainings on understanding vector-borne diseases, identifying potential vector breeding grounds and measures to prevent the propagation of vectors for general workers.
- Dengue awareness or other vector awareness campaign to be conducted on site (indicating the proposed date)

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ATTACHMENT A-10

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WASTE MANAGEMENT PLAN

The Contractor shall follow the following reporting format for the submission of the Waste Management Plan. The proposed plan shall include but is not limited to the following:

1 Project information

- Project title and description

2 Site layout plan

- Brief write-up on the Contract: locations of station, alignment of tunnel, locations of launch shafts / escape shafts
- Site plans indicating site location for each construction phase, vehicular entrances, and proposed locations of waste management measures
- Should on-site wastewater treatment be proposed, separation of wastewater and surface runoff catchments, flow of wastewater, wastewater storage area and wastewater treatment plant shall be indicated on the site layout plan.

3 Waste management personnel

- In-house Waste Management
 - a) Organisation chart
 - b) Roles and duty roster for waste management activities
- Waste Collector
 - a) Details of all waste collector companies hired e.g. tunnel waste, general waste, construction waste, recyclable waste, sanitary waste and toxic waste
 - b) Track record of the above companies
 - c) Valid NEA licence and certificates
- Wastewater Treatment Solution Provider (if applicable)
 - a) Details of wastewater treatment companies
 - b) Track record of the above companies

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4 Solid waste management and control

- This section shall include, at minimum, the solid waste management and control measures as specified in Clause 8 of Annex A-g.
 - a) Identification of all types of waste in accordance to the method of construction e.g. chemical, organic, wood, metal and construction waste.
 - b) Waste management procedures for waste reduction, waste segregation, recycling, and disposal.
 - c) Waste management and control checklist.

5 Wastewater management

- This section shall highlight the measures for wastewater management which include:
 - a) Identification of wastewater sources (piling slurry water, concrete washout water, TBM tunneling wastewater, etc.);
 - b) Estimation of wastewater generated per day;
 - c) Process and procedures for minimising wastewater generation, managing wastewater at source, separating wastewater from surface runoff, disposing and/or treating wastewater (by waste collector or wastewater treatment provider).
 - d) Safety Data Sheets (SDS) of chemicals that will be used for treatment.

6 Testing of discharge quality

- Identification of watercourse type at treated trade effluent discharge point(s)
- Test schedule of treated trade effluent against the correct regulatory discharge limits at accredited laboratory on quarterly basis

7 Inspection and maintenance

- Inspection and maintenance schedules and checklists for all proposed wastewater containment and / or treatment facilities to be included

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8 Response plan

- This section shall specify the measures to be taken in the event there is any contravention of the management measures or any unacceptable situation such as overflowing of skip bins, accidental discharge of untreated trade effluent, treatment system breakdown or waste into any watercourse or land.
- In the event where untreated trade effluent is discharged into watercourse and discovered by PUB, the Contractor shall follow the PUB-LTA Working Response Protocol Framework to provide prompt investigation reporting to authorities.

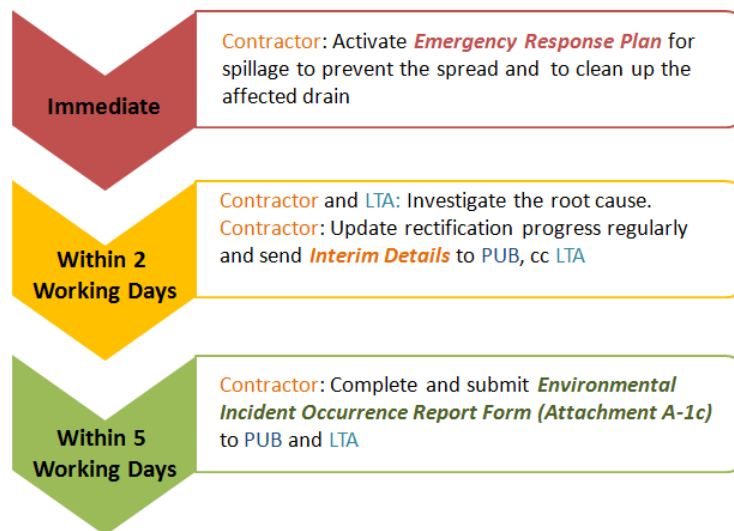


Figure 3: PUB-LTA Working Response Protocol Framework

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ATTACHMENT A-11a

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**NOISE MANAGEMENT PLAN
(FOR CONTRACT SUM \geq \$20 MILLION)**

The Contractor shall follow the following reporting format for the submission of the Noise Management Plan (for contract sum \geq \$20 million). The proposed plan shall include but not limited to the required information as follows.

1 Revision page

- List of revision
- Summary of revision

2 Project information

- Brief write up on the contract: locations of station (top down / bottom up construction), alignment of tunnel (TBM / cut and cover) and locations of launch shafts / escape shafts
- Information on the types of buildings (whether residential / noise sensitive / business etc) and their height (2 storey shop houses / 20 storey office buildings / 12 storey apartment)

3 Acoustic consultant profile

- Relevant experience and track records

4 Work schedule

- Project work schedule (e.g. Gantt chart) including a breakdown of the various construction phases and their commencement date for the next 6 months (to be updated and revised regularly)
- Implementation schedule of the mitigation measures, according to the work schedule / construction phases/milestones

5 Identification of Noise Sensitive Receivers

- List of identified noise sensitive receivers and the respective characteristics
- Vulnerabilities of every identified receiver and the mitigation measures targeted to address these concerns

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ATTACHMENT A-11a

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6 Baseline survey

- Results of the pre-construction noise readings / ambient noise levels recorded continuously over one (1) full week, using charts for easy reference
- Charts of the relevant leqs separately
- Actual readings in the appendix
- Proposed adjusted permissible noise limits for NEA approval

7 Noise simulation

- Noise simulation results and analysis from sound modelling software, such as CadnaA, SoundPlan or equivalent, in accordance to the respective construction phases (predicted noise levels before and after implementation of mitigation measures)
- Results in the form of noise simulation maps

8 Noise meters

- Calibration certificates of the noise meters for baseline survey, real-time noise meters and portable noise meters used
- Photos of the noise meters showing its fixed location and the orientation of the microphones

9 Noise mitigation measures for machinery and equipment

- List of machinery and equipment to be used on site
- Evidence that machinery and equipment to be used are sound-reduced models/ or operating using a quieter method from the manufacturers
- Noise emission levels of the machinery's engine noise and operating noise measured at source (1m to 3m away) for all machinery and equipment on site.
- Estimated noise levels at the receiver's end based on the worst case scenario (machinery and equipment at the shortest possible distance from the nearest affected building), using the formula in the SS 602 - Code of Practice for Noise Control on Construction and Demolition Sites.

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ATTACHMENT A-11a

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- Noise mitigation measures (with details such as material, orientation, dimensions and shapes of acoustic enclosures) for each machinery and equipment that are likely to cause excessive noise at the receiver's end according to the respective construction phases.
- Noise emission levels of the machinery's noise and operating noise measured at source after implementation of noise mitigation measures
- Example of entry under this section:

Machinery / Plant / Equipment	Sound Reduced ?	Remarks	Noise emission levels at source (engine / operational) dBA	Shortest Dist to receiver (worst case scenario)	Estimated noise levels at receiver's end	Mitigation Measures required?	Final Noise Emission Levels at source (engine / operational) dBA
Bored piling rig Model XXX	N	No sound reduced model available	80/100	30		Yes, acoustic panels will be used to enclose the engine. In addition, portable noise barriers will be set up to shield the operation. Please see Appendix for photos of mitigation measures.	
Bored Piling rig Model YYY	N	No sound reduced model available	83/104	30		Yes, acoustic panels will be used to enclose the engine. In addition, coring bucket of the rig will be modified to refrain from "shaking". Please see Appendix for photos of mitigation measures.	
Generator set (PowerGrid supply not ready for now)	Y	Yes, please see appendix for manufacturer's specifications	55	30		No but low humming noise may be irritating to residents at night so generator set will be enclosed within a noise enclosure. Please see Appendix for photo of enclosure.	
Hacking tool model YYY	N	No sound reduced equipment available	120	30		Hacking to be carried out within an enclosure. No hacking works will be allowed during the evenings onwards till the next morning and during weekends.	

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ATTACHMENT A-11a

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10 Noise mitigation measures for noisy areas / processes

- Specifications, such as height, length and acoustic material (sound transmission class) of all mitigation measures, e.g. full length perimeter noise barriers and full enclosures.
- Verified test reports of noise reduction ability of acoustic material
- Description of management system to track implementation schedule of noise mitigation measures
- List of noisy work processes and respective mitigation measures targeted at each noisy activity. Example:

Work Processes / Noisy area	Likely to cause nuisance to nearby residents?	Noise emission levels at source if applicable (dBA)	Dist to receiver	Estimated noise levels at receiver's end	Mitigation Measures	Final Noise Emission Levels at source (engine / operational) dBA
Rebar fabrication yard	Yes, especially during handling of rebar	76-78	50		To be sited at the furthest end from residences, please refer to site layout	
Permanent Works Area	Yes, machinery movement	80-83	30		To be enclosed within an acoustic enclosure as specified in LTA's GS. Please see Appendix for photos of acoustic enclosures	
Washing Bay	Yes, especially during the night	70-72	30		Noise barriers to be installed on hoarding next to the washing bay. Please see Appendix for photo of noise barrier at washing bay	
Slurry Treatment Plant	Yes, desanding operation is noisy	85-90	40		To be situated within a full acoustic barrier as per LTA's GS. Please refer to Appendix for photo.	

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ATTACHMENT A-11a

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11 Public relation efforts

- Names and contact details of Public Relations Officer (PRO) and list of personnel that will manage feedback and investigative works
- Samples of circulars / publications / notice that will be distributed to residents / stakeholders
- Frequency of meet-the-residents sessions with specific dates, venues, invited guests and the target audience
- Description of the intended proceedings for each of these sessions

12 Feedback management

- Organisation chart including the roles and responsibilities of the PRO and the Contractor PM
- Process of feedback management
- Documentation of feedback, complaints and stop-work orders received

13 Site layout

- Site location, tunnel alignment and the surrounding buildings within 150m from the boundary of the construction site
- Locations of site offices / canteen, silo, wash bay, workers' rest area, rebar fabrication area and location of vehicular access.
- Locations of permanent acoustic enclosures (e.g. slurry treatment plant, launch shafts, permanent work areas) and locations of all temporary / permanent noise barriers, incorporating recommendations by the appointed acoustic consultant. The map must indicate the targeted dates of completion of each temporary / permanent noise mitigation measure.
- Noise sensitive receivers within 150m of site
- Location of real-time noise meters

14 Response plan

- List in detail the plan for heightened mitigation measures and public engagement should there be unavoidable noisy works predicted to exceed the regulatory noise limits

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ATTACHMENT A-11b

**NOISE MANAGEMENT PLAN
(FOR CONTRACT SUM <S\$20 MILLION)**

For projects <S\$20 million or of work nature that is considerably small scale, a basic Noise Management Plan may be prepared. The proposed plan shall include but not limited to the required information as in Attachment A-11a, unless otherwise stated.

- 1 Revision page**
- 2 Project information & Site layout**
- 3 Work schedule**
- 4 Baseline survey**
- 5 Identification of Noise Sensitive Receivers**
- 6 Noise mitigation measures**

Work Activity	Noise Sensitive Receiver	Type of noise (E.g. Drilling, knocking, scraping etc.)	Mitigation Measures
<i>E.g. Installation of handrails</i>	<i>E.g. Blk 110 residents</i>	<i>E.g. Drilling</i>	<i>E.g. Scheduling work during day time</i>

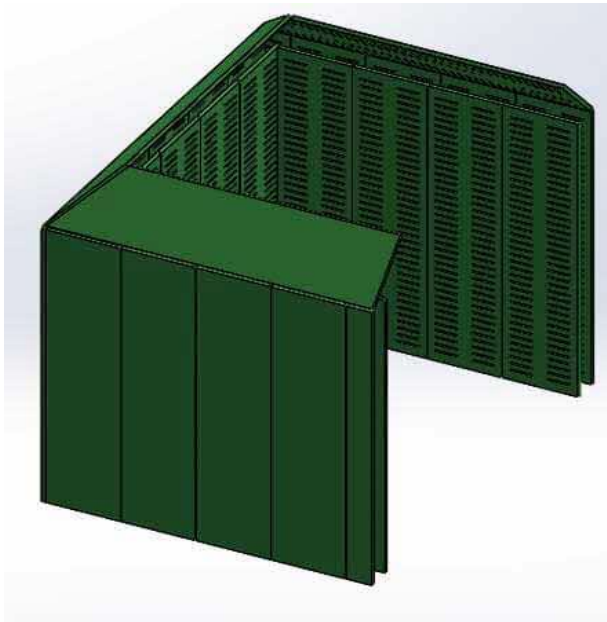
- 7 Public engagement efforts**

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ATTACHMENT A-11c



Indicative design of jagged edge flat-tip barrier



Indicative design of 2-layer noise panel

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ATTACHMENT A-12

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EARTH CONTROL MEASURES PLAN

The Contractor shall follow the following reporting format for the submission of the Earth Control Measures Plan. The proposed plan shall include but not limited to the required information as follows:

1 Revision page

- List of revision
- Summary of revision

2 Project information

- Name and address of site occupier
- Name and address of QECP for the project
- Name of ECO and ECMO (if applicable)
- Certification of QECP and ECMO (if applicable)
- Project title and description
- Site area and project duration
- Sequence of work, type and duration for each phase of construction activities

3 Detailed information of ECM Plan

This section shall concisely provide the erosion and sediment control measures to be used for different phases of construction activities, such as site clearance and foundation, taking into consideration of all potential controls described in Annex A-g Clause 10. Layout plans for various phases of construction activities shall be provided, showing the following information:

- Key/location plan showing the proposed site in relation to main roads and including any special landmarks or features;
- Boundary line of proposed development;
- Proposed phasing of work;
- Proposed outlet discharge points, CCTVs, TSS monitoring systems;
- Direction of surface runoffs into the proposed internal temporary drains;
- Direction of flow for all existing and proposed drains;

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ATTACHMENT A-12

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- Direction of flow for runoffs upstream and adjacent to the site and clearly indicate how they are effectively drained or diverted away;
- Description and location of each proposed erosion and sediment control measures, including silt fence, bund walls, perimeter drains, internal drains, sedimentation tanks, treatment system, CCTVs, TSS monitoring system, stockpile area, vehicle access route, wash bays etc;
- Specifications and catalogues of proposed erosion and sediment control measures;
- Indication of area of bare earth surfaces, where the surface runoff is expected, in m² on the plan;
- Indication of areas where bare earth surfaces are covered with concrete, milled waste, erosion control blankets, etc in m² on the plan; and
- Implementation schedule of all the mitigation measures, according to the work schedule/construction phases/milestones.

4 ECM calculations

- Calculations of soil loss / sediment yield
- Hydraulic calculations for the proposed temporary drainage system, silt traps, sedimentation tanks and size / capacity of storage ponds/tanks
- Calculations for the required and designed capacity of treatment units

5 Inspection, maintenance and monitoring of ECM

- Inspection schedule, checklist and maintenance schedule to be carried out by the Contractor for all proposed erosion and sediment control measures

6 Response plan

- This section shall specify the emergency response measures to be taken in the event there is any accidental discharge of silty water out of the site.
- In the event where silty discharge into watercourse is discovered by PUB, the Contractor shall follow the PUB-LTA Working Response Protocol Framework to provide prompt investigation reporting to authorities.

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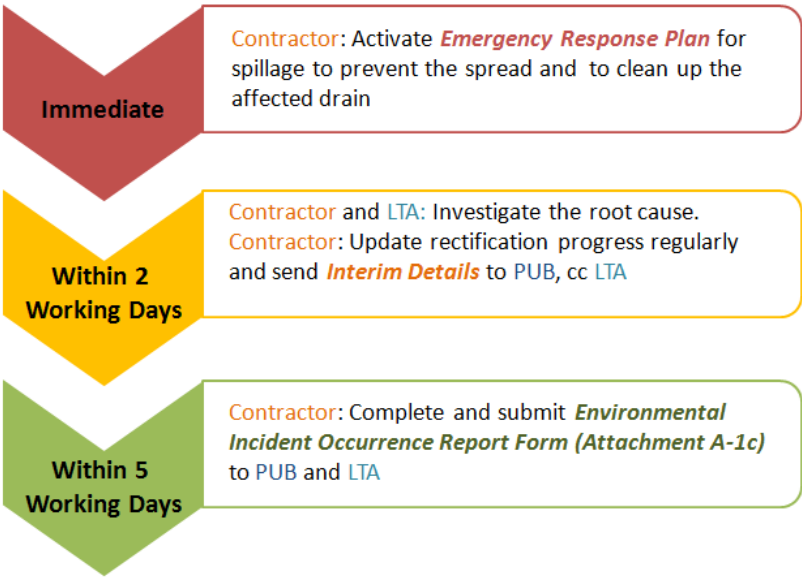


Figure 4: PUB-LTA Working Response Protocol Framework

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ATTACHMENT A-13

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Requirements for QECP Inspection Report

The QECP Inspection Report should identify good practices and areas for improvement on site. The following outlines the documented information requires to be submitted as part of the QECP's monthly site inspection for LTA sites. It consists of three attachments, with their requirements elaborated below.

1. QECP Inspection Checklist

The QECP inspection checklist should be duly filled. A sampleⁱ is as shown in Attachment 1.

2. ECM Layout Plan

The ECM Layout Plan should be updated according to the current stage of works, and it should show accurate information of the ECM being implemented. It should include:

- Date of ECM plan
- QECP's endorsement
- Site layout plan with locations and specifications of all ECM facilities clearly indicated:
 - a) Perimeter drains
 - b) Sedimentation/holding ponds
 - c) Silt traps (if any)
 - d) ECM treatment plants
 - e) Stockpiles (if any)

The site layout plan should also indicate locations where site photos are taken. A sample is as shown in Attachment 2.

3. Inspection Photos

All ECM facilities shall be inspected, and photography records should be provided. Site photos should be taken from an angle that is representative of the actual site condition. Photos taken should not be limited to just areas for improvement, but should also include good practices or areas with good maintenance. A sample is as shown in Attachment 3.

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Attachment 1 – Sample QECP Inspection Checklist

Date of Inspection:
Name of Inspecting Officer:
Appointment
Date & Time of Site Visit:
Weather Condition:

Project Title:
Location of Site :
Project Duration:
Type of Present Construction Activity:
PUB Permit Number:

Owner / Developer:
QP for Project:
QECP for ECM:
ECO:
Owner / Developer's Representative on-site:

Date of ECM Plan:
Last Date of ECM Plan Review:

ADDITIONAL INFORMATION
Date & Time of Previous Site Visit:
Date Of Last Inspection Report:
Issues Identified In Previous Site Visit:

This site inspection has been certified by:

QP / QECP:
Signature:
Date:

Contractor:
Signature:
Date:

Owner/Developer:
Signature:
Date:

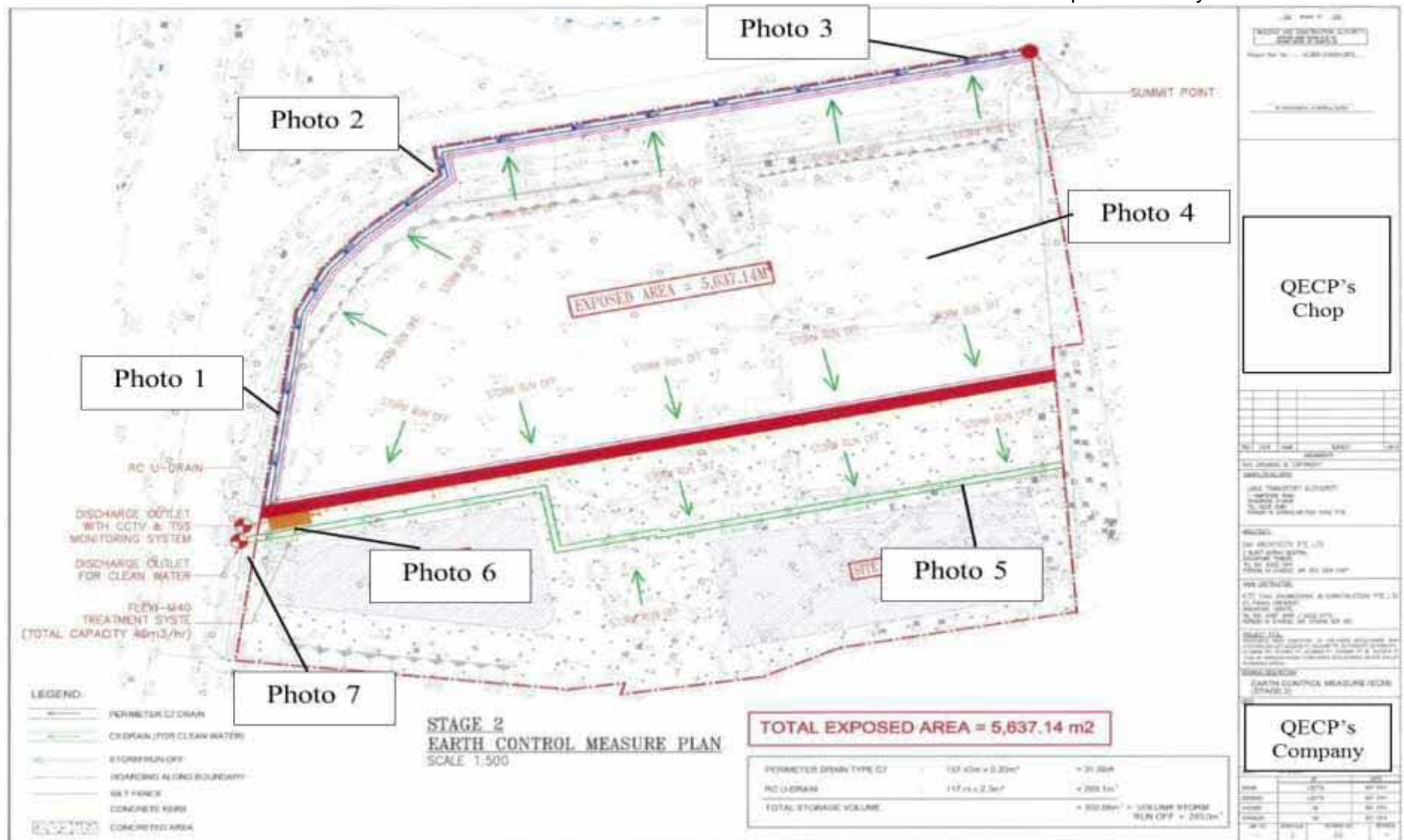
Note:
Earth Control Measures is for the treatment of silty water due to rain water. Construction wastewater (slurry, bentonite..etc) due to tunnelling, boring..etc shall be separately treated.

S/N	BEST MANAGEMENT PRACTICES	INSPECTION	COMPLIANCE	ACTIONS
1	Construction Sequence & Scheduling	Clearing of construction areas carried out in phases?	Yes / No / NA	
2	Stockpiles of Earth Materials	Stockpile location according to ECM plan?	Yes / No / NA	
3	Stablization through laying of milled waste, lean concrete, turfing ...etc	Location according to ECM schedule?	Yes / No / NA	
		Construction according to ECM details?	Yes / No / NA	
		Any signs of damage at lean concrete areas?	Yes / No / NA	
		Any signs of damage at milled waste areas?	Yes / No / NA	
		Any signs of damage at turfed areas?	Yes / No / NA	
4	Stockpiles of Earth Materials	Stockpile location according to ECM plan?	Yes / No / NA	
		Protected against erosion?	Yes / No / NA	
		Protected against sedimentation?	Yes / No / NA	
5	Silt Traps	Installation of silt traps including location according to ECM schedule?	Yes / No / NA	
		Installation of silt traps according to ECM plan including no.s & size?	Yes / No / NA	
		Silt Traps damaged?	Yes / No / NA	
6	Sedimentation Basins / Storage Ponds	Installation of basins / ponds including location according to ECM schedule?	Yes / No / NA	
		Installation of basins / ponds according to ECM plan including no.s?	Yes / No / NA	
		Concentration of TSS in effluent (outlet of discharge) < 50mg/l?	Yes / No / NA	
		Sediment filled to within 300mm of water discharge level of outflow structure?	Yes / No / NA	
		Sedimentation basins inlet / outlet choked?	Yes / No / NA	
		Protected against sedimentation?	Yes / No / NA	
7	Treatment Units / Polymer Blocks	Treatment unit(s) in operation?	Yes / No / NA	
		Polymer blocks used / adequate?	Yes / No / NA	
8	Perimeter cut-off drains	Installation of cut-off drains including location according to ECM schedule?	Yes / No / NA	
		Installation of cut-off drains according to ECM plan including lengths?	Yes / No / NA	
		Cut-off drain lined?	Yes / No / NA	
		Any signs of inadequate capacity? (flooding)	Yes / No / NA	
		Any obstruction / sediment?	Yes / No / NA	
		Any signs of damage?	Yes / No / NA	
9	Wheeled wash areas, entry/exit points	Location according to ECM plan?	Yes / No / NA	
		Construction according to details?	Yes / No / NA	
		Any signs of damage?	Yes / No / NA	
		Run-off (from wheeled wash areas) and overflow / discharge channeled to suitable areas for proper treatment?	Yes / No / NA	
		Any signs of silty water from these areas into public drains (drains / roads / etc)?	Yes / No / NA	
10	Others	Any areas without/inadequate ECM?	Yes / No / NA	
		Public drains at discharge points silted?	Yes / No / NA	
		Public drains in vicinity of site silted / obstructed?	Yes / No / NA	
		Run-off from site not channeled through silt fences / cut-off drains / silt traps?	Yes / No / NA	
		Any discharge of water into public drains?	Yes / No / NA	
		Earth surfaces / slopes adjacent to any drain not turfed, paved or covered?	Yes / No / NA	

Any other observations / comments:

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Attachment 2 – Sample ECM Layout Plan



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Attachment 3 – Sample Inspection Photos

Observation	Close-out Action
Perimeter Drains	
<p><u>Photo 1</u></p>  <p>Observation: Perimeter drain and silt fence are well-maintained</p>	<p>N.A.</p>
<p><u>Photo 2</u></p>  <p>Observation: Perimeter drain is silted, and concrete lining is damaged</p> <p>Recommendation: To clear the silt and repair the damaged section of the drain</p>	

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Attachment 3 – Sample Inspection Photos

Photo 3



Observation: Perimeter drain is not constructed according to the specifications in the ECM plan.

Recommendation: To increase the depth of the perimeter drain and ensure that it is constructed according to the specifications stated in the ECM plan.

Photo 4





Observation: Perimeter drain is well-maintained.

N.A.

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Attachment 3 – Sample Inspection Photos

Stockpiles	
<p><u>Photo 5</u></p>  <p>Observation: Earth stockpile is adequately covered</p>	<p>N.A.</p>
Sedimentation Ponds	
<p><u>Photo 6</u></p>  <p>Observation: Sedimentation pond is heavily silted</p> <p>Recommendation: To clear the silt and ensure that the capacity of the sedimentation pond is not compromised.</p>	

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Attachment 3 – Sample Inspection Photos

ECM Treatment Plants

Photo 7



Observation: TSS meter is errant with reading of -10mg/L

Recommendation: To engage the supplier and rectify the technical error

Closed out by: _____ Signature & Date: _____
(Contractor)

Verified by: _____ Signature & Date: _____
(LTA Project Team)

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ANNEX A-h

BIODIVERSITY

1. GENERAL

- 1.1 This section is only applicable to contracts with a Biodiversity Impact Assessment (BIA) conducted for their construction work.
- 1.2 The Contractor shall adhere to and implement the recommended mitigation measures outlined in the BIA.

2. BIODIVERSITY MONITORING AND MANAGEMENT PLAN

- 2.1 The Contractor shall submit a Biodiversity Monitoring and Management Plan as specified in the BIA and submitted to the Engineer for approval within three (3) months of contract award or as subjected to the Engineer's approval.
- 2.2 During construction, the Contractor shall include but not limited to the following implementation measures on site:
 - (a) Use environmentally-friendly methods for vector control such as Bti and search & destroy operation etc. instead of anti-malaria (AM) oil, or chemical larvicides;,
 - (b) Use sound reduced machines prior to entering the site;,
 - (c) Barricade noisy activities with portable sound barriers or panels;,
 - (d) Lightings would affect nocturnal animals. When lighting has to be used, refrain from pointing the glare towards habitats. Lightings shall be directed downwards where work is carried out;,
 - (e) Site utilization plans shall consider preservation and protection of native trees as far as possible. Tree or shrubs that can be preserved and protected shall be identified with methods to prevent harm to the tree, branches and roots. (Refer to NParks Conservation of Trees and Plants Guideline for reference);,
 - (f) Preventive measures to ensure no trade effluent, chemical, diesel or silt discharges into nearby water bodies. (Refer to Annex A-g Section 6 and 10 for more details).

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ANNEX A-i

FLOODING

1 General

- 1.1 The Contractor has to take into consideration of possible flooding to the Works during construction stage. This shall include provision of flooding protection measures for existing underground Rapid Transit System (RTS) and / or existing underground road tunnels before any opening is made into the existing RTS below the specified flood protection level. The Contractor shall consider the risks of flooding due to nature or arising from the construction activities.
- 1.2 The Contractor shall submit, within two (2) months of the award of the Contract a comprehensive flood protection plan for the whole of the Works. In preparing this plan, the Contractor shall carefully examine the surrounding topography to determine the probable nature and extent of any flooding. Where relevant the Contractor shall also consider in his plan the possible adverse effects of wind and tides and the risk from adjacent tunnel contracts.
- 1.3 The plan shall identify the areas that are at risk from flooding. The plan shall examine the potential consequences of any flooding and shall make proposals to prevent flooding.
- 1.4 The flood protection measures provided shall comply with the requirements of “Code of Practice on Surface Water Drainage” for “Flood Protection of Underground Rapid Transit System” issued by the PUB (Drainage) Department. When considering rainfall intensity the Contractor shall use a storm return period of not less than 100 years. A suitable Runoff Coefficient shall use a storm return period of not less than 100 years. A suitable Runoff Coefficient shall be used but shall not be less than 0.90 (urban areas fully and closely built up) without the written acceptance of the Engineer.
- 1.5 When pumping is proposed, the Contractor shall address the following:
 - a) operating procedures;
 - b) provision of a secure power supply and back-up;
 - c) automation and/or reaction time required to start the pumps; and
 - d) method and arrangement of discharge.
- 1.6 Shafts shall be surrounded by topography sloping away from shaft to direct rain water to a drainage channel. Shafts shall be equipped with a minimum of two (2) dewatering lines per shaft to ensure effective drainage in case of blockage.

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2 Flooding Evacuation and Rescue Procedure

- 2.1 The Contractor must make adequate safety provisions in the event of flooding whether it is due to inclement weather or the bursting of river bank in order to minimise the loss of life and property damage, where practicable.
- 2.2 The safety provisions to be put in place shall not only be limited to the providing of an emergency evacuation and rescue plan, trained rescue teams and water rescue aids or equipment. The trained rescue team and emergency procedure shall be in place before the start of any work. The number of trained rescue teams and water rescue aid or equipment shall be increased when deem necessary by the Engineer or his Representatives. The water rescue aids or equipment shall be properly maintained throughout the lifetime of the project.
- 2.3 Emergency drills shall be conducted every six (6) months with the involvement of Singapore Civil Defence Force where necessary.

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ANNEX A-j

MARINE WORKS

1 General

- 1.1 Marine structure is defined as any temporary or permanent structure constructed in open water, on the foreshore or in rivers where some part or all of the structure is exposed to the water. Marine work is work on or within a marine structure either during its construction or installation or thereafter.
- 1.2 The Contractor shall ensure that all relevant requirements of marine safety legislation are complied with and shall liaise with the appropriate officers of the Maritime and Port Authority of Singapore (MPA) for necessary permissions for work being carried out in waters which come under their jurisdiction.
- 1.3 The Contractor shall liaise with the Building and Construction Authority (BCA) with respect to the impact of building materials.
- 1.4 The Contractor shall also ensure that all relevant requirements of environmental legislation are complied with and shall liaise with the appropriate departments of National Environment Agency (NEA).
- 1.5 Navigational aids (inclusive of lights and beacons) shall be fitted at appropriate positions as required by marine safety legislation and they shall be maintained in efficient working order. Navigational and other warning lights shall function throughout all hours of darkness or of reduced visibility.
- 1.6 Pre and post condition sonar surveys with runs at five (5) metre intervals or closer shall be carried out by a hydrographic surveyor approved by MPA. Results of the survey shall be submitted to the Engineer and MPA. Any high spots, levels or sunken object found in the post condition sonar surveys that were not observed in the pre-condition sonar survey shall be removed to the satisfaction of the MPA.
- 1.7 Before starting of any marine works and upon its completion, the Contractor shall ensure appropriate notices to mariners and other port users are issued by the Port Master's Department of the MPA including the payment of necessary fees.
- 1.8 The Contractor shall ensure that lifting machines inclusive of barge mounted cranes, lifting appliances and lifting gears on board of any vessel used for lifting operations in connection with this Contract shall comply with the "lifting operation" annex of this general specification.

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- 1.9 All floating barge / pontoon mounted plant shall be secured against accidental displacement and the barge / pontoon anchored to minimise movement due to the drag of the current etc.
- 1.10 At night the waters surrounding any barge / pontoon in which any form of work is being carried out shall be effectively illuminated to a surface distance of 10 metres away.
- 1.11 All reasonable measures shall be taken by the Contractor to prevent workers from falling into the water. All persons working near the edge of docks, wharves or similar structures, or on board a vessel or barge mounted crane shall be provided with and shall wear a suitable life jacket.
- 1.12 Where any work is being carried out on or near water suitable life buoys with sufficient length of life line shall be placed at strategic points for rescue purposes. The Contractor shall provide a standby emergency boat at a location approved by the Engineer.
- 1.13 The Contractor shall ensure that vertical ladders which afford a means of escape for a person from the water to a safe place are fixed to the outer surface of any marine structure or vessel on which work is being carried out and maintained in an acceptable condition.

2 Design, Installation and Dismantling of Marine Structures

- 2.1 The design of the marine structure shall take into account the maximum possible tidal range and flow, effects of flooding or other works upriver if appropriate, the wash caused by passing vessels and predicted wave height in the worst foreseeable weather conditions. In determining these maximum water levels the Contractor shall consult relevant tidal charts and tables for the intended location of the marine structure.
- 2.2 The design of marine structures should also take into account the impact load due to the berthing force of vessels, barges, etc.
- 2.3 The Contractor shall ensure that the marine structure is designed by a PE and such design shall be subject to approval by both NEA and MPA. The PE shall supervise its construction and certify the structure as being in compliance with his design and calculations before the marine structure is first taken into use.
- 2.4 The PE shall specify the method by which the marine structure is to be located in position, if it is pre-fabricated, and shall supervise closely its being placed there. This work shall be carried out by persons having adequate previous experience of similar work, or by persons under the close control of supervisors who have such experience. The marine works shall be supervised by a dedicated and qualified supervisor.

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- 2.5 If assembled in-situ, only competent workers are to be used, and appropriate precautions must be taken to ensure the safety of those persons engaged in such work.
- 2.6 Alterations or modifications proposed to the marine structure shall be planned and designed by a PE subject to the approval of the Engineer. The PE shall subsequently certify that such works have been carried out in accordance with his designs and calculations before being taken back into use.
- 2.7 A method statement containing relevant safety requirements shall be generated by a PE together with a risk assessment for the installation, dismantling and subsequent removal from site of the marine structure and this shall be approved by the Engineer before any such work takes place.
- 2.8 All temporary marine structures erected shall be dismantled and removed on completion of the works.

3 Working Platforms

- 3.1 Where a person is required to work above water, proper working platforms in compliance with Scaffold Regulations shall be provided. They shall be maintained in position along all open sides of the platforms and any associated means of access except the parts where it is necessary for this edge protection to be removed for the work in progress.
- 3.2 If required by the Engineer safety nets shall be placed under any working platform over water, at a sufficient height to prevent a person coming into contact with the water taking into account the maximum tidal range.
- 3.3 No-one shall carry out any work over water from a temporary work platform unless he is wearing a safety harness which is secured by a lanyard to a fixed point or lifeline which has first been inspected and authorised by a Safety Supervisor as safe for use. Such authorisation shall be recorded in writing in a register kept for that purpose.
- 3.4 Barges and pontoons and similar which are used as working platforms shall be properly constructed and sufficiently stable to avoid tipping. All persons working on them shall wear appropriate buoyancy aids and be instructed in what action to take in the case of any capsize or man overboard. Each shall have an appropriately stocked first aid box on board.

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4 Water Transport

- 4.1 Persons may only be transported across water to their work locations only in vessels certified by MPA. All persons carried on board as passengers must be seated throughout the crossing and the vessel may only carry the approved number of passengers. If materials are carried in addition to passengers, the vessel must not be overloaded. Operators of these vessels shall hold a valid MPA license to operate.
- 4.2 The vessel must be equipped with the scheduled number of suitable life-saving appliances according to its capacity and these should be maintained in a satisfactory condition.
- 4.3 No smoking shall be permitted on board the vessel.
- 4.4 The embarkation and disembarkation points for passengers at the land side and at the work location shall be fitted with hand rails and mid rails and shall be designed to make access safe during all tidal and weather conditions. Grab ropes shall be fitted near the waterline at all such locations and lifebelts provided and maintained close to the edge.
- 4.5 When not engaged in the transportation of passengers the vessel shall be on standby for rescue and other emergency purposes.
- 4.6 The Contractor shall make available a vessel together with operator with a seating capacity of not less than six passengers to enable LTA site staff to carry out inspections of the marine works at any time during the working hours of the Contract.
- 4.7 All barges, pontoons, vessels and similar used for transporting materials to the work locations for whatever reasons shall be certified by MPA. All persons who work on board shall be subject to the site rules and regulations of the Contractor and shall take part in such safety activities, co-ordination meetings and briefings as are required under the Contractor's Safety Management System.
- 4.8 All sunken vessels, barges, pontoons that may have sunk during the project shall be salvaged and removed.

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5 Inspection and Remedial Works

- 5.1 The marine structure shall be inspected by a competent person before any person carries out work in it at the start of any shift or, of continuous working is undertaken, at least once in every period of 12 hours. The results of such inspection shall be recorded in writing and the entry countersigned by the Project Manager or his nominated representative on a daily basis.
- 5.2 The marine structure shall also be inspected by a competent person after any incident which may have affected its strength or structural integrity.
- 5.3 If any remedial works are found to be necessary all workers not involved in such work shall be removed to a safe place on land before such work is commenced.
- 5.4 Any remedial works shall be designed by a PE and approved by the Engineer.

6 Diving

- 6.1 All diving works shall comply with “SS 511, Diving at Work”. Prior to the commencement of any dive, the Contractor shall submit a dive plan in accordance to SS 511 for the Engineer’s approval.

7 Emergency Procedures

- 7.1 The Contractor shall draw up emergency plans to cover all foreseeable contingencies and these shall be approved by the Engineer before any marine work takes place. They shall include provision for the setting up of an emergency control centre and management team to co-ordinate the rescue procedure or other response.
- 7.2 The Contractor shall ensure that all persons including those who are not employees of the Contractor or of his sub-contractors who work on or over water for whatever reason are briefed in these procedures, in appropriate languages which they understand, before commencing work.
- 7.3 A desk top exercise shall be held for the worst case emergency scenario involving the marine structures within three (3) months of the permanent works commencing thereon.

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ANNEX A-k

CONTAMINATED GROUND

1 General

- 1.1 Soil samples at appropriate depths and spacing shall be taken for testing by a competent person to identify any contaminant present as well as monitoring of airborne contaminants through air sampling. Soil contaminants to consider shall include, but not limited to, heavy metals and their derivatives, hydrocarbon compounds and asbestos. Airborne contaminants to consider shall include, but not limited, methane (CH₄) and other flammable gases.
- 1.2 The Contractor must take all necessary precautions to prevent any person from being exposed to the risk posed by the contaminants.
- 1.3 It shall be noted that contamination can be caused by a range of different hazardous materials and by a mixture of concentrations and distributions. Contaminants can also migrate to adjacent areas via ground water.
 - (a) Measures shall be taken in the design to alleviate the risks and describe those hazards that are not reasonably practicable to remove by design but must be controlled by the Contractor and any other relevant party.
 - (b) The Contractor shall ensure that sufficient information is provided on the nature, extent and level of contamination and that all personnel entering the site shall be informed of the hazards and the precautions needed; and
 - (c) All permissible exposure limits shall be established and communicated.

2 Site Layout

- 2.1 The perimeter of the site shall be hoarded and suitable warning signs posted. Access into and out of the site shall be controlled via one entrance with washing and changing facilities for personnel and a wash-bay for vehicles leaving the site.
- 2.2 The main site office shall be located in a “clean” area as recommended by the Environmental, Safety and Health Specialist, and may include a canteen for personnel to take their meals.
- 2.3 Security shall be provided to prevent unauthorised access onto the site.
- 2.4 Established thoroughfares and alternative routes across the site shall be clearly defined and maintained.

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3 Hygiene

- 3.1 A high standard of personal hygiene shall be practised and enforced at all times.
- 3.2 The consumption of food and drinks shall be confined to the canteen area. No smoking is allowed on site.
- 3.3 The washing and changing facilities shall include storage for contaminated clothing, footwear etc. and arrangements shall be made for the washing and drying of these.
- 3.4 Appropriate Personal Protective Equipment (PPE), which may include but not limited to waterproof safety boots and gloves when handling wet material, shall be provided for all personnel working on site.
- 3.5 A boot wash shall be situated immediately outside the entrance to the washing and changing facilities, and this shall include running water and either fixed or hand brushes to remove contaminated soils.

4 Health and Safety

- 4.1 An Industrial Hygiene Specialist shall be engaged by the Contractor to carry out the risk assessment for the affected area. He / she may not necessary be on site at all times, however he / she is to be available on site whenever the need for professional advice arises. The appointment of such a specialist shall be subjected to the acceptance of the Engineer.
- 4.2 A Designated Workplace Doctor shall be engaged to attend to the health of the workers exposed to contaminated materials while working on site. He / She need not be stationed on site but prior arrangements must be made to enable him / her to attend to the workers when the need arises. Periodic medical examination and monitoring of workers are to be carried out at the advice of the Designated Workplace Doctor.
- 4.3 Adequate first aid provisions shall be made available on site with a first aid station located next to the washing facilities.
- 4.4 Practical measures shall be implemented to control dust generation on site that may pose a possible hazard to those working on-site as well as the public.

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- 4.5 Air quality on site shall be monitored on a frequency deemed appropriate by the site engineer or as advised by the Industrial Hygiene Specialist. Gases to be monitored include, but not limited to, methane (CH₄) and other flammable and toxic gases, with emergency plans prepared in the event permissible limits are breached. A record of the daily monitoring is to be submitted to the Engineer weekly.
- 4.6 Work in excavations deeper than one (1) metre as well as confined spaces are to be controlled via a Permit-To-Work system. And all work in confined spaces are to comply with SS568, Code of Practice for Confined Spaces.
- 4.7 Excavation greater than two (2) metre in depth shall be designated a restricted area and worker shall not work alone and shall have a watcher at the surface. This is in addition to the need for a Permit-To-Work.
- 4.8 Facemasks shall be worn by personnel working over borehole while it is being advanced through the waste and before the temporary casing is installed down to natural ground.

5 Operational Regime

- 5.1 On-site speed limits shall be applied as a mandatory standard and due diligence shall be given to any operations which are likely to create a dust nuisance.
- 5.2 Arrangements shall be made for dewatering of excavations. Site leachate shall be regarded as hazardous.
- 5.3 Discharge of extracted leachate shall be to an area approved for such disposal by the National Environment Agency.
- 5.4 Excavation and compaction work shall be carried out by use of track driven hydraulic excavators. Waste dumping and compaction shall be carried out by tracked or steel-wheeled plant.
- 5.5 All machinery/plant/vehicle used on site shall have enclosed air-conditioned cabs.
- 5.6 All site plant and machinery shall be thoroughly washed down before leaving the site.

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6 Disposal of Dumping Ground Material

- 6.1 The Contractor shall comply with all the statutory requirements as laid down by the National Environment Agency with regards to the disposal of contaminated waste material.
- 6.2 The Contractor shall transport waste material directly from the excavation to the approved dumping ground and shall discharge the waste directly into position. No stockpiles of waste are allowed on site.

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ANNEX A-I

D&B RAIL PROJECTS CIVIL DESIGN SAFETY SUBMISSIONS

1 Introduction

- 1.1 The Contractor shall be required to prepare and submit risk assessment reports for the following project life cycle:
- a) Design stages: Pre-Final Design and Final Design;
 - b) Pre-construction; and
 - c) Project handover
- 1.2 The risk assessment reports to be submitted at the Pre-Final Design Stage shall be the Civil Design Pre-Final Safety Submissions and at the Final Design Stage shall be the Civil Design Safety Submission (Civil DSS).
- 1.3 The Civil Design Pre-Final Safety Submissions shall be submitted one (1) month after pre-final design submission and the Civil Design Safety Submissions (Civil DSS) shall be submitted one (1) month after the final design submission.
- 1.4 After the completion of the Civil DSS, the Contractor shall use it as a base for the preparation of the Civil Construction Safety Submissions (Civil CNSS). The CNSS can be submitted in accordance to structural packages and shall be submitted to the Engineer two (2) months before application for permit to excavate.
- 1.5 The Contractor shall also prepare and submit a Civil Handover Safety Submission (Civil HSS). The Civil HSS shall be submitted four (4) months before the completion of system test running or handling over of project to the Operator for trial run, whichever is earlier.
- 1.6 The Accident Frequency, Accident Severity and Risk Index for the risk assessment and Hazard Register Structure for the Civil DSS, CNSS and the HSS shall be in compliance with Clause 4 of this Annex.
- 1.7 The Civil DSS, CNSS and HSS shall be subjected to the acceptance of the Engineer. The Contractor shall make amendments and revise the Safety Submissions in accordance with the Engineer's comments.

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2 Safety Submissions

2.1 Civil Design Safety Submissions (CIVIL DSS)

2.1.1 The objectives of the Safety Submissions at the Pre-Final and Final design stages is to demonstrate that the design concept of the permanent works and the proposed construction methodologies and measures under the specific contract has addressed the relevant identified preliminary hazards and newly identified construction and maintenance hazards.

2.1.2 The fundamental information to be provided in the Civil Design Safety Submissions shall include but not limited to the following:

(i) Background Information

- (a) An executive summary highlighting the major areas of concern and the required mitigation measures including the status of findings
- (b) Brief description of the Civil Contract and its scope (the number of stations, tunnel / viaduct / at grade trackway, stations descriptions, alignment and etc.)
- (c) Environment (On adjacent buildings, utilities, water bodies)
- (d) Proposed Method of Construction
- (e) Details of key milestone schedules of the Contract

(ii) Identification of Major Hazards and Mitigation

- (a) Relevant hazards identified in the Civil Concept Safety Submissions (furnished by the Authority)
- (b) Impact To Utilities
- (c) Impact To Buildings and Adjacent Structures
- (d) Impact To Existing and Future Rapid Transit System
- (e) Flooding (to public and own works)
- (f) Surface / Ground Settlement
- (g) Environmental Impact
- (h) Demolition of Buildings and Structures

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- (i) Underpinning of Buildings and Structures
 - (j) Construction near high risks areas, e.g. petrol stations, ammunition stores, power plants, dump sites and etc.
 - (k) Risk associated with future provisions
 - (l) Risk associated with known future provisions
 - (m) Highlight hazards that cannot be eliminated through design of permanent structures and requires mitigation measures during construction
 - (n) Highlight maintenance hazards and their proposed operation measures (A separate Civil DSS focusing on the maintenance hazards shall be prepared as highlighted in Clause 2.1.3)
 - (o) Major risk to workers and public
 - (p) Specific compliance requirements during construction for safety and health
- (iii) Hazard and Risk Management Process
- (a) A description on the roles and responsibilities in the review and acceptance of the mitigation measures
 - (b) The hazard and risk mitigation process shall demonstrate that the high- level hazards have been assessed and that there is no hazard with residual “Intolerable” risk categorisation after the proposed mitigation measures.

2.1.3 The Civil DSS for maintenance hazards shall highlight design provisions for safe maintenance of civil infrastructure, architecture fittings / finishes and E&M equipment and fittings, as well as address the major high level maintenance risks. It shall include, but not limited to, the following:

- (i) Falling from height;
- (ii) Overloading of slab (including equipment delivery and replacement routes);
- (iii) Lifting (focusing on permanent lifting hooks, beams, lifting machines/equipment or cranes provided for maintenance purposes);
- (iv) Working in confined space;
- (v) Fire / explosion (storage / handling of hazardous substances / materials);

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- (vi) Ergonomics (posture of workers during maintenance);
- (vii) Health (noise, heat and etc); and
- (viii) Others.

2.1.4 The Civil DSS for maintenance hazards shall be subsequently transferred to Civil Handover Safety Submission (Civil HSS) to be handover to the operator.

2.2 Civil Construction Safety Submission (CIVIL CNSS)

2.2.1 The objective of the Civil CNSS is to demonstrate that the residual hazards transferred from the Civil DSS have been mitigated during construction phase in the specific contract and that the Contractor has in place the necessary arrangement for managing safety risks.

2.2.2 The fundamental information to be provided in the Civil CNSS is the construction health and safety plan that shall include but not limited to the following areas:

- (i) An executive summary report highlighting the major areas of concerns and the status of findings.
- (ii) Description of contract work and scope:
 - Major work description and scope;
 - Programme details; and
 - Brief details of subcontractors and other consultants.
- (iii) Communication and management of the work:
 - Contractor's Safety Management System prepared according to the guideline of CP 79. The element on emergency preparedness shall include a flood protection plan, a fire safety plan etc;
 - Arrangement for monitoring and review of health and safety performance; and
 - Arrangement for the exchange of design information between the developer, designer and contractors.
- (iv) Hazard management covering:
 - Proposed mitigation measures of the residual risk transferred from the Civil DSS;

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- Temporary works design such as temporary support structure, false work system, design of decking for support of road traffic etc;
- Further major hazards identified by the Contractor (besides residual hazards transferred from Civil DSS) and proposed mitigation measures for these identified “new” hazards. The information shall highlight the major construction hazards that are specific to the contract locality; and
- Other envisaged significant health & safety risk during the construction process and its mitigation measures.

(iv) Environmental control plan (in compliance with ISO 14000).

2.2.3 The Civil CNSS shall not focus on common construction work activities such as heavy lifting, hot works, form work erection and etc. These routine construction work activities shall be addressed through method statements.

2.3 Civil Handover Safety Submission (Civil HSS)

2.3.1 The objective of the Civil HSS is to provide the operator/maintenance agencies the necessary information on maintenance hazards and those residual hazards or information that are relevant to the health and safety of any future construction work, which includes cleaning, maintenance, alterations, refurbishment and demolition.

2.3.2 The fundamental information to be provided in the HSS is the Health and Safety File that shall include but not limited to the following areas:

- (i) An executive summary report highlighting the major areas of concerns and status of findings.
- (ii) Summary list of information and final as-built drawings of the structure, including safe working loads for floors and roofs.
- (iii) Key structural principles incorporated in the design of the structure.
- (iv) Schedule of hazardous substances and location of where they are used, if any.
- (v) Information on:
 - Maintenance hazards, including hazardous areas;
 - Specialist manuals for operating and maintenance and replacement purposes; and

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- Fragile materials that maintainer must exercise additional precautions.
- (vi) Hazards that should be considered during future construction work on or nearby the premises.

3 Risk Management Facilitator (RMF) / Designed For Safety Professional (DfS Professional) for the Hazard Identification and Risk Management Process

3.1 Contractor shall propose and engage a qualified and competent RMF / DfS Professional. The qualifications of RMF / DfS Professional proposed for this contract shall include:

- a) Reasonable exposure in safety and health for construction especially on transportation infrastructure projects in a similar nature to this Contract, and
- b) Attended the DfS for Professional Course and passed the assessment, or equivalent, and either
 - Be a registered PE or Architect with a Practicing Certificate or
 - Have 10 years relevant experience in the design (at least five (5) years in design which includes contributions to designs, writing specifications) and the supervision of the construction of structures; and
 - Have a degree accepted by Professional Engineers Board (PEB) or Board Of Architects and construction related degree accepted by Singapore Institute of Surveyors and Valuers (SISV) and Society of Project Managers (SPM).

The final approval for the appointed RMF / DfS Professional shall be within the Authority's discretion. The appointed DFS Professional is to perform the necessary duties as part of the delegation of the Authority's duty.

3.2 The RMF / DfS Professional shall facilitate the hazard identification and risk management sessions for the preparations of the Safety Submissions. The Authority shall be invited to attend these sessions as observers. The Authority may send representative(s) to attend if deemed necessary.

3.3 The RMF / DfS Professional shall be the appointed person in-charge of the preparation and submission of the Safety Submissions. The hazard registers are live documents. He shall add new hazards identified, monitor and update the hazards in the register to ensure all hazards are mitigated and closed.

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3.4 The RMF / DfS Professional shall attend the Engineer's Project Safety Committee Meetings and any other risk management meetings directed by the Engineer.

4 Risk Matrix, Hazard Register Structure and Hazard Action Form (HAF)

4.1 The Contractor shall prepare the Safety Submissions using the risk matrix given:

Table 1 : Accident Frequency

Likelihood	Rating	Description
Frequent	I	Likely to occur 12 times or more per year
Probable	II	Likely to occur 4 times per year
Occasional	III	Likely to occur once a year
Remote	IV	Likely to occur once in 5 year project period
Improbable	V	Unlikely, but may exceptionally occur

Table 2 - Accident Severity

No	Consequence	Rating	Description(*)
1	Catastrophic	I	<ul style="list-style-type: none"> Single or Multiple loss of life from injury or occupational disease, immediately or delayed; and / or Loss of whole production for greater than 3 days and / or Total loss in excess of \$1 million.
2	Critical	II	<ul style="list-style-type: none"> Reportable major injury¹, occupational disease¹ or dangerous occurrence; and / or Damaged to works or plants causing delays of up to 3 days; and / or Total loss in excess of \$250,000 but up to \$1 million.
3	Marginal	III	<ul style="list-style-type: none"> Reportable injury², occupational disease² ; and / or Damage to works or plants causing delays of up to 1 day; and / or, Total loss in excess of \$25,000 but up to \$250,000.

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No	Consequence	Rating	Description(*)
4	Negligible	IV	<ul style="list-style-type: none"> Minor injury³, no lost time or person involved returns to work during the shift after treatment; and / or Damage to works or plants does not cause significant delays; and / or Total loss of up to \$25,000.

Note:

(*) If more than one of the descriptions occurs, the severity rating would be increased to the next higher level. Applicable to item numbers 2 and 3 only.

¹ For man-days lost greater than 7 days.

² For man-days lost between 4 to 7 days.

³ For man-days lost between 1 to 3 days.

Table 3: Risk Index Matrix

Risk Category			Accident Severity Category			
			I	II	III	IV
			Catastrophic	Critical	Marginal	Negligible
Accident Frequency Category	I	Frequent	A	A	A	B
	II	Probable	A	A	B	C
	III	Occasional	A	B	C	C
	IV	Remote	B	C	C	D
	V	Improbable	C	C	D	D

The definitions of the risk indices determined from the Risk Index Assessment Matrix are presented in the table 4.

Table 4: Definition of Risk Index

Risk Index	Description	Definition
A	Intolerable	Risk shall be reduced by whatever means possible.
B	Undesirable	Risk shall only be accepted if further risk reduction is not practicable.
C	Tolerable	Risk shall be accepted subject to demonstration that the level of risk is as low as reasonably practicable.
D	Acceptable	Risk is acceptable.

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- 4.2 For hazards relating to **operation and maintenance**, the Accident Frequency, Accident Severity and the Risk Category shall be in accordance to the definitions given in Table 5, 6, 7 and 8.

Table 5: Accident Frequency

Category		* Definition	Frequency Guide (Operating hour) <i>acc = accident</i>
1	Frequent	Likely to occur frequently. The hazard will be continually experienced.	≥ 1 acc per 100 hrs
2	Probable	Will occur several times. The hazard can be expected to occur often.	1×10^2 hrs < 1 acc $\leq 1 \times 10^4$ hrs
3	Occasional	Likely to occur several times. The hazard can be expected to occur several times.	1×10^4 hrs < 1 acc $\leq 1 \times 10^5$ hrs
4	Remote	Likely to occur some time in the system's life cycle. The hazard can reasonably be expected to occur.	1×10^5 hrs < 1 acc $\leq 1 \times 10^6$ hrs
5	Improbable	Unlikely to occur but possible. It can be assumed that the hazard may exceptionally occur.	1×10^6 hrs < 1 acc $\leq 1 \times 10^8$ hrs
6	Incredible	Extremely unlikely to occur. It can be assumed that the hazard may not occur.	1×10^8 hrs < 1 acc $\leq 1 \times 10^{10}$ hrs

* Source: European Standard EN 50126

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Table 6: Accident Severity

Category		* Definition
I	Catastrophic	Fatalities and / or multiple severe injuries and / or major damage to the environment.
II	Critical	Single fatality and / or severe injury and / or significant damage to the environment.
III	Marginal	Minor injury and / or significant threat to the environment.
IV	Insignificant	Possible minor injury.

Source: European Standard EN 50126

Table 7: Risk Category

Risk Category*		Accident Severity Category			
		I	II	III	IV
		Catastrophic	Critical	Marginal	Insignificant
Accident Frequency Category	Frequent	Intolerable	Intolerable	Intolerable	Undesirable
	Probable	Intolerable	Intolerable	Undesirable	Tolerable
	Occasional	Intolerable	Undesirable	Undesirable	Tolerable
	Remote	Undesirable	Undesirable	Tolerable	Negligible
	Improbable	Tolerable	Tolerable	Negligible	Negligible
	Incredible	Negligible	Negligible	Negligible	Negligible

Source: European Standard EN 50126

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Table 8: Definition of Risk Categories

Risk Category	Definition
Intolerable	Risk that shall be reduced by whatever means possible.
Undesirable	Risk that shall only be accepted if further risk reduction is not practicable.
Tolerable	Risk that shall be accepted subject to it being reduced so far as is reasonably practicable.
Negligible	Risk that shall be accepted subject to endorsement of the safety submission.

HAZARD REGISTER STRUCTURE

1			2	3	4	5	6	7			8	9			10	11	12	13	14	15	16	17
Risk ID			Previous Hazard ID	Work Activity	Hazard	Hazard Cause	Impact	Initial Risk Category Ri			Mitigation Measures	Residual Risk Category Rr			Future Actions	Risk Owner	Action Owner	Due Date By	Risk Exposure Period	Target Risk Rating	Status	Remark
Hazard No.	Hazard Code	Running Number						F	S	Ri		F	S	Rr								

Definitions of Terms in the Hazard Log

Column	Field Name	Description
1.	Risk ID	Numbering system and hazard code to refer to details and the list of hazard codes attached in next page.
2.	Previous ID	The hazard number that was previously assigned to the particular hazard before it was transferred to the current hazard register.
3.	Work Activity	Describes the construction activity that may have risks.
4.	Hazard	A situation or circumstance in which there is a potential for an accident to occur that may cause injury or fatality to personnel, or damage to system or environment. For example, toxic fumes are a potential hazard. In many cases, the hazard may be continuously present under normal conditions, referred to as an intrinsic hazard. Note that the hazard is distinct from the accident, but is rather the circumstances in which the accident may occur.
5.	Hazard Cause	The events, circumstances or conditions that result in the creation of the hazard.
6.	Impact	The result of such hazard i.e. type of accident or incident that may happen if this hazard occurs.
7.	Initial Risk Category (Ri)	The initial risk assessed prior to mitigation measures is implemented. This is dependent on the frequency (F) rating and severity (S) rating.
8.	Mitigation Measures	Provision of safeguards/control measures for considerations. The risks should be re-assessed to see if either probability or severity rate has been reduced by the proposed mitigation measures.
9.	Residual Risk Category (Rr)	The risk assessed when the proposed mitigation measures are in place. This is dependent on the frequency (F) rating and severity (S) rating.
10.	Future Actions	These are additional mitigation measures identified but yet to be implemented.
11.	Risk Owner	The person who carries the responsibility for ensuring that the risk is monitored and, where appropriate, effectively managed. They might not be the person who has to do the necessary actions, but they must continuously aware of the risk and closing-out status.
12.	Action Owner	This is assigned to the person who is best able to control the risk mitigation on site.
13.	Due Date By	Timescale when mitigation measures are to be implemented.
14.	Risk Exposure Period	The period the risk will be active for work activity described.
15.	Target Risk Rating	Mitigation rating to be achieved.
16.	Status	Description of current status for the risk, which also include the implementation status for proposed mitigation measures. The status shall be reviewed monthly. Closed-out date shall be recorded against the status.
17.	Remark	Any further comments pertaining to the risks.

**Where the hazards are deleted, the reason for deletion shall be stated clearly in the Hazard Register.

Numbering System:

Contract Number / Site Contract Number / Stage / Hazard Code / Hazard Running Number / Packages

Definition:

- i. **Contract Number:** The Contract number of the A/E or Contractor who prepares the Safety Submission.
- ii. **Site Contract Number:** The contract number of site the safety submission is for.
- iii. **Hazard Code:** The hazard classification codes for the different category of hazards.
- iv. **Hazard Running Number:** The hazard running number based on the category of hazards starting with “001”.
- v. **Packages:** This refers to the number of Construction Safety Submissions (CNSS) proposed by the Contractors, usually using alphabets: A, B, C, D and etc. Only applicable to construction stage.

Hazard Classification Reference Codes

Ref	Category
100	Earth Retaining Supporting Structures (ERSS)
101	Temporary Structures
102	Diaphragm Walling/Piling
103	Permanent Structures
104	Ground Conditions
105	Adjacent Structures or buildings
106	Existing Utilities
107	Existing RTS Stations, Tunnels and Viaducts
108	Existing Road Tunnels and Viaducts
109	Obstructions
110	Interface with adjacent contracts
111	Interface with adjacent developments
112	Future developments or Addition & Alteration works
113	Tunnelling
114	Underpinning Works
115	Demolition Works

116	Blasting Works
117	Construction Methodology
118	Ground Improvements
119	Instrumentation
120	Hazardous Materials
121	Fire & Explosions
122	Flooding
123	Confined Space
124	Architectural/Glazing Works
125	Maintenance
999	Others

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Actionee / Hazard Owner :		Hazard Action Form No:	Hazard No:	Part 1
Additional Actionee / Hazard Owner :		Date Issued	Response Date Due	
Hazard				
Hazard Cause				
Accident Potential				
Initial Accident Risk	Severity:	Accident Frequency:	Risk Class:	

Description Of Action Needed :			Part 2 – Hazard Owner(s)
Actionee(s) Response :			
Name :	Signature :	Date :	

<u>Action Review & Status</u>				Part 3
Decision/Comments On Part 2 :				
Residual Accident Risk	Severity:	Accident Frequency:	Risk Class:	
Name :	Signature :	Date :		
Subsequent Action Raised : <input type="checkbox"/> Yes ⇒ Action No. : <input type="checkbox"/> No				

ANNEX A-m

BUILD ONLY RAIL PROJECTS CIVIL DESIGN SAFETY SUBMISSIONS

1 Introduction

- 1.1 The Contractor shall be required to prepare and submit risk assessment reports for the following stages of the project life cycle:
- (i) Pre-construction Stage
 - (ii) Project Handover
- 1.2 The Contractor shall be given a copy of a Civil Design Safety Submission prepared by the Authority or its Consultant. The Contractor shall use it as a base for the preparation of the Civil Construction Safety Submissions (Civil CNSS). The CNSS can be submitted in accordance to structural packages and shall be submitted to the Engineer two (2) months before application for permit to excavate or two (2) months before making structural submission to the Building and Construction Authority (BCA) for temporary works. The final timing for the submission of the CNSS shall be decided by the Engineer.
- 1.3 The Contractor shall also prepare and submit a Civil Handover Safety Submission (Civil HSS). The Civil HSS shall be submitted four (4) months before the completion of system test running or handling over of project to the Operator for trial run, whichever is earlier.
- 1.4 The Accident Frequency, Accident Severity and Risk Index for the risk assessment and Hazard Register Structure for the Civil DSS, CNSS and the HSS shall be in compliance with Clause 4 of this Annex.
- 1.5 The Civil CNSS and HSS shall be subjected to the acceptance of the Engineer. The Contractor shall make amendments and revise the Safety Submissions in accordance with the Engineer's instructions.

2 Safety Submissions

- 2.1 Civil Construction Safety Submission (CIVIL CNSS)
- 2.1.1 The objective of the Civil CNSS is to demonstrate that the residual hazards transferred from the Civil DSS have been mitigated during construction phase in the specific contract and that the Contractor has in place the necessary arrangement for managing safety risks.
- 2.1.2 The fundamental information to be provided in the Civil CNSS is the construction health and safety plan that shall include but not limited to the following areas:
- (i) An executive summary report highlighting the major areas of concerns and the status of findings.

- (ii) Description of contract work and scope:
 - Major work description and scope;
 - Programme details; and
 - Brief details of subcontractors and other consultants.
- (iii) Communication and management of the work:
 - Contractor's Safety Management System prepared according to the guideline of CP 79. The element on emergency preparedness shall include a flood protection plan, a fire safety plan, etc;
 - Arrangement for monitoring and review of health and safety performance; and
 - Arrangement for the exchange of design information between the developer, designer and contractors.
- (iv) Hazard management covering:
 - Proposed mitigation measures of the residual risk transferred from the Civil DSS;
 - Temporary works design such as temporary support structure, false work system, design of decking for support of road traffic, etc;
 - Further major hazards identified by the Contractor (besides residual hazards transferred from Civil DSS) and proposed mitigation measures for these identified "new" hazards. The information shall highlight the major construction hazards that are specific to the contract locality; and
 - Other envisaged significant health & safety risk during the construction process and its mitigation measures.
- (v) Environmental control plan (in compliance with ISO 14000).

2.1.3

The Civil CNSS shall not focus on common construction work activities such as heavy lifting, hot works, form work erection and etc. These routine construction work activities shall be addressed through method statements.

2.2 Civil Handover Safety Submission (Civil HSS)

2.2.1 The objective of the Civil HSS is to provide the operator/maintenance agencies the necessary information on maintenance hazards and those residual hazards or information that are relevant to the health and safety of any future construction work, which includes cleaning, maintenance, alterations, refurbishment and demolition.

2.2.2 The fundamental information to be provided in the HSS is the Health and Safety File that shall include but not limited to the following areas:

- (i) An executive summary report highlighting the major areas of concerns and status of findings.
- (ii) Summary list of information and final as-built drawings of the structure, including safe working loads for floors and roofs.
- (iii) Key structural principles incorporated in the design of the structure.
- (iv) Schedule of hazardous substances and location of where they are used, if any.
- (v) Information on:
 - Maintenance hazards, including hazardous areas;
 - Specialist manuals for operating and maintenance and replacement purposes; and
 - Fragile materials that maintainer must exercise additional precautions.
- (vi) Hazards that should be considered during future construction work on or nearby the premises.

3. **Risk Management Facilitator (RMF) / Designed For Safety Professional (DfS Professional) for the Hazard Identification and Risk Management Process**

3.1 Contractor shall propose and engage a qualified and competent RMF / DfS Professional. The qualifications of RMF / DfS Professional proposed for this contract shall include:

- (i) Reasonable exposure in safety and health for construction especially on transportation infrastructure projects in a similar nature to this Contract, and
- (ii) Attended the DfS for Professional Course and passed the assessment, or equivalent, and either

- Be a registered PE or Architect with a Practicing Certificate or
- Have 10 years relevant experience in the design (at least 5 years in design which includes contributions to designs, writing specifications) and the supervision of the construction of structures; and
- Have a degree accepted by Professional Engineers Board (PEB) or Board Of Architects and construction related degree accepted by Singapore Institute of Surveyors and Valuers (SISV) and Society of Project Managers (SPM).

The final approval for the appointed RMF / DfS Professional shall be within the Authority's discretion. The appointed DFS Professional is to perform the necessary duties as part of the delegation of the Authority's duty.

- 3.2 The RMF / DfS Professional shall facilitate the hazard identification and risk management sessions for the preparations of the Safety Submissions. The Authority shall be invited to attend these sessions as observers. The Authority may send representative(s) to attend if deemed necessary.
- 3.3 The RMF / DfS Professional shall be the appointed person in-charge of the preparation and submission of the Safety Submissions. The hazard registers are live documents. He shall add new hazards identified, monitor and update the hazards in the register to ensure all hazards are mitigated and closed.
- 3.4 The RMF / DfS Professional shall attend the Engineer's Project Safety Committee Meetings and any other risk management meetings directed by the Engineer.

4 Risk Matrix, Hazard Register Structure and Hazard Action Form(HAF)

- 4.1 The Contractor shall prepare the Safety Submissions using the risk matrix given:

Table 1 : Accident Frequency

Likelihood	Rating	Description
Frequent	I	Likely to occur 12 times or more per year
Probable	II	Likely to occur 4 times per year
Occasional	III	Likely to occur once a year
Remote	IV	Likely to occur once in 5 year project period
Improbable	V	Unlikely, but may exceptionally occur

Table 2 - Accident Severity

No	Consequence	Rating	Description(*)
1	Catastrophic	I	<ul style="list-style-type: none"> Single or Multiple loss of life from injury or occupational disease, immediately or delayed; and / or Loss of whole production for greater than 3 days and / or Total loss in excess of \$1 million.
2	Critical	II	<ul style="list-style-type: none"> Reportable major injury¹, occupational disease¹ or dangerous occurrence; and / or Damaged to works or plants causing delays of up to 3 days; and / or Total loss in excess of \$250,000 but up to \$1 million.
3	Marginal	III	<ul style="list-style-type: none"> Reportable injury², occupational disease² ; and / or Damage to works or plants causing delays of up to 1 day; and / or, Total loss in excess of \$25,000 but up to \$250,000.
4	Negligible	IV	<ul style="list-style-type: none"> Minor injury³, no lost time or person involved returns to work during the shift after treatment; and / or Damage to works or plants does not cause significant delays; and / or Total loss of up to \$25,000.

Note:

(*) If more than one of the descriptions occurs, the severity rating would be increased to the next higher level. Applicable to item numbers 2 and 3 only.

¹ For man-days lost greater than 7 days.

² For man-days lost between 4 to 7 days.

³ For man-days lost between 1 to 3 days

Table 3: Risk Index Matrix

Risk Category			Accident Severity Category			
			I	II	III	IV
			Catastrophic	Critical	Marginal	Negligible
Accident Frequency Category	I	Frequent	A	A	A	B
	II	Probable	A	A	B	C
	III	Occasional	A	B	C	C
	IV	Remote	B	C	C	D
	V	Improbable	C	C	D	D

The definitions of the risk indices determined from the Risk Index Assessment Matrix are presented in the table 4.

TABLE 4: Definition of Risk Index

Risk Index	Description	Definition
A	Intolerable	Risk shall be reduced by whatever means possible.
B	Undesirable	Risk shall only be accepted if further risk reduction is not practicable.
C	Tolerable	Risk shall be accepted subject to demonstration that the level of risk is as low as reasonably practicable.
D	Acceptable	Risk is acceptable.

- 4.2 For hazards relating to **operation and maintenance**, the Accident Frequency, Accident Severity and the Risk Category shall be in accordance to the definitions given in Table 5, 6, 7 and 8.

Table 5: Accident Frequency

Category		* Definition	Frequency Guide (Operating hour) <i>acc = accident</i>
1	Frequent	Likely to occur frequently. The hazard will be continually experienced.	$\geq 1 \text{ acc per } 100 \text{ hrs}$
2	Probable	Will occur several times. The hazard can be expected to occur often.	$1 \times 10^2 \text{ hrs} < 1 \text{ acc} \leq 1 \times 10^4 \text{ hrs}$
3	Occasional	Likely to occur several times. The hazard can be expected to occur several times.	$1 \times 10^4 \text{ hrs} < 1 \text{ acc} \leq 1 \times 10^5 \text{ hrs}$
4	Remote	Likely to occur some time in the system's life cycle. The hazard can reasonably be expected to occur.	$1 \times 10^5 \text{ hrs} < 1 \text{ acc} \leq 1 \times 10^6 \text{ hrs}$
5	Improbable	Unlikely to occur but possible. It can be assumed that the hazard may exceptionally occur.	$1 \times 10^6 \text{ hrs} < 1 \text{ acc} \leq 1 \times 10^8 \text{ hrs}$
6	Incredible	Extremely unlikely to occur. It can be assumed that the hazard may not occur.	$1 \times 10^8 \text{ hrs} < 1 \text{ acc} \leq 1 \times 10^{10} \text{ hrs}$

* Source: European Standard EN 50126

Table 6: Accident Severity

Category		* Definition
I	Catastrophic	Fatalities and / or multiple severe injuries and / or major damage to the environment.
II	Critical	Single fatality and / or severe injury and / or significant damage to the environment.
III	Marginal	Minor injury and / or significant threat to the environment.
IV	Insignificant	Possible minor injury.

Source: European Standard EN 50126

Table 7: Risk Category

Risk Category*		Accident Severity Category			
		I	II	III	IV
		Catastrophic	Critical	Marginal	Insignificant
Accident Frequency Category	Frequent	Intolerable	Intolerable	Intolerable	Undesirable
	Probable	Intolerable	Intolerable	Undesirable	Tolerable
	Occasional	Intolerable	Undesirable	Undesirable	Tolerable
	Remote	Undesirable	Undesirable	Tolerable	Negligible
	Improbable	Tolerable	Tolerable	Negligible	Negligible
	Incredible	Negligible	Negligible	Negligible	Negligible

Source: European Standard EN 50126

Table 8: Definition of Risk Categories

Risk Category	Definition
Intolerable	Risk that shall be reduced by whatever means possible.
Undesirable	Risk that shall only be accepted if further risk reduction is not practicable.
Tolerable	Risk that shall be accepted subject to it being reduced so far as is reasonably practicable.
Negligible	Risk that shall be accepted subject to endorsement of the safety submission.

HAZARD REGISTER STRUCTURE

1			2	3	4	5	6	7			8	9			10	11	12	13	14	15	16	17
Risk ID			Previous Hazard ID	Work Activity	Hazard	Hazard Cause	Impact	Initial Risk Category Ri			Mitigation Measures	Residual Risk Category Rr			Future Actions	Risk Owner	Action Owner	Due Date By	Risk Exposure Period	Target Risk Rating	Status	Remark
Hazard No.	Hazard Code	Running Number						F	S	Ri		F	S	Rr								

Definitions of Terms in the Hazard Log

Column	Field Name	Description
1.	Risk ID	Numbering system and hazard code to refer to details and the list of hazard codes attached in next page.
2.	Previous ID	The hazard number that was previously assigned to the particular hazard before it was transferred to the current hazard register.
3.	Work Activity	Describes the construction activity that may have risks.
4.	Hazard	A situation or circumstance in which there is a potential for an accident to occur that may cause injury or fatality to personnel, or damage to system or environment. For example, toxic fumes are a potential hazard. In many cases, the hazard may be continuously present under normal conditions, referred to as an intrinsic hazard. Note that the hazard is distinct from the accident, but is rather the circumstances in which the accident may occur.
5.	Hazard Cause	The events, circumstances or conditions that result in the creation of the hazard.
6.	Impact	The result of such hazard i.e. type of accident or incident that may happen if this hazard occurs.
7.	Initial Risk Category (Ri)	The initial risk assessed prior to mitigation measures is implemented. This is dependent on the frequency (F) rating and severity (S) rating.
8.	Mitigation Measures	Provision of safeguards/control measures for considerations. The risks should be re-assessed to see if either probability or severity rate has been reduced by the proposed mitigation measures.
9.	Residual Risk Category (Rr)	The risk assessed when the proposed mitigation measures are in place. This is dependent on the frequency (F) rating and severity (S) rating.
10.	Future Actions	These are additional mitigation measures identified but yet to be implemented.
11.	Risk Owner	The person who carries the responsibility for ensuring that the risk is monitored and, where appropriate, effectively managed. They might not be the person who has to do the necessary actions, but they must continuously aware of the risk and closing-out status.
12.	Action Owner	This is assigned to the person who is best able to control the risk mitigation on site.
13.	Due Date By	Timescale when mitigation measures are to be implemented.
14.	Risk Exposure Period	The period the risk will be active for work activity described.
15.	Target Risk Rating	Mitigation rating to be achieved.
16.	Status	Description of current status for the risk, which also include the implementation status for proposed mitigation measures. The status shall be reviewed monthly. Closed-out date shall be recorded against the status.
17.	Remark	Any further comments pertaining to the risks.

**Where the hazards are deleted, the reason for deletion shall be stated clearly in the Hazard Register.

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Numbering System:

Contract Number / Site Contract Number / Stage / Hazard Code / Hazard Running Number / Packages

Definition:

- i. **Contract Number:** The Contract number of the A/E or Contractor who prepares the Safety Submission.
- ii. **Site Contract Number:** The contract number of site the safety submission is for.
- iii. **Hazard Code:** The hazard classification codes for the different category of hazards.
- iv. **Hazard Running Number:** The hazard running number based on the category of hazards starting with "001".
- v. **Packages:** This refers to the number of Construction Safety Submissions (CNSS) proposed by the Contractors, usually using alphabets: A, B, C, D and etc. Only applicable to construction stage.

Hazard Classification Reference Codes

Ref	Category
100	Earth Retaining Supporting Structures (ERSS)
101	Temporary Structures
102	Diaphragm Walling/Piling
103	Permanent Structures
104	Ground Conditions
105	Adjacent Structures or buildings
106	Existing Utilities
107	Existing RTS Stations, Tunnels and Viaducts
108	Existing Road Tunnels and Viaducts
109	Obstructions
110	Interface with adjacent contracts
111	Interface with adjacent developments
112	Future developments or Addition & Alteration works
113	Tunnelling
114	Underpinning Works
115	Demolition Works
116	Blasting Works

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117	Construction Methodology
118	Ground Improvements
119	Instrumentation
120	Hazardous Materials
121	Fire & Explosions
122	Flooding
123	Confined Space
124	Architectural/Glazing Works
125	Maintenance
999	Others

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Land Transport Authority	HAZARD ACTION FORM
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Actionee / Hazard Owner :		Hazard Action Form No:		Hazard No:		Part 1
Additional Actionee / Hazard Owner :		Date Issued		Response Date Due		
Hazard						
Hazard Cause						
Accident Potential						
Initial Accident Risk	Severity:	Accident Frequency:		Risk Class:		

Description Of Action Needed :			Part 2 – Hazard Owner(s)
Actionee(s) Response :			
Name :	Signature :	Date :	

<u>Action Review & Status</u>				Part 3
Decision/Comments On Part 2 :				
Residual Accident Risk	Severity:	Accident Frequency:	Risk Class:	
Name :	Signature :	Date :		
Subsequent Action Raised: <input type="checkbox"/> Yes ⇒ Action No. : <input type="checkbox"/> No				

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ANNEX A-n

**D&B ROAD PROJECTS
CIVIL DESIGN SAFETY SUBMISSIONS**

1 Introduction

- 1.1 The Contractor shall be required to prepare and submit risk assessment reports for the following project life cycle:
- (i) Design stages: Pre-Final Design and Final Design
 - (ii) Pre-construction
 - (iii) Project handover
- 1.2 The risk assessment reports to be submitted at the Pre-Final Design Stage shall be the Civil Design Pre-Final Safety Submissions and at the Final Design Stage shall be the Civil Design Safety Submission (Civil DSS).
- 1.3 The Civil Design Pre-Final Safety Submissions shall be submitted one (1) month after pre-final design submission and the Civil Design Safety Submissions (Civil DSS) shall be submitted one (1) month after the final design submission.
- 1.4 After the completion of the Civil DSS, the Contractor shall use it as a base for the preparation of the Civil Construction Safety Submissions (Civil CNSS). The CNSS can be submitted in accordance to structural packages and shall be submitted to the Engineer two (2) months before application for permit to excavate.
- 1.5 The Contractor shall also prepare and submit a Civil Handover Safety Submission (Civil HSS). The Civil HSS shall be submitted four (4) months before the end of the defects liability period (DLP) of the contract.
- 1.6 The Accident Frequency, Accident Severity and Risk Index for the risk assessment and Hazard Register Structure for the Civil DSS, CNSS and the HSS shall be in compliance with Clause 4 of this Annex.
- 1.7 The Civil DSS, CNSS and HSS shall be subjected to the acceptance of the Engineer. The Contractor shall make amendments and revise the Safety Submissions in accordance with the Engineer's instructions.

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2 Safety Submissions

2.1 Civil Design Safety Submissions (CIVIL DSS)

2.1.1 The objectives of the Safety Submissions at the Pre-Final and Final design stages is to demonstrate that the design concept of the permanent works and the proposed construction methodologies and measures under the specific contract has addressed the relevant identified preliminary hazards and newly identified construction and maintenance hazards.

2.1.2 The fundamental information to be provided in the Civil Design Safety Submissions shall include but not limited to the following:

(i) Background Information

- (a) An executive summary highlighting the major areas of concern and the required mitigation measures including the status of findings
- (b) Brief description of the Civil Contract and its scope (the number of stations, tunnel/viaduct/at grade trackway, stations descriptions, alignment and etc.)
- (c) Environment (On adjacent buildings, utilities, water bodies)
- (d) Proposed Method of Construction
- (e) Details of key milestone schedules of the Contract

(ii) Identification of Major Hazards and Mitigation

- (a) Relevant hazards identified in the Civil Concept Safety Submissions (furnished by the Authority)
- (b) Impact To Utilities
- (c) Impact To Buildings and Adjacent Structures
- (d) Impact To Existing and Future Rapid Transit System
- (e) Flooding (to public and own works)
- (f) Surface/Ground Settlement
- (g) Environmental Impact
- (h) Demolition of Buildings and Structures

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- (i) Underpinning of Buildings and Structures
 - (j) Construction near high risks areas, e.g. petrol stations, ammunition stores, power plants, dump sites and etc.
 - (k) Risk associated with future provisions
 - (l) Risk associated with known future provisions
 - (m) Highlight hazards that cannot be eliminated through design of permanent structures and requires mitigation measures during construction
 - (n) Highlight maintenance hazards and their proposed operation measures (A separate Civil DSS focusing on the maintenance hazards shall be prepared as highlighted in Clause 2.1.3)
 - (o) Major risk to workers and public
 - (p) Specific compliance requirements during construction for safety and health
- (iii) Hazard and Risk Management Process
- (a) A description on the roles and responsibilities in the review and acceptance of the mitigation measures
 - (b) The hazard and risk mitigation process shall demonstrate that the high- level hazards have been assessed and that there is no hazard with residual “Intolerable” risk categorisation after the proposed mitigation measures.

2.1.3 The Civil DSS for maintenance hazards shall highlight design provisions for safe maintenance of civil infrastructure, architecture fittings / finishes and E&M equipment and fittings, as well as address the major high level maintenance risks. It shall include, but not limited to, the following:

- (i) Falling from height;
- (ii) Overloading of slab (including equipment delivery and replacement routes);
- (iii) Lifting (focusing on permanent lifting hooks, beams, lifting machines / equipment or cranes provided for maintenance purposes);
- (iv) Working in confined space;
- (v) Fire / explosion (storage / handling of hazardous substances / materials);

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- (vi) Ergonomics (posture of workers during maintenance);
- (vii) Health (noise, heat and etc); and
- (viii) Others.

2.1.4 The Civil DSS for maintenance hazards shall be subsequently transferred to Civil Handover Safety Submission (Civil HSS) to be handover to the operator.

2.2 Civil Construction Safety Submission (CIVIL CNSS)

2.2.1 The objective of the Civil CNSS is to demonstrate that the residual hazards transferred from the Civil DSS have been mitigated during construction phase in the specific contract and that the Contractor has in place the necessary arrangement for managing safety risks.

2.2.2 The fundamental information to be provided in the Civil CNSS is the construction health and safety plan that shall include but not limited to the following areas:

- (i) An executive summary report highlighting the major areas of concerns and the status of findings.
- (ii) Description of contract work and scope:
 - Major work description and scope;
 - Programme details; and
 - Brief details of subcontractors and other consultants.
- (iii) Communication and management of the work:
 - Contractor's Safety Management System prepared according to the guideline of CP 79. The element on emergency preparedness shall include a flood protection plan, a fire safety plan, etc;
 - Arrangement for monitoring and review of health and safety performance; and
 - Arrangement for the exchange of design information between the developer, designer and contractors.
- (iv) Hazard management covering:
 - Proposed mitigation measures of the residual risk transferred from the Civil DSS;
 - Temporary works design such as temporary support structure, false work system, design of decking for support of road traffic, etc;

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- Further major hazards identified by the Contractor (besides residual hazards transferred from Civil DSS) and proposed mitigation measures for these identified “new” hazards. The information shall highlight the major construction hazards that are specific to the contract locality; and
- Other envisaged significant health & safety risk during the construction process and its mitigation measures.

(v) Environmental control plan (in compliance with ISO 14000).

2.2.3 The Civil CNSS shall not focus on common construction work activities such as heavy lifting, hot works, form work erection and etc. These routine construction work activities shall be addressed through method statements.

2.3 Civil Handover Safety Submission (Civil HSS)

2.3.1 The objective of the Civil HSS is to provide the operator/maintenance agencies the necessary information on maintenance hazards and those residual hazards or information that are relevant to the health and safety of any future construction work, which includes cleaning, maintenance, alterations, refurbishment and demolition.

2.3.2 The fundamental information to be provided in the HSS is the Health and Safety File that shall include but not limited to the following areas:

- (i) An executive summary report highlighting the major areas of concerns and status of findings.
- (ii) Summary list of information and final as-built drawings of the structure, including safe working loads for floors and roofs.
- (iii) Key structural principles incorporated in the design of the structure.
- (iv) Schedule of hazardous substances and location of where they are used, if any.
- (v) Information on:
 - Maintenance hazards, including hazardous areas;
 - Specialist manuals for operating and maintenance and replacement purposes; and
 - Fragile materials that maintainer must exercise additional precautions.
- (vi) Hazards that should be considered during future construction work on or nearby the premises.

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3. Risk Management Facilitator (RMF) / Designed For Safety Professional (DfS Professional) for the Hazard Identification and Risk Management Process

3.1 Contractor shall propose and engage a qualified and competent RMF / DfS Professional. The qualifications of RMF / DfS Professional proposed for this contract shall include:

- (i) Reasonable exposure in safety and health for construction especially on transportation infrastructure projects in a similar nature to this Contract, and
- (ii) Attended the DfS for Professional Course and passed the assessment, or equivalent, and either
 - Be a registered PE or Architect with a Practicing Certificate or
 - Have 10 years relevant experience in the design (at least five (5) years in design which includes contributions to designs, writing specifications) and the supervision of the construction of structures; and
 - Have a degree accepted by Professional Engineers Board (PEB) or Board Of Architects and construction related degree accepted by Singapore Institute of Surveyors and Valuers (SISV) and Society of Project Managers (SPM).

The final approval for the appointed RMF / DfS Professional shall be within the Authority's discretion. The appointed DFS Professional is to perform the necessary duties as part of the delegation of the Authority's duty.

3.2 The RMF / DfS Professional shall facilitate the hazard identification and risk management sessions for the preparations of the Safety Submissions. The Authority shall be invited to attend these sessions as observers. The Authority may send representative(s) to attend if deemed necessary.

3.3 The RMF / DfS Professional shall be the appointed person in-charge of the preparation and submission of the Safety Submissions. The hazard registers are live documents. He shall add new hazards identified, monitor and update the hazards in the register to ensure all hazards are mitigated and closed.

3.4 The RMF / DfS Professional shall attend the Engineer's Project Safety Committee Meetings and any other risk management meetings directed by the Engineer.

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4 Risk Matrix, Hazard Register Structure and Hazard Action Form(HAF)

4.1 The Contractor shall prepare the Safety Submissions using the risk matrix given:

Table 1 : Accident Frequency

Likelihood	Rating	Description
Frequent	I	Likely to occur 12 times or more per year
Probable	II	Likely to occur 4 times per year
Occasional	III	Likely to occur once a year
Remote	IV	Likely to occur once in 5 year project period
Improbable	V	Unlikely, but may exceptionally occur

Table 2 - Accident Severity

No	Consequence	Rating	Description(*)
1	Catastrophic	I	<ul style="list-style-type: none"> Single or Multiple loss of life from injury or occupational disease, immediately or delayed; and / or Loss of whole production for greater than 3 man-days and / or Total loss in excess of \$1 million.
2	Critical	II	<ul style="list-style-type: none"> Reportable major injury¹, occupational disease¹ or dangerous occurrence; and / or Damaged to works or plants causing delays of up to 3 man-days; and / or Total loss in excess of \$250,000 but up to \$1 million.
3	Marginal	III	<ul style="list-style-type: none"> Reportable injury², occupational disease² ; and / or Damage to works or plants causing delays of up to 1 man-day; and / or, Total loss in excess of \$25,000 but up to \$250,000.

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No	Consequence	Rating	Description(*)
4	Negligible	IV	<ul style="list-style-type: none"> Minor injury³, no lost time or person involved returns to work during the shift after treatment; and / or Damage to works or plants does not cause significant delays; and / or Total loss of up to \$25,000.

Note:

(*) If more than one of the descriptions occurs, the severity rating would be increased to the next higher level. Applicable to item numbers 2 and 3 only.

¹ For man-days lost greater than 7 days.

² For man-days lost between 4 to 7 days.

³ For man-days lost between 1 to 3 days.

Table 3: Risk Index Matrix

Risk Category			Accident Severity Category			
			I	II	III	IV
			Catastrophic	Critical	Marginal	Negligible
Accident Frequency Category	I	Frequent	A	A	A	B
	II	Probable	A	A	B	C
	III	Occasional	A	B	C	C
	IV	Remote	B	C	C	D
	V	Improbable	C	C	D	D

The definitions of the risk indices determined from the Risk Index Assessment Matrix are presented in the table 4.

TABLE 4: Definition of Risk Index

Risk Index	Description	Definition
A	Intolerable	Risk shall be reduced by whatever means possible.
B	Undesirable	Risk shall only be accepted if further risk reduction is not practicable.
C	Tolerable	Risk shall be accepted subject to demonstration that the level of risk is as low as reasonably practicable.
D	Acceptable	Risk is acceptable.

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- 4.2 For hazards relating to **operation and maintenance**, the Accident Frequency, Accident Severity and the Risk Category shall be in accordance to the definitions given in Table 5, 6, 7 and 8.

Table 5: Accident Frequency

Category	Definition	Frequency Guide
Frequent	Likely to occur often	10 times per year or more
Occasional	Likely to occur several times	Less than 10 times per year but more than once per year
Remote	Likely to occur sometime during the system's operational life	Less than once per year but more than once every 10 years
Improbable	Unlikely to occur but possible	Less than once every 10 years but more than once every 100 years
Incredible	Unlikely to occur	Once every 100 years or less

Table 6: Accident Severity

Category	Definition
HIGH	Multiple fatalities and / or severe injuries
MEDIUM	Single fatality or severe injury, with possible other minor injuries
LOW	Minor injuries or property damage only
NEGLIGIBLE	Property damage only

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Table 7: Risk Category

Risk Category		Accident Severity Category			
		Negligible	Low	Medium	High
Accident Frequency Category	Frequent	B	A	A	A
	Occasional	C	B	A	A
	Remote	D	C	B	A
	Improbable	D	D	C	B
	Incredible	D	D	D	C

Table 8: Definition of Risk Categories

Risk Category	Description	Definition
A	Intolerable	Risk shall be reduced by whatever means possible.
B	Undesirable	Risk shall only be accepted by LTA if further risk reduction is not practicable.
C	Tolerable	Risk shall be accepted by LTA subject to endorsement by the PSR Committee (Roads).
D	Acceptable	Risk shall be accepted by LTA.

HAZARD REGISTER STRUCTURE

1			2	3	4	5	6	7			8	9			10	11	12	13	14	15	16	17
Risk ID			Previous Hazard ID	Work Activity	Hazard	Hazard Cause	Impact	Initial Risk Category Ri			Mitigation Measures	Residual Risk Category Rr			Future Actions	Risk Owner	Action Owner	Due Date By	Risk Exposure Period	Target Risk Rating	Status	Remark
Hazard No.	Hazard Code	Running Number						F	S	Ri		F	S	Rr								

Definitions of Terms in the Hazard Log

Column	Field Name	Description
1.	Risk ID	Numbering system and hazard code to refer to details and the list of hazard codes attached in next page.
2.	Previous ID	The hazard number that was previously assigned to the particular hazard before it was transferred to the current hazard register.
3.	Work Activity	Describes the construction activity that may have risks.
4.	Hazard	A situation or circumstance in which there is a potential for an accident to occur that may cause injury or fatality to personnel, or damage to system or environment. For example, toxic fumes are a potential hazard. In many cases, the hazard may be continuously present under normal conditions, referred to as an intrinsic hazard. Note that the hazard is distinct from the accident, but is rather the circumstances in which the accident may occur.
5.	Hazard Cause	The events, circumstances or conditions that result in the creation of the hazard.
6.	Impact	The result of such hazard i.e. type of accident or incident that may happen if this hazard occurs.
7.	Initial Risk Category (Ri)	The initial risk assessed prior to mitigation measures is implemented. This is dependent on the frequency (F) rating and severity (S) rating.
8.	Mitigation Measures	Provision of safeguards/control measures for considerations. The risks should be re-assessed to see if either probability or severity rate has been reduced by the proposed mitigation measures.
9.	Residual Risk Category (Rr)	The risk assessed when the proposed mitigation measures are in place. This is dependent on the frequency (F) rating and severity (S) rating.
10.	Future Actions	These are additional mitigation measures identified but yet to be implemented.
11.	Risk Owner	The person who carries the responsibility for ensuring that the risk is monitored and, where appropriate, effectively managed. They might not be the person who has to do the necessary actions, but they must continuously aware of the risk and closing-out status.
12.	Action Owner	This is assigned to the person who is best able to control the risk mitigation on site.
13.	Due Date By	Timescale when mitigation measures are to be implemented.
14.	Risk Exposure Period	The period the risk will be active for work activity described.
15.	Target Risk Rating	Mitigation rating to be achieved.
16.	Status	Description of current status for the risk, which also include the implementation status for proposed mitigation measures. The status shall be reviewed monthly. Closed-out date shall be recorded against the status.
17.	Remark	Any further comments pertaining to the risks.

**Where the hazards are deleted, the reason for deletion shall be stated clearly in the Hazard Register.

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Numbering System:

Contract Number / Site Contract Number / Stage / Hazard Code / Hazard Running Number / Packages

Definition:

- i. **Contract Number:** The Contract number of the A/E or Contractor who prepares the Safety Submission.
- ii. **Site Contract Number:** The contract number of site the safety submission is for.
- iii. **Hazard Code:** The hazard classification codes for the different category of hazards.
- iv. **Hazard Running Number:** The hazard running number based on the category of hazards starting with "001".
- v. **Packages:** This refers to the number of Construction Safety Submissions (CNSS) proposed by the Contractors, usually using alphabets: A, B, C, D and etc. Only applicable to construction stage.

Hazard Classification Reference Codes

Ref	Category
100	Earth Retaining Supporting Structures (ERSS)
101	Temporary Structures
102	Diaphragm Walling/Piling
103	Permanent Structures
104	Ground Conditions
105	Adjacent Structures or buildings
106	Existing Utilities
107	Existing RTS Stations, Tunnels and Viaducts
108	Existing Road Tunnels and Viaducts
109	Obstructions
110	Interface with adjacent contracts
111	Interface with adjacent developments
112	Future developments or Addition & Alteration works
113	Tunnelling
114	Underpinning Works
115	Demolition Works
116	Blasting Works

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117	Construction Methodology
118	Ground Improvements
119	Instrumentation
120	Hazardous Materials
121	Fire & Explosions
122	Flooding
123	Confined Space
124	Architectural/Glazing Works
125	Maintenance
999	Others

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Land Transport Authority	HAZARD ACTION FORM
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Actionee / Hazard Owner :		Hazard Action Form No:		Hazard No:		Part 1
Additional Actionee / Hazard Owner :		Date Issued		Response Date Due		
Hazard						
Hazard Cause						
Accident Potential						
Initial Accident Risk	Severity:	Accident Frequency:		Risk Class:		

Description Of Action Needed :			Part 2 – Hazard Owner(s)
Actionee(s) Response :			
Name :	Signature :	Date :	

<u>Action Review & Status</u>				Part 3
Decision/Comments On Part 2 :				
Residual Accident Risk	Severity:	Accident Frequency:	Risk Class:	
Name :	Signature :	Date :		
Subsequent Action Raised : <input type="checkbox"/> Yes ⇒ Action No. : <input type="checkbox"/> No				

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ANNEX A-o

BUILD ONLY ROAD PROJECTS CIVIL DESIGN SAFETY SUBMISSIONS

1 Introduction

- 1.1 The Contractor shall be required to prepare and submit risk assessment reports for the following stages of the project life cycle:
- (i) Pre-construction Stage
 - (ii) Project Handover
- 1.2 The Contractor shall be given a copy of a Civil Design Safety Submission prepared by the Authority or its Consultant. The Contractor shall use it as a base for the preparation of the Civil Construction Safety Submissions (Civil CNSS). The CNSS can be submitted in accordance to structural packages and shall be submitted to the Engineer two (2) months before application for permit to excavate; or two (2) months before making structural submission to the Building and Construction Authority (BCA) for temporary works. The Engineer shall decide on the final timing for the CNSS submission.
- 1.3 The Contractor shall also prepare and submit a Civil Handover Safety Submission (Civil HSS). The Civil HSS shall be submitted four (4) months before the end of the defects liability period (DLP) of the contract.
- 1.4 The Accident Frequency, Accident Severity and Risk Index for the risk assessment and Hazard Register Structure for the Civil DSS, CNSS and the HSS shall be in compliance with Clause 4 of this Annex.
- 1.5 The Civil CNSS and HSS shall be subjected to the acceptance of the Engineer. The Contractor shall make amendments and revise the Safety Submissions in accordance with the Engineer's instructions.

2 Safety Submissions

- 2.1 Civil Construction Safety Submission (CIVIL CNSS)
- 2.1.1 The objective of the Civil CNSS is to demonstrate that the residual hazards transferred from the Civil DSS have been mitigated during construction phase in the specific contract and that the Contractor has in place the necessary arrangement for managing safety risks.
- 2.1.2 The fundamental information to be provided in the Civil CNSS is the construction health and safety plan that shall include but not limited to the following areas:

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- (i) An executive summary report highlighting the major areas of concerns and the status of findings.
- (ii) Description of contract work and scope:
 - Major work description and scope;
 - Programme details; and
 - Brief details of subcontractors and other consultants.
- (iii) Communication and management of the work:
 - Contractor's Safety Management System prepared according to the guideline of CP 79. The element on emergency preparedness shall include a flood protection plan, a fire safety plan, etc;
 - Arrangement for monitoring and review of health and safety performance; and
 - Arrangement for the exchange of design information between the developer, designer and contractors.
- (iv) Hazard management covering:
 - Proposed mitigation measures of the residual risk transferred from the Civil DSS;
 - Temporary works design such as temporary support structure, false work system, design of decking for support of road traffic, etc;
 - Further major hazards identified by the Contractor (besides residual hazards transferred from Civil DSS) and proposed mitigation measures for these identified "new" hazards. The information shall highlight the major construction hazards that are specific to the contract locality; and
 - Other envisaged significant health & safety risk during the construction process and its mitigation measures.
- (v) Environmental control plan (in compliance with ISO 14000).

2.1.3

The Civil CNSS shall not focus on common construction work activities such as heavy lifting, hot works, form work erection and etc. These routine construction work activities shall be addressed through method statements.

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2.2 Civil Handover Safety Submission (Civil HSS)

2.2.1 The objective of the Civil HSS is to provide the operator/maintenance agencies the necessary information on maintenance hazards and those residual hazards or information that are relevant to the health and safety of any future construction work, which includes cleaning, maintenance, alterations, refurbishment and demolition.

2.2.2 The fundamental information to be provided in the HSS is the Health and Safety File that shall include but not limited to the following areas:

- (i) An executive summary report highlighting the major areas of concerns and status of findings.
- (ii) Summary list of information and final as-built drawings of the structure, including safe working loads for floors and roofs.
- (iii) Key structural principles incorporated in the design of the structure.
- (iv) Schedule of hazardous substances and location of where they are used, if any.
- (v) Information on:
 - Maintenance hazards, including hazardous areas;
 - Specialist manuals for operating and maintenance and replacement purposes; and
 - Fragile materials that maintainer must exercise additional precautions.
- (vi) Hazards that should be considered during future construction work on or nearby the premises.

3 **Risk Management Facilitator (RMF) / Designed For Safety Professional (DfS Professional) for the Hazard Identification and Risk Management Process**

3.1 Contractor shall propose and engage a qualified and competent RMF / DfS Professional. The qualifications of RMF / DfS Professional proposed for this contract shall include:

- (i) Reasonable exposure in safety and health for construction especially on transportation infrastructure projects in a similar nature to this Contract, and

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- (ii) Attended the DfS for Professional Course and passed the assessment, or equivalent, and either
- Be a registered PE or Architect with a Practicing Certificate or
 - Have 10 years relevant experience in the design (at least five (5) years in design which includes contributions to designs, writing specifications) and the supervision of the construction of structures; and
 - Have a degree accepted by Professional Engineers Board (PEB) or Board Of Architects and construction related degree accepted by Singapore Institute of Surveyors and Valuers (SISV) and Society of Project Managers (SPM).

The final approval for the appointed RMF / DfS Professional shall be within the Authority's discretion. The appointed DFS Professional is to perform the necessary duties as part of the delegation of the Authority's duty.

- 3.2 The RMF / DfS Professional shall facilitate the hazard identification and risk management sessions for the preparations of the Safety Submissions. The Authority shall be invited to attend these sessions as observers. The Authority may send representative(s) to attend if deemed necessary.
- 3.3 The RMF / DfS Professional shall be the appointed person in-charge of the preparation and submission of the Safety Submissions. The hazard registers are live documents. He shall add new hazards identified, monitor and update the hazards in the register to ensure all hazards are mitigated and closed.
- 3.4 The RMF / DfS Professional shall attend the Engineer's Project Safety Committee Meetings and any other risk management meetings directed by the Engineer.

4 Risk Matrix, Hazard Register Structure and Hazard Action Form (HAF)

- 4.1 The Contractor shall prepare the Safety Submissions using the risk matrix given:

Table 1 : Accident Frequency

Likelihood	Rating	Description
Frequent	I	Likely to occur 12 times or more per year
Probable	II	Likely to occur 4 times per year
Occasional	III	Likely to occur once a year
Remote	IV	Likely to occur once in 5 year project period
Improbable	V	Unlikely, but may exceptionally occur

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Table 2 - Accident Severity

No	Consequence	Rating	Description(*)
1	Catastrophic	I	<ul style="list-style-type: none"> Single or Multiple loss of life from injury or occupational disease, immediately or delayed; and / or Loss of whole production for greater than 3 days and / or Total loss in excess of \$1 million.
2	Critical	II	<ul style="list-style-type: none"> Reportable major injury¹, occupational disease¹ or dangerous occurrence; and / or Damaged to works or plants causing delays of up to 3 days; and / or Total loss in excess of \$250,000 but up to \$1 million.
3	Marginal	III	<ul style="list-style-type: none"> Reportable injury², occupational disease² ; and / or Damage to works or plants causing delays of up to 1 day; and / or, Total loss in excess of \$25,000 but up to \$250,000.
4	Negligible	IV	<ul style="list-style-type: none"> Minor injury³, no lost time or person involved returns to work during the shift after treatment; and / or Damage to works or plants does not cause significant delays; and / or Total loss of up to \$25,000.

Note:

(*) If more than one of the descriptions occurs, the severity rating would be increased to the next higher level. Applicable to item numbers 2 and 3 only.

¹ For man-days lost greater than 7 days.

² For man-days lost between 4 to 7 days.

³ For man-days lost between 1 to 3 days.

Table 3: Risk Index Matrix

Risk Category			Accident Severity Category			
			I	II	III	IV
			Catastrophic	Critical	Marginal	Negligible
Accident Frequency Category	I	Frequent	A	A	A	B
	II	Probable	A	A	B	C
	III	Occasional	A	B	C	C
	IV	Remote	B	C	C	D
	V	Improbable	C	C	D	D

The definitions of the risk indices determined from the Risk Index Assessment Matrix are presented in the table 4.

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TABLE 4: Definition of Risk Index

Risk Index	Description	Definition
A	Intolerable	Risk shall be reduced by whatever means possible.
B	Undesirable	Risk shall only be accepted if further risk reduction is not practicable.
C	Tolerable	Risk shall be accepted subject to demonstration that the level of risk is as low as reasonably practicable.
D	Acceptable	Risk is acceptable.

- 4.2 For hazards relating to **operation and maintenance**, the Accident Frequency, Accident Severity and the Risk Category shall be in accordance to the definitions given in Table 5, 6, 7 and 8.

Table 5: Accident Frequency

Category	Definition	Frequency Guide
Frequent	Likely to occur often	10 times per year or more
Occasional	Likely to occur several times	Less than 10 times per year but more than once per year
Remote	Likely to occur sometime during the system's operational life	Less than once per year but more than once every 10 years
Improbable	Unlikely to occur but possible	Less than once every 10 years but more than once every 100 years
Incredible	Unlikely to occur	Once every 100 years or less

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Table 6: Accident Severity

Category	Definition
HIGH	Multiple fatalities and / or severe injuries
MEDIUM	Single fatality or severe injury, with possible other minor injuries
LOW	Minor injuries or property damage only
NEGLIGIBLE	Property damage only

Table 7: Risk Category

Risk Category		Accident Severity Category			
		Negligible	Low	Medium	High
Accident Frequency Category	Frequent	B	A	A	A
	Occasional	C	B	A	A
	Remote	D	C	B	A
	Improbable	D	D	C	B
	Incredible	D	D	D	C

Table 8: Definition of Risk Categories

Risk Category	Description	Definition
A	Intolerable	Risk shall be reduced by whatever means possible.
B	Undesirable	Risk shall only be accepted by LTA if further risk reduction is not practicable.
C	Tolerable	Risk shall be accepted by LTA subject to endorsement by the PSR Committee (Roads).
D	Acceptable	Risk shall be accepted by LTA.

HAZARD REGISTER STRUCTURE

1			2	3	4	5	6	7			8	9			10	11	12	13	14	15	16	17
Risk ID			Previous Hazard ID	Work Activity	Hazard	Hazard Cause	Impact	Initial Risk Category Ri			Mitigation Measures	Residual Risk Category Rr			Future Actions	Risk Owner	Action Owner	Due Date By	Risk Exposure Period	Target Risk Rating	Status	Remark
Hazard No.	Hazard Code	Running Number						F	S	Ri		F	S	Rr								

Definitions of Terms in the Hazard Log

Column	Field Name	Description
1.	Risk ID	Numbering system and hazard code to refer to details and the list of hazard codes attached in next page.
2.	Previous ID	The hazard number that was previously assigned to the particular hazard before it was transferred to the current hazard register.
3.	Work Activity	Describes the construction activity that may have risks.
4.	Hazard	A situation or circumstance in which there is a potential for an accident to occur that may cause injury or fatality to personnel, or damage to system or environment. For example, toxic fumes are a potential hazard. In many cases, the hazard may be continuously present under normal conditions, referred to as an intrinsic hazard. Note that the hazard is distinct from the accident, but is rather the circumstances in which the accident may occur.
5.	Hazard Cause	The events, circumstances or conditions that result in the creation of the hazard.
6.	Impact	The result of such hazard i.e. type of accident or incident that may happen if this hazard occurs.
7.	Initial Risk Category (Ri)	The initial risk assessed prior to mitigation measures is implemented. This is dependent on the frequency (F) rating and severity (S) rating.
8.	Mitigation Measures	Provision of safeguards/control measures for considerations. The risks should be re-assessed to see if either probability or severity rate has been reduced by the proposed mitigation measures.
9.	Residual Risk Category (Rr)	The risk assessed when the proposed mitigation measures are in place. This is dependent on the frequency (F) rating and severity (S) rating.
10.	Future Actions	These are additional mitigation measures identified but yet to be implemented.
11.	Risk Owner	The person who carries the responsibility for ensuring that the risk is monitored and, where appropriate, effectively managed. They might not be the person who has to do the necessary actions, but they must continuously aware of the risk and closing-out status.
12.	Action Owner	This is assigned to the person who is best able to control the risk mitigation on site.
13.	Due Date By	Timescale when mitigation measures are to be implemented.
14.	Risk Exposure Period	The period the risk will be active for work activity described.
15.	Target Risk Rating	Mitigation rating to be achieved.
16.	Status	Description of current status for the risk, which also include the implementation status for proposed mitigation measures. The status shall be reviewed monthly. Closed-out date shall be recorded against the status.
17.	Remark	Any further comments pertaining to the risks.

**Where the hazards are deleted, the reason for deletion shall be stated clearly in the Hazard Register.

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Numbering System:

Contract Number / Site Contract Number / Stage / Hazard Code / Hazard Running Number / Packages

Definition:

- i. **Contract Number:** The Contract number of the A/E or Contractor who prepares the Safety Submission.
- ii. **Site Contract Number:** The contract number of site the safety submission is for.
- iii. **Hazard Code:** The hazard classification codes for the different category of hazards.
- iv. **Hazard Running Number:** The hazard running number based on the category of hazards starting with "001".
- v. **Packages:** This refers to the number of Construction Safety Submissions (CNSS) proposed by the Contractors, usually using alphabets: A, B, C, D and etc. Only applicable to construction stage.

Hazard Classification Reference Codes

Ref	Category
100	Earth Retaining Supporting Structures (ERSS)
101	Temporary Structures
102	Diaphragm Walling/Piling
103	Permanent Structures
104	Ground Conditions
105	Adjacent Structures or buildings
106	Existing Utilities
107	Existing RTS Stations, Tunnels and Viaducts
108	Existing Road Tunnels and Viaducts
109	Obstructions
110	Interface with adjacent contracts
111	Interface with adjacent developments
112	Future developments or Addition & Alteration works
113	Tunnelling

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114	Underpinning Works
115	Demolition Works
116	Blasting Works
117	Construction Methodology
118	Ground Improvements
119	Instrumentation
120	Hazardous Materials
121	Fire & Explosions
122	Flooding
123	Confined Space
124	Architectural/Glazing Works
125	Maintenance
999	Others

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Land Transport Authority	HAZARD ACTION FORM
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Actionee / Hazard Owner :		Hazard Action Form No:		Hazard No:		Part 1
Additional Actionee / Hazard Owner :		Date Issued		Response Date Due		
Hazard						
Hazard Cause						
Accident Potential						
Initial Accident Risk	Severity:	Accident Frequency:		Risk Class:		

Description Of Action Needed :			Part 2 – Hazard Owner(s)
Actionee(s) Response :			
Name :	Signature :	Date :	

<u>Action Review & Status</u>				Part 3
Decision/Comments On Part 2 :				
Residual Accident Risk	Severity:	Accident Frequency:	Risk Class:	
Name :	Signature :	Date :		
Subsequent Action Raised : <input type="checkbox"/> Yes ⇒ Action No. : <input type="checkbox"/> No				

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Annex A-p

PROTECTION OF SLAB OPENINGS

1.0 Classification of Openings

1.1 The Contractor shall note that the slab openings on site shall comprise of varying sizes and are categorised into three (3) groups.

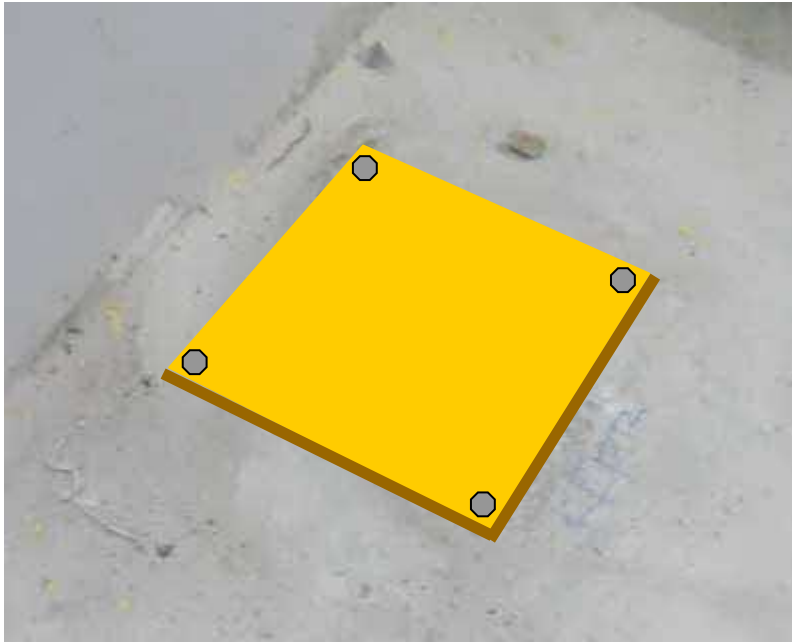
- 1) Group 1: 300mm wide x any length:
Too narrow for a person to fall through, but wider than their foot and therefore possible to fall into with potential injuries to shin, knee, thigh or hip.
- 2) Group 2: 300mm – 1000mm wide x any length:
Big enough to fall through, with potentially serious consequences, but too small to be of use as a service opening. Sumps, pits and future access hatches are excluded from this group and shall be treated as Group 3 openings.
- 3) Group 3: Greater than 1000mm x any length:
Stairwells, air shafts and service openings are the most common in this category.

2.0 Treatment of Openings

2.1 For each group of openings, the Contractor shall comply with the 'standard' solution stipulated in this Section.

- 1) Group 1: 300mm wide x any length:
A plywood cover (12 or 18mm thick) bolted or nailed down. Cover to be painted in a distinctive colour or pattern.

GS-A-227



Note: Yellow was chosen because is distinctive, but any colour or pattern can be adopted.

2) Group 2: 300mm – 1000mm wide x any length:

A13 mesh, fixed to the top steel and cast into the slab. After casting, a plywood cover can be fitted and secured to prevent debris from falling through.



A13 Mesh Cast into Slab

GS-A-228

Mesh cast with slab provides immediate protection against fall and cannot be accidentally removed. Design load on A13 mesh has to be taken as 1.5KN. This is a commonly used load in 'Dead and Live Load Tables' for human traffic. Mesh is capable of spanning 1200mm under 1.5KN, but has been limited to 1000mm. Mesh to be hot dipped galvanised.

Embedment length to be 425mm in short span direction.



Cover fitted to prevent debris and materials from falling through. If cover is removed or becomes damaged the opening is still secure. Cover should be cut to fit inside the opening thus reducing the trip hazard and also allowing other works to pass over it.

2.4 Group 3: Greater than 1000mm x any length:

Standard method of railings, toeboards and netting shall be provided, with the height of railings to be at least 1.1m high.

GS-A-229



Barricade shown above is meant to protect against people. It is not appropriate for use where vehicle movement is expected. A properly designed steel structure is recommended in such situations.

3.0 Removal of Mesh

- 3.1 The Contractor shall note that the Stop-end below the mesh should be removed during striking of formwork. Stop-end above the mesh could be removed at the same time or left to serve as a stop-end for future screeding works (if any). Plywood cover can be cut to suit.
- 3.2 Removal of mesh shall be undertaken by the Contractor only when the opening is required by the relevant owner. As the relevant owner is usually a SWC it is intended that the mesh be removed only when requested by them. It should not be removed during room handover.
- 3.3 After removing the mesh, the Contractor should grind the remnant steel flush to the opening and make good to the exposed ends using an acceptable anti-corrosion treatment (e.g. cold galvanised paint, epoxy paint, etc.)

GS-A-230

Annex A-q

SAFE INSTALLATION AND MAINTENANCE OF SLIDING GATES (BOTH PERMANENT AND TEMPORARY**)

General

- 1.1 The sliding gate shall be fully fabricated in the factory prior to delivery and installation on site.
- 1.2 In the process of installation, the contractor shall provide temporary restraint to prevent any movement (that can result in overrun and toppling) of the gate until its full installation with all safety features (e.g. stoppers to prevent overrun, gate safety sensors etc.) are completed.



Sliding gate restrained from movement by securing to gate post.

- 1.3 The work zone surrounding the installation of the sliding gate must be cordoned off with rigid barricades to prevent any unauthorized personnel from approaching.

GS-A-231



Cordon off work zone around gate installation

- 1.4 The manufacturer / supplier / builder of sliding gate shall provide to the Contractor the operational manual for safe operation and maintenance of the gate.
- 1.5 All sliding gates should be checked and maintained periodically according to the manufacturer supplier / builder's recommendation. In addition, the track for the gate should be properly maintained to prevent any accumulation of debris which could cause the sliding gate to derail.
- 1.6 The Contractor shall comply with recommendations from "Circular on Safety Considerations in Gate Design and Operation" issued by the Ministry of Manpower and Building Construction Authority dated 1st March 2012.

** Temporary sliding gates refers to gates installed in conjunction with site hoarding around the worksite boundary

GS-A-232

ANNEX A-r

Photographs Highlighting Good SHE Practices

(For Compliance on Site)

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GS-A-233



Examples of Step Platforms
Source: Google images



Examples of Step Platforms being used on site

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GS-A-234



Steel staircase with unobstructed headroom and netting wrapped around handrail and underneath of steps to prevent loose material from falling through



Handrails (top and intermediate)

Proper handrails provided at designated site access and walkways. Toe board and netting are added to prevent loose material from falling over

GS-A-235



Handrails (top and intermediate)

Proper handrails provided at designated site access and walkways. Toe board are added to prevent loose material from falling over. Netting added to prevent loose material from falling down



Platform with handrails provided for signalman to stand on strut to co-ordinate lifting operation

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GS-A-236



Floor opening cover is flushed and secured against moving



Lifting activity is cordoned off and warning signage is placed to warn personnel against entering the area

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GS-A-237



Lifting activity is cordoned off and warning signage is placed to warn personnel against entering the area



Crane access lined with closely decked steel plates to ensure stability of crane

GS-A-238



Crane access lined with closely decked steel plates to ensure stability of crane



Lifting gears properly stored and maintained in good condition

GS-A-239



Colour code system implemented to ensure lifting gear is checked thoroughly every month before use

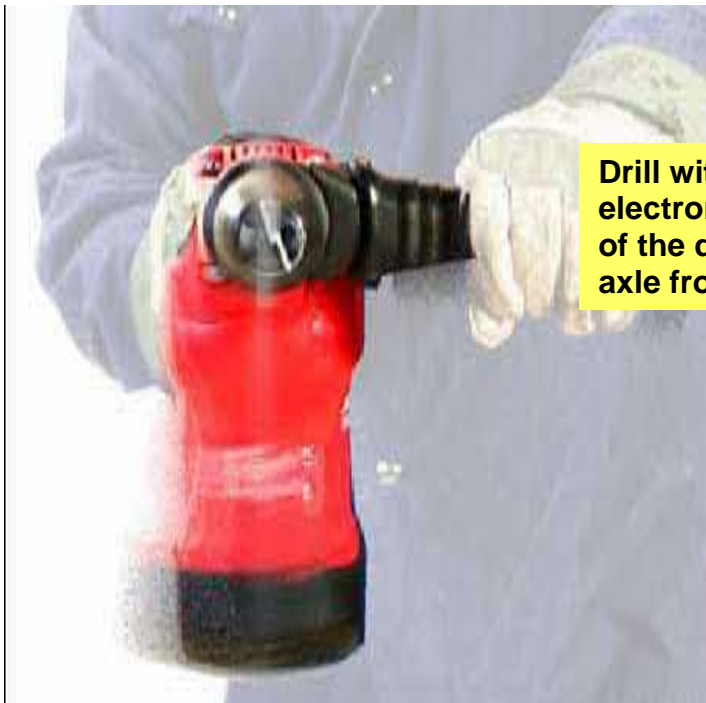


Ventilation fan with fixed mechanical guard to prevent fingers from coming into contact the moving fan blades

GS-A-240



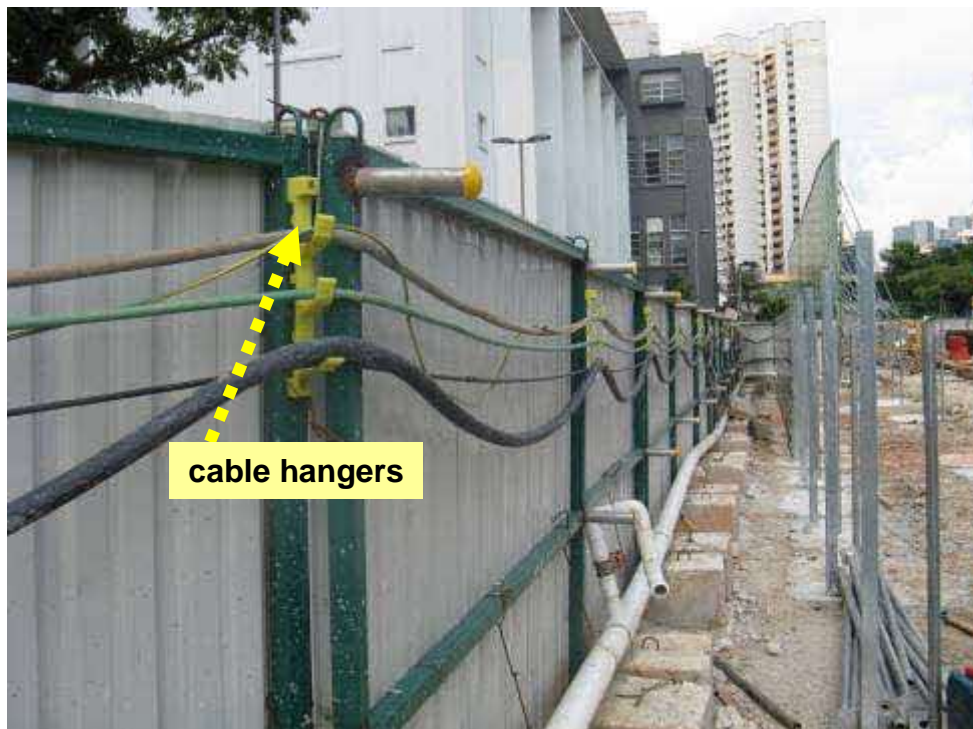
Sticker label to indicate that powered tool has been checked regularly by LEW



Drill with ATC safety feature has an electronic device to sense the jamming of the drill bit and disconnect motor axle from gear

Powered drill with Active Torque Control (ATC) safety feature (or equivalent) to prevent uncontrolled spinning of drill when drill bit gets jammed. The uncontrolled spinning can cause injury to operator

GS-A-241



Proper cable hangers use to hang up cables



Flammable substance stored at designated storage area with warning signage. Area is locked to prevent unauthorized removal of substance

GS-A-242



Gas cylinders secured in a cylinder trolley to prevent toppling



Fire fighting and first aid equipment readily available at strategic locations

GS-A-243



Height Limit Gantry installed at site entrance / exit to ensure the total height of the vehicle does not exceed 4.5m



Site entrance equipped with revolving light and convex mirror to enhance pedestrian safety. Full-time banksman deployed to guide vehicles exiting the worksite

GS-A-244



Overhead shelter provided when work is carried out near hoarding to protect the public from any falling objects



“See through fencing” allows pedestrian to check and ensure vehicles has stopped before crossing at traffic junction

GS-A-245



Concrete barriers use to protect workers against the possibility of vehicles crashing into site boundary



Good housekeeping around worksite

GS-A-246



Good housekeeping at worksite with designated areas for storage and walkway



Good housekeeping at worksite with designated areas for storage and walkway

GS-A-247



Good housekeeping at worksite with designated areas for storage and walkway



GS-A-248

Good housekeeping. Material storage area separate from walkway



Tunnel is well illuminated



Continuous walkway with guardrail provided along the tunnel

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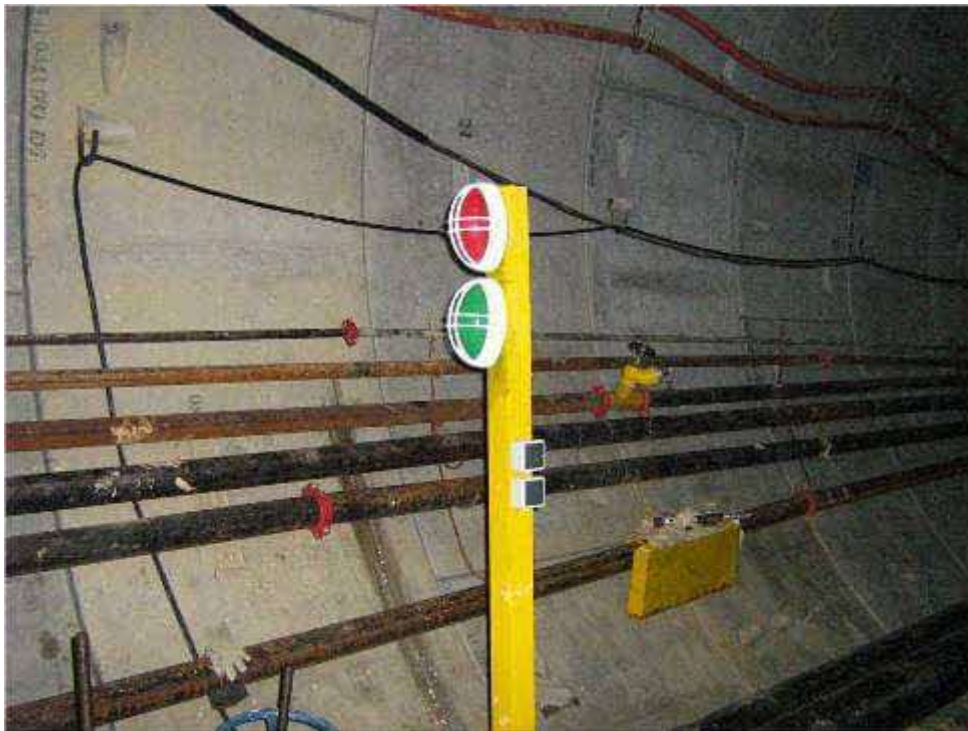
GS-A-249



Telephone provided at regular interval along tunnel to notify of any emergency



Fire hose reel provided at regular interval along tunnel for fire fighting purpose



Red and Green signal light to regulate locomotive movement in the tunnel

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GS-A-250



Locomotive equip with camera to monitor rear view



Locomotive equip with camera and monitor for rear view.

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GS-A-251



Good illumination and housekeeping maintained underneath TBM Back-up gantry cars



Manchester gate

Manchester gate installed to regulate movement of locomotive in tunnel

GS-A-252



Proper First Aid room equipped with standard first aid items, stretcher and bed



Proper rest areas with tables and chairs provided

GS-A-253



Proper rest areas with tables and chairs provided



Proper rest areas with tables and chairs provided

GS-A-254



Water cooler provided at worksite



Stage provided for safety promotional events

GS-A-255



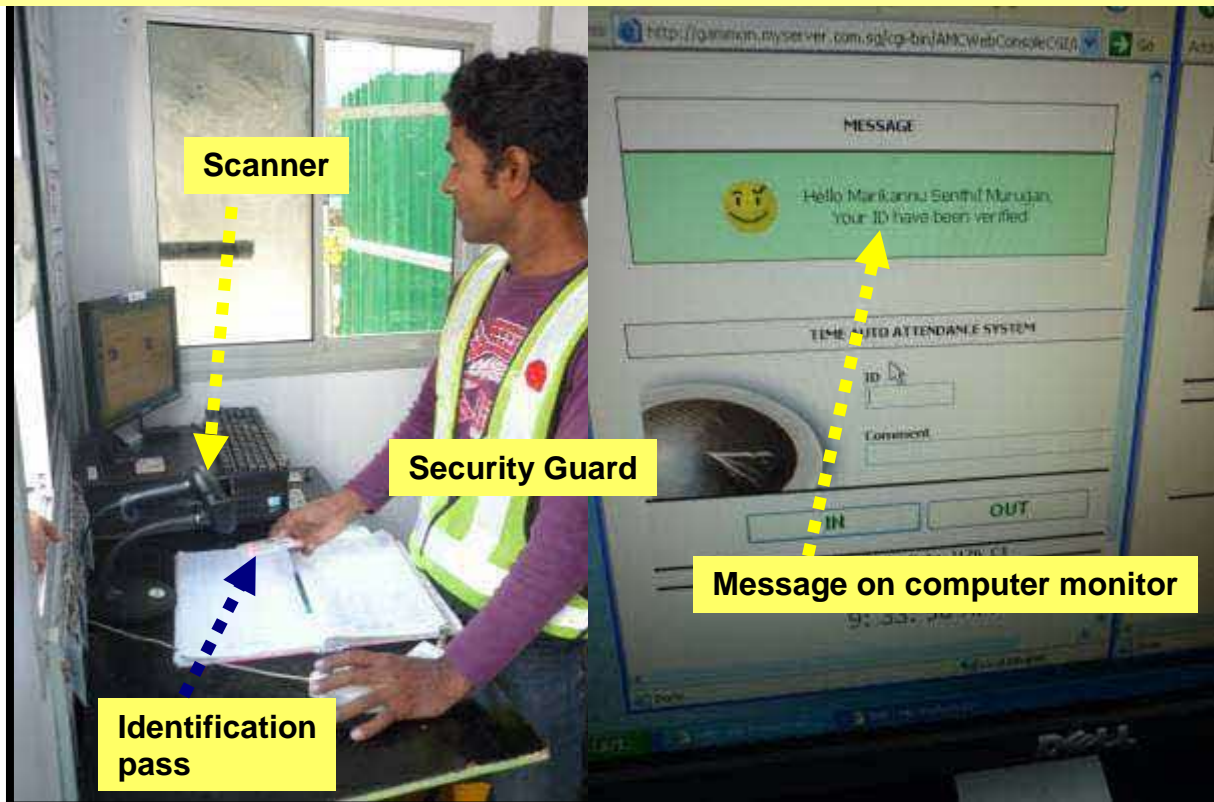
Safety promotion corner – Display of exhibits to communicate safety requirements



Coloured Safety posters / articles displayed to communicate safety requirements

GS-A-256

Electronic scanner use to keep track of personnel entering and leaving worksite



Access control to Tunnel using finger print. This method eliminate the problem of forgetting to bring or loss of identification tags

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GS-A-257



Security pass exchange area separated from vehicle access to prevent vehicles driving too near and injuring workers reporting at the security post



Roller gate at the entrance has an advantage over hinged gate as it eliminates the accidental swinging of gate that can result in hitting man or vehicle

GS-A-258



Use of bund wall to protect silty runoff from entering the public drain



Adequate use of turbidity curtain for works near water-bodies / waterways

GS-A-259



Full acoustic enclosures used for permanent work areas (E.g. launch shafts). Where a full enclosure is not possible, an acoustic enclosure with the opened face oriented away from any residential/ sensitive premises and covered with retractable noise barrier shall be considered.

GS-A-260



Full acoustic enclosures designed with air ventilation system and adequate space for plants and machineries to manoeuvre



Large acoustic enclosures on slurry treatment plants

GS-A-261



Large acoustic enclosures on desanding plants



Large acoustic enclosures used for noisy activities / machineries (For e.g. excavation activities, launch shaft) conducted near noise sensitive receivers)

GS-A-262



Use of celcon block walls with built-in rockwool to house noisy ventilation fan



**Use of noise enclosures for noisy machineries
(For e.g. power-pack generator)**

GS-A-263



Noise enclosure on D-wall cutter machine

GS-A-264



Noise enclosure on boring rigs



Noise enclosure on D-wall cutter for ventilation fans

GS-A-265

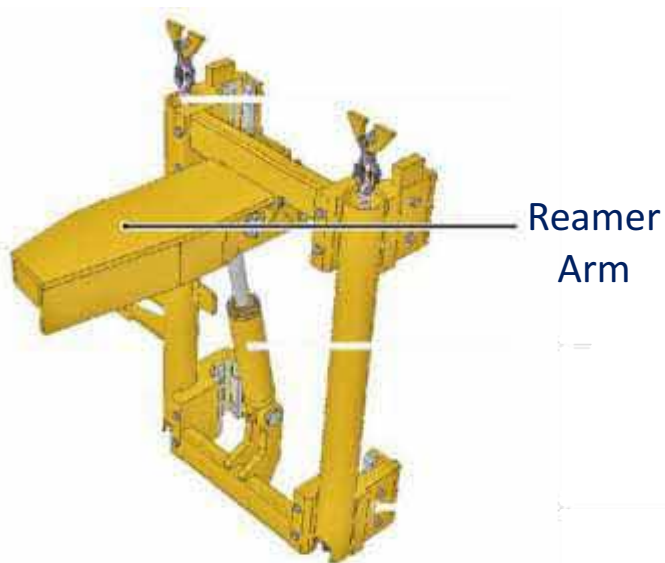


Use of sound-reduced machinery



Use of silent-piling machine (for suitable soil conditions)

GS-A-266



An auger cleaner tool can be installed onto the existing boring rig. This tool is built with a reamer arm to scrap off the soil / residue retaining on the auger after boring. The benefits of using the auger cleaner include 1) reduce noise and 2) clean small auger flights with sticky soil.



The noise damping system can be applicable to all Kelly bars. It consists of sound absorbing pads which are glued onto the exterior surface of the outer Kelly bar section, and these pads are protected against mechanical damage by metal sheets. The system mainly reduces the disturbing high frequency noise that are generated by the jerky Kelly bar movements and amplified by individual hollow Kelly bar sections clanging with each other.



GS-A-267



Use of modified auger bucket (suitable for sticky soil conditions)

Modification of auger bucket involves:

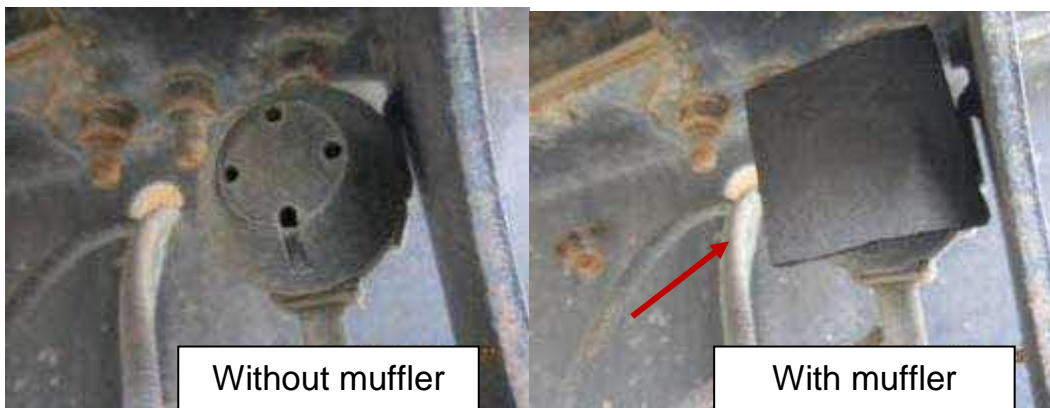
- **Introducing a sliding steel plate separator**
- **Creating two separate chambers with associated cutter**
- **With this modification, soil discharge can be done simply using spinning action alone**

Sliding steel plate separator will drop like a trap door, pulling down stuck soil by gravity and allow the use of centrifugal force to spin out the soil, instead of using inertia in the usual spin and lock method to discharge soil in the standard auger bucket. This thus results in a reduction of the high-pitched intermittent “metal-clanking” noise level from 97dB (5m from the source) to 83dB.

GS-A-268



Use of portable noise barriers around noisy works such as bore piling



Use of absorptive material to muffle beepers of trucks entering the site to a suitable volume.

GS-A-269



No use of canvas 'noise' curtains that do not meet the STC standards, as stipulated in Annex A-g Environmental Considerations, for interim or long-term noise mitigation measures.

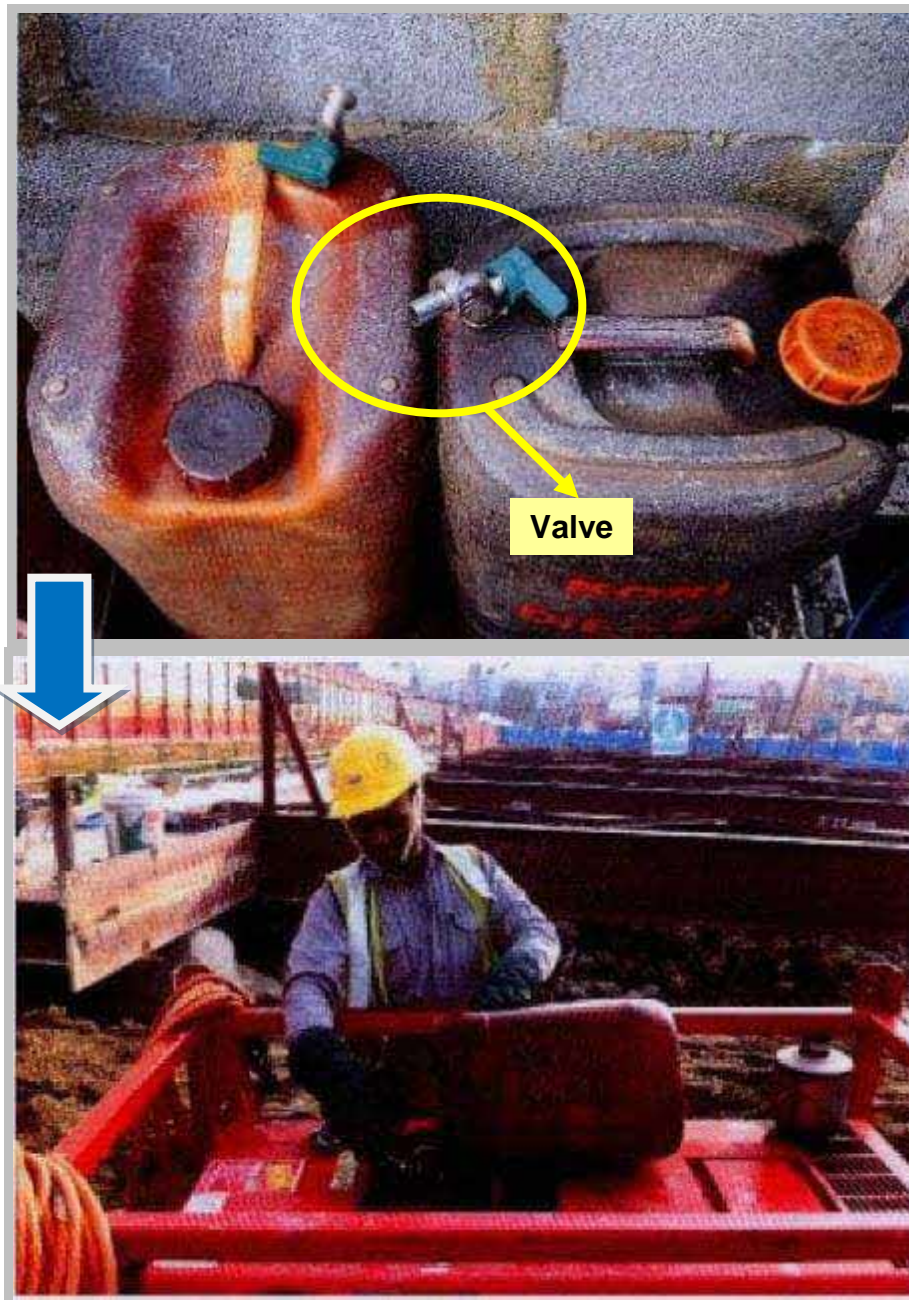
GS-A-270



Provision of adequate and sheltered bins for containment of wastes

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GS-A-271



Use of valve during diesel refill

By having this valve, diesel refill can be done in a more controllable manner thus preventing spillage.

GS-A-272



Arresting of dust at source using recycled water



Use of 'green' hoardings to beautify the site and to reduce the impact from traffic carbon emissions

GS-A-273

ANNEX A-s

Mobile Elevated Working Platform (MEWP) Usage On Site

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- 1.1 The contractor shall ensure all MEWPs used on site are fitted with an additional locking device to prevent unauthorised usage. The additional locking device implemented shall be approved by the MEWP manufacturer or supplier.
- 1.2 The additional locking device will be included in the daily pre operational checklist and shall be checked by the operator before usage. The MEWPs shall not be allowed to be used once the additional locking device is found damaged.
- 1.3 The contractor shall ensure no modification to the MEWP ignition keyholes and main power disconnect switch system.
- 1.4 The contractor shall ensure barricades are provided for the MEWPs' working zone. In addition, a banksman shall be provided to control MEWP movement on site.

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ANNEX A-t

Sample Data Logger Report

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Project:	T201
Name of Crane operator:	XXX
Report Generated Date:	
From:	
To:	
Manufacturer:	
Crane Model No.:	
Data logger Serial No.:	
Type of Crane:	
LM certificate:	
Crane operational hours since installation:	

Summary of Overload/Over-hoisting/Over-decking Details

Total no. of overload:	
Total time of overload:	
Maximum overload time:	
Minimum overload time:	
Maximum overload moment:	

Summary of Overload/Over-hoisting/Over-derricking Lift Details

No.	Date	Time	Part Line (Main/Auxiliary hook)	Load Moment	Actual Load Lifted	Load Capacity (SWL)	Slewing Angle	Boom Angle	Boom Length	Operating Radius	Remarks
1	05/02/2015	17:51:22	4 (Main)	104%	47.00t	45.00t	3°	70.3°	40m	15.2m	OVERLOADING

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Summary of Bypassing Limit switches Details

Total no. of bypass times:	
No. of times overload limit switch bypassed:	
No. of times over-hoist limit switch bypassed:	
No. of times over-derrick limit switch bypassed:	

Summary of Bypassing Limit switches Lift Details

No.	Date	Time	Part Line (Main/Auxiliary hook)	Load Moment	Actual Load Lifted	Load Capacity (SWL)	Slewing Angle	Boom Angle	Boom Length	Operating Radius	Remarks
1	06/02/2015	17:51:22	4 (Main)	22%	10.00t	45.00t	3°	70.3°	40m	15.2m	OVERHOIST BYPASS ACTIVATED

Lift Details

No.	Date	Time	Part Line (Main/Auxiliary hook)	Load Moment	Actual Load Lifted	Load Capacity (SWL)	Slewing Angle	Boom Angle	Boom Length	Operating Radius	Remarks
1	07/02/2015	17:51:22	4 (Main)	97%	43.55t	45.00t	3°	70.3°	40m	15.2m	
2	07/02/2015	17:51:30	4 (Main)	97%	43.55t	45.00t	3°	70.3°	40m	15.2m	
3	07/02/2015	17:52:00	4 (Main)	97%	43.55t	45.00t	3°	70.3°	40m	15.2m	

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ANNEX A-u

DESIGN FOR SAFETY (DFS) AND DFS PROFESSIONAL

1.1 This project falls wholly within the scope of the Workplace Safety and Health (Design for Safety) Regulations, which will be called as DfS Regulations from herein. These DfS Regulations are to be implemented in their entirety irrespective of whether the Contract is awarded prior to the mandatory implementation date (1 August 2016).

1.2 The DfS Regulations require all the relevant stakeholders such as Developers, Designers and Contractors to work together to address the risk at source and plan for the construction, maintenance and demolition works in relation to the safety of any person who are:

- a) Carrying out or affected by the construction work,
- b) Maintaining the structure, or
- c) Carrying out or affected by the demolition work

1.3 The DfS Regulations emphasize on elimination of all foreseeable risks as far as it is reasonably practicable. Whenever it is not reasonably practicable to eliminate the risks, the risks shall be reduced to as low as reasonably practicable through, but not limited to, reduction of design risk at its source or collective protection measures to be used throughout the lifecycle of a project.

Further information on the DfS Regulations and its guidelines, including the roles and responsibilities of every stakeholder, can be found on the Workplace Safety and Health Council website (<https://www.wshc.sg>).

Contractor shall propose and engage a qualified and competent DfS Professional. The qualifications of DfS Professional proposed for this contract shall include:

- a) Reasonable exposure in safety and health for construction especially on transportation infrastructure projects in a similar nature to this Contract, and
 - b) Attended the DfS for Professional Course and passed the assessment, or equivalent, and either
- Be a registered PE or Architect with a Practicing Certificate or
 - Have 10 years relevant experience in the design (at least five (5) years in design which includes contributions to designs, writing specifications) and the supervision of the construction of structures; and
 - Have a degree accepted by PEB or BOA and construction related degree accepted by SISV and SPM

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The final approval for the appointed DfS Professional shall be within the Authority's discretion.

1.4 The appointed DfS Professional is to perform the necessary duties as part of the delegation of Authority's duty in convening the DfS Review Meeting and producing DfS Register as stipulated in the DfS Regulations. The duties of DfS Professional also include, but not limited to:

- a) Coordinate the stakeholders (Authority, designers, contractors, etc.) and to facilitate the communication of vital information that could affect safety and health risks in the project
- b) Convene DfS Review Meetings as necessary to identify all foreseeable design risks in the project and discuss how each of the foreseeable design risks can be eliminated or reduced
- c) Ensure that each DfS Review Meetings are attended by all the relevant designers and contractors appointed
- d) Prepare, develop and submit DfS Register containing information and records on every DfS Review Meeting convened and every residual design risk in the project to the Authority
- e) Ensure that the DfS Register is kept up to date
- f) Ensure all designers and contractors appointed for the project have access to the DfS Register

1.5 The DfS Professional shall propose a systematic review process for Authority's approval. For example, to assist the stakeholders in reviewing the design, the **GUIDE** process developed by the Workplace Safety and Health Council in the DfS Guidelines can be implemented:

- a) **G – Group** together a review team consisting of major stakeholders.
- b) **U – Understand** the full design concept by looking at the drawings and calculations, or have the designers elaborate on the design.
- c) **I – Identify** the risks that arise as a result of the design or construction method. The risks should be recorded and analysed to see if they can be eliminated by changing the design.
- d) **D – Design** around the risks identified to eliminate or to mitigate the risks.
- e) **E – Enter** all the information including vital design change information affecting safety and health or remaining risks to be mitigated into the DfS Register.

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ANNEX A-v

SAFE WORK PROCEDURE FOR CONTROLLING MOVEMENT OF HEAVY MACHINERY

General

- 1.1 All Heavy Machineries brought into LTA sites are subjected to the Safe Work Procedures for Movement of Heavy Machineries.
- 1.2 This Safe Work Procedure required Contractors to implement three (3) control points prior to moving and using of the heavy machineries on LTA sites:
 - a) Permit to Move
 - b) Permit to Work
 - c) Resuming Work after Heavy Rain
- 1.3 Heavy Equipment refers to any equipment with a high Centre of Gravity (CG), including all Lifting Machineries (LM) such as Boring Rigs, Trench Cutters, Grouting Machines (e.g. Deep Soil Mixing Machines, Wet Soil Mixing Machines), rotary percussion rigs and D-Wall machines.

Item (i) – Permit to Move

- 1.4 This Permit to Move is aimed to monitor and control the movement of large, high mast machines so as to ensure that they are on firm, well prepared ground at all times.
- 1.5 Prior to moving a Heavy Machinery, a Permit to Move is required. Sub-Contractor needs to prepare and submit a Permit to Move to the Contractor. The Permit shall be valid for one (1) rig and only for the location prepared and tested. Each new location shall require a separate permit.
- 1.6 Prior to the approval of the Permit to Move, the following requirements for the location where the heavy machineries are to be moved to shall be satisfied:
 - a) Ground to well compacted using 10T Roller and tested (Plate Bearing Test or calibrated Cone Penetrometer Test)
 - b) Any soft spots to be excavated, replaced with suitable soil, re-compacted and retested.
 - c) Ground then to be topped with compacted hardcore. Minimum 500mm or more if required by PE.
 - d) Steel plates to be laid on top of hardcore.
 - e) All testing to be witnessed by QP(S).
 - f) PE to issue Certificate of Supervision (COS) once works are completed.

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- g) COS should include a signed statement by the supervising PE, design calculations, plan showing area covered by COS, copy of test results, copy of bore logs used for calculations, permissible sequence for rig movements and photos if necessary.
- h) Area covered by COS to be not greater than 300m².

Relevant documentations need to be attached with the Permit to Move.

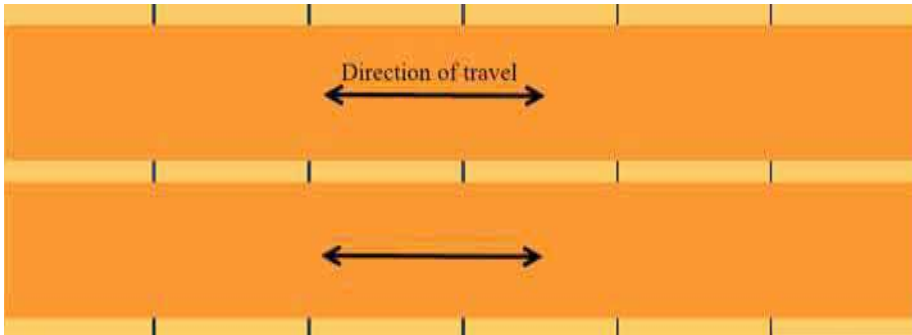


Figure: 2 layers of Steel Plates at right angle to each other

- 1.7 The Permit to Move shall be:
 - a) Prepared, approved and submitted by sub-contractor to Main Contractor;
 - b) Approved by Main Contractor (recommended three (3) tiers of approval i.e. Lifting Engineer, Authorised WSH Personnel, Project Manager/ Authorised Manager);
 - c) Acknowledged by QP(S); and
 - d) Audited by LTA
- 1.8 The PE Design Calculations indicated in Clause 1.6(g) must be comprehensive and should allow for the following as a minimum:
 - a) Static plus dynamic loads;
 - b) Non uniform distribution of load; and
 - c) Appropriate allowances for flexing of steel plates.

Item (b) – Permit to Work

- 1.9 Permit to Work and daily checklists are required for daily operations prior to commencing work. The application of the permit shall be accompanied with relevant documentations (i.e. COS by PE, machine daily checklist)

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- 1.10 The Permit to Work shall be prepared by Sub-contractor and submitted to Main Contractor for approval. It is recommended to have at least four (4) tiers of approval by Main Contractor (i.e. safety assessor, supervisor-in-charge, authorised WSH personnel project manager/ authorised manager).

Item (c) – Resuming Works After Heavy Rain

- 1.11 After periods of heavy rain, following measures are required:
- a) Steel plates to be lifted and ground inspected for loss of integrity by Lifting Engineer;
 - b) Surrounding ground to be also inspected for localised flooding which could reduce the ground's bearing capacity; and
 - c) QP(S) to witness the inspection and approve prior to resuming the work
If the ground shows loss of integrity then COS shall be void and preparation work must be repeated.
- 1.12 The Lifting Engineer must complete and sign a Crane Access Checklist on a daily basis and after heavy downpour. Following are the examples of items to be checked in the Crane Access Checklist:
- a) Laying of hardcore
 - b) Compaction of Subgrade
 - c) Laying of steel plates
 - d) Dimension in accordance to layout and details
 - e) Proper drainage
 - f) Stability
 - g) Barrier next to ground depression or excavated area
 - h) Others

Other Precautions – Verticality (DSM & Boring rigs only)

- 1.13 Due to the high CG of DSM, WSM machines and boring rigs, manufacturers specify a maximum vertical stability angle for the machine's movement. This angle varies between machines and direction of tilt, and it is typically within the region of 7° . Once this vertical stability angle is exceeded, the machine is prone to collapse.
- 1.14 It is recommended to limit the mast tilt during movement to 5° (i.e. 2° less than lowest limit of vertical stability).
- 1.15 During movement, it is recommended to limit the tilting of the mast to 5° (i.e. 2° less than lowest limit of vertical stability). In addition, the ground to be prepared for the machinery's movement and operation should be as flat as possible.

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ANNEX A-w

Formwork Structures

- 1) WSH (Scaffolds) Regulations shall be applicable to the erecting and dismantling of falseworks.
- 2) The Contractor shall not use any mix and match formwork structure on site. This shall include the use of only proprietary access step ladders, working platforms and any other accessories from the same system formwork supplier for erection and dismantling of formwork structure. Strictly no mix and match of any proprietary system formwork components and accessories. The use of any conventional catwalks and monkey ladders for system formwork is not allowed.
- 3) The Contractor's Professional Engineer (PE) responsible for the design and inspection of the formwork structure shall endorse and submit a declaration form attached in this Annex to the Engineer. A flowchart for "Formwork Structure and Concreting" is also attached.
- 4) There shall be at least two Certificate of Supervision (COS) issued by the Contractor's PE. One before rebar installation and one before concreting.
- 5) Notwithstanding Clause 4 above, all wall formwork structure with a height of 4 metres or more shall have PE design and COS issued by the PE before casting of concrete is allowed to proceed.
- 6) The Contractor shall ensure that the height of exposed adjustable base plate or jack base shall be less than 150mm. If the height exceeds 150mm, a longitudinal bracing at a height of not more than 460mm measured from the base plate/support surface shall be provided using right angle or swivel couplers and not more than half the length of the adjustable base plate or jack base is exposed.
- 7) The Contractor shall submit an emergency escape route and emergency response plan before concreting work is allowed to proceed.
- 8) The Contractor's Project Manager (PM) shall endorse and submit a formwork structure checklist attached in this Annex after his inspection of the formwork structure to the Engineer before concreting is allowed to proceed.

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Standard Formwork Structure Checklist
TO BE COMPLETED & SUBMITTED PRIOR TO CONCRETING

Reference: _____

Formwork Structure Location: _____

No.	Formwork Safety Issues	Yes /No	Action Required / Remark
1	PE & QPS declaration Forms on formwork structure attached? #		
2	PE certification of lifting points for column boxes and wall shutters? (where applicable) **		
3	Certificate for Safe Use (COS) for formwork structure issued by PE? (Attached to this checklist) **		
4	Contractor's/Formwork Supervisor's Checklist Submitted by Formwork Supervisor prior to laying reinforcement? (Attached to this Checklist) **		
5	Formwork structure built to PE design? Any deviations from endorsed drawings has been designed and certified by PE and further reviewed <u>and agreed</u> by QPS? ##		
6	Risk assessment and <u>safety</u> measures checked by safety officer (Attached to this list) **		
7	Method Statement and risk assessment reviewed and accepted by QPS? (QPS review form to be attached to this checklist) #		
8	Formwork and falsework materials <u>are</u> in good condition and free from corrosion? **##		
9	All modular & system formwork are assembled and erected in accordance with the manufacturer's recommendation? **		
10	All formwork structure system supplied from a single system formwork supplier and no mix and match of different formwork structure system? #		
11	Exposed Adjustable base plate/Jack base <150mm. If exceed, provide longitudinal bracing at height not more than 460mm measured from the base plate/support surface using right angle or swivel couplers and not more than half of the adjustable base plate/Jack base length shall be exposed. **		
12	Seating of formwork structure firm? **		
13	Edges & joints between formwork adequately sealed? #		
14	Proper Access provided using same formwork supplier proprietary step ladders with proper width and with proper riser/thread and proprietary landing/working platforms for erection and inspection of formwork up to the top level? #		

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No.	Formwork Safety Issues	Yes /No	Action Required / Remark
15	Edge protection and fall protection provided? **		
16	Openings securely covered? **		
17	Barricades and warning signs provided to prevent access below formwork during concreting? #		
18	Formwork supervisor appointed and qualified? **		
19	Scaffold erectors trained and qualified? **		
20	Formwork watchers appointed? **##		
21	Communication devices provided between Formwork Supervisor and formwork watchers below? **##		
22	Are Emergency Escape Route and Response Plan Available? (Attached to this checklist?) ##		
23	Location plans & photos of inspected structure submitted? (Attached to this checklist) #		
	(other items – to be added as necessary)		
<div style="display: flex; justify-content: space-between;"> <div> Inspection by: _____ Inspection by: _____ Acknowledged by: _____ </div> <div> Contractor's PM QPS/SRE/RE*/RTO* LTA PM/DPM/SPE/PRAPE* </div> <div> Signature: _____ Signature: _____ Signature: _____ </div> <div> Date: _____ Date: _____ Date: _____ </div> </div> <p><i>*Only for minor roads projects; QPS/SRE for Complex/Mega/Major Rail Projects or North South Corridor.</i> <i>**WSH (Construction) Regulation #Authority Requirement ##SS 580</i></p>			

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PE Declaration Form

Declaration by Professional Engineer Project

Name: _____

Location: _____

I, _____, the Professional Engineer for the formwork structure design, hereby submit the detailed design calculation and drawings prepared by me and certify that, they have been prepared in accordance with provisions of the SS 580:2012, SS EN 1990:2008, SS EN 1992:2008, SS EN 1993:2010, BS EN 12812:2008, Workplace Safety & Health (Construction) Regulations 2007 Part IX Formwork Structures and any written design code pertaining to the design for the time being in force. Not amounting to other consideration, I have taken into account the following aspects:

- Formwork structure shall be capable of sustaining the total dead load, live load and impact loads imposed on the structure with a minimum safety factor of 2;
- Density of fresh concrete with reinforcement shall not be less than 26 kN/m³;
- Total imposed load, not including impact loads, shall not be less than 1.5 kN/m²;
- In no case shall the assumed value of Lateral load due to dumping of concrete, wind, and equipment acting in any direction at each floor line be less than 1.5 kN/m² of floor edge or 2.5% of total load on the form, whichever is greater;
- Lateral pressure of wet concrete on the vertical or sloping formwork as stated in SS580 has been considered;
- Has considered dead load, imposed load, impact load, load on storage areas, horizontal load, wind load and special loads stated in SS580;
- Diagonal bracings to stabilise multiple bays shall be inclined 30° to 60° to the horizontal, and shall be in pairs, with each pair being inclined in the opposite direction to the other, to provide for the change in direction of applied forces.
- There shall be one pair of braces for every 2h vertical support, where 'h' is the height of the covered by the brace, in meters;
- Mix and match formwork system not used;
- The formwork structure has been designed in accordance to the design intent and construction sequence as specified by the QP(Design) for the permanent works;
- Obtain clearance from QP(Design), for the Foundation of formwork structure when permanent works are used to support the formwork structure. Structural calculation showing there is no over stressing and there is no residual stresses in the permanent structure;

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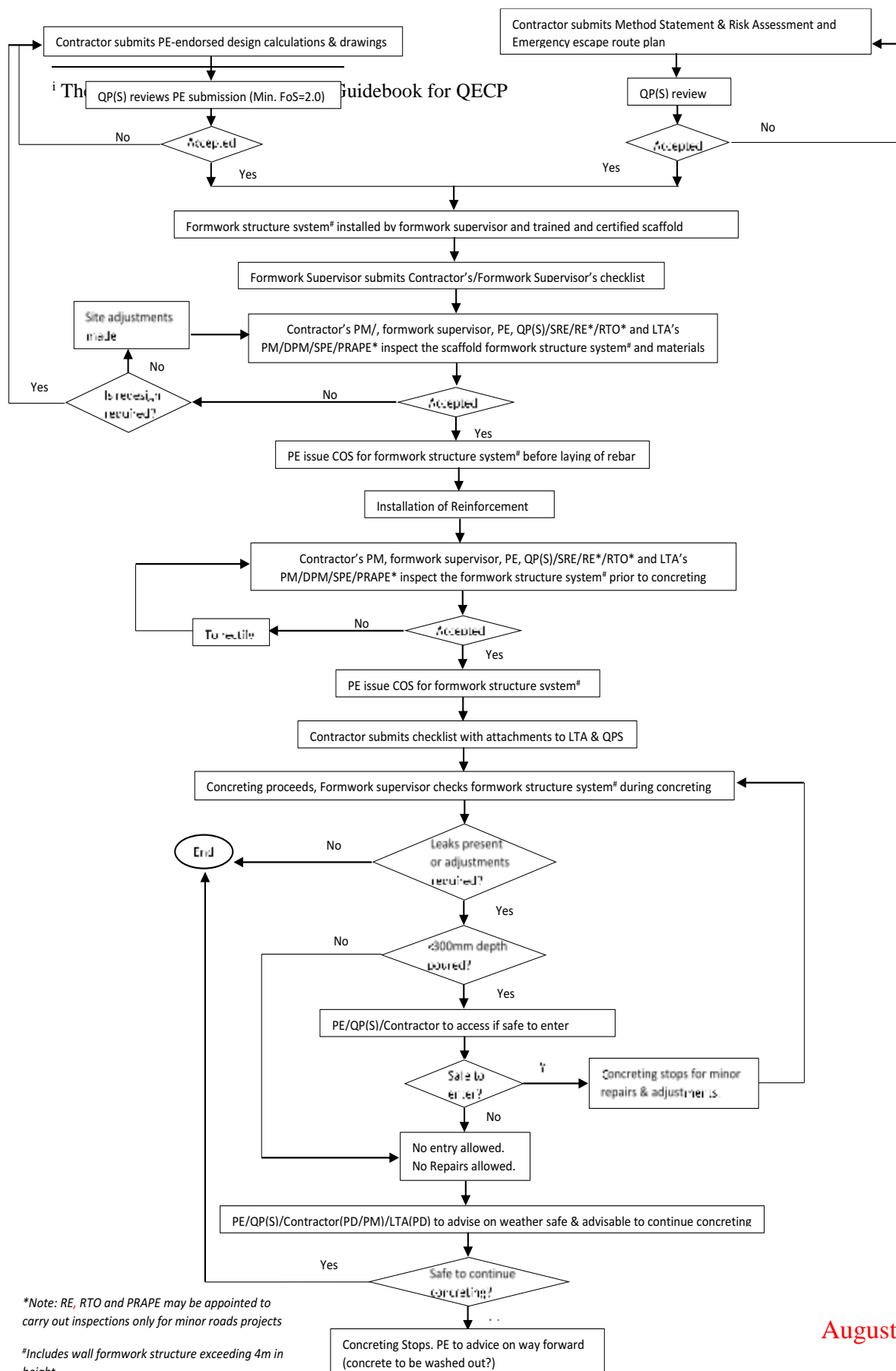
- Casting panel for special case e.g cantilever, sloping, big opening, triangle corner; etc;
- The drawings has been prepared in accordance to the Clause 6.2 of SS 580
- Joints and connection details been shown in drawing;

Name, stamp & signature of PE

Date: _____

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Flowchart for Formwork Structure & Concreting



*Note: RE, RTO and PRAPE may be appointed to carry out inspections only for minor roads projects

#Includes wall formwork structure exceeding 4m in height

August 2019 Edition

Appendix C1

List of Plant Species in
Maju Forest

Appendix C1 List of Plant Species in Maju Forest

S/N	Site	Species	Family	Origin	Status	Habit
1	Maju Forest	<i>Abelmoschus esculentus</i>	Malvaceae	Exotic	Cultivated Only	Shrub
2	Maju Forest	<i>Acacia auriculiformis</i>	Fabaceae	Exotic	Naturalised	Tree
3	Maju Forest	<i>Acacia mangium</i>	Fabaceae	Exotic	Naturalised	Tree
4	Maju Forest	<i>Acacia</i> sp.	Fabaceae	-	-	Climber
5	Maju Forest	<i>Acrostichum aureum</i>	Pteridaceae	Native	Common	Herb
6	Maju Forest	<i>Adenanthera pavonina</i>	Fabaceae	Exotic	Naturalised	Tree
7	Maju Forest	<i>Adiantum latifolium</i>	Adiantaceae	Exotic	Naturalised	Herb
8	Maju Forest	<i>Adinandra dumosa</i>	Pentaphragaceae	Native	Common	Tree
9	Maju Forest	<i>Agelaea macrophylla</i>	Connaraceae	Native	Critically Endangered	Climber
10	Maju Forest	<i>Ageratum conyzoides</i>	Asteraceae	Exotic	Naturalised	Herb
11	Maju Forest	<i>Aglanema commutatum</i>	Araceae	Exotic	Casual	Herb
12	Maju Forest	<i>Allamanda cathartica</i>	Apocynaceae	Exotic	Casual	Climber
13	Maju Forest	<i>Alocasia macrorrhizos</i>	Araceae	Exotic	Naturalised	Herb
14	Maju Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree
15	Maju Forest	<i>Alstonia angustiloba</i>	Apocynaceae	Native	Common	Tree
16	Maju Forest	<i>Alstonia scholaris</i>	Apocynaceae	Exotic	Cultivated Only	Tree
17	Maju Forest	<i>Alyxia reinwardtii</i>	Apocynaceae	Native	Common	Climber
18	Maju Forest	<i>Amphineuron opulentum</i>	Thelypteridaceae	Native	Endangered	Climber
19	Maju Forest	<i>Andira inermis</i>	Fabaceae	Exotic	Casual	Tree
20	Maju Forest	<i>Andrographis paniculata</i>	Acanthaceae	Exotic	Naturalised	Herb
21	Maju Forest	<i>Angiopteris evecta</i>	Marattiaceae	Native	Vulnerable	Herb
22	Maju Forest	<i>Anisophyllea disticha</i>	Anisophyllaceae	Native	Common	Shrub
23	Maju Forest	<i>Annona muricata</i>	Annonaceae	Exotic	Cultivated Only	Tree
24	Maju Forest	<i>Aphanamixis polystachya</i>	Meliaceae	Native	Endangered	Tree
25	Maju Forest	<i>Aporosa benthamiana</i>	Phyllanthaceae	Native	Vulnerable	Tree
26	Maju Forest	<i>Archidendron cf. jiringa</i>	Fabaceae	Native	Vulnerable	Tree
27	Maju Forest	<i>Archidendron clypearia</i>	Fabaceae	Native	Common	Tree
28	Maju Forest	<i>Ardisia elliptica</i>	Myrsinaceae	Native	Endangered	Tree
29	Maju Forest	<i>Aristolochia acuminata</i>	Aristolochiaceae	Exotic	Cultivated Only	Climber
30	Maju Forest	<i>Arthropphyllum diversifolium</i>	Araliaceae	Native	Common	Tree
31	Maju Forest	<i>Artocarpus heterophyllus</i>	Moraceae	Exotic	Casual	Tree
32	Maju Forest	<i>Artocarpus integer</i>	Moraceae	Exotic	Casual	Tree
33	Maju Forest	<i>Aspidopterys concava</i>	Malpighiaceae	Native	Endangered	Climber
34	Maju Forest	<i>Asplenium longissimum</i>	Aspleniaceae	Native	Common	Epiphyte
35	Maju Forest	<i>Asplenium nidus</i>	Aspleniaceae	Native	Common	Epiphyte
36	Maju Forest	<i>Asystasia gangetica</i> ssp. <i>micrantha</i>	Acanthaceae	Exotic	Naturalised	Herb
37	Maju Forest	<i>Averrhoa carambola</i>	Oxalidaceae	Exotic	Casual	Tree
38	Maju Forest	<i>Axonopus compressus</i>	Poaceae	Exotic	Naturalised	Herb
39	Maju Forest	<i>Baccaurea motleyana</i>	Phyllanthaceae	Native	Critically Endangered	Tree
40	Maju Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub
41	Maju Forest	<i>Baphia nitida</i>	Fabaceae	Exotic	Casual	Shrub
42	Maju Forest	<i>Basella alba</i>	Basellaceae	Exotic	Cultivated Only	Climber
43	Maju Forest	<i>Bhesa paniculata</i>	Celastraceae	Native	Common	Tree
44	Maju Forest	<i>Blechnum finlaysonianum</i>	Blechnaceae	Native	Vulnerable	Herb
45	Maju Forest	<i>Bridelia stipularis</i>	Phyllanthaceae	Native	Vulnerable	Shrub
46	Maju Forest	<i>Bridelia tomentosa</i>	Phyllanthaceae	Native	Common	Tree
47	Maju Forest	<i>Bromheadia finlaysonianana</i>	Orchidaceae	Native	Common	Herb
48	Maju Forest	<i>Buchanania arborens</i>	Anacardiaceae	Native	Common	Tree
49	Maju Forest	<i>Caesalpinia sumatrana</i>	Fabaceae	Native	Critically Endangered	Climber
50	Maju Forest	<i>Caladium bicolor</i>	Araceae	Exotic	Cultivated Only	Herb
51	Maju Forest	<i>Callicarpa longifolia</i>	Lamiaceae	Native	Endangered	Shrub
52	Maju Forest	<i>Callisia repens</i>	Commelinaceae	Exotic	Cultivated Only	Herb
53	Maju Forest	<i>Calophyllum soulattri</i>	Calophyllaceae	Exotic	Not assessed	Tree
54	Maju Forest	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree
55	Maju Forest	<i>Canna indica</i>	Cannaceae	Exotic	Naturalised	Herb
56	Maju Forest	<i>Cansjera rheedii</i>	Opiliaceae	Native	Vulnerable	Climber
57	Maju Forest	<i>Carica papaya</i>	Caricaceae	Exotic	Casual	Tree
58	Maju Forest	<i>Caryota mitis</i>	Arecaceae	Native	Common	Tree
59	Maju Forest	<i>Centella asiatica</i>	Apiaceae	Native	Common	Herb
60	Maju Forest	<i>Centotheca lappacea</i>	Poaceae	Native	Critically Endangered	Herb
61	Maju Forest	<i>Christella parasitica</i>	Thelypteridaceae	Cryptogenic	-	Tree
62	Maju Forest	<i>Cinnamomum iners</i>	Lauraceae	Native	Common	Tree
63	Maju Forest	<i>Cissus hastata</i>	Vitaceae	Cryptogenic	-	Climber
64	Maju Forest	<i>Claoxylon indicum</i>	Euphorbiaceae	Native	Common	Tree
65	Maju Forest	<i>Clausena excavata</i>	Rutaceae	Native	Common	Shrub
66	Maju Forest	<i>Cleome rutidosperma</i>	Cleomaceae	Exotic	Naturalised	Herb
67	Maju Forest	<i>Clerodendrum laevifolium</i>	Lamiaceae	Native	Common	Tree
68	Maju Forest	<i>Clerodendrum paniculatum</i>	Lamiaceae	Exotic	Casual	Shrub
69	Maju Forest	<i>Clidemia hirta</i>	Melastomataceae	Exotic	Naturalised	Shrub
70	Maju Forest	<i>Clinacanthus nutans</i>	Acanthaceae	Exotic	Not assessed	Herb
71	Maju Forest	<i>Clitoria ternatea</i>	Fabaceae	Exotic	Naturalised	Climber
72	Maju Forest	<i>Coccinia grandis</i>	Cucurbitaceae	Exotic	Naturalised	Climber

Appendix C1 List of Plant Species in Maju Forest

S/N	Site	Species	Family	Origin	Status	Habit
73	Maju Forest	<i>Cocos nucifera</i>	Arecaceae	Exotic	Naturalised	Tree
74	Maju Forest	<i>Colocasia esculenta</i>	Araceae	Exotic	Casual	Herb
75	Maju Forest	<i>Commelina diffusa</i>	Commelinaceae	Cryptogenic	-	Herb
76	Maju Forest	<i>Commersonia bartramia</i>	Malvaceae	Native	Common	Tree
77	Maju Forest	<i>Connarus semidecandrus</i>	Connaraceae	Native	Critically Endangered	Climber
78	Maju Forest	<i>Costus lucanusianus</i>	Costaceae	Exotic	Casual	Herb
79	Maju Forest	<i>Costus speciosus</i>	Costaceae	Native	Common	Herb
80	Maju Forest	<i>Cryptocarya ferrea</i>	Lauraceae	Native	Critically Endangered	Tree
81	Maju Forest	<i>Cucumis maderaspatanus</i>	Cucurbitaceae	Exotic	Naturalised	Climber
82	Maju Forest	<i>Cyclosorus triphyllus</i> var. <i>triphyllus</i>	Thelypteridaceae	Native	Common	Herb
83	Maju Forest	<i>Cyperus haspan</i>	Cyperaceae	Cryptogenic	-	Herb
84	Maju Forest	<i>Cyperus javanicus</i>	Cyperaceae	Native	Common	Herb
85	Maju Forest	<i>Cynophyllum fragrans</i>	Gentianaceae	Native	Common	Tree
86	Maju Forest	<i>Cyrtostachys renda</i>	Arecaceae	Native	Presumed Extinct	Shrub
87	Maju Forest	<i>Dalbergia</i> cf. <i>junghunii</i>	Fabaceae	Native	Critically Endangered	Climber
88	Maju Forest	<i>Davallia denticulata</i>	Davalliaceae	Native	Common	Epiphyte
89	Maju Forest	<i>Delonix regia</i>	Fabaceae	Exotic	Cultivated Only	Tree
90	Maju Forest	<i>Desmodium triflorum</i>	Fabaceae	Cryptogenic	-	Herb
91	Maju Forest	<i>Dianella ensifolia</i>	Xanthorrhoeaceae	Native	Common	Herb
92	Maju Forest	<i>Dicranopteris linearis</i>	Gleicheniaceae	Native	Common	Climber
93	Maju Forest	<i>Dieffenbachia seguine</i> var. <i>seguine</i>	Araceae	Exotic	Casual	Herb
94	Maju Forest	<i>Dillenia suffruticosa</i>	Dilleniaceae	Native	Common	Shrub
95	Maju Forest	<i>Dimocarpus longan</i>	Sapindaceae	Exotic	Casual	Tree
96	Maju Forest	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree
97	Maju Forest	<i>Dioscorea laurifolia</i>	Dioscoreaceae	Native	Common	Climber
98	Maju Forest	<i>Dioscorea orbiculata</i> var. <i>tenuifolia</i>	Dioscoreaceae	Native	Not assessed; recently rediscovered	Climber
	Maju Forest	<i>Dioscorea pyriformis</i>	Dioscoreaceae	Native	Common	Climber
100	Maju Forest	<i>Dissochaeta gracilis</i>	Melastomataceae	Native	Vulnerable	Climber
101	Maju Forest	<i>Dracaena surculosa</i>	Ruscaceae	Exotic	Cultivated Only	Shrub
102	Maju Forest	<i>Drynaria quercifolia</i>	Polypodiaceae	Native	Common	Epiphyte
103	Maju Forest	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree
104	Maju Forest	<i>Dysoxylum cauliflorum</i>	Meliaceae	Native	Vulnerable	Tree
105	Maju Forest	<i>Eclipta prostrata</i>	Asteraceae	Exotic	Naturalised	Herb
106	Maju Forest	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree
107	Maju Forest	<i>Elaeocarpus ferrugineus</i>	Elaeocarpaceae	Native	Common	Tree
108	Maju Forest	<i>Elaeocarpus mastersii</i>	Elaeocarpaceae	Native	Common	Tree
109	Maju Forest	<i>Elaeocarpus petiolatus</i>	Elaeocarpaceae	Native	Common	Tree
110	Maju Forest	<i>Embelia ribes</i>	Myrsinaceae	Native	Common	Climber
111	Maju Forest	<i>Epipremnum aureum</i>	Araceae	Exotic	Casual	Climber
112	Maju Forest	<i>Epipremnum pinnatum</i>	Araceae	Native	Critically Endangered	Climber
113	Maju Forest	<i>Erycibe tomentosa</i>	Convolvulaceae	Native	Common	Climber
114	Maju Forest	<i>Etingera elatior</i>	Zingiberaceae	Exotic	Cultivated Only	Herb
115	Maju Forest	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree
116	Maju Forest	<i>Fibraurea tinctoria</i>	Menispermaceae	Native	Common	Climber
117	Maju Forest	<i>Ficus apiocarpa</i>	Moraceae	Native	Endangered	Climber
118	Maju Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree
119	Maju Forest	<i>Ficus benjamina</i>	Moraceae	Cryptogenic	-	Strangler
120	Maju Forest	<i>Ficus fistulosa</i>	Moraceae	Native	Common	Tree
121	Maju Forest	<i>Ficus grossularioides</i> var. <i>grossularioides</i>	Moraceae	Native	Common	Tree
122	Maju Forest	<i>Ficus heterophylla</i>	Moraceae	Native	Common	Climber
123	Maju Forest	<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler
124	Maju Forest	<i>Ficus punctata</i>	Moraceae	Native	Common	Climber
125	Maju Forest	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree
126	Maju Forest	<i>Fimbristylis littoralis</i>	Cyperaceae	Cryptogenic	-	Herb
127	Maju Forest	<i>Flagellaria indica</i>	Flagellariaceae	Native	Common	Climber
128	Maju Forest	<i>Galearia fulva</i>	Pandaceae	Native	Vulnerable	Tree
129	Maju Forest	<i>Garcinia griffithii</i>	Clusiaceae	Native	Endangered	Tree
130	Maju Forest	<i>Glochidion superbum</i>	Phyllanthaceae	Native	Common	Tree
131	Maju Forest	<i>Glochidion zeylanicum</i> var. <i>zeylanicum</i>	Phyllanthaceae	Native	Vulnerable	Tree
132	Maju Forest	<i>Gnetum gnemon</i> var. <i>gnemon</i>	Gnetaceae	Native	Critically Endangered	Tree
133	Maju Forest	<i>Goniophlebium percussum</i>	Polypodiaceae	Native	Vulnerable	Epiphyte
134	Maju Forest	<i>Guioa pubescens</i>	Sapindaceae	Native	Vulnerable	Tree
135	Maju Forest	<i>Gymnacranthera farquhariana</i> var. <i>farquhariana</i>	Myristicaceae	Native	Critically Endangered	Tree
136	Maju Forest	<i>Gymnacranthera forbesii</i>	Myristicaceae	Native	Critically Endangered	Tree
137	Maju Forest	<i>Gynochthodes sublanceolata</i>	Rubiaceae	Native	Common	Climber
138	Maju Forest	<i>Gynotroches axillaris</i>	Rhizophoraceae	Native	Common	Tree
139	Maju Forest	<i>Hedyotis auricularia</i>	Rubiaceae	Native	Common	Herb
140	Maju Forest	<i>Heliconia psittacorum</i>	Heliconiaceae	Exotic	Casual	Herb
141	Maju Forest	<i>Hemigraphis primulifolia</i>	Acanthaceae	Exotic	Naturalised	Herb
142	Maju Forest	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree
143	Maju Forest	<i>Hopea odorata</i>	Dipterocarpaceae	Exotic	Cultivated Only	Tree
144	Maju Forest	<i>Horsfieldia polyspherula</i>	Myristicaceae	Native	Vulnerable	Tree

Appendix C1 List of Plant Species in Maju Forest

S/N	Site	Species	Family	Origin	Status	Habit
145	Maju Forest	<i>Hypolytrum nemorum</i>	Cyperaceae	Native	Common	Herb
146	Maju Forest	<i>Ilex cymosa</i>	Aquifoliaceae	Native	Common	Tree
147	Maju Forest	<i>Imperata cylindrica</i>	Poaceae	Cryptogenic	-	Herb
148	Maju Forest	<i>Ipomoea cairica</i>	Convolvulaceae	Exotic	Naturalised	Climber
149	Maju Forest	<i>Ipomoea triloba</i>	Convolvulaceae	Exotic	Naturalised	Climber
150	Maju Forest	<i>Isachne globosa</i>	Poaceae	Cryptogenic	-	Herb
151	Maju Forest	<i>Ischaemum ciliare</i>	Poaceae	Cryptogenic	-	Herb
152	Maju Forest	<i>Ischaemum muticum</i>	Poaceae	Native	Common	Herb
153	Maju Forest	<i>Ixonanthes reticulata</i>	Ixonanthaceae	Native	Common	Tree
154	Maju Forest	<i>Khaya grandifoliola</i>	Meliaceae	Exotic	Cultivated Only	Tree
155	Maju Forest	<i>Khaya senegalensis</i>	Meliaceae	Exotic	Cultivated Only	Tree
156	Maju Forest	<i>Kyllinga nemoralis</i>	Cyperaceae	Cryptogenic	-	Herb
157	Maju Forest	<i>Kyllinga polyphylla</i>	Cyperaceae	Exotic	Naturalised	Herb
158	Maju Forest	<i>Lagerstroemia speciosa</i>	Lythraceae	Exotic	Cultivated Only	Tree
159	Maju Forest	<i>Lansium domesticum</i>	Meliaceae	Exotic	Cultivated Only	Tree
160	Maju Forest	<i>Lantana camara</i>	Verbenaceae	Exotic	Naturalised	Shrub
161	Maju Forest	<i>Leea indica</i>	Vitaceae	Native	Common	Tree
162	Maju Forest	<i>Leea rubra</i>	Vitaceae	Native	Presumed Extinct	Shrub
163	Maju Forest	<i>Lepisanthes rubiginosa</i>	Sapindaceae	Native	Common	Tree
164	Maju Forest	<i>Leucaena leucocephala</i>	Fabaceae	Exotic	Naturalised	Tree
165	Maju Forest	<i>Licuala grandis</i>	Arecaceae	Exotic	Cultivated Only	Tree
166	Maju Forest	<i>Licuala spinosa</i>	Arecaceae	Native	Vulnerable	Shrub
167	Maju Forest	<i>Limacia scandens</i>	Menispermaceae	Native	Vulnerable	Climber
168	Maju Forest	<i>Litsea castanea</i>	Lauraceae	Native	Endangered	Tree
169	Maju Forest	<i>Litsea cf. grandis</i>	Lauraceae	Native	Endangered	Tree
170	Maju Forest	<i>Litsea elliptica</i>	Lauraceae	Native	Common	Tree
171	Maju Forest	<i>Litsea firma</i>	Lauraceae	Native	Vulnerable	Tree
172	Maju Forest	<i>Lomariopsis lineata</i>	Lomariopsidaceae	Native	Critically Endangered	Climber
173	Maju Forest	<i>Ludwigia hyssopifolia</i>	Onagraceae	Cryptogenic	-	Herb
174	Maju Forest	<i>Lycopodiella cernua</i>	Lycopodiaceae	Native	Common	Herb
175	Maju Forest	<i>Lygodium flexuosum</i>	Schizaeaceae	Native	Common	Climber
176	Maju Forest	<i>Lygodium longifolium</i>	Schizaeaceae	Native	Vulnerable	Climber
177	Maju Forest	<i>Lygodium microphyllum</i>	Schizaeaceae	Native	Common	Climber
178	Maju Forest	<i>Macaranga bancana</i>	Euphorbiaceae	Native	Common	Tree
179	Maju Forest	<i>Macaranga corifera</i>	Euphorbiaceae	Native	Common	Tree
180	Maju Forest	<i>Macaranga gigantea</i>	Euphorbiaceae	Native	Common	Tree
181	Maju Forest	<i>Macaranga griffithiana</i>	Euphorbiaceae	Native	Vulnerable	Tree
182	Maju Forest	<i>Macaranga heynei</i>	Euphorbiaceae	Native	Common	Tree
183	Maju Forest	<i>Macaranga hulletii</i>	Euphorbiaceae	Native	Critically Endangered	Tree
184	Maju Forest	<i>Macaranga hypoleuca</i>	Euphorbiaceae	Native	Common	Tree
185	Maju Forest	<i>Maesa ramentacea</i>	Maesaceae	Native	Common	Shrub
186	Maju Forest	<i>Mallotus paniculatus</i>	Euphorbiaceae	Native	Common	Tree
187	Maju Forest	<i>Mangifera indica</i>	Anacardiaceae	Exotic	Casual	Tree
188	Maju Forest	<i>Manihot carthagenensis</i> ssp. <i>glaziovii</i>	Euphorbiaceae	Exotic	Naturalised	Tree
189	Maju Forest	<i>Manihot esculenta</i>	Euphorbiaceae	Exotic	Naturalised	Shrub
190	Maju Forest	<i>Megathyrsus maximus</i>	Poaceae	Exotic	Naturalised	Herb
191	Maju Forest	<i>Melastoma malabathricum</i>	Melastomataceae	Native	Common	Shrub
192	Maju Forest	<i>Melicope glabra</i>	Rutaceae	Native	Vulnerable	Tree
193	Maju Forest	<i>Melinis repens</i>	Poaceae	Exotic	Naturalised	Herb
194	Maju Forest	<i>Melochia corymbifolia</i>	Malvaceae	Cryptogenic	-	Shrub
195	Maju Forest	<i>Melothria pendula</i>	Cucurbitaceae	Exotic	Not assessed	Climber
196	Maju Forest	<i>Merremia hirta</i>	Convolvulaceae	Cryptogenic	-	Climber
197	Maju Forest	<i>Merremia umbellata</i>	Convolvulaceae	Cryptogenic	-	Climber
198	Maju Forest	<i>Mikania micrantha</i>	Asteraceae	Exotic	Naturalised	Climber
199	Maju Forest	<i>Mimosa diplotricha</i>	Fabaceae	Exotic	Naturalised	Shrub
200	Maju Forest	<i>Mimosa pigra</i>	Fabaceae	Exotic	Naturalised	Shrub
201	Maju Forest	<i>Mimosa pudica</i>	Fabaceae	Exotic	Naturalised	Shrub
202	Maju Forest	<i>Mimusops elengi</i>	Sapotaceae	Exotic	Casual	Tree
203	Maju Forest	<i>Monochoria vaginalis</i>	Pontederiaceae	Cryptogenic	-	Herb
204	Maju Forest	<i>Morella esculenta</i>	Myricaceae	Native	Common	Tree
205	Maju Forest	<i>Morus alba</i>	Moraceae	Exotic	Cultivated Only	Tree
206	Maju Forest	<i>Mucuna pruriens</i>	Fabaceae	Exotic	Not assessed	Climber
207	Maju Forest	<i>Muntingia calabura</i>	Muntingiaceae	Exotic	Naturalised	Tree
208	Maju Forest	<i>Musa cultivar</i>	Musaceae	Exotic	Not assessed	Herb
209	Maju Forest	<i>Nepenthes gracilis</i>	Nepenthaceae	Native	Common	Climber
210	Maju Forest	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree
211	Maju Forest	<i>Nephrolepis auriculata</i>	Oleandraceae	Cryptogenic	-	Herb
212	Maju Forest	<i>Neptunia plena</i>	Fabaceae	Exotic	Naturalised	Shrub
213	Maju Forest	<i>Ochna kirkii</i>	Ochnaceae	Exotic	Cultivated Only	Shrub
214	Maju Forest	<i>Oldenlandia corymbosa</i>	Rubiaceae	Exotic	Naturalised	Herb
215	Maju Forest	<i>Oldenlandia diffusa</i>	Rubiaceae	Cryptogenic	-	Herb
216	Maju Forest	<i>Oncosperma horridum</i>	Arecaceae	Native	Vulnerable	Shrub

Appendix C1 List of Plant Species in Maju Forest

S/N	Site	Species	Family	Origin	Status	Habit
217	Maju Forest	<i>Ottocloa nodosa</i>	Poaceae	Native	Common	Herb
218	Maju Forest	<i>Oxalis barrelieri</i>	Oxalidaceae	Exotic	Naturalised	Herb
219	Maju Forest	<i>Oxyceros longiflorus</i>	Rubiaceae	Native	Vulnerable	Climber
220	Maju Forest	<i>Paederia foetida</i>	Rubiaceae	Native	Common	Climber
221	Maju Forest	<i>Palaquium obovatum</i>	Sapotaceae	Native	Vulnerable	Tree
222	Maju Forest	<i>Paraderris elliptica</i>	Fabaceae	Cryptogenic	-	Climber
223	Maju Forest	<i>Passiflora foetida</i>	Passifloraceae	Exotic	Naturalised	Climber
224	Maju Forest	<i>Passiflora laurifolia</i>	Passifloraceae	Exotic	Naturalised	Climber
225	Maju Forest	<i>Passiflora suberosa</i>	Passifloraceae	Exotic	Naturalised	Climber
226	Maju Forest	<i>Peltophorum pterocarpum</i>	Fabaceae	Native	Critically Endangered	Tree
227	Maju Forest	<i>Pennisetum purpureum</i>	Poaceae	Exotic	Naturalised	Herb
228	Maju Forest	<i>Pereskia bleo</i>	Cactaceae	Exotic	Cultivated Only	Shrub
229	Maju Forest	<i>Phyllanthus urinaria</i>	Phyllanthaceae	Exotic	Naturalised	Herb
230	Maju Forest	<i>Pinanga kuhlili</i>	Arecaceae	Exotic	Cultivated Only	Shrub
231	Maju Forest	<i>Piper caninum</i>	Piperaceae	Native	Common	Climber
232	Maju Forest	<i>Piper sarmentosum</i>	Piperaceae	Native	Common	Climber
233	Maju Forest	<i>Pityrogramma calomelanos</i>	Adiantaceae	Exotic	Naturalised	Herb
234	Maju Forest	<i>Plectranthus monostachyus</i>	Lamiaceae	Exotic	Not assessed	Herb
235	Maju Forest	<i>Pleocnemia irregularis</i>	Dryopteridaceae	Native	Common	Herb
236	Maju Forest	<i>Podocarpus rumphii</i>	Podocarpaceae	Exotic	Cultivated Only	Tree
237	Maju Forest	<i>Polygala paniculata</i>	Polygalaceae	Exotic	Naturalised	Herb
238	Maju Forest	<i>Pometia pinnata</i>	Sapindaceae	Native	Endangered	Tree
239	Maju Forest	<i>Pronephrium triphyllum</i>	Thelypteridaceae	Native	Common	Herb
240	Maju Forest	<i>Psophocarpus tetragonolobus</i>	Fabaceae	Exotic	Not assessed	Climber
241	Maju Forest	<i>Pteris semipinnata</i>	Pteridaceae	Native	Vulnerable	Herb
242	Maju Forest	<i>Pteris vittata</i>	Pteridaceae	Cryptogenic	-	Herb
243	Maju Forest	<i>Pterocarpus indicus</i>	Fabaceae	Exotic	Casual	Tree
244	Maju Forest	<i>Ptychosperma macarthurii</i>	Arecaceae	Exotic	Naturalised	Tree
245	Maju Forest	<i>Pyrrosia longifolia</i>	Polypodiaceae	Native	Common	Epiphyte
246	Maju Forest	<i>Pyrrosia piloselloides</i>	Polypodiaceae	Native	Common	Epiphyte
247	Maju Forest	<i>Rhodamnia cinerea</i>	Myrtaceae	Native	Common	Tree
248	Maju Forest	<i>Salacia cf. korthalsiana</i>	Celastraceae	Native	Critically Endangered	Climber
249	Maju Forest	<i>Samanea saman</i>	Fabaceae	Exotic	Casual	Tree
250	Maju Forest	<i>Santiria apiculata</i>	Burseraceae	Native	Common	Tree
251	Maju Forest	<i>Sauropus androgynus</i>	Phyllanthaceae	Native	Common	Shrub
252	Maju Forest	<i>Schizostachyum brachycladum</i>	Poaceae	Exotic	Casual	Shrub
253	Maju Forest	<i>Scleria ciliaris</i>	Cyperaceae	Native	Common	Herb
254	Maju Forest	<i>Scoparia dulcis</i>	Scrophulariaceae	Exotic	Naturalised	Herb
255	Maju Forest	<i>Selaginella ciliaris</i>	Selaginellaceae	Native	Common	Climber
256	Maju Forest	<i>Selaginella intermedia</i>	Selaginellaceae	Native	Vulnerable	Herb
257	Maju Forest	<i>Senna siamea</i>	Fabaceae	Exotic	Cultivated Only	Tree
258	Maju Forest	<i>Setaria barbata</i>	Poaceae	Exotic	Naturalised	Herb
259	Maju Forest	<i>Smilax cf. megacarpa</i>	Smilacaceae	Native	Not assessed; recently rediscovered	Climber
260	Maju Forest	<i>Smilax setosa</i>	Smilacaceae	Native	Common	Climber
261	Maju Forest	<i>Solanum torvum</i>	Solanaceae	Exotic	Naturalised	Shrub
262	Maju Forest	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree
263	Maju Forest	<i>Spathoglottis plicata</i>	Orchidaceae	Native	Common	Herb
264	Maju Forest	<i>Spermacoe exilis</i>	Rubiaceae	Cryptogenic	-	Herb
265	Maju Forest	<i>Spermacoe latifolia</i>	Rubiaceae	Exotic	Naturalised	Herb
266	Maju Forest	<i>Sphagneticola trilobata</i>	Asteraceae	Exotic	Naturalised	Herb
267	Maju Forest	<i>Stachytarpheta indica</i>	Verbenaceae	Exotic	Naturalised	Shrub
268	Maju Forest	<i>Stenochlaena palustris</i>	Blechnaceae	Native	Common	Climber
269	Maju Forest	<i>Sterculia foetida</i>	Malvaceae	Exotic	Cultivated Only	Tree
270	Maju Forest	<i>Sterculia oblongata</i>	Malvaceae	Exotic	Cultivated Only	Tree
271	Maju Forest	<i>Sterculia parviflora</i>	Malvaceae	Native	Critically Endangered	Tree
272	Maju Forest	<i>Strobilanthes crispus</i>	Acanthaceae	Exotic	Cultivated Only	Herb
273	Maju Forest	<i>Strophanthus cf. caudatus</i>	Apocynaceae	Native	Critically Endangered	Climber
274	Maju Forest	<i>Struchium sparganophorum</i>	Asteraceae	Exotic	Naturalised	Herb
275	Maju Forest	<i>Swietenia macrophylla</i>	Meliaceae	Exotic	Casual	Tree
276	Maju Forest	<i>Synedrella nodiflora</i>	Asteraceae	Exotic	Naturalised	Herb
277	Maju Forest	<i>Syngonium podophyllum</i>	Araceae	Exotic	Naturalised	Climber
278	Maju Forest	<i>Syzygium bomeense</i>	Myrtaceae	Native	Common	Tree
279	Maju Forest	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree
280	Maju Forest	<i>Syzygium jambos</i>	Myrtaceae	Exotic	Casual	Tree
281	Maju Forest	<i>Syzygium lineatum</i>	Myrtaceae	Native	Common	Tree
282	Maju Forest	<i>Syzygium myrtillosum</i>	Myrtaceae	Native	Presumed Extinct	Tree
283	Maju Forest	<i>Syzygium polyanthum</i>	Myrtaceae	Native	Vulnerable	Tree
284	Maju Forest	<i>Syzygium zeylanicum</i>	Myrtaceae	Native	Common	Shrub
285	Maju Forest	<i>Taenitis blechnoides</i>	Pteridaceae	Native	Common	Climber
286	Maju Forest	<i>Tectaria cf. semipinnata</i>	Dryopteridaceae	Native	Endangered	Herb
287	Maju Forest	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree
288	Maju Forest	<i>Tetracera indica</i>	Dilleniaceae	Native	Common	Climber

Appendix C1 List of Plant Species in Maju Forest

S/N	Site	Species	Family	Origin	Status	Habit
289	Maju Forest	<i>Thalia geniculata</i>	Marantaceae	Exotic	Cultivated Only	Herb
290	Maju Forest	<i>Thunbergia laurifolia</i>	Acanthaceae	Native	Presumed Extinct	Climber
291	Maju Forest	<i>Timonius wallichianus</i>	Rubiaceae	Native	Common	Tree
292	Maju Forest	<i>Torenia polygonoides</i>	Linderniaceae	Cryptogenic	-	Herb
293	Maju Forest	<i>Trema cannabina</i>	Cannabaceae	Native	Common	Shrub
294	Maju Forest	<i>Trema tomentosa</i>	Cannabaceae	Native	Common	Shrub
295	Maju Forest	<i>Tridax procumbens</i>	Asteraceae	Exotic	Naturalised	Herb
296	Maju Forest	<i>Typhonium trilobatum</i>	Araceae	Exotic	Naturalised	Herb
297	Maju Forest	<i>Uncaria gambir</i>	Rubiaceae	Exotic	Naturalised	Climber
298	Maju Forest	<i>Uncaria longiflora</i> var. <i>pteropoda</i>	Rubiaceae	Native	Critically Endangered	Climber
299	Maju Forest	<i>Vernonia cinerea</i>	Asteraceae	Cryptogenic	-	Herb
300	Maju Forest	<i>Vitex pinnata</i>	Lamiaceae	Native	Common	Tree
301	Maju Forest	<i>Xanthophyllum eurhynchum</i>	Polygalaceae	Native	Vulnerable	Shrub
302	Maju Forest	<i>Xanthosoma sagittifolium</i>	Araceae	Exotic	Not assessed	Herb
303	Maju Forest	<i>Xanthostemon chrysanthus</i>	Myrtaceae	Exotic	Cultivated Only	Tree
304	Maju Forest	<i>Xylopia caudata</i>	Annonaceae	Native	Vulnerable	Tree
305	Maju Forest	<i>Youngia japonica</i>	Asteraceae	Exotic	Naturalised	Herb

Appendix C2

List of Plant Species in
Clementi Forest

Appendix C2 List of Plant Species in Clementi Forest

S/N	Site	Species	Family	Origin	Status	Habit
1	Clementi Forest	<i>Acacia auriculiformis</i>	Fabaceae	Exotic	Naturalised	Tree
2	Clementi Forest	<i>Acacia mangium</i>	Fabaceae	Exotic	Naturalised	Tree
3	Clementi Forest	<i>Acalypha siamensis</i>	Euphorbiaceae	Exotic	Casual	Shrub
4	Clementi Forest	<i>Adenanthera pavonina</i>	Fabaceae	Exotic	Naturalised	Tree
5	Clementi Forest	<i>Adiantum latifolium</i>	Adiantaceae	Exotic	Naturalised	Herb
6	Clementi Forest	<i>Agelaea borneensis</i>	Connaraceae	Native	Vulnerable	Climber
7	Clementi Forest	<i>Agelaea macrophylla</i>	Connaraceae	Native	Critically Endangered	Climber
8	Clementi Forest	<i>Aglanema commutatum</i>	Araceae	Exotic	Casual	Herb
9	Clementi Forest	<i>Alocasia macrorrhizos</i>	Araceae	Exotic	Naturalised	Herb
10	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree
11	Clementi Forest	<i>Alstonia angustiloba</i>	Apocynaceae	Native	Common	Tree
12	Clementi Forest	<i>Ampelocissus gracilis</i>	Vitaceae	Native	Endangered	Climber
13	Clementi Forest	<i>Amphineuron opulentum</i>	Thelypteridaceae	Native	Endangered	Climber
14	Clementi Forest	<i>Ananas comosus</i>	Bromeliaceae	Exotic	Casual	Shrub
15	Clementi Forest	<i>Andira inermis</i>	Fabaceae	Exotic	Casual	Tree
16	Clementi Forest	<i>Angiopteris evecta</i>	Marattiaceae	Native	Vulnerable	Herb
17	Clementi Forest	<i>Antidesma bunius</i>	Phyllanthaceae	Exotic	Casual	Tree
18	Clementi Forest	<i>Antidesma cuspidatum</i>	Phyllanthaceae	Native	Common	Tree
19	Clementi Forest	<i>Aphanamixis polystachya</i>	Meliaceae	Native	Endangered	Tree
20	Clementi Forest	<i>Aporosa benthamiana</i>	Phyllanthaceae	Native	Vulnerable	Tree
21	Clementi Forest	<i>Aporosa frutescens</i>	Phyllanthaceae	Native	Common	Tree
22	Clementi Forest	<i>Archidendron clypearia</i>	Fabaceae	Native	Common	Tree
23	Clementi Forest	<i>Archidendron jiringa</i>	Fabaceae	Native	Vulnerable	Tree
24	Clementi Forest	<i>Ardisia elliptica</i>	Myrsinaceae	Native	Endangered	Tree
25	Clementi Forest	<i>Ardisia kteniophylla</i>	Myrsinaceae	Exotic	Cultivated Only	Shrub
26	Clementi Forest	<i>Aristolochia acuminata</i>	Aristolochiaceae	Exotic	Cultivated Only	Climber
27	Clementi Forest	<i>Arthrophyllum diversifolium</i>	Araliaceae	Native	Common	Tree
28	Clementi Forest	<i>Artocarpus heterophyllus</i>	Moraceae	Exotic	Casual	Tree
29	Clementi Forest	<i>Artocarpus integer</i>	Moraceae	Exotic	Casual	Tree
30	Clementi Forest	<i>Aspidopterys concava</i>	Malpighiaceae	Native	Endangered	Climber
31	Clementi Forest	<i>Asplenium longissimum</i>	Aspleniaceae	Native	Common	Epiphyte
32	Clementi Forest	<i>Asplenium nidus</i>	Aspleniaceae	Native	Common	Epiphyte
33	Clementi Forest	<i>Asplenium nitidum</i>	Aspleniaceae	Native	Presumed Extinct	Epiphyte
34	Clementi Forest	<i>Asystasia gangetica</i> ssp. <i>micrantha</i>	Acanthaceae	Exotic	Naturalised	Herb
35	Clementi Forest	<i>Averrhoa bilimbi</i>	Oxalidaceae	Exotic	Casual	Tree
36	Clementi Forest	<i>Averrhoa carambola</i>	Oxalidaceae	Exotic	Casual	Tree
37	Clementi Forest	<i>Axonopus compressus</i>	Poaceae	Exotic	Naturalised	Herb
38	Clementi Forest	<i>Baccaurea motleyana</i>	Phyllanthaceae	Native	Critically Endangered	Tree
39	Clementi Forest	<i>Bambusa heterostachya</i>	Poaceae	Exotic	Casual	Shrub
40	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub
41	Clementi Forest	<i>Baphia nitida</i>	Fabaceae	Exotic	Casual	Shrub
42	Clementi Forest	<i>Blechnopsis orientalis</i>	Blechnaceae	Native	Common	Herb
43	Clementi Forest	<i>Blechnum finlaysonianum</i>	Blechnaceae	Native	Vulnerable	Herb
44	Clementi Forest	<i>Bouea macrophylla</i>	Anacardiaceae	Native	Critically Endangered	Tree
45	Clementi Forest	<i>Bridelia stipularis</i>	Phyllanthaceae	Native	Vulnerable	Shrub
46	Clementi Forest	<i>Bridelia tomentosa</i>	Phyllanthaceae	Native	Common	Tree
47	Clementi Forest	<i>Bromheadia finlaysonianana</i>	Orchidaceae	Native	Common	Herb
48	Clementi Forest	<i>Callerya atropurpurea</i>	Fabaceae	Exotic	Casual	Tree
49	Clementi Forest	<i>Callicarpa longifolia</i>	Lamiaceae	Native	Endangered	Shrub
50	Clementi Forest	<i>Callisia repens</i>	Commelinaceae	Exotic	Cultivated Only	Herb
51	Clementi Forest	<i>Calophyllum soulattri</i>	Calophyllaceae	Exotic	Not assessed	Tree
52	Clementi Forest	<i>Calophyllum tetrapterum</i>	Calophyllaceae	Native	Vulnerable	Tree
53	Clementi Forest	<i>Calopogonium mucunoides</i>	Fabaceae	Exotic	Naturalised	Climber
54	Clementi Forest	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree
55	Clementi Forest	<i>Canna indica</i>	Cannaceae	Exotic	Naturalised	Herb
56	Clementi Forest	<i>Carallia suffruticosa</i>	Rhizophoraceae	Exotic	Cultivated Only	Tree
57	Clementi Forest	<i>Carica papaya</i>	Caricaceae	Exotic	Casual	Tree
58	Clementi Forest	<i>Caryota mitis</i>	Arecaceae	Native	Common	Tree
59	Clementi Forest	<i>Caryota no</i>	Arecaceae	Exotic	Cultivated Only	Tree
60	Clementi Forest	<i>Casuarina equisetifolia</i>	Casuarinaceae	Native	Common	Tree
61	Clementi Forest	<i>Centella asiatica</i>	Apiaceae	Native	Common	Herb
62	Clementi Forest	<i>Centotheca lappacea</i>	Poaceae	Native	Critically Endangered	Herb
63	Clementi Forest	<i>Centrosema molle</i>	Fabaceae	Exotic	Naturalised	Climber
64	Clementi Forest	<i>Chassalia chartacea</i>	Rubiaceae	Native	Vulnerable	Shrub
65	Clementi Forest	<i>Chassalia curviflora</i>	Rubiaceae	Native	Endangered	Tree
66	Clementi Forest	<i>Cheilocostus speciosus</i>	Costaceae	Native	Common	Shrub
67	Clementi Forest	<i>Chisocheton cf. patens</i>	Meliaceae	Native	Critically Endangered	Tree
68	Clementi Forest	<i>Chrysopogon aciculatus</i>	Poaceae	Native	Common	Herb
69	Clementi Forest	<i>Cinnamomum iners</i>	Lauraceae	Native	Common	Tree
70	Clementi Forest	<i>Cissus hastata</i>	Vitaceae	Cryptogenic	-	Climber
71	Clementi Forest	<i>Claoxylon indicum</i>	Euphorbiaceae	Native	Common	Tree
72	Clementi Forest	<i>Clausena excavata</i>	Rutaceae	Native	Common	Shrub

Appendix C2 List of Plant Species in Clementi Forest

S/N	Site	Species	Family	Origin	Status	Habit
73	Clementi Forest	<i>Cleome rutidosperma</i>	Cleomaceae	Exotic	Naturalised	Herb
74	Clementi Forest	<i>Clerodendrum laevifolium</i>	Lamiaceae	Native	Common	Tree
75	Clementi Forest	<i>Clerodendrum paniculatum</i>	Lamiaceae	Exotic	Casual	Shrub
76	Clementi Forest	<i>Clidemia hirta</i>	Melastomataceae	Exotic	Naturalised	Shrub
77	Clementi Forest	<i>Clinacanthus nutans</i>	Acanthaceae	Exotic	Not assessed	Herb
78	Clementi Forest	<i>Coccinia grandis</i>	Cucurbitaceae	Exotic	Naturalised	Climber
79	Clementi Forest	<i>Cocos nucifera</i>	Arecaceae	Exotic	Naturalised	Tree
80	Clementi Forest	<i>Colocasia esculenta</i>	Araceae	Exotic	Casual	Herb
81	Clementi Forest	<i>Commelina diffusa</i>	Commelinaceae	Cryptogenic	-	Herb
82	Clementi Forest	<i>Congea tomentosa</i>	Lamiaceae	Exotic	Casual	Climber
83	Clementi Forest	<i>Connarus semidecandrus</i>	Connaraceae	Native	Critically Endangered	Climber
84	Clementi Forest	<i>Cordyline fruticosa</i>	Asparagaceae	Exotic	Casual	Shrub
85	Clementi Forest	<i>Cratoxylum formosum</i>	Hypericaceae	Native	Endangered	Tree
86	Clementi Forest	<i>Ctenanthe lubbersiana</i>	Marantaceae	Exotic	Cultivated Only	Shrub
87	Clementi Forest	<i>Cucumis maderaspatanus</i>	Cucurbitaceae	Exotic	Naturalised	Climber
88	Clementi Forest	<i>Cyanthillium cinereum</i>	Asteraceae	Exotic	Not assessed	Herb
89	Clementi Forest	<i>Cyclosorus interruptus</i>	Thelypteridaceae	Native	Common	Herb
90	Clementi Forest	<i>Cyclosorus triphyllus</i> var. <i>triphyllus</i>	Thelypteridaceae	Native	Common	Herb
91	Clementi Forest	<i>Cyrtophyllum fragrans</i>	Gentianaceae	Native	Common	Tree
92	Clementi Forest	<i>Cyrtostachys renda</i>	Arecaceae	Native	Presumed Extinct	Shrub
93	Clementi Forest	<i>Davallia denticulata</i>	Davalliaceae	Native	Common	Epiphyte
94	Clementi Forest	<i>Desmodium heterophyllum</i>	Fabaceae	Cryptogenic	-	Herb
95	Clementi Forest	<i>Desmodium triflorum</i>	Fabaceae	Cryptogenic	-	Herb
96	Clementi Forest	<i>Dieffenbachia seguine</i> var. <i>seguine</i>	Araceae	Exotic	Casual	Herb
97	Clementi Forest	<i>Dienia ophydis</i>	Orchidaceae	Native	Critically Endangered	Herb
98	Clementi Forest	<i>Digitaria bicornis</i>	Poaceae	Native	Common	Herb
99	Clementi Forest	<i>Digitaria didactyla</i>	Poaceae	Exotic	Naturalised	Herb
100	Clementi Forest	<i>Dillenia indica</i>	Dilleniaceae	Native	Critically Endangered	Tree
101	Clementi Forest	<i>Dillenia suffruticosa</i>	Dilleniaceae	Native	Common	Shrub
102	Clementi Forest	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree
103	Clementi Forest	<i>Dioscorea sansibarensis</i>	Dioscoreaceae	Exotic	Naturalised	Climber
104	Clementi Forest	<i>Diospyros blancoi</i>	Ebenaceae	Exotic	Cultivated Only	Tree
105	Clementi Forest	<i>Dischidia major</i>	Apocynaceae	Native	Common	Epiphyte
106	Clementi Forest	<i>Dracaena braunii</i>	Ruscaceae	Exotic	Cultivated Only	Shrub
107	Clementi Forest	<i>Dracaena fragrans</i>	Ruscaceae	Exotic	Casual	Shrub
108	Clementi Forest	<i>Dracaena porteri</i>	Ruscaceae	Native	Common	Shrub
109	Clementi Forest	<i>Dracaena surculosa</i>	Ruscaceae	Exotic	Cultivated Only	Shrub
110	Clementi Forest	<i>Duabanga grandiflora</i>	Lythraceae	Exotic	Cultivated Only	Tree
111	Clementi Forest	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree
112	Clementi Forest	<i>Dysoxylum cauliflorum</i>	Meliaceae	Native	Vulnerable	Tree
113	Clementi Forest	<i>Eclipta prostrata</i>	Asteraceae	Exotic	Naturalised	Herb
114	Clementi Forest	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree
115	Clementi Forest	<i>Elaeocarpus mastersii</i>	Elaeocarpaceae	Native	Common	Tree
116	Clementi Forest	<i>Elaeocarpus petiolatus</i>	Elaeocarpaceae	Native	Common	Tree
117	Clementi Forest	<i>Elaeocarpus stipularis</i>	Elaeocarpaceae	Native	Vulnerable	Tree
118	Clementi Forest	<i>Embelia ribes</i>	Myrsinaceae	Native	Common	Climber
119	Clementi Forest	<i>Endospermum diadenum</i>	Euphorbiaceae	Native	Vulnerable	Tree
120	Clementi Forest	<i>Epipremnum aureum</i>	Araceae	Exotic	Casual	Climber
121	Clementi Forest	<i>Epipremnum pinnatum</i>	Araceae	Native	Critically Endangered	Climber
122	Clementi Forest	<i>Erycibe tomentosa</i>	Convolvulaceae	Native	Common	Climber
123	Clementi Forest	<i>Euphorbia neriiifolia</i>	Euphorbiaceae	Exotic	Cultivated Only	Shrub
124	Clementi Forest	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree
125	Clementi Forest	<i>Fibraurea tinctoria</i>	Menispermaceae	Native	Common	Climber
126	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree
127	Clementi Forest	<i>Ficus benjamina</i>	Moraceae	Cryptogenic	-	Strangler
128	Clementi Forest	<i>Ficus elastica</i>	Moraceae	Exotic	Casual	Strangler
129	Clementi Forest	<i>Ficus fistulosa</i>	Moraceae	Native	Common	Tree
130	Clementi Forest	<i>Ficus grossularioides</i> var. <i>grossularioides</i>	Moraceae	Native	Common	Tree
131	Clementi Forest	<i>Ficus heteropleura</i>	Moraceae	Native	Common	Climber
132	Clementi Forest	<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler
133	Clementi Forest	<i>Ficus punctata</i>	Moraceae	Native	Common	Climber
134	Clementi Forest	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree
135	Clementi Forest	<i>Ficus vasculosa</i>	Moraceae	Native	Endangered	Tree
136	Clementi Forest	<i>Ficus villosa</i>	Moraceae	Native	Critically Endangered	Climber
137	Clementi Forest	<i>Fimbristylis littoralis</i>	Cyperaceae	Cryptogenic	-	Herb
138	Clementi Forest	<i>Flagellaria indica</i>	Flagellariaceae	Native	Common	Climber
139	Clementi Forest	<i>Garcinia mangostana</i>	Clusiaceae	Exotic	Casual	Tree
140	Clementi Forest	<i>Gironniera nervosa</i>	Cannabaceae	Native	Common	Tree
141	Clementi Forest	<i>Gnetum gnemon</i> var. <i>gnemon</i>	Gnetaceae	Native	Critically Endangered	Tree
142	Clementi Forest	<i>Goniophlebium percussum</i>	Polypodiaceae	Native	Vulnerable	Epiphyte
143	Clementi Forest	<i>Guioa pubescens</i>	Sapindaceae	Native	Vulnerable	Tree
144	Clementi Forest	<i>Gynochthodes sublaeolata</i>	Rubiaceae	Native	Common	Climber

Appendix C2 List of Plant Species in Clementi Forest

S/N	Site	Species	Family	Origin	Status	Habit
145	Clementi Forest	<i>Gynochthodes umbellata</i>	Rubiaceae	Native	Common	Climber
146	Clementi Forest	<i>Gynotroches axillaris</i>	Rhizophoraceae	Native	Common	Tree
147	Clementi Forest	<i>Hedyotis auricularia</i>	Rubiaceae	Native	Common	Herb
148	Clementi Forest	<i>Heliconia psittacorum</i>	Heliconiaceae	Exotic	Casual	Herb
149	Clementi Forest	<i>Heliconia rostrata</i>	Heliconiaceae	Exotic	Cultivated Only	Shrub
150	Clementi Forest	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree
151	Clementi Forest	<i>Horsfieldia polyspherula</i>	Myristicaceae	Native	Vulnerable	Tree
152	Clementi Forest	<i>Hoya verticillata</i> var. <i>verticillata</i>	Apocynaceae	Native	Common	Climber
153	Clementi Forest	<i>Hydrilla verticillata</i>	Hydrocharitaceae	Cryptogenic	-	Herb
154	Clementi Forest	<i>Hypolytrum nemorum</i>	Cyperaceae	Native	Common	Herb
155	Clementi Forest	<i>Hyptis capitata</i>	Lamiaceae	Exotic	Naturalised	Herb
156	Clementi Forest	<i>Ilex cymosa</i>	Aquifoliaceae	Native	Common	Tree
157	Clementi Forest	<i>Imperata cylindrica</i>	Poaceae	Cryptogenic	-	Herb
158	Clementi Forest	<i>Indigofera hirsuta</i>	Fabaceae	Exotic	Naturalised	Shrub
159	Clementi Forest	<i>Indigofera spicata</i>	Fabaceae	Exotic	Naturalised	Shrub
160	Clementi Forest	<i>Indorouchera griffithiana</i>	Linaceae	Native	Common	Climber
161	Clementi Forest	<i>Ipomoea aquatica</i>	Convolvulaceae	Cryptogenic	-	Climber
162	Clementi Forest	<i>Ipomoea cairica</i>	Convolvulaceae	Exotic	Naturalised	Climber
163	Clementi Forest	<i>Isachne globosa</i>	Poaceae	Cryptogenic	-	Herb
164	Clementi Forest	<i>Ischaemum muticum</i>	Poaceae	Native	Common	Herb
165	Clementi Forest	<i>Ixora javanica</i>	Rubiaceae	Exotic	Cultivated Only	Shrub
166	Clementi Forest	<i>Justicia gendarussa</i>	Acanthaceae	Exotic	Cultivated Only	Shrub
167	Clementi Forest	<i>Kyllinga brevifolia</i>	Cyperaceae	Cryptogenic	-	Herb
168	Clementi Forest	<i>Kyllinga nemoralis</i>	Cyperaceae	Cryptogenic	-	Herb
169	Clementi Forest	<i>Kyllinga polyphylla</i>	Cyperaceae	Exotic	Naturalised	Herb
170	Clementi Forest	<i>Lansium domesticum</i>	Meliaceae	Exotic	Cultivated Only	Tree
171	Clementi Forest	<i>Leea indica</i>	Vitaceae	Native	Common	Tree
172	Clementi Forest	<i>Legazpia polygonoides</i>	Linderniaceae	Exotic	Not assessed	Herb
173	Clementi Forest	<i>Lepisanthes rubiginosa</i>	Sapindaceae	Native	Common	Tree
174	Clementi Forest	<i>Leucaena leucocephala</i>	Fabaceae	Exotic	Naturalised	Tree
175	Clementi Forest	<i>Licania splendens</i>	Chrysobalanaceae	Native	Common	Tree
176	Clementi Forest	<i>Licuala spinosa</i>	Arecaceae	Native	Vulnerable	Shrub
177	Clementi Forest	<i>Limncharis flava</i>	Alismataceae	Exotic	Naturalised	Shrub
178	Clementi Forest	<i>Lindernia crustacea</i>	Linderniaceae	Cryptogenic	-	Herb
179	Clementi Forest	<i>Lindsaea ensifolia</i>	Dennstaedtiaceae	Native	Common	Herb
180	Clementi Forest	<i>Litsea castanea</i>	Lauraceae	Native	Endangered	Tree
181	Clementi Forest	<i>Litsea elliptica</i>	Lauraceae	Native	Common	Tree
182	Clementi Forest	<i>Litsea firma</i>	Lauraceae	Native	Vulnerable	Tree
183	Clementi Forest	<i>Litsea grandis</i>	Lauraceae	Native	Endangered	Tree
184	Clementi Forest	<i>Lygodium flexuosum</i>	Schizaeaceae	Native	Common	Climber
185	Clementi Forest	<i>Lygodium longifolium</i>	Schizaeaceae	Native	Vulnerable	Climber
186	Clementi Forest	<i>Macaranga bancana</i>	Euphorbiaceae	Native	Common	Tree
187	Clementi Forest	<i>Macaranga gigantea</i>	Euphorbiaceae	Native	Common	Tree
188	Clementi Forest	<i>Macaranga griffithiana</i>	Euphorbiaceae	Native	Vulnerable	Tree
189	Clementi Forest	<i>Macaranga heynei</i>	Euphorbiaceae	Native	Common	Tree
190	Clementi Forest	<i>Macaranga hullettii</i>	Euphorbiaceae	Native	Critically Endangered	Tree
191	Clementi Forest	<i>Maesa ramentacea</i>	Maesaceae	Native	Common	Shrub
192	Clementi Forest	<i>Mallotus paniculatus</i>	Euphorbiaceae	Native	Common	Tree
193	Clementi Forest	<i>Mangifera foetida</i>	Anacardiaceae	Native	Vulnerable	Tree
194	Clementi Forest	<i>Mangifera indica</i>	Anacardiaceae	Exotic	Casual	Tree
195	Clementi Forest	<i>Mangifera odorata</i>	Anacardiaceae	Native	Vulnerable	Tree
196	Clementi Forest	<i>Manihot carthagenensis</i> ssp. <i>glaziovii</i>	Euphorbiaceae	Exotic	Naturalised	Tree
197	Clementi Forest	<i>Manihot esculenta</i>	Euphorbiaceae	Exotic	Naturalised	Shrub
198	Clementi Forest	<i>Melastoma malabathricum</i>	Melastomataceae	Native	Common	Shrub
199	Clementi Forest	<i>Melothria pendula</i>	Cucurbitaceae	Exotic	Not assessed	Climber
200	Clementi Forest	<i>Memecylon floridum</i>	Melastomataceae	Native	Critically Endangered	Tree
201	Clementi Forest	<i>Merremia umbellata</i>	Convolvulaceae	Cryptogenic	-	Climber
202	Clementi Forest	<i>Microlepia speluncae</i>	Dennstaedtiaceae	Native	Common	Herb
203	Clementi Forest	<i>Mikania micrantha</i>	Asteraceae	Exotic	Naturalised	Climber
204	Clementi Forest	<i>Mimosa diplotricha</i>	Fabaceae	Exotic	Naturalised	Shrub
205	Clementi Forest	<i>Mimosa pigra</i>	Fabaceae	Exotic	Naturalised	Shrub
206	Clementi Forest	<i>Mimosa pudica</i>	Fabaceae	Exotic	Naturalised	Shrub
207	Clementi Forest	<i>Mimusops elengi</i>	Sapotaceae	Exotic	Casual	Tree
208	Clementi Forest	<i>Molineria capitulata</i>	Poaceae	Native	Critically Endangered	Herb
209	Clementi Forest	<i>Muntingia calabura</i>	Muntingiaceae	Exotic	Naturalised	Tree
210	Clementi Forest	<i>Musa cultivar</i>	Musaceae	Exotic	Not assessed	Herb
211	Clementi Forest	<i>Myristica fragrans</i>	Myristicaceae	Exotic	Cultivated Only	Tree
212	Clementi Forest	<i>Neolitsea cassia</i>	Lauraceae	Native	Vulnerable	Tree
213	Clementi Forest	<i>Neoscortechinia</i> cf. <i>sumatrensis</i>	Euphorbiaceae	Native	Critically Endangered	Tree
214	Clementi Forest	<i>Nephrolepis lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree
215	Clementi Forest	<i>Nephrolepis exaltata</i>	Oleandraceae	Exotic	Cultivated Only	Herb
216	Clementi Forest	<i>Nephrolepis falcata</i>	Oleandraceae	Native	Common	Epiphyte

Appendix C2 List of Plant Species in Clementi Forest

S/N	Site	Species	Family	Origin	Status	Habit
217	Clementi Forest	<i>Neptunia plena</i>	Fabaceae	Exotic	Naturalised	Shrub
218	Clementi Forest	<i>Nymphaea rubra</i>	Nymphaeaceae	Exotic	Cultivated Only	Herb
219	Clementi Forest	<i>Ochna kirkii</i>	Ochnaceae	Exotic	Cultivated Only	Shrub
220	Clementi Forest	<i>Oldenlandia cristata</i>	Rubiaceae	Native	Vulnerable	Herb
221	Clementi Forest	<i>Oncosperma tigillarum</i>	Arecaceae	Native	Vulnerable	Shrub
222	Clementi Forest	<i>Ottocloa nodosa</i>	Poaceae	Native	Common	Herb
223	Clementi Forest	<i>Oxalis barrelieri</i>	Oxalidaceae	Exotic	Naturalised	Herb
224	Clementi Forest	<i>Oxyceros longiflorus</i>	Rubiaceae	Native	Vulnerable	Climber
225	Clementi Forest	<i>Paederia foetida</i>	Rubiaceae	Native	Common	Climber
226	Clementi Forest	<i>Paraderris elliptica</i>	Fabaceae	Cryptogenic	-	Climber
227	Clementi Forest	<i>Parkia speciosa</i>	Fabaceae	Native	Vulnerable	Tree
228	Clementi Forest	<i>Passiflora foetida</i>	Passifloraceae	Exotic	Naturalised	Climber
229	Clementi Forest	<i>Passiflora laurifolia</i>	Passifloraceae	Exotic	Naturalised	Climber
230	Clementi Forest	<i>Pellacalix saccardianus</i>	Rhizophoraceae	Native	Endangered	Tree
231	Clementi Forest	<i>Phanera semibifida</i> var. <i>semibifida</i>	Fabaceae	Native	Vulnerable	Climber
232	Clementi Forest	<i>Philodendron erubescens</i>	Araceae	Exotic	Cultivated Only	Climber
233	Clementi Forest	<i>Philodendron hederaceum</i>	Araceae	Exotic	Casual	Herb
234	Clementi Forest	<i>Phyllanthus urinaria</i>	Phyllanthaceae	Exotic	Naturalised	Herb
235	Clementi Forest	<i>Phytocrene bracteata</i>	Icacinaceae	Native	Vulnerable	Climber
236	Clementi Forest	<i>Pinanga kuhlii</i>	Arecaceae	Exotic	Cultivated Only	Shrub
237	Clementi Forest	<i>Piper betle</i>	Piperaceae	Exotic	Casual	Climber
238	Clementi Forest	<i>Piper pedicellosum</i>	Piperaceae	Native	Critically Endangered	Climber
239	Clementi Forest	<i>Piper sarmentosum</i>	Piperaceae	Native	Common	Climber
240	Clementi Forest	<i>Pipturus argenteus</i>	Urticaceae	Exotic	Naturalised	Tree
241	Clementi Forest	<i>Planchonella obovata</i>	Sapotaceae	Native	Vulnerable	Tree
242	Clementi Forest	<i>Pteris vittata</i>	Pteridaceae	Cryptogenic	-	Herb
243	Clementi Forest	<i>Pterocarpus indicus</i>	Fabaceae	Exotic	Casual	Tree
244	Clementi Forest	<i>Ptychosperma macarthurii</i>	Arecaceae	Exotic	Naturalised	Tree
245	Clementi Forest	<i>Quisqualis indica</i>	Combretaceae	Exotic	Casual	Climber
246	Clementi Forest	<i>Rhodamnia cinerea</i>	Myrtaceae	Native	Common	Tree
247	Clementi Forest	<i>Rivina humilis</i>	Phytolaccaceae	Exotic	Naturalised	Herb
248	Clementi Forest	<i>Ruellia</i> cf. <i>blechum</i>	Acanthaceae	Exotic	Not assessed	Herb
249	Clementi Forest	<i>Ruellia repens</i>	Acanthaceae	Cryptogenic	-	Herb
250	Clementi Forest	<i>Ruellia tuberosa</i>	Acanthaceae	Exotic	Cultivated Only	Shrub
251	Clementi Forest	<i>Sauropus androgynus</i>	Phyllanthaceae	Native	Common	Shrub
252	Clementi Forest	<i>Scleria ciliaris</i>	Cyperaceae	Native	Common	Herb
253	Clementi Forest	<i>Scoparia dulcis</i>	Scrophulariaceae	Exotic	Naturalised	Herb
254	Clementi Forest	<i>Scurrula ferruginea</i>	Loranthaceae	Native	Common	Shrub
255	Clementi Forest	<i>Selaginella argentea</i>	Selaginellaceae	Native	Critically Endangered	Herb
256	Clementi Forest	<i>Senna alata</i>	Fabaceae	Exotic	Naturalised	Tree
257	Clementi Forest	<i>Setaria barbata</i>	Poaceae	Exotic	Naturalised	Herb
258	Clementi Forest	<i>Smilax setosa</i>	Smilacaceae	Native	Common	Climber
259	Clementi Forest	<i>Solanum torvum</i>	Solanaceae	Exotic	Naturalised	Shrub
260	Clementi Forest	<i>Spathiphyllum cannifolium</i>	Araceae	Exotic	Cultivated Only	Shrub
261	Clementi Forest	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree
262	Clementi Forest	<i>Spatholobus ferrugineus</i>	Fabaceae	Native	Common	Climber
263	Clementi Forest	<i>Sphagneticola trilobata</i>	Asteraceae	Exotic	Naturalised	Herb
264	Clementi Forest	<i>Sporobolus indicus</i> var. <i>flaccidus</i>	Poaceae	Native	Common	Herb
265	Clementi Forest	<i>Stenochlaena palustris</i>	Blechnaceae	Native	Common	Climber
266	Clementi Forest	<i>Sterculia</i> cf. <i>cordata</i>	Malvaceae	Native	Critically Endangered	Tree
267	Clementi Forest	<i>Sterculia parviflora</i>	Malvaceae	Native	Critically Endangered	Tree
268	Clementi Forest	<i>Streblus elongatus</i>	Moraceae	Native	Vulnerable	Tree
269	Clementi Forest	<i>Strobilanthes reptans</i>	Acanthaceae	Exotic	Naturalised	Shrub
270	Clementi Forest	<i>Struchium sparganophorum</i>	Asteraceae	Exotic	Naturalised	Herb
271	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree
272	Clementi Forest	<i>Syngonium podophyllum</i>	Araceae	Exotic	Naturalised	Climber
273	Clementi Forest	<i>Syzygium aqueum</i>	Myrtaceae	Exotic	Cultivated Only	Tree
274	Clementi Forest	<i>Syzygium borneense</i>	Myrtaceae	Native	Common	Tree
275	Clementi Forest	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree
276	Clementi Forest	<i>Syzygium jambos</i>	Myrtaceae	Exotic	Casual	Tree
277	Clementi Forest	<i>Syzygium lineatum</i>	Myrtaceae	Native	Common	Tree
278	Clementi Forest	<i>Syzygium malaccense</i>	Myrtaceae	Exotic	Casual	Tree
279	Clementi Forest	<i>Syzygium myrtifolium</i>	Myrtaceae	Native	Presumed Extinct	Tree
280	Clementi Forest	<i>Syzygium oblatum</i> var. <i>oblatum</i>	Myrtaceae	Native	Critically Endangered	Tree
281	Clementi Forest	<i>Syzygium polyanthum</i>	Myrtaceae	Native	Vulnerable	Tree
282	Clementi Forest	<i>Taenitis blechnoides</i>	Pteridaceae	Native	Common	Climber
283	Clementi Forest	<i>Tectaria incisa</i>	Dryopteridaceae	Cryptogenic	-	Herb
284	Clementi Forest	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree
285	Clementi Forest	<i>Tetracera fagifolia</i>	Dilleniaceae	Native	Vulnerable	Climber
286	Clementi Forest	<i>Tetracera indica</i>	Dilleniaceae	Native	Common	Climber
287	Clementi Forest	<i>Thaumatococcus daniellii</i>	Marantaceae	Exotic	Casual	Shrub
288	Clementi Forest	<i>Thunbergia fragrans</i>	Acanthaceae	Exotic	Naturalised	Climber

Appendix C2 List of Plant Species in Clementi Forest

S/N	Site	Species	Family	Origin	Status	Habit
289	Clementi Forest	<i>Thunbergia grandiflora</i>	Acanthaceae	Exotic	Casual	Climber
290	Clementi Forest	<i>Thunbergia laurifolia</i>	Acanthaceae	Native	Presumed Extinct	Climber
291	Clementi Forest	<i>Thyrsostachys siamensis</i>	Poaceae	Exotic	Casual	Shrub
292	Clementi Forest	<i>Timonius wallichianus</i>	Rubiaceae	Native	Common	Tree
293	Clementi Forest	<i>Trema cannabina</i>	Cannabaceae	Native	Common	Shrub
294	Clementi Forest	<i>Trema tomentosa</i>	Cannabaceae	Native	Common	Shrub
295	Clementi Forest	<i>Tridax procumbens</i>	Asteraceae	Exotic	Naturalised	Herb
296	Clementi Forest	<i>Uncaria gambir</i>	Rubiaceae	Exotic	Naturalised	Climber
297	Clementi Forest	Unknown	-	-	-	Tree
298	Clementi Forest	Unknown	Burseraceae	-	-	-
299	Clementi Forest	<i>Vernonia elaeagnifolia</i>	Asteraceae	Exotic	Casual	Climber
300	Clementi Forest	<i>Vitex pinnata</i>	Lamiaceae	Native	Common	Tree
301	Clementi Forest	<i>Vittaria elongata</i>	Vittariaceae	Native	Common	Epiphyte
302	Clementi Forest	<i>Xanthosoma sagittifolium</i>	Araceae	Exotic	Not assessed	Herb
303	Clementi Forest	<i>Xylopia malayana</i>	Annonaceae	Native	Common	Tree

Appendix D1

List and Locations of
Plants of Conservation
Significance in Maju Forest

S/N	Site	Species	Family	Origin	Status	Habit
1	Maju Forest	<i>Acacia</i> sp.	Fabaceae	-	-	Climber
2	Maju Forest	<i>Agelaea macrophylla</i>	Connaraceae	Native	Critically Endangered	Climber
3	Maju Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree
4	Maju Forest	<i>Amphineuron opulentum</i>	Thelypteridaceae	Native	Endangered	Climber
5	Maju Forest	<i>Angiopteris evecta</i>	Marattiaceae	Native	Vulnerable	Herb
6	Maju Forest	<i>Aporosa benthamiana</i>	Phyllanthaceae	Native	Vulnerable	Tree
7	Maju Forest	<i>Archidendron</i> cf. <i>jiringa</i>	Fabaceae	Native	Vulnerable	Tree
8	Maju Forest	<i>Aspidopterys concava</i>	Malpighiaceae	Native	Endangered	Climber
9	Maju Forest	<i>Bridelia stipularis</i>	Phyllanthaceae	Native	Vulnerable	Shrub
10	Maju Forest	<i>Caesalpinia sumatrana</i>	Fabaceae	Native	Critically Endangered	Climber
11	Maju Forest	<i>Callicarpa longifolia</i>	Lamiaceae	Native	Endangered	Shrub
12	Maju Forest	<i>Cansjera rheedii</i>	Opiliaceae	Native	Vulnerable	Climber
13	Maju Forest	<i>Centotheca lappacea</i>	Poaceae	Native	Critically Endangered	Herb
14	Maju Forest	<i>Connarus semidecandrus</i>	Connaraceae	Native	Critically Endangered	Climber
15	Maju Forest	<i>Cryptocarya ferrea</i>	Lauraceae	Native	Critically Endangered	Tree
16	Maju Forest	<i>Dalbergia</i> cf. <i>junghunii</i>	Fabaceae	Native	Critically Endangered	Climber
17	Maju Forest	<i>Dioscorea orbiculata</i> var. <i>tenuifolia</i>	Dioscoreaceae	Native	Not assessed; recently rediscovered	Climber
18	Maju Forest	<i>Dissochaeta gracilis</i>	Melastomataceae	Native	Vulnerable	Climber
19	Maju Forest	<i>Dysoxylum cauliflorum</i>	Meliaceae	Native	Vulnerable	Tree
20	Maju Forest	<i>Ficus apiocarpa</i>	Moraceae	Native	Endangered	Climber
21	Maju Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree
22	Maju Forest	<i>Galearia fulva</i>	Pandaceae	Native	Vulnerable	Tree
23	Maju Forest	<i>Garcinia griffithii</i>	Clusiaceae	Native	Endangered	Tree
24	Maju Forest	<i>Glochidion zeylanicum</i> var. <i>zeylanicum</i>	Phyllanthaceae	Native	Vulnerable	Tree
25	Maju Forest	<i>Goniophlebium percussum</i>	Polypodiaceae	Native	Vulnerable	Epiphyte
26	Maju Forest	<i>Guioa pubescens</i>	Sapindaceae	Native	Vulnerable	Tree
27	Maju Forest	<i>Gymnacranthera farquhariana</i> var. <i>farquhariana</i>	Myristicaceae	Native	Critically Endangered	Tree
28	Maju Forest	<i>Gymnacranthera forbesii</i>	Myristicaceae	Native	Critically Endangered	Tree
29	Maju Forest	<i>Horsfieldia polyspherula</i>	Myristicaceae	Native	Vulnerable	Tree
30	Maju Forest	<i>Limacia scandens</i>	Menispermaceae	Native	Vulnerable	Climber
31	Maju Forest	<i>Litsea castanea</i>	Lauraceae	Native	Endangered	Tree
32	Maju Forest	<i>Litsea</i> cf. <i>grandis</i>	Lauraceae	Native	Endangered	Tree
33	Maju Forest	<i>Litsea firma</i>	Lauraceae	Native	Vulnerable	Tree
34	Maju Forest	<i>Lomariopsis lineata</i>	Lomariopsidaceae	Native	Critically Endangered	Climber
35	Maju Forest	<i>Lygodium longifolium</i>	Schizaeaceae	Native	Vulnerable	Climber
36	Maju Forest	<i>Macaranga griffithiana</i>	Euphorbiaceae	Native	Vulnerable	Tree
37	Maju Forest	<i>Macaranga hullettii</i>	Euphorbiaceae	Native	Critically Endangered	Tree
38	Maju Forest	<i>Melicope glabra</i>	Rutaceae	Native	Vulnerable	Tree
39	Maju Forest	<i>Oncosperma horridum</i>	Arecaceae	Native	Vulnerable	Shrub
40	Maju Forest	<i>Oxyceros longiflorus</i>	Rubiaceae	Native	Vulnerable	Climber
41	Maju Forest	<i>Pteris semipinnata</i>	Pteridaceae	Native	Vulnerable	Herb
42	Maju Forest	<i>Salacia</i> cf. <i>korthalsiana</i>	Celastraceae	Native	Critically Endangered	Climber
43	Maju Forest	<i>Selaginella intermedia</i>	Selaginellaceae	Native	Vulnerable	Herb
44	Maju Forest	<i>Smilax</i> cf. <i>megacarpa</i>	Smilacaceae	Native	Not assessed; recently rediscovered	Climber
45	Maju Forest	<i>Strophanthus</i> cf. <i>caudatus</i>	Apocynaceae	Native	Critically Endangered	Climber
46	Maju Forest	<i>Tectaria</i> cf. <i>semipinnata</i>	Dryopteridaceae	Native	Endangered	Herb
47	Maju Forest	<i>Uncaria longiflora</i> var. <i>pteropoda</i>	Rubiaceae	Native	Critically Endangered	Climber
48	Maju Forest	<i>Xanthophyllum eurhynchum</i>	Polygalaceae	Native	Vulnerable	Shrub
49	Maju Forest	<i>Xylopi caudata</i>	Annonaceae	Native	Vulnerable	Tree

Appendix D2

List and Locations of
Plants of Conservation
Significance in Clementi
Forest

Appendix D2 List and Locations of Plant of Conservation Significance in Clementi Forest

S/N	Site	Species	Family	Origin	Status	Habit	Northing	Easting
1	Clementi Forest	<i>Agelaea borneensis</i>	Connaraceae	Native	Vulnerable	Climber	34754.02524	22089.45134
2	Clementi Forest	<i>Agelaea macrophylla</i>	Connaraceae	Native	Critically Endangered	Climber	33927.37943	21517.73654
3	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34479.152	22013.854
4	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34350.95	21867.285
5	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34361.32	21874.898
6	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34363.283	21877.836
7	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34379.456	21899.006
8	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34377.891	21900.262
9	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34373.58	21907.84
10	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34384.195	21906.001
11	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34387.597	21916.038
12	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34396.226	21921.338
13	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34402.954	21933.799
14	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34414.585	21943.612
15	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34428.026	21972.71
16	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34316.642	21817.644
17	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34313.236	21818.076
18	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34311.751	21820.585
19	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34316.737	21820.326
20	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34314.322	21817.489
21	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34320.995	21824.912
22	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34273.642	21675.293
23	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34282.686	21694.94
24	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34277.531	21705.385
25	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34274.67	21710.445
26	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34277.848	21710.596
27	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34289.65	21727.893
28	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34293.078	21734.141
29	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34293.125	21733.633
30	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34288.397	21731.085
31	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34290.27	21753.056
32	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34314.921	21800.653
33	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34313.85	21801.838
34	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34354.415	21851.743
35	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34359.825	21855.654
36	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34362.604	21863.032
37	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34362.349	21862.872
38	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34367.862	21866.925
39	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34367.508	21867.203
40	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34367.724	21867.222
41	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34370.266	21869.724
42	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34369.921	21869.254
43	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34371.603	21875.385
44	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34372.511	21875.881
45	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34373.367	21876.2
46	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34373.522	21877.113
47	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34373.444	21876.506
48	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34377.816	21879.454
49	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34377.017	21877.549
50	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34382.248	21881.064
51	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34382.226	21881.123
52	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34383.246	21881.503
53	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34322.077	21831.338
54	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34323.263	21832.469
55	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34320.031	21838.085
56	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34333.431	21835.547
57	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34340.318	21842.388
58	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34337.828	21855.383
59	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34356.634	21873.992
60	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34366.705	21890.394
61	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34379.081	21913.507
62	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34386.552	21929.749
63	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34391.537	21937.921
64	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34452.79	22002.918
65	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34453.128	22004.877
66	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34453.86	22007.704
67	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34457.446	22007.513
68	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34457.679	22007.638
69	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34458.93	22009.625
70	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	33921.84829	21620.56843
71	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	33987.63838	21707.26489
72	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	33885.68853	21697.13517
73	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	33823.32552	21642.49031
74	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34260.5392	21624.24883
75	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34264.40888	21643.2795

Appendix D2 List and Locations of Plant of Conservation Significance in Clementi Forest

S/N	Site	Species	Family	Origin	Status	Habit	Northing	Easting
76	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34261.75426	21678.78093
77	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34286.96348	21760.46831
78	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34272.03556	21774.04534
79	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34245.9397	21782.16891
80	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34039.93551	21921.61066
81	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34156.9227	21970.35824
82	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34182.79758	21954.33305
83	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34287.29439	21796.52625
84	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34536.08099	22114.04169
85	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34465.4197	22111.36923
86	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34395.32214	22185.15291
87	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34383.15288	22182.48169
88	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34319.68444	22145.19824
89	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34311.16991	22008.20019
90	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34256.43925	22072.1907
91	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34264.28949	22073.08119
92	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34271.8044	22150.20527
93	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34732.24076	22120.5007
94	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34726.82284	22108.81516
95	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34718.19772	22122.05846
96	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34667.4421	22203.29889
97	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34712.99893	22205.08049
98	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34746.17627	22029.68858
99	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34770.06012	22055.06316
100	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34783.43435	22046.27156
101	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34772.16394	22059.29221
102	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34823.57546	22042.04342
103	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34788.52171	22091.12142
104	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34732.13287	22119.27651
105	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34792.17212	22153.22116
106	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34789.63138	22207.75306
107	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34742.40898	22231.67936
108	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34611.05394	22029.35178
109	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34403.29066	21857.07055
110	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34367.46018	21827.57793
111	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34561.62534	22068.19084
112	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34488.20271	22037.36198
113	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34263.965	21663.86813
114	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34298.79283	21768.25887
115	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34348.33	21844.82744
116	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34414.01169	21866.30785
117	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34390.0163	21895.0201
118	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34382.60804	21883.22321
119	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34376.96896	21872.31668
120	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34392.44893	21895.5766
121	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34408.9247	21890.79151
122	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34419.3182	21915.3868
123	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34468.19155	21949.99902
124	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34471.0658	21982.05055
125	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34462.77258	21986.39068
126	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34444.41815	21940.53886
127	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34304.98603	21811.99594
128	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34321.2406	21809.77051
129	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34371.43996	21883.66812
130	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34313.72209	21852.72824
131	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34295.69586	21826.686
132	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34254.78631	21798.8626
133	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34374.97796	21901.47458
134	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34280.55308	21757.46333
135	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34250.25456	21776.7158
136	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34192.42288	21670.09872
137	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34243.95474	21661.97574
138	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34072.11811	21685.56527
139	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	33878.61182	21693.35115
140	Clementi Forest	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34286.6264	22001.63355
141	Clementi Forest	<i>Ampelocissus gracilis</i>	Vitaceae	Native	Endangered	Climber	34326.87949	21828.80121
142	Clementi Forest	<i>Amphineuron opulentum</i>	Thelypteridaceae	Native	Endangered	Climber	34480.35311	22006.7571
143	Clementi Forest	<i>Amphineuron opulentum</i>	Thelypteridaceae	Native	Endangered	Climber	34757.67792	21894.80569
144	Clementi Forest	<i>Amphineuron opulentum</i>	Thelypteridaceae	Native	Endangered	Climber	34053.64616	21950.54636
145	Clementi Forest	<i>Amphineuron opulentum</i>	Thelypteridaceae	Native	Endangered	Climber	34235.87315	22064.17738
146	Clementi Forest	<i>Amphineuron opulentum</i>	Thelypteridaceae	Native	Endangered	Climber	34356.73298	21906.92738
147	Clementi Forest	<i>Angiopteris evecta</i>	Marattiaceae	Native	Vulnerable	Herb	33995.15756	21703.14733
148	Clementi Forest	<i>Angiopteris evecta</i>	Marattiaceae	Native	Vulnerable	Herb	34261.64438	21648.62135
149	Clementi Forest	<i>Angiopteris evecta</i>	Marattiaceae	Native	Vulnerable	Herb	34261.75452	21667.42935
150	Clementi Forest	<i>Angiopteris evecta</i>	Marattiaceae	Native	Vulnerable	Herb	34261.53294	21686.57122

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S/N	Site	Species	Family	Origin	Status	Habit	Northing	Easting
151	Clementi Forest	<i>Angiopteris evecta</i>	Marattiaceae	Native	Vulnerable	Herb	34372.53905	22259.71664
152	Clementi Forest	<i>Angiopteris evecta</i>	Marattiaceae	Native	Vulnerable	Herb	34235.42875	22043.70003
153	Clementi Forest	<i>Angiopteris evecta</i>	Marattiaceae	Native	Vulnerable	Herb	34467.74795	22019.77774
154	Clementi Forest	<i>Angiopteris evecta</i>	Marattiaceae	Native	Vulnerable	Herb	34261.09161	21873.21642
155	Clementi Forest	<i>Angiopteris evecta</i>	Marattiaceae	Native	Vulnerable	Herb	34271.7034	21686.34887
156	Clementi Forest	<i>Angiopteris evecta</i>	Marattiaceae	Native	Vulnerable	Herb	34461.77742	21986.05679
157	Clementi Forest	<i>Angiopteris evecta</i>	Marattiaceae	Native	Vulnerable	Herb	34357.72904	21866.97433
158	Clementi Forest	<i>Aspidopterys concava</i>	Malpighiaceae	Native	Vulnerable	Herb	34360.82501	21872.65019
159	Clementi Forest	<i>Angiopteris evecta</i>	Marattiaceae	Native	Vulnerable	Herb	34321.90342	21837.81558
160	Clementi Forest	<i>Angiopteris evecta</i>	Marattiaceae	Native	Vulnerable	Herb	34375.08085	22258.71509
161	Clementi Forest	<i>Aporosa benthamiana</i>	Phyllanthaceae	Native	Vulnerable	Tree	34801.90566	21996.0803
162	Clementi Forest	<i>Aspidopterys concava</i>	Malpighiaceae	Native	Endangered	Climber	34101.41495	21931.51682
163	Clementi Forest	<i>Aspidopterys concava</i>	Malpighiaceae	Native	Endangered	Climber	34877.31604	21898.70349
164	Clementi Forest	<i>Aspidopterys concava</i>	Malpighiaceae	Native	Endangered	Climber	34915.90853	21929.97674
165	Clementi Forest	<i>Aspidopterys concava</i>	Malpighiaceae	Native	Endangered	Climber	34850.44197	22144.43052
166	Clementi Forest	<i>Aspidopterys concava</i>	Malpighiaceae	Native	Endangered	Climber	34708.90597	22149.21296
167	Clementi Forest	<i>Asplenium nitidum</i>	Aspleniaceae	Native	Presumed Extinct	Epiphyte	34256.33715	21632.70677
168	Clementi Forest	<i>Blechnum finlaysonianum</i>	Blechnaceae	Native	Vulnerable	Herb	33928.59322	21626.68954
169	Clementi Forest	<i>Blechnum finlaysonianum</i>	Blechnaceae	Native	Vulnerable	Herb	34005.66227	21699.36371
170	Clementi Forest	<i>Bridelia stipularis</i>	Phyllanthaceae	Native	Vulnerable	Shrub	34899.20946	22250.49061
171	Clementi Forest	<i>Callicarpa longifolia</i>	Lamiaceae	Native	Endangered	Shrub	33875.85448	21392.53398
172	Clementi Forest	<i>Callicarpa longifolia</i>	Lamiaceae	Native	Endangered	Shrub	33911.90166	21402.99611
173	Clementi Forest	<i>Callicarpa longifolia</i>	Lamiaceae	Native	Endangered	Shrub	33845.22364	21459.19602
174	Clementi Forest	<i>Calophyllum tetrapterum</i>	Calophyllaceae	Native	Vulnerable	Tree	34720.01	22193.276
175	Clementi Forest	<i>Calophyllum tetrapterum</i>	Calophyllaceae	Native	Vulnerable	Tree	33926.82372	21639.48786
176	Clementi Forest	<i>Calophyllum tetrapterum</i>	Calophyllaceae	Native	Vulnerable	Tree	33971.60659	21638.37599
177	Clementi Forest	<i>Calophyllum tetrapterum</i>	Calophyllaceae	Native	Vulnerable	Tree	33916.86842	21795.73888
178	Clementi Forest	<i>Calophyllum tetrapterum</i>	Calophyllaceae	Native	Vulnerable	Tree	33860.69883	21686.89591
179	Clementi Forest	<i>Calophyllum tetrapterum</i>	Calophyllaceae	Native	Vulnerable	Tree	33848.75743	21656.62473
180	Clementi Forest	<i>Calophyllum tetrapterum</i>	Calophyllaceae	Native	Vulnerable	Tree	33838.58487	21642.37937
181	Clementi Forest	<i>Calophyllum tetrapterum</i>	Calophyllaceae	Native	Vulnerable	Tree	33924.17254	21526.75096
182	Clementi Forest	<i>Calophyllum tetrapterum</i>	Calophyllaceae	Native	Vulnerable	Tree	34379.94368	22298.00051
183	Clementi Forest	<i>Calophyllum tetrapterum</i>	Calophyllaceae	Native	Vulnerable	Tree	34388.57324	22257.2686
184	Clementi Forest	<i>Calophyllum tetrapterum</i>	Calophyllaceae	Native	Vulnerable	Tree	34500.8063	22097.23618
185	Clementi Forest	<i>Calophyllum tetrapterum</i>	Calophyllaceae	Native	Vulnerable	Tree	34468.73786	22104.69191
186	Clementi Forest	<i>Calophyllum tetrapterum</i>	Calophyllaceae	Native	Vulnerable	Tree	34863.16364	21889.91129
187	Clementi Forest	<i>Calophyllum tetrapterum</i>	Calophyllaceae	Native	Vulnerable	Tree	34872.78397	21895.69857
188	Clementi Forest	<i>Calophyllum tetrapterum</i>	Calophyllaceae	Native	Vulnerable	Tree	34882.96034	21903.37778
189	Clementi Forest	<i>Calophyllum tetrapterum</i>	Calophyllaceae	Native	Vulnerable	Tree	34773.3763	22140.75631
190	Clementi Forest	<i>Centotheca lappacea</i>	Poaceae	Native	Critically Endangered	Herb	33859.48945	21389.86262
191	Clementi Forest	<i>Centotheca lappacea</i>	Poaceae	Native	Critically Endangered	Herb	33848.65288	21399.5446
192	Clementi Forest	<i>Centotheca lappacea</i>	Poaceae	Native	Critically Endangered	Herb	33848.32038	21432.0413
193	Clementi Forest	<i>Centotheca lappacea</i>	Poaceae	Native	Critically Endangered	Herb	33847.43554	21442.27997
194	Clementi Forest	<i>Centotheca lappacea</i>	Poaceae	Native	Critically Endangered	Herb	34260.09716	21612.89725
195	Clementi Forest	<i>Centotheca lappacea</i>	Poaceae	Native	Critically Endangered	Herb	34711.45454	22034.362
196	Clementi Forest	<i>Centotheca lappacea</i>	Poaceae	Native	Critically Endangered	Herb	34669.87511	22249.03903
197	Clementi Forest	<i>Centotheca lappacea</i>	Poaceae	Native	Critically Endangered	Herb	34513.63699	21938.53717
198	Clementi Forest	<i>Centotheca lappacea</i>	Poaceae	Native	Critically Endangered	Herb	34298.79283	21768.25887
199	Clementi Forest	<i>Centotheca lappacea</i>	Poaceae	Native	Critically Endangered	Herb	34413.45854	21878.7723
200	Clementi Forest	<i>Centotheca lappacea</i>	Poaceae	Native	Critically Endangered	Herb	34295.58488	21815.33443
201	Clementi Forest	<i>Chassalia chartacea</i>	Rubiaceae	Native	Vulnerable	Shrub	34782.00458	21887.01595
202	Clementi Forest	<i>Chassalia curviflora</i>	Rubiaceae	Native	Endangered	Tree	34827.11952	21880.33957
203	Clementi Forest	<i>Chassalia curviflora</i>	Rubiaceae	Native	Endangered	Tree	34881.19001	21909.60996
204	Clementi Forest	<i>Chisocheton cf. patens</i>	Meliaceae	Native	Critically Endangered	Tree	34707.39	22193.477
205	Clementi Forest	<i>Connarus semidecandrus</i>	Connaraceae	Native	Critically Endangered	Climber	33925.94202	21514.73167
206	Clementi Forest	<i>Connarus semidecandrus</i>	Connaraceae	Native	Critically Endangered	Climber	33946.50608	21638.59799
207	Clementi Forest	<i>Connarus semidecandrus</i>	Connaraceae	Native	Critically Endangered	Climber	34417.98331	22172.24376
208	Clementi Forest	<i>Connarus semidecandrus</i>	Connaraceae	Native	Critically Endangered	Climber	34887.49248	21908.16334
209	Clementi Forest	<i>Connarus semidecandrus</i>	Connaraceae	Native	Critically Endangered	Climber	34899.54017	21953.01334
210	Clementi Forest	<i>Connarus semidecandrus</i>	Connaraceae	Native	Critically Endangered	Climber	34714.43945	22134.52283
211	Clementi Forest	<i>Denia ophrydis</i>	Orchidaceae	Native	Critically Endangered	Herb	34272.59212	21733.31324
212	Clementi Forest	<i>Denia ophrydis</i>	Orchidaceae	Native	Critically Endangered	Herb	34284.64042	21755.23763
213	Clementi Forest	<i>Dysoxylum cauliflorum</i>	Meliaceae	Native	Vulnerable	Tree	34495.39366	22096.90219
214	Clementi Forest	<i>Dysoxylum cauliflorum</i>	Meliaceae	Native	Vulnerable	Tree	34481.67659	22093.00675
215	Clementi Forest	<i>Elaeocarpus stipularis</i>	Elaeocarpaceae	Native	Vulnerable	Tree	33950.70804	21633.47874
216	Clementi Forest	<i>Elaeocarpus stipularis</i>	Elaeocarpaceae	Native	Vulnerable	Tree	33987.08535	21713.94228
217	Clementi Forest	<i>Elaeocarpus stipularis</i>	Elaeocarpaceae	Native	Vulnerable	Tree	33940.97492	21744.21213
218	Clementi Forest	<i>Elaeocarpus stipularis</i>	Elaeocarpaceae	Native	Vulnerable	Tree	33927.37364	21769.14079
219	Clementi Forest	<i>Elaeocarpus stipularis</i>	Elaeocarpaceae	Native	Vulnerable	Tree	33904.2697	21499.59571
220	Clementi Forest	<i>Elaeocarpus stipularis</i>	Elaeocarpaceae	Native	Vulnerable	Tree	34034.51727	21924.83795
221	Clementi Forest	<i>Elaeocarpus stipularis</i>	Elaeocarpaceae	Native	Vulnerable	Tree	34330.74319	22070.85682
222	Clementi Forest	<i>Elaeocarpus stipularis</i>	Elaeocarpaceae	Native	Vulnerable	Tree	34268.93376	22031.57015
223	Clementi Forest	<i>Elaeocarpus stipularis</i>	Elaeocarpaceae	Native	Vulnerable	Tree	34239.5158	22054.60653
224	Clementi Forest	<i>Elaeocarpus stipularis</i>	Elaeocarpaceae	Native	Vulnerable	Tree	34245.92925	22065.17921
225	Clementi Forest	<i>Elaeocarpus stipularis</i>	Elaeocarpaceae	Native	Vulnerable	Tree	34356.73402	21860.18563

Appendix D2 List and Locations of Plant of Conservation Significance in Clementi Forest

S/N	Site	Species	Family	Origin	Status	Habit	Northing	Easting
226	Clementi Forest	<i>Endospermum diadenum</i>	Euphorbiaceae	Native	Vulnerable	Tree	34055.74795	21911.14975
227	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34791.95677	21866.98402
228	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34778.68704	21900.37064
229	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	33850.31136	21405.6656
230	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	33950.27002	21450.62917
231	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	33945.73643	21451.63067
232	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34000.79853	21631.69926
233	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	33991.1784	21636.15064
234	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	33995.15756	21703.14733
235	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	33967.29221	21724.06923
236	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	33848.75743	21656.62473
237	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34267.06134	21701.59548
238	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34285.63632	21772.04243
239	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34099.75622	21936.07967
240	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34482.6776	22094.23096
241	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34451.93336	22155.77359
242	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34367.34129	22179.03137
243	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34341.02912	22157.218
244	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34338.14728	22128.05999
245	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34313.27121	22129.06107
246	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34331.52122	22090.33257
247	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34332.29103	22065.06978
248	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34324.21973	22003.74887
249	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34293.26333	22016.65783
250	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34754.69446	22001.86634
251	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34772.93405	22020.56341
252	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34766.85376	22030.46806
253	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34761.65422	22034.47438
254	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34866.92634	21897.1452
255	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34913.14663	21928.30734
256	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34775.69445	22092.01147
257	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34754.02524	22089.45134
258	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34792.17464	22035.92181
259	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34787.86483	22037.92493
260	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34785.98302	22055.28608
261	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34811.5261	22068.30753
262	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34827.44818	22106.25766
263	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34803.45246	22115.04903
264	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34781.886	22075.42943
265	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34777.13161	22065.41325
266	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34772.82162	22075.65182
267	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34737.32305	22123.72821
268	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34711.89043	22142.09048
269	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34732.35459	22154.88923
270	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34782.44057	22146.09841
271	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34740.31585	22161.01034
272	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34600.65482	22034.35959
273	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34370.99971	21871.09235
274	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34409.03436	21932.08005
275	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34413.45693	21951.55587
276	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34416.11061	21956.78655
277	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34293.81479	21810.7715
278	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34306.31301	21808.76857
279	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34347.77755	21855.73383
280	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34358.28174	21874.87593
281	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34396.31773	21955.67322
282	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34408.92334	21952.44609
283	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34445.52276	21992.39995
284	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34276.5676	21758.68743
285	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34260.09887	21716.39689
286	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34233.33293	21680.33833
287	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34238.0871	21699.70289
288	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34212.87785	21677.66691
289	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34203.8139	21659.19257
290	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34169.75454	21590.41458
291	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34197.84623	21613.34097
292	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34227.92121	21635.71094
293	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34227.47596	21653.29474
294	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	34243.95474	21661.97574
295	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	33985.87438	21483.01542
296	Clementi Forest	<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	33924.28817	21415.90605
297	Clementi Forest	<i>Ficus vasculosa</i>	Moraceae	Native	Endangered	Tree	34269.05143	21712.72452
298	Clementi Forest	<i>Ficus villosa</i>	Moraceae	Native	Critically Endangered	Climber	34394.99177	21912.93788
299	Clementi Forest	<i>Goniophlebium percutsum</i>	Polypodiaceae	Native	Vulnerable	Epiphyte	34236.54077	21784.72837
300	Clementi Forest	<i>Goniophlebium percutsum</i>	Polypodiaceae	Native	Vulnerable	Epiphyte	34730.69381	22235.90812

Appendix D2 List and Locations of Plant of Conservation Significance in Clementi Forest

S/N	Site	Species	Family	Origin	Status	Habit	Northing	Easting
301	Clementi Forest	<i>Goniophlebium percursum</i>	Polypodiaceae	Native	Vulnerable	Epiphyte	34379.73337	21870.64739
302	Clementi Forest	<i>Goniophlebium percursum</i>	Polypodiaceae	Native	Vulnerable	Epiphyte	34388.35773	21892.57169
303	Clementi Forest	<i>Goniophlebium percursum</i>	Polypodiaceae	Native	Vulnerable	Epiphyte	34390.56823	21937.53284
304	Clementi Forest	<i>Goniophlebium percursum</i>	Polypodiaceae	Native	Vulnerable	Epiphyte	34072.11811	21685.56527
305	Clementi Forest	<i>Guioa pubescens</i>	Sapindaceae	Native	Vulnerable	Tree	33912.33986	21576.60863
306	Clementi Forest	<i>Guioa pubescens</i>	Sapindaceae	Native	Vulnerable	Tree	33898.5176	21593.74698
307	Clementi Forest	<i>Guioa pubescens</i>	Sapindaceae	Native	Vulnerable	Tree	33847.87292	21652.72956
308	Clementi Forest	<i>Guioa pubescens</i>	Sapindaceae	Native	Vulnerable	Tree	34282.87194	21772.37623
309	Clementi Forest	<i>Horsfieldia polyspherula</i>	Myristicaceae	Native	Vulnerable	Tree	33977.13519	21644.60836
310	Clementi Forest	<i>Horsfieldia polyspherula</i>	Myristicaceae	Native	Vulnerable	Tree	33924.61524	21509.72359
311	Clementi Forest	<i>Horsfieldia polyspherula</i>	Myristicaceae	Native	Vulnerable	Tree	33960.21793	21614.44836
312	Clementi Forest	<i>Horsfieldia polyspherula</i>	Myristicaceae	Native	Vulnerable	Tree	34915.46387	22102.07517
313	Clementi Forest	<i>Litsea castanea</i>	Lauraceae	Native	Endangered	Tree	33947.83648	21488.57902
314	Clementi Forest	<i>Litsea firma</i>	Lauraceae	Native	Vulnerable	Tree	34742.527	22151.044
315	Clementi Forest	<i>Litsea firma</i>	Lauraceae	Native	Vulnerable	Tree	33925.2786	21513.84134
316	Clementi Forest	<i>Litsea firma</i>	Lauraceae	Native	Vulnerable	Tree	33907.47399	22105.5375
317	Clementi Forest	<i>Litsea firma</i>	Lauraceae	Native	Vulnerable	Tree	33845.993	21659.18434
318	Clementi Forest	<i>Litsea firma</i>	Lauraceae	Native	Vulnerable	Tree	34511.86329	22099.5735
319	Clementi Forest	<i>Litsea firma</i>	Lauraceae	Native	Vulnerable	Tree	34331.07566	22123.83082
320	Clementi Forest	<i>Litsea firma</i>	Lauraceae	Native	Vulnerable	Tree	34778.78971	22105.14372
321	Clementi Forest	<i>Litsea firma</i>	Lauraceae	Native	Vulnerable	Tree	34832.20224	22131.85439
322	Clementi Forest	<i>Litsea firma</i>	Lauraceae	Native	Vulnerable	Tree	34772.48733	22102.36134
323	Clementi Forest	<i>Litsea firma</i>	Lauraceae	Native	Vulnerable	Tree	34283.30915	22001.63347
324	Clementi Forest	<i>Litsea firma</i>	Lauraceae	Native	Vulnerable	Tree	34286.62645	21999.40775
325	Clementi Forest	<i>Lygodium longifolium</i>	Schizaeaceae	Native	Vulnerable	Climber	34342.13217	22148.98257
326	Clementi Forest	<i>Lygodium longifolium</i>	Schizaeaceae	Native	Vulnerable	Climber	34296.13412	22127.9478
327	Clementi Forest	<i>Lygodium longifolium</i>	Schizaeaceae	Native	Vulnerable	Climber	34292.15507	22004.97236
328	Clementi Forest	<i>Macaranga griffithiana</i>	Euphorbiaceae	Native	Vulnerable	Tree	34260.75854	21702.59695
329	Clementi Forest	<i>Macaranga griffithiana</i>	Euphorbiaceae	Native	Vulnerable	Tree	34873.44555	22159.34382
330	Clementi Forest	<i>Macaranga griffithiana</i>	Euphorbiaceae	Native	Vulnerable	Tree	34411.57707	21830.80633
331	Clementi Forest	<i>Macaranga griffithiana</i>	Euphorbiaceae	Native	Vulnerable	Tree	34391.67494	21894.12982
332	Clementi Forest	<i>Macaranga griffithiana</i>	Euphorbiaceae	Native	Vulnerable	Tree	34375.9731	21903.03266
333	Clementi Forest	<i>Macaranga griffithiana</i>	Euphorbiaceae	Native	Vulnerable	Tree	34439.22027	21979.93535
334	Clementi Forest	<i>Macaranga griffithiana</i>	Euphorbiaceae	Native	Vulnerable	Tree	34381.28024	21923.7327
335	Clementi Forest	<i>Macaranga griffithiana</i>	Euphorbiaceae	Native	Vulnerable	Tree	34445.96503	21993.73544
336	Clementi Forest	<i>Macaranga griffithiana</i>	Euphorbiaceae	Native	Vulnerable	Tree	34306.52979	22006.08558
337	Clementi Forest	<i>Macaranga hullettii</i>	Euphorbiaceae	Native	Critically Endangered	Tree	34827.88883	21878.33637
338	Clementi Forest	<i>Macaranga hullettii</i>	Euphorbiaceae	Native	Critically Endangered	Tree	34841.38327	21883.90116
339	Clementi Forest	<i>Macaranga hullettii</i>	Euphorbiaceae	Native	Critically Endangered	Tree	34416.22136	21948.77369
340	Clementi Forest	<i>Macaranga hullettii</i>	Euphorbiaceae	Native	Critically Endangered	Tree	34436.1242	21978.37722
341	Clementi Forest	<i>Memecylon floridum</i>	Melastomataceae	Native	Critically Endangered	Tree	34821.03539	22064.85776
342	Clementi Forest	<i>Neoscortechinia cf. sumatrensis</i>	Euphorbiaceae	Native	Critically Endangered	Tree	34729.36062	22167.01975
343	Clementi Forest	<i>Oldenlandia cristata</i>	Rubiaceae	Native	Vulnerable	Herb	34838.28773	21884.01238
344	Clementi Forest	<i>Oncosperma tigillarum</i>	Arecaceae	Native	Vulnerable	Shrub	34726.65	22133.859
345	Clementi Forest	<i>Oncosperma tigillarum</i>	Arecaceae	Native	Vulnerable	Shrub	34147.30592	21824.01172
346	Clementi Forest	<i>Oncosperma tigillarum</i>	Arecaceae	Native	Vulnerable	Shrub	34086.48649	21969.91154
347	Clementi Forest	<i>Oncosperma tigillarum</i>	Arecaceae	Native	Vulnerable	Shrub	34331.52337	21990.72811
348	Clementi Forest	<i>Oxyceros longiflorus</i>	Rubiaceae	Native	Vulnerable	Climber	33894.20895	21433.04401
349	Clementi Forest	<i>Oxyceros longiflorus</i>	Rubiaceae	Native	Vulnerable	Climber	34274.69053	21722.29558
350	Clementi Forest	<i>Oxyceros longiflorus</i>	Rubiaceae	Native	Vulnerable	Climber	34341.02912	22157.218
351	Clementi Forest	<i>Oxyceros longiflorus</i>	Rubiaceae	Native	Vulnerable	Climber	33950.82292	21431.04213
352	Clementi Forest	<i>Parkia speciosa</i>	Fabaceae	Native	Vulnerable	Tree	34365.68034	22268.84227
353	Clementi Forest	<i>Phanera semibifida</i> var. <i>semibifida</i>	Fabaceae	Native	Vulnerable	Climber	34719.08467	22012.99453
354	Clementi Forest	<i>Phanera semibifida</i> var. <i>semibifida</i>	Fabaceae	Native	Vulnerable	Climber	34712.6707	22041.59586
355	Clementi Forest	<i>Phanera semibifida</i> var. <i>semibifida</i>	Fabaceae	Native	Vulnerable	Climber	34724.72037	22021.89783
356	Clementi Forest	<i>Phanera semibifida</i> var. <i>semibifida</i>	Fabaceae	Native	Vulnerable	Climber	34720.63285	22032.35898
357	Clementi Forest	<i>Phanera semibifida</i> var. <i>semibifida</i>	Fabaceae	Native	Vulnerable	Climber	34715.54449	22034.02822
358	Clementi Forest	<i>Phanera semibifida</i> var. <i>semibifida</i>	Fabaceae	Native	Vulnerable	Climber	34751.80921	22130.85107
359	Clementi Forest	<i>Phytocrene bracteata</i>	Icacinaceae	Native	Vulnerable	Climber	34283.64615	21764.25209
360	Clementi Forest	<i>Phytocrene bracteata</i>	Icacinaceae	Native	Vulnerable	Climber	34161.68084	21816.22174
361	Clementi Forest	<i>Phytocrene bracteata</i>	Icacinaceae	Native	Vulnerable	Climber	34170.41524	21861.62824
362	Clementi Forest	<i>Phytocrene bracteata</i>	Icacinaceae	Native	Vulnerable	Climber	34085.27008	21973.91796
363	Clementi Forest	<i>Phytocrene bracteata</i>	Icacinaceae	Native	Vulnerable	Climber	34378.61922	22255.15389
364	Clementi Forest	<i>Phytocrene bracteata</i>	Icacinaceae	Native	Vulnerable	Climber	34473.93425	22254.71072
365	Clementi Forest	<i>Phytocrene bracteata</i>	Icacinaceae	Native	Vulnerable	Climber	34352.40994	22183.26007
366	Clementi Forest	<i>Phytocrene bracteata</i>	Icacinaceae	Native	Vulnerable	Climber	34896.88916	21966.92449
367	Clementi Forest	<i>Phytocrene bracteata</i>	Icacinaceae	Native	Vulnerable	Climber	34743.52336	22132.29765
368	Clementi Forest	<i>Phytocrene bracteata</i>	Icacinaceae	Native	Vulnerable	Climber	34596.57021	21911.82944
369	Clementi Forest	<i>Phytocrene bracteata</i>	Icacinaceae	Native	Vulnerable	Climber	34633.2814	21932.64145
370	Clementi Forest	<i>Phytocrene bracteata</i>	Icacinaceae	Native	Vulnerable	Climber	34415.11548	21954.8946
371	Clementi Forest	<i>Phytocrene bracteata</i>	Icacinaceae	Native	Vulnerable	Climber	34394.99177	21912.93788
372	Clementi Forest	<i>Phytocrene bracteata</i>	Icacinaceae	Native	Vulnerable	Climber	34379.50383	22259.82808
373	Clementi Forest	<i>Piper pedicellosum</i>	Piperaceae	Native	Critically Endangered	Climber	34493.28991	22089.33444
374	Clementi Forest	<i>Piper pedicellosum</i>	Piperaceae	Native	Critically Endangered	Climber	34284.5217	22094.56058
375	Clementi Forest	<i>Piper pedicellosum</i>	Piperaceae	Native	Critically Endangered	Climber	34766.85345	21994.07632

Appendix D2 List and Locations of Plant of Conservation Significance in Clementi Forest

S/N	Site	Species	Family	Origin	Status	Habit	Northing	Easting
376	Clementi Forest	<i>Piper pedicellosum</i>	Piperaceae	Native	Critically Endangered	Climber	34721.51771	21995.07694
377	Clementi Forest	<i>Piper pedicellosum</i>	Piperaceae	Native	Critically Endangered	Climber	34880.41141	21911.61316
378	Clementi Forest	<i>Piper pedicellosum</i>	Piperaceae	Native	Critically Endangered	Climber	34732.46549	22170.69238
379	Clementi Forest	<i>Planchonella obovata</i>	Sapotaceae	Native	Vulnerable	Tree	34776.47526	21912.61246
380	Clementi Forest	<i>Planchonella obovata</i>	Sapotaceae	Native	Vulnerable	Tree	34883.40498	21917.289
381	Clementi Forest	<i>Planchonella obovata</i>	Sapotaceae	Native	Vulnerable	Tree	34906.95602	21901.82026
382	Clementi Forest	<i>Planchonella obovata</i>	Sapotaceae	Native	Vulnerable	Tree	34865.37311	22150.32919
383	Clementi Forest	<i>Planchonella obovata</i>	Sapotaceae	Native	Vulnerable	Tree	34754.90376	22182.48956
384	Clementi Forest	<i>Planchonella obovata</i>	Sapotaceae	Native	Vulnerable	Tree	33915.99294	21421.0252
385	Clementi Forest	<i>Planchonella obovata</i>	Sapotaceae	Native	Vulnerable	Tree	34911.37658	21917.06704
386	Clementi Forest	<i>Planchonella obovata</i>	Sapotaceae	Native	Vulnerable	Tree	34902.5308	21907.05077
387	Clementi Forest	<i>Selaginella argentea</i>	Selaginellaceae	Native	Critically Endangered	Herb	34664.68021	22086.88975
388	Clementi Forest	<i>Sterculia cf. cordata</i>	Malvaceae	Native	Critically Endangered	Tree	34793.05501	22042.15405
389	Clementi Forest	<i>Sterculia parviflora</i>	Malvaceae	Native	Critically Endangered	Tree	33947.50458	21495.70158
390	Clementi Forest	<i>Sterculia parviflora</i>	Malvaceae	Native	Critically Endangered	Tree	33928.59586	21513.06238
391	Clementi Forest	<i>Streblus elongatus</i>	Moraceae	Native	Vulnerable	Tree	34825.23808	21875.55407
392	Clementi Forest	<i>Streblus elongatus</i>	Moraceae	Native	Vulnerable	Tree	34908.3926	21902.37674
393	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34696.689	21993.201
394	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34777.528	22040.173
395	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34759.571	22125.58
396	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34763.18	22129.188
397	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34747.555	22124.568
398	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34728.079	22132.065
399	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34729.254	22132.374
400	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34712.331	22137.067
401	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34764.141	22158.195
402	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34835.206	21997.765
403	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34753.14236	21984.95026
404	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34733.90208	21995.96753
405	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34731.9115	22006.76259
406	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34735.11814	22008.20942
407	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34770.50573	22019.78433
408	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34775.14833	22055.39714
409	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34757.45562	22038.03556
410	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34757.78847	22072.64667
411	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34719.63973	22095.9054
412	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34780.4489	22099.13411
413	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34768.62287	22085.89038
414	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34788.74516	22046.0491
415	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34793.72224	22046.60565
416	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34806.32674	22058.7365
417	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34774.92544	22079.88087
418	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34754.3582	22119.61086
419	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34730.14061	22100.13464
420	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34755.12741	22122.50441
421	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34720.74205	22126.84397
422	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34729.58345	22150.66016
423	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34758.22255	22146.65434
424	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34789.29949	22127.2906
425	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34739.75996	22151.99586
426	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34757.22978	22194.73148
427	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34768.28733	22171.02701
428	Clementi Forest	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34302.10619	22033.90796
429	Clementi Forest	<i>Syzygium oblatum</i> var. <i>oblatum</i>	Myrtaceae	Native	Critically Endangered	Tree	34870.24451	21895.36464
430	Clementi Forest	<i>Syzygium oblatum</i> var. <i>oblatum</i>	Myrtaceae	Native	Critically Endangered	Tree	34791.18133	22108.14881
431	Clementi Forest	<i>Tetracera faqifolia</i>	Dilleniaceae	Native	Vulnerable	Climber	34745.84421	21994.18715
432	Clementi Forest	<i>Tetracera faqifolia</i>	Dilleniaceae	Native	Vulnerable	Climber	34817.05066	22036.81267
433	Clementi Forest	<i>Tetracera faqifolia</i>	Dilleniaceae	Native	Vulnerable	Climber	34797.48247	22004.98338
434	Clementi Forest	Unknown	-	-	-	Tree	33933.79289	21512.83992
435	Clementi Forest	Unknown	-	-	-	Tree	34296.57761	22026.11754

Appendix E1

List of Large Plant
Specimens in Maju Forest

Appendix E1 List of Large Plant Specimens in Maju Forest

S/N	Site	Species	Family	Origin	Status	Habit	Girth/ spread (m)	Height (m)	Northing	Easting
1	Maju Forest	<i>Alstonia angustiloba</i>	Apocynaceae	Native	Common	Tree	3	20	34309.86555	21208.69343
2	Maju Forest	<i>Alstonia angustiloba</i>	Apocynaceae	Native	Common	Tree	3	20	34128.75307	20842.54488
3	Maju Forest	<i>Alstonia angustiloba</i>	Apocynaceae	Native	Common	Tree	3.1	20	34143.23817	20850.78072
4	Maju Forest	<i>Alstonia angustiloba</i>	Apocynaceae	Native	Common	Tree	3.4	25	34244.07847	21008.4812
5	Maju Forest	<i>Alstonia angustiloba</i>	Apocynaceae	Native	Common	Tree	3.5	25	34135.60676	20918.44484
6	Maju Forest	<i>Alstonia angustiloba</i>	Apocynaceae	Native	Common	Tree	3	20	34339.94578	21054.33507
7	Maju Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	8	18	34868.61954	20486.21451
8	Maju Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	5	12-15	34903.99432	20829.98933
9	Maju Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	12	15	34263.67	21283.072
10	Maju Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	8	15	34260.495	21276.975
11	Maju Forest	<i>Cyrtophyllum fragrans</i>	Gentianaceae	Native	Common	Tree	3.5	20	34318.27404	21016.82982
12	Maju Forest	<i>Cyrtophyllum fragrans</i>	Gentianaceae	Native	Common	Tree	3.2	20	34233.24541	20880.27489
13	Maju Forest	<i>Cyrtophyllum fragrans</i>	Gentianaceae	Native	Common	Tree	3	20	34287.53282	21071.80627
14	Maju Forest	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	3.9	16	34008.22823	20771.87258
15	Maju Forest	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	3	12	34016.74248	20772.76312
16	Maju Forest	<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	3	15	34145.88881	20973.64494
17	Maju Forest	<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	7	16	34006.01637	20785.56119
18	Maju Forest	<i>Ixonanthes reticulata</i>	Ixonanthaceae	Native	Common	Tree	3.8	25	34317.94391	20954.50746
19	Maju Forest	<i>Khaya grandifoliola</i>	Meliaceae	Exotic	Cultivated Only	Tree	3	5	34209.32	21381.031
20	Maju Forest	<i>Khaya grandifoliola</i>	Meliaceae	Exotic	Cultivated Only	Tree	3.5	20	34191.391	21424.092
21	Maju Forest	<i>Khaya senegalensis</i>	Meliaceae	Exotic	Cultivated Only	Tree	3.6	20	34837.99412	20347.21281
22	Maju Forest	<i>Samanea saman</i>	Fabaceae	Exotic	Casual	Tree	4.5	14	34201.73591	21476.96634
23	Maju Forest	<i>Samanea saman</i>	Fabaceae	Exotic	Casual	Tree	3.2	18	34173.87	21388.354
24	Maju Forest	<i>Schizostachyum brachycladum</i>	Poaceae	Exotic	Casual	Shrub	8	15	34545.83791	20991.57281
25	Maju Forest	<i>Schizostachyum brachycladum</i>	Poaceae	Exotic	Casual	Shrub	8	15	34542.40993	20997.80495
26	Maju Forest	<i>Schizostachyum brachycladum</i>	Poaceae	Exotic	Casual	Shrub	8	15	34513.99219	20996.80262
27	Maju Forest	<i>Schizostachyum brachycladum</i>	Poaceae	Exotic	Casual	Shrub	8	15	34298.03289	21254.98975
28	Maju Forest	<i>Schizostachyum brachycladum</i>	Poaceae	Exotic	Casual	Shrub	8	15	34256.7881	21269.01127
29	Maju Forest	<i>Schizostachyum brachycladum</i>	Poaceae	Exotic	Casual	Shrub	8	15	34285.32098	21085.2723
30	Maju Forest	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	3.6	20	34182.624	21394.13
31	Maju Forest	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	3	20	34375.33179	20974.42982
32	Maju Forest	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	3.8	20	34285.21112	21057.22723
33	Maju Forest	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	4	20	34444.10838	21014.49593
34	Maju Forest	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	3.3	19	34320.81737	21012.93474
35	Maju Forest	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	3	17	34826.0517	20358.8979

Appendix E2

List of Large Plant
Specimens in Clementi
Forest

Appendix E2 List of Large Plant Specimens in Clementi Forest

S/N	Site	Species	Family	Origin	Status	Habit	Girth/ spread (m)	Height (m)	Northing	Easting
1	Clementi Forest	<i>Alstonia angustiloba</i>	Apocynaceae	Native	Common	Tree	3.4	26	33939.31912	21620.9027
2	Clementi Forest	<i>Alstonia angustiloba</i>	Apocynaceae	Native	Common	Tree	5.6	25	33928.37129	21660.29913
3	Clementi Forest	<i>Alstonia angustiloba</i>	Apocynaceae	Native	Common	Tree	4.6	25	34026.00878	21667.75781
4	Clementi Forest	<i>Alstonia angustiloba</i>	Apocynaceae	Native	Common	Tree	4.4	25	33886.24132	21700.80776
5	Clementi Forest	<i>Alstonia angustiloba</i>	Apocynaceae	Native	Common	Tree	3	28	34068.24187	21958.78214
6	Clementi Forest	<i>Alstonia angustiloba</i>	Apocynaceae	Native	Common	Tree	3.1	25	34141.22074	21985.38205
7	Clementi Forest	<i>Alstonia angustiloba</i>	Apocynaceae	Native	Common	Tree	4.4	25	34321.12167	22115.15
8	Clementi Forest	<i>Bambusa heterostachya</i>	Poaceae	Exotic	Casual	Shrub	6	6	33736.74999	21444.39186
9	Clementi Forest	<i>Bambusa heterostachya</i>	Poaceae	Exotic	Casual	Shrub	10	8	33848.76137	21487.46378
10	Clementi Forest	<i>Bambusa heterostachya</i>	Poaceae	Exotic	Casual	Shrub	5	5	33867.44874	21478.7836
11	Clementi Forest	<i>Bambusa heterostachya</i>	Poaceae	Exotic	Casual	Shrub	4	10	35005.47167	22185.61099
12	Clementi Forest	<i>Bambusa heterostachya</i>	Poaceae	Exotic	Casual	Shrub	5	15	34030.10364	21513.06477
13	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	8	10	34791.95677	21866.98402
14	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	6	10	33907.47535	21542.99892
15	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	15	15	33975.69631	21706.26301
16	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	7	10	33924.72036	21746.32627
17	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	8	15	34261.531	21771.37414
18	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	20	15	34261.75214	21772.15318
19	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	10	15	34125.18847	21935.3012
20	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	15	15	34101.08312	21936.30228
21	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	10	15	34086.26637	21922.94716
22	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	10	15	34141.10976	22003.74489
23	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	8	10	34166.5431	21953.10851
24	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	10	15	34276.12567	21825.90653
25	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	10	8	34476.3749	22106.584
26	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	3-5	8-10	35019.17963	22175.92908
27	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	5	8-10	35026.48292	22184.16467
28	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	3	10	34396.88041	21705.60489
29	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	3	6	34603.42665	22006.75978
30	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	3	4	34610.60926	22022.00664
31	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	10	14	34351.75973	21824.12759
32	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	10	18	34293.81479	21810.7715
33	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	5	15	34265.95487	21786.73225
34	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	5	12	34338.4886	21885.22545
35	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	4	10	34082.07695	21382.85668
36	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	3.5	6	34017.94069	21500.82258
37	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	5	15	33917.31173	21751.22287
38	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	5	15	33906.25311	21801.30315
39	Clementi Forest	<i>Cyrtophyllum fragrans</i>	Gentianaceae	Native	Common	Tree	3	20	34860.61842	22148.65974
40	Clementi Forest	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	3	25	33865.45826	21484.23677
41	Clementi Forest	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	3	23	34878.052	22069.287
42	Clementi Forest	<i>Ficus benjamina</i>	Moraceae	Cryptogenic	-	Strangler	3.8	20	33715.63042	21434.04137
43	Clementi Forest	<i>Ficus benjamina</i>	Moraceae	Cryptogenic	-	Strangler	3	25	34723.213	21989.837

Appendix E2 List of Large Plant Specimens in Clementi Forest

S/N	Site	Species	Family	Origin	Status	Habit	Girth/ spread (m)	Height (m)	Northing	Easting
44	Clementi Forest	<i>Ficus benjamina</i>	Moraceae	Cryptogenic	-	Strangler	5	18	34758.796	22089.666
45	Clementi Forest	<i>Ficus benjamina</i>	Moraceae	Cryptogenic	-	Strangler	4	18	34684.519	21839.486
46	Clementi Forest	<i>Ficus benjamina</i>	Moraceae	Cryptogenic	-	Strangler	5	20	34552.675	21948.092
47	Clementi Forest	<i>Ficus benjamina</i>	Moraceae	Cryptogenic	-	Strangler	5	20	34541.976	21936.838
48	Clementi Forest	<i>Ficus elastica</i>	Moraceae	Exotic	Casual	Strangler	8	20	33991.18048	21546.89603
49	Clementi Forest	<i>Ficus elastica</i>	Moraceae	Exotic	Casual	Strangler	3	18	34417.139	21773.213
50	Clementi Forest	<i>Ficus elastica</i>	Moraceae	Exotic	Casual	Strangler	5	20	34326.668	21754.334
51	Clementi Forest	<i>Ficus elastica</i>	Moraceae	Exotic	Casual	Strangler	5	15-20	34305.347	21785.66
52	Clementi Forest	<i>Ficus elastica</i>	Moraceae	Exotic	Casual	Strangler	15	18	33998.612	21533.168
53	Clementi Forest	<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	10	15	33792.58982	21465.76089
54	Clementi Forest	<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	6	20	33705.78938	21428.92179
55	Clementi Forest	<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	7	20	33803.86744	21508.94172
56	Clementi Forest	<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	6	20	33835.15973	21526.74887
57	Clementi Forest	<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	3	20	34711.553	22011.152
58	Clementi Forest	<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	15	25	34952.192	22170.407
59	Clementi Forest	<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	3	20	34435.098	21775.881
60	Clementi Forest	<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	20	25	34525.798	21887.262
61	Clementi Forest	<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	3	18	34565.307	22000.278
62	Clementi Forest	<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	5	16	34081.261	21406.347
63	Clementi Forest	<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	15	9	34315.119	21860.251
64	Clementi Forest	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	3.5	25	34224.92741	21918.83249
65	Clementi Forest	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	3.5	22	34246.93082	22035.46482
66	Clementi Forest	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	3.8	18	34900.7633	21970.37455
67	Clementi Forest	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	3	12	34740.575	22042.982
68	Clementi Forest	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	3.4	20	34774.989	22176.6
69	Clementi Forest	<i>Pterocarpus indicus</i>	Fabaceae	Exotic	Casual	Tree	5.5	25	34146.64249	21823.12138
70	Clementi Forest	<i>Pterocarpus indicus</i>	Fabaceae	Exotic	Casual	Tree	3	25	34146.20014	21825.45846
71	Clementi Forest	<i>Pterocarpus indicus</i>	Fabaceae	Exotic	Casual	Tree	3	25	34158.58441	21831.13453
72	Clementi Forest	<i>Pterocarpus indicus</i>	Fabaceae	Exotic	Casual	Tree	3	20	34159.57944	21837.2555
73	Clementi Forest	<i>Pterocarpus indicus</i>	Fabaceae	Exotic	Casual	Tree	4.6	18	34420.42826	21723.41181
74	Clementi Forest	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	3.2	25	33941.64083	21636.59466
75	Clementi Forest	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	3.6	22	33947.39272	21550.56757
76	Clementi Forest	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	3.2	25	34592.275	22020.529
77	Clementi Forest	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	3	25	34177.82405	21848.71877
78	Clementi Forest	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	3.6	20	34892.992	22127.858
79	Clementi Forest	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	4.6	16	35017.292	22163.84
80	Clementi Forest	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	3.6	20	35035.843	22174.734
81	Clementi Forest	<i>Thyrsostachys siamensis</i>	Poaceae	Exotic	Casual	Shrub	3	7	34875.43731	22202.0791

Appendix F1

List of Other Specimens
of Value in Maju Forest

Appendix F1 List of Other Specimens of Value in Maju Forest

S/N	Site	Species	Family	Origin	Status	Habit	Girth/ spread (m)	Height (m)	Northing	Easting	Remarks
1	Maju Forest	<i>Alstonia angustiloba</i>	Apocynaceae	Native	Common	Tree	2.8	18	34641.72319	20361.00728	-
2	Maju Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	1	15	34242.41292	21287.15118	-
3	Maju Forest	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	-	-	34411.70393	21169.74449	Active changeable hawk-eagle nest

Appendix F2

List of Other Specimens
of Value in Clementi
Forest

Appendix F2 List of Other Specimens of Value in Clementi Forest

S/N	Site	Species	Family	Origin	Status	Habit	Girth/ spread (m)	Height (m)	Northin g	Easting	Remarks
1	Clementi Forest	<i>Bambusa heterostachya</i>	Poaceae	Exotic	Casual	Shrub	2.5	10	33861.9	21483.23507	-
2	Clementi Forest	<i>Bambusa heterostachya</i>	Poaceae	Exotic	Casual	Shrub	1.5	8	34693.5	22190.05597	-
3	Clementi Forest	<i>Bambusa heterostachya</i>	Poaceae	Exotic	Casual	Shrub	2	8	34722	22238.80147	Cluster of two
4	Clementi Forest	<i>Bambusa heterostachya</i>	Poaceae	Exotic	Casual	Shrub	2	8	34755.3	22233.34897	Cluster of six
5	Clementi Forest	<i>Bambusa heterostachya</i>	Poaceae	Exotic	Casual	Shrub	2	8	34766.2	22230.67825	Cluster of four
6	Clementi Forest	<i>Bambusa</i> sp.	Poaceae	Exotic	-	Shrub	-	-	34708	21954.56718	-
7	Clementi Forest	<i>Bambusa</i> sp.	Poaceae	Exotic	-	Shrub	-	-	33813.4	21501.93067	-
8	Clementi Forest	<i>Bambusa</i> sp.	Poaceae	Exotic	-	Shrub	-	-	33836.6	21563.14077	-
9	Clementi Forest	<i>Bambusa</i> sp.	Poaceae	Exotic	-	Shrub	-	-	33841	21662.18906	-
10	Clementi Forest	<i>Bambusa</i> sp.	Poaceae	Exotic	-	Shrub	-	-	33908.5	21868.07724	-
11	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	1	10	33888.6	21504.93727	-
12	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	1	12	34512.4	22099.23964	-
13	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	1	8	34585	22026.2351	Cluster
14	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	2	5	33996.9	21447.40287	-
15	Clementi Forest	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	-	-	33980.3	21920.38515	-
16	Clementi Forest	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	-	-	34470.9	22273.29606	Probably raptor nest
17	Clementi Forest	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	-	-	34487	22257.8271	Nest
18	Clementi Forest	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	-	-	34381.4	22298.22312	Nest
19	Clementi Forest	<i>Thyrsostachys siamensis</i>	Poaceae	Exotic	Casual	Shrub	-	-	34184.9	22046.14731	-
20	Clementi Forest	<i>Vitex pinnata</i>	Lamiaceae	Native	Common	Tree	-	-	34010.5	21925.83903	Nest

Appendix G1

List of Specimens
Assessed by Certified
Arborists in Maju Forest

Appendix G1 List of Specimens Assessed by Certified Arborists in Maju Forest

S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
1	Maju Forest	2019-06-24	T11666	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34272.76728	21527.39349	1.5	15	1) Good health and vigour, 2) Assessment of main trunk limited by climbers and epiphytes
2	Maju Forest	2019-06-24	T11667	<i>Senna siamea</i>	Fabaceae	Exotic	Cultivated Only	Tree	34269.17992	21521.70649	1.1	15	1) Good health and vigour, 2) Assessment of main trunk limited by climbers and epiphytes
3	Maju Forest	2019-06-24	T11668	<i>Senna siamea</i>	Fabaceae	Exotic	Cultivated Only	Tree	34268.28581	21517.08794	1	15	1) Good health and vigour, 2) No significant defects
4	Maju Forest	2019-06-24	T11669	<i>Syzygium lineatum</i>	Myrtaceae	Native	Common	Tree	34270.96841	21500.71725	1.6	12	1) Good health and vigour, 2) Growing on slope, 3) Compression side roots exposed
5	Maju Forest	2019-06-24	T11670	<i>Cyrtophyllum fragrans</i>	Gentianaceae	Native	Common	Tree	34278.73548	21498.12438	1.1	15	1) Good health and vigour, 2) No significant defects
6	Maju Forest	2019-06-24	T11671	<i>Morella esculenta</i>	Myricaceae	Native	Common	Tree	34281.69233	21504.45685	1.2	10	1) Good health and vigour, 2) No significant defects at base, 3) Assessment of main trunk and canopy limited by foliage
7	Maju Forest	2019-06-24	T11672	<i>Adinandra dumosa</i>	Pentaphylacaceae	Native	Common	Tree	34278.83567	21511.92434	1	12	1) Good health and vigour, 2) No significant defects
8	Maju Forest	2019-06-24	T11673	<i>Cyrtophyllum fragrans</i>	Gentianaceae	Native	Common	Tree	34279.17651	21519.09141	2.5	10	1) Growing in a cluster of Acacia auriculiformis trees, 2) Neighbouring Acacia auriculiformis tree is dead, 3) Removal of neighbouring tree will entail the removal of Cyrtophyllum fragrans (T11673)
9	Maju Forest	2019-06-24	T11674	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34293.53014	21518.8024	1.1	12	1) Good health and vigour, 2) Photopic lean towards Southwest on the main trunk
10	Maju Forest	2019-06-24	T11675	<i>Cyrtophyllum fragrans</i>	Gentianaceae	Native	Common	Tree	34293.3852	21512.93742	1.5	20	1) Good health and vigour, 2) V-shaped main bifurcation
11	Maju Forest	2019-06-24	T11677	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34291.64684	21499.31549	1	15	1) Good health and vigour
12	Maju Forest	2019-06-24	T11678	<i>Acacia auriculiformis</i>	Fabaceae	Exotic	Naturalised	Tree	34291.8094	21499.0484	1.1	12	1) Good health and vigour, 2) Leaning West
13	Maju Forest	2019-06-24	T11679	<i>Cyrtophyllum fragrans</i>	Gentianaceae	Native	Common	Tree	34301.73346	21491.16931	1	12	1) Good health and vigour, 2) No significant defects
14	Maju Forest	2019-06-24	T11680	<i>Acacia auriculiformis</i>	Fabaceae	Exotic	Naturalised	Tree	34303.42295	21490.55725	1.5	12	1) Good health and vigour, 2) Leaning Northwest
15	Maju Forest	2019-06-24	T11681	<i>Acacia auriculiformis</i>	Fabaceae	Exotic	Naturalised	Tree	34311.70673	21450.51534	1.4	15	1) Good health and vigour, 2) Leaning East
16	Maju Forest	2019-06-24	T11682	<i>Syzygium lineatum</i>	Myrtaceae	Native	Common	Tree	34321.21334	21439.68705	1	10	1) Good health and vigour
17	Maju Forest	2019-06-24	T11683	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34320.72468	21431.62965	1	12	1) Storm vulnerable, 2) Low retention value
18	Maju Forest	2019-06-24	T11684	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34320.2952	21431.89674	2	25	1) Storm vulnerable, 2) Low retention value
19	Maju Forest	2019-06-24	T11685	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34343.57546	21425.73183	1.3	15	1) Storm vulnerable, 2) Low retention value
20	Maju Forest	2018-11-01	T16601	<i>Lagerstroemia speciosa</i>	Lythraceae	Exotic	Cultivated Only	Tree	34222.13692	21498.34563	2.2	12	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) U-shaped bifurcation
21	Maju Forest	2018-11-01	T16602	<i>Samanea saman</i>	Fabaceae	Exotic	Casual	Tree	34214.76138	21478.54697	2.1	14	1) Good health, 2) Asymmetric canopy, 3) Assessment limited by epiphytes
22	Maju Forest	2018-11-01	T16603	<i>Adenanthera pavonina</i>	Fabaceae	Exotic	Naturalised	Tree	34221.40869	21474.27359	1.3	10	1) Average health, 2) Decay on trunk at height 3 m facing Northeast, 3) Assessment limited by epiphytes
23	Maju Forest	2018-11-01	T16604	<i>Samanea saman</i>	Fabaceae	Exotic	Casual	Tree	34212.73183	21467.0618	1.7	14	1) Average health, 2) Asymmetric canopy, 3) Assessment limited by epiphytes
24	Maju Forest	2018-11-01	T16605	<i>Samanea saman</i>	Fabaceae	Exotic	Casual	Tree	34201.73591	21476.96634	4.5	14	1) Good health, 2) Ficus growing on bifurcation, 3) Assessment limited by epiphytes
25	Maju Forest	2018-11-01	T16606	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34219.85726	21430.4587	2	14	1) Good health, 2) Root flare obvious, 3) Decay on one 1st degree branch, 4) Large dead 1st degree branch
26	Maju Forest	2018-11-01	T16607	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34222.35832	21422.57943	1	12	1) Good health, 2) No significant defects, 3) Root flare obvious
27	Maju Forest	2018-11-01	T16608	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34223.16509	21422.25671	1.7	16	1) Good health, 2) No significant defects, 3) Root flare obvious
28	Maju Forest	2018-11-01	T16609	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34227.02616	21407.78911	2	6	1) Good health, 2) No significant defects, 3) Root flare obvious
29	Maju Forest	2018-11-01	T16610	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34229.05888	21401.89079	1.3	14	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Assessment limited by climbers
30	Maju Forest	2018-11-01	T16611	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34228.61217	21392.39775	1.4	16	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Growing on slope, 5) Assessment limited by climbers
31	Maju Forest	2018-11-01	T16612	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34227.37226	21389.09241	1.2	12	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Growing on slope, 5) Assessment limited by climbers
32	Maju Forest	2018-11-01	T16613	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34221.20757	21376.26053	1.2	16	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Growing on slope, 5) Assessment limited by climbers
33	Maju Forest	2018-11-01	T16614	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34221.52605	21375.38135	1.4	16	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Growing on slope, 5) Assessment limited by climbers
34	Maju Forest	2018-11-07	T16616	<i>Pterocarpus indicus</i>	Fabaceae	Exotic	Casual	Tree	34233.36051	21488.61915	2	18	1) Good health, 2) No significant defects, 3) Growing on slope, 4) Assessment limited by climbers
35	Maju Forest	2018-11-07	T16617	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34231.42865	21474.78576	1.2	14	1) Good health, 2) No significant defects, 3) Growing on slope, 4) Assessment limited by climbers
36	Maju Forest	2018-11-07	T16618	<i>Adenanthera pavonina</i>	Fabaceae	Exotic	Naturalised	Tree	34224.69931	21454.98712	1	14	1) Good health, 2) No significant defects, 3) Growing on slope
37	Maju Forest	2018-11-07	T16619	<i>Acacia auriculiformis</i>	Fabaceae	Exotic	Naturalised	Tree	34229.99801	21452.17161	1.9	15	1) Storm vulnerable, 2) Low retention value
38	Maju Forest	2018-11-07	T16620	<i>Vitex pinnata</i>	Lamiaceae	Native	Common	Tree	34237.15739	21448.48809	1.4	12	1) Good health, 2) No significant defects, 3) Root flare obvious
39	Maju Forest	2018-11-07	T16621	<i>Macaranga confiera</i>	Euphorbiaceae	Native	Common	Tree	34238.57846	21454.57568	1.5	16	1) Good health, 2) No significant defects, 3) Growing on slope, 4) V-shaped bifurcation
40	Maju Forest	2018-11-07	T16622	<i>Vitex pinnata</i>	Lamiaceae	Native	Common	Tree	34241.71541	21443.4245	1.1	12	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Growing on slope
41	Maju Forest	2018-11-07	T16623	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34245.10124	21437.42606	2.5	6	1) Good health, 2) No significant defects
42	Maju Forest	2018-11-07	T16624	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34247.14429	21462.38844	2.1	10	1) Storm vulnerable, 2) Low retention value
43	Maju Forest	2018-11-07	T16625	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34244.52205	21428.17785	1	10	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Growing on slope
44	Maju Forest	2018-11-07	T16626	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34243.31772	21412.20771	1.9	15	1) Storm vulnerable, 2) Low retention value
45	Maju Forest	2018-11-07	T16627	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34241.37654	21404.52866	1.8	15	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Growing on slope
46	Maju Forest	2018-11-07	T16628	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34256.35696	21415.60237	2.3	5	1) Good health, 2) No significant defects
47	Maju Forest	2018-11-07	T16629	<i>Alstonia angustiloba</i>	Apocynaceae	Native	Common	Tree	34251.61668	21422.19062	1.1	16	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Growing on slope
48	Maju Forest	2018-11-07	T16630	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34261.11326	21410.07137	1.5	18	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Growing on slope
49	Maju Forest	2018-11-07	T16631	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34259.90688	21409.99344	1.2	16	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Growing on slope
50	Maju Forest	2018-11-07	T16632	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34262.58727	21407.83448	1.8	6	1) Good health, 2) No significant defects
51	Maju Forest	2018-11-07	T16633	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34260.90858	21410.01572	1.1	10	1) Good health, 2) No significant defects
52	Maju Forest	2018-11-07	T16634	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34265.67237	21414.63437	1.2	10	1) Good health, 2) No significant defects
53	Maju Forest	2018-11-07	T16635	<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	34262.89489	21416.98252	1.6	14	1) Host tree is dead
54	Maju Forest	2018-11-07	T16636	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34266.45778	21438.13882	2.5	8	1) Good health, 2) No significant defects
55	Maju Forest	2018-11-07	T16637	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34270.58097	21397.86309	1.1	16	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Growing on slope
56	Maju Forest	2018-11-07	T16638	<i>Senna siamea</i>	Fabaceae	Exotic	Cultivated Only	Tree	34269.7833	21401.9029	1.3	10	1) Good health, 2) Growing on slope, 3) Exposed dead wood on trunk
57	Maju Forest	2018-11-07	T16639	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34269.67444	21385.72134	1.1	16	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Growing on slope
58	Maju Forest	2018-11-07	T16640	<i>Acacia auriculiformis</i>	Fabaceae	Exotic	Naturalised	Tree	34268.31908	21373.53506	1.2	16	1) Storm vulnerable, 2) Low retention value
59	Maju Forest	2018-11-07	T16641	<i>Macaranga hypoleuca</i>	Euphorbiaceae	Native	Common	Tree	34268.80442	21363.22962	1	16	1) Good health, 2) Growing partially over vehicle guard rail
60	Maju Forest	2018-11-07	T16642	<i>Syzygium lineatum</i>	Myrtaceae	Native	Common	Tree	34280.03513	21411.70779	1.4	12	1) Good health, 2) Leaning Southwest
61	Maju Forest	2018-11-07	T16643	<i>Syzygium lineatum</i>	Myrtaceae	Native	Common	Tree	34284.55171	21401.10196	1.5	12	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Growing on slope
62	Maju Forest	2018-11-07	T16644	<i>Syzygium lineatum</i>	Myrtaceae	Native	Common	Tree	34294.10938	21395.66012	1.5	16	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Growing on slope
63	Maju Forest	2018-11-07	T16645	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34299.02493	21393.73492	1.2	10	1) Good health, 2) No significant defects
64	Maju Forest	2018-11-07	T16646	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34312.15636	21384.57607	1.2	16	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Growing on slope
65	Maju Forest	2018-11-07	T16647	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34284.19086	21407.50113	1.9	20	1) Storm vulnerable, 2) Low retention value
66	Maju Forest	2018-11-07	T16648	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34313.18734	21380.90353	2.2	20	1) Storm vulnerable, 2) Low retention value
67	Maju Forest	2018-11-07	T16649	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34312.70247	21380.94803	1.8	10	1) Good health, 2) No significant defects

Appendix G1 List of Specimens Assessed by Certified Arborists in Maju Forest

S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
68	Maju Forest	2018-11-07	T16650	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34315.04347	21380.25809	3	22	1) Storm vulnerable, 2) Low retention value
69	Maju Forest	2018-11-07	T16651	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34307.4075	21365.97941	2	7	1) Good health, 2) No significant defects
70	Maju Forest	2018-11-07	T16652	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34311.91621	21360.76003	2.8	16	1) Storm vulnerable, 2) Low retention value, 3) Fungal fruiting bodies at tree base, 4) Leaning West
71	Maju Forest	2018-11-07	T16653	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34291.75364	21347.39362	1.4	14	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Growing on slope
72	Maju Forest	2018-11-07	T16654	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34290.15436	21339.71458	1.8	22	1) Storm vulnerable, 2) Low retention value
73	Maju Forest	2018-11-07	T16655	<i>Litsea elliptica</i>	Lauraceae	Native	Common	Tree	34289.13295	21340.93874	2.1	16	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Growing on slope
74	Maju Forest	2018-11-07	T16656	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34283.10458	21365.71173	1.8	10	1) Good health, 2) No significant defects
75	Maju Forest	2018-11-07	T16657	<i>Acacia auriculiformis</i>	Fabaceae	Exotic	Naturalised	Tree	34282.74764	21361.41593	1.5	12	1) Storm vulnerable, 2) Low retention value
76	Maju Forest	2018-11-07	T16658	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34286.04941	21365.70067	2.2	7	1) Good health, 2) No significant defects
77	Maju Forest	2018-11-07	T16659	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34289.40665	21357.83256	1.4	15	1) Storm vulnerable, 2) Low retention value
78	Maju Forest	2018-11-07	T16660	<i>Acacia auriculiformis</i>	Fabaceae	Exotic	Naturalised	Tree	34288.54065	21357.08689	1.5	12	1) Storm vulnerable, 2) Low retention value
79	Maju Forest	2018-11-07	T16661	<i>Camposperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34289.41336	21364.23173	1	15	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Growing on slope
80	Maju Forest	2018-11-07	T16662	<i>Cinnamomum iners</i>	Lauraceae	Native	Common	Tree	34291.92614	21365.61178	1.3	15	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Growing on slope
81	Maju Forest	2018-11-07	T16663	<i>Acacia auriculiformis</i>	Fabaceae	Exotic	Naturalised	Tree	34286.68291	21365.08859	1.2	12	1) Storm vulnerable, 2) Low retention value
82	Maju Forest	2018-11-07	T16664	<i>Vitex pinnata</i>	Lamiaceae	Native	Common	Tree	34283.46376	21364.13142	1.4	8	1) Poor health, 2) Root flare obvious, 3) Asymmetric lean towards Northwest
83	Maju Forest	2018-11-07	T16665	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34274.24324	21378.50986	1.6	15	1) Good health, 2) Severe lean towards Southeast
84	Maju Forest	2018-11-07	T16666	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34270.79145	21377.37462	1.3	15	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Growing on slope
85	Maju Forest	2018-11-12	T16667	<i>Rhodamnia cinerea</i>	Myrtaceae	Native	Common	Tree	34278.75253	21344.47751	1.3	18	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Low bifurcation
86	Maju Forest	2018-11-12	T16668	<i>Dillenia suffruticosa</i>	Dilleniaceae	Native	Common	Shrub	34296.1623	21341.08359	1.5	6	1) Good health, 2) No significant defects, 3) Multiple trunk attachments
87	Maju Forest	2018-11-12	T16680	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34323.2221	21368.25011	1.5	8	1) Storm vulnerable, 2) Low retention value, 3) Past canopy failure
88	Maju Forest	2019-11-20	T16701	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34230.235	21225.021	1.6	20	1) Good health, 2) Growing on slope, 3) Assessment limited by climbers
89	Maju Forest	2019-11-20	T16701A	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34229.048	21226.033	1.2	20	1) Good health, 2) Root flare obvious, 3) Growing on slope, 4) Unable to access
90	Maju Forest	2019-11-20	T16703	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34239.198	21241.46	1.1	18	1) Good health, 2) Assessment limited by climbers
91	Maju Forest	2019-11-20	T16703A	<i>Vitex pinnata</i>	Lamiaceae	Native	Common	Tree	34234.813	21249.281	1.2	16	1) Good health, 2) Low bifurcation, 3) Growing on slope, 4) Unable to access
92	Maju Forest	2019-11-20	T16704	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34237.797	21252.456	1.2	18	1) Good health, 2) Root flare obvious, 3) Infested with termites
93	Maju Forest	2019-11-20	T16705	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34240.787	21262.274	1.1	18	1) Good health, 2) Decay at tree base, 3) Infested with termites, 4) Low retention value
94	Maju Forest	2019-11-20	T16706	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34241.864	21275.099	1.9	25	1) Good health, 2) Root flare obvious, 3) Growing on top and along edge of slope, 4) U-shaped bifurcation
95	Maju Forest	2019-11-20	T16708	<i>Vitex pinnata</i>	Lamiaceae	Native	Common	Tree	34245.107	21292.222	1.2	16	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
96	Maju Forest	2019-11-20	T16709	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34248.456	21305.289	1.3	20	1) Good health, 2) Slight lean towards Northwest
97	Maju Forest	2019-11-20	T16710	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34247.504	21309.337	1.3	20	1) Good health, 2) Assessment limited by climbers
98	Maju Forest	2019-11-20	T16711	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34252.559	21318.468	1.5	22	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
99	Maju Forest	2019-11-20	T16712	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34255.922	21319.3	1.5	25	1) Good health, 2) Root flare obvious, 3) Growing on slope
100	Maju Forest	2019-11-20	T16713	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34260.419	21322.151	2.8	25	1) Storm vulnerable, 2) Low retention value
101	Maju Forest	2019-11-20	T16714	<i>Senna siamea</i>	Fabaceae	Exotic	Cultivated Only	Tree	34271.031	21339.321	1.6	18	1) Good health, 2) No significant defects, 3) Root flare obvious
102	Maju Forest	2019-11-20	T16715	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34275.101	21317.991	3.5	25	1) Storm vulnerable, 2) Low retention value
103	Maju Forest	2019-11-20	T16717	<i>Senna siamea</i>	Fabaceae	Exotic	Cultivated Only	Tree	34275.838	21318.376	1.2	14	1) Good health, 2) No significant defects, 3) U-shaped bifurcation
104	Maju Forest	2019-11-20	T16721	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	34263.67	21283.072	12	15	1) Good health, 2) No significant defects
105	Maju Forest	2019-11-20	T16722	<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	34260.495	21276.975	8	15	1) Good health, 2) No significant defects
106	Maju Forest	2019-11-20	T16723	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34256.173	21277.725	1.7	20	1) Good health, 2) Root flare obvious, 3) Girdling roots
107	Maju Forest	2019-11-20	T16725	<i>Macaranga confiera</i>	Euphorbiaceae	Native	Common	Tree	34255.66	21277.24	1.2	22	1) Good health, 2) Root flare obvious, 3) Growing on slope, 4) Assessment limited by climbers
108	Maju Forest	2019-11-20	T16726	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34253.272	21263.177	1.2	20	1) Good health, 2) Root flare obvious, 3) Growing on slope, 4) Assessment limited by climbers
109	Maju Forest	2019-11-20	T16727	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34244.209	21268.167	1.5	20	1) Good health, 2) Root flare obvious, 3) Low bifurcation
110	Maju Forest	2019-11-20	T16728	<i>Vitex pinnata</i>	Lamiaceae	Native	Common	Tree	34288.942	21316.464	2	10	1) Good health, 2) Root flare obvious, 3) Low bifurcation
111	Maju Forest	2019-11-20	T16730	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34331.982	21384.395	1.4	18	1) Storm vulnerable, 2) Low retention value
112	Maju Forest	2019-11-20	T16731	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34331.967	21384.029	1.3	18	1) Storm vulnerable, 2) Low retention value
113	Maju Forest	2019-11-20	T16732	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34333.137	21397.477	2.1	20	1) Storm vulnerable, 2) Low retention value
114	Maju Forest	2019-11-20	T16734	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34329.227	21393.54	1.7	20	1) Storm vulnerable, 2) Low retention value
115	Maju Forest	2019-11-20	T16735	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34325.437	21395.322	3.8, 1.5	20	1) Storm vulnerable, 2) Low retention value
116	Maju Forest	2019-11-20	T16736	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34315.203	21394.29	2	25	1) Storm vulnerable, 2) Low retention value
117	Maju Forest	2019-11-20	T16737	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34314.002	21404.663	4.2	25	1) Storm vulnerable, 2) Low retention value
118	Maju Forest	2019-11-20	T16738	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34318.645	21418.25	3.8	25	1) Storm vulnerable, 2) Low retention value
119	Maju Forest	2019-11-20	T16741	<i>Acacia auriculiformis</i>	Fabaceae	Exotic	Naturalised	Tree	34347.701	21412.581	1.6	20	1) Storm vulnerable, 2) Low retention value
120	Maju Forest	2019-11-20	T16742	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34285.234	21440.561	1.4	20	1) Good health, 2) No significant defects, 3) Root flare obvious
121	Maju Forest	2019-11-20	T16743	<i>Acacia auriculiformis</i>	Fabaceae	Exotic	Naturalised	Tree	34282.511	21436.809	2.2	18	1) Storm vulnerable, 2) Low retention value
122	Maju Forest	2019-11-20	T16744	<i>Cyrtophyllum fragrans</i>	Gentianaceae	Native	Common	Tree	34279.5	21423.218	1.2	16	1) Good health, 2) No significant defects, 3) Growing on slope
123	Maju Forest	2019-11-20	T16745	<i>Rhodamnia cinerea</i>	Myrtaceae	Native	Common	Tree	34277.88	21443.803	1.4	12	1) Good health, 2) No significant defects, 3) Growing on slope
124	Maju Forest	2019-11-20	T16746	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34277.185	21442.541	1.5	20	1) Good health, 2) No significant defects, 3) Growing on slope
125	Maju Forest	2019-11-20	T16746A	<i>Syzygium lineatum</i>	Myrtaceae	Native	Common	Tree	34278.813	21450.349	1	12	1) Good health, 2) No significant defects, 3) Growing on slope, 4) Infested with termites
126	Maju Forest	2019-11-20	T16746A	<i>Syzygium lineatum</i>	Myrtaceae	Native	Common	Tree	34278.813	21450.349	1.2	18	1) Good health, 2) Growing on slope, 3) Unable to access
127	Maju Forest	2019-11-20	T16747	<i>Acacia auriculiformis</i>	Fabaceae	Exotic	Naturalised	Tree	34280.834	21479.893	1.2	12	1) Storm vulnerable, 2) Low retention value
128	Maju Forest	2019-11-20	T16748	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34266.885	21454.641	2.8	25	1) Storm vulnerable, 2) Low retention value
129	Maju Forest	2019-11-20	T16748A	<i>Alstonia angustiloba</i>	Apocynaceae	Native	Common	Tree	34267.217	21446.581	1.8	18	1) Good health, 2) Unable to access because of fallen trunks and climbers
130	Maju Forest	2019-11-20	T16750	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34268.383	21397.657	1.2	18	1) Good health, 2) Root flare obvious, 3) Leaning South
131	Maju Forest	2019-11-21	T16751	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34246.563	21307.272	1.8	22	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers
132	Maju Forest	2019-11-21	T16752	<i>Syzygium lineatum</i>	Myrtaceae	Native	Common	Tree	34236.374	21299.367	1.5	20	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Asymmetric canopy
133	Maju Forest	2019-11-21	T16753	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34233.195	21281.452	1.3	20	1) Good health, 2) Root flare obvious, 3) Growing on slope, 4) Assessment limited by climbers
134	Maju Forest	2019-11-21	T16754	<i>Acacia auriculiformis</i>	Fabaceae	Exotic	Naturalised	Tree	34226.831	21231.27	1.5	16	1) Tree appears dead, 2) Unable to assess canopy as it is covered completely by climbers
135	Maju Forest	2019-11-21	T16755	<i>Macaranga confiera</i>	Euphorbiaceae	Native	Common	Tree	34226.953	21226.774	1.2	20	1) Good health, 2) Growing on slope, 3) U-shaped bifurcation, 4) Assessment limited by climbers
136	Maju Forest	2019-11-21	T16756	<i>Ixonanthes reticulata</i>	Ixonanthaceae	Native	Common	Tree	34220.415	21221.21	1.5	20	1) Good health, 2) Root flare obvious, 3) Growing on slope, 4) Assessment limited by climbers
137	Maju Forest	2019-11-21	T16759	<i>Adenanthera pavonina</i>	Fabaceae	Exotic	Naturalised	Tree	34212.474	21202.88	1.8	15	1) Good health, 2) Root flare obvious, 3) Growing on slope, 4) Low bifurcation, 5) Assessment limited by climbers
138	Maju Forest	2019-11-21	T16760	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34209.513	21201.554	1.8	25	1) Storm vulnerable, 2) Low retention value
139	Maju Forest	2019-11-21	T16762	<i>Macaranga griffithiana</i>	Euphorbiaceae	Native	Vulnerable	Tree	34209.627	21218.498	1.1	12	1) Good health, 2) No significant defects, 3) Root flare obvious

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S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
140	Maju Forest	2019-11-21	T16763	<i>Vitex pinnata</i>	Lamiaceae	Native	Common	Tree	34210.808	21220.409	1.1	16	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
141	Maju Forest	2019-11-21	T16764	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34206.957	21288.882	1.3	22	1) Storm vulnerable, 2) Low retention value
142	Maju Forest	2019-11-21	T16765	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34212.835	21309.535	1.4	22	1) Storm vulnerable, 2) Low retention value
143	Maju Forest	2019-11-21	T16766	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34215.829	21316.348	1.2	13	1) Good health, 2) No significant defects, 3) Growing on slope
144	Maju Forest	2019-11-21	T16767	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34224.534	21327.35	1.2	20	1) Good health, 2) No significant defects, 3) Root flare obvious
145	Maju Forest	2019-11-21	T16768	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34210.026	21335.108	1.1	18	1) Good health, 2) Roots exposed because of soil erosion, 3) Growing next to <i>Adinandra dumosa</i>
146	Maju Forest	2019-11-21	T16769	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34205.858	21333.286	1.2	15	1) Good health, 2) Low bifurcation, 3) Growing on slope
147	Maju Forest	2019-11-21	T16770	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34202.095	21335.423	2	18	1) Storm vulnerable, 2) Low retention value
148	Maju Forest	2019-11-21	T16773	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34228.056	21244.436	2.5	8	1) Good health, 2) No significant defects
149	Maju Forest	2019-11-21	T16773A	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34201.016	21330.279	1.2	20	1) Good health, 2) Root flare obvious, 3) Roots partially exposed because of soil erosion, 4) Growing on slope
150	Maju Forest	2019-11-21	T16774	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34194.742	21327.976	2.5	25	1) Storm vulnerable, 2) Low retention value
151	Maju Forest	2019-11-21	T16775	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34185.615	21325.896	1.8	12	1) Storm vulnerable, 2) Low retention value, 3) Water sprouts growing from fallen branch
152	Maju Forest	2019-11-21	T16776	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34174.485	21299.163	1.1	18	1) Good health, 2) Growing on slope, 3) Assessment limited by understory canopy
153	Maju Forest	2019-11-21	T16777	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34175.626	21298.077	1	16	1) Good health, 2) Growing on slope, 3) Leaning Northwest
154	Maju Forest	2019-11-21	T16778	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34166.841	21290.078	1	20	1) Good health, 2) Assessment limited by climbers
155	Maju Forest	2019-11-21	T16779	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34165.732	21306.482	1.1	20	1) Good health, 2) Assessment limited by climbers
156	Maju Forest	2019-11-21	T16782	<i>Syzygium polyanthum</i>	Myrtaceae	Native	Vulnerable	Tree	34174.465	21321.142	1.8	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
157	Maju Forest	2019-11-21	T16784	<i>Syzygium polyanthum</i>	Myrtaceae	Native	Vulnerable	Tree	34175.591	21323.656	1	20	1) Good health, 2) Root flare obvious, 3) Oil palm growing next to it, 4) Assessment limited by climbers
158	Maju Forest	2019-11-21	T16785	<i>Khaya grandifoliola</i>	Meliaceae	Exotic	Cultivated Only	Tree	34195.514	21328.764	1.1	18	1) Good health, 2) Root flare obvious, 3) Leaning West, 4) Assessment limited by climbers
159	Maju Forest	2019-11-21	T16787	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34226.361	21358.763	1.3	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
160	Maju Forest	2019-11-21	T16788	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34225.6	21358.784	1.5	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
161	Maju Forest	2019-11-21	T16789	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34218.193	21352.577	1.1	18	1) Good health, 2) Root flare obvious, 3) Growing on slope, 4) Assessment limited by climbers
162	Maju Forest	2019-11-21	T16790	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34220.493	21351.871	2	18	1) Good health, 2) Root flare obvious, 3) Growing on slope, 4) Low bifurcation, 5) Assessment limited by climbers
163	Maju Forest	2019-11-21	T16791	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34222.225	21352.908	2.2	20	1) Good health, 2) Root flare obvious, 3) Growing on slope, 4) Low bifurcation
164	Maju Forest	2019-11-21	T16792	<i>Khaya grandifoliola</i>	Meliaceae	Exotic	Cultivated Only	Tree	34219.232	21375.249	1.4	16	1) Good health, 2) Root flare obvious, 3) Infested with termites, 4) Leaning Northwest, 5) Growing on slope, 6) Dieback at canopy
165	Maju Forest	2019-11-21	T16793	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34222.953	21382.751	1.2	16	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Growing on slope
166	Maju Forest	2019-11-21	T16794	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34225.273	21385.318	1.1	18	1) Good health, 2) No significant defects, 3) Root flare obvious
167	Maju Forest	2019-11-21	T16795	<i>Khaya grandifoliola</i>	Meliaceae	Exotic	Cultivated Only	Tree	34221.32	21388.33	1.4	18	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) U-shaped bifurcation
168	Maju Forest	2019-11-21	T16796	<i>Khaya grandifoliola</i>	Meliaceae	Exotic	Cultivated Only	Tree	34216.656	21389.979	1.3	18	1) Good health, 2) Infested with termites
169	Maju Forest	2019-11-21	T16798	<i>Mimusops elengi</i>	Sapotaceae	Exotic	Casual	Tree	34215.296	21389.51	1.5	12	1) Good health, 2) Root flare obvious, 3) U-shaped bifurcation, 4) Infested with termites
170	Maju Forest	2019-11-21	T16799	<i>Mimusops elengi</i>	Sapotaceae	Exotic	Casual	Tree	34219.509	21412.646	1.2	9	1) Good health, 2) Root flare obvious, 3) U-shaped bifurcation, 4) Infested with termites
171	Maju Forest	2019-11-21	T16800	<i>Mimusops elengi</i>	Sapotaceae	Exotic	Casual	Tree	34222.429	21413.359	1.2	10	1) Good health, 2) No significant defects, 3) U-shaped bifurcation
172	Maju Forest	2019-11-25	T16801	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34224.237	21439.12	1.2	20	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Growing on slope, 5) Cluster of two
173	Maju Forest	2019-11-25	T16802	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34224.237	21439.12	1.4	20	1) Good health, 2) Root flare obvious, 3) Growing on slope, 4) Assessment limited by climbers
174	Maju Forest	2019-11-25	T16803	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34226.486	21439.452	1.1	20	1) Good health, 2) Root flare obvious, 3) Growing on slope, 4) Unable to access because of climbers
175	Maju Forest	2019-11-25	T16804	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34229.885	21438.46	2	20	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Growing on slope
176	Maju Forest	2019-11-25	T16805	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34224.94	21447.071	1.4	20	1) Good health, 2) Root flare obvious, 3) Growing on slope, 4) Unable to access because of climbers
177	Maju Forest	2019-11-25	T16806	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34185.3	21330.223	1	20	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Growing on slope
178	Maju Forest	2019-11-25	T16807	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34816.539	21968.278	1.24	20	1) Good health, 2) Root flare obvious, 3) Growing on slope, 4) Assessment limited by climbers
179	Maju Forest	2019-11-25	T16808	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34809.688	21962.184	1.3	20	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Growing on slope, 5) U-shaped bifurcation
180	Maju Forest	2019-11-25	T16809	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34805.153	21961.366	2.1	20	1) Good health, 2) Root flare obvious, 4) Growing on slope
181	Maju Forest	2019-11-25	T16810	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34792.187	21946.51	1	20	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Growing on slope, 5) U-shaped bifurcation
182	Maju Forest	2019-11-25	T16811	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34788.848	21942.389	1.1	20	1) Good health, 2) Root flare obvious, 3) Growing on slope
183	Maju Forest	2019-11-25	T16812	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34790.036	21927.38	1.8	22	1) Good health, 2) Root flare obvious, 3) Leaning South
184	Maju Forest	2019-11-25	T16813	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34788.697	21922.339	1.1	22	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
185	Maju Forest	2019-11-25	T16814	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34783.407	21919.513	1.8	20	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy
186	Maju Forest	2019-11-25	T16815	<i>Adenanthera pavonina</i>	Fabaceae	Exotic	Naturalised	Tree	34773.837	21910.091	1.4	20	1) Good health, 2) Poor form, 3) Base of trunk combined with <i>Syzygium grande</i>
187	Maju Forest	2019-11-25	T16815	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34754.527	21913.45	1.4	20	1) Good health, 2) Base of trunk combined with <i>Adenanthera pavonina</i>
188	Maju Forest	2019-11-25	T16816	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34726.865	21921.654	1.1	22	1) Good health, 2) Root flare obvious
189	Maju Forest	2019-11-25	T16817	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34727.783	21921.84	1.1	20	1) Good health, 2) Root flare obvious
190	Maju Forest	2019-11-25	T16818	<i>Cyrtophyllum fragrans</i>	Gentianaceae	Native	Common	Tree	34734.105	21923.081	1	16	1) Good health, 2) Multiple attachments, 3) Growing beside drain, 4) Cluster of three
191	Maju Forest	2019-11-25	T16820	<i>Arthrophyllum diversifolium</i>	Araliaceae	Native	Common	Tree	34725.25	21924.683	1	10	1) Good health, 2) Infested with termites, 3) U-shaped bifurcation
192	Maju Forest	2019-11-20	T18130	<i>Mangifera indica</i>	Anacardiaceae	Exotic	Casual	Tree	34127.351	21223.599	2.3	8	1) Good health, 2) No significant defects, 3) Spread of surface roots up to 5 m radius
193	Maju Forest	2019-11-20	T18131	<i>Podocarpus rumphii</i>	Podocarpaceae	Exotic	Cultivated Only	Tree	34120.644	21234.453	1.2	11	1) Average health, 2) V-shaped bifurcation, 3) Asymmetric canopy because of neighbouring trees in close proximity
194	Maju Forest	2019-11-20	T18132	<i>Podocarpus rumphii</i>	Podocarpaceae	Exotic	Cultivated Only	Tree	34117.544	21241.204	1.16	11	1) Average health, 2) Asymmetric canopy because of neighbouring trees in close proximity
195	Maju Forest	2019-11-20	T18133	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34110.303	21240.184	1.22	10	1) Good health, 2) No significant defects
196	Maju Forest	2019-11-20	T18134	<i>Podocarpus rumphii</i>	Podocarpaceae	Exotic	Cultivated Only	Tree	34103.724	21245.047	1.08	11	1) Good health, 2) No significant defects, 3) Asymmetric canopy
197	Maju Forest	2019-11-20	T18135	<i>Xanthostemon chrysanthus</i>	Myrtaceae	Exotic	Cultivated Only	Tree	34109.087	21250.881	1.95	8	1) Good health, 2) No significant defects, 3) Multiple attachments
198	Maju Forest	2019-11-20	T18136	<i>Podocarpus rumphii</i>	Podocarpaceae	Exotic	Cultivated Only	Tree	34111.941	21246.824	1.43	12	1) Good health, 2) No significant defects, 3) U-shaped bifurcation with bulge
199	Maju Forest	2019-11-20	T18137	<i>Podocarpus rumphii</i>	Podocarpaceae	Exotic	Cultivated Only	Tree	34121.615	21244.973	1.13	12	1) Average health, 2) No significant defects, 3) Asymmetric canopy because of neighbouring trees in close proximity
200	Maju Forest	2019-11-20	T18138	<i>Podocarpus rumphii</i>	Podocarpaceae	Exotic	Cultivated Only	Tree	34129.886	21237.867	1.1	10	1) Good health, 2) No significant defects

Appendix G1 List of Specimens Assessed by Certified Arborists in Maju Forest

S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
201	Maju Forest	2019-11-20	T18139	<i>Podocarpus rumphii</i>	Podocarpaceae	Exotic	Cultivated Only	Tree	34131.861	21244.325	1.25	10	1) Average health, 2) No significant defects, 3) U-shaped bifurcation, 4) Asymmetric canopy
202	Maju Forest	2019-11-20	T18140	<i>Mimusops elengi</i>	Sapotaceae	Exotic	Casual	Tree	34118.493	21254.057	1.4	9	1) Good health, 2) No significant defects
203	Maju Forest	2019-11-20	T18141	<i>Podocarpus rumphii</i>	Podocarpaceae	Exotic	Cultivated Only	Tree	34125.775	21266.6	1	11	1) Good health, 2) No significant defects
204	Maju Forest	2019-11-20	T18142	<i>Podocarpus rumphii</i>	Podocarpaceae	Exotic	Cultivated Only	Tree	34124.912	21268.476	1.02	11	1) Good health, 2) No significant defects
205	Maju Forest	2019-11-20	T18143	<i>Xanthostemon chrysanthus</i>	Myrtaceae	Exotic	Cultivated Only	Tree	34125.513	21279.193	1.06	12	1) Good health, 2) No significant defects
206	Maju Forest	2019-11-20	T18144	<i>Xanthostemon chrysanthus</i>	Myrtaceae	Exotic	Cultivated Only	Tree	34127	21285.084	1	12	1) Good health, 2) No significant defects
207	Maju Forest	2019-11-20	T18145	<i>Syzygium polyanthum</i>	Myrtaceae	Native	Vulnerable	Tree	34133.676	21285.031	1.5	15	1) Good health, 2) Root flare obvious and evenly-distributed, 3) U-shaped bifurcation, 4) Past trunk failure
208	Maju Forest	2019-11-20	T18146	<i>Mimusops elengi</i>	Sapotaceae	Exotic	Casual	Tree	34134.52	21291.241	1.15	9	1) Good health, 2) No significant defects
209	Maju Forest	2019-11-20	T18147	<i>Syzygium polyanthum</i>	Myrtaceae	Native	Vulnerable	Tree	34143.869	21282.664	1.5	15	1) Good health, 2) No significant defects, 3) Root flare obvious
210	Maju Forest	2019-11-20	T18148	<i>Syzygium polyanthum</i>	Myrtaceae	Native	Vulnerable	Tree	34145.669	21294.242	1.13	15	1) Good health, 2) No significant defects, 3) Asymmetric canopy because T16618 is in close proximity
211	Maju Forest	2019-11-20	T18149	<i>Podocarpus rumphii</i>	Podocarpaceae	Exotic	Cultivated Only	Tree	34150.265	21255.035	1.05	15	1) Good health, 2) No significant defects
212	Maju Forest	2019-11-20	T18150	<i>Syzygium polyanthum</i>	Myrtaceae	Native	Vulnerable	Tree	34167.556	21309.419	1.1	12	1) Good health, 2) No significant defects
213	Maju Forest	2019-11-20	T18151	<i>Syzygium polyanthum</i>	Myrtaceae	Native	Vulnerable	Tree	34157.255	21309.642	1.4	12	1) Good health, 2) No significant defects, 3) Multiple attachments
214	Maju Forest	2019-11-20	T18152	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34163.962	21316.279	1.7	15	1) Good health, 2) No significant defects, 3) Root flare obvious
215	Maju Forest	2019-11-20	T18153	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34168.333	21322.539	2.1	16	1) Good health, 2) No significant defects, 3) Root flare obvious
216	Maju Forest	2019-11-20	T18154	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34173.403	21332.29	2.1	18	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Growing on slope
217	Maju Forest	2019-11-20	T18155	<i>Vitex pinnata</i>	Lamiaceae	Native	Common	Tree	34181.993	21340.368	1.3	15	1) Good health, 2) Decay on primary branch facing Northeast
218	Maju Forest	2019-11-20	T18156	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34179.033	21345.047	1.4	15	1) Good health, 2) No significant defects, 3) Root flare obvious
219	Maju Forest	2019-11-20	T18157	<i>Khaya grandifoliola</i>	Meliaceae	Exotic	Cultivated Only	Tree	34190.095	21345.795	2.5	20	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Slightly asymmetric canopy
220	Maju Forest	2019-11-20	T18158	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34178.648	21345.716	1	18	1) Good health, 2) No significant defects, 3) Growing next to T16627
221	Maju Forest	2019-11-20	T18159	<i>Vitex pinnata</i>	Lamiaceae	Native	Common	Tree	34197.536	21346.342	1.7	12	1) Good health, 2) Decay on branches
222	Maju Forest	2019-11-20	T18160	<i>Khaya grandifoliola</i>	Meliaceae	Exotic	Cultivated Only	Tree	34199.781	21353.469	2.7	20	1) Good health, 2) No significant defects, 3) Root flare obvious
223	Maju Forest	2019-11-20	T18161	<i>Khaya grandifoliola</i>	Meliaceae	Exotic	Cultivated Only	Tree	34203.009	21357.81	2.2	20	1) Good health, 2) No significant defects, 3) Root flare obvious
224	Maju Forest	2019-11-20	T18162	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34206.422	21353.473	1.5	18	1) Poor health, 2) Root flare obvious, 3) Leaning Southwest, 4) Canopy defoliated
225	Maju Forest	2019-11-20	T18163	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34208.094	21357.044	1.2	18	1) Good health, 2) No significant defects, 3) Root flare obvious
226	Maju Forest	2019-11-20	T18164	<i>Khaya grandifoliola</i>	Meliaceae	Exotic	Cultivated Only	Tree	34196.035	21363.766	1.77	18	1) Good health, 2) No significant defects, 3) Root flare obvious
227	Maju Forest	2019-11-20	T18165	<i>Khaya grandifoliola</i>	Meliaceae	Exotic	Cultivated Only	Tree	34204.829	21371.757	2	18	1) Good health, 2) No significant defects, 3) Root growth restricted by path
228	Maju Forest	2019-11-20	T18166	<i>Khaya grandifoliola</i>	Meliaceae	Exotic	Cultivated Only	Tree	34206.547	21373.924	2.7	20	1) Good health, 2) No significant defects, 3) Root growth restricted by path
229	Maju Forest	2019-11-20	T18167	<i>Khaya grandifoliola</i>	Meliaceae	Exotic	Cultivated Only	Tree	34209.32	21381.031	3	5	1) Poor health, 2) Trunk is dead-headed
230	Maju Forest	2019-11-20	T18168	<i>Khaya grandifoliola</i>	Meliaceae	Exotic	Cultivated Only	Tree	34214.443	21420.69	2.9	20	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Root growth restricted by path
231	Maju Forest	2019-11-20	T18169	<i>Khaya grandifoliola</i>	Meliaceae	Exotic	Cultivated Only	Tree	34220.196	21421.178	1.8	20	1) Good health, 2) No significant defects, 3) Root flare obvious
232	Maju Forest	2019-11-20	T18170	<i>Khaya grandifoliola</i>	Meliaceae	Exotic	Cultivated Only	Tree	34216.136	21421.814	2.8	20	1) Good health, 2) No significant defects, 3) Root flare obvious
233	Maju Forest	2019-11-20	T18171	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34202.321	21440.284	2.16	12	1) Good health, 2) No significant defects
234	Maju Forest	2019-11-20	T18172	<i>Cinnamomum iners</i>	Lauraceae	Native	Common	Tree	34184.254	21430.335	1.77	12	1) Good health, 2) Primary branch failure
235	Maju Forest	2019-11-20	T18173	<i>Khaya grandifoliola</i>	Meliaceae	Exotic	Cultivated Only	Tree	34190.542	21424.761	2.4	20	1) Good health, 2) No significant defects, 3) Root flare obvious
236	Maju Forest	2019-11-20	T18174	<i>Khaya grandifoliola</i>	Meliaceae	Exotic	Cultivated Only	Tree	34191.391	21424.092	3.5	20	1) Good health, 2) No significant defects, 3) Root flare obvious
237	Maju Forest	2019-11-20	T18175	<i>Cinnamomum iners</i>	Lauraceae	Native	Common	Tree	34179.043	21416.136	2.8	15	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Growing on slope
238	Maju Forest	2019-11-20	T18176	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34182.624	21394.13	3.6	20	1) Good health, 2) No significant defects
239	Maju Forest	2019-11-20	T18177	<i>Samanea saman</i>	Fabaceae	Exotic	Casual	Tree	34192.648	21397.164	2.9	18	1) Good health, 2) No significant defects, 3) Failure of pruned branch, 4) Strangled by fig
240	Maju Forest	2019-11-20	T18178	<i>Samanea saman</i>	Fabaceae	Exotic	Casual	Tree	34173.87	21388.354	3.2	18	1) Good health, 2) Failure of pruned branch
241	Maju Forest	2019-11-20	T18179	<i>Peltophorum pterocarpum</i>	Fabaceae	Native	Critically Endangered	Tree	34160.711	21348.556	2.5	15	1) Average health, 2) Decay on trunk

Appendix G2

List of Specimens
Assessed by Certified
Arborists in Clementi
Forest

Appendix G2 List of Specimens Assessed by Certified Arborists in Clementi Forest

S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
1	Clementi Forest	2019-12-03	T16821	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34722.069	21928.506	1.3	15	1) Good health, 2) Root flare obvious, 3) U-shaped bifurcation, 4) Assessment limited by climbers
2	Clementi Forest	2019-12-03	T16822	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34716.587	21934.916	1.7	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by canopies of other trees
3	Clementi Forest	2019-12-03	T16823	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34721.369	21940.29	1.5	20	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) U-shaped bifurcation
4	Clementi Forest	2019-12-03	T16824	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34724.647	21938.908	1.1	18	1) Good health, 2) Asymmetric canopy, 3) Decay at tree base facing Northwest, 4) Low retention value
5	Clementi Forest	2019-12-03	T16825	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34728.261	21943.757	1.4	18	1) Good health, 2) Leaning Southwest, 3) Growing on slope, 4) Assessment limited by climbers
6	Clementi Forest	2019-12-03	T16826	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34736.641	21932.814	1	12	1) Good health, 2) Root flare obvious, 3) U-shaped bifurcation, 4) Assessment limited by climbers
7	Clementi Forest	2019-12-03	T16827	<i>Vitex pinnata</i>	Lamiaceae	Native	Common	Tree	34750.287	21946.457	1.2	12	1) Average health, 2) Root flare obvious, 3) Assessment limited by climbers
8	Clementi Forest	2019-12-03	T16828	<i>Vitex pinnata</i>	Lamiaceae	Native	Common	Tree	34753.799	21949.202	1.1	12	1) Average health, 2) Root flare obvious, 3) Assessment limited by climbers
9	Clementi Forest	2019-12-03	T16829	<i>Vitex pinnata</i>	Lamiaceae	Native	Common	Tree	34750.991	21940.116	1.2	12	1) Average health, 2) U-shaped bifurcation, 3) Asymmetric canopy, 4) Assessment limited by climbers
10	Clementi Forest	2019-12-03	T16830	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34761.933	21933.112	2.4	15	1) Good health, 2) Decay on trunk at bifurcation, 3) Assessment limited by climbers
11	Clementi Forest	2019-12-03	T16831	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34748.855	21926.706	1.6	15	1) Good health, 2) Leaning West, 3) Assessment limited by climbers
12	Clementi Forest	2019-12-03	T16832	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34757.584	21924.098	1.4	25	1) Good health, 2) No significant defects, 3) Root flare obvious
13	Clementi Forest	2019-12-03	T16833	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34768.251	21921.395	2.5	20	1) Poor health, 2) Root flare obvious, 3) Dieback at canopy, 4) Assessment limited by fallen tree and climbers
14	Clementi Forest	2019-12-03	T16834	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34773.804	21923.691	2.2	20	1) Storm vulnerable, 2) Low retention value
15	Clementi Forest	2019-12-03	T16835	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34759.892	21947.546	1.5	12	1) Storm vulnerable, 2) Low retention value
16	Clementi Forest	2019-12-03	T16836	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34769.99	21948.462	1.2	12	1) Storm vulnerable, 2) Low retention value
17	Clementi Forest	2019-12-03	T16837	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34785.487	21953.726	1	12	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers
18	Clementi Forest	2019-12-03	T16838	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34787.624	21950.626	2.9	25	1) Good health, 2) Root flare obvious, 3) Assessment limited by fallen tree and climbers
19	Clementi Forest	2019-12-03	T16839	<i>Garcinia mangostana</i>	Clusiaceae	Exotic	Casual	Tree	34797.163	21969.347	1	15	1) Good health, 2) Root flare obvious, 3) V-shaped bifurcation
20	Clementi Forest	2019-12-03	T16840	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34797.94	21970.302	1.3	12	1) Good health, 2) Past primary branch failure, 3) Decay at tree base, 4) Low retention value
21	Clementi Forest	2019-12-03	T16841	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34801.888	21971.28	1.2	13	1) Good health, 2) Root flare obvious, 3) U-shaped bifurcation
22	Clementi Forest	2019-12-03	T16842	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34801.416	21976.539	2.1	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
23	Clementi Forest	2019-12-03	T16843	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34812.49	21980.505	1.2	18	1) Good health, 2) No significant defects, 3) Root flare obvious
24	Clementi Forest	2019-12-03	T16844	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34812.723	21979.242	1.8	14	1) Storm vulnerable, 2) Low retention value
25	Clementi Forest	2019-12-03	T16845	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34812.328	21974.865	1.4	10	1) Average health, 2) Past canopy failure, 3) Assessment limited by climbers
26	Clementi Forest	2019-12-03	T16846	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34809.155	22000.688	1.2	16	1) Good health, 2) Assessment limited by climbers
27	Clementi Forest	2019-12-03	T16847	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34822.957	22016.621	1	20	1) Good health, 2) Leaning Southeast, 3) Assessment limited by climbers
28	Clementi Forest	2019-12-03	T16848	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34824.365	22028.842	1.4	25	1) Good health, 2) No significant defects
29	Clementi Forest	2019-12-03	T16849	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34795.959	22028.276	1.5	10	1) Poor health, 2) Root flare obvious, 3) Past primary branch failure
30	Clementi Forest	2019-12-03	T16850	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34795.005	22021.942	1.5	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
31	Clementi Forest	2019-12-03	T16851	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34798.321	21995.371	1.1	15	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
32	Clementi Forest	2019-12-03	T16852	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34795.239	21989.284	1	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
33	Clementi Forest	2019-12-03	T16853	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34792.912	21986.183	1.1	25	1) Good health, 2) Root flare obvious, 3) Assessment limited by canopies of other trees
34	Clementi Forest	2019-12-03	T16854	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34784.347	21980.235	1.1	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by canopies of other trees
35	Clementi Forest	2019-12-03	T16855	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34774.35	21973.531	1.4	20	1) Good health, 2) No significant defects, 3) Root flare obvious

Appendix G2 List of Specimens Assessed by Certified Arborists in Clementi Forest

S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
36	Clementi Forest	2019-12-03	T16856	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34770.472	21970.229	1.2	16	1) Poor health, 2) Decay at tree base, 3) Leaning East, 4) Assessment limited by climbers
37	Clementi Forest	2019-12-03	T16857	<i>Cyrtophyllum fragrans</i>	Gentianaceae	Native	Common	Tree	34771.432	21968.476	2.1	18	1) Average health, 2) Root flare obvious, 3) Assessment limited by climbers
38	Clementi Forest	2019-12-03	T16858	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34770.402	21962.222	2.2	16	1) Good health, 2) Root flare obvious, 3) Low U-shaped bifurcation, 4) Assessment limited by climbers
39	Clementi Forest	2019-12-03	T16859	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34716.783	21941.26	1.8	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by canopies of other trees
40	Clementi Forest	2019-12-03	T16860	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34723.641	21950.032	1.8	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
41	Clementi Forest	2019-12-03	T16861	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34719.832	21955.453	2.4	25	1) Storm vulnerable, 2) Low retention value, 3) Assessment limited by climbers
42	Clementi Forest	2019-12-03	T16862	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34700.207	21970.818	1.1	12	1) Good health, 2) Assessment limited by canopies of other trees
43	Clementi Forest	2019-12-03	T16863	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34700.207	21970.818	2	22	1) Good health, 2) No significant defects, 3) Root flare obvious
44	Clementi Forest	2019-12-03	T16864	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34702.447	21978.045	1.6	18	1) Good health, 2) Root flare obvious, 3) Low V-shaped bifurcation, 4) Assessment limited by climbers
45	Clementi Forest	2019-12-03	T16865	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34701.022	21976.798	1.1	20	1) Good health, 2) No significant defects
46	Clementi Forest	2019-12-03	T16866	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34702.078	21983.785	2	16	1) Good health, 2) Root flare obvious, 3) Leaning Northwest, 4) Assessment limited by climbers
47	Clementi Forest	2019-12-03	T16867	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34696.332	21988.069	1.5	14	1) Good health, 2) Leaning West, 3) Assessment limited by climbers
48	Clementi Forest	2019-12-03	T16868	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34696.689	21993.201	0.3	5	1) Good health, 2) Assessment limited by climbers
49	Clementi Forest	2019-12-03	T16869	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34703.758	21995.606	1.4	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
50	Clementi Forest	2019-12-03	T16870	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34701.236	21994.004	1	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
51	Clementi Forest	2019-12-03	T16871	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34703.965	22000.296	1.1	19	1) Good health, 2) No significant defects, 3) Asymmetric canopy
52	Clementi Forest	2019-12-03	T16872	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34702.294	22009.16	1.2	6	1) Poor health, 2) Past canopy failure, 3) Decay on trunk at failed portion, 4) Low retention value
53	Clementi Forest	2019-12-04	T16873	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34710.949	22011.508	2.1	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
54	Clementi Forest	2019-12-04	T16874	<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	34711.553	22011.152	3	20	1) Unable to identify host plant species, 2) Assessment limited by climbers
55	Clementi Forest	2019-12-04	T16875	<i>Diospyros blancoi</i>	Ebenaceae	Exotic	Cultivated Only	Tree	34682.365	22056.935	1.5	18	1) Good health, 2) Root flare obvious, 3) Self-corrected lean, 4) Assessment limited by climbers
56	Clementi Forest	2019-12-04	T16876	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34678.778	22055.516	1.5	18	1) Cluster of two, 2) Assessment limited by climbers
57	Clementi Forest	2019-12-04	T16876	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34679.454	22051.813	1.2	20	1) Cluster of two, 2) Assessment limited by climbers
58	Clementi Forest	2019-12-04	T16877	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34675.127	22065.936	1.2	20	1) Good health, 2) No significant defects
59	Clementi Forest	2019-12-04	T16878	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34673.554	22068.234	1.1	20	1) Good health, 2) Assessment limited by climbers
60	Clementi Forest	2019-12-04	T16879	<i>Macaranga conifera</i>	Euphorbiaceae	Native	Common	Tree	34671.51	22069.695	1.8	22	1) Good health, 2) Root flare obvious, 3) Mechanical damage on root flare, 4) Assessment limited by climbers
61	Clementi Forest	2019-12-04	T16880	<i>Baccaurea motleyana</i>	Phyllanthaceae	Native	Critically Endangered	Tree	34682.075	22066.61	1.5	14	1) Good health, 2) No significant defects, 3) Root flare obvious
62	Clementi Forest	2019-12-04	T16881	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34684.855	22064.156	1.1	22	1) Good health, 2) Leaning North
63	Clementi Forest	2019-12-04	T16882	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34694.796	22072.958	1.3	16	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers
64	Clementi Forest	2019-12-04	T16883	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34700.756	22070.089	1.8	25	1) Good health, 2) No significant defects, 3) Root flare obvious
65	Clementi Forest	2019-12-04	T16884	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34702.405	22070.784	1	20	1) Good health, 2) No significant defects, 3) Asymmetric canopy
66	Clementi Forest	2019-12-04	T16885	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34694.04	22078.497	1.8	25	1) Average health, 2) Root flare obvious, 3) Assessment limited by climbers
67	Clementi Forest	2019-12-04	T16886	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34690.512	22086.209	1.1	22	1) Good health, 2) Roots exposed because of soil erosion
68	Clementi Forest	2019-12-04	T16887	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34680.108	22080.899	1	12	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy
69	Clementi Forest	2019-12-04	T16888	<i>Lansium domesticum</i>	Meliaceae	Exotic	Cultivated Only	Tree	34675.387	22087.106	1.2	12	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
70	Clementi Forest	2019-12-04	T16889	<i>Lansium domesticum</i>	Meliaceae	Exotic	Cultivated Only	Tree	34668.552	22090.572	1.5	12	1) Good health, 2) Root flare obvious, 3) Primary branch with imminent failure, 4) Assessment limited by climbers

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S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
71	Clementi Forest	2019-12-04	T16890	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34665.185	22090.128	1.3	16	1) Average health, 2) Root flare obvious, 3) Assessment limited by climbers
72	Clementi Forest	2019-12-04	T16891	<i>Baccaurea motleyana</i>	Phyllanthaceae	Native	Critically Endangered	Tree	34668.624	22095.346	1.5	16	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
73	Clementi Forest	2019-12-04	T16892	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34667.305	22112.359	1.2	15	1) Good health, 2) Asymmetric canopy, 3) Assessment limited by climbers
74	Clementi Forest	2019-12-04	T16893	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34666.267	22111.207	1.4	20	1) Root flare obvious, 2) Assessment limited by climbers
75	Clementi Forest	2019-12-04	T16894	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34665.561	22112.008	1.2	13	1) Average health, 2) Assessment limited by climbers
76	Clementi Forest	2019-12-04	T16895	<i>Lansium domesticum</i>	Meliaceae	Exotic	Cultivated Only	Tree	34661.982	22121.713	1.5	14	1) Good health, 2) Low bifurcation, 3) Asymmetric canopy
77	Clementi Forest	2019-12-04	T16896	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34651.411	22125.597	1.1	18	1) Good health, 2) U-shaped bifurcation, 3) Asymmetric canopy, 4) Assessment limited by climbers
78	Clementi Forest	2019-12-04	T16897	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34647.774	22140.376	1.3	18	1) Good health, 2) Asymmetric canopy, 3) Assessment limited by climbers
79	Clementi Forest	2019-12-04	T16898	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34649.697	22140.143	1	17	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers
80	Clementi Forest	2019-12-04	T16899	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34642.86	22143.433	1.2	14	1) Good health, 2) Asymmetric canopy, 3) Assessment limited by climbers
81	Clementi Forest	2019-12-04	T16901	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34637.673	22144.806	1	18	1) Good health, 2) Assessment limited by climbers
82	Clementi Forest	2019-12-04	T16902	<i>Lansium domesticum</i>	Meliaceae	Exotic	Cultivated Only	Tree	34634.288	22147.255	1.8	14	1) Good health, 2) Root flare obvious, 3) Infested with termites, 4) Pocket decay on branches
83	Clementi Forest	2019-12-04	T16903	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34634.078	22147.945	1.2	16	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
84	Clementi Forest	2019-12-04	T16904	<i>Lansium domesticum</i>	Meliaceae	Exotic	Cultivated Only	Tree	34634.965	22150.557	1.5	16	1) Good health, 2) Root flare obvious, 3) Decay and cavity on trunk at bifurcation, 4) Assessment limited by climbers
85	Clementi Forest	2019-12-04	T16905	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34637.787	22156.789	1.3	10	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
86	Clementi Forest	2019-12-04	T16905A	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34633.737	22157.709	1	16	1) Unable to access because of fallen tree, 2) Assessment limited by climbers
87	Clementi Forest	2019-12-04	T16906	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34624.921	22160.78	1.2	16	1) Good health, 2) Assessment limited by canopies of other trees
88	Clementi Forest	2019-12-04	T16907	<i>Cinnamomum iners</i>	Lauraceae	Native	Common	Tree	34620.496	22147.117	1.4	9	1) Good health, 2) Multiple branch attachments, 3) Assessment limited by climbers
89	Clementi Forest	2019-12-04	T16908	<i>Aphanaxis polystachya</i>	Meliaceae	Native	Endangered	Tree	34619.27	22144.411	1	12	1) Good health, 2) No significant defects, 3) Asymmetric canopy
90	Clementi Forest	2019-12-04	T16909	<i>Averrhoa carambola</i>	Oxalidaceae	Exotic	Casual	Tree	34648.098	22165.302	1.2	8	1) Average health, 2) Decay on trunk at bifurcation, 3) Assessment limited by climbers
91	Clementi Forest	2019-12-04	T16910	<i>Andira inermis</i>	Fabaceae	Exotic	Casual	Tree	34649.305	22165.943	1.2	12	1) Good health, 2) Slight lean towards Southwest, 3) Assessment limited by climbers
92	Clementi Forest	2019-12-04	T16911	<i>Cinnamomum iners</i>	Lauraceae	Native	Common	Tree	34655.369	22169.119	1.2	12	1) Good health, 2) Root flare obvious, 3) Cavity on trunk at height of 1 m, 4) Asymmetric canopy
93	Clementi Forest	2019-12-04	T16912	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34642.289	22172.975	1	17	1) Good health, 2) Decay on trunk at height of 2.5 m facing Southwest
94	Clementi Forest	2019-12-04	T16913	<i>Garcinia mangostana</i>	Clusiaceae	Exotic	Casual	Tree	34661.691	22189.703	1	15	1) Good health, 2) Assessment limited by climbers
95	Clementi Forest	2019-12-04	T16914	<i>Artocarpus heterophyllus</i>	Moraceae	Exotic	Casual	Tree	34660.871	22191.248	1	15	1) Good health, 2) Slight lean towards Southwest, 3) Asymmetric canopy, 4) Assessment limited by climbers
96	Clementi Forest	2019-12-04	T16915	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34663.719	22163.404	1.2	16	1) Good health, 2) Asymmetric canopy, 3) Assessment limited by climbers
97	Clementi Forest	2019-12-04	T16916	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34669.593	22161.313	1.1	18	1) Good health, 2) Assessment limited by climbers
98	Clementi Forest	2019-12-04	T16917	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34680.352	22166.997	1.4	20	1) Good health, 2) U-shaped bifurcation, 3) Leaning Southwest
99	Clementi Forest	2019-12-04	T16918	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34677.559	22162.337	2.1	18	1) Storm vulnerable, 2) Low retention value
100	Clementi Forest	2019-12-04	T16919	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34673.005	22160.023	2	16	1) Good health, 2) Root flare obvious, 3) Low bifurcation, 4) Assessment limited by climbers
101	Clementi Forest	2019-12-04	T16920	<i>Andira inermis</i>	Fabaceae	Exotic	Casual	Tree	34658.966	22153.807	1	15	1) Good health, 2) Growing on slope, 3) Asymmetric canopy, 4) Assessment limited by climbers
102	Clementi Forest	2019-12-04	T16921	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34656.846	22160.992	1.2	18	1) Good health, 2) Assessment limited by climbers
103	Clementi Forest	2019-12-04	T16922	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34649.523	22151.912	2.2	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
104	Clementi Forest	2019-12-04	T16923	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34658.539	22146.199	1.9	14	1) Poor health, 2. Past trunk failure, 3) Low retention value
105	Clementi Forest	2019-12-04	T16924	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34664.672	22141.687	1.6	16	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy

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106	Clementi Forest	2019-12-04	T16925	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34671.591	22144.825	1.6	16	1) Good health, 2) No significant defects, 3) Root flare obvious
107	Clementi Forest	2019-12-04	T16926	<i>Falcataia moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34679.292	22148.352	2.4	25	1) Storm vulnerable, 2) Low retention value, 3) Waypoint was taken 2 m away from tree owing to the tough terrain and drain
108	Clementi Forest	2019-12-04	T16927	<i>Falcataia moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34689.37	22134.755	2.6	24	1) Storm vulnerable, 2) Low retention value
109	Clementi Forest	2019-12-04	T16928	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34679.558	22129.82	1.1	17	1) Good health, 2) Root flare obvious
110	Clementi Forest	2019-12-04	T16930	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34685.991	22124.573	1.5	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
111	Clementi Forest	2019-12-04	T16931	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34701.37	22118.643	1.3	14	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
112	Clementi Forest	2019-12-04	T16932	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34703.245	22119.688	1.1	18	1) Good health, 2) No significant defects
113	Clementi Forest	2019-12-04	T16933	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34694.295	22108.308	1.1	18	1) Good health, 2) U-shaped bifurcation, 3) Assessment limited by climbers
114	Clementi Forest	2019-12-04	T16934	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34683.007	22110.447	1.2	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
115	Clementi Forest	2019-12-04	T16935	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34677.498	22115.439	1.2	20	1) Good health, 2) Assessment limited by climbers
116	Clementi Forest	2019-12-04	T16936	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34681.101	22116.134	1.6	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
117	Clementi Forest	2019-12-04	T16937	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34725.679	21964.438	1.9	19	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) U-shaped bifurcation
118	Clementi Forest	2019-12-04	T16938	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34732.506	21966.102	1.5	20	1) Good health, 2) No significant defects, 3) Root flare obvious
119	Clementi Forest	2019-12-04	T16939	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34737.127	21968.362	1.9	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
120	Clementi Forest	2019-12-04	T16940	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34744.796	21974.302	1	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
121	Clementi Forest	2019-12-04	T16941	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34749.82	21968.641	1.4	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
122	Clementi Forest	2019-12-04	T16942	<i>Ficus benjamina</i>	Moraceae	Cryptogenic	-	Strangler	34758.205	21969.906	2	20	1) Good health, 2) Unable to identify host tree species, 3) Tree mixed with <i>Ficus microcarpa</i>
123	Clementi Forest	2019-12-04	T16943	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34765.981	21969.361	2.3	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
124	Clementi Forest	2019-12-04	T16944	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34776.151	21982.645	2.2	22	1) Good health, 2) Root flare obvious, 3) Assessment limited by canopies of other trees
125	Clementi Forest	2019-12-04	T16945	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34769.601	21983.527	2.3	22	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
126	Clementi Forest	2019-12-04	T16946	<i>Mangifera odorata</i>	Anacardiaceae	Native	Vulnerable	Tree	34770.92	21983.898	2.3	18	1) Good health, 2) Asymmetric canopy, 3) Assessment limited by climbers
127	Clementi Forest	2019-12-04	T16947	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34770.479	21985.147	2.2	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
128	Clementi Forest	2019-12-04	T16948	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34758.54	21983.766	1.9	20	1) Good health, 2) Assessment limited by climbers
129	Clementi Forest	2019-12-04	T16949	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34758.599	21976.095	1.2	20	1) Average health, 2) Root flare obvious, 3) Assessment limited by climbers
130	Clementi Forest	2019-12-04	T16950	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34755.908	21985.809	1.8	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
131	Clementi Forest	2019-12-05	T16951	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34749.951	21985.53	1.8	25	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
132	Clementi Forest	2019-12-05	T16952	<i>Bouea macrophylla</i>	Anacardiaceae	Native	Critically Endangered	Tree	34736.634	21979.356	1.6	18	1) Good health, 2) Root flare obvious, 3) Past primary branch failure
133	Clementi Forest	2019-12-05	T16953	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34718.66	21986.539	1.6	12	1) Good health, 2) Leaning East, 3) Extensive decay at tree base facing Northwest
134	Clementi Forest	2019-12-05	T16954	<i>Ficus benjamina</i>	Moraceae	Cryptogenic	-	Strangler	34723.213	21989.837	3	25	1) Good health, 2) No significant defects, 3) U-shaped bifurcation
135	Clementi Forest	2019-12-05	T16955	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34727.593	21988.962	2.3	25	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
136	Clementi Forest	2019-12-05	T16956	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34731.308	21989.914	1.1	25	1) Good health, 2) Assessment limited by climbers
137	Clementi Forest	2019-12-05	T16957	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34734.963	21991.021	1.8	8	1) Past primary branch failure, 2) Decay on primary branch, 3) Low retention value
138	Clementi Forest	2019-12-05	T16958	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34735.491	21982.514	1.1	20	1) Good health, 2) No significant defects
139	Clementi Forest	2019-12-05	T16959	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34738.243	21985.901	1.3	16	1) Good health, 2) Decay at tree base facing Southwest
140	Clementi Forest	2019-12-05	T16960	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34737.865	21993.131	1.5	20	1) Good health, 2) Root flare obvious, 3) Leaning Southwest

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S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
141	Clementi Forest	2019-12-05	T16961	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34729.671	21999.467	1.3	18	1) Good health, 2) Assessment limited by climbers
142	Clementi Forest	2019-12-05	T16962	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34735.926	22005.445	1.6	20	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Asymmetric canopy
143	Clementi Forest	2019-12-05	T16963	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34722.482	22002.655	1	18	1) Good health, 2) No significant defects, 3) Asymmetric canopy
144	Clementi Forest	2019-12-05	T16964	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34717.237	22025.984	1.5	16	1) Good health, 2) Leaning 45° South, 3) Assessment limited by climbers
145	Clementi Forest	2019-12-05	T16965	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34707.976	22036.267	1.2	20	1) Good health, 2) No significant defects, 3) Root flare obvious
146	Clementi Forest	2019-12-05	T16966	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34717.47	22040.747	1.7	25	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers
147	Clementi Forest	2019-12-05	T16967	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34719.188	22046.954	2.2	20	1) Root flare obvious, 2) Ficus benjamina growing on host tree, 3) Slight lean towards East
148	Clementi Forest	2019-12-05	T16968	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34712.412	22049.107	1	20	1) Good health, 2) No significant defects
149	Clementi Forest	2019-12-05	T16969	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34719.547	22044.735	2.4	18	1) Average health, 2) Root flare obvious, 3) Low U-shaped bifurcation, 4) Assessment limited by climbers
150	Clementi Forest	2019-12-05	T16970	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34717.864	22064.766	1.5	20	1) Good health, 2) No significant defects, 3) Root flare obvious
151	Clementi Forest	2019-12-05	T16971	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34712.742	22076.712	1.5	20	1) Good health, 2) Assessment limited by climbers
152	Clementi Forest	2019-12-05	T16972	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34705.45	22088.245	2.4	18	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers
153	Clementi Forest	2019-12-05	T16973	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34712.217	22098.518	1.1	18	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers
154	Clementi Forest	2019-12-05	T16974	<i>Baccaurea motleyana</i>	Phyllanthaceae	Native	Critically Endangered	Tree	34700.551	22104.713	1.1	17	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
155	Clementi Forest	2019-12-05	T16975	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34702.127	22102.776	1.8	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
156	Clementi Forest	2019-12-05	T16976	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34710.511	22110.07	1.1	14	1) Assessment limited by climbers
157	Clementi Forest	2019-12-05	T16977	<i>Baccaurea motleyana</i>	Phyllanthaceae	Native	Critically Endangered	Tree	34722.683	22101.364	1	13	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
158	Clementi Forest	2019-12-05	T16978	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34722.282	22097.867	1.7	25	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
159	Clementi Forest	2019-12-05	T16979	<i>Macaranga gigantea</i>	Euphorbiaceae	Native	Common	Tree	34719.898	22097.777	1	14	1) Good health, 2) No significant defects
160	Clementi Forest	2019-12-05	T16980	<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	34726.765	22098.353	2	25	1) Good health, 2) Assessment limited by climbers
161	Clementi Forest	2019-12-05	T16981	<i>Cinnamomum iners</i>	Lauraceae	Native	Common	Tree	34728.836	22098.42	1.8	11	1) Good health, 2) Low bifurcation, 3) Assessment limited by climbers
162	Clementi Forest	2019-12-05	T16982	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34733.563	22097.259	1.6	7	1) Average health, 2) Past canopy failure, 3) Low retention value
163	Clementi Forest	2019-12-05	T16983	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34737.138	22095.201	1.8	25	1) Good health, 2) Root flare obvious, 3) V-shaped bifurcation with bulge, 4) Assessment limited by climbers
164	Clementi Forest	2019-12-05	T16984	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34733.751	22099.471	1	18	1) Good health, 2) Asymmetric canopy, 3) Assessment limited by climbers
165	Clementi Forest	2019-12-05	T16985	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34726.539	22107.867	1.3	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
166	Clementi Forest	2019-12-05	T16986	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34725.378	22123.996	1.4	20	1) Good health, 2) Assessment limited by climbers
167	Clementi Forest	2019-12-05	T16987	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34704.676	22125.807	1	20	1) Good health, 2) Assessment limited by climbers
168	Clementi Forest	2019-12-05	T16988	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34693.744	22170.899	1.1	19	1) Good health, 2) Asymmetric canopy, 3) Assessment limited by climbers
169	Clementi Forest	2019-12-05	T16989	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34675.26	22180.36	1	20	1) Good health, 2) Growing on edge of slope, 3) Assessment limited by climbers
170	Clementi Forest	2019-12-05	T16990	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34679.853	22196.039	1.4	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
171	Clementi Forest	2019-12-05	T16991	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34679.784	22197.683	1.3	20	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers
172	Clementi Forest	2019-12-05	T16992	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34707.39	22193.477	1.6	22	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
173	Clementi Forest	2019-12-05	T16993	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34707.39	22193.477	1.1	20	1) Good health, 2) Assessment limited by climbers
174	Clementi Forest	2019-12-05	T16994	<i>Chisocheton cf. patens</i>	Meliaceae	Native	Critically Endangered	Tree	34707.39	22193.477	1	16	1) Good health, 2) No significant defects, 3) Root flare obvious
175	Clementi Forest	2019-12-05	T16995	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34707.39	22193.477	2	25	1) Good health, 2) No significant defects, 3) Root flare obvious

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176	Clementi Forest	2019-12-05	T16996	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34715.527	22201.903	2.1	25	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
177	Clementi Forest	2019-12-05	T16997	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34711.73	22202.2	1	16	1) Good health, 2) No significant defects, 3) Root flare obvious
178	Clementi Forest	2019-12-05	T16998	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34767.327	21990.929	1.2	16	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers
179	Clementi Forest	2019-12-05	T16999	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34767.629	21991.55	1.4	16	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
180	Clementi Forest	2019-12-05	T17000	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34762.175	21997.168	1.6	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
181	Clementi Forest	2019-12-05	T17001	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34766.178	21999.051	1.1	20	1) Good health, 2) No significant defects, 3) Root flare obvious
182	Clementi Forest	2019-12-05	T17002	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34753.992	22007.519	1.2	25	1) Good health, 2) No significant defects, 3) Root flare obvious
183	Clementi Forest	2019-12-05	T17006	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34760.338	22016.047	1.6	20	1) Good health, 2) Root flare obvious, 3) U-shaped bifurcation
184	Clementi Forest	2019-12-05	T17008	<i>Mangifera odorata</i>	Anacardiaceae	Native	Vulnerable	Tree	34770.717	22026.083	1.3	25	1) Good health, 2) Root flare obvious, 3) U-shaped bifurcation, 4) Assessment limited by canopies of other trees
185	Clementi Forest	2019-12-05	T17010	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34775.236	22026.083	1	18	1) Good health, 2) Growing on slope
186	Clementi Forest	2019-12-05	T17012	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34760.135	22025.45	1.3	22	1) Good health, 2) Cluster of four, 3) Assessment limited by climbers
187	Clementi Forest	2019-12-05	T17012	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34738.978	22014.22	1.3	22	1) Good health, 2) Cluster of four, 3) Assessment limited by climbers
188	Clementi Forest	2019-12-05	T17012	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34763.759	22039.694	1.4	22	1) Good health, 2) Cluster of four, 3) Assessment limited by climbers
189	Clementi Forest	2019-12-05	T17012	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34760.711	22039.214	1.4	22	1) Good health, 2) Cluster of four, 3) Assessment limited by climbers
190	Clementi Forest	2019-12-05	T17013	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34741.561	22047.255	1.4	22	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
191	Clementi Forest	2019-12-05	T17014	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34739.868	22043.382	2	22	1) Good health, 2) Growing next to stream, 3) V-shaped bifurcation
192	Clementi Forest	2019-12-10	T17015	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34740.575	22042.982	3	12	1) Good health, 2) No significant defects, 3) Low bifurcation with two trunks of 1.5 m girth each, 4) Assessment of canopy limited by epiphytes and climbers
193	Clementi Forest	2019-12-10	T17016	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34732.808	22034.542	1.1	16	1) Good health, 2) No significant defects
194	Clementi Forest	2019-12-10	T17017	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34729.423	22042.129	1.5	8	1) Average health, 2) Past failure on primary branch, 3) Low retention value
195	Clementi Forest	2019-12-10	T17018	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34731.12	22049.649	1	14	1) Good health, 2) No obvious root flare, 3) Assessment limited by climbers
196	Clementi Forest	2019-12-10	T17019	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34742.688	22068.851	1.3	12	1) Poor health, 2) Dieback at canopy, 3) Tree appears to be in irreversible decline, 4) Low retention value
197	Clementi Forest	2019-12-10	T17020	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34736.119	22060.327	1.2	16	1) Assessment limited by climbers
198	Clementi Forest	2019-12-10	T17021	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34725.007	22014.44	1.7	18	1) Good health, 2) Assessment limited by climbers
199	Clementi Forest	2019-12-10	T17022	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34719.533	22086.686	1.4	18	1) No obvious root flare, 2) Assessment limited by climbers
200	Clementi Forest	2019-12-10	T17023	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34757.157	22111.465	1.2	20	1) Good health, 2) Assessment limited by climbers
201	Clementi Forest	2019-12-10	T17024	<i>Ficus benjamina</i>	Moraceae	Cryptogenic	-	Strangler	34758.796	22089.666	5	18	1) Good health, 2) Good vigour, 3) No significant defects, 4) Assessment limited by climbers
202	Clementi Forest	2019-12-10	T17025	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34757.239	22089.237	1.5	25	1) Good health, 2) Assessment limited by climbers
203	Clementi Forest	2019-12-10	T17026	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34758.309	22088.92	1.45	25	1) Good health, 2) No significant defects
204	Clementi Forest	2019-12-10	T17027	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34751.192	22086.646	1.35	20	1) Good health, 2) No significant defects, 3) U-shaped bifurcation
205	Clementi Forest	2019-12-10	T17028	<i>Diospyros blancoi</i>	Ebenaceae	Exotic	Cultivated Only	Tree	34769.594	22096.825	2.2	18	1) Good health, 2) Fungal bodies growing at base of trunk indicative of internal decay
206	Clementi Forest	2019-12-10	T17029	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34775.089	22097.243	2.4	18	1) Good health, 2) Decay at tree base, 3) Low retention value
207	Clementi Forest	2019-12-10	T17030	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34780.388	22096.358	1.3	18	1) Root flare obvious, 2) Decay on trunk, 3) Assessment limited by climbers
208	Clementi Forest	2019-12-10	T17031	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34779.618	22097.139	1.9	12	1) Average health, 2) Past failure on one bifurcate, 3) Discolouration of main bifurcation indicative of decay, 4) Low retention value
209	Clementi Forest	2019-12-10	T17032	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34785.63	22104.429	2	25	1) Good health, 2) Assessment limited by climbers
210	Clementi Forest	2019-12-10	T17033	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34790.469	22104.941	1	12	1) Asymmetric canopy, 2) Assessment limited by climbers

Appendix G2 List of Specimens Assessed by Certified Arborists in Clementi Forest

S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
211	Clementi Forest	2019-12-10	T17034	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34789.617	22106.52	1.2	15	1) Good health, 2) No significant defects
212	Clementi Forest	2019-12-10	T17035	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34792.645	22030.214	2.4	20	1) Storm vulnerable, 2) Low retention value
213	Clementi Forest	2019-12-12	T17036	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34792.071	22035.717	1	16	1) Poor health, 2) Root flare obvious, 3) Assessment limited by climbers
214	Clementi Forest	2019-12-12	T17037	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34791.281	22035.97	1.3	16	1) Poor health, 2) Assessment limited by climbers
215	Clementi Forest	2019-12-12	T17038	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34794.508	22033.936	1.33	16	1) Good health, 2) No significant defects, 3) Asymmetric canopy
216	Clementi Forest	2019-12-12	T17039	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34780.659	22042.642	1.21	16	1) Assessment limited by climbers
217	Clementi Forest	2019-12-12	T17040	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34777.528	22040.173	0.3	4	1) Good health, 2) No significant defects, 3) Abandoned bird nest
218	Clementi Forest	2019-12-12	T17041	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34776.37	22059.481	1.1	18	1) Asymmetric canopy, 2) Assessment limited by climbers
219	Clementi Forest	2019-12-12	T17042	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34776.698	22053.729	1	20	1) Assessment limited by climbers
220	Clementi Forest	2019-12-12	T17043	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34770.985	22059.119	1	10	1) Past branch failure, 2) Low retention value
221	Clementi Forest	2019-12-12	T17044	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34772.913	22062.511	1.1	14	1) Average health, 2) Leaning Northwest, 3) Assessment limited by climbers
222	Clementi Forest	2019-12-12	T17045	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34782.186	22059.086	1.45	20	1) Good health, 2) Assessment limited by canopies of other trees
223	Clementi Forest	2019-12-12	T17046	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34789.447	22054.242	1.3	20	1) Good health, 2) Root flare obvious, 3) Past branch failure
224	Clementi Forest	2019-12-12	T17047	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34828.231	22034.409	1.2	18	1) Good health, 2) Assessment limited by climbers
225	Clementi Forest	2019-12-12	T17048	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34830.975	22033.42	1.06	12	1) Good health, 2) Poor branch architecture, 3) Low retention value
226	Clementi Forest	2019-12-16	T17049	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34826.119	22080.061	1.3	20	1) Good health, 2) Assessment limited by climbers
227	Clementi Forest	2019-12-16	T17050	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34821.183	22072.307	1.6	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
228	Clementi Forest	2019-12-16	T17051	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34828.678	22086.912	1	18	1) Good health, 2) Root flare obvious, 3) Mechanical damage at base of trunk, 4) Assessment limited by climbers
229	Clementi Forest	2019-12-16	T17052	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34827.71	22088.235	1	16	1) Good health, 2) Root flare obvious, 3) Mechanical damage at base of trunk, 4) Asymmetric canopy, 5) Assessment limited by climbers
230	Clementi Forest	2019-12-16	T17053	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34845.803	22121.809	1.2	16	1) Canopy severely covered by climbers
231	Clementi Forest	2019-12-16	T17054	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34854.1	22119.666	1	13	1) Average health, 2) Past canopy failure
232	Clementi Forest	2019-12-16	T17055	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34851.028	22136.277	1.2	18	1) Average health, 2) Root flare obvious, 3) Assessment limited by climbers
233	Clementi Forest	2019-12-16	T17056	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34850.932	22138.878	1.2	20	1) Good health, 2) Assessment limited by climbers
234	Clementi Forest	2019-12-16	T17057	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34846.602	22138.875	1.15	18	1) Good health, 2) U-shaped bifurcation, 3) Assessment limited by climbers
235	Clementi Forest	2019-12-16	T17058	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34851.244	22138.386	1	18	1) Good health, 2) Assessment limited by climbers
236	Clementi Forest	2019-12-16	T17059	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34854.197	22145.408	1.3	11	1) Average health, 2) Root flare obvious, 3) Past canopy failure
237	Clementi Forest	2019-12-16	T17060	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34856.839	22143.787	1.1	12	1) Average health, 2) Assessment limited by climbers
238	Clementi Forest	2019-12-16	T17061	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34870.105	22149.378	1.3	12	1) Good health, 2) Asymmetric canopy, 3) Assessment limited by climbers
239	Clementi Forest	2019-12-16	T17062	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34879.953	22148.297	1	16	1) Good health, 2) Root flare obvious, 3) Growing on slope
240	Clementi Forest	2019-12-16	T17063	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34840.645	22142.791	1.3	18	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy
241	Clementi Forest	2019-12-16	T17064	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34839.792	22141.786	1.7	18	1) Good health, 2) U-shaped bifurcation, 3) Assessment limited by climbers
242	Clementi Forest	2019-12-16	T17065	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34833.55	22137.289	1.3	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
243	Clementi Forest	2019-12-16	T17066	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34836.206	22134.667	1.2	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
244	Clementi Forest	2019-12-16	T17067	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34826.885	22143.609	1.5	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
245	Clementi Forest	2019-12-16	T17068	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34827.799	22119.594	2	20	1) Root flare obvious, 2) Decay on trunk at height 4 m facing Southwest

Appendix G2 List of Specimens Assessed by Certified Arborists in Clementi Forest

S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
246	Clementi Forest	2019-12-16	T17069	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34826.968	22116.843	1.2	20	1) Good health, 2) Assessment limited by climbers
247	Clementi Forest	2019-12-16	T17070	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34828.47	22112.469	1.7	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
248	Clementi Forest	2019-12-16	T17071	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34827.002	22102.137	1.2	16	1) Good health, 2) U-shaped bifurcation, 3) Assessment limited by climbers
249	Clementi Forest	2019-12-16	T17072	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34801.076	22105.278	1.6	18	1) Good health, 2) Assessment limited by climbers
250	Clementi Forest	2019-12-16	T17073	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34802.867	22103.409	1.3	18	1) Poor health, 2) Fungal fruiting bodies at tree base indicative of internal decay, 3) Dieback at canopy
251	Clementi Forest	2019-12-16	T17074	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34801.842	22100.482	1	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
252	Clementi Forest	2019-12-16	T17075	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34791.297	22071.407	1.5	18	1) Good health, 2) Assessment limited by climbers
253	Clementi Forest	2019-12-16	T17076	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34829.157	21967.865	1.4	16	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
254	Clementi Forest	2019-12-16	T17077	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34847.671	21957.675	1.2	16	1) Good health, 2) U-shaped bifurcation, 3) Assessment limited by climbers
255	Clementi Forest	2019-12-16	T17078	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34840.601	22029.804	1.1	6	1) Poor health, 2) Past canopy failure
256	Clementi Forest	2019-12-16	T17079	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34840.716	22031.038	1.2	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
257	Clementi Forest	2019-12-16	T17080	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34842.94	22035.051	1.8	20	1) Good health, 2) Root flare obvious, 3) U-shaped bifurcation
258	Clementi Forest	2019-12-16	T17081	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34841.415	22038.996	1.1	18	1) Good health, 2) Asymmetric canopy, 3) Assessment limited by climbers
259	Clementi Forest	2019-12-16	T17082	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34846.655	22042.743	1.5	18	1) Good health, 2) Asymmetric canopy, 3) Assessment limited by climbers
260	Clementi Forest	2019-12-16	T17083	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34844.993	22043.622	1.7	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
261	Clementi Forest	2019-12-16	T17084	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34855.368	22044.673	1.2	18	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers
262	Clementi Forest	2019-12-16	T17085	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34859.619	22047.193	1.2	20	1) Good health, 2) Asymmetric canopy, 3) Assessment limited by climbers
263	Clementi Forest	2019-12-16	T17086	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34861.435	22048.511	1.1	6	1) Good health, 2) Past canopy failure, 3) Low retention value
264	Clementi Forest	2019-12-16	T17087	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34865.353	22053.474	1.4	20	1) Good health, 2) Decay at tree base, 3) U-shaped bifurcation
265	Clementi Forest	2019-12-16	T17088	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34866.513	22065.738	1.3	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
266	Clementi Forest	2019-12-16	T17089	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34854.571	22071.156	1.3	15	1) Leaning North, 2) Asymmetric canopy, 3) Assessment limited by climbers
267	Clementi Forest	2019-12-17	T17090	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34864.953	22077.232	1	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
268	Clementi Forest	2019-12-17	T17091	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34867.007	22078.499	1.6	18	1) Storm vulnerable, 2) Low retention value
269	Clementi Forest	2019-12-17	T17092	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34871.122	22082.562	2.3	25	1) Storm vulnerable, 2) Low retention value
270	Clementi Forest	2019-12-17	T17093	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34865.542	22087.46	2.3	25	1) Storm vulnerable, 2) Low retention value
271	Clementi Forest	2019-12-17	T17094	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34867.322	22083.702	2.5	25	1) Storm vulnerable, 2) Low retention value
272	Clementi Forest	2019-12-17	T17095	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34870.386	22090.4	2.5	25	1) Storm vulnerable, 2) Low retention value
273	Clementi Forest	2019-12-17	T17096	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34871.858	22088.468	3.3	25	1) Storm vulnerable, 2) Low retention value
274	Clementi Forest	2019-12-17	T17097	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34874.064	22088.569	2.5	25	1) Storm vulnerable, 2) Low retention value
275	Clementi Forest	2019-12-17	T17098	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34874.383	22094.278	2.8	25	1) Storm vulnerable, 2) Low retention value
276	Clementi Forest	2019-12-17	T17099	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34878.818	22104.936	2	20	1) Storm vulnerable, 2) Low retention value
277	Clementi Forest	2019-12-17	T17100	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34875.459	22109.898	1.8	25	1) Storm vulnerable, 2) Low retention value
278	Clementi Forest	2019-12-17	T17101	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34880.2	22112.844	1.7	25	1) Storm vulnerable, 2) Low retention value
279	Clementi Forest	2019-12-17	T17102	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34883.456	22113.918	2.7	25	1) Storm vulnerable, 2) Low retention value
280	Clementi Forest	2019-12-17	T17103	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34882.852	22115.814	3	25	1) Storm vulnerable, 2) Low retention value

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S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
281	Clementi Forest	2019-12-17	T17104	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34870.349	22125.987	1.4	20	1) Storm vulnerable, 2) Low retention value
282	Clementi Forest	2019-12-17	T17105	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34876.696	22124.432	1.6	25	1) Storm vulnerable, 2) Low retention value
283	Clementi Forest	2019-12-17	T17106	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34872.252	22131.939	1.6	25	1) Storm vulnerable, 2) Low retention value
284	Clementi Forest	2019-12-17	T17107	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34873.884	22141.645	1.9	25	1) Storm vulnerable, 2) Low retention value
285	Clementi Forest	2019-12-17	T17108	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34877.234	22141.599	2	25	1) Storm vulnerable, 2) Low retention value
286	Clementi Forest	2019-12-17	T17109	<i>Cinnamomum iners</i>	Lauraceae	Native	Common	Tree	34879.18	22135.526	1	7	1) Poor health, 2) Past canopy and branch failure
287	Clementi Forest	2019-12-17	T17110	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34878.683	22146.655	4	25	1) Storm vulnerable, 2) Low retention value
288	Clementi Forest	2019-12-17	T17111	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34885.048	22140.386	1.6	25	1) Storm vulnerable, 2) Low retention value
289	Clementi Forest	2019-12-17	T17112	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34886.503	22134.245	2	25	1) Storm vulnerable, 2) Low retention value
290	Clementi Forest	2019-12-17	T17113	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34890.039	22130.959	1.3	18	1) Storm vulnerable, 2) Low retention value
291	Clementi Forest	2019-12-17	T17114	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34888.181	22133.335	1.3	18	1) Storm vulnerable, 2) Low retention value
292	Clementi Forest	2019-12-17	T17115	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34884.17	22124.1	1.1	18	1) Storm vulnerable, 2) Low retention value
293	Clementi Forest	2019-12-17	T17116	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34894.465	22125.582	4	25	1) Storm vulnerable, 2) Low retention value
294	Clementi Forest	2019-12-17	T17117	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34892.992	22127.858	3.6	20	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Assessment limited by climbers and canopies of other trees
295	Clementi Forest	2019-12-17	T17118	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34893.515	22123.396	1.6	16	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
296	Clementi Forest	2019-12-17	T17119	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34894.299	22119.649	1.8	18	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy
297	Clementi Forest	2019-12-17	T17120	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34894.523	22115.132	1	15	1) Good health, 2) No significant defects
298	Clementi Forest	2019-12-17	T17121	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34895.444	22113.962	1	15	1) Good health, 2) Assessment limited by climbers
299	Clementi Forest	2019-12-17	T17122	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34895.603	22114.266	1.3	18	1) Good health, 2) Asymmetric lean towards Northeast
300	Clementi Forest	2019-12-17	T17123	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34896.432	22112.983	1.2	14	1) Storm vulnerable, 2) Low retention value
301	Clementi Forest	2019-12-17	T17124	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34915.632	22112.204	1.2	14	1) Storm vulnerable, 2) Low retention value, 3) Located beside big <i>Falcataria moluccana</i> tree
302	Clementi Forest	2019-12-17	T17125	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34915.632	22112.204	4.4	25	1) Storm vulnerable, 2) Low retention value
303	Clementi Forest	2019-12-17	T17126	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34915.647	22101.814	1.3	14	1) Storm vulnerable, 2) Low retention value
304	Clementi Forest	2019-12-17	T17127	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34915.647	22101.814	1	14	1) Storm vulnerable, 2) Low retention value
305	Clementi Forest	2019-12-17	T17128	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34911.517	22095.746	1	14	1) Storm vulnerable, 2) Low retention value
306	Clementi Forest	2019-12-17	T17129	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34905.928	22094.794	1.1	14	1) Storm vulnerable, 2) Low retention value
307	Clementi Forest	2019-12-17	T17130	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34905.966	22095.253	1.3	15	1) Storm vulnerable, 2) Low retention value
308	Clementi Forest	2019-12-17	T17131	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	1.330748359	103.7801038	1	12	1) Storm vulnerable, 2) Low retention value
309	Clementi Forest	2019-12-17	T17132	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	1.330746548	103.7801001	1.2	15	1) Storm vulnerable, 2) Low retention value
310	Clementi Forest	2019-12-17	T17133	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	1.33072437	103.780174	1.3	15	1) Storm vulnerable, 2) Low retention value
311	Clementi Forest	2019-12-17	T17134	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	1.330574191	103.7804628	1.1	14	1) Storm vulnerable, 2) Low retention value
312	Clementi Forest	2019-12-17	T17135	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34842.435	22016.161	1.3	20	1) Good health, 2) Root flare obvious
313	Clementi Forest	2019-12-17	T17136	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34843.039	22016.294	3	25	1) Storm vulnerable, 2) Low retention value
314	Clementi Forest	2019-12-17	T17137	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34842.886	22019.65	1.1	12	1) Storm vulnerable, 2) Low retention value
315	Clementi Forest	2019-12-17	T17138	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34841.898	22018.563	4.1	25	1) Storm vulnerable, 2) Low retention value, 3) Two trunks connected at base of the tree

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S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
316	Clementi Forest	2019-12-17	T17138	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34849.227	22020.055	2.1	25	1) Storm vulnerable, 2) Low retention value, 3) Two trunks connected at base of the tree
317	Clementi Forest	2019-12-17	T17139	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34850.724	22018.279	2.1	20	1) Storm vulnerable, 2) Low retention value, 3) Two trunks connected at base of the tree
318	Clementi Forest	2019-12-17	T17139	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34854.468	22015.853	2.1	20	1) Storm vulnerable, 2) Low retention value, 3) Two trunks connected at base of the tree
319	Clementi Forest	2019-12-17	T17140	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34856.154	22011.381	1.1	14	1) Storm vulnerable, 2) Low retention value
320	Clementi Forest	2019-12-17	T17141	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34854.205	22007.291	1.3	18	1) Storm vulnerable, 2) Low retention value
321	Clementi Forest	2019-12-17	T17142	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34900.315	22087.339	2.2	20	1) Storm vulnerable, 2) Low retention value
322	Clementi Forest	2019-12-18	T17143	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34836.664	22000.504	1	15	1) Storm vulnerable, 2) Low retention value
323	Clementi Forest	2019-12-18	T17144	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34840.6	21998.68	1.1	22	1) Storm vulnerable, 2) Low retention value
324	Clementi Forest	2019-12-18	T17145	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34847.331	21993.405	3	25	1) Storm vulnerable, 2) Low retention value
325	Clementi Forest	2019-12-18	T17146	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34852.448	22004.231	1.1	20	1) Storm vulnerable, 2) Low retention value
326	Clementi Forest	2019-12-18	T17147	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34848.562	22003.901	3	22	1) Storm vulnerable, 2) Low retention value
327	Clementi Forest	2019-12-18	T17148	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34852.053	22004.235	1.2	18	1) Storm vulnerable, 2) Low retention value
328	Clementi Forest	2019-12-18	T17149	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34867.189	22040.729	1.1	18	1) Storm vulnerable, 2) Low retention value
329	Clementi Forest	2019-12-18	T17150	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34869.407	22036.56	1	22	1) Storm vulnerable, 2) Low retention value
330	Clementi Forest	2019-12-18	T17151	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34875.546	22038.882	4.3	22	1) Storm vulnerable, 2) Low retention value
331	Clementi Forest	2019-12-18	T17152	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34879.684	22045.166	1.5	22	1) Storm vulnerable, 2) Low retention value
332	Clementi Forest	2019-12-18	T17153	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34877.34	22049.304	2.1	25	1) Storm vulnerable, 2) Low retention value
333	Clementi Forest	2019-12-18	T17154	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34875.58	22052.523	2.7	25	1) Storm vulnerable, 2) Low retention value
334	Clementi Forest	2019-12-18	T17155	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34877.516	22051.104	3	25	1) Storm vulnerable, 2) Low retention value
335	Clementi Forest	2019-12-18	T17156	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34874.66	22051.836	1.8	15	1) Storm vulnerable, 2) Low retention value
336	Clementi Forest	2019-12-18	T17157	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34872.647	22051.565	1.2	8	1) Storm vulnerable, 2) Low retention value
337	Clementi Forest	2019-12-18	T17158	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34877.014	22062.095	3.2	25	1) Storm vulnerable, 2) Low retention value
338	Clementi Forest	2019-12-18	T17159	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34878.052	22069.287	3	23	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers, 5) Growing next to a <i>Falcataria moluccana</i> tree
339	Clementi Forest	2019-12-18	T17160	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34881.757	22069.837	1.5	20	1) Storm vulnerable, 2) Low retention value
340	Clementi Forest	2019-12-18	T17161	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34883.591	22068.646	1.1	25	1) Storm vulnerable, 2) Low retention value
341	Clementi Forest	2019-12-18	T17162	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34888.397	22073.623	2	14	1) Good health, 2) No significant defects
342	Clementi Forest	2019-12-18	T17163	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34890.282	22074.067	1.7	25	1) Storm vulnerable, 2) Low retention value
343	Clementi Forest	2019-12-18	T17164	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34890.212	22073.847	1.7	10	1) Good health, 2) No significant defects
344	Clementi Forest	2019-12-18	T17165	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34896.349	22082.104	2	25	1) Storm vulnerable, 2) Low retention value
345	Clementi Forest	2019-12-18	T17166	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34890.47	22084.707	1.5	25	1) Storm vulnerable, 2) Low retention value
346	Clementi Forest	2019-12-18	T17167	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34890.643	22104.071	1.5	25	1) Storm vulnerable, 2) Low retention value
347	Clementi Forest	2019-12-18	T17168	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34886.848	22101.548	1.3	25	1) Storm vulnerable, 2) Low retention value
348	Clementi Forest	2019-12-18	T17169	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34894.896	22091.032	1.1	25	1) Storm vulnerable, 2) Low retention value
349	Clementi Forest	2019-12-18	T17170	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34888.43	22066.444	1.8	25	1) Storm vulnerable, 2) Low retention value
350	Clementi Forest	2019-12-18	T17171	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34892.67	22052.003	1.8	25	1) Storm vulnerable, 2) Low retention value

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S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
351	Clementi Forest	2019-12-18	T17172	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34893.84	22048.509	2.7	25	1) Storm vulnerable, 2) Low retention value
352	Clementi Forest	2019-12-18	T17173	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34881.547	22027.392	1.8	25	1) Storm vulnerable, 2) Low retention value
353	Clementi Forest	2019-12-18	T17174	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34884.416	22019.258	1.2	15	1) Storm vulnerable, 2) Low retention value
354	Clementi Forest	2019-12-18	T17175	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34878.514	22023.682	1.5	25	1) Storm vulnerable, 2) Low retention value
355	Clementi Forest	2019-12-18	T17176	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34881.366	22019.696	1.8	25	1) Storm vulnerable, 2) Low retention value
356	Clementi Forest	2019-12-18	T17177	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34858.682	22027.934	1	16	1) Storm vulnerable, 2) Low retention value
357	Clementi Forest	2019-12-18	T17178	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34863.424	22019.308	1.8	25	1) Storm vulnerable, 2) Low retention value
358	Clementi Forest	2019-12-18	T17179	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34866.757	22013.232	1.2	25	1) Storm vulnerable, 2) Low retention value
359	Clementi Forest	2019-12-18	T17180	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34868.327	22011.635	1.2	25	1) Storm vulnerable, 2) Low retention value
360	Clementi Forest	2019-12-18	T17181	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34738.878	22099.82	1.3	25	1) Storm vulnerable, 2) Low retention value
361	Clementi Forest	2019-12-18	T17182	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34760.417	22122.401	1	25	1) Storm vulnerable, 2) Low retention value
362	Clementi Forest	2019-12-18	T17183	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34759.571	22125.58	2.2	25	1) Storm vulnerable, 2) Low retention value
363	Clementi Forest	2019-12-18	T17184	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34763.18	22129.188	2.4	25	1) Storm vulnerable, 2) Low retention value
364	Clementi Forest	2019-12-18	T17185	<i>Andira inermis</i>	Fabaceae	Exotic	Casual	Tree	34747.269	22126.023	1	16	1) Good health, 2) Root flare obvious, 3) Past branch failure
365	Clementi Forest	2019-12-18	T17186	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34747.555	22124.568	2.5	25	1) Storm vulnerable, 2) Low retention value
366	Clementi Forest	2019-12-18	T17187	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34741.431	22119.679	2.3	25	1) Storm vulnerable, 2) Low retention value
367	Clementi Forest	2019-12-18	T17188	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34740.301	22120.841	1.4	25	1) Storm vulnerable, 2) Low retention value
368	Clementi Forest	2019-12-18	T17189	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34728.079	22132.065	2	25	1) Storm vulnerable, 2) Low retention value
369	Clementi Forest	2019-12-18	T17190	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34729.254	22132.374	1	20	1) Storm vulnerable, 2) Low retention value
370	Clementi Forest	2019-12-18	T17191	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34726.65	22133.859	1	25	1) Storm vulnerable, 2) Low retention value
371	Clementi Forest	2019-12-18	T17192	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34719.624	22138.344	1	25	1) Storm vulnerable, 2) Low retention value
372	Clementi Forest	2019-12-18	T17193	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34712.331	22137.067	2	25	1) Storm vulnerable, 2) Low retention value
373	Clementi Forest	2019-12-18	T17194	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34711.486	22141.717	1	20	1) Storm vulnerable, 2) Low retention value
374	Clementi Forest	2019-12-19	T17195	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34738.878	22099.82	1	12	1) Good health, 2) Cavity on main trunk
375	Clementi Forest	2019-12-19	T17196	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34760.417	22122.401	1	15	1) Good health, 2) No significant defects
376	Clementi Forest	2019-12-19	T17197	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34759.571	22125.58	0.4	6	1) Good health, 2) Multiple branch failures
377	Clementi Forest	2019-12-19	T17198	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34763.18	22129.188	0.4	6	1) Good health, 2) No significant defects
378	Clementi Forest	2019-12-19	T17199	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34747.269	22126.023	1.15	15	1) Good health, 2) Assessment limited by climbers
379	Clementi Forest	2019-12-19	T17200	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34747.555	22124.568	0.4	6	1) Good health, 2) Decay on main trunk, 3) Low retention value
380	Clementi Forest	2019-12-19	T17201	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34741.431	22119.679	1.1	12	1) Good health, 2) Leaning 15° Northeast, 3) Poor canopy form
381	Clementi Forest	2019-12-19	T17202	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34740.301	22120.841	1	12	1) Good health, 2) No significant defects
382	Clementi Forest	2019-12-19	T17203	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34728.079	22132.065	0.3	5	1) Good health, 2) No significant defects
383	Clementi Forest	2019-12-19	T17204	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34729.254	22132.374	0.5	6	1) Good health, 2) Decay on primary branch
384	Clementi Forest	2019-12-19	T17205	<i>Oncosperma tigillarum</i>	Arecaceae	Native	Vulnerable	Shrub	34726.65	22133.859	1	3	1) Good health, 2) No significant defects, 3) Cluster
385	Clementi Forest	2019-12-19	T17206	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34719.624	22138.344	1.2	15	1) Good health, 2) No significant defects

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386	Clementi Forest	2019-12-19	T17207	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34712.331	22137.067	0.4	4	1) Good health, 2) No significant defects
387	Clementi Forest	2019-12-19	T17208	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34711.486	22141.717	1	18	1) Good health, 2) Root flare obvious, 3) Damage on trunk, 4) Past canopy failure
388	Clementi Forest	2019-12-19	T17209	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34699.85	22166.694	1	16	1) Good health, 2) No significant defects
389	Clementi Forest	2019-12-19	T17210	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34713.015	22182.327	1.1	16	1) Good health, 2) Assessment limited by climbers
390	Clementi Forest	2019-12-19	T17211	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34709.588	22180.577	1.2	18	1) Good health, 2) Assessment limited by climbers
391	Clementi Forest	2019-12-19	T17212	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34708.753	22182.226	1.1	18	1) Good health, 2) Assessment limited by climbers
392	Clementi Forest	2019-12-19	T17213	<i>Syzygium lineatum</i>	Myrtaceae	Native	Common	Tree	34723.764	22193.472	1.2	20	1) Good health, 2) No significant defects, 3) Root flare obvious
393	Clementi Forest	2019-12-19	T17214	<i>Calophyllum tetrapterum</i>	Calophyllaceae	Native	Vulnerable	Tree	34720.01	22193.276	0.4	7	1) Good health, 2) No significant defects
394	Clementi Forest	2019-12-19	T17215	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34716.462	22191.77	1.5	20	1) Good health, 2) No significant defects
395	Clementi Forest	2019-12-19	T17216	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34731.353	22179.77	1	18	1) Good health, 2) Mechanical damage on trunk
396	Clementi Forest	2019-12-19	T17217	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34732.271	22177.237	1	15	1) Good health, 2) No significant defects
397	Clementi Forest	2019-12-19	T17218	<i>Syzygium lineatum</i>	Myrtaceae	Native	Common	Tree	34732.244	22175.995	1	20	1) Good health, 2) No significant defects, 3) Root flare obvious
398	Clementi Forest	2019-12-19	T17219	Unable to identify	-	-	-	-	34736.371	22167.172	1.7	20	1) Past canopy failure, 2) Assessment limited by climbers
399	Clementi Forest	2019-12-19	T17220	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34732.016	22156.191	1.1	20	1) Good health, 2) No significant defects
400	Clementi Forest	2019-12-19	T17221	<i>Litsea firma</i>	Lauraceae	Native	Vulnerable	Tree	34742.527	22151.044	0.4	5	1) Good health, 2) No significant defects
401	Clementi Forest	2019-12-19	T17222	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34735.574	22146.055	1.1	8	1) Good health, 2) Past canopy failure, 3) Assessment of tree base limited by undergrowth
402	Clementi Forest	2019-12-19	T17223	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34734.966	22145.576	1	18	1) Good health, 2) No significant defects
403	Clementi Forest	2019-12-19	T17224	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34754.832	22139.677	1.5	18	1) Poor health, 2) Decay on trunk
404	Clementi Forest	2019-12-19	T17225	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34757.628	22146.357	1.3	18	1) Poor health, 2) Decay on trunk
405	Clementi Forest	2019-12-19	T17226	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34757.935	22151.011	2	25	1) Good health, 2) Past branch failure
406	Clementi Forest	2019-12-19	T17227	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34767.133	22143.659	1.1	25	1) Good health, 2) Assessment limited by climbers
407	Clementi Forest	2019-12-19	T17228	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34771.29	22144.372	1.3	20	1) Good health, 2) No significant defects
408	Clementi Forest	2019-12-19	T17229	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34774.393	22144.878	1.8	20	1) Good health, 2) Uprooting pressure observed
409	Clementi Forest	2019-12-19	T17230	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34778.473	22142.17	1.6	20	1) Good health, 2) Uprooting pressure observed
410	Clementi Forest	2019-12-19	T17231	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34776.392	22148.558	1.9	20	1) Good health, 2) No significant defects
411	Clementi Forest	2019-12-19	T17232	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34778.733	22159.606	1.5	20	1) Good health, 2) No significant defects
412	Clementi Forest	2019-12-19	T17233	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34786.252	22144.294	2.2	25	1) Good health, 2) Assessment limited by climbers and epiphytes
413	Clementi Forest	2019-12-19	T17234	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34784.77	22141.814	2.8	25	1) Good health, 2) Assessment limited by climbers
414	Clementi Forest	2019-12-19	T17235	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34797.952	22140.338	1	18	1) Good health, 2) No significant defects
415	Clementi Forest	2019-12-19	T17236	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34801.629	22139.873	1.1	18	1) Good health, 2) No significant defects
416	Clementi Forest	2019-12-19	T17237	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34797.383	22130.723	1.5	22	1) Good health, 2) Past branch failure, 3) Assessment limited by climbers
417	Clementi Forest	2019-12-19	T17238	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34797.705	22139.964	2.1	25	1) Good health, 2) Past canopy failure
418	Clementi Forest	2019-12-19	T17239	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34807.209	22135.507	1	20	1) Good health, 2) No significant defects
419	Clementi Forest	2019-12-19	T17240	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34819.803	22152.917	1.4	20	1) Good health, 2) No significant defects
420	Clementi Forest	2019-12-19	T17241	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34819.206	22153.092	1.4	20	1) Good health, 2) Fruiting bodies on main trunk at height 10 m indicative of internal decay

Appendix G2 List of Specimens Assessed by Certified Arborists in Clementi Forest

S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
421	Clementi Forest	2019-12-19	T17242	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34805.216	22161.695	1.8	20	1) Good health, 2) Past branch failure, 3) Fruiting bodies on main trunk indicative of internal decay
422	Clementi Forest	2019-12-19	T17243	<i>Vitex pinnata</i>	Lamiaceae	Native	Common	Tree	34798.798	22161.661	1.2	18	1) Good health, 2) No significant defects
423	Clementi Forest	2019-12-19	T17244	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34799.065	22164.272	1.7	22	1) Good health, 2) No significant defects
424	Clementi Forest	2019-12-19	T17245	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34802.318	22164.218	1.6	20	1) Good health, 2) Leaning South with no obvious tension, 3) Possible decay on main trunk, 4) Low retention value
425	Clementi Forest	2019-12-19	T17246	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34799.772	22162.931	1.95	20	1) Good health, 2) No significant defects
426	Clementi Forest	2019-12-19	T17247	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34796.958	22162.042	1.2	20	1) Good health, 2) No significant defects
427	Clementi Forest	2019-12-19	T17248	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34775.182	22160.157	2.9	20	1) Good health, 2) Past branch failure
428	Clementi Forest	2019-12-19	T17249	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34771.991	22159.494	1	16	1) Good health, 2) No significant defects
429	Clementi Forest	2019-12-19	T17250	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34764.141	22158.195	0.5	8	1) Good health, 2) No significant defects, 3) Clusters
430	Clementi Forest	2019-12-19	T17251	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34748.144	22165.5	1.8	15	1) Good health, 2) No significant defects
431	Clementi Forest	2019-12-19	T17252	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34741.344	22164.748	1.1	18	1) Good health, 2) No significant defects
432	Clementi Forest	2019-12-19	T17253	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34729.717	22193.9	1.4	22	1) Good health, 2) No significant defects
433	Clementi Forest	2019-12-19	T17254	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34756.334	22189.855	2.2	20	1) Good health, 2) No significant defects
434	Clementi Forest	2019-12-19	T17255	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34760.348	22194.336	1.3	20	1) Good health, 2) No significant defects
435	Clementi Forest	2019-12-19	T17256	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34759.906	22194.776	1.9	20	1) Good health, 2) Assessment limited by climbers
436	Clementi Forest	2019-12-19	T17257	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34760.988	22184.159	2.1	18	1) Good health, 2) No significant defects, 3) Crooked trunk
437	Clementi Forest	2019-12-19	T17258	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34768.857	22184.375	1	20	1) Good health, 2) No significant defects
438	Clementi Forest	2019-12-19	T17259	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34770.441	22185.853	1	20	1) Good health, 2) No significant defects
439	Clementi Forest	2019-12-19	T17260	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34774.989	22176.6	3.4	20	1) Good health, 2) No significant defects
440	Clementi Forest	2019-12-30	T17261	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34777.576	22178.254	1.3	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
441	Clementi Forest	2019-12-30	T17262	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34779.318	22182.856	1.1	8	1) Poor health, 2) Past canopy failure, 3) Low retention value
442	Clementi Forest	2019-12-30	T17263	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34780.965	22191.568	1.3	20	1) Good health, 2) No significant defects
443	Clementi Forest	2019-12-30	T17264	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34784.881	22195.154	1.45	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by water shoots
444	Clementi Forest	2019-12-30	T17265	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34788.217	22200.283	2.2	25	1) Storm vulnerable, 2) Low retention value
445	Clementi Forest	2019-12-30	T17266	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34788.453	22200.11	1.5	20	1) Good health, 2) No significant defects, 3) Root flare obvious
446	Clementi Forest	2019-12-30	T17267	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34784.32	22194.336	1	18	1) Good health, 2) No significant defects
447	Clementi Forest	2019-12-30	T17268	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34791.964	22188.93	1	10	1) Average health, 2) Past branch failure, 3) Asymmetric lean towards Northeast
448	Clementi Forest	2019-12-30	T17269	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34788.098	22184.397	1.6	20	1) Good health, 2) No significant defects, 3) U-shaped bifurcation
449	Clementi Forest	2019-12-30	T17270	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34805.486	22171.705	1.6	20	1) Good health, 2) No significant defects, 3) Root flare obvious
450	Clementi Forest	2019-12-30	T17271	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34810.494	22169.901	1.5	20	1) Good health, 2) Asymmetric canopy, 3) Assessment limited by climbers
451	Clementi Forest	2019-12-30	T17272	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34907.703	22124.562	1.6	16	1) Storm vulnerable, 2) Low retention value
452	Clementi Forest	2019-12-30	T17273	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34911.85	22128.107	1.6	16	1) Storm vulnerable, 2) Low retention value
453	Clementi Forest	2019-12-30	T17274	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34914.912	22131.029	1.5	16	1) Storm vulnerable, 2) Low retention value
454	Clementi Forest	2019-12-30	T17275	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34918.051	22138.806	1.05	16	1) Storm vulnerable, 2) Low retention value
455	Clementi Forest	2019-12-30	T17276	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34920.955	22138.713	2.4	20	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) U-shaped bifurcation

Appendix G2 List of Specimens Assessed by Certified Arborists in Clementi Forest

S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
456	Clementi Forest	2019-12-30	T17277	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34922.331	22129.049	1.4	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by neighbouring palms
457	Clementi Forest	2019-12-30	T17278	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34927.598	22120.728	1.8	20	1) Good health, 2) Root flare obvious, 3) Growing on slope, 4) Leaning West
458	Clementi Forest	2019-12-30	T17279	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34931.704	22121.572	2	18	1) Good health, 2) Root flare obvious, 3) Growing on slope, 4) Assessment limited by climbers
459	Clementi Forest	2019-12-30	T17280	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34923.491	22149.533	1.9	16	1) Storm vulnerable, 2) Low retention value
460	Clementi Forest	2019-12-30	T17281	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34927.668	22151.21	1.3	16	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Asymmetric canopy
461	Clementi Forest	2019-12-30	T17282	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34925.392	22163.814	1.5	16	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers
462	Clementi Forest	2019-12-30	T17283	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34927.57	22171.908	1.45	16	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
463	Clementi Forest	2019-12-30	T17284	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34932.759	22172.345	1.7	16	1) Good health, 2) Assessment limited by canopies of other trees
464	Clementi Forest	2019-12-30	T17285	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34939.175	22167.672	1	16	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
465	Clementi Forest	2019-12-30	T17286	<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	34952.192	22170.407	15	25	1) Good health, 2) No significant defects
466	Clementi Forest	2019-12-30	T17287	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34942.851	22162.134	1.1	16	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers
467	Clementi Forest	2019-12-30	T17288	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34946.098	22160.605	1.2	20	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Growing on slope
468	Clementi Forest	2019-12-30	T17289	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34955.741	22162.022	1.6	16	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy
469	Clementi Forest	2019-12-30	T17290	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34968.427	22157.447	2.9	20	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) U-shaped bifurcation
470	Clementi Forest	2019-12-30	T17291	<i>Syzygium lineatum</i>	Myrtaceae	Native	Common	Tree	34988.038	22144.792	1	12	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
471	Clementi Forest	2019-12-30	T17292	<i>Syzygium lineatum</i>	Myrtaceae	Native	Common	Tree	34988.367	22145.582	1.2	12	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
472	Clementi Forest	2019-12-30	T17293	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	35017.292	22163.84	4.6	16	1) Good health, 2) Root flare obvious, 3) Exposed dead wood on trunk most likely caused by lightning strike, 4) Past canopy failure
473	Clementi Forest	2019-12-30	T17294	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	35035.843	22174.734	3.6	20	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Cluster of two
474	Clementi Forest	2019-12-30	T17294A	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	35035.843	22174.734	1.3	20	-
475	Clementi Forest	2019-12-30	T17295	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	35039.564	22175.604	1.6	16	1) Storm vulnerable, 2) Low retention value
476	Clementi Forest	2019-12-30	T17296	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	35007.806	22158.455	2	18	1) Storm vulnerable, 2) Low retention value
477	Clementi Forest	2019-12-30	T17297	<i>Caryota no</i>	Arecaceae	Exotic	Cultivated Only	Tree	35007.969	22157.688	1.1	16	1) Good health, 2) No significant defects
478	Clementi Forest	2019-12-30	T17298	<i>Caryota no</i>	Arecaceae	Exotic	Cultivated Only	Tree	35001.144	22154.827	1.05	16	1) Good health, 2) No significant defects
479	Clementi Forest	2019-12-30	T17299	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34993.157	22164.659	1.5	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
480	Clementi Forest	2019-12-30	T17300	<i>Aphanamixis polystachya</i>	Meliaceae	Native	Endangered	Tree	34979.887	22163.836	1.1	16	1) Good health, 2) No significant defects, 3) Asymmetric canopy
481	Clementi Forest	2019-12-17	T17301	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34838.465	22019.653	1.98	15	1) Good health, 2) Past failure on primary bifurcate
482	Clementi Forest	2019-12-17	T17302	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34826.836	22008.694	1.2	12	1) Good health, 2) Past failure at canopy
483	Clementi Forest	2019-12-17	T17303	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34836.53	22007.367	1.13	15	1) Good health, 2) No significant defects, 3) Assessment limited by undergrowth
484	Clementi Forest	2019-12-17	T17304	<i>Symplocos fasciculata</i>	Symplocaceae	Native	Vulnerable	Tree	34835.206	21997.765	0.35	6	1) Good health, 2) No significant defects
485	Clementi Forest	2020-01-03	T17305	<i>Claoxylon indicum</i>	Euphorbiaceae	Native	Common	Tree	35025.133	22186.415	1.1	10	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers, 4) Leaning Northeast
486	Clementi Forest	2020-01-03	T17306	<i>Aphanamixis polystachya</i>	Meliaceae	Native	Endangered	Tree	35007.152	22179.742	1	6	1) Good health, 2) Leaning 45° East
487	Clementi Forest	2020-01-03	T17307	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34993.483	22186.087	1.4	15	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
488	Clementi Forest	2020-01-03	T17308	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34992.282	22186.115	2.1	16	1) Good health, 2) Root flare obvious, 3) U-shaped bifurcation, 4) Assessment limited by climbers
489	Clementi Forest	2020-01-03	T17309	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34984.149	22191.28	2.6	20	1) Good health, 2) Asymmetric canopy, 4) Assessment limited by climbers
490	Clementi Forest	2020-01-03	T17310	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34974.208	22192.231	2.4	18	1) Good health, 2) Growing on slopes, 3) V-shaped bifurcation, 4) Assessment limited by climbers

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S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
491	Clementi Forest	2020-01-03	T17311	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34968.439	22193.506	1	6	1) Good health, 2) Low retention value, 3) Past trunk failure resulting in resprouts
492	Clementi Forest	2020-01-03	T17312	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34965.421	22193.714	1.3	22	1) Good health, 2) No significant defects, 3) Root flare obvious
493	Clementi Forest	2020-01-03	T17313	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34936.514	22195.033	1.1	16	1) Good health, 2) Asymmetric lean towards Northeast, 3) Decay on primary branch
494	Clementi Forest	2020-01-03	T17314	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34940.029	22194.448	1.8	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
495	Clementi Forest	2020-01-03	T17315	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34937.687	22194.54	1.2	16	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
496	Clementi Forest	2020-01-03	T17316	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34936.196	22194.671	2.6	25	1) Storm vulnerable, 2) Low retention value
497	Clementi Forest	2020-01-03	T17317	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34931.658	22187.378	1	16	1) Good health, 2) Growing next to Cinomomum iners and stream
498	Clementi Forest	2020-01-03	T17318	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34932.44	22189.908	1.5	25	1) Storm vulnerable, 2) Low retention value
499	Clementi Forest	2020-01-03	T17319	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34921.508	22199.235	1.1	10	1) Storm vulnerable, 2) Low retention value
500	Clementi Forest	2020-01-03	T17320	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34910.877	22198.14	1.1	15	1) Good health, 2) Assessment limited by climbers
501	Clementi Forest	2020-01-03	T17321	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34892.669	22201.297	2.3	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
502	Clementi Forest	2020-01-03	T17322	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34790.61	22210.738	1.2	16	1) Good health, 2) Asymmetric canopy, 3) U-shaped bifurcation
503	Clementi Forest	2020-01-03	T17322A	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34792.568	22210.88	1.6	18	1) Storm vulnerable, 2) Low retention value
504	Clementi Forest	2020-01-03	T17323	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34774.647	22212.005	1.5	18	1) Good health, 2) Root flare obvious, 3) Growing next to stream, 4) Assessment limited by climbers
505	Clementi Forest	2020-01-03	T17324	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34889.189	22211.431	2.1	20	1) Storm vulnerable, 2) Low retention value
506	Clementi Forest	2020-01-03	T17325	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34885.645	22211.359	1.8	20	1) Storm vulnerable, 2) Low retention value
507	Clementi Forest	2020-01-03	T17326	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34886.772	22211.54	3.8	20	1) Storm vulnerable, 2) Low retention value
508	Clementi Forest	2020-01-03	T17327	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34901.405	22217.564	2.2	18	1) Storm vulnerable, 2) Low retention value
509	Clementi Forest	2020-01-03	T17328	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34909.781	22219.499	2.4	20	1) Storm vulnerable, 2) Low retention value
510	Clementi Forest	2020-01-03	T17329	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34930.052	22219.261	1.9	14	1) Storm vulnerable, 2) Low retention value
511	Clementi Forest	2020-01-03	T17330	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34928.649	22219.076	1.1	14	1) Storm vulnerable, 2) Low retention value
512	Clementi Forest	2020-01-03	T17331	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34933.565	22214.822	1.5	18	1) Storm vulnerable, 2) Low retention value
513	Clementi Forest	2020-01-03	T17332	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34937.343	22215.893	1.7	18	1) Storm vulnerable, 2) Low retention value
514	Clementi Forest	2020-01-03	T17333	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34941.664	22215.174	1.5	18	1) Storm vulnerable, 2) Low retention value
515	Clementi Forest	2020-01-03	T17334	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34940.88	22216.507	1.4	18	1) Storm vulnerable, 2) Low retention value
516	Clementi Forest	2020-01-03	T17335	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34938.281	22215.719	2.2	18	1) Storm vulnerable, 2) Low retention value
517	Clementi Forest	2020-01-03	T17336	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34942.32	22216.078	1	18	1) Storm vulnerable, 2) Low retention value
518	Clementi Forest	2020-01-03	T17337	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34948.903	22215.833	1.1	15	1) Storm vulnerable, 2) Low retention value
519	Clementi Forest	2020-01-03	T17338	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34945.752	22218.944	1.6	18	1) Storm vulnerable, 2) Low retention value
520	Clementi Forest	2020-01-03	T17339	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34945.853	22220.263	1.4	18	1) Storm vulnerable, 2) Low retention value
521	Clementi Forest	2020-01-03	T17340	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34961.073	22216.64	2.2	20	1) Storm vulnerable, 2) Low retention value
522	Clementi Forest	2020-01-03	T17341	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34959.009	22216.195	1.8	20	1) Storm vulnerable, 2) Low retention value
523	Clementi Forest	2020-01-03	T17342	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34975.222	22217.214	1.8	18	1) Storm vulnerable, 2) Low retention value
524	Clementi Forest	2020-01-03	T17343	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34978.102	22217.323	1.3	18	1) Storm vulnerable, 2) Low retention value
525	Clementi Forest	2020-01-03	T17344	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	35003.676	22222.263	1.3	16	1) Storm vulnerable, 2) Low retention value

Appendix G2 List of Specimens Assessed by Certified Arborists in Clementi Forest

S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
526	Clementi Forest	2020-01-03	T17345	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	35016.976	22219.344	1.2	16	1) Storm vulnerable, 2) Low retention value
527	Clementi Forest	2020-01-03	T17346	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	35009.958	22225.18	1.6	18	1) Storm vulnerable, 2) Low retention value
528	Clementi Forest	2020-01-03	T17347	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	35017.173	22223.978	2.4	18	1) Storm vulnerable, 2) Low retention value
529	Clementi Forest	2020-01-03	T17348	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	35021.339	22250.44	1	12	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
530	Clementi Forest	2020-01-03	T17349	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	35030.194	22250.724	2.4	20	1) Storm vulnerable, 2) Low retention value
531	Clementi Forest	2020-01-03	T17350	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	35029.785	22248.649	1.9	15	1) Storm vulnerable, 2) Low retention value
532	Clementi Forest	2020-01-03	T17351	<i>Cinnamomum iners</i>	Lauraceae	Native	Common	Tree	35037.608	22244.924	1.3	8	1) Good health, 2) Growing on slope, 3) Canopy severely covered by climbers
533	Clementi Forest	2020-01-03	T17352	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	35024.947	22250.503	1.1	12	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
534	Clementi Forest	2020-01-03	T17353	<i>Cinnamomum iners</i>	Lauraceae	Native	Common	Tree	35025.671	22251.46	1	12	1) Asymmetric lean towards Southwest, 2) Assessment limited by climbers
535	Clementi Forest	2020-01-03	T17354	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	35007.188	22247.97	1.5	10	1) Good health, 2) No significant defects
536	Clementi Forest	2020-01-03	T17355	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34997.623	22249.334	1.6	16	1) Storm vulnerable, 2) Low retention value
537	Clementi Forest	2020-01-03	T17356	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34994.458	22248.211	2.4	20	1) Storm vulnerable, 2) Low retention value, 3) Cluster of three
538	Clementi Forest	2020-01-03	T17356	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34994.458	22248.211	2.1	20	1) Storm vulnerable, 2) Low retention value, 3) Cluster of three
539	Clementi Forest	2020-01-03	T17356	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34994.458	22248.211	3.5	20	1) Storm vulnerable, 2) Low retention value, 3) Cluster of three
540	Clementi Forest	2020-01-03	T17357	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34993.318	22246.052	1.5	13	1) Good health, 2) Root flare obvious, 3) Growing on the edge of the slope, 4) Assessment limited by climbers
541	Clementi Forest	2020-01-03	T17359	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34987.554	22244.421	1.4	12	1) Good health, 2) Root flare obvious, 3) Cavity on trunk below bifurcation
542	Clementi Forest	2020-01-03	T17360	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34978.769	22248.686	2.2	20	1) Storm vulnerable, 2) Low retention value
543	Clementi Forest	2020-01-03	T17361	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34980.855	22249.907	1.6	8	1) Good health, 2) No significant defects
544	Clementi Forest	2020-01-03	T17362	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34981.144	22249.182	2	16	1) Storm vulnerable, 2) Low retention value
545	Clementi Forest	2020-01-03	T17363	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34968.031	22248.8	3	20	1) Storm vulnerable, 2) Low retention value
546	Clementi Forest	2020-01-03	T17364	<i>Mangifera indica</i>	Anacardiaceae	Exotic	Casual	Tree	34969.596	22246.056	1.1	8	1) Good health, 2) U-shaped bifurcation
547	Clementi Forest	2020-01-03	T17365	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34714.366	21865.855	1.5	18	1) Good health, 2) Root flare obvious, 3) Growing on top of slope, 4) Assessment limited by climbers
548	Clementi Forest	2020-01-03	T17366	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34697.896	21868.686	1	15	1) Good health, 2) Assessment limited by climbers
549	Clementi Forest	2020-01-03	T17367	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34696.769	21868.62	1.2	15	1) Good health, 2) Assessment limited by climbers
550	Clementi Forest	2020-01-03	T17368	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34691.58	21882.424	1.3	9	1) Storm vulnerable, 2) Low retention value
551	Clementi Forest	2020-01-03	T17369	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34693.128	21878.176	1.2	9	1) Storm vulnerable, 2) Low retention value
552	Clementi Forest	2020-01-03	T17370	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34686.233	21875.204	1.8	9	1) Storm vulnerable, 2) Low retention value
553	Clementi Forest	2020-01-03	T17371	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34676.906	21861.023	3	6	1) Good health, 2) No significant defects
554	Clementi Forest	2020-01-03	T17372	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34670.99	21860.454	1.1	7	1) Past canopy failure, 2) Assessment limited by climbers and undergrowth
555	Clementi Forest	2020-01-03	T17373	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34669.911	21861.498	1.5	7	1) Past canopy failure, 2) Root flare obvious, 3) Assessment limited by climbers and undergrowth
556	Clementi Forest	2020-01-03	T17374	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34670.584	21851.988	2	12	1) Good health, 2) Assessment limited by climbers
557	Clementi Forest	2020-01-03	T17375	<i>Archidendron jiringa</i>	Fabaceae	Native	Vulnerable	Tree	34662.861	21848.166	1.6	12	1) Good health, 2) Assessment limited by climbers
558	Clementi Forest	2020-01-03	T17376	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34647.568	21865.42	2.4	10	1) Storm vulnerable, 2) Low retention value
559	Clementi Forest	2020-01-03	T17377	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34646.675	21864.954	1.4	12	1) Storm vulnerable, 2) Low retention value
560	Clementi Forest	2020-01-03	T17377	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34646.675	21864.954	1.5	12	1) Storm vulnerable, 2) Low retention value

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S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
561	Clementi Forest	2020-01-03	T17378	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34645.86	21864.017	2.6	14	1) Storm vulnerable, 2) Low retention value
562	Clementi Forest	2020-01-03	T17379	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34629.606	21873.56	2.2	18	1) Storm vulnerable, 2) Low retention value
563	Clementi Forest	2020-01-03	T17380	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34631.695	21869.226	1.4	18	1) Storm vulnerable, 2) Low retention value
564	Clementi Forest	2020-01-03	T17381	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34627.054	21866.547	2.6	20	1) Storm vulnerable, 2) Low retention value
565	Clementi Forest	2020-01-03	T17382	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34621.42	21862.395	1.5	18	1) Storm vulnerable, 2) Low retention value
566	Clementi Forest	2020-01-03	T17383	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34615.04	21863.51	1.8	14	1) Storm vulnerable, 2) Low retention value
567	Clementi Forest	2020-01-03	T17384	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34612.185	21865.034	2.4	12	1) Storm vulnerable, 2) Low retention value
568	Clementi Forest	2020-01-03	T17384A	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34620.714	21881.474	1.1	10	1) Poor health, 2) Past canopy failure, 3) Growing near stream, 4) Assessment limited by climbers
569	Clementi Forest	2020-01-03	T17385	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34598.208	21894.932	1.3	12	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
570	Clementi Forest	2020-01-03	T17386	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34600.355	21895.225	2	8	1) Good health, 2) Self-corrected lean towards West
571	Clementi Forest	2020-01-03	T17387	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34601.534	21894.839	2.1	16	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
572	Clementi Forest	2020-01-03	T17388	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34600.724	21891.494	2	10	1) Good health, 2) Self-corrected lean towards West
573	Clementi Forest	2020-01-03	T17389	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34593.172	21886.503	2.5	10	1) Good health, 2) Self-corrected lean towards West, 3) Cluster of two
574	Clementi Forest	2020-01-03	T17389	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34593.172	21886.503	2.5	10	1) Good health, 2) Self-corrected lean towards West, 3) Cluster of two
575	Clementi Forest	2020-01-03	T17390	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34575.054	21884.335	2.5	7	1) Good health, 2) Self-corrected lean towards West
576	Clementi Forest	2020-01-03	T17391	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34575.831	21879.626	1.8	10	1) Good health, 2) Self-corrected lean towards West
577	Clementi Forest	2020-01-03	T17392	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34567.042	21872.197	2	10	1) Good health, 2) No significant defects
578	Clementi Forest	2020-01-03	T17393	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34567.11	21872.16	1.4	16	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
579	Clementi Forest	2020-01-03	T17394	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34577.67	21869.79	2	10	1) Good health, 2) Self-corrected lean, 3) Assessment limited by climbers
580	Clementi Forest	2020-01-03	T17395	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34566.055	21876.754	2.1	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers and undergrowth
581	Clementi Forest	2020-01-03	T17396	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34569.558	21876.848	1.1	9	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
582	Clementi Forest	2020-01-03	T17397	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34565.527	21876.72	1.8	18	1) Good health, 2) Mechanical damage on root flare, 3) Assessment limited by climbers
583	Clementi Forest	2020-01-03	T17398	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34561.106	21872.687	1.1	16	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers and undergrowth
584	Clementi Forest	2020-01-03	T17399	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34541.284	21873.214	1.8	15	1) Leaning West, 2) Assessment limited by climbers, 3) Root disturbance owing to previous earth works near tree
585	Clementi Forest	2020-01-03	T17400	<i>Averrhoa carambola</i>	Oxalidaceae	Exotic	Casual	Tree	34541.275	21872.479	1.5	8	1) Good health, 2) Past branch failure, 3) Assessment limited by climbers
586	Clementi Forest	2020-01-03	T17401	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34668.458	22248.554	2	10	1) Good health, 2) No significant defects
587	Clementi Forest	2020-01-03	T17402	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34664.985	22253.358	2	12	1) Good health, 2) No significant defects
588	Clementi Forest	2020-01-03	T17403	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34663.277	22252.693	1.5	15	1) Good health, 2) No significant defects
589	Clementi Forest	2020-01-03	T17404	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34677.001	22253.892	1.5	14	1) Good health, 2) No significant defects
590	Clementi Forest	2020-01-03	T17405	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34691.508	22253.012	2	12	1) Good health, 2) No significant defects
591	Clementi Forest	2020-01-03	T17406	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34688.313	22252.466	2.1	25	1) Storm vulnerable, 2) Low retention value
592	Clementi Forest	2020-01-03	T17407	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34695.933	22252.43	2	20	1) Storm vulnerable, 2) Low retention value
593	Clementi Forest	2020-01-03	T17408	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34698.166	22252.155	2.1	20	1) Storm vulnerable, 2) Low retention value
594	Clementi Forest	2020-01-03	T17409	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34708.045	22253.124	1.6	20	1) Good health, 2) Root flare obvious, 2) Growing on gentle slope, 4) Assessment limited by climbers
595	Clementi Forest	2020-01-03	T17410	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34712.893	22253.219	3	25	1) Storm vulnerable, 2) Low retention value

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S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
596	Clementi Forest	2020-01-03	T17411	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34717.642	22247.202	2	10	1) Good health, 2) No significant defects
597	Clementi Forest	2020-01-03	T17412	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34733.306	22236.318	2	12	1) Good health, 2) No significant defects
598	Clementi Forest	2020-01-03	T17413	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34733.301	22236.338	2	12	1) Good health, 2) No significant defects, 3) Growing at edge of waterbody
599	Clementi Forest	2020-01-03	T17414	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34733.169	22236.25	2	10	1) Good health, 2) No significant defects
600	Clementi Forest	2020-01-03	T17415	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34733.513	22236.135	1.2	10	1) Good health, 2) No significant defects, 3) Growing at edge of waterbody
601	Clementi Forest	2020-01-03	T17416	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34733.432	22236.62	2	10	1) Good health, 2) No significant defects
602	Clementi Forest	2020-01-03	T17417	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34740.734	22242.106	1.6	12	1) Good health, 2) No significant defects
603	Clementi Forest	2020-01-03	T17418	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34740.84	22242.288	2	12	1) Good health, 2) No significant defects
604	Clementi Forest	2020-01-03	T17419	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34740.868	22242.362	2	10	1) Good health, 2) No significant defects
605	Clementi Forest	2020-01-03	T17420	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34740.987	22242.53	1.2	15	1) Good health, 2) No significant defects, 3) Leaning Southwest
606	Clementi Forest	2020-01-03	T17421	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34753.466	22255.733	1.5	9	1) Good health, 2) No significant defects, 3) Growing next to T17422
607	Clementi Forest	2020-01-03	T17422	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34753.549	22256.052	2.7	25	1) Good health, 2) Root flare obvious, 3) Past branch failure facing Southeast, 4) Growing next to T17421
608	Clementi Forest	2020-01-03	T17423	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34763.857	22257.015	1.2	12	1) Good health, 2) No significant defects
609	Clementi Forest	2020-01-03	T17424	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34769.303	22257.172	2	20	1) Storm vulnerable, 2) Low retention value
610	Clementi Forest	2020-01-03	T17425	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34769.142	22257.385	1.5	20	1) Storm vulnerable, 2) Low retention value
611	Clementi Forest	2020-01-03	T17426	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34774.937	22256.987	3.5	25	1) Storm vulnerable, 2) Low retention value
612	Clementi Forest	2020-01-03	T17427	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34774.287	22257.303	1.4	15	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) growing next to T17426
613	Clementi Forest	2020-01-03	T17428	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34787.084	22257.424	1.2	12	1) Good health, 2) No significant defects
614	Clementi Forest	2020-01-03	T17429	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34791.89	22254.835	1.5	10	1) Good health, 2) No significant defects
615	Clementi Forest	2020-01-03	T17430	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34791.599	22258.818	1.5	10	1) Good health, 2) No significant defects
616	Clementi Forest	2020-01-03	T17431	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34787.433	22257.963	1.8	15	1) Storm vulnerable, 2) Low retention value
617	Clementi Forest	2020-01-03	T17432	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34793.824	22258.716	1.5	10	1) Good health, 2) No significant defects
618	Clementi Forest	2020-01-03	T17433	<i>Alstonia angustiloba</i>	Apocynaceae	Native	Common	Tree	34792.193	22259.236	1.1	10	1) Good health, 2) Mechanical damage facing North, 3) Dieback at canopy
619	Clementi Forest	2020-01-03	T17434	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34800.594	22259.123	1.24	12	1) Storm vulnerable, 2) Low retention value
620	Clementi Forest	2020-01-03	T17435	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34800.544	22259.107	1.8	20	1) Storm vulnerable, 2) Low retention value
621	Clementi Forest	2020-01-03	T17436	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34809.768	22259.553	3.2	25	1) Storm vulnerable, 2) Low retention value
622	Clementi Forest	2020-01-03	T17437	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34813.556	22259.777	1.1	12	1) Storm vulnerable, 2) Low retention value
623	Clementi Forest	2020-01-03	T17438	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34813.723	22259.9	2.2	25	1) Storm vulnerable, 2) Low retention value
624	Clementi Forest	2020-01-03	T17439	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34813.74	22259.921	1.3	20	1) Storm vulnerable, 2) Low retention value
625	Clementi Forest	2020-01-03	T17440	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34813.7	22260.034	2.5	25	1) Storm vulnerable, 2) Low retention value
626	Clementi Forest	2020-01-03	T17441	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34813.512	22259.788	2.6	25	1) Storm vulnerable, 2) Low retention value
627	Clementi Forest	2020-01-03	T17442	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34813.763	22259.52	2	25	1) Storm vulnerable, 2) Low retention value
628	Clementi Forest	2020-01-03	T17443	<i>Claoxylon indicum</i>	Euphorbiaceae	Native	Common	Tree	34829.839	22260.553	1.2	8	1) Good health, 2) Past branch failure, 3) Leaning North, 4) Assessment limited by climbers and undergrowth
629	Clementi Forest	2020-01-03	T17444	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34837.588	22261.699	1.5	15	1) Good health, 2) No significant defects, 3) Root flare obvious
630	Clementi Forest	2020-01-03	T17445	<i>Ficus benjamina</i>	Moraceae	Cryptogenic	-	Strangler	34684.519	21839.486	4	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers and undergrowth

Appendix G2 List of Specimens Assessed by Certified Arborists in Clementi Forest

S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
631	Clementi Forest	2020-01-03	T17446	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34617.768	21912.481	3	25	1) Storm vulnerable, 2) Low retention value
632	Clementi Forest	2020-01-03	T17447	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34641.903	21911.541	1.4	12	1) Good health, 2) Leaning Northwest, 3) Assessment limited by climbers and undergrowth
633	Clementi Forest	2020-01-03	T17448	<i>Adenanthera pavonina</i>	Fabaceae	Exotic	Naturalised	Tree	34597.413	21903.534	1.4	15	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
634	Clementi Forest	2020-01-03	T17449	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34591.91	21901.599	1	14	1) Good health, 2) Root flare obvious, 3) Slight lean towards East, 4) Assessment limited by climbers
635	Clementi Forest	2020-01-03	T17450	Unable to identify	-	-	-	-	34591.468	21918.893	1.6	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers and undergrowth
636	Clementi Forest	2020-01-03	T17451	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34591.478	21918.84	2	8	1) Good health, 2) Fallen/ asymmetric lean
637	Clementi Forest	2020-01-03	T17452	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34622.953	21929.191	1.5	7	1) Good health, 2) No significant defects
638	Clementi Forest	2020-01-03	T17453	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34629.423	21931.314	2	10	1) Good health, 2) No significant defects
639	Clementi Forest	2020-01-03	T17454	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34628.992	21930.296	2	10	1) Good health, 2) No significant defects
640	Clementi Forest	2020-01-03	T17455	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34628.821	21930.791	2	7	1) Good health, 2) Assessment limited by climbers
641	Clementi Forest	2020-01-03	T17456	<i>Vitex pinnata</i>	Lamiaceae	Native	Common	Tree	34630.142	21944.91	1.8	14	1) Good health, 2) Assessment limited by climbers
642	Clementi Forest	2020-01-03	T17457	<i>Macaranga gigantea</i>	Euphorbiaceae	Native	Common	Tree	34608.43	21964.099	1.2	14	1) Good health, 2) Growing next to T17458, 3) Assessment limited by climbers
643	Clementi Forest	2020-01-03	T17458	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34608.439	21964.221	1.6	25	1) Storm vulnerable, 2) Low retention value
644	Clementi Forest	2020-01-03	T17459	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34598.208	21954.712	1.8	20	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers
645	Clementi Forest	2020-01-03	T17460	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34597.91	21955.533	2	6	1) Good health, 2) No significant defects
646	Clementi Forest	2020-01-06	T17461	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34384.861	21724.495	2.7	27	1) Storm vulnerable, 2) Low retention value
647	Clementi Forest	2020-01-06	T17462	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34396.808	21740.857	1.4	14	1) Good health, 2) No significant defects, 3) Root flare obvious
648	Clementi Forest	2020-01-06	T17463	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34395.244	21744.759	1.4	17	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
649	Clementi Forest	2020-01-06	T17464	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34389.917	21751.763	1.3	18	1) Good health, 2) No significant defects, 3) Root flare obvious
650	Clementi Forest	2020-01-06	T17465	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34392.142	21762.402	2	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
651	Clementi Forest	2020-01-06	T17466	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34396.99	21757.9	1.6	14	1) Storm vulnerable, 2) Low retention value
652	Clementi Forest	2020-01-06	T17467	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34402.67	21760.279	1.5	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
653	Clementi Forest	2020-01-06	T17468	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34398.936	21774.786	1.1	18	1) Good health, 2) No significant defects, 3) Root flare obvious
654	Clementi Forest	2020-01-06	T17469	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34399.551	21778.946	1.1	18	1) Good health, 2) No significant defects, 3) Root flare obvious
655	Clementi Forest	2020-01-06	T17470	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34398.153	21790.617	1.6	18	1) Good health, 2) No significant defects, 3) Root flare obvious
656	Clementi Forest	2020-01-06	T17471	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34402.194	21785.259	1	18	1) Good health, 2) No significant defects, 3) Root flare obvious
657	Clementi Forest	2020-01-06	T17472	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34405.128	21775.603	1	17	1) Good health, 2) No significant defects, 3) Root flare obvious
658	Clementi Forest	2020-01-06	T17473	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34413.667	21775.859	1.05	18	1) Good health, 2) Asymmetric canopy
659	Clementi Forest	2020-01-06	T17474	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34419.355	21775.575	1.2	20	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Assessment limited by climbers
660	Clementi Forest	2020-01-06	T17475	<i>Ficus elastica</i>	Moraceae	Exotic	Casual	Strangler	34417.139	21773.213	3	18	1) Good health, 2) No significant defects
661	Clementi Forest	2020-01-06	T17476	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34420.624	21782.509	1.2	18	1) Good health, 2) No significant defects, 3) Root flare obvious
662	Clementi Forest	2020-01-06	T17477	<i>Antidesma bunius</i>	Phyllanthaceae	Exotic	Casual	Tree	34407.946	21786.441	1.6	16	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Multiple branch attachments
663	Clementi Forest	2020-01-06	T17478	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34426.216	21781.429	2.2	18	1) Storm vulnerable, 2) Low retention value
664	Clementi Forest	2020-01-06	T17479	<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	34435.098	21775.881	3	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers, 4) Bird nest in canopy
665	Clementi Forest	2020-01-06	T17480	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34449.966	21792.407	2.1	20	1) Storm vulnerable, 2) Low retention value

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S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
666	Clementi Forest	2020-01-06	T17481	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34450.701	21809.568	2.6	18	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers
667	Clementi Forest	2020-01-06	T17482	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34451.467	21805.235	1.05	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
668	Clementi Forest	2020-01-06	T17483	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34456.537	21801.349	1.6	18	1) Good health, 2) Assessment limited by climbers
669	Clementi Forest	2020-01-06	T17484	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34418.721	21797.432	1.1	20	1) Poor health, 2) Root flare obvious, 3) Dieback at canopy
670	Clementi Forest	2020-01-06	T17485	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34417.139	21799.427	1.25	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
671	Clementi Forest	2020-01-06	T17486	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34420.593	21799.47	1.5	12	1) Good health, 2) No significant defects
672	Clementi Forest	2020-01-06	T17487	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34423.736	21800.248	1.8	18	1) Storm vulnerable, 2) Low retention value
673	Clementi Forest	2020-01-06	T17488	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34424.027	21798.553	1.6	10	1) Good health, 2) No significant defects
674	Clementi Forest	2020-01-06	T17489	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34444.94	21811.815	1.4	15	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
675	Clementi Forest	2020-01-06	T17490	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34434.868	21804.934	1.55	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
676	Clementi Forest	2020-01-06	T17491	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34436.353	21804.534	1.25	20	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers
677	Clementi Forest	2020-01-06	T17492	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34440.972	21818.457	1.6	18	1) Storm vulnerable, 2) Low retention value
678	Clementi Forest	2020-01-06	T17493	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34443.02	21819.976	1.3	13	1) Good health, 2) No significant defects
679	Clementi Forest	2020-01-06	T17494	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34443.966	21826.31	1.2	15	1) Storm vulnerable, 2) Low retention value
680	Clementi Forest	2020-01-06	T17495	<i>Artocarpus heterophyllus</i>	Moraceae	Exotic	Casual	Tree	34447.365	21827.978	1	10	1) Good health, 2) Asymmetric lean towards South, 3) Assessment limited by climbers
681	Clementi Forest	2020-01-06	T17496	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34443.896	21826.587	1	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
682	Clementi Forest	2020-01-06	T17497	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34446.063	21821.793	2	20	1) Average health, 2) Root flare obvious, 3) Minor dieback at canopy
683	Clementi Forest	2020-01-06	T17498	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34447.145	21823.39	1.2	18	1) Good health, 2) Assessment limited by climbers
684	Clementi Forest	2020-01-06	T17499	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34472.389	21814.672	1.1	14	1) Good health, 2) No significant defects
685	Clementi Forest	2020-01-06	T17500	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34469.09	21810.17	2.6	18	1) Storm vulnerable, 2) Low retention value
686	Clementi Forest	2020-01-06	T17501	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34473.651	21808.336	2.5	20	1) Good health, 2) Assessment limited by climbers
687	Clementi Forest	2020-01-06	T17502	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34484.425	21811.483	1.5	18	1) Good health, 2) Root flare obvious, 3) Leaning Northwest, 4) Assessment limited by climbers
688	Clementi Forest	2020-01-06	T17503	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34489.069	21813.453	2.8	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
689	Clementi Forest	2020-01-06	T17504	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34465.858	21834.568	1.7	14	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) U-shaped bifurcation
690	Clementi Forest	2020-01-06	T17505	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34468.063	21835.818	1.25	14	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
691	Clementi Forest	2020-01-06	T17506	Unable to identify	-	-	-	-	34468.355	21837.26	1.45	16	1) Canopy completely defoliated
692	Clementi Forest	2020-01-06	T17507	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34472.888	21835.416	1.6	20	1) Good health, 2) No significant defects, 3) Root flare obvious
693	Clementi Forest	2020-01-06	T17508	<i>Artocarpus heterophyllus</i>	Moraceae	Exotic	Casual	Tree	34452.125	21833.158	1.1	10	1) Good health, 2) Extensive decay and cavity on tree bark facing Northwest, 3) Asymmetric canopy, 4) Low retention value
694	Clementi Forest	2020-01-06	T17509	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34459.545	21833.84	1.7	18	1) Good health, 2) No significant defects, 3) Root flare obvious
695	Clementi Forest	2020-01-06	T17510	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34458.567	21837.772	1.2	12	1) Good health, 2) Root flare obvious, 3) U-shaped bifurcation, 4) Assessment limited by climbers
696	Clementi Forest	2020-01-06	T17511	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34459.541	21844.411	1.5	18	1) Good health, 2) Root flare obvious, 3) Past canopy failure, 4) Low retention value
697	Clementi Forest	2020-01-06	T17512	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34480.231	21842.048	2.6	20	1) Good health, 2) No significant defects, 3) Root flare obvious
698	Clementi Forest	2020-01-06	T17513	<i>Diospyros blancoi</i>	Ebenaceae	Exotic	Cultivated Only	Tree	34479.06	21841.649	1.4	15	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
699	Clementi Forest	2020-01-06	T17514	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34498.141	21835.216	1.2	16	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
700	Clementi Forest	2020-01-06	T17515	<i>Cocos nucifera</i>	Arecaceae	Exotic	Naturalised	Tree	34495.436	21835.259	1.1	14	1) Good health, 2) No significant defects

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S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
701	Clementi Forest	2020-01-06	T17516	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34493.985	21836.156	1.1	16	1) Average health, 2) Root flare obvious, 3) Minor dieback at canopy, 4) Assessment limited by climbers
702	Clementi Forest	2020-01-06	T17517	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34498.277	21838.034	1	16	1) Average health, 2) Assessment limited by climbers
703	Clementi Forest	2020-01-06	T17518	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34499.067	21836.833	2.2	16	1) Storm vulnerable, 2) Low retention value
704	Clementi Forest	2020-01-06	T17519	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34497.237	21841.216	1	16	1) Good health, 2) Asymmetric canopy, 3) Assessment limited by climbers
705	Clementi Forest	2020-01-06	T17520	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34495.258	21846.561	2	8	1) Good health, 2) No significant defects
706	Clementi Forest	2020-01-06	T17521	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34490.747	21857.993	1.8	16	1) Good health, 2) No significant defects, 3) Root flare obvious
707	Clementi Forest	2020-01-06	T17522	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34494.848	21857.978	2	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
708	Clementi Forest	2020-01-06	T17523	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34493.988	21862.9	2	8	1) Good health, 2) No significant defects
709	Clementi Forest	2020-01-06	T17524	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34495.673	21866.159	1.5	13	1) Good health, 2) No significant defects
710	Clementi Forest	2020-01-06	T17525	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34482.525	21870.07	1.25	16	1) Storm vulnerable, 2) Low retention value
711	Clementi Forest	2020-01-06	T17526	<i>Cleoxylon indicum</i>	Euphorbiaceae	Native	Common	Tree	34487.033	21866.995	1	12	1) Good health, 2) Leaning Northwest, 3) Assessment limited by climbers
712	Clementi Forest	2020-01-07	T17527	<i>Adenanthera pavonina</i>	Fabaceae	Exotic	Naturalised	Tree	34502.368	21855.708	1.2	12	1) Good health, 2) Assessment limited by climbers and epiphytes
713	Clementi Forest	2020-01-07	T17528	<i>Mangifera indica</i>	Anacardiaceae	Exotic	Casual	Tree	34503.992	21855.998	2.9	15	1) Good health, 2) No significant defects
714	Clementi Forest	2020-01-07	T17529	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34506.666	21855.879	1.8	20	1) Good health, 2) No significant defects, 3) Root flare obvious
715	Clementi Forest	2020-01-07	T17530	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34505.422	21865.548	1.2	12	1) Good health, 2) No significant defects
716	Clementi Forest	2020-01-07	T17531	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34507.467	21873.727	1.2	10	1) Storm vulnerable, 2) Low retention value
717	Clementi Forest	2020-01-07	T17532	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34499.412	21879.461	2.3	25	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) Assessment of main bifurcation limited by climbers
718	Clementi Forest	2020-01-07	T17533	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34504.665	21881.723	1.2	12	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
719	Clementi Forest	2020-01-07	T17534	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34494.238	21895.379	1.2	10	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers and epiphytes
720	Clementi Forest	2020-01-07	T17535	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34499.761	21890.598	2	10	1) Good health, 2) No significant defects
721	Clementi Forest	2020-01-07	T17536	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34505.791	21894.841	2	8	1) Good health, 2) No significant defects
722	Clementi Forest	2020-01-07	T17537	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34508.223	21897.663	2	8	1) Good health, 2) No significant defects
723	Clementi Forest	2020-01-07	T17538	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34512.773	21860.717	1.4	12	1) Storm vulnerable, 2) Low retention value
724	Clementi Forest	2020-01-07	T17539	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34513.393	21856.163	1.4	25	1) Average health, 2) Low live canopy caused by seasonal shedding, 3) Assessment limited by undergrowth, epiphytes, and climbers
725	Clementi Forest	2020-01-07	T17540	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34510.231	21876.619	1.4	10	1) Good health, 2) No significant defects
726	Clementi Forest	2020-01-07	T17541	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34528.372	21868.566	2.2	25	1) Average health, 2) Root flare obvious, 3) Low live canopy caused by seasonal shedding
727	Clementi Forest	2020-01-07	T17542	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34528.803	21871.745	1.3	10	1) Storm vulnerable, 2) Low retention value
728	Clementi Forest	2020-01-07	T17543	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34532.428	21872.004	2	10	1) Good health, 2) No significant defects
729	Clementi Forest	2020-01-07	T17544	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34531.801	21876.818	1.7	25	1) Good health, 2) Structural assessment limited by undergrowth, epiphytes, and climbers
730	Clementi Forest	2020-01-07	T17545	<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	34525.798	21887.262	20	25	1) Good health, 2) No significant defects, 3) Shallow-rooted
731	Clementi Forest	2020-01-07	T17546	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34519.939	21897.009	1	14	1) Good health, 2) Assessment limited by climbers
732	Clementi Forest	2020-01-07	T17547	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34520.526	21900.694	1.6	14	1) Storm vulnerable, 2) Low retention value
733	Clementi Forest	2020-01-07	T17548	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34520.728	21899.397	1.8	20	1) Storm vulnerable, 2) Low retention value
734	Clementi Forest	2020-01-07	T17549	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34522.415	21900.492	1.7	15	1) Storm vulnerable, 2) Low retention value
735	Clementi Forest	2020-01-07	T17550	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34521.894	21900.708	2	10	1) Good health, 2) No significant defects

Appendix G2 List of Specimens Assessed by Certified Arborists in Clementi Forest

S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
736	Clementi Forest	2020-01-07	T17551	<i>Claoxylon indicum</i>	Euphorbiaceae	Native	Common	Tree	34521.868	21901.798	1.5	15	1) Good health, 2) Assessment limited by climbers
737	Clementi Forest	2020-01-07	T17552	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34523.746	21911.93	1.7	10	1) Good health, 2) No significant defects
738	Clementi Forest	2020-01-07	T17553	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34535.735	21900.955	2	10	1) Good health, 2) No significant defects
739	Clementi Forest	2020-01-07	T17554	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34553.058	21900.794	2	5	1) Good health, 2) No significant defects
740	Clementi Forest	2020-01-07	T17555	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34565.349	21900.191	1	15	1) Good health, 2) Past branch failure, 3) Assessment limited by climbers and epiphytes
741	Clementi Forest	2020-01-07	T17556	<i>Aphanamixis polystachya</i>	Meliaceae	Native	Endangered	Tree	34570.947	21898.645	1.1	8	1) Good health, 2) Past branch failure, 3) U-shaped bifurcation, 4) Assessment limited by climbers and epiphytes
742	Clementi Forest	2020-01-07	T17557	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34576.127	21888.888	2	6	1) Good health, 2) Partially uprooted
743	Clementi Forest	2020-01-07	T17558	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34575.379	21887.829	2	10	1) Good health, 2) No significant defects
744	Clementi Forest	2020-01-07	T17559	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34572.837	21937.195	2	15	1) Good health, 2) No significant defects, 3) Root flare obvious
745	Clementi Forest	2020-01-07	T17560	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34572.933	21946.916	2	8	1) Good health, 2) No significant defects
746	Clementi Forest	2020-01-07	T17561	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34564.343	21946.924	1.9	10	1) Good health, 2) Root flare obvious, 3) Past canopy failure, 4) Assessment limited by climbers and epiphytes
747	Clementi Forest	2020-01-07	T17562	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34572.096	21956.1	2	6	1) Good health, 2) No significant defects
748	Clementi Forest	2020-01-07	T17563	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34584.842	21948.017	2	8	1) Good health, 2) Partially uprooted
749	Clementi Forest	2020-01-07	T17564	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34591.616	21947.813	2	8	1) Good health, 2) No significant defects
750	Clementi Forest	2020-01-07	T17565	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34594.805	21936.145	2	8	1) Good health, 2) No significant defects
751	Clementi Forest	2020-01-07	T17566	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34595.84	21935.45	2	8	1) Good health, 2) No significant defects
752	Clementi Forest	2020-01-07	T17567	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34590.62	21932.419	1.4	12	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers and epiphytes
753	Clementi Forest	2020-01-07	T17568	<i>Ficus benjamina</i>	Moraceae	Cryptogenic	-	Strangler	34552.675	21948.092	5	20	1) Good health, 2) Shallow-rooted
754	Clementi Forest	2020-01-07	T17569	<i>Ficus benjamina</i>	Moraceae	Cryptogenic	-	Strangler	34541.976	21936.838	5	20	1) Good health, 2) Shallow-rooted
755	Clementi Forest	2020-01-07	T17570	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34524.928	21927.224	1.8	20	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) U-shaped bifurcation
756	Clementi Forest	2020-01-07	T17571	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34521.432	21925.137	2.3	20	1) Storm vulnerable, 2) Low retention value
757	Clementi Forest	2020-01-07	T17572	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34520.998	21923.816	2.4	20	1) Storm vulnerable, 2) Low retention value
758	Clementi Forest	2020-01-07	T17573	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34518.362	21920.273	1.8	10	1) Good health, 2) No significant defects
759	Clementi Forest	2020-01-07	T17574	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34515.105	21938.981	1.5	20	1) Good health, 2) Assessment limited by climbers and epiphytes
760	Clementi Forest	2020-01-07	T17575	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34507.513	21941.379	1.1	18	1) Good health, 2) No significant defects
761	Clementi Forest	2020-01-07	T17576	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34503.11	21925.211	1.9	10	1) Storm vulnerable, 2) Low retention value, 3) Big decay on main trunk
762	Clementi Forest	2020-01-07	T17577	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34489.379	21913.48	1.9	20	1) Good health, 2) No significant defects, 3) Root flare obvious
763	Clementi Forest	2020-01-07	T17578	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34491.574	21908.734	1.3	20	1) Good health, 2) Leaning Southwest, 3) Assessment limited by climbers and epiphytes
764	Clementi Forest	2020-01-07	T17579	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34493.76	21913.183	1.7	20	1) Good health, 2) Slight lean towards Northeast
765	Clementi Forest	2020-01-07	T17580	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34496.08	21903.766	3.6	20	1) Storm vulnerable, 2) Low retention value
766	Clementi Forest	2020-01-07	T17581	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34492.114	21902.869	1.5	15	1) Good health, 2) Past branch failure, 3) Assessment limited by climbers
767	Clementi Forest	2020-01-08	T17582	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	37984.821	30661.871	1.2	15	1) Good health, 2) Assessment limited by climbers
768	Clementi Forest	2020-01-08	T17583	<i>Pterocarpus indicus</i>	Fabaceae	Exotic	Casual	Tree	34420.42826	21723.41181	4.6	18	1) Good health, 2) Assessment limited by climbers and undergrowth
769	Clementi Forest	2020-01-08	T17584	<i>Alstonia angustiloba</i>	Apocynaceae	Native	Common	Tree	37994.846	30661.854	2.4	15	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
770	Clementi Forest	2020-01-08	T17585	<i>Cinnamomum iners</i>	Lauraceae	Native	Common	Tree	37995.509	30661.801	1.1	8	1) Poor health, 2) Past branch failure, 3) Large cavity on trunk at height 3 m facing Northwest

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S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
771	Clementi Forest	2020-01-08	T17586	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34398.111	21718.492	1.3	14	1) Storm vulnerable, 2) Low retention value
772	Clementi Forest	2020-01-08	T17587	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34399.296	21712.686	2	6	1) Good health, 2) No significant defects
773	Clementi Forest	2020-01-08	T17588	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34395.415	21712.439	1.2	10	1) Good health, 2) No significant defects
774	Clementi Forest	2020-01-08	T17589	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34398.925	21709.434	1.3	13	1) Storm vulnerable, 2) Low retention value
775	Clementi Forest	2020-01-08	T17590	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34362.879	21682.117	2	8	1) Good health, 2) No significant defects
776	Clementi Forest	2020-01-08	T17591	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34358.152	21691.375	2	10	1) Good health, 2) No significant defects
777	Clementi Forest	2020-01-08	T17592	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34346.332	21709.515	2	10	1) Good health, 2) No significant defects, 3) Cluster of two
778	Clementi Forest	2020-01-08	T17592A	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34347.732	21709.274	2	10	1) Good health, 2) No significant defects, 3) Cluster of two
779	Clementi Forest	2020-01-08	T17593	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34351.515	21706.835	1.6	10	1) Good health, 2) No significant defects
780	Clementi Forest	2020-01-08	T17594	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34345.853	21707.12	2	8	1) Good health, 2) No significant defects
781	Clementi Forest	2020-01-08	T17595	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34348.646	21711.591	2	8	1) Good health, 2) No significant defects
782	Clementi Forest	2020-01-08	T17596	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34355.192	21714.322	1.2	10	1) Storm vulnerable, 2) Low retention value
783	Clementi Forest	2020-01-08	T17597	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34373.34	21725.711	2	8	1) Good health, 2) No significant defects
784	Clementi Forest	2020-01-08	T17598	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34381.722	21721.844	1.3	10	1) Storm vulnerable, 2) Low retention value
785	Clementi Forest	2020-01-08	T17599	<i>Macaranga gigantea</i>	Euphorbiaceae	Native	Common	Tree	34420.711	21731.324	1.1	10	1) Good health, 2) Root flare obvious, 3) Asymmetric lean towards West
786	Clementi Forest	2020-01-08	T17600	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34428.786	21734.722	1.2	15	1) Good health, 2) Assessment limited by climbers
787	Clementi Forest	2020-01-08	T17601	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34432.557	21734.635	1.2	16	1) Good health, 2) Assessment limited by climbers
788	Clementi Forest	2020-01-08	T17602	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34429.821	21746.366	1.7	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
789	Clementi Forest	2020-01-08	T17603	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34437.848	21750.852	1.6	15	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
790	Clementi Forest	2020-01-08	T17604	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34442.174	21748.15	1.1	15	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
791	Clementi Forest	2020-01-08	T17605	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34446.721	21754.181	2.8	17	1) Good health, 2) Root flare obvious, 3) Cavity on trunk at height 3.5 m facing Southeast
792	Clementi Forest	2020-01-08	T17606	<i>Aphanamixis polystachya</i>	Meliaceae	Native	Endangered	Tree	34452.143	21753.824	1	8	1) Good health, 2) Asymmetric canopy, 3) Assessment limited by climbers
793	Clementi Forest	2020-01-08	T17607	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34457.716	21764.161	1	14	1) Good health, 2) Root flare obvious, 3) Asymmetric lean towards West
794	Clementi Forest	2020-01-08	T17608	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34466.924	21766.183	1.4	14	1) Good health, 2) Root flare obvious, 3) Asymmetric lean towards West
795	Clementi Forest	2020-01-08	T17609	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34474.249	21759.904	1	18	1) Average health, 2) Minor canopy dieback, 3) Assessment limited by climbers
796	Clementi Forest	2020-01-08	T17610	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34475.686	21759.641	1.05	17	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
797	Clementi Forest	2020-01-08	T17611	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34479.484	21762.655	1.3	15	1) Storm vulnerable, 2) Low retention value
798	Clementi Forest	2020-01-08	T17612	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34481.28	21765.793	1.1	14	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers
799	Clementi Forest	2020-01-08	T17613	<i>Pterocarpus indicus</i>	Fabaceae	Exotic	Casual	Tree	34475.076	21779.91	2	17	1) Good health, 2) Root flare obvious, 3) Asymmetric lean towards Northeast, 4) Assessment limited by climbers
800	Clementi Forest	2020-01-08	T17614	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34483.86	21783.866	1.5	22	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers
801	Clementi Forest	2020-01-08	T17615	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34497.803	21782.684	1.2	20	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers
802	Clementi Forest	2020-01-08	T17616	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34499.625	21781.133	2	10	1) Good health, 2) No significant defects
803	Clementi Forest	2020-01-08	T17617	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34502.623	21785.744	1.8	8	1) Good health, 2) No significant defects
804	Clementi Forest	2020-01-08	T17618	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34503.364	21790.249	1.8	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
805	Clementi Forest	2020-01-08	T17619	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34505.833	21786.85	2.4	22	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers

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S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
806	Clementi Forest	2020-01-08	T17620	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34503.755	21797.2	2.4	20	1) Good health, 2) Leaning Northeast, 3) Compression and tension roots present, 4) Assessment limited by climbers
807	Clementi Forest	2020-01-08	T17621	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34499.113	21795.222	1.5	16	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
808	Clementi Forest	2020-01-08	T17622	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34504.877	21800.726	1.6	16	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers
809	Clementi Forest	2020-01-08	T17623	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34525.758	21814.555	1.5	18	1) Average health, 2) Past branch failure, 3) Decay on trunk, 4) Assessment limited by climbers
810	Clementi Forest	2020-01-08	T17624	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34524.795	21817.208	1.9	16	1) Storm vulnerable, 2) Low retention value
811	Clementi Forest	2020-01-08	T17625	Unable to identify	-	-	-	-	34526.333	21817.478	1.5	10	1) Poor health, 2) Canopy completely covered by climbers
812	Clementi Forest	2020-01-08	T17626	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34529.693	21825.589	2	14	1) Good health, 2) U-shaped bifurcation, 3) Assessment limited by climbers
813	Clementi Forest	2020-01-08	T17627	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34531.872	21819.594	1.1	12	1) Good health, 2) No significant defects, 3) Cluster of three
814	Clementi Forest	2020-01-08	T17627A	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34533.866	21821.059	1.1	12	1) Good health, 2) No significant defects, 3) Cluster of three
815	Clementi Forest	2020-01-08	T17627B	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34533.555	21819.435	1.8	12	1) Good health, 2) No significant defects, 3) Cluster of three
816	Clementi Forest	2020-01-08	T17628	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34517.544	21828.85	1.8	12	1) Good health, 2) No significant defects
817	Clementi Forest	2020-01-08	T17629	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34517.995	21830.923	1.2	10	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
818	Clementi Forest	2020-01-08	T17630	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34518.482	21830.229	1	14	1) Average health, 2) Root flare obvious, 3) Asymmetric lean towards Northwest, 4) Assessment limited by climbers
819	Clementi Forest	2020-01-08	T17631	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34510.252	21836.435	1	16	1) Storm vulnerable, 2) Low retention value
820	Clementi Forest	2020-01-08	T17632	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34502.224	21819.439	2.1	18	1) Good health, 2) Root flare obvious, 3) Asymmetric lean towards East, 4) Assessment limited by climbers
821	Clementi Forest	2020-01-08	T17633	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34501.086	21819.626	1.1	18	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers
822	Clementi Forest	2020-01-08	T17634	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34499.75	21819.492	1.6	17	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
823	Clementi Forest	2020-01-08	T17635	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34474.752	21807.488	1.15	17	1) Storm vulnerable, 2) Low retention value
824	Clementi Forest	2020-01-08	T17635A	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34477.254	21807.725	1.8	20	1) Storm vulnerable, 2) Low retention value
825	Clementi Forest	2020-01-08	T17636	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34480.465	21806.564	1.8	20	1) Storm vulnerable, 2) Low retention value
826	Clementi Forest	2020-01-08	T17637	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34469.878	21793.404	2.8	20	1) Good health, 2) Root flare obvious, 3) Multiple branch attachments, 4) Assessment limited by climbers
827	Clementi Forest	2020-01-08	T17638	<i>Mangifera odorata</i>	Anacardiaceae	Native	Vulnerable	Tree	34474.405	21794.58	1.8	16	1) Good health, 2) U-shaped bifurcation, 3) Asymmetric canopy, 4) Assessment limited by climbers
828	Clementi Forest	2020-01-08	T17639	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34463.965	21785.098	1.8	18	1) Good health, 2) No significant defects, 3) Root flare obvious
829	Clementi Forest	2020-01-08	T17640	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34467.58	21786.062	2.2	18	1) Storm vulnerable, 2) Low retention value
830	Clementi Forest	2020-01-08	T17641	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34450.094	21779.093	1	18	1) Good health, 2) Assessment limited by climbers
831	Clementi Forest	2020-01-08	T17642	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34453.067	21782.171	2.5	20	1) Storm vulnerable, 2) Low retention value
832	Clementi Forest	2020-01-08	T17643	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34452.301	21780.373	1.1	18	1) Storm vulnerable, 2) Low retention value
833	Clementi Forest	2020-01-08	T17644	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34442.332	21777.176	1	12	1) Good health, 2) Assessment limited by climbers and fallen trees at base
834	Clementi Forest	2020-01-08	T17645	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34426.536	21759.41	1.2	20	1) Storm vulnerable, 2) Low retention value
835	Clementi Forest	2020-01-08	T17646	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34430.031	21758.005	1.6	18	1) Storm vulnerable, 2) Low retention value
836	Clementi Forest	2020-01-08	T17647	<i>Vitex pinnata</i>	Lamiaceae	Native	Common	Tree	34421.874	21761.716	1.2	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
837	Clementi Forest	2020-01-08	T17648	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34422.573	21760.035	1.6	20	1) Good health, 2) Assessment limited by climbers
838	Clementi Forest	2020-01-08	T17649	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34419.355	21747.384	1.4	18	1) Good health, 2) No significant defects, 3) U-shaped bifurcation
839	Clementi Forest	2020-01-08	T17650	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34418.428	21751.764	1.5	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
840	Clementi Forest	2020-01-09	T17651	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34376.288	21726.757	3.6	20	1) Storm vulnerable, 2) Low retention value

Appendix G2 List of Specimens Assessed by Certified Arborists in Clementi Forest

S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
841	Clementi Forest	2020-01-09	T17651A	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34374.5	21727.157	1.8	20	1) Storm vulnerable, 2) Low retention value
842	Clementi Forest	2020-01-09	T17652	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34363.367	21732.474	1.6	20	1) Storm vulnerable, 2) Low retention value
843	Clementi Forest	2020-01-09	T17653	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34359.45	21736.802	1.5	8	1) Good health, 2) No significant defects
844	Clementi Forest	2020-01-09	T17654	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34359.634	21737.371	2.6	20	1) Storm vulnerable, 2) Low retention value
845	Clementi Forest	2020-01-09	T17655	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34371.297	21735.457	2.2	10	1) Storm vulnerable, 2) Low retention value
846	Clementi Forest	2020-01-09	T17656	<i>Vitex pinnata</i>	Lamiaceae	Native	Common	Tree	34379.279	21740.717	1.8	12	1) Good health, 2) Root flare obvious, 3) Multiple branch attachments, 4) Assessment limited by climbers and epiphytes
847	Clementi Forest	2020-01-09	T17657	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34404.596	21756.092	2.3	15	1) Storm vulnerable, 2) Low retention value
848	Clementi Forest	2020-01-09	T17658	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34404.416	21756.227	2.5	8	1) Good health, 2) No significant defects
849	Clementi Forest	2020-01-09	T17659	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34391.562	21764.103	1.4	12	1) Average health, 2) Root flare obvious, 3) U-shaped bifurcation, 4) Past branch failure, 5) Decay and fruiting bodies on primary branch, 6) Low retention value
850	Clementi Forest	2020-01-09	T17660	<i>Aphanamixis polystachya</i>	Meliaceae	Native	Endangered	Tree	34388.813	21772.861	1.5	12	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
851	Clementi Forest	2020-01-09	T17661	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34386.018	21790.782	2	12	1) Good health, 2) No significant defects
852	Clementi Forest	2020-01-09	T17662	<i>Mangifera odorata</i>	Anacardiaceae	Native	Vulnerable	Tree	34386.484	21788.83	1.6	15	1) Good health, 2) Assessment limited by climbers
853	Clementi Forest	2020-01-09	T17663	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34403.151	21786.863	1	18	1) Good health, 2) No significant defects, 3) Root flare obvious
854	Clementi Forest	2020-01-09	T17664	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34402.485	21786.925	1	18	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) U-shaped bifurcation
855	Clementi Forest	2020-01-09	T17665	<i>Cinnamomum iners</i>	Lauraceae	Native	Common	Tree	34407.125	21786.747	1.1	6	1) Poor health, 2) Past failure on primary branch, 3) Low retention value
856	Clementi Forest	2020-01-09	T17666	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34403.253	21806.87	1.2	18	1) Good health, 2) No significant defects, 3) Root flare obvious
857	Clementi Forest	2020-01-09	T17667	<i>Syzygium aqueum</i>	Myrtaceae	Exotic	Cultivated Only	Tree	34403.092	21803.818	1.3	15	1) Good health, 2) No significant defects, 3) Root flare obvious
858	Clementi Forest	2020-01-09	T17668	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34411.026	21804.032	1.8	20	1) Good health, 2) No significant defects, 3) Root flare obvious
859	Clementi Forest	2020-01-09	T17669	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34406.214	21804.98	2.4	20	1) Storm vulnerable, 2) Low retention value, 3) Past canopy failure
860	Clementi Forest	2020-01-09	T17670	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34405.172	21812.565	1.2	10	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
861	Clementi Forest	2020-01-09	T17671	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34415.758	21809.792	1.4	12	1) Good health, 2) Smooth bulge at height 3 m indicative of internal decay, 3) Assessment limited by climbers
862	Clementi Forest	2020-01-09	T17672	<i>Bridelia tomentosa</i>	Phyllanthaceae	Native	Common	Tree	34414.84	21809.241	1.1	8	1) Poor health, 2) Decay on trunk, 3) Failure at canopy
863	Clementi Forest	2020-01-09	T17673	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34426.762	21810.728	1.2	10	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
864	Clementi Forest	2020-01-09	T17674	<i>Aphanamixis polystachya</i>	Meliaceae	Native	Endangered	Tree	34426.591	21810.124	1.3	10	1) Good health, 2) Poor trunk form, 3) Leaning Southeast
865	Clementi Forest	2020-01-09	T17675	<i>Mangifera indica</i>	Anacardiaceae	Exotic	Casual	Tree	34425.246	21830.022	1.4	10	1) Average health, 2) Root flare obvious, 3) Past failure on primary branch
866	Clementi Forest	2020-01-09	T17676	<i>Averrhoa bilimbi</i>	Oxalidaceae	Exotic	Casual	Tree	34432.878	21829.654	1.1	10	1) Good health, 2) No significant defects
867	Clementi Forest	2020-01-09	T17677	<i>Mangifera indica</i>	Anacardiaceae	Exotic	Casual	Tree	34435.374	21829.693	1.6	15	1) Good health, 2) No significant defects, 3) Root flare obvious
868	Clementi Forest	2020-01-09	T17678	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34435.221	21839.057	1.4	12	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
869	Clementi Forest	2020-01-09	T17679	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34436.447	21848.2	1.5	12	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
870	Clementi Forest	2020-01-09	T17680	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34441.785	21848.007	1.8	18	1) Storm vulnerable, 2) Low retention value
871	Clementi Forest	2020-01-09	T17681	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34450.035	21847.012	2.1	18	1) Storm vulnerable, 2) Low retention value
872	Clementi Forest	2020-01-09	T17682	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34450.38	21842.256	1.04	12	1) Good health, 2) No significant defects, 3) Root flare obvious
873	Clementi Forest	2020-01-09	T17683	<i>Camposperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34445.371	21841.531	2.6	15	1) Good health, 2) No significant defects, 3) Root flare obvious
874	Clementi Forest	2020-01-09	T17684	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34455.497	21863.077	1.4	15	1) Good health, 2) No significant defects, 3) Root flare obvious
875	Clementi Forest	2020-01-09	T17685	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34454.771	21861.68	1	15	1) Good health, 2) Assessment limited by climbers

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S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
876	Clementi Forest	2020-01-09	T17686	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34456.956	21861.285	1	12	1) Good health, 2) Smooth buldge at bifurcation indicative of internal decay
877	Clementi Forest	2020-01-09	T17687	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34462.967	21860.128	1.3	12	1) Good health, 2) Assessment limited by climbers
878	Clementi Forest	2020-01-09	T17688	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34460.471	21863.71	1.6	15	1) Good health, 2) Assessment limited by climbers
879	Clementi Forest	2020-01-09	T17689	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34460.547	21865.67	2.2	15	1) Good health, 2) Assessment limited by climbers
880	Clementi Forest	2020-01-09	T17690	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34484.903	21869.197	1.5	12	1) Storm vulnerable, 2) Low retention value
881	Clementi Forest	2020-01-09	T17691	<i>Bridelia tomentosa</i>	Phyllanthaceae	Native	Common	Tree	34486.517	21870.969	1.1	12	1) Average health, 2) No significant defects, 3) Root flare obvious
882	Clementi Forest	2020-01-09	T17692	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34473.356	21889.02	1.5	15	1) Good health, 2) Assessment limited by climbers
883	Clementi Forest	2020-01-09	T17693	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34479.057	21891.563	1.7	15	1) Storm vulnerable, 2) Low retention value
884	Clementi Forest	2020-01-09	T17694	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34493.419	21892.291	1.2	10	1) Good health, 2) Assessment limited by climbers
885	Clementi Forest	2020-01-09	T17695	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34491.962	21877.667	1.6	12	1) Storm vulnerable, 2) Low retention value
886	Clementi Forest	2020-01-09	T17696	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34492.043	21878.645	1	12	1) Storm vulnerable, 2) Low retention value
887	Clementi Forest	2020-01-09	T17697	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34496.734	21877.721	1.4	15	1) Good health, 2) Root flare obvious, 3) Assessment of tree base limited by undergrowth
888	Clementi Forest	2020-01-14	T17698	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34511.501	21951.316	1.2	14	1) Good health, 2) Assessment limited by climbers
889	Clementi Forest	2020-01-14	T17699	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34494.518	21960.197	1.2	15	1) Good health, 2) Assessment limited by climbers and epiphytes
890	Clementi Forest	2020-01-14	T17700	<i>Ficus benjamina</i>	Moraceae	Cryptogenic	-	Strangler	34489.061	21953.719	1.5	20	1) Good health, 2) Shallow-rooted, 3) Strangling a <i>Hevea brasiliensis</i> tree
891	Clementi Forest	2020-01-13	T17701	Unable to identify	-	-	-	-	34537.174	21944.506	1.4	20	1) Poor health, 2) Crown completely defoliated
892	Clementi Forest	2020-01-13	T17702	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34539.415	21949.485	2.2	16	1) Good health, 2) Extensive cavity on trunk, 3) Low retention value
893	Clementi Forest	2020-01-13	T17703	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34537.935	21958.638	1.4	13	1) Good health, 2) No significant defects
894	Clementi Forest	2020-01-13	T17704	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34538.21	21961.35	1.4	13	1) Good health, 2) No significant defects
895	Clementi Forest	2020-01-13	T17705	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34530.072	21958.569	1.4	13	1) Good health, 2) No significant defects
896	Clementi Forest	2020-01-13	T17706	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34534.999	21961.892	1.4	13	1) Good health, 2) No significant defects
897	Clementi Forest	2020-01-13	T17707	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34532.648	21958.745	1.4	15	1) Good health, 2) Asymmetric canopy, 3) Assessment limited by climbers
898	Clementi Forest	2020-01-13	T17708	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34535.888	21960.027	1.3	13	1) Good health, 2) Asymmetric canopy, 3) Assessment limited by climbers
899	Clementi Forest	2020-01-13	T17709	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34532.624	21963.367	1.4	12	1) Good health, 2) No significant defects
900	Clementi Forest	2020-01-13	T17710	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34539.596	21962.143	1.3	17	1) Good health, 2) Root flare obvious, 3) Decay on primary branch
901	Clementi Forest	2020-01-13	T17711	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34540.987	21982.545	1.5	12	1) Good health, 2) No significant defects
902	Clementi Forest	2020-01-13	T17712	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34546.222	21986.694	1	12	1) Good health, 2) Decay on primary branch, 3) Assessment limited by climbers
903	Clementi Forest	2020-01-13	T17713	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34541.212	21983.766	1.3	12	1) Good health, 2) Decay on primary branch, 3) Assessment limited by climbers
904	Clementi Forest	2020-01-13	T17714	<i>Cinnamomum iners</i>	Lauraceae	Native	Common	Tree	34544.517	21987.063	1.5	10	1) Good health, 2) No significant defects
905	Clementi Forest	2020-01-13	T17715	<i>Cinnamomum iners</i>	Lauraceae	Native	Common	Tree	34548.16	21988.352	1.2	10	1) Good health, 2) No significant defects
906	Clementi Forest	2020-01-13	T17716	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34556.844	21988.253	1.65	18	1) Good health, 2) No significant defects, 3) Root flare obvious
907	Clementi Forest	2020-01-13	T17717	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34562.541	21990.82	1.2	18	1) Good health, 2) No significant defects, 3) Root flare obvious
908	Clementi Forest	2020-01-13	T17718	<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	34565.307	22000.278	3	18	1) Good health, 2) Assessment limited by climbers
909	Clementi Forest	2020-01-13	T17719	<i>Garcinia mangostana</i>	Clusiaceae	Exotic	Casual	Tree	34560.737	22019.523	1	16	1) Good health, 2) Assessment limited by climbers
910	Clementi Forest	2020-01-13	T17720	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34567.429	22022.77	2	20	1) Good health, 2) Root flare obvious, 3) V-shaped bifurcation

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S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
911	Clementi Forest	2020-01-13	T17721	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34578.524	22026.035	1.4	22	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
912	Clementi Forest	2020-01-13	T17722	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34585.453	22033.471	1.5	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
913	Clementi Forest	2020-01-13	T17723	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34604.353	22047.42	1.1	16	1) Good health, 2) No significant defects, 3) U-shaped bifurcation
914	Clementi Forest	2020-01-13	T17724	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34602.164	22051.301	1.1	16	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers
915	Clementi Forest	2020-01-13	T17725	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34608.831	22052.092	1.5	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
916	Clementi Forest	2020-01-13	T17726	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34609.708	22056.229	1.1	16	1) Good health, 2) Leaning East, 3) Assessment limited by climbers
917	Clementi Forest	2020-01-13	T17727	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34613.035	22052.29	1.1	16	1) Good health, 2) Asymmetric canopy, 3) Assessment limited by climbers
918	Clementi Forest	2020-01-13	T17728	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34618.389	22055.915	1.3	18	1) Average health, 2) Past trunk failure, 3) Low retention value
919	Clementi Forest	2020-01-13	T17729	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34620.144	22053.409	1.7	20	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers
920	Clementi Forest	2020-01-13	T17730	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34627.661	22040.904	1.5	18	1) Good health, 2) Asymmetric canopy, 3) Assessment limited by climbers
921	Clementi Forest	2020-01-13	T17731	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34627.866	22042.918	1.8	18	1) Good health, 2) Asymmetric canopy, 3) Assessment limited by climbers
922	Clementi Forest	2020-01-13	T17732	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34629.271	22039.299	1.8	18	1) Good health, 2) Asymmetric canopy, 3) Assessment limited by climbers
923	Clementi Forest	2020-01-13	T17733	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34624.697	22039.348	1.2	18	1) Good health, 2) Asymmetric canopy, 3) Assessment limited by climbers
924	Clementi Forest	2020-01-13	T17734	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34623.219	22038.071	1.8	18	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers
925	Clementi Forest	2020-01-13	T17735	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34621.654	22030.779	1.6	18	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers
926	Clementi Forest	2020-01-13	T17736	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34616.641	22022.961	1.2	9	1) Good health, 2) No significant defects
927	Clementi Forest	2020-01-13	T17737	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34617.708	22040.41	1.3	18	1) Good health, 2) No significant defects, 3) Root flare obvious
928	Clementi Forest	2020-01-13	T17738	<i>Litsea elliptica</i>	Lauraceae	Native	Common	Tree	34617.579	22046.637	1.8	25	1) Good health, 2) Root flare obvious, 3) Assessment limited by other tree canopies in proximity
929	Clementi Forest	2020-01-13	T17739	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34618.005	22044.889	1.5	22	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
930	Clementi Forest	2020-01-13	T17740	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34617.985	22047.091	2.2	25	1) Good health, 2) No significant defects, 3) Root flare obvious
931	Clementi Forest	2020-01-13	T17741	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34600.393	22048.668	1.2	16	1) Good health, 2) No significant defects
932	Clementi Forest	2020-01-13	T17742	<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	34595.188	22032.226	1.2	25	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
933	Clementi Forest	2020-01-13	T17743	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34592.275	22020.529	3.2	25	1) Good health, 2) Strangled by <i>Ficus benjamina</i>
934	Clementi Forest	2020-01-13	T17744	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34595.997	22018.192	1.1	12	1) Good health, 2) Root flare obvious, 3) V-shaped bifurcation, 4) Asymmetric canopy
935	Clementi Forest	2020-01-13	T17745	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34611.86	22006.282	2.5	14	1) Storm vulnerable, 2) Low retention value
936	Clementi Forest	2020-01-13	T17746	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34618.505	22008.564	1.6	14	1) Storm vulnerable, 2) Low retention value
937	Clementi Forest	2020-01-13	T17747	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34614.718	22007.56	1.5	14	1) Storm vulnerable, 2) Low retention value
938	Clementi Forest	2020-01-13	T17748	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34615.634	22007.367	2	9	1) Good health, 2) No significant defects
939	Clementi Forest	2020-01-13	T17749	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34618.035	22005.156	1.2	14	1) Storm vulnerable, 2) Low retention value
940	Clementi Forest	2020-01-13	T17750	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34605.571	21998.444	1.2	16	1) Good health, 2) Assessment limited by climbers
941	Clementi Forest	2020-01-13	T17751	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34609.167	21996.647	2	14	1) Good health, 2) No significant defects
942	Clementi Forest	2020-01-13	T17752	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34589.388	22008.79	2	18	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy
943	Clementi Forest	2020-01-13	T17753	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34575	22015.158	1.9	20	1) Storm vulnerable, 2) Low retention value
944	Clementi Forest	2020-01-13	T17754	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34570.544	22020.83	1.2	20	1) Good health, 2) No significant defects
945	Clementi Forest	2020-01-13	T17755	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34568.067	22020.868	1.2	18	1) Good health, 2) Big borer hole on trunk at height 1.5 m facing Southeast

Appendix G2 List of Specimens Assessed by Certified Arborists in Clementi Forest

S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
946	Clementi Forest	2020-01-13	T17756	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34574.239	22029.566	2	25	1) Good health, 2) No significant defects, 3) Root flare obvious
947	Clementi Forest	2020-01-13	T17757	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34550.902	22020.94	1.8	22	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
948	Clementi Forest	2020-01-13	T17758	<i>Ficus benjamina</i>	Moraceae	Cryptogenic	-	Strangler	34577.016	21989.741	2	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
949	Clementi Forest	2020-01-13	T17759	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34563.095	21985.928	1.2	20	1) Good health, 2) Assessment limited by climbers
950	Clementi Forest	2020-01-13	T17760	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34515.522	21969.694	1.8	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
951	Clementi Forest	2020-01-13	T17761	<i>Cinnamomum iners</i>	Lauraceae	Native	Common	Tree	34514.301	21970.466	1.25	16	1) Good health, 2) Root flare obvious, 3) Asymmetric lean towards West
952	Clementi Forest	2020-01-13	T17762	<i>Cinnamomum iners</i>	Lauraceae	Native	Common	Tree	34518.513	21969.602	1.6	16	1) Two trees fused together, 2) Good health
953	Clementi Forest	2020-01-13	T17762	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34518.513	21969.602	1.8	16	1) Two trees fused together, 2) Good health, 3) Decay at bifurcation and on trunk
954	Clementi Forest	2020-01-13	T17763	<i>Cinnamomum iners</i>	Lauraceae	Native	Common	Tree	34520.269	21974.537	1	12	1) Good health, 2) Asymmetric lean towards East, 3) Assessment limited by climbers
955	Clementi Forest	2020-01-13	T17764	<i>Aphanamixis polystachya</i>	Meliaceae	Native	Endangered	Tree	34518.448	21984.224	1.3	10	1) Good health, 2) Asymmetric lean towards Northeast, 3) Assessment limited by climbers
956	Clementi Forest	2020-01-13	T17765	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34508.689	21968.08	1	18	1) Good health, 2) U-shaped bifurcation, 3) Asymmetric canopy, 4) Assessment limited by climbers
957	Clementi Forest	2020-01-13	T17766	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34509.362	21943.253	1.1	14	1) Good health, 2) Asymmetric lean towards East, 3) Assessment limited by climbers
958	Clementi Forest	2020-01-13	T17767	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34511.477	21944.457	1.7	14	1) Good health, 2) Fungal fruiting bodies at base of tree, 3) Asymmetric lean towards East, 4) Assessment limited by climbers
959	Clementi Forest	2020-01-13	T17768	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34507.738	21953.441	2.4	14	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
960	Clementi Forest	2020-01-13	T17769	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34504.786	21953.145	1.9	20	1) Good health, 2) Assessment limited by climbers
961	Clementi Forest	2020-01-13	T17770	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34506.4	21951.797	1	16	1) Good health, 2) Asymmetric canopy, 3) Assessment limited by climbers
962	Clementi Forest	2020-01-14	T17771	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34488.83	21954.771	1.3	18	1) Good health, 2) Assessment limited by climbers
963	Clementi Forest	2020-01-14	T17772	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34477.099	21947.588	1	15	1) Good health, 2) Assessment limited by climbers
964	Clementi Forest	2020-01-14	T17773	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34479.07	21932.948	1.7	17	1) Good health, 2) Multiple branch attachments, 3) Decay at bifurcation
965	Clementi Forest	2020-01-14	T17774	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34476.064	21929.687	2	13	1) Good health, 2) Low bifurcation, 3) Leaning West
966	Clementi Forest	2020-01-14	T17775	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34478.373	21933.53	1.6	13	1) Good health, 2) Past branch failure, 3) Leaning West
967	Clementi Forest	2020-01-14	T17776	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34484.151	21922.612	1.6	15	1) Good health, 2) Leaning West, 3) Assessment limited by climbers
968	Clementi Forest	2020-01-14	T17777	<i>Aphanamixis polystachya</i>	Meliaceae	Native	Endangered	Tree	34479.835	21907.478	1.05	13	1) Good health, 2) Root flare obvious, 3) Leaning North, 4) Assessment limited by climbers
969	Clementi Forest	2020-01-14	T17778	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34471.743	21900.123	1.8	18	1) Storm vulnerable, 2) Low retention value
970	Clementi Forest	2020-01-14	T17779	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34466.483	21903.594	1	16	1) Good health, 2) No significant defects
971	Clementi Forest	2020-01-14	T17780	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34449.187	21909.337	1	16	1) Good health, 2) Root flare obvious, 3) Growing on slope, 4) Assessment limited by climbers
972	Clementi Forest	2020-01-14	T17781	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34450.854	21905.58	1.2	20	1) Good health, 2) Assessment limited by climbers
973	Clementi Forest	2020-01-14	T17782	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34444.392	21896.194	1.05	14	1) Poor health, 2) Canopy defoliated, 3) Assessment limited by climbers
974	Clementi Forest	2020-01-14	T17783	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34439.909	21887.025	2.2	20	1) Good health, 2) Assessment limited by climbers
975	Clementi Forest	2020-01-14	T17784	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34441.837	21882.005	1.8	20	1) Good health, 2) Assessment limited by climbers
976	Clementi Forest	2020-01-14	T17785	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34434.891	21879.324	2.6	18	1) Storm vulnerable, 2) Low retention value, 3) Strangled by <i>Ficus microcarpa</i>
977	Clementi Forest	2020-01-14	T17786	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34427.824	21867.739	1.3	15	1) Good health, 2) Multiple past branch failures, 3) Assessment limited by climbers
978	Clementi Forest	2020-01-14	T17787	<i>Bridelia tomentosa</i>	Phyllanthaceae	Native	Common	Tree	34433.712	21859.119	1.5	20	1) Good health, 2) Assessment limited by climbers
979	Clementi Forest	2020-01-14	T17788	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34427.13	21858.405	1.1	16	1) Good health, 2) No significant defects, 3) Root flare obvious
980	Clementi Forest	2020-01-14	T17789	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34410.309	21863.704	1.5	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers

Appendix G2 List of Specimens Assessed by Certified Arborists in Clementi Forest

S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
981	Clementi Forest	2020-01-14	T17790	<i>Artocarpus integer</i>	Moraceae	Exotic	Casual	Tree	34412.195	21864.815	1.2	14	1) Good health, 2) Assessment limited by climbers
982	Clementi Forest	2020-01-14	T17791	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34415.644	21863.377	1.4	15	1) Average health, 2) Past canopy failure, 3) Poor form
983	Clementi Forest	2020-01-14	T17792	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34408.417	21851.502	1.6	18	1) Average health, 2) Root flare obvious, 3) Dieback at canopy, 4) Assessment limited by climbers
984	Clementi Forest	2020-01-14	T17793	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34397.761	21845.676	1.5	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by undergrowth
985	Clementi Forest	2020-01-14	T17794	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34392.788	21846.902	1.3	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
986	Clementi Forest	2020-01-14	T17795	<i>Mangifera foetida</i>	Anacardiaceae	Native	Vulnerable	Tree	34403.245	21834.421	1.8	20	1) Good health, 2) Assessment limited by canopies of other trees
987	Clementi Forest	2020-01-14	T17796	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34406.673	21826.542	1.2	20	1) Average health, 2) Root flare obvious, 3) Poor form, 4) Assessment limited by undergrowth
988	Clementi Forest	2020-01-14	T17797	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34383.438	21814.2	2	10	1) Good health, 2) No significant defects
989	Clementi Forest	2020-01-14	T17798	<i>Artocarpus heterophyllus</i>	Moraceae	Exotic	Casual	Tree	34380.175	21807.433	1.2	16	1) Good health, 2) Assessment limited by climbers and canopies of other trees
990	Clementi Forest	2020-01-14	T17799	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34385.417	21804.728	1.3	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
991	Clementi Forest	2020-01-14	T17800	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34370.484	21793.707	1.6	8	1) Good health, 2) No significant defects, 3) Cluster of three
992	Clementi Forest	2020-01-14	T17800A	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34366.781	21796.668	2	7	1) Good health, 2) No significant defects, 3) Cluster of three
993	Clementi Forest	2020-01-14	T17800B	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34362.61	21800.131	2	8	1) Good health, 2) No significant defects, 3) Cluster of three
994	Clementi Forest	2020-01-14	T17801	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34353.471	21791.403	2	8	1) Good health, 2) No significant defects, 3) Cluster of two
995	Clementi Forest	2020-01-14	T17801A	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34360.067	21782.937	2.5	10	1) Good health, 2) No significant defects, 3) Cluster of two
996	Clementi Forest	2020-01-14	T17802	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34350.025	21774.883	1.2	15	1) Storm vulnerable, 2) Low retention value
997	Clementi Forest	2020-01-14	T17803	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34347.01	21773.84	2.2	18	1) Storm vulnerable, 2) Low retention value
998	Clementi Forest	2020-01-14	T17803A	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34351.138	21770.253	2.2	18	1) Storm vulnerable, 2) Low retention value
999	Clementi Forest	2020-01-14	T17804	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34335.475	21761.847	2.3	18	1) Storm vulnerable, 2) Low retention value
1000	Clementi Forest	2020-01-14	T17805	<i>Artocarpus integer</i>	Moraceae	Exotic	Casual	Tree	34334.128	21758.395	1.4	15	1) Good health, 2) Multiple branch attachments, 3) Past branch failure
1001	Clementi Forest	2020-01-14	T17806	<i>Ficus elastica</i>	Moraceae	Exotic	Casual	Strangler	34326.668	21754.334	5	20	1) Good health, 2) Shallow-rooted
1002	Clementi Forest	2020-01-14	T17807	<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	34326.01	21738.122	2	15	1) Good health, 2) Shallow-rooted, 3) Growing together with <i>Ficus benjamina</i> , 4) Canopy covered by climbers
1003	Clementi Forest	2020-01-14	T17808	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34325.078	21719.563	2	8	1) Good health, 2) No significant defects, 3) Cluster of three
1004	Clementi Forest	2020-01-14	T17808A	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34327.565	21717.901	1.3	8	1) Good health, 2) No significant defects, 3) Cluster of three
1005	Clementi Forest	2020-01-14	T17808B	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34329.508	21718.438	2	8	1) Good health, 2) No significant defects, 3) Cluster of three
1006	Clementi Forest	2020-01-15	T17809	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34429.101	21708.899	1.1	18	1) Good health, 2) Assessment limited by climbers
1007	Clementi Forest	2020-01-15	T17810	<i>Pterocarpus indicus</i>	Fabaceae	Exotic	Casual	Tree	34428.579	21708.811	2.2	18	1) Good health, 2) Large wound from previous pruning, 3) Assessment limited by climbers
1008	Clementi Forest	2020-01-15	T17811	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34503.062	21973.695	1.3	20	1) Good health, 2) Assessment limited by climbers
1009	Clementi Forest	2020-01-15	T17812	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34502.205	21977.685	1.1	20	1) Good health, 2) Assessment limited by climbers
1010	Clementi Forest	2020-01-15	T17813	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34505.299	21978.656	1.05	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
1011	Clementi Forest	2020-01-15	T17814	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34504.311	21982.988	2	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
1012	Clementi Forest	2020-01-15	T17815	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34506.416	21986.018	1.8	18	1) Storm vulnerable, 2) Low retention value
1013	Clementi Forest	2020-01-15	T17816	<i>Syzygium polyanthum</i>	Myrtaceae	Native	Vulnerable	Tree	34502.653	21990.789	1.4	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
1014	Clementi Forest	2020-01-15	T17817	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34507.905	21998.321	1	16	1) Good health, 2) No significant defects
1015	Clementi Forest	2020-01-15	T17818	<i>Cinnamomum iners</i>	Lauraceae	Native	Common	Tree	34508.161	21998.946	1.8	18	1) Good health, 2) Decay on trunk below bifurcation, 3) Assessment limited by climbers

Appendix G2 List of Specimens Assessed by Certified Arborists in Clementi Forest

S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
1016	Clementi Forest	2020-01-15	T17819	<i>Artocarpus heterophyllus</i>	Moraceae	Exotic	Casual	Tree	34532.822	22000.97	1.4	15	1) Good health, 2) Uprooting pressure observed, 3) Low retention value
1017	Clementi Forest	2020-01-15	T17820	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34538.855	22001.45	2.4	18	1) Storm vulnerable, 2) Low retention value
1018	Clementi Forest	2020-01-15	T17821	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34540.789	22008.632	2.2	22	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
1019	Clementi Forest	2020-01-15	T17822	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34545.804	22007.005	1.5	16	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers
1020	Clementi Forest	2020-01-15	T17823	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34552.362	21994.91	1.7	13	1) Good health, 2) Root flare obvious, 3) Low U-shaped bifurcation, 4) Asymmetric canopy, 5) Assessment limited by climbers
1021	Clementi Forest	2020-01-15	T17824	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34540.153	22021.562	1.2	16	1) Good health, 2) Root flare obvious, 3) Decay on trunk at height 3 m, 4) Assessment limited by climbers
1022	Clementi Forest	2020-01-15	T17825	<i>Mangifera indica</i>	Anacardiaceae	Exotic	Casual	Tree	34544.933	22020.618	1.2	12	1) Good health, 2) Assessment limited by climbers
1023	Clementi Forest	2020-01-15	T17826	<i>Cinnamomum iners</i>	Lauraceae	Native	Common	Tree	34536.511	22022.904	1.2	12	1) Poor health, 2) Past trunk failure
1024	Clementi Forest	2020-01-15	T17827	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34540.363	22025.629	2.3	22	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
1025	Clementi Forest	2020-01-15	T17828	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34540.757	22026.594	1.6	16	1) Good health, 2) No significant defects, 3) Root flare obvious
1026	Clementi Forest	2020-01-15	T17829	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34541.085	22028.576	1.6	16	1) Good health, 2) Extensive decay and cavity at base of trunk, 3) Low retention value
1027	Clementi Forest	2020-01-15	T17830	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34546.209	22038.713	1.2	20	1) Good health, 2) Root flare obvious, 3) Self-corrected lean
1028	Clementi Forest	2020-01-15	T17831	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34555.876	22038.128	2.2	20	1) Good health, 2) No significant defects, 3) Root flare obvious
1029	Clementi Forest	2020-01-15	T17832	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34565.726	22047.651	1.7	16	1) Good health, 2) No significant defects, 3) Root flare obvious
1030	Clementi Forest	2020-01-15	T17833	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34572.559	22053.867	1.1	18	1) Good health, 2) Assessment limited by climbers
1031	Clementi Forest	2020-01-15	T17834	<i>Litsea elliptica</i>	Lauraceae	Native	Common	Tree	34580.31	22051.811	1	25	1) Good health, 2) No significant defects, 3) Root flare obvious
1032	Clementi Forest	2020-01-15	T17835	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34591.088	22055.157	2	20	1) Good health, 2) U-shaped bifurcation, 3) Assessment limited by climbers
1033	Clementi Forest	2020-01-15	T17836	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34589.892	22059.065	1.3	20	1) Good health, 2) No significant defects, 3) Root flare obvious
1034	Clementi Forest	2020-01-15	T17837	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34587.013	22070.726	1.3	18	1) Good health, 2) Asymmetric canopy, 3) Assessment limited by climbers
1035	Clementi Forest	2020-01-15	T17838	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34576.754	22079.029	1.2	20	1) Good health, 2) Assessment limited by climbers
1036	Clementi Forest	2020-01-15	T17839	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34571.785	22090.303	1.3	18	1) Good health, 2) V-shaped bifurcation with buldge
1037	Clementi Forest	2020-01-15	T17840	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34573.958	22090.945	1.1	17	1) Good health, 2) Asymmetric lean towards Southeast, 3) Assessment limited by climbers
1038	Clementi Forest	2020-01-15	T17841	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34561.921	22084.048	1.1	18	1) Good health, 2) Decay at tree base facing Northeast
1039	Clementi Forest	2020-01-15	T17842	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34570.652	22066.199	2.5	20	1) Good health, 2) No significant defects, 3) Root flare obvious
1040	Clementi Forest	2020-01-15	T17843	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34559.415	22059.158	1.4	17	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy
1041	Clementi Forest	2020-01-15	T17844	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34550.089	22061.43	2.2	16	1) Good health, 2) Root flare obvious, 3) Strangled by Ficus benjamina
1042	Clementi Forest	2020-01-15	T17845	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34543.199	22058.516	1.3	18	1) Good health, 2) Root flare obvious, 3) U-shaped bifurcation, 4) Pocket decay on trunk at height 1.8 m
1043	Clementi Forest	2020-01-15	T17846	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34542.952	22078.378	2	18	1) Poor health, 2) Root flare obvious, 3) Assessment limited by climbers
1044	Clementi Forest	2020-01-15	T17847	<i>Cinnamomum iners</i>	Lauraceae	Native	Common	Tree	34538.149	22086.802	1.8	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
1045	Clementi Forest	2020-01-15	T17848	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34541.141	22077.775	1.2	16	1) Good health, 2) No significant defects, 3) Root flare obvious
1046	Clementi Forest	2020-01-15	T17849	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34531.106	22073.711	2	16	1) Good health, 2) No significant defects, 3) Root flare obvious
1047	Clementi Forest	2020-01-15	T17850	<i>Baccaurea motleyana</i>	Phyllanthaceae	Native	Critically Endangered	Tree	34536.437	22067.034	1.1	16	1) Good health, 2) No significant defects, 3) Root flare obvious
1048	Clementi Forest	2020-01-15	T17851	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34538.716	22066.62	1.6	18	1) Good health, 2) Root flare obvious, 3) Decay on trunk facing Northeast at height 1.3 m
1049	Clementi Forest	2020-01-15	T17852	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34530.617	22051.265	2.6	22	1) Good health, 2) No significant defects, 3) Root flare obvious
1050	Clementi Forest	2020-01-15	T17853	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34535.022	22043.525	1.7	20	1) Good health, 2) No significant defects, 3) Root flare obvious

Appendix G2 List of Specimens Assessed by Certified Arborists in Clementi Forest

S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
1051	Clementi Forest	2020-01-15	T17854	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34543.563	22043.916	1.3	18	1) Good health, 2) Severe decay from base of tree to trunk, 3) Low retention value
1052	Clementi Forest	2020-01-15	T17855	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34547.82	22044.758	1.9	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by canopies of other trees
1053	Clementi Forest	2020-01-15	T17856	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34526.728	22030.384	1.6	16	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers
1054	Clementi Forest	2020-01-15	T17857	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34519.949	22022.93	1.1	16	1) Good health, 2) Asymmetric canopy, 3) Assessment limited by climbers
1055	Clementi Forest	2020-01-15	T17858	<i>Adenanthera pavonina</i>	Fabaceae	Exotic	Naturalised	Tree	34519.445	22023.79	2.1	22	1) Good health, 2) No significant defects, 3) Root flare obvious
1056	Clementi Forest	2020-01-15	T17859	<i>Ficus benjamina</i>	Moraceae	Cryptogenic	-	Strangler	34525.281	22015.283	2.2	14	1) Good health, 2) Assessment limited by climbers
1057	Clementi Forest	2020-01-15	T17860	<i>Claoxylon indicum</i>	Euphorbiaceae	Native	Common	Tree	34507.236	22022.5	1.1	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
1058	Clementi Forest	2020-01-15	T17861	<i>Cinnamomum iners</i>	Lauraceae	Native	Common	Tree	34512.259	22022.087	1.6	16	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
1059	Clementi Forest	2020-01-15	T17862	<i>Litsea elliptica</i>	Lauraceae	Native	Common	Tree	34498.344	22023.308	1.1	12	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
1060	Clementi Forest	2020-01-15	T17863	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34495.953	22021.846	1.2	17	1) Poor health, 2) No significant defects
1061	Clementi Forest	2020-01-15	T17864	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34493.788	22022.799	1.2	16	1) Good health, 2) Root flare obvious, 3) Past primary branch failure, 4) Asymmetric canopy
1062	Clementi Forest	2020-01-15	T17865	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34492.551	22022.755	2.5	17	1) Good health, 2) Root flare obvious, 3) Past primary branch failure
1063	Clementi Forest	2020-01-15	T17866	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34488.099	22025.365	1.5	8	1) Good health, 2) No significant defects
1064	Clementi Forest	2020-01-15	T17867	<i>Cinnamomum iners</i>	Lauraceae	Native	Common	Tree	34491.482	22018.186	1.4	14	1) Poor health, 2) Asymmetric canopy
1065	Clementi Forest	2020-01-15	T17868	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34490.143	22012.49	2	14	1) Storm vulnerable, 2) Low retention value
1066	Clementi Forest	2020-01-15	T17869	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34479.898	22012.492	1.3	12	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
1067	Clementi Forest	2020-01-15	T17870	<i>Alsophila lutebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34479.152	22013.854	0.3	2.8	1) Good health, 2) No significant defects, 3) Cluster in proximity
1068	Clementi Forest	2020-01-15	T17871	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34476.75	21996.179	1.05	13	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
1069	Clementi Forest	2020-01-15	T17872	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34475.88	21996.536	1.2	14	1) Average health, 2) Asymmetric canopy, 3) Assessment limited by climbers
1070	Clementi Forest	2020-01-15	T17873	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34483.893	21999.823	1.2	8	1) Good health, 2) No significant defects, 3) Root flare obvious
1071	Clementi Forest	2020-01-15	T17874	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34489.913	21991.779	1.1	16	1) Good health, 2) Asymmetric lean towards Southeast, 3) Assessment limited by climbers
1072	Clementi Forest	2020-01-15	T17875	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34493.372	21984.987	1.9	16	1) Good health, 2) Asymmetric lean towards Southeast, 3) Assessment limited by climbers
1073	Clementi Forest	2020-01-15	T17876	<i>Cinnamomum iners</i>	Lauraceae	Native	Common	Tree	34507.204	21996.826	1.1	14	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
1074	Clementi Forest	2020-01-16	T17877	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34414.516	21860.228	1.4	15	1) Good health, 2) No significant defects, 3) Root flare obvious
1075	Clementi Forest	2020-01-16	T17878	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34418.469	21869.508	1.2	15	1) Good health, 2) No significant defects, 3) Assessment of canopy limited
1076	Clementi Forest	2020-01-16	T17879	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34406.819	21872.022	2	6	1) Good health
1077	Clementi Forest	2020-01-16	T17880	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34400.274	21879.821	1	12	1) Good health, 2) No significant defects
1078	Clementi Forest	2020-01-16	T17881	<i>Artocarpus integer</i>	Moraceae	Exotic	Casual	Tree	34401.812	21880.7	1.3	12	1) Good health, 2) No significant defects, 3) Assessment of canopy limited
1079	Clementi Forest	2020-01-16	T17882	<i>Artocarpus integer</i>	Moraceae	Exotic	Casual	Tree	34403.771	21880.562	1.1	10	1) Good health, 2) No significant defects, 3) Assessment of canopy limited
1080	Clementi Forest	2020-01-16	T17883	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34400.417	21884.901	1.4	15	1) Average health, 2) Failure at canopy, 3) Assessment limited
1081	Clementi Forest	2020-01-16	T17884	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34392.253	21873.23	1.2	8	1) Tree is dead
1082	Clementi Forest	2020-01-16	T17885	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34390.392	21887.269	1.2	12	1) Good health, 2) Decay on main trunk, 3) Standing on edge of steep slope
1083	Clementi Forest	2020-01-16	T17886	<i>Litsea elliptica</i>	Lauraceae	Native	Common	Tree	34387.721	21887.837	2.2	15	1) Good health, 2) Root flare obvious, 3) Assessment of canopy limited by climbers
1084	Clementi Forest	2020-01-16	T17887	<i>Litsea elliptica</i>	Lauraceae	Native	Common	Tree	34389.786	21891.677	1.7	15	1) Good health, 2) Root flare obvious, 3) Assessment of canopy limited by climbers
1085	Clementi Forest	2020-01-16	T17888	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34398.771	21895.697	1.4	10	1) Average health

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S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
1086	Clementi Forest	2020-01-16	T17889	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34406.182	21883.193	1	8	1) Good health, 2) No significant defects
1087	Clementi Forest	2020-01-16	T17890	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34406.344	21883.804	2	8	1) Good health
1088	Clementi Forest	2020-01-16	T17891	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34407.932	21890.908	1	11	1) Good health, 2) Root flare obvious, 3) Assessment of canopy limited by climbers
1089	Clementi Forest	2020-01-16	T17892	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34415.329	21887.613	1.1	15	1) Good health, 2) No significant defects, 3) Root flare obvious
1090	Clementi Forest	2020-01-16	T17893	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34418.624	21893.438	2	16	1) Good health, 2) No significant defects
1091	Clementi Forest	2020-01-16	T17894	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34419.809	21896.787	2	8	1) Good health
1092	Clementi Forest	2020-01-16	T17895	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34414.829	21898.72	1.5	18	1) Good health, 2) No significant defects, 3) Root flare obvious
1093	Clementi Forest	2020-01-16	T17896	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34421.019	21899.498	2	10	1) Good health, 2) No significant defects
1094	Clementi Forest	2020-01-16	T17897	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34422.082	21899.381	1.1	17	1) Good health, 2) Possible decay on main trunk (photo 816)
1095	Clementi Forest	2020-01-16	T17898	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34426.441	21910.222	1.3	20	1) Good health, 2) No significant defects
1096	Clementi Forest	2020-01-16	T17899	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34426.472	21911.468	1.2	20	1) Good health, 2) Trunk girdled by tyre ring
1097	Clementi Forest	2020-01-16	T17900	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34429.24	21901.477	2	18	1) Good health, 2) No significant defects
1098	Clementi Forest	2020-01-16	T17901	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34436.682	21899.158	1.8	20	1) Good health, 2) No significant defects
1099	Clementi Forest	2020-01-16	T17902	<i>Artocarpus integer</i>	Moraceae	Exotic	Casual	Tree	34437.012	21885.336	1	10	1) Average health, 2) Decay at tree base, 3) Low retention value
1100	Clementi Forest	2020-01-16	T17903	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34424.213	21877.256	1	15	1) Good health, 2) Assessment of canopy limited, 3) Root flare obvious
1101	Clementi Forest	2020-01-16	T17904	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34424.109	21875.503	1.1	15	1) Good health, 2) Decay at tree base (photo 840)
1102	Clementi Forest	2020-01-16	T17905	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34423.448	21877.412	1	15	1) Good health, 2) No significant defects
1103	Clementi Forest	2020-01-16	T17906	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34425.381	21892.95	1	12	1) Good health, 2) No significant defects
1104	Clementi Forest	2020-01-16	T17907	<i>Mangifera odorata</i>	Anacardiaceae	Native	Vulnerable	Tree	34446.139	21907.115	1	15	1) Good health, 2) No significant defects
1105	Clementi Forest	2020-01-16	T17908	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34448.236	21905.975	1.1	12	1) Good health, 2) No significant defects
1106	Clementi Forest	2020-01-16	T17909	<i>Aphanamix polystachya</i>	Meliaceae	Native	Endangered	Tree	34453.614	21917.197	1.6	15	1) Good health, 2) Leaning North with prominent tension root
1107	Clementi Forest	2020-01-16	T17910	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34466.333	21921.322	1.5	15	1) Storm vulnerable, 2) Low retention value
1108	Clementi Forest	2020-01-16	T17911	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34465.416	21921.61	2	10	1) Good health
1109	Clementi Forest	2020-01-16	T17912	<i>Baccaurea motleyana</i>	Phyllanthaceae	Native	Critically Endangered	Tree	34464.678	21939.562	1.5	10	1) Good health, 2) No significant defects, 3) Root flare obvious
1110	Clementi Forest	2020-01-16	T17913	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34455.376	21940.186	1.2	10	1) Good health, 2) Root flare not obvious
1111	Clementi Forest	2020-01-16	T17914	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34463.405	21941.183	1.6	12	1) Good health, 2) No significant defects, 3) Decay on main trunk
1112	Clementi Forest	2020-01-16	T17915	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34467.911	21938.078	1.6	12	1) Good health, 2) No significant defects
1113	Clementi Forest	2020-01-16	T17916	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34470.254	21938.934	1.2	12	1) Good health, 2) Assessment limited by climbers
1114	Clementi Forest	2020-01-16	T17917	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34474.909	21951.171	1.1	10	1) Good health, 2) Assessment limited by climbers
1115	Clementi Forest	2020-01-16	T17918	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34477.799	21957.437	1.2	8	1) Good health, 2) Leaning East
1116	Clementi Forest	2020-01-16	T17919	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34473.07	21958.536	1.4	12	1) Good health, 2) Assessment limited by climbers
1117	Clementi Forest	2020-01-16	T17920	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34476.657	21958.781	1.2	10	1) Good health, 2) Assessment limited by climbers
1118	Clementi Forest	2020-01-16	T17921	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34485.037	21962.408	1	12	1) Good health, 2) Assessment limited by climbers
1119	Clementi Forest	2020-01-16	T17922	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34485.914	21963.868	1.1	10	1) Good health, 2) Assessment limited by climbers
1120	Clementi Forest	2020-01-16	T17923	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34489.983	21977.132	2.4	12	1) Good health, 2) Large decay on trunk, 3) Low retention value

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S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
1121	Clementi Forest	2020-01-16	T17924	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34483.374	21977.377	1.4	12	1) Good health, 2) No significant defects
1122	Clementi Forest	2020-01-16	T17925	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34477.313	21984.614	1.3	12	1) Good health
1123	Clementi Forest	2020-01-16	T17926	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34471.005	21987.139	1.3	10	1) Good health, 2) Growing on steep slope
1124	Clementi Forest	2020-01-16	T17927	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34469.965	21959.97	1.4	12	1) Good health, 2) No significant defects
1125	Clementi Forest	2020-01-16	T17928	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34470.343	21960.421	1.2	10	1) Good health, 2) No significant defects
1126	Clementi Forest	2020-01-16	T17929	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34462.668	21957.248	1.6	12	1) Good health, 2) No significant defects
1127	Clementi Forest	2020-01-16	T17930	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34459.805	21958.18	1.5	12	1) Good health, 2) No significant defects
1128	Clementi Forest	2020-01-16	T17931	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34461.501	21959.374	1	10	1) Good health, 2) No significant defects
1129	Clementi Forest	2020-01-16	T17932	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34460.461	21960.176	2	12	1) Good health, 2) No significant defects, 3) Trunks are fused together at height 5 m (photo 932-933)
1130	Clementi Forest	2020-01-16	T17933	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34461.49	21958.731	1.2	10	1) Good health, 2) No significant defects, 3) Trunks are fused together at height 5 m (photo 932-933)
1131	Clementi Forest	2020-01-16	T17934	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34460.523	21959.838	1	10	1) Good health, 2) Decay at tree base, 3) Low retention value
1132	Clementi Forest	2020-01-16	T17935	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34458.953	21960.799	1.6	12	1) Good health, 2) No significant defects
1133	Clementi Forest	2020-01-16	T17936	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34452.717	21949.716	1.6	10	1) Good health, 2) No significant defects
1134	Clementi Forest	2020-01-16	T17937	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34452.114	21949.375	1.4	12	1) Good health, 2) No significant defects
1135	Clementi Forest	2020-01-16	T17938	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34453.887	21950.057	1	10	1) Good health, 2) No significant defects
1136	Clementi Forest	2020-01-16	T17939	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34455.997	21949.578	1	10	1) Good health, 2) No significant defects
1137	Clementi Forest	2020-01-16	T17940	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34452.343	21950.525	1	10	1) Good health, 2) No significant defects, 3) Growing on the edge of steep slope
1138	Clementi Forest	2020-01-16	T17941	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34453.9	21954.398	1.3	10	1) Good health, 2) No significant defects
1139	Clementi Forest	2020-01-16	T17942	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34453.176	21949.883	1.2	10	1) Good health, 2) Decay at tree base, 3) Low retention value
1140	Clementi Forest	2020-01-16	T17943	<i>Dimocarpus longan</i> ssp. <i>malesianus</i>	Sapindaceae	Exotic	Casual	Tree	34448.013	21942.713	1.2	10	1) Good health, 2) No significant defects
1141	Clementi Forest	2020-01-16	T17944	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34445.615	21935.563	1.3	12	1) Good health, 2) No significant defects
1142	Clementi Forest	2020-01-16	T17945	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34436.366	21931.722	1.2	8	1) Good health, 2) Decay at tree base, 3) Asymmetric leaning canopy
1143	Clementi Forest	2020-01-16	T17946	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34438.213	21931.167	1.5	10	1) Good health, 2) Asymmetric canopy
1144	Clementi Forest	2020-01-16	T17947	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34432.209	21936.11	1.7	12	1) Good health, 2) No significant defects
1145	Clementi Forest	2020-01-16	T17948	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34433.782	21933.809	1	10	1) Good health, 2) No significant defects
1146	Clementi Forest	2020-01-16	T17949	<i>Artocarpus integer</i>	Moraceae	Exotic	Casual	Tree	34429.66	21929.358	1.2	10	1) Good health, 2) No significant defects, 3) Growing on the edge of steep slope
1147	Clementi Forest	2020-01-16	T17950	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34428.751	21928.79	1.2	12	1) Good health, 2) No significant defects
1148	Clementi Forest	2020-01-16	T17951	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34431.891	21924.461	1.1	8	1) Average health, 2) Assessment limited by climbers
1149	Clementi Forest	2020-01-16	T17952	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34431.229	21921.482	1.2	10	1) Good health, 2) Asymmetric leaning trunk
1150	Clementi Forest	2020-01-16	T17953	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34425.345	21922.302	2	12	1) Good health, 2) No significant defects
1151	Clementi Forest	2020-01-20	T17954	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34303.601	21754.182	1	14	1) Good health, 2) No significant defects, 3) Root flare obvious
1152	Clementi Forest	2020-01-20	T17955	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34302.539	21756.928	1	14	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
1153	Clementi Forest	2020-01-20	T17956	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34299.922	21751.444	1.25	16	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
1154	Clementi Forest	2020-01-20	T17957	<i>Mangifera odorata</i>	Anacardiaceae	Native	Vulnerable	Tree	34328.212	21760.146	1.1	4.5	1) Good health, 2) Past trunk failure, 3) Low retention value
1155	Clementi Forest	2020-01-20	T17958	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34353.917	21827.263	1.4	8	1) Good health, 2) No significant defects

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S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
1156	Clementi Forest	2020-01-20	T17959	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34363.24	21847.615	2	9	1) Good health, 2) No significant defects
1157	Clementi Forest	2020-01-20	T17960	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34967.148	22250.419	3.9	18	1) Storm vulnerable, 2) Low retention value
1158	Clementi Forest	2020-01-20	T17961	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34937.455	22246.707	1.7	18	1) Storm vulnerable, 2) Low retention value
1159	Clementi Forest	2020-01-20	T17961A	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34937.04	22246.479	1.25	18	1) Storm vulnerable, 2) Low retention value
1160	Clementi Forest	2020-01-20	T17961B	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34935.27	22246.456	1.4	18	1) Storm vulnerable, 2) Low retention value
1161	Clementi Forest	2020-01-20	T17962	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34899.975	22250.905	2.5	22	1) Storm vulnerable, 2) Low retention value
1162	Clementi Forest	2020-01-20	T17963	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34868.915	22250.117	1	9	1) Storm vulnerable, 2) Low retention value
1163	Clementi Forest	2020-01-20	T17964	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34866.062	22248.522	1.9	15	1) Storm vulnerable, 2) Low retention value
1164	Clementi Forest	2020-01-20	T17965	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34846.714	22248.309	1.1	15	1) Good health, 2) Root flare obvious, 3) V-shaped bifurcation, 4) Assessment limited by climbers
1165	Clementi Forest	2020-01-21	T17966	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34310.411	21803.595	2	8	1) Good health
1166	Clementi Forest	2020-01-21	T17967	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34309.929	21802.843	2	8	1) Good health
1167	Clementi Forest	2020-01-21	T17968	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34313.889	21802.753	2	5	1) Uprooted
1168	Clementi Forest	2020-01-21	T17969	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34344.077	21844.546	1.2	20	1) Good health, 2) No significant defects, 3) Root flare obvious
1169	Clementi Forest	2020-01-21	T17970	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34344.832	21846.062	1.2	20	1) Good health, 2) No significant defects, 3) Root flare obvious
1170	Clementi Forest	2020-01-21	T17971	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34351.162	21852.458	1	20	1) Growing on bottom of slope, 2) No decay at tree base, 3) Tension root up slope, 4) Compression root down slope
1171	Clementi Forest	2020-01-21	T17972	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34350.95	21867.285	0.4	5	1) Average health, 2) Leaning 30° North
1172	Clementi Forest	2020-01-21	T17973	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34357.552	21872.081	2	6	1) Good health
1173	Clementi Forest	2020-01-21	T17974	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34358.397	21871.532	2	6	1) Good health
1174	Clementi Forest	2020-01-21	T17975	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34361.32	21874.898	0.3	4	1) Good health, 2) Growing on edge of slope
1175	Clementi Forest	2020-01-21	T17976	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34363.283	21877.836	0.5	7	1) Good health, 2) Growing on edge of slope
1176	Clementi Forest	2020-01-21	T17977	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34379.456	21899.006	0.4	7	1) Leaning 20° North
1177	Clementi Forest	2020-01-21	T17978	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34377.891	21900.262	0.4	7	1) Leaning 30° North
1178	Clementi Forest	2020-01-21	T17979	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34373.911	21903.808	2	7	1) Good health
1179	Clementi Forest	2020-01-21	T17980	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34373.58	21907.84	0.3	4	1) Good health, 2) Leaning 20° South
1180	Clementi Forest	2020-01-21	T17981	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34384.195	21906.001	0.3	3	1) Good health
1181	Clementi Forest	2020-01-21	T17982	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34387.597	21916.038	0.3	3	1) Good health
1182	Clementi Forest	2020-01-21	T17983	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34396.226	21921.338	0.3	3	1) Good health, 2) Leaning 15° Southwest
1183	Clementi Forest	2020-01-21	T17984	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34394.437	21921.651	1.1	15	1) Root spread obvious, 2) No decay at tree base, 3) Assessment limited by climbers
1184	Clementi Forest	2020-01-21	T17985	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34402.954	21933.799	0.3	3	1) Good health
1185	Clementi Forest	2020-01-21	T17986	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34414.585	21943.612	0.3	4	1) Good health
1186	Clementi Forest	2020-01-21	T17987	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34412.388	21950.7	1.2	20	1) Good health, 2) Discoloration at tree base, 3) Growing on edge of slope
1187	Clementi Forest	2020-01-21	T17988	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34415.571	21952.746	1.1	15	1) Average health, 2) No obvious root flare, 3) Growing on edge of slope
1188	Clementi Forest	2020-01-21	T17989	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34428.026	21972.71	0.3	3	1) Good health
1189	Clementi Forest	2020-01-21	T17990	<i>Arthropphyllum diversifolium</i>	Araliaceae	Native	Common	Tree	34433.938	21974.26	1	12	1) Average health, 2) Growing on edge of slope, 3) Leaning West, 4) Tension root obvious, 5) Asymmetric canopy
1190	Clementi Forest	2020-01-21	T17991	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34439.061	21988.792	1.3	18	1) Good health, 2) No root flare, 3) No decay at tree base

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S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
1191	Clementi Forest	2020-01-22	T17992	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34316.642	21817.644	0.3	5	1) Good health
1192	Clementi Forest	2020-01-22	T17993	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34313.236	21818.076	0.5	5	1) Good health
1193	Clementi Forest	2020-01-22	T17994	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34311.751	21820.585	0.4	4.5	1) Good health
1194	Clementi Forest	2020-01-22	T17995	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34316.737	21820.326	0.45	5	1) Good health
1195	Clementi Forest	2020-01-22	T17996	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34314.322	21817.489	0.4	5	1) Good health
1196	Clementi Forest	2020-01-22	T17997	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34321.011	21818.042	2.5	10	1) Good health
1197	Clementi Forest	2020-01-22	T17998	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34324.698	21820.796	2.5	10	1) Good health
1198	Clementi Forest	2020-01-22	T17998A	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34330.372	21821.844	2	10	1) Good health
1199	Clementi Forest	2020-01-22	T17999	<i>Camponosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34328.551	21820.825	1	15	1) Good health, 2) No significant defects, 3) Root flare obvious
1200	Clementi Forest	2020-01-22	T18000	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34320.995	21824.912	0.4	5	1) Good health, 2) Cluster in proximity
1201	Clementi Forest	2020-01-16	T18001	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34299.947	21629.477	2	10	1) Good health, 2) Assessment limited by climbers
1202	Clementi Forest	2020-01-16	T18001A	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34297.512	21634.962	1.5	8	1) Good health, 2) Assessment limited by climbers
1203	Clementi Forest	2020-01-16	T18001B	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34296.884	21637.062	2	8	1) Good health, 2) Assessment limited by climbers
1204	Clementi Forest	2020-01-16	T18001C	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34297.935	21637.357	2	8	1) Good health, 2) Assessment limited by climbers
1205	Clementi Forest	2020-01-16	T18001D	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34297.062	21637.045	2	8	1) Good health, 2) Assessment limited by climbers
1206	Clementi Forest	2020-01-16	T18001E	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34296.925	21636.293	2	8	1) Good health, 2) Assessment limited by climbers
1207	Clementi Forest	2020-01-16	T18001F	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34296.452	21637.417	2	8	1) Good health, 2) Assessment limited by climbers
1208	Clementi Forest	2020-01-16	T18002	<i>Mangifera odorata</i>	Anacardiaceae	Native	Vulnerable	Tree	34297.308	21636.345	1.4	11	1) Good health, 2) Asymmetric canopy, 3) Assessment limited by climbers
1209	Clementi Forest	2020-01-16	T18003	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34295.859	21646.792	1.2	10	1) Storm vulnerable, 2) Low retention value
1210	Clementi Forest	2020-01-16	T18004	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34259.782	21638.242	1.7	8	1) Good health, 2) No significant defects
1211	Clementi Forest	2020-01-16	T18005	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34262.205	21643.736	1.6	8	1) Good health, 2) No significant defects
1212	Clementi Forest	2020-01-16	T18005A	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34266.095	21651.61	2	8	1) Good health, 2) No significant defects, 3) Not accessible owing to slope condition
1213	Clementi Forest	2020-01-16	T18006	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34268.942	21673.763	1.8	9	1) Good health, 2) No significant defects
1214	Clementi Forest	2020-01-16	T18007	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34273.642	21675.293	0.4	5	1) Good health, 2) No significant defects
1215	Clementi Forest	2020-01-16	T18008	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34280.904	21689.299	2	8	1) Good health, 2) No significant defects
1216	Clementi Forest	2020-01-16	T18009	<i>Litsea elliptica</i>	Lauraceae	Native	Common	Tree	34281.532	21692.1	2.6	10	1) Average health, 2) Past trunk failure
1217	Clementi Forest	2020-01-16	T18010	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34280.604	21696.026	2	10	1) Good health, 2) No significant defects
1218	Clementi Forest	2020-01-16	T18011	<i>Camponosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34281.767	21700.431	1	16	1) Good health, 2) Root flare obvious, 3) Growing on slope
1219	Clementi Forest	2020-01-16	T18012	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34282.686	21694.94	0.5	8	1) Good health, 2) No significant defects
1220	Clementi Forest	2020-01-16	T18013	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34284.614	21693.398	2	8	1) Good health, 2) No significant defects
1221	Clementi Forest	2020-01-16	T18014	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34277.531	21705.385	0.6	5	1) Good health, 2) No significant defects
1222	Clementi Forest	2020-01-16	T18015	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34274.67	21710.445	0.45	3	1) Good health, 2) No significant defects
1223	Clementi Forest	2020-01-16	T18016	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34277.848	21710.596	0.5	3.5	1) Good health, 2) No significant defects
1224	Clementi Forest	2020-01-16	T18017	<i>Camponosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34280.214	21705.049	1.3	18	1) Good health, 2) No significant defects, 3) Tension root present
1225	Clementi Forest	2020-01-16	T18018	<i>Artocarpus integer</i>	Moraceae	Exotic	Casual	Tree	34284.562	21729.908	1	17	1) Good health, 2) Growing on slope, 3) Assessment limited by climbers

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S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
1226	Clementi Forest	2020-01-16	T18019	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34289.65	21727.893	0.5	4	1) Good health, 2) No significant defects
1227	Clementi Forest	2020-01-16	T18020	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34293.078	21734.141	0.55	5	1) Good health, 2) No significant defects
1228	Clementi Forest	2020-01-16	T18020A	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34293.125	21733.633	0.5	3	1) Good health, 2) No significant defects
1229	Clementi Forest	2020-01-16	T18021	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34288.397	21731.085	0.7	5	1) Good health, 2) No significant defects
1230	Clementi Forest	2020-01-16	T18022	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34288.48	21748.693	1.2	16	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy
1231	Clementi Forest	2020-01-16	T18023	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34290.27	21753.056	0.4	2.5	1) Good health, 2) No significant defects
1232	Clementi Forest	2020-01-16	T18024	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34296.162	21756.006	2	20	1) Good health, 2) No significant defects, 3) Root flare obvious
1233	Clementi Forest	2020-01-16	T18024A	<i>Ficus elastica</i>	Moraceae	Exotic	Casual	Strangler	34305.347	21785.66	5	15-20	1) Inaccessible
1234	Clementi Forest	2020-01-16	T18025	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34314.921	21800.653	0.55	5	1) Good health, 2) No significant defects
1235	Clementi Forest	2020-01-16	T18026	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34313.85	21801.838	0.5	4	1) Good health, 2) No significant defects
1236	Clementi Forest	2020-01-16	T18027	<i>Syzygium lineatum</i>	Myrtaceae	Native	Common	Tree	34322.347	21811.213	1.1	11	1) Good health, 2) Roots partially exposed due to soil erosion, 3) Asymmetric canopy
1237	Clementi Forest	2020-01-16	T18028	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34324.674	21815.206	2.7	25	1) Good health, 2) No significant defects
1238	Clementi Forest	2020-01-16	T18029	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34332.337	21828.52	1.1	17	1) Good health, 2) No significant defects, 3) Root flare obvious
1239	Clementi Forest	2020-01-16	T18030	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34341.089	21841.478	1.25	18	1) Good health, 2) No significant defects, 3) Root flare obvious
1240	Clementi Forest	2020-01-16	T18030A	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34341.089	21841.478	1.3	18	1) Good health, 2) No significant defects, 3) Root flare obvious
1241	Clementi Forest	2020-01-16	T18030B	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34341.089	21841.478	1.3	18	1) Good health, 2) No significant defects, 3) Root flare obvious
1242	Clementi Forest	2020-01-16	T18031	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34347.66	21846.447	2	7	1) Good health, 2) No significant defects
1243	Clementi Forest	2020-01-16	T18032	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34354.19	21851.208	2	7	1) Good health, 2) No significant defects
1244	Clementi Forest	2020-01-16	T18033	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34354.415	21851.743	0.5	5	1) Good health, 2) No significant defects
1245	Clementi Forest	2020-01-16	T18034	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34359.825	21855.654	0.8	6	1) Good health, 2) No significant defects
1246	Clementi Forest	2020-01-16	T18035	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34362.604	21863.032	0.8	5	1) Good health, 2) No significant defects
1247	Clementi Forest	2020-01-16	T18036	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34362.349	21862.872	0.7	5	1) Good health, 2) No significant defects
1248	Clementi Forest	2020-01-16	T18037	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34367.862	21866.925	0.6	5	1) Good health, 2) No significant defects, 3) Cluster of seven with girth > 0.3 m
1249	Clementi Forest	2020-01-16	T18037A	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34367.508	21867.203	0.5	5	1) Good health, 2) No significant defects
1250	Clementi Forest	2020-01-16	T18037B	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34367.724	21867.222	0.7	5	1) Good health, 2) No significant defects
1251	Clementi Forest	2020-01-16	T18037C	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34370.266	21869.724	0.4	5	1) Good health, 2) No significant defects
1252	Clementi Forest	2020-01-16	T18037D	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34369.921	21869.254	0.6	5	1) Good health, 2) No significant defects
1253	Clementi Forest	2020-01-16	T18038	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34371.603	21875.385	0.3	5	1) Good health, 2) No significant defects, 3) Cluster of five
1254	Clementi Forest	2020-01-16	T18038A	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34372.511	21875.881	0.8	6	1) Good health, 2) No significant defects
1255	Clementi Forest	2020-01-16	T18038B	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34373.367	21876.2	0.5	5	1) Good health, 2) No significant defects
1256	Clementi Forest	2020-01-16	T18038C	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34373.522	21877.113	0.4	5	1) Good health, 2) No significant defects
1257	Clementi Forest	2020-01-16	T18038D	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34373.444	21876.506	0.7	5	1) Good health, 2) No significant defects
1258	Clementi Forest	2020-01-16	T18039	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34377.816	21879.454	0.95	6	1) Good health, 2) No significant defects
1259	Clementi Forest	2020-01-16	T18039A	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34377.017	21877.549	0.4	4	1) Good health, 2) No significant defects
1260	Clementi Forest	2020-01-16	T18040	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34382.248	21881.064	0.4	3	1) Good health, 2) No significant defects

Appendix G2 List of Specimens Assessed by Certified Arborists in Clementi Forest

S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
1261	Clementi Forest	2020-01-16	T18040A	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34382.226	21881.123	0.5	5	1) Good health, 2) No significant defects
1262	Clementi Forest	2020-01-16	T18040B	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34383.246	21881.503	0.4	5	1) Good health, 2) No significant defects
1263	Clementi Forest	2020-01-16	T18041	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34382.912	21867.075	1.1	12	1) Good health, 2) Fungal fruiting bodies at tree base indicative of internal decay, 3) Asymmetric canopy
1264	Clementi Forest	2020-01-16	T18042	<i>Macaranga gigantea</i>	Euphorbiaceae	Native	Common	Tree	34377.541	21853.25	1	13	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers
1265	Clementi Forest	2020-01-16	T18043	<i>Artocarpus integer</i>	Moraceae	Exotic	Casual	Tree	34382.621	21855.593	1.5	14	1) Good health, 2) Assessment limited by climbers
1266	Clementi Forest	2020-01-16	T18044	<i>Artocarpus integer</i>	Moraceae	Exotic	Casual	Tree	34391.15	21854.668	1.1	14	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
1267	Clementi Forest	2020-01-22	T18045	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34322.077	21831.338	0.4	6	1) Good health
1268	Clementi Forest	2020-01-22	T18046	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34323.263	21832.469	0.5	5	1) Good health
1269	Clementi Forest	2020-01-22	T18047	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34320.031	21838.085	0.4	5	1) Good health
1270	Clementi Forest	2020-01-22	T18048	<i>Litsea elliptica</i>	Lauraceae	Native	Common	Tree	34327.206	21828.809	1.8	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
1271	Clementi Forest	2020-01-22	T18049	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34330.767	21830.791	2.5	9	1) Good health
1272	Clementi Forest	2020-01-22	T18050	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34333.431	21835.547	0.2-0.4	3-4	1) Good health, 2) Cluster in proximity
1273	Clementi Forest	2020-01-22	T18051	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34340.318	21842.388	0.4-0.5	5-6	1) Good health, 2) Cluster of three
1274	Clementi Forest	2020-01-22	T18052	<i>Camposperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34339.087	21848.044	1.2	20	1) Good health, 2) Root flare obvious, 3) Growing on slope, 4) Asymmetric canopy
1275	Clementi Forest	2020-01-22	T18053	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34337.828	21855.383	0.2-0.6	2-6	1) Good health, 2) Cluster of 12
1276	Clementi Forest	2020-01-22	T18054	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34356.634	21873.992	0.4-0.5	5-7	1) Good health, 2) Cluster of four
1277	Clementi Forest	2020-01-22	T18055	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34363.589	21886.818	1.2	18	1) Average health, 2) Root flare obvious, 3) Growing on edge of slope, 4) Possible decay at canopy, 5) Assessment limited by climbers and epiphytes
1278	Clementi Forest	2020-01-22	T18056	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34366.705	21890.394	0.2-0.3	0.5-5	1) Good health, 2) Cluster of 15
1279	Clementi Forest	2020-01-22	T18057	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34379.081	21913.507	0.2-0.4	2-4	1) Good health, 2) Cluster of two0
1280	Clementi Forest	2020-01-22	T18058	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34381.548	21917.48	2.5	8	1) Good health
1281	Clementi Forest	2020-01-22	T18059	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34386.552	21929.749	0.4	4	1) Good health
1282	Clementi Forest	2020-01-22	T18060	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34391.537	21937.921	0.2-0.4	3-4	1) Good health, 2) Cluster of seven
1283	Clementi Forest	2020-01-22	T18061	<i>Syzygium lineatum</i>	Myrtaceae	Native	Common	Tree	34388.355	21942.09	1.4	10	1) Good health, 2) Root flare obvious, 3) Decay from main trunk to canopy, 5) Leaning East, 6) Assessment limited by climbers and epiphytes
1284	Clementi Forest	2020-01-22	T18062	<i>Syzygium lineatum</i>	Myrtaceae	Native	Common	Tree	34390.29	21940.644	1.5	15	1) Good health, 2) Root flare obvious, 3) Decay on main trunk at height 4 m facing North, 4) Termit tracks present, 5) Assessment limited by climbers
1285	Clementi Forest	2020-01-22	T18063	<i>Macaranga conifera</i>	Euphorbiaceae	Native	Common	Tree	34412.335	21965.619	1.3	20	1) Average health, 2) Root flare obvious, 3) Fused at base with dead tree of girth 1.8 m, 4) Past branch failure, 5) Asymmetric canopy, 6) Assessment limited by fallen branches and undergrowth
1286	Clementi Forest	2020-01-22	T18064	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34416.154	21962.246	1.4	20	1) Average health, 2) Root flare obvious, 3) Growing on slope
1287	Clementi Forest	2020-01-22	T18065	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34452.735	21999.335	1	20	1) Good health, 2) No significant defects, 3) Root flare obvious
1288	Clementi Forest	2020-01-22	T18066	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34452.79	22002.918	0.5	6	1) Good health
1289	Clementi Forest	2020-01-22	T18067	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34453.128	22004.877	0.4	6	1) Good health
1290	Clementi Forest	2020-01-22	T18068	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34453.86	22007.704	0.5	5	1) Good health 2) Leaning
1291	Clementi Forest	2020-01-22	T18068A	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34457.446	22007.513	0.5	7	1) Good health
1292	Clementi Forest	2020-01-22	T18069	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34457.679	22007.638	0.5	6	1) Good health
1293	Clementi Forest	2020-01-22	T18070	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	34458.93	22009.625	0.5	6	1) Good health, 2) Leaning towards stream
1294	Clementi Forest	2020-01-22	T18071	<i>Camposperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34396.278	21929.428	1.3	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
1295	Clementi Forest	2020-01-22	T18072	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34393.919	21932.133	1	15	1) Good health 2) Slightly leaning South, 3) No obvious root flare

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S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
1296	Clementi Forest	2020-01-22	T18073	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34363.556	21907.864	2.5	2	1) Good health
1297	Clementi Forest	2020-01-22	T18074	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34362.455	21909.059	2.5	12	1) Good health
1298	Clementi Forest	2020-01-22	T18075	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34355.758	21908.016	1.5	20	1) Good health, 2) No significant defects, 3) Root flare obvious
1299	Clementi Forest	2020-01-22	T18076	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34347.998	21901.865	1.2	15	1) Good health, 2) Leaning and coiling on ground
1300	Clementi Forest	2020-01-22	T18077	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34344.861	21894.967	2.5	9	1) Good health
1301	Clementi Forest	2020-01-22	T18078	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34345.486	21894.446	2.5	10	1) Good health
1302	Clementi Forest	2020-01-22	T18078A	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34349.414	21895.094	2.5	8	1) Good health, 2) Access limited
1303	Clementi Forest	2020-01-22	T18079	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34343.125	21896.217	1.2	20	1) Storm vulnerable, 2) Low retention value
1304	Clementi Forest	2020-01-22	T18080	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34343.308	21898.178	2.5	12	1) Good health
1305	Clementi Forest	2020-01-22	T18081	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34340.211	21893.406	2.5	8	1) Good health
1306	Clementi Forest	2020-01-22	T18082	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34332.809	21890.797	2.5	12	1) Good health, 2) Self-corrected lean, 3) Assessment limited by climbers
1307	Clementi Forest	2020-01-22	T18083	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34334.069	21889.191	2	14	1) Good health, 2) Self-corrected lean
1308	Clementi Forest	2020-01-22	T18084	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34337.024	21880.778	1.8	20	1) Storm vulnerable, 2) Low retention value
1309	Clementi Forest	2020-01-22	T18085	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34337.874	21881.021	1.8	20	1) Storm vulnerable, 2) Low retention value
1310	Clementi Forest	2020-01-31	T18086	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34120.234	21392.648	1.5	14	1) Good health, 2) Growing on slope, 3) Assessment limited by climbers, 4) Unable to access
1311	Clementi Forest	2020-01-31	T18086A	<i>Callerya atropurpurea</i>	Fabaceae	Exotic	Casual	Tree	34122.765	21406.344	1	14	1) Good health, 2) Growing on slope, 3) Assessment limited by climbers, 4) Unable to access
1312	Clementi Forest	2020-01-31	T18087	<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	34081.261	21406.347	5	16	1) Good health, 2) Aerial roots have been cut, 3) Assessment limited by climbers
1313	Clementi Forest	2020-01-31	T18088	<i>Mangifera odorata</i>	Anacardiaceae	Native	Vulnerable	Tree	34091.972	21406.079	1.1	4	1) Average health, 2) Previously pollarded, 3) Decay at trunk 1.5 m
1314	Clementi Forest	2020-01-31	T18089	<i>Mangifera odorata</i>	Anacardiaceae	Native	Vulnerable	Tree	34082.626	21417.858	1.7	9	1) Good health, 2) Growing next to T18087, 3) Assessment limited by climbers
1315	Clementi Forest	2020-01-31	T18090	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34081.493	21419.835	1.3	10	1) Good health, 2) No significant defects
1316	Clementi Forest	2020-01-31	T18091	<i>Nephelium lappaceum</i>	Sapindaceae	Native	Critically Endangered	Tree	34078.919	21431.696	2.1	12	1) Average health, 2) Dieback at canopy, 3) Assessment limited by climbers
1317	Clementi Forest	2020-01-31	T18092	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34070.605	21423.962	1.2	12	1) Good health, 2) No significant defects, 3) Root flare obvious
1318	Clementi Forest	2020-01-31	T18093	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34068.665	21423.87	1.6	16	1) Good health, 2) No significant defects, 3) Root flare obvious
1319	Clementi Forest	2020-01-31	T18094	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34055.321	21433.378	1.5	16	1) Good health, 2) No significant defects, 3) Root flare obvious
1320	Clementi Forest	2020-01-31	T18095	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34054.591	21436.192	1	16	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
1321	Clementi Forest	2020-01-31	T18096	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34056.844	21437.256	1.8	18	1) Storm vulnerable, 2) Low retention value
1322	Clementi Forest	2020-01-31	T18097	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34054.706	21440.696	1.6	17	1) Good health, 2) Root flare obvious, 3) Growing on slope, 4) Assessment limited by climbers
1323	Clementi Forest	2020-01-31	T18098	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34043.951	21442.85	1	16	1) Good health, 2) Root flare obvious, 3) Growing on slope, 4) Assessment limited by climbers
1324	Clementi Forest	2020-01-31	T18099	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34047.066	21458.287	1.2	8	1) Good health, 2) No significant defects
1325	Clementi Forest	2020-01-31	T18100	<i>Mangifera indica</i>	Anacardiaceae	Exotic	Casual	Tree	34055.584	21462.905	2	15	1) Good health, 2) No significant defects, 3) Root flare obvious
1326	Clementi Forest	2020-01-31	T18101	<i>Pterocarpus indicus</i>	Fabaceae	Exotic	Casual	Tree	34068.265	21469.309	1.8	18	1) Average health, 2) Infested with leaf miners, 3) Assessment limited by climbers
1327	Clementi Forest	2020-01-31	T18102	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34066.883	21484.532	1	10	1) Storm vulnerable, 2) Low retention value
1328	Clementi Forest	2020-01-31	T18103	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34058.459	21495.868	2.5	18	1) Storm vulnerable, 2) Low retention value
1329	Clementi Forest	2020-01-31	T18104	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34056.2	21502.796	1.2-1.3	12	1) Good health, 2) No significant defects, 3) Cluster of two
1330	Clementi Forest	2020-01-31	T18105	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34056.041	21504.544	1.2-1.3	12	1) Good health, 2) No significant defects, 3) Cluster of two

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S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
1331	Clementi Forest	2020-01-31	T18106	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34053.568	21505.921	1.6	16	1) Storm vulnerable, 2) Low retention value
1332	Clementi Forest	2020-01-31	T18107	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34039.286	21511.73	1.2	18	1) Storm vulnerable, 2) Low retention value
1333	Clementi Forest	2020-01-31	T18108	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34042.851	21510.416	1.2	8	1) Good health, 2) No significant defects
1334	Clementi Forest	2020-01-31	T18109	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34045.271	21512.281	2.5	18	1) Storm vulnerable, 2) Low retention value
1335	Clementi Forest	2020-01-31	T18110	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34036.937	21517.341	12	12	1) Storm vulnerable, 2) Low retention value
1336	Clementi Forest	2020-01-31	T18111	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34032.455	21518.761	3.5	18	1) Storm vulnerable, 2) Low retention value
1337	Clementi Forest	2020-01-31	T18112	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34034.726	21518.141	1.4	10	1) Good health, 2) No significant defects
1338	Clementi Forest	2020-01-31	T18113	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34034.678	21518.945	2.7	12	1) Storm vulnerable, 2) Low retention value
1339	Clementi Forest	2020-01-31	T18114	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34031.027	21502.731	1.2-1.4	10-12	1) Good health, 2) No significant defects, 3) Cluster of three
1340	Clementi Forest	2020-01-31	T18115	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34032.419	21502.643	1.1	16	1) Storm vulnerable, 2) Low retention value
1341	Clementi Forest	2020-01-31	T18116	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34026.616	21500.954	2.2	14	1) Storm vulnerable, 2) Low retention value
1342	Clementi Forest	2020-01-31	T18117	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34025.758	21495.368	1.2-1.5	10-12	1) Good health, 2) No significant defects, 3) Cluster of five
1343	Clementi Forest	2020-01-31	T18118	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34038.355	21495.647	2.6	15	1) Storm vulnerable, 2) Low retention value
1344	Clementi Forest	2020-01-31	T18119	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34036.197	21495.601	3	20	1) Storm vulnerable, 2) Low retention value
1345	Clementi Forest	2020-01-31	T18120	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34036.029	21493.79	1.2	12	1) Good health, 2) No significant defects
1346	Clementi Forest	2020-01-31	T18121	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34035.141	21480.202	1.2	12	1) Good health, 2) No significant defects, 3) Cluster of two
1347	Clementi Forest	2020-01-31	T18122	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34046.934	21467.188	1.2-1.5	12	1) Average to good health, 2) Growing on slope, 3) Assessment limited by climbers, 4) Cluster of three
1348	Clementi Forest	2020-01-31	T18123	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	33993.336	21457.803	1.2	10	1) Average to good health, 2) Assessment limited by climbers, 3) Cluster of two
1349	Clementi Forest	2020-01-31	T18124	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	33984.439	21468.568	1.4	12	1) Good health, 2) No significant defects
1350	Clementi Forest	2020-01-31	T18125	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	33987.046	21485.528	1.2	10	1) Good health, 2) No significant defects, 3) Cluster of four
1351	Clementi Forest	2020-01-31	T18126	<i>Artocarpus heterophyllus</i>	Moraceae	Exotic	Casual	Tree	33991.079	21486.779	1	9	1) Good health, 2) No significant defects, 3) Asymmetric canopy
1352	Clementi Forest	2020-01-31	T18127	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	33984.241	21490.052	2.8	20	1) Storm vulnerable, 2) Low retention value
1353	Clementi Forest	2020-01-31	T18128	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34002.816	21494.553	1-1.1	12	1) Good health, 2) No significant defects, 3) Cluster of two
1354	Clementi Forest	2020-01-31	T18129	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34007.586	21485.826	1.3	12	1) Good health, 2) No significant defects
1355	Clementi Forest	2020-02-03	T18180	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34005.268	21515.799	1.2	8	1) Good health, 2) No significant defects, 3) Cluster of two
1356	Clementi Forest	2020-02-03	T18180A	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34005.268	21515.799	1.5	8	1) Good health, 2) No significant defects
1357	Clementi Forest	2020-02-03	T18181	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	33993.736	21512.331	1.4	12	1) Good health, 2) No significant defects
1358	Clementi Forest	2020-02-03	T18182	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	33997.144	21512.509	3.7	25	1) Storm vulnerable, 2) Low retention value
1359	Clementi Forest	2020-02-03	T18183	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34001.298	21510.865	1.3	12	1) Good health, 2) No significant defects
1360	Clementi Forest	2020-02-03	T18184	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34004.606	21505.279	1.3	11	1) Good health, 2) No significant defects
1361	Clementi Forest	2020-02-03	T18185	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	33968.724	21509.315	1.3	12	1) Good health, 2) No significant defects, 3) Cluster of four
1362	Clementi Forest	2020-02-03	T18186	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	33975.92	21507.906	2.5-3.5	18-25	1) Storm vulnerable, 2) Low retention value, 3) Cluster of three
1363	Clementi Forest	2020-02-03	T18187	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	33968.013	21511.623	1-1.4	12	1) Good health, 2) No significant defects, 3) Cluster of six
1364	Clementi Forest	2020-02-03	T18188	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	33970.399	21509.69	1-1.3	12	1) Good health, 2) No significant defects, 3) Cluster of four
1365	Clementi Forest	2020-02-03	T18189	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	33963.715	21502.744	2.8-3.5	18-25	1) Storm vulnerable, 2) Low retention value, 3) Cluster of three

Appendix G2 List of Specimens Assessed by Certified Arborists in Clementi Forest

S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
1366	Clementi Forest	2020-02-03	T18190	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	33966.962	21495.346	3.5	15	1) Storm vulnerable, 2) Low retention value
1367	Clementi Forest	2020-02-03	T18191	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	33960.496	21481.966	1.1-1.3	12	1) Good health, 2) No significant defects, 3) Cluster of four
1368	Clementi Forest	2020-02-03	T18192	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	33960.693	21478.183	3.2	16	1) Storm vulnerable, 2) Low retention value
1369	Clementi Forest	2020-02-03	T18193	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	33961.682	21451.892	1.2	7	1) Good health, 2) No significant defects, 3) Cluster of six
1370	Clementi Forest	2020-02-03	T18194	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	33968.345	21451.711	1.3	10	1) Good health, 2) No significant defects
1371	Clementi Forest	2020-02-03	T18195	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	33974.348	21441.207	1.2	10	1) Good health, 2) No significant defects
1372	Clementi Forest	2020-02-03	T18196	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	33956.657	21441.55	1.4	12	1) Good health, 2) No significant defects
1373	Clementi Forest	2020-02-03	T18197	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	33952.009	21429.301	1.3	10	1) Good health, 2) No significant defects
1374	Clementi Forest	2020-02-03	T18198	<i>Cyrtophyllum fragrans</i>	Gentianaceae	Native	Common	Tree	33945.569	21427.341	1.2	5	1) Poor health, 2) Root flare obvious, 3) Past canopy failure
1375	Clementi Forest	2020-02-03	T18199	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	33945.171	21425.321	1.3	6	1) Good health, 2) No significant defects, 3) Cluster of two
1376	Clementi Forest	2020-02-03	T18200	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	33963.722	21469.438	1-1.3	12	1) Good health, 2) No significant defects
1377	Clementi Forest	2020-01-21	T18201	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34324.792	21858.541	1.5-2	6	1) Good health, 2) Cluster of three
1378	Clementi Forest	2020-01-21	T18202	<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	34315.119	21860.251	15	9	1) Good health, 2) Assessment limited by climbers
1379	Clementi Forest	2020-01-21	T18203	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34315.228	21860.125	1	8	1) Good health, 2) Assessment limited by climbers
1380	Clementi Forest	2020-01-21	T18204	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34314.957	21855.488	1.8	9	1) Good health
1381	Clementi Forest	2020-01-21	T18205	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34295.548	21850.354	1	12	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
1382	Clementi Forest	2020-01-21	T18206	<i>Claoxylon indicum</i>	Euphorbiaceae	Native	Common	Tree	34294.571	21847.777	1.1	12	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
1383	Clementi Forest	2020-01-21	T18207	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34296.384	21843.288	1.15	8	1) Storm vulnerable, 2) Low retention value
1384	Clementi Forest	2020-01-21	T18208	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34300.015	21817.69	1.1	10	1) Average health, 2) Root flare obvious, 3) Growing on slope, 4) Assessment limited by climbers
1385	Clementi Forest	2020-01-21	T18209	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34285.951	21813.498	1.45	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
1386	Clementi Forest	2020-01-21	T18210	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34287.108	21821.091	1.1	12	1) Storm vulnerable, 2) Low retention value
1387	Clementi Forest	2020-01-21	T18211	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34285.876	21828.147	1.45	16	1) Good health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers
1388	Clementi Forest	2020-01-21	T18212	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34287.861	21839.561	2.2	20	1) Storm vulnerable, 2) Low retention value
1389	Clementi Forest	2020-01-21	T18213	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34286.802	21839.743	2	20	1) Storm vulnerable, 2) Low retention value
1390	Clementi Forest	2020-01-21	T18214	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34283.518	21827.164	1.25	18	1) Good health, 2) No significant defects, 3) Root flare obvious
1391	Clementi Forest	2020-01-21	T18215	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34284.1	21827.57	1.2	18	1) Good health, 2) No significant defects, 3) Root flare obvious
1392	Clementi Forest	2020-01-21	T18216	<i>Averrhoa carambola</i>	Oxalidaceae	Exotic	Casual	Tree	34279.031	21801.916	1.3	14	1) Good health, 2) Low bifurcation, 3) Decay on primary branch, 3) Infested with termites
1393	Clementi Forest	2020-01-21	T18217	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34262.385	21790.974	1	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
1394	Clementi Forest	2020-01-21	T18218	<i>Macaranga gigantea</i>	Euphorbiaceae	Native	Common	Tree	34273.952	21784.774	1.4	14	1) Good health, 2) Root flare obvious, 3) Growing on slope, 4) Assessment limited by climbers
1395	Clementi Forest	2020-01-21	T18219	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34243.623	21791.603	1.5	14	1) Storm vulnerable, 2) Low retention value
1396	Clementi Forest	2020-01-21	T18220	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34243.765	21791.297	1.1	16	1) Good health, 2) No significant defects, 3) Root flare obvious
1397	Clementi Forest	2020-01-21	T18221	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34244.107	21788.447	1.35	16	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
1398	Clementi Forest	2020-01-21	T18222	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34243.799	21791.316	1.8	20	1) Good health, 2) No significant defects, 3) Root flare obvious
1399	Clementi Forest	2020-01-22	T18223	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34278.572	21754.772	2.5	9	1) Good health, 2) No significant defects
1400	Clementi Forest	2020-01-22	T18224	<i>Cratogeomys formosum</i>	Hypericaceae	Native	Endangered	Tree	34282.197	21756.935	1.4	15	1) Good health, 2) Root flare obvious, 3) Growing on slope, 4) Assessment limited by climbers

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S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
1401	Clementi Forest	2020-01-22	T18225	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34286.515	21763.19	1.25	18	1) Good health, 2) Root flare obvious, 3) No significant defects
1402	Clementi Forest	2020-01-22	T18226	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34281.007	21754.001	1.6	15	1) Good health, 2) Root flare obvious, 3) Growing on slope, 4) No significant defects
1403	Clementi Forest	2020-01-22	T18227	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34248.942	21773.616	1.2	15	1) Average health, 2) Root flare obvious, 3) Growing on slope, 4) Assessment limited by climbers
1404	Clementi Forest	2020-01-22	T18228	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34245.784	21780.539	1.4	18	1) Good health, 2) Root flare obvious, 3) No significant defects
1405	Clementi Forest	2020-01-22	T18229	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34243.671	21782.971	1.3	9	1) Good health, 2) Self-corrected lean
1406	Clementi Forest	2020-01-22	T18230	<i>Campnosperma auriculatum</i>	Anacardiaceae	Native	Common	Tree	34237.108	21785.843	1.5	16	1) Good health, 2) Root flare obvious, 3) No significant defects
1407	Clementi Forest	2020-01-22	T18231	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34234.416	21789.018	1.3	15	1) Storm vulnerable, 2) Low retention value
1408	Clementi Forest	2020-01-22	T18232	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34229.778	21787.635	1.1	12	1) Average health, 2) Extensive decay at tree base, 3) Low retention value
1409	Clementi Forest	2020-01-22	T18233	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34228.731	21775.551	1.2	10	1) Average health, 2) Uprooting pressure observed, 3) Leaning at more than 45° East
1410	Clementi Forest	2020-01-22	T18234	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34223.239	21763.335	1	20	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
1411	Clementi Forest	2020-01-22	T18235	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34231.222	21764.046	1	15	1) Good health, 2) No significant defects
1412	Clementi Forest	2020-01-22	T18236	<i>Terminalia catappa</i>	Combretaceae	Native	Common	Tree	34234.177	21760.522	1.1	10	1) Good health, 2) Root flare obvious, 3) Poor form
1413	Clementi Forest	2020-01-22	T18237	<i>Vitex pinnata</i>	Lamiaceae	Native	Common	Tree	34273.959	21705.959	1	9	1) Poor health, 2) Root flare obvious, 3) U-shaped bifurcation, 4) Assessment limited by climbers
1414	Clementi Forest	2020-01-22	T18238	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34271.995	21689.822	1.2	12	1) Good health, 2) No significant defects
1415	Clementi Forest	2020-01-22	T18239	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34259.124	21673.925	1.8	20	1) Storm vulnerable, 2) Low retention value
1416	Clementi Forest	2020-01-22	T18240	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34256.18	21673.668	3.6	25	1) Storm vulnerable, 2) Low retention value
1417	Clementi Forest	2020-01-22	T18241	<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	34255.384	21673.371	1	14	1) Good health, 2) Root flare obvious, 3) Growing on slope, 4) Assessment limited by climbers
1418	Clementi Forest	2020-01-22	T18242	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34260.789	21679.844	3	9	1) Storm vulnerable, 2) Low retention value 3) Cluster of two
1419	Clementi Forest	2020-01-22	T18242A	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34260.373	21679.894	3	18	1) Storm vulnerable, 2) Low retention value
1420	Clementi Forest	2020-01-22	T18243	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34249.051	21648.936	2	8	1) Good health, 2) No significant defects
1421	Clementi Forest	2020-01-22	T18244	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34247.953	21639.989	1	10	1) Good health, 2) No significant defects
1422	Clementi Forest	2020-01-22	T18245	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34251.353	21631.495	1.5	7	1) Good health, 2) No significant defects 3) Cluster of two
1423	Clementi Forest	2020-01-22	T18245A	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34250.985	21630.802	1.5	7	1) Good health, 2) No significant defects
1424	Clementi Forest	2020-01-22	T18246	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34251.551	21626.769	1.2	11	1) Good health, 2) No significant defects
1425	Clementi Forest	2020-01-22	T18246A	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34249.921	21622.115	1.2	10	1) Good health, 2) No significant defects
1426	Clementi Forest	2020-01-22	T18246B	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34250.152	21622.222	1.2	10	1) Good health, 2) No significant defects
1427	Clementi Forest	2020-01-22	T18247	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34250.844	21620.097	1.8	10	1) Good health, 2) No significant defects
1428	Clementi Forest	2020-01-22	T18248	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34252.654	21616.413	2	9	1) Good health, 2) No significant defects 3) Cluster of two
1429	Clementi Forest	2020-01-22	T18248A	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34249.001	21614.928	1.4	9	1) Good health, 2) No significant defects
1430	Clementi Forest	2020-01-22	T18249	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34248.517	21612.746	1.3	9	1) Good health, 2) No significant defects
1431	Clementi Forest	2020-01-23	T18250	<i>Syzygium lineatum</i>	Myrtaceae	Native	Common	Tree	34237.495	21674.983	1.35	8	1) Average health, 2) Root flare obvious, 3) Asymmetric canopy, 4) Assessment limited by climbers
1432	Clementi Forest	2020-01-23	T18251	<i>Morella esculenta</i>	Myricaceae	Native	Common	Tree	34237.51	21676.701	1.5	14	1) Good health, 2) Root flare obvious, 3) Infested with termites, 4) Asymmetric canopy
1433	Clementi Forest	2020-01-23	T18252	<i>Adinandra dumosa</i>	Pentaphylacaceae	Native	Common	Tree	34236.138	21682.902	1.1	17	1) Good health, 2) No significant defects, 3) Root flare obvious
1434	Clementi Forest	2020-01-23	T18253	<i>Adinandra dumosa</i>	Pentaphylacaceae	Native	Common	Tree	34235.835	21689.079	1.35	17	1) Average health, 2) Root flare obvious, 3) Infested with termites, 4) Asymmetric canopy, 5) Assessment limited by climbers
1435	Clementi Forest	2020-01-23	T18254	<i>Adinandra dumosa</i>	Pentaphylacaceae	Native	Common	Tree	34235.975	21690.773	1.35	18	1) Good health, 2) Root flare obvious, 3) Low bifurcation, 4) Asymmetric canopy

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S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
1436	Clementi Forest	2020-01-23	T18255	<i>Adinandra dumosa</i>	Pentaphylacaceae	Native	Common	Tree	34238.139	21703.365	1.3	18	1) Good health, 2) Root flare obvious, 3) Low bifurcation, 4) Asymmetric canopy
1437	Clementi Forest	2020-01-23	T18256	<i>Rhodamnia cinerea</i>	Myrtaceae	Native	Common	Tree	34236.727	21706.763	1.55	15	1) Good health, 2) Low bifurcation, 3) Root flare obvious
1438	Clementi Forest	2020-01-23	T18257	<i>Syzygium lineatum</i>	Myrtaceae	Native	Common	Tree	34238.621	21708.342	1.8	10	1) Poor health, 2) Decay on primary branches and buttress roots, 3) Low retention value
1439	Clementi Forest	2020-01-23	T18258	<i>Adinandra dumosa</i>	Pentaphylacaceae	Native	Common	Tree	34230.133	21688.991	1.5	10	1) Good health, 2) Root flare obvious, 3) Multiple attachments
1440	Clementi Forest	2020-01-23	T18259	<i>Adinandra dumosa</i>	Pentaphylacaceae	Native	Common	Tree	34226.477	21675.803	1	18	1) Good health, 2) Root flare obvious, 3) Assessment limited by canopies of other trees
1441	Clementi Forest	2020-01-23	T18260	<i>Adinandra dumosa</i>	Pentaphylacaceae	Native	Common	Tree	34229.751	21676.201	1.05	20	1) Good health, 2) No significant defects, 3) Root flare obvious
1442	Clementi Forest	2020-01-23	T18261	<i>Adinandra dumosa</i>	Pentaphylacaceae	Native	Common	Tree	34230.404	21670.586	1	20	1) Average health, 2) Root flare obvious, 3) Assessment limited by climbers
1443	Clementi Forest	2020-01-23	T18262	<i>Rhodamnia cinerea</i>	Myrtaceae	Native	Common	Tree	34238.633	21670.671	1.05	18	1) Good health, 2) Root flare obvious, 3) Growing on slope, 4) Assessment limited by climbers
1444	Clementi Forest	2020-01-23	T18263	<i>Rhodamnia cinerea</i>	Myrtaceae	Native	Common	Tree	34233.393	21666.308	1	12	1) Good health, 2) Root flare obvious, 3) U-shaped bifurcation, 4) Asymmetric canopy
1445	Clementi Forest	2020-01-23	T18264	<i>Adinandra dumosa</i>	Pentaphylacaceae	Native	Common	Tree	34225.259	21674.722	1.3	16	1) Good health, 2) Root flare obvious, 3) Low bifurcation
1446	Clementi Forest	2020-01-23	T18265	<i>Adinandra dumosa</i>	Pentaphylacaceae	Native	Common	Tree	34222.463	21673.703	1.6	15	1) Good health, 2) Root flare obvious, 3) Low bifurcation
1447	Clementi Forest	2020-01-23	T18266	<i>Adinandra dumosa</i>	Pentaphylacaceae	Native	Common	Tree	34221.451	21677.021	1.5	14	1) Good health, 2) Root flare obvious, 3) Low bifurcation
1448	Clementi Forest	2020-01-23	T18267	<i>Cyrtophyllum fragrans</i>	Gentianaceae	Native	Common	Tree	34212.366	21677.32	1.6	15	1) Average health, 2) Assessment limited by climbers
1449	Clementi Forest	2020-01-23	T18268	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34194.478	21677.383	4	25	1) Storm vulnerable, 2) Low retention value
1450	Clementi Forest	2020-01-23	T18269	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34204.581	21669.79	1.6	7	1) Good health
1451	Clementi Forest	2020-01-23	T18270	<i>Adinandra dumosa</i>	Pentaphylacaceae	Native	Common	Tree	34216.719	21650.781	1.8	18	1) Good health, 2) No significant defects, 3) Low bifurcation
1452	Clementi Forest	2020-01-23	T18271	<i>Cyrtophyllum fragrans</i>	Gentianaceae	Native	Common	Tree	34220.05	21647.843	1.4	16	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
1453	Clementi Forest	2020-01-23	T18272	<i>Adinandra dumosa</i>	Pentaphylacaceae	Native	Common	Tree	34200.567	21638.337	1	16	1) Good health, 2) No significant defects, 3) Root flare obvious, 4) U-shaped bifurcation
1454	Clementi Forest	2020-01-23	T18273	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34192.453	21626.465	2	10	1) Good health
1455	Clementi Forest	2020-01-23	T18274	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34194.612	21621.615	2	6	1) Good health, 2) Cluster of four
1456	Clementi Forest	2020-01-23	T18275	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34200.164	21617.493	2	6	1) Good health, 2) Cluster of four
1457	Clementi Forest	2020-01-23	T18276	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34184.206	21597.233	1.4	12	1) Good health
1458	Clementi Forest	2020-01-23	T18277	<i>Dillenia suffruticosa</i>	Dilleniaceae	Native	Common	Shrub	34199.847	21602.625	1.3	5	1) Good health, 2) Decay on primary branch
1459	Clementi Forest	2020-01-23	T18278	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34180.396	21596.585	1.2	14	1) Good health
1460	Clementi Forest	2020-01-23	T18279	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34169.528	21596.89	2	10	1) Good health
1461	Clementi Forest	2020-01-23	T18280	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34157.26	21599.413	4.2	18	1) Storm vulnerable, 2) Low retention value
1462	Clementi Forest	2020-01-23	T18281	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34156.666	21600.833	1.2	12	1) Good health
1463	Clementi Forest	2020-01-23	T18282	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34154.395	21598.66	3.5	20	1) Storm vulnerable, 2) Low retention value
1464	Clementi Forest	2020-01-23	T18283	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34151.658	21597.914	2	8	1) Good health, 2) Cluster of two
1465	Clementi Forest	2020-01-23	T18284	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34146.829	21599.078	1.5	10	1) Good health, 2) Cluster of two
1466	Clementi Forest	2020-01-23	T18285	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34143.844	21598.388	1.4	10	1) Good health
1467	Clementi Forest	2020-01-23	T18286	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34149.025	21598.538	1.6	10	1) Good health, 2) Cluster of three
1468	Clementi Forest	2020-01-23	T18287	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34143.726	21592.898	2	20	1) Storm vulnerable, 2) Low retention value
1469	Clementi Forest	2020-01-23	T18288	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34145.576	21592.34	1.8	10	1) Good health, 2) Cluster of three
1470	Clementi Forest	2020-01-23	T18289	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34132.321	21579.187	2.2	8	1) Good health

Appendix G2 List of Specimens Assessed by Certified Arborists in Clementi Forest

S/N	Site	Date	Tag ID	Species	Family	Origin	Status	Habit	Northing (DGPS)	Easting (DGPS)	Girth/ spread (m)	Height (m)	Assessment
1471	Clementi Forest	2020-01-23	T18290	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34134.155	21577.611	1.3	12	1) Storm vulnerable, 2) Low retention value, 3) Cluster of three
1472	Clementi Forest	2020-01-23	T18291	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34127.818	21581.089	2.4	12	1) Storm vulnerable, 2) Low retention value
1473	Clementi Forest	2020-01-23	T18292	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34105.39	21585.295	1.5	6	1) Good health
1474	Clementi Forest	2020-01-23	T18293	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34160.268	21591.196	2	12	1) Good health, 2) Cluster of two
1475	Clementi Forest	2020-01-23	T18294	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34176.989	21584.105	1.4	18	1) Storm vulnerable, 2) Low retention value
1476	Clementi Forest	2020-01-23	T18295	<i>Spathodea campanulata</i>	Bignoniaceae	Exotic	Naturalised	Tree	34177.598	21583.726	2.5	18	1) Storm vulnerable, 2) Low retention value
1477	Clementi Forest	2020-01-23	T18296	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34176.212	21584.059	1.6	6	1) Good health
1478	Clementi Forest	2020-01-23	T18297	<i>Cyrtophyllum fragrans</i>	Gentianaceae	Native	Common	Tree	34208.669	21617.523	1.1	18	1) Average health, 2) Assessment limited by climbers
1479	Clementi Forest	2020-01-23	T18298	<i>Cyrtophyllum fragrans</i>	Gentianaceae	Native	Common	Tree	34210.337	21619.101	1.45	20	1) Average health, 2) Assessment limited by climbers
1480	Clementi Forest	2020-01-23	T18299	<i>Cyrtophyllum fragrans</i>	Gentianaceae	Native	Common	Tree	34213.827	21614.729	1.1	10	1) Poor health, 2) Root flare obvious, 3) Past canopy failure, 4) Assessment limited by climbers
1481	Clementi Forest	2020-01-23	T18300	<i>Cyrtophyllum fragrans</i>	Gentianaceae	Native	Common	Tree	34226.396	21600.924	1.65	12	1) Average health, 2) Root flare obvious, 3) Possible canopy failure, 4) Assessment limited by climbers
1482	Clementi Forest	2020-01-23	T18301	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34220.659	21599.92	3	10	1) Good health, 2) Cluster of 16
1483	Clementi Forest	2020-01-23	T18302	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34226.446	21613.677	2	8	1) Good health
1484	Clementi Forest	2020-01-23	T18303	<i>Morella esculenta</i>	Myricaceae	Native	Common	Tree	34230.805	21626.538	1	10	1) Poor health, 2) Root flare obvious, 3) Assessment limited by canopies of other trees
1485	Clementi Forest	2020-01-23	T18304	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	34236.395	21625.72	2	10	1) Good health
1486	Clementi Forest	2020-01-23	T18305	<i>Adinandra dumosa</i>	Pentaphylacaceae	Native	Common	Tree	34233.315	21647.884	2	12	1) Good health, 2) No significant defects, 3) Multiple attachments
1487	Clementi Forest	2020-01-23	T18306	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34236.065	21655.706	1	14	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
1488	Clementi Forest	2020-01-23	T18307	<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	34229.745	21653.298	2.5	18	1) Good health, 2) No significant defects, 3) Root flare obvious
1489	Clementi Forest	2020-02-03	T18308	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	33925.656	21419.225	1.3	12	1) Good health, 2) No significant defects
1490	Clementi Forest	2020-02-03	T18309	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	33976.739	21479.653	1.3	12	1) Good health, 2) No significant defects
1491	Clementi Forest	2020-02-03	T18310	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	33977.527	21494.254	2.5	11	1) Storm vulnerable, 2) Low retention value
1492	Clementi Forest	2020-02-03	T18311	<i>Elaeis guineensis</i>	Arecaceae	Exotic	Cultivated Only	Tree	33973.76	21529.494	1.3	11	1) Good health, 2) No significant defects
1493	Clementi Forest	2020-02-03	T18312	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	33993.933	21520.464	2	15	1) Storm vulnerable, 2) Low retention value
1494	Clementi Forest	2020-02-03	T18313	<i>Ficus elastica</i>	Moraceae	Exotic	Casual	Strangler	33998.612	21533.168	15	18	1) Good health, 2) Assessment limited by climbers
1495	Clementi Forest	2020-03-09	T18314	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34790.482	21877.603	2.5	16	1) Average health, 2) Root flare obvious, 3) Past canopy failure, 4) Assessment limited by climbers
1496	Clementi Forest	2020-03-09	T18315	<i>Macaranga gigantea</i>	Euphorbiaceae	Native	Common	Tree	34787.338	21883.089	1.3	14	1) Good health, 2) Root flare obvious, 3) Assessment limited by climbers
1497	Clementi Forest	2020-03-09	T18316	<i>Hevea brasiliensis</i>	Euphorbiaceae	Exotic	Naturalised	Tree	34781.526	21900.091	1	16	1) Good health, 2) Crooked trunk, 3) Assessment limited by climbers
1498	Clementi Forest	2020-03-09	T18317	<i>Durio zibethinus</i>	Malvaceae	Exotic	Casual	Tree	34776.303	21904.422	1.8	20	1) Good health, 2) Root flare obvious, 3) Pocket decay on branches, 4) Assessment limited by climbers
1499	Clementi Forest	2020-03-09	T18318	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34759.564	21895.415	1.1	13	1) Storm vulnerable, 2) Low retention value
1500	Clementi Forest	2020-03-09	T18319	<i>Falcataria moluccana</i>	Fabaceae	Exotic	Naturalised	Tree	34744.518	21886.625	1.2	12	1) Storm vulnerable, 2) Low retention value

Appendix H1

List of Probable and
Recorded Fauna Species
at Maju Forest

Faunal group	Total no. of probable species		Total no. of recorded species		Total no. of recorded species not on probable list (CS species)
	All species	CS species	All species	CS species	
Aculeate hymenopterans	78	1	6	0	0
Bees	39	1	3	0	0
Stinging wasps	39	0	3	0	0
Odonates	43	1	10	0	0
Dragonflies	33	0	8	0	0
Damselflies	10	1	2	0	0
Butterflies	178	17	34	1	0
Freshwater decapod crustaceans	1	0	1	0	0
Freshwater fish	9	0	2	0	0
Herpetofauna	47	1	18	0	1
Amphibians	16	0	8	0	0
Reptiles	31	1	10	0	1
Birds	152	19	48	7	0
Mammals	26	5	11	2	0
Non-volant mammals	15	2	6	2	0
Bats	11	3	5	0	0
Total	534	44	130	10	1

S/N	Type	Family name	Scientific name	Common name	Global status (IUCN, 2012)	National status (Ascher et al. (in prep); JXQ Lee, pers comm)	Species of conservation significance	Native status (The Biodiversity of Singapore, 2020; JXQ Lee, pers comm)	Probable species	Recorded species	Remarks
4	Bee	Apidae	<i>Apis cerana</i>	Eastern honey bee	Not Assessed	Least Concern	No	Native	Yes	Yes	
16	Bee	Apidae	<i>Tetragonula valdezi</i>	NA	Not Assessed	Least Concern	No	Native	Yes	Yes	
22	Bee	Apidae	<i>Xylocopa latipes</i>	Broad-handed carpenter	Not Assessed	Least Concern	No	Native	Yes	Yes	
40	Stinging Wasp	Crabronidae	<i>Liris subtessellatus</i>	NA	Not Assessed	Least Concern	No	Native	Yes	Yes	
	Stinging Wasp	Pompilidae	Family Pompilidae	NA	NA	NA	NA	NA	NA	Yes	
72	Stinging Wasp	Vespidae	<i>Ropalidia sumatrae</i>	NA	Not Assessed	Least Concern	No	Native	Yes	Yes	Nest observed
74	Stinging Wasp	Vespidae	<i>Stenodyneriellus guttulatus</i>	NA	Not Assessed	Least Concern	No	Native	Yes	Yes	

S/N	Type	Family name	Scientific name	Common name	Global status (IUCN, 2012)	National status (Soh et al., 2019)	Species of conservation significance	Distribution/Rarity (Soh et al. 2019)	Probable species	Recorded species
10	Damselfly	Platycnemididae	<i>Copera vittata</i>	Variable featherlegs	Least Concern	Vulnerable	Yes	Restricted and Rare	Yes	No

S/N	Family name	Scientific name	Common name	Global status (IUCN, 2012)	National status (Davison et al. 2008; Jain et al. 2018)	Species of conservation significance	Distribution/Rarity (Khew, 2015)	Probable species	Recorded species
139	Nymphalidae	<i>Neptis harita harita</i>	Chocolate sailor	Not Assessed	Vulnerable	Yes	Rare	Yes	Yes

S/N	Family name	Scientific name	Common name	Global status (IUCN, 2012)	National status (Davison et al. 2008)	Species of conservation significance	Native status (Baker & Lim, 2012)	Probable species	Recorded species
1	Gecarcinucidae	<i>Parathelphusa maculata</i>	Maculate freshwater	Least Concern	Not Assessed	No	Native	Yes	Yes

S/N	Family name	Scientific name	Common name	Global status (IUCN, 2012)	National status (Davison et al. 2008)	Species of conservation significance	Native status (Baker & Lim, 2012)	Probable species	Recorded species
1	Anabantidae	<i>Anabas testudineus</i>	Oriental climbing perch	Least Concern	Not Assessed	No	Native	Yes	No
2	Aplocheilidae	<i>Aplocheilus armatus</i>	Whitespot	Not Assessed	Not Assessed	No	Native	Yes	No
3	Clariidae	<i>Clarias cf. batrachus</i>	Common walking catfish	Not Assessed	Not Assessed	No	Native	Yes	No
4	Osphronemidae	<i>Betta pugnax</i>	Malayan forest betta	Least Concern	Not Assessed	No	Native	Yes	No
5	Osphronemidae	<i>Trichopsis vittata</i>	Croaking gouramy	Least Concern	Not Assessed	No	Native	Yes	No
6	Poeciliidae	<i>Gambusia affinis</i>	Mosquitofish	Least Concern	Not Assessed	No	Non-native	Yes	No
7	Poeciliidae	<i>Poecilia reticulata</i>	Guppy	Least Concern	Not Assessed	No	Non-native	Yes	Yes
8	Poeciliidae	<i>Poecilia sphenops</i>	Green molly	Least Concern	Not Assessed	No	Non-native	Yes	No
9	Synbranchidae	<i>Monopterus albus</i>	Sunda swamp-eel	Least Concern	Not Assessed	No	Native	Yes	Yes

S/N	Family name	Scientific name	Common name	Global status (IUCN, 2012)	National status (Davison et al. 2008)	Species of conservation significance	Distribution/Rarity (Baker & Lim, 2012)	Native status (Baker & Lim, 2012)	Probable species	Recorded species	Remarks
1	Bufonidae	<i>Duttaphrynus melanostictus</i>	Asian toad	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	No	Recorded by Camphora in 2018
2	Dicroglossidae	<i>Fejervarya cancrivora</i>	Crab-eating frog	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	No	
3	Dicroglossidae	<i>Fejervarya limnocharis</i>	Field frog	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	No	
4	Dicroglossidae	<i>Limnonectes blythii</i>	Malayan giant frog	Near Threatened	Least Concern	No	Widespread and Common	Native	Yes	Yes	
5	Dicroglossidae	<i>Limnonectes malesianus</i>	Malesian frog	Near Threatened	Near Threatened	No	Restricted but Common	Native	Yes	No	Recorded by Camphora in 2018
6	Dicroglossidae	<i>Occidozyga sumatrana</i>	Yellow-bellied puddle frog	Least Concern	Near Threatened	No	Restricted but Common	Native	Yes	No	
7	Eleutherodactylidae	<i>Eleutherodactylus planirostris</i>	Greenhouse frog	Least Concern	Not Assessed	No	Widespread and Common	Non-native	Yes	Yes	
8	Microhylidae	<i>Kaloula pulchra</i>	Banded bull frog	Least Concern	Not Assessed	No	Widespread and Common	Non-native	Yes	Yes	
9	Microhylidae	<i>Microhyla butleri</i>	Painted chorus	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	Yes	
10	Microhylidae	<i>Microhyla mukhlesuri</i>	East Asian ornate chorus frog	Least Concern	Not Assessed	No	Restricted and Rare	Non-native	Yes	Yes	
11	Microhylidae	<i>Microhyla heymonsi</i>	Dark-sided chorus	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	Yes	
12	Ranidae	<i>Chalcorana labialis</i>	Copper-cheeked frog	Least Concern	Least Concern	No	Restricted but Common	Native	Yes	Yes	Tadpoles. Also recorded by Camphora in 2018
13	Ranidae	<i>Hylarana erythraea</i>	Green paddy frog	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	No	
14	Ranidae	<i>Lithobates catesbeianus</i>	American bullfrog	Least Concern	Not Assessed	No	Widespread and Common	Non-native	Yes	No	
15	Ranidae	<i>Pulchrana laterimaculata</i>	Masked rough-sided frog	Least Concern	Near Threatened	No	Restricted and Uncommon	Native	Yes	No	
16	Rhacophoridae	<i>Polypedates</i>	Four-lined tree	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	Yes	

S/N	Family name	Scientific name	Common name	Global status (IUCN, 2012)	National status (Davison et al. 2008)	Species of conservat ion	Distribution/Rarity (Baker & Lim, 2012)	Native status (Baker & Lim, 2012)	Probable species	Recorded species	Remarks
24	Geomydidae	<i>Cuora amboinensis</i>	Malayan box terrapin	Vulnerable; CITES protected (Appendix II)	Near Threatened	Yes	Restricted but Common	Native	Yes	No	

S/N	Family name	Scientific name	Common name	Global status (IUCN, 2012)	National status (Davison et al. 2008)	Species of conservation significance	Distribution/Rarity (NSS, 2020; Singapore Birds Project, 2020)	Native status (NSS, 2020; Singapore Birds Project, 2020)	Probable species	Recorded species	Remarks
4	Accipitridae	<i>Accipiter trivirgatus</i>	Crested goshawk	Least Concern; CITES protected (Appendix II)	Critically Endangered	Yes	Uncommon	Resident breeder	Yes	Yes	
10	Accipitridae	<i>Nisaetus cirrhatus</i>	Changeable hawk-eagle	Least Concern; CITES protected (Appendix II)	Endangered	Yes	Uncommon	Resident breeder	Yes	Yes	Nest observed
111	Phasianidae	<i>Gallus gallus</i>	Red junglefowl	Least Concern	Endangered	Yes	Uncommon	Resident breeder	Yes	Yes	Also recorded on camera trap
124	Psittaculidae	<i>Loriculus galgulus</i>	Blue-crowned hanging-parrot	Least Concern; CITES protected (Appendix II)	Endangered	Yes	Uncommon	Resident breeder	Yes	Yes	
127	Psittaculidae	<i>Psittacula longicauda</i>	Long-tailed parakeet	Vulnerable; CITES protected (Appendix II)	Not Assessed	Yes	Common	Resident breeder	Yes	Yes	
134	Pycnonotidae	<i>Pycnonotus zeylanicus</i>	Straw-headed bulbul	Critically Endangered; CITES protected (Appendix II)	Endangered	Yes	Uncommon	Resident breeder	Yes	Yes	
136	Rallidae	<i>Rallina fasciata</i>	Red-legged crane	Least Concern	Vulnerable	Yes	Uncommon	Resident breeder	Yes	Yes	Also recorded on camera trap

S/N	Family name	Scientific name	Common name	Global status (IUCN, 2012)	National status (Davison et al. 2008)	Species of conservation significance	Distribution/Rarity (Baker & Lim, 2012)	Native status (Baker & Lim, 2012)	Probable species	Recorded species	Remarks
2	Cercopithecidae	<i>Macaca fascicularis</i>	Long-tailed macaque	Vulnerable; CITES protected (Appendix II)	Least Concern	Yes	Widespread and Common	Native	Yes	Yes	Recorded on camera trap
4	Manidae	<i>Manis javanica</i>	Sunda pangolin	Critically Endangered; CITES protected (Appendix I)	Critically Endangered	Yes	Widespread but Rare	Native	Yes	Yes	Recorded on camera trap CT05

S/ N	Family name	Scientific name	Common name	Global status (IUCN, 2012)	National status (Davison et al. 2008)	Species of conservatio n significanc	Distribution/Rarity (Baker & Lim, 2012)	Native status (Baker & Lim, 2012)	Probable species	Recorded species	Remarks
1	Emballonuridae	<i>Saccolaimus saccolaimus</i>	Pouch tomb bat	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	Yes	
2	Emballonuridae	<i>Taphozous melanopogon</i>	Black-bearded tomb bat	Least Concern	Least Concern	No	Widespread but Rare	Native	Yes	No	
3	Pteropodidae	<i>Cynopterus brachyotis</i>	Lesser short-nosed fruit bat	Least Concern	Not Assessed	No	Widespread and Common	Native	Yes	Yes	
4	Pteropodidae	<i>Eonycteris spelaea</i>	Cave nectar bat	Least Concern	Vulnerable	Yes	Widespread but Uncommon	Native	Yes	No	
5	Rhinolophidae	<i>Rhinolophus refulgens</i>	Glossy horseshoe bat	Least Concern	Not Assessed	No	Restricted but Common	Native	Yes	Yes	
6	Vespertilionidae	<i>Myotis horsfieldii</i>	Horsfield's myotis	Least Concern	Least Concern	No	NA	Native	Yes	No	
7	Vespertilionidae	<i>Myotis muricola</i>	Asian whiskered myotis	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	Yes	
8	Vespertilionidae	<i>Pipistrellus javanicus</i>	Javan pipistrelle	Least Concern	Not Assessed	No	Widespread but Uncommon	Native	Yes	No	Recorded by Camphora in
9	Vespertilionidae	<i>Scotophilus kuhlii</i>	Lesser Asian house bat	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	Yes	
10	Vespertilionidae	<i>Tylonycteris fulvida</i>	Lesser bamboo bat	Least Concern	Vulnerable	Yes	Restricted and Rare	Native	Yes	No	Tylonycteris sp. recorded by
11	Vespertilionidae	<i>Tylonycteris malayana</i>	Greater bamboo bat	Least Concern	Vulnerable	Yes	Widespread and Common	Native	Yes	No	Tylonycteris sp. recorded by

Appendix H2

List of Probable and
Recorded Fauna Species
at Clementi Forest

Faunal group	Total no. of probable species		Total no. of recorded species		Total no. of recorded species not on probable list (CS species)
	All species	CS species	All species	CS species	
Aculeate hymenopterans	81	1	18	1	0
Bees	41	1	8	1	0
Stinging wasps	40	0	10	0	0
Odonates	52	2	25	2	0
Dragonflies	41	1	18	1	0
Damselflies	11	1	7	1	0
Butterflies	175	16	49	2	0
Freshwater decapod crustaceans	2	0	0	0	0
Freshwater fish	14	0	8	0	0
Herpetofauna	48	2	25	1	1 (1)
Amphibians	16	0	11	0	0
Reptiles	32	2	14	1	1 (1)
Birds	161	20	75	10	1 (0)
Mammals	27	6	10	2	0
Non-volant mammals	16	3	5	1	0
Bats	11	3	5	1	0
Total	560	47	210	18	2 (1)

Appendix H2 List of Probable Recorded Species at Clementi Forest

S/N	Type	Family name	Scientific name	Common name	Global status (IUCN, 2012)	National status (Ascher et al. (in prep); JXQ Lee, pers comm)	Species of conservation significance	Native status (The Biodiversity of Singapore, 2020; JXQ Lee, pers comm)	Probable species	Recorded species	Remarks
1	Bee	Apidae	<i>Amegilla andrewsi</i>	Andrew's blue-banded digger bee	Not Assessed	Least Concern	No	Native	Yes	No	
2	Bee	Apidae	<i>Amegilla korotonensis</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
3	Bee	Apidae	<i>Apis andreniformis</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
4	Bee	Apidae	<i>Apis cerana</i>	Eastern honey bee	Not Assessed	Least Concern	No	Native	Yes	Yes	
5	Bee	Apidae	<i>Apis dorsata</i>	NA	Not Assessed	Least Concern	No	Native	Yes	Yes	
6	Bee	Apidae	<i>Braunsapis clarihirta</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
7	Bee	Apidae	<i>Braunsapis cupulifera</i> *	NA	Not Assessed	Least Concern	No	Native	Yes	No	
8	Bee	Apidae	<i>Braunsapis hewitti</i> *	NA	Not Assessed	Least Concern	No	Native	Yes	No	
9	Bee	Apidae	<i>Braunsapis puangensis</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
10	Bee	Apidae	<i>Ceratina collusor</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
11	Bee	Apidae	<i>Ceratina lieftincki</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
12	Bee	Apidae	<i>Ceratina negrolateralis</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
13	Bee	Apidae	<i>Ceratina dentipes</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
14	Bee	Apidae	<i>Ceratina smaragdula</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
15	Bee	Apidae	<i>Ceratina unimaculata</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
16	Bee	Apidae	<i>Tetragonula valdezi</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
17	Bee	Apidae	<i>Thyreus ceylonicus</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
18	Bee	Apidae	<i>Thyreus himalayensis</i>	NA	Not Assessed	Least Concern	No	Native	Yes	Yes	
19	Bee	Apidae	<i>Xylocopa aestuans</i>	White-cheeked carpenter bee	Not Assessed	Least Concern	No	Native	Yes	No	
20	Bee	Apidae	<i>Xylocopa caerulea</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
21	Bee	Apidae	<i>Xylocopa flavonigrescens</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
22	Bee	Apidae	<i>Xylocopa insularis</i>	NA	Not Assessed	Data Deficient	No	Native	Yes	No	Specimens collected from this area in LKCNHM
23	Bee	Apidae	<i>Xylocopa latipes</i>	Broad-handed carpenter bee	Not Assessed	Least Concern	No	Native	Yes	Yes	
24	Bee	Apidae	<i>Xylocopa myops</i>	NA	Not Assessed	Data Deficient	No	Native	Yes	No	Specimens collected from this area in LKCNHM
25	Bee	Colletidae	<i>Hylaeus penangensis</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
26	Bee	Halictidae	<i>Lasioglossum deliense</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
27	Bee	Halictidae	<i>Lasioglossum vagans</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
28	Bee	Halictidae	<i>Lasioglossum adonidae</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
29	Bee	Halictidae	<i>Lipotriches takauensis</i>	NA	Not Assessed	Vulnerable	Yes	Native	Yes	Yes	
30	Bee	Halictidae	<i>Lipotriches ceratina</i>	NA	Not Assessed	Least Concern	No	Native	Yes	Yes	
31	Bee	Halictidae	<i>Nomia strigata</i>	Pearly-banded bee	Not Assessed	Least Concern	No	Native	Yes	Yes	
32	Bee	Halictidae	<i>Nomia incerta</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
33	Bee	Halictidae	<i>Patellapis murbanus</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
34	Bee	Halictidae	<i>Pseudapis siamensis</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
35	Bee	Megachilidae	<i>Coelioxys confusus</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	

Appendix H2 List of Probable Recorded Species at Clementi Forest

S/N	Type	Family name	Scientific name	Common name	Global status (IUCN, 2012)	National status (Ascher et al. (in prep); JXQ Lee, pers comm)	Species of conservation significance	Native status (The Biodiversity of Singapore, 2020; JXQ Lee, pers comm)	Probable species	Recorded species	Remarks
36	Bee	Megachilidae	<i>Euaspis polynesia</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
37	Bee	Megachilidae	<i>Megachile conjuncta</i>	NA	Not Assessed	Least Concern	No	Native	Yes	Yes	
38	Bee	Megachilidae	<i>Megachile laticeps</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
39	Bee	Megachilidae	<i>Megachile disjuncta</i>	NA	Not Assessed	Least Concern	No	Non-native	Yes	No	
40	Bee	Megachilidae	<i>Megachile umbripennis</i>	NA	Not Assessed	Least Concern	No	Non-native	Yes	No	
41	Bee	Megachilidae	<i>Megachile subrixator</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
42	Stinging Wasp	Crabronidae	<i>Liris subtessellatus</i>	NA	Not Assessed	Least Concern	No	Native	Yes	Yes	
43	Stinging Wasp	Crabronidae	<i>Tachytes sp.</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
44	Stinging Wasp	Crabronidae	<i>Trypoxylon sp.</i>	NA	Not Assessed	Least Concern	NA	Native	Yes	No	
45	Stinging Wasp	Pompilidae	<i>Auplopus sp.</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
46	Stinging Wasp	Pompilidae	<i>Paragenia argentifrons</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
47	Stinging Wasp	Pompilidae	<i>Tachypompilus analis</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
48	Stinging Wasp	Scoliidae	<i>Campsomeriella collaris</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
49	Stinging Wasp	Scoliidae	<i>Phalerimeris phalerata</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
50	Stinging Wasp	Sphecidae	<i>Chalybion bengalense</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
51	Stinging Wasp	Sphecidae	<i>Isodontia diodon</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
52	Stinging Wasp	Sphecidae	<i>Sceliphron javanum</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
53	Stinging Wasp	Sphecidae	<i>Sceliphron madraspatanum</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
54	Stinging Wasp	Sphecidae	<i>Sphex diabolicus</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
55	Stinging Wasp	Sphecidae	<i>Tachypompilus analis</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
56	Stinging Wasp	Sphecidae	<i>Sphex subtruncatus</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
57	Stinging Wasp	Vespidae	<i>Allorhynchium argentatum</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
58	Stinging Wasp	Vespidae	<i>Antepipona sp. nr. bipustulata</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
59	Stinging Wasp	Vespidae	<i>Delta campaniforme</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
60	Stinging Wasp	Vespidae	<i>Delta esuriens</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
61	Stinging Wasp	Vespidae	<i>Delta pyriforme</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
62	Stinging Wasp	Vespidae	<i>Elimus sp.</i>	NA	Not Assessed	Least Concern	No	Native	Yes	Yes	
63	Stinging Wasp	Vespidae	<i>Eumenes sp.</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
64	Stinging Wasp	Vespidae	<i>Liostenogaster nitidipennis</i>	NA	Not Assessed	Near Threatened	No	Native	Yes	No	
	Stinging Wasp	Vespidae	<i>Liostenogaster sp.</i>	NA	NA	NA	NA	NA	NA	Yes	
65	Stinging Wasp	Vespidae	<i>Liostenogaster varipicta</i>	NA	Not Assessed	Near Threatened	No	Native	Yes	No	
66	Stinging Wasp	Vespidae	<i>Parapolybia varia</i>	Lesser paper wasp	Not Assessed	Near Threatened	No	Native	Yes	Yes	
67	Stinging Wasp	Vespidae	<i>Parischnogaster mellyi</i>	NA	Not Assessed	Least Concern	No	Native	Yes	Yes	
68	Stinging Wasp	Vespidae	<i>Parischnogaster nigricans</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
69	Stinging Wasp	Vespidae	<i>Phimenes flavopictus</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
70	Stinging Wasp	Vespidae	<i>Polistes sagittarius</i>	Banded paper wasp	Not Assessed	Least Concern	No	Native	Yes	No	
71	Stinging Wasp	Vespidae	<i>Rhynchium haemorrhoidale</i>	NA	Not Assessed	Least Concern	No	Native	Yes	Yes	
72	Stinging Wasp	Vespidae	<i>Ropalidia erythrospila</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	

Appendix H2 List of Probable Recorded Species at Clementi Forest

S/N	Type	Family name	Scientific name	Common name	Global status (IUCN, 2012)	National status (Ascher et al. (in prep); JXQ Lee, pers comm)	Species of conservation significance	Native status (The Biodiversity of Singapore, 2020; JXQ Lee, pers comm)	Probable species	Recorded species	Remarks
73	Stinging Wasp	Vespidae	<i>Ropalidia jacobsoni</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
74	Stinging Wasp	Vespidae	<i>Ropalidia stigma</i>	NA	Not Assessed	Least Concern	No	Native	Yes	Yes	
75	Stinging Wasp	Vespidae	<i>Ropalidia sumatrae</i>	NA	Not Assessed	Least Concern	No	Native	Yes	Yes	
76	Stinging Wasp	Vespidae	<i>Ropalidia timida</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
77	Stinging Wasp	Vespidae	<i>Stenodyneriellus guttulatus</i>	NA	Not Assessed	Least Concern	No	Native	Yes	Yes	
78	Stinging Wasp	Vespidae	<i>Subancistrocerus sichelii</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
79	Stinging Wasp	Vespidae	<i>Vespa affinis</i>	Lesser banded hornet	Not Assessed	Least Concern	No	Native	Yes	No	
80	Stinging Wasp	Vespidae	<i>Vespa analis</i>	NA	Not Assessed	Least Concern	No	Native	Yes	No	
81	Stinging Wasp	Vespidae	<i>Vespa tropica</i>	Greater banded hornet	Not Assessed	Least Concern	No	Native	Yes	Yes	
*Based on Ascher et al. (in prep), both the taxonomic revision of Braunsapis and preliminary DNA barcoding results from Singapore suggests that both <i>B. cupulifera</i> and <i>B. hewitti</i> may be species complexes.											

Appendix H2 List of Probable Recorded Species at Clementi Forest

S/N	Type	Family name	Scientific name	Common name	Global status (IUCN, 2012)	National status (Soh et al., 2019)	Species of conservation significance	Distribution/Rarity (Soh et al. 2019)	Probable species	Recorded species
1	Damselfly	Coenagrionidae	<i>Agriocnemis femina</i>	Variable wisp	Least Concern	Least Concern	No	Widespread and Common	Yes	Yes
2	Damselfly	Coenagrionidae	<i>Agriocnemis rubescens</i>	Variable sprite	Least Concern	Least Concern	No	Widespread but Uncommon	Yes	No
3	Damselfly	Coenagrionidae	<i>Archibasis viola</i>	Violet sprite	Least Concern	Least Concern	No	Widespread and Common	Yes	No
4	Damselfly	Coenagrionidae	<i>Ceragrion cerinorubellum</i>	Ornate coral-tail	Least Concern	Least Concern	No	Widespread and Common	Yes	Yes
5	Damselfly	Coenagrionidae	<i>Ischnura senegalensis</i>	Common bluetail	Least Concern	Least Concern	No	Widespread and Common	Yes	Yes
6	Damselfly	Coenagrionidae	<i>Onychargia atrocyana</i>	Shorttail	Least Concern	Least Concern	No	Widespread but Uncommon	Yes	No
7	Damselfly	Coenagrionidae	<i>Pseudagrion microcephalum</i>	Blue sprite	Least Concern	Least Concern	No	Widespread and Common	Yes	Yes
8	Damselfly	Coenagrionidae	<i>Teinobasis ruficollis</i>	Red-tailed sprite	Not Assessed	Near Threatened	No	Widespread but Rare	Yes	Yes
9	Damselfly	Lestidae	<i>Lestes praemorsus</i>	Crenulated spreadwing	Least Concern	Least Concern	No	Widespread but Uncommon	Yes	No
10	Damselfly	Platycnemididae	<i>Copera marginipes</i>	Yellow featherlegs	Least Concern	Least Concern	No	Widespread and Common	Yes	Yes
11	Damselfly	Platycnemididae	<i>Copera vittata</i>	Variable featherlegs	Least Concern	Vulnerable	Yes	Restricted and Rare	Yes	Yes
12	Dragonfly	Aeshnidae	<i>Anax guttatus</i>	Emperor	Least Concern	Least Concern	No	Widespread but Uncommon	Yes	No
13	Dragonfly	Aeshnidae	<i>Gynacantha bayadera</i>	Small duskhawker	Least Concern	Vulnerable	Yes	Restricted and Rare	Yes	Yes
14	Dragonfly	Aeshnidae	<i>Gynacantha dohrni</i>	Spear-tail duskhawker	Not Assessed	Least Concern	No	Widespread but Uncommon	Yes	No
15	Dragonfly	Aeshnidae	<i>Gynacantha subinterrupta</i>	Dingy duskhawker	Least Concern	Least Concern	No	Widespread but Uncommon	Yes	Yes
16	Dragonfly	Gomphidae	<i>Ictinogomphus decoratus</i>	Common flangetail	Least Concern	Least Concern	No	Widespread and Common	Yes	No
17	Dragonfly	Libellulidae	<i>Acisoma panorpoides</i>	Trumpet tail	Least Concern	Least Concern	No	Widespread and Common	Yes	No
18	Dragonfly	Libellulidae	<i>Aethriamanta brevipennis</i>	Scarlet adjutant	Least Concern	Least Concern	No	Widespread but Uncommon	Yes	No
19	Dragonfly	Libellulidae	<i>Aethriamanta gracilis</i>	Pond adjutant	Least Concern	Least Concern	No	Widespread and Common	Yes	No
20	Dragonfly	Libellulidae	<i>Agrionoptera insignis</i>	Grenadier	Least Concern	Least Concern	No	Widespread and Common	Yes	Yes
21	Dragonfly	Libellulidae	<i>Brachydiplax chalybea</i>	Blue dasher	Least Concern	Least Concern	No	Widespread and Common	Yes	Yes
22	Dragonfly	Libellulidae	<i>Brachythemis contaminata</i>	Common amberwing	Least Concern	Least Concern	No	Widespread and Common	Yes	No
23	Dragonfly	Libellulidae	<i>Camacinia gigantea</i>	Sultan	Least Concern	Least Concern	No	Widespread but Uncommon	Yes	Yes
24	Dragonfly	Libellulidae	<i>Cratilla metallica</i>	Dark-tipped forest skimmer	Least Concern	Least Concern	No	Widespread and Common	Yes	Yes
25	Dragonfly	Libellulidae	<i>Crocothemis servilia</i>	Common scarlet	Least Concern	Least Concern	No	Widespread and Common	Yes	Yes
26	Dragonfly	Libellulidae	<i>Diplacodes nebulosa</i>	Black-tipped percher	Least Concern	Least Concern	No	Widespread but Uncommon	Yes	No
27	Dragonfly	Libellulidae	<i>Diplacodes trivialis</i>	Blue percher	Least Concern	Least Concern	No	Widespread and Common	Yes	Yes
28	Dragonfly	Libellulidae	<i>Hydrobasileus croceus</i>	Water monarch	Least Concern	Least Concern	No	Widespread and Common	Yes	No
29	Dragonfly	Libellulidae	<i>Lathrecista asiatica</i>	Scarlet grenadier	Least Concern	Least Concern	No	Widespread and Common	Yes	Yes
30	Dragonfly	Libellulidae	<i>Nannophya pygmaea</i>	Scarlet pygmy	Least Concern	Least Concern	No	Widespread and Common	Yes	No
31	Dragonfly	Libellulidae	<i>Nesoxenia lineata</i>	Striped grenadier	Least Concern	Least Concern	No	Widespread but Uncommon	Yes	No
32	Dragonfly	Libellulidae	<i>Neurothemis fluctuans</i>	Common parasol	Least Concern	Least Concern	No	Widespread and Common	Yes	Yes
33	Dragonfly	Libellulidae	<i>Orchithemis pulcherrima</i>	Variable sentinel	Least Concern	Least Concern	No	Widespread and Common	Yes	No
34	Dragonfly	Libellulidae	<i>Orthetrum chrysis</i>	Spine-tufted skimmer	Least Concern	Least Concern	No	Widespread and Common	Yes	Yes
35	Dragonfly	Libellulidae	<i>Orthetrum glaucum</i>	Common blue skimmer	Least Concern	Least Concern	No	Widespread and Common	Yes	Yes
36	Dragonfly	Libellulidae	<i>Orthetrum luzonicum</i>	Slender blue skimmer	Least Concern	Least Concern	No	Widespread and Common	Yes	No
37	Dragonfly	Libellulidae	<i>Orthetrum sabina</i>	Variiegated green skimmer	Least Concern	Least Concern	No	Widespread and Common	Yes	Yes
38	Dragonfly	Libellulidae	<i>Orthetrum testaceum</i>	Scarlet skimmer	Least Concern	Least Concern	No	Widespread and Common	Yes	Yes
39	Dragonfly	Libellulidae	<i>Pantala flavescens</i>	Wandering glider	Least Concern	Least Concern	No	Widespread and Common	Yes	Yes
40	Dragonfly	Libellulidae	<i>Potamarcha congener</i>	Common chaser	Least Concern	Least Concern	No	Widespread and Common	Yes	No
41	Dragonfly	Libellulidae	<i>Pseudothemis jorina</i>	Banded skimmer	Least Concern	Least Concern	No	Widespread but Uncommon	Yes	No

Appendix H2 List of Probable Recorded Species at Clementi Forest

S/N	Type	Family name	Scientific name	Common name	Global status (IUCN, 2012)	National status (Soh et al., 2019)	Species of conservation significance	Distribution/Rarity (Soh et al. 2019)	Probable species	Recorded species
42	Dragonfly	Libellulidae	<i>Rhodothemis rufa</i>	Common redbolt	Least Concern	Least Concern	No	Widespread and Common	Yes	No
43	Dragonfly	Libellulidae	<i>Rhyothemis obsolescens</i>	Bronze flutterer	Least Concern	Least Concern	No	Widespread but Uncommon	Yes	No
44	Dragonfly	Libellulidae	<i>Rhyothemis phyllis</i>	Yellow-barred flutterer	Least Concern	Least Concern	No	Widespread and Common	Yes	Yes
45	Dragonfly	Libellulidae	<i>Rhyothemis triangularis</i>	Sapphire flutterer	Least Concern	Least Concern	No	Widespread but Uncommon	Yes	No
46	Dragonfly	Libellulidae	<i>Tholymis tillarga</i>	White-barred duskhawk	Least Concern	Least Concern	No	Widespread and Common	Yes	Yes
47	Dragonfly	Libellulidae	<i>Tramea transmarina</i>	Saddlebag glider	Least Concern	Least Concern	No	Widespread and Common	Yes	No
48	Dragonfly	Libellulidae	<i>Trithemis aurora</i>	Crimson dropwing	Least Concern	Least Concern	No	Widespread and Common	Yes	No
49	Dragonfly	Libellulidae	<i>Trithemis festiva</i>	Indigo dropwing	Least Concern	Least Concern	No	Widespread and Common	Yes	Yes
50	Dragonfly	Libellulidae	<i>Trithemis pallidinervis</i>	Dancing dropwing	Least Concern	Least Concern	No	Widespread but Uncommon	Yes	No
51	Dragonfly	Libellulidae	<i>Urothemis signata</i>	Scarlet basker	Not Assessed	Least Concern	No	Widespread and Common	Yes	No
52	Dragonfly	Libellulidae	<i>Zyxomma petiolatum</i>	Slender duskdarter	Least Concern	Least Concern	No	Widespread and Common	Yes	No

Appendix H2 List of Probable Recorded Species at Clementi Forest

S/N	Family name	Scientific name	Common name	Global status (IUCN, 2012)	National status (Davison et al. 2008; Jain et al. 2018)	Species of conservation significance	Distribution/Rarity (Khew, 2015)	Probable species	Recorded species
1	Hesperiidae	<i>Ampittia dioscorides camertes</i>	Bush hopper	Not Assessed	Not Assessed	No	Moderately common	Yes	No
2	Hesperiidae	<i>Ancistroides nigrata maura</i>	Chocolate demon	Not Assessed	Not Assessed	No	Common	Yes	No
3	Hesperiidae	<i>Astictopterus jama jama</i>	Forest hopper	Not Assessed	Nationally Extinct (Rediscovered)	Yes	Moderately rare	Yes	No
4	Hesperiidae	<i>Baoris farri farri</i>	Bamboo paintbrush swift	Not Assessed	Not Assessed	No	Moderately rare	Yes	No
5	Hesperiidae	<i>Baoris ocea</i>	Paintbrush swift	Not Assessed	Not Assessed	No	Moderately rare	Yes	No
6	Hesperiidae	<i>Borbo cinnara</i>	Formosan swift	Not Assessed	Endangered	Yes	Moderately common	Yes	Yes
7	Hesperiidae	<i>Bibasis harisa consobrina</i>	Orange awlet	Not Assessed	Not Assessed	No	Moderately rare	Yes	Yes
8	Hesperiidae	<i>Caltois cormasa</i>	Full stop swift	Not Assessed	Not Assessed	No	Moderately rare	Yes	Yes
9	Hesperiidae	<i>Caltois malaya</i>	Malayan swift	Not Assessed	Nationally Extinct (Rediscovered)	Yes	Moderately rare	Yes	No
10	Hesperiidae	<i>Cephenes acalle niasicus</i>	Plain palm dart	Not Assessed	Nationally Extinct (Rediscovered)	Yes	Moderately rare	Yes	No
11	Hesperiidae	<i>Cephenes trichopepla</i>	Yellow palm dart	Not Assessed	Not Assessed	No	Common	Yes	No
12	Hesperiidae	<i>Erionota acroleuca apicalis</i>	White tipped banana skipper	Not Assessed	Not Assessed	No	Moderately rare	Yes	Yes
13	Hesperiidae	<i>Erionota thrax thrax</i>	Banana skipper	Not Assessed	Not Assessed	No	Moderately common	Yes	No
14	Hesperiidae	<i>Erionota torus</i>	Torus skipper	Not Assessed	Not Assessed	No	Moderately rare	Yes	No
15	Hesperiidae	<i>Halpe ormenes vilasina</i>	Dark banded ace	Not Assessed	Not Assessed	No	Rare	Yes	No
16	Hesperiidae	<i>Hasora badra badra</i>	Common awl	Not Assessed	Not Assessed	No	Moderately common	Yes	No
17	Hesperiidae	<i>Hasora chromus chromus</i>	Common banded awl	Not Assessed	Not Assessed	No	Moderately rare	Yes	No
18	Hesperiidae	<i>Hasora vitta vitta</i>	Plain banded awl	Not Assessed	Not Assessed	No	Moderately rare	Yes	No
19	Hesperiidae	<i>Hidari irava</i>	Coconut skipper	Not Assessed	Not Assessed	No	Common	Yes	No
20	Hesperiidae	<i>Iambrix salsala salsala</i>	Chestnut bob	Not Assessed	Not Assessed	No	Common	Yes	Yes
21	Hesperiidae	<i>Iambrix stellifer</i>	Starry bob	Not Assessed	Not Assessed	No	Moderately rare	Yes	No
22	Hesperiidae	<i>Matapa aria</i>	Common redeye	Not Assessed	Not Assessed	No	Moderately rare	Yes	Yes
23	Hesperiidae	<i>Notocrypta paralysos varians</i>	Banded demon	Not Assessed	Not Assessed	No	Moderately common	Yes	No
24	Hesperiidae	<i>Odina hieroglyphica ortina</i>	Hieroglyphic flat	Not Assessed	Not Assessed	No	Moderately rare	Yes	No
25	Hesperiidae	<i>Oriens gola pseudolus</i>	Common dartlet	Not Assessed	Not Assessed	No	Moderately common	Yes	Yes
26	Hesperiidae	<i>Pelopidas agna agna</i>	Bengal swift	Not Assessed	Endangered	Yes	Moderately common	Yes	No
27	Hesperiidae	<i>Pelopidas assamensis</i>	Great swift	Not Assessed	Not Assessed	No	Moderately rare	Yes	No
28	Hesperiidae	<i>Pelopidas conjunctus conjunctus</i>	Conjoined swift	Not Assessed	Not Assessed	No	Moderately rare	Yes	No
29	Hesperiidae	<i>Pelopidas mathias mathias</i>	Small branded swift	Not Assessed	Not Assessed	No	Common	Yes	Yes
30	Hesperiidae	<i>Plastingia naga</i>	Chequered lancer	Not Assessed	Not Assessed	No	Moderately common	Yes	Yes
31	Hesperiidae	<i>Polytremis lubricans lubricans</i>	Contiguous swift	Not Assessed	Not Assessed	No	Common	Yes	Yes
32	Hesperiidae	<i>Potanthus ganda</i>	NA	Not Assessed	Not Assessed	No	NA	Yes	No
33	Hesperiidae	<i>Potanthus omaha omaha</i>	Lesser dart	Not Assessed	Not Assessed	No	Common	Yes	Yes
34	Hesperiidae	<i>Potanthus serina</i>	Large dart	Not Assessed	Not Assessed	No	Moderately common	Yes	No
35	Hesperiidae	<i>Potanthus trachala tytleri</i>	Detached dart	Not Assessed	Nationally Extinct (Rediscovered)	Yes	Moderately rare	Yes	No
36	Hesperiidae	<i>Pyroneura latoia latoia</i>	Yellow vein lancer	Not Assessed	Not Assessed	No	Moderately common	Yes	No
37	Hesperiidae	<i>Suastus gremius gremius</i>	Palm bob	Not Assessed	Not Assessed	No	Common	Yes	Yes
38	Hesperiidae	<i>Tagiades japetus atticus</i>	Common snow flat	Not Assessed	Not Assessed	No	Moderately common	Yes	No
39	Hesperiidae	<i>Taractrocera archias quinta</i>	Yellow grass dart	Not Assessed	Not Assessed	No	Moderately common	Yes	No
40	Hesperiidae	<i>Taractrocera ardonia lamia</i>	Spotted grass dart	Not Assessed	Not Assessed	No	Moderately rare	Yes	No
41	Hesperiidae	<i>Telicota augias augias</i>	Pale palm dart	Not Assessed	Not Assessed	No	Moderately common	Yes	No

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S/N	Family name	Scientific name	Common name	Global status (IUCN, 2012)	National status (Davison et al. 2008; Jain et al. 2018)	Species of conservation significance	Distribution/Rarity (Khew, 2015)	Probable species	Recorded species
42	Hesperiidae	<i>Telicota besta bina</i>	Besta palm dart	Not Assessed	Not Assessed	No	Moderately common	Yes	No
43	Hesperiidae	<i>Telicota colon stinga</i>	Common palm dart	Not Assessed	Nationally Extinct (Rediscovered)	Yes	Moderately common	Yes	No
44	Hesperiidae	<i>Udaspes folus</i>	Grass demon	Not Assessed	Not Assessed	No	Moderately common	Yes	No
45	Hesperiidae	<i>Zographetus doxus</i>	Spotted flitter	Not Assessed	Not Assessed	No	Rare	Yes	No
46	Lycaenidae	<i>Acytolepis puspa lambi</i>	Common hedge blue	Not Assessed	Not Assessed	No	Moderately common	Yes	No
47	Lycaenidae	<i>Allotinus unicolor unicolor</i>	Lesser darkwing	Not Assessed	Not Assessed	No	Moderately common	Yes	No
48	Lycaenidae	<i>Anthene emolus goberus</i>	Ciliate blue	Not Assessed	Not Assessed	No	Common	Yes	Yes
49	Lycaenidae	<i>Anthene lycaenina miya</i>	Pointed ciliate blue	Not Assessed	Not Assessed	No	Moderately rare	Yes	No
50	Lycaenidae	<i>Arhopala amphimuta amphimuta</i>	NA	Not Assessed	Nationally Extinct (Rediscovered)	Yes	Moderately common	Yes	No
51	Lycaenidae	<i>Arhopala centaurus nakula</i>	Centaur oakblue	Not Assessed	Not Assessed	No	Moderately common	Yes	No
52	Lycaenidae	<i>Arhopala major major</i>	NA	Not Assessed	Data Deficient	No	Common	Yes	No
53	Lycaenidae	<i>Catochrysops panormus exiguus</i>	Silver forget-me-not	Not Assessed	Not Assessed	No	Moderately rare	Yes	No
54	Lycaenidae	<i>Catochrysops strabo strabo</i>	Forget-me-not	Not Assessed	Not Assessed	No	Moderately rare	Yes	No
55	Lycaenidae	<i>Catopyrops ancyra</i>	Ancyra blue	Not Assessed	Vulnerable	Yes	Moderately rare	Yes	No
56	Lycaenidae	<i>Cheritra freja frigga</i>	Common imperial	Least Concern	Not Assessed	No	Moderately rare	Yes	No
57	Lycaenidae	<i>Chilades pandava pandava</i>	Cycad blue	Not Assessed	Not Assessed	No	Common	Yes	No
58	Lycaenidae	<i>Curetis saronis sumatrana</i>	Sumatran sunbeam	Not Assessed	Not Assessed	No	Moderately common	Yes	No
59	Lycaenidae	<i>Drupadia ravindra moorei</i>	Common posy	Not Assessed	Not Assessed	No	Common	Yes	No
60	Lycaenidae	<i>Drupadia ravindra moorei</i>	Common posy	Not Assessed	Not Assessed	No	Common	Yes	No
61	Lycaenidae	<i>Eooxylides tharis distanti</i>	Branded imperial	Not Assessed	Not Assessed	No	Common	Yes	Yes
62	Lycaenidae	<i>Euchrysops cnejus cnejus</i>	Gram blue	Not Assessed	Not Assessed	No	Moderately common	Yes	No
63	Lycaenidae	<i>Everes lacturnus rileyi</i>	Indian cupid	Not Assessed	Not Assessed	No	Rare	Yes	No
64	Lycaenidae	<i>Flos apidanus saturatus</i>	Plain plushblue	Not Assessed	Not Assessed	No	Moderately common	Yes	No
65	Lycaenidae	<i>Hypolycaena erylus teatus</i>	Common tit	Not Assessed	Not Assessed	No	Common	Yes	No
66	Lycaenidae	<i>Hypolycaena thecloides thecloides</i>	Dark tit	Not Assessed	Not Assessed	No	Moderately rare	Yes	No
67	Lycaenidae	<i>Ionolyce helicon merguiana</i>	Pointed line blue	Not Assessed	Not Assessed	No	Common	Yes	No
68	Lycaenidae	<i>Iraota rochana boswelliana</i>	Scarce silverstreak	Not Assessed	Not Assessed	No	Moderately common	Yes	No
69	Lycaenidae	<i>Jamides alecto ageladas</i>	Metallic caerulean	Not Assessed	Nationally Extinct (Rediscovered)	Yes	Moderately rare	Yes	No
70	Lycaenidae	<i>Jamides bochus nabonassar</i>	Dark caerulean	Not Assessed	Not Assessed	No	Moderately rare	Yes	No
71	Lycaenidae	<i>Jamides celeno aelianus</i>	Common caerulean	Not Assessed	Not Assessed	No	Common	Yes	No
72	Lycaenidae	<i>Lampides boeticus</i>	Pea blue	Not Assessed	Not Assessed	No	Common	Yes	No
73	Lycaenidae	<i>Logania marmorata damis</i>	Pale mottle	Not Assessed	Not Assessed	No	Moderately common	Yes	Yes
74	Lycaenidae	<i>Loxura atymnus fuconius</i>	Yamfly	Not Assessed	Not Assessed	No	Moderately common	Yes	Yes
75	Lycaenidae	<i>Megisba malaya sikkima</i>	Malayan	Not Assessed	Not Assessed	No	Moderately rare	Yes	No
76	Lycaenidae	<i>Miletus biggsii biggsii</i>	Bigg's brownwing	Not Assessed	Not Assessed	No	Moderately common	Yes	No
	Lycaenidae	<i>Miletus sp.</i>	NA	NA	NA	NA	NA	NA	Yes
77	Lycaenidae	<i>Miletus symethus petronius</i>	Blue brownwing/great brownie	Not Assessed	Not Assessed	No	Moderately common	Yes	No
78	Lycaenidae	<i>Nacaduba berenice icena</i>	Rounded sixline blue	Not Assessed	Not Assessed	No	Common	Yes	No
79	Lycaenidae	<i>Nacaduba beroe neon</i>	Opaque sixline blue	Not Assessed	Not Assessed	No	Common	Yes	No
80	Lycaenidae	<i>Nacaduba biocellata</i>	Two spotted line blue	Not Assessed	Not Assessed	No	Moderately rare	Yes	No
81	Lycaenidae	<i>Nacaduba kurava nemana</i>	Transparent sixline blue	Not Assessed	Nationally Extinct (Rediscovered)	Yes	Moderately common	Yes	No

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82	Lycaenidae	<i>Nacaduba pavana singapura</i>	Singapore fourline blue	Not Assessed	Not Assessed	No	Moderately rare	Yes	No
83	Lycaenidae	<i>Nacaduba sanaya elioti</i>	Jewel fourline blue	Not Assessed	Nationally Extinct (Rediscovered)	Yes	Moderately rare	Yes	No
84	Lycaenidae	<i>Petrelaea dana dana</i>	Dingy line blue	Not Assessed	Not Assessed	No	Moderately rare	Yes	No
85	Lycaenidae	<i>Prosotas dubiosa lumpura</i>	Tailless line blue	Not Assessed	Not Assessed	No	Common	Yes	No
86	Lycaenidae	<i>Prosotas nora superdates</i>	Common line blue	Not Assessed	Not Assessed	No	Moderately common	Yes	No
87	Lycaenidae	<i>Rapala dieneces dieneces</i>	Scarlet flash	Not Assessed	Not Assessed	No	Moderately rare	Yes	No
88	Lycaenidae	<i>Rapala iarbus iarbus</i>	Common red flash	Not Assessed	Not Assessed	No	Moderately common	Yes	No
89	Lycaenidae	<i>Rapala manea chozeba</i>	Slate flash	Not Assessed	Not Assessed	No	Moderately rare	Yes	No
90	Lycaenidae	<i>Rapala pheretima sequeira</i>	Copper flash	Not Assessed	Not Assessed	No	Moderately common	Yes	No
91	Lycaenidae	<i>Rapala suffusa barthema</i>	Suffused flash	Not Assessed	Not Assessed	No	Moderately common	Yes	No
92	Lycaenidae	<i>Rapala varuna orseis</i>	Indigo flash	Not Assessed	Not Assessed	No	Moderately rare	Yes	No
93	Lycaenidae	<i>Semanga superba deliciosa</i>	NA	Not Assessed	Not Assessed	No	Moderately rare	Yes	No
94	Lycaenidae	<i>Spalgis epius epius</i>	Apefly	Not Assessed	Not Assessed	No	Moderately common	Yes	No
95	Lycaenidae	<i>Spindasis lohita senama</i>	Long banded silverline	Not Assessed	Not Assessed	No	Moderately common	Yes	No
96	Lycaenidae	<i>Spindasis syama terana</i>	Club silverline	Not Assessed	Not Assessed	No	Moderately common	Yes	No
97	Lycaenidae	<i>Surendra vivarna amisena</i>	Acacia blue	Not Assessed	Not Assessed	No	Moderately common	Yes	Yes
98	Lycaenidae	<i>Tajuria cippus maxentius</i>	Peacock royal	Not Assessed	Not Assessed	No	Moderately common	Yes	No
99	Lycaenidae	<i>Virachola kessuma deliochus</i>	Pitcher blue	Not Assessed	Not Assessed	No	Rare	Yes	No
100	Lycaenidae	<i>Zeltus amasa maximinianus</i>	Fluffy tit	Not Assessed	Not Assessed	No	Moderately common	Yes	No
101	Lycaenidae	<i>Zizeeria maha serica</i>	Pale grass blue	Not Assessed	Not Assessed	No	Common	Yes	No
102	Lycaenidae	<i>Zizina otis lampa</i>	Lesser grass blue	Not Assessed	Not Assessed	No	Common	Yes	Yes
103	Lycaenidae	<i>Zizula hylax pygmaea</i>	Pygmy grass blue	Not Assessed	Not Assessed	No	Common	Yes	No
104	Nymphalidae	<i>Acraea terpsicore</i>	Tawny coster	Not Assessed	Not Assessed	No	Common	Yes	Yes
105	Nymphalidae	<i>Amathusia phidippus phidippus</i>	Palm king	Not Assessed	Not Assessed	No	Moderately rare	Yes	Yes
106	Nymphalidae	<i>Athyma kanwa kanwa</i>	Dot-dash sergeant	Not Assessed	Not Assessed	No	Rare	Yes	No
107	Nymphalidae	<i>Athyma nefte subrata</i>	Colour sergeant	Not Assessed	Not Assessed	No	Common	Yes	Yes
108	Nymphalidae	<i>Cethosia cyane</i>	Leopard lacewing	Not Assessed	Not Assessed	No	Common	Yes	No
109	Nymphalidae	<i>Danaus chrysippus chrysippus</i>	Plain tiger	Not Assessed	Not Assessed	No	Common	Yes	Yes
110	Nymphalidae	<i>Doleschallia bisaltide bisaltide</i>	Autumn leaf	Not Assessed	Not Assessed	No	Common	Yes	No
111	Nymphalidae	<i>Elymnias hypermnestra agina</i>	Common palmfly	Not Assessed	Not Assessed	No	Common	Yes	Yes
112	Nymphalidae	<i>Elymnias panthera panthera</i>	Tawny palmfly	Not Assessed	Not Assessed	No	Moderately common	Yes	Yes
113	Nymphalidae	<i>Euploea midamus singapura</i>	Blue spotted crow	Not Assessed	Not Assessed	No	Moderately common	Yes	No
114	Nymphalidae	<i>Euploea mulciber mulciber</i>	Striped blue crow	Not Assessed	Not Assessed	No	Common	Yes	Yes
115	Nymphalidae	<i>Euripus nyctelius euploeoides</i>	Courtesan	Not Assessed	Critically Endangered	Yes	Rare	Yes	No
116	Nymphalidae	<i>Euthalia aconthea gurda</i>	Baron	Not Assessed	Not Assessed	No	Common	Yes	No
117	Nymphalidae	<i>Euthalia adonia pinwilli</i>	Green baron	Not Assessed	Not Assessed	No	Moderately common	Yes	No
118	Nymphalidae	<i>Euthalia monina monina</i>	Malay baron	Not Assessed	Not Assessed	No	Common	Yes	Yes
119	Nymphalidae	<i>Faunis canens arcesilas</i>	Common faun	Not Assessed	Not Assessed	No	Common	Yes	No
120	Nymphalidae	<i>Hypolimnas anomala anomala</i>	Malayan eggfly	Not Assessed	Not Assessed	No	Common	Yes	No
121	Nymphalidae	<i>Hypolimnas bolina bolina</i>	Great eggfly	Not Assessed	Not Assessed	No	Moderately common	Yes	No
122	Nymphalidae	<i>Hypolimnas bolina jacintha</i>	Jacintha eggfly	Not Assessed	Not Assessed	No	Common	Yes	No

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S/N	Family name	Scientific name	Common name	Global status (IUCN, 2012)	National status (Davison et al. 2008; Jain et al. 2018)	Species of conservation significance	Distribution/Rarity (Khew, 2015)	Probable species	Recorded species
123	Nymphalidae	<i>Ideopsis vulgaris macrina</i>	Blue glassy tiger	Not Assessed	Not Assessed	No	Common	Yes	Yes
124	Nymphalidae	<i>Junonia almana javana</i>	Peacock pansy	Least Concern	Not Assessed	No	Common	Yes	Yes
125	Nymphalidae	<i>Junonia hedonia ida</i>	Chocolate pansy	Not Assessed	Not Assessed	No	Common	Yes	Yes
126	Nymphalidae	<i>Junonia orithya wallacei</i>	Blue pansy	Not Assessed	Not Assessed	No	Common	Yes	No
127	Nymphalidae	<i>Lasippa tiga siaka</i>	Malayan lascar	Not Assessed	Not Assessed	No	Common	Yes	No
128	Nymphalidae	<i>Lethe europa malaya</i>	Bamboo tree brown	Not Assessed	Not Assessed	No	Moderately rare	Yes	Yes
129	Nymphalidae	<i>Lexias pardalis dirteana</i>	Archduke	Not Assessed	Not Assessed	No	Common	Yes	No
130	Nymphalidae	<i>Melanitis leda leda</i>	Common evening brown	Not Assessed	Not Assessed	No	Moderately rare	Yes	No
131	Nymphalidae	<i>Moduza procris milonia</i>	Commander	Not Assessed	Not Assessed	No	Moderately common	Yes	No
132	Nymphalidae	<i>Mycalesis fusca fusca</i>	Malayan bush brown	Not Assessed	Not Assessed	No	Moderately common	Yes	No
133	Nymphalidae	<i>Mycalesis mineus macromalayana</i>	Dark brand bush brown	Not Assessed	Not Assessed	No	Common	Yes	Yes
134	Nymphalidae	<i>Mycalesis perseoides perseoides</i>	Burmese bush brown	Not Assessed	Data Deficient	No	Common	Yes	Yes
135	Nymphalidae	<i>Mycalesis perseus cepheus</i>	Dingy bush brown	Not Assessed	Not Assessed	No	Moderately common	Yes	No
136	Nymphalidae	<i>Mycalesis visala phamis</i>	Long brand bush brown	Not Assessed	Not Assessed	No	Moderately common	Yes	Yes
137	Nymphalidae	<i>Neptis hylas papaja</i>	Common sailor	Not Assessed	Not Assessed	No	Moderately common	Yes	No
138	Nymphalidae	<i>Orsotriaena medus cinerea</i>	Dark grass brown	Not Assessed	Not Assessed	No	Common	Yes	No
139	Nymphalidae	<i>Pantoporia hordonia hordonia</i>	Common lascar	Not Assessed	Not Assessed	No	Common	Yes	No
140	Nymphalidae	<i>Pantoporia hordonia hordonia</i>	Common lascar	Not Assessed	Not Assessed	No	Common	Yes	No
141	Nymphalidae	<i>Parantica agleoides agleoides</i>	Dark glassy tiger	Not Assessed	Not Assessed	No	Common	Yes	Yes
142	Nymphalidae	<i>Phaedyra columella singa</i>	Short banded sailor	Not Assessed	Not Assessed	No	Common	Yes	No
143	Nymphalidae	<i>Phalanta phalantha phalantha</i>	Leopard	Not Assessed	Not Assessed	No	Common	Yes	No
144	Nymphalidae	<i>Polyura hebe plautus</i>	Plain nawab	Not Assessed	Not Assessed	No	Common	Yes	No
145	Nymphalidae	<i>Polyura schreiber tisamenus</i>	Blue nawab	Not Assessed	Not Assessed	No	Moderately rare	Yes	No
	Nymphalidae	<i>Polyura sp.</i>	NA	NA	NA	NA	NA	NA	Yes
146	Nymphalidae	<i>Tanaecia iapis puseda</i>	Horsfield's baron	Not Assessed	Not Assessed	No	Common	Yes	No
147	Nymphalidae	<i>Tanaecia pelea pelea</i>	Malay viscount	Not Assessed	Not Assessed	No	Common	Yes	No
148	Nymphalidae	<i>Vindula dejone erotella</i>	Cruiser	Not Assessed	Not Assessed	No	Common	Yes	Yes
149	Nymphalidae	<i>Ypthima baldus newboldi</i>	Common five-ring	Not Assessed	Not Assessed	No	Common	Yes	Yes
151	Nymphalidae	<i>Ypthima horsfieldii humei</i>	Malayan five-ring	Not Assessed	Not Assessed	No	Common	Yes	Yes
153	Nymphalidae	<i>Ypthima huebneri</i>	Common four-ring	Not Assessed	Not Assessed	No	Moderately common	Yes	No
155	Nymphalidae	<i>Ypthima pandocus corticaria</i>	Common three-ring	Not Assessed	Not Assessed	No	Common	Yes	No
157	Papilionidae	<i>Chilasa clytia clytia</i>	Common mime	Not Assessed	Not Assessed	No	Common	Yes	Yes
159	Papilionidae	<i>Graphium agamemnon agamemnon</i>	Tailed jay	Not Assessed	Not Assessed	No	Common	Yes	No
161	Papilionidae	<i>Graphium sarpedon luctatius</i>	Common bluebottle	Not Assessed	Not Assessed	No	Common	Yes	No
163	Papilionidae	<i>Pachioptera aristolochiae asteris</i>	Common rose	Not Assessed	Vulnerable	Yes	Moderately common	Yes	No
165	Papilionidae	<i>Papilio demoleus malayanus</i>	Lime butterfly	Not Assessed	Not Assessed	No	Common	Yes	No
167	Papilionidae	<i>Papilio polytes romulus</i>	Common mormon	Not Assessed	Not Assessed	No	Common	Yes	Yes
169	Papilionidae	<i>Troides helena cerberus</i>	Common birdwing	Not Assessed; CITES protected (Appendix II)	Vulnerable	Yes	Moderately common	Yes	Yes
171	Pieridae	<i>Appias libythea olferna</i>	Striped albatross	Not Assessed	Not Assessed	No	Common	Yes	No
173	Pieridae	<i>Catopsilia pomona pomona</i>	Lemon emigrant	Not Assessed	Not Assessed	No	Common	Yes	Yes

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S/N	Family name	Scientific name	Common name	Global status (IUCN, 2012)	National status (Davison et al. 2008; Jain et al. 2018)	Species of conservation significance	Distribution/Rarity (Khew, 2015)	Probable species	Recorded species
175	Pieridae	<i>Catopsilia pyranthe pyranthe</i>	Mottled emigrant	Not Assessed	Not Assessed	No	Common	Yes	No
177	Pieridae	<i>Catopsilia scylla cornelia</i>	Orange emigrant	Not Assessed	Not Assessed	No	Common	Yes	No
179	Pieridae	<i>Delias hyparete metarete</i>	Painted jezebel	Not Assessed	Not Assessed	No	Common	Yes	Yes
181	Pieridae	<i>Eurema andersonii andersonii</i>	Anderson's grass yellow	Not Assessed	Not Assessed	No	Moderately common	Yes	Yes
183	Pieridae	<i>Eurema blanda snelleni</i>	Three spot grass yellow	Not Assessed	Not Assessed	No	Common	Yes	Yes
185	Pieridae	<i>Eurema hecabe contubernalis</i>	Common grass yellow	Not Assessed	Not Assessed	No	Common	Yes	Yes
187	Pieridae	<i>Eurema sari sodalis</i>	Chocolate grass yellow	Not Assessed	Not Assessed	No	Moderately common	Yes	No
189	Pieridae	<i>Eurema simulatrix tecmessa</i>	Forest grass yellow	Not Assessed	Not Assessed	No	Moderately common	Yes	No
191	Pieridae	<i>Leptosia nina malayana</i>	Psyche	Not Assessed	Not Assessed	No	Common	Yes	Yes
193	Pieridae	<i>Pieris canidia canidia</i>	Cabbage white	Not Assessed	Not Assessed	No	Moderately rare	Yes	No
195	Riodinidae	<i>Abisara geza niya</i>	Spotted judy	Not Assessed	Not Assessed	No	Moderately rare	Yes	No
197	Riodinidae	<i>Abisara saturata kausambioides</i>	Malayan plum judy	Not Assessed	Not Assessed	No	Moderately common	Yes	No
199	Riodinidae	<i>Abisara savitri savitri</i>	Malay tailed judy	Not Assessed	Not Assessed	No	Moderately rare	Yes	Yes
201	Riodinidae	<i>Taxila haquinus haquinus</i>	Harlequin	Not Assessed	Endangered	Yes	Moderately rare	Yes	No

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S/N	Family name	Scientific name	Common name	Global status (IUCN, 2012)	National status (Davison et al. 2008)	Species of conservation significance	Native status (Baker & Lim, 2012)	Probable species	Recorded species
1	Gecarcinucidae	<i>Parathelphusa maculata</i>	Maculate freshwater crab	Least Concern	Not Assessed	No	Native	Yes	No
2	Palaemonidae	<i>Macrobrachium lanchesteri</i>	Riceland shrimp	Least Concern	Not Assessed	No	Non-native	Yes	No

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S/N	Family name	Scientific name	Common name	Global status (IUCN, 2012)	National status (Davison et al. 2008)	Species of conservation significance	Native status (Baker & Lim, 2012)	Probable species	Recorded species
1	Anabantidae	<i>Anabas testudineus</i>	Oriental climbing perch	Least Concern	Not Assessed	No	Native	Yes	No
2	Aplocheilidae	<i>Aplocheilus armatus</i>	Whitespot	Not Assessed	Not Assessed	No	Native	Yes	No
3	Channidae	<i>Channa striata</i>	Common snakehead/aruan	Least Concern	Not Assessed	No	Native	Yes	Yes
4	Cichlidae	<i>Amphilophus citrinellus</i>	Midas cichlid	Least Concern	Not Assessed	No	Non-native	Yes	Yes
5	Cichlidae	<i>Cichlasoma urophthalmum</i>	Mayan cichlid	Least Concern	Not Assessed	No	Non-native	Yes	Yes
6	Cichlidae	<i>Oreochromis mossambicus</i>	Mozambique tilapia	Vulnerable	Not Assessed	Yes	Non-native	Yes	Yes
7	Clariidae	<i>Clarias cf. batrachus</i>	Common walking catfish	Not Assessed	Not Assessed	No	Native	Yes	Yes
8	Osphronemidae	<i>Betta pugnax</i>	Malayan forest betta	Least Concern	Not Assessed	No	Native	Yes	No
9	Osphronemidae	<i>Trichopsis vittata</i>	Croaking gouramy	Least Concern	Not Assessed	No	Native	Yes	No
10	Osphronemidae (Gouramie)	<i>Trichopodus trichopterus</i>	Threespot gourami	Least Concern	Not Assessed	No	Native	Yes	Yes
11	Poeciliidae	<i>Gambusia affinis</i>	Mosquitofish	Least Concern	Not Assessed	No	Non-native	Yes	No
12	Poeciliidae	<i>Poecilia reticulata</i>	Guppy	Least Concern	Not Assessed	No	Non-native	Yes	Yes
13	Poeciliidae	<i>Poecilia sphenops</i>	Green molly	Least Concern	Not Assessed	No	Non-native	Yes	No
14	Synbranchidae	<i>Monopterus albus</i>	Sunda swamp-eel	Least Concern	Not Assessed	No	Native	Yes	Yes

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S/N	Family name	Scientific name	Common name	Global status (IUCN, 2012)	National status (Davison et al. 2008)	Species of conservation significance	Distribution/Rarity (Baker & Lim, 2012)	Native status (Baker & Lim, 2012)	Probable species	Recorded species
1	Bufonidae	<i>Duttaphrynus melanostictus</i>	Asian toad	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	Yes
2	Dicroglossidae	<i>Fejervarya cancrivora</i>	Crab-eating frog	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	No
3	Dicroglossidae	<i>Fejervarya limnocharis</i>	Field frog	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	Yes
4	Dicroglossidae	<i>Limnonectes blythii</i>	Malayan giant frog	Near Threatened	Least Concern	No	Widespread and Common	Native	Yes	Yes
5	Dicroglossidae	<i>Limnonectes malesianus</i>	Malesian frog	Near Threatened	Near Threatened	No	Restricted but Common	Native	Yes	Yes
6	Dicroglossidae	<i>Occidozyga sumatrana</i>	Yellow-bellied puddle frog	Least Concern	Near Threatened	No	Restricted but Common	Native	Yes	No
7	Eleutherodactylidae	<i>Eleutherodactylus planirostris</i>	Greenhouse frog	Least Concern	Not Assessed	No	Widespread and Common	Non-native	Yes	Yes
8	Microhylidae	<i>Kaloula pulchra</i>	Banded bull frog	Least Concern	Not Assessed	No	Widespread and Common	Non-native	Yes	Yes
9	Microhylidae	<i>Microhyla butleri</i>	Painted chorus frog	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	Yes
10	Microhylidae	<i>Microhyla mukhesuri</i>	East Asian ornate chorus frog	Least Concern	Not Assessed	No	Restricted and Rare	Non-native	Yes	No
11	Microhylidae	<i>Microhyla heymonsi</i>	Dark-sided chorus frog	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	Yes
12	Ranidae	<i>Chalcorana labialis</i>	Copper-cheeked frog	Least Concern	Least Concern	No	Restricted but Common	Native	Yes	Yes
13	Ranidae	<i>Hylarana erythraea</i>	Green paddy frog	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	No
14	Ranidae	<i>Lithobates catesbeianus</i>	American bullfrog	Least Concern	Not Assessed	No	Widespread and Common	Non-native	Yes	No
15	Ranidae	<i>Pulchrana laterimaculata</i>	Masked rough-sided frog	Least Concern	Near Threatened	No	Restricted and Uncommon	Native	Yes	Yes
16	Rhacophoridae	<i>Polypedates leucomystax</i>	Four-lined tree frog	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	Yes

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S/N	Family name	Scientific name	Common name	Global status (IUCN, 2012)	National status (Davison et al. 2008)	Species of conservation significance	Distribution/Rarity (Baker & Lim, 2012)	Native status (Baker & Lim, 2012)	Probable species	Recorded species	Remarks
1	Agamidae	<i>Bronchocela cristatella</i>	Green crested lizard	Not Assessed	Least Concern	No	Widespread but Uncommon	Native	Yes	Yes	
2	Agamidae	<i>Calotes versicolor</i>	Changeable lizard	Not Assessed	Not Assessed	No	Widespread and Common	Non-native	Yes	Yes	
3	Agamidae	<i>Draco sumatranus</i>	Sumatran flying dragon	Not Assessed	Least Concern	No	Widespread and Common	Native	Yes	No	
4	Colubridae	<i>Ahaetulla prasina</i>	Oriental whip snake	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	Yes	
5	Colubridae	<i>Calamaria schlegeli</i>	Pink-headed reed snake	Least Concern	Near Threatened	No	Restricted and Rare	Native	Yes	No	Teo & Rajathurai, 1997
6	Colubridae	<i>Chrysopelea paradisi</i>	Paradise gliding snake	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	No	
7	Colubridae	<i>Coelognathus flavolineatus</i>	Common Malayan racer	Least Concern	Least Concern	No	Widespread but Rare	Native	Yes	No	
8	Colubridae	<i>Dendrelaphis caudolineatus</i>	Striped bronzeback	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	No	
9	Colubridae	<i>Dendrelaphis kopsteini</i>	Red-necked bronzeback	Least Concern	Near Threatened	No	Widespread but Rare	Native	Yes	No	Recorded in Holland Woods
10	Colubridae	<i>Dendrelaphis pictus</i>	Painted bronzeback	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	Yes	
11	Colubridae	<i>Lycodon capucinus</i>	House wolf snake	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	No	Recorded in Ho et al., 2019
12	Colubridae	<i>Oligodon octolineatus</i>	Striped kukri snake	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	No	
13	Colubridae	<i>Ptyas korros</i>	Indochinese rat snake	Least Concern	Least Concern	No	Widespread but Uncommon	Native	Yes	No	
14	Colubridae	<i>Xenochrophis vittatus</i>	Striped keelback	Least Concern	Not Assessed	No	Widespread and Common	Non-native	Yes	No	
15	Elapidae	<i>Calliophis intestinalis</i>	Malayan banded coral snake	Least Concern	Near Threatened	No	Widespread but Rare	Native	Yes	No	
16	Elapidae	<i>Naja sumatrana</i>	Equatorial spitting cobra	Least Concern; CITES protected (Appendix II)	Not Assessed	No	Widespread and Common	Native	Yes	Yes	
17	Emydidae	<i>Trachemys scripta</i>	Red-eared slider	Least Concern	Not Assessed	No	Widespread and Common	Non-native	Yes	Yes	
18	Gekkonidae	<i>Gehyra mutilata</i>	Four-clawed gecko	Not Assessed	Not Assessed	No	Widespread and Common	Native	Yes	No	
19	Gekkonidae	<i>Gekko monarchus</i>	Spotted house gecko	Not Assessed	Not Assessed	No	Widespread and Common	Native	Yes	Yes	
20	Gekkonidae	<i>Hemidactylus frenatus</i>	Spiny-tailed house gecko	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	Yes	
21	Gekkonidae	<i>Hemidactylus platyurus</i>	Flat-tailed gecko	Not Assessed	Least Concern	No	Widespread and Common	Native	Yes	No	
22	Gekkonidae	<i>Lepidodactylus lugubris</i>	Maritime gecko	Not Assessed	Not Assessed	No	Widespread but Rare	Native	Yes	Yes	
23	Geomydidae	<i>Cuora amboinensis</i>	Malayan box terrapin	Vulnerable; CITES protected (Appendix II)	Near Threatened	Yes	Restricted but Common	Native	Yes	No	
24	Geomydidae	<i>Siebenrockiella crassicolis</i>	Black marsh terrapin	Vulnerable; CITES protected (Appendix II)	Not Assessed	No	Widespread and Common	Non-native	Yes	No	
25	Homalopsidae	<i>Homalopsis buccata</i>	Puff-faced water snake	Least Concern	Vulnerable	Yes	Widespread but Uncommon	Native	Yes	No	
26	Pythonidae	<i>Malayopython reticulatus</i>	Reticulated python	Least Concern; CITES protected (Appendix II)	Not Assessed	No	Widespread and Common	Native	Yes	No	Recorded in Ho et al., 2019
27	Scincidae	<i>Eutropis multifasciata</i>	Many-lined sun skink	Not Assessed	Least Concern	No	Widespread and Common	Native	Yes	Yes	Also recorded on camera trap
28	Scincidae	<i>Lygosoma bowringii</i>	Garden supple skink	Not Assessed	Least Concern	No	Widespread and Common	Native	Yes	Yes	

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29	Trionychidae	<i>Dogania subplana</i>	Malayan forest softshell turtle	Least Concern; CITES protected (Appendix II)	Critically Endangered	Yes	Restricted and Rare	Native	No	Yes	
30	Typhlopidae	<i>Indotyphlops braminus</i>	Brahminy blind snake	Least Concern	Not Assessed	No	Widespread and Common	Native	Yes	No	
31	Varanidae	<i>Varanus nebulosus</i>	Clouded monitor	Not Assessed; CITES protected (Appendix I)	Least Concern	No	Restricted but Common	Native	Yes	Yes	Also recorded on camera trap
32	Varanidae	<i>Varanus salvator</i>	Malayan water monitor	Least Concern; CITES protected (Appendix II)	Least Concern	No	Widespread and Common	Native	Yes	Yes	Also recorded on camera trap
33	Xenopeltidae	<i>Xenopeltis unicolor</i>	Iridescent earth snake	Least Concern	Least Concern	No	Widespread but Uncommon	Native	Yes	No	Recorded in Ho et al., 2019

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S/N	Family name	Scientific name	Common name	Global status (IUCN, 2012)	National status (Davison et al. 2008)	Species of conservation significance	Distribution/Rarity (NSS, 2020; Singapore Birds Project, 2020)	Native status (NSS, 2020; Singapore Birds Project, 2020)	Probable species	Recorded species	Remarks
1	Acanthizidae	<i>Gerygone sulphurea</i>	Golden-bellied gerygone	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	No	
2	Accipitridae	<i>Accipiter gularis</i>	Japanese sparrowhawk	Least Concern; CITES protected (Appendix II)	Not Assessed	No	Common	Winter visitor	Yes	No	
3	Accipitridae	<i>Accipiter soloensis</i>	Chinese sparrowhawk	Least Concern; CITES protected (Appendix II)	Not Assessed	No	Uncommon	Winter visitor	Yes	No	
4	Accipitridae	<i>Accipiter trivirgatus</i>	Crested goshawk	Least Concern; CITES protected (Appendix II)	Critically Endangered	Yes	Uncommon	Resident breeder	Yes	No	
5	Accipitridae	<i>Aviceda jerdoni</i>	Jerdon's baza	Least Concern; CITES protected (Appendix II)	Not Assessed	No	Uncommon	Winter visitor	Yes	No	
6	Accipitridae	<i>Aviceda leuphotes</i>	Black baza	Least Concern; CITES protected (Appendix II)	Not Assessed	No	Common	Winter visitor	Yes	No	
7	Accipitridae	<i>Buteo buteo</i>	Common buzzard	Least Concern; CITES protected (Appendix II)	Not Assessed	No	Uncommon	Winter visitor	Yes	No	
8	Accipitridae	<i>Haliaeetus leucogaster</i>	White-bellied sea eagle	Least Concern; CITES protected (Appendix II)	Not Assessed	No	Common	Resident breeder	Yes	Yes	
9	Accipitridae	<i>Haliastur indus</i>	Brahminy kite	Least Concern; CITES protected (Appendix II)	Not Assessed	No	Common	Resident breeder	Yes	Yes	
10	Accipitridae	<i>Nisaetus cirrhatus</i>	Changeable hawk-eagle	Least Concern; CITES protected (Appendix II)	Endangered	Yes	Uncommon	Resident breeder	Yes	Yes	Nest observed too.
11	Accipitridae	<i>Pernis ptilorhynchus</i>	Crested honey-buzzard	Least Concern; CITES protected (Appendix II)	Not Assessed	No	Common	Winter visitor	Yes	Yes	
12	Accipitridae	<i>Spilornis cheela</i>	Crested serpent eagle	Least Concern; CITES protected (Appendix II)	Critically Endangered	Yes	Rare	Resident, breeding not proven	Yes	Yes	
13	Aegithinidae	<i>Aegithina tiphia</i>	Common iora	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	Yes	
14	Alcedinidae	<i>Alcedo atthis</i>	Common kingfisher	Least Concern	Not Assessed	No	Common	Winter visitor	Yes	Yes	
15	Alcedinidae	<i>Ceyx erithaca</i>	Oriental dwarf kingfisher	Least Concern	Not Assessed	No	Uncommon	Winter visitor	Yes	No	
16	Alcedinidae	<i>Halcyon smyrnensis</i>	White-throated kingfisher	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	Yes	
17	Alcedinidae	<i>Pelargopsis capensis</i>	Stork-billed kingfisher	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes	No	
18	Alcedinidae	<i>Todiramphus chloris</i>	Collared kingfisher	Least Concern	Not Assessed	No	Abundant	Resident breeder	Yes	Yes	
19	Apodidae	<i>Aerodramus fuciphagus</i>	Edible-nest swiftlet	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	No	

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20	Apodidae	<i>Aerodramus maximus</i>	Black-nest swiftlet	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	No	
	Apodidae	<i>Aerodramus</i> sp.	Swiftlet sp.	NA	NA	NA	NA	NA	NA	Yes	
21	Apodidae	<i>Collocalia affinis</i>	Plume-toed swiftlet	Not Assessed	Not Assessed	No	Uncommon	Resident breeder	Yes	No	
22	Apodidae	<i>Cypsiurus balasensis</i>	Asian palm swift	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes	No	
23	Apodidae	<i>Hirundapus caudacutus</i>	White-throated needletail	Least Concern	Not Assessed	No	Rare	Accidental visitor	Yes	No	
24	Apodidae	<i>Hirundapus cochinchinensis</i>	Silver-backed needletail	Least Concern	Not Assessed	No	Uncommon	Winter visitor	Yes	No	
25	Apodidae	<i>Hirundapus giganteus</i>	Brown-backed needletail	Least Concern	Not Assessed	No	Uncommon	Winter visitor	Yes	No	
26	Ardeidae	<i>Bubulcus coromandus</i>	Eastern cattle egret	Least Concern	Not Assessed	No	Common	Winter visitor	Yes	No	
27	Ardeidae	<i>Butorides striata</i>	Striated heron	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	No	
28	Ardeidae	<i>Egretta garzetta</i>	Little egret	Least Concern	Not Assessed	No	Common	Winter visitor	Yes	Yes	
29	Rallidae	<i>Lewinia striata</i>	Slaty-breasted rail	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes	Yes	
30	Ardeidae	<i>Gorsachius melanolophus</i>	Malayan night heron	Least Concern	Not Assessed	No	Rare	Winter visitor	Yes	No	
31	Ardeidae	<i>Ixobrychus cinnamomeus</i>	Cinnamon bittern	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes	Yes	
32	Ardeidae	<i>Ixobrychus flavicollis</i>	Black bittern	Least Concern	Not Assessed	No	Uncommon	Winter visitor	Yes	No	
33	Ardeidae	<i>Ixobrychus sinensis</i>	Yellow bittern	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	No	
34	Bucerotidae	<i>Anthracoseros albirostris</i>	Oriental pied hornbill	Least Concern; CITES protected (Appendix II)	Critically Endangered	Yes	Uncommon	Resident breeder	Yes	Yes	
35	Cacatuidae	<i>Cacatua goffiniana</i>	Tanimbar corella	Near Threatened; CITES protected (Appendix I)	Not Assessed	No	Common	Introduced resident breeder	Yes	Yes	
36	Cacatuidae	<i>Cacatua sulphurea</i>	Yellow-crested cockatoo	Critically Endangered; CITES protected (Appendix I)	Not Assessed	No	Uncommon	Introduced resident breeder	Yes	No	
37	Campephagidae	<i>Lalage nigra</i>	Pied triller	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	No	
38	Campephagidae	<i>Pericrocotus divaricatus</i>	Ashy minivet	Least Concern	Not Assessed	No	Common	Winter visitor	Yes	Yes	
39	Caprimulgidae	<i>Caprimulgus affinis</i>	Savanna nightjar	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	Yes	
40	Caprimulgidae	<i>Caprimulgus jotaka</i>	Jungle nightjar	Least Concern	Not Assessed	No	Uncommon	Winter visitor	Yes	No	
41	Caprimulgidae	<i>Caprimulgus macrurus</i>	Large-tailed nightjar	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	Yes	
42	Charadriidae	<i>Vanellus indicus</i>	Red-wattled lapwing	Least Concern	Endangered	Yes	Uncommon	Resident breeder	Yes	Yes	
43	Chloropseidae	<i>Chloropsis moluccensis</i>	Blue-winged leafbird	Least Concern	Not Assessed	No	Common	Resident, breeding not proven	Yes	No	
44	Cisticolidae	<i>Orthotomus atrogularis</i>	Dark-necked tailorbird	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	Yes	
45	Cisticolidae	<i>Orthotomus ruficeps</i>	Ashy tailorbird	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	No	
46	Cisticolidae	<i>Orthotomus sericeus</i>	Rufous-tailed tailorbird	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes	Yes	
47	Cisticolidae	<i>Orthotomus sutorius</i>	Common tailorbird	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	Yes	
48	Cisticolidae	<i>Prinia flaviventris</i>	Yellow-bellied prinia	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	No	
49	Columbidae	<i>Chalcophaps indica</i>	Common emerald dove	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes	Yes	Recorded from camera trap

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50	Columbidae	<i>Columba livia</i>	Rock dove	Least Concern	Not Assessed	No	Abundant	Introduced resident breeder	Yes	No	
51	Columbidae	<i>Ducula bicolor</i>	Pied imperial pigeon	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes	Yes	
52	Columbidae	<i>Geopelia striata</i>	Zebra dove	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	No	
53	Columbidae	<i>Ptilinopus jambu</i>	Jambu fruit dove	Near Threatened	Not Assessed	No	Uncommon	Non-breeding visitor	Yes	No	
54	Columbidae	<i>Spilopelia chinensis</i>	Spotted dove	Least Concern	Not Assessed	No	Abundant	Resident breeder	Yes	Yes	Also recorded from camera trap
55	Columbidae	<i>Treron curvirostra</i>	Thick-billed green pigeon	Least Concern	Endangered	Yes	Uncommon	Resident breeder	Yes	No	
56	Columbidae	<i>Treron vernans</i>	Pink-necked green pigeon	Least Concern	Not Assessed	No	Abundant	Resident breeder	Yes	Yes	
57	Coraciidae	<i>Eurystomus orientalis</i>	Oriental dollarbird	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	Yes	
58	Corvidae	<i>Corvus macrorhynchos</i>	Large-billed crow	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes	No	
59	Corvidae	<i>Corvus splendens</i>	House crow	Least Concern	Not Assessed	No	Common	Introduced resident breeder	Yes	Yes	
60	Cuculidae	<i>Cacomantis merulinus</i>	Plaintive cuckoo	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes	No	
61	Cuculidae	<i>Cacomantis sepulchralis</i>	Rusty-breasted cuckoo	Least Concern	Vulnerable	Yes	Uncommon	Resident breeder	Yes	No	
62	Cuculidae	<i>Cacomantis sonneratii</i>	Banded bay cuckoo	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes	No	
63	Cuculidae	<i>Centropus bengalensis</i>	Lesser coucal	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	Yes	
64	Cuculidae	<i>Centropus sinensis</i>	Greater coucal	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes	Yes	
65	Cuculidae	<i>Chrysococcyx minutillus</i>	Little bronze-cuckoo	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	No	
66	Cuculidae	<i>Chrysococcyx xanthorhynchus</i>	Violet cuckoo	Least Concern	Endangered	Yes	Uncommon	Resident breeder	Yes	Yes	
67	Cuculidae	<i>Clamator coromandus</i>	Chestnut-winged cuckoo	Least Concern	Not Assessed	No	Uncommon	Winter visitor	Yes	No	
68	Cuculidae	<i>Cuculus micropterus</i>	Indian cuckoo	Least Concern	Not Assessed	No	Uncommon	Winter visitor	Yes	Yes	
69	Cuculidae	<i>Eudynamys scolopaceus</i>	Asian koel	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	Yes	
70	Cuculidae	<i>Hierococcyx nasicolor</i>	Hodgson's hawk cuckoo	Least Concern	Not Assessed	No	Uncommon	Winter visitor	Yes	No	
71	Cuculidae	<i>Phaenicophaeus sumatranus</i>	Chestnut-bellied malkoha	Near Threatened	Not Assessed	No	Uncommon	Resident breeder	Yes	No	
72	Cuculidae	<i>Surniculus lugubris</i>	Square-tailed drongo-cuckoo	Least Concern	Critically Endangered	Yes	Uncommon	Resident breeder	Yes	No	
73	Dicaeidae	<i>Dicaeum cruentatum</i>	Scarlet-backed flowerpecker	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	Yes	
74	Dicaeidae	<i>Dicaeum trigonostigma</i>	Orange-bellied flowerpecker	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	No	
75	Dicruridae	<i>Dicrurus annectans</i>	Crow-billed drongo	Least Concern	Not Assessed	No	Uncommon	Winter visitor	Yes	No	
76	Dicruridae	<i>Dicrurus paradiseus</i>	Greater racket-tailed drongo	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	Yes	Also recorded from camera trap
77	Estrildidae	<i>Lonchura punctulata</i>	Scaly-breasted munia	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	No	
78	Hemiprocidae	<i>Hemiprocne longipennis</i>	Grey-rumped treeswift	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	No	
79	Hirundinidae	<i>Cecropis daurica</i>	Red-rumped swallow	Least Concern	Not Assessed	No	Uncommon	Winter visitor	Yes	No	
80	Hirundinidae	<i>Hirundo rustica</i>	Barn swallow	Least Concern	Not Assessed	No	Abundant	Winter visitor	Yes	No	
81	Hirundinidae	<i>Hirundo tahitica</i>	Pacific swallow	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	Yes	
82	Irenidae	<i>Irena puella</i>	Asian fairy-bluebird	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes	No	
83	Laniidae	<i>Lanius cristatus</i>	Brown shrike	Least Concern	Not Assessed	No	Common	Winter visitor	Yes	No	
84	Laniidae	<i>Lanius tigrinus</i>	Tiger shrike	Least Concern	Not Assessed	No	Common	Winter visitor	Yes	No	

Appendix H2 List of Probable Recorded Species at Clementi Forest

S/N	Family name	Scientific name	Common name	Global status (IUCN, 2012)	National status (Davison et al. 2008)	Species of conservation significance	Distribution/Rarity (NSS, 2020; Singapore Birds Project, 2020)	Native status (NSS, 2020; Singapore Birds Project, 2020)	Probable species	Recorded species	Remarks
85	Leiothrichidae	<i>Garrulax leucolophus</i>	White-crested laughingthrush	Least Concern	Not Assessed	No	Common	Introduced resident breeder	Yes	Yes	
86	Leiothrichidae	<i>Pterorhinus chinensis</i>	Black-throated laughingthrush	Least Concern	Not Assessed	No	NA	Introduced	No	Yes	Recorded from camera trap
87	Megalaimidae	<i>Psilopogon haemacephalus</i>	Coppersmith barbet	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	Yes	
88	Megalaimidae	<i>Psilopogon lineatus</i>	Lineated barbet	Least Concern	Not Assessed	No	Uncommon	Introduced resident breeder	Yes	Yes	
89	Meropidae	<i>Merops philippinus</i>	Blue-tailed bee-eater	Least Concern	Not Assessed	No	Common	Winter visitor	Yes	No	
90	Meropidae	<i>Merops viridis</i>	Blue-throated bee-eater	Least Concern	Not Assessed	No	Common	Migrant breeder	Yes	Yes	
91	Monarchidae	<i>Terpsiphone affinis</i>	Blyth's paradise flycatcher	Least Concern	Not Assessed	No	Uncommon	Winter visitor	Yes	No	
92	Monarchidae	<i>Terpsiphone atrocaudata</i>	Japanese paradise flycatcher	Near Threatened	Not Assessed	No	Rare	Passage migrant	Yes	No	
93	Monarchidae	<i>Terpsiphone incei</i>	Amur paradise flycatcher	Least Concern	Not Assessed	No	Common	Winter visitor	Yes	No	
94	Motacillidae	<i>Anthus rufulus</i>	Paddyfield pipit	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	No	
95	Motacillidae	<i>Dendronanthus indicus</i>	Forest wagtail	Least Concern	Not Assessed	No	Uncommon	Winter visitor	Yes	No	
96	Motacillidae	<i>Motacilla cinerea</i>	Grey wagtail	Least Concern	Not Assessed	No	Uncommon	Winter visitor	Yes	No	
97	Muscicapidae	<i>Copsychus malabaricus</i>	White-rumped shama	Least Concern	Critically Endangered	Yes	Uncommon	Resident breeder	Yes	No	
98	Muscicapidae	<i>Copsychus saularis</i>	Oriental magpie-robin	Least Concern	Endangered	Yes	Uncommon	Resident breeder	Yes	No	
99	Muscicapidae	<i>Cyanoptila cumatilis</i>	Zappey's flycatcher	Least Concern	Not Assessed	No	Rare	Passage migrant	Yes	No	
100	Muscicapidae	<i>Cyanoptila cyanomelana</i>	Blue-and-white flycatcher	Least Concern	Not Assessed	No	Rare	Passage migrant	Yes	No	
101	Muscicapidae	<i>Cyornis brunneatus</i>	Brown-chested jungle flycatcher	Vulnerable	Not Assessed	Yes	Uncommon	Winter visitor	Yes	No	
102	Muscicapidae	<i>Ficedula elisae</i>	Green-backed flycatcher	Least Concern	Not Assessed	No	Rare	Winter visitor	Yes	No	
103	Muscicapidae	<i>Ficedula mugimaki</i>	Mugimaki flycatcher	Least Concern	Not Assessed	No	Uncommon	Passage migrant	Yes	No	
104	Muscicapidae	<i>Ficedula zanthopygia</i>	Yellow-rumped flycatcher	Least Concern	Not Assessed	No	Uncommon	Passage migrant	Yes	Yes	
105	Muscicapidae	<i>Larvivora cyane</i>	Siberian blue robin	Least Concern	Not Assessed	No	Common	Winter visitor	Yes	Yes	Also recorded from camera trap
106	Muscicapidae	<i>Muscicapa dauurica</i>	Asian brown flycatcher	Least Concern	Not Assessed	No	Common	Winter visitor	Yes	Yes	
107	Muscicapidae	<i>Muscicapa ferruginea</i>	Ferruginous flycatcher	Least Concern	Not Assessed	No	Uncommon	Winter visitor	Yes	No	
108	Muscicapidae	<i>Muscicapa sibirica</i>	Dark-sided flycatcher	Least Concern	Not Assessed	No	Uncommon	Winter visitor	Yes	No	
109	Muscicapidae	<i>Muscicapa williamsoni</i>	Brown-streaked flycatcher	Least Concern	Not Assessed	No	Rare	Winter visitor	Yes	No	
110	Nectariniidae	<i>Aethopyga siparaja</i>	Crimson sunbird	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	Yes	
111	Nectariniidae	<i>Anthreptes malacensis</i>	Brown-throated sunbird	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	Yes	
112	Nectariniidae	<i>Arachnothera longirostra</i>	Little spiderhunter	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes	No	
113	Nectariniidae	<i>Cinnyris jugularis</i>	Olive-backed sunbird	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	Yes	
114	Nectariniidae	<i>Leptocoma brasiliانا</i>	Van Hasselt's sunbird	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	No	
115	Oriolidae	<i>Oriolus chinensis</i>	Black-naped oriole	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	Yes	
116	Pandionidae	<i>Pandion haliaetus</i>	Western osprey	Least Concern	Not Assessed	No	Common	Non-breeding visitor	Yes	No	
117	Passeridae	<i>Passer montanus</i>	Eurasian tree sparrow	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	No	
118	Pellorneidae	<i>Malacocincla abbotti</i>	Abbott's babbler	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes	No	

Appendix H2 List of Probable Recorded Species at Clementi Forest

S/N	Family name	Scientific name	Common name	Global status (IUCN, 2012)	National status (Davison et al. 2008)	Species of conservation significance	Distribution/Rarity (NSS, 2020; Singapore Birds Project, 2020)	Native status (NSS, 2020; Singapore Birds Project, 2020)	Probable species	Recorded species	Remarks
119	Phasianidae	<i>Gallus gallus</i>	Red junglefowl	Least Concern	Endangered	Yes	Uncommon	Resident breeder	Yes	Yes	Also recorded from camera trap
120	Phasianidae	<i>Gallus gallus (domestic)</i>	Domestic chicken	Not Assessed	Not Assessed	No	NA	Introduced	Yes	No	
121	Phylloscopidae	<i>Phylloscopus borealis</i>	Arctic warbler	Least Concern	Not Assessed	No	Common	Winter visitor	Yes	Yes	
122	Phylloscopidae	<i>Phylloscopus borealoides</i>	Sakhalin leaf warbler	Least Concern	Not Assessed	No	Rare	Accidental visitor	Yes	No	
123	Phylloscopidae	<i>Phylloscopus coronatus</i>	Eastern crowned warbler	Least Concern	Not Assessed	No	Uncommon	Winter visitor	Yes	No	
124	Phylloscopidae	<i>Phylloscopus inornatus</i>	Yellow-browed warbler	Least Concern	Not Assessed	No	Rare	Winter visitor	Yes	No	
125	Picidae	<i>Chrysophlegma miniaceum</i>	Banded woodpecker	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	Yes	
126	Picidae	<i>Dinopium javanense</i>	Common flameback	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	Yes	Also recorded from camera trap
127	Picidae	<i>Micropternus brachyurus</i>	Rufous woodpecker	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes	Yes	
128	Picidae	<i>Picus vittatus</i>	Laced woodpecker	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	Yes	Also recorded from camera trap
129	Picidae	<i>Yungipicus moluccensis</i>	Sunda pygmy woodpecker	Least Concern	Not Assessed	No	Abundant	Resident breeder	Yes	No	
130	Pittidae	<i>Pitta moluccensis</i>	Blue-winged pitta	Least Concern	Not Assessed	No	Uncommon	Migrant breeder	Yes	No	
131	Pittidae	<i>Pitta sordida</i>	Hooded pitta	Least Concern	Not Assessed	No	Uncommon	Winter visitor	Yes	Yes	Recorded from camera trap
132	Psittaculidae	<i>Loriculus galgulus</i>	Blue-crowned hanging-parrot	Least Concern; CITES protected (Appendix II)	Endangered	Yes	Uncommon	Resident breeder	Yes	Yes	
133	Psittaculidae	<i>Psittacula alexandri</i>	Red-breasted parakeet	Near Threatened; CITES protected (Appendix II)	Not Assessed	No	Common	Introduced resident breeder	Yes	Yes	
134	Psittaculidae	<i>Psittacula krameri</i>	Rose-ringed parakeet	Least Concern	Not Assessed	No	Uncommon	Introduced resident breeder	Yes	Yes	
135	Psittaculidae	<i>Psittacula longicauda</i>	Long-tailed parakeet	Vulnerable; CITES protected (Appendix II)	Not Assessed	Yes	Common	Resident breeder	Yes	Yes	
136	Psittaculidae	<i>Trichoglossus haematodus</i>	Coconut lorikeet	Least Concern; CITES protected (Appendix II)	Not Assessed	No	Uncommon	Introduced resident breeder	Yes	Yes	
137	Pycnonotidae	<i>Hemixos cinereus</i>	Cinereous bulbul	Least Concern	Not Assessed	No	Uncommon	Non-breeding visitor	Yes	No	
138	Pycnonotidae	<i>Pycnonotus brunneus</i>	Asian red-eyed bulbul	Least Concern	Endangered	Yes	Uncommon	Resident breeder	Yes	No	
139	Pycnonotidae	<i>Pycnonotus goiavier</i>	Yellow-vented bulbul	Least Concern	Not Assessed	No	Abundant	Resident breeder	Yes	Yes	Also recorded from camera trap
140	Pycnonotidae	<i>Pycnonotus jocosus</i>	Red-whiskered bulbul	Least Concern	Not Assessed	No	Uncommon	Introduced resident breeder	Yes	No	
141	Pycnonotidae	<i>Pycnonotus plumosus</i>	Olive-winged bulbul	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	Yes	

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S/N	Family name	Scientific name	Common name	Global status (IUCN, 2012)	National status (Davison et al. 2008)	Species of conservation significance	Distribution/Rarity (NSS, 2020; Singapore Birds Project, 2020)	Native status (NSS, 2020; Singapore Birds Project, 2020)	Probable species	Recorded species	Remarks
142	Pycnonotidae	<i>Pycnonotus zeylanicus</i>	Straw-headed bulbul	Critically Endangered; CITES protected (Appendix II)	Endangered	Yes	Uncommon	Resident breeder	Yes	Yes	
143	Rallidae	<i>Amaurornis phoenicurus</i>	White-breasted waterhen	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	Yes	Also recorded from camera trap
144	Rallidae	<i>Zapornia fusca</i>	Ruddy-breasted crake	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes	Yes	
145	Rallidae	<i>Rallina fasciata</i>	Red-legged crake	Least Concern	Vulnerable	Yes	Uncommon	Resident breeder	Yes	Yes	Also recorded from camera trap
146	Rhipiduridae	<i>Rhipidura javanica</i>	Malaysian pied fantail	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	Yes	Recorded from camera trap
147	Strigidae	<i>Bubo sumatranus</i>	Barred eagle-owl	Least Concern; CITES protected (Appendix II)	Not Assessed	No	Rare	Resident breeder	Yes	No	
148	Strigidae	<i>Ketupa ketupu</i>	Buffy fish owl	Least Concern; CITES protected (Appendix II)	Critically Endangered	Yes	Uncommon	Resident breeder	Yes	No	
149	Strigidae	<i>Ninox scutulata</i>	Brown hawk-owl	Least Concern; CITES protected (Appendix II)	Not Assessed	No	Common	Resident breeder	Yes	Yes	
150	Strigidae	<i>Otus lempiji</i>	Sunda scops owl	Least Concern; CITES protected (Appendix II)	Not Assessed	No	Common	Resident breeder	Yes	Yes	Also recorded from camera trap
151	Strigidae	<i>Strix seloputo</i>	Spotted wood owl	Least Concern; CITES protected (Appendix II)	Critically Endangered	Yes	Uncommon	Resident breeder	Yes	No	
152	Sturnidae	<i>Acridotheres javanicus</i>	Javan myna	Least Concern	Not Assessed	No	Abundant	Introduced resident breeder	Yes	Yes	Also recorded from camera trap
153	Sturnidae	<i>Acridotheres tristis</i>	Common myna	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	No	
154	Sturnidae	<i>Agropsar sturninus</i>	Daurian starling	Least Concern	Not Assessed	No	Common	Winter visitor	Yes	No	
155	Sturnidae	<i>Aplonis panayensis</i>	Asian glossy starling	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	Yes	
156	Sturnidae	<i>Gracula religiosa</i>	Common hill myna	Least Concern; CITES protected (Appendix I)	Not Assessed	No	Uncommon	Resident breeder	Yes	Yes	
157	Timaliidae	<i>Mixornis gularis</i>	Pin-striped tit-babbler	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	Yes	
158	Turdidae	<i>Geokichla citrina</i>	Orange-headed thrush	Least Concern	Not Assessed	No	Uncommon	Winter visitor	Yes	Yes	Recorded from camera trap
159	Turdidae	<i>Geokichla sibirica</i>	Siberian thrush	Least Concern	Not Assessed	No	Rare	Passage migrant	Yes	No	
160	Turdidae	<i>Turdus obscurus</i>	Eyebrowed thrush	Least Concern	Not Assessed	No	Uncommon	Passage migrant	Yes	No	

Appendix H2 List of Probable Recorded Species at Clementi Forest

S/N	Family name	Scientific name	Common name	Global status (IUCN, 2012)	National status (Davison et al. 2008)	Species of conservation significance	Distribution/Rarity (NSS, 2020; Singapore Birds Project, 2020)	Native status (NSS, 2020; Singapore Birds Project, 2020)	Probable species	Recorded species	Remarks
161	Tytonidae	<i>Tyto javanica</i>	Eastern barn owl	Least Concern; CITES protected (Appendix II)	Not Assessed	No	Uncommon	Resident breeder	Yes	No	
162	Zosteropidae	<i>Zosterops simplex</i>	Swinhoe's white-eye	Least Concern	Not Assessed	No	Common	Resident breeder	Yes	Yes	

Appendix H2 List of Probable Recorded Species at Clementi Forest

S/N	Family Name	Scientific Name	Common Name	Global Status (IUCN, 2012)	National status (Davison et al. 2008)	Species of Conservation Significance	Distribution/Rarity (Baker & Lim, 2012)	Native Status (Baker & Lim, 2012)	Probable Species	Recorded Species	Remarks
1	Canidae	<i>Canis lupus familiaris</i>	Feral dog	Not Assessed	Not Assessed	No	NA	Non-native	Yes	No	
2	Cercopithecidae	<i>Macaca fascicularis</i>	Long-tailed macaque	Vulnerable; CITES protected (Appendix II)	Least Concern	Yes	Widespread and Common	Native	Yes	Yes	
3	Felidae	<i>Felis catus</i>	Feral cat	Not Assessed	Not Assessed	No	NA	Non-native	Yes	No	
4	Manidae	<i>Manis javanica</i>	Sunda pangolin	Critically Endangered; CITES protected (Appendix I)	Critically Endangered	Yes	Widespread but Rare	Native	Yes	No	Recorded in Ho et al., 2019
5	Muridae	<i>Mus musculus</i>	House mouse	Least Concern	Not Assessed	No	Widespread and Common	Native	Yes	No	
6	Muridae	<i>Sundamys annandalei</i>	Annandale's rat	Least Concern	Not Assessed	No	Restricted but Common	Native	Yes	No	
7	Muridae	<i>Rattus exulans</i>	Pacific rat	Least Concern	Least Concern	No	Widespread but Uncommon	Native	Yes	No	
8	Muridae	<i>Rattus norvegicus</i>	Brown rat	Least Concern	Not Assessed	No	Widespread and Common	Non-native	Yes	No	
	Muridae	Family Muridae	NA	NA	NA	NA	NA	NA	NA	Yes	
9	Muridae	<i>Rattus tanezumi</i>	Asian house rat	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	No	
10	Muridae	<i>Rattus tiomanicus</i>	Malaysian wood rat	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	No	
11	Mustelidae	<i>Lutrogale perspicillata</i>	Smooth otter	Vulnerable; CITES protected (Appendix I)	Endangered	Yes	Widespread but Rare	Native	Yes	No	Anecdotal record of Otter sp. at pond (Ho et al., 2019) - likely a transient record
12	Sciuridae	<i>Callosciurus notatus</i>	Plantain squirrel	Least Concern	Not Assessed	No	Widespread and Common	Native	Yes	Yes	
13	Soricidae	<i>Suncus murinus</i>	House shrew	Least Concern	Not Assessed	No	Widespread and Common	Native	Yes	No	
14	Suidae	<i>Sus scrofa</i>	Eurasian wild boar	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	No	
15	Tupaiaidae	<i>Tupaia glis</i>	Common treeshrew	Least Concern	Not Assessed	No	Widespread and Common	Native	Yes	Yes	
16	Viverridae	<i>Paradoxurus musangus</i>	Sumatran palm civet	Least Concern	Least Concern	No	Widespread but Uncommon	Native	Yes	Yes	

Appendix H2 List of Probable Recorded Species at Clementi Forest

S/N	Family Name	Scientific Name	Common Name	Global Status (IUCN, 2012)	National status (Davison et al. 2008)	Species of Conservation Significance	Distribution/Rarity (Baker & Lim, 2012)	Native Status (Baker & Lim, 2012)	Probable Species	Recorded Species	Remarks
1	Emballonuridae	<i>Saccolaimus saccolaimus</i>	Pouch tomb bat	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	No	
2	Emballonuridae	<i>Taphozous melanopogon</i>	Black-bearded tomb bat	Least Concern	Least Concern	No	Widespread but Rare	Native	Yes	No	
3	Pteropodidae	<i>Cynopterus brachyotis</i>	Lesser short-nosed fruit bat	Least Concern	Not Assessed	No	Widespread and Common	Native	Yes	Yes	
4	Pteropodidae	<i>Eonycteris spelaea</i>	Cave nectar bat	Least Concern	Vulnerable	Yes	Widespread but Uncommon	Native	Yes	No	
5	Rhinolophidae	<i>Rhinolophus refulgens</i>	Glossy horseshoe bat	Least Concern	Not Assessed	No	Restricted but Common	Native	Yes	Yes	Recorded via acoustic sampling.
6	Vespertilionidae	<i>Myotis horsfieldii</i>	Horsfield's myotis	Least Concern	Least Concern	No	NA	Native	Yes	No	
7	Vespertilionidae	<i>Myotis muricola</i>	Asian whiskered myotis	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	Yes	Recorded via acoustic sampling.
8	Vespertilionidae	<i>Pipistrellus javanicus</i>	Javan pipistrelle	Least Concern	Not Assessed	No	Widespread but Uncommon	Native	Yes	No	
9	Vespertilionidae	<i>Scotophilus kuhlii</i>	Lesser Asian house bat	Least Concern	Least Concern	No	Widespread and Common	Native	Yes	Yes	Recorded via acoustic sampling.
10	Vespertilionidae	<i>Tylonycteris fulvida</i>	Lesser bamboo bat	Least Concern	Vulnerable	Yes	Restricted and Rare	Native	Yes	No	
11	Vespertilionidae	<i>Tylonycteris malayana</i>	Greater bamboo bat	Least Concern	Vulnerable	Yes	Widespread and Common	Native	Yes	No	
	Vespertilionidae	<i>Tylonycteris sp.</i>	NA	NA	NA	NA	NA	NA	NA	Yes	Recorded via acoustic sampling.

Appendix I1

Fauna Survey Data for
Maju Forest

Appendix I1 Faunal Survey Data for Maju Forest

Date	Latitude	Longitude	Sampling point	Time (24h)	Scientific name	Quantity	Observation type	Survey method	Remarks
2-Dec-19	1.32461	103.76990	SSW A1 03	0844-	<i>Orthetrum chrysis</i>	1	Seen	Incidental	NA
2-Dec-19	1.32443	103.76962	SSW A1 02	0834-	<i>Poecilia reticulata</i>	1	Seen	Point Count	NA
2-Dec-19	1.32671	103.76958	SSW A3 01	0945-	<i>Trithemis aurora</i>	1	Seen	Incidental	NA
3-Dec-19	1.33125	103.76472	SSW T1 12	901	<i>Accipiter trivirogatus</i>	1	Seen	Targeted	NA
3-Dec-19	1.32866	103.77046	SSW T1 12	819	<i>Acridotheres javanicus</i>	1	Heard	Targeted	NA
3-Dec-19	1.32857	103.76962	NA	836	<i>Acridotheres javanicus</i>	5	Seen	Incidental	NA
3-Dec-19	1.32857	103.76962	NA	836	<i>Aethya sicaria</i>	1	Seen	Incidental	NA
3-Dec-19	1.32866	103.77046	SSW T1 12	819	<i>Amaloria phoenicurus</i>	1	Heard	Incidental	NA
3-Dec-19	1.32866	103.77046	SSW T1 12	819	<i>Agonis panayensis</i>	1	Heard	Incidental	NA
3-Dec-19	1.32811	103.77043	SSW T1 11	803	<i>Cacatua goffiniana</i>	1	Heard	Targeted	NA
3-Dec-19	1.32811	103.77043	SSW T1 11	813	<i>Cacatua goffiniana</i>	2	Seen	Targeted	NA
3-Dec-19	1.32544	103.76975	SSW T1 08	727	<i>Callosciurus notatus</i>	1	Heard	Incidental	NA
3-Dec-19	1.32646	103.77016	SSW T1 09	740	<i>Callosciurus notatus</i>	3	Seen	Incidental	NA
3-Dec-19	1.32691	103.77006	SSW T1 10	748	<i>Callosciurus notatus</i>	2	Seen	Incidental	NA
3-Dec-19	1.32726	103.77014	SSW T1 10	752	<i>Callosciurus notatus</i>	1	Seen	Targeted	NA
3-Dec-19	1.32760	103.77027	SSW T1 11	756	<i>Callosciurus notatus</i>	1	Seen	Targeted	NA
3-Dec-19	1.32791	103.77028	SSW T1 11	810	<i>Callosciurus notatus</i>	1	Seen	Targeted	NA
3-Dec-19	1.32848	103.77045	SSW T1 12	818	<i>Callosciurus notatus</i>	1	Heard	Targeted	NA
3-Dec-19	1.33005	103.76489	SSW T1 03	916	<i>Callosciurus notatus</i>	1	Seen	Targeted	NA
3-Dec-19	1.32857	103.76962	NA	836	<i>Cinnyris jugularis</i>	2	Seen	Incidental	NA
3-Dec-19	1.32811	103.77043	SSW T1 11	813	<i>Dicaeum cruentatum</i>	1	Heard	Targeted	NA
3-Dec-19	1.33077	103.76501	SSW T1 02	911	<i>Dicaeum cruentatum</i>	1	Heard	Targeted	NA
3-Dec-19	1.32542	103.76994	SSW T1 08	730	<i>Dicurus paradiseus</i>	1	Heard	Targeted	NA
3-Dec-19	1.32656	103.77006	SSW T1 09	742	<i>Dicurus paradiseus</i>	1	Heard	Targeted	NA
3-Dec-19	1.32737	103.77026	SSW T1 10	754	<i>Dicurus paradiseus</i>	1	Heard	Targeted	NA
3-Dec-19	1.33125	103.76472	SSW T1 01	901	<i>Dicurus paradiseus</i>	1	Heard	Targeted	NA
3-Dec-19	1.32760	103.77027	SSW T1 11	756	<i>Dinopium javanense</i>	1	Heard	Incidental	NA
3-Dec-19	1.32778	103.77005	SSW T1 11	807	<i>Dinopium javanense</i>	1	Seen	Targeted	NA
3-Dec-19	1.32857	103.76962	NA	836	<i>Ducula bicolor</i>	3	Seen	Incidental	NA
3-Dec-19	1.32646	103.77016	SSW T1 09	740	<i>Eudynamis scolopacea</i>	1	Heard	Targeted	NA
3-Dec-19	1.32857	103.76962	NA	836	<i>Eudynamis scolopacea</i>	1	Heard	Incidental	NA
3-Dec-19	1.32544	103.76975	SSW T1 08	727	<i>Gallus gallus</i>	1	Heard	Targeted	NA
3-Dec-19	1.32760	103.77027	SSW T1 11	756	<i>Gallus gallus</i>	1	Heard	Targeted	NA
3-Dec-19	1.32432	103.76970	SSW T1 06	712	<i>Garrulax leucolophus</i>	2	Heard	Targeted	NA
3-Dec-19	1.32670	103.76994	SSW T1 11	745	<i>Garrulax leucolophus</i>	3	Heard	Targeted	NA
3-Dec-19	1.32760	103.77027	SSW T1 11	756	<i>Garrulax leucolophus</i>	3	Heard	Targeted	NA
3-Dec-19	1.32811	103.77043	SSW T1 01	813	<i>Garrulax leucolophus</i>	2	Heard	Targeted	NA
3-Dec-19	1.33125	103.76472	SSW T1 02	901	<i>Garrulax leucolophus</i>	2	Heard	Targeted	NA
3-Dec-19	1.33077	103.76501	SSW T1 04	911	<i>Garrulax leucolophus</i>	1	Heard	Targeted	NA
3-Dec-19	1.32895	103.76465	SSW T1 07	928	<i>Gracula religiosa</i>	1	Heard	Targeted	NA
3-Dec-19	1.32500	103.77001	SSW T1 07	721	<i>Halcyon smyrnensis</i>	1	Seen	Targeted	NA
3-Dec-19	1.32988	103.76480	SSW T1 08	917	<i>Loriculus galbulus</i>	1	Heard	Targeted	NA
3-Dec-19	1.32544	103.76975	SSW T1 11	727	<i>Mixornis gularis</i>	2	Seen	Targeted	NA
3-Dec-19	1.32811	103.77043	SSW T1 03	813	<i>Mixornis gularis</i>	4	Heard	Incidental	NA
3-Dec-19	1.33005	103.76489	SSW T1 12	916	<i>Mixornis gularis</i>	1	Heard	Targeted	NA
3-Dec-19	1.32866	103.77046	SSW T1 12	819	<i>Nisaeetus cirrhatus</i>	1	Heard	Targeted	NA
3-Dec-19	1.32839	103.77044	SSW T1 11	817	<i>Oriolus chinensis</i>	1	Seen	Targeted	NA
3-Dec-19	1.32811	103.77043	SSW T1 10	813	<i>Phylloscopus borealis</i>	1	Heard	Targeted	NA
3-Dec-19	1.32691	103.77006	SSW T1 05	749	<i>Picus vittatus</i>	1	Heard	Targeted	NA
3-Dec-19	1.32400	103.76923	SSW T1 07	709	<i>Psittacops lineatus</i>	1	Heard	Targeted	NA
3-Dec-19	1.32497	103.76979	SSW T1 11	722	<i>Psittacops lineatus</i>	2	Heard	Targeted	NA
3-Dec-19	1.32760	103.77027	SSW T1 05	756	<i>Psittacops lineatus</i>	1	Heard	Targeted	NA
3-Dec-19	1.32400	103.76923	SSW T1 05	709	<i>Psittacula alexandri</i>	1	Heard	Targeted	NA
3-Dec-19	1.32413	103.76944	SSW T1 11	710	<i>Psittacula krameri</i>	1	Seen	Targeted	NA
3-Dec-19	1.32760	103.77027	SSW T1 11	803	<i>Psittacula krameri</i>	1	Heard	Incidental	NA
3-Dec-19	1.32811	103.77043	SSW T1 12	813	<i>Psittacula krameri</i>	3	Heard	Targeted	NA
3-Dec-19	1.32857	103.76962	SSW T1 12	836	<i>Psittacula krameri</i>	2	Seen	Targeted	NA
3-Dec-19	1.32857	103.76962	SSW T1 12	836	<i>Psittacula longicauda</i>	1	Seen	Targeted	NA
3-Dec-19	1.33077	103.76501	SSW T1 12	911	<i>Psittacula longicauda</i>	1	Heard	Incidental	NA
3-Dec-19	1.32857	103.76962	NA	836	<i>Pycnonotus goiavier</i>	2	Seen	Incidental	NA
3-Dec-19	1.32857	103.76962	NA	836	<i>Treron vernans</i>	5	Seen	Incidental	NA
3-Dec-19	1.32857	103.76962	NA	836	<i>Trichoglossus haematodus</i>	2	Seen	Incidental	NA
5-Dec-19	1.32698	103.77002	SSW T1 12	2036	<i>Ahaetulla prasina</i>	1	Seen	Targeted	NA
5-Dec-19	1.32873	103.77015	SSW T1 05	2113	<i>Bronchocela cristatella</i>	1	Seen	Targeted	NA
5-Dec-19	1.32372	103.76888	SSW T1 05	1943	<i>Cynopterus brachyotis</i>	1	Seen	Targeted	NA
5-Dec-19	1.32869	103.77031	SSW T1 03	2110	<i>Cynopterus brachyotis</i>	1	Seen	Targeted	NA
5-Dec-19	1.32992	103.76483	SSW T1 02	2154	<i>Cynopterus brachyotis</i>	1	Seen	Targeted	NA
5-Dec-19	1.33022	103.76493	SSW T1 05	2153	<i>Gallus gallus</i>	1	Seen	Targeted	Roosting on tree
5-Dec-19	1.32372	103.76888	SSW T1 05	1943	<i>Halcyon smyrnensis</i>	1	Seen	Targeted	NA
5-Dec-19	1.32844	103.77010	SSW T1 06	2118	<i>Hemidactylus frenatus</i>	1	Seen	Targeted	NA
5-Dec-19	1.32466	103.77002	SSW T1 10	2001	Larvae Unidentified Odonate	1	Seen	Incidental	NA
5-Dec-19	1.32698	103.77002	SSW T1 06	2036	<i>Lygosoma bowringii</i>	1	Seen	Targeted	NA
5-Dec-19	1.32446	103.76972	SSW T1 06	1957	<i>Microhyla butleri</i>	1	Heard	Incidental	NA
5-Dec-19	1.32430	103.76940	SSW T1 06	1948	<i>Microhyla mukhesuri</i>	1	Heard	Incidental	NA
5-Dec-19	1.32430	103.76940	SSW T1 06	1948	<i>Microhyla heymonsi</i>	1	Heard	Incidental	NA
5-Dec-19	1.32443	103.76965	SSW T1 06	1954	<i>Microhyla heymonsi</i>	1	Heard	Incidental	NA
5-Dec-19	1.32443	103.76965	SSW T1 06	1954	<i>Microhyla sp.</i>	1	Seen	Incidental	NA
5-Dec-19	1.32430	103.76940	SSW T1 11	1948	<i>Polydectes leucomystax</i>	1	Heard	Incidental	NA
5-Dec-19	1.32783	103.77024	SSW T1 12	2054	<i>Pseudorabdon longiceps</i>	1	Seen	Targeted	NA
5-Dec-19	1.32864	103.77043	SSW T1 10	2109	<i>Rallina fasciata</i>	1	Heard	Targeted	NA
5-Dec-19	1.32691	103.76989	SSW T1 05	2032	<i>Rattus sp.</i>	1	Seen	Targeted	NA
5-Dec-19	1.32358	103.76875	SSW T1 05	1941	Unidentified Fruit bat	1	Seen	Targeted	NA
5-Dec-19	1.32446	103.76972	SSW T1 08	1957	Unidentified Fruit bat	1	Seen	Targeted	On Ficus tree
5-Dec-19	1.32567	103.76991	SSW T1 12	2016	Unidentified Fruit bat	1	Seen	Targeted	NA
5-Dec-19	1.32822	103.77040	SSW T1 02	2102	Unidentified Fruit bat	1	Seen	Targeted	NA
5-Dec-19	1.33037	103.76490	SSW T1 10	2149	Unidentified Fruit bat	1	Seen	Targeted	NA
5-Dec-19	1.32691	103.76989	SSW T1 10	2032	Unidentified Small mammal	1	Seen	Targeted	Small mammal sp.
5-Dec-19	1.32716	103.77009	SSW T2 02	2041	<i>Varanus salvator</i>	1	Seen	Incidental	NA
10-Dec-19	1.32617	103.77438	SSW T2 04	726	<i>Acridotheres javanicus</i>	1	Seen	Targeted	NA

Appendix I1 Faunal Survey Data for Maju Forest

Date	Latitude	Longitude	Sampling point	Time (24h)	Scientific name	Quantity	Observation type	Survey method	Remarks
10-Dec-19	1.32650	103.77298	SSW T2 04	735	Acridotheres javanicus	1	Heard	Targeted	NA
10-Dec-19	1.32666	103.77283	SSW T2 05	750	Acridotheres javanicus	2	Heard	Targeted	NA
10-Dec-19	1.32744	103.77227	SSW T2 05	809	Acridotheres javanicus	1	Seen	Targeted	NA
10-Dec-19	1.32709	103.77249	SSW T2 02	758	Amuroornis phoenicurus	1	Heard	Targeted	NA
10-Dec-19	1.32617	103.77438	SSW T2 10	725	Cacatua goffiniana	5	Heard	Targeted	NA
10-Dec-19	1.32624	103.77326	SSW T2 04	733	Chalcophaps indica	1	Heard	Targeted	NA
10-Dec-19	1.32666	103.77283	SSW T2 01	746	Chalcophaps indica	1	Heard	Targeted	NA
10-Dec-19	1.32619	103.77520	SSW T2 05	719	Dicrurus paradiseus	1	Seen	Targeted	NA
10-Dec-19	1.32709	103.77249	SSW T2 03	759	Dicrurus paradiseus	1	Heard	Targeted	NA
10-Dec-19	1.32599	103.77363	SSW T2 04	916	Dicrurus paradiseus	2	Heard	Targeted	NA
10-Dec-19	1.32650	103.77298	SSW T2 04	735	Dinopium javanense	1	Heard	Targeted	NA
10-Dec-19	1.32666	103.77283	SSW T2 07	749	Dinopium javanense	1	Seen	Targeted	NA
10-Dec-19	1.32625	103.77207	SSW T2 05	850	Dinopium javanense	1	Heard	Targeted	NA
10-Dec-19	1.32709	103.77249	SSW T2 05	754	Gallus gallus	1	Heard	Targeted	NA
10-Dec-19	1.32755	103.77215	SSW T2 05	829	Gallus gallus	1	Heard	Targeted	NA
10-Dec-19	1.32619	103.77520	SSW T2 03	719	Garrulax leucolophus	2	Heard	Targeted	NA
10-Dec-19	1.32620	103.77362	SSW T2 05	729	Garrulax leucolophus	2	Seen	Targeted	NA
10-Dec-19	1.32709	103.77249	SSW T2 08	756	Garrulax leucolophus	2	Seen	Targeted	NA
10-Dec-19	1.32548	103.77143	SSW T2 08	908	Garrulax leucolophus	3	Heard	Targeted	NA
10-Dec-19	1.32757	103.77203	SSW T2 06	830	Haliastur indus	1	Seen	Targeted	NA
10-Dec-19	1.32650	103.77298	SSW T2 03	735	Loriculus calgulus	2	Seen	Targeted	NA
10-Dec-19	1.32620	103.77362	SSW T2 04	729	Meroops sp.	2	Heard	Targeted	NA
10-Dec-19	1.32650	103.77298	SSW T2 05	744	Meroops viridis	2	Seen	Targeted	NA
10-Dec-19	1.32769	103.77221	SSW T2 05	811	Meroops viridis	1	Seen	Targeted	NA
10-Dec-19	1.32426	103.76941	SSW A1 01	0834-	Neurothemis fluctuans	1	Seen	Point Count	NA
10-Dec-19	1.32461	103.76990	SSW A1 03	0851-	Neurothemis fluctuans	1	Seen	Point Count	NA
10-Dec-19	1.32650	103.77298	SSW T2 04	742	Nisaetus cirratus	1	Heard	Targeted	NA
10-Dec-19	1.32666	103.77283	SSW T2 04	752	Nisaetus cirratus	2	Seen	Targeted	NA
10-Dec-19	1.32650	103.77298	SSW T2 05	742	Oriolus chinensis	1	Seen	Targeted	NA
10-Dec-19	1.32720	103.77239	SSW T2 12	807	Orthotomus sericeus	1	Heard	Targeted	NA
10-Dec-19	1.32618	103.77505	SSW T2 05	720	Phylloscopus borealis	1	Heard	Targeted	NA
10-Dec-19	1.32786	103.77219	SSW T2 05	815	Phylloscopus borealis	1	Heard	Targeted	NA
10-Dec-19	1.32650	103.77298	SSW T2 08	742	Picus vittatus	1	Heard	Targeted	NA
10-Dec-19	1.32558	103.77133	SSW T2 08	856	Picus vittatus	1	Heard	Targeted	NA
10-Dec-19	1.32548	103.77143	SSW T2 08	900	Picus vittatus	1	Heard	Targeted	NA
10-Dec-19	1.32593	103.77309	SSW T2 04	912	Picus vittatus	1	Heard	Targeted	NA
10-Dec-19	1.32650	103.77298	SSW T2 04	742	Psilopogon lineatus	1	Seen	Targeted	NA
10-Dec-19	1.32666	103.77283	SSW T2 05	746	Psilopogon lineatus	1	Heard	Targeted	NA
10-Dec-19	1.32709	103.77249	SSW T2 06	802	Psilopogon lineatus	1	Seen	Targeted	NA
10-Dec-19	1.32757	103.77203	SSW T2 06	830	Psilopogon lineatus	2	Heard	Targeted	NA
10-Dec-19	1.32599	103.77363	SSW T2 04	916	Psilopogon lineatus	1	Heard	Targeted	NA
10-Dec-19	1.32650	103.77298	SSW T2 05	735	Psittacula alexandri	3	Seen	Targeted	NA
10-Dec-19	1.32786	103.77219	SSW T2 05	815	Psittacula krameri	1	Seen	Targeted	NA
10-Dec-19	1.32619	103.77520	SSW T2 10	719	Psittacula longicauda	20	Seen	Targeted	NA
10-Dec-19	1.32624	103.77326	SSW T2 05	734	Psittacula longicauda	15	Heard	Targeted	NA
10-Dec-19	1.32709	103.77249	SSW T2 05	758	Psittacula longicauda	1	Seen	Targeted	NA
10-Dec-19	1.32709	103.77249	SSW T2 05	802	Psittacula longicauda	5	Seen	Targeted	NA
10-Dec-19	1.32769	103.77221	SSW T2 05	811	Psittacula longicauda	1	Seen	Targeted	NA
10-Dec-19	1.32619	103.77520	SSW T2 04	719	Pycnonotus plumosus	1	Seen	Targeted	NA
10-Dec-19	1.32666	103.77283	SSW T2 05	748	Pycnonotus zeylanicus	1	Heard	Targeted	NA
10-Dec-19	1.32752	103.77224	SSW T2 07	809	Pycnonotus zeylanicus	1	Heard	Targeted	NA
10-Dec-19	1.32645	103.77207	SSW T2 08	843	Pycnonotus zeylanicus	1	Heard	Targeted	NA
10-Dec-19	1.32548	103.77143	SSW T2 08	859	Pycnonotus zeylanicus	2	Heard	Targeted	NA
10-Dec-19	1.32599	103.77363	SSW T2 04	916	Pycnonotus zeylanicus	1	Heard	Targeted	NA
10-Dec-19	1.32666	103.77283	SSW T2 04	750	Treron vernans	2	Heard	Targeted	NA
10-Dec-19	1.32650	103.77298	SSW T2 01	735	Trichoglossus haematodus	2	Seen	Targeted	NA
18-Dec-19	1.32625	103.77323	SSW T2 07	2006	Ahaetulla prasina	1	Seen	Targeted	NA
18-Dec-19	1.32632	103.77196	SSW T1 04	2057	Ahaetulla prasina	1	Seen	Targeted	NA
18-Dec-19	1.32877	103.76471	SSW T2 02	1048	Arhonia centaurus nakula	1	Seen	Targeted	NA
18-Dec-19	1.32615	103.77456	SSW T2 03	1952	Cynopterus brachyotis	1	Seen	Targeted	NA
18-Dec-19	1.32616	103.77360	SSW T2 09	2001	Cynopterus brachyotis	1	Seen	Targeted	NA
18-Dec-19	1.32587	103.77294	SSW T2 10	2128	Cynopterus brachyotis	1	Seen	Targeted	NA
18-Dec-19	1.32583	103.77316	SSW T2 01	2132	Cynopterus brachyotis	1	Seen	Targeted	NA
18-Dec-19	1.32640	103.77590	SSW T2 01	2149	Cynopterus brachyotis	1	Seen	Targeted	NA
18-Dec-19	1.32830	103.76463	SSW T1 04	1049	Delias hypparete metarete	1	Seen	Targeted	NA
18-Dec-19	1.32625	103.77323	SSW T2 04	2007	Dendrelaphis pictus	2	Seen	Targeted	NA
18-Dec-19	1.32680	103.77273	SSW T2 10	2024	Dendrelaphis pictus	1	Seen	Targeted	NA
18-Dec-19	1.32583	103.77316	SSW T1 05	2132	Dicrurus paradiseus	1	Seen	Targeted	NA
18-Dec-19	1.32401	103.76920	SSW T1 06	908	Eurema hecabe contubernalis	1	Seen	Targeted	Feeding on nectar of
18-Dec-19	1.32426	103.76952	SSW T1 05	914	Eurema hecabe contubernalis	1	Seen	Targeted	NA
18-Dec-19	1.32388	103.76904	SSW T1 06	904	Eurema sp.	1	Seen	Targeted	NA
18-Dec-19	1.32426	103.76952	SSW T1 05	913	Eurema sp.	5	Seen	Targeted	NA
18-Dec-19	1.32381	103.76897	SSW T2 09	903	Eutropis multifasciata	1	Seen	Incidental	NA
18-Dec-19	1.32584	103.77261	SSW T2 09	2125	Gekko monarchus	1	Seen	Targeted	NA
18-Dec-19	1.32587	103.77294	SSW T2 01	2128	Gekko monarchus	1	Seen	Targeted	NA
18-Dec-19	1.32640	103.77590	SSW T2 01	2149	Gekko monarchus	2	Seen	Targeted	NA
18-Dec-19	1.32426	103.76952	SSW T1 04	913	Junonia hedonia ida	2	Seen	Targeted	NA
18-Dec-19	1.32817	103.76460	SSW T1 04	1050	Junonia hedonia ida	1	Seen	Targeted	NA
18-Dec-19	1.32676	103.77277	SSW T2 07	2022	Kaloula pulchra	20	Heard	Targeted	NA
18-Dec-19	1.32632	103.77196	SSW T2 08	2056	Kaloula pulchra	2	Heard	Targeted	NA
18-Dec-19	1.32571	103.77164	SSW T2 08	2106	Kaloula pulchra	2	Heard	Targeted	NA
18-Dec-19	1.32557	103.77204	SSW T2 04	2116	Limnodynastes bluthii	1	Seen	Targeted	NA
18-Dec-19	1.32676	103.77277	SSW T2 06	2022	Microhyla butleri	20	Heard	Targeted	NA
18-Dec-19	1.32713	103.77205	SSW T2 07	2046	Microhyla butleri	10	Heard	Targeted	NA
18-Dec-19	1.32663	103.77224	SSW T2 07	2051	Microhyla butleri	1	Heard	Targeted	NA
18-Dec-19	1.32632	103.77196	SSW T2 08	2056	Microhyla butleri	5	Heard	Targeted	NA
18-Dec-19	1.32571	103.77164	SSW T2 04	2106	Microhyla butleri	5	Heard	Targeted	NA
18-Dec-19	1.32676	103.77277	SSW T2 06	2022	Microhyla heymonsi	20	Heard	Targeted	NA
18-Dec-19	1.32713	103.77205	SSW T2 12	2046	Microhyla heymonsi	10	Heard	Targeted	NA

Appendix I1 Faunal Survey Data for Maju Forest

Date	Latitude	Longitude	Sampling point	Time (24h)	Scientific name	Quantity	Observation type	Survey method	Remarks
18-Dec-19	1.32598	103.77493	SSW T1 12	2146	<i>Mvotis muricola</i>	1	Acoustic	Acoustic	NA
18-Dec-19	1.32834	103.77041	SSW T2 04	952	<i>Nisaetus cirrhatus</i>	1	Heard	Incidental	NA
18-Dec-19	1.32637	103.77305	SSW T1 12	2014	<i>Otus lempiji</i>	1	Heard	Targeted	NA
18-Dec-19	1.32854	103.77011	SSW T1 06	1000	<i>Papilio polytes romulus</i>	1	Seen	Targeted	NA
18-Dec-19	1.32426	103.76952	SSW T2 05	913	<i>Pelopidas mathias mathias</i>	1	Seen	Targeted	Feeding on nectar of
18-Dec-19	1.32691	103.77258	SSW T2 04	2027	<i>Rallina fasciata</i>	2	Seen	Targeted	NA
18-Dec-19	1.32655	103.77276	SSW T2 08	2018	<i>Rattus sp.</i>	1	Seen	Targeted	NA
18-Dec-19	1.32569	103.77217	SSW T2 08	2121	<i>Rhinolophus lepidus</i>	1	Acoustic	Acoustic	NA
18-Dec-19	1.32569	103.77219	SSW T2 10	2122	<i>Rhinolophus lepidus</i>	1	Acoustic	Acoustic	NA
18-Dec-19	1.32595	103.77355	SSW T2 01	2135	<i>Rhinolophus lepidus</i>	1	Acoustic	Acoustic	NA
18-Dec-19	1.32609	103.77589	NA	2147	<i>Rhinolophus lepidus</i>	1	Acoustic	Acoustic	NA
18-Dec-19	1.32620	103.77437	SSW T2 11	1954	<i>Scotophilus kuhlii</i>	1	Acoustic	Acoustic	NA
18-Dec-19	1.32620	103.77401	SSW T1 12	1957	<i>Scotophilus kuhlii</i>	1	Acoustic	Acoustic	NA
18-Dec-19	1.32854	103.77011	SSW T1 12	958	<i>Ypthima horsfieldii humei</i>	3	Seen	Targeted	NA
18-Dec-19	1.32854	103.77011	SSW T1 12	1003	<i>Ypthima horsfieldii humei</i>	1	Seen	Targeted	NA
18-Dec-19	1.32854	103.77011	SSW T2 08	958	<i>Zizina otis lampo</i>	5	Seen	Targeted	NA
18-Dec-19	1.32561	103.77219	SSW T2 08	2121	<i>Rhinolophus lepidus</i>	NA	Acoustic	Acoustic	20191218 212134.wav
18-Dec-19	1.32561	103.77219	SSW T2 10	2122	<i>Rhinolophus lepidus</i>	NA	Acoustic	Acoustic	20191218 212216.wav
18-Dec-19	1.32591	103.77361	SSW T2 12	2135	<i>Rhinolophus lepidus</i>	NA	Acoustic	Acoustic	20191218 213538.wav
18-Dec-19	1.32602	103.77502	SSW T2 02	2147	<i>Rhinolophus lepidus</i>	NA	Acoustic	Acoustic	20191218 214738.wav
18-Dec-19	1.32620	103.77437	SSW T2 11	1954	<i>Scotophilus kuhlii</i>	NA	Acoustic	Acoustic	20191218 195431.wav
18-Dec-19	1.32620	103.77401	SSW T2 12	1957	<i>Scotophilus kuhlii</i>	NA	Acoustic	Acoustic	20191218 195744.wav
18-Dec-19	1.32598	103.77493	SSW T1 05	2146	<i>Mvotis muricola</i>	NA	Acoustic	Acoustic	20191218 214620.wav
18-Dec-19	1.32388	103.76904	SSW T1 05	905	<i>Apis cerana</i>	1	Seen	Targeted	NA
18-Dec-19	1.32401	103.76920	SSW T1 02	909	<i>Apis cerana</i>	5	Seen	Targeted	Feeding on nectar of
18-Dec-19	1.33102	103.76660	NA	1018	<i>Liris subfessellatus</i>	1	Seen	Incidental	NA
18-Dec-19	1.33097	103.76700	NA	1015	<i>Nest Ropalidia sumatrae</i>	NA	Seen	Incidental	Nest
18-Dec-19	1.32388	103.76904	SSW T1 05	904	<i>Stenodyneriellus outulatus</i>	1	Seen	Targeted	NA
18-Dec-19	1.32388	103.76904	SSW T1 05	905	<i>Stenodyneriellus outulatus</i>	1	Seen	Targeted	NA
18-Dec-19	1.32401	103.76920	SSW T1 10	908	<i>Tetragonula sp. nr. laevicaps</i>	1	Seen	Targeted	Feeding on nectar of
18-Dec-19	1.32697	103.76994	SSW T1 12	937	<i>Xylocopa latipes</i>	1	Seen	Targeted	NA
18-Dec-19	1.32873	103.77022	SSW T2 04	955	<i>Xylocopa latipes</i>	1	Seen	Targeted	NA
19-Dec-19	1.32648	103.77300	SSW T2 04	920	<i>Dendrolaphis pictus</i>	1	Seen	Targeted	NA
19-Dec-19	1.32648	103.77300	SSW T2 06	920	<i>Eutropis multifasciata</i>	1	Seen	Targeted	NA
19-Dec-19	1.32746	103.77196	SSW T2 05	937	<i>Eutropis multifasciata</i>	1	Seen	Targeted	NA
19-Dec-19	1.32742	103.77232	SSW T2 01	931	<i>Varanus salvator</i>	1	Seen	Targeted	NA
4-Jan-20	1.33099	103.76499	SSW T2 01	828	<i>Callosciurus notatus</i>	1	Seen	Targeted	NA
9-Jan-20	1.32609	103.77499	SSW T2 08	1108	<i>Agrioponotera insinias</i>	2	Seen	Targeted	NA
9-Jan-20	1.32551	103.77097	SSW A2 04	0932	<i>Nest Ropalidia insinias</i>	1	Seen	Point count	NA
9-Jan-20	1.32621	103.77516	SSW T2 05	959	<i>Catantopilia pomona pomona</i>	5	Seen	Targeted	Feeding on
9-Jan-20	1.32705	103.77251	SSW T2 04	1022	<i>Catantopilia pomona pomona</i>	1	Seen	Targeted	NA
9-Jan-20	1.32633	103.77313	SSW T2 04	1015	<i>Delias hyoparete metarete</i>	1	Seen	Targeted	NA
9-Jan-20	1.32671	103.77279	SSW T2 01	1018	<i>Elymnias hypermnestra acina</i>	1	Seen	Targeted	NA
9-Jan-20	1.32621	103.77516	SSW T2 08	1001	<i>Eurema hecabe contubernalis</i>	2	Seen	Targeted	NA
9-Jan-20	1.32572	103.77202	SSW T2 12	1047	<i>Eurema sp.</i>	1	Seen	Targeted	NA
9-Jan-20	1.32609	103.77499	SSW T2 04	1108	<i>Eurema sp.</i>	1	Seen	Targeted	NA
9-Jan-20	1.32677	103.77275	SSW T2 01	1020	<i>Iambrix salsala salsala</i>	1	Seen	Targeted	NA
9-Jan-20	1.32621	103.77516	SSW T2 06	1001	<i>Junonia hedonia ida</i>	2	Seen	Targeted	NA
9-Jan-20	1.32748	103.77195	SSW T2 01	1024	<i>Nest Nisaetus cirrhatus</i>	NA	Seen	Incidental	Adult observed on nest
9-Jan-20	1.32621	103.77516	SSW T2 01	1001	<i>Orthetrum glaucum</i>	2	Seen	Targeted	NA
9-Jan-20	1.32621	103.77516	SSW T2 05	959	<i>Papilio polytes romulus</i>	1	Seen	Targeted	Feeding on
9-Jan-20	1.32742	103.77223	SSW T1 08	1024	<i>Papilio polytes romulus</i>	1	Seen	Targeted	NA
9-Jan-20	1.32511	103.77077	NA	925	<i>Picus vittatus</i>	1	Seen	Incidental	Flew out from nest hole
9-Jan-20	1.32624	103.77326	SSW T2 01	1012	<i>Tholymis tillara</i>	1	Seen	Targeted	NA
2-Feb-20	1.32423	103.76949	SSW T1 05	1150	<i>Acraea terpsicore</i>	1	Seen	Targeted	NA
2-Feb-20	1.32389	103.76905	SSW T1 09	1200	<i>Acraea terpsicore</i>	1	Seen	Targeted	NA
2-Feb-20	1.32671	103.76958	SSW A3 01	1050	<i>Agrioponotera insinias</i>	4	Seen	Point Count	NA
2-Feb-20	1.32443	103.76962	SSW A1 02	1143	<i>Agrioponotera insinias</i>	4	Seen	Point Count	1 ovipositing
2-Feb-20	1.32426	103.76941	SSW A1 01	1155	<i>Agrioponotera insinias</i>	2	Seen	Point Count	NA
2-Feb-20	1.32457	103.76961	SSW T1 06	1128	<i>Ancistroides niorita maura</i>	1	Seen	Targeted	NA
2-Feb-20	1.32439	103.76983	SSW T1 06	1133	<i>Ancistroides niorita maura</i>	1	Seen	Targeted	NA
2-Feb-20	1.32436	103.76961	SSW T1 02	1145	<i>Ancistroides niorita maura</i>	1	Seen	Targeted	NA
2-Feb-20	1.33028	103.76490	SSW T1 06	918	<i>Baoris sp.</i>	1	Seen	Targeted	NA
2-Feb-20	1.32439	103.76983	SSW T1 05	1141	<i>Catantopilia pomona pomona</i>	1	Seen	Targeted	NA
2-Feb-20	1.32360	103.76873	SSW T1 05	1203	<i>Catantopilia pomona pomona</i>	2	Seen	Targeted	NA
2-Feb-20	1.32781	103.77025	SSW T1 06	1010	<i>Centropus sinensis</i>	1	Heard	Incidental	NA
2-Feb-20	1.32457	103.76961	SSW T1 06	1128	<i>Centropus sinensis</i>	1	Heard	Incidental	NA
2-Feb-20	1.32426	103.76941	SSW A1 01	1155	<i>Ceragrion cerinorubellum</i>	1	Seen	Point Count	NA
2-Feb-20	1.32835	103.77014	SSW T1 11	955	<i>Delias hyoparete metarete</i>	1	Seen	Targeted	NA
2-Feb-20	1.32797	103.77024	SSW T1 05	1007	<i>Delias hyoparete metarete</i>	2	Seen	Targeted	NA
2-Feb-20	1.32376	103.76887	SSW T1 05	1202	<i>Delias hyoparete metarete</i>	1	Seen	Targeted	NA
2-Feb-20	1.32856	103.76468	SSW T1 01	857	<i>Elymnias hypermnestra acina</i>	1	Seen	Incidental	NA
2-Feb-20	1.33113	103.76449	SSW T1 06	930	<i>Elymnias hypermnestra acina</i>	1	Seen	Targeted	NA
2-Feb-20	1.32439	103.76983	SSW T1 05	1141	<i>Elymnias hypermnestra acina</i>	2	Seen	Targeted	NA
2-Feb-20	1.32422	103.76937	SSW T1 05	1156	<i>Elymnias hypermnestra acina</i>	1	Seen	Targeted	NA
2-Feb-20	1.32389	103.76905	SSW T1 11	1200	<i>Elymnias hypermnestra acina</i>	1	Seen	Targeted	NA
2-Feb-20	1.32781	103.77025	SSW T1 09	1028	<i>Eooxylides tharis distanti</i>	1	Seen	Targeted	NA
2-Feb-20	1.32662	103.76962	SSW T1 09	1044	<i>Eooxylides tharis distanti</i>	1	Seen	Targeted	NA
2-Feb-20	1.32563	103.76997	SSW T1 09	1114	<i>Eooxylides tharis distanti</i>	1	Seen	Targeted	NA
2-Feb-20	1.32651	103.76996	SSW T1 03	1050	<i>Eooxylides tharis distanti</i>	2	Seen	Targeted	NA
2-Feb-20	1.33004	103.76489	SSW T1 02	915	<i>Erynnis hiraica apicalis</i>	1	Seen	Targeted	NA
2-Feb-20	1.33063	103.76492	SSW T1 06	921	<i>Erynnis sp.</i>	1	Seen	Targeted	NA
2-Feb-20	1.32471	103.76946	SSW T1 06	1123	<i>Eurema sp.</i>	5	Seen	Targeted	NA
2-Feb-20	1.32448	103.76985	SSW T1 06	1132	<i>Eurema sp.</i>	3	Seen	Targeted	NA
2-Feb-20	1.32439	103.76983	SSW T1 05	1141	<i>Eurema sp.</i>	2	Seen	Targeted	NA
2-Feb-20	1.32413	103.76942	SSW T1 05	1153	<i>Eurema sp.</i>	2	Seen	Targeted	NA
2-Feb-20	1.32389	103.76905	SSW T1 03	1200	<i>Eurema sp.</i>	3	Seen	Targeted	NA
2-Feb-20	1.32979	103.76474	SSW T1 06	911	<i>Gynacantha subinterrupta</i>	1	Seen	Targeted	NA
2-Feb-20	1.32424	103.76953	SSW T1 01	1149	<i>Hypolimnas anomala anomala</i>	1	Seen	Targeted	NA

Appendix I1 Faunal Survey Data for Maju Forest

Date	Latitude	Longitude	Sampling point	Time (24h)	Scientific name	Quantity	Observation type	Survey method	Remarks
2-Feb-20	1.33187	103.76563	NA	941	<i>Hypolycaena enylus teatus</i>	1	Seen	Incidental	NA
2-Feb-20	1.32882	103.76469	SSW T1 12	858	<i>Iambrix salsala salsala</i>	1	Seen	Targeted	NA
2-Feb-20	1.32863	103.77017	SSW T1 09	959	<i>Iambrix salsala salsala</i>	2	Seen	Targeted	NA
2-Feb-20	1.32670	103.76947	SSW T1 09	1050-	<i>Junonia almana javana</i>	1	Seen	Targeted	NA
2-Feb-20	1.32882	103.76469	SSW T1 12	858	<i>Junonia hedonia ida</i>	1	Seen	Targeted	NA
2-Feb-20	1.32859	103.77014	SSW T1 06	958	<i>Junonia hedonia ida</i>	1	Seen	Targeted	NA
2-Feb-20	1.32424	103.76953	SSW T1 05	1150	<i>Junonia hedonia ida</i>	3	Seen	Targeted	NA
2-Feb-20	1.32389	103.76905	SSW T1 01	1200	<i>Junonia hedonia ida</i>	3	Seen	Targeted	NA
2-Feb-20	1.33113	103.76449	SSW T1 06	930	<i>Lathrecista asiatica</i>	1	Seen	Targeted	NA
2-Feb-20	1.32464	103.76948	SSW T1 09	1126	<i>Lathrecista asiatica</i>	1	Seen	Targeted	NA
2-Feb-20	1.32671	103.76958	SSW A3 01	1050-	<i>Lathrecista asiatica</i>	1	Seen	Point Count	NA
2-Feb-20	1.32461	103.76990	SSW A1 03	1134-	<i>Lathrecista asiatica</i>	2	Seen	Point Count	NA
2-Feb-20	1.32424	103.76953	SSW T1 05	1150	<i>Motacilla cinerea</i>	1	Seen	Incidental	NA
2-Feb-20	1.32422	103.76937	SSW T1 06	1157	<i>Mycalesis mineus macromalavana</i>	1	Seen	Targeted	NA
2-Feb-20	1.32462	103.76952	SSW T1 06	1124	<i>Neurothemis fluctuans</i>	1	Seen	Targeted	NA
2-Feb-20	1.32439	103.76983	SSW T1 09	1133	<i>Neurothemis fluctuans</i>	1	Seen	Targeted	NA
2-Feb-20	1.32671	103.76958	SSW A3 01	1050-	<i>Neurothemis fluctuans</i>	4	Seen	Point Count	NA
2-Feb-20	1.32443	103.76962	SSW A1 02	1143-	<i>Neurothemis fluctuans</i>	4	Seen	Point Count	NA
2-Feb-20	1.32426	103.76941	SSW A1 01	1155-	<i>Neurothemis fluctuans</i>	11	Seen	Point Count	NA
2-Feb-20	1.32439	103.76983	SSW T1 06	1141	<i>Oriens oia pseudolus</i>	1	Seen	Targeted	NA
2-Feb-20	1.32464	103.76948	SSW T1 10	1126	<i>Orithetrum chrysis</i>	1	Seen	Targeted	NA
2-Feb-20	1.32714	103.77008	SSW A3 04	1020-	<i>Orithetrum chrysis</i>	1	Seen	Point Count	NA
2-Feb-20	1.32671	103.76958	SSW A3 01	1050-	<i>Orithetrum chrysis</i>	2	Seen	Point Count	NA
2-Feb-20	1.32461	103.76990	SSW A1 03	1134-	<i>Orithetrum chrysis</i>	2	Seen	Point Count	NA
2-Feb-20	1.32443	103.76962	SSW A1 02	1143-	<i>Orithetrum chrysis</i>	1	Seen	Point Count	NA
2-Feb-20	1.32426	103.76941	SSW A1 01	1155-	<i>Orithetrum chrysis</i>	2	Seen	Point Count	NA
2-Feb-20	1.32426	103.76941	SSW A1 01	1155-	<i>Orithetrum glaucum</i>	1	Seen	Point Count	NA
2-Feb-20	1.32464	103.76948	SSW T1 06	1125	<i>Peloidas mathias mathias</i>	1	Seen	Targeted	NA
2-Feb-20	1.32439	103.76983	SSW T1 05	1133	<i>Phaedyma columella singa</i>	1	Seen	Targeted	NA
2-Feb-20	1.32389	103.76905	SSW T1 07	1200	<i>Phaedyma columella singa</i>	1	Seen	Targeted	NA
2-Feb-20	1.32527	103.76953	SSW T1 05	1117	<i>Plastinoia naga</i>	1	Seen	Targeted	NA
2-Feb-20	1.32376	103.76887	SSW T1 05	1202	<i>Polyura hebe plautus</i>	1	Seen	Targeted	NA
2-Feb-20	1.32423	103.76949	SSW T1 06	1150	<i>Prosotas dubiosa lumoura</i>	4	Seen	Targeted	NA
2-Feb-20	1.32424	103.76953	SSW T1 11	1150	<i>Taractrocera archias quinta</i>	1	Seen	Targeted	NA
2-Feb-20	1.32781	103.77025	SSW T1 07	1028	<i>Tholymis tillarga</i>	1	Seen	Targeted	NA
2-Feb-20	1.32516	103.76951	SSW T1 01	1119	<i>Tholymis tillarga</i>	1	Seen	Targeted	NA
2-Feb-20	1.33203	103.76563	NA	938	<i>Tritemis aurora</i>	1	Seen	Incidental	NA
2-Feb-20	1.32849	103.77013	SSW T1 04	957	<i>Ypthima baldus newboldi</i>	1	Seen	Targeted	NA
2-Feb-20	1.32882	103.76469	SSW T1 12	858	<i>Ypthima horsfieldii humei</i>	1	Seen	Targeted	NA
2-Feb-20	1.32871	103.77024	SSW T1 06	1000	<i>Ypthima sp.</i>	1	Seen	Targeted	NA
2-Feb-20	1.32471	103.76946	SSW T1 01	1123	<i>Ypthima sp.</i>	3	Seen	Targeted	NA
2-Feb-20	1.33125	103.76442	SSW T1 01	931	<i>Zizeeria maha serica</i>	1	Seen	Targeted	NA
2-Feb-20	1.33173	103.76457	SSW T1 01	933	<i>Zizeeria maha serica</i>	3	Seen	Targeted	NA
2-Feb-20	1.33125	103.76442	SSW T2 11	931	<i>Zizina otis lampo</i>	5	Seen	Targeted	NA
5-Feb-20	1.33129	103.76466	SSW T1 06	1952	<i>Ahaetulla prasina</i>	1	Seen	Targeted	NA
5-Feb-20	1.32443	103.76962	SSW A1 02	2207-	<i>Amaurornis phoenicurus</i>	1	Seen	Incidental	NA
5-Feb-20	1.32683	103.76991	SSW T1 04	2113	<i>Bronchocela cristatella</i>	1	Seen	Targeted	NA
5-Feb-20	1.32885	103.76478	SSW T1 10	2014	<i>Caomilulus sp.</i>	1	Seen	Targeted	NA
5-Feb-20	1.32690	103.76992	SSW T1 06	2118	<i>Dendrelaphis pictus</i>	1	Seen	Targeted	NA
5-Feb-20	1.32459	103.76962	SSW T1 06	2206	<i>Dendrelaphis pictus</i>	1	Seen	Targeted	Juvenile
5-Feb-20	1.32443	103.76962	SSW A1 02	2207-	<i>Eleutherodactylus planirostris</i>	1	Seen	Point Count	NA
5-Feb-20	1.32508	103.76958	SSW T1 04	2157	<i>Flynnias hypomnestra agina</i>	1	Seen	Incidental	NA
5-Feb-20	1.32923	103.76464	SSW T1 04	2010	<i>Gallus gallus</i>	1	Seen	Targeted	Female
5-Feb-20	1.32829	103.76465	NA	2016	<i>Gekko monarchus</i>	1	Seen	Incidental	Outside route
5-Feb-20	1.32671	103.76958	SSW A3 01	2130-	<i>Lathrecista asiatica</i>	1	Seen	Incidental	NA
5-Feb-20	1.32737	103.77015	SSW A3 05	2100-	<i>Microhyla heymonsi</i>	2	Heard	Point Count	NA
5-Feb-20	1.32676	103.76983	SSW A3 02	2123-	<i>Microhyla heymonsi</i>	3	Heard	Point Count	NA
5-Feb-20	1.32443	103.76962	SSW A1 02	2207-	<i>Microhyla heymonsi</i>	2	Seen	Point Count	NA
5-Feb-20	1.32443	103.76962	SSW A1 02	2207-	<i>Microhyla heymonsi</i>	2	Heard	Point Count	NA
5-Feb-20	1.32671	103.76958	SSW A3 01	2130-	<i>Monopterus javanensis</i>	1	Seen	Point Count	NA
5-Feb-20	1.32671	103.76958	SSW A3 01	2130-	<i>Rallina fasciata</i>	1	Seen	Incidental	NA
5-Feb-20	1.32856	103.77039	SSW T1 11	2042	<i>Rattus sp.</i>	1	Seen	Targeted	NA
5-Feb-20	1.32798	103.77023	SSW T1 10	2048	<i>Rattus sp.</i>	1	Seen	Targeted	NA
5-Feb-20	1.32714	103.77008	SSW A3 04	2104-	<i>Tadpole Chalcorana labialis</i>	2	Seen	Point Count	NA
5-Feb-20	1.32443	103.76962	SSW A1 02	2207-	<i>Tadpole Microhyla butleri</i>	15	Seen	Point Count	NA
5-Feb-20	1.32443	103.76962	SSW A1 02	2207-	<i>Tadpole Microhyla heymonsi</i>	15	Seen	Point Count	NA
5-Feb-20	1.32738	103.77018	SSW A3 05	2100-	Unidentified Frog	1	Seen	Point Count	NA
5-Feb-20	1.33031	103.76499	SSW T1 12	2002	Unidentified Fruit bat	1	Seen	Targeted	NA
5-Feb-20	1.32868	103.77030	SSW T1 12	2036	Unidentified Fruit bat	2	Seen	Targeted	NA
5-Feb-20	1.32828	103.77042	SSW T1 11	2045	Unidentified Fruit bat	1	Seen	Targeted	NA
5-Feb-20	1.32794	103.77024	SSW T1 06	2049	Unidentified Fruit bat	1	Seen	Targeted	NA
5-Feb-20	1.32428	103.76971	SSW T1 10	2214	Unidentified Fruit bat	1	Seen	Targeted	NA
5-Feb-20	1.32690	103.76992	SSW T1 12	2118	Unidentified Gekkonidae	1	Heard	Targeted	NA
5-Feb-20	1.32868	103.77030	SSW T2 01	2036	Unidentified Insect bat	4	Seen	Targeted	Saw them flying in and
13-Feb-20	1.32925	103.76458	SSW T1 03	731	<i>Acridotheres javanicus</i>	1	Heard	Targeted	NA
13-Feb-20	1.32999	103.76486	SSW T1 11	738	<i>Acridotheres javanicus</i>	1	Heard	Targeted	NA
13-Feb-20	1.32778	103.77001	SSW T1 09	821	<i>Acridotheres javanicus</i>	1	Heard	Targeted	NA
13-Feb-20	1.32647	103.77010	SSW T1 01	837	<i>Acridotheres javanicus</i>	2	Heard	Targeted	NA
13-Feb-20	1.33127	103.76468	SSW T1 11	749	<i>Aerodramus sp.</i>	1	Seen	Targeted	NA
13-Feb-20	1.32775	103.76997	SSW T1 06	821	<i>Aerodramus sp.</i>	1	Seen	Targeted	NA
13-Feb-20	1.32460	103.76955	SSW T1 08	855	<i>Aerodramus sp.</i>	4	Seen	Targeted	NA
13-Feb-20	1.32549	103.76985	SSW T1 11	847	<i>Aethopoga siparaia</i>	1	Heard	Targeted	NA
13-Feb-20	1.32798	103.77029	SSW T1 04	814	<i>Antherites malacensis</i>	1	Heard	Targeted	NA
13-Feb-20	1.32890	103.76462	SSW T1 02	728	<i>Aponis panavensis</i>	1	Heard	Targeted	NA
13-Feb-20	1.33032	103.76493	SSW T1 07	740	<i>Aponis panavensis</i>	1	Heard	Targeted	NA
13-Feb-20	1.32511	103.76947	SSW T1 04	849	<i>Aponis panavensis</i>	1	Heard	Targeted	NA
13-Feb-20	1.32883	103.76472	SSW T1 11	727	<i>Callosciurus notatus</i>	1	Seen	Targeted	NA
13-Feb-20	1.32805	103.77036	SSW T1 11	812	<i>Callosciurus notatus</i>	1	Seen	Targeted	NA
13-Feb-20	1.32798	103.77016	SSW T1 11	815	<i>Callosciurus notatus</i>	1	Seen	Targeted	NA

Appendix I1 Faunal Survey Data for Maju Forest

Date	Latitude	Longitude	Sampling point	Time (24h)	Scientific name	Quantity	Observation type	Survey method	Remarks
13-Feb-20	1.32791	103.77018	SSW T1 08	816	<i>Callosciurus notatus</i>	4	Seen	Targeted	NA
13-Feb-20	1.32598	103.77020	SSW T1 06	841	<i>Callosciurus notatus</i>	2	Heard	Targeted	NA
13-Feb-20	1.32456	103.76967	SSW T1 05	856	<i>Callosciurus notatus</i>	1	Seen	Targeted	NA
13-Feb-20	1.32418	103.76943	SSW T1 02	901	<i>Callosciurus notatus</i>	4	Seen	Targeted	NA
13-Feb-20	1.33045	103.76495	SSW T1 01	741	<i>Chrysophlegma miniaceum</i>	1	Heard	Targeted	NA
13-Feb-20	1.33104	103.76496	SSW T1 05	746	<i>Chrysophlegma miniaceum</i>	1	Heard	Targeted	NA
13-Feb-20	1.32418	103.76943	SSW T1 11	901	<i>Chrysophlegma miniaceum</i>	1	Heard	Targeted	NA
13-Feb-20	1.32775	103.76997	SSW T1 07	822	<i>Cinnvris iugularis</i>	1	Heard	Targeted	NA
13-Feb-20	1.32483	103.76936	SSW T1 03	852	<i>Cinnvris iugularis</i>	1	Heard	Targeted	NA
13-Feb-20	1.32937	103.76464	SSW T1 07	732	<i>Dicaeum cruentatum</i>	1	Heard	Targeted	NA
13-Feb-20	1.32483	103.76936	SSW T1 05	852	<i>Dicaeum cruentatum</i>	1	Heard	Targeted	NA
13-Feb-20	1.32387	103.76905	SSW T1 11	903	<i>Dicaeum cruentatum</i>	1	Seen	Targeted	NA
13-Feb-20	1.32775	103.76997	SSW T1 08	821	<i>Dicaeum sp.</i>	1	Seen	Targeted	NA
13-Feb-20	1.32577	103.77002	SSW T1 03	844	<i>Dicaeum sp.</i>	1	Heard	Targeted	NA
13-Feb-20	1.32971	103.76472	SSW T1 02	735	<i>Dicrurus paradiseus</i>	1	Seen	Targeted	NA
13-Feb-20	1.33032	103.76493	SSW T1 11	740	<i>Dinopium javanense</i>	1	Heard	Targeted	NA
13-Feb-20	1.32805	103.77036	SSW T1 11	812	<i>Dinopium javanense</i>	1	Heard	Targeted	NA
13-Feb-20	1.32791	103.77018	SSW T1 03	819	<i>Dinopium javanense</i>	1	Seen	Targeted	NA
13-Feb-20	1.32937	103.76464	SSW T1 06	734	<i>Fleutherodactylus planirostris</i>	1	Heard	Targeted	NA
13-Feb-20	1.32456	103.76967	SSW T1 07	856	<i>Eudynamis scolopacea</i>	1	Heard	Targeted	NA
13-Feb-20	1.32483	103.76936	SSW T1 04	852	<i>Eutropis multifasciata</i>	1	Seen	Targeted	NA
13-Feb-20	1.32851	103.76470	SSW T1 04	726	<i>Gallus gallus (domestic)</i>	1	Heard	Targeted	NA
13-Feb-20	1.32913	103.76457	SSW T1 03	730	<i>Gallus gallus (domestic)</i>	1	Seen	Targeted	NA
13-Feb-20	1.32999	103.76486	SSW T1 05	738	<i>Gallus gallus (domestic)</i>	1	Seen	Targeted	NA
13-Feb-20	1.32418	103.76943	SSW T1 01	901	<i>Gallus gallus (domestic)</i>	1	Heard	Targeted	NA
13-Feb-20	1.33104	103.76496	SSW T1 12	746	<i>Garrulax leucolophus</i>	2	Heard	Targeted	NA
13-Feb-20	1.32870	103.77029	SSW T1 11	809	<i>Garrulax leucolophus</i>	2	Heard	Targeted	NA
13-Feb-20	1.32805	103.77036	SSW T1 11	812	<i>Garrulax leucolophus</i>	2	Heard	Targeted	NA
13-Feb-20	1.32791	103.77018	SSW T1 06	818	<i>Garrulax leucolophus</i>	3	Seen	Targeted	NA
13-Feb-20	1.32460	103.76955	SSW T1 06	855	<i>Loriculus galbulus</i>	1	Heard	Targeted	NA
13-Feb-20	1.32420	103.76955	SSW T1 05	859	<i>Loriculus galbulus</i>	1	Seen	Targeted	NA
13-Feb-20	1.32418	103.76943	SSW T1 12	901	<i>Macaca fascicularis</i>	5	Seen	Targeted	NA
13-Feb-20	1.32847	103.77041	SSW T1 08	810	<i>Mixornis ularis</i>	1	Heard	Targeted	NA
13-Feb-20	1.32577	103.77002	SSW T1 06	844	<i>Mixornis ularis</i>	1	Heard	Targeted	NA
13-Feb-20	1.32466	103.76947	SSW T1 11	854	<i>Mixornis ularis</i>	1	Heard	Targeted	NA
13-Feb-20	1.32798	103.77016	SSW T1 08	816	<i>Matapa aria</i>	1	Seen	Incidental	NA
13-Feb-20	1.32577	103.77002	SSW T1 04	844	<i>Nisaetus cirrhatus</i>	1	Heard	Targeted	NA
13-Feb-20	1.32883	103.76472	SSW T1 03	727	<i>Oriolus chinensis</i>	1	Heard	Targeted	NA
13-Feb-20	1.32999	103.76486	SSW T1 03	738	<i>Oriolus chinensis</i>	1	Heard	Targeted	NA
13-Feb-20	1.32937	103.76464	SSW T1 11	733	<i>Orthotomus atroquaris</i>	1	Heard	Targeted	NA
13-Feb-20	1.32791	103.77018	SSW T1 09	816	<i>Orthotomus atroquaris</i>	1	Heard	Targeted	NA
13-Feb-20	1.32653	103.77005	SSW T1 07	837	<i>Orthotomus atroquaris</i>	1	Heard	Targeted	NA
13-Feb-20	1.32474	103.76945	SSW T1 11	852	<i>Orthotomus atroquaris</i>	1	Heard	Targeted	NA
13-Feb-20	1.32798	103.77016	SSW T1 10	816	<i>Picus vittatus</i>	1	Seen	Targeted	NA
13-Feb-20	1.32714	103.77009	SSW T1 11	829	<i>Picus vittatus</i>	1	Heard	Targeted	NA
13-Feb-20	1.32791	103.77018	SSW T1 08	816	<i>Psilopogon lineatus</i>	1	Heard	Targeted	NA
13-Feb-20	1.32598	103.77020	SSW T1 06	842	<i>Psilopogon lineatus</i>	1	Heard	Targeted	NA
13-Feb-20	1.32466	103.76947	SSW T1 06	854	<i>Psilopogon lineatus</i>	1	Seen	Targeted	NA
13-Feb-20	1.32466	103.76947	SSW T1 08	854	<i>Psittacula alexandri</i>	2	Heard	Targeted	NA
13-Feb-20	1.32586	103.77017	SSW T1 04	843	<i>Psittacula longicauda</i>	1	Heard	Targeted	NA
13-Feb-20	1.32874	103.76472	SSW T1 12	726	<i>Pycnonotus goiavier</i>	2	Seen	Targeted	NA
13-Feb-20	1.32870	103.77029	SSW T1 11	809	<i>Pycnonotus goiavier</i>	1	Heard	Targeted	NA
13-Feb-20	1.32768	103.77000	SSW T1 08	824	<i>Pycnonotus goiavier</i>	1	Heard	Targeted	NA
13-Feb-20	1.32549	103.76985	SSW T1 07	847	<i>Pycnonotus goiavier</i>	1	Heard	Targeted	NA
13-Feb-20	1.32483	103.76936	SSW T1 07	851	<i>Pycnonotus goiavier</i>	2	Heard	Targeted	NA
13-Feb-20	1.32474	103.76945	SSW T1 06	852	<i>Pycnonotus goiavier</i>	2	Seen	Targeted	NA
13-Feb-20	1.32460	103.76955	SSW T1 02	855	<i>Pycnonotus plumosus</i>	1	Heard	Targeted	NA
13-Feb-20	1.33088	103.76497	SSW T1 12	745	<i>Pycnonotus zeylanicus</i>	1	Heard	Targeted	NA
13-Feb-20	1.32847	103.77041	SSW T1 04	810	<i>Todiramphus chloris</i>	1	Heard	Targeted	NA
13-Feb-20	1.32851	103.76470	SSW T1 02	726	<i>Trogon vernans</i>	3	Seen	Targeted	NA
13-Feb-20	1.33079	103.76494	SSW T2 01	744	<i>Trichoglossus haematodus</i>	2	Heard	Targeted	NA
15-Feb-20	1.32612	103.77582	SSW T2 01	909	<i>Acisoma panorpoides</i>	1	Seen	Targeted	NA
15-Feb-20	1.32743	103.77226	SSW T2 05	1029	<i>Agriocoptera insinialis</i>	1	Seen	Targeted	NA
15-Feb-20	1.32738	103.77226	SSW T2 01	1030	<i>Agriocoptera insinialis</i>	1	Seen	Targeted	NA
15-Feb-20	1.32615	103.77582	NA	907	<i>Amathusia phidippus phidippus</i>	2	Seen	Incidental	Feeding on Nephelium
15-Feb-20	1.32620	103.77473	SSW T2 03	1102	<i>Amathusia phidippus phidippus</i>	1	Seen	Targeted	NA
15-Feb-20	1.32627	103.77339	SSW T2 06	1052	<i>Athya nefte subrata</i>	1	Seen	Targeted	NA
15-Feb-20	1.32704	103.77204	SSW T2 12	1018	<i>Caterpillar Lasipia tica siaka</i>	1	Seen	Targeted	Caterpillar on Erycibe
15-Feb-20	1.32604	103.77502	SSW T2 05	919	<i>Catopsilia pomona pomona</i>	1	Seen	Targeted	NA
15-Feb-20	1.32738	103.77226	SSW T2 04	1030	<i>Catopsilia pomona pomona</i>	4	Seen	Targeted	NA
15-Feb-20	1.32671	103.77275	SSW T2 04	1044	<i>Catopsilia pomona pomona</i>	1	Seen	Targeted	NA
15-Feb-20	1.32657	103.77292	SSW T2 03	1046	<i>Catopsilia pomona pomona</i>	1	Seen	Targeted	NA
15-Feb-20	1.32618	103.77354	SSW T2 12	1053	<i>Catopsilia pomona pomona</i>	2	Seen	Targeted	On Cassia sp.
15-Feb-20	1.32618	103.77516	SSW T2 06	1108	<i>Catopsilia pomona pomona</i>	2	Seen	Targeted	Feeding on
15-Feb-20	1.32752	103.77186	SSW T2 06	1022	<i>Delias hyoparete metarete</i>	2	Seen	Targeted	NA
15-Feb-20	1.32738	103.77226	SSW T2 01	1030	<i>Delias hyoparete metarete</i>	1	Seen	Targeted	NA
15-Feb-20	1.32612	103.77582	SSW T2 01	910	<i>Elymnias hyopernestra agina</i>	1	Seen	Targeted	NA
15-Feb-20	1.32562	103.77201	SSW T2 07	949	<i>Elymnias hyopernestra agina</i>	1	Seen	Targeted	NA
15-Feb-20	1.32664	103.77221	SSW T2 01	1009	<i>Elymnias hyopernestra agina</i>	1	Seen	Targeted	NA
15-Feb-20	1.32621	103.77515	SSW T2 04	1117	<i>Elymnias hyopernestra agina</i>	1	Seen	Targeted	NA
15-Feb-20	1.32680	103.77272	SSW T2 04	1042	<i>Elymnias panthera panthera</i>	1	Seen	Targeted	NA
15-Feb-20	1.32671	103.77275	SSW T2 04	1044	<i>Elymnias panthera panthera</i>	1	Seen	Targeted	NA
15-Feb-20	1.32654	103.77300	SSW T2 01	1047	<i>Elymnias panthera panthera</i>	1	Seen	Targeted	NA
15-Feb-20	1.32612	103.77582	SSW T2 01	910	<i>Foelixydes tharis distanti</i>	1	Seen	Targeted	NA
15-Feb-20	1.32591	103.77470	SSW T2 01	924	<i>Foelixydes tharis distanti</i>	1	Seen	Targeted	NA
15-Feb-20	1.32621	103.77515	SSW T2 10	1116	<i>Eurema hecabe contubernalis</i>	1	Seen	Targeted	NA
15-Feb-20	1.32594	103.77344	SSW T2 08	933	<i>Eurema sp.</i>	1	Seen	Targeted	NA
15-Feb-20	1.32560	103.77201	SSW T2 06	946	<i>Eurema sp.</i>	1	Seen	Targeted	NA
15-Feb-20	1.32755	103.77190	SSW T2 06	1022	<i>Eurema sp.</i>	2	Seen	Targeted	NA

Appendix I1 Faunal Survey Data for Maju Forest

Date	Latitude	Longitude	Sampling point	Time (24h)	Scientific name	Quantity	Observation type	Survey method	Remarks
15-Feb-20	1.32743	103.77226	SSW T2 12	1029	Eurema sp.	1	Seen	Targeted	NA
15-Feb-20	1.32618	103.77516	SSW T2 05	1108	Eurema sp.	2	Seen	Targeted	Feeding on
15-Feb-20	1.32690	103.77262	SSW T2 07	1040	Gynacantha dohrni	1	Seen	Targeted	NA
15-Feb-20	1.32652	103.77215	SSW T2 05	1000	Gynacantha sp.	1	Seen	Targeted	NA
15-Feb-20	1.32709	103.77254	SSW T2 12	1037	Gynacantha sp.	1	Seen	Targeted	NA
15-Feb-20	1.32604	103.77502	SSW T2 12	920	Iambrix salsala salsala	2	Seen	Targeted	Mating
15-Feb-20	1.32604	103.77502	SSW T2 10	922	Iambrix salsala salsala	1	Seen	Targeted	NA
15-Feb-20	1.32594	103.77344	SSW T2 07	933	Lasiopa tica siaka	1	Seen	Targeted	NA
15-Feb-20	1.32670	103.77217	SSW T2 02	1011	Lathrecista asiatica	1	Seen	Targeted	NA
15-Feb-20	1.32619	103.77464	SSW T2 06	1100	Lathrecista asiatica	1	Seen	Targeted	NA
15-Feb-20	1.32683	103.77213	SSW T2 12	1012	Matana aria	1	Seen	Targeted	NA
15-Feb-20	1.32618	103.77516	SSW T2 01	1108	Neotis harita harita	1	Seen	Targeted	Feeding on
15-Feb-20	1.32612	103.77582	SSW T2 01	910	Neurothemis fluctuans	1	Seen	Targeted	NA
15-Feb-20	1.32621	103.77515	SSW T2 03	1116	Orthetrum glaucum	1	Seen	Targeted	NA
15-Feb-20	1.32624	103.77339	SSW T2 02	1053	Pachliopta aristolochiae asteris	1	Seen	Targeted	NA
15-Feb-20	1.32618	103.77469	SSW T2 09	1101	Pachliopta aristolochiae asteris	1	Seen	Targeted	NA
15-Feb-20	1.32582	103.77278	SSW T2 07	938	Panilio polytes romulus	1	Seen	Targeted	NA
15-Feb-20	1.32664	103.77221	SSW T2 04	1009	Pupa Polyura hebe plautus	1	Seen	Targeted	Pupa on Adenanthra
15-Feb-20	1.32671	103.77275	SSW T2 01	1043	Surendra vivarna amisena	1	Seen	Targeted	NA
15-Feb-20	1.32612	103.77582	SSW T2 01	911	Zizina otis lampo	1	Seen	Targeted	NA
21-Feb-20	1.32730	103.77192	SSW T2 05	2117	Ahaetulla prasina	1	Seen	Targeted	NA
21-Feb-20	1.32749	103.77228	SSW T2 10	2128	Bronchocela cristatella	1	Seen	Targeted	NA
21-Feb-20	1.32582	103.77356	SSW T2 07	2014	Chalchophaps indica	1	Seen	Targeted	Sleeping on a branch
21-Feb-20	1.32623	103.77232	SSW T2 06	2052	Chalchophaps indica	1	Seen	Targeted	NA
21-Feb-20	1.32683	103.77187	SSW T2 06	2108	Dendrelaphis pictus	1	Seen	Targeted	NA
21-Feb-20	1.32758	103.77197	SSW T2 06	2120	Dendrelaphis pictus	3	Seen	Targeted	NA
21-Feb-20	1.32758	103.77197	SSW T2 06	2123	Dendrelaphis pictus	1	Seen	Targeted	NA
21-Feb-20	1.32650	103.77303	SSW T2 04	2140	Dendrelaphis pictus	2	Seen	Targeted	NA
21-Feb-20	1.32650	103.77303	SSW T2 10	2147	Dendrelaphis pictus	1	Seen	Targeted	NA
21-Feb-20	1.32582	103.77325	SSW T2 07	2019	Elautherodactylus planirostris	1	Seen	Targeted	NA
21-Feb-20	1.32633	103.77226	SSW T2 01	2055	Garrulax leucolophus	2	Seen	Targeted	Sleeping on a branch
21-Feb-20	1.32608	103.77566	SSW T2 07	1942	Gekko monarchus	3	Seen	Targeted	NA
21-Feb-20	1.32637	103.77218	SSW T2 12	2057	Gekko monarchus	1	Seen	Targeted	NA
21-Feb-20	1.32602	103.77502	SSW T2 11	1943	Limnonectes blythii	2	Seen	Targeted	NA
21-Feb-20	1.32590	103.77438	SSW T2 01	1957	Limnonectes sp.	1	Seen	Targeted	NA
21-Feb-20	1.32696	103.77588	NA	1942	Myotis muricola	1	Acoustic	Acoustic	NA
21-Feb-20	1.32490	103.77311	NA	2133	Myotis muricola	1	Acoustic	Acoustic	NA
21-Feb-20	1.32670	103.77199	SSW T2 11	2105	Otus lempii	1	Seen	Targeted	NA
21-Feb-20	1.32595	103.77424	SSW T2 12	2000	Parathelohusa maculata	1	Seen	Incidental	Crab. Seen at naturalised
21-Feb-20	1.32602	103.77502	SSW T2 11	1943	Poecilia reticulata	1	Seen	Incidental	Seen at naturalised drain
21-Feb-20	1.32626	103.77429	SSW T2 12	2158	Rattus sp.	1	Seen	Targeted	NA
21-Feb-20	1.32599	103.77507	SSW T2 12	1943	Rhinolophus lepidus	1	Acoustic	Acoustic	NA
21-Feb-20	1.32596	103.77490	SSW T2 08	1949	Rhinolophus lepidus	1	Acoustic	Acoustic	NA
21-Feb-20	1.32464	103.77238	NA	2024	Saccolaimus saccolaimus	1	Acoustic	Acoustic	NA
21-Feb-20	1.32464	103.77238	NA	2024	Saccolaimus saccolaimus	1	Acoustic	Acoustic	NA
21-Feb-20	1.32464	103.77238	NA	2024	Saccolaimus saccolaimus	1	Acoustic	Acoustic	NA
21-Feb-20	1.32477	103.77242	NA	2024	Saccolaimus saccolaimus	1	Acoustic	Acoustic	NA
21-Feb-20	1.32469	103.77242	NA	2026	Saccolaimus saccolaimus	1	Acoustic	Acoustic	NA
21-Feb-20	1.32463	103.77240	NA	2026	Saccolaimus saccolaimus	1	Acoustic	Acoustic	NA
21-Feb-20	1.32463	103.77240	NA	2027	Saccolaimus saccolaimus	1	Acoustic	Acoustic	NA
21-Feb-20	1.32486	103.77229	NA	2106	Saccolaimus saccolaimus	1	Acoustic	Acoustic	NA
21-Feb-20	1.32591	103.77447	SSW T2 01	1954	Scat. Unidentified Viverridae	1	Seen	Targeted	Scat. Civet sp.
21-Feb-20	1.32696	103.77588	NA	1949	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
21-Feb-20	1.32696	103.77588	NA	1949	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
21-Feb-20	1.32696	103.77588	NA	2002	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
21-Feb-20	1.32696	103.77588	NA	2004	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
21-Feb-20	1.32696	103.77588	NA	2005	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
21-Feb-20	1.32696	103.77588	NA	2010	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
21-Feb-20	1.32696	103.77588	NA	2010	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
21-Feb-20	1.32464	103.77238	NA	2147	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
21-Feb-20	1.32600	103.77497	SSW T2 12	1947	Unidentified Fruit bat	1	Seen	Targeted	NA
21-Feb-20	1.32598	103.77476	SSW T2 11	1950	Unidentified Fruit bat	1	Seen	Targeted	NA
21-Feb-20	1.32589	103.77426	SSW T2 10	1959	Unidentified Fruit bat	1	Seen	Targeted	NA
21-Feb-20	1.32586	103.77362	SSW T2 10	2010	Unidentified Fruit bat	1	Seen	Targeted	Feeding on Ficus sp. fruit
21-Feb-20	1.32582	103.77325	SSW T2 06	2019	Unidentified Fruit bat	3	Seen	Targeted	NA
21-Feb-20	1.32758	103.77197	SSW T2 06	2123	Unidentified Fruit bat	1	Seen	Targeted	NA
21-Feb-20	1.32714	103.77196	SSW T2 01	2116	Unidentified Insect bat	1	Seen	Targeted	NA
21-Feb-20	1.32696	103.77588	NA	1943	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200221_194348.wav
21-Feb-20	1.32696	103.77588	NA	1949	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200221_194949.wav
21-Feb-20	1.32464	103.77238	NA	2024	Saccolaimus saccolaimus	NA	Acoustic	Acoustic	20200221_202440.wav
21-Feb-20	1.32464	103.77238	NA	2024	Saccolaimus saccolaimus	NA	Acoustic	Acoustic	20200221_202430.wav
21-Feb-20	1.32464	103.77238	NA	2024	Saccolaimus saccolaimus	NA	Acoustic	Acoustic	20200221_202453.wav
21-Feb-20	1.32477	103.77242	NA	2024	Saccolaimus saccolaimus	NA	Acoustic	Acoustic	20200221_202459.wav
21-Feb-20	1.32469	103.77242	NA	2026	Saccolaimus saccolaimus	NA	Acoustic	Acoustic	20200221_202608.wav
21-Feb-20	1.32463	103.77240	NA	2026	Saccolaimus saccolaimus	NA	Acoustic	Acoustic	20200221_202658.wav
21-Feb-20	1.32463	103.77240	NA	2027	Saccolaimus saccolaimus	NA	Acoustic	Acoustic	20200221_202707.wav
21-Feb-20	1.32486	103.77229	NA	2106	Saccolaimus saccolaimus	NA	Acoustic	Acoustic	20200221_210654.wav
21-Feb-20	1.32696	103.77588	NA	1949	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200221_194949.wav
21-Feb-20	1.32696	103.77588	NA	1949	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200221_194927.wav
21-Feb-20	1.32696	103.77588	NA	2002	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200221_200256.wav
21-Feb-20	1.32696	103.77588	NA	2004	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200221_200426.wav
21-Feb-20	1.32696	103.77588	NA	2005	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200221_200554.wav
21-Feb-20	1.32696	103.77588	NA	2010	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200221_201029.wav
21-Feb-20	1.32696	103.77588	NA	2010	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200221_201039.wav
21-Feb-20	1.32464	103.77238	NA	2147	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200221_214759.wav
21-Feb-20	1.32696	103.77588	NA	1942	Myotis muricola	NA	Acoustic	Acoustic	20200221_194243.wav
21-Feb-20	1.32490	103.77311	NA	2133	Myotis muricola	NA	Acoustic	Acoustic	20200221_213339.wav
22-Feb-20	1.32591	103.77388	SSW T2 03	1930-	Euthalia sp.	1	Seen	Incidental	Recorded during Moth
26-Feb-20	1.32588	103.77328	SSW T2 09	1533	Abisara savitri savitri	1	Seen	Incidental	NA

Appendix I1 Faunal Survey Data for Maju Forest

Date	Latitude	Longitude	Sampling point	Time (24h)	Scientific name	Quantity	Observation type	Survey method	Remarks
26-Feb-20	1.32587	103.77230	SSW T2 09	1555	<i>Abisara savitri savitri</i>	1	Seen	Incidental	NA
26-Feb-20	1.32577	103.77271	SSW BT 01	1540	<i>Amathusia phidippus phidippus</i>	2	Seen	Trapping	Banana Bait
26-Feb-20	1.32578	103.77223	SSW T2 07	1553	Caterpillar Unidentified Lepidoptera	2	Seen	Incidental	NA
26-Feb-20	1.32645	103.77227	SSW T2 09	1558	<i>Chrysoscelus paradisi</i>	1	Seen	Incidental	NA
26-Feb-20	1.32577	103.77271	SSW BT 01	1540	<i>Elymnias hypermnestra acina</i>	3	Seen	Trapping	Banana Bait
26-Feb-20	1.32572	103.77271	SSW BT 02	1540	<i>Elymnias hypermnestra acina</i>	1	Seen	Trapping	Prawn Bait; no bait in
26-Feb-20	1.32577	103.77271	SSW BT 01	1540	<i>Polvura hebe plautus</i>	1	Seen	Trapping	Banana Bait
26-Feb-20	1.32592	103.77370	SSW T2 01	1528	<i>Tagiades ultra</i>	1	Seen	Incidental	NA
4-Apr-20	1.32692	103.76997	SSW A3 03	817	Eggs Unidentified Frog	10	Seen	Point Count	NA
4-Apr-20	1.32443	103.76962	SSW A1 02	856	<i>Tadpole Microhyla heymonsi</i>	36	Seen	Point Count	NA
5-Apr-20	1.32461	103.77007	SSW T1 06	956	<i>Bronchocela cristatella</i>	1	Seen	Incidental	NA
5-Apr-20	1.32443	103.76962	SSW A1 02	948	<i>Tadpole Microhyla heymonsi</i>	45	Seen	Point Count	NA
15-Feb-20	1.32621	103.77515	SSW T2 01	1111	<i>Ameoilla andrewsi</i>	1	Seen	Targeted	Feeding on
15-Feb-20	1.32612	103.77582	SSW T2 01	909	<i>Apis cerana</i>	3	Seen	Targeted	NA
15-Feb-20	1.32618	103.77516	SSW T2 12	1108	<i>Chalybion bengalense</i>	1	Seen	Targeted	NA
15-Feb-20	1.32611	103.77591	SSW T2 01	915	Nest <i>Delta pyriforme</i>	NA	Seen	Targeted	Nest in tunnel
15-Feb-20	1.32598	103.77496	SSW T2 12	918	Nest <i>Eumenes</i> sp. (clustering)	NA	Seen	Targeted	Nest in tunnel. Clustering
15-Feb-20	1.32621	103.77515	SSW T2 01	1112	<i>Nomia strigata</i>	1	Seen	Targeted	Feeding on
15-Feb-20	1.32671	103.77275	SSW T2 04	1044	<i>Ropalidia sumatrae</i>	1	Seen	Targeted	NA
15-Feb-20	1.32625	103.77322	SSW T2 10	1051	<i>Ropalidia sumatrae</i>	1	Seen	Targeted	NA
15-Feb-20	1.32621	103.77515	SSW T2 01	1112	<i>Ropalidia sumatrae</i>	1	Seen	Targeted	NA
15-Feb-20	1.32611	103.77591	SSW T2 01	915	Nest <i>Sceliochroa</i> sp.	NA	Seen	Targeted	Nest in tunnel
15-Feb-20	1.32625	103.77338	SSW T2 03	1053	<i>Trypoxylon</i> sp.	1	Seen	Targeted	NA
15-Feb-20	1.32618	103.77516	SSW T2 12	1110	Unidentified Pompilidae	1	Seen	Targeted	Feeding on
15-Feb-20	1.32621	103.77436	SSW T2 02	1057	<i>Xylocopa latipes</i>	1	Seen	Targeted	NA
15-Feb-20	1.32621	103.77515	SSW T2 01	1114	<i>Xylocopa latipes</i>	1	Seen	Targeted	Feeding on <i>Thunbergia</i>
15-Feb-20	1.32601	103.77451	SSW T2 02	925	Unidentified Stenogastrinae sp.	2	Seen	Targeted	NA
15-Feb-20	1.32611	103.77591	SSW T2 01	915	Nest Unidentified Wasp	NA	Seen	Targeted	Nest in tunnel
5-Feb-20	NA	NA	NA	1948	<i>Myotis muricola</i>	1	Acoustic	Acoustic	NA
5-Feb-20	NA	NA	NA	2018	<i>Scotophilus kuhli</i>	1	Acoustic	Acoustic	NA
5-Feb-20	NA	NA	NA	2018	<i>Scotophilus kuhli</i>	NA	Acoustic	Acoustic	20200205 201839.wav
5-Feb-20	NA	NA	NA	1948	<i>Myotis muricola</i>	NA	Acoustic	Acoustic	20200205 194840.wav

Appendix I1 Faunal Survey Data for Maju Forest

Type	Sampling Point	Latitude	Longitude	Sampling Date	Time Open (hrs)	Retrieval Date	Time Close (hrs)	Remarks
Butterfly Trap	SSW_BT_01	1.32577	103.77271	25-Feb-20	NA	26-Feb-20	1540	Banana Bait
Butterfly Trap	SSW_BT_01	1.32577	103.77271	25-Feb-20	NA	26-Feb-20	1540	Banana Bait
Butterfly Trap	SSW_BT_01	1.32577	103.77271	25-Feb-20	NA	26-Feb-20	1540	Banana Bait
Butterfly Trap	SSW_BT_02	1.32572	103.77271	25-Feb-20	NA	26-Feb-20	1540	Prawn Bait; no bait in bowl
Butterfly Trap	SSW_BT_03	1.32645	103.77217	25-Feb-20	NA	26-Feb-20	1600	Banana Bait
Butterfly Trap	SSW_BT_04	1.32644	103.77214	25-Feb-20	NA	26-Feb-20	1600	Prawn Bait
Fish Trap	SSW_FT_01	1.32426	103.76941	2-Dec-19	NA	3-Dec-19	827	No catch
Fish Trap	SSW_FT_02	1.32443	103.76962	2-Dec-19	NA	3-Dec-19	834	No catch
Fish Trap	SSW_FT_03	1.32461	103.76990	2-Dec-19	NA	3-Dec-19	844	No catch
Fish Trap	SSW_FT_04	1.32671	103.76958	2-Dec-19	NA	3-Dec-19	945	No catch. Placed at mouth of drain to check for catfish.

Appendix I1 Faunal Survey Data for Maju Forest

Date	Sampling Point	Latitude	Longitude	AM/PM	Time (24h)	Min.Light (lux)	Max.Light (lux)	Avg.Light (lux)	Min.Humidity (rH)	Max.Humidity (rH)	Avg.Humidity (rH)	Temperature (°C)
9-Jun-20	SSW_LTH_504	1.32620	103.77453	PM	2033	0.0	0.0	0.0	80.5	81.2	80.9	30.4
9-Jun-20	SSW_LTH_1004	1.32620	103.77418	PM	2043	0.0	0.0	0.0	85.2	87.5	86.4	30.3
9-Jun-20	SSW_LTH_1504	1.32623	103.77383	PM	2046	0.0	0.0	0.0	84.3	84.5	84.4	29.9
11-Jun-20	SSW_LTH_504	1.32620	103.77453	AM	1056	1247.0	1258.0	1252.5	88.6	91.0	89.8	31.6
11-Jun-20	SSW_LTH_1004	1.32620	103.77418	AM	1100	311.0	312.0	311.5	88.0	88.5	88.3	31.2
11-Jun-20	SSW_LTH_1504	1.32623	103.77383	AM	1104	599.0	674.0	636.5	84.4	84.8	84.6	30.5
15-Jun-20	SSW_LTH_504	1.32620	103.77453	AM	0815	207.0	220.0	213.5	79.6	80.2	79.9	30.8
15-Jun-20	SSW_LTH_1004	1.32620	103.77418	AM	0820	88.0	201.0	144.5	80.1	84.2	82.2	30.9
15-Jun-20	SSW_LTH_1504	1.32623	103.77383	AM	0825	143.0	155.0	149.0	77.9	80.5	79.2	31.2
23-Jun-20	SSW_LTH_504	1.32620	103.77453	PM	2000	0.0	0.0	0.0	84.0	84.4	84.2	28.8
23-Jun-20	SSW_LTH_1004	1.32620	103.77418	PM	2006	0.0	0.0	0.0	84.2	84.8	84.5	28.6
23-Jun-20	SSW_LTH_1504	1.32623	103.77383	PM	2014	0.0	0.0	0.0	86.2	86.6	86.4	28.5

Appendix I1 Faunal Survey Data for Maju Forest

Sampling Point	Type	Latitude	Longitude
SSW_A1_01	Aquatic	1.32426	103.76941
SSW_A1_02	Aquatic	1.32443	103.76962
SSW_A1_03	Aquatic	1.32461	103.76990
SSW_A2_01	Aquatic	1.32482	103.77049
SSW_A2_02	Aquatic	1.32502	103.77070
SSW_A2_03	Aquatic	1.32530	103.77081
SSW_A2_04	Aquatic	1.32551	103.77097
SSW_A3_01	Aquatic	1.32671	103.76958
SSW_A3_02	Aquatic	1.32676	103.76983
SSW_A3_03	Aquatic	1.32692	103.76997
SSW_A3_04	Aquatic	1.32714	103.77008
SSW_A3_05	Aquatic	1.32738	103.77018
SSW_T1_01	Terrestrial	1.33132	103.76481
SSW_T1_02	Terrestrial	1.33048	103.76498
SSW_T1_03	Terrestrial	1.32964	103.76474
SSW_T1_04	Terrestrial	1.32884	103.76473
SSW_T1_05	Terrestrial	1.32385	103.76932
SSW_T1_06	Terrestrial	1.32445	103.76965
SSW_T1_07	Terrestrial	1.32508	103.76943
SSW_T1_08	Terrestrial	1.32575	103.77001
SSW_T1_09	Terrestrial	1.32650	103.77005
SSW_T1_10	Terrestrial	1.32723	103.77007
SSW_T1_11	Terrestrial	1.32779	103.77018
SSW_T1_12	Terrestrial	1.32863	103.77042
SSW_T2_01	Terrestrial	1.32633	103.77536
SSW_T2_02	Terrestrial	1.32617	103.77454
SSW_T2_03	Terrestrial	1.32622	103.77365
SSW_T2_04	Terrestrial	1.32654	103.77289
SSW_T2_05	Terrestrial	1.32717	103.77240
SSW_T2_06	Terrestrial	1.32705	103.77201
SSW_T2_07	Terrestrial	1.32647	103.77219
SSW_T2_08	Terrestrial	1.32570	103.77187
SSW_T2_09	Terrestrial	1.32578	103.77268
SSW_T2_10	Terrestrial	1.32591	103.77339
SSW_T2_11	Terrestrial	1.32602	103.77426
SSW_T2_12	Terrestrial	1.32604	103.77494
SSW_BT_01	Butterfly Trap	1.32577	103.77271
SSW_BT_02	Butterfly Trap	1.32572	103.77271
SSW_BT_03	Butterfly Trap	1.32645	103.77217
SSW_BT_04	Butterfly Trap	1.32644	103.77214
SSW_FT_01	Fish Trap	1.32426	103.76941
SSW_FT_02	Fish Trap	1.32443	103.76962
SSW_FT_03	Fish Trap	1.32461	103.76990
SSW_FT_04	Fish Trap	1.32671	103.76958
SSW_LTH_1004	LTH	1.32620	103.77418
SSW_LTH_1504	LTH	1.32623	103.77383
SSW_LTH_504	LTH	1.32620	103.77453

Appendix I1 Faunal Survey Data for Maju Forest

Date	Activity	Sampling location	Direction	Time in	Time out	Weather
2-Dec-19	AM - fish	SSW A1 A2	Reverse	800	1100	Fair
3-Dec-19	AM - bird, herp	SSW T1	Forward	715	930	Fair
5-Dec-19	PM - bird, herp, mammal, fish	SSW T1 A1	Forward	1940	2209	Fair
10-Dec-19	AM - odonates	SSW T1 A1	Forward	834	1025	Pre-rain, Cloudy
18-Dec-19	AM - butterflies, bees	SSW T1	Forward	920	1050	Cloudy
18-Dec-19	PM - bird, herp, mammal	SSW T2	Forward	1930	2200	Fair
19-Dec-19	AM - herp	SSW T2	Forward	900	1030	Fair
4-Jan-20	AM - mammal	SSW T1	Forward	715	840	Fair
9-Jan-20	AM - odonates, butterflies	SSW T2 A2	Forward	915	1111	Cloudy
2-Feb-20	AM - butterflies, odonates	SSW T1 A1 A3	Reverse	855	1203	Cloudy
5-Feb-20	PM - bird, herp, mammal, fish	SSW T1 A1 A3	Reverse	1950	2215	Fair
13-Feb-20	AM - bird, herp, mammal	SSW T1	Reverse	725	905	Cloudy
15-Feb-20	AM - butterflies, bees, odonates	SSW T2	Reverse	905	1120	Fair
21-Feb-20	PM - bird, herp, mammal, fish	SSW T2 A1 A2	Reverse	1940	2206	Fair
22-Feb-20	PM - moth	SSW MT	NA	1700	2230	Fair
4-Apr-20	AM - aquatic, herp	SSW A1 A2 A3	Reverse	730	1100	Cool
5-Apr-20	AM - aquatic, herp	SSW A1 A2 A3	Forward	745	1015	Cool
9-Jun-20	PM - LTH	LTH	NA	NA	NA	Fair
11-Jun-20	AM - LTH	LTH	NA	NA	NA	Fair
15-Jun-20	AM - LTH	LTH	NA	NA	NA	Fair
23-Jun-20	PM - LTH	LTH	NA	NA	NA	Fair, Post-rain

Appendix I2

Fauna Survey Data for
Clementi Forest

Appendix I2 Faunal Survey Data for Clementi Forest

Date	Latitude	Longitude	Sampling point	Time (24h)	Scientific name	Quantity	Observation type	Survey method	Remarks
27-Nov-19	1.32385	103.77874	HW T2 08	NA	NA	1	Seen	Incidental	Bird nest on Vitex pinnata
27-Nov-19	1.32524	103.77842	NA	1047	Troides helena cerberus	2	Seen	Incidental	2 birdwing butterflies
28-Nov-19	1.32721	103.78209	NA	NA	NA	1	Seen	Incidental	Bird nest
28-Nov-19	1.32802	103.78186	NA	NA	NA	1	Seen	Incidental	Probably raptor nest
28-Nov-19	1.32816	103.78172	NA	NA	NA	1	Seen	Incidental	Bird nest
16-Dec-19	1.33058	103.77812	HW T1 05	747	Acridotheres javanicus	1	Seen	Targeted	NA
16-Dec-19	1.33132	103.77963	HW T1 09	823	Acridotheres javanicus	1	Heard	Targeted	NA
16-Dec-19	1.32923	103.78149	HW T1 16	931	Acridotheres javanicus	3	Seen	Targeted	NA
16-Dec-19	1.32999	103.77931	HW T1 07	800	Aegithina tiphia	1	Heard	Targeted	NA
16-Dec-19	1.33058	103.77812	HW T1 05	747	Alcedo atthis	1	Seen	Targeted	NA
16-Dec-19	1.32894	103.78151	HW T1 16	932	Ammaurornis phoenicurus	1	Seen	Targeted	NA
16-Dec-19	1.33213	103.78088	HW T1 11	854	Anthractoceros albirostris	1	Heard	Targeted	NA
16-Dec-19	1.33185	103.78133	HW T1 14	917	Anthreptes malacensis	1	Heard	Targeted	NA
16-Dec-19	1.32755	103.77697	HW T1 01	720	Cacatua goffiniana	1	Heard	Targeted	NA
16-Dec-19	1.32751	103.77747	HW T1 01	727	Callosciurus notatus	2	Seen	Targeted	NA
16-Dec-19	1.33163	103.78000	HW T1 09	833	Callosciurus notatus	1	Seen	Targeted	NA
16-Dec-19	1.33213	103.78088	HW T1 11	854	Callosciurus notatus	1	Seen	Targeted	NA
16-Dec-19	1.33185	103.78133	HW T1 14	917	Callosciurus notatus	1	Seen	Targeted	NA
16-Dec-19	1.33023	103.78141	HW T1 16	925	Callosciurus notatus	2	Heard	Targeted	NA
16-Dec-19	1.32986	103.78142	HW T1 16	928	Callosciurus notatus	1	Seen	Targeted	NA
16-Dec-19	1.33036	103.77849	HW T1 05	749	Centropus bengalensis	1	Seen	Targeted	NA
16-Dec-19	1.32894	103.78151	HW T1 16	932	Centropus sinensis	1	Heard	Targeted	NA
16-Dec-19	1.32793	103.77758	HW T1 02	730	Chrysophlegma miniaceum	1	Heard	Targeted	NA
16-Dec-19	1.33047	103.77838	HW T1 05	748	Chrysophlegma miniaceum	1	Heard	Targeted	NA
16-Dec-19	1.33140	103.77976	HW T1 09	827	Chrysophlegma miniaceum	1	Heard	Targeted	NA
16-Dec-19	1.33185	103.78133	HW T1 14	917	Cinnyris jugularis	2	Seen	Targeted	NA
16-Dec-19	1.32760	103.77743	HW T1 01	728	Dicrurus paradiseus	1	Heard	Targeted	NA
16-Dec-19	1.33009	103.77932	HW T1 07	758	Dicrurus paradiseus	1	Heard	Targeted	Stream lookout point
16-Dec-19	1.33161	103.77994	HW T1 09	832	Dicrurus paradiseus	1	Seen	Targeted	NA
16-Dec-19	1.33119	103.77951	HW T1 08	818	Dinopium javanense	1	Heard	Targeted	NA
16-Dec-19	1.32817	103.77761	HW T1 02	732	Eurystomus orientalis	8	Seen	Targeted	NA
16-Dec-19	1.33093	103.77962	HW T1 08	815	Eurystomus orientalis	2	Heard	Targeted	NA
16-Dec-19	1.32986	103.78142	HW T1 16	928	Eurystomus orientalis	1	Seen	Targeted	NA
16-Dec-19	1.33072	103.78135	HW T1 15	923	Ficedula zanthopygia	1	Heard	Targeted	NA
16-Dec-19	1.32730	103.77722	HW T1 01	721	Gallus gallus	1	Heard	Targeted	NA
16-Dec-19	1.33164	103.78031	HW T1 10	839	Gallus gallus	1	Heard	Targeted	NA
16-Dec-19	1.33201	103.78061	HW T1 10	850	Gallus gallus	1	Heard	Targeted	NA
16-Dec-19	1.32808	103.77769	HW T1 02	737	Garrulax leucolophus	1	Heard	Targeted	NA
16-Dec-19	1.33012	103.77953	HW T1 07	807	Garrulax leucolophus	3	Heard	Targeted	NA
16-Dec-19	1.33023	103.78141	HW T1 16	925	Garrulax leucolophus	3	Seen	Targeted	NA
16-Dec-19	1.32730	103.77722	HW T1 01	721	Gracula religiosa	1	Heard	Targeted	NA
16-Dec-19	1.33164	103.78031	HW T1 10	839	Gracula religiosa	1	Seen	Targeted	NA
16-Dec-19	1.32817	103.77761	HW T1 02	732	Halcyon smyrnensis	1	Heard	Targeted	NA
16-Dec-19	1.32894	103.78151	HW T1 16	940	Haliaeetus leucogaster	1	Seen	Targeted	NA
16-Dec-19	1.32923	103.78149	HW T1 16	931	Haliastur indus	1	Seen	Targeted	NA
16-Dec-19	1.33093	103.77962	HW T1 08	815	Larivora cyane	1	Heard	Targeted	NA
16-Dec-19	1.33220	103.78130	HW T1 13	916	Loriculus galgulus	1	Seen	Targeted	Flying overhead
16-Dec-19	1.33185	103.78133	HW T1 14	917	Loriculus galgulus	1	Seen	Targeted	NA
16-Dec-19	1.33110	103.78138	HW T1 15	921	Loriculus galgulus	1	Heard	Targeted	NA
16-Dec-19	1.33008	103.77934	HW T1 07	804	Mixornis gularis	1	Heard	Targeted	NA
16-Dec-19	1.33093	103.77962	HW T1 08	815	Mixornis gularis	1	Heard	Targeted	NA
16-Dec-19	1.33213	103.78088	HW T1 11	854	Mixornis gularis	1	Heard	Targeted	NA
16-Dec-19	1.32894	103.78151	HW T1 16	932	Muscicapa dauurica	1	Heard	Targeted	NA
16-Dec-19	1.33295	103.78117	HW T1 12	911	Nisaetus cirrhatus	1	Seen	Targeted	NA
16-Dec-19	1.32755	103.77697	HW T1 01	720	Oriolus chinensis	2	Seen	Targeted	NA
16-Dec-19	1.32999	103.77931	HW T1 07	800	Orthotomus atrogularis	1	Heard	Targeted	NA
16-Dec-19	1.33093	103.77962	HW T1 08	815	Orthotomus atrogularis	1	Heard	Targeted	NA
16-Dec-19	1.33132	103.77959	HW T1 09	820	Orthotomus atrogularis	1	Heard	Targeted	NA
16-Dec-19	1.32986	103.78142	HW T1 16	928	Orthotomus atrogularis	2	Heard	Targeted	NA
16-Dec-19	1.32808	103.77769	HW T1 02	737	Orthotomus sericeus	1	Heard	Targeted	NA
16-Dec-19	1.33119	103.77951	HW T1 08	818	Orthotomus sericeus	1	Heard	Targeted	NA
16-Dec-19	1.32999	103.77931	HW T1 07	800	Orthotomus sutorius	1	Heard	Targeted	NA
16-Dec-19	1.32993	103.78143	HW T1 16	926	Papilio polytes romulus	1	Seen	Incidental	NA
16-Dec-19	1.33240	103.78126	HW T1 13	915	Pericrocotus divaricatus	1	Seen	Targeted	NA
16-Dec-19	1.33132	103.77959	HW T1 09	820	Phylloscopus borealis	1	Heard	Targeted	NA
16-Dec-19	1.33093	103.77961	HW T1 08	810	Picus vittatus	1	Heard	Targeted	NA
16-Dec-19	1.33166	103.78031	HW T1 10	835	Picus vittatus	1	Seen	Targeted	Male
16-Dec-19	1.33281	103.78091	HW T1 12	903	Picus vittatus	1	Heard	Targeted	NA
16-Dec-19	1.33072	103.78135	HW T1 15	923	Picus vittatus	1	Heard	Targeted	NA
16-Dec-19	1.32999	103.77931	HW T1 07	800	Psilopogon lineatus	1	Heard	Targeted	Stream lookout point
16-Dec-19	1.33093	103.77962	HW T1 08	815	Psilopogon lineatus	1	Heard	Targeted	NA
16-Dec-19	1.33132	103.77963	HW T1 09	823	Psittacula lineatus	1	Seen	Targeted	NA
16-Dec-19	1.33132	103.77963	HW T1 09	823	Psittacula alexandri	1	Seen	Targeted	Male
16-Dec-19	1.33140	103.77976	HW T1 09	827	Psittacula alexandri	2	Seen	Targeted	NA
16-Dec-19	1.33166	103.78031	HW T1 10	835	Psittacula alexandri	2	Heard	Targeted	NA
16-Dec-19	1.33110	103.78138	HW T1 15	921	Psittacula alexandri	2	Seen	Targeted	NA
16-Dec-19	1.33248	103.78086	HW T1 11	858	Psittacula krameri	1	Heard	Targeted	NA
16-Dec-19	1.32755	103.77697	HW T1 01	720	Psittacula longicauda	1	Heard	Targeted	NA
16-Dec-19	1.32751	103.77747	HW T1 01	727	Psittacula longicauda	1	Seen	Targeted	NA
16-Dec-19	1.32999	103.77931	HW T1 07	800	Psittacula longicauda	2	Heard	Targeted	NA
16-Dec-19	1.33132	103.77963	HW T1 09	823	Psittacula longicauda	1	Heard	Targeted	NA
16-Dec-19	1.33248	103.78086	HW T1 11	858	Psittacula longicauda	1	Heard	Targeted	NA
16-Dec-19	1.33185	103.78133	HW T1 14	917	Pycnonotus goiavier	1	Heard	Targeted	NA
16-Dec-19	1.33027	103.77886	HW T1 06	753	Pycnonotus zeylanicus	1	Heard	Targeted	Calling at a distance
16-Dec-19	1.33164	103.78031	HW T1 10	839	Pycnonotus zeylanicus	1	Heard	Targeted	NA
16-Dec-19	1.32894	103.78151	HW T1 16	932	Pycnonotus zeylanicus	1	Heard	Targeted	NA
16-Dec-19	1.33023	103.78141	HW T1 16	925	Spilopelia chinensis	1	Seen	Targeted	NA
16-Dec-19	1.33220	103.78130	HW T1 13	916	Spilornis cheela	1	Seen	Targeted	NA
16-Dec-19	1.33008	103.77934	HW T1 07	804	Todiramphus chloris	1	Heard	Targeted	NA

Appendix I2 Faunal Survey Data for Clementi Forest

Date	Latitude	Longitude	Sampling point	Time (24h)	Scientific name	Quantity	Observation type	Survey method	Remarks
16-Dec-19	1.33119	103.77951	HW T1 08	818	Treron vernans	1	Seen	Targeted	NA
16-Dec-19	1.33140	103.77976	HW T1 09	827	Treron vernans	1	Seen	Targeted	Feeding on palm fruits
16-Dec-19	1.33166	103.78031	HW T1 10	835	Treron vernans	1	Seen	Targeted	Male perched
16-Dec-19	1.33269	103.78090	HW T1 11	902	Treron vernans	4	Seen	Targeted	1 male, 1 female, 2 unid
16-Dec-19	1.33110	103.78138	HW T1 15	921	Treron vernans	3	Seen	Targeted	NA
16-Dec-19	1.33132	103.77959	HW T1 09	820	Unidentified Sciuridae	1	Seen	Targeted	NA
16-Dec-19	1.33164	103.78031	HW T1 10	839	Unidentified Sciuridae	1	Seen	Targeted	NA
16-Dec-19	1.32999	103.77931	HW T1 07	800	Zosterops simplex	1	Heard	Targeted	NA
20-Dec-19	1.33026	103.77889	HW T1 06	959	Abisara savitri savitri	1	Seen	Targeted	NA
20-Dec-19	1.33219	103.78129	HW T1 13	1117	Acraea terpsicore	1	Seen	Targeted	NA
20-Dec-19	1.32889	103.77805	HW T1 03	921	Agriocnemis femina	1	Seen	Targeted	NA
20-Dec-19	1.32990	103.77931	HW T1 07	1004	Agriocnemis femina	1	Seen	Targeted	NA
20-Dec-19	1.32990	103.77931	HW T1 07	1007	Agriocnemis femina	1	Seen	Targeted	NA
20-Dec-19	1.33091	103.78133	HW T1 15	1123	Agriopoptera insignis	1	Seen	Targeted	NA
20-Dec-19	1.33040	103.78142	HW T1 15	1127	Agriopoptera insignis	2	Seen	Targeted	NA
20-Dec-19	1.32887	103.77833	HW T1 03	917	Borbo cinnara	1	Seen	Targeted	NA
20-Dec-19	1.32889	103.77805	HW T1 03	922	Ceragrion cerinorubellum	1	Seen	Targeted	NA
20-Dec-19	1.33028	103.77859	HW T1 05	954	Ceragrion cerinorubellum	1	Seen	Targeted	NA
20-Dec-19	1.32891	103.77782	HW T1 04	931	Crocothemis servilia	3	Seen	Targeted	NA
20-Dec-19	1.32984	103.77796	HW T1 05	937	Crocothemis servilia	3	Seen	Targeted	NA
20-Dec-19	1.33009	103.77800	HW T1 05	938	Crocothemis servilia	1	Seen	Targeted	NA
20-Dec-19	1.33040	103.77811	HW T1 05	940	Crocothemis servilia	4	Seen	Targeted	NA
20-Dec-19	1.33048	103.77830	HW T1 05	945	Crocothemis servilia	2	Seen	Targeted	NA
20-Dec-19	1.33048	103.77830	HW T1 05	946	Crocothemis servilia	1	Seen	Targeted	NA
20-Dec-19	1.33033	103.77854	HW T1 05	951	Crocothemis servilia	1	Seen	Targeted	NA
20-Dec-19	1.32990	103.77931	HW T1 07	1006	Crocothemis servilia	1	Seen	Targeted	NA
20-Dec-19	1.33241	103.78124	HW T1 13	1116	Crocothemis servilia	2	Seen	Targeted	NA
20-Dec-19	1.33266	103.78131	HW T1 13	1140	Danaus chrysippus chrysippus	1	Seen	Targeted	NA
20-Dec-19	1.33117	103.77952	HW T1 08	1024	Delias hyparete metarete	1	Seen	Targeted	NA
20-Dec-19	1.33167	103.78027	HW T1 10	1032	Delias hyparete metarete	2	Seen	Targeted	NA
20-Dec-19	1.33230	103.78118	HW T1 13	1930-	Erionota hiraca apicalis	1	Seen	Incidental	Recorded during Moth
20-Dec-19	1.32891	103.77782	HW T1 04	929	Eurema hecabe contubernalis	2	Seen	Targeted	NA
20-Dec-19	1.32739	103.77713	HW T1 01	904	Eurema sp.	1	Seen	Targeted	NA
20-Dec-19	1.32963	103.77790	HW T1 04	936	Eurema sp.	3	Seen	Targeted	NA
20-Dec-19	1.33047	103.77838	HW T1 05	947	Eurema sp.	1	Seen	Targeted	NA
20-Dec-19	1.32990	103.77931	HW T1 07	1006	Eurema sp.	1	Seen	Targeted	NA
20-Dec-19	1.33219	103.78129	HW T1 13	1117	Eurema sp.	1	Seen	Targeted	NA
20-Dec-19	1.32971	103.78136	HW T1 16	1131	Eurema sp.	1	Seen	Targeted	NA
20-Dec-19	1.33048	103.77830	HW T1 05	946	Ischnura senegalensis	1	Seen	Targeted	NA
20-Dec-19	1.33040	103.77845	HW T1 05	949	Ischnura senegalensis	2	Seen	Targeted	NA
20-Dec-19	1.33033	103.77854	HW T1 05	951	Ischnura senegalensis	6	Seen	Targeted	1 mating pair
20-Dec-19	1.33028	103.77859	HW T1 05	953	Ischnura senegalensis	5	Seen	Targeted	NA
20-Dec-19	1.32990	103.77931	HW T1 07	1006	Ischnura senegalensis	1	Seen	Targeted	NA
20-Dec-19	1.33242	103.78089	HW T1 11	1047	Micropternus brachyurus	1	Heard	Incidental	NA
20-Dec-19	1.33179	103.78131	HW T1 14	1119	Mycalesis mineus macromalayana	1	Seen	Targeted	NA
20-Dec-19	1.33016	103.77952	HW T1 07	1012	Mycalesis perseoides perseoides	1	Seen	Targeted	NA
20-Dec-19	1.32831	103.77810	HW T1 02	909	Mycalesis visala phamis	2	Seen	Targeted	NA
20-Dec-19	1.32831	103.77810	HW T1 02	909	Mycalesis visala phamis	1	Seen	Targeted	NA
20-Dec-19	1.33025	103.77805	HW T1 05	939	Mycalesis visala phamis	1	Seen	Targeted	NA
20-Dec-19	1.33028	103.77859	HW T1 05	953	Mycalesis visala phamis	1	Seen	Targeted	NA
20-Dec-19	1.33028	103.77859	HW T1 05	953	Mycalesis visala phamis	1	Seen	Targeted	NA
20-Dec-19	1.33062	103.78138	HW T1 15	1124	Mycalesis visala phamis	1	Seen	Targeted	NA
20-Dec-19	1.32886	103.77833	HW T1 03	915	Neurothemis fluctuans	1	Seen	Targeted	NA
20-Dec-19	1.32887	103.77833	HW T1 03	918	Neurothemis fluctuans	1	Seen	Targeted	NA
20-Dec-19	1.32889	103.77805	HW T1 03	921	Neurothemis fluctuans	1	Seen	Targeted	NA
20-Dec-19	1.32889	103.77805	HW T1 03	922	Neurothemis fluctuans	1	Seen	Targeted	NA
20-Dec-19	1.32889	103.77805	HW T1 03	925	Neurothemis fluctuans	2	Seen	Targeted	NA
20-Dec-19	1.33048	103.77830	HW T1 05	946	Neurothemis fluctuans	1	Seen	Targeted	NA
20-Dec-19	1.32990	103.77931	HW T1 07	1004	Neurothemis fluctuans	1	Seen	Targeted	NA
20-Dec-19	1.33040	103.77811	HW T1 05	940	Orthetrum sabina	1	Seen	Targeted	NA
20-Dec-19	1.33048	103.77830	HW T1 05	945	Orthetrum sabina	1	Seen	Targeted	NA
20-Dec-19	1.32891	103.77782	HW T1 04	929	Pantala flavescens	2	Seen	Targeted	NA
20-Dec-19	1.33040	103.77845	HW T1 05	948	Polytrema lubricans lubricans	1	Seen	Targeted	NA
20-Dec-19	1.33040	103.77845	HW T1 05	949	Potanthus omaha omaha	5	Seen	Targeted	NA
20-Dec-19	1.32891	103.77782	HW T1 04	931	Pseudagrion microcephalum	1	Seen	Targeted	NA
20-Dec-19	1.33217	103.78076	HW T1 11	1043	Pycnonotus zeylanicus	2	Seen	Incidental	NA
20-Dec-19	1.33062	103.78138	HW T1 15	1125	Rhyothemis phyllis	1	Seen	Targeted	NA
20-Dec-19	1.32971	103.78136	HW T1 16	1131	Rhyothemis phyllis	1	Seen	Targeted	NA
20-Dec-19	1.33021	103.78141	HW T1 16	1129	Ypthima horsfieldii humei	1	Seen	Targeted	NA
20-Dec-19	1.33033	103.77854	HW T1 05	951	Ypthima sp.	1	Seen	Targeted	NA
20-Dec-19	1.32962	103.78136	HW T1 16	1133	Ypthima sp.	2	Seen	Targeted	NA
20-Dec-19	1.33061	103.77811	HW T1 05	941	Zizina otis lampa	1	Seen	Targeted	NA
20-Dec-19	1.33061	103.77811	HW T1 05	943	Apis cerana	1	Seen	Targeted	NA
20-Dec-19	1.33040	103.78142	HW T1 15	1127	Austronomia takuensis	1	Seen	Targeted	NA
20-Dec-19	1.32990	103.77931	HW T1 07	1007	Elimus sp.	1	Seen	Targeted	NA
20-Dec-19	1.32889	103.77805	HW T1 03	919	Lipotriches ceratina	1	Seen	Targeted	Collected
20-Dec-19	1.32891	103.77782	HW T1 04	928	Lipotriches ceratina	1	Seen	Targeted	NA
20-Dec-19	1.32891	103.77782	HW T1 04	932	Lipotriches ceratina	1	Seen	Targeted	NA
20-Dec-19	1.33061	103.77811	HW T1 05	941	Megachile conjuncta	1	Seen	Targeted	Collected. Feeding on
20-Dec-19	1.33028	103.77859	HW T1 05	953	Parischnogaster mellyi	1	Seen	Targeted	NA
20-Dec-19	1.32990	103.77931	HW T1 07	1006	Phymatostoma haemorrhoidale	1	Seen	Targeted	Wasp
20-Dec-19	1.33247	103.78099	HW T1 11	1049	Nest Ropalidia sp.	NA	Seen	Targeted	Nest only
20-Dec-19	1.33294	103.78094	HW T1 12	1109	Thyreus himalayensis	1	Seen	Targeted	Collected
20-Dec-19	1.32887	103.77833	HW T1 03	918	Xylocopa latipes	1	Seen	Targeted	NA
20-Dec-19	1.32990	103.77931	HW T1 07	1006	Xylocopa latipes	1	Seen	Targeted	NA
20-Dec-19	1.33230	103.78118	HW T1 13	1930-	Apis dorsata	1	Seen	Incidental	NA
20-Dec-19	1.33230	103.78118	HW T1 13	1930-	Ropalidia sumatrae	1	Seen	Incidental	NA
3-Jan-20	1.33038	103.77830	HW A1 07	2050-	Amphiphilus citrinellus	30	Seen	Point count	Many juveniles
3-Jan-20	1.32889	103.77788	HW T1 04	1948	Calotes versicolor	1	Seen	Incidental	NA

Appendix I2 Faunal Survey Data for Clementi Forest

Date	Latitude	Longitude	Sampling point	Time (24h)	Scientific name	Quantity	Observation type	Survey method	Remarks
3-Jan-20	1.33060	103.77811	HW T1 05	2041	Calotes versicolor	1	Seen	Incidental	NA
3-Jan-20	1.32936	103.78017	NA	2133	Calotes versicolor	1	Seen	Incidental	NA
3-Jan-20	1.32938	103.78050	NA	2144	Caprimulgus macrurus	1	Heard	Incidental	NA
3-Jan-20	1.32954	103.78098	NA	2155	Caprimulgus macrurus	1	Heard	Incidental	NA
3-Jan-20	1.32922	103.77825	NA	2034	Caprimulgus sp.	1	Seen	Incidental	NA
3-Jan-20	1.33056	103.78128	HW A1 03	2225-	Chalcorana labialis	1	Seen	Point count	NA
3-Jan-20	1.32940	103.77826	HW A2 01	2032	Clarias cf. batrachus	1	Seen	Incidental	NA
3-Jan-20	1.33038	103.77830	HW A1 07	2056	Clarias cf. batrachus	1	Seen	Incidental	NA
3-Jan-20	1.33031	103.77842	HW A1 07	2100	Clarias cf. batrachus	2	Seen	Incidental	NA
3-Jan-20	1.32989	103.77925	HW T1 07	2122	Dendrelaphis pictus	1	Seen	Incidental	NA
3-Jan-20	1.32938	103.78050	NA	2144	Dendrelaphis pictus	1	Seen	Incidental	NA
3-Jan-20	1.32941	103.78058	NA	2146	Dendrelaphis pictus	1	Seen	Incidental	NA
3-Jan-20	1.32973	103.78110	HW T1 16	2206	Dendrelaphis pictus	1	Seen	Incidental	Tiny
3-Jan-20	1.32954	103.78098	HW A1 04	2155-	Dogania subplana	1	Seen	Point count	NA
3-Jan-20	1.32919	103.77824	NA	2008	Eleutherodactylus planirostris	10	Heard	Incidental	NA
3-Jan-20	1.32991	103.77933	HW T1 07	2126	Eleutherodactylus planirostris	1	Heard	Incidental	NA
3-Jan-20	1.32984	103.77977	NA	2129	Eleutherodactylus planirostris	1	Heard	Incidental	NA
3-Jan-20	1.32880	103.77764	HW T1 04	1936	Fejervarya limncharis	1	Seen	Incidental	NA
3-Jan-20	1.32893	103.77767	HW T1 04	1942	Fejervarya limncharis	5	Seen	Incidental	NA
3-Jan-20	1.33049	103.77827	HW T1 05	2043	Fejervarya limncharis	1	Seen	Incidental	NA
3-Jan-20	1.33031	103.77842	HW T1 05	2100	Fejervarya limncharis	10	Seen	Incidental	NA
3-Jan-20	1.32901	103.77818	HW T1 03	2003	Lepidodactylus lugubris	1	Seen	Incidental	NA
3-Jan-20	1.33060	103.78132	HW T1 15	2233	Limnectes blythii	1	Seen	Incidental	NA
3-Jan-20	1.33136	103.78111	HW T1 14	2244	Limnectes blythii	3	Seen	Incidental	NA
3-Jan-20	1.32954	103.78098	HW A1 04	2155-	Limnectes blythii	2	Seen	Point count	NA
3-Jan-20	1.33263	103.78103	HW A1 01	2303-	Limnectes blythii	1	Seen	Point count	NA
3-Jan-20	1.32890	103.77797	HW T1 04	1955	Limnectes malesianus	2	Seen	Incidental	NA
3-Jan-20	1.32919	103.77824	NA	2008	Limnectes malesianus	2	Seen	Incidental	NA
3-Jan-20	1.33038	103.77830	HW T1 05	2051	Limnectes malesianus	2	Seen	Incidental	NA
3-Jan-20	1.32939	103.77824	HW A2 01	2020-	Limnectes malesianus	5	Seen	Point count	NA
3-Jan-20	1.32939	103.77824	NA	2017	Limnectes sp.	1	Seen	Incidental	NA
3-Jan-20	1.32940	103.77826	NA	2031	Limnectes sp.	1	Seen	Incidental	NA
3-Jan-20	1.33040	103.77835	HW T1 05	2046	Limnectes sp.	1	Seen	Incidental	NA
3-Jan-20	1.32893	103.77767	HW T1 04	1942	Lygosoma bowringii	1	Seen	Incidental	NA
3-Jan-20	1.33049	103.77827	HW T1 05	2043	Microhyla butleri	2	Seen	Incidental	NA
3-Jan-20	1.33037	103.78116	HW T1 15	2221	Microhyla butleri	20	Heard	Incidental	NA
3-Jan-20	1.33120	103.78117	HW T1 14	2241	Microhyla butleri	2	Seen	Incidental	NA
3-Jan-20	1.32895	103.77814	HW T1 03	2001	Microhyla heymonsi	1	Heard	Incidental	NA
3-Jan-20	1.33037	103.78116	HW T1 15	2221	Microhyla heymonsi	5	Heard	Incidental	NA
3-Jan-20	1.33165	103.78101	HW A1 02	2246-	Microhyla heymonsi	2	Seen	Point count	Drying and swampy
3-Jan-20	1.32889	103.77788	HW A2 02	1945-	Monopterus javanensis	1	Seen	Point count	NA
3-Jan-20	1.32939	103.77824	NA	2020	Muscicapa dauurica	1	Seen	Incidental	Sleeping. Looked like
3-Jan-20	1.33016	103.77853	HW T1 05	2107	Oreochromis mossambicus	1	Seen	Incidental	NA
3-Jan-20	1.33031	103.77842	HW T1 05	2100	Poecilia reticulata	100	Seen	Incidental	NA
3-Jan-20	1.32889	103.77788	HW A2 02	1945-	Poecilia reticulata	1	Seen	Point count	NA
3-Jan-20	1.33038	103.77830	HW A1 07	2050-	Poecilia reticulata	500	Seen	Point count	NA
3-Jan-20	1.32984	103.77903	HW A1 06	2115-	Poecilia reticulata	10	Seen	Point count	NA
3-Jan-20	1.32936	103.78017	HW A1 05	2133-	Poecilia reticulata	20	Seen	Point count	NA
3-Jan-20	1.33056	103.78128	HW A1 03	2225-	Poecilia reticulata	5	Seen	Point count	NA
3-Jan-20	1.33263	103.78103	HW A1 01	2303-	Poecilia reticulata	10	Seen	Point count	NA
3-Jan-20	1.32901	103.77818	HW T1 03	2003	Polypedates leucomystax	1	Heard	Incidental	NA
3-Jan-20	1.33060	103.78132	HW T1 15	2234	Rattus sp.	1	Seen	Incidental	NA
3-Jan-20	1.32922	103.77825	NA	2034	Rattus sp.	1	Seen	Incidental	NA
3-Jan-20	1.33031	103.77842	HW T1 05	2100	Trichopodus trichopterus	40	Seen	Incidental	NA
3-Jan-20	1.32936	103.78017	HW A1 05	2133-	Trichopodus trichopterus	10	Seen	Point count	NA
3-Jan-20	1.32989	103.77925	HW T1 07	2122	Unidentified Bird	1	Seen	Incidental	In grassland but flew off
3-Jan-20	1.33009	103.77866	HW T1 06	2110	Unidentified Cichlidae	1	Seen	Incidental	Cichlid sp
3-Jan-20	1.32890	103.77797	HW T1 04	1955	Unidentified Frog	1	Heard	Incidental	Eleutherodactylus
4-Jan-20	1.32879	103.77782	HW A2 02	09140	Agriocnemis femina	1	Seen	Point count	NA
4-Jan-20	1.33012	103.77861	HW T1 06	1001	Brachydiplax chalybea	2	Seen	Incidental	NA
4-Jan-20	1.32940	103.78012	HW A1 05	10300	Brachydiplax chalybea	2	Seen	Point count	NA
4-Jan-20	1.32941	103.78061	NA	1042	Caterpillar Unidentified Lepidoptera	1	Seen	Incidental	Order Lepidoptera
4-Jan-20	1.32879	103.77782	HW A2 02	09140	Ceriatrigon cerinorubellum	1	Seen	Point count	NA
4-Jan-20	1.33035	103.77827	HW A1 07	09400	Cichlasoma urophthalmum	4	Seen	Point count	4 caught but >100 seen
4-Jan-20	1.32961	103.78103	HW A1 04	10460	Copera marginipes	1	Seen	Point count	NA
4-Jan-20	1.33035	103.77827	HW A1 07	09400	Crocothemis servilia	3	Seen	Point count	1 female ovipositing
4-Jan-20	1.32991	103.77898	HW A1 06	10090	Crocothemis servilia	4	Seen	Point count	2 male, 2 female
4-Jan-20	1.32940	103.78012	HW A1 05	10300	Crocothemis servilia	3	Seen	Point count	NA
4-Jan-20	1.33035	103.77827	HW A1 07	09400	Ischnura senegalensis	3	Seen	Point count	1 mating pair
4-Jan-20	1.32991	103.77898	HW A1 06	10090	Ischnura senegalensis	2	Seen	Point count	NA
4-Jan-20	1.32940	103.78012	HW A1 05	10300	Ischnura senegalensis	1	Seen	Point count	NA
4-Jan-20	1.32991	103.77898	HW A1 06	10090	Larvae Unidentified Odonate	1	Seen	Point count	NA
4-Jan-20	1.32940	103.78012	HW A1 05	10300	Larvae Unidentified Odonate	1	Seen	Point count	NA
4-Jan-20	1.32940	103.78012	HW A1 05	10300	Larvae Unidentified Zygoptera	1	Seen	Point count	Damselfly
4-Jan-20	1.33035	103.77827	HW A1 07	09400	Neurothemis fluctuans	1	Seen	Point count	NA
4-Jan-20	1.32991	103.77898	HW A1 06	10090	Neurothemis fluctuans	2	Seen	Point count	NA
4-Jan-20	1.32940	103.78012	HW A1 05	10300	Neurothemis fluctuans	2	Seen	Point count	NA
4-Jan-20	1.32961	103.78103	HW A1 04	10460	Orthetrum chrysis	1	Seen	Point count	NA
4-Jan-20	1.33058	103.78127	HW A1 03	11130	Orthetrum chrysis	1	Seen	Point count	NA
4-Jan-20	1.32961	103.78103	HW A1 02	11320	Orthetrum chrysis	1	Seen	Point count	NA
4-Jan-20	1.33035	103.77827	HW A1 07	09400	Orthetrum sabina	3	Seen	Point count	NA
4-Jan-20	1.32991	103.77898	HW A1 06	10090	Orthetrum sabina	1	Seen	Point count	NA
4-Jan-20	1.32936	103.77827	HW FT 01	935	Poecilia reticulata	9	Seen	Point count	NA
4-Jan-20	1.32879	103.77782	HW A2 02	09140	Poecilia reticulata	12	Seen	Point count	NA
4-Jan-20	1.32935	103.77824	HW A2 01	09270	Poecilia reticulata	3	Seen	Point count	NA
4-Jan-20	1.33035	103.77827	HW A1 07	09400	Poecilia reticulata	16	Seen	Point count	16 caught but >1000
4-Jan-20	1.32991	103.77898	HW A1 06	10090	Poecilia reticulata	3	Seen	Point count	NA
4-Jan-20	1.33053	103.78123	HW FT 04	1022	Poecilia reticulata	1	Seen	Trapping	NA
4-Jan-20	1.32940	103.78012	HW A1 05	10300	Poecilia reticulata	14	Seen	Point count	NA

Appendix I2 Faunal Survey Data for Clementi Forest

Date	Latitude	Longitude	Sampling point	Time (24h)	Scientific name	Quantity	Observation type	Survey method	Remarks
4-Jan-20	1.33058	103.78127	HW A1 03	11130	Poecilia reticulata	3	Seen	Point count	NA
4-Jan-20	1.33264	103.78106	HW A1 01	11450	Poecilia reticulata	11	Seen	Point count	NA
4-Jan-20	1.32879	103.77782	HW A2 02	09140	Pseudagrion microcephalum	2	Seen	Point count	NA
4-Jan-20	1.32935	103.77824	HW A2 01	09270	Pseudagrion microcephalum	2	Seen	Point count	NA
4-Jan-20	1.33002	103.77877	HW T1 06	1004	Rhyothemis phyllis	1	Seen	Incidental	NA
4-Jan-20	1.32940	103.78012	HW A1 05	10300	Rhyothemis phyllis	2	Seen	Point count	NA
4-Jan-20	1.32936	103.77827	HW FT 01	1022	Trichogaster trichopterus	1	Seen	Trapping	Dead
4-Jan-20	1.32991	103.77898	HW A1 06	10090	Trithemis festiva	1	Seen	Point count	NA
8-Jan-20	1.32880	103.77828	HW T1 03	1957	Callosciurus notatus	1	Seen	Targeted	Disturbed
8-Jan-20	1.32888	103.77805	HW T1 03	1958	Calotes versicolor	1	Seen	Targeted	NA
8-Jan-20	1.33137	103.77975	HW T1 09	2038	Caprimulgus macrurus	1	Heard	Targeted	NA
8-Jan-20	1.33265	103.78092	HW T1 11	2104	Caprimulgus macrurus	1	Heard	Targeted	NA
8-Jan-20	1.32887	103.78151	HW T1 16	2140	Caprimulgus macrurus	1	Heard	Targeted	NA
8-Jan-20	1.32904	103.77773	HW T1 04	2005	Caprimulgus sp.	1	Seen	Targeted	NA
8-Jan-20	1.33292	103.78105	HW T1 12	2108	Caprimulgus sp.	2	Seen	Targeted	NA
8-Jan-20	1.32861	103.77825	HW MN 03	1930	Cynopterus brachyotis	1	Caught	Trapping	Escaped
8-Jan-20	1.32861	103.77825	HW MN 03	1938	Cynopterus brachyotis	1	Caught	Trapping	Adult female
8-Jan-20	1.32861	103.77825	HW MN 03	1944	Cynopterus brachyotis	1	Caught	Trapping	Adult male
8-Jan-20	1.32861	103.77825	HW MN 03	2029	Cynopterus brachyotis	1	Caught	Trapping	Adult male
8-Jan-20	1.32887	103.78151	HW T1 16	2140	Cynopterus brachyotis	1	Seen	Targeted	NA
8-Jan-20	1.32745	103.77700	HW T1 01	1934	Dendrelaphis pictus	1	Seen	Targeted	NA
8-Jan-20	1.33189	103.78054	HW T1 10	2053	Dendrelaphis pictus	1	Seen	Targeted	NA
8-Jan-20	1.32730	103.77722	HW T1 01	1937	Eleutherodactylus planirostris	1	Heard	Targeted	NA
8-Jan-20	1.33040	103.77867	HW T1 05	2011	Eleutherodactylus planirostris	2	Heard	Targeted	NA
8-Jan-20	1.33063	103.77972	HW T1 08	2029	Eleutherodactylus planirostris	1	Heard	Targeted	NA
8-Jan-20	1.33292	103.78105	HW T1 12	2108	Eleutherodactylus planirostris	3	Seen	Targeted	NA
8-Jan-20	1.32904	103.77773	HW T1 04	2005	Fejervarya limnocharis	1	Seen	Targeted	NA
8-Jan-20	1.33012	103.78144	HW T1 16	2133	Fejervarya limnocharis	2	Seen	Targeted	NA
8-Jan-20	1.33042	103.78136	HW T1 15	2130	Fejervarya sp.	1	Seen	Targeted	Fejervarya limnocharis or
8-Jan-20	1.33265	103.78092	HW T1 11	2104	Gallus gallus	1	Seen	Targeted	NA
8-Jan-20	1.32887	103.78151	HW T1 16	2140	Gallus gallus	2	Seen	Targeted	Male and female.
8-Jan-20	1.33166	103.78132	HW T1 14	2116	Garrulax leucolophus	1	Heard	Targeted	NA
8-Jan-20	1.32888	103.77805	HW T1 03	1958	Gekko monarchus	1	Seen	Targeted	NA
8-Jan-20	1.32890	103.77786	HW T1 04	2004	Gekko monarchus	1	Seen	Targeted	NA
8-Jan-20	1.33190	103.78118	HW T1 14	2115	Gekko monarchus	1	Seen	Targeted	NA
8-Jan-20	1.33042	103.78136	HW T1 15	2128	Limnonectes blythii	1	Seen	Targeted	NA
8-Jan-20	1.33292	103.78105	HW T1 12	2108	Microhyla butleri	1	Seen	Targeted	NA
8-Jan-20	1.33166	103.78132	HW T1 14	2116	Microhyla butleri	1	Heard	Targeted	NA
8-Jan-20	1.33047	103.78139	HW T1 15	2120	Microhyla butleri	50	Heard	Targeted	NA
8-Jan-20	1.33042	103.78136	HW T1 15	2130	Microhyla butleri	1	Seen	Targeted	NA
8-Jan-20	1.32730	103.77722	HW T1 01	1937	Microhyla heymonsi	1	Heard	Targeted	NA
8-Jan-20	1.32867	103.77827	HW T1 03	1955	Microhyla heymonsi	1	Heard	Targeted	NA
8-Jan-20	1.33040	103.77867	HW T1 05	2011	Microhyla heymonsi	5	Heard	Targeted	NA
8-Jan-20	1.33114	103.78135	HW T1 14	2119	Microhyla heymonsi	1	Heard	Targeted	NA
8-Jan-20	1.33047	103.78139	HW T1 15	2120	Microhyla heymonsi	50	Heard	Targeted	NA
8-Jan-20	1.33181	103.78128	HW T1 14	2119	Myotis muricola	1	Acoustic	Acoustic	NA
8-Jan-20	1.33042	103.78136	HW T1 15	2127	Ninox scutulata	1	Seen	Targeted	Perched high up on tree.
8-Jan-20	1.32943	103.78140	HW T1 16	2139	Ninox scutulata	2	Seen	Targeted	Probably one owl was the
8-Jan-20	1.33114	103.78135	HW T1 14	2119	Otus lempiji	1	Heard	Targeted	NA
8-Jan-20	1.32943	103.78140	HW T1 16	2139	Otus lempiji	1	Heard	Targeted	NA
8-Jan-20	1.32730	103.77722	HW T1 01	1937	Polypedates leucomystax	1	Heard	Targeted	NA
8-Jan-20	1.32867	103.77827	HW T1 03	1955	Polypedates leucomystax	1	Heard	Targeted	NA
8-Jan-20	1.33115	103.77961	HW T1 08	2035	Polypedates leucomystax	1	Heard	Targeted	NA
8-Jan-20	1.33170	103.78036	HW T1 10	2048	Rallina fasciata	1	Heard	Targeted	NA
8-Jan-20	1.32989	103.77929	HW T1 07	1934	Rhinolophus lepidus	1	Acoustic	Acoustic	NA
8-Jan-20	1.32730	103.77722	HW T1 01	1937	Unidentified Fruit bat	1	Seen	Targeted	NA
8-Jan-20	1.32780	103.77742	HW T1 01	1943	Unidentified Fruit bat	1	Seen	Targeted	NA
8-Jan-20	1.32867	103.77827	HW T1 03	1955	Unidentified Fruit bat	1	Seen	Targeted	NA
8-Jan-20	1.33155	103.78011	HW T1 09	2043	Unidentified Fruit bat	1	Seen	Targeted	NA
8-Jan-20	1.33279	103.78089	HW T1 12	2106	Unidentified Fruit bat	1	Seen	Targeted	NA
8-Jan-20	1.33292	103.78105	HW T1 12	2108	Unidentified Fruit bat	1	Seen	Targeted	NA
8-Jan-20	1.33260	103.78120	HW T1 13	2111	Unidentified Fruit bat	2	Seen	Targeted	NA
8-Jan-20	1.33189	103.78054	HW T1 10	2051	Varanus nebulosus	1	Seen	Targeted	NA
8-Jan-20	1.32614	103.77580	HW T2 20	1934	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200108_193430.wav
8-Jan-20	1.33181	103.78128	HW T1 14	2119	Myotis muricola	NA	Acoustic	Acoustic	20200108_211900.wav
9-Jan-20	1.32824	103.77799	HW T1 02	NA	Amathusia phidippus phidippus	1	Seen	Incidental	NA
10-Jan-20	1.33160	103.78006	HW T1 09	932	Naja sumatrana	1	Seen	Incidental	NA
10-Jan-20	1.32402	103.77880	HW T2 09	953	Suastus gremius gremius	1	Seen	Incidental	During CT maintenance
10-Jan-20	1.32881	103.77980	NA	1100	Tholymis tillarga	1	Seen	Incidental	Male. During CT
16-Jan-20	1.32266	103.77678	HW T2 05	1016	Agrionoptera insignis	1	Seen	Targeted	Water body
16-Jan-20	1.32334	103.77850	HW T2 08	1107	Agrionoptera insignis	1	Seen	Targeted	NA
16-Jan-20	1.32580	103.77972	HW T2 11	1146	Burara harisa consobrina	1	Seen	Targeted	NA
16-Jan-20	1.32334	103.77850	HW T2 08	1107	Caterpillar Burara harisa consobrina	1	Seen	Targeted	Caterpillar. Feeding on
16-Jan-20	1.32322	103.77845	HW T2 08	1106	Catopsilia pomona pomona	1	Seen	Targeted	NA
16-Jan-20	1.32404	103.77879	HW T2 09	1125	Catopsilia pomona pomona	1	Seen	Targeted	NA
16-Jan-20	1.32696	103.77812	HW T2 18	1232	Copra vittata	3	Seen	Targeted	NA
16-Jan-20	1.32696	103.77812	HW T2 18	1236	Copra vittata	2	Seen	Targeted	NA
16-Jan-20	1.32334	103.77850	HW T2 08	1107	Cratilla metallica	1	Seen	Targeted	NA
16-Jan-20	1.32314	103.77854	HW T2 08	1055	Delias hyparete metarete	1	Seen	Targeted	NA
16-Jan-20	1.32353	103.77866	HW T2 08	1113	Delias hyparete metarete	1	Seen	Targeted	NA
16-Jan-20	1.32353	103.77866	HW T2 08	1113	Elymnias hypermnestra agina	1	Seen	Targeted	NA
16-Jan-20	1.32538	103.77981	HW T2 11	1139	Elymnias hypermnestra agina	2	Seen	Targeted	NA
16-Jan-20	1.32828	103.77993	HW T2 15	1207	Eooxylides tharis distanti	4	Seen	Targeted	NA
16-Jan-20	1.32759	103.77904	HW T2 16	1217	Eooxylides tharis distanti	1	Seen	Targeted	NA
16-Jan-20	1.32685	103.77797	HW T2 18	1238	Eooxylides tharis distanti	7	Seen	Targeted	NA
16-Jan-20	1.32617	103.77605	HW T2 20	1247	Eooxylides tharis distanti	1	Seen	Targeted	NA
16-Jan-20	1.32404	103.77879	HW T2 09	1127	Eurema andersonii andersonii	1	Seen	Targeted	NA
16-Jan-20	1.32444	103.77915	HW T2 09	1130	Eurema andersonii andersonii	1	Seen	Targeted	NA
16-Jan-20	1.32404	103.77879	HW T2 09	1116	Eurema blanda snelleni	1	Seen	Targeted	NA

Appendix I2 Faunal Survey Data for Clementi Forest

Date	Latitude	Longitude	Sampling point	Time (24h)	Scientific name	Quantity	Observation type	Survey method	Remarks
16-Jan-20	1.32404	103.77879	HW T2 09	1116	Eurema hecabe contubernalis	2	Seen	Targeted	NA
16-Jan-20	1.32404	103.77879	HW T2 09	1116	Eurema sp.	3	Seen	Targeted	NA
16-Jan-20	1.32404	103.77879	HW T2 09	1126	Eurema sp.	1	Seen	Targeted	NA
16-Jan-20	1.32515	103.77976	HW T2 10	1135	Eurema sp.	1	Seen	Targeted	NA
16-Jan-20	1.32720	103.77850	HW T2 17	1228	Eurema sp.	1	Seen	Targeted	NA
16-Jan-20	1.32314	103.77854	HW T2 08	1055	Gynacantha bayadera	1	Seen	Targeted	NA
16-Jan-20	1.32321	103.77745	HW T2 06	1038	Gynacantha sp.	1	Seen	Targeted	NA
16-Jan-20	1.32323	103.77852	HW T2 08	1102	Gynacantha subinterrupta	1	Seen	Targeted	NA
16-Jan-20	1.32279	103.77395	HW T2 01	922	Iambrix salsala salsala	2	Seen	Targeted	NA
16-Jan-20	1.32404	103.77879	HW T2 09	1116	Iambrix salsala salsala	1	Seen	Targeted	NA
16-Jan-20	1.32515	103.77976	HW T2 10	1135	Iambrix salsala salsala	1	Seen	Targeted	NA
16-Jan-20	1.32734	103.77863	HW T2 17	1224	Ixobrychus cinnamomeus	1	Seen	Incidental	Migrant
16-Jan-20	1.32224	103.77479	HW T2 02	931	Lathrecista asiatica	1	Seen	Targeted	NA
16-Jan-20	1.32353	103.77866	HW T2 08	1113	Lathrecista asiatica	2	Seen	Targeted	NA
16-Jan-20	1.32343	103.77853	HW T2 08	1110	Logania marmorata damis	1	Seen	Targeted	NA
16-Jan-20	1.32322	103.77845	HW T2 08	1104	Macaca fascicularis	6	Seen	Targeted	NA
16-Jan-20	1.32444	103.77915	HW T2 09	1130	Matapa aria	1	Seen	Targeted	NA
16-Jan-20	1.32515	103.77976	HW T2 10	1135	Matapa aria	1	Seen	Targeted	NA
16-Jan-20	1.32266	103.77678	HW T2 05	1016	Moult Gynacantha sp.	4	Seen	Targeted	Only the moult. Mr Tang
16-Jan-20	1.32515	103.77976	HW T2 10	1135	Mycaelis mineus macromalayana	1	Seen	Targeted	NA
16-Jan-20	1.32538	103.77981	HW T2 11	1141	Mycaelis perseoides perseoides	1	Seen	Targeted	NA
16-Jan-20	1.32647	103.77614	HW T2 20	NA	NA	1	Seen	Incidental	Wasp nest
16-Jan-20	1.32404	103.77879	HW T2 09	1127	Neurothemis fluctuans	1	Seen	Targeted	NA
16-Jan-20	1.32515	103.77976	HW T2 10	1135	Neurothemis fluctuans	1	Seen	Targeted	NA
16-Jan-20	1.32224	103.77479	HW T2 02	931	Orthetrum chrysis	1	Seen	Targeted	NA
16-Jan-20	1.32538	103.77981	HW T2 11	1143	Orthetrum chrysis	1	Seen	Targeted	NA
16-Jan-20	1.32404	103.77879	HW T2 09	1122	Orthetrum glaucum	1	Seen	Targeted	NA
16-Jan-20	1.32538	103.77981	HW T2 11	1139	Orthetrum glaucum	1	Seen	Targeted	NA
16-Jan-20	1.32404	103.77879	HW T2 09	1116	Papilio polytes romulus	2	Seen	Targeted	NA
16-Jan-20	1.32404	103.77879	HW T2 09	1116	Pelopidas mathias mathias	2	Seen	Targeted	NA
16-Jan-20	1.32653	103.77743	HW T2 19	1242	Polypedates leucomystax	1	Seen	Incidental	NA
16-Jan-20	1.32404	103.77879	HW T2 09	1116	Potanthus omaha omaha	1	Seen	Targeted	NA
16-Jan-20	1.32515	103.77976	HW T2 10	1135	Surendra vivarna amisena	1	Seen	Targeted	NA
16-Jan-20	1.32226	103.77537	HW T2 03	945	Teneral Gynacantha subinterrupta	1	Seen	Targeted	Tenero
16-Jan-20	1.32224	103.77479	HW T2 02	931	Tholymis tillarga	1	Seen	Targeted	NA
16-Jan-20	1.32538	103.77981	HW T2 11	1142	Tholymis tillarga	1	Seen	Targeted	NA
16-Jan-20	1.32791	103.78051	HW T2 14	1201	Tholymis tillarga	1	Seen	Targeted	NA
16-Jan-20	1.32685	103.77797	HW T2 18	1238	Tholymis tillarga	1	Seen	Targeted	NA
22-Jan-20	1.32308	103.77857	HW T2 08	2132	Acherontia lachesis	1	Seen	Incidental	NA
22-Jan-20	1.32717	103.77841	HW T2 17	2300	Amaurornis phoenicurus	1	Seen	Targeted	NA
22-Jan-20	1.32396	103.77886	HW T2 09	2143	Caprimulgus macrurus	1	Seen	Targeted	NA
22-Jan-20	1.32520	103.77977	HW T2 10	2156	Caprimulgus sp.	5	Seen	Targeted	NA
22-Jan-20	1.32266	103.77657	HW T2 05	2055	Cuculus micropterus	1	Seen	Targeted	Roosting
22-Jan-20	1.32723	103.77861	HW T2 17	2258	Cynopterus brachyotis	1	Seen	Targeted	NA
22-Jan-20	1.32257	103.77645	HW T2 05	2050	Dendrelaphis pictus	1	Seen	Targeted	NA
22-Jan-20	1.32371	103.77876	HW T2 08	2141	Dendrelaphis pictus	1	Seen	Targeted	NA
22-Jan-20	1.32396	103.77886	HW T2 09	2143	Dendrelaphis pictus	1	Seen	Targeted	NA
22-Jan-20	1.32520	103.77977	HW T2 10	2156	Dendrelaphis pictus	1	Seen	Targeted	NA
22-Jan-20	1.32213	103.77485	HW T2 02	2018	Eleutherodactylus planirostris	2	Seen	Targeted	NA
22-Jan-20	1.32206	103.77490	HW T2 02	2019	Eleutherodactylus planirostris	2	Seen	Targeted	NA
22-Jan-20	1.32219	103.77550	HW T2 03	2020	Eleutherodactylus planirostris	2	Seen	Targeted	NA
22-Jan-20	1.32204	103.77509	HW T2 02	2022	Eleutherodactylus planirostris	1	Seen	Targeted	NA
22-Jan-20	1.32228	103.77542	HW T2 03	2030	Eleutherodactylus planirostris	1	Seen	Targeted	NA
22-Jan-20	1.32549	103.77980	HW T2 11	2200	Eleutherodactylus planirostris	1	Seen	Targeted	NA
22-Jan-20	1.32613	103.78012	HW T2 12	2212	Eleutherodactylus planirostris	1	Seen	Targeted	NA
22-Jan-20	1.32790	103.78064	HW T2 14	2231	Eleutherodactylus planirostris	2	Seen	Targeted	NA
22-Jan-20	1.32829	103.78029	HW T2 15	2237	Eleutherodactylus planirostris	2	Seen	Targeted	NA
22-Jan-20	1.32801	103.77961	HW T2 16	2245	Eleutherodactylus planirostris	1	Seen	Targeted	NA
22-Jan-20	1.32499	103.77958	HW T2 10	2152	Elymnias panthera panthera	1	Seen	Targeted	NA
22-Jan-20	1.32305	103.77770	HW T2 06	2118	Gallus gallus	5	Seen	Targeted	NA
22-Jan-20	1.32209	103.77540	HW T2 03	2027	Gekko monarchus	1	Seen	Targeted	NA
22-Jan-20	1.32289	103.77800	HW T2 07	2122	Gekko monarchus	1	Seen	Targeted	NA
22-Jan-20	1.32308	103.77857	HW T2 08	2132	Gynacantha subinterrupta	1	Seen	Targeted	NA
22-Jan-20	1.32269	103.77687	HW T2 05	2103	Limnectes blythii	3	Seen	Targeted	NA
22-Jan-20	1.32544	103.77983	HW T2 11	2159	Limnectes blythii	1	Seen	Targeted	NA
22-Jan-20	1.32549	103.77980	HW T2 11	2200	Limnectes blythii	1	Seen	Targeted	NA
22-Jan-20	1.32809	103.77983	HW T2 15	2242	Limnectes blythii	1	Seen	Targeted	NA
22-Jan-20	1.32786	103.77943	HW T2 16	2247	Limnectes blythii	2	Seen	Targeted	NA
22-Jan-20	1.32706	103.77827	HW T2 17	2302	Limnectes blythii	2	Seen	Targeted	NA
22-Jan-20	1.32605	103.77597	HW T2 20	2318	Limnectes blythii	1	Seen	Targeted	NA
22-Jan-20	1.32228	103.77542	HW T2 03	2030	Macaca fascicularis	4	Seen	Targeted	Roost site, next to
22-Jan-20	1.32205	103.77522	HW T2 03	2025	Microhyla butleri	1	Seen	Targeted	NA
22-Jan-20	1.32269	103.77687	HW T2 05	2103	Microhyla butleri	25	Heard	Targeted	NA
22-Jan-20	1.32723	103.77861	HW T2 17	2258	Microhyla butleri	20	Heard	Targeted	NA
22-Jan-20	1.32221	103.77474	HW T2 02	2012	Microhyla heymonsi	1	Heard	Targeted	NA
22-Jan-20	1.32270	103.77678	HW T2 05	2103	Microhyla heymonsi	20	Heard	Targeted	NA
22-Jan-20	1.32786	103.77943	HW T2 16	2247	Microhyla heymonsi	2	Heard	Targeted	NA
22-Jan-20	1.32746	103.77877	HW T2 17	2255	Microhyla heymonsi	1	Heard	Targeted	NA
22-Jan-20	1.32723	103.77861	HW T2 17	2258	Microhyla heymonsi	2	Seen	Targeted	NA
22-Jan-20	1.32221	103.77474	HW T2 02	2012	Microhyla sp.	1	Seen	Targeted	NA
22-Jan-20	1.32212	103.77618	HW T2 04	2042	Moult Naja sumatrana	1	Seen	Incidental	Moult only
22-Jan-20	1.32279	103.77660	HW T2 05	2100	Otus lempiji	1	Heard	Targeted	NA
22-Jan-20	1.32371	103.77876	HW T2 08	2141	Otus lempiji	1	Heard	Targeted	NA
22-Jan-20	1.32581	103.77974	HW T2 11	2205	Otus lempiji	1	Heard	Targeted	NA
22-Jan-20	1.32715	103.78061	HW T2 13	2225	Otus lempiji	1	Heard	Targeted	NA
22-Jan-20	1.32296	103.77821	HW T2 07	2127	Rallina fasciata	1	Seen	Targeted	NA
22-Jan-20	1.32581	103.77974	HW T2 11	2205	Rallina fasciata	2	Heard	Targeted	NA
22-Jan-20	1.32715	103.78061	HW T2 13	2225	Rallina fasciata	1	Seen	Targeted	NA
22-Jan-20	1.32308	103.77857	HW T2 08	2132	Rattus sp.	1	Seen	Targeted	NA

Appendix I2 Faunal Survey Data for Clementi Forest

Date	Latitude	Longitude	Sampling point	Time (24h)	Scientific name	Quantity	Observation type	Survey method	Remarks
22-Jan-20	1.32499	103.77964	HW T2 10	2153	Rattus sp.	1	Seen	Targeted	NA
22-Jan-20	1.32642	103.78057	HW T2 12	2216	Rattus sp.	1	Seen	Targeted	NA
22-Jan-20	1.32801	103.77961	HW T2 16	2245	Tadpole Unidentified frog	20	Seen	Targeted	NA
22-Jan-20	1.32221	103.77474	HW T2 02	2012	Unidentified Frog	1	Seen	Targeted	NA
22-Jan-20	1.32259	103.77420	HW T2 01	2005	Unidentified Fruit bat	1	Seen	Targeted	NA
22-Jan-20	1.32269	103.77687	HW T2 05	2103	Unidentified Fruit bat	2	Seen	Targeted	NA
22-Jan-20	1.32306	103.77716	HW T2 06	2110	Unidentified Fruit bat	1	Seen	Targeted	NA
22-Jan-20	1.32318	103.77754	HW T2 06	2113	Unidentified Fruit bat	1	Seen	Targeted	NA
22-Jan-20	1.32320	103.77768	HW T2 06	2114	Unidentified Fruit bat	2	Seen	Targeted	NA
22-Jan-20	1.32308	103.77857	HW T2 08	2132	Unidentified Fruit bat	1	Seen	Targeted	NA
22-Jan-20	1.32371	103.77876	HW T2 08	2141	Unidentified Fruit bat	1	Seen	Targeted	NA
22-Jan-20	1.32448	103.77919	HW T2 09	2147	Unidentified Fruit bat	1	Seen	Targeted	NA
22-Jan-20	1.32483	103.77953	HW T2 10	2150	Unidentified Fruit bat	1	Seen	Targeted	NA
22-Jan-20	1.32581	103.77974	HW T2 11	2205	Unidentified Fruit bat	1	Seen	Targeted	NA
22-Jan-20	1.32768	103.77922	HW T2 16	2251	Unidentified Fruit bat	1	Seen	Targeted	NA
22-Jan-20	1.32655	103.77741	HW T2 19	2309	Unidentified Fruit bat	1	Seen	Targeted	NA
22-Jan-20	1.32617	103.77608	HW T2 20	2315	Unidentified Fruit bat	1	Seen	Targeted	NA
22-Jan-20	1.32499	103.77964	HW T2 10	2153	Unidentified Gekkonidae	1	Seen	Targeted	NA
22-Jan-20	1.32809	103.77983	HW T2 15	2242	Unidentified Gekkonidae	1	Seen	Targeted	NA
23-Jan-20	1.32493	103.77559	NA	NA	Camacinia gigantea	2	Seen	Incidental	2 males flying over pond
23-Jan-20	1.32493	103.77559	NA	NA	NA	1	Seen	Incidental	20 by 20 m pond
31-Jan-20	1.32391	103.77502	NA	1050	Lathrecista asiatica	1	Seen	Incidental	NA
31-Jan-20	1.32363	103.77476	NA	1146	Macaca fascicularis	2	Seen	Incidental	NA
3-Feb-20	1.32346	103.77441	NA	1119	Pelopidas mathias mathias	1	Seen	Incidental	NA
7-Feb-20	1.33244	103.78135	HW T1 13	735	Acridotheres javanicus	10	Seen	Targeted	Feeding on Ficus
7-Feb-20	1.33166	103.78131	HW T1 14	740	Acridotheres javanicus	2	Seen	Targeted	NA
7-Feb-20	1.33168	103.78047	HW T1 10	821	Acridotheres javanicus	1	Heard	Targeted	NA
7-Feb-20	1.33160	103.78005	HW T1 09	825	Acridotheres javanicus	2	Seen	Targeted	NA
7-Feb-20	1.32990	103.77928	HW T1 07	845	Acridotheres javanicus	10	Seen	Targeted	NA
7-Feb-20	1.32849	103.77827	HW T1 03	912	Acridotheres javanicus	1	Seen	Targeted	NA
7-Feb-20	1.32765	103.77742	HW T1 01	918	Acridotheres javanicus	1	Heard	Targeted	NA
7-Feb-20	1.32742	103.77707	HW T1 01	923	Acridotheres javanicus	1	Seen	Targeted	NA
7-Feb-20	1.32769	103.77674	HW T1 01	924	Acridotheres javanicus	1	Seen	Targeted	NA
7-Feb-20	1.32970	103.78135	HW T1 16	748	Aegithina tiphia	1	Heard	Targeted	NA
7-Feb-20	1.32990	103.77928	HW T1 07	847	Aegithina tiphia	1	Heard	Targeted	NA
7-Feb-20	1.32880	103.77792	HW T1 04	904	Aegithina tiphia	1	Heard	Targeted	NA
7-Feb-20	1.33265	103.78133	HW T1 13	733	Aerodramus sp.	3	Seen	Targeted	NA
7-Feb-20	1.33264	103.78089	HW T1 11	814	Aethopyga siparaja	1	Heard	Targeted	NA
7-Feb-20	1.33063	103.77969	HW T1 08	835	Aethopyga siparaja	1	Heard	Targeted	NA
7-Feb-20	1.33024	103.77880	HW T1 06	851	Aethopyga siparaja	1	Heard	Targeted	NA
7-Feb-20	1.32888	103.77797	HW T1 04	905	Aethopyga siparaja	1	Seen	Targeted	NA
7-Feb-20	1.32849	103.77827	HW T1 03	912	Aethopyga siparaja	1	Heard	Targeted	NA
7-Feb-20	1.32603	103.77585	HW T2 20	1235	Amathusia phidippus phidippus	1	Seen	Incidental	NA
7-Feb-20	1.33186	103.78134	HW T1 14	739	Amauromis phoenicurus	1	Heard	Targeted	NA
7-Feb-20	1.33091	103.78133	HW T1 15	743	Amauromis phoenicurus	1	Heard	Targeted	NA
7-Feb-20	1.33211	103.78129	HW T1 13	737	Anthractoceros albirostris	1	Heard	Targeted	NA
7-Feb-20	1.33047	103.77953	HW T1 07	839	Anthractoceros albirostris	1	Heard	Targeted	NA
7-Feb-20	1.33306	103.78117	HW T1 12	801	Antheptes malacensis	1	Heard	Targeted	NA
7-Feb-20	1.33031	103.77961	HW T1 07	841	Antheptes malacensis	1	Heard	Targeted	NA
7-Feb-20	1.32878	103.77827	HW T1 03	909	Antheptes malacensis	1	Heard	Targeted	NA
7-Feb-20	1.33244	103.78135	HW T1 13	735	Aplonis panayensis	2	Seen	Targeted	Feeding on Ficus
7-Feb-20	1.33155	103.78131	HW T1 14	741	Aplonis panayensis	2	Seen	Targeted	NA
7-Feb-20	1.33091	103.78133	HW T1 15	743	Aplonis panayensis	1	Seen	Targeted	NA
7-Feb-20	1.32990	103.77928	HW T1 07	845	Aplonis panayensis	7	Seen	Targeted	NA
7-Feb-20	1.32880	103.77792	HW T1 04	902	Aplonis panayensis	2	Seen	Targeted	NA
7-Feb-20	1.33018	103.78137	HW T1 16	746	Cacatua goffiniana	1	Heard	Targeted	NA
7-Feb-20	1.33241	103.78090	HW T1 11	814	Cacatua goffiniana	1	Heard	Targeted	NA
7-Feb-20	1.33244	103.78135	HW T1 13	735	Callosciurus notatus	1	Seen	Targeted	Feeding on Ficus
7-Feb-20	1.32898	103.78142	HW T1 16	751	Callosciurus notatus	1	Seen	Targeted	NA
7-Feb-20	1.33301	103.78094	HW T1 12	806	Callosciurus notatus	1	Seen	Targeted	NA
7-Feb-20	1.33024	103.77885	HW T1 06	851	Callosciurus notatus	1	Seen	Targeted	NA
7-Feb-20	1.32880	103.77792	HW T1 04	857	Callosciurus notatus	1	Seen	Targeted	NA
7-Feb-20	1.32885	103.77813	HW T1 03	907	Callosciurus notatus	1	Seen	Targeted	NA
7-Feb-20	1.32849	103.77827	HW T1 03	912	Callosciurus notatus	1	Seen	Targeted	NA
7-Feb-20	1.32746	103.77736	HW T1 01	920	Callosciurus notatus	1	Seen	Targeted	NA
7-Feb-20	1.32731	103.77725	HW T1 01	921	Callosciurus notatus	1	Seen	Targeted	NA
7-Feb-20	1.33166	103.78131	HW T1 14	740	Centropus sinensis	1	Heard	Targeted	NA
7-Feb-20	1.33281	103.78088	HW T1 12	812	Chrysophlegma miniaceum	1	Heard	Targeted	NA
7-Feb-20	1.33283	103.78095	HW T1 12	808	Corvus splendens	1	Heard	Targeted	NA
7-Feb-20	1.33129	103.78135	HW T1 14	742	Dicrurus paradiseus	2	Seen	Targeted	NA
7-Feb-20	1.33200	103.78127	HW T1 14	738	Dinopium javanense	2	Seen	Targeted	NA
7-Feb-20	1.32970	103.78135	HW T1 16	748	Dinopium javanense	1	Seen	Targeted	NA
7-Feb-20	1.33007	103.77919	HW T1 07	848	Dinopium javanense	1	Heard	Targeted	NA
7-Feb-20	1.32880	103.77792	HW T1 04	904	Dinopium javanense	1	Heard	Targeted	NA
7-Feb-20	1.33211	103.78129	HW T1 13	738	Eurystomus orientalis	2	Seen	Targeted	NA
7-Feb-20	1.32970	103.78135	HW T1 16	747	Eurystomus orientalis	1	Seen	Targeted	NA
7-Feb-20	1.32906	103.78139	HW T1 16	750	Eurystomus orientalis	1	Seen	Targeted	NA
7-Feb-20	1.32618	103.77593	HW T2 20	1240	Euthalia monina monina	1	Seen	Incidental	NA
7-Feb-20	1.33155	103.78131	HW T1 14	741	Gallus gallus	1	Heard	Targeted	NA
7-Feb-20	1.33018	103.78137	HW T1 16	746	Gallus gallus	1	Heard	Targeted	NA
7-Feb-20	1.33305	103.78106	HW T1 12	805	Gallus gallus	2	Seen	Targeted	NA
7-Feb-20	1.33244	103.78135	HW T1 13	735	Garrulax leucolophus	1	Seen	Targeted	NA
7-Feb-20	1.33186	103.78134	HW T1 14	739	Garrulax leucolophus	3	Seen	Targeted	NA
7-Feb-20	1.33160	103.78008	HW T1 09	829	Garrulax leucolophus	2	Heard	Targeted	NA
7-Feb-20	1.33061	103.77966	HW T1 08	837	Garrulax leucolophus	3	Seen	Targeted	NA
7-Feb-20	1.32746	103.77736	HW T1 01	920	Garrulax leucolophus	3	Heard	Targeted	NA
7-Feb-20	1.33018	103.78137	HW T1 16	746	Gracula religiosa	1	Heard	Targeted	NA
7-Feb-20	1.33113	103.77963	HW T1 08	831	Gracula religiosa	1	Heard	Targeted	NA
7-Feb-20	1.33265	103.78133	HW T1 13	733	Hirundo tahitica	1	Seen	Targeted	NA

Appendix I2 Faunal Survey Data for Clementi Forest

Date	Latitude	Longitude	Sampling point	Time (24h)	Scientific name	Quantity	Observation type	Survey method	Remarks
7-Feb-20	1.33307	103.78130	HW T1 12	731	Loriculus galgulus	1	Heard	Targeted	NA
7-Feb-20	1.33155	103.78131	HW T1 14	741	Loriculus galgulus	1	Seen	Targeted	NA
7-Feb-20	1.32885	103.77813	HW T1 03	907	Loriculus galgulus	2	Seen	Targeted	NA
7-Feb-20	1.32773	103.77740	HW T1 01	919	Macaca fascicularis	1	Seen	Targeted	Feeding on Ficus
7-Feb-20	1.33110	103.78133	HW T1 15	757	Mixornis gularis	1	Heard	Targeted	NA
7-Feb-20	1.33082	103.77967	HW T1 08	833	Mixornis gularis	1	Heard	Targeted	NA
7-Feb-20	1.33031	103.77961	HW T1 07	841	Mixornis gularis	1	Heard	Targeted	NA
7-Feb-20	1.33024	103.77880	HW T1 06	851	Mixornis gularis	2	Heard	Targeted	NA
7-Feb-20	1.32878	103.77827	HW T1 03	909	Mixornis gularis	2	Heard	Targeted	NA
7-Feb-20	1.33160	103.78008	HW T1 09	NA	Nest Unidentified Raptor	NA	Seen	Incidental	Nest only. Possibly raptor
7-Feb-20	1.33237	103.78121	HW T1 13	800	Nisaetus cirrhatus	1	Heard	Targeted	NA
7-Feb-20	1.33186	103.78134	HW T1 14	739	Oriolus chinensis	1	Heard	Targeted	NA
7-Feb-20	1.32906	103.78139	HW T1 16	750	Oriolus chinensis	1	Seen	Targeted	NA
7-Feb-20	1.33188	103.78057	HW T1 10	820	Oriolus chinensis	1	Heard	Targeted	NA
7-Feb-20	1.33129	103.78135	HW T1 14	742	Orthotomus atroregularis	1	Heard	Targeted	NA
7-Feb-20	1.33082	103.77967	HW T1 08	833	Orthotomus atroregularis	2	Heard	Targeted	NA
7-Feb-20	1.32731	103.77725	HW T1 01	921	Orthotomus sericeus	1	Heard	Targeted	NA
7-Feb-20	1.33307	103.78130	HW T1 12	731	Orthotomus sutorius	2	Seen	Targeted	NA
7-Feb-20	1.33128	103.77957	HW T1 09	830	Phylloscopus borealis	1	Heard	Targeted	NA
7-Feb-20	1.32731	103.77725	HW T1 01	921	Psilopogon haemacephalus	1	Heard	Targeted	NA
7-Feb-20	1.33244	103.78135	HW T1 13	735	Psilopogon lineatus	1	Heard	Targeted	NA
7-Feb-20	1.32970	103.78135	HW T1 16	747	Psilopogon lineatus	1	Heard	Targeted	NA
7-Feb-20	1.33264	103.78089	HW T1 11	814	Psilopogon lineatus	1	Heard	Targeted	NA
7-Feb-20	1.33127	103.77963	HW T1 09	829	Psilopogon lineatus	1	Heard	Targeted	NA
7-Feb-20	1.33007	103.77919	HW T1 07	848	Psilopogon lineatus	1	Heard	Targeted	NA
7-Feb-20	1.32906	103.78139	HW T1 16	750	Psittacula alexandri	1	Seen	Targeted	NA
7-Feb-20	1.33155	103.78131	HW T1 14	741	Psittacula longicauda	1	Seen	Targeted	NA
7-Feb-20	1.33122	103.78135	HW T1 14	742	Psittacula longicauda	1	Seen	Targeted	NA
7-Feb-20	1.33091	103.78133	HW T1 15	743	Psittacula longicauda	6	Seen	Targeted	NA
7-Feb-20	1.33018	103.78137	HW T1 16	746	Psittacula longicauda	3	Seen	Targeted	NA
7-Feb-20	1.32923	103.78138	HW T1 16	749	Psittacula longicauda	1	Seen	Targeted	NA
7-Feb-20	1.32893	103.78157	HW T1 16	752	Psittacula longicauda	20	Seen	Targeted	NA
7-Feb-20	1.33165	103.78019	HW T1 10	824	Psittacula longicauda	1	Heard	Targeted	NA
7-Feb-20	1.33063	103.77969	HW T1 08	835	Psittacula longicauda	1	Heard	Targeted	NA
7-Feb-20	1.32923	103.78138	HW T1 16	749	Pycnonotus goiavier	2	Seen	Targeted	NA
7-Feb-20	1.32924	103.77779	HW T1 04	856	Pycnonotus goiavier	2	Seen	Targeted	NA
7-Feb-20	1.32753	103.77691	HW T1 01	923	Pycnonotus goiavier	1	Heard	Targeted	NA
7-Feb-20	1.33307	103.78130	HW T1 12	731	Pycnonotus plumosus	1	Heard	Targeted	NA
7-Feb-20	1.33122	103.78135	HW T1 14	742	Pycnonotus plumosus	1	Heard	Targeted	NA
7-Feb-20	1.32970	103.78135	HW T1 16	748	Pycnonotus plumosus	1	Heard	Targeted	NA
7-Feb-20	1.32990	103.77928	HW T1 07	845	Pycnonotus plumosus	1	Heard	Targeted	NA
7-Feb-20	1.32878	103.77827	HW T1 03	909	Pycnonotus plumosus	1	Heard	Targeted	NA
7-Feb-20	1.33211	103.78129	HW T1 13	737	Pycnonotus zeylanicus	3	Seen	Targeted	NA
7-Feb-20	1.33217	103.78074	HW T1 11	817	Pycnonotus zeylanicus	1	Heard	Targeted	NA
7-Feb-20	1.33014	103.77942	HW T1 07	842	Pycnonotus zeylanicus	1	Heard	Targeted	NA
7-Feb-20	1.33024	103.77880	HW T1 06	851	Pycnonotus zeylanicus	1	Heard	Targeted	NA
7-Feb-20	1.32888	103.77797	HW T1 04	905	Pycnonotus zeylanicus	1	Heard	Targeted	NA
7-Feb-20	1.33091	103.78133	HW T1 15	743	Spilopelia chinensis	2	Heard	Targeted	NA
7-Feb-20	1.32990	103.77928	HW T1 07	846	Spilopelia chinensis	1	Seen	Targeted	NA
7-Feb-20	1.32290	103.77812	HW T2 07	1230	Todiramphus chloris	1	Seen	Incidental	NA
7-Feb-20	1.33265	103.78133	HW T1 13	733	Treron vernans	1	Seen	Targeted	NA
7-Feb-20	1.33244	103.78135	HW T1 13	735	Treron vernans	1	Seen	Targeted	Feeding on Ficus
7-Feb-20	1.33219	103.78134	HW T1 13	736	Treron vernans	2	Seen	Targeted	Feeding on Ficus
7-Feb-20	1.32990	103.77928	HW T1 07	845	Treron vernans	1	Seen	Targeted	NA
7-Feb-20	1.32849	103.77827	HW T1 03	912	Treron vernans	4	Seen	Targeted	NA
7-Feb-20	1.32902	103.78136	HW T1 16	754	Trichoglossus haematodus	2	Seen	Targeted	NA
7-Feb-20	1.32880	103.77792	HW T1 04	902	Trichoglossus haematodus	2	Seen	Targeted	NA
7-Feb-20	1.32800	103.77764	HW T1 02	917	Trichoglossus haematodus	2	Heard	Targeted	NA
7-Feb-20	1.32546	103.77780	NA	1200	Troides helena cerberus	1	Seen	Incidental	NA
7-Feb-20	1.33168	103.78047	HW T1 10	821	Unidentified Gekkonidae	1	Heard	Targeted	NA
7-Feb-20	1.32769	103.77674	HW T1 01	925	Varanus salvator	1	Seen	Targeted	NA
13-Feb-20	1.32749	103.77738	HW T1 01	2159	Ahaetulla prasina	1	Seen	Targeted	NA
13-Feb-20	1.32582	103.77597	HW T2 20	1459	Amathusia phidippus phidippus	1	Seen	Incidental	NA
13-Feb-20	1.32989	103.78140	HW T1 16	1955	Bronchocela cristatella	1	Seen	Targeted	NA
13-Feb-20	1.33187	103.78053	HW T1 10	2038	Bronchocela cristatella	1	Seen	Targeted	NA
13-Feb-20	1.33033	103.78142	HW T1 15	2001	Caprimulgus macrurus	1	Heard	Targeted	NA
13-Feb-20	1.33156	103.78133	HW T1 14	2008	Caprimulgus macrurus	1	Heard	Targeted	NA
13-Feb-20	1.33316	103.78120	HW T1 12	2016	Caprimulgus macrurus	1	Seen	Targeted	NA
13-Feb-20	1.32574	103.77545	NA	1430	Chilasa clytia clytia	1	Seen	Incidental	NA
13-Feb-20	1.33090	103.78138	HW T1 15	2005	Dendrelaphis pictus	1	Seen	Targeted	NA
13-Feb-20	1.33039	103.77848	HW T1 05	2118	Dendrelaphis pictus	1	Seen	Targeted	NA
13-Feb-20	1.32885	103.77820	HW T1 03	2139	Dendrelaphis pictus	1	Seen	Targeted	NA
13-Feb-20	1.33062	103.78143	HW T1 15	2003	Duttaphrynus melanostictus	1	Seen	Targeted	NA
13-Feb-20	1.33271	103.78123	HW T1 13	2014	Duttaphrynus melanostictus	1	Seen	Targeted	NA
13-Feb-20	1.33037	103.77802	HW T1 05	2123	Duttaphrynus melanostictus	2	Seen	Targeted	NA
13-Feb-20	1.33003	103.77797	HW T1 05	2124	Duttaphrynus melanostictus	1	Seen	Targeted	NA
13-Feb-20	1.33254	103.78094	HW T1 11	2026	Eleutherodactylus planirostris	1	Seen	Targeted	NA
13-Feb-20	1.33243	103.78090	HW T1 11	2029	Eleutherodactylus planirostris	1	Seen	Targeted	NA
13-Feb-20	1.33236	103.78087	HW T1 11	2031	Eleutherodactylus planirostris	1	Seen	Targeted	NA
13-Feb-20	1.33222	103.78087	HW T1 11	2032	Eleutherodactylus planirostris	1	Seen	Targeted	NA
13-Feb-20	1.33020	103.77905	HW T1 06	2109	Eleutherodactylus planirostris	8	Seen	Targeted	NA
13-Feb-20	1.33024	103.77889	HW T1 06	2114	Eleutherodactylus planirostris	1	Seen	Targeted	NA
13-Feb-20	1.33032	103.77864	HW T1 05	2116	Eleutherodactylus planirostris	2	Seen	Targeted	NA
13-Feb-20	1.33047	103.77830	HW T1 05	2120	Eleutherodactylus planirostris	20	Seen	Targeted	NA
13-Feb-20	1.32983	103.77795	HW T1 05	2125	Eleutherodactylus planirostris	4	Seen	Targeted	NA
13-Feb-20	1.32829	103.77827	HW T1 03	2144	Eleutherodactylus planirostris	1	Seen	Targeted	NA
13-Feb-20	1.32828	103.77808	HW T1 02	2147	Eleutherodactylus planirostris	1	Seen	Targeted	NA
13-Feb-20	1.33119	103.77956	HW T1 08	2052	Eurystomus orientalis	1	Seen	Targeted	Roosting on branch
13-Feb-20	1.33060	103.77810	HW T1 05	2122	Gekko monarchus	1	Seen	Targeted	NA

Appendix I2 Faunal Survey Data for Clementi Forest

Date	Latitude	Longitude	Sampling point	Time (24h)	Scientific name	Quantity	Observation type	Survey method	Remarks
13-Feb-20	1.33217	103.78131	HW T1 13	2012	Kaloula pulchra	1	Seen	Targeted	NA
13-Feb-20	1.33002	103.77935	HW T1 07	2107	Limnonectes blythii	1	Seen	Targeted	NA
13-Feb-20	1.33025	103.78144	HW T1 15	1959	Microhyla butleri	1	Heard	Targeted	NA
13-Feb-20	1.33090	103.78138	HW T1 15	2005	Microhyla butleri	1	Heard	Targeted	NA
13-Feb-20	1.33047	103.77830	HW T1 05	2120	Microhyla butleri	1	Seen	Targeted	NA
13-Feb-20	1.32863	103.77827	HW T1 03	2141	Microhyla butleri	1	Seen	Targeted	NA
13-Feb-20	1.32891	103.78142	HW T1 16	1950	Microhyla heymonsi	1	Heard	Targeted	NA
13-Feb-20	1.33025	103.78144	HW T1 15	1958	Microhyla heymonsi	TMTC	Heard	Targeted	NA
13-Feb-20	1.33312	103.78104	HW T1 12	2020	Microhyla heymonsi	1	Seen	Targeted	NA
13-Feb-20	1.33275	103.78091	HW T1 12	2024	Microhyla heymonsi	1	Seen	Targeted	NA
13-Feb-20	1.32938	103.77736	HW T1 04	2146	Myotis muricola	1	Acoustic	Acoustic	NA
13-Feb-20	1.33236	103.77982	NA	2049	Myotis muricola	1	Acoustic	Acoustic	NA
13-Feb-20	1.32955	103.77667	NA	2137	Myotis muricola	1	Acoustic	Acoustic	NA
13-Feb-20	1.32938	103.77736	HW T1 04	2146	Myotis muricola	1	Acoustic	Acoustic	NA
13-Feb-20	1.32887	103.77633	NA	2157	Myotis muricola	1	Acoustic	Acoustic	NA
13-Feb-20	1.32887	103.77633	NA	2200	Myotis muricola	1	Acoustic	Acoustic	NA
13-Feb-20	1.32804	103.77671	NA	2200	Myotis muricola	1	Acoustic	Acoustic	NA
13-Feb-20	1.32842	103.77628	NA	2200	Myotis muricola	1	Acoustic	Acoustic	NA
13-Feb-20	1.32842	103.77628	NA	2202	Myotis muricola	1	Acoustic	Acoustic	NA
13-Feb-20	1.32751	103.77902	HW T2 16	1724	Naja sumatrana	1	Seen	Incidental	NA
13-Feb-20	1.33005	103.78142	HW T1 16	1956	Otus lempiji	1	Heard	Targeted	NA
13-Feb-20	1.33100	103.77957	HW T1 08	2054	Paradoxurus musangus	1	Seen	Targeted	NA
13-Feb-20	1.32823	103.77821	HW T1 02	2145	Paradoxurus musangus	1	Seen	Targeted	NA
13-Feb-20	1.32749	103.77738	HW T1 01	2152	Paradoxurus musangus	1	Seen	Targeted	NA
13-Feb-20	1.33253	103.78091	HW T1 11	2027	Picus vittatus	1	Seen	Targeted	Roosting in treehole
13-Feb-20	1.33025	103.78144	HW T1 15	1958	Polypedates leucomystax	1	Heard	Targeted	NA
13-Feb-20	1.33222	103.78087	HW T1 11	2034	Polypedates leucomystax	1	Seen	Targeted	NA
13-Feb-20	1.33021	103.77898	HW T1 06	2113	Polypedates leucomystax	1	Seen	Targeted	NA
13-Feb-20	1.33308	103.78121	HW T1 12	2009	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33308	103.78121	HW T1 12	2003	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33308	103.78121	HW T1 12	2004	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33308	103.78121	HW T1 12	2004	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33308	103.78121	HW T1 12	2004	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33308	103.78121	HW T1 12	2005	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33308	103.78121	HW T1 12	2005	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33308	103.78121	HW T1 12	2005	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33308	103.78121	HW T1 12	2006	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33308	103.78121	HW T1 12	2006	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33308	103.78121	HW T1 12	2006	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33308	103.78121	HW T1 12	2006	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33308	103.78121	HW T1 12	2007	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33308	103.78121	HW T1 12	2007	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33308	103.78121	HW T1 12	2007	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33308	103.78121	HW T1 12	2008	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33308	103.78121	HW T1 12	2009	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33316	103.78080	HW T1 12	2009	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33316	103.78080	HW T1 12	2009	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33316	103.78080	HW T1 12	2010	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33312	103.78104	HW T1 12	2011	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33312	103.78104	HW T1 12	2011	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33314	103.78104	HW T1 12	2012	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33312	103.78104	HW T1 12	2012	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33311	103.78104	HW T1 12	2013	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33394	103.78126	NA	2013	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33349	103.78121	HW T1 12	2013	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33284	103.78080	HW T1 12	2025	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33255	103.78059	HW T1 11	2026	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33236	103.77982	NA	2110	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33057	103.77779	NA	2119	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.32923	103.77728	HW T1 04	2138	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.32919	103.77671	NA	2150	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
13-Feb-20	1.33005	103.78142	HW T1 16	1956	Unidentified Fruit bat	1	Seen	Targeted	NA
13-Feb-20	1.33033	103.78142	HW T1 15	2001	Unidentified Fruit bat	1	Seen	Targeted	Roosting under ficus
13-Feb-20	1.33217	103.78131	HW T1 13	2011	Unidentified Fruit bat	1	Seen	Targeted	NA
13-Feb-20	1.33243	103.78090	HW T1 11	2028	Unidentified Fruit bat	1	Seen	Targeted	NA
13-Feb-20	1.33236	103.78087	HW T1 11	2031	Unidentified Fruit bat	1	Seen	Targeted	NA
13-Feb-20	1.33222	103.78087	HW T1 11	2033	Unidentified Fruit bat	1	Seen	Targeted	NA
13-Feb-20	1.32823	103.77821	HW T1 02	2146	Unidentified Fruit bat	1	Seen	Targeted	NA
13-Feb-20	1.32819	103.77990	HW T2 15	1719	Unidentified Pachliopta aristolochiae	1	Seen	Incidental	Kathleen observed red
13-Feb-20	1.33189	103.78127	HW T1 14	2010	Unidentified Rallidae	1	Seen	Targeted	NA
13-Feb-20	1.32887	103.77794	HW T1 04	2135	Unidentified Rallidae	1	Seen	Targeted	NA
13-Feb-20	1.33308	103.78184	NA	1937	Vanellus indicus	1	Heard	Incidental	NA
13-Feb-20	1.33308	103.78121	HW T1 12	2009	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 200910.wav
13-Feb-20	1.33308	103.78121	HW T1 12	2003	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 200358.wav
13-Feb-20	1.33308	103.78121	HW T1 12	2004	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 200413.wav
13-Feb-20	1.33308	103.78121	HW T1 12	2004	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 200428.wav
13-Feb-20	1.33308	103.78121	HW T1 12	2004	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 200443.wav
13-Feb-20	1.33308	103.78121	HW T1 12	2005	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 200506.wav
13-Feb-20	1.33308	103.78121	HW T1 12	2005	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 200521.wav
13-Feb-20	1.33308	103.78121	HW T1 12	2005	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 200545.wav
13-Feb-20	1.33308	103.78121	HW T1 12	2006	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 200600.wav
13-Feb-20	1.33308	103.78121	HW T1 12	2006	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 200615.wav
13-Feb-20	1.33308	103.78121	HW T1 12	2006	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 200631.wav
13-Feb-20	1.33308	103.78121	HW T1 12	2006	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 200646.wav
13-Feb-20	1.33308	103.78121	HW T1 12	2007	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 200716.wav
13-Feb-20	1.33308	103.78121	HW T1 12	2007	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 200731.wav
13-Feb-20	1.33308	103.78121	HW T1 12	2007	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 200746.wav
13-Feb-20	1.33308	103.78121	HW T1 12	2008	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 200842.wav
13-Feb-20	1.33308	103.78121	HW T1 12	2009	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 200922.wav

Appendix I2 Faunal Survey Data for Clementi Forest

Date	Latitude	Longitude	Sampling point	Time (24h)	Scientific name	Quantity	Observation type	Survey method	Remarks
13-Feb-20	1.33316	103.78080	HW T1 12	2009	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 200933.wav
13-Feb-20	1.33316	103.78080	HW T1 12	2009	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 200956.wav
13-Feb-20	1.33316	103.78080	HW T1 12	2010	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 201038.wav
13-Feb-20	1.33312	103.78104	HW T1 12	2011	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 201131.wav
13-Feb-20	1.33312	103.78104	HW T1 12	2011	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 201146.wav
13-Feb-20	1.33314	103.78104	HW T1 12	2012	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 201230.wav
13-Feb-20	1.33312	103.78104	HW T1 12	2012	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 201251.wav
13-Feb-20	1.33311	103.78104	HW T1 12	2013	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 201306.wav
13-Feb-20	1.33394	103.78126	NA	2013	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 201343.wav
13-Feb-20	1.33349	103.78121	HW T1 12	2013	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 201359.wav
13-Feb-20	1.33284	103.78080	HW T1 12	2025	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 202508.wav
13-Feb-20	1.33255	103.78059	HW T1 11	2026	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 202631.wav
13-Feb-20	1.33236	103.77982	NA	2110	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 211031.wav
13-Feb-20	1.33057	103.77779	NA	2119	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 211949.wav
13-Feb-20	1.32923	103.77728	HW T1 04	2138	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 213816.wav
13-Feb-20	1.32919	103.77671	NA	2150	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200213 215058.wav
13-Feb-20	1.32938	103.77736	HW T1 04	2146	Myotis muricola	NA	Acoustic	Acoustic	20200213 214625.wav
13-Feb-20	1.33236	103.77982	NA	2049	Myotis muricola	NA	Acoustic	Acoustic	20200213 204922.wav
13-Feb-20	1.32955	103.77667	NA	2137	Myotis muricola	NA	Acoustic	Acoustic	20200213 213757.wav
13-Feb-20	1.32938	103.77736	HW T1 04	2146	Myotis muricola	NA	Acoustic	Acoustic	20200213 214619.wav
13-Feb-20	1.32887	103.77633	NA	2157	Myotis muricola	NA	Acoustic	Acoustic	20200213 215748.wav
13-Feb-20	1.32887	103.77633	NA	2200	Myotis muricola	NA	Acoustic	Acoustic	20200213 220009.wav
13-Feb-20	1.32804	103.77671	NA	2200	Myotis muricola	NA	Acoustic	Acoustic	20200213 220034.wav
13-Feb-20	1.32842	103.77628	NA	2200	Myotis muricola	NA	Acoustic	Acoustic	20200213 220057.wav
13-Feb-20	1.32842	103.77628	NA	2202	Myotis muricola	NA	Acoustic	Acoustic	20200213 220205.wav
16-Feb-20	1.33036	103.77857	HW T1 05	1054	Abisara savitri savitri	2	Seen	Targeted	NA
16-Feb-20	1.32969	103.77791	HW T1 04	1108	Acraea terpsicore	1	Seen	Targeted	NA
16-Feb-20	1.32911	103.77772	HW T1 04	1110	Acraea terpsicore	2	Seen	Targeted	NA
16-Feb-20	1.33074	103.78131	HW T1 15	925	Agrionoptera insignis	1	Seen	Targeted	NA
16-Feb-20	1.33006	103.78135	HW T1 16	939	Agrionoptera insignis	1	Seen	Targeted	NA
16-Feb-20	1.32964	103.78128	HW T1 16	947	Agrionoptera insignis	1	Seen	Targeted	NA
16-Feb-20	1.33286	103.78107	HW T1 12	1001	Agrionoptera insignis	1	Seen	Targeted	NA
16-Feb-20	1.33141	103.78124	HW T1 14	918	Anthea emolus goberus	1	Seen	Targeted	NA
16-Feb-20	1.32988	103.77928	HW T1 07	1044	Athyma nefte subrata	1	Seen	Targeted	NA
16-Feb-20	1.33041	103.77846	HW T1 05	1058	Borbo cinnara	1	Seen	Targeted	NA
16-Feb-20	1.33202	103.78132	HW T1 14	910	Caloris cornasa	1	Seen	Targeted	NA
16-Feb-20	1.33171	103.78124	HW T1 14	911	Caterpillar Matapa aria	1	Seen	Targeted	Caterpillar on bamboo
16-Feb-20	1.33034	103.78139	HW T1 15	930	Caterpillar Matapa aria	1	Seen	Targeted	Caterpillar on bamboo
16-Feb-20	1.32988	103.77928	HW T1 07	1044	Catopsilia pomona pomona	1	Seen	Targeted	NA
16-Feb-20	1.33046	103.77832	HW T1 05	1101	Catopsilia pomona pomona	1	Seen	Targeted	NA
16-Feb-20	1.33033	103.78140	HW T1 15	932	Cerionoptera cerinorubellum	1	Seen	Targeted	NA
16-Feb-20	1.33159	103.78121	HW T1 14	914	Crocotemis servilia	1	Seen	Targeted	NA
16-Feb-20	1.33141	103.78124	HW T1 14	918	Crocotemis servilia	2	Seen	Targeted	NA
16-Feb-20	1.32959	103.78136	HW T1 16	944	Crocotemis servilia	1	Seen	Targeted	NA
16-Feb-20	1.33046	103.77832	HW T1 05	1101	Crocotemis servilia	1	Seen	Targeted	NA
16-Feb-20	1.33038	103.77805	HW T1 05	1107	Crocotemis servilia	2	Seen	Targeted	NA
16-Feb-20	1.32969	103.77791	HW T1 04	1108	Crocotemis servilia	1	Seen	Targeted	NA
16-Feb-20	1.33161	103.78124	HW T1 14	1000	Delias hyparete metarete	2	Seen	Targeted	NA
16-Feb-20	1.33264	103.78087	HW T1 11	1008	Delias hyparete metarete	4	Seen	Targeted	NA
16-Feb-20	1.33193	103.78053	HW T1 10	1013	Delias hyparete metarete	3	Seen	Targeted	NA
16-Feb-20	1.33157	103.78001	HW T1 09	1024	Delias hyparete metarete	3	Seen	Targeted	NA
16-Feb-20	1.33096	103.78131	HW T1 15	924	Diplacodes trivialis	1	Seen	Targeted	NA
16-Feb-20	1.33046	103.77832	HW T1 05	1106	Egretta garzetta	1	Seen	Targeted	Foraging in canal
16-Feb-20	1.33159	103.78121	HW T1 14	914	Elymnias hypermnestra agina	1	Seen	Targeted	Feeding on Pipturus
16-Feb-20	1.32829	103.77802	HW T1 02	1123	Elymnias hypermnestra agina	1	Seen	Targeted	NA
16-Feb-20	1.32819	103.77786	HW T1 02	1124	Elymnias hypermnestra agina	1	Seen	Targeted	NA
16-Feb-20	1.32754	103.77694	HW T1 01	1131	Elymnias hypermnestra agina	1	Seen	Targeted	NA
16-Feb-20	1.33036	103.77954	HW T1 07	1039	Erionota sp.	1	Seen	Targeted	NA
16-Feb-20	1.33141	103.78124	HW T1 14	918	Eurema sp.	1	Seen	Targeted	NA
16-Feb-20	1.33112	103.78124	HW T1 15	920	Eurema sp.	1	Seen	Targeted	NA
16-Feb-20	1.33005	103.78134	HW T1 16	936	Eurema sp.	1	Seen	Targeted	NA
16-Feb-20	1.32982	103.78133	HW T1 16	942	Eurema sp.	1	Seen	Targeted	NA
16-Feb-20	1.33046	103.77832	HW T1 05	1105	Eurema sp.	1	Seen	Targeted	NA
16-Feb-20	1.32969	103.77791	HW T1 04	1108	Eurema sp.	1	Seen	Targeted	NA
16-Feb-20	1.32903	103.77772	HW T1 04	1110	Eurema sp.	1	Seen	Targeted	NA
16-Feb-20	1.33149	103.77975	HW T1 09	1027	Gynacantha sp.	1	Seen	Targeted	NA
16-Feb-20	1.33160	103.78026	HW T1 10	1022	Gynacantha subinterrupta	1	Seen	Targeted	NA
16-Feb-20	1.33077	103.77970	HW T1 08	1033	Gynacantha subinterrupta	1	Seen	Targeted	NA
16-Feb-20	1.33018	103.77942	HW T1 07	1041	Gynacantha subinterrupta	1	Seen	Targeted	NA
16-Feb-20	1.33267	103.78138	HW T1 13	904	Iambrix salsala salsala	1	Seen	Targeted	NA
16-Feb-20	1.33005	103.78134	HW T1 16	936	Iambrix salsala salsala	2	Seen	Targeted	NA
16-Feb-20	1.33006	103.78135	HW T1 16	938	Iambrix salsala salsala	1	Seen	Targeted	Feeding on Leea indica
16-Feb-20	1.32937	103.78139	HW T1 16	949	Iambrix salsala salsala	1	Seen	Targeted	NA
16-Feb-20	1.33308	103.78111	HW T1 12	1003	Iambrix salsala salsala	1	Seen	Targeted	NA
16-Feb-20	1.32804	103.77768	HW T1 02	1125	Ideopsis vulgaris macrina	1	Seen	Targeted	NA
16-Feb-20	1.32998	103.77929	HW T1 07	1046	Ischnura senegalensis	1	Seen	Targeted	NA
16-Feb-20	1.33033	103.77849	HW T1 05	1057	Ischnura senegalensis	1	Seen	Targeted	NA
16-Feb-20	1.33041	103.77846	HW T1 05	1058	Junonia almana javana	1	Seen	Targeted	NA
16-Feb-20	1.33043	103.77839	HW T1 05	1059	Junonia almana javana	1	Seen	Targeted	NA
16-Feb-20	1.33046	103.77832	HW T1 05	1106	Junonia almana javana	1	Seen	Targeted	NA
16-Feb-20	1.32988	103.77928	HW T1 07	1044	Junonia hedonia ida	1	Seen	Targeted	NA
16-Feb-20	1.33041	103.77846	HW T1 05	1058	Junonia hedonia ida	1	Seen	Targeted	NA
16-Feb-20	1.32881	103.77789	HW T1 04	1114	Lathrecista asiatica	1	Seen	Targeted	NA
16-Feb-20	1.33045	103.78131	HW T1 15	929	Mycalesis mineus macromalaya	1	Seen	Targeted	NA
16-Feb-20	1.32913	103.78140	HW T1 16	950	Mycalesis mineus macromalaya	1	Seen	Targeted	NA
16-Feb-20	1.33308	103.78111	HW T1 12	1003	Mycalesis mineus macromalaya	1	Seen	Targeted	NA
16-Feb-20	1.32960	103.78129	HW T1 16	946	Mycalesis perseoides perseoides	1	Seen	Targeted	NA
16-Feb-20	1.33031	103.77889	HW T1 06	1051	Mycalesis perseoides perseoides	1	Seen	Targeted	NA
16-Feb-20	1.32907	103.78141	HW T1 16	951	Mycalesis visala phamis	1	Seen	Targeted	NA

Appendix I2 Faunal Survey Data for Clementi Forest

Date	Latitude	Longitude	Sampling point	Time (24h)	Scientific name	Quantity	Observation type	Survey method	Remarks
16-Feb-20	1.33023	103.77896	HW T1 06	1050	Mycalesis visala phamis	1	Seen	Targeted	NA
16-Feb-20	1.32879	103.77824	HW T1 03	1118	Mycalesis visala phamis	1	Seen	Targeted	NA
16-Feb-20	1.32870	103.77830	HW T1 03	1120	Mycalesis visala phamis	1	Seen	Targeted	NA
16-Feb-20	1.32868	103.77824	HW T1 03	1120	Mycalesis visala phamis	1	Seen	Targeted	NA
16-Feb-20	1.32795	103.77748	HW T1 02	1127	Mycalesis visala phamis	1	Seen	Targeted	NA
16-Feb-20	1.32795	103.77748	HW T1 02	1127	Mycalesis visala phamis	1	Seen	Targeted	NA
16-Feb-20	1.33202	103.78132	HW T1 14	908	Neurothemis fluctuans	1	Seen	Targeted	NA
16-Feb-20	1.32913	103.78140	HW T1 16	950	Neurothemis fluctuans	1	Seen	Targeted	NA
16-Feb-20	1.33012	103.77905	HW T1 06	1047	Neurothemis fluctuans	1	Seen	Targeted	NA
16-Feb-20	1.32887	103.77785	HW T1 04	1112	Neurothemis fluctuans	3	Seen	Targeted	NA
16-Feb-20	1.32887	103.77785	HW T1 04	1112	Orthetrum chrysis	1	Seen	Targeted	NA
16-Feb-20	1.33043	103.77839	HW T1 05	1059	Orthetrum sabina	1	Seen	Targeted	NA
16-Feb-20	1.33046	103.77832	HW T1 05	1101	Orthetrum sabina	1	Seen	Targeted	NA
16-Feb-20	1.33046	103.77832	HW T1 05	1101	Orthetrum testaceum	8	Seen	Targeted	NA
16-Feb-20	1.33161	103.78124	HW T1 14	958	Parantica agleoides agleoides	1	Seen	Targeted	NA
16-Feb-20	1.32964	103.78128	HW T1 16	947	Pelopidas mathias mathias	1	Seen	Targeted	NA
16-Feb-20	1.33046	103.77832	HW T1 05	1105	Polyura sp.	1	Seen	Targeted	NA
16-Feb-20	1.33310	103.78135	HW T1 12	902	Potanthus omaha omaha	1	Seen	Targeted	NA
16-Feb-20	1.33267	103.78138	HW T1 13	904	Potanthus omaha omaha	1	Seen	Targeted	NA
16-Feb-20	1.33267	103.78138	HW T1 13	904	Potanthus omaha omaha	1	Seen	Targeted	NA
16-Feb-20	1.33159	103.78121	HW T1 14	913	Potanthus omaha omaha	1	Seen	Targeted	NA
16-Feb-20	1.33141	103.78124	HW T1 14	917	Potanthus omaha omaha	1	Seen	Targeted	NA
16-Feb-20	1.33112	103.78124	HW T1 15	920	Potanthus omaha omaha	1	Seen	Targeted	NA
16-Feb-20	1.32982	103.78133	HW T1 16	942	Potanthus omaha omaha	1	Seen	Targeted	NA
16-Feb-20	1.33043	103.77839	HW T1 05	1059	Potanthus omaha omaha	1	Seen	Targeted	NA
16-Feb-20	1.32881	103.77789	HW T1 04	1114	Potanthus omaha omaha	2	Seen	Targeted	Feeding on Leea indica
16-Feb-20	1.33046	103.77832	HW T1 05	1102	Rhyothemis phyllis	1	Seen	Targeted	NA
16-Feb-20	1.32988	103.77928	HW T1 07	1044	Vindula dejone erotella	1	Seen	Targeted	NA
16-Feb-20	1.33046	103.77832	HW T1 05	1101	Vindula dejone erotella	2	Seen	Targeted	Puddling
16-Feb-20	1.33107	103.78129	HW T1 15	921	Ypthima baldus newboldi	1	Seen	Targeted	NA
16-Feb-20	1.33107	103.78129	HW T1 15	921	Ypthima baldus newboldi	1	Seen	Targeted	NA
16-Feb-20	1.33267	103.78138	HW T1 13	904	Ypthima fasciata torone	2	Seen	Targeted	NA
16-Feb-20	1.33267	103.78138	HW T1 13	904	Ypthima horsfieldii humei	1	Seen	Targeted	NA
16-Feb-20	1.33061	103.78135	HW T1 15	927	Ypthima horsfieldii humei	1	Seen	Targeted	NA
16-Feb-20	1.33050	103.78133	HW T1 15	929	Ypthima horsfieldii humei	1	Seen	Targeted	NA
16-Feb-20	1.32929	103.78139	HW T1 16	949	Ypthima horsfieldii humei	1	Seen	Targeted	NA
16-Feb-20	1.32893	103.77779	HW T1 04	1112	Ypthima horsfieldii humei	2	Seen	Targeted	NA
16-Feb-20	1.32995	103.78136	HW T1 16	938	Ypthima sp.	1	Seen	Targeted	NA
16-Feb-20	1.33033	103.77849	HW T1 05	1057	Ypthima sp.	1	Seen	Targeted	NA
16-Feb-20	1.32885	103.77814	HW T1 03	1117	Ypthima sp.	1	Seen	Targeted	NA
16-Feb-20	1.32903	103.77772	HW T1 04	1110	Zizina otis lampa	10	Seen	Targeted	NA
21-Feb-20	1.33037	103.77855	HW T1 05	1047	Abisara savitri savitri	1	Seen	Incidental	At the grassy/forest edge
25-Feb-20	1.32511	103.77489	NA	950	Chrysococcyx xanthorhynchus	1	Seen	Incidental	NA
27-Feb-20	1.32675	103.77782	HW T2 18	733	Acridotheres javanicus	2	Heard	Targeted	NA
27-Feb-20	1.32792	103.77947	HW T2 16	754	Acridotheres javanicus	1	Seen	Targeted	NA
27-Feb-20	1.32836	103.78024	HW T2 15	804	Acridotheres javanicus	1	Heard	Targeted	NA
27-Feb-20	1.32589	103.77979	HW T2 11	832	Acridotheres javanicus	2	Heard	Targeted	NA
27-Feb-20	1.32538	103.77989	HW T2 11	901	Acridotheres javanicus	2	Seen	Targeted	NA
27-Feb-20	1.32418	103.77896	HW T2 09	908	Acridotheres javanicus	2	Seen	Targeted	NA
27-Feb-20	1.32251	103.77433	HW T2 01	955	Acridotheres javanicus	1	Heard	Targeted	NA
27-Feb-20	1.32688	103.77794	HW T2 18	738	Aegithina tiphia	1	Heard	Targeted	NA
27-Feb-20	1.32208	103.77574	HW T2 03	942	Aegithina tiphia	1	Heard	Targeted	NA
27-Feb-20	1.40426	103.78628	HW T2 01	959	Aegithina tiphia	1	Heard	Targeted	NA
27-Feb-20	1.32792	103.77947	HW T2 16	754	Aerodramus sp.	1	Seen	Targeted	NA
27-Feb-20	1.32567	103.77971	HW T2 11	834	Aerodramus sp.	1	Seen	Targeted	NA
27-Feb-20	1.32615	103.77638	HW T2 20	724	Aethopyga siparaja	1	Heard	Targeted	NA
27-Feb-20	1.32752	103.77898	HW T2 16	750	Aethopyga siparaja	1	Heard	Targeted	NA
27-Feb-20	1.32307	103.77720	HW T2 06	925	Aethopyga siparaja	1	Heard	Targeted	NA
27-Feb-20	1.32567	103.77971	HW T2 11	834	Amaurornis phoenicurus	1	Heard	Targeted	NA
27-Feb-20	1.32637	103.77691	HW T2 19	727	Aplonis panayensis	1	Heard	Targeted	NA
27-Feb-20	1.32675	103.77782	HW T2 18	733	Aplonis panayensis	1	Seen	Targeted	NA
27-Feb-20	1.32745	103.77866	HW T2 17	747	Aplonis panayensis	1	Heard	Targeted	NA
27-Feb-20	1.32836	103.78024	HW T2 15	804	Aplonis panayensis	1	Heard	Targeted	NA
27-Feb-20	1.32704	103.78058	HW T2 13	822	Aplonis panayensis	1	Heard	Targeted	NA
27-Feb-20	1.32206	103.77550	HW T2 03	946	Cacatua goffiniana	1	Seen	Targeted	NA
27-Feb-20	1.32820	103.77973	HW T2 15	759	Chrysophlegma miniaceum	1	Heard	Targeted	NA
27-Feb-20	1.32785	103.78068	HW T2 14	811	Chrysophlegma miniaceum	1	Heard	Targeted	NA
27-Feb-20	1.32538	103.77989	HW T2 11	901	Chrysophlegma miniaceum	1	Heard	Targeted	NA
27-Feb-20	1.32470	103.77934	HW T2 10	906	Chrysophlegma miniaceum	1	Heard	Targeted	NA
27-Feb-20	1.32727	103.77854	HW T2 17	746	Cinnyris jugularis	1	Heard	Targeted	NA
27-Feb-20	1.32307	103.77720	HW T2 06	927	Dicaeum cruentatum	1	Heard	Targeted	NA
27-Feb-20	1.32623	103.77655	HW T2 20	725	Dicaeum sp.	1	Heard	Targeted	NA
27-Feb-20	1.32269	103.77676	HW T2 05	930	Dicurus paradiseus	1	Heard	Targeted	NA
27-Feb-20	1.32605	103.77599	HW T2 20	720	Dinopium javanense	2	Heard	Targeted	NA
27-Feb-20	1.32688	103.77794	HW T2 18	738	Dinopium javanense	1	Heard	Targeted	NA
27-Feb-20	1.32785	103.78068	HW T2 14	812	Dinopium javanense	1	Heard	Targeted	NA
27-Feb-20	1.32671	103.78051	HW T2 13	825	Dinopium javanense	1	Heard	Targeted	NA
27-Feb-20	1.32536	103.77955	HW T2 11	858	Dinopium javanense	1	Heard	Targeted	NA
27-Feb-20	1.32307	103.77720	HW T2 06	925	Dinopium javanense	1	Heard	Targeted	NA
27-Feb-20	1.32210	103.77513	HW T2 03	949	Dinopium javanense	2	Heard	Targeted	NA
27-Feb-20	1.32675	103.77782	HW T2 18	733	Eleutherodactylus planirostris	2	Heard	Targeted	NA
27-Feb-20	1.32820	103.77973	HW T2 15	759	Eleutherodactylus planirostris	1	Heard	Targeted	NA
27-Feb-20	1.32575	103.77893	NA	0853-	Eleutherodactylus planirostris	1	Heard	Incidental	NA
27-Feb-20	1.32311	103.77740	HW T2 06	925	Eudynamis scolopaceus	1	Heard	Targeted	NA
27-Feb-20	1.32836	103.78024	HW T2 15	804	Gallus gallus	1	Heard	Targeted	NA
27-Feb-20	1.32613	103.77617	HW T2 20	722	Garrulax leucolophus	2	Heard	Targeted	NA
27-Feb-20	1.32715	103.77832	HW T2 17	740	Garrulax leucolophus	3	Seen	Targeted	NA
27-Feb-20	1.32803	103.77964	HW T2 16	756	Garrulax leucolophus	2	Heard	Targeted	NA
27-Feb-20	1.32309	103.77853	HW T2 08	917	Garrulax leucolophus	2	Heard	Targeted	NA

Appendix I2 Faunal Survey Data for Clementi Forest

Date	Latitude	Longitude	Sampling point	Time (24h)	Scientific name	Quantity	Observation type	Survey method	Remarks
27-Feb-20	1.32283	103.77686	HW T2 05	928	Garrulax leucolophus	2	Heard	Targeted	NA
27-Feb-20	1.32204	103.77599	HW T2 04	939	Garrulax leucolophus	2	Heard	Targeted	NA
27-Feb-20	1.32210	103.77513	HW T2 03	949	Garrulax leucolophus	1	Heard	Targeted	NA
27-Feb-20	1.32805	103.77966	HW T2 15	759	Gracula religiosa	1	Heard	Targeted	NA
27-Feb-20	1.32614	103.78016	HW T2 12	828	Gracula religiosa	1	Heard	Targeted	NA
27-Feb-20	1.32538	103.77989	HW T2 11	901	Gracula religiosa	1	Heard	Targeted	NA
27-Feb-20	1.32241	103.77644	HW T2 04	936	Gracula religiosa	1	Heard	Targeted	NA
27-Feb-20	1.32204	103.77599	HW T2 04	939	Halcyon smyrnensis	1	Heard	Targeted	NA
27-Feb-20	1.32605	103.77599	HW T2 20	721	Limnonectes blythii	1	Seen	Targeted	NA
27-Feb-20	1.32538	103.77989	HW T2 11	901	Loriculus galgulus	1	Heard	Targeted	NA
27-Feb-20	1.32208	103.77574	HW T2 03	942	Loriculus galgulus	1	Heard	Targeted	NA
27-Feb-20	1.40426	103.78628	HW T2 01	959	Loriculus galgulus	1	Heard	Targeted	NA
27-Feb-20	1.32615	103.77638	HW T2 20	724	Mixornis gularis	1	Heard	Targeted	NA
27-Feb-20	1.32632	103.77705	HW T2 19	729	Mixornis gularis	1	Heard	Targeted	NA
27-Feb-20	1.32688	103.77794	HW T2 18	738	Mixornis gularis	1	Heard	Targeted	NA
27-Feb-20	1.32728	103.78060	HW T2 13	817	Mixornis gularis	2	Heard	Targeted	NA
27-Feb-20	1.32292	103.77800	HW T2 07	920	Mixornis gularis	2	Heard	Targeted	NA
27-Feb-20	1.32223	103.77557	HW T2 03	943	Mixornis gularis	1	Heard	Targeted	NA
27-Feb-20	1.32675	103.77782	HW T2 18	733	Merops sp.	1	Seen	Targeted	NA
27-Feb-20	1.32752	103.77898	HW T2 16	750	Merops sp.	1	Heard	Targeted	NA
27-Feb-20	1.32615	103.77638	HW T2 20	725	Nisaetus cirrhatus	1	Heard	Targeted	NA
27-Feb-20	1.32715	103.77832	HW T2 17	744	Oriolus chinensis	1	Heard	Targeted	NA
27-Feb-20	1.32820	103.77973	HW T2 15	759	Oriolus chinensis	1	Heard	Targeted	NA
27-Feb-20	1.32737	103.78074	HW T2 13	815	Oriolus chinensis	1	Heard	Targeted	NA
27-Feb-20	1.32619	103.78027	HW T2 12	827	Oriolus chinensis	1	Heard	Targeted	NA
27-Feb-20	1.32538	103.77989	HW T2 11	901	Oriolus chinensis	1	Heard	Targeted	NA
27-Feb-20	1.32222	103.77471	HW T2 02	953	Oriolus chinensis	2	Heard	Targeted	NA
27-Feb-20	1.32715	103.77832	HW T2 17	740	Orthotomus atroregularis	1	Heard	Targeted	NA
27-Feb-20	1.32715	103.77832	HW T2 17	744	Orthotomus atroregularis	1	Heard	Targeted	NA
27-Feb-20	1.32737	103.78074	HW T2 13	815	Orthotomus atroregularis	1	Heard	Targeted	NA
27-Feb-20	1.32635	103.78031	HW T2 12	827	Orthotomus atroregularis	2	Heard	Targeted	NA
27-Feb-20	1.32307	103.77720	HW T2 06	927	Orthotomus atroregularis	1	Heard	Targeted	NA
27-Feb-20	1.32208	103.77574	HW T2 03	942	Orthotomus atroregularis	1	Heard	Targeted	NA
27-Feb-20	1.32803	103.77964	HW T2 16	756	Orthotomus sericeus	1	Heard	Targeted	NA
27-Feb-20	1.32575	103.77975	HW T2 11	833	Orthotomus sericeus	1	Heard	Targeted	NA
27-Feb-20	1.32222	103.77471	HW T2 02	953	Orthotomus sericeus	1	Heard	Targeted	NA
27-Feb-20	1.32651	103.77732	HW T2 19	730	Orthotomus sp.	1	Heard	Targeted	NA
27-Feb-20	1.32538	103.77989	HW T2 11	902	Pericrocotus divaricatus	1	Heard	Targeted	NA
27-Feb-20	1.32206	103.77550	HW T2 03	946	Pernis ptilorhynchus	1	Seen	Targeted	NA
27-Feb-20	1.32623	103.77669	HW T2 19	726	Picus vittatus	1	Heard	Targeted	NA
27-Feb-20	1.32792	103.77947	HW T2 16	754	Picus vittatus	1	Heard	Targeted	NA
27-Feb-20	1.32635	103.78031	HW T2 12	827	Picus vittatus	1	Heard	Targeted	NA
27-Feb-20	1.32536	103.77955	HW T2 11	858	Picus vittatus	1	Heard	Targeted	NA
27-Feb-20	1.32311	103.77740	HW T2 06	925	Picus vittatus	1	Seen	Targeted	NA
27-Feb-20	1.32331	103.77847	HW T2 08	915	Polypedates leucomystax	3	Seen	Targeted	Tadpoles in well
27-Feb-20	1.32707	103.77806	HW T2 18	739	Psilopogon lineatus	1	Heard	Targeted	NA
27-Feb-20	1.32745	103.77866	HW T2 17	747	Psilopogon lineatus	1	Heard	Targeted	NA
27-Feb-20	1.32792	103.77947	HW T2 16	754	Psilopogon lineatus	1	Heard	Targeted	NA
27-Feb-20	1.32828	103.77986	HW T2 15	801	Psilopogon lineatus	1	Heard	Targeted	NA
27-Feb-20	1.32737	103.78074	HW T2 13	815	Psilopogon lineatus	1	Heard	Targeted	NA
27-Feb-20	1.32644	103.78036	HW T2 12	826	Psilopogon lineatus	1	Heard	Targeted	NA
27-Feb-20	1.32493	103.77952	HW T2 10	905	Psilopogon lineatus	1	Heard	Targeted	NA
27-Feb-20	1.32355	103.77867	HW T2 08	912	Psilopogon lineatus	1	Heard	Targeted	NA
27-Feb-20	1.32295	103.77829	HW T2 07	918	Psilopogon lineatus	1	Heard	Targeted	NA
27-Feb-20	1.32206	103.77550	HW T2 03	946	Psilopogon lineatus	1	Heard	Targeted	NA
27-Feb-20	1.32251	103.77433	HW T2 01	955	Psilopogon lineatus	1	Heard	Targeted	NA
27-Feb-20	1.32615	103.77638	HW T2 20	724	Psittacula alexandri	2	Heard	Targeted	NA
27-Feb-20	1.32623	103.77655	HW T2 20	725	Psittacula alexandri	1	Seen	Targeted	NA
27-Feb-20	1.32644	103.78036	HW T2 12	825	Psittacula alexandri	1	Heard	Targeted	NA
27-Feb-20	1.32605	103.77599	HW T2 20	721	Psittacula longicauda	1	Heard	Targeted	NA
27-Feb-20	1.32688	103.77794	HW T2 18	738	Psittacula longicauda	1	Heard	Targeted	NA
27-Feb-20	1.32715	103.77832	HW T2 17	742	Psittacula longicauda	3	Heard	Targeted	NA
27-Feb-20	1.32846	103.78015	HW T2 15	802	Psittacula longicauda	1	Heard	Targeted	NA
27-Feb-20	1.32785	103.78068	HW T2 14	807	Psittacula longicauda	3	Seen	Targeted	NA
27-Feb-20	1.32589	103.77979	HW T2 11	832	Psittacula longicauda	5	Heard	Targeted	NA
27-Feb-20	1.32538	103.77989	HW T2 11	902	Psittacula longicauda	1	Seen	Targeted	NA
27-Feb-20	1.32320	103.77755	HW T2 06	924	Psittacula longicauda	2	Heard	Targeted	NA
27-Feb-20	1.32201	103.77503	HW T2 02	951	Psittacula longicauda	1	Heard	Targeted	NA
27-Feb-20	1.32538	103.77989	HW T2 11	902	Pycnonotus goiavier	1	Heard	Targeted	NA
27-Feb-20	1.32623	103.77655	HW T2 20	725	Pycnonotus plumosus	1	Heard	Targeted	NA
27-Feb-20	1.32665	103.77765	HW T2 18	732	Pycnonotus plumosus	1	Heard	Targeted	NA
27-Feb-20	1.32785	103.77932	HW T2 16	752	Pycnonotus plumosus	1	Heard	Targeted	NA
27-Feb-20	1.32785	103.78068	HW T2 14	806	Pycnonotus zeylanicus	1	Heard	Targeted	NA
27-Feb-20	1.32611	103.78006	HW T2 12	828	Pycnonotus zeylanicus	1	Heard	Targeted	NA
27-Feb-20	1.32241	103.77644	HW T2 04	936	Pycnonotus zeylanicus	1	Heard	Targeted	NA
27-Feb-20	1.32549	103.77968	HW T2 11	0840-	Teinobasis ruficollis	1	Seen	Incidental	NA
27-Feb-20	1.32771	103.78080	HW T2 14	813	Trichoglossus haematodus	1	Heard	Targeted	NA
27-Feb-20	1.32712	103.78059	HW T2 13	820	Trichoglossus haematodus	2	Heard	Targeted	NA
27-Feb-20	1.32589	103.77979	HW T2 11	832	Trichoglossus haematodus	2	Heard	Targeted	NA
27-Feb-20	1.32536	103.77955	HW T2 11	857	Trichoglossus haematodus	1	Heard	Targeted	NA
27-Feb-20	1.32538	103.77989	HW T2 11	901	Trichoglossus haematodus	2	Heard	Targeted	NA
27-Feb-20	1.32418	103.77896	HW T2 09	908	Trichoglossus haematodus	2	Seen	Targeted	NA
27-Feb-20	1.32355	103.77867	HW T2 08	913	Unidentified Gekkonidae	1	Seen	Targeted	NA
27-Feb-20	1.32675	103.77782	HW T2 18	733	Varanus nebulosus	1	Seen	Targeted	NA
28-Feb-20	1.32794	103.77793	HW BT 04	1150	Elymnias hypermnestra agina	1	Seen	Trapping	Prawn Bait
2-Mar-20	1.32967	103.77937	NA	2125	Amaurornis phoenicurus	1	Seen	Incidental	NA
2-Mar-20	1.32970	103.77920	NA	2125	Dendrelaphis pictus	1	Seen	Incidental	NA
2-Mar-20	1.33263	103.78103	HW A1 01	1948-	Eleutherodactylus planirostris	3	Seen	Point Count	NA
2-Mar-20	1.33263	103.78103	HW A1 01	1948-	Eleutherodactylus planirostris	2	Heard	Point Count	NA

Appendix I2 Faunal Survey Data for Clementi Forest

Date	Latitude	Longitude	Sampling point	Time (24h)	Scientific name	Quantity	Observation type	Survey method	Remarks
2-Mar-20	1.33056	103.78128	HW A1 03	2035-	Eleutherodactylus planirostris	1	Seen	Point Count	NA
2-Mar-20	1.32954	103.78098	HW A1 04	2046-	Eleutherodactylus planirostris	1	Seen	Point Count	NA
2-Mar-20	1.32954	103.78098	HW A1 04	2046-	Eleutherodactylus planirostris	1	Heard	Point Count	NA
2-Mar-20	1.32984	103.77903	HW A1 06	2127-	Eleutherodactylus planirostris	2	Heard	Point Count	NA
2-Mar-20	1.32985	103.77878	HW A1 01	2135	Gekko monachus	3	Seen	Incidental	NA
2-Mar-20	1.33223	103.78101	HW A1 03	1958	Limnonectes blythii	1	Seen	Incidental	NA
2-Mar-20	1.33127	103.78118	HW A1 03	2025	Limnonectes blythii	1	Seen	Incidental	NA
2-Mar-20	1.33263	103.78103	HW A1 01	1948-	Limnonectes blythii	2	Seen	Point Count	NA
2-Mar-20	1.33056	103.78128	HW A1 03	2035-	Limnonectes blythii	1	Heard	Point Count	NA
2-Mar-20	1.33056	103.78128	HW A1 03	2035-	Limnonectes blythii	2	Seen	Point Count	NA
2-Mar-20	1.33263	103.78103	HW A1 01	1948-	Limnonectes malesianus	1	Seen	Point Count	NA
2-Mar-20	1.33166	103.78107	HW A1 05	2016	Microhyla heymonsi	1	Seen	Incidental	NA
2-Mar-20	1.33263	103.78103	HW A1 02	2004-	NA	NA	Seen	Point Count	nothing observed
2-Mar-20	1.33223	103.78101	HW A1 07	1959	Ninox scutulata	1	Seen	Incidental	NA
2-Mar-20	1.33422	103.78135	NA	1949	Otus lempiji	1	Heard	Incidental	NA
2-Mar-20	1.33101	103.78121	HW T1 15	2028	Paradoxurus musangus	1	Seen	Incidental	NA
2-Mar-20	1.33263	103.78103	HW A1 01	1948-	Poecilia reticulata	17	Seen	Point Count	NA
2-Mar-20	1.33056	103.78128	HW A1 03	2035-	Poecilia reticulata	38	Seen	Point Count	NA
2-Mar-20	1.32936	103.78017	HW A1 05	2115-	Poecilia reticulata	1	Seen	Point Count	NA
2-Mar-20	1.33038	103.77830	HW A1 07	2142-	Poecilia reticulata	TMTC	Seen	Point Count	NA
2-Mar-20	1.32967	103.77937	NA	2125	Zapornia fusca	1	Seen	Incidental	NA
2-Mar-20	1.33038	103.77830	HW A1 07	2142-	Trichopodus trichopterus	4	Seen	Point Count	NA
3-Mar-20	1.33074	103.78135	HW T1 15	931	Agrioptera insignis	2	Seen	Incidental	NA
3-Mar-20	1.33056	103.78128	HW A1 03	0932-	Agrioptera insignis	1	Seen	Point Count	NA
3-Mar-20	1.32936	103.78017	HW A1 05	0956-	Brachydiplax chalybea	2	Seen	Point Count	NA
3-Mar-20	1.32984	103.77903	HW A1 06	0959-	Brachydiplax chalybea	1	Seen	Point Count	NA
3-Mar-20	1.33038	103.77830	HW A1 07	1023-	Brachydiplax chalybea	1	Seen	Point Count	NA
3-Mar-20	1.32984	103.77903	HW A1 06	0959-	Channa striata	1	Seen	Point Count	NA
3-Mar-20	1.32936	103.78017	HW A1 05	0956-	Crocothemis servilia	20	Seen	Point Count	NA
3-Mar-20	1.32984	103.77903	HW A1 06	0959-	Crocothemis servilia	10	Seen	Point Count	NA
3-Mar-20	1.33038	103.77830	HW A1 07	1023-	Crocothemis servilia	15	Seen	Point Count	NA
3-Mar-20	1.33264	103.78112	HW T1 13	918	Diplacodes trivialis	4	Seen	Incidental	NA
3-Mar-20	1.32936	103.78017	HW A1 05	0956-	Ischnura senegalensis	1	Seen	Point Count	NA
3-Mar-20	1.33038	103.77830	HW A1 07	1023-	Ischnura senegalensis	4	Seen	Point Count	Mating
3-Mar-20	1.32984	103.77903	HW A1 06	0959-	Lathrecista asiatica	1	Seen	Point Count	NA
3-Mar-20	1.32984	103.77903	HW A1 06	0959-	Neurothemis fluctuans	1	Seen	Point Count	NA
3-Mar-20	1.32954	103.78098	HW A1 04	0942-	Orthetrum chrysis	1	Seen	Point Count	NA
3-Mar-20	1.32984	103.77903	HW A1 06	0959-	Orthetrum chrysis	1	Seen	Point Count	NA
3-Mar-20	1.33038	103.77830	HW A1 07	1023-	Orthetrum sabina	4	Seen	Point Count	NA
3-Mar-20	1.33056	103.78128	HW A1 03	0932-	Poecilia reticulata	5	Seen	Point Count	NA
3-Mar-20	1.32936	103.78017	HW A1 05	0956-	Poecilia reticulata	7	Seen	Point Count	NA
3-Mar-20	1.32984	103.77903	HW A1 06	0959-	Poecilia reticulata	TMTC	Seen	Point Count	NA
3-Mar-20	1.33038	103.77830	HW A1 07	1023-	Poecilia reticulata	TMTC	Seen	Point Count	NA
3-Mar-20	1.32984	103.77903	HW A1 06	0959-	Pseudagrion microcephalum	2	Seen	Point Count	Mating
3-Mar-20	1.33038	103.77830	HW A1 07	1023-	Pseudagrion microcephalum	1	Seen	Point Count	NA
3-Mar-20	1.25387	103.81543	NA	939	Rhyothemis phyllis	1	Seen	Incidental	NA
3-Mar-20	1.32984	103.77903	HW A1 06	0959-	Rhyothemis phyllis	1	Seen	Point Count	NA
3-Mar-20	1.33038	103.77830	HW A1 07	1023-	Rhyothemis phyllis	1	Seen	Point Count	NA
3-Mar-20	1.32984	103.77903	HW T1 06	1002	Spilornis cheela	1	Seen	Incidental	NA
3-Mar-20	1.33263	103.78103	HW A1 01	0911-	Tadpole Chalcorana labialis	20	Seen	Point Count	Tadpoles
3-Mar-20	1.33056	103.78128	HW A1 03	0932-	Tadpole Chalcorana labialis	17	Seen	Point Count	Tadpoles
3-Mar-20	1.33039	103.77834	HW T 09	1030	Trichopodus trichopterus	1	Seen	Trapping	Dead
3-Mar-20	1.32984	103.77903	HW A1 06	0959-	Trithemis festiva	1	Seen	Point Count	NA
3-Mar-20	1.32936	103.78017	NA	1001	Urocybomyia varia	1	Seen	Incidental	John: "Not a common"
14-Mar-20	1.32292	103.77801	HW T2 07	1107	Abisara savitri savitri	1	Seen	Targeted	NA
14-Mar-20	1.32755	103.77890	HW T2 17	935	Agrioptera insignis	1	Seen	Targeted	NA
14-Mar-20	1.32441	103.77907	HW T2 09	1043	Agrioptera insignis	1	Seen	Targeted	NA
14-Mar-20	1.32420	103.77895	HW T2 09	1045	Agrioptera insignis	2	Seen	Targeted	NA
14-Mar-20	1.32338	103.77846	HW T2 08	1059	Agrioptera insignis	1	Seen	Targeted	NA
14-Mar-20	1.32268	103.77681	HW T2 05	1120	Agrioptera insignis	1	Seen	Targeted	NA
14-Mar-20	1.32221	103.77464	HW T2 02	1143	Agrioptera insignis	2	Seen	Targeted	NA
14-Mar-20	1.32784	103.78052	HW T2 14	955	Burara sp.	1	Seen	Targeted	NA
14-Mar-20	1.32776	103.78065	HW T2 14	957	Burara sp.	1	Seen	Targeted	NA
14-Mar-20	1.32595	103.78002	HW T2 11	1016	Burara sp.	1	Seen	Targeted	NA
14-Mar-20	1.32338	103.77846	HW T2 08	1059	Burara sp.	2	Seen	Targeted	NA
14-Mar-20	1.32574	103.77981	HW T2 11	1020	Caloris cornasa	2	Seen	Targeted	NA
14-Mar-20	1.32265	103.77412	HW T2 01	1151	Caloris cornasa	1	Seen	Targeted	NA
14-Mar-20	1.32265	103.77412	HW T2 01	1151	Caloris cornasa	1	Seen	Targeted	NA
14-Mar-20	1.32830	103.78023	HW T2 15	948	Caterpillar Burara harisa consobrina	1	Seen	Targeted	Caterpillar on
14-Mar-20	1.32784	103.78052	HW T2 14	955	Caterpillar Burara harisa consobrina	1	Seen	Targeted	Caterpillar on
14-Mar-20	1.32784	103.78052	HW T2 14	952	Caterpillar Matapa aria	1	Seen	Targeted	Caterpillar on bamboo
14-Mar-20	1.32256	103.77444	HW T2 02	1147	Caterpillar Unidentified Lepidoptera	1	Seen	Targeted	Gan collected
14-Mar-20	1.32764	103.77910	HW T2 16	937	Chrysococcyx xanthorhynchus	1	Heard	Incidental	NA
14-Mar-20	1.32338	103.77846	HW T2 08	1059	Cratilla metallica	1	Seen	Targeted	NA
14-Mar-20	1.32736	103.78074	HW T2 13	1001	Delias hyparete metarete	2	Seen	Targeted	NA
14-Mar-20	1.32706	103.78057	HW T2 13	1005	Delias hyparete metarete	1	Seen	Targeted	NA
14-Mar-20	1.32338	103.77846	HW T2 08	1059	Delias hyparete metarete	1	Seen	Targeted	NA
14-Mar-20	1.32441	103.77907	HW T2 09	1043	Elymnias hypermnestra agina	2	Seen	Targeted	NA
14-Mar-20	1.32298	103.77836	HW T2 07	1102	Elymnias hypermnestra agina	1	Seen	Targeted	NA
14-Mar-20	1.32221	103.77464	HW T2 02	1143	Elymnias hypermnestra agina	1	Seen	Targeted	NA
14-Mar-20	1.32674	103.77778	HW T2 18	922	Eooxylides tharis distanti	1	Seen	Targeted	NA
14-Mar-20	1.32672	103.77781	HW T2 18	924	Eooxylides tharis distanti	1	Seen	Targeted	NA
14-Mar-20	1.32771	103.77915	HW T2 16	938	Eooxylides tharis distanti	1	Seen	Targeted	NA
14-Mar-20	1.32795	103.77955	HW T2 16	941	Eooxylides tharis distanti	1	Seen	Targeted	NA
14-Mar-20	1.32279	103.77656	HW T2 05	1121	Eooxylides tharis distanti	1	Seen	Targeted	NA
14-Mar-20	1.32214	103.77481	HW T2 02	1142	Eooxylides tharis distanti	1	Seen	Targeted	NA
14-Mar-20	1.32338	103.77846	HW T2 08	1059	Euploea mulciber mulciber	1	Seen	Targeted	NA
14-Mar-20	1.32407	103.77881	HW T2 09	1047	Eurema hecabe contubernalis	1	Seen	Targeted	Feeding on Asystasia
14-Mar-20	1.32534	103.77988	HW T2 11	1029	Eurema sp.	3	Seen	Targeted	NA

Appendix I2 Faunal Survey Data for Clementi Forest

Date	Latitude	Longitude	Sampling point	Time (24h)	Scientific name	Quantity	Observation type	Survey method	Remarks
14-Mar-20	1.32508	103.77964	HW T2 10	1033	Eurema sp.	2	Seen	Targeted	NA
14-Mar-20	1.32459	103.77922	HW T2 09	1037	Eurema sp.	1	Seen	Targeted	NA
14-Mar-20	1.32454	103.77915	HW T2 09	1041	Eurema sp.	1	Seen	Targeted	NA
14-Mar-20	1.32432	103.77904	HW T2 09	1044	Eurema sp.	2	Seen	Targeted	NA
14-Mar-20	1.32221	103.77464	HW T2 02	1143	Eurema sp.	1	Seen	Targeted	NA
14-Mar-20	1.32624	103.77675	HW T2 19	912	Gynacantha sp.	1	Seen	Targeted	NA
14-Mar-20	1.32500	103.77956	HW T2 10	1034	Iambrix salsala salsala	1	Seen	Targeted	NA
14-Mar-20	1.32299	103.77834	HW T2 07	1104	Iambrix salsala salsala	2	Seen	Targeted	NA
14-Mar-20	1.32221	103.77464	HW T2 02	1143	Iambrix salsala salsala	1	Seen	Targeted	NA
14-Mar-20	1.32275	103.77395	HW T2 01	1154	Iambrix salsala salsala	2	Seen	Targeted	NA
14-Mar-20	1.32674	103.77778	HW T2 18	920	Ideopsis vulgaris macrina	1	Seen	Targeted	NA
14-Mar-20	1.32320	103.77772	HW T2 06	1113	Ideopsis vulgaris macrina	1	Seen	Targeted	NA
14-Mar-20	1.32306	103.77715	HW T2 06	1116	Ideopsis vulgaris macrina	1	Seen	Targeted	NA
14-Mar-20	1.32541	103.77975	HW T2 11	1026	Lathrecista asiatica	2	Seen	Targeted	NA
14-Mar-20	1.32212	103.77602	HW T2 04	1133	Matapa aria	1	Seen	Targeted	NA
14-Mar-20	1.32541	103.77975	HW T2 11	1026	Miletus sp.	1	Seen	Targeted	NA
14-Mar-20	1.32386	103.77868	HW T2 08	1052	Miletus sp.	1	Seen	Targeted	NA
14-Mar-20	1.32500	103.77956	HW T2 10	1034	Mycalesis sp.	1	Seen	Targeted	NA
14-Mar-20	1.32464	103.77928	HW T2 10	1038	Mycalesis sp.	1	Seen	Targeted	NA
14-Mar-20	1.32674	103.77778	HW T2 18	923	Mycalesis visala phamis	1	Seen	Targeted	NA
14-Mar-20	1.32508	103.77964	HW T2 10	1033	Neurothemis fluctuans	1	Seen	Targeted	NA
14-Mar-20	1.32386	103.77868	HW T2 08	1053	Neurothemis fluctuans	2	Seen	Targeted	NA
14-Mar-20	1.32275	103.77395	HW T2 01	1154	Neurothemis fluctuans	1	Seen	Targeted	NA
14-Mar-20	1.32299	103.77834	HW T2 07	1104	Oriens gola pseudolus	1	Seen	Targeted	NA
14-Mar-20	1.32755	103.77890	HW T2 17	935	Orthetrum chrysis	1	Seen	Targeted	NA
14-Mar-20	1.32780	103.77932	HW T2 16	939	Orthetrum chrysis	1	Seen	Targeted	NA
14-Mar-20	1.32555	103.77973	HW T2 11	1024	Orthetrum chrysis	2	Seen	Targeted	1 ovipositing
14-Mar-20	1.32221	103.77464	HW T2 02	1143	Orthetrum chrysis	2	Seen	Targeted	NA
14-Mar-20	1.32541	103.77975	HW T2 11	1028	Papilio polytes romulus	1	Seen	Targeted	NA
14-Mar-20	1.32390	103.77881	HW T2 09	1049	Papilio polytes romulus	1	Seen	Targeted	Feeding on Asystasia
14-Mar-20	1.32390	103.77881	HW T2 09	1049	Pelopidas mathias mathias	4	Seen	Targeted	NA
14-Mar-20	1.32284	103.77805	HW T2 07	1107	Tholymis tillarga	1	Seen	Targeted	NA
14-Mar-20	1.32500	103.77956	HW T2 10	1035	Ypthima horsfieldii humei	1	Seen	Targeted	NA
14-Mar-20	1.32780	103.77932	HW T2 16	940	Liostrogaster sp.	1	Seen	Incidental	NA
20-Mar-20	1.33030	103.77873	HW T1 06	1015	Abisara savitri savitri	1	Seen	Incidental	NA
20-Mar-20	1.32271	103.77473	HW T2 02	935	Amathusia phidippus phidippus	1	Seen	Incidental	NA
20-Mar-20	1.32607	103.77609	HW T2 20	710	Callosciurus notatus	1	Heard	Targeted	NA
20-Mar-20	1.32629	103.77701	HW T2 19	718	Callosciurus notatus	2	Heard	Targeted	NA
20-Mar-20	1.32646	103.77742	HW T2 19	722	Callosciurus notatus	1	Heard	Targeted	NA
20-Mar-20	1.32659	103.77764	HW T2 18	724	Callosciurus notatus	1	Heard	Targeted	NA
20-Mar-20	1.32702	103.77816	HW T2 18	734	Callosciurus notatus	1	Heard	Targeted	NA
20-Mar-20	1.32717	103.77847	HW T2 17	737	Callosciurus notatus	1	Seen	Targeted	NA
20-Mar-20	1.32717	103.77847	HW T2 17	737	Callosciurus notatus	1	Heard	Targeted	NA
20-Mar-20	1.32758	103.77902	HW T2 16	750	Callosciurus notatus	2	Heard	Targeted	NA
20-Mar-20	1.32815	103.77966	HW T2 15	758	Callosciurus notatus	1	Seen	Targeted	NA
20-Mar-20	1.32817	103.77992	HW T2 15	758	Callosciurus notatus	1	Seen	Targeted	NA
20-Mar-20	1.32817	103.77992	HW T2 15	801	Callosciurus notatus	1	Heard	Targeted	NA
20-Mar-20	1.32651	103.78034	HW T2 12	819	Callosciurus notatus	1	Seen	Targeted	NA
20-Mar-20	1.32627	103.78028	HW T2 12	821	Callosciurus notatus	2	Seen	Targeted	NA
20-Mar-20	1.32614	103.78008	HW T2 12	823	Callosciurus notatus	1	Seen	Targeted	NA
20-Mar-20	1.32614	103.78008	HW T2 12	823	Callosciurus notatus	1	Heard	Targeted	NA
20-Mar-20	1.32572	103.77974	HW T2 11	830	Callosciurus notatus	1	Seen	Targeted	NA
20-Mar-20	1.32446	103.77917	HW T2 09	840	Callosciurus notatus	1	Heard	Targeted	NA
20-Mar-20	1.32400	103.77890	HW T2 09	842	Callosciurus notatus	3	Heard	Targeted	NA
20-Mar-20	1.32344	103.77851	HW T2 08	845	Callosciurus notatus	1	Seen	Targeted	NA
20-Mar-20	1.32319	103.77847	HW T2 08	848	Callosciurus notatus	1	Heard	Targeted	NA
20-Mar-20	1.32294	103.77839	HW T2 07	851	Callosciurus notatus	1	Heard	Targeted	NA
20-Mar-20	1.32305	103.77813	HW T2 07	853	Callosciurus notatus	1	Seen	Targeted	NA
20-Mar-20	1.32268	103.77450	HW T2 02	933	Callosciurus notatus	1	Seen	Targeted	NA
20-Mar-20	1.32279	103.77666	HW T2 05	908	Gynacantha subinterrupta	1	Seen	Incidental	NA
24-Mar-20	1.32511	103.77959	HW T2 10	1016	Lethe europa malaya	1	Seen	Incidental	NA
24-Mar-20	1.32201	103.77578	HW T2 03	1051	Platingia naga	1	Seen	Incidental	NA
24-Mar-20	1.32685	103.77795	HW T2 18	926	Teinobasis ruficollis	1	Seen	Incidental	NA
24-Mar-20	1.32519	103.77979	HW T2 10	1014	Vanelius indicus	1	Heard	Incidental	NA
24-Mar-20	1.32536	103.77987	HW T2 11	1010	Vindula dejone erotella	1	Seen	Targeted	NA
24-Mar-20	1.32608	103.77582	HW T2 20	911	Apis cerana	2	Seen	Targeted	Feeding on Mimosa
24-Mar-20	1.32494	103.77953	HW T2 10	1017	Liris subtessellatus	1	Seen	Targeted	NA
24-Mar-20	1.32608	103.77582	HW T2 20	911	Nomia strigata	1	Seen	Targeted	Feeding on Melastoma
24-Mar-20	1.32711	103.78062	HW T2 13	956	Ropalidia stigma	1	Seen	Targeted	NA
24-Mar-20	1.32482	103.77942	HW T2 10	1018	Stenodyneriellus guttulatus	1	Seen	Targeted	NA
24-Mar-20	1.32224	103.77558	HW T2 03	1054	Vespa tropica	1	Seen	Targeted	NA
24-Mar-20	1.32223	103.77628	HW T2 04	1047	Xylocopa latipes	1	Seen	Targeted	At nest
25-Mar-20	1.32649	103.78041	HW T2 12	2044	Caprimulgus macrurus	1	Heard	Targeted	NA
25-Mar-20	1.32539	103.77991	HW T2 11	2111	Caprimulgus macrurus	1	Seen	Targeted	NA
25-Mar-20	1.32415	103.77895	HW T2 09	2123	Caprimulgus macrurus	2	Seen	Targeted	NA
25-Mar-20	1.32795	103.78056	HW T2 14	2032	Dendrelaphis pictus	1	Seen	Targeted	NA
25-Mar-20	1.32527	103.77983	HW T2 11	2116	Dendrelaphis pictus	1	Seen	Targeted	NA
25-Mar-20	1.32741	103.77881	HW T2 17	2010	Eleutherodactylus planirostris	1	Heard	Targeted	NA
25-Mar-20	1.32209	103.77502	HW T2 02	2215	Eleutherodactylus planirostris	1	Seen	Targeted	NA
25-Mar-20	1.32691	103.77803	HW T2 18	1952	Eutropis multifasciata	1	Seen	Targeted	NA
25-Mar-20	1.32345	103.77854	HW T2 08	2129	Eutropis multifasciata	1	Seen	Targeted	NA
25-Mar-20	1.32785	103.78064	HW T2 14	2033	Gallus gallus	1	Seen	Targeted	NA
25-Mar-20	1.32625	103.77683	HW T2 19	1942	Hemidactylus frenatus	1	Seen	Targeted	NA
25-Mar-20	1.32228	103.77541	HW T2 03	2210	Macaca fascicularis	1	Seen	Targeted	Roost tree
25-Mar-20	1.32703	103.77830	HW T2 17	2001	Microhyla butleri	1	Heard	Targeted	NA
25-Mar-20	1.32580	103.77975	HW T2 11	2103	Microhyla butleri	1	Heard	Targeted	NA
25-Mar-20	1.32262	103.77684	HW T2 05	2157	Microhyla butleri	1	TMTC	Targeted	NA
25-Mar-20	1.32614	103.77606	HW T2 20	1936	Microhyla heymonsi	10	Heard	Targeted	NA
25-Mar-20	1.32691	103.77803	HW T2 18	1952	Microhyla heymonsi	1	TMTC	Targeted	NA

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Date	Latitude	Longitude	Sampling point	Time (24h)	Scientific name	Quantity	Observation type	Survey method	Remarks
25-Mar-20	1.32754	103.77894	HW T2 16	2011	Microhyla heymonsi	3	Heard	Targeted	NA
25-Mar-20	1.32810	103.78017	HW T2 15	2029	Microhyla heymonsi	2	Seen	Targeted	NA
25-Mar-20	1.32345	103.77854	HW T2 08	2129	Microhyla heymonsi	1	Heard	Targeted	NA
25-Mar-20	1.32262	103.77684	HW T2 05	2157	Microhyla heymonsi	TMTC	Heard	Targeted	NA
25-Mar-20	1.32231	103.77465	HW T2 02	2220	Microhyla heymonsi	1	Heard	Targeted	NA
25-Mar-20	1.32698	103.77811	HW T2 18	1958	Monopterus javanensis	1	Seen	Incidental	NA
25-Mar-20	1.32803	103.77962	HW T2 16	2017	Monopterus javanensis	1	Seen	Incidental	NA
25-Mar-20	1.32703	103.77830	HW T2 17	2001	Nisaetus cirrhatus	1	Heard	Targeted	NA
25-Mar-20	1.32595	103.78002	HW T2 11	2101	Otus lempiji	1	Heard	Targeted	NA
25-Mar-20	1.32607	103.78005	HW T2 12	2049	Paradoxurus musangus	1	Seen	Targeted	NA
25-Mar-20	1.32580	103.77975	HW T2 11	2101	Paradoxurus musangus	1	Seen	Targeted	NA
25-Mar-20	1.32691	103.77803	HW T2 18	1952	Polypedates leucomystax	2	Heard	Targeted	NA
25-Mar-20	1.32718	103.77845	HW T2 17	2004	Polypedates leucomystax	2	Heard	Targeted	NA
25-Mar-20	1.32262	103.77684	HW T2 05	2157	Polypedates leucomystax	1	Heard	Targeted	NA
25-Mar-20	1.32807	103.77961	HW T2 16	2000	Pulchrana laterimaculata	1	Heard	Targeted	NA
25-Mar-20	1.32676	103.78049	HW T2 13	2042	Rallina fasciata	1	Heard	Targeted	NA
25-Mar-20	1.32262	103.77684	HW T2 05	2157	Tadpole Microhyla butleri	>500	Seen	Targeted	NA
25-Mar-20	1.32262	103.77684	HW T2 05	2157	Tadpole Microhyla heymonsi	>500	Seen	Targeted	NA
25-Mar-20	1.32245	103.77455	HW T2 02	2222	Unidentified Aeshnidae	1	Seen	Targeted	NA
25-Mar-20	1.32200	103.77486	HW T2 02	2217	Unidentified Bird	1	Seen	Targeted	Possibly tailorbird sp.
25-Mar-20	1.32615	103.77630	HW T2 20	1938	Unidentified Fruit bat	1	Seen	Targeted	NA
25-Mar-20	1.32844	103.78012	HW T2 15	2026	Unidentified Fruit bat	1	Seen	Targeted	NA
25-Mar-20	1.32649	103.78041	HW T2 12	2044	Unidentified Fruit bat	1	Seen	Targeted	NA
25-Mar-20	1.32527	103.77983	HW T2 11	2116	Unidentified Fruit bat	1	Seen	Targeted	NA
25-Mar-20	1.32345	103.77854	HW T2 08	2129	Unidentified Insect bat	1	Seen	Targeted	NA
25-Mar-20	1.32345	103.77854	HW T2 08	2129	Varanus salvator	2	Seen	Targeted	Mating pair on tree
25-Mar-20	1.32614	103.77580	HW T2 20	1934	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200325 193447.wav
25-Mar-20	1.32870	103.77690	NA	1949	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200325 194942.wav
25-Mar-20	1.32870	103.77690	NA	1949	Myotis muricola	NA	Acoustic	Acoustic	20200325 194942.wav
5-Apr-20	1.33263	103.78103	HW A1 01	800	Eleutherodactylus planirostris	1	Heard	Point Count	NA
5-Apr-20	1.32954	103.78098	HW A1 04	830	Eleutherodactylus planirostris	1	Heard	Point Count	NA
5-Apr-20	1.32939	103.77824	HW A2 01	850	Eleutherodactylus planirostris	2	Heard	Point Count	NA
5-Apr-20	1.32889	103.77788	HW A2 02	900	Eleutherodactylus planirostris	1	Heard	Point Count	NA
5-Apr-20	1.33056	103.78128	HW A1 03	815	Microhyla butleri	1	Heard	Point Count	NA
9-Jun-20	1.33091	103.77821	HW BB 04	1930	Caprimulgus affinis	1	Heard	Incidental	NA
9-Jun-20	1.32889	103.77781	HW T1 04	2010	Lewinia striata	1	Seen	Incidental	NA
9-Jun-20	1.32738	103.77711	HW T1 01	2014	Paradoxurus musangus	1	Seen	Incidental	NA
9-Jun-20	1.32939	103.77824	HW A2 01	1950-	Eleutherodactylus planirostris	3	Heard	Point count	NA
9-Jun-20	1.32939	103.77824	HW A2 01	1950-	Limnonectes blythii	1	Seen	Point count	NA
9-Jun-20	1.32939	103.77824	HW A2 01	1950-	Poecilia reticulata	3	Seen	Point count	NA
9-Jun-20	1.32889	103.77788	HW A2 02	2000-	Channa striata	1	Seen	Point count	NA
9-Jun-20	1.32889	103.77788	HW A2 02	2000-	Eleutherodactylus planirostris	2	Heard	Point count	NA
9-Jun-20	1.31172	103.77045	HW BB 01	1926	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 192632.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1931	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 193124.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1932	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 193202.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1932	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 193221.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1933	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 193333.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1933	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 193344.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1933	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 193359.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1934	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 193414.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1934	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 193452.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1935	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 193511.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1937	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200609 193707.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1937	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 193707.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1938	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 193800.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1938	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 193810.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1938	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 193826.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1938	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 193841.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1938	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 193854.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1939	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 193900.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1939	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 193912.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1939	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 193928.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1939	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 193940.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1940	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 194032.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1940	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 194048.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1940	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 194056.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1942	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 194203.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1942	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 194218.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1943	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 194316.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1943	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 194358.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1945	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 194525.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1947	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 194726.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1947	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 194735.wav
9-Jun-20	1.31172	103.77045	HW BB 01	1948	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 194850.wav
9-Jun-20	1.31172	103.77045	HW BB 01	2002	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 200225.wav
9-Jun-20	1.31172	103.77045	HW BB 01	2003	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 200309.wav
9-Jun-20	1.31172	103.77045	HW BB 01	2003	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 200348.wav
9-Jun-20	1.31172	103.77045	HW BB 01	2003	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 200357.wav
9-Jun-20	1.31172	103.77045	HW BB 01	2005	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200609 200550.wav
9-Jun-20	1.31172	103.77045	HW BB 01	2006	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200609 200612.wav
9-Jun-20	1.31172	103.77045	HW BB 01	2038	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 203829.wav
9-Jun-20	1.31172	103.77045	HW BB 01	2038	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 203846.wav
9-Jun-20	1.33090	103.77825	HW BB 04	1932	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200609 193229.wav
11-Jun-20	1.32721	103.77849	HW T2 17	1009	Nisaetus cirrhatus	1	Seen	Incidental	NA
18-Jun-20	1.32889	103.77788	HW A2 02	1225-	Neurothemis fluctuans	6	Seen	Point count	NA
18-Jun-20	1.32889	103.77788	HW A2 02	1225-	Orthetrum chrysus	1	Seen	Point count	NA
18-Jun-20	1.32889	103.77788	HW A2 02	1225-	Poecilia reticulata	3	Seen	Point count	NA
18-Jun-20	1.32889	103.77793	HW T1 04	1227	Loxura atymnus fuconius	1	Seen	Incidental	NA
18-Jun-20	1.32939	103.77824	HW A2 01	1233-	Poecilia reticulata	28	Seen	Point count	NA

Appendix 12 Faunal Survey Data for Clementi Forest

Date	Latitude	Longitude	Sampling point	Time (24h)	Scientific name	Quantity	Observation type	Survey method	Remarks
22-Jun-20	1.32927	103.77957	HW_BB_02_03	1946	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200622_194614.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	1948	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_194806.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	1948	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200622_194832.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	1949	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_194917.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	1951	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_195135.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	1954	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_195409.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	1954	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_195420.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	1954	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_195452.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	1957	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_195747.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	1958	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_195800.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	1959	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_195902.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2002	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_200209.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2002	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_200245.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2003	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_200300.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2003	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_200354.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2003	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_200358.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2004	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_200422.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2004	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_200440.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2005	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_200504.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2005	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_200512.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2005	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_200528.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2005	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_200558.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2006	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_200613.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2006	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_200639.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2006	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200622_200646.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2007	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_200711.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2007	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_200718.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2007	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_200736.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2008	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_200820.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2008	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_200826.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2008	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_200838.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2008	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_200849.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2009	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_200904.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2009	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_200927.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2009	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_200935.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2009	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_200941.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2009	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_200952.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2009	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_200957.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2010	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_201005.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2010	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_201037.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2010	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_201045.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2011	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_201100.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2011	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_201111.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2012	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_201224.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2012	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_201231.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2013	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_201310.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2013	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_201314.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2013	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_201340.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2013	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_201346.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2014	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_201412.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2014	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_201417.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2014	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_201442.wav
22-Jun-20	1.32927	103.77957	HW_BB_02_03	2014	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_201453.wav
22-Jun-20	1.32919	103.77951	HW_BB_02_03	2015	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_201509.wav
22-Jun-20	1.32919	103.77951	HW_BB_02_03	2015	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_201543.wav
22-Jun-20	1.32919	103.77951	HW_BB_02_03	2016	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_201605.wav
22-Jun-20	1.32919	103.77951	HW_BB_02_03	2016	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_201621.wav
22-Jun-20	1.32919	103.77951	HW_BB_02_03	2016	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_201625.wav
22-Jun-20	1.32919	103.77951	HW_BB_02_03	2016	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_201636.wav
22-Jun-20	1.32919	103.77951	HW_BB_02_03	2016	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_201648.wav
22-Jun-20	1.32919	103.77951	HW_BB_02_03	2016	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_201656.wav
22-Jun-20	1.32919	103.77951	HW_BB_02_03	2017	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_201715.wav
22-Jun-20	1.32919	103.77951	HW_BB_02_03	2017	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_201731.wav
22-Jun-20	1.32919	103.77951	HW_BB_02_03	2018	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_201858.wav
22-Jun-20	1.32919	103.77951	HW_BB_02_03	2020	Rhinolophus leptidus	NA	Acoustic	Acoustic	20200622_202026.wav
22-Jun-20	1.32919	103.77951	HW_BB_02_03	2020	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_202058.wav
22-Jun-20	1.32919	103.77951	HW_BB_02_03	2021	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_202119.wav
22-Jun-20	1.32919	103.77951	HW_BB_02_03	2021	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_202153.wav
22-Jun-20	1.32919	103.77951	HW_BB_02_03	2022	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_202215.wav
22-Jun-20	1.32919	103.77951	HW_BB_02_03	2022	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_202244.wav
22-Jun-20	1.32919	103.77951	HW_BB_02_03	2022	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_202254.wav
22-Jun-20	1.32919	103.77951	HW_BB_02_03	2023	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_202305.wav
22-Jun-20	1.32919	103.77951	HW_BB_02_03	2023	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_202309.wav
22-Jun-20	1.32919	103.77951	HW_BB_02_03	2023	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_202316.wav
22-Jun-20	1.32912	103.77942	HW_BB_02_03	2025	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_202541.wav
22-Jun-20	1.32912	103.77942	HW_BB_02_03	2026	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_202657.wav
22-Jun-20	1.32912	103.77942	HW_BB_02_03	2027	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_202721.wav
22-Jun-20	1.32919	103.77948	HW_BB_02_03	2029	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_202953.wav
22-Jun-20	1.32919	103.77948	HW_BB_02_03	2030	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_203010.wav
22-Jun-20	1.32919	103.77948	HW_BB_02_03	2029	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_202943.wav
22-Jun-20	1.32919	103.77948	HW_BB_02_03	2031	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_203149.wav
22-Jun-20	1.32919	103.77948	HW_BB_02_03	2032	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_203221.wav
22-Jun-20	1.32919	103.77948	HW_BB_02_03	2032	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_203256.wav
22-Jun-20	1.32919	103.77948	HW_BB_02_03	2033	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_203302.wav
22-Jun-20	1.32919	103.77948	HW_BB_02_03	2034	Rhinolophus leptidus	NA	Acoustic	Acoustic	20200622_203458.wav
22-Jun-20	1.32919	103.77948	HW_BB_02_03	2043	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_204328.wav
22-Jun-20	1.32919	103.77948	HW_BB_02_03	2048	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_204842.wav
22-Jun-20	1.32919	103.77948	HW_BB_02_03	2048	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_204854.wav

Appendix 12 Faunal Survey Data for Clementi Forest

Date	Latitude	Longitude	Sampling point	Time (24h)	Scientific name	Quantity	Observation type	Survey method	Remarks
22-Jun-20	1.32919	103.77948	HW BB 02 03	2049	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_204904.wav
22-Jun-20	1.32919	103.77948	HW BB 02 03	2052	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_205254.wav
22-Jun-20	1.32919	103.77948	HW BB 02 03	2053	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_205310.wav
22-Jun-20	1.32919	103.77948	HW BB 02 03	2053	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_205342.wav
22-Jun-20	1.32919	103.77948	HW BB 02 03	2054	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_205406.wav
22-Jun-20	1.32919	103.77948	HW BB 02 03	2055	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_205537.wav
22-Jun-20	1.32919	103.77948	HW BB 02 03	2055	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_205555.wav
22-Jun-20	1.32919	103.77948	HW BB 02 03	2056	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_205611.wav
22-Jun-20	1.32919	103.77948	HW BB 02 03	2109	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_210917.wav
22-Jun-20	1.32919	103.77948	HW BB 02 03	2113	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_211310.wav
22-Jun-20	1.32919	103.77948	HW BB 02 03	2113	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_211315.wav
22-Jun-20	1.32919	103.77948	HW BB 02 03	2113	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_211327.wav
22-Jun-20	1.32919	103.77948	HW BB 02 03	2114	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622_211420.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1925	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_192519.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1928	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_192837.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1929	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_192909.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1929	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_192915.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1929	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_192945.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1930	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_193055.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1931	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_193118.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1931	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_193131.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1932	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_193229.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1932	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_193229.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1932	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_193254.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1932	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_193254.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1933	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_193337.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1933	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_193345.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1933	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_193355.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1934	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_193410.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1934	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_193417.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1934	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_193432.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1934	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_193447.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1936	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_193601.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1937	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_193709.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1937	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_193718.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1938	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_193843.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1947	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_194705.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1947	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_194759.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1948	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_194810.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1948	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_194810.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1949	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_194911.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1949	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_194938.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1949	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_194952.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1950	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_195057.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1951	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_195117.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1952	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_195228.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1952	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_195247.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1953	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_195315.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1953	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_195315.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1953	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_195331.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1953	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_195346.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1953	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_195358.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1954	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_195443.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1955	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_195539.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1956	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_195619.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1956	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_195658.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1957	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_195722.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1958	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_195809.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1958	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_195821.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1958	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_195837.wav
23-Jun-20	1.32693	103.77782	HW BB 05	1958	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_195853.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2000	Myotis muricola	NA	Acoustic	Acoustic	20200623_200030.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2000	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_200030.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2003	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_200313.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2003	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_200328.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2004	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_200446.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2004	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_200458.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2005	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_200520.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2005	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_200552.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2006	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_200609.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2006	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_200618.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2006	Myotis muricola	NA	Acoustic	Acoustic	20200623_200630.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2006	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_200630.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2006	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_200630.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2007	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_200703.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2007	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_200737.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2007	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_200749.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2009	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_200920.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2009	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_200935.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2009	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_200950.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2010	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_201006.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2010	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_201021.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2010	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_201021.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2010	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_201036.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2010	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_201051.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2011	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_201106.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2011	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_201121.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2011	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623_201121.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2011	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623_201143.wav

Appendix 12 Faunal Survey Data for Clementi Forest

Date	Latitude	Longitude	Sampling point	Time (24h)	Scientific name	Quantity	Observation type	Survey method	Remarks
23-Jun-20	1.32693	103.77782	HW BB 05	2011	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623 201143.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2012	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 201200.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2012	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623 201200.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2012	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623 201216.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2012	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623 201231.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2012	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 201247.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2012	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623 201247.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2013	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 201307.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2013	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 201323.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2014	Myotis muricola	NA	Acoustic	Acoustic	20200623 201416.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2014	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623 201416.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2014	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 201456.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2014	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623 201456.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2015	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 201511.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2015	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623 201511.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2015	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 201527.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2016	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 201622.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2016	Myotis muricola	NA	Acoustic	Acoustic	20200623 201642.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2017	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 201709.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2017	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 201735.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2017	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 201744.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2021	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 202157.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2023	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 202351.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2030	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 203008.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2030	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 203020.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2030	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 203027.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2030	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 203042.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2031	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 203109.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2031	Myotis muricola	NA	Acoustic	Acoustic	20200623 203155.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2032	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 203237.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2033	Unidentified Emballonuridae	NA	Acoustic	Acoustic	20200623 203302.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2033	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 203302.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2033	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 203347.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2034	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 203417.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2034	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200623 203417.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2034	Myotis muricola	NA	Acoustic	Acoustic	20200623 203445.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2034	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 203445.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2035	Myotis muricola	NA	Acoustic	Acoustic	20200623 203500.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2035	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 203514.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2035	Myotis muricola	NA	Acoustic	Acoustic	20200623 203529.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2035	Myotis muricola	NA	Acoustic	Acoustic	20200623 203544.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2037	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 203756.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2038	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 203807.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2038	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 203839.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2039	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 203907.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2039	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 203933.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2039	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 203943.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2039	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 203951.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2040	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 204006.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2040	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 204036.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2046	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 204607.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2046	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 204617.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2047	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 204747.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2048	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 204847.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2049	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 204902.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2049	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 204946.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2050	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 205023.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2055	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 205535.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2056	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 205647.wav
23-Jun-20	1.32693	103.77782	HW BB 05	2059	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200623 205910.wav
8-Jan-20	NA	NA	NA	1931	Myotis muricola	1	Acoustic	Acoustic	NA
8-Jan-20	NA	NA	NA	1954	Scotophilus kuhlii	1	Acoustic	Acoustic	NA
8-Jan-20	NA	NA	NA	1954	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200108 195426.wav
8-Jan-20	NA	NA	NA	1931	Myotis muricola	NA	Acoustic	Acoustic	20200108 193114.wav
20-Jan-20	NA	NA	NA	NA	Leptosia nina malayana	1	Seen	Incidental	Feeding on the nectar of
7-Feb-20	NA	NA	NA	NA	NA	1	Seen	Incidental	On Syzygium grande leaf
25-Mar-20	NA	NA	NA	1934	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200325 193447.wav
22-Jun-20	1.32921,	103.77946,	HW BB 02 03	1902	Saccolaimus saccolaimus	NA	Acoustic	Acoustic	20200622 190212.wav
22-Jun-20	1.32921,	103.77946,	HW BB 02 03	1902	Saccolaimus saccolaimus	NA	Acoustic	Acoustic	20200622 190229.wav
22-Jun-20	1.32921,	103.77946,	HW BB 02 03	1902	Saccolaimus saccolaimus	NA	Acoustic	Acoustic	20200622 190238.wav
22-Jun-20	1.32921,	103.77946,	HW BB 02 03	1917	Saccolaimus saccolaimus	NA	Acoustic	Acoustic	20200622 191733.wav
22-Jun-20	1.32921,	103.77946,	HW BB 02 03	1922	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200622 192207.wav
22-Jun-20	1.32921,	103.77946,	HW BB 02 03	1926	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200622 192613.wav
22-Jun-20	1.32921,	103.77946,	HW BB 02 03	1935	Myotis muricola	NA	Acoustic	Acoustic	20200622 193523.wav
22-Jun-20	1.32921,	103.77946,	HW BB 02 03	1935	Myotis muricola	NA	Acoustic	Acoustic	20200622 193548.wav
22-Jun-20	1.32921,	103.77946,	HW BB 02 03	1940	Myotis muricola	NA	Acoustic	Acoustic	20200622 194057.wav
22-Jun-20	1.32921,	103.77946,	HW BB 02 03	1951	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200622 195137.wav
22-Jun-20	1.32921,	103.77946,	HW BB 02 03	1955	Myotis muricola	NA	Acoustic	Acoustic	20200622 195521.wav
22-Jun-20	1.32921,	103.77946,	HW BB 02 03	1955	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200622 195538.wav
22-Jun-20	1.32921,	103.77946,	HW BB 02 03	1955	Myotis muricola	NA	Acoustic	Acoustic	20200622 195552.wav
22-Jun-20	1.32921,	103.77946,	HW BB 02 03	1956	Myotis muricola	NA	Acoustic	Acoustic	20200622 195610.wav
22-Jun-20	1.32921,	103.77946,	HW BB 02 03	1956	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200622 195610.wav
22-Jun-20	1.32921,	103.77946,	HW BB 02 03	1956	Myotis muricola	NA	Acoustic	Acoustic	20200622 195626.wav
22-Jun-20	1.32921,	103.77946,	HW BB 02 03	1957	Myotis muricola	NA	Acoustic	Acoustic	20200622 195705.wav
22-Jun-20	1.32921,	103.77946,	HW BB 02 03	2001	Saccolaimus saccolaimus	NA	Acoustic	Acoustic	20200622 200130.wav
22-Jun-20	1.32921,	103.77946,	HW BB 02 03	2001	Saccolaimus saccolaimus	NA	Acoustic	Acoustic	20200622 200145.wav
22-Jun-20	1.32921,	103.77946,	HW BB 02 03	2002	Saccolaimus saccolaimus	NA	Acoustic	Acoustic	20200622 200202.wav
22-Jun-20	1.32921,	103.77946,	HW BB 02 03	2002	Saccolaimus saccolaimus	NA	Acoustic	Acoustic	20200622 200218.wav

Appendix 12 Faunal Survey Data for Clementi Forest

Date	Latitude	Longitude	Sampling point	Time (24h)	Scientific name	Quantity	Observation type	Survey method	Remarks
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2002	Saccolaimus saccolaimus	NA	Acoustic	Acoustic	20200622 200238.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2002	Saccolaimus saccolaimus	NA	Acoustic	Acoustic	20200622 200244.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2003	Saccolaimus saccolaimus	NA	Acoustic	Acoustic	20200622 200307.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2003	Saccolaimus saccolaimus	NA	Acoustic	Acoustic	20200622 200332.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2006	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200622 200638.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2007	Saccolaimus saccolaimus	NA	Acoustic	Acoustic	20200622 200714.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2008	Saccolaimus saccolaimus	NA	Acoustic	Acoustic	20200622 200812.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2010	Saccolaimus saccolaimus	NA	Acoustic	Acoustic	20200622 201018.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	1913	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 191315.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	1920	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 192005.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	1922	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 192207.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	1933	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 193355.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	1946	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 194612.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	1958	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 195819.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2001	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 200105.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2002	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 200202.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2004	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 200411.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2004	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 200426.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2005	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 200511.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2006	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 200638.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2007	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 200714.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2008	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 200812.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2008	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 200828.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2009	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 200904.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2008	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 200848.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2009	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 200951.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2010	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 201018.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2010	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 201003.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2010	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 201033.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2012	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 201220.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2021	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 202110.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2022	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 202212.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2022	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 202229.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2023	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 202305.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2023	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 202352.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2026	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 202624.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2034	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 203439.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2048	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 204844.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2048	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 204859.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2049	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 204920.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2049	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 204927.wav
22-Jun-20	1.32921,	103.77946,	HW_BB_02_03	2055	Tylonycteris spp.	NA	Acoustic	Acoustic	20200622 205525.wav
1-Jul-20	1.32403,	103.77503,	HW_BB_07_08	1931	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200701 193126.wav
1-Jul-20	1.32403,	103.77503,	HW_BB_07_08	1931	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200701 193126.wav
1-Jul-20	1.32403,	103.77503,	HW_BB_07_08	1936	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200701 193641.wav
1-Jul-20	1.32403,	103.77503,	HW_BB_07_08	1936	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200701 193641.wav
1-Jul-20	1.32403,	103.77503,	HW_BB_07_08	1936	Saccolaimus saccolaimus	NA	Acoustic	Acoustic	20200701 193641.wav
1-Jul-20	1.32403,	103.77503,	HW_BB_07_08	2011	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200701 201100.wav
1-Jul-20	1.32403,	103.77503,	HW_BB_07_08	2011	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200701 201119.wav
1-Jul-20	1.32403,	103.77503,	HW_BB_07_08	2011	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200701 201132.wav
1-Jul-20	1.32403,	103.77503,	HW_BB_07_08	2011	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200701 201132.wav
1-Jul-20	1.32403,	103.77503,	HW_BB_07_08	2011	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200701 201148.wav
1-Jul-20	1.32403,	103.77503,	HW_BB_07_08	2013	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200701 201324.wav
1-Jul-20	1.32403,	103.77503,	HW_BB_07_08	2013	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200701 201351.wav
1-Jul-20	1.32403,	103.77503,	HW_BB_07_08	2014	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200701 201415.wav
1-Jul-20	1.32403,	103.77503,	HW_BB_07_08	2014	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200701 201435.wav
1-Jul-20	1.32403,	103.77503,	HW_BB_07_08	2014	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200701 201435.wav
1-Jul-20	1.32403,	103.77503,	HW_BB_07_08	2015	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200701 201506.wav
1-Jul-20	1.32403,	103.77503,	HW_BB_07_08	2015	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200701 201532.wav
1-Jul-20	1.32403,	103.77503,	HW_BB_07_08	2015	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200701 201539.wav
1-Jul-20	1.32403,	103.77503,	HW_BB_07_08	2017	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200701 201749.wav
1-Jul-20	1.32403,	103.77503,	HW_BB_07_08	2018	Rhinolophus lepidus	NA	Acoustic	Acoustic	20200701 201825.wav
1-Jul-20	1.32403,	103.77503,	HW_BB_07_08	2020	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200701 202003.wav
1-Jul-20	1.32403,	103.77503,	HW_BB_07_08	2032	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200701 203246.wav
1-Jul-20	1.32403,	103.77503,	HW_BB_07_08	2033	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200701 203301.wav
1-Jul-20	1.32403,	103.77503,	HW_BB_07_08	2043	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200701 204350.wav
1-Jul-20	1.32403,	103.77503,	HW_BB_07_08	2044	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200701 204426.wav
1-Jul-20	1.32403,	103.77503,	HW_BB_07_08	2051	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200701 205134.wav
1-Jul-20	1.32403,	103.77503,	HW_BB_07_08	2054	Scotophilus kuhlii	NA	Acoustic	Acoustic	20200701 205454.wav
3-Feb-20	1.32355	103.7747	NA	1140	Unidentified Hemicordulia tenera	1	Seen	Incidental	NA

Appendix I2 Faunal Survey Data for Clementi Forest

Bamboo cluster	Latitude	Longitude	Bamboo species	Height (m)	Spread (m)	Presence of slits	Active slit internode girth (cm)	Active slit internode length (cm)	Active slit length / width (cm)	Active slit height from ground (m)	Estimated no. of individuals	Observations of bamboo bats	Priority classification (1 - bamboo bat roosting confirmed, 2 - bamboo bat recorded but roosting not confirmed, 3 - bamboo bat not recorded but potential roosting site)	Remarks
HW_BB_01	1.32734	103.77676	<i>Bambusa vulgaris</i>	10	3	No	N.A	N.A	N.A	N.A	N.A	N.A	3	Cluster of 3 small bamboos
HW_BB_02	1.32921	103.77946	<i>Bambusa vulgaris</i>	6	3	Yes	N.A	N.A	N.A	N.A	3	2015h: 1 bat 2025h: 2 bats	2	
HW_BB_03	1.32928	103.7796	<i>Bambusa vulgaris</i>	4	3	Yes	15.5	36.5	18	6	3	2010h: 3 bats	2	2 small clusters
HW_BB_04	1.33092	103.77821	<i>Bambusa vulgaris</i>	10	8	No	N.A	N.A	N.A	1	N.A	N.A	3	
HW_BB_05	1.32693	103.77782	<i>Bambusa vulgaris</i>	14	10	Yes (on dead stems)	N.A	N.A	N.A	N.A		1935h: 2 unid bats flying around. Bat activity throughout, flying around Old Jurong Line passing by bamboo clusters.	3	
HW_BB_06	1.3245	103.77386	<i>Bambusa vulgaris</i>	10	4	No	N.A	N.A	N.A	N.A	N.A	N.A	3	
HW_BB_07	1.32403	103.77503	<i>Bambusa heterostachya</i>	15	5	Yes	N.A	N.A	N.A	N.A	N.A	1920h: 2 unid bats flying around	3	
HW_BB_08	1.32392	103.77492	<i>Bambusa vulgaris</i>	6	3.5	Yes	N.A	N.A	N.A	N.A	N.A	N.A	3	Partially fallen

Appendix I2 Faunal Survey Data for Clementi Forest

Type	Sampling Point	Latitude	Longitude	Sampling Date	Time Open (hrs)	Retrieval Date	Time Close (hrs)	Remarks
Butterfly Trap	HW BT 01	1.32775	103.78058	27-Feb-20	NA	28-Feb-20	1230	Banana Bait
Butterfly Trap	HW BT 02	1.32775	103.78058	27-Feb-20	NA	28-Feb-20	1230	Prawn Bait
Butterfly Trap	HW BT 03	1.32794	103.77793	27-Feb-20	NA	28-Feb-20	1150	Banana Bait
Butterfly Trap	HW BT 04	1.32794	103.77793	27-Feb-20	NA	28-Feb-20	1150	Prawn Bait
Bat Trap	HW HT 01	1.33036	103.77859	8-Jan-20	1745	9-Jan-20	745	
Bat Trap	HW HT 02	1.32992	103.77932	8-Jan-20	1813	9-Jan-20	755	
Bat Trap	HW HT 03	1.32838	103.77835	8-Jan-20	1810	9-Jan-20	815	
Bat Trap	HW MN 03	1.32861	103.77825	8-Jan-20	1821	8-Jan-20	2100	
Fish Trap	HW FT 01	1.32936	103.77827	3-Jan-20	NA	4-Jan-20	1022	
Fish Trap	HW FT 02	1.33035	103.77827	3-Jan-20	NA	4-Jan-20	1022	No catch
Fish Trap	HW FT 03	1.32941	103.78014	3-Jan-20	NA	4-Jan-20	1022	No catch
Fish Trap	HW FT 04	1.33053	103.78123	3-Jan-20	NA	4-Jan-20	1022	
Fish Trap	HW FT 05	1.32492	103.77558	27-Feb-20	NA	28-Feb-20	1310	At Corona pond
Fish Trap	HW FT 06	1.32492	103.77558	27-Feb-20	NA	28-Feb-20	1310	At Corona pond
Fish Trap	HW FT 07	1.32492	103.77558	27-Feb-20	NA	28-Feb-20	1310	At Corona pond
Fish Trap	HW FT 08	1.32492	103.77558	27-Feb-20	NA	28-Feb-20	1310	At Corona pond
Fish Trap	HW FT 09	1.33039	103.77834	3-Feb-20	NA	3-Mar-20	1030	
Fish Trap	HW FT 10	1.33039	103.77831	3-Feb-20	NA	3-Mar-20	1030	
Fish Trap	HW FT 11	1.33038	103.77835	3-Feb-20	NA	3-Mar-20	1030	
Fish Trap	HW FT 12	1.33036	103.77837	3-Feb-20	NA	3-Mar-20	1030	

Appendix I2 Faunal Survey Data for Clementi Forest

Date	Sampling Point	Latitude	Longitude	AM/PM	Time	Min.Light (lux)	Max.Light (lux)	Avg.Light (lux)	Min.Humidity (rH)	Max.Humidity (rH)	Avg.Humidity (rH)	Temperature (°C)
4-Jun-20	HW_LTH_505	1.33245	103.78124	AM	0821	N.A	N.A	4150.0	N.A	N.A	83.1	29.0
4-Jun-20	HW_LTH_1005	1.33259	103.78086	AM	0830	N.A	N.A	437.0	N.A	N.A	85.4	28.3
4-Jun-20	HW_LTH_1006	1.33047	103.78136	AM	0840	N.A	N.A	3600.0	N.A	N.A	88.6	27.9
4-Jun-20	HW_LTH_1002	1.32942	103.78071	AM	0902	N.A	N.A	220.0	N.A	N.A	86.3	29.6
4-Jun-20	HW_LTH_502	1.32944	103.78032	AM	0914	N.A	N.A	16800.0	N.A	N.A	90.0	30.4
4-Jun-20	HW_LTH_02	1.32947	103.78003	AM	0917	N.A	N.A	1500.0	N.A	N.A	80.6	30.1
4-Jun-20	HW_LTH_01	1.33013	103.77940	AM	0933	N.A	N.A	333.0	N.A	N.A	86.5	30.5
4-Jun-20	HW_LTH_501	1.33059	103.77953	AM	0940	N.A	N.A	644.0	N.A	N.A	88.0	30.1
4-Jun-20	HW_LTH_1001	1.33113	103.77946	AM	0944	N.A	N.A	500.0	N.A	N.A	84.8	29.6
4-Jun-20	HW_LTH_03	1.32706	103.77768	AM	1035	N.A	N.A	603.0	N.A	N.A	80.9	30.0
4-Jun-20	HW_LTH_503	1.32671	103.77788	AM	1055	N.A	N.A	1663.0	N.A	N.A	87.4	31.5
4-Jun-20	HW_LTH_1003	1.32636	103.77807	AM	1100	N.A	N.A	316.0	N.A	N.A	80.4	30.4
8-Jun-20	HW_LTH_04	1.32552	103.77525	AM	900	N.A	N.A	15200.0	N.A	N.A	75.3	30.0
9-Jun-20	HW_LTH_04	1.32552	103.77525	PM	2019	0.0	0.0	0.0	83.1	85.8	84.5	29.8
11-Jun-20	HW_LTH_1501	1.33146	103.77977	AM	0827	221.0	214.0	217.5	88.2	89.6	88.9	28.6
11-Jun-20	HW_LTH_1505	1.33217	103.78063	AM	0845	194.0	228.0	211.0	93.2	93.8	93.5	30.0
11-Jun-20	HW_LTH_1506	1.33008	103.78120	AM	0913	399.0	435.0	417.0	93.4	93.8	93.6	29.8
11-Jun-20	HW_LTH_1502	1.32864	103.78081	AM	0929	3430.0	3940.0	3685.0	94.1	94.2	94.2	31.6
11-Jun-20	HW_LTH_1503	1.32607	103.77833	AM	1025	612.0	617.0	614.5	90.1	91.2	90.7	30.8
22-Jun-20	HW_LTH_03	1.32706	103.77768	PM	1953	0.0	0.0	0.0	84.1	84.9	84.5	29.6
22-Jun-20	HW_LTH_01	1.33013	103.77940	PM	2012	0.0	0.0	0.0	90.8	91.1	91.0	29.0
22-Jun-20	HW_LTH_501	1.33059	103.77953	PM	2020	0.0	0.0	0.0	85.5	86.2	85.9	29.3
22-Jun-20	HW_LTH_1001	1.33113	103.77946	PM	2032	0.0	0.0	0.0	81.7	82.3	82.0	29.9
22-Jun-20	HW_LTH_1501	1.33146	103.77977	PM	2041	0.0	0.0	0.0	85.6	85.6	85.6	29.4
22-Jun-20	HW_LTH_1505	1.33217	103.78063	PM	2053	0.0	0.0	0.0	91.2	91.4	91.3	29.1
22-Jun-20	HW_LTH_1005	1.33259	103.78086	PM	2059	0.0	0.0	0.0	87.0	87.4	87.2	29.2
22-Jun-20	HW_LTH_505	1.33245	103.78124	PM	2110	0.0	0.0	0.0	88.9	89.6	89.3	28.7
22-Jun-20	HW_LTH_1006	1.33047	103.78136	PM	2118	0.0	0.0	0.0	98.7	90.5	94.6	28.6
22-Jun-20	HW_LTH_1506	1.33008	103.78120	PM	2122	0.0	0.0	0.0	91.5	91.7	91.6	28.8
22-Jun-20	HW_LTH_1002	1.32942	103.78071	PM	2130	0.0	0.0	0.0	91.0	91.2	91.1	28.7
22-Jun-20	HW_LTH_502	1.32944	103.78032	PM	2138	0.0	0.0	0.0	91.1	91.2	91.2	28.5
22-Jun-20	HW_LTH_02	1.32947	103.78003	PM	2139	0.0	0.0	0.0	90.3	90.5	90.4	27.9
15-Jun-20	HW_LTH_04	1.32552	103.77525	AM	0940	4230.0	4800.0	4515.0	85.2	86.6	85.9	30.7
15-Jun-20	HW_LTH_03	1.32706	103.77768	AM	0844	127.0	175.0	151.0	79.5	81.0	80.3	32.0
15-Jun-20	HW_LTH_503	1.32671	103.77788	AM	0912	641.0	688.0	664.5	88.6	90.0	89.3	30.1
15-Jun-20	HW_LTH_1003	1.32636	103.77807	AM	0923	186.0	209.0	197.5	93.8	94.0	93.9	30.7
15-Jun-20	HW_LTH_1503	1.32607	103.77833	AM	0928	385.0	413.0	399.0	86.0	86.7	86.4	30.7
16-Jun-20	HW_LTH_01	1.33013	103.77940	AM	0812	98.0	105.0	101.5	87.7	87.9	87.8	28.9
16-Jun-20	HW_LTH_501	1.33059	103.77953	AM	0818	97.0	103.0	100.0	87.7	88.6	88.2	29.2
16-Jun-20	HW_LTH_1001	1.33113	103.77946	AM	0827	201.0	240.0	220.5	87.7	87.9	87.8	30.0
16-Jun-20	HW_LTH_1501	1.33146	103.77977	AM	0834	173.0	193.0	183.0	84.2	84.9	84.6	30.2
16-Jun-20	HW_LTH_1505	1.33217	103.78063	AM	0844	243.0	246.0	244.5	87.1	88.0	87.6	30.3

Appendix I2 Faunal Survey Data for Clementi Forest

Date	Sampling Point	Latitude	Longitude	AM/PM	Time	Min.Light (lux)	Max.Light (lux)	Avg.Light (lux)	Min.Humidity (rH)	Max.Humidity (rH)	Avg.Humidity (rH)	Temperature (°C)
16-Jun-20	HW_LTH_1005	1.33259	103.78086	AM	0853	760.0	953.0	856.5	88.7	88.9	88.8	30.5
16-Jun-20	HW_LTH_505	1.33245	103.78124	AM	0959	11550.0	13000.0	12275.0	77.4	80.3	78.9	31.6
16-Jun-20	HW_LTH_1006	1.33047	103.78136	AM	0910	2830.0	3010.0	2920.0	84.3	85.1	84.7	31.5
16-Jun-20	HW_LTH_1506	1.33008	103.78120	AM	0920	324.0	330.0	327.0	84.7	85.3	85.0	31.5
16-Jun-20	HW_LTH_1002	1.32942	103.78071	AM	0931	622.0	645.0	633.5	85.6	85.9	85.8	31.1
16-Jun-20	HW_LTH_502	1.32944	103.78032	AM	0945	17390.0	17500.0	17445.0	78.4	80.4	79.4	32.0
16-Jun-20	HW_LTH_02	1.32947	103.78003	AM	0950	Max (>20000)	Max (>20000)	Max (>20000)	82.6	84.8	83.7	33.1
16-Jun-20	HW_LTH_1502	1.32864	103.78081	AM	1027	8840.0	9600.0	9220.0	79.0	82.9	81.0	32.4
23-Jun-20	HW_LTH_04	1.32552	103.77525	PM	2035	2.0	2.0	2.0	85.6	85.9	85.8	29.8
23-Jun-20	HW_LTH_503	1.32671	103.77788	PM	2058	0.0	0.0	0.0	91.9	92.1	92.0	28.7
23-Jun-20	HW_LTH_1003	1.32636	103.77807	PM	2105	0.0	0.0	0.0	91.9	92.0	92.0	28.8
23-Jun-20	HW_LTH_1503	1.32607	103.77833	PM	2109	0.0	0.0	0.0	88.9	89.2	89.1	28.6
2-Jul-20	HW_LTH_1502	1.32864	103.78081	PM	2012	0.0	0.0	0.0	82.1	83.2	82.7	31.3
2-Jul-20	HW_LTH_502	1.32944	103.78032	PM	2032	0.0	0.0	0.0	79.8	80.7	80.3	30.2
2-Jul-20	HW_LTH_02	1.32947	103.78003	PM	2038	0.0	0.0	0.0	82.2	83.6	82.9	29.1
2-Jul-20	HW_LTH_1002	1.32942	103.78071	PM	2047	0.0	0.0	0.0	85.4	87.4	86.4	29.0
2-Jul-20	HW_LTH_1506	1.33008	103.78120	PM	2057	0.0	0.0	0.0	87.0	88.3	87.7	29.6
2-Jul-20	HW_LTH_1006	1.33047	103.78136	PM	2103	0.0	0.0	0.0	86.0	87.3	86.7	29.5
2-Jul-20	HW_LTH_505	1.33245	103.78124	PM	2109	0.0	0.0	0.0	83.1	83.5	83.3	29.3
2-Jul-20	HW_LTH_1005	1.33259	103.78086	PM	2117	0.0	0.0	0.0	81.0	81.5	81.3	30.4
2-Jul-20	HW_LTH_1505	1.33217	103.78063	PM	2123	0.0	0.0	0.0	79.6	81.9	80.8	30.0
2-Jul-20	HW_LTH_1501	1.33146	103.77977	PM	2135	0.0	0.0	0.0	80.2	81.7	81.0	29.9
2-Jul-20	HW_LTH_1001	1.33113	103.77946	PM	2142	0.0	0.0	0.0	82.9	83.0	83.0	29.9
2-Jul-20	HW_LTH_501	1.33059	103.77953	PM	2148	0.0	0.0	0.0	85.6	86.4	86.0	30.5
2-Jul-20	HW_LTH_01	1.33013	103.77940	PM	2155	0.0	0.0	0.0	81.6	83.4	82.5	30.5
9-Jun-20	HW_LTH_03	1.32706	103.77768	PM	2120	7.0	8.0	7.5	84.5	86.8	85.7	31.3
9-Jun-20	HW_LTH_503	1.32671	103.77788	PM	2137	0.0	0.0	0.0	82.9	83.5	83.2	31.1
9-Jun-20	HW_LTH_1003	1.32636	103.77807	PM	2139	0.0	0.0	0.0	77.9	83.9	80.9	31.0
9-Jun-20	HW_LTH_1503	1.32607	103.77833	PM	2142	0.0	0.0	0.0	80.6	80.6	80.6	31.3

Appendix I2 Faunal Survey Data for Clementi Forest

Sampling Point	Type	Latitude	Longitude
HW_A2_01	Aquatic	1.32939	103.77823
HW_A2_02	Aquatic	1.32889	103.77788
HW_A1_01	Aquatic	1.33263	103.78103
HW_A1_02	Aquatic	1.33263	103.78103
HW_A1_03	Aquatic	1.33056	103.78128
HW_A1_04	Aquatic	1.32954	103.78098
HW_A1_05	Aquatic	1.32936	103.78017
HW_A1_06	Aquatic	1.32984	103.77903
HW_A1_07	Aquatic	1.33038	103.77830
HW_T1_01	Terrestrial	1.32740	103.77730
HW_T1_02	Terrestrial	1.32813	103.77777
HW_T1_03	Terrestrial	1.32867	103.77829
HW_T1_04	Terrestrial	1.32907	103.77768
HW_T1_05	Terrestrial	1.33046	103.77835
HW_T1_06	Terrestrial	1.33021	103.77899
HW_T1_07	Terrestrial	1.33014	103.77938
HW_T1_08	Terrestrial	1.33088	103.77964
HW_T1_09	Terrestrial	1.33152	103.77974
HW_T1_10	Terrestrial	1.33193	103.78045
HW_T1_11	Terrestrial	1.33232	103.78091
HW_T1_12	Terrestrial	1.33313	103.78100
HW_T1_13	Terrestrial	1.33248	103.78126
HW_T1_14	Terrestrial	1.33158	103.78132
HW_T1_15	Terrestrial	1.33068	103.78136
HW_T1_16	Terrestrial	1.32979	103.78136
HW_T2_01	Terrestrial	1.32275	103.77399
HW_T2_02	Terrestrial	1.32227	103.77474
HW_T2_03	Terrestrial	1.32217	103.77550
HW_T2_04	Terrestrial	1.32206	103.77634
HW_T2_05	Terrestrial	1.32282	103.77669
HW_T2_06	Terrestrial	1.32319	103.77750
HW_T2_07	Terrestrial	1.32292	103.77812
HW_T2_08	Terrestrial	1.32347	103.77858
HW_T2_09	Terrestrial	1.32424	103.77904
HW_T2_10	Terrestrial	1.32489	103.77961
HW_T2_11	Terrestrial	1.32564	103.77975
HW_T2_12	Terrestrial	1.32628	103.78028
HW_T2_13	Terrestrial	1.32703	103.78055
HW_T2_14	Terrestrial	1.32776	103.78074
HW_T2_15	Terrestrial	1.32827	103.78003
HW_T2_16	Terrestrial	1.32775	103.77931
HW_T2_17	Terrestrial	1.32719	103.77860
HW_T2_18	Terrestrial	1.32671	103.77785
HW_T2_19	Terrestrial	1.32642	103.77700
HW_T2_20	Terrestrial	1.32613	103.77616
HW_BT_01	Butterfly Trap	1.32775	103.78058
HW_BT_02	Butterfly Trap	1.32775	103.78058
HW_BT_03	Butterfly Trap	1.32794	103.77793
HW_BT_04	Butterfly Trap	1.32794	103.77793
HW_HT_01	Bat Trap	1.33036	103.77859
HW_HT_02	Bat Trap	1.32992	103.77932
HW_HT_03	Bat Trap	1.32838	103.77835
HW_MN_03	Bat Trap	1.32861	103.77825
HW_FT_01	Fish Trap	1.32936	103.77827
HW_FT_02	Fish Trap	1.33035	103.77827
HW_FT_03	Fish Trap	1.32941	103.78014
HW_FT_04	Fish Trap	1.33053	103.78123
HW_FT_05	Fish Trap	1.32492	103.77558

Appendix I2 Faunal Survey Data for Clementi Forest

Sampling Point	Type	Latitude	Longitude
HW_FT_06	Fish Trap	1.32492	103.77558
HW_FT_07	Fish Trap	1.32492	103.77558
HW_FT_08	Fish Trap	1.32492	103.77558
HW_FT_09	Fish Trap	1.33039	103.77834
HW_FT_10	Fish Trap	1.33039	103.77831
HW_FT_11	Fish Trap	1.33038	103.77835
HW_FT_12	Fish Trap	1.33036	103.77837
HW_BB_01	Bamboo	1.32734	103.77676
HW_BB_02	Bamboo	1.32921	103.77946
HW_BB_03	Bamboo	1.32928	103.77960
HW_BB_04	Bamboo	1.33092	103.77821
HW_BB_05	Bamboo	1.32693	103.77782
HW_BB_06	Bamboo	1.32450	103.77386
HW_BB_07	Bamboo	1.32403	103.77503
HW_BB_08	Bamboo	1.32392	103.77492
HW_LTH_01	LTH	1.33013	103.77940
HW_LTH_02	LTH	1.32947	103.78003
HW_LTH_03	LTH	1.32706	103.77768
HW_LTH_04	LTH	1.32552	103.77525
HW_LTH_1001	LTH	1.33113	103.77946
HW_LTH_1002	LTH	1.32942	103.78071
HW_LTH_1003	LTH	1.32636	103.77807
HW_LTH_1005	LTH	1.33259	103.78086
HW_LTH_1006	LTH	1.33047	103.78136
HW_LTH_1501	LTH	1.33146	103.77977
HW_LTH_1502	LTH	1.32864	103.78081
HW_LTH_1503	LTH	1.32607	103.77833
HW_LTH_1505	LTH	1.33217	103.78063
HW_LTH_1506	LTH	1.33008	103.78120
HW_LTH_501	LTH	1.33059	103.77953
HW_LTH_502	LTH	1.32944	103.78032
HW_LTH_503	LTH	1.32671	103.77788
HW_LTH_505	LTH	1.33245	103.78124

Appendix I2 Faunal Survey Data for Clementi Forest

Date	Activity	Sampling location	Direction	Time in	Time out	Weather
16-Dec-19	AM - bird, herp, mammal	HW T1	Forward	720	945	Fair
20-Dec-19	AM - butterflies, bees, odonates	HW T1	Forward	902	1133	Cloudy
20-Dec-19	PM - moth	HW_MT	NA	1730	2200	Fair
3-Jan-20	PM - herp, aquatic(fish)	HW A1 A2	Reverse	1932	2310	Fair
4-Jan-20	AM - aquatic (odonate, fish)	HW A1 A2	Reverse	905	1200	Sunny
8-Jan-20	PM - bird, herp, mammal	HW T1	Forward	1933	2140	Fair
8-Jan-20	PM - bat	NA	NA	1700	2145	Fair
16-Jan-20	AM - butterflies, odonates	HW T2	Forward	920	1250	Sunny
22-Jan-20	PM - bird, herp, mammal	HW T2	Forward	2002	2318	Fair
6-Feb-20	AM - bird, herp, mammal	HW T1	Reverse	731	924	Fair
13-Feb-20	PM - bird, herp, mammal	HW T1	Reverse	1930	2203	Fine
16-Feb-20	AM - butterflies, odonates	HW T1	Reverse	901	1132	Cloudy
27-Feb-20	AM - bird, herp	HW T2	Reverse	718	1000	Fair
28-Feb-20	AM - collect butterfly and fish trap	NA	NA	1130	1310	Sunny
2-Mar-20	PM - herp + fish (aquatic)	HW A1	Forward	748	947	Fair
3-Mar-20	AM - aquatic (odonate, fish)	HW A1	Forward	905	1030	Fair
14-Mar-20	AM - butterflies, odonates	HW T2	Reverse	901	1155	Partly cloudy
20-Mar-20	AM - mammal	HW T2	Reverse	709	950	Fair
24-Mar-20	AM - bees	HW T2	Reverse	910	1110	Fair
25-Mar-20	PM - bird, herp, mammal	HW T2	Reverse	1933	2232	Fair
4-Apr-20	AM - aquatic, herp	HW A1 A2	Reverse	730	1100	Cool
5-Apr-20	AM - aquatic, herp	HW A1 A2	Forward	745	1015	Cool
4-Jun-20	AM - LTH	NA	1	N.A	N.A	Sunny
8-Jun-20	AM - LTH	NA	1	N.A	N.A	Sunny then rain
9-Jun-20	PM - fish, herp	HW_A2	NA	1950	2005	Fair
9-Jun-20	PM - bamboo bats roost emergence	HW_BB_01_04	NA	1830	2100	Fair
9-Jun-20	PM - LTH	NA	1	N.A	N.A	Fair
11-Jun-20	AM - LTH	NA	1	N.A	N.A	Fair
15-Jun-20	AM - LTH	NA	2	N.A	N.A	Fair
16-Jun-20	AM - LTH	NA	2	N.A	N.A	Cloudy then rain
18-Jun-20	AM - fish, odonates	HW_A2	NA	1225	1242	Cloudy
22-Jun-20	PM - bamboo bats roost emergence	HW_BB_02_03	NA	1830	2115	Fair
22-Jun-20	PM - LTH	NA	1	N.A	N.A	Fair
23-Jun-20	PM - bamboo bats roost emergence, LTH	HW_BB_05	NA	1830	2100	Fair
23-Jun-20	PM - LTH	NA	2	N.A	N.A	Fair, Post-rain
1-Jul-20	PM - bamboo bats roost emergence	HW_BB_06_07_08	NA	1830	2100	Fair
2-Jul-20	PM - LTH	NA	2	N.A	N.A	Fair

Appendix J1

Camera Trap Log and
Data for Maju Forest

Appendix J1 Camera Trap Log and Data for Maju Forest

Station	Latitude	Longitude	Deployment date	End Date	No. of trap nights
SSW_CT_01	1.329212012	103.764674	20-Nov-19	30-Jan-20	71
SSW_CT_02	1.328617986	103.770484	20-Nov-19	21-Jan-20	62
SSW_CT_03	1.324945958	103.770162	20-Nov-19	21-Jan-20	62
SSW_CT_04	1.326936996	103.772665	21-Nov-19	21-Jan-20	61
SSW_CT_05	1.326200981	103.771079	21-Nov-19	21-Jan-20	61
SSW_CT_06	1.325654984	103.772216	21-Nov-19	21-Jan-20	61

Appendix J2

Camera Trap Log and
Data for Clementi Forest

Appendix J1 Camera Trap Log and Data for Clementi Forest

Station	SamplingDate	FileName	FileModifyDate	Date	Time	Taxon	Scientific name	Quantity
HW_CT_01	12/12/2019	IMG_0012.AVI	05/12/2019 18:39	05/12/2019	18:39:52	Mammal	Callosciurus notatus	1
HW_CT_01	12/12/2019	IMG_0019.AVI	09/12/2019 17:27	09/12/2019	17:27:42	Mammal	Callosciurus notatus	1
HW_CT_01	12/12/2019	IMG_0020.AVI	10/12/2019 07:49	10/12/2019	07:49:14	Mammal	Callosciurus notatus	1
HW_CT_01	12/12/2019	IMG_0021.AVI	11/12/2019 07:38	11/12/2019	07:38:24	Mammal	Callosciurus notatus	1
HW_CT_01	12/12/2019	IMG_0022.AVI	12/12/2019 07:28	12/12/2019	07:28:56	Mammal	Callosciurus notatus	1
HW_CT_01	10/01/2020	IMG_0007.AVI	14/12/2019 08:55	14/12/2019	08:55:28	Mammal	Callosciurus notatus	1
HW_CT_01	10/01/2020	IMG_0008.AVI	17/12/2019 09:08	17/12/2019	09:08:18	Mammal	Tupaia glis	1
HW_CT_01	10/01/2020	IMG_0026.AVI	22/12/2019 12:29	22/12/2019	12:29:34	Bird	Garrulax leucolophus	1
HW_CT_01	10/01/2020	IMG_0027.AVI	23/12/2019 11:55	23/12/2019	11:55:20	Mammal	Callosciurus notatus	1
HW_CT_01	10/01/2020	IMG_0028.AVI	29/12/2019 17:45	29/12/2019	17:45:56	Mammal	Callosciurus notatus	1
HW_CT_01	10/01/2020	IMG_0029.AVI	30/12/2019 08:30	30/12/2019	08:30:02	Mammal	Callosciurus notatus	1
HW_CT_01	10/01/2020	IMG_0030.AVI	30/12/2019 15:12	30/12/2019	15:12:56	Mammal	Callosciurus notatus	1
HW_CT_01	10/01/2020	IMG_0031.AVI	31/12/2019 06:49	31/12/2019	06:49:14	Mammal	Callosciurus notatus	1
HW_CT_01	10/01/2020	IMG_0032.AVI	31/12/2019 07:51	31/12/2019	07:51:16	Mammal	Callosciurus notatus	1
HW_CT_01	10/01/2020	IMG_0033.AVI	31/12/2019 18:21	31/12/2019	18:21:58	Mammal	Callosciurus notatus	1
HW_CT_01	10/01/2020	IMG_0034.AVI	31/12/2019 18:22	31/12/2019	18:22:40	Mammal	Callosciurus notatus	1
HW_CT_01	10/01/2020	IMG_0035.AVI	01/01/2020 07:32	01/01/2020	07:32:52	Mammal	Callosciurus notatus	1
HW_CT_01	10/01/2020	IMG_0036.AVI	03/01/2020 08:36	03/01/2020	08:36:54	Mammal	Callosciurus notatus	1
HW_CT_01	10/01/2020	IMG_0038.AVI	05/01/2020 09:36	05/01/2020	09:36:12	Bird	Garrulax leucolophus	1
HW_CT_01	10/01/2020	IMG_0039.AVI	05/01/2020 10:27	05/01/2020	10:27:34	Mammal	Callosciurus notatus	1
HW_CT_01	10/01/2020	IMG_0040.AVI	07/01/2020 12:23	07/01/2020	12:23:04	Mammal	Callosciurus notatus	1
HW_CT_01	10/01/2020	IMG_0041.AVI	07/01/2020 17:18	07/01/2020	17:18:56	Bird	Garrulax leucolophus	1
HW_CT_01	10/01/2020	IMG_0042.AVI	07/01/2020 17:23	07/01/2020	17:23:50	Mammal	Callosciurus notatus	1
HW_CT_01	10/01/2020	IMG_0043.AVI	07/01/2020 17:24	07/01/2020	17:24:20	Mammal	Callosciurus notatus	1
HW_CT_01	10/01/2020	IMG_0045.AVI	09/01/2020 09:34	09/01/2020	09:34:28	Mammal	Callosciurus notatus	1
HW_CT_02	12/12/2019	IMG_0038.AVI	03/12/2019 11:04	03/12/2019	11:04:22	Bird	Garrulax leucolophus	1
HW_CT_02	12/12/2019	IMG_0042.AVI	06/12/2019 01:21	06/12/2019	01:21:10	Mammal	Rattus sp.	1
HW_CT_02	12/12/2019	IMG_0043.AVI	06/12/2019 23:04	06/12/2019	23:04:24	Mammal	Rattus sp.	1
HW_CT_02	12/12/2019	IMG_0044.AVI	07/12/2019 03:19	07/12/2019	03:19:18	Bird	Otus lempiji	1
HW_CT_02	10/01/2020	IMG_0024.AVI	29/12/2019 16:01	29/12/2019	16:01:20	Mammal	Callosciurus notatus	1
HW_CT_02	10/01/2020	IMG_0025.AVI	31/12/2019 03:41	31/12/2019	03:41:02	Bird	Unidentified bird	1
HW_CT_02	10/01/2020	IMG_0028.AVI	05/01/2020 10:08	05/01/2020	10:08:06	Bird	Garrulax leucolophus	3
HW_CT_02	20/03/2020	IMG_0007.AVI	27/02/2020 11:27	27/02/2020	11:27:58	Mammal	Tupaia glis	1
HW_CT_02	20/03/2020	IMG_0008.AVI	27/02/2020 20:24	27/02/2020	20:24:18	Mammal	Rattus sp.	1
HW_CT_02	20/03/2020	IMG_0010.AVI	29/02/2020 02:39	29/02/2020	02:39:46	NA	Unidentified sp.	1
HW_CT_02	20/03/2020	IMG_0011.AVI	29/02/2020 04:44	29/02/2020	04:44:28	Mammal	Rattus sp.	1
HW_CT_02	20/03/2020	IMG_0012.AVI	29/02/2020 06:08	29/02/2020	06:08:28	Mammal	Rattus sp.	1
HW_CT_02	20/03/2020	IMG_0013.AVI	29/02/2020 07:59	29/02/2020	07:59:50	Mammal	Tupaia glis	1
HW_CT_02	20/03/2020	IMG_0014.AVI	29/02/2020 10:38	29/02/2020	10:38:34	Bird	Garrulax leucolophus	1
HW_CT_02	20/03/2020	IMG_0016.AVI	29/02/2020 16:25	29/02/2020	16:25:14	Bird	Garrulax leucolophus	3
HW_CT_02	20/03/2020	IMG_0017.AVI	29/02/2020 19:09	29/02/2020	19:09:20	Bird	Garrulax leucolophus	1
HW_CT_02	20/03/2020	IMG_0018.AVI	01/03/2020 04:12	01/03/2020	04:12:52	NA	Unidentified sp.	1
HW_CT_02	20/03/2020	IMG_0019.AVI	01/03/2020 14:19	01/03/2020	14:19:58	Bird	Garrulax leucolophus	1
HW_CT_02	20/03/2020	IMG_0020.AVI	02/03/2020 19:01	02/03/2020	19:01:48	Bird	Garrulax leucolophus	2
HW_CT_02	20/03/2020	IMG_0021.AVI	03/03/2020 17:51	03/03/2020	17:51:48	Bird	Garrulax leucolophus	3
HW_CT_02	20/03/2020	IMG_0022.AVI	04/03/2020 01:39	04/03/2020	01:39:16	Mammal	Rattus sp.	1
HW_CT_02	20/03/2020	IMG_0023.AVI	04/03/2020 16:09	04/03/2020	16:09:44	Bird	Garrulax leucolophus	2
HW_CT_02	20/03/2020	IMG_0024.AVI	05/03/2020 10:16	05/03/2020	10:16:12	Mammal	Unidentified squirrel or shrew	1
HW_CT_02	20/03/2020	IMG_0025.AVI	06/03/2020 17:45	06/03/2020	17:45:10	Bird	Chalcophaps indica	1
HW_CT_02	20/03/2020	IMG_0026.AVI	07/03/2020 06:27	07/03/2020	06:27:34	NA	Unidentified sp.	1
HW_CT_02	20/03/2020	IMG_0027.AVI	07/03/2020 09:39	07/03/2020	09:39:26	Bird	Garrulax leucolophus	1
HW_CT_02	20/03/2020	IMG_0028.AVI	07/03/2020 09:52	07/03/2020	09:52:10	Bird	Garrulax leucolophus	1
HW_CT_02	20/03/2020	IMG_0029.AVI	07/03/2020 09:52	07/03/2020	09:52:50	Bird	Garrulax leucolophus	1
HW_CT_02	20/03/2020	IMG_0030.AVI	07/03/2020 09:57	07/03/2020	09:57:22	Mammal	Unidentified squirrel or shrew	1
HW_CT_02	20/03/2020	IMG_0031.AVI	07/03/2020 10:07	07/03/2020	10:07:22	Bird	Garrulax leucolophus	2
HW_CT_02	20/03/2020	IMG_0031.AVI	07/03/2020 10:07	07/03/2020	10:07:22	Mammal	Unidentified squirrel or shrew	1
HW_CT_02	20/03/2020	IMG_0032.AVI	07/03/2020 20:29	07/03/2020	20:29:48	Mammal	Rattus sp.	1
HW_CT_02	20/03/2020	IMG_0033.AVI	08/03/2020 09:31	08/03/2020	09:31:10	Bird	Garrulax leucolophus	2
HW_CT_02	20/03/2020	IMG_0034.AVI	08/03/2020 09:41	08/03/2020	09:41:18	Bird	Garrulax leucolophus	1
HW_CT_02	20/03/2020	IMG_0035.AVI	08/03/2020 09:41	08/03/2020	09:41:56	Bird	Garrulax leucolophus	2
HW_CT_02	20/03/2020	IMG_0036.AVI	08/03/2020 09:42	08/03/2020	09:42:38	Bird	Garrulax leucolophus	1
HW_CT_02	20/03/2020	IMG_0037.AVI	08/03/2020 09:49	08/03/2020	09:49:08	Bird	Garrulax leucolophus	2
HW_CT_02	20/03/2020	IMG_0038.AVI	08/03/2020 09:57	08/03/2020	09:57:34	Bird	Garrulax leucolophus	1
HW_CT_02	20/03/2020	IMG_0039.AVI	08/03/2020 10:14	08/03/2020	10:14:40	Mammal	Tupaia glis	1
HW_CT_02	20/03/2020	IMG_0040.AVI	09/03/2020 11:49	09/03/2020	11:49:20	Bird	Garrulax leucolophus	1
HW_CT_02	20/03/2020	IMG_0041.AVI	11/03/2020 07:31	11/03/2020	07:31:28	Bird	Garrulax leucolophus	3
HW_CT_02	20/03/2020	IMG_0042.AVI	11/03/2020 07:32	11/03/2020	07:32:42	Bird	Garrulax leucolophus	2
HW_CT_02	20/03/2020	IMG_0043.AVI	11/03/2020 16:46	11/03/2020	16:46:14	NA	Unidentified sp.	1
HW_CT_02	20/03/2020	IMG_0044.AVI	12/03/2020 10:06	12/03/2020	10:06:54	Bird	Garrulax leucolophus	2
HW_CT_02	20/03/2020	IMG_0045.AVI	12/03/2020 10:09	12/03/2020	10:09:56	Mammal	Callosciurus notatus	1
HW_CT_02	20/03/2020	IMG_0046.AVI	12/03/2020 10:10	12/03/2020	10:10:28	Mammal	Callosciurus notatus	1
HW_CT_02	20/03/2020	IMG_0047.AVI	13/03/2020 10:34	13/03/2020	10:34:40	Mammal	Callosciurus notatus	1
HW_CT_02	20/03/2020	IMG_0048.AVI	14/03/2020 08:41	14/03/2020	08:41:56	Mammal	Tupaia glis	1
HW_CT_02	20/03/2020	IMG_0050.AVI	14/03/2020 09:47	14/03/2020	09:47:36	Mammal	Tupaia glis	1
HW_CT_02	20/03/2020	IMG_0050.AVI	14/03/2020 09:47	14/03/2020	09:47:36	Bird	Garrulax leucolophus	1
HW_CT_02	20/03/2020	IMG_0051.AVI	14/03/2020 17:15	14/03/2020	17:15:00	NA	Unidentified sp.	1
HW_CT_02	20/03/2020	IMG_0052.AVI	14/03/2020 17:15	14/03/2020	17:15:22	NA	Unidentified sp.	1
HW_CT_02	20/03/2020	IMG_0053.AVI	15/03/2020 00:17	15/03/2020	00:17:38	Mammal	Rattus sp.	1
HW_CT_02	20/03/2020	IMG_0054.AVI	15/03/2020 00:51	15/03/2020	00:51:14	Mammal	Rattus sp.	1
HW_CT_02	20/03/2020	IMG_0056.AVI	15/03/2020 15:49	15/03/2020	15:49:22	Bird	Garrulax leucolophus	1
HW_CT_02	20/03/2020	IMG_0057.AVI	15/03/2020 18:41	15/03/2020	18:41:22	NA	Unidentified sp.	1
HW_CT_02	20/03/2020	IMG_0058.AVI	16/03/2020 08:03	16/03/2020	08:03:42	Bird	Garrulax leucolophus	2
HW_CT_02	20/03/2020	IMG_0059.AVI	16/03/2020 08:04	16/03/2020	08:04:02	Bird	Garrulax leucolophus	2
HW_CT_02	20/03/2020	IMG_0060.AVI	16/03/2020 08:04	16/03/2020	08:04:48	Bird	Garrulax leucolophus	2
HW_CT_02	20/03/2020	IMG_0061.AVI	16/03/2020 08:07	16/03/2020	08:07:22	Bird	Garrulax leucolophus	1
HW_CT_02	20/03/2020	IMG_0062.AVI	16/03/2020 08:07	16/03/2020	08:07:46	Bird	Garrulax leucolophus	1
HW_CT_02	20/03/2020	IMG_0063.AVI	16/03/2020 08:09	16/03/2020	08:09:46	Bird	Garrulax leucolophus	1

Appendix J1 Camera Trap Log and Data for Clementi Forest

Station	SamplingDate	FileName	FileModifyDate	Date	Time	Taxon	Scientific name	Quantity
HW_CT_02	20/03/2020	IMG_0065.AVI	16/03/2020 13:34	16/03/2020	13:34:50	NA	Unidentified sp.	1
HW_CT_02	20/03/2020	IMG_0067.AVI	16/03/2020 18:42	16/03/2020	18:42:02	Bird	Garrulax leucolophus	1
HW_CT_02	20/03/2020	IMG_0068.AVI	16/03/2020 18:47	16/03/2020	18:47:46	Mammal	Unidentified squirrel or shrew	1
HW_CT_02	20/03/2020	IMG_0069.AVI	17/03/2020 05:02	17/03/2020	05:02:58	Mammal	Rattus sp.	1
HW_CT_02	20/03/2020	IMG_0070.AVI	17/03/2020 08:23	17/03/2020	08:23:04	Bird	Garrulax leucolophus	2
HW_CT_02	20/03/2020	IMG_0071.AVI	17/03/2020 08:23	17/03/2020	08:23:48	Bird	Garrulax leucolophus	1
HW_CT_02	20/03/2020	IMG_0073.AVI	18/03/2020 17:15	18/03/2020	17:15:00	Bird	Garrulax leucolophus	1
HW_CT_02	20/03/2020	IMG_0074.AVI	18/03/2020 17:17	18/03/2020	17:17:40	Bird	Garrulax leucolophus	2
HW_CT_02	20/03/2020	IMG_0075.AVI	18/03/2020 17:18	18/03/2020	17:18:54	Bird	Garrulax leucolophus	2
HW_CT_02	20/03/2020	IMG_0076.AVI	18/03/2020 17:21	18/03/2020	17:21:42	Bird	Garrulax leucolophus	2
HW_CT_02	20/03/2020	IMG_0077.AVI	18/03/2020 17:23	18/03/2020	17:23:24	Bird	Garrulax leucolophus	2
HW_CT_02	20/03/2020	IMG_0078.AVI	18/03/2020 17:52	18/03/2020	17:52:24	Bird	Garrulax leucolophus	1
HW_CT_02	20/03/2020	IMG_0079.AVI	18/03/2020 17:53	18/03/2020	17:53:34	Bird	Garrulax leucolophus	1
HW_CT_02	20/03/2020	IMG_0080.AVI	19/03/2020 04:56	19/03/2020	04:56:16	Mammal	Rattus sp.	1
HW_CT_02	25/03/2020	IMG_0003.AVI	20/03/2020 18:24	20/03/2020	18:24:12	Bird	Garrulax leucolophus	1
HW_CT_02	25/03/2020	IMG_0004.AVI	20/03/2020 18:24	20/03/2020	18:24:34	Bird	Garrulax leucolophus	2
HW_CT_02	25/03/2020	IMG_0005.AVI	21/03/2020 08:58	21/03/2020	08:58:08	Bird	Garrulax leucolophus	1
HW_CT_02	25/03/2020	IMG_0006.AVI	21/03/2020 09:29	21/03/2020	09:29:20	Bird	Garrulax leucolophus	1
HW_CT_02	25/03/2020	IMG_0007.AVI	21/03/2020 11:49	21/03/2020	11:49:14	Mammal	Callosciurus notatus	1
HW_CT_02	25/03/2020	IMG_0008.AVI	21/03/2020 11:50	21/03/2020	11:50:26	Mammal	Callosciurus notatus	1
HW_CT_02	25/03/2020	IMG_0009.AVI	21/03/2020 11:53	21/03/2020	11:53:42	Bird	Garrulax leucolophus	1
HW_CT_02	25/03/2020	IMG_0010.AVI	21/03/2020 12:11	21/03/2020	12:11:02	Bird	Garrulax leucolophus	2
HW_CT_02	25/03/2020	IMG_0011.AVI	21/03/2020 12:52	21/03/2020	12:52:34	Mammal	Callosciurus notatus	1
HW_CT_02	25/03/2020	IMG_0012.AVI	21/03/2020 12:53	21/03/2020	12:53:16	Mammal	Callosciurus notatus	1
HW_CT_02	25/03/2020	IMG_0015.AVI	21/03/2020 12:55	21/03/2020	12:55:06	Mammal	Callosciurus notatus	1
HW_CT_02	25/03/2020	IMG_0016.AVI	21/03/2020 12:55	21/03/2020	12:55:34	Mammal	Callosciurus notatus	1
HW_CT_02	25/03/2020	IMG_0017.AVI	21/03/2020 12:56	21/03/2020	12:56:44	Mammal	Callosciurus notatus	1
HW_CT_02	25/03/2020	IMG_0018.AVI	22/03/2020 08:25	22/03/2020	08:25:06	Bird	Garrulax leucolophus	2
HW_CT_02	25/03/2020	IMG_0023.AVI	23/03/2020 07:38	23/03/2020	07:38:22	Mammal	Tupaia glis	1
HW_CT_02	25/03/2020	IMG_0024.AVI	24/03/2020 08:37	24/03/2020	08:37:28	Bird	Garrulax leucolophus	2
HW_CT_02	25/03/2020	IMG_0026.AVI	24/03/2020 16:32	24/03/2020	16:32:04	Bird	Garrulax leucolophus	2
HW_CT_02	25/03/2020	IMG_0027.AVI	24/03/2020 23:52	24/03/2020	23:52:54	Mammal	Rattus sp.	1
HW_CT_02	25/03/2020	IMG_0028.AVI	25/03/2020 02:28	25/03/2020	02:28:04	NA	Unidentified sp.	1
HW_CT_02	25/03/2020	IMG_0029.AVI	25/03/2020 09:05	25/03/2020	09:05:04	Bird	Garrulax leucolophus	2
HW_CT_02	25/03/2020	IMG_0030.AVI	25/03/2020 09:20	25/03/2020	09:20:28	Bird	Garrulax leucolophus	1
HW_CT_02	25/03/2020	IMG_0031.AVI	25/03/2020 17:44	25/03/2020	17:44:26	Bird	Garrulax leucolophus	1
HW_CT_02	25/03/2020	IMG_0032.AVI	25/03/2020 17:44	25/03/2020	17:44:48	Bird	Garrulax leucolophus	1
HW_CT_03	12/12/2019	IMG_0011.AVI	27/11/2019 18:28	27/11/2019	18:28:58	Mammal	Callosciurus notatus	1
HW_CT_03	12/12/2019	IMG_0013.AVI	05/12/2019 17:39	05/12/2019	17:39:44	Mammal	Callosciurus notatus	1
HW_CT_03	10/01/2020	IMG_0001.AVI	12/12/2019 18:42	12/12/2019	18:42:26	Mammal	Callosciurus notatus	1
HW_CT_03	10/01/2020	IMG_0002.AVI	13/12/2019 04:09	13/12/2019	04:09:18	Mammal	Paradoxurus musangus	1
HW_CT_03	10/01/2020	IMG_0007.AVI	30/12/2019 10:00	30/12/2019	10:00:18	Bird	Gallus gallus	2
HW_CT_03	10/01/2020	IMG_0008.AVI	30/12/2019 10:00	30/12/2019	10:00:48	Bird	Gallus gallus	2
HW_CT_03	10/01/2020	IMG_0009.AVI	30/12/2019 10:01	30/12/2019	10:01:34	Bird	Gallus gallus	2
HW_CT_03	10/01/2020	IMG_0010.AVI	30/12/2019 10:03	30/12/2019	10:03:50	Bird	Gallus gallus	2
HW_CT_03	10/01/2020	IMG_0011.AVI	30/12/2019 10:04	30/12/2019	10:04:18	Bird	Gallus gallus	2
HW_CT_03	10/01/2020	IMG_0012.AVI	30/12/2019 10:04	30/12/2019	10:04:42	Bird	Gallus gallus	2
HW_CT_03	10/01/2020	IMG_0013.AVI	30/12/2019 10:08	30/12/2019	10:08:04	Bird	Gallus gallus	2
HW_CT_03	10/01/2020	IMG_0014.AVI	30/12/2019 10:08	30/12/2019	10:08:36	Bird	Gallus gallus	2
HW_CT_03	10/01/2020	IMG_0015.AVI	30/12/2019 10:12	30/12/2019	10:12:56	Bird	Gallus gallus	2
HW_CT_03	10/01/2020	IMG_0016.AVI	30/12/2019 10:14	30/12/2019	10:14:58	Bird	Gallus gallus	2
HW_CT_03	10/01/2020	IMG_0017.AVI	30/12/2019 10:18	30/12/2019	10:18:02	Bird	Gallus gallus	3
HW_CT_03	10/01/2020	IMG_0043.AVI	09/01/2020 18:37	09/01/2020	18:37:04	Mammal	Callosciurus notatus	1
HW_CT_03	10/01/2020	IMG_0044.AVI	09/01/2020 18:37	09/01/2020	18:37:32	Mammal	Callosciurus notatus	1
HW_CT_03	30/01/2020	IMG_0002.AVI	10/01/2020 17:37	10/01/2020	17:37:54	Bird	Gallus gallus	1
HW_CT_03	30/01/2020	IMG_0003.AVI	10/01/2020 17:38	10/01/2020	17:38:22	Bird	Gallus gallus	2
HW_CT_03	30/01/2020	IMG_0004.AVI	10/01/2020 17:39	10/01/2020	17:39:06	Bird	Gallus gallus	2
HW_CT_03	30/01/2020	IMG_0005.AVI	10/01/2020 17:40	10/01/2020	17:40:26	Bird	Gallus gallus	2
HW_CT_03	30/01/2020	IMG_0006.AVI	10/01/2020 17:41	10/01/2020	17:41:10	Bird	Gallus gallus	2
HW_CT_03	30/01/2020	IMG_0007.AVI	10/01/2020 17:42	10/01/2020	17:42:56	Bird	Gallus gallus	1
HW_CT_03	30/01/2020	IMG_0008.AVI	10/01/2020 17:43	10/01/2020	17:43:30	Bird	Gallus gallus	2
HW_CT_03	30/01/2020	IMG_0010.AVI	13/01/2020 22:19	13/01/2020	22:19:56	Mammal	Paradoxurus musangus	1
HW_CT_03	30/01/2020	IMG_0011.AVI	15/01/2020 11:40	15/01/2020	11:40:08	Bird	Gallus gallus	2
HW_CT_03	30/01/2020	IMG_0013.AVI	19/01/2020 03:25	19/01/2020	03:25:54	Mammal	Paradoxurus musangus	1
HW_CT_04	10/01/2020	IMG_0009.AVI	22/11/2019 12:29	22/11/2019	12:29:18	Mammal	Callosciurus notatus	1
HW_CT_04	10/01/2020	IMG_0011.AVI	26/11/2019 17:00	26/11/2019	17:00:32	Mammal	Callosciurus notatus	1
HW_CT_04	10/01/2020	IMG_0011.AVI	26/11/2019 17:00	26/11/2019	17:00:32	Bird	Amauromis phoenicurus	1
HW_CT_04	10/01/2020	IMG_0012.AVI	26/11/2019 17:22	26/11/2019	17:22:16	Mammal	Callosciurus notatus	1
HW_CT_04	10/01/2020	IMG_0013.AVI	26/11/2019 17:34	26/11/2019	17:34:24	Mammal	Callosciurus notatus	2
HW_CT_04	10/01/2020	IMG_0014.AVI	26/11/2019 17:43	26/11/2019	17:43:28	Mammal	Callosciurus notatus	1
HW_CT_04	10/01/2020	IMG_0015.AVI	26/11/2019 17:46	26/11/2019	17:46:42	Mammal	Callosciurus notatus	1
HW_CT_04	10/01/2020	IMG_0016.AVI	26/11/2019 18:01	26/11/2019	18:01:52	Mammal	Unidentified squirrel or shrew	1
HW_CT_04	10/01/2020	IMG_0017.AVI	27/11/2019 12:00	27/11/2019	12:00:02	Mammal	Callosciurus notatus	1
HW_CT_04	10/01/2020	IMG_0018.AVI	04/12/2019 17:44	04/12/2019	17:44:52	Mammal	Callosciurus notatus	1
HW_CT_04	10/01/2020	IMG_0019.AVI	06/12/2019 17:30	06/12/2019	17:30:10	Mammal	Callosciurus notatus	1
HW_CT_04	10/01/2020	IMG_0020.AVI	06/12/2019 17:38	06/12/2019	17:38:58	Mammal	Callosciurus notatus	1
HW_CT_04	10/01/2020	IMG_0021.AVI	07/12/2019 08:09	07/12/2019	08:09:44	Mammal	Callosciurus notatus	1
HW_CT_04	10/01/2020	IMG_0023.AVI	07/12/2019 13:45	07/12/2019	13:45:12	Mammal	Callosciurus notatus	1
HW_CT_04	10/01/2020	IMG_0024.AVI	07/12/2019 13:45	07/12/2019	13:45:42	Mammal	Callosciurus notatus	1
HW_CT_04	10/01/2020	IMG_0025.AVI	08/12/2019 08:20	08/12/2019	08:20:26	Bird	Garrulax leucolophus	1
HW_CT_04	10/01/2020	IMG_0026.AVI	08/12/2019 08:26	08/12/2019	08:26:18	Mammal	Callosciurus notatus	2
HW_CT_04	10/01/2020	IMG_0027.AVI	08/12/2019 08:37	08/12/2019	08:37:56	Bird	Garrulax leucolophus	1
HW_CT_04	10/01/2020	IMG_0028.AVI	12/12/2019 07:00	12/12/2019	07:00:34	Mammal	Callosciurus notatus	1
HW_CT_04	10/01/2020	IMG_0029.AVI	12/12/2019 07:01	12/12/2019	07:01:18	Mammal	Callosciurus notatus	1
HW_CT_04	10/01/2020	IMG_0030.AVI	12/12/2019 07:01	12/12/2019	07:01:40	Mammal	Callosciurus notatus	1
HW_CT_04	10/01/2020	IMG_0031.AVI	12/12/2019 07:02	12/12/2019	07:02:02	Mammal	Unidentified squirrel or shrew	1
HW_CT_04	10/01/2020	IMG_0053.AVI	17/12/2019 08:02	17/12/2019	08:02:58	Mammal	Callosciurus notatus	1

Appendix J1 Camera Trap Log and Data for Clementi Forest

Station	SamplingDate	FileName	FileModifyDate	Date	Time	Taxon	Scientific name	Quantity
HW_CT_04	10/01/2020	IMG_0064.AVI	25/12/2019 17:47	25/12/2019	17:47:48	Bird	Garrulax leucolophus	3
HW_CT_04	10/01/2020	IMG_0065.AVI	26/12/2019 10:11	26/12/2019	10:11:06	Mammal	Unidentified squirrel or shrew	1
HW_CT_04	10/01/2020	IMG_0067.AVI	26/12/2019 18:04	26/12/2019	18:04:52	Bird	Garrulax leucolophus	3
HW_CT_04	10/01/2020	IMG_0068.AVI	27/12/2019 17:52	27/12/2019	17:52:32	Mammal	Callosciurus notatus	1
HW_CT_04	10/01/2020	IMG_0069.AVI	28/12/2019 08:41	28/12/2019	08:41:16	Mammal	Callosciurus notatus	2
HW_CT_04	10/01/2020	IMG_0070.AVI	28/12/2019 16:40	28/12/2019	16:40:14	Mammal	Callosciurus notatus	1
HW_CT_04	10/01/2020	IMG_0072.AVI	31/12/2019 18:16	31/12/2019	18:16:14	Mammal	Callosciurus notatus	1
HW_CT_04	10/01/2020	IMG_0073.AVI	31/12/2019 18:19	31/12/2019	18:19:02	Mammal	Callosciurus notatus	1
HW_CT_04	10/01/2020	IMG_0074.AVI	02/01/2020 18:39	02/01/2020	18:39:36	Mammal	Callosciurus notatus	1
HW_CT_04	10/01/2020	IMG_0076.AVI	05/01/2020 18:49	05/01/2020	18:49:14	Mammal	Callosciurus notatus	1
HW_CT_04	10/01/2020	IMG_0077.AVI	07/01/2020 18:27	07/01/2020	18:27:20	Mammal	Callosciurus notatus	2
HW_CT_04	10/01/2020	IMG_0078.AVI	09/01/2020 07:31	09/01/2020	07:31:50	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	12/12/2019	IMG_0010.AVI	22/11/2019 12:35	22/11/2019	12:35:18	Bird	Gallus gallus	1
HW_CT_05	12/12/2019	IMG_0011.AVI	22/11/2019 15:54	22/11/2019	15:54:58	Bird	Gallus gallus	1
HW_CT_05	12/12/2019	IMG_0012.AVI	22/11/2019 17:41	22/11/2019	17:41:28	Mammal	Callosciurus notatus	1
HW_CT_05	12/12/2019	IMG_0013.AVI	24/11/2019 08:00	24/11/2019	08:00:40	Bird	Gallus gallus	1
HW_CT_05	12/12/2019	IMG_0014.AVI	24/11/2019 08:29	24/11/2019	08:29:26	Bird	Gallus gallus	1
HW_CT_05	12/12/2019	IMG_0015.AVI	25/11/2019 16:16	25/11/2019	16:16:28	Bird	Gallus gallus	1
HW_CT_05	12/12/2019	IMG_0016.AVI	25/11/2019 16:25	25/11/2019	16:25:02	Bird	Gallus gallus	1
HW_CT_05	12/12/2019	IMG_0017.AVI	25/11/2019 16:27	25/11/2019	16:27:08	Bird	Gallus gallus	1
HW_CT_05	12/12/2019	IMG_0020.AVI	27/11/2019 07:25	27/11/2019	07:25:08	Bird	Gallus gallus	1
HW_CT_05	12/12/2019	IMG_0021.AVI	27/11/2019 07:26	27/11/2019	07:26:06	Bird	Gallus gallus	3
HW_CT_05	12/12/2019	IMG_0022.AVI	27/11/2019 07:26	27/11/2019	07:26:30	Bird	Gallus gallus	3
HW_CT_05	12/12/2019	IMG_0023.AVI	27/11/2019 07:27	27/11/2019	07:27:00	Bird	Gallus gallus	3
HW_CT_05	12/12/2019	IMG_0024.AVI	27/11/2019 07:27	27/11/2019	07:27:40	Bird	Gallus gallus	3
HW_CT_05	12/12/2019	IMG_0025.AVI	27/11/2019 07:28	27/11/2019	07:28:12	Bird	Gallus gallus	3
HW_CT_05	12/12/2019	IMG_0026.AVI	27/11/2019 07:28	27/11/2019	07:28:40	Bird	Gallus gallus	3
HW_CT_05	12/12/2019	IMG_0027.AVI	27/11/2019 07:29	27/11/2019	07:29:04	Bird	Gallus gallus	3
HW_CT_05	12/12/2019	IMG_0028.AVI	27/11/2019 07:29	27/11/2019	07:29:26	Bird	Gallus gallus	1
HW_CT_05	12/12/2019	IMG_0029.AVI	27/11/2019 07:30	27/11/2019	07:30:06	Bird	Gallus gallus	2
HW_CT_05	12/12/2019	IMG_0030.AVI	27/11/2019 07:32	27/11/2019	07:32:22	Bird	Gallus gallus	1
HW_CT_05	12/12/2019	IMG_0031.AVI	27/11/2019 09:44	27/11/2019	09:44:30	Bird	Gallus gallus	1
HW_CT_05	12/12/2019	IMG_0032.AVI	27/11/2019 10:34	27/11/2019	10:34:02	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	12/12/2019	IMG_0033.AVI	27/11/2019 11:22	27/11/2019	11:22:56	Bird	Gallus gallus	4
HW_CT_05	12/12/2019	IMG_0034.AVI	27/11/2019 11:25	27/11/2019	11:25:02	Bird	Gallus gallus	1
HW_CT_05	12/12/2019	IMG_0035.AVI	27/11/2019 12:24	27/11/2019	12:24:32	Bird	Gallus gallus	1
HW_CT_05	12/12/2019	IMG_0035.AVI	27/11/2019 12:24	27/11/2019	12:24:32	Mammal	Callosciurus notatus	1
HW_CT_05	12/12/2019	IMG_0036.AVI	28/11/2019 08:28	28/11/2019	08:28:14	Bird	Gallus gallus	1
HW_CT_05	12/12/2019	IMG_0038.AVI	30/11/2019 07:41	30/11/2019	07:41:18	Bird	Gallus gallus	1
HW_CT_05	12/12/2019	IMG_0039.AVI	04/12/2019 17:59	04/12/2019	17:59:18	Bird	Gallus gallus	1
HW_CT_05	12/12/2019	IMG_0040.AVI	04/12/2019 17:59	04/12/2019	17:59:40	Bird	Gallus gallus	1
HW_CT_05	12/12/2019	IMG_0041.AVI	06/12/2019 18:34	06/12/2019	18:34:54	Mammal	Unidentified mammal	1
HW_CT_05	12/12/2019	IMG_0042.AVI	06/12/2019 18:35	06/12/2019	18:35:40	Mammal	Unidentified mammal	1
HW_CT_05	12/12/2019	IMG_0043.AVI	06/12/2019 18:36	06/12/2019	18:36:04	Mammal	Unidentified mammal	1
HW_CT_05	12/12/2019	IMG_0044.AVI	06/12/2019 18:36	06/12/2019	18:36:24	Mammal	Unidentified mammal	1
HW_CT_05	12/12/2019	IMG_0048.AVI	08/12/2019 07:04	08/12/2019	07:04:52	Mammal	Callosciurus notatus	1
HW_CT_05	12/12/2019	IMG_0049.AVI	08/12/2019 07:19	08/12/2019	07:19:38	Bird	Gallus gallus	1
HW_CT_05	12/12/2019	IMG_0050.AVI	10/12/2019 18:41	10/12/2019	18:41:10	Mammal	Callosciurus notatus	1
HW_CT_05	10/01/2020	IMG_0011.AVI	17/12/2019 17:29	17/12/2019	17:29:36	Mammal	Unidentified mammal	1
HW_CT_05	10/01/2020	IMG_0014.AVI	21/12/2019 07:08	21/12/2019	07:08:58	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	10/01/2020	IMG_0030.AVI	28/12/2019 07:59	28/12/2019	07:59:58	Bird	Gallus gallus	1
HW_CT_05	10/01/2020	IMG_0031.AVI	28/12/2019 08:11	28/12/2019	08:11:36	Mammal	Tupaia glis	1
HW_CT_05	10/01/2020	IMG_0032.AVI	28/12/2019 18:48	28/12/2019	18:48:12	Mammal	Tupaia glis	1
HW_CT_05	10/01/2020	IMG_0033.AVI	29/12/2019 07:59	29/12/2019	07:59:24	Bird	Gallus gallus	3
HW_CT_05	10/01/2020	IMG_0034.AVI	29/12/2019 08:00	29/12/2019	08:00:14	Bird	Gallus gallus	3
HW_CT_05	10/01/2020	IMG_0035.AVI	29/12/2019 08:00	29/12/2019	08:00:46	Bird	Gallus gallus	2
HW_CT_05	10/01/2020	IMG_0036.AVI	29/12/2019 08:01	29/12/2019	08:01:14	Bird	Gallus gallus	3
HW_CT_05	10/01/2020	IMG_0039.AVI	30/12/2019 09:57	30/12/2019	09:57:04	Bird	Gallus gallus	1
HW_CT_05	10/01/2020	IMG_0040.AVI	30/12/2019 10:03	30/12/2019	10:03:32	Bird	Gallus gallus	2
HW_CT_05	10/01/2020	IMG_0041.AVI	30/12/2019 10:04	30/12/2019	10:04:42	Bird	Gallus gallus	2
HW_CT_05	10/01/2020	IMG_0042.AVI	30/12/2019 15:40	30/12/2019	15:40:22	Mammal	Macaca fascicularis	1
HW_CT_05	10/01/2020	IMG_0043.AVI	30/12/2019 15:41	30/12/2019	15:41:44	Mammal	Macaca fascicularis	1
HW_CT_05	10/01/2020	IMG_0044.AVI	30/12/2019 15:42	30/12/2019	15:42:18	Mammal	Macaca fascicularis	1
HW_CT_05	10/01/2020	IMG_0045.AVI	30/12/2019 15:42	30/12/2019	15:42:50	Mammal	Macaca fascicularis	2
HW_CT_05	10/01/2020	IMG_0046.AVI	01/01/2020 07:53	01/01/2020	07:53:44	Bird	Gallus gallus	1
HW_CT_05	10/01/2020	IMG_0053.AVI	03/01/2020 08:56	03/01/2020	08:56:10	Bird	Gallus gallus	1
HW_CT_05	10/01/2020	IMG_0054.AVI	03/01/2020 08:58	03/01/2020	08:58:50	Bird	Gallus gallus	1
HW_CT_05	10/01/2020	IMG_0055.AVI	03/01/2020 09:01	03/01/2020	09:01:20	Bird	Gallus gallus	1
HW_CT_05	30/01/2020	IMG_0006.AVI	31/01/2020 11:35	31/01/2020	11:35:15	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	30/01/2020	IMG_0009.AVI	31/01/2020 11:35	31/01/2020	11:35:22	Reptile	Varanus sp.	1
HW_CT_05	30/01/2020	IMG_0029.AVI	31/01/2020 11:37	31/01/2020	11:37:30	NA	Unidentified sp.	1
HW_CT_05	30/01/2020	IMG_0073.AVI	31/01/2020 11:41	31/01/2020	11:41:32	Bird	Gallus gallus	1
HW_CT_05	30/01/2020	IMG_0008.AVI	31/01/2020 12:03	31/01/2020	12:03:47	Reptile	Varanus sp.	1
HW_CT_05	30/01/2020	IMG_0081.AVI	31/01/2020 12:07	31/01/2020	12:07:45	Reptile	Varanus salvator	1
HW_CT_05	04/06/2020	IMG_0013.AVI	21/03/2020 12:53	21/03/2020	12:53:52	Mammal	Callosciurus notatus	2
HW_CT_05	04/06/2020	IMG_0014.AVI	21/03/2020 12:54	21/03/2020	12:54:46	Mammal	Callosciurus notatus	2
HW_CT_05	04/06/2020	IMG_0040.AVI	26/03/2020 09:22	26/03/2020	09:22:32	Mammal	Tupaia glis	1
HW_CT_05	04/06/2020	IMG_0041.AVI	26/03/2020 19:19	26/03/2020	19:19:06	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	04/06/2020	IMG_0042.AVI	27/03/2020 08:11	27/03/2020	08:11:28	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	04/06/2020	IMG_0044.AVI	27/03/2020 13:43	27/03/2020	13:43:02	Mammal	Callosciurus notatus	1
HW_CT_05	04/06/2020	IMG_0045.AVI	27/03/2020 13:43	27/03/2020	13:43:24	Mammal	Callosciurus notatus	1
HW_CT_05	04/06/2020	IMG_0048.AVI	28/03/2020 13:17	28/03/2020	13:17:36	Mammal	Callosciurus notatus	1
HW_CT_05	04/06/2020	IMG_0049.AVI	28/03/2020 13:18	28/03/2020	13:18:26	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	04/06/2020	IMG_0051.AVI	28/03/2020 17:33	28/03/2020	17:33:06	Mammal	Callosciurus notatus	1
HW_CT_05	04/06/2020	IMG_0052.AVI	28/03/2020 19:06	28/03/2020	19:06:14	Mammal	Tupaia glis	1
HW_CT_05	04/06/2020	IMG_0055.AVI	29/03/2020 12:43	29/03/2020	12:43:32	Bird	Garrulax leucolophus	2
HW_CT_05	04/06/2020	IMG_0056.AVI	29/03/2020 13:41	29/03/2020	13:41:40	Mammal	Unidentified squirrel or shrew	1

Appendix J1 Camera Trap Log and Data for Clementi Forest

Station	SamplingDate	FileName	FileModifyDate	Date	Time	Taxon	Scientific name	Quantity
HW_CT_05	04/06/2020	IMG_0057.AVI	29/03/2020 13:42	29/03/2020	13:42:40	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	04/06/2020	IMG_0059.AVI	30/03/2020 11:26	30/03/2020	11:26:54	NA	Unidentified sp.	1
HW_CT_05	04/06/2020	IMG_0060.AVI	30/03/2020 11:44	30/03/2020	11:44:06	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	04/06/2020	IMG_0061.AVI	30/03/2020 11:47	30/03/2020	11:47:44	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	04/06/2020	IMG_0062.AVI	31/03/2020 10:31	31/03/2020	10:31:32	Reptile	Varanus sp.	1
HW_CT_05	04/06/2020	IMG_0063.AVI	31/03/2020 17:37	31/03/2020	17:37:04	Mammal	Callosciurus notatus	1
HW_CT_05	04/06/2020	IMG_0064.AVI	31/03/2020 18:42	31/03/2020	18:42:50	Reptile	Varanus nebulosus	1
HW_CT_05	04/06/2020	IMG_0065.AVI	01/04/2020 14:09	01/04/2020	14:09:26	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0066.AVI	02/04/2020 11:08	02/04/2020	11:08:18	Bird	Garrulax leucolophus	2
HW_CT_05	04/06/2020	IMG_0067.AVI	02/04/2020 14:20	02/04/2020	14:20:16	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	04/06/2020	IMG_0068.AVI	02/04/2020 14:21	02/04/2020	14:21:26	NA	Unidentified sp.	1
HW_CT_05	04/06/2020	IMG_0070.AVI	03/04/2020 13:12	03/04/2020	13:12:02	Bird	Garrulax leucolophus	3
HW_CT_05	04/06/2020	IMG_0071.AVI	03/04/2020 13:20	03/04/2020	13:20:38	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0074.AVI	03/04/2020 18:55	03/04/2020	18:55:02	Bird	Rallina fasciata	2
HW_CT_05	04/06/2020	IMG_0082.AVI	06/04/2020 07:05	06/04/2020	07:05:02	Bird	Pitta sordida	1
HW_CT_05	04/06/2020	IMG_0083.AVI	06/04/2020 11:27	06/04/2020	11:27:36	Bird	Garrulax leucolophus	2
HW_CT_05	04/06/2020	IMG_0084.AVI	06/04/2020 16:39	06/04/2020	16:39:40	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0085.AVI	06/04/2020 17:53	06/04/2020	17:53:36	Bird	Amouromis phoenicurus	1
HW_CT_05	04/06/2020	IMG_0086.AVI	06/04/2020 18:22	06/04/2020	18:22:28	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0087.AVI	07/04/2020 10:24	07/04/2020	10:24:16	Bird	Picus vittatus	1
HW_CT_05	04/06/2020	IMG_0095.AVI	08/04/2020 19:02	08/04/2020	19:02:24	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	04/06/2020	IMG_0097.AVI	09/04/2020 13:59	09/04/2020	13:59:24	Bird	Garrulax leucolophus	2
HW_CT_05	04/06/2020	IMG_0101.AVI	10/04/2020 12:39	10/04/2020	12:39:18	Bird	Garrulax leucolophus	2
HW_CT_05	04/06/2020	IMG_0102.AVI	10/04/2020 12:44	10/04/2020	12:44:30	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0103.AVI	10/04/2020 15:16	10/04/2020	15:16:20	Mammal	Callosciurus notatus	1
HW_CT_05	04/06/2020	IMG_0107.AVI	11/04/2020 09:02	11/04/2020	09:02:44	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	04/06/2020	IMG_0113.AVI	12/04/2020 12:02	12/04/2020	12:02:48	Mammal	Tupaia glis	1
HW_CT_05	04/06/2020	IMG_0114.AVI	12/04/2020 12:10	12/04/2020	12:10:06	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	04/06/2020	IMG_0115.AVI	12/04/2020 12:31	12/04/2020	12:31:30	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0116.AVI	12/04/2020 12:32	12/04/2020	12:32:08	Bird	Garrulax leucolophus	2
HW_CT_05	04/06/2020	IMG_0119.AVI	13/04/2020 12:40	13/04/2020	12:40:02	Mammal	Callosciurus notatus	1
HW_CT_05	04/06/2020	IMG_0121.AVI	14/04/2020 19:04	14/04/2020	19:04:20	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	04/06/2020	IMG_0122.AVI	14/04/2020 19:06	14/04/2020	19:06:36	NA	Unidentified sp.	1
HW_CT_05	04/06/2020	IMG_0123.AVI	16/04/2020 14:49	16/04/2020	14:49:08	Mammal	Callosciurus notatus	1
HW_CT_05	04/06/2020	IMG_0124.AVI	17/04/2020 18:23	17/04/2020	18:23:36	Mammal	Tupaia glis	1
HW_CT_05	04/06/2020	IMG_0125.AVI	19/04/2020 11:06	19/04/2020	11:06:58	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0126.AVI	19/04/2020 11:07	19/04/2020	11:07:42	Bird	Garrulax leucolophus	2
HW_CT_05	04/06/2020	IMG_0127.AVI	19/04/2020 15:05	19/04/2020	15:05:08	NA	Unidentified sp.	1
HW_CT_05	04/06/2020	IMG_0128.AVI	19/04/2020 15:05	19/04/2020	15:05:30	NA	Unidentified sp.	1
HW_CT_05	04/06/2020	IMG_0130.AVI	20/04/2020 12:15	20/04/2020	12:15:44	Mammal	Callosciurus notatus	1
HW_CT_05	04/06/2020	IMG_0131.AVI	20/04/2020 12:39	20/04/2020	12:39:32	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	04/06/2020	IMG_0132.AVI	21/04/2020 13:18	21/04/2020	13:18:08	Mammal	Callosciurus notatus	2
HW_CT_05	04/06/2020	IMG_0134.AVI	21/04/2020 18:03	21/04/2020	18:03:02	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	04/06/2020	IMG_0136.AVI	23/04/2020 12:32	23/04/2020	12:32:30	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0137.AVI	24/04/2020 10:11	24/04/2020	10:11:38	Bird	Garrulax leucolophus	2
HW_CT_05	04/06/2020	IMG_0138.AVI	24/04/2020 12:02	24/04/2020	12:02:48	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	04/06/2020	IMG_0139.AVI	24/04/2020 12:36	24/04/2020	12:36:24	Mammal	Callosciurus notatus	1
HW_CT_05	04/06/2020	IMG_0140.AVI	24/04/2020 18:13	24/04/2020	18:13:56	Mammal	Tupaia glis	1
HW_CT_05	04/06/2020	IMG_0141.AVI	25/04/2020 13:18	25/04/2020	13:18:08	Bird	Garrulax leucolophus	2
HW_CT_05	04/06/2020	IMG_0143.AVI	26/04/2020 02:20	26/04/2020	02:20:52	Mammal	Rattus sp.	1
HW_CT_05	04/06/2020	IMG_0144.AVI	26/04/2020 07:39	26/04/2020	07:39:10	Bird	Garrulax leucolophus	2
HW_CT_05	04/06/2020	IMG_0146.AVI	26/04/2020 07:46	26/04/2020	07:46:44	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0147.AVI	26/04/2020 12:52	26/04/2020	12:52:04	Bird	Garrulax leucolophus	2
HW_CT_05	04/06/2020	IMG_0148.AVI	26/04/2020 20:04	26/04/2020	20:04:18	Mammal	Rattus sp.	1
HW_CT_05	04/06/2020	IMG_0149.AVI	26/04/2020 22:40	26/04/2020	22:40:28	Mammal	Rattus sp.	1
HW_CT_05	04/06/2020	IMG_0150.AVI	28/04/2020 09:39	28/04/2020	09:39:48	NA	Unidentified sp.	1
HW_CT_05	04/06/2020	IMG_0151.AVI	28/04/2020 09:47	28/04/2020	09:47:40	Mammal	Tupaia glis	1
HW_CT_05	04/06/2020	IMG_0152.AVI	29/04/2020 11:56	29/04/2020	11:56:24	Mammal	Callosciurus notatus	1
HW_CT_05	04/06/2020	IMG_0153.AVI	29/04/2020 13:00	29/04/2020	13:00:34	Mammal	Callosciurus notatus	1
HW_CT_05	04/06/2020	IMG_0154.AVI	29/04/2020 14:13	29/04/2020	14:13:26	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0156.AVI	29/04/2020 14:54	29/04/2020	14:54:18	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	04/06/2020	IMG_0157.AVI	30/04/2020 09:17	30/04/2020	09:17:16	Bird	Gallus gallus	1
HW_CT_05	04/06/2020	IMG_0158.AVI	01/05/2020 10:31	01/05/2020	10:31:44	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0159.AVI	02/05/2020 18:31	02/05/2020	18:31:54	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	04/06/2020	IMG_0160.AVI	02/05/2020 18:38	02/05/2020	18:38:02	Mammal	Tupaia glis	1
HW_CT_05	04/06/2020	IMG_0161.AVI	02/05/2020 18:53	02/05/2020	18:53:48	Mammal	Tupaia glis	1
HW_CT_05	04/06/2020	IMG_0162.AVI	02/05/2020 18:54	02/05/2020	18:54:40	Mammal	Tupaia glis	1
HW_CT_05	04/06/2020	IMG_0163.AVI	02/05/2020 19:16	02/05/2020	19:16:04	Mammal	Tupaia glis	1
HW_CT_05	04/06/2020	IMG_0165.AVI	03/05/2020 07:48	03/05/2020	07:48:32	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	04/06/2020	IMG_0166.AVI	03/05/2020 10:45	03/05/2020	10:45:46	Bird	Amouromis phoenicurus	1
HW_CT_05	04/06/2020	IMG_0168.AVI	03/05/2020 14:08	03/05/2020	14:08:10	Mammal	Tupaia glis	1
HW_CT_05	04/06/2020	IMG_0169.AVI	04/05/2020 19:16	04/05/2020	19:16:26	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	04/06/2020	IMG_0170.AVI	05/05/2020 17:22	05/05/2020	17:22:34	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0171.AVI	06/05/2020 19:05	06/05/2020	19:05:30	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	04/06/2020	IMG_0173.AVI	09/05/2020 08:30	09/05/2020	08:30:02	NA	Unidentified sp.	1
HW_CT_05	04/06/2020	IMG_0174.AVI	09/05/2020 08:57	09/05/2020	08:57:02	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	04/06/2020	IMG_0176.AVI	09/05/2020 11:01	09/05/2020	11:01:28	Mammal	Callosciurus notatus	1
HW_CT_05	04/06/2020	IMG_0177.AVI	09/05/2020 12:15	09/05/2020	12:15:00	Bird	Picus vittatus	1
HW_CT_05	04/06/2020	IMG_0178.AVI	09/05/2020 18:55	09/05/2020	18:55:02	Mammal	Tupaia glis	1
HW_CT_05	04/06/2020	IMG_0179.AVI	10/05/2020 09:21	10/05/2020	09:21:36	Bird	Gallus gallus	1
HW_CT_05	04/06/2020	IMG_0181.AVI	11/05/2020 18:31	11/05/2020	18:31:20	Mammal	Rattus sp.	1
HW_CT_05	04/06/2020	IMG_0182.AVI	11/05/2020 18:31	11/05/2020	18:31:46	Mammal	Callosciurus notatus	1
HW_CT_05	04/06/2020	IMG_0183.AVI	11/05/2020 18:41	11/05/2020	18:41:56	Mammal	Callosciurus notatus	1
HW_CT_05	04/06/2020	IMG_0184.AVI	11/05/2020 18:46	11/05/2020	18:46:14	Mammal	Tupaia glis	1
HW_CT_05	04/06/2020	IMG_0185.AVI	13/05/2020 18:16	13/05/2020	18:16:38	Mammal	Tupaia glis	1
HW_CT_05	04/06/2020	IMG_0186.AVI	14/05/2020 12:14	14/05/2020	12:14:12	Mammal	Callosciurus notatus	1
HW_CT_05	04/06/2020	IMG_0188.AVI	14/05/2020 13:31	14/05/2020	13:31:26	Mammal	Unidentified squirrel or shrew	1

Appendix J1 Camera Trap Log and Data for Clementi Forest

Station	SamplingDate	FileName	FileModifyDate	Date	Time	Taxon	Scientific name	Quantity
HW_CT_05	04/06/2020	IMG_0189.AVI	14/05/2020 18:04	14/05/2020	18:04:56	Bird	Unidentified bird	1
HW_CT_05	04/06/2020	IMG_0190.AVI	15/05/2020 07:34	15/05/2020	07:34:10	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0191.AVI	15/05/2020 19:04	15/05/2020	19:04:12	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	04/06/2020	IMG_0192.AVI	16/05/2020 08:09	16/05/2020	08:09:44	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	04/06/2020	IMG_0194.AVI	16/05/2020 09:26	16/05/2020	09:26:18	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0195.AVI	16/05/2020 09:26	16/05/2020	09:26:54	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0196.AVI	16/05/2020 12:11	16/05/2020	12:11:32	Bird	Garrulax leucolophus	2
HW_CT_05	04/06/2020	IMG_0197.AVI	16/05/2020 12:29	16/05/2020	12:29:22	Bird	Picus vittatus	1
HW_CT_05	04/06/2020	IMG_0198.AVI	17/05/2020 15:34	17/05/2020	15:34:50	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0199.AVI	17/05/2020 16:09	17/05/2020	16:09:42	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0200.AVI	18/05/2020 07:25	18/05/2020	07:25:40	Bird	Gallus gallus	1
HW_CT_05	04/06/2020	IMG_0201.AVI	18/05/2020 08:03	18/05/2020	08:03:24	NA	Unidentified sp.	1
HW_CT_05	04/06/2020	IMG_0202.AVI	19/05/2020 18:51	19/05/2020	18:51:10	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0203.AVI	19/05/2020 18:51	19/05/2020	18:51:44	Bird	Garrulax leucolophus	2
HW_CT_05	04/06/2020	IMG_0204.AVI	19/05/2020 18:52	19/05/2020	18:52:18	Bird	Garrulax leucolophus	2
HW_CT_05	04/06/2020	IMG_0205.AVI	19/05/2020 18:52	19/05/2020	18:52:42	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0206.AVI	19/05/2020 18:53	19/05/2020	18:53:02	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0207.AVI	19/05/2020 18:53	19/05/2020	18:53:36	Bird	Garrulax leucolophus	3
HW_CT_05	04/06/2020	IMG_0208.AVI	19/05/2020 19:10	19/05/2020	19:10:20	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	04/06/2020	IMG_0210.AVI	19/05/2020 21:32	19/05/2020	21:32:26	Mammal	Rattus sp.	1
HW_CT_05	04/06/2020	IMG_0211.AVI	19/05/2020 21:46	19/05/2020	21:46:54	Mammal	Rattus sp.	1
HW_CT_05	04/06/2020	IMG_0212.AVI	19/05/2020 23:57	19/05/2020	23:57:36	Mammal	Rattus sp.	1
HW_CT_05	04/06/2020	IMG_0213.AVI	19/05/2020 23:59	19/05/2020	23:59:12	Mammal	Rattus sp.	1
HW_CT_05	04/06/2020	IMG_0214.AVI	20/05/2020 16:03	20/05/2020	16:03:50	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0215.AVI	20/05/2020 16:07	20/05/2020	16:07:58	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0216.AVI	20/05/2020 17:45	20/05/2020	17:45:48	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0217.AVI	20/05/2020 18:52	20/05/2020	18:52:38	Mammal	Tupaia glis	1
HW_CT_05	04/06/2020	IMG_0218.AVI	20/05/2020 18:53	20/05/2020	18:53:20	Mammal	Tupaia glis	1
HW_CT_05	04/06/2020	IMG_0219.AVI	21/05/2020 03:06	21/05/2020	03:06:12	Mammal	Rattus sp.	1
HW_CT_05	04/06/2020	IMG_0220.AVI	21/05/2020 03:09	21/05/2020	03:09:38	Mammal	Rattus sp.	1
HW_CT_05	04/06/2020	IMG_0221.AVI	21/05/2020 03:10	21/05/2020	03:10:48	NA	Unidentified sp.	1
HW_CT_05	04/06/2020	IMG_0222.AVI	21/05/2020 07:13	21/05/2020	07:13:06	Mammal	Tupaia glis	1
HW_CT_05	04/06/2020	IMG_0223.AVI	21/05/2020 14:10	21/05/2020	14:10:24	Reptile	Varanus sp.	1
HW_CT_05	04/06/2020	IMG_0224.AVI	21/05/2020 14:15	21/05/2020	14:15:34	Reptile	Varanus sp.	1
HW_CT_05	04/06/2020	IMG_0225.AVI	22/05/2020 10:28	22/05/2020	10:28:20	Bird	Garrulax leucolophus	2
HW_CT_05	04/06/2020	IMG_0226.AVI	22/05/2020 10:28	22/05/2020	10:28:40	Bird	Gallus gallus	2
HW_CT_05	04/06/2020	IMG_0227.AVI	22/05/2020 10:48	22/05/2020	10:48:58	Mammal	Tupaia glis	1
HW_CT_05	04/06/2020	IMG_0228.AVI	22/05/2020 11:20	22/05/2020	11:20:00	Reptile	Varanus sp.	1
HW_CT_05	04/06/2020	IMG_0229.AVI	23/05/2020 08:24	23/05/2020	08:24:58	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0230.AVI	24/05/2020 16:00	24/05/2020	16:00:36	Mammal	Callosciurus notatus	1
HW_CT_05	04/06/2020	IMG_0231.AVI	24/05/2020 16:03	24/05/2020	16:03:36	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	04/06/2020	IMG_0232.AVI	26/05/2020 07:17	26/05/2020	07:17:44	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	04/06/2020	IMG_0233.AVI	26/05/2020 07:18	26/05/2020	07:18:46	NA	Unidentified sp.	1
HW_CT_05	04/06/2020	IMG_0234.AVI	26/05/2020 12:50	26/05/2020	12:50:44	Bird	Garrulax leucolophus	3
HW_CT_05	04/06/2020	IMG_0236.AVI	26/05/2020 16:17	26/05/2020	16:17:22	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0239.AVI	27/05/2020 14:24	27/05/2020	14:24:02	Bird	Gallus gallus	2
HW_CT_05	04/06/2020	IMG_0240.AVI	27/05/2020 14:24	27/05/2020	14:24:24	Bird	Gallus gallus	2
HW_CT_05	04/06/2020	IMG_0241.AVI	27/05/2020 14:24	27/05/2020	14:24:50	Bird	Gallus gallus	2
HW_CT_05	04/06/2020	IMG_0242.AVI	29/05/2020 07:52	29/05/2020	07:52:26	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	04/06/2020	IMG_0243.AVI	29/05/2020 07:54	29/05/2020	07:54:06	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0244.AVI	29/05/2020 07:54	29/05/2020	07:54:52	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0245.AVI	29/05/2020 09:17	29/05/2020	09:17:04	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0246.AVI	29/05/2020 18:47	29/05/2020	18:47:24	NA	Unidentified sp.	1
HW_CT_05	04/06/2020	IMG_0247.AVI	30/05/2020 11:17	30/05/2020	11:17:38	Mammal	Tupaia glis	1
HW_CT_05	04/06/2020	IMG_0248.AVI	30/05/2020 14:12	30/05/2020	14:12:26	Reptile	Varanus sp.	1
HW_CT_05	04/06/2020	IMG_0249.AVI	30/05/2020 15:08	30/05/2020	15:08:02	Mammal	Tupaia glis	1
HW_CT_05	04/06/2020	IMG_0250.AVI	30/05/2020 19:02	30/05/2020	19:02:46	Mammal	Tupaia glis	1
HW_CT_05	04/06/2020	IMG_0253.AVI	31/05/2020 18:39	31/05/2020	18:39:18	Mammal	Tupaia glis	1
HW_CT_05	04/06/2020	IMG_0254.AVI	01/06/2020 07:28	01/06/2020	07:28:30	Bird	Gallus gallus	2
HW_CT_05	04/06/2020	IMG_0255.AVI	01/06/2020 12:48	01/06/2020	12:48:52	Bird	Gallus gallus	1
HW_CT_05	04/06/2020	IMG_0256.AVI	02/06/2020 07:11	02/06/2020	07:11:32	Mammal	Callosciurus notatus	1
HW_CT_05	04/06/2020	IMG_0256.AVI	02/06/2020 07:11	02/06/2020	07:11:32	Mammal	Callosciurus notatus	1
HW_CT_05	04/06/2020	IMG_0257.AVI	02/06/2020 07:11	02/06/2020	07:11:54	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0259.AVI	02/06/2020 08:46	02/06/2020	08:46:14	Mammal	Unidentified squirrel or shrew	1
HW_CT_05	04/06/2020	IMG_0260.AVI	02/06/2020 15:56	02/06/2020	15:56:58	Reptile	Varanus sp.	1
HW_CT_05	04/06/2020	IMG_0261.AVI	02/06/2020 15:57	02/06/2020	15:57:22	Reptile	Varanus sp.	1
HW_CT_05	04/06/2020	IMG_0262.AVI	02/06/2020 18:38	02/06/2020	18:38:34	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0264.AVI	03/06/2020 12:43	03/06/2020	12:43:20	Bird	Garrulax leucolophus	1
HW_CT_05	04/06/2020	IMG_0265.AVI	03/06/2020 18:32	03/06/2020	18:32:12	Mammal	Tupaia glis	1
HW_CT_05	04/06/2020	IMG_0266.AVI	03/06/2020 19:13	03/06/2020	19:13:58	Mammal	Tupaia glis	1
HW_CT_06	13/02/2020	IMG_0004.AVI	11/01/2020 10:13	11/01/2020	10:13:48	Mammal	Tupaia glis	1
HW_CT_06	13/02/2020	IMG_0005.AVI	11/01/2020 15:58	11/01/2020	15:58:26	Bird	Garrulax leucolophus	2
HW_CT_06	13/02/2020	IMG_0005.AVI	11/01/2020 15:58	11/01/2020	15:58:26	Mammal	Tupaia glis	1
HW_CT_06	13/02/2020	IMG_0010.AVI	18/01/2020 08:37	18/01/2020	08:37:30	Bird	Picus vittatus	1
HW_CT_06	13/02/2020	IMG_0012.AVI	02/02/2020 07:19	02/02/2020	07:19:16	Mammal	Tupaia glis	1
HW_CT_06	13/02/2020	IMG_0013.AVI	02/02/2020 07:19	02/02/2020	07:19:38	Mammal	Tupaia glis	1
HW_CT_06	13/02/2020	IMG_0016.AVI	03/02/2020 14:09	03/02/2020	14:09:40	Mammal	Callosciurus notatus	2
HW_CT_06	13/02/2020	IMG_0017.AVI	05/02/2020 07:10	05/02/2020	07:10:08	Mammal	Tupaia glis	1
HW_CT_06	13/02/2020	IMG_0018.AVI	05/02/2020 07:21	05/02/2020	07:21:22	Mammal	Tupaia glis	1
HW_CT_07	10/01/2020	IMG_0015.AVI	11/12/2019 06:58	11/12/2019	06:58:26	Mammal	Tupaia glis	1
HW_CT_07	10/01/2020	IMG_0017.AVI	11/12/2019 16:56	11/12/2019	16:56:12	Bird	Gallus gallus	1
HW_CT_07	10/01/2020	IMG_0018.AVI	11/12/2019 18:04	11/12/2019	18:04:08	Mammal	Tupaia glis	1
HW_CT_07	10/01/2020	IMG_0019.AVI	12/12/2019 05:29	12/12/2019	05:29:10	Mammal	Unidentified mammal	1
HW_CT_07	10/01/2020	IMG_0019.AVI	12/12/2019 05:29	12/12/2019	05:29:10	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0020.AVI	12/12/2019 17:53	12/12/2019	17:53:58	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0021.AVI	13/12/2019 06:49	13/12/2019	06:49:42	Mammal	Tupaia glis	1
HW_CT_07	10/01/2020	IMG_0022.AVI	13/12/2019 06:50	13/12/2019	06:50:08	Mammal	Unidentified squirrel or shrew	1

Appendix J1 Camera Trap Log and Data for Clementi Forest

Station	SamplingDate	FileName	FileModifyDate	Date	Time	Taxon	Scientific name	Quantity
HW_CT_07	10/01/2020	IMG_0024.AVI	14/12/2019 12:15	14/12/2019	12:15:22	Mammal	Tupaia glis	1
HW_CT_07	10/01/2020	IMG_0025.AVI	14/12/2019 17:33	14/12/2019	17:33:44	Bird	Gallus gallus	1
HW_CT_07	10/01/2020	IMG_0026.AVI	15/12/2019 05:37	15/12/2019	05:37:58	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0027.AVI	15/12/2019 09:52	15/12/2019	09:52:52	Bird	Gallus gallus	1
HW_CT_07	10/01/2020	IMG_0028.AVI	16/12/2019 07:09	16/12/2019	07:09:16	Mammal	Tupaia glis	1
HW_CT_07	10/01/2020	IMG_0029.AVI	16/12/2019 12:18	16/12/2019	12:18:58	Mammal	Tupaia glis	1
HW_CT_07	10/01/2020	IMG_0031.AVI	18/12/2019 22:34	18/12/2019	22:34:22	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0032.AVI	18/12/2019 22:34	18/12/2019	22:34:44	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0033.AVI	18/12/2019 22:35	18/12/2019	22:35:10	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0035.AVI	20/12/2019 02:27	20/12/2019	02:27:00	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0036.AVI	20/12/2019 07:49	20/12/2019	07:49:56	Mammal	Tupaia glis	1
HW_CT_07	10/01/2020	IMG_0037.AVI	20/12/2019 07:55	20/12/2019	07:55:14	Mammal	Tupaia glis	1
HW_CT_07	10/01/2020	IMG_0038.AVI	20/12/2019 13:26	20/12/2019	13:26:52	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0039.AVI	20/12/2019 14:19	20/12/2019	14:19:22	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0041.AVI	20/12/2019 16:37	20/12/2019	16:37:38	Bird	Unidentified bird	1
HW_CT_07	10/01/2020	IMG_0044.AVI	21/12/2019 04:46	21/12/2019	04:46:16	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0046.AVI	21/12/2019 04:46	21/12/2019	04:46:58	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0047.AVI	21/12/2019 07:34	21/12/2019	07:34:30	Mammal	Tupaia glis	1
HW_CT_07	10/01/2020	IMG_0050.AVI	22/12/2019 05:30	22/12/2019	05:30:16	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0051.AVI	22/12/2019 07:40	22/12/2019	07:40:48	Mammal	Tupaia glis	1
HW_CT_07	10/01/2020	IMG_0052.AVI	22/12/2019 22:48	22/12/2019	22:48:22	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0053.AVI	23/12/2019 00:06	23/12/2019	00:06:38	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0054.AVI	23/12/2019 01:04	23/12/2019	01:04:36	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0055.AVI	23/12/2019 02:11	23/12/2019	02:11:56	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0056.AVI	23/12/2019 02:57	23/12/2019	02:57:12	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0058.AVI	23/12/2019 02:59	23/12/2019	02:59:24	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0059.AVI	23/12/2019 04:59	23/12/2019	04:59:56	Mammal	Unidentified mammal	1
HW_CT_07	10/01/2020	IMG_0059.AVI	23/12/2019 04:59	23/12/2019	04:59:56	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0061.AVI	23/12/2019 06:43	23/12/2019	06:43:36	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0062.AVI	23/12/2019 07:37	23/12/2019	07:37:36	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0063.AVI	23/12/2019 07:39	23/12/2019	07:39:36	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0064.AVI	23/12/2019 07:40	23/12/2019	07:40:34	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0065.AVI	23/12/2019 07:41	23/12/2019	07:41:04	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0066.AVI	23/12/2019 07:43	23/12/2019	07:43:38	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0068.AVI	23/12/2019 08:06	23/12/2019	08:06:26	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0069.AVI	23/12/2019 08:10	23/12/2019	08:10:04	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0070.AVI	23/12/2019 08:44	23/12/2019	08:44:52	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0071.AVI	23/12/2019 09:14	23/12/2019	09:14:54	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0072.AVI	23/12/2019 09:38	23/12/2019	09:38:22	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0073.AVI	23/12/2019 09:38	23/12/2019	09:38:44	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0074.AVI	23/12/2019 09:40	23/12/2019	09:40:08	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0075.AVI	23/12/2019 09:40	23/12/2019	09:40:50	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0076.AVI	23/12/2019 09:41	23/12/2019	09:41:16	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0077.AVI	23/12/2019 10:03	23/12/2019	10:03:16	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0078.AVI	23/12/2019 10:04	23/12/2019	10:04:32	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0079.AVI	23/12/2019 10:08	23/12/2019	10:08:40	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0080.AVI	23/12/2019 10:42	23/12/2019	10:42:24	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0081.AVI	23/12/2019 10:58	23/12/2019	10:58:18	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0082.AVI	23/12/2019 11:00	23/12/2019	11:00:26	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0083.AVI	23/12/2019 11:01	23/12/2019	11:01:02	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0084.AVI	23/12/2019 11:01	23/12/2019	11:01:26	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0087.AVI	23/12/2019 14:27	23/12/2019	14:27:20	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0088.AVI	23/12/2019 14:43	23/12/2019	14:43:26	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0089.AVI	23/12/2019 18:38	23/12/2019	18:38:58	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0090.AVI	24/12/2019 02:23	24/12/2019	02:23:22	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0092.AVI	24/12/2019 07:22	24/12/2019	07:22:50	Mammal	Tupaia glis	1
HW_CT_07	10/01/2020	IMG_0093.AVI	24/12/2019 23:37	24/12/2019	23:37:38	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0094.AVI	25/12/2019 21:21	25/12/2019	21:21:44	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0095.AVI	25/12/2019 23:09	25/12/2019	23:09:36	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0096.AVI	26/12/2019 05:39	26/12/2019	05:39:28	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0097.AVI	26/12/2019 05:40	26/12/2019	05:40:12	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0098.AVI	26/12/2019 18:26	26/12/2019	18:26:38	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0099.AVI	26/12/2019 18:33	26/12/2019	18:33:58	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0100.AVI	27/12/2019 01:49	27/12/2019	01:49:12	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0101.AVI	27/12/2019 06:07	27/12/2019	06:07:14	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0102.AVI	27/12/2019 09:07	27/12/2019	09:07:04	Mammal	Tupaia glis	1
HW_CT_07	10/01/2020	IMG_0103.AVI	27/12/2019 12:16	27/12/2019	12:16:42	Mammal	Tupaia glis	1
HW_CT_07	10/01/2020	IMG_0104.AVI	27/12/2019 17:16	27/12/2019	17:16:06	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0105.AVI	27/12/2019 17:33	27/12/2019	17:33:04	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0106.AVI	27/12/2019 17:33	27/12/2019	17:33:38	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0107.AVI	27/12/2019 18:23	27/12/2019	18:23:32	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0108.AVI	28/12/2019 03:24	28/12/2019	03:24:42	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0109.AVI	28/12/2019 03:27	28/12/2019	03:27:00	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0110.AVI	28/12/2019 03:44	28/12/2019	03:44:46	Mammal	Unidentified mammal	1
HW_CT_07	10/01/2020	IMG_0110.AVI	28/12/2019 03:44	28/12/2019	03:44:46	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0111.AVI	28/12/2019 03:46	28/12/2019	03:46:26	Mammal	Unidentified mammal	1
HW_CT_07	10/01/2020	IMG_0111.AVI	28/12/2019 03:46	28/12/2019	03:46:26	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0113.AVI	28/12/2019 12:36	28/12/2019	12:36:38	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0114.AVI	28/12/2019 18:09	28/12/2019	18:09:40	Mammal	Tupaia glis	1
HW_CT_07	10/01/2020	IMG_0115.AVI	28/12/2019 18:31	28/12/2019	18:31:28	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0116.AVI	29/12/2019 03:44	29/12/2019	03:44:22	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0118.AVI	29/12/2019 04:09	29/12/2019	04:09:32	Mammal	Unidentified mammal	1
HW_CT_07	10/01/2020	IMG_0118.AVI	29/12/2019 04:09	29/12/2019	04:09:32	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0119.AVI	29/12/2019 04:15	29/12/2019	04:15:14	Mammal	Unidentified mammal	1
HW_CT_07	10/01/2020	IMG_0119.AVI	29/12/2019 04:15	29/12/2019	04:15:14	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0120.AVI	29/12/2019 06:09	29/12/2019	06:09:02	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0121.AVI	29/12/2019 06:13	29/12/2019	06:13:42	Mammal	Rattus sp.	1

Appendix J1 Camera Trap Log and Data for Clementi Forest

Station	SamplingDate	FileName	FileModifyDate	Date	Time	Taxon	Scientific name	Quantity
HW_CT_07	10/01/2020	IMG_0122.AVI	29/12/2019 06:16	29/12/2019	06:16:10	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0124.AVI	30/12/2019 13:08	30/12/2019	13:08:40	Mammal	Unidentified squirrel or shrew	1
HW_CT_07	10/01/2020	IMG_0125.AVI	30/12/2019 14:33	30/12/2019	14:33:14	Mammal	Tupaia glis	1
HW_CT_07	10/01/2020	IMG_0126.AVI	30/12/2019 14:39	30/12/2019	14:39:52	Mammal	Tupaia glis	1
HW_CT_07	10/01/2020	IMG_0127.AVI	30/12/2019 14:46	30/12/2019	14:46:18	Mammal	Tupaia glis	1
HW_CT_07	10/01/2020	IMG_0128.AVI	30/12/2019 14:53	30/12/2019	14:53:54	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0129.AVI	30/12/2019 14:55	30/12/2019	14:55:32	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0130.AVI	30/12/2019 14:55	30/12/2019	14:55:54	Mammal	Tupaia glis	1
HW_CT_07	10/01/2020	IMG_0130.AVI	30/12/2019 14:55	30/12/2019	14:55:54	Mammal	Tupaia glis	1
HW_CT_07	10/01/2020	IMG_0131.AVI	30/12/2019 15:05	30/12/2019	15:05:48	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0132.AVI	31/12/2019 01:35	31/12/2019	01:35:38	Mammal	Paradoxurus musangus	1
HW_CT_07	10/01/2020	IMG_0133.AVI	31/12/2019 01:36	31/12/2019	01:36:02	Mammal	Paradoxurus musangus	1
HW_CT_07	10/01/2020	IMG_0134.AVI	31/12/2019 11:47	31/12/2019	11:47:52	Mammal	Unidentified mammal	1
HW_CT_07	10/01/2020	IMG_0134.AVI	31/12/2019 11:47	31/12/2019	11:47:52	Mammal	Tupaia glis	1
HW_CT_07	10/01/2020	IMG_0135.AVI	31/12/2019 14:34	31/12/2019	14:34:22	Mammal	Tupaia glis	1
HW_CT_07	10/01/2020	IMG_0137.AVI	01/01/2020 02:54	01/01/2020	02:54:18	Mammal	Unidentified mammal	1
HW_CT_07	10/01/2020	IMG_0137.AVI	01/01/2020 02:54	01/01/2020	02:54:18	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0138.AVI	01/01/2020 02:54	01/01/2020	02:54:54	Mammal	Unidentified mammal	1
HW_CT_07	10/01/2020	IMG_0138.AVI	01/01/2020 02:54	01/01/2020	02:54:54	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0139.AVI	01/01/2020 03:20	01/01/2020	03:20:30	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0141.AVI	01/01/2020 04:57	01/01/2020	04:57:42	Mammal	Unidentified mammal	1
HW_CT_07	10/01/2020	IMG_0141.AVI	01/01/2020 04:57	01/01/2020	04:57:42	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0142.AVI	03/01/2020 05:09	03/01/2020	05:09:02	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0143.AVI	03/01/2020 05:09	03/01/2020	05:09:30	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0145.AVI	03/01/2020 15:13	03/01/2020	15:13:02	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0146.AVI	03/01/2020 15:15	03/01/2020	15:15:04	Bird	Garrulax leucolophus	1
HW_CT_07	10/01/2020	IMG_0147.AVI	03/01/2020 15:29	03/01/2020	15:29:44	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0148.AVI	03/01/2020 15:34	03/01/2020	15:34:56	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0149.AVI	03/01/2020 15:46	03/01/2020	15:46:40	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0150.AVI	03/01/2020 15:48	03/01/2020	15:48:12	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0151.AVI	03/01/2020 15:48	03/01/2020	15:48:50	Mammal	Unidentified squirrel or shrew	1
HW_CT_07	10/01/2020	IMG_0152.AVI	03/01/2020 16:16	03/01/2020	16:16:10	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0153.AVI	03/01/2020 16:21	03/01/2020	16:21:04	Mammal	Tupaia glis	1
HW_CT_07	10/01/2020	IMG_0157.AVI	03/01/2020 23:29	03/01/2020	23:29:22	Mammal	Unidentified mammal	1
HW_CT_07	10/01/2020	IMG_0157.AVI	03/01/2020 23:29	03/01/2020	23:29:22	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0158.AVI	04/01/2020 05:59	04/01/2020	05:59:52	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0159.AVI	04/01/2020 06:00	04/01/2020	06:00:14	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0160.AVI	04/01/2020 06:00	04/01/2020	06:00:52	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0161.AVI	04/01/2020 06:01	04/01/2020	06:01:20	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0162.AVI	04/01/2020 07:12	04/01/2020	07:12:12	Mammal	Tupaia glis	1
HW_CT_07	10/01/2020	IMG_0163.AVI	04/01/2020 08:25	04/01/2020	08:25:12	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0164.AVI	04/01/2020 10:10	04/01/2020	10:10:24	Bird	Garrulax leucolophus	1
HW_CT_07	10/01/2020	IMG_0165.AVI	04/01/2020 10:33	04/01/2020	10:33:20	Mammal	Tupaia glis	1
HW_CT_07	10/01/2020	IMG_0166.AVI	04/01/2020 12:22	04/01/2020	12:22:40	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0167.AVI	04/01/2020 16:36	04/01/2020	16:36:28	Mammal	Tupaia glis	1
HW_CT_07	10/01/2020	IMG_0168.AVI	05/01/2020 09:28	05/01/2020	09:28:02	Mammal	Tupaia glis	1
HW_CT_07	10/01/2020	IMG_0168.AVI	05/01/2020 09:28	05/01/2020	09:28:02	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0169.AVI	05/01/2020 09:30	05/01/2020	09:30:32	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0170.AVI	05/01/2020 10:00	05/01/2020	10:00:34	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0171.AVI	05/01/2020 14:29	05/01/2020	14:29:20	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0172.AVI	05/01/2020 14:29	05/01/2020	14:29:54	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0173.AVI	05/01/2020 15:00	05/01/2020	15:00:20	Mammal	Tupaia glis	1
HW_CT_07	10/01/2020	IMG_0174.AVI	05/01/2020 15:21	05/01/2020	15:21:52	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0175.AVI	05/01/2020 15:27	05/01/2020	15:27:54	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0177.AVI	06/01/2020 05:13	06/01/2020	05:13:34	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0178.AVI	06/01/2020 05:13	06/01/2020	05:13:56	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0180.AVI	06/01/2020 05:15	06/01/2020	05:15:02	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0181.AVI	06/01/2020 05:16	06/01/2020	05:16:38	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0182.AVI	06/01/2020 05:21	06/01/2020	05:21:40	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0183.AVI	06/01/2020 05:42	06/01/2020	05:42:20	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0184.AVI	06/01/2020 05:42	06/01/2020	05:42:44	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0185.AVI	06/01/2020 05:43	06/01/2020	05:43:30	Mammal	Rattus sp.	2
HW_CT_07	10/01/2020	IMG_0186.AVI	06/01/2020 05:44	06/01/2020	05:44:46	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0187.AVI	06/01/2020 05:45	06/01/2020	05:45:58	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0188.AVI	06/01/2020 05:46	06/01/2020	05:46:30	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0189.AVI	06/01/2020 05:49	06/01/2020	05:49:24	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0190.AVI	06/01/2020 05:50	06/01/2020	05:50:54	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0192.AVI	06/01/2020 13:56	06/01/2020	13:56:26	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0194.AVI	07/01/2020 02:51	07/01/2020	02:51:10	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0196.AVI	07/01/2020 21:07	07/01/2020	21:07:14	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0198.AVI	08/01/2020 03:37	08/01/2020	03:37:56	Mammal	Unidentified mammal	1
HW_CT_07	10/01/2020	IMG_0198.AVI	08/01/2020 03:37	08/01/2020	03:37:56	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0199.AVI	08/01/2020 04:38	08/01/2020	04:38:42	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0200.AVI	08/01/2020 05:40	08/01/2020	05:40:36	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0201.AVI	08/01/2020 23:27	08/01/2020	23:27:56	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0202.AVI	09/01/2020 09:58	09/01/2020	09:58:36	Mammal	Callosciurus notatus	1
HW_CT_07	10/01/2020	IMG_0203.AVI	09/01/2020 10:53	09/01/2020	10:53:04	Bird	Garrulax leucolophus	1
HW_CT_07	10/01/2020	IMG_0204.AVI	09/01/2020 10:53	09/01/2020	10:53:38	Bird	Garrulax leucolophus	1
HW_CT_07	10/01/2020	IMG_0205.AVI	09/01/2020 19:20	09/01/2020	19:20:34	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0206.AVI	10/01/2020 00:27	10/01/2020	00:27:16	Mammal	Rattus sp.	1
HW_CT_07	10/01/2020	IMG_0208.AVI	10/01/2020 09:42	10/01/2020	09:42:18	Mammal	Tupaia glis	1
HW_CT_07	13/02/2020	IMG_0005.AVI	10/01/2020 14:55	10/01/2020	14:55:36	Mammal	Unidentified mammal	1
HW_CT_07	13/02/2020	IMG_0007.AVI	10/01/2020 20:05	10/01/2020	20:05:36	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0009.AVI	11/01/2020 19:28	11/01/2020	19:28:52	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0010.AVI	11/01/2020 21:37	11/01/2020	21:37:44	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0014.AVI	12/01/2020 23:58	12/01/2020	23:58:16	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0015.AVI	13/01/2020 02:53	13/01/2020	02:53:42	Mammal	Rattus sp.	1

Appendix J1 Camera Trap Log and Data for Clementi Forest

Station	SamplingDate	FileName	FileModifyDate	Date	Time	Taxon	Scientific name	Quantity
HW_CT_07	13/02/2020	IMG_0016.AVI	14/01/2020 00:45	14/01/2020	00:45:50	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0017.AVI	14/01/2020 08:33	14/01/2020	08:33:52	Mammal	Tupaia glis	1
HW_CT_07	13/02/2020	IMG_0018.AVI	14/01/2020 08:34	14/01/2020	08:34:20	Mammal	Tupaia glis	1
HW_CT_07	13/02/2020	IMG_0022.AVI	16/01/2020 15:07	16/01/2020	15:07:06	Mammal	Tupaia glis	1
HW_CT_07	13/02/2020	IMG_0023.AVI	16/01/2020 15:07	16/01/2020	15:07:38	Mammal	Tupaia glis	1
HW_CT_07	13/02/2020	IMG_0024.AVI	16/01/2020 21:16	16/01/2020	21:16:36	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0025.AVI	17/01/2020 02:34	17/01/2020	02:34:14	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0028.AVI	18/01/2020 08:00	18/01/2020	08:00:28	Mammal	Tupaia glis	1
HW_CT_07	13/02/2020	IMG_0029.AVI	18/01/2020 21:33	18/01/2020	21:33:54	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0030.AVI	19/01/2020 05:35	19/01/2020	05:35:36	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0031.AVI	19/01/2020 05:36	19/01/2020	05:36:40	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0033.AVI	19/01/2020 05:55	19/01/2020	05:55:16	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0035.AVI	19/01/2020 17:19	19/01/2020	17:19:08	Mammal	Callosciurus notatus	1
HW_CT_07	13/02/2020	IMG_0036.AVI	19/01/2020 19:49	19/01/2020	19:49:54	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0037.AVI	20/01/2020 04:38	20/01/2020	04:38:02	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0038.AVI	20/01/2020 15:48	20/01/2020	15:48:56	Bird	Gallus gallus	1
HW_CT_07	13/02/2020	IMG_0039.AVI	20/01/2020 17:20	20/01/2020	17:20:06	Mammal	Tupaia glis	1
HW_CT_07	13/02/2020	IMG_0040.AVI	21/01/2020 06:31	21/01/2020	06:31:24	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0041.AVI	21/01/2020 06:32	21/01/2020	06:32:34	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0044.AVI	22/01/2020 04:33	22/01/2020	04:33:12	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0046.AVI	22/01/2020 07:00	22/01/2020	07:00:48	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0047.AVI	22/01/2020 07:02	22/01/2020	07:02:24	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0048.AVI	22/01/2020 13:10	22/01/2020	13:10:26	Mammal	Callosciurus notatus	1
HW_CT_07	13/02/2020	IMG_0049.AVI	22/01/2020 19:35	22/01/2020	19:35:42	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0050.AVI	22/01/2020 21:36	22/01/2020	21:36:30	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0051.AVI	23/01/2020 01:50	23/01/2020	01:50:58	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0053.AVI	23/01/2020 06:31	23/01/2020	06:31:40	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0054.AVI	23/01/2020 06:56	23/01/2020	06:56:52	Mammal	Rattus sp.	2
HW_CT_07	13/02/2020	IMG_0055.AVI	23/01/2020 14:30	23/01/2020	14:30:00	Mammal	Callosciurus notatus	1
HW_CT_07	13/02/2020	IMG_0058.AVI	24/01/2020 07:29	24/01/2020	07:29:00	Mammal	Callosciurus notatus	1
HW_CT_07	13/02/2020	IMG_0059.AVI	24/01/2020 14:23	24/01/2020	14:23:56	Mammal	Callosciurus notatus	1
HW_CT_07	13/02/2020	IMG_0060.AVI	24/01/2020 14:33	24/01/2020	14:33:28	Mammal	Callosciurus notatus	1
HW_CT_07	13/02/2020	IMG_0061.AVI	25/01/2020 04:48	25/01/2020	04:48:42	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0062.AVI	25/01/2020 22:48	25/01/2020	22:48:06	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0063.AVI	26/01/2020 00:34	26/01/2020	00:34:54	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0064.AVI	26/01/2020 22:31	26/01/2020	22:31:54	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0065.AVI	26/01/2020 22:36	26/01/2020	22:36:22	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0066.AVI	26/01/2020 22:47	26/01/2020	22:47:22	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0068.AVI	27/01/2020 00:47	27/01/2020	00:47:24	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0069.AVI	27/01/2020 00:51	27/01/2020	00:51:24	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0070.AVI	27/01/2020 02:41	27/01/2020	02:41:02	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0071.AVI	27/01/2020 02:42	27/01/2020	02:42:44	Mammal	Rattus sp.	2
HW_CT_07	13/02/2020	IMG_0073.AVI	27/01/2020 05:08	27/01/2020	05:08:30	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0074.AVI	27/01/2020 05:09	27/01/2020	05:09:10	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0077.AVI	29/01/2020 01:16	29/01/2020	01:16:54	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0078.AVI	29/01/2020 01:17	29/01/2020	01:17:20	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0079.AVI	29/01/2020 01:21	29/01/2020	01:21:34	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0080.AVI	29/01/2020 04:50	29/01/2020	04:50:42	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0081.AVI	29/01/2020 08:22	29/01/2020	08:22:16	Mammal	Tupaia glis	1
HW_CT_07	13/02/2020	IMG_0082.AVI	29/01/2020 09:31	29/01/2020	09:31:30	Bird	Gallus gallus	1
HW_CT_07	13/02/2020	IMG_0084.AVI	29/01/2020 21:36	29/01/2020	21:36:56	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0086.AVI	30/01/2020 06:07	30/01/2020	06:07:18	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0087.AVI	30/01/2020 23:50	30/01/2020	23:50:06	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0089.AVI	31/01/2020 04:42	31/01/2020	04:42:44	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0091.AVI	31/01/2020 07:40	31/01/2020	07:40:32	Mammal	Callosciurus notatus	1
HW_CT_07	13/02/2020	IMG_0093.AVI	01/02/2020 14:05	01/02/2020	14:05:08	Mammal	Callosciurus notatus	1
HW_CT_07	13/02/2020	IMG_0094.AVI	02/02/2020 04:15	02/02/2020	04:15:22	Mammal	Rattus sp.	2
HW_CT_07	13/02/2020	IMG_0095.AVI	02/02/2020 11:43	02/02/2020	11:43:32	Mammal	Tupaia glis	2
HW_CT_07	13/02/2020	IMG_0096.AVI	03/02/2020 01:45	03/02/2020	01:45:28	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0098.AVI	03/02/2020 07:41	03/02/2020	07:41:08	Mammal	Callosciurus notatus	1
HW_CT_07	13/02/2020	IMG_0099.AVI	03/02/2020 07:41	03/02/2020	07:41:36	Mammal	Unidentified squirrel or shrew	1
HW_CT_07	13/02/2020	IMG_0101.AVI	03/02/2020 07:45	03/02/2020	07:45:28	Mammal	Callosciurus notatus	1
HW_CT_07	13/02/2020	IMG_0102.AVI	03/02/2020 07:48	03/02/2020	07:48:24	Mammal	Unidentified squirrel or shrew	1
HW_CT_07	13/02/2020	IMG_0103.AVI	03/02/2020 09:41	03/02/2020	09:41:06	Mammal	Callosciurus notatus	1
HW_CT_07	13/02/2020	IMG_0104.AVI	03/02/2020 09:41	03/02/2020	09:41:30	Mammal	Callosciurus notatus	1
HW_CT_07	13/02/2020	IMG_0107.AVI	04/02/2020 21:33	04/02/2020	21:33:44	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0108.AVI	04/02/2020 21:43	04/02/2020	21:43:28	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0109.AVI	05/02/2020 01:22	05/02/2020	01:22:40	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0110.AVI	05/02/2020 02:08	05/02/2020	02:08:44	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0111.AVI	05/02/2020 02:13	05/02/2020	02:13:44	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0112.AVI	05/02/2020 02:14	05/02/2020	02:14:38	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0113.AVI	05/02/2020 02:28	05/02/2020	02:28:38	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0114.AVI	05/02/2020 08:01	05/02/2020	08:01:54	Mammal	Tupaia glis	1
HW_CT_07	13/02/2020	IMG_0115.AVI	05/02/2020 12:48	05/02/2020	12:48:42	Mammal	Callosciurus notatus	1
HW_CT_07	13/02/2020	IMG_0116.AVI	05/02/2020 14:55	05/02/2020	14:55:04	Mammal	Unidentified squirrel or shrew	1
HW_CT_07	13/02/2020	IMG_0117.AVI	06/02/2020 05:14	06/02/2020	05:14:50	Mammal	Rattus sp.	2
HW_CT_07	13/02/2020	IMG_0118.AVI	06/02/2020 05:16	06/02/2020	05:16:04	Mammal	Rattus sp.	2
HW_CT_07	13/02/2020	IMG_0119.AVI	06/02/2020 07:44	06/02/2020	07:44:04	Mammal	Tupaia glis	1
HW_CT_07	13/02/2020	IMG_0122.AVI	06/02/2020 23:30	06/02/2020	23:30:44	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0123.AVI	07/02/2020 02:30	07/02/2020	02:30:04	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0124.AVI	07/02/2020 02:30	07/02/2020	02:30:44	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0125.AVI	07/02/2020 19:02	07/02/2020	19:02:14	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0126.AVI	07/02/2020 21:49	07/02/2020	21:49:24	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0127.AVI	07/02/2020 22:08	07/02/2020	22:08:00	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0128.AVI	07/02/2020 22:23	07/02/2020	22:23:20	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0129.AVI	08/02/2020 00:22	08/02/2020	00:22:06	Mammal	Rattus sp.	1

Appendix J1 Camera Trap Log and Data for Clementi Forest

Station	SamplingDate	FileName	FileModifyDate	Date	Time	Taxon	Scientific name	Quantity
HW_CT_07	13/02/2020	IMG_0130.AVI	08/02/2020 00:36	08/02/2020	00:36:42	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0135.AVI	08/02/2020 04:01	08/02/2020	04:01:38	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0136.AVI	08/02/2020 04:04	08/02/2020	04:04:04	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0137.AVI	08/02/2020 04:04	08/02/2020	04:04:36	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0138.AVI	08/02/2020 04:05	08/02/2020	04:05:22	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0139.AVI	08/02/2020 08:05	08/02/2020	08:05:46	Mammal	Unidentified squirrel or shrew	1
HW_CT_07	13/02/2020	IMG_0140.AVI	08/02/2020 16:05	08/02/2020	16:05:46	Mammal	Callosciurus notatus	1
HW_CT_07	13/02/2020	IMG_0141.AVI	09/02/2020 00:17	09/02/2020	00:17:34	NA	Unidentified sp.	1
HW_CT_07	13/02/2020	IMG_0143.AVI	09/02/2020 01:42	09/02/2020	01:42:00	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0144.AVI	09/02/2020 09:32	09/02/2020	09:32:26	Mammal	Tupaia glis	1
HW_CT_07	13/02/2020	IMG_0145.AVI	09/02/2020 17:27	09/02/2020	17:27:34	Bird	Chalcophaps indica	1
HW_CT_07	13/02/2020	IMG_0146.AVI	10/02/2020 02:51	10/02/2020	02:51:06	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0147.AVI	10/02/2020 06:08	10/02/2020	06:08:10	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0148.AVI	10/02/2020 10:10	10/02/2020	10:10:52	Mammal	Unidentified mammal	1
HW_CT_07	13/02/2020	IMG_0149.AVI	10/02/2020 20:25	10/02/2020	20:25:26	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0150.AVI	10/02/2020 22:49	10/02/2020	22:49:14	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0151.AVI	11/02/2020 06:19	11/02/2020	06:19:00	Mammal	Rattus sp.	1
HW_CT_07	13/02/2020	IMG_0155.AVI	12/02/2020 14:32	12/02/2020	14:32:32	Mammal	Unidentified mammal	1
HW_CT_07	13/02/2020	IMG_0156.AVI	12/02/2020 14:33	12/02/2020	14:33:04	Mammal	Callosciurus notatus	1
HW_CT_07	13/02/2020	IMG_0159.AVI	12/02/2020 20:01	12/02/2020	20:01:00	Mammal	Rattus sp.	1
HW_CT_08	12/12/2019	IMG_0010.AVI	23/11/2019 14:03	23/11/2019	14:03:28	Bird	Gallus gallus	1
HW_CT_08	12/12/2019	IMG_0011.AVI	25/11/2019 02:33	25/11/2019	02:33:30	Mammal	Rattus sp.	1
HW_CT_08	12/12/2019	IMG_0012.AVI	25/11/2019 10:36	25/11/2019	10:36:44	Bird	Gallus gallus	1
HW_CT_08	12/12/2019	IMG_0013.AVI	25/11/2019 10:51	25/11/2019	10:51:06	Bird	Gallus gallus	1
HW_CT_08	12/12/2019	IMG_0014.AVI	25/11/2019 12:52	25/11/2019	12:52:08	Bird	Gallus gallus	1
HW_CT_08	12/12/2019	IMG_0015.AVI	26/11/2019 11:16	26/11/2019	11:16:00	Bird	Gallus gallus	1
HW_CT_08	12/12/2019	IMG_0016.AVI	26/11/2019 13:22	26/11/2019	13:22:58	Bird	Gallus gallus	1
HW_CT_08	12/12/2019	IMG_0017.AVI	26/11/2019 18:40	26/11/2019	18:40:28	Bird	Garrulax leucolophus	1
HW_CT_08	12/12/2019	IMG_0021.AVI	27/11/2019 13:33	27/11/2019	13:33:06	Bird	Gallus gallus	1
HW_CT_08	12/12/2019	IMG_0022.AVI	27/11/2019 18:33	27/11/2019	18:33:46	NA	Unidentified sp.	1
HW_CT_08	12/12/2019	IMG_0023.AVI	28/11/2019 11:10	28/11/2019	11:10:50	Bird	Gallus gallus	1
HW_CT_08	12/12/2019	IMG_0025.AVI	30/11/2019 08:41	30/11/2019	08:41:00	Bird	Gallus gallus	1
HW_CT_08	12/12/2019	IMG_0037.AVI	03/12/2019 07:55	03/12/2019	07:55:38	Mammal	Tupaia glis	1
HW_CT_08	12/12/2019	IMG_0038.AVI	04/12/2019 07:04	04/12/2019	07:04:34	Mammal	Tupaia glis	1
HW_CT_08	12/12/2019	IMG_0043.AVI	07/12/2019 18:22	07/12/2019	18:22:28	Mammal	Tupaia glis	1
HW_CT_08	12/12/2019	IMG_0046.AVI	09/12/2019 07:02	09/12/2019	07:02:28	Mammal	Callosciurus notatus	1
HW_CT_08	12/12/2019	IMG_0047.AVI	09/12/2019 07:05	09/12/2019	07:05:38	Mammal	Callosciurus notatus	1
HW_CT_08	12/12/2019	IMG_0048.AVI	09/12/2019 07:11	09/12/2019	07:11:24	Mammal	Callosciurus notatus	1
HW_CT_08	12/12/2019	IMG_0049.AVI	09/12/2019 07:20	09/12/2019	07:20:22	Bird	Garrulax leucolophus	1
HW_CT_08	12/12/2019	IMG_0051.AVI	11/12/2019 07:37	11/12/2019	07:37:16	Mammal	Tupaia glis	1
HW_CT_08	12/12/2019	IMG_0052.AVI	12/12/2019 00:24	12/12/2019	00:24:12	Mammal	Rattus sp.	1
HW_CT_08	12/12/2019	IMG_0053.AVI	12/12/2019 00:24	12/12/2019	00:24:34	Mammal	Rattus sp.	1
HW_CT_08	10/01/2020	IMG_0005.AVI	12/12/2019 18:11	12/12/2019	18:11:00	Bird	Gallus gallus	1
HW_CT_08	10/01/2020	IMG_0006.AVI	12/12/2019 18:12	12/12/2019	18:12:20	Bird	Gallus gallus	1
HW_CT_08	10/01/2020	IMG_0007.AVI	12/12/2019 18:12	12/12/2019	18:12:44	Bird	Gallus gallus	1
HW_CT_08	10/01/2020	IMG_0008.AVI	13/12/2019 00:17	13/12/2019	00:17:08	Mammal	Rattus sp.	1
HW_CT_08	10/01/2020	IMG_0009.AVI	13/12/2019 07:20	13/12/2019	07:20:32	Bird	Gallus gallus	2
HW_CT_08	10/01/2020	IMG_0010.AVI	13/12/2019 07:22	13/12/2019	07:22:48	Bird	Gallus gallus	1
HW_CT_08	10/01/2020	IMG_0011.AVI	14/12/2019 07:59	14/12/2019	07:59:26	Mammal	Callosciurus notatus	1
HW_CT_08	10/01/2020	IMG_0012.AVI	14/12/2019 08:07	14/12/2019	08:07:24	Mammal	Callosciurus notatus	1
HW_CT_08	10/01/2020	IMG_0013.AVI	14/12/2019 08:08	14/12/2019	08:08:42	Mammal	Callosciurus notatus	1
HW_CT_08	10/01/2020	IMG_0015.AVI	14/12/2019 09:36	14/12/2019	09:36:16	Bird	Gallus gallus	1
HW_CT_08	10/01/2020	IMG_0015.AVI	14/12/2019 09:36	14/12/2019	09:36:16	Bird	Gallus gallus	1
HW_CT_08	10/01/2020	IMG_0016.AVI	14/12/2019 09:42	14/12/2019	09:42:34	Bird	Gallus gallus	1
HW_CT_08	10/01/2020	IMG_0017.AVI	14/12/2019 09:57	14/12/2019	09:57:28	Mammal	Callosciurus notatus	1
HW_CT_08	10/01/2020	IMG_0017.AVI	14/12/2019 09:57	14/12/2019	09:57:28	Bird	Gallus gallus	1
HW_CT_08	10/01/2020	IMG_0018.AVI	14/12/2019 10:04	14/12/2019	10:04:50	Bird	Gallus gallus	1
HW_CT_08	10/01/2020	IMG_0019.AVI	15/12/2019 08:12	15/12/2019	08:12:34	Bird	Gallus gallus	1
HW_CT_08	10/01/2020	IMG_0020.AVI	15/12/2019 12:05	15/12/2019	12:05:58	Bird	Gallus gallus	1
HW_CT_08	10/01/2020	IMG_0021.AVI	15/12/2019 12:06	15/12/2019	12:06:20	Bird	Gallus gallus	1
HW_CT_08	10/01/2020	IMG_0022.AVI	15/12/2019 12:06	15/12/2019	12:06:40	Bird	Gallus gallus	1
HW_CT_08	10/01/2020	IMG_0023.AVI	05/12/2019 12:07	15/12/2019	12:07:02	Bird	Amauromis phoenicurus	1
HW_CT_08	10/01/2020	IMG_0023.AVI	05/12/2019 12:07	15/12/2019	12:07:02	Bird	Gallus gallus	1
HW_CT_08	10/01/2020	IMG_0024.AVI	15/12/2019 12:07	15/12/2019	12:07:22	Bird	Garrulax leucolophus	1
HW_CT_08	10/01/2020	IMG_0024.AVI	15/12/2019 12:07	15/12/2019	12:07:22	Bird	Amauromis phoenicurus	2
HW_CT_08	10/01/2020	IMG_0024.AVI	15/12/2019 12:07	15/12/2019	12:07:22	Bird	Gallus gallus	1
HW_CT_08	10/01/2020	IMG_0025.AVI	15/12/2019 12:07	15/12/2019	12:07:44	Bird	Garrulax leucolophus	1
HW_CT_08	10/01/2020	IMG_0025.AVI	15/12/2019 12:07	15/12/2019	12:07:44	Bird	Amauromis phoenicurus	2
HW_CT_08	10/01/2020	IMG_0025.AVI	15/12/2019 12:07	15/12/2019	12:07:44	Bird	Gallus gallus	1
HW_CT_08	10/01/2020	IMG_0026.AVI	15/12/2019 12:08	15/12/2019	12:08:06	Bird	Gallus gallus	1
HW_CT_08	10/01/2020	IMG_0027.AVI	15/12/2019 12:08	15/12/2019	12:08:26	Bird	Gallus gallus	1
HW_CT_08	10/01/2020	IMG_0028.AVI	15/12/2019 12:08	15/12/2019	12:08:48	Bird	Gallus gallus	1
HW_CT_08	10/01/2020	IMG_0029.AVI	15/12/2019 12:09	15/12/2019	12:09:10	Bird	Gallus gallus	2
HW_CT_08	10/01/2020	IMG_0030.AVI	15/12/2019 12:09	15/12/2019	12:09:40	Bird	Gallus gallus	1
HW_CT_08	10/01/2020	IMG_0031.AVI	15/12/2019 12:10	15/12/2019	12:10:02	Bird	Gallus gallus	1
HW_CT_08	10/01/2020	IMG_0032.AVI	15/12/2019 12:10	15/12/2019	12:10:22	Bird	Gallus gallus	1
HW_CT_08	10/01/2020	IMG_0033.AVI	15/12/2019 12:10	15/12/2019	12:10:46	Bird	Gallus gallus	1
HW_CT_08	10/01/2020	IMG_0039.AVI	20/12/2019 19:17	20/12/2019	19:17:10	Mammal	Unidentified mammal	1
HW_CT_08	10/01/2020	IMG_0099.AVI	03/01/2020 01:05	03/01/2020	01:05:56	Bird	Otus lempiji	1
HW_CT_08	10/01/2020	IMG_0100.AVI	04/01/2020 11:14	04/01/2020	11:14:44	Mammal	Callosciurus notatus	1
HW_CT_08	10/01/2020	IMG_0105.AVI	09/01/2020 19:12	09/01/2020	19:12:02	Mammal	Callosciurus notatus	1
HW_CT_08	30/01/2020	IMG_0006.AVI	11/01/2020 19:08	11/01/2020	19:08:22	Bird	Unidentified bird	1
HW_CT_08	30/01/2020	IMG_0008.AVI	14/01/2020 08:42	14/01/2020	08:42:10	Mammal	Tupaia glis	1
HW_CT_08	30/01/2020	IMG_0031.AVI	19/01/2020 16:35	19/01/2020	16:35:04	Bird	Gallus gallus	1
HW_CT_08	30/01/2020	IMG_0032.AVI	19/01/2020 18:55	19/01/2020	18:55:42	Bird	Gallus gallus	1
HW_CT_08	30/01/2020	IMG_0052.AVI	22/01/2020 19:13	22/01/2020	19:13:34	Mammal	Tupaia glis	1

Appendix J1 Camera Trap Log and Data for Clementi Forest

Station	SamplingDate	FileName	FileModifyDate	Date	Time	Taxon	Scientific name	Quantity
HW_CT_08	30/01/2020	IMG_0059.AVI	28/01/2020 10:27	28/01/2020	10:27:58	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0009.AVI	10/12/2019 17:33	10/12/2019	17:33:22	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0010.AVI	10/12/2019 17:35	10/12/2019	17:35:12	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0011.AVI	10/12/2019 18:10	10/12/2019	18:10:04	Mammal	Unidentified squirrel or shrew	1
HW_CT_09	10/01/2020	IMG_0012.AVI	10/12/2019 18:21	10/12/2019	18:21:58	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0013.AVI	10/12/2019 18:26	10/12/2019	18:26:48	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0014.AVI	11/12/2019 00:32	11/12/2019	00:32:36	Mammal	Rattus sp.	1
HW_CT_09	10/01/2020	IMG_0015.AVI	11/12/2019 00:40	11/12/2019	00:40:54	Mammal	Rattus sp.	1
HW_CT_09	10/01/2020	IMG_0017.AVI	11/12/2019 07:07	11/12/2019	07:07:42	Mammal	Callosciurus notatus	2
HW_CT_09	10/01/2020	IMG_0018.AVI	11/12/2019 07:22	11/12/2019	07:22:10	Bird	Garrulax leucolophus	1
HW_CT_09	10/01/2020	IMG_0019.AVI	11/12/2019 07:25	11/12/2019	07:25:18	Bird	Garrulax leucolophus	1
HW_CT_09	10/01/2020	IMG_0021.AVI	11/12/2019 07:54	11/12/2019	07:54:30	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0022.AVI	11/12/2019 15:37	11/12/2019	15:37:36	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0023.AVI	11/12/2019 16:32	11/12/2019	16:32:18	Mammal	Tupaia glis	2
HW_CT_09	10/01/2020	IMG_0024.AVI	11/12/2019 16:47	11/12/2019	16:47:48	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0025.AVI	11/12/2019 17:02	11/12/2019	17:02:08	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0026.AVI	11/12/2019 17:09	11/12/2019	17:09:12	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0027.AVI	11/12/2019 17:22	11/12/2019	17:22:50	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0028.AVI	11/12/2019 18:46	11/12/2019	18:46:20	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0029.AVI	11/12/2019 18:48	11/12/2019	18:48:48	Mammal	Unidentified squirrel or shrew	1
HW_CT_09	10/01/2020	IMG_0030.AVI	11/12/2019 21:35	11/12/2019	21:35:50	Mammal	Rattus sp.	1
HW_CT_09	10/01/2020	IMG_0031.AVI	12/12/2019 07:00	12/12/2019	07:00:52	Bird	Garrulax leucolophus	1
HW_CT_09	10/01/2020	IMG_0032.AVI	12/12/2019 07:03	12/12/2019	07:03:54	Bird	Garrulax leucolophus	2
HW_CT_09	10/01/2020	IMG_0034.AVI	12/12/2019 08:42	12/12/2019	08:42:10	Bird	Garrulax leucolophus	1
HW_CT_09	10/01/2020	IMG_0035.AVI	12/12/2019 08:42	12/12/2019	08:42:40	Bird	Garrulax leucolophus	1
HW_CT_09	10/01/2020	IMG_0036.AVI	12/12/2019 09:38	12/12/2019	09:38:16	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0037.AVI	13/12/2019 07:26	13/12/2019	07:26:46	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0038.AVI	13/12/2019 07:42	13/12/2019	07:42:54	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0039.AVI	13/12/2019 07:43	13/12/2019	07:43:16	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0041.AVI	13/12/2019 11:15	13/12/2019	11:15:28	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0042.AVI	13/12/2019 11:15	13/12/2019	11:15:50	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0043.AVI	13/12/2019 11:16	13/12/2019	11:16:10	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0044.AVI	13/12/2019 11:16	13/12/2019	11:16:32	Mammal	Unidentified squirrel or shrew	1
HW_CT_09	10/01/2020	IMG_0045.AVI	13/12/2019 11:16	13/12/2019	11:16:54	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0046.AVI	13/12/2019 11:17	13/12/2019	11:17:16	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0047.AVI	13/12/2019 11:17	13/12/2019	11:17:36	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0048.AVI	13/12/2019 11:17	13/12/2019	11:17:58	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0049.AVI	13/12/2019 11:18	13/12/2019	11:18:18	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0050.AVI	13/12/2019 11:19	13/12/2019	11:19:04	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0051.AVI	13/12/2019 12:50	13/12/2019	12:50:10	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0052.AVI	13/12/2019 13:34	13/12/2019	13:34:54	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0053.AVI	13/12/2019 14:04	13/12/2019	14:04:22	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0054.AVI	13/12/2019 16:16	13/12/2019	16:16:02	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0055.AVI	14/12/2019 06:59	14/12/2019	06:59:36	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0056.AVI	14/12/2019 11:51	14/12/2019	11:51:34	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0057.AVI	15/12/2019 08:52	15/12/2019	08:52:42	Bird	Garrulax leucolophus	1
HW_CT_09	10/01/2020	IMG_0058.AVI	15/12/2019 10:02	15/12/2019	10:02:48	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0060.AVI	15/12/2019 20:54	15/12/2019	20:54:02	Mammal	Rattus sp.	1
HW_CT_09	10/01/2020	IMG_0061.AVI	15/12/2019 21:56	15/12/2019	21:56:40	Mammal	Rattus sp.	1
HW_CT_09	10/01/2020	IMG_0062.AVI	16/12/2019 01:28	16/12/2019	01:28:06	Mammal	Rattus sp.	1
HW_CT_09	10/01/2020	IMG_0063.AVI	16/12/2019 08:55	16/12/2019	08:55:32	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0064.AVI	16/12/2019 13:49	16/12/2019	13:49:18	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0065.AVI	16/12/2019 15:41	16/12/2019	15:41:40	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0066.AVI	16/12/2019 15:42	16/12/2019	15:42:38	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0067.AVI	16/12/2019 16:54	16/12/2019	16:54:06	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0068.AVI	16/12/2019 16:54	16/12/2019	16:54:38	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0069.AVI	16/12/2019 18:23	16/12/2019	18:23:32	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0070.AVI	17/12/2019 07:28	17/12/2019	07:28:22	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0071.AVI	17/12/2019 07:28	17/12/2019	07:28:44	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0072.AVI	17/12/2019 07:29	17/12/2019	07:29:10	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0073.AVI	17/12/2019 07:29	17/12/2019	07:29:36	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0074.AVI	17/12/2019 07:29	17/12/2019	07:29:58	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0075.AVI	17/12/2019 07:30	17/12/2019	07:30:18	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0076.AVI	17/12/2019 07:30	17/12/2019	07:30:42	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0077.AVI	17/12/2019 07:31	17/12/2019	07:31:06	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0078.AVI	17/12/2019 07:31	17/12/2019	07:31:28	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0079.AVI	17/12/2019 08:08	17/12/2019	08:08:20	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0081.AVI	17/12/2019 10:57	17/12/2019	10:57:38	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0082.AVI	17/12/2019 14:48	17/12/2019	14:48:00	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0083.AVI	18/12/2019 07:56	18/12/2019	07:56:10	Bird	Garrulax leucolophus	2
HW_CT_09	10/01/2020	IMG_0085.AVI	18/12/2019 17:02	18/12/2019	17:02:34	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0086.AVI	18/12/2019 17:20	18/12/2019	17:20:14	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0087.AVI	18/12/2019 22:51	18/12/2019	22:51:04	Mammal	Rattus sp.	1
HW_CT_09	10/01/2020	IMG_0089.AVI	19/12/2019 03:35	19/12/2019	03:35:46	Mammal	Rattus sp.	1
HW_CT_09	10/01/2020	IMG_0090.AVI	19/12/2019 08:16	19/12/2019	08:16:06	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0091.AVI	19/12/2019 08:43	19/12/2019	08:43:34	Mammal	Unidentified squirrel or shrew	2
HW_CT_09	10/01/2020	IMG_0093.AVI	19/12/2019 13:13	19/12/2019	13:13:00	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0094.AVI	19/12/2019 13:13	19/12/2019	13:13:20	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0095.AVI	19/12/2019 14:15	19/12/2019	14:15:14	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0096.AVI	19/12/2019 18:49	19/12/2019	18:49:00	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0098.AVI	20/12/2019 03:03	20/12/2019	03:03:24	Mammal	Rattus sp.	1
HW_CT_09	10/01/2020	IMG_0099.AVI	20/12/2019 07:20	20/12/2019	07:20:00	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0100.AVI	20/12/2019 07:29	20/12/2019	07:29:02	Bird	Garrulax leucolophus	1
HW_CT_09	10/01/2020	IMG_0101.AVI	20/12/2019 07:30	20/12/2019	07:30:26	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0102.AVI	20/12/2019 07:30	20/12/2019	07:30:48	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0103.AVI	20/12/2019 07:32	20/12/2019	07:32:20	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0104.AVI	20/12/2019 07:32	20/12/2019	07:32:44	Mammal	Callosciurus notatus	1

Appendix J1 Camera Trap Log and Data for Clementi Forest

Station	SamplingDate	FileName	FileModifyDate	Date	Time	Taxon	Scientific name	Quantity
HW_CT_09	10/01/2020	IMG_0105.AVI	20/12/2019 07:33	20/12/2019	07:33:54	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0107.AVI	20/12/2019 17:23	20/12/2019	17:23:58	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0108.AVI	20/12/2019 17:29	20/12/2019	17:29:48	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0109.AVI	20/12/2019 17:59	20/12/2019	17:59:46	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0110.AVI	20/12/2019 18:34	20/12/2019	18:34:36	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0111.AVI	20/12/2019 18:42	20/12/2019	18:42:40	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0112.AVI	20/12/2019 18:49	20/12/2019	18:49:06	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0113.AVI	20/12/2019 21:29	20/12/2019	21:29:16	Mammal	Rattus sp.	1
HW_CT_09	10/01/2020	IMG_0114.AVI	20/12/2019 22:46	20/12/2019	22:46:56	Mammal	Rattus sp.	1
HW_CT_09	10/01/2020	IMG_0115.AVI	20/12/2019 22:47	20/12/2019	22:47:28	Mammal	Rattus sp.	1
HW_CT_09	10/01/2020	IMG_0116.AVI	20/12/2019 22:50	20/12/2019	22:50:08	Mammal	Rattus sp.	1
HW_CT_09	10/01/2020	IMG_0117.AVI	20/12/2019 22:51	20/12/2019	22:51:58	Mammal	Rattus sp.	1
HW_CT_09	10/01/2020	IMG_0118.AVI	20/12/2019 23:19	20/12/2019	23:19:46	Mammal	Rattus sp.	1
HW_CT_09	10/01/2020	IMG_0119.AVI	20/12/2019 23:22	20/12/2019	23:22:02	Mammal	Rattus sp.	1
HW_CT_09	10/01/2020	IMG_0120.AVI	20/12/2019 23:29	20/12/2019	23:29:46	Mammal	Rattus sp.	1
HW_CT_09	10/01/2020	IMG_0121.AVI	20/12/2019 23:31	20/12/2019	23:31:48	Mammal	Rattus sp.	1
HW_CT_09	10/01/2020	IMG_0122.AVI	21/12/2019 00:01	21/12/2019	00:01:14	Mammal	Rattus sp.	1
HW_CT_09	10/01/2020	IMG_0125.AVI	21/12/2019 07:28	21/12/2019	07:28:40	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0126.AVI	21/12/2019 08:35	21/12/2019	08:35:56	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0127.AVI	21/12/2019 08:41	21/12/2019	08:41:56	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0128.AVI	21/12/2019 10:26	21/12/2019	10:26:02	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0131.AVI	21/12/2019 14:19	21/12/2019	14:19:18	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0132.AVI	21/12/2019 14:56	21/12/2019	14:56:38	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0133.AVI	21/12/2019 15:16	21/12/2019	15:16:30	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0134.AVI	21/12/2019 16:35	21/12/2019	16:35:26	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0135.AVI	21/12/2019 18:30	21/12/2019	18:30:44	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0136.AVI	22/12/2019 07:19	22/12/2019	07:19:04	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0137.AVI	22/12/2019 07:27	22/12/2019	07:27:20	Bird	Garrulax leucolophus	2
HW_CT_09	10/01/2020	IMG_0138.AVI	22/12/2019 07:28	22/12/2019	07:28:06	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0138.AVI	22/12/2019 07:28	22/12/2019	07:28:06	Bird	Garrulax leucolophus	1
HW_CT_09	10/01/2020	IMG_0139.AVI	22/12/2019 07:28	22/12/2019	07:28:32	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0140.AVI	22/12/2019 07:29	22/12/2019	07:29:28	Bird	Garrulax leucolophus	1
HW_CT_09	10/01/2020	IMG_0141.AVI	22/12/2019 07:32	22/12/2019	07:32:00	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0142.AVI	22/12/2019 07:59	22/12/2019	07:59:34	Mammal	Unidentified squirrel or shrew	1
HW_CT_09	10/01/2020	IMG_0143.AVI	22/12/2019 09:20	22/12/2019	09:20:06	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0144.AVI	22/12/2019 11:33	22/12/2019	11:33:34	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0145.AVI	22/12/2019 15:02	22/12/2019	15:02:44	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0146.AVI	22/12/2019 15:03	22/12/2019	15:03:08	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0147.AVI	22/12/2019 15:03	22/12/2019	15:03:30	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0148.AVI	22/12/2019 15:05	22/12/2019	15:05:04	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0149.AVI	22/12/2019 15:19	22/12/2019	15:19:38	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0150.AVI	22/12/2019 15:28	22/12/2019	15:28:48	Mammal	Unidentified squirrel or shrew	1
HW_CT_09	10/01/2020	IMG_0152.AVI	22/12/2019 16:33	22/12/2019	16:33:04	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0153.AVI	22/12/2019 19:07	22/12/2019	19:07:52	Mammal	Unidentified squirrel or shrew	1
HW_CT_09	10/01/2020	IMG_0156.AVI	23/12/2019 09:40	23/12/2019	09:40:38	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0157.AVI	23/12/2019 09:41	23/12/2019	09:41:02	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0158.AVI	23/12/2019 09:48	23/12/2019	09:48:22	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0159.AVI	23/12/2019 09:48	23/12/2019	09:48:50	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0161.AVI	23/12/2019 10:49	23/12/2019	10:49:52	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0162.AVI	23/12/2019 13:51	23/12/2019	13:51:16	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0163.AVI	23/12/2019 14:49	23/12/2019	14:49:16	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0164.AVI	23/12/2019 17:45	23/12/2019	17:45:16	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0165.AVI	23/12/2019 18:08	23/12/2019	18:08:50	Mammal	Unidentified squirrel or shrew	1
HW_CT_09	10/01/2020	IMG_0168.AVI	24/12/2019 08:18	24/12/2019	08:18:22	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0169.AVI	24/12/2019 08:43	24/12/2019	08:43:38	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0170.AVI	24/12/2019 08:44	24/12/2019	08:44:14	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0171.AVI	24/12/2019 08:57	24/12/2019	08:57:44	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0172.AVI	24/12/2019 09:24	24/12/2019	09:24:14	Mammal	Unidentified squirrel or shrew	1
HW_CT_09	10/01/2020	IMG_0173.AVI	24/12/2019 09:34	24/12/2019	09:34:26	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0174.AVI	24/12/2019 09:34	24/12/2019	09:34:52	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0175.AVI	24/12/2019 10:22	24/12/2019	10:22:20	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0176.AVI	24/12/2019 11:01	24/12/2019	11:01:20	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0177.AVI	24/12/2019 12:13	24/12/2019	12:13:28	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0178.AVI	24/12/2019 17:07	24/12/2019	17:07:04	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0180.AVI	25/12/2019 11:24	25/12/2019	11:24:12	Bird	Garrulax leucolophus	2
HW_CT_09	10/01/2020	IMG_0181.AVI	25/12/2019 11:30	25/12/2019	11:30:04	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0182.AVI	25/12/2019 11:46	25/12/2019	11:46:18	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0183.AVI	25/12/2019 11:48	25/12/2019	11:48:52	Bird	Garrulax leucolophus	1
HW_CT_09	10/01/2020	IMG_0184.AVI	25/12/2019 12:29	25/12/2019	12:29:22	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0185.AVI	25/12/2019 12:29	25/12/2019	12:29:48	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0186.AVI	25/12/2019 12:45	25/12/2019	12:45:30	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0187.AVI	25/12/2019 13:18	25/12/2019	13:18:52	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0188.AVI	25/12/2019 15:22	25/12/2019	15:22:02	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0189.AVI	25/12/2019 18:50	25/12/2019	18:50:26	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0191.AVI	26/12/2019 08:27	26/12/2019	08:27:28	Bird	Garrulax leucolophus	1
HW_CT_09	10/01/2020	IMG_0192.AVI	26/12/2019 08:27	26/12/2019	08:27:52	Bird	Garrulax leucolophus	1
HW_CT_09	10/01/2020	IMG_0193.AVI	26/12/2019 08:38	26/12/2019	08:38:02	Bird	Garrulax leucolophus	1
HW_CT_09	10/01/2020	IMG_0194.AVI	26/12/2019 09:42	26/12/2019	09:42:00	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0195.AVI	26/12/2019 11:08	26/12/2019	11:08:48	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0196.AVI	26/12/2019 11:37	26/12/2019	11:37:52	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0197.AVI	26/12/2019 11:40	26/12/2019	11:40:06	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0198.AVI	26/12/2019 11:44	26/12/2019	11:44:20	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0199.AVI	26/12/2019 11:45	26/12/2019	11:45:46	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0200.AVI	26/12/2019 12:50	26/12/2019	12:50:20	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0201.AVI	26/12/2019 13:09	26/12/2019	13:09:30	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0202.AVI	26/12/2019 13:46	26/12/2019	13:46:20	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0205.AVI	26/12/2019 15:31	26/12/2019	15:31:48	Mammal	Tupaia glis	1

Appendix J1 Camera Trap Log and Data for Clementi Forest

Station	SamplingDate	FileName	FileModifyDate	Date	Time	Taxon	Scientific name	Quantity
HW_CT_09	10/01/2020	IMG_0206.AVI	26/12/2019 15:37	26/12/2019	15:37:42	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0207.AVI	27/12/2019 10:57	27/12/2019	10:57:08	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0208.AVI	27/12/2019 16:51	27/12/2019	16:51:48	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0209.AVI	27/12/2019 17:32	27/12/2019	17:32:06	Bird	Garrulax leucolophus	1
HW_CT_09	10/01/2020	IMG_0210.AVI	27/12/2019 17:36	27/12/2019	17:36:12	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0211.AVI	27/12/2019 17:44	27/12/2019	17:44:16	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0212.AVI	27/12/2019 17:45	27/12/2019	17:45:00	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0213.AVI	27/12/2019 17:47	27/12/2019	17:47:42	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0214.AVI	27/12/2019 17:58	27/12/2019	17:58:24	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0215.AVI	27/12/2019 17:58	27/12/2019	17:58:46	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0216.AVI	28/12/2019 11:55	28/12/2019	11:55:52	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0217.AVI	28/12/2019 16:02	28/12/2019	16:02:52	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0218.AVI	28/12/2019 17:15	28/12/2019	17:15:46	Mammal	Tupaia glis	2
HW_CT_09	10/01/2020	IMG_0219.AVI	28/12/2019 17:16	28/12/2019	17:16:08	Mammal	Tupaia glis	2
HW_CT_09	10/01/2020	IMG_0220.AVI	28/12/2019 18:19	28/12/2019	18:19:14	Bird	Garrulax leucolophus	1
HW_CT_09	10/01/2020	IMG_0221.AVI	28/12/2019 19:15	28/12/2019	19:15:44	Mammal	Unidentified squirrel or shrew	1
HW_CT_09	10/01/2020	IMG_0222.AVI	29/12/2019 06:59	29/12/2019	06:59:16	Mammal	Unidentified squirrel or shrew	1
HW_CT_09	10/01/2020	IMG_0223.AVI	29/12/2019 07:06	29/12/2019	07:06:34	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0224.AVI	29/12/2019 07:34	29/12/2019	07:34:30	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0226.AVI	29/12/2019 09:59	29/12/2019	09:59:34	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0228.AVI	29/12/2019 10:38	29/12/2019	10:38:34	Bird	Gallus gallus	1
HW_CT_09	10/01/2020	IMG_0229.AVI	29/12/2019 10:41	29/12/2019	10:41:06	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0230.AVI	29/12/2019 10:46	29/12/2019	10:46:32	Bird	Garrulax leucolophus	1
HW_CT_09	10/01/2020	IMG_0231.AVI	29/12/2019 10:55	29/12/2019	10:55:36	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0232.AVI	29/12/2019 10:56	29/12/2019	10:56:08	Bird	Garrulax leucolophus	1
HW_CT_09	10/01/2020	IMG_0233.AVI	29/12/2019 12:15	29/12/2019	12:15:02	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0234.AVI	29/12/2019 12:28	29/12/2019	12:28:36	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0235.AVI	29/12/2019 12:32	29/12/2019	12:32:50	Mammal	Unidentified squirrel or shrew	1
HW_CT_09	10/01/2020	IMG_0236.AVI	29/12/2019 12:39	29/12/2019	12:39:24	Bird	Garrulax leucolophus	1
HW_CT_09	10/01/2020	IMG_0237.AVI	29/12/2019 12:53	29/12/2019	12:53:32	Bird	Gallus gallus	5
HW_CT_09	10/01/2020	IMG_0238.AVI	29/12/2019 12:54	29/12/2019	12:54:46	Bird	Gallus gallus	7
HW_CT_09	10/01/2020	IMG_0239.AVI	29/12/2019 12:55	29/12/2019	12:55:08	Bird	Gallus gallus	7
HW_CT_09	10/01/2020	IMG_0240.AVI	29/12/2019 12:55	29/12/2019	12:55:28	Bird	Gallus gallus	8
HW_CT_09	10/01/2020	IMG_0241.AVI	29/12/2019 12:55	29/12/2019	12:55:52	Bird	Gallus gallus	7
HW_CT_09	10/01/2020	IMG_0242.AVI	29/12/2019 12:56	29/12/2019	12:56:22	Bird	Gallus gallus	8
HW_CT_09	10/01/2020	IMG_0243.AVI	29/12/2019 12:56	29/12/2019	12:56:56	Bird	Gallus gallus	8
HW_CT_09	10/01/2020	IMG_0244.AVI	29/12/2019 12:57	29/12/2019	12:57:26	Bird	Gallus gallus	9
HW_CT_09	10/01/2020	IMG_0245.AVI	29/12/2019 12:58	29/12/2019	12:58:08	Bird	Gallus gallus	8
HW_CT_09	10/01/2020	IMG_0246.AVI	29/12/2019 12:59	29/12/2019	12:59:10	Bird	Gallus gallus	8
HW_CT_09	10/01/2020	IMG_0247.AVI	29/12/2019 12:59	29/12/2019	12:59:50	Bird	Gallus gallus	8
HW_CT_09	10/01/2020	IMG_0248.AVI	29/12/2019 13:00	29/12/2019	13:00:12	Bird	Gallus gallus	7
HW_CT_09	10/01/2020	IMG_0249.AVI	29/12/2019 13:01	29/12/2019	13:01:04	Bird	Gallus gallus	7
HW_CT_09	10/01/2020	IMG_0250.AVI	29/12/2019 13:02	29/12/2019	13:02:06	Bird	Gallus gallus	5
HW_CT_09	10/01/2020	IMG_0251.AVI	29/12/2019 13:02	29/12/2019	13:02:52	Bird	Gallus gallus	5
HW_CT_09	10/01/2020	IMG_0252.AVI	29/12/2019 13:03	29/12/2019	13:03:18	Bird	Gallus gallus	2
HW_CT_09	10/01/2020	IMG_0253.AVI	29/12/2019 17:31	29/12/2019	17:31:26	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0254.AVI	29/12/2019 17:33	29/12/2019	17:33:22	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0255.AVI	29/12/2019 17:43	29/12/2019	17:43:42	Mammal	Unidentified squirrel or shrew	1
HW_CT_09	10/01/2020	IMG_0256.AVI	29/12/2019 18:18	29/12/2019	18:18:32	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0257.AVI	29/12/2019 18:24	29/12/2019	18:24:52	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0258.AVI	29/12/2019 18:26	29/12/2019	18:26:34	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0259.AVI	29/12/2019 18:48	29/12/2019	18:48:34	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0261.AVI	30/12/2019 07:03	30/12/2019	07:03:46	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0262.AVI	30/12/2019 08:29	30/12/2019	08:29:32	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0263.AVI	30/12/2019 09:01	30/12/2019	09:01:40	Mammal	Unidentified squirrel or shrew	1
HW_CT_09	10/01/2020	IMG_0264.AVI	30/12/2019 12:07	30/12/2019	12:07:08	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0265.AVI	30/12/2019 13:04	30/12/2019	13:04:36	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0266.AVI	30/12/2019 14:54	30/12/2019	14:54:36	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0267.AVI	30/12/2019 15:00	30/12/2019	15:00:16	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0269.AVI	31/12/2019 07:59	31/12/2019	07:59:52	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0270.AVI	31/12/2019 11:32	31/12/2019	11:32:00	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0272.AVI	31/12/2019 17:29	31/12/2019	17:29:50	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0273.AVI	31/12/2019 17:39	31/12/2019	17:39:52	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0274.AVI	31/12/2019 19:01	31/12/2019	19:01:38	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0275.AVI	01/01/2020 08:36	01/01/2020	08:36:44	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0276.AVI	01/01/2020 12:30	01/01/2020	12:30:50	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0277.AVI	01/01/2020 13:33	01/01/2020	13:33:12	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0278.AVI	01/01/2020 13:33	01/01/2020	13:33:46	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0279.AVI	01/01/2020 14:03	01/01/2020	14:03:46	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0280.AVI	01/01/2020 14:04	01/01/2020	14:04:14	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0281.AVI	01/01/2020 14:08	01/01/2020	14:08:32	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0283.AVI	01/01/2020 16:28	01/01/2020	16:28:08	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0284.AVI	01/01/2020 16:46	01/01/2020	16:46:28	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0285.AVI	01/01/2020 16:57	01/01/2020	16:57:38	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0286.AVI	01/01/2020 17:28	01/01/2020	17:28:08	Mammal	Unidentified squirrel or shrew	1
HW_CT_09	10/01/2020	IMG_0287.AVI	01/01/2020 17:32	01/01/2020	17:32:26	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0288.AVI	01/01/2020 17:34	01/01/2020	17:34:24	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0288.AVI	01/01/2020 17:34	01/01/2020	17:34:24	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0289.AVI	01/01/2020 17:35	01/01/2020	17:35:00	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0290.AVI	02/01/2020 02:00	02/01/2020	02:00:40	Mammal	Rattus sp.	1
HW_CT_09	10/01/2020	IMG_0292.AVI	02/01/2020 09:55	02/01/2020	09:55:26	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0294.AVI	02/01/2020 17:24	02/01/2020	17:24:00	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0295.AVI	02/01/2020 17:27	02/01/2020	17:27:36	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0296.AVI	02/01/2020 17:42	02/01/2020	17:42:28	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0297.AVI	02/01/2020 18:22	02/01/2020	18:22:26	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0298.AVI	03/01/2020 08:17	03/01/2020	08:17:04	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0299.AVI	03/01/2020 09:01	03/01/2020	09:01:14	Mammal	Callosciurus notatus	1

Appendix J1 Camera Trap Log and Data for Clementi Forest

Station	SamplingDate	FileName	FileModifyDate	Date	Time	Taxon	Scientific name	Quantity
HW_CT_09	10/01/2020	IMG_0300.AVI	03/01/2020 10:02	03/01/2020	10:02:48	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0301.AVI	03/01/2020 10:06	03/01/2020	10:06:22	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0302.AVI	03/01/2020 18:09	03/01/2020	18:09:12	Mammal	Tupaia glis	2
HW_CT_09	10/01/2020	IMG_0303.AVI	04/01/2020 07:11	04/01/2020	07:11:36	Mammal	Unidentified squirrel or shrew	1
HW_CT_09	10/01/2020	IMG_0304.AVI	04/01/2020 07:22	04/01/2020	07:22:34	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0305.AVI	04/01/2020 07:24	04/01/2020	07:24:46	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0306.AVI	04/01/2020 09:25	04/01/2020	09:25:12	Bird	Garrulax leucolophus	1
HW_CT_09	10/01/2020	IMG_0307.AVI	04/01/2020 09:55	04/01/2020	09:55:00	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0308.AVI	04/01/2020 09:56	04/01/2020	09:56:30	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0309.AVI	04/01/2020 10:40	04/01/2020	10:40:46	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0310.AVI	04/01/2020 11:17	04/01/2020	11:17:56	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0311.AVI	04/01/2020 11:18	04/01/2020	11:18:34	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0312.AVI	04/01/2020 11:39	04/01/2020	11:39:38	Mammal	Callosciurus notatus	2
HW_CT_09	10/01/2020	IMG_0313.AVI	04/01/2020 11:40	04/01/2020	11:40:08	Mammal	Callosciurus notatus	2
HW_CT_09	10/01/2020	IMG_0314.AVI	04/01/2020 11:40	04/01/2020	11:40:34	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0315.AVI	04/01/2020 11:43	04/01/2020	11:43:16	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0316.AVI	04/01/2020 11:48	04/01/2020	11:48:34	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0318.AVI	04/01/2020 12:18	04/01/2020	12:18:44	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0319.AVI	04/01/2020 12:30	04/01/2020	12:30:44	Mammal	Callosciurus notatus	2
HW_CT_09	10/01/2020	IMG_0320.AVI	04/01/2020 12:34	04/01/2020	12:34:02	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0321.AVI	04/01/2020 13:04	04/01/2020	13:04:06	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0322.AVI	04/01/2020 13:09	04/01/2020	13:09:18	Mammal	Callosciurus notatus	2
HW_CT_09	10/01/2020	IMG_0323.AVI	04/01/2020 17:42	04/01/2020	17:42:04	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0324.AVI	05/01/2020 02:32	05/01/2020	02:32:00	Mammal	Unidentified mammal	1
HW_CT_09	10/01/2020	IMG_0326.AVI	05/01/2020 07:27	05/01/2020	07:27:30	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0327.AVI	05/01/2020 08:43	05/01/2020	08:43:28	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0328.AVI	05/01/2020 08:56	05/01/2020	08:56:16	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0329.AVI	05/01/2020 08:57	05/01/2020	08:57:20	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0332.AVI	05/01/2020 15:35	05/01/2020	15:35:32	Mammal	Tupaia glis	2
HW_CT_09	10/01/2020	IMG_0333.AVI	05/01/2020 15:49	05/01/2020	15:49:56	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0334.AVI	05/01/2020 16:21	05/01/2020	16:21:20	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0335.AVI	05/01/2020 17:02	05/01/2020	17:02:12	Mammal	Tupaia glis	1
HW_CT_09	10/01/2020	IMG_0336.AVI	05/01/2020 17:02	05/01/2020	17:02:58	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0337.AVI	05/01/2020 17:05	05/01/2020	17:05:12	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0338.AVI	05/01/2020 17:40	05/01/2020	17:40:02	Mammal	Callosciurus notatus	1
HW_CT_09	10/01/2020	IMG_0340.AVI	05/01/2020 19:18	05/01/2020	19:18:48	Mammal	Callosciurus notatus	2
HW_CT_09	10/01/2020	IMG_0341.AVI	06/01/2020 03:18	06/01/2020	03:18:34	Mammal	Rattus sp.	1
HW_CT_09	10/01/2020	IMG_0342.AVI	06/01/2020 08:22	06/01/2020	08:22:34	Mammal	Tupaia glis	1
HW_CT_09	13/02/2020	IMG_0005.AVI	10/01/2020 11:30	10/01/2020	11:30:24	Mammal	Macaca fascicularis	4
HW_CT_09	13/02/2020	IMG_0006.AVI	10/01/2020 11:31	10/01/2020	11:31:20	Mammal	Macaca fascicularis	6
HW_CT_09	13/02/2020	IMG_0007.AVI	10/01/2020 11:32	10/01/2020	11:32:16	Mammal	Macaca fascicularis	6
HW_CT_09	13/02/2020	IMG_0008.AVI	10/01/2020 11:32	10/01/2020	11:32:42	Mammal	Macaca fascicularis	7
HW_CT_09	13/02/2020	IMG_0009.AVI	10/01/2020 11:33	10/01/2020	11:33:04	Mammal	Macaca fascicularis	5
HW_CT_09	13/02/2020	IMG_0010.AVI	10/01/2020 11:33	10/01/2020	11:33:26	Mammal	Macaca fascicularis	5
HW_CT_09	13/02/2020	IMG_0011.AVI	10/01/2020 11:34	10/01/2020	11:34:02	Mammal	Macaca fascicularis	4
HW_CT_09	13/02/2020	IMG_0012.AVI	10/01/2020 11:35	10/01/2020	11:35:14	Mammal	Macaca fascicularis	5
HW_CT_09	13/02/2020	IMG_0013.AVI	10/01/2020 11:35	10/01/2020	11:35:36	Mammal	Macaca fascicularis	5
HW_CT_09	13/02/2020	IMG_0014.AVI	10/01/2020 11:36	10/01/2020	11:36:00	Mammal	Macaca fascicularis	6
HW_CT_09	13/02/2020	IMG_0015.AVI	10/01/2020 11:36	10/01/2020	11:36:24	Mammal	Macaca fascicularis	8
HW_CT_09	13/02/2020	IMG_0016.AVI	10/01/2020 11:36	10/01/2020	11:36:46	Mammal	Macaca fascicularis	12
HW_CT_09	13/02/2020	IMG_0017.AVI	10/01/2020 11:37	10/01/2020	11:37:10	Mammal	Macaca fascicularis	10
HW_CT_09	13/02/2020	IMG_0018.AVI	10/01/2020 11:37	10/01/2020	11:37:44	Mammal	Macaca fascicularis	8
HW_CT_09	13/02/2020	IMG_0019.AVI	10/01/2020 11:38	10/01/2020	11:38:14	Mammal	Macaca fascicularis	5
HW_CT_09	13/02/2020	IMG_0020.AVI	10/01/2020 11:38	10/01/2020	11:38:58	Mammal	Macaca fascicularis	6
HW_CT_09	13/02/2020	IMG_0021.AVI	10/01/2020 11:39	10/01/2020	11:39:36	Mammal	Macaca fascicularis	7
HW_CT_09	13/02/2020	IMG_0022.AVI	10/01/2020 11:40	10/01/2020	11:40:08	Mammal	Macaca fascicularis	7
HW_CT_09	13/02/2020	IMG_0023.AVI	10/01/2020 11:40	10/01/2020	11:40:28	Mammal	Macaca fascicularis	7
HW_CT_09	13/02/2020	IMG_0024.AVI	10/01/2020 11:40	10/01/2020	11:40:52	Mammal	Macaca fascicularis	12
HW_CT_09	13/02/2020	IMG_0025.AVI	10/01/2020 11:41	10/01/2020	11:41:14	Mammal	Macaca fascicularis	10
HW_CT_09	13/02/2020	IMG_0026.AVI	10/01/2020 11:41	10/01/2020	11:41:34	Mammal	Macaca fascicularis	9
HW_CT_09	13/02/2020	IMG_0027.AVI	10/01/2020 11:42	10/01/2020	11:42:00	Mammal	Macaca fascicularis	11
HW_CT_09	13/02/2020	IMG_0028.AVI	10/01/2020 11:42	10/01/2020	11:42:24	Mammal	Macaca fascicularis	12
HW_CT_09	13/02/2020	IMG_0029.AVI	10/01/2020 11:42	10/01/2020	11:42:44	Mammal	Macaca fascicularis	10
HW_CT_09	13/02/2020	IMG_0030.AVI	10/01/2020 11:43	10/01/2020	11:43:06	Mammal	Macaca fascicularis	12
HW_CT_09	13/02/2020	IMG_0031.AVI	10/01/2020 11:43	10/01/2020	11:43:28	Mammal	Macaca fascicularis	8
HW_CT_09	13/02/2020	IMG_0032.AVI	10/01/2020 11:43	10/01/2020	11:43:58	Mammal	Macaca fascicularis	8
HW_CT_09	13/02/2020	IMG_0033.AVI	10/01/2020 11:44	10/01/2020	11:44:20	Mammal	Macaca fascicularis	8
HW_CT_09	13/02/2020	IMG_0034.AVI	10/01/2020 11:44	10/01/2020	11:44:42	Mammal	Macaca fascicularis	7
HW_CT_09	13/02/2020	IMG_0035.AVI	10/01/2020 11:45	10/01/2020	11:45:12	Mammal	Macaca fascicularis	4
HW_CT_09	13/02/2020	IMG_0036.AVI	10/01/2020 11:45	10/01/2020	11:45:38	Mammal	Macaca fascicularis	2
HW_CT_09	13/02/2020	IMG_0037.AVI	10/01/2020 11:46	10/01/2020	11:46:20	Mammal	Macaca fascicularis	1
HW_CT_09	13/02/2020	IMG_0038.AVI	10/01/2020 11:46	10/01/2020	11:46:48	Mammal	Macaca fascicularis	1
HW_CT_09	13/02/2020	IMG_0039.AVI	10/01/2020 17:46	10/01/2020	17:46:06	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0039.AVI	10/01/2020 17:46	10/01/2020	17:46:06	Bird	Garrulax leucolophus	1
HW_CT_09	13/02/2020	IMG_0040.AVI	10/01/2020 17:50	10/01/2020	17:50:34	Bird	Garrulax leucolophus	2
HW_CT_09	13/02/2020	IMG_0040.AVI	10/01/2020 17:50	10/01/2020	17:50:34	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0041.AVI	11/01/2020 11:39	11/01/2020	11:39:28	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0042.AVI	11/01/2020 12:31	11/01/2020	12:31:36	Bird	Garrulax leucolophus	1
HW_CT_09	13/02/2020	IMG_0043.AVI	11/01/2020 14:37	11/01/2020	14:37:34	Mammal	Unidentified squirrel or shrew	1
HW_CT_09	13/02/2020	IMG_0044.AVI	11/01/2020 15:59	11/01/2020	15:59:30	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0045.AVI	11/01/2020 17:08	11/01/2020	17:08:20	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0046.AVI	11/01/2020 17:16	11/01/2020	17:16:08	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0047.AVI	11/01/2020 18:19	11/01/2020	18:19:54	Mammal	Tupaia glis	1
HW_CT_09	13/02/2020	IMG_0048.AVI	12/01/2020 12:07	12/01/2020	12:07:00	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0049.AVI	12/01/2020 12:35	12/01/2020	12:35:38	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0050.AVI	12/01/2020 13:07	12/01/2020	13:07:02	Mammal	Tupaia glis	1
HW_CT_09	13/02/2020	IMG_0051.AVI	12/01/2020 13:45	12/01/2020	13:45:30	Mammal	Callosciurus notatus	1

Appendix J1 Camera Trap Log and Data for Clementi Forest

Station	SamplingDate	FileName	FileModifyDate	Date	Time	Taxon	Scientific name	Quantity
HW_CT_09	13/02/2020	IMG_0052.AVI	12/01/2020 14:53	12/01/2020	14:53:50	Bird	Garrulax leucolophus	1
HW_CT_09	13/02/2020	IMG_0053.AVI	12/01/2020 15:30	12/01/2020	15:30:34	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0054.AVI	12/01/2020 18:02	12/01/2020	18:02:18	Mammal	Tupaia glis	1
HW_CT_09	13/02/2020	IMG_0055.AVI	13/01/2020 08:57	13/01/2020	08:57:36	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0056.AVI	13/01/2020 12:05	13/01/2020	12:05:20	Mammal	Unidentified squirrel or shrew	1
HW_CT_09	13/02/2020	IMG_0057.AVI	14/01/2020 08:04	14/01/2020	08:04:40	Mammal	Unidentified squirrel or shrew	1
HW_CT_09	13/02/2020	IMG_0058.AVI	14/01/2020 08:17	14/01/2020	08:17:22	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0058.AVI	14/01/2020 08:17	14/01/2020	08:17:22	Bird	Garrulax leucolophus	1
HW_CT_09	13/02/2020	IMG_0059.AVI	14/01/2020 08:21	14/01/2020	08:21:58	Bird	Garrulax leucolophus	1
HW_CT_09	13/02/2020	IMG_0060.AVI	14/01/2020 08:23	14/01/2020	08:23:12	Bird	Unidentified bird	1
HW_CT_09	13/02/2020	IMG_0060.AVI	14/01/2020 08:23	14/01/2020	08:23:12	NA	Unidentified sp.	1
HW_CT_09	13/02/2020	IMG_0061.AVI	14/01/2020 08:27	14/01/2020	08:27:28	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0062.AVI	14/01/2020 14:28	14/01/2020	14:28:02	Mammal	Unidentified squirrel or shrew	1
HW_CT_09	13/02/2020	IMG_0064.AVI	14/01/2020 15:09	14/01/2020	15:09:38	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0065.AVI	14/01/2020 15:18	14/01/2020	15:18:10	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0065.AVI	14/01/2020 15:18	14/01/2020	15:18:10	Bird	Garrulax leucolophus	1
HW_CT_09	13/02/2020	IMG_0066.AVI	14/01/2020 15:18	14/01/2020	15:18:42	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0066.AVI	14/01/2020 15:18	14/01/2020	15:18:42	Bird	Garrulax leucolophus	1
HW_CT_09	13/02/2020	IMG_0067.AVI	14/01/2020 15:19	14/01/2020	15:19:12	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0067.AVI	14/01/2020 15:19	14/01/2020	15:19:12	Bird	Garrulax leucolophus	2
HW_CT_09	13/02/2020	IMG_0068.AVI	14/01/2020 15:23	14/01/2020	15:23:08	Mammal	Callosciurus notatus	2
HW_CT_09	13/02/2020	IMG_0068.AVI	14/01/2020 15:23	14/01/2020	15:23:08	Bird	Garrulax leucolophus	1
HW_CT_09	13/02/2020	IMG_0069.AVI	14/01/2020 15:24	14/01/2020	15:24:18	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0070.AVI	14/01/2020 15:24	14/01/2020	15:24:52	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0071.AVI	14/01/2020 15:26	14/01/2020	15:26:18	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0072.AVI	14/01/2020 15:27	14/01/2020	15:27:00	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0073.AVI	14/01/2020 15:27	14/01/2020	15:27:24	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0073.AVI	14/01/2020 15:27	14/01/2020	15:27:24	Bird	Garrulax leucolophus	2
HW_CT_09	13/02/2020	IMG_0074.AVI	14/01/2020 15:35	14/01/2020	15:35:00	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0075.AVI	14/01/2020 16:06	14/01/2020	16:06:42	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0076.AVI	14/01/2020 16:10	14/01/2020	16:10:00	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0077.AVI	14/01/2020 16:38	14/01/2020	16:38:04	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0078.AVI	14/01/2020 22:36	14/01/2020	22:36:50	Mammal	Rattus sp.	1
HW_CT_09	13/02/2020	IMG_0081.AVI	15/01/2020 10:04	15/01/2020	10:04:42	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0083.AVI	15/01/2020 10:53	15/01/2020	10:53:58	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0084.AVI	15/01/2020 11:02	15/01/2020	11:02:38	Mammal	Unidentified squirrel or shrew	1
HW_CT_09	13/02/2020	IMG_0084.AVI	15/01/2020 11:02	15/01/2020	11:02:38	Bird	Garrulax leucolophus	1
HW_CT_09	13/02/2020	IMG_0084.AVI	15/01/2020 11:02	15/01/2020	11:02:38	Bird	Unidentified bird	2
HW_CT_09	13/02/2020	IMG_0085.AVI	15/01/2020 11:11	15/01/2020	11:11:08	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0086.AVI	15/01/2020 12:37	15/01/2020	12:37:06	Bird	Garrulax leucolophus	1
HW_CT_09	13/02/2020	IMG_0087.AVI	15/01/2020 15:01	15/01/2020	15:01:52	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0088.AVI	16/01/2020 07:18	16/01/2020	07:18:40	Mammal	Unidentified squirrel or shrew	1
HW_CT_09	13/02/2020	IMG_0089.AVI	16/01/2020 08:14	16/01/2020	08:14:10	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0090.AVI	16/01/2020 09:31	16/01/2020	09:31:14	Bird	Garrulax leucolophus	1
HW_CT_09	13/02/2020	IMG_0091.AVI	16/01/2020 09:32	16/01/2020	09:32:12	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0091.AVI	16/01/2020 09:32	16/01/2020	09:32:12	Bird	Garrulax leucolophus	1
HW_CT_09	13/02/2020	IMG_0092.AVI	16/01/2020 10:53	16/01/2020	10:53:04	Mammal	Callosciurus notatus	2
HW_CT_09	13/02/2020	IMG_0093.AVI	16/01/2020 10:53	16/01/2020	10:53:38	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0094.AVI	17/01/2020 13:32	17/01/2020	13:32:00	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0095.AVI	17/01/2020 13:32	17/01/2020	13:32:26	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0096.AVI	17/01/2020 18:33	17/01/2020	18:33:02	Mammal	Tupaia glis	2
HW_CT_09	13/02/2020	IMG_0097.AVI	17/01/2020 18:43	17/01/2020	18:43:14	Bird	Garrulax leucolophus	2
HW_CT_09	13/02/2020	IMG_0098.AVI	18/01/2020 17:16	18/01/2020	17:16:32	Mammal	Tupaia glis	1
HW_CT_09	13/02/2020	IMG_0099.AVI	18/01/2020 19:11	18/01/2020	19:11:40	Mammal	Tupaia glis	1
HW_CT_09	13/02/2020	IMG_0100.AVI	18/01/2020 19:14	18/01/2020	19:14:08	Mammal	Tupaia glis	1
HW_CT_09	13/02/2020	IMG_0101.AVI	19/01/2020 00:46	19/01/2020	00:46:22	Mammal	Rattus sp.	1
HW_CT_09	13/02/2020	IMG_0102.AVI	19/01/2020 08:56	19/01/2020	08:56:44	Mammal	Tupaia glis	1
HW_CT_09	13/02/2020	IMG_0103.AVI	19/01/2020 10:14	19/01/2020	10:14:20	Bird	Gallus gallus	2
HW_CT_09	13/02/2020	IMG_0104.AVI	19/01/2020 19:02	19/01/2020	19:02:56	Bird	Garrulax leucolophus	1
HW_CT_09	13/02/2020	IMG_0105.AVI	20/01/2020 09:00	20/01/2020	09:00:18	Mammal	Tupaia glis	1
HW_CT_09	13/02/2020	IMG_0106.AVI	20/01/2020 10:08	20/01/2020	10:08:02	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0107.AVI	20/01/2020 10:40	20/01/2020	10:40:02	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0108.AVI	20/01/2020 12:07	20/01/2020	12:07:04	Bird	Garrulax leucolophus	1
HW_CT_09	13/02/2020	IMG_0109.AVI	20/01/2020 16:03	20/01/2020	16:03:12	Mammal	Callosciurus notatus	2
HW_CT_09	13/02/2020	IMG_0110.AVI	20/01/2020 16:54	20/01/2020	16:54:34	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0111.AVI	21/01/2020 11:07	21/01/2020	11:07:12	Mammal	Tupaia glis	1
HW_CT_09	13/02/2020	IMG_0113.AVI	23/01/2020 09:02	23/01/2020	09:02:06	Mammal	Callosciurus notatus	2
HW_CT_09	13/02/2020	IMG_0114.AVI	24/01/2020 07:29	24/01/2020	07:29:46	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0115.AVI	24/01/2020 07:39	24/01/2020	07:39:58	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0116.AVI	24/01/2020 07:46	24/01/2020	07:46:44	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0117.AVI	24/01/2020 18:05	24/01/2020	18:05:16	Mammal	Unidentified squirrel or shrew	1
HW_CT_09	13/02/2020	IMG_0118.AVI	25/01/2020 07:33	25/01/2020	07:33:22	Mammal	Tupaia glis	1
HW_CT_09	13/02/2020	IMG_0119.AVI	25/01/2020 12:19	25/01/2020	12:19:10	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0120.AVI	25/01/2020 12:32	25/01/2020	12:32:26	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0121.AVI	25/01/2020 13:03	25/01/2020	13:03:08	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0123.AVI	25/01/2020 13:56	25/01/2020	13:56:04	Mammal	Unidentified squirrel or shrew	1
HW_CT_09	13/02/2020	IMG_0124.AVI	25/01/2020 13:59	25/01/2020	13:59:24	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0125.AVI	25/01/2020 14:44	25/01/2020	14:44:04	Mammal	Unidentified squirrel or shrew	1
HW_CT_09	13/02/2020	IMG_0126.AVI	25/01/2020 14:45	25/01/2020	14:45:46	Mammal	Callosciurus notatus	2
HW_CT_09	13/02/2020	IMG_0127.AVI	26/01/2020 07:39	26/01/2020	07:39:50	Mammal	Tupaia glis	1
HW_CT_09	13/02/2020	IMG_0128.AVI	26/01/2020 08:28	26/01/2020	08:28:22	Mammal	Tupaia glis	1
HW_CT_09	13/02/2020	IMG_0129.AVI	26/01/2020 15:26	26/01/2020	15:26:30	Mammal	Unidentified squirrel or shrew	1
HW_CT_09	13/02/2020	IMG_0130.AVI	26/01/2020 15:27	26/01/2020	15:27:04	Mammal	Callosciurus notatus	3
HW_CT_09	13/02/2020	IMG_0131.AVI	27/01/2020 07:46	27/01/2020	07:46:38	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0132.AVI	27/01/2020 07:47	27/01/2020	07:47:14	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0133.AVI	27/01/2020 10:29	27/01/2020	10:29:34	Mammal	Callosciurus notatus	2
HW_CT_09	13/02/2020	IMG_0134.AVI	27/01/2020 10:29	27/01/2020	10:29:56	Mammal	Callosciurus notatus	2

Appendix J1 Camera Trap Log and Data for Clementi Forest

Station	SamplingDate	FileName	FileModifyDate	Date	Time	Taxon	Scientific name	Quantity
HW_CT_09	13/02/2020	IMG_0135.AVI	27/01/2020 12:19	27/01/2020	12:19:30	Bird	Gallus gallus	1
HW_CT_09	13/02/2020	IMG_0136.AVI	27/01/2020 13:31	27/01/2020	13:31:30	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0138.AVI	27/01/2020 15:35	27/01/2020	15:35:12	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0139.AVI	28/01/2020 07:44	28/01/2020	07:44:10	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0140.AVI	28/01/2020 18:16	28/01/2020	18:16:26	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0141.AVI	28/01/2020 18:20	28/01/2020	18:20:42	Mammal	Unidentified squirrel or shrew	1
HW_CT_09	13/02/2020	IMG_0143.AVI	30/01/2020 07:44	30/01/2020	07:44:52	Mammal	Tupaia glis	1
HW_CT_09	13/02/2020	IMG_0144.AVI	30/01/2020 15:21	30/01/2020	15:21:10	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0145.AVI	30/01/2020 16:50	30/01/2020	16:50:06	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0146.AVI	30/01/2020 16:58	30/01/2020	16:58:56	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0147.AVI	30/01/2020 17:03	30/01/2020	17:03:54	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0148.AVI	30/01/2020 17:25	30/01/2020	17:25:56	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0150.AVI	30/01/2020 18:55	30/01/2020	18:55:56	Mammal	Macaca fascicularis	1
HW_CT_09	13/02/2020	IMG_0151.AVI	30/01/2020 19:15	30/01/2020	19:15:54	Mammal	Tupaia glis	1
HW_CT_09	13/02/2020	IMG_0152.AVI	30/01/2020 19:24	30/01/2020	19:24:40	Mammal	Unidentified squirrel or shrew	1
HW_CT_09	13/02/2020	IMG_0153.AVI	31/01/2020 12:07	31/01/2020	12:07:42	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0154.AVI	31/01/2020 16:52	31/01/2020	16:52:38	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0155.AVI	31/01/2020 17:47	31/01/2020	17:47:50	Mammal	Callosciurus notatus	2
HW_CT_09	13/02/2020	IMG_0156.AVI	31/01/2020 18:16	31/01/2020	18:16:58	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0157.AVI	31/01/2020 18:52	31/01/2020	18:52:26	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0158.AVI	31/01/2020 19:14	31/01/2020	19:14:04	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0159.AVI	01/02/2020 07:12	01/02/2020	07:12:22	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0160.AVI	01/02/2020 07:12	01/02/2020	07:12:52	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0161.AVI	01/02/2020 07:36	01/02/2020	07:36:48	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0162.AVI	01/02/2020 12:48	01/02/2020	12:48:38	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0163.AVI	01/02/2020 17:57	01/02/2020	17:57:52	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0164.AVI	01/02/2020 18:17	01/02/2020	18:17:18	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0164.AVI	01/02/2020 18:17	01/02/2020	18:17:18	Mammal	Unidentified squirrel or shrew	2
HW_CT_09	13/02/2020	IMG_0164.AVI	01/02/2020 18:17	01/02/2020	18:17:18	Bird	Garrulax leucolophus	3
HW_CT_09	13/02/2020	IMG_0165.AVI	02/02/2020 09:21	02/02/2020	09:21:50	Mammal	Macaca fascicularis	4
HW_CT_09	13/02/2020	IMG_0166.AVI	02/02/2020 09:22	02/02/2020	09:22:10	Mammal	Macaca fascicularis	4
HW_CT_09	13/02/2020	IMG_0167.AVI	02/02/2020 09:23	02/02/2020	09:23:16	Mammal	Macaca fascicularis	5
HW_CT_09	13/02/2020	IMG_0168.AVI	02/02/2020 09:24	02/02/2020	09:24:42	Mammal	Macaca fascicularis	5
HW_CT_09	13/02/2020	IMG_0169.AVI	02/02/2020 09:25	02/02/2020	09:25:50	Mammal	Macaca fascicularis	4
HW_CT_09	13/02/2020	IMG_0170.AVI	02/02/2020 09:26	02/02/2020	09:26:36	Mammal	Macaca fascicularis	4
HW_CT_09	13/02/2020	IMG_0171.AVI	02/02/2020 09:28	02/02/2020	09:28:12	Mammal	Macaca fascicularis	5
HW_CT_09	13/02/2020	IMG_0172.AVI	02/02/2020 09:28	02/02/2020	09:28:42	Mammal	Macaca fascicularis	5
HW_CT_09	13/02/2020	IMG_0173.AVI	02/02/2020 09:33	02/02/2020	09:33:06	Mammal	Macaca fascicularis	4
HW_CT_09	13/02/2020	IMG_0174.AVI	02/02/2020 09:34	02/02/2020	09:34:58	Mammal	Macaca fascicularis	7
HW_CT_09	13/02/2020	IMG_0175.AVI	02/02/2020 09:37	02/02/2020	09:37:24	Mammal	Macaca fascicularis	5
HW_CT_09	13/02/2020	IMG_0176.AVI	02/02/2020 09:37	02/02/2020	09:37:46	Mammal	Macaca fascicularis	8
HW_CT_09	13/02/2020	IMG_0177.AVI	02/02/2020 09:38	02/02/2020	09:38:08	Mammal	Macaca fascicularis	7
HW_CT_09	13/02/2020	IMG_0178.AVI	02/02/2020 09:39	02/02/2020	09:39:30	Mammal	Macaca fascicularis	8
HW_CT_09	13/02/2020	IMG_0179.AVI	02/02/2020 09:39	02/02/2020	09:39:58	Mammal	Macaca fascicularis	9
HW_CT_09	13/02/2020	IMG_0180.AVI	02/02/2020 09:40	02/02/2020	09:40:48	Mammal	Macaca fascicularis	11
HW_CT_09	13/02/2020	IMG_0181.AVI	02/02/2020 09:41	02/02/2020	09:41:12	Mammal	Macaca fascicularis	5
HW_CT_09	13/02/2020	IMG_0182.AVI	02/02/2020 09:41	02/02/2020	09:41:38	Mammal	Macaca fascicularis	9
HW_CT_09	13/02/2020	IMG_0183.AVI	02/02/2020 09:42	02/02/2020	09:42:22	Mammal	Macaca fascicularis	6
HW_CT_09	13/02/2020	IMG_0184.AVI	02/02/2020 09:43	02/02/2020	09:43:24	Mammal	Macaca fascicularis	5
HW_CT_09	13/02/2020	IMG_0185.AVI	02/02/2020 09:43	02/02/2020	09:43:46	Mammal	Macaca fascicularis	7
HW_CT_09	13/02/2020	IMG_0186.AVI	02/02/2020 09:44	02/02/2020	09:44:08	Mammal	Macaca fascicularis	8
HW_CT_09	13/02/2020	IMG_0187.AVI	02/02/2020 09:44	02/02/2020	09:44:30	Mammal	Macaca fascicularis	8
HW_CT_09	13/02/2020	IMG_0188.AVI	02/02/2020 09:44	02/02/2020	09:44:56	Mammal	Macaca fascicularis	6
HW_CT_09	13/02/2020	IMG_0189.AVI	02/02/2020 09:45	02/02/2020	09:45:24	Mammal	Macaca fascicularis	9
HW_CT_09	13/02/2020	IMG_0190.AVI	02/02/2020 09:46	02/02/2020	09:46:48	Mammal	Macaca fascicularis	6
HW_CT_09	13/02/2020	IMG_0191.AVI	02/02/2020 09:47	02/02/2020	09:47:44	Mammal	Macaca fascicularis	7
HW_CT_09	13/02/2020	IMG_0193.AVI	02/02/2020 09:49	02/02/2020	09:49:10	Mammal	Macaca fascicularis	6
HW_CT_09	13/02/2020	IMG_0194.AVI	02/02/2020 09:49	02/02/2020	09:49:36	Mammal	Macaca fascicularis	7
HW_CT_09	13/02/2020	IMG_0195.AVI	02/02/2020 09:51	02/02/2020	09:51:20	Mammal	Macaca fascicularis	6
HW_CT_09	13/02/2020	IMG_0196.AVI	02/02/2020 09:51	02/02/2020	09:51:52	Mammal	Macaca fascicularis	7
HW_CT_09	13/02/2020	IMG_0197.AVI	02/02/2020 10:07	02/02/2020	10:07:20	Mammal	Macaca fascicularis	1
HW_CT_09	13/02/2020	IMG_0198.AVI	02/02/2020 11:06	02/02/2020	11:06:38	Mammal	Tupaia glis	1
HW_CT_09	13/02/2020	IMG_0199.AVI	02/02/2020 11:55	02/02/2020	11:55:10	Mammal	Macaca fascicularis	1
HW_CT_09	13/02/2020	IMG_0200.AVI	02/02/2020 12:03	02/02/2020	12:03:48	Mammal	Macaca fascicularis	2
HW_CT_09	13/02/2020	IMG_0201.AVI	02/02/2020 12:22	02/02/2020	12:22:06	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0202.AVI	02/02/2020 19:01	02/02/2020	19:01:24	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0203.AVI	03/02/2020 08:08	03/02/2020	08:08:28	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0204.AVI	03/02/2020 08:22	03/02/2020	08:22:30	Bird	Garrulax leucolophus	1
HW_CT_09	13/02/2020	IMG_0205.AVI	03/02/2020 14:06	03/02/2020	14:06:24	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0206.AVI	03/02/2020 14:15	03/02/2020	14:15:38	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0207.AVI	03/02/2020 14:31	03/02/2020	14:31:20	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0208.AVI	03/02/2020 14:46	03/02/2020	14:46:34	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0209.AVI	03/02/2020 15:24	03/02/2020	15:24:40	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0210.AVI	03/02/2020 15:51	03/02/2020	15:51:34	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0211.AVI	03/02/2020 16:34	03/02/2020	16:34:16	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0212.AVI	03/02/2020 17:57	03/02/2020	17:57:28	Mammal	Callosciurus notatus	1
HW_CT_09	13/02/2020	IMG_0213.AVI	03/02/2020 19:23	03/02/2020	19:23:30	NA	Unidentified sp.	2
HW_CT_09	13/02/2020	IMG_0214.AVI	04/02/2020 07:19	04/02/2020	07:19:42	Mammal	Tupaia glis	2
HW_CT_09	13/02/2020	IMG_0215.AVI	04/02/2020 09:45	04/02/2020	09:45:20	Mammal	Tupaia glis	1
HW_CT_09	13/02/2020	IMG_0216.AVI	04/02/2020 14:58	04/02/2020	14:58:28	Mammal	Callosciurus notatus	1
HW_CT_10	10/01/2020	IMG_0015.AVI	14/12/2019 07:58	14/12/2019	07:58:24	Mammal	Callosciurus notatus	1
HW_CT_10	10/01/2020	IMG_0020.AVI	25/12/2019 13:55	25/12/2019	13:55:46	Mammal	Callosciurus notatus	1
HW_CT_10	10/01/2020	IMG_0021.AVI	25/12/2019 13:56	25/12/2019	13:56:56	Mammal	Callosciurus notatus	1
HW_CT_10	10/01/2020	IMG_0022.AVI	26/12/2019 16:42	26/12/2019	16:42:52	Mammal	Callosciurus notatus	1
HW_CT_10	10/01/2020	IMG_0023.AVI	27/12/2019 08:55	27/12/2019	08:55:14	Mammal	Callosciurus notatus	1
HW_CT_10	10/01/2020	IMG_0046.AVI	01/01/2020 09:10	01/01/2020	09:10:44	Mammal	Callosciurus notatus	1
HW_CT_10	10/01/2020	IMG_0057.AVI	06/01/2020 08:26	06/01/2020	08:26:10	Mammal	Unidentified squirrel or shrew	2

Appendix J1 Camera Trap Log and Data for Clementi Forest

Station	SamplingDate	FileName	FileModifyDate	Date	Time	Taxon	Scientific name	Quantity
HW_CT_10	10/01/2020	IMG_0058.AVI	06/01/2020 08:26	06/01/2020	08:26:38	Mammal	Callosciurus notatus	1
HW_CT_10	10/01/2020	IMG_0058.AVI	06/01/2020 08:26	06/01/2020	08:26:38	Mammal	Unidentified squirrel or shrew	1
HW_CT_10	10/01/2020	IMG_0059.AVI	06/01/2020 08:32	06/01/2020	08:32:28	Mammal	Callosciurus notatus	1
HW_CT_10	10/01/2020	IMG_0059.AVI	06/01/2020 08:32	06/01/2020	08:32:28	Mammal	Unidentified squirrel or shrew	1
HW_CT_10	10/01/2020	IMG_0062.AVI	06/01/2020 12:45	06/01/2020	12:45:30	Mammal	Unidentified squirrel or shrew	1
HW_CT_10	10/01/2020	IMG_0065.AVI	09/01/2020 14:59	09/01/2020	14:59:02	Mammal	Unidentified squirrel or shrew	1
HW_CT_10	13/02/2020	IMG_0003.AVI	12/01/2020 11:55	12/01/2020	11:55:28	Bird	Picus vittatus	1
HW_CT_10	13/02/2020	IMG_0004.AVI	12/01/2020 15:54	12/01/2020	15:54:18	Mammal	Callosciurus notatus	1
HW_CT_10	13/02/2020	IMG_0005.AVI	13/01/2020 09:07	13/01/2020	09:07:36	Mammal	Callosciurus notatus	1
HW_CT_10	13/02/2020	IMG_0006.AVI	13/01/2020 09:09	13/01/2020	09:09:36	Mammal	Callosciurus notatus	1
HW_CT_10	13/02/2020	IMG_0007.AVI	14/01/2020 17:04	14/01/2020	17:04:38	Bird	Picus vittatus	1
HW_CT_10	13/02/2020	IMG_0008.AVI	19/01/2020 14:54	19/01/2020	14:54:54	Mammal	Callosciurus notatus	1
HW_CT_10	13/02/2020	IMG_0009.AVI	19/01/2020 14:55	19/01/2020	14:55:38	Mammal	Callosciurus notatus	1
HW_CT_10	13/02/2020	IMG_0010.AVI	19/01/2020 18:54	19/01/2020	18:54:58	Mammal	Callosciurus notatus	1
HW_CT_10	13/02/2020	IMG_0011.AVI	20/01/2020 14:25	20/01/2020	14:25:00	Mammal	Callosciurus notatus	1
HW_CT_10	13/02/2020	IMG_0012.AVI	20/01/2020 14:25	20/01/2020	14:25:36	Mammal	Callosciurus notatus	1
HW_CT_10	13/02/2020	IMG_0013.AVI	23/01/2020 07:56	23/01/2020	07:56:16	Mammal	Callosciurus notatus	1
HW_CT_10	13/02/2020	IMG_0014.AVI	23/01/2020 08:05	23/01/2020	08:05:42	Mammal	Callosciurus notatus	1
HW_CT_10	13/02/2020	IMG_0015.AVI	23/01/2020 08:56	23/01/2020	08:56:42	Mammal	Callosciurus notatus	1
HW_CT_10	13/02/2020	IMG_0016.AVI	23/01/2020 08:57	23/01/2020	08:57:04	Mammal	Callosciurus notatus	1
HW_CT_10	13/02/2020	IMG_0016.AVI	23/01/2020 08:57	23/01/2020	08:57:04	Mammal	Unidentified squirrel or shrew	1
HW_CT_10	13/02/2020	IMG_0017.AVI	23/01/2020 08:57	23/01/2020	08:57:24	Mammal	Callosciurus notatus	1
HW_CT_10	13/02/2020	IMG_0018.AVI	23/01/2020 09:03	23/01/2020	09:03:40	Mammal	Callosciurus notatus	1
HW_CT_10	13/02/2020	IMG_0019.AVI	23/01/2020 09:04	23/01/2020	09:04:02	Mammal	Callosciurus notatus	1
HW_CT_10	13/02/2020	IMG_0020.AVI	23/01/2020 09:07	23/01/2020	09:07:26	Mammal	Callosciurus notatus	1
HW_CT_10	13/02/2020	IMG_0020.AVI	23/01/2020 09:07	23/01/2020	09:07:26	Bird	Garrulax leucolophus	1
HW_CT_10	13/02/2020	IMG_0021.AVI	23/01/2020 09:23	23/01/2020	09:23:38	Mammal	Callosciurus notatus	2
HW_CT_10	13/02/2020	IMG_0022.AVI	23/01/2020 09:26	23/01/2020	09:26:30	Mammal	Callosciurus notatus	1
HW_CT_10	13/02/2020	IMG_0022.AVI	23/01/2020 09:26	23/01/2020	09:26:30	Bird	Garrulax leucolophus	1
HW_CT_10	13/02/2020	IMG_0026.AVI	28/01/2020 12:41	28/01/2020	12:41:34	Mammal	Callosciurus notatus	2
HW_CT_10	13/02/2020	IMG_0027.AVI	28/01/2020 12:42	28/01/2020	12:42:38	Mammal	Callosciurus notatus	2
HW_CT_10	13/02/2020	IMG_0028.AVI	28/01/2020 15:07	28/01/2020	15:07:00	Mammal	Callosciurus notatus	1
HW_CT_10	13/02/2020	IMG_0029.AVI	04/02/2020 09:06	04/02/2020	09:06:46	NA	Unidentified sp.	1
HW_CT_10	13/02/2020	IMG_0031.AVI	06/02/2020 07:26	06/02/2020	07:26:40	NA	Unidentified sp.	1
HW_CT_10	13/02/2020	IMG_0032.AVI	10/02/2020 14:03	10/02/2020	14:03:06	Mammal	Callosciurus notatus	1
HW_CT_10	13/02/2020	IMG_0033.AVI	10/02/2020 14:13	10/02/2020	14:13:04	Mammal	Callosciurus notatus	1
HW_CT_10	13/02/2020	IMG_0034.AVI	10/02/2020 14:18	10/02/2020	14:18:42	Mammal	Callosciurus notatus	1
HW_CT_10	13/02/2020	IMG_0034.AVI	10/02/2020 14:18	10/02/2020	14:18:42	Mammal	Unidentified squirrel or shrew	1
HW_CT_11	10/01/2020	IMG_0012.AVI	13/12/2019 09:34	13/12/2019	09:34:48	Mammal	Callosciurus notatus	1
HW_CT_11	10/01/2020	IMG_0015.AVI	19/12/2019 20:49	19/12/2019	20:49:58	Bird	Unidentified bird	1
HW_CT_11	10/01/2020	IMG_0017.AVI	20/12/2019 10:48	20/12/2019	10:48:46	Bird	Gallus gallus	2
HW_CT_11	10/01/2020	IMG_0018.AVI	22/12/2019 17:39	22/12/2019	17:39:00	Mammal	Callosciurus notatus	1
HW_CT_11	10/01/2020	IMG_0019.AVI	28/12/2019 17:05	28/12/2019	17:05:28	Mammal	Callosciurus notatus	1
HW_CT_11	10/01/2020	IMG_0020.AVI	29/12/2019 17:50	29/12/2019	17:50:34	Mammal	Callosciurus notatus	1
HW_CT_11	10/01/2020	IMG_0021.AVI	30/12/2019 03:20	30/12/2019	03:20:02	Bird	Unidentified owl	1
HW_CT_11	10/01/2020	IMG_0022.AVI	30/12/2019 20:34	30/12/2019	20:34:56	Mammal	Unidentified bat	1
HW_CT_11	10/01/2020	IMG_0023.AVI	31/12/2019 21:43	31/12/2019	21:43:02	Mammal	Unidentified bat	1
HW_CT_11	10/01/2020	IMG_0024.AVI	01/01/2020 02:36	01/01/2020	02:36:34	Mammal	Unidentified bat	1
HW_CT_11	10/01/2020	IMG_0025.AVI	01/01/2020 15:56	01/01/2020	15:56:44	Bird	Gallus gallus	1
HW_CT_11	10/01/2020	IMG_0026.AVI	01/01/2020 17:15	01/01/2020	17:15:42	Mammal	Unidentified squirrel or shrew	1
HW_CT_11	10/01/2020	IMG_0028.AVI	02/01/2020 01:53	02/01/2020	01:53:40	Mammal	Unidentified bat	1
HW_CT_11	10/01/2020	IMG_0029.AVI	03/01/2020 11:43	03/01/2020	11:43:02	Reptile	Varanus sp.	1
HW_CT_11	10/01/2020	IMG_0031.AVI	04/01/2020 05:31	04/01/2020	05:31:18	Mammal	Unidentified bat	1
HW_CT_11	10/01/2020	IMG_0032.AVI	09/01/2020 14:22	09/01/2020	14:22:48	Mammal	Callosciurus notatus	1
HW_CT_11	10/01/2020	IMG_0033.AVI	09/01/2020 14:55	09/01/2020	14:55:52	Mammal	Callosciurus notatus	1
HW_CT_11	13/02/2020	IMG_0004.AVI	10/01/2020 13:02	10/01/2020	13:02:08	Reptile	Varanus salvator	1
HW_CT_11	13/02/2020	IMG_0005.AVI	10/01/2020 20:34	10/01/2020	20:34:16	Mammal	Unidentified bat	1
HW_CT_11	13/02/2020	IMG_0006.AVI	12/01/2020 00:08	12/01/2020	00:08:46	Mammal	Unidentified mammal	1
HW_CT_11	13/02/2020	IMG_0007.AVI	12/01/2020 10:10	12/01/2020	10:10:40	Mammal	Callosciurus notatus	1
HW_CT_11	13/02/2020	IMG_0008.AVI	13/01/2020 13:23	13/01/2020	13:23:34	Mammal	Callosciurus notatus	1
HW_CT_11	13/02/2020	IMG_0009.AVI	13/01/2020 13:23	13/01/2020	13:23:58	Mammal	Callosciurus notatus	1
HW_CT_11	13/02/2020	IMG_0010.AVI	15/01/2020 14:34	15/01/2020	14:34:46	Bird	Garrulax leucolophus	1
HW_CT_11	13/02/2020	IMG_0011.AVI	15/01/2020 17:59	15/01/2020	17:59:44	Mammal	Callosciurus notatus	1
HW_CT_11	13/02/2020	IMG_0012.AVI	15/01/2020 18:00	15/01/2020	18:00:40	Mammal	Callosciurus notatus	1
HW_CT_11	13/02/2020	IMG_0015.AVI	22/01/2020 12:22	22/01/2020	12:22:02	Mammal	Callosciurus notatus	1
HW_CT_11	13/02/2020	IMG_0016.AVI	22/01/2020 12:25	22/01/2020	12:25:40	Mammal	Callosciurus notatus	1
HW_CT_11	13/02/2020	IMG_0018.AVI	23/01/2020 10:46	23/01/2020	10:46:50	Mammal	Callosciurus notatus	1
HW_CT_11	13/02/2020	IMG_0020.AVI	26/01/2020 13:18	26/01/2020	13:18:00	Mammal	Callosciurus notatus	1
HW_CT_11	13/02/2020	IMG_0021.AVI	26/01/2020 13:18	26/01/2020	13:18:22	Mammal	Callosciurus notatus	1
HW_CT_11	13/02/2020	IMG_0022.AVI	31/01/2020 11:59	31/01/2020	11:59:50	Mammal	Callosciurus notatus	1
HW_CT_11	13/02/2020	IMG_0023.AVI	01/02/2020 09:21	01/02/2020	09:21:04	Mammal	Macaca fascicularis	3
HW_CT_11	13/02/2020	IMG_0025.AVI	03/02/2020 17:10	03/02/2020	17:10:06	Mammal	Callosciurus notatus	1
HW_CT_11	13/02/2020	IMG_0026.AVI	07/02/2020 06:36	07/02/2020	06:36:12	Bird	Otus lempiji	1
HW_CT_11	13/02/2020	IMG_0027.AVI	09/02/2020 15:40	09/02/2020	15:40:08	Mammal	Callosciurus notatus	1
HW_CT_11	20/03/2020	IMG_0005.AVI	27/02/2020 23:59	27/02/2020	23:59:44	Mammal	Rattus sp.	1
HW_CT_11	20/03/2020	IMG_0006.AVI	28/02/2020 14:48	28/02/2020	14:48:12	Bird	Garrulax leucolophus	1
HW_CT_11	20/03/2020	IMG_0007.AVI	28/02/2020 16:35	28/02/2020	16:35:36	Reptile	Varanus sp.	1
HW_CT_11	20/03/2020	IMG_0008.AVI	28/02/2020 17:48	28/02/2020	17:48:02	Mammal	Callosciurus notatus	1
HW_CT_11	20/03/2020	IMG_0009.AVI	28/02/2020 17:48	28/02/2020	17:48:48	Mammal	Callosciurus notatus	1
HW_CT_11	20/03/2020	IMG_0010.AVI	28/02/2020 17:49	28/02/2020	17:49:38	Mammal	Callosciurus notatus	1
HW_CT_11	20/03/2020	IMG_0011.AVI	28/02/2020 18:36	28/02/2020	18:36:38	Bird	Garrulax leucolophus	2
HW_CT_11	20/03/2020	IMG_0012.AVI	28/02/2020 18:40	28/02/2020	18:40:54	Bird	Garrulax leucolophus	1
HW_CT_11	20/03/2020	IMG_0012.AVI	28/02/2020 18:40	28/02/2020	18:40:54	Mammal	Callosciurus notatus	1
HW_CT_11	20/03/2020	IMG_0013.AVI	28/02/2020 18:47	28/02/2020	18:47:16	Mammal	Unidentified squirrel or shrew	1
HW_CT_11	20/03/2020	IMG_0014.AVI	28/02/2020 22:54	28/02/2020	22:54:22	NA	Unidentified sp.	1
HW_CT_11	20/03/2020	IMG_0015.AVI	29/02/2020 01:56	29/02/2020	01:56:32	Mammal	Rattus sp.	1
HW_CT_11	20/03/2020	IMG_0017.AVI	29/02/2020 09:12	29/02/2020	09:12:20	Mammal	Tupaia glis	1

Appendix J1 Camera Trap Log and Data for Clementi Forest

Station	SamplingDate	FileName	FileModifyDate	Date	Time	Taxon	Scientific name	Quantity
HW_CT_11	20/03/2020	IMG_0018.AVI	29/02/2020 17:57	29/02/2020	17:57:54	Bird	Garrulax leucolophus	2
HW_CT_11	20/03/2020	IMG_0019.AVI	29/02/2020 17:59	29/02/2020	17:59:18	Bird	Garrulax leucolophus	2
HW_CT_11	20/03/2020	IMG_0020.AVI	29/02/2020 18:00	29/02/2020	18:00:46	Bird	Garrulax leucolophus	1
HW_CT_11	20/03/2020	IMG_0022.AVI	01/03/2020 18:48	01/03/2020	18:48:10	Mammal	Unidentified squirrel or shrew	1
HW_CT_11	20/03/2020	IMG_0023.AVI	02/03/2020 18:18	02/03/2020	18:18:02	Bird	Garrulax leucolophus	2
HW_CT_11	20/03/2020	IMG_0024.AVI	03/03/2020 22:11	03/03/2020	22:11:34	Mammal	Paradoxurus musangus	1
HW_CT_11	20/03/2020	IMG_0025.AVI	06/03/2020 16:00	06/03/2020	16:00:20	Mammal	Tupaia glis	1
HW_CT_11	20/03/2020	IMG_0026.AVI	06/03/2020 17:52	06/03/2020	17:52:04	Bird	Amauromis phoenicurus	2
HW_CT_11	20/03/2020	IMG_0027.AVI	07/03/2020 07:50	07/03/2020	07:50:50	Mammal	Tupaia glis	1
HW_CT_11	20/03/2020	IMG_0028.AVI	07/03/2020 11:27	07/03/2020	11:27:36	Mammal	Tupaia glis	1
HW_CT_11	20/03/2020	IMG_0029.AVI	08/03/2020 12:58	08/03/2020	12:58:10	Bird	Garrulax leucolophus	1
HW_CT_11	20/03/2020	IMG_0029.AVI	08/03/2020 12:58	08/03/2020	12:58:10	Bird	Amauromis phoenicurus	2
HW_CT_11	20/03/2020	IMG_0030.AVI	08/03/2020 12:58	08/03/2020	12:58:44	Bird	Garrulax leucolophus	1
HW_CT_11	20/03/2020	IMG_0030.AVI	08/03/2020 12:58	08/03/2020	12:58:44	Bird	Amauromis phoenicurus	1
HW_CT_11	20/03/2020	IMG_0031.AVI	08/03/2020 15:24	08/03/2020	15:24:20	Bird	Amauromis phoenicurus	1
HW_CT_11	20/03/2020	IMG_0032.AVI	09/03/2020 16:00	09/03/2020	16:00:18	Bird	Amauromis phoenicurus	2
HW_CT_11	20/03/2020	IMG_0033.AVI	09/03/2020 16:43	09/03/2020	16:43:48	Mammal	Tupaia glis	1
HW_CT_11	20/03/2020	IMG_0035.AVI	09/03/2020 16:52	09/03/2020	16:52:24	Mammal	Callosciurus notatus	1
HW_CT_11	20/03/2020	IMG_0036.AVI	10/03/2020 11:03	10/03/2020	11:03:34	Mammal	Unidentified squirrel or shrew	1
HW_CT_11	20/03/2020	IMG_0037.AVI	10/03/2020 13:03	10/03/2020	13:03:14	Mammal	Tupaia glis	1
HW_CT_11	20/03/2020	IMG_0038.AVI	10/03/2020 15:50	10/03/2020	15:50:26	Mammal	Tupaia glis	1
HW_CT_11	20/03/2020	IMG_0038.AVI	10/03/2020 15:50	10/03/2020	15:50:26	Mammal	Callosciurus notatus	1
HW_CT_11	20/03/2020	IMG_0040.AVI	11/03/2020 09:57	11/03/2020	09:57:04	Mammal	Tupaia glis	1
HW_CT_11	20/03/2020	IMG_0042.AVI	11/03/2020 12:00	11/03/2020	12:00:32	Mammal	Unidentified squirrel or shrew	1
HW_CT_11	20/03/2020	IMG_0043.AVI	11/03/2020 18:32	11/03/2020	18:32:00	Mammal	Tupaia glis	1
HW_CT_11	20/03/2020	IMG_0045.AVI	12/03/2020 04:53	12/03/2020	04:53:34	NA	Unidentified sp.	1
HW_CT_11	20/03/2020	IMG_0047.AVI	12/03/2020 10:51	12/03/2020	10:51:48	Mammal	Unidentified squirrel or shrew	1
HW_CT_11	20/03/2020	IMG_0048.AVI	12/03/2020 12:20	12/03/2020	12:20:28	Bird	Garrulax leucolophus	1
HW_CT_11	20/03/2020	IMG_0049.AVI	12/03/2020 12:56	12/03/2020	12:56:00	Bird	Garrulax leucolophus	1
HW_CT_11	20/03/2020	IMG_0050.AVI	12/03/2020 13:01	12/03/2020	13:01:22	Bird	Garrulax leucolophus	1
HW_CT_11	20/03/2020	IMG_0051.AVI	12/03/2020 16:04	12/03/2020	16:04:44	Bird	Amauromis phoenicurus	1
HW_CT_11	20/03/2020	IMG_0052.AVI	13/03/2020 07:28	13/03/2020	07:28:32	Mammal	Tupaia glis	2
HW_CT_11	20/03/2020	IMG_0053.AVI	13/03/2020 14:26	13/03/2020	14:26:10	Bird	Gallus gallus	1
HW_CT_11	20/03/2020	IMG_0054.AVI	13/03/2020 15:54	13/03/2020	15:54:32	Bird	Gallus gallus	1
HW_CT_11	20/03/2020	IMG_0055.AVI	13/03/2020 16:10	13/03/2020	16:10:56	Bird	Gallus gallus	1
HW_CT_11	20/03/2020	IMG_0056.AVI	13/03/2020 16:11	13/03/2020	16:11:36	Bird	Gallus gallus	1
HW_CT_11	20/03/2020	IMG_0057.AVI	13/03/2020 16:13	13/03/2020	16:13:10	Bird	Gallus gallus	1
HW_CT_11	20/03/2020	IMG_0058.AVI	13/03/2020 16:13	13/03/2020	16:13:32	Bird	Gallus gallus	1
HW_CT_11	20/03/2020	IMG_0059.AVI	13/03/2020 16:14	13/03/2020	16:14:24	Bird	Gallus gallus	1
HW_CT_11	20/03/2020	IMG_0060.AVI	14/03/2020 09:31	14/03/2020	09:31:08	Mammal	Tupaia glis	1
HW_CT_11	20/03/2020	IMG_0061.AVI	14/03/2020 18:44	14/03/2020	18:44:46	Bird	Garrulax leucolophus	1
HW_CT_11	20/03/2020	IMG_0062.AVI	14/03/2020 18:46	14/03/2020	18:46:02	Bird	Garrulax leucolophus	2
HW_CT_11	20/03/2020	IMG_0070.AVI	15/03/2020 11:53	15/03/2020	11:53:58	Reptile	Varanus sp.	1
HW_CT_11	20/03/2020	IMG_0071.AVI	15/03/2020 17:03	15/03/2020	17:03:56	Bird	Garrulax leucolophus	1
HW_CT_11	20/03/2020	IMG_0072.AVI	15/03/2020 17:07	15/03/2020	17:07:40	Mammal	Unidentified squirrel or shrew	1
HW_CT_11	20/03/2020	IMG_0073.AVI	16/03/2020 08:05	16/03/2020	08:05:42	Bird	Amauromis phoenicurus	1
HW_CT_11	20/03/2020	IMG_0074.AVI	16/03/2020 11:08	16/03/2020	11:08:42	Mammal	Unidentified squirrel or shrew	1
HW_CT_11	20/03/2020	IMG_0075.AVI	16/03/2020 15:47	16/03/2020	15:47:48	Mammal	Tupaia glis	1
HW_CT_11	20/03/2020	IMG_0076.AVI	16/03/2020 16:52	16/03/2020	16:52:44	Bird	Amauromis phoenicurus	1
HW_CT_11	20/03/2020	IMG_0077.AVI	17/03/2020 12:38	17/03/2020	12:38:00	Bird	Garrulax leucolophus	1
HW_CT_11	20/03/2020	IMG_0077.AVI	17/03/2020 12:38	17/03/2020	12:38:00	Mammal	Callosciurus notatus	1
HW_CT_11	20/03/2020	IMG_0078.AVI	17/03/2020 15:45	17/03/2020	15:45:28	Mammal	Callosciurus notatus	1
HW_CT_11	20/03/2020	IMG_0080.AVI	17/03/2020 16:50	17/03/2020	16:50:18	Mammal	Callosciurus notatus	1
HW_CT_11	20/03/2020	IMG_0081.AVI	17/03/2020 18:26	17/03/2020	18:26:26	Mammal	Unidentified squirrel or shrew	1
HW_CT_11	20/03/2020	IMG_0082.AVI	18/03/2020 09:44	18/03/2020	09:44:50	Mammal	Callosciurus notatus	2
HW_CT_11	20/03/2020	IMG_0083.AVI	18/03/2020 10:31	18/03/2020	10:31:48	Mammal	Unidentified squirrel or shrew	1
HW_CT_11	20/03/2020	IMG_0084.AVI	18/03/2020 10:32	18/03/2020	10:32:36	Reptile	Varanus sp.	1
HW_CT_11	20/03/2020	IMG_0084.AVI	18/03/2020 10:32	18/03/2020	10:32:36	Mammal	Callosciurus notatus	1
HW_CT_11	20/03/2020	IMG_0085.AVI	18/03/2020 11:39	18/03/2020	11:39:34	Mammal	Callosciurus notatus	1
HW_CT_11	20/03/2020	IMG_0086.AVI	18/03/2020 17:16	18/03/2020	17:16:18	Mammal	Tupaia glis	1
HW_CT_11	20/03/2020	IMG_0087.AVI	19/03/2020 12:41	19/03/2020	12:41:56	Bird	Gallus gallus	2
HW_CT_11	20/03/2020	IMG_0088.AVI	19/03/2020 12:42	19/03/2020	12:42:20	Bird	Gallus gallus	3
HW_CT_11	20/03/2020	IMG_0089.AVI	19/03/2020 12:42	19/03/2020	12:42:44	Bird	Gallus gallus	3
HW_CT_11	20/03/2020	IMG_0090.AVI	19/03/2020 12:43	19/03/2020	12:43:10	Bird	Gallus gallus	3
HW_CT_11	20/03/2020	IMG_0091.AVI	19/03/2020 12:43	19/03/2020	12:43:32	Bird	Gallus gallus	3
HW_CT_11	20/03/2020	IMG_0092.AVI	19/03/2020 12:43	19/03/2020	12:43:56	Bird	Gallus gallus	3
HW_CT_11	20/03/2020	IMG_0093.AVI	19/03/2020 12:44	19/03/2020	12:44:38	Bird	Gallus gallus	3
HW_CT_11	20/03/2020	IMG_0094.AVI	19/03/2020 12:45	19/03/2020	12:45:00	Bird	Gallus gallus	2
HW_CT_11	20/03/2020	IMG_0095.AVI	19/03/2020 12:47	19/03/2020	12:47:12	Bird	Gallus gallus	1
HW_CT_11	08/06/2020	IMG_0004.AVI	20/03/2020 10:28	20/03/2020	10:28:50	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0005.AVI	21/03/2020 12:14	21/03/2020	12:14:20	NA	Unidentified sp.	1
HW_CT_11	08/06/2020	IMG_0006.AVI	21/03/2020 13:12	21/03/2020	13:12:16	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0007.AVI	21/03/2020 13:12	21/03/2020	13:12:48	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0008.AVI	21/03/2020 13:13	21/03/2020	13:13:46	Bird	Gallus gallus	2
HW_CT_11	08/06/2020	IMG_0009.AVI	21/03/2020 13:14	21/03/2020	13:14:40	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0010.AVI	21/03/2020 13:18	21/03/2020	13:18:38	Bird	Garrulax leucolophus	2
HW_CT_11	08/06/2020	IMG_0012.AVI	23/03/2020 10:31	23/03/2020	10:31:18	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0013.AVI	23/03/2020 11:55	23/03/2020	11:55:06	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0014.AVI	23/03/2020 17:50	23/03/2020	17:50:16	Bird	Amauromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0015.AVI	24/03/2020 18:04	24/03/2020	18:04:44	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0016.AVI	24/03/2020 18:35	24/03/2020	18:35:56	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0017.AVI	25/03/2020 07:34	25/03/2020	07:34:00	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0018.AVI	25/03/2020 12:45	25/03/2020	12:45:24	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0019.AVI	25/03/2020 19:07	25/03/2020	19:07:58	Bird	Unidentified bird	1
HW_CT_11	08/06/2020	IMG_0020.AVI	28/03/2020 18:31	28/03/2020	18:31:32	Mammal	Tupaia glis	2
HW_CT_11	08/06/2020	IMG_0021.AVI	28/03/2020 19:02	28/03/2020	19:02:02	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0022.AVI	30/03/2020 07:34	30/03/2020	07:34:12	Mammal	Tupaia glis	1

Appendix J1 Camera Trap Log and Data for Clementi Forest

Station	SamplingDate	FileName	FileModifyDate	Date	Time	Taxon	Scientific name	Quantity
HW_CT_11	08/06/2020	IMG_0023.AVI	31/03/2020 09:16	31/03/2020	09:16:08	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0024.AVI	31/03/2020 12:21	31/03/2020	12:21:12	Mammal	Callosciurus notatus	1
HW_CT_11	08/06/2020	IMG_0025.AVI	31/03/2020 13:39	31/03/2020	13:39:20	Mammal	Callosciurus notatus	1
HW_CT_11	08/06/2020	IMG_0026.AVI	31/03/2020 13:50	31/03/2020	13:50:58	Bird	Amuromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0027.AVI	31/03/2020 14:03	31/03/2020	14:03:46	Bird	Amuromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0028.AVI	31/03/2020 14:11	31/03/2020	14:11:18	Mammal	Macaca fascicularis	1
HW_CT_11	08/06/2020	IMG_0030.AVI	31/03/2020 14:21	31/03/2020	14:21:42	Mammal	Macaca fascicularis	1
HW_CT_11	08/06/2020	IMG_0031.AVI	31/03/2020 14:22	31/03/2020	14:22:02	Mammal	Macaca fascicularis	1
HW_CT_11	08/06/2020	IMG_0032.AVI	31/03/2020 17:32	31/03/2020	17:32:20	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0033.AVI	31/03/2020 21:56	31/03/2020	21:56:06	Mammal	Rattus sp.	1
HW_CT_11	08/06/2020	IMG_0034.AVI	01/04/2020 09:37	01/04/2020	09:37:30	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0035.AVI	01/04/2020 12:04	01/04/2020	12:04:42	NA	Unidentified sp.	1
HW_CT_11	08/06/2020	IMG_0036.AVI	01/04/2020 12:06	01/04/2020	12:06:50	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0037.AVI	01/04/2020 12:16	01/04/2020	12:16:36	Mammal	Callosciurus notatus	1
HW_CT_11	08/06/2020	IMG_0038.AVI	01/04/2020 14:45	01/04/2020	14:45:46	Mammal	Callosciurus notatus	1
HW_CT_11	08/06/2020	IMG_0039.AVI	01/04/2020 14:58	01/04/2020	14:58:42	Bird	Garrulax leucolophus	2
HW_CT_11	08/06/2020	IMG_0040.AVI	02/04/2020 08:38	02/04/2020	08:38:40	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0041.AVI	02/04/2020 11:50	02/04/2020	11:50:00	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0042.AVI	02/04/2020 14:37	02/04/2020	14:37:40	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0042.AVI	02/04/2020 14:37	02/04/2020	14:37:40	Mammal	Callosciurus notatus	1
HW_CT_11	08/06/2020	IMG_0043.AVI	02/04/2020 15:07	02/04/2020	15:07:24	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0044.AVI	03/04/2020 07:01	03/04/2020	07:01:54	NA	Unidentified sp.	1
HW_CT_11	08/06/2020	IMG_0045.AVI	03/04/2020 15:27	03/04/2020	15:27:54	Bird	Gallus gallus	1
HW_CT_11	08/06/2020	IMG_0046.AVI	03/04/2020 16:09	03/04/2020	16:09:58	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0048.AVI	04/04/2020 14:21	04/04/2020	14:21:02	Bird	Amuromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0049.AVI	05/04/2020 09:03	05/04/2020	09:03:04	Mammal	Tupaia glis	2
HW_CT_11	08/06/2020	IMG_0050.AVI	05/04/2020 10:27	05/04/2020	10:27:30	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0050.AVI	05/04/2020 10:27	05/04/2020	10:27:30	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0051.AVI	05/04/2020 13:34	05/04/2020	13:34:04	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0052.AVI	05/04/2020 13:34	05/04/2020	13:34:34	Bird	Amuromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0054.AVI	05/04/2020 13:36	05/04/2020	13:36:42	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0055.AVI	05/04/2020 13:37	05/04/2020	13:37:04	Bird	Amuromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0055.AVI	05/04/2020 13:37	05/04/2020	13:37:04	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0056.AVI	05/04/2020 13:37	05/04/2020	13:37:48	Bird	Amuromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0056.AVI	05/04/2020 13:37	05/04/2020	13:37:48	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0057.AVI	05/04/2020 17:55	05/04/2020	17:55:58	Bird	Amuromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0058.AVI	06/04/2020 08:28	06/04/2020	08:28:52	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0059.AVI	06/04/2020 11:59	06/04/2020	11:59:56	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0060.AVI	06/04/2020 13:35	06/04/2020	13:35:46	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0061.AVI	07/04/2020 09:14	07/04/2020	09:14:10	Bird	Garrulax leucolophus	2
HW_CT_11	08/06/2020	IMG_0063.AVI	07/04/2020 10:03	07/04/2020	10:03:28	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0064.AVI	07/04/2020 12:44	07/04/2020	12:44:48	Bird	Amuromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0065.AVI	07/04/2020 13:02	07/04/2020	13:02:52	Bird	Amuromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0066.AVI	07/04/2020 13:05	07/04/2020	13:05:20	Bird	Amuromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0067.AVI	07/04/2020 14:13	07/04/2020	14:13:52	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0068.AVI	07/04/2020 14:21	07/04/2020	14:21:02	Bird	Amuromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0069.AVI	07/04/2020 14:34	07/04/2020	14:34:20	Bird	Amuromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0070.AVI	07/04/2020 17:35	07/04/2020	17:35:38	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0071.AVI	07/04/2020 17:36	07/04/2020	17:36:20	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0072.AVI	07/04/2020 19:09	07/04/2020	19:09:40	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0073.AVI	08/04/2020 10:32	08/04/2020	10:32:56	Bird	Picus vittatus	1
HW_CT_11	08/06/2020	IMG_0077.AVI	08/04/2020 17:51	08/04/2020	17:51:48	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0078.AVI	09/04/2020 12:07	09/04/2020	12:07:10	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0079.AVI	10/04/2020 03:28	10/04/2020	03:28:36	Mammal	Rattus sp.	1
HW_CT_11	08/06/2020	IMG_0080.AVI	10/04/2020 07:19	10/04/2020	07:19:18	Mammal	Unidentified squirrel or shrew	1
HW_CT_11	08/06/2020	IMG_0081.AVI	10/04/2020 07:35	10/04/2020	07:35:26	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0082.AVI	10/04/2020 07:44	10/04/2020	07:44:02	Bird	Amuromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0083.AVI	10/04/2020 07:47	10/04/2020	07:47:12	Bird	Amuromis phoenicurus	2
HW_CT_11	08/06/2020	IMG_0084.AVI	10/04/2020 07:48	10/04/2020	07:48:18	Bird	Amuromis phoenicurus	2
HW_CT_11	08/06/2020	IMG_0085.AVI	10/04/2020 12:11	10/04/2020	12:11:54	Bird	Rallina fasciata	1
HW_CT_11	08/06/2020	IMG_0086.AVI	10/04/2020 12:12	10/04/2020	12:12:28	Bird	Picus vittatus	1
HW_CT_11	08/06/2020	IMG_0087.AVI	10/04/2020 12:35	10/04/2020	12:35:10	Bird	Dicrurus paradiseus	1
HW_CT_11	08/06/2020	IMG_0088.AVI	10/04/2020 16:21	10/04/2020	16:21:42	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0089.AVI	11/04/2020 12:24	11/04/2020	12:24:16	Bird	Picus vittatus	1
HW_CT_11	08/06/2020	IMG_0090.AVI	11/04/2020 14:03	11/04/2020	14:03:50	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0091.AVI	12/04/2020 07:05	12/04/2020	07:05:46	Mammal	Unidentified squirrel or shrew	1
HW_CT_11	08/06/2020	IMG_0092.AVI	12/04/2020 07:34	12/04/2020	07:34:56	Mammal	Callosciurus notatus	1
HW_CT_11	08/06/2020	IMG_0093.AVI	12/04/2020 12:26	12/04/2020	12:26:18	Reptile	Varanus sp.	1
HW_CT_11	08/06/2020	IMG_0094.AVI	13/04/2020 11:24	13/04/2020	11:24:26	Bird	Pycnonotus goiaver	1
HW_CT_11	08/06/2020	IMG_0095.AVI	14/04/2020 03:17	14/04/2020	03:17:24	Mammal	Rattus sp.	1
HW_CT_11	08/06/2020	IMG_0096.AVI	14/04/2020 13:27	14/04/2020	13:27:02	Bird	Amuromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0097.AVI	15/04/2020 09:57	15/04/2020	09:57:28	Mammal	Callosciurus notatus	1
HW_CT_11	08/06/2020	IMG_0098.AVI	15/04/2020 15:21	15/04/2020	15:21:00	Bird	Amuromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0099.AVI	15/04/2020 18:25	15/04/2020	18:25:08	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0099.AVI	15/04/2020 18:25	15/04/2020	18:25:08	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0100.AVI	15/04/2020 18:29	15/04/2020	18:29:14	Bird	Picus vittatus	1
HW_CT_11	08/06/2020	IMG_0101.AVI	16/04/2020 14:34	16/04/2020	14:34:14	Bird	Amuromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0102.AVI	16/04/2020 14:40	16/04/2020	14:40:18	Bird	Picus vittatus	1
HW_CT_11	08/06/2020	IMG_0103.AVI	17/04/2020 10:13	17/04/2020	10:13:54	Bird	Amuromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0104.AVI	18/04/2020 10:21	18/04/2020	10:21:22	Bird	Amuromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0105.AVI	18/04/2020 13:30	18/04/2020	13:30:24	Bird	Picus vittatus	1
HW_CT_11	08/06/2020	IMG_0106.AVI	19/04/2020 15:33	19/04/2020	15:33:40	Mammal	Unidentified squirrel or shrew	1
HW_CT_11	08/06/2020	IMG_0107.AVI	19/04/2020 18:00	19/04/2020	18:00:42	Bird	Amuromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0108.AVI	20/04/2020 18:12	20/04/2020	18:12:06	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0109.AVI	21/04/2020 08:41	21/04/2020	08:41:52	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0110.AVI	21/04/2020 13:50	21/04/2020	13:50:58	Mammal	Callosciurus notatus	1
HW_CT_11	08/06/2020	IMG_0111.AVI	21/04/2020 13:57	21/04/2020	13:57:20	Mammal	Callosciurus notatus	1

Appendix J1 Camera Trap Log and Data for Clementi Forest

Station	SamplingDate	FileName	FileModifyDate	Date	Time	Taxon	Scientific name	Quantity
HW_CT_11	08/06/2020	IMG_0112.AVI	21/04/2020 13:57	21/04/2020	13:57:58	Mammal	Callosciurus notatus	1
HW_CT_11	08/06/2020	IMG_0113.AVI	21/04/2020 13:59	21/04/2020	13:59:16	Mammal	Callosciurus notatus	1
HW_CT_11	08/06/2020	IMG_0114.AVI	21/04/2020 14:11	21/04/2020	14:11:58	Mammal	Callosciurus notatus	1
HW_CT_11	08/06/2020	IMG_0115.AVI	21/04/2020 14:15	21/04/2020	14:15:44	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0116.AVI	22/04/2020 07:06	22/04/2020	07:06:20	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0117.AVI	22/04/2020 11:53	22/04/2020	11:53:02	Mammal	Unidentified squirrel or shrew	2
HW_CT_11	08/06/2020	IMG_0119.AVI	22/04/2020 12:51	22/04/2020	12:51:28	Mammal	Callosciurus notatus	1
HW_CT_11	08/06/2020	IMG_0121.AVI	22/04/2020 13:05	22/04/2020	13:05:06	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0122.AVI	22/04/2020 18:23	22/04/2020	18:23:06	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0122.AVI	22/04/2020 18:23	22/04/2020	18:23:06	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0123.AVI	23/04/2020 18:42	23/04/2020	18:42:20	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0124.AVI	24/04/2020 12:04	24/04/2020	12:04:08	Bird	Acridotheres javanicus	1
HW_CT_11	08/06/2020	IMG_0125.AVI	24/04/2020 12:30	24/04/2020	12:30:06	Bird	Unidentified bird	1
HW_CT_11	08/06/2020	IMG_0126.AVI	24/04/2020 12:30	24/04/2020	12:30:28	Bird	Amauromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0127.AVI	24/04/2020 13:37	24/04/2020	13:37:18	Bird	Amauromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0128.AVI	25/04/2020 07:06	25/04/2020	07:06:52	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0129.AVI	25/04/2020 16:36	25/04/2020	16:36:58	Bird	Garrulax leucolophus	3
HW_CT_11	08/06/2020	IMG_0130.AVI	26/04/2020 14:29	26/04/2020	14:29:30	Bird	Garrulax leucolophus	3
HW_CT_11	08/06/2020	IMG_0131.AVI	26/04/2020 14:41	26/04/2020	14:41:20	Bird	Unidentified bird	1
HW_CT_11	08/06/2020	IMG_0133.AVI	28/04/2020 10:48	28/04/2020	10:48:28	Bird	Picus vittatus	1
HW_CT_11	08/06/2020	IMG_0134.AVI	28/04/2020 15:19	28/04/2020	15:19:38	Mammal	Unidentified squirrel or shrew	1
HW_CT_11	08/06/2020	IMG_0135.AVI	28/04/2020 16:48	28/04/2020	16:48:10	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0136.AVI	28/04/2020 17:50	28/04/2020	17:50:10	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0137.AVI	28/04/2020 18:13	28/04/2020	18:13:26	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0138.AVI	29/04/2020 07:09	29/04/2020	07:09:50	Mammal	Unidentified squirrel or shrew	1
HW_CT_11	08/06/2020	IMG_0139.AVI	29/04/2020 13:11	29/04/2020	13:11:54	Bird	Picus vittatus	1
HW_CT_11	08/06/2020	IMG_0140.AVI	29/04/2020 16:22	29/04/2020	16:22:08	Bird	Amauromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0141.AVI	29/04/2020 16:54	29/04/2020	16:54:08	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0142.AVI	29/04/2020 18:14	29/04/2020	18:14:46	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0143.AVI	02/05/2020 16:30	02/05/2020	16:30:22	Bird	Dicrurus paradiseus	2
HW_CT_11	08/06/2020	IMG_0144.AVI	02/05/2020 17:35	02/05/2020	17:35:56	Bird	Amauromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0145.AVI	03/05/2020 07:50	03/05/2020	07:50:14	Bird	Amauromis phoenicurus	2
HW_CT_11	08/06/2020	IMG_0146.AVI	03/05/2020 08:15	03/05/2020	08:15:40	Bird	Amauromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0147.AVI	04/05/2020 16:53	04/05/2020	16:53:20	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0148.AVI	05/05/2020 09:41	05/05/2020	09:41:22	Bird	Amauromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0149.AVI	05/05/2020 10:43	05/05/2020	10:43:46	Bird	Unidentified bird	1
HW_CT_11	08/06/2020	IMG_0151.AVI	05/05/2020 13:33	05/05/2020	13:33:08	Bird	Rhipidura javanica	1
HW_CT_11	08/06/2020	IMG_0152.AVI	05/05/2020 13:33	05/05/2020	13:33:34	Bird	Rhipidura javanica	1
HW_CT_11	08/06/2020	IMG_0153.AVI	06/05/2020 04:48	06/05/2020	04:48:52	Mammal	Rattus sp.	1
HW_CT_11	08/06/2020	IMG_0154.AVI	06/05/2020 04:49	06/05/2020	04:49:26	Mammal	Rattus sp.	1
HW_CT_11	08/06/2020	IMG_0155.AVI	06/05/2020 16:12	06/05/2020	16:12:44	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0155.AVI	06/05/2020 16:12	06/05/2020	16:12:44	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0156.AVI	06/05/2020 16:30	06/05/2020	16:30:48	Bird	Garrulax leucolophus	3
HW_CT_11	08/06/2020	IMG_0157.AVI	07/05/2020 10:24	07/05/2020	10:24:06	Bird	Amauromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0158.AVI	07/05/2020 10:51	07/05/2020	10:51:48	Bird	Amauromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0159.AVI	07/05/2020 11:03	07/05/2020	11:03:58	Bird	Amauromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0160.AVI	07/05/2020 11:04	07/05/2020	11:04:30	Bird	Amauromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0162.AVI	07/05/2020 14:34	07/05/2020	14:34:52	Bird	Picus vittatus	1
HW_CT_11	08/06/2020	IMG_0163.AVI	07/05/2020 17:06	07/05/2020	17:06:08	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0164.AVI	08/05/2020 14:37	08/05/2020	14:37:36	Bird	Amauromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0165.AVI	08/05/2020 14:41	08/05/2020	14:41:26	Bird	Amauromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0165.AVI	08/05/2020 14:41	08/05/2020	14:41:26	Bird	Garrulax leucolophus	2
HW_CT_11	08/06/2020	IMG_0166.AVI	09/05/2020 15:05	09/05/2020	15:05:04	Mammal	Macaca fascicularis	1
HW_CT_11	08/06/2020	IMG_0167.AVI	09/05/2020 15:05	09/05/2020	15:05:36	Mammal	Macaca fascicularis	2
HW_CT_11	08/06/2020	IMG_0168.AVI	09/05/2020 15:06	09/05/2020	15:06:12	Mammal	Macaca fascicularis	2
HW_CT_11	08/06/2020	IMG_0169.AVI	09/05/2020 15:06	09/05/2020	15:06:36	Mammal	Macaca fascicularis	2
HW_CT_11	08/06/2020	IMG_0170.AVI	09/05/2020 15:07	09/05/2020	15:07:14	Mammal	Macaca fascicularis	2
HW_CT_11	08/06/2020	IMG_0171.AVI	09/05/2020 15:10	09/05/2020	15:10:30	Mammal	Macaca fascicularis	2
HW_CT_11	08/06/2020	IMG_0172.AVI	09/05/2020 15:10	09/05/2020	15:10:56	Mammal	Macaca fascicularis	2
HW_CT_11	08/06/2020	IMG_0173.AVI	09/05/2020 15:15	09/05/2020	15:15:18	Mammal	Macaca fascicularis	1
HW_CT_11	08/06/2020	IMG_0174.AVI	09/05/2020 15:24	09/05/2020	15:24:08	Mammal	Macaca fascicularis	1
HW_CT_11	08/06/2020	IMG_0175.AVI	09/05/2020 15:25	09/05/2020	15:25:34	Mammal	Macaca fascicularis	1
HW_CT_11	08/06/2020	IMG_0176.AVI	09/05/2020 15:26	09/05/2020	15:26:24	Mammal	Macaca fascicularis	1
HW_CT_11	08/06/2020	IMG_0178.AVI	09/05/2020 15:40	09/05/2020	15:40:52	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0179.AVI	11/05/2020 14:59	11/05/2020	14:59:32	Bird	Picus vittatus	1
HW_CT_11	08/06/2020	IMG_0180.AVI	12/05/2020 18:26	12/05/2020	18:26:04	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0181.AVI	13/05/2020 16:59	13/05/2020	16:59:42	NA	Unidentified sp.	1
HW_CT_11	08/06/2020	IMG_0182.AVI	13/05/2020 17:41	13/05/2020	17:41:32	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0183.AVI	13/05/2020 17:42	13/05/2020	17:42:00	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0184.AVI	14/05/2020 07:08	14/05/2020	07:08:34	Mammal	Callosciurus notatus	1
HW_CT_11	08/06/2020	IMG_0185.AVI	14/05/2020 08:56	14/05/2020	08:56:30	Mammal	Callosciurus notatus	1
HW_CT_11	08/06/2020	IMG_0186.AVI	14/05/2020 11:56	14/05/2020	11:56:32	Bird	Picus vittatus	1
HW_CT_11	08/06/2020	IMG_0187.AVI	14/05/2020 22:54	14/05/2020	22:54:26	Bird	Otus lempiji	1
HW_CT_11	08/06/2020	IMG_0189.AVI	15/05/2020 16:00	15/05/2020	16:00:38	Mammal	Callosciurus notatus	1
HW_CT_11	08/06/2020	IMG_0190.AVI	15/05/2020 16:16	15/05/2020	16:16:48	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0190.AVI	15/05/2020 16:16	15/05/2020	16:16:48	Bird	Unidentified bird	1
HW_CT_11	08/06/2020	IMG_0191.AVI	15/05/2020 16:17	15/05/2020	16:17:14	Mammal	Callosciurus notatus	1
HW_CT_11	08/06/2020	IMG_0192.AVI	15/05/2020 17:01	15/05/2020	17:01:14	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0194.AVI	15/05/2020 18:34	15/05/2020	18:34:56	Mammal	Callosciurus notatus	1
HW_CT_11	08/06/2020	IMG_0195.AVI	15/05/2020 18:49	15/05/2020	18:49:36	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0196.AVI	16/05/2020 11:37	16/05/2020	11:37:24	Bird	Picus vittatus	1
HW_CT_11	08/06/2020	IMG_0197.AVI	16/05/2020 11:44	16/05/2020	11:44:48	Bird	Dinopium javanense	1
HW_CT_11	08/06/2020	IMG_0198.AVI	16/05/2020 14:02	16/05/2020	14:02:00	Mammal	Callosciurus notatus	1
HW_CT_11	08/06/2020	IMG_0199.AVI	16/05/2020 17:30	16/05/2020	17:30:24	Bird	Garrulax leucolophus	2
HW_CT_11	08/06/2020	IMG_0199.AVI	16/05/2020 17:30	16/05/2020	17:30:24	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0200.AVI	17/05/2020 09:29	17/05/2020	09:29:54	Bird	Rallina fasciata	1
HW_CT_11	08/06/2020	IMG_0201.AVI	18/05/2020 14:21	18/05/2020	14:21:54	Bird	Amauromis phoenicurus	1

Appendix J1 Camera Trap Log and Data for Clementi Forest

Station	SamplingDate	FileName	FileModifyDate	Date	Time	Taxon	Scientific name	Quantity
HW_CT_11	08/06/2020	IMG_0202.AVI	18/05/2020 17:41	18/05/2020	17:41:42	Bird	Amuromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0203.AVI	18/05/2020 17:48	18/05/2020	17:48:52	Bird	Amuromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0204.AVI	19/05/2020 07:26	19/05/2020	07:26:38	Bird	Amuromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0205.AVI	19/05/2020 07:37	19/05/2020	07:37:54	Bird	Amuromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0206.AVI	19/05/2020 10:29	19/05/2020	10:29:56	Bird	Picus vittatus	1
HW_CT_11	08/06/2020	IMG_0208.AVI	21/05/2020 12:02	21/05/2020	12:02:12	Bird	Gallus gallus	1
HW_CT_11	08/06/2020	IMG_0209.AVI	21/05/2020 13:44	21/05/2020	13:44:52	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0210.AVI	22/05/2020 09:46	22/05/2020	09:46:44	Bird	Dicrurus paradiseus	1
HW_CT_11	08/06/2020	IMG_0211.AVI	22/05/2020 13:44	22/05/2020	13:44:14	Bird	Picus vittatus	1
HW_CT_11	08/06/2020	IMG_0213.AVI	23/05/2020 12:42	23/05/2020	12:42:22	Bird	Amuromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0214.AVI	23/05/2020 16:18	23/05/2020	16:18:40	Mammal	Tupaia glis	1
HW_CT_11	08/06/2020	IMG_0215.AVI	23/05/2020 16:21	23/05/2020	16:21:34	Mammal	Unidentified squirrel or shrew	1
HW_CT_11	08/06/2020	IMG_0216.AVI	24/05/2020 10:30	24/05/2020	10:30:44	Bird	Picus vittatus	1
HW_CT_11	08/06/2020	IMG_0218.AVI	24/05/2020 15:34	24/05/2020	15:34:44	Bird	Picus vittatus	1
HW_CT_11	08/06/2020	IMG_0222.AVI	26/05/2020 09:08	26/05/2020	09:08:44	Bird	Gallus gallus	1
HW_CT_11	08/06/2020	IMG_0223.AVI	26/05/2020 09:09	26/05/2020	09:09:10	Bird	Gallus gallus	1
HW_CT_11	08/06/2020	IMG_0224.AVI	26/05/2020 12:15	26/05/2020	12:15:34	Bird	Gallus gallus	1
HW_CT_11	08/06/2020	IMG_0225.AVI	26/05/2020 14:57	26/05/2020	14:57:46	Mammal	Callosciurus notatus	1
HW_CT_11	08/06/2020	IMG_0226.AVI	27/05/2020 07:25	27/05/2020	07:25:52	Bird	Amuromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0227.AVI	28/05/2020 14:17	28/05/2020	14:17:00	Bird	Spilopelia chinensis	1
HW_CT_11	08/06/2020	IMG_0228.AVI	29/05/2020 07:14	29/05/2020	07:14:30	Bird	Amuromis phoenicurus	1
HW_CT_11	08/06/2020	IMG_0229.AVI	30/05/2020 16:46	30/05/2020	16:46:02	Bird	Pycnonotus goiaver	1
HW_CT_11	08/06/2020	IMG_0230.AVI	30/05/2020 16:46	30/05/2020	16:46:22	Bird	Pycnonotus goiaver	1
HW_CT_11	08/06/2020	IMG_0231.AVI	31/05/2020 17:28	31/05/2020	17:28:04	Bird	Garrulax leucolophus	2
HW_CT_11	08/06/2020	IMG_0232.AVI	02/06/2020 10:44	02/06/2020	10:44:00	Reptile	Varanus sp.	1
HW_CT_11	08/06/2020	IMG_0233.AVI	02/06/2020 15:09	02/06/2020	15:09:16	Bird	Garrulax leucolophus	1
HW_CT_11	08/06/2020	IMG_0234.AVI	04/06/2020 07:08	04/06/2020	07:08:56	NA	Unidentified sp.	1
HW_CT_12	10/01/2020	IMG_0010.AVI	11/12/2019 07:24	11/12/2019	07:24:48	Mammal	Unidentified squirrel or shrew	1
HW_CT_12	10/01/2020	IMG_0012.AVI	11/12/2019 08:28	11/12/2019	08:28:20	Bird	Geokichia citrina	1
HW_CT_12	10/01/2020	IMG_0013.AVI	11/12/2019 15:27	11/12/2019	15:27:02	Bird	Garrulax leucolophus	2
HW_CT_12	10/01/2020	IMG_0015.AVI	12/12/2019 16:08	12/12/2019	16:08:46	Mammal	Unidentified squirrel or shrew	1
HW_CT_12	10/01/2020	IMG_0016.AVI	12/12/2019 16:10	12/12/2019	16:10:08	Mammal	Tupaia glis	1
HW_CT_12	10/01/2020	IMG_0017.AVI	13/12/2019 07:13	13/12/2019	07:13:02	Mammal	Callosciurus notatus	1
HW_CT_12	10/01/2020	IMG_0018.AVI	13/12/2019 09:35	13/12/2019	09:35:58	Mammal	Tupaia glis	1
HW_CT_12	10/01/2020	IMG_0019.AVI	13/12/2019 10:42	13/12/2019	10:42:54	Mammal	Callosciurus notatus	1
HW_CT_12	10/01/2020	IMG_0020.AVI	15/12/2019 17:45	15/12/2019	17:45:58	Mammal	Tupaia glis	1
HW_CT_12	10/01/2020	IMG_0021.AVI	15/12/2019 19:02	15/12/2019	19:02:10	Bird	Rallina fasciata	1
HW_CT_12	10/01/2020	IMG_0022.AVI	15/12/2019 21:36	15/12/2019	21:36:58	Mammal	Paradoxurus musangus	1
HW_CT_12	10/01/2020	IMG_0023.AVI	15/12/2019 21:37	15/12/2019	21:37:18	Mammal	Paradoxurus musangus	1
HW_CT_12	10/01/2020	IMG_0024.AVI	16/12/2019 09:27	16/12/2019	09:27:20	Mammal	Tupaia glis	1
HW_CT_12	10/01/2020	IMG_0025.AVI	16/12/2019 09:27	16/12/2019	09:27:42	Mammal	Tupaia glis	1
HW_CT_12	10/01/2020	IMG_0026.AVI	16/12/2019 18:37	16/12/2019	18:37:42	Mammal	Unidentified squirrel or shrew	1
HW_CT_12	10/01/2020	IMG_0027.AVI	17/12/2019 07:40	17/12/2019	07:40:04	Mammal	Unidentified squirrel or shrew	1
HW_CT_12	10/01/2020	IMG_0028.AVI	17/12/2019 14:59	17/12/2019	14:59:12	Mammal	Tupaia glis	1
HW_CT_12	10/01/2020	IMG_0029.AVI	19/12/2019 11:35	19/12/2019	11:35:24	Mammal	Unidentified squirrel or shrew	1
HW_CT_12	10/01/2020	IMG_0030.AVI	19/12/2019 16:14	19/12/2019	16:14:08	Bird	Garrulax leucolophus	1
HW_CT_12	10/01/2020	IMG_0031.AVI	19/12/2019 16:15	19/12/2019	16:15:26	Bird	Garrulax leucolophus	2
HW_CT_12	10/01/2020	IMG_0032.AVI	20/12/2019 07:20	20/12/2019	07:20:58	Mammal	Callosciurus notatus	1
HW_CT_12	10/01/2020	IMG_0033.AVI	20/12/2019 07:35	20/12/2019	07:35:30	Mammal	Callosciurus notatus	1
HW_CT_12	10/01/2020	IMG_0034.AVI	20/12/2019 17:29	20/12/2019	17:29:58	Mammal	Callosciurus notatus	1
HW_CT_12	10/01/2020	IMG_0035.AVI	20/12/2019 17:30	20/12/2019	17:30:22	Mammal	Callosciurus notatus	1
HW_CT_12	10/01/2020	IMG_0036.AVI	20/12/2019 17:40	20/12/2019	17:40:36	Bird	Garrulax leucolophus	1
HW_CT_12	10/01/2020	IMG_0037.AVI	20/12/2019 17:41	20/12/2019	17:41:48	Bird	Garrulax leucolophus	1
HW_CT_12	13/02/2020	IMG_0010.AVI	10/01/2020 09:25	10/01/2020	09:25:42	Mammal	Tupaia glis	1
HW_CT_12	13/02/2020	IMG_0011.AVI	10/01/2020 09:27	10/01/2020	09:27:08	Mammal	Tupaia glis	1
HW_CT_12	13/02/2020	IMG_0012.AVI	10/01/2020 10:30	10/01/2020	10:30:40	Mammal	Tupaia glis	1
HW_CT_12	13/02/2020	IMG_0013.AVI	10/01/2020 10:35	10/01/2020	10:35:22	Mammal	Tupaia glis	1
HW_CT_12	13/02/2020	IMG_0014.AVI	10/01/2020 10:44	10/01/2020	10:44:48	Mammal	Tupaia glis	1
HW_CT_12	13/02/2020	IMG_0015.AVI	10/01/2020 10:49	10/01/2020	10:49:16	Mammal	Tupaia glis	1
HW_CT_12	13/02/2020	IMG_0016.AVI	10/01/2020 10:51	10/01/2020	10:51:38	Mammal	Tupaia glis	1
HW_CT_12	13/02/2020	IMG_0017.AVI	10/01/2020 13:05	10/01/2020	13:05:34	Bird	Garrulax leucolophus	2
HW_CT_12	13/02/2020	IMG_0018.AVI	11/01/2020 07:08	11/01/2020	07:08:36	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0019.AVI	11/01/2020 07:09	11/01/2020	07:09:28	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0020.AVI	11/01/2020 07:18	11/01/2020	07:18:32	Mammal	Tupaia glis	1
HW_CT_12	13/02/2020	IMG_0021.AVI	11/01/2020 07:59	11/01/2020	07:59:54	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0022.AVI	11/01/2020 11:41	11/01/2020	11:41:48	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0025.AVI	12/01/2020 07:35	12/01/2020	07:35:26	Mammal	Tupaia glis	1
HW_CT_12	13/02/2020	IMG_0026.AVI	12/01/2020 13:01	12/01/2020	13:01:28	Mammal	Tupaia glis	1
HW_CT_12	13/02/2020	IMG_0027.AVI	12/01/2020 14:51	12/01/2020	14:51:14	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0028.AVI	12/01/2020 16:39	12/01/2020	16:39:38	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0029.AVI	13/01/2020 08:52	13/01/2020	08:52:24	Mammal	Unidentified squirrel or shrew	1
HW_CT_12	13/02/2020	IMG_0030.AVI	13/01/2020 09:45	13/01/2020	09:45:00	Mammal	Tupaia glis	1
HW_CT_12	13/02/2020	IMG_0032.AVI	13/01/2020 16:17	13/01/2020	16:17:52	Mammal	Tupaia glis	1
HW_CT_12	13/02/2020	IMG_0033.AVI	14/01/2020 07:28	14/01/2020	07:28:40	Mammal	Tupaia glis	1
HW_CT_12	13/02/2020	IMG_0034.AVI	14/01/2020 08:17	14/01/2020	08:17:48	Mammal	Tupaia glis	1
HW_CT_12	13/02/2020	IMG_0035.AVI	14/01/2020 10:48	14/01/2020	10:48:54	Mammal	Tupaia glis	1
HW_CT_12	13/02/2020	IMG_0036.AVI	14/01/2020 16:37	14/01/2020	16:37:38	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0037.AVI	14/01/2020 17:05	14/01/2020	17:05:58	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0037.AVI	14/01/2020 17:05	14/01/2020	17:05:58	Bird	Garrulax leucolophus	1
HW_CT_12	13/02/2020	IMG_0038.AVI	14/01/2020 17:08	14/01/2020	17:08:12	Mammal	Callosciurus notatus	2
HW_CT_12	13/02/2020	IMG_0038.AVI	14/01/2020 17:08	14/01/2020	17:08:12	Bird	Garrulax leucolophus	1
HW_CT_12	13/02/2020	IMG_0039.AVI	14/01/2020 17:09	14/01/2020	17:09:36	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0039.AVI	14/01/2020 17:09	14/01/2020	17:09:36	Bird	Garrulax leucolophus	1
HW_CT_12	13/02/2020	IMG_0040.AVI	14/01/2020 17:13	14/01/2020	17:13:20	Bird	Unidentified bird	1
HW_CT_12	13/02/2020	IMG_0041.AVI	14/01/2020 23:58	14/01/2020	23:58:16	Mammal	Rattus sp.	1
HW_CT_12	13/02/2020	IMG_0042.AVI	15/01/2020 00:02	15/01/2020	00:02:22	Mammal	Rattus sp.	1
HW_CT_12	13/02/2020	IMG_0043.AVI	15/01/2020 00:03	15/01/2020	00:03:34	Mammal	Rattus sp.	1

Appendix J1 Camera Trap Log and Data for Clementi Forest

Station	SamplingDate	FileName	FileModifyDate	Date	Time	Taxon	Scientific name	Quantity
HW_CT_12	13/02/2020	IMG_0044.AVI	15/01/2020 00:36	15/01/2020	00:36:56	Mammal	Rattus sp.	1
HW_CT_12	13/02/2020	IMG_0045.AVI	15/01/2020 03:54	15/01/2020	03:54:00	Mammal	Rattus sp.	1
HW_CT_12	13/02/2020	IMG_0047.AVI	15/01/2020 07:25	15/01/2020	07:25:52	Mammal	Tupaia glis	1
HW_CT_12	13/02/2020	IMG_0048.AVI	15/01/2020 07:33	15/01/2020	07:33:58	Mammal	Tupaia glis	1
HW_CT_12	13/02/2020	IMG_0049.AVI	15/01/2020 14:04	15/01/2020	14:04:34	Mammal	Tupaia glis	1
HW_CT_12	13/02/2020	IMG_0051.AVI	15/01/2020 14:35	15/01/2020	14:35:10	Mammal	Tupaia glis	1
HW_CT_12	13/02/2020	IMG_0052.AVI	15/01/2020 15:01	15/01/2020	15:01:32	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0053.AVI	15/01/2020 16:47	15/01/2020	16:47:10	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0054.AVI	15/01/2020 17:14	15/01/2020	17:14:54	Mammal	Tupaia glis	1
HW_CT_12	13/02/2020	IMG_0055.AVI	15/01/2020 23:24	15/01/2020	23:24:06	Mammal	Rattus sp.	1
HW_CT_12	13/02/2020	IMG_0057.AVI	16/01/2020 07:18	16/01/2020	07:18:22	Mammal	Callosciurus notatus	2
HW_CT_12	13/02/2020	IMG_0058.AVI	16/01/2020 07:18	16/01/2020	07:18:44	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0059.AVI	16/01/2020 07:58	16/01/2020	07:58:56	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0060.AVI	16/01/2020 08:05	16/01/2020	08:05:16	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0061.AVI	16/01/2020 08:08	16/01/2020	08:08:18	Mammal	Tupaia glis	1
HW_CT_12	13/02/2020	IMG_0062.AVI	16/01/2020 08:25	16/01/2020	08:25:56	Mammal	Tupaia glis	1
HW_CT_12	13/02/2020	IMG_0075.AVI	18/01/2020 15:20	18/01/2020	15:20:18	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0076.AVI	18/01/2020 15:47	18/01/2020	15:47:42	Bird	Garrulax leucolophus	2
HW_CT_12	13/02/2020	IMG_0077.AVI	19/01/2020 00:31	19/01/2020	00:31:44	Mammal	Rattus sp.	1
HW_CT_12	13/02/2020	IMG_0078.AVI	19/01/2020 01:07	19/01/2020	01:07:26	Mammal	Rattus sp.	1
HW_CT_12	13/02/2020	IMG_0079.AVI	19/01/2020 07:06	19/01/2020	07:06:56	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0082.AVI	19/01/2020 14:05	19/01/2020	14:05:00	Mammal	Unidentified mammal	1
HW_CT_12	13/02/2020	IMG_0082.AVI	19/01/2020 14:05	19/01/2020	14:05:00	Bird	Garrulax leucolophus	2
HW_CT_12	13/02/2020	IMG_0083.AVI	19/01/2020 15:38	19/01/2020	15:38:36	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0085.AVI	20/01/2020 10:56	20/01/2020	10:56:34	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0107.AVI	22/01/2020 16:19	22/01/2020	16:19:10	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0108.AVI	22/01/2020 17:16	22/01/2020	17:16:26	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0109.AVI	22/01/2020 18:15	22/01/2020	18:15:00	Mammal	Tupaia glis	1
HW_CT_12	13/02/2020	IMG_0110.AVI	22/01/2020 18:15	22/01/2020	18:15:24	Mammal	Tupaia glis	1
HW_CT_12	13/02/2020	IMG_0114.AVI	23/01/2020 01:25	23/01/2020	01:25:14	Mammal	Rattus sp.	1
HW_CT_12	13/02/2020	IMG_0115.AVI	23/01/2020 20:29	23/01/2020	20:29:42	Bird	Otus lempiji	1
HW_CT_12	13/02/2020	IMG_0117.AVI	24/01/2020 12:59	24/01/2020	12:59:38	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0119.AVI	25/01/2020 07:34	25/01/2020	07:34:22	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0120.AVI	25/01/2020 11:26	25/01/2020	11:26:54	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0121.AVI	25/01/2020 17:41	25/01/2020	17:41:40	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0122.AVI	26/01/2020 09:40	26/01/2020	09:40:16	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0123.AVI	26/01/2020 18:55	26/01/2020	18:55:48	Mammal	Unidentified squirrel or shrew	1
HW_CT_12	13/02/2020	IMG_0124.AVI	27/01/2020 08:58	27/01/2020	08:58:34	Mammal	Tupaia glis	1
HW_CT_12	13/02/2020	IMG_0126.AVI	28/01/2020 17:26	28/01/2020	17:26:42	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0127.AVI	29/01/2020 07:22	29/01/2020	07:22:42	Bird	Pterorchinus chinensis	2
HW_CT_12	13/02/2020	IMG_0130.AVI	31/01/2020 17:24	31/01/2020	17:24:36	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0132.AVI	01/02/2020 17:18	01/02/2020	17:18:02	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0133.AVI	01/02/2020 23:12	01/02/2020	23:12:28	Bird	Otus lempiji	1
HW_CT_12	13/02/2020	IMG_0134.AVI	03/02/2020 16:36	03/02/2020	16:36:14	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0136.AVI	03/02/2020 17:12	03/02/2020	17:12:00	Bird	Pterorchinus chinensis	1
HW_CT_12	13/02/2020	IMG_0137.AVI	05/02/2020 11:46	05/02/2020	11:46:54	NA	Unidentified sp.	1
HW_CT_12	13/02/2020	IMG_0138.AVI	05/02/2020 14:37	05/02/2020	14:37:26	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0139.AVI	05/02/2020 18:02	05/02/2020	18:02:00	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0140.AVI	06/02/2020 17:55	06/02/2020	17:55:16	Bird	Garrulax leucolophus	1
HW_CT_12	13/02/2020	IMG_0141.AVI	06/02/2020 21:37	06/02/2020	21:37:20	Bird	Otus lempiji	1
HW_CT_12	13/02/2020	IMG_0142.AVI	06/02/2020 22:05	06/02/2020	22:05:32	Bird	Otus lempiji	1
HW_CT_12	13/02/2020	IMG_0143.AVI	07/02/2020 00:47	07/02/2020	00:47:22	Bird	Otus lempiji	1
HW_CT_12	13/02/2020	IMG_0145.AVI	07/02/2020 01:38	07/02/2020	01:38:52	Bird	Otus lempiji	1
HW_CT_12	13/02/2020	IMG_0146.AVI	07/02/2020 08:34	07/02/2020	08:34:28	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0148.AVI	08/02/2020 07:53	08/02/2020	07:53:42	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0149.AVI	08/02/2020 15:46	08/02/2020	15:46:46	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0150.AVI	08/02/2020 16:15	08/02/2020	16:15:54	Bird	Garrulax leucolophus	2
HW_CT_12	13/02/2020	IMG_0152.AVI	09/02/2020 12:20	09/02/2020	12:20:44	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0153.AVI	09/02/2020 13:30	09/02/2020	13:30:18	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0156.AVI	11/02/2020 09:15	11/02/2020	09:15:06	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0157.AVI	11/02/2020 09:30	11/02/2020	09:30:40	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0158.AVI	11/02/2020 14:09	11/02/2020	14:09:36	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0159.AVI	11/02/2020 14:26	11/02/2020	14:26:42	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0160.AVI	11/02/2020 15:56	11/02/2020	15:56:20	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0163.AVI	13/02/2020 07:42	13/02/2020	07:42:24	Mammal	Callosciurus notatus	1
HW_CT_12	13/02/2020	IMG_0164.AVI	13/02/2020 10:32	13/02/2020	10:32:44	NA	Unidentified sp.	1
HW_CT_12	20/03/2020	IMG_0011.AVI	28/02/2020 07:25	28/02/2020	07:25:10	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0012.AVI	28/02/2020 12:34	28/02/2020	12:34:50	Reptile	Unidentified Scincidae	1
HW_CT_12	20/03/2020	IMG_0013.AVI	28/02/2020 14:27	28/02/2020	14:27:56	Mammal	Unidentified squirrel or shrew	1
HW_CT_12	20/03/2020	IMG_0014.AVI	28/02/2020 15:36	28/02/2020	15:36:24	Bird	Garrulax leucolophus	1
HW_CT_12	20/03/2020	IMG_0015.AVI	28/02/2020 15:17	28/02/2020	15:38:02	Bird	Garrulax leucolophus	2
HW_CT_12	20/03/2020	IMG_0016.AVI	28/02/2020 15:39	28/02/2020	15:39:34	Bird	Garrulax leucolophus	1
HW_CT_12	20/03/2020	IMG_0023.AVI	29/02/2020 07:18	29/02/2020	07:18:24	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0024.AVI	29/02/2020 07:19	29/02/2020	07:19:04	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0028.AVI	29/02/2020 09:48	29/02/2020	09:48:56	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0029.AVI	29/02/2020 11:54	29/02/2020	11:54:02	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0031.AVI	29/02/2020 15:00	29/02/2020	15:00:40	Mammal	Callosciurus notatus	1
HW_CT_12	20/03/2020	IMG_0032.AVI	01/03/2020 07:18	01/03/2020	07:18:52	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0033.AVI	01/03/2020 07:33	01/03/2020	07:33:22	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0034.AVI	01/03/2020 17:37	01/03/2020	17:37:54	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0035.AVI	01/03/2020 17:52	01/03/2020	17:52:20	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0036.AVI	01/03/2020 17:52	01/03/2020	17:52:46	Mammal	Tupaia glis	2
HW_CT_12	20/03/2020	IMG_0037.AVI	01/03/2020 18:10	01/03/2020	18:10:50	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0038.AVI	02/03/2020 07:30	02/03/2020	07:30:22	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0040.AVI	02/03/2020 10:25	02/03/2020	10:25:20	Mammal	Unidentified squirrel or shrew	1
HW_CT_12	20/03/2020	IMG_0041.AVI	02/03/2020 10:26	02/03/2020	10:26:10	Mammal	Unidentified squirrel or shrew	1
HW_CT_12	20/03/2020	IMG_0042.AVI	02/03/2020 11:26	02/03/2020	11:26:24	Reptile	Eutropis multifasciata	1

Appendix J1 Camera Trap Log and Data for Clementi Forest

Station	SamplingDate	FileName	FileModifyDate	Date	Time	Taxon	Scientific name	Quantity
HW_CT_12	20/03/2020	IMG_0045.AVI	03/03/2020 07:33	03/03/2020	07:33:08	Bird	Rallina fasciata	1
HW_CT_12	20/03/2020	IMG_0046.AVI	03/03/2020 08:02	03/03/2020	08:02:58	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0047.AVI	03/03/2020 19:11	03/03/2020	19:11:04	Bird	Rallina fasciata	1
HW_CT_12	20/03/2020	IMG_0048.AVI	03/03/2020 19:24	03/03/2020	19:24:18	Bird	Rallina fasciata	1
HW_CT_12	20/03/2020	IMG_0049.AVI	04/03/2020 07:12	04/03/2020	07:12:04	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0050.AVI	04/03/2020 07:26	04/03/2020	07:26:28	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0051.AVI	04/03/2020 08:44	04/03/2020	08:44:10	Mammal	Callosciurus notatus	1
HW_CT_12	20/03/2020	IMG_0052.AVI	04/03/2020 09:10	04/03/2020	09:10:42	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0053.AVI	04/03/2020 09:11	04/03/2020	09:11:04	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0054.AVI	04/03/2020 10:03	04/03/2020	10:03:48	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0056.AVI	05/03/2020 07:22	05/03/2020	07:22:20	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0057.AVI	05/03/2020 07:22	05/03/2020	07:22:42	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0058.AVI	05/03/2020 07:23	05/03/2020	07:23:02	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0059.AVI	05/03/2020 07:34	05/03/2020	07:34:30	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0060.AVI	05/03/2020 17:27	05/03/2020	17:27:20	Bird	Larivora cyane	1
HW_CT_12	20/03/2020	IMG_0061.AVI	06/03/2020 10:04	06/03/2020	10:04:42	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0062.AVI	06/03/2020 10:40	06/03/2020	10:40:32	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0063.AVI	06/03/2020 16:23	06/03/2020	16:23:36	Mammal	Unidentified squirrel or shrew	1
HW_CT_12	20/03/2020	IMG_0064.AVI	06/03/2020 16:23	06/03/2020	16:23:58	Mammal	Unidentified squirrel or shrew	1
HW_CT_12	20/03/2020	IMG_0065.AVI	06/03/2020 16:54	06/03/2020	16:54:28	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0066.AVI	07/03/2020 11:18	07/03/2020	11:18:32	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0067.AVI	07/03/2020 14:15	07/03/2020	14:15:44	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0068.AVI	08/03/2020 07:11	08/03/2020	07:11:52	Bird	Rallina fasciata	1
HW_CT_12	20/03/2020	IMG_0069.AVI	08/03/2020 08:40	08/03/2020	08:40:22	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0070.AVI	08/03/2020 09:57	08/03/2020	09:57:44	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0072.AVI	08/03/2020 10:38	08/03/2020	10:38:34	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0073.AVI	08/03/2020 12:23	08/03/2020	12:23:52	Reptile	Varanus sp.	1
HW_CT_12	20/03/2020	IMG_0074.AVI	09/03/2020 00:35	09/03/2020	00:35:04	Mammal	Rattus sp.	1
HW_CT_12	20/03/2020	IMG_0075.AVI	09/03/2020 00:39	09/03/2020	00:39:18	Mammal	Rattus sp.	1
HW_CT_12	20/03/2020	IMG_0076.AVI	09/03/2020 00:56	09/03/2020	00:56:10	Mammal	Rattus sp.	1
HW_CT_12	20/03/2020	IMG_0077.AVI	09/03/2020 07:31	09/03/2020	07:31:24	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0078.AVI	09/03/2020 07:43	09/03/2020	07:43:52	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0079.AVI	09/03/2020 09:01	09/03/2020	09:01:36	Bird	Larivora cyane	1
HW_CT_12	20/03/2020	IMG_0080.AVI	09/03/2020 11:18	09/03/2020	11:18:40	Mammal	Unidentified squirrel or shrew	1
HW_CT_12	20/03/2020	IMG_0081.AVI	09/03/2020 14:42	09/03/2020	14:42:20	Mammal	Callosciurus notatus	1
HW_CT_12	20/03/2020	IMG_0082.AVI	09/03/2020 18:56	09/03/2020	18:56:24	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0083.AVI	09/03/2020 19:02	09/03/2020	19:02:48	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0084.AVI	10/03/2020 07:40	10/03/2020	07:40:34	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0085.AVI	10/03/2020 08:01	10/03/2020	08:01:42	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0086.AVI	10/03/2020 08:54	10/03/2020	08:54:50	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0087.AVI	10/03/2020 11:21	10/03/2020	11:21:12	Bird	Garrulax leucolophus	1
HW_CT_12	20/03/2020	IMG_0087.AVI	10/03/2020 11:21	10/03/2020	11:21:12	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0089.AVI	10/03/2020 11:59	10/03/2020	11:59:58	Reptile	Varanus sp.	1
HW_CT_12	20/03/2020	IMG_0090.AVI	10/03/2020 14:46	10/03/2020	14:46:00	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0091.AVI	10/03/2020 16:21	10/03/2020	16:21:50	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0092.AVI	10/03/2020 18:02	10/03/2020	18:02:02	Mammal	Callosciurus notatus	1
HW_CT_12	20/03/2020	IMG_0093.AVI	10/03/2020 18:03	10/03/2020	18:03:38	Mammal	Unidentified squirrel or shrew	1
HW_CT_12	20/03/2020	IMG_0094.AVI	10/03/2020 18:04	10/03/2020	18:04:00	Mammal	Unidentified squirrel or shrew	1
HW_CT_12	20/03/2020	IMG_0095.AVI	10/03/2020 18:04	10/03/2020	18:04:20	Mammal	Unidentified squirrel or shrew	1
HW_CT_12	20/03/2020	IMG_0096.AVI	10/03/2020 18:04	10/03/2020	18:04:42	Mammal	Unidentified squirrel or shrew	1
HW_CT_12	20/03/2020	IMG_0097.AVI	10/03/2020 18:05	10/03/2020	18:05:02	Mammal	Unidentified squirrel or shrew	1
HW_CT_12	20/03/2020	IMG_0098.AVI	10/03/2020 18:08	10/03/2020	18:08:16	Mammal	Unidentified squirrel or shrew	1
HW_CT_12	20/03/2020	IMG_0099.AVI	10/03/2020 18:08	10/03/2020	18:08:38	Mammal	Unidentified squirrel or shrew	1
HW_CT_12	20/03/2020	IMG_0100.AVI	11/03/2020 00:54	11/03/2020	00:54:20	Mammal	Rattus sp.	1
HW_CT_12	20/03/2020	IMG_0101.AVI	11/03/2020 07:18	11/03/2020	07:18:12	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0102.AVI	11/03/2020 07:23	11/03/2020	07:23:32	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0103.AVI	11/03/2020 09:50	11/03/2020	09:50:38	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0104.AVI	11/03/2020 10:28	11/03/2020	10:28:12	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0105.AVI	11/03/2020 12:46	11/03/2020	12:46:10	Reptile	Varanus sp.	1
HW_CT_12	20/03/2020	IMG_0106.AVI	11/03/2020 14:16	11/03/2020	14:16:04	Bird	Garrulax leucolophus	1
HW_CT_12	20/03/2020	IMG_0107.AVI	11/03/2020 14:16	11/03/2020	14:16:26	Bird	Garrulax leucolophus	1
HW_CT_12	20/03/2020	IMG_0108.AVI	11/03/2020 15:26	11/03/2020	15:26:56	Reptile	Eutropis multifasciata	1
HW_CT_12	20/03/2020	IMG_0109.AVI	11/03/2020 19:19	11/03/2020	19:19:16	Bird	Rallina fasciata	1
HW_CT_12	20/03/2020	IMG_0110.AVI	12/03/2020 00:36	12/03/2020	00:36:50	Mammal	Rattus sp.	1
HW_CT_12	20/03/2020	IMG_0111.AVI	12/03/2020 00:44	12/03/2020	00:44:04	Mammal	Rattus sp.	1
HW_CT_12	20/03/2020	IMG_0112.AVI	12/03/2020 00:45	12/03/2020	00:45:46	Mammal	Rattus sp.	1
HW_CT_12	20/03/2020	IMG_0113.AVI	12/03/2020 01:20	12/03/2020	01:20:42	Mammal	Rattus sp.	1
HW_CT_12	20/03/2020	IMG_0114.AVI	12/03/2020 01:46	12/03/2020	01:46:38	Mammal	Rattus sp.	1
HW_CT_12	20/03/2020	IMG_0115.AVI	12/03/2020 07:24	12/03/2020	07:24:28	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0116.AVI	12/03/2020 08:25	12/03/2020	08:25:40	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0117.AVI	12/03/2020 09:31	12/03/2020	09:31:26	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0118.AVI	12/03/2020 09:53	12/03/2020	09:53:30	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0120.AVI	13/03/2020 07:16	13/03/2020	07:16:32	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0121.AVI	13/03/2020 07:58	13/03/2020	07:58:20	Mammal	Callosciurus notatus	1
HW_CT_12	20/03/2020	IMG_0124.AVI	13/03/2020 09:10	13/03/2020	09:10:08	Bird	Larivora cyane	1
HW_CT_12	20/03/2020	IMG_0125.AVI	13/03/2020 09:52	13/03/2020	09:52:00	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0126.AVI	13/03/2020 09:56	13/03/2020	09:56:34	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0127.AVI	13/03/2020 11:05	13/03/2020	11:05:42	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0128.AVI	13/03/2020 17:37	13/03/2020	17:37:14	Bird	Garrulax leucolophus	1
HW_CT_12	20/03/2020	IMG_0129.AVI	13/03/2020 17:37	13/03/2020	17:37:34	Bird	Garrulax leucolophus	1
HW_CT_12	20/03/2020	IMG_0130.AVI	13/03/2020 17:52	13/03/2020	17:52:14	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0131.AVI	13/03/2020 18:58	13/03/2020	18:58:16	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0132.AVI	14/03/2020 00:36	14/03/2020	00:36:16	Mammal	Rattus sp.	1
HW_CT_12	20/03/2020	IMG_0133.AVI	14/03/2020 00:37	14/03/2020	00:37:40	Mammal	Rattus sp.	1
HW_CT_12	20/03/2020	IMG_0134.AVI	14/03/2020 05:36	14/03/2020	05:36:18	Mammal	Rattus sp.	1
HW_CT_12	20/03/2020	IMG_0135.AVI	14/03/2020 05:37	14/03/2020	05:37:34	Mammal	Rattus sp.	1
HW_CT_12	20/03/2020	IMG_0136.AVI	14/03/2020 05:38	14/03/2020	05:38:06	Mammal	Rattus sp.	1

Appendix J1 Camera Trap Log and Data for Clementi Forest

Station	SamplingDate	FileName	FileModifyDate	Date	Time	Taxon	Scientific name	Quantity
HW_CT_12	20/03/2020	IMG_0137.AVI	14/03/2020 05:41	14/03/2020	05:41:46	Mammal	Rattus sp.	1
HW_CT_12	20/03/2020	IMG_0138.AVI	14/03/2020 05:42	14/03/2020	05:42:26	Mammal	Rattus sp.	1
HW_CT_12	20/03/2020	IMG_0139.AVI	14/03/2020 05:42	14/03/2020	05:42:58	Mammal	Rattus sp.	1
HW_CT_12	20/03/2020	IMG_0140.AVI	14/03/2020 05:43	14/03/2020	05:43:46	Mammal	Rattus sp.	1
HW_CT_12	20/03/2020	IMG_0141.AVI	14/03/2020 05:44	14/03/2020	05:44:10	Mammal	Rattus sp.	1
HW_CT_12	20/03/2020	IMG_0142.AVI	14/03/2020 05:44	14/03/2020	05:44:52	Mammal	Rattus sp.	1
HW_CT_12	20/03/2020	IMG_0143.AVI	14/03/2020 07:14	14/03/2020	07:14:42	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0144.AVI	14/03/2020 07:15	14/03/2020	07:15:04	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0145.AVI	14/03/2020 07:15	14/03/2020	07:15:48	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0146.AVI	14/03/2020 07:26	14/03/2020	07:26:34	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0147.AVI	14/03/2020 09:57	14/03/2020	09:57:54	NA	Unidentified sp.	1
HW_CT_12	20/03/2020	IMG_0148.AVI	14/03/2020 10:53	14/03/2020	10:53:22	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0149.AVI	14/03/2020 17:18	14/03/2020	17:18:12	NA	Unidentified sp.	1
HW_CT_12	20/03/2020	IMG_0150.AVI	14/03/2020 17:29	14/03/2020	17:29:00	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0151.AVI	14/03/2020 20:44	14/03/2020	20:44:02	Mammal	Rattus sp.	1
HW_CT_12	20/03/2020	IMG_0152.AVI	15/03/2020 07:38	15/03/2020	07:38:22	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0153.AVI	15/03/2020 07:45	15/03/2020	07:45:36	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0154.AVI	15/03/2020 09:25	15/03/2020	09:25:42	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0155.AVI	15/03/2020 09:26	15/03/2020	09:26:36	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0156.AVI	15/03/2020 15:14	15/03/2020	15:14:02	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0157.AVI	15/03/2020 16:36	15/03/2020	16:36:34	Mammal	Unidentified squirrel or shrew	1
HW_CT_12	20/03/2020	IMG_0159.AVI	15/03/2020 16:43	15/03/2020	16:43:18	Mammal	Unidentified squirrel or shrew	1
HW_CT_12	20/03/2020	IMG_0160.AVI	15/03/2020 21:43	15/03/2020	21:43:04	Mammal	Rattus sp.	1
HW_CT_12	20/03/2020	IMG_0161.AVI	16/03/2020 07:24	16/03/2020	07:24:48	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0162.AVI	16/03/2020 07:32	16/03/2020	07:32:14	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0163.AVI	16/03/2020 15:23	16/03/2020	15:23:12	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0165.AVI	17/03/2020 07:05	17/03/2020	07:05:50	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0167.AVI	17/03/2020 08:51	17/03/2020	08:51:52	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0168.AVI	17/03/2020 18:30	17/03/2020	18:30:08	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0169.AVI	17/03/2020 19:05	17/03/2020	19:05:10	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0170.AVI	18/03/2020 07:21	18/03/2020	07:21:48	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0171.AVI	18/03/2020 08:45	18/03/2020	08:45:52	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0172.AVI	18/03/2020 17:40	18/03/2020	17:40:44	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0174.AVI	19/03/2020 13:17	19/03/2020	13:17:52	Reptile	Eutropis multifasciata	1
HW_CT_12	20/03/2020	IMG_0175.AVI	19/03/2020 16:49	19/03/2020	16:49:28	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0176.AVI	19/03/2020 20:13	19/03/2020	20:13:44	Mammal	Rattus sp.	1
HW_CT_12	20/03/2020	IMG_0177.AVI	20/03/2020 07:14	20/03/2020	07:14:24	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0178.AVI	20/03/2020 07:21	20/03/2020	07:21:16	Mammal	Tupaia glis	1
HW_CT_12	20/03/2020	IMG_0179.AVI	20/03/2020 07:35	20/03/2020	07:35:40	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0002.AVI	20/03/2020 07:53	20/03/2020	07:53:16	NA	Unidentified sp.	1
HW_CT_12	04/06/2020	IMG_0003.AVI	20/03/2020 08:28	20/03/2020	08:28:56	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0004.AVI	20/03/2020 08:59	20/03/2020	08:59:02	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0005.AVI	21/03/2020 02:30	21/03/2020	02:30:54	Mammal	Rattus sp.	1
HW_CT_12	04/06/2020	IMG_0007.AVI	21/03/2020 09:07	21/03/2020	09:07:06	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0008.AVI	21/03/2020 09:26	21/03/2020	09:26:10	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0009.AVI	21/03/2020 12:16	21/03/2020	12:16:00	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0010.AVI	21/03/2020 14:27	21/03/2020	14:27:14	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0011.AVI	22/03/2020 07:46	22/03/2020	07:46:46	Mammal	Unidentified squirrel or shrew	1
HW_CT_12	04/06/2020	IMG_0012.AVI	22/03/2020 11:19	22/03/2020	11:19:16	Reptile	Varanus salvator	1
HW_CT_12	04/06/2020	IMG_0013.AVI	22/03/2020 12:17	22/03/2020	12:17:16	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0014.AVI	22/03/2020 17:21	22/03/2020	17:21:00	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0015.AVI	23/03/2020 10:15	23/03/2020	10:15:42	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0016.AVI	23/03/2020 16:07	23/03/2020	16:07:30	Bird	Larivora cyane	1
HW_CT_12	04/06/2020	IMG_0017.AVI	23/03/2020 16:08	23/03/2020	16:08:06	Bird	Larivora cyane	1
HW_CT_12	04/06/2020	IMG_0018.AVI	24/03/2020 08:30	24/03/2020	08:30:22	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0019.AVI	24/03/2020 12:28	24/03/2020	12:28:18	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0020.AVI	24/03/2020 15:21	24/03/2020	15:21:58	Bird	Larivora cyane	1
HW_CT_12	04/06/2020	IMG_0021.AVI	24/03/2020 20:16	24/03/2020	20:16:38	Mammal	Rattus sp.	1
HW_CT_12	04/06/2020	IMG_0022.AVI	24/03/2020 20:17	24/03/2020	20:17:10	Mammal	Rattus sp.	1
HW_CT_12	04/06/2020	IMG_0023.AVI	25/03/2020 07:04	25/03/2020	07:04:28	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0024.AVI	25/03/2020 07:17	25/03/2020	07:17:02	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0025.AVI	25/03/2020 08:24	25/03/2020	08:24:50	Bird	Larivora cyane	1
HW_CT_12	04/06/2020	IMG_0026.AVI	25/03/2020 22:55	25/03/2020	22:55:24	Mammal	Rattus sp.	1
HW_CT_12	04/06/2020	IMG_0027.AVI	26/03/2020 06:26	26/03/2020	06:26:58	Mammal	Rattus sp.	1
HW_CT_12	04/06/2020	IMG_0028.AVI	26/03/2020 07:09	26/03/2020	07:09:00	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0029.AVI	27/03/2020 02:10	27/03/2020	02:10:42	Mammal	Rattus sp.	1
HW_CT_12	04/06/2020	IMG_0030.AVI	27/03/2020 07:13	27/03/2020	07:13:26	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0032.AVI	28/03/2020 07:13	28/03/2020	07:13:06	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0033.AVI	28/03/2020 07:54	28/03/2020	07:54:12	Bird	Larivora cyane	1
HW_CT_12	04/06/2020	IMG_0034.AVI	28/03/2020 08:53	28/03/2020	08:53:28	Bird	Larivora cyane	1
HW_CT_12	04/06/2020	IMG_0035.AVI	28/03/2020 09:08	28/03/2020	09:08:44	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0036.AVI	28/03/2020 15:25	28/03/2020	15:25:06	Bird	Garrulax leucolophus	2
HW_CT_12	04/06/2020	IMG_0037.AVI	28/03/2020 15:35	28/03/2020	15:35:58	Bird	Chalcophaps indica	1
HW_CT_12	04/06/2020	IMG_0038.AVI	28/03/2020 23:48	28/03/2020	23:48:06	Mammal	Rattus sp.	1
HW_CT_12	04/06/2020	IMG_0039.AVI	29/03/2020 01:36	29/03/2020	01:36:24	Mammal	Rattus sp.	1
HW_CT_12	04/06/2020	IMG_0040.AVI	29/03/2020 07:23	29/03/2020	07:23:52	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0041.AVI	29/03/2020 08:04	29/03/2020	08:04:18	Bird	Larivora cyane	1
HW_CT_12	04/06/2020	IMG_0042.AVI	29/03/2020 08:04	29/03/2020	08:04:46	Bird	Larivora cyane	1
HW_CT_12	04/06/2020	IMG_0043.AVI	29/03/2020 12:03	29/03/2020	12:03:46	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0045.AVI	29/03/2020 18:08	29/03/2020	18:08:18	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0046.AVI	29/03/2020 18:08	29/03/2020	18:08:58	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0047.AVI	30/03/2020 04:03	30/03/2020	04:03:56	Mammal	Rattus sp.	1
HW_CT_12	04/06/2020	IMG_0048.AVI	30/03/2020 04:20	30/03/2020	04:20:12	Mammal	Rattus sp.	1
HW_CT_12	04/06/2020	IMG_0049.AVI	30/03/2020 06:22	30/03/2020	06:22:22	Mammal	Rattus sp.	1
HW_CT_12	04/06/2020	IMG_0050.AVI	30/03/2020 06:24	30/03/2020	06:24:12	Mammal	Rattus sp.	1
HW_CT_12	04/06/2020	IMG_0051.AVI	30/03/2020 06:24	30/03/2020	06:24:32	Mammal	Rattus sp.	1
HW_CT_12	04/06/2020	IMG_0052.AVI	30/03/2020 06:24	30/03/2020	06:24:54	Mammal	Rattus sp.	1

Appendix J1 Camera Trap Log and Data for Clementi Forest

Station	SamplingDate	FileName	FileModifyDate	Date	Time	Taxon	Scientific name	Quantity
HW_CT_12	04/06/2020	IMG_0053.AVI	30/03/2020 07:19	30/03/2020	07:19:00	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0054.AVI	30/03/2020 07:35	30/03/2020	07:35:52	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0055.AVI	30/03/2020 10:00	30/03/2020	10:00:28	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0056.AVI	30/03/2020 10:06	30/03/2020	10:06:28	Mammal	Unidentified squirrel or shrew	1
HW_CT_12	04/06/2020	IMG_0057.AVI	30/03/2020 11:39	30/03/2020	11:39:50	Mammal	Callosciurus notatus	1
HW_CT_12	04/06/2020	IMG_0058.AVI	30/03/2020 11:40	30/03/2020	11:40:12	Mammal	Callosciurus notatus	1
HW_CT_12	04/06/2020	IMG_0059.AVI	30/03/2020 12:30	30/03/2020	12:30:28	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0060.AVI	30/03/2020 13:32	30/03/2020	13:32:20	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0061.AVI	30/03/2020 14:08	30/03/2020	14:08:06	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0062.AVI	30/03/2020 15:43	30/03/2020	15:43:10	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0063.AVI	30/03/2020 17:02	30/03/2020	17:02:24	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0064.AVI	31/03/2020 07:06	31/03/2020	07:06:34	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0065.AVI	31/03/2020 16:21	31/03/2020	16:21:18	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0066.AVI	31/03/2020 18:56	31/03/2020	18:56:00	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0067.AVI	31/03/2020 21:53	31/03/2020	21:53:00	Mammal	Rattus sp.	1
HW_CT_12	04/06/2020	IMG_0068.AVI	01/04/2020 09:10	01/04/2020	09:10:00	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0069.AVI	01/04/2020 09:45	01/04/2020	09:45:14	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0070.AVI	01/04/2020 13:51	01/04/2020	13:51:50	Bird	Garrulax leucolophus	2
HW_CT_12	04/06/2020	IMG_0071.AVI	01/04/2020 13:54	01/04/2020	13:54:44	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0072.AVI	01/04/2020 14:00	01/04/2020	14:00:00	Mammal	Callosciurus notatus	1
HW_CT_12	04/06/2020	IMG_0073.AVI	02/04/2020 07:20	02/04/2020	07:20:02	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0074.AVI	02/04/2020 07:26	02/04/2020	07:26:20	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0075.AVI	02/04/2020 08:31	02/04/2020	08:31:14	Bird	Larivora cyane	1
HW_CT_12	04/06/2020	IMG_0076.AVI	02/04/2020 08:31	02/04/2020	08:31:48	Bird	Larivora cyane	1
HW_CT_12	04/06/2020	IMG_0077.AVI	02/04/2020 08:32	02/04/2020	08:32:22	Bird	Larivora cyane	1
HW_CT_12	04/06/2020	IMG_0079.AVI	02/04/2020 14:33	02/04/2020	14:33:56	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0080.AVI	02/04/2020 14:34	02/04/2020	14:34:44	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0081.AVI	03/04/2020 01:37	03/04/2020	01:37:52	Mammal	Rattus sp.	1
HW_CT_12	04/06/2020	IMG_0082.AVI	03/04/2020 01:38	03/04/2020	01:38:50	Mammal	Rattus sp.	1
HW_CT_12	04/06/2020	IMG_0083.AVI	03/04/2020 08:46	03/04/2020	08:46:42	Bird	Larivora cyane	1
HW_CT_12	04/06/2020	IMG_0084.AVI	03/04/2020 08:51	03/04/2020	08:51:56	Bird	Larivora cyane	1
HW_CT_12	04/06/2020	IMG_0085.AVI	03/04/2020 12:56	03/04/2020	12:56:44	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0086.AVI	03/04/2020 14:16	03/04/2020	14:16:22	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0087.AVI	03/04/2020 14:16	03/04/2020	14:16:44	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0088.AVI	03/04/2020 14:28	03/04/2020	14:28:34	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0089.AVI	03/04/2020 14:28	03/04/2020	14:28:54	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0090.AVI	03/04/2020 16:26	03/04/2020	16:26:18	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0091.AVI	03/04/2020 16:29	03/04/2020	16:29:22	Bird	Larivora cyane	1
HW_CT_12	04/06/2020	IMG_0092.AVI	03/04/2020 16:29	03/04/2020	16:29:56	Bird	Larivora cyane	1
HW_CT_12	04/06/2020	IMG_0093.AVI	03/04/2020 17:31	03/04/2020	17:31:10	Mammal	Unidentified squirrel or shrew	1
HW_CT_12	04/06/2020	IMG_0094.AVI	03/04/2020 18:55	03/04/2020	18:55:00	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0095.AVI	03/04/2020 18:55	03/04/2020	18:55:26	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0096.AVI	03/04/2020 20:24	03/04/2020	20:24:58	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0097.AVI	04/04/2020 02:29	04/04/2020	02:29:54	Mammal	Rattus sp.	1
HW_CT_12	04/06/2020	IMG_0098.AVI	04/04/2020 09:12	04/04/2020	09:12:18	Bird	Larivora cyane	1
HW_CT_12	04/06/2020	IMG_0099.AVI	04/04/2020 09:20	04/04/2020	09:20:06	Bird	Larivora cyane	1
HW_CT_12	04/06/2020	IMG_0100.AVI	04/04/2020 09:20	04/04/2020	09:20:26	Bird	Larivora cyane	1
HW_CT_12	04/06/2020	IMG_0102.AVI	05/04/2020 10:36	05/04/2020	10:36:54	Bird	Larivora cyane	1
HW_CT_12	04/06/2020	IMG_0104.AVI	05/04/2020 18:27	05/04/2020	18:27:46	Bird	Larivora cyane	1
HW_CT_12	04/06/2020	IMG_0105.AVI	06/04/2020 02:33	06/04/2020	02:33:48	Mammal	Rattus sp.	1
HW_CT_12	04/06/2020	IMG_0106.AVI	06/04/2020 08:17	06/04/2020	08:17:12	Bird	Larivora cyane	1
HW_CT_12	04/06/2020	IMG_0107.AVI	06/04/2020 09:09	06/04/2020	09:09:18	Bird	Larivora cyane	1
HW_CT_12	04/06/2020	IMG_0108.AVI	06/04/2020 09:31	06/04/2020	09:31:12	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0110.AVI	06/04/2020 18:35	06/04/2020	18:35:02	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0112.AVI	06/04/2020 18:54	06/04/2020	18:54:54	Mammal	Unidentified squirrel or shrew	1
HW_CT_12	04/06/2020	IMG_0113.AVI	07/04/2020 07:37	07/04/2020	07:37:50	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0114.AVI	07/04/2020 17:58	07/04/2020	17:58:36	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0115.AVI	07/04/2020 23:39	07/04/2020	23:39:42	Mammal	Rattus sp.	1
HW_CT_12	04/06/2020	IMG_0116.AVI	08/04/2020 07:39	08/04/2020	07:39:16	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0117.AVI	08/04/2020 09:24	08/04/2020	09:24:28	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0118.AVI	08/04/2020 12:52	08/04/2020	12:52:26	Reptile	Varanus salvator	1
HW_CT_12	04/06/2020	IMG_0119.AVI	08/04/2020 14:27	08/04/2020	14:27:00	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0120.AVI	08/04/2020 22:41	08/04/2020	22:41:20	Mammal	Rattus sp.	1
HW_CT_12	04/06/2020	IMG_0121.AVI	09/04/2020 07:38	09/04/2020	07:38:12	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0122.AVI	09/04/2020 07:38	09/04/2020	07:38:36	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0123.AVI	09/04/2020 07:39	09/04/2020	07:39:02	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0124.AVI	09/04/2020 07:39	09/04/2020	07:39:36	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0126.AVI	09/04/2020 17:12	09/04/2020	17:12:20	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0127.AVI	09/04/2020 17:14	09/04/2020	17:14:22	Mammal	Unidentified squirrel or shrew	1
HW_CT_12	04/06/2020	IMG_0128.AVI	09/04/2020 17:17	09/04/2020	17:17:32	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0129.AVI	10/04/2020 03:10	10/04/2020	03:10:46	Mammal	Rattus sp.	1
HW_CT_12	04/06/2020	IMG_0130.AVI	10/04/2020 09:13	10/04/2020	09:13:06	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0131.AVI	10/04/2020 09:13	10/04/2020	09:13:28	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0132.AVI	10/04/2020 09:46	10/04/2020	09:46:00	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0133.AVI	10/04/2020 10:42	10/04/2020	10:42:56	Mammal	Callosciurus notatus	1
HW_CT_12	04/06/2020	IMG_0134.AVI	10/04/2020 10:44	10/04/2020	10:44:16	Mammal	Callosciurus notatus	1
HW_CT_12	04/06/2020	IMG_0135.AVI	10/04/2020 10:44	10/04/2020	10:44:38	Mammal	Callosciurus notatus	1
HW_CT_12	04/06/2020	IMG_0136.AVI	10/04/2020 13:22	10/04/2020	13:22:10	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0137.AVI	10/04/2020 14:22	10/04/2020	14:22:00	Reptile	Varanus sp.	1
HW_CT_12	04/06/2020	IMG_0138.AVI	10/04/2020 15:57	10/04/2020	15:57:10	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0139.AVI	10/04/2020 16:59	10/04/2020	16:59:42	NA	Unidentified sp.	1
HW_CT_12	04/06/2020	IMG_0141.AVI	10/04/2020 17:00	10/04/2020	17:00:30	Mammal	Callosciurus notatus	1
HW_CT_12	04/06/2020	IMG_0142.AVI	10/04/2020 18:30	10/04/2020	18:30:30	Mammal	Unidentified squirrel or shrew	1
HW_CT_12	04/06/2020	IMG_0143.AVI	11/04/2020 07:35	11/04/2020	07:35:30	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0144.AVI	11/04/2020 08:44	11/04/2020	08:44:58	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0145.AVI	11/04/2020 11:18	11/04/2020	11:18:20	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0146.AVI	11/04/2020 14:20	11/04/2020	14:20:24	Bird	Garrulax leucolophus	1

Appendix J1 Camera Trap Log and Data for Clementi Forest

Station	SamplingDate	FileName	FileModifyDate	Date	Time	Taxon	Scientific name	Quantity
HW_CT_12	04/06/2020	IMG_0147.AVI	11/04/2020 14:20	11/04/2020	14:20:48	Bird	Garrulax leucolophus	2
HW_CT_12	04/06/2020	IMG_0148.AVI	11/04/2020 14:21	11/04/2020	14:21:38	Bird	Garrulax leucolophus	1
HW_CT_12	04/06/2020	IMG_0148.AVI	11/04/2020 14:21	11/04/2020	14:21:38	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0149.AVI	11/04/2020 15:05	11/04/2020	15:05:58	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0150.AVI	11/04/2020 15:06	11/04/2020	15:06:42	Mammal	Callosciurus notatus	1
HW_CT_12	04/06/2020	IMG_0151.AVI	12/04/2020 07:55	12/04/2020	07:55:50	Mammal	Tupaia glis	2
HW_CT_12	04/06/2020	IMG_0152.AVI	12/04/2020 07:57	12/04/2020	07:57:06	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0153.AVI	12/04/2020 07:59	12/04/2020	07:59:42	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0154.AVI	12/04/2020 09:49	12/04/2020	09:49:16	Reptile	Varanus salvator	1
HW_CT_12	04/06/2020	IMG_0155.AVI	12/04/2020 12:24	12/04/2020	12:24:12	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0156.AVI	12/04/2020 19:53	12/04/2020	19:53:36	Mammal	Rattus sp.	1
HW_CT_12	04/06/2020	IMG_0157.AVI	13/04/2020 09:23	13/04/2020	09:23:34	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0158.AVI	13/04/2020 12:24	13/04/2020	12:24:20	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0159.AVI	14/04/2020 07:16	14/04/2020	07:16:46	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0160.AVI	14/04/2020 12:50	14/04/2020	12:50:20	Reptile	Eutropis multifasciata	1
HW_CT_12	04/06/2020	IMG_0161.AVI	14/04/2020 14:30	14/04/2020	14:30:10	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0162.AVI	14/04/2020 14:35	14/04/2020	14:35:42	Mammal	Tupaia glis	1
HW_CT_12	04/06/2020	IMG_0163.AVI	14/04/2020 17:27	14/04/2020	17:27:16	Mammal	Callosciurus notatus	1
HW_CT_12	04/06/2020	IMG_0164.AVI	14/04/2020 17:41	14/04/2020	17:41:34	Mammal	Tupaia glis	1

Appendix K

Fauna Response and Rescue Plan

Fauna Response and Rescue Plan

Area	Within Hoarding		Outside of Hoarding	All
Animal Type	Snakes (assume all venomous)	Others (Civet cat, squirrel, dog, bird, frog)	All	Dead/Injured
Animal condition	Alive, moving or resting	Alive, moving or resting	Alive, moving or resting	Dead/Injured
Response	<ol style="list-style-type: none"> 1. Stop works in vicinity 2. Report to appointed Ecologist with location and description of animal. 3. Ecologist to relocate if necessary. 4. Once animal has been relocated, works can resume. 5. Fill out and submit Wildlife Incident Form. 	<ol style="list-style-type: none"> 1. Stop works if animal or worker is potentially endangered and allow animal to move off on its own. 2. Once animal has move on, resume works. 	<ol style="list-style-type: none"> 1. Stop works if animal or worker is potentially endangered and allow animal to move off on its own. 	<ol style="list-style-type: none"> 1. Report to appointed Ecologist. Ecologist may contact NParks' Animal Veterinary at 1800 476 1600. 2. Fill out and submit Wildlife Incident Form.
Remarks	No attempts should be made by the construction team to handle the animal.			

Appendix L

Baseline Surface Water Quality Report

TEST REPORT

Our Reference No. : R200545
Project Code / Ref. : 60596697

Date Received : 04/02/2020
Date Commenced : 04/02/2020
Date Reported : 11/02/2020

Customer Ref. No. : -
Customer Name : AECOM Singapore Pte Ltd
Customer Address : 300 Beach Road
#03-00 The Concourse
Singapore 199555

Attention To : Ms Liang Liang
Sample Description : 7 Water Samples

RESULTS: Refer to Page 2



Tan Thuan Piang
Laboratory Manager

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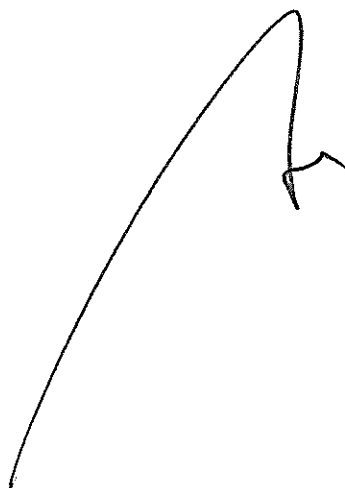
R200545

RESULTS

Test Parameter	Unit	Test Method	Sampling Date: 04/02/2020							Detection Limit
			WQ1	WQ2	WQ16	WQ17	WQ18	WQ19	WQ20	
Turbidity	NTU	APHA 2130B	4.5	45	3.3	2.6	12	8.2	7.2	-
Biochemical Oxygen Demand (BOD)	mg/L	APHA 5210B	1.78	1.52	1.30	1.78	2.89	2.39	1.80	1
Chemical Oxygen Demand, COD	mg O ₂ /L	HACH Method 8000	14	19	6	8	12	11	8	5
Total Nitrogen as TN	mg/L	APHA 4500-P (J)	0.67	0.72	1.15	1.10	1.01	0.94	0.59	0.01
Total Phosphorus as TP	mg/L	APHA 4500-P (J)	0.099	0.10	0.064	0.11	0.11	0.094	0.093	0.01
Nitrate as NO ₃ -N	mg/L	APHA 4500-NO ₃ (I)	0.12	0.0065	0.93	0.62	0.36	0.11	0.067	0.005
Orthophosphates as PO ₄	mg/L	APHA 4500-P (G)	0.20	0.19	0.13	0.21	0.22	0.21	0.19	0.005
Total Suspended Solids, TSS	mg/L	APHA 2540D	3.67	7.00	4.67	3.00	5.35	7.00	6.33	1

Note:

1. APHA is a standard method for Determination of Water and Waste Water (APHA 23rd Edition, 2017)
2. "<" = Less than. The data reported is less than Detection Limit of the test.



TEST REPORT

Our Reference No. : **R201356**

Project Code / Ref. :

Date Received : 17/03/2020

Date Commenced : 17/03/2020

Date Reported : 24/03/2020

Customer Ref. No. : 60617507


Customer Name : AECOM Singapore Pte Ltd

Customer Address : 300 Beach Road
#03-00 The Concourse
Singapore 199555

Attention To : Ms Liang Liang

Sample Description : 10 Water Samples

RESULTS: Refer to Page 2



Tan Thuan Piang
Technical Manager

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R201356

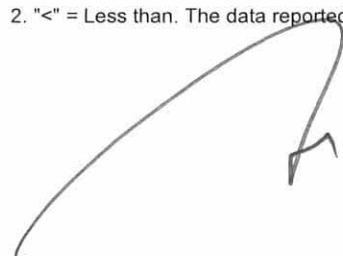
RESULTS

Test Parameter	Unit	Test Method	Sampling Date: 17/03/2020					LOR
			Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	
			WQ1	WQ2	WQ16	WQ17	WQ18	
Turbidity	NTU	APHA 2130B	3.2	45	3.6	3.7	9.1	-
Total Suspended Solids as TSS	mg/L	APHA 2540D	1.00	66.5	1.00	2.33	5.67	1
Biochemical Oxygen Demand,BOD	mg/L	APHA 5210B	1.67	4.17	1.34	1.88	2.12	1
Chemical Oxygen Demand,COD	mg/L	HACH Method 8000	6	12	<5	<5	7	5
Total Nitrogen as TN	mg/L	APHA 4500-P (J)	0.54	1.28	1.05	1.18	0.99	0.01
Nitrate as NO ₃ -N	mg/L	APHA 4500-NO ₃ (I)	0.16	<0.005	0.085	0.078	0.35	0.005
Total Phosphorus as TP	mg/L	APHA 4500-P (J)	0.075	0.13	0.083	0.10	0.11	0.01
Orthophosphates as PO ₄ -P	mg/L	APHA 4500-P (G)	0.068	0.068	0.053	0.076	0.071	0.005

Test Parameter	Unit	Test Method	Sampling Date: 17/03/2020					LOR
			Sample 6	Sample 7	Sample 8	Sample 9	Sample 10	
			WQ19	WQ20	WQ8	WQ9	WQ13	
Turbidity	NTU	APHA 2130B	6.3	6.8	30	10.0	19	-
Total Suspended Solids as TSS	mg/L	APHA 2540D	24.0	13.0	18.0	6.67	7.67	1
Biochemical Oxygen Demand,BOD	mg/L	APHA 5210B	1.68	1.64	3.92	<1	1.86	1
Chemical Oxygen Demand,COD	mg/L	HACH Method 8000	7	<5			5	5
Total Nitrogen as TN	mg/L	APHA 4500-P (J)	0.60	0.63			0.78	0.01
Nitrate as NO ₃ -N	mg/L	APHA 4500-NO ₃ (I)	0.075	0.0280			0.24	0.005
Total Phosphorus as TP	mg/L	APHA 4500-P (J)	0.15	0.11			0.10	0.01
Orthophosphates as PO ₄ -P	mg/L	APHA 4500-P (G)	0.070	0.069			0.057	0.005

Note:

1. APHA is a standard method for Determination of Water and Waste Water (APHA 22nd Edition, 2012)
2. "<" = Less than. The data reported is less than Detection Limit of the test.



TEST REPORT

Our Reference No. : R203726

Project Code / Ref. : CR2005

Date Received : 22/06/2020

Date Commenced : 22/06/2020

Date Reported : 30/06/2020

Customer Ref. No. : 60617507

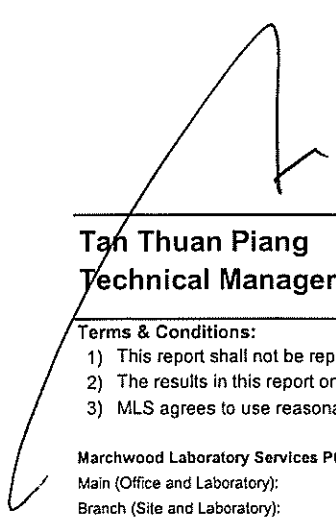
Customer Name : AECOM Singapore Pte Ltd

Customer Address : 300 Beach Road
#03-00 The Concourse
Singapore 199555

Attention To : Ms Liang Liang

Sample Description : 6 Water Samples

RESULTS: Refer to Page 2



Tan Thuan Piang
Technical Manager

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R203726

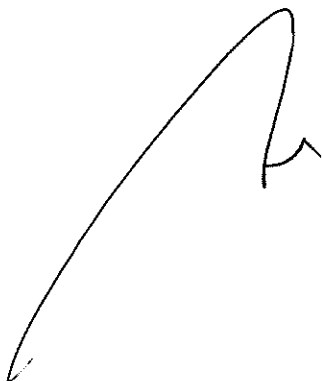
RESULTS

Test Parameter	Unit	Test Method	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	LOR
			WQ14	WQ15	WQ16	WQ17	WQ18	WQ19	
Turbidity	NTU	APHA 2130B	3.3	14	9.1	4.4	7.8	7.0	-
Total Suspended Solids as TSS	mg/L	APHA 2540D	11.0	4.00	14.7	2.33	3.67	6.00	1
Biochemical Oxygen Demand, BOD	mg/L	APHA 5210B	2.68	2.26	2.64	1.45	1.83	2.28	1
Chemical Oxygen Demand, COD	mg O ₂ /L	HACH Method 8000	14	23	12	7	7	8	5
Total Nitrogen as TN	mg/L	APHA 4500-P (J)	0.69	2.60	0.72	1.13	0.79	0.82	0.01
Nitrate as NO ₃ -N	mg/L	APHA 4500-NO ₃ (I)	0.11	1.03	0.56	0.76	0.55	0.53	0.005
Total Phosphorus as TP	mg/L	APHA 4500-P (J)	0.12	0.083	0.053	0.10	0.078	0.092	0.01
Orthophosphates as PO ₄ -P	mg/L	APHA 4500-P (G)	0.040	0.055	0.044	0.057	0.051	0.049	0.005

Note:

1. APHA is a standard method for Determination of Water and Waste Water (APHA 23rd Edition, 2017)

2. "<" = Less than. The data reported is less than Detection Limit of the test.



TEST REPORT

Our Reference No. : **R204650**

Project Code / Ref. : CR2005

Date Received : 13/08/2020

Date Commenced : 13/08/2020

Date Reported : 21/08/2020

Customer Ref. No. : 60617507

Customer Name : AECOM Singapore Pte Ltd

Customer Address : 300 Beach Road

#03-00 The Concourse

Singapore 199555

Attention To : Ms Liang Liang

Sample Description : 6 Water Samples

RESULTS: Refer to Page 2



Tan Thuan Piang
Technical Manager

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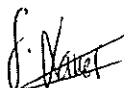
R204650

RESULTS

Test Parameter	Unit	Test Method	Sample 1	Sample 2		Sample 6	LOR
			WQ 1	WQ 2		WQ 20	
Turbidity	NTU	APHA 2130B	7.0	24		6.6	-
Total Suspended Solids as TSS	mg/L	APHA 2540D	3.40	20.0		3.60	1
Biochemical Oxygen Demand, BOD	mg/L	APHA 5210B	<1	2.44		<1	1
Chemical Oxygen Demand, COD	mg O ₂ /L	HACH Method 8000	7	19		13	5
Total Nitrogen as TN	mg/L	APHA 4500-P (J)	0.54	1.37		0.55	0.01
Nitrate as NO ₃ -N	mg/L	APHA 4500-NO ₃ (I)	0.36	0.79		0.38	0.005
Total Phosphorus as TP	mg/L	APHA 4500-P (J)	0.024	0.051		0.031	0.01
Orthophosphates as PO ₄ -P	mg/L	APHA 4500-P (G)	0.012	0.032		0.012	0.005

Note:

1. APHA is a standard method for Determination of Water and Waste Water (APHA 23rd Edition, 2017)
2. "<" = Less than. The data reported is less than Detection Limit of the test.



TEST REPORT

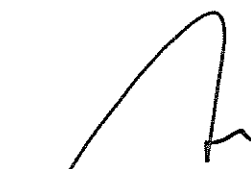
Our Reference No. : **R222061**
Project Code / Ref. : Maju Forest

Date Received : 28/03/2022
Date Commenced : 28/03/2022
Date Reported : 05/04/2022

Customer Ref. No. : -
Customer Name : AECOM Singapore Pte Ltd
Customer Address : 300 Beach Road
#03-00 The Concourse
Singapore 199555

Attention To : Ms Jacquelynn Chia
Sample Description : 3 Water samples as per received.

RESULTS : Refer to Page 2





Tan Thuan Piang
Technical Manager



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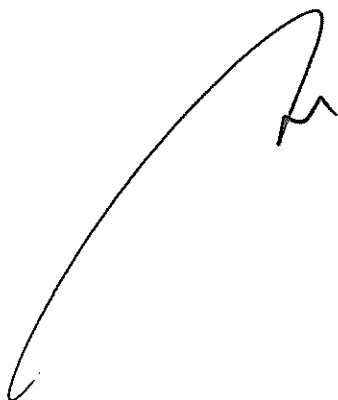
R222061

RESULTS

Test Parameter	Unit	Test Method	Sample 1	Sample 2	Sample 3	LOR
			WQ33 28/03/2022	WQ34 28/03/2022	WQ35 28/03/2022	
Total Nitrogen as TN	mg/L	APHA 4500-P (J)	0.39	1.00	0.41	0.01
Total Phosphorus as TP	mg/L	APHA 4500-P (J)	0.065	0.31	0.14	0.01
Nitrate as NO ₃ -N	mg/L	APHA 4500-NO ₃ (I)	0.21	0.32	0.25	0.005
Orthophosphates as PO ₄ -P	mg/L	APHA 4500-P (G)	0.050	0.038	0.051	0.005
Total Suspended Solids as TSS	mg/L	APHA 2540D	1.67	128	4.80	1
Chemical Oxygen Demand as COD	mg/L	HACH Method 8000 (Oct 2014)	5	52	<5	5
Biochemical Oxygen Demand as BOD	mg/L	APHA 5210B	3.67	1.61	<1	1
Turbidity	NTU	APHA 2130B	2.3	160	4.6	0.1
pH value	-	APHA 4500-H ⁺ (B)	6.6	5.4	5.0	-

Note:

1. APHA is a standard method for Determination of Water and Waste Water (APHA 23rd Edition, 2017)
2. "<" = Less than. The data reported is less than Detection Limit of the test.



TEST REPORT


Our Reference No. : R222278
Project Code / Ref. : Maju Forest

Date Received : 06/04/2022
Date Commenced : 06/04/2022
Date Reported : 14/04/2022

Customer Ref. No. : -
Customer Name : AECOM Singapore Pte Ltd
Customer Address : 300 Beach Road
#03-00 The Concourse
Singapore 199555

Attention To : Ms Jacquelyn Chia
Sample Description : 3 Water samples as per received.

RESULTS : Refer to Page 2



Tan Thuan Piang
Technical Manager

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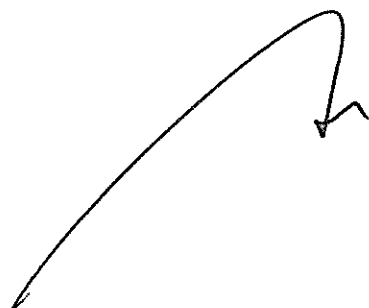
R222278

RESULTS

Test Parameter	Unit	Test Method	Sample 1	Sample 2	Sample 3	LOR
			WQ33 06/04/2022	WQ34 06/04/2022	WQ35 06/04/2022	
Total Nitrogen as TN	mg/L	APHA 4500-P (J)	0.32	0.59	0.37	0.01
Total Phosphorus as TP	mg/L	APHA 4500-P (J)	0.065	0.076	0.082	0.01
Nitrate as NO ₃ -N	mg/L	APHA 4500-NO ₃ (I)	0.13	0.28	0.25	0.005
Orthophosphates as PO ₄ -P	mg/L	APHA 4500-P (G)	0.041	0.039	0.043	0.005
Total Suspended Solids as TSS	mg/L	APHA 2540D	4.40	41.0	6.60	1
Chemical Oxygen Demand as COD	mg/L	HACH Method 8000 (Oct 2014)	5	31	5	5
Biochemical Oxygen Demand as BOD	mg/L	APHA 5210B	<1	<1	<1	1
Turbidity	NTU	APHA 2130B	7.5	34	4.1	0.1
pH value	-	APHA 4500-H ⁺ (B)	6.5	5.3	5.5	-

Note:

1. APHA is a standard method for Determination of Water and Waste Water (APHA 23rd Edition, 2017)
2. "<" = Less than. The data reported is less than Detection Limit of the test.



TEST REPORT

Our Reference No. : **R222393**
Project Code / Ref. : Maju Forest

Date Received : 11/04/2022
Date Commenced : 12/04/2022
Date Reported : 20/04/2022

Customer Ref. No. : -
Customer Name : AECOM Singapore Pte Ltd
Customer Address : 300 Beach Road
#03-00 The Concourse
Singapore 199555

Attention To : Ms Jacquelynn Chia
Sample Description : 4 Water samples as per received.

RESULTS : Refer to Page 2





Tan Thuan Piang
Technical Manager



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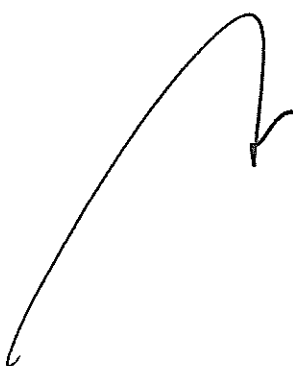
R222393

RESULTS

Test Parameter	Unit	Test Method	Sample 1	Sample 2	Sample 3		LOR
			WQ33 11/04/2022	WQ34 11/04/2022	WQ35 11/04/2022		
Total Nitrogen as TN	mg/L	APHA 4500-P (J)	1.55	1.28	1.60		0.01
Total Phosphorus as TP	mg/L	APHA 4500-P (J)	0.039	0.040	0.034		0.01
Nitrate as NO ₃ -N	mg/L	APHA 4500-NO ₃ (I)	1.48	1.25	1.54		0.005
Orthophosphates as PO ₄ -P	mg/L	APHA 4500-P (G)	0.037	0.034	0.033		0.005
Total Suspended Solids as TSS	mg/L	APHA 2540D	25.9	16.2	6.70		1
Chemical Oxygen Demand as COD	mg/L	HACH Method 8000 (Oct 2014)	83	48	35		5
Biochemical Oxygen Demand as BOD	mg/L	APHA 5210B	<1	<1	<1		1
Turbidity	NTU	APHA 2130B	70	60	40		0.1
pH value	-	APHA 4500-H ⁺ (B)	6.6	5.4	5.5		-

Note:

1. APHA is a standard method for Determination of Water and Waste Water (APHA 23rd Edition, 2017)
2. "<" = Less than. The data reported is less than Detection Limit of the test.



Appendix M

Ambient Air Quality Baseline Monitoring Report




Our Ref: SG2003973

Date: 06 July 2020

ENVIRONMENTAL IMPACT STUDY AT CR2005
AIR QUALITY MONITORING
(DUST MONITORING - PM_{2.5} & PM₁₀)
FOR

AECOM SINGAPORE PTE LTD
300 BEACH ROAD #23-00 THE CONCOURSE
SINGAPORE 199555



Edmundo II Dio Casapao
Environmental Engineer

Tan Teong Huat
Assistant General Manager
BSc, MSc (SHE Tech.), MSNIC

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Executive Summary

ALS Technichem (S) Pte Ltd is appointed by AECOM Singapore Pte Ltd to carry out Ambient Air Monitoring for the Environmental Impact Study at CR2005 Project (Dust Monitoring – PM₁₀ and PM_{2.5}). The monitoring was undertaken to determine the ambient air quality of Particulate Matter as 2.5um and 10um (PM_{2.5} and PM₁₀), for 7 days continuously at five (5) selected locations from 25th February to 26th June 2020. The objective of this monitoring is to establish a baseline ambient air quality at the selected points and compare whether they are in compliance with the limits stipulated by Singapore Ambient Air Quality Targets by 2020 and the Long-Term Targets.

The monitoring results for PM₁₀ for all locations for all 7 days are in compliance to the Singapore Ambient Air Quality Targets by 2020.

For PM_{2.5}, the monitoring results for all locations are in compliance to the Singapore Ambient Air Quality Long Term Targets for all 7 days except for Day 1 at Singapore University of Social Sciences (AQ01). The measured value for this day is 26.5 µgm⁻³ as compared to the long-term target of 25 µgm⁻³.

It should be noted that the Ambient Air Monitoring project was carried out to the best of our knowledge and ability as well as responsibility towards the code of practice in the performance and reliability of our business to be accurate, precise and representative at the date/time and locations sampled so as to achieve a satisfactory baseline study.



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List of Abbreviations

PM ₁₀	Particulate matter with aerodynamic diameter less than 10µm
PM _{2.5}	Particulate matter with aerodynamic diameter less than 2.5µm
µgm ⁻³	Microgram per cubic metre
LOR	Limit of Reporting



1.0 Monitoring Requirement

1.1 Introduction

ALS Technichem (S) Pte Ltd (hereafter as "ALS") has been appointed as the contractor to perform Ambient Air Monitoring at the selected locations for the Environmental Impact Study for CR2005 Project. The monitoring was conducted at five (5) locations (Dust Monitoring – PM₁₀ and PM_{2.5}) at the request of AECOM Singapore Pte Ltd (hereafter as "AECOM").

The ambient air monitoring is aimed to provide an air quality baseline information on the targeted area which was pre-determined by AECOM and to evaluate the results whether it is in compliance against National Environmental Agency- Singapore Ambient Air Quality Targets by 2020 and the Long-Term Targets.

1.2 Scope of Work

The scope of works for the ambient air quality monitoring includes:

1. Preparation of an Ambient Air Monitoring Plan;
2. Ambient air monitoring station setup and sampling at selected sampling points (as dictated by AECOM) are identified as follows:
 - AQ01 – Singapore University of Social Sciences
 - AQ02 – Methodist Girls School
 - AQ03 – Eng Neo Woods
 - AQ04 – North of Windsor Nature Park
 - AQ05 – Peirce Secondary School
3. Collected air samples were analysed for:
 - Particulate Matter as 10um and 2.5um (PM₁₀ & PM_{2.5});
4. Assessing the analytical results against Singapore Ambient Air Quality Targets by 2020 and the Long-Term Targets
5. Providing a report outlining the findings and results of the study.



1.3 Monitoring Requirement

Ambient air monitoring was conducted at five (5) locations as dictated by AECOM. Particulate Matter as 10um and 2.5um (PM₁₀ & PM_{2.5}), were monitored as required. Monitored parameters were dictated by AECOM and compared with the Singapore Ambient Air Quality Targets by 2020 and the Long-Term Targets. Table 1.1 lists the details of the limits of each parameter in this study.

Table 1.1: Summary of test parameters and limits for ambient air monitoring

Parameters	Limits (mgm ⁻³ or µgm ⁻³)	Guidelines
PM _{2.5}	25 µgm ⁻³ (24-hour averaging period)	Singapore Ambient Air Quality Long Term Targets
PM ₁₀	50 µgm ⁻³ (24-hour averaging period)	Singapore Ambient Air Quality Targets by 2020

2.0 Sampling and Field Monitoring

2.1 Sampling Equipment

The following equipment was mobilized and used during the environmental monitoring activities.

Parameter	Instrument Type
Particulate matter (PM ₁₀ & PM _{2.5})	TSI Environmental DustTrak Monitoring System



2.2 Monitoring Location (★ indicates air monitoring location)



Figure 2.1: Air Quality Monitoring Locations (AQ01 to AQ05)

2.3 Detail Ambient Air Monitoring Point

The air monitoring points identified as AQ01 through AQ05 was dictated by AECOM. The details of the monitoring point is listed in Table 2.1 below.

Table 2.1: Details of monitoring points

Sampling ID	Monitoring Point	Parameter	Sampling Start		Sampling Stop	
			Date	Time (hr)	Date	Time (hr)
AQ01	Singapore University of Social Sciences	PM ₁₀ & PM _{2.5} (24 hours)	11 Mar 2020	1300	18 Mar 2020	1255
AQ02	Methodist Girls School	PM ₁₀ & PM _{2.5} (24 hours)	25 Feb 2020	1300	03 Mar 2020	1255
AQ03	Eng Neo Woods	PM ₁₀ & PM _{2.5} (24 hours)	26 Mar 2020	1800	02 Apr 2020	1755
AQ04	North of Windsor Nature Park	PM ₁₀ & PM _{2.5} (24 hours)	19 Jun 2020	1300	26 Jun 2020	1255
AQ05	Peirce Secondary School	PM ₁₀ & PM _{2.5} (24 hours)	03 Mar 2020	1800	10 Mar 2020	1755



3.0 Sampling and Analysis Methodology

Brief method description, method reference and reporting limit of the analytical methods are provided in Table 3.1.

Table 3.1: Summary of methodologies and limit of reporting (LOR)

No.	Parameter	Referenced Analytical Method	Description of Method	LOR
1.	Particulate matter (PM ₁₀ & PM _{2.5})	TSI Environmental DustTrak Monitoring System Operation Manual	Concentrations of PM ₁₀ & PM _{2.5} were measured by Light scattering laser photometer principle using an Environmental DustTrak Monitoring Equipment coupled with heated inlet for 5 minutes interval data log over 7 days continuous sampling period	1.0 µgm ⁻³



3.1 Quality Assurance / Quality Control

The certificate of field equipment calibration is attached in Appendix 1. The photos of the monitoring locations are attached in Appendix 2.



4.0 Results of Monitoring at AQ01

Table 4.1: Summary of results for Particulate Matter as PM_{2.5}, and PM₁₀ based on 24-hour average at AQ01

Sampling Point	Day	Particulate Matter (PM _{2.5}), μgm^{-3}	Particulate Matter (PM ₁₀), μgm^{-3}
Singapore University of Social Sciences (AQ01)	Day 1 (11 to 12 Mar 2020)	26.5	30.1
	Day 2 (12 to 13 Mar 2020)	14.0	16.4
	Day 3 (13 to 14 Mar 2020)	11.2	14.5
	Day 4 (14 to 15 Mar 2020)	13.5	16.6
	Day 5 (15 to 16 Mar 2020)	9.43	12.5
	Day 6 (16 to 17 Mar 2020)	11.6	15.9
	Day 7 (17 to 18 Mar 2020)	14.9	18.4
Limits (μgm^{-3})		25^a	50^b

Notes:

^a Denotes as per client request, the results are compared to the limits stipulated by Singapore Ambient Air Quality Long Term Targets

^b Denotes results are compared to the limits stipulated by Singapore Ambient Air Quality Targets by 2020.

Bold font denotes exceeded the applicable limit.



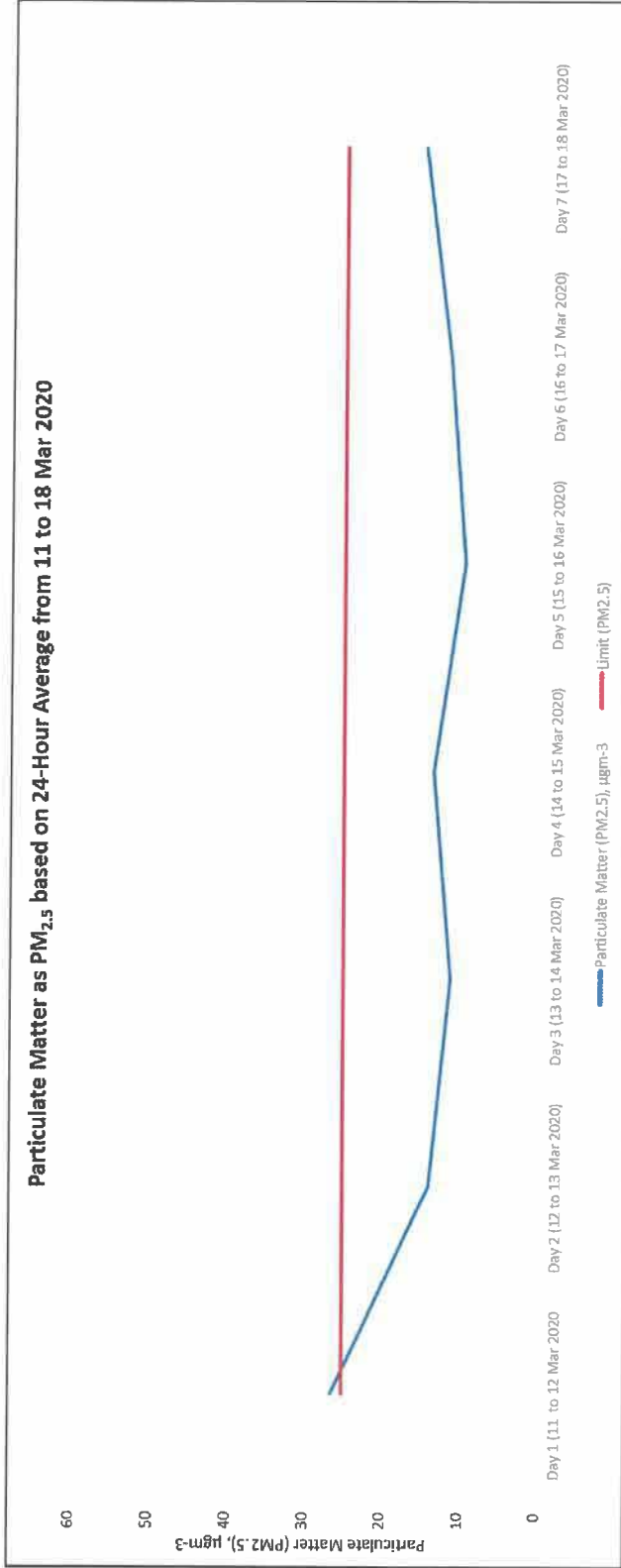


Figure 4.1: 24-Hour Average for PM_{2.5} at AQ01 from 11 to 18 Mar 2020



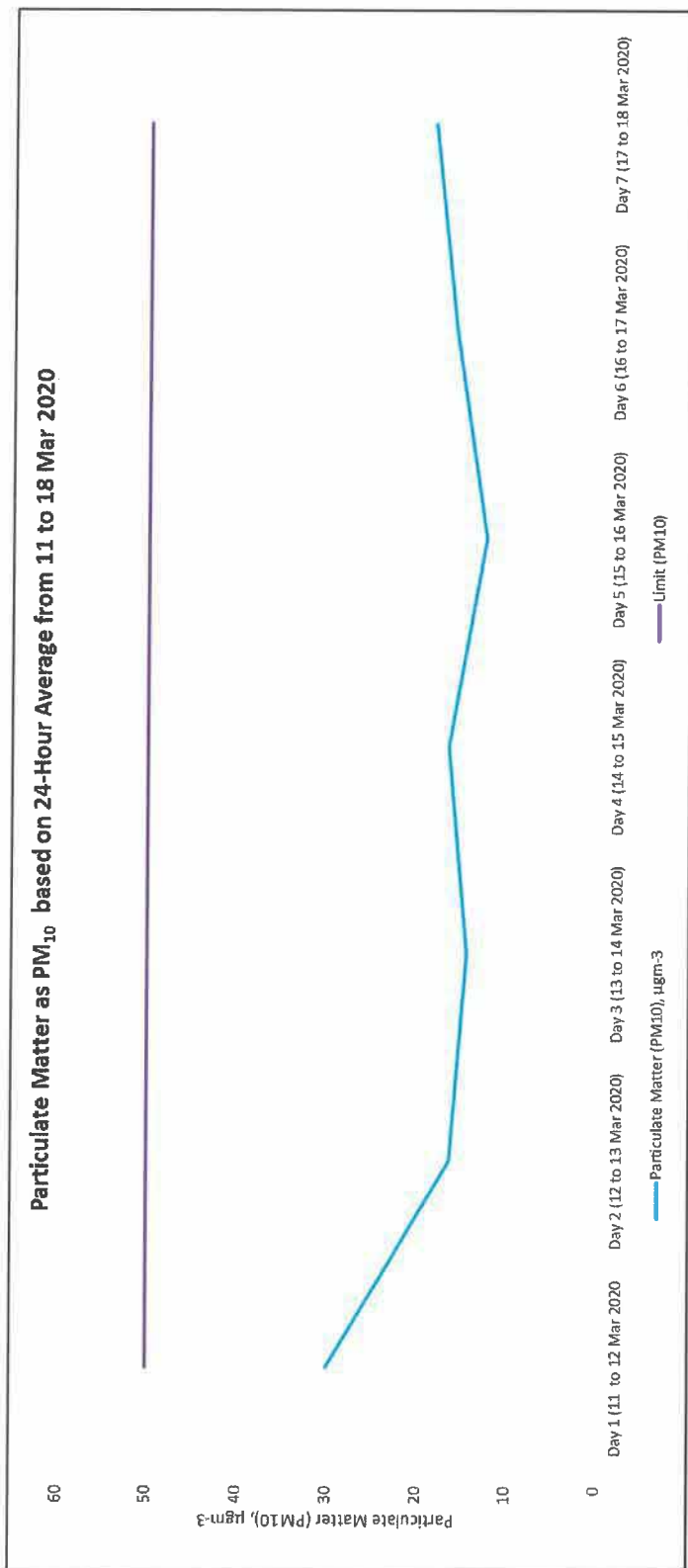


Figure 4.2: 24-Hour Average for PM₁₀ at AQ01 from 11 to 18 Mar 2020



4.1 Results of Monitoring at AQ02

Table 4.2: Summary of results for Particulate Matter as PM_{2.5}, and PM₁₀ based on 24-hour average at AQ02

Sampling Point	Day	Particulate Matter (PM _{2.5}), μgm^{-3}	Particulate Matter (PM ₁₀), μgm^{-3}
Methodist Girls School (AQ02)	Day 1 (25 to 26 Feb 2020)	13.6	18.3
	Day 2 (26 to 27 Feb 2020)	10.8	14.5
	Day 3 (27 to 28 Feb 2020)	10.8	15.5
	Day 4 (28 to 29 Feb 2020)	10.0	13.4
	Day 5 (29 Feb to 01 Mar 2020)	11.2	14.4
	Day 6 (01 to 02 Mar 2020)	8.95	11.6
	Day 7 (02 to 03 Mar 2020)	9.44	12.5
Limits (μgm^{-3})		25 ^a	50 ^b

Notes:

^a Denotes as per client request, the results are compared to the limits stipulated by Singapore Ambient Air Quality Long Term Targets

^b Denotes results are compared to the limits stipulated by Singapore Ambient Air Quality Targets by 2020.





Figure 4.3: 24-Hour Average for PM_{2.5} at AQ02 from 25 Feb to 03 Mar 2020

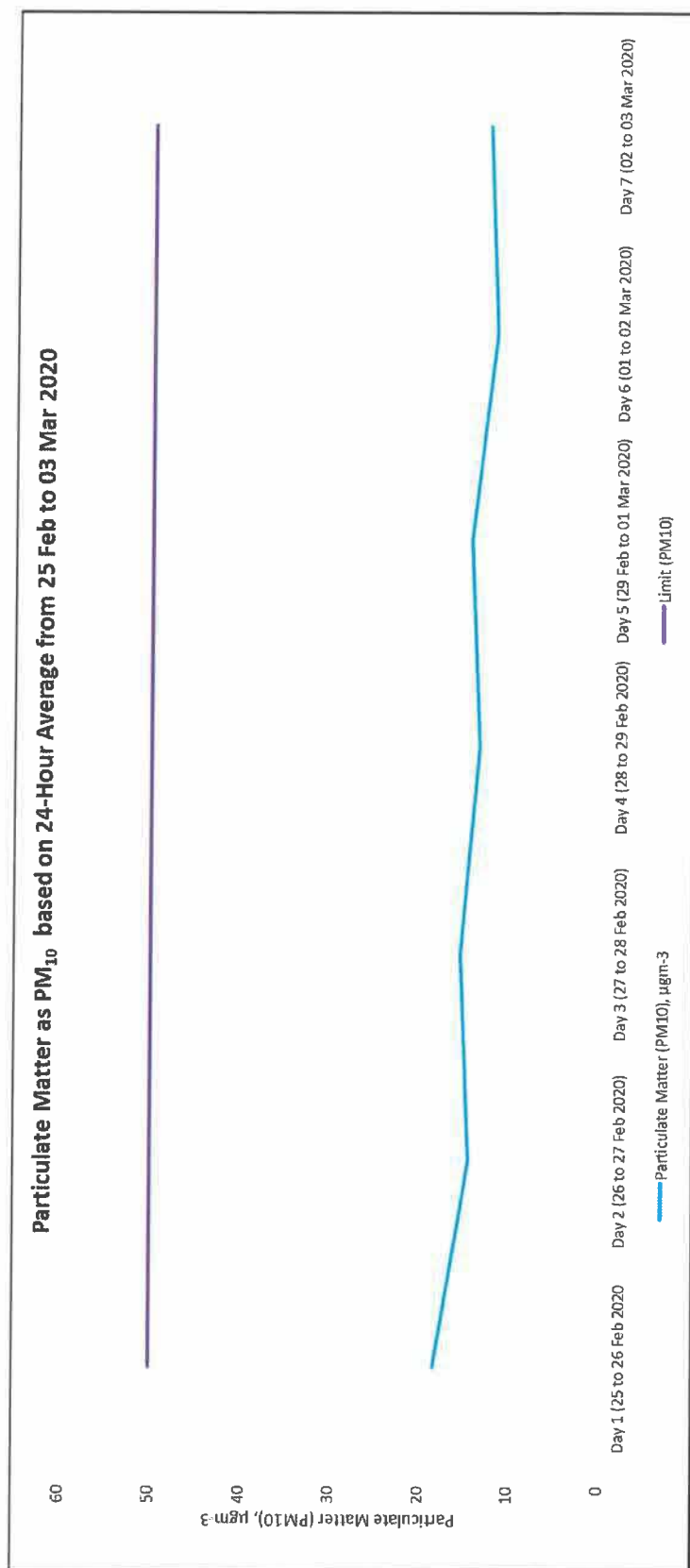


Figure 4.4: 24-Hour Average for PM₁₀ at AQ02 from 25 Feb to 03 Mar 2020



4.2 Results of Monitoring at AQ03

Table 4.3: Summary of results for Particulate Matter as PM_{2.5}, and PM₁₀ based on 24-hour average at AQ03

Sampling Point	Day	Particulate Matter (PM _{2.5}), μgm^{-3}	Particulate Matter (PM ₁₀), μgm^{-3}
Eng Neo Woods (AQ03)	Day 1 (26 to 27 Mar 2020)	10.0	14.6
	Day 2 (27 to 28 Mar 2020)	12.6	20.5
	Day 3 (28 to 29 Mar 2020)	16.9	25.5
	Day 4 (29 to 30 Mar 2020)	12.2	16.4
	Day 5 (30 to 31 Mar 2020)	14.0	19.1
	Day 6 (31 Mar to 01 Apr 2020)	16.4	19.9
	Day 7 (01 to 02 Apr 2020)	11.5	16.9
Limits (μgm^{-3})		25 ^a	50 ^b

Notes:

^a Denotes as per client request, the results are compared to the limits stipulated by Singapore Ambient Air Quality Long Term Targets

^b Denotes results are compared to the limits stipulated by Singapore Ambient Air Quality Targets by 2020.



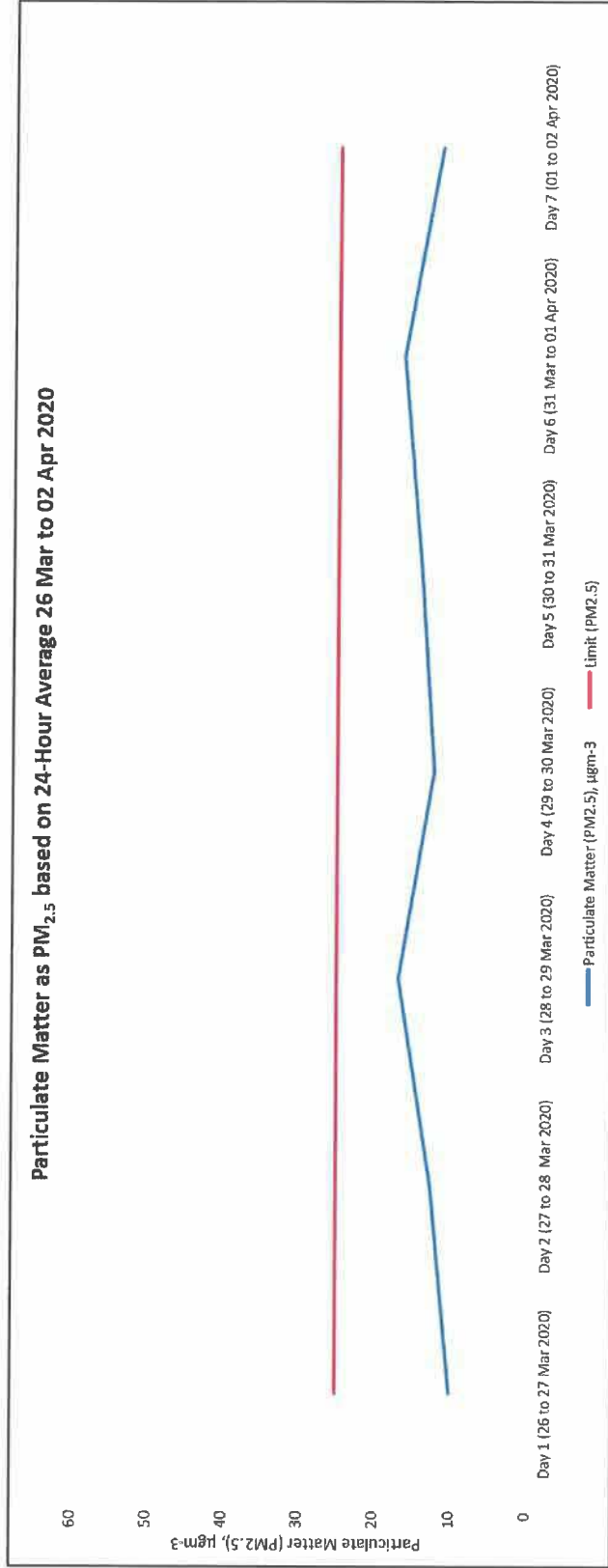


Figure 4.5: 24-Hour Average for PM_{2.5} at AQ03 from 26 Mar to 02 Apr 2020



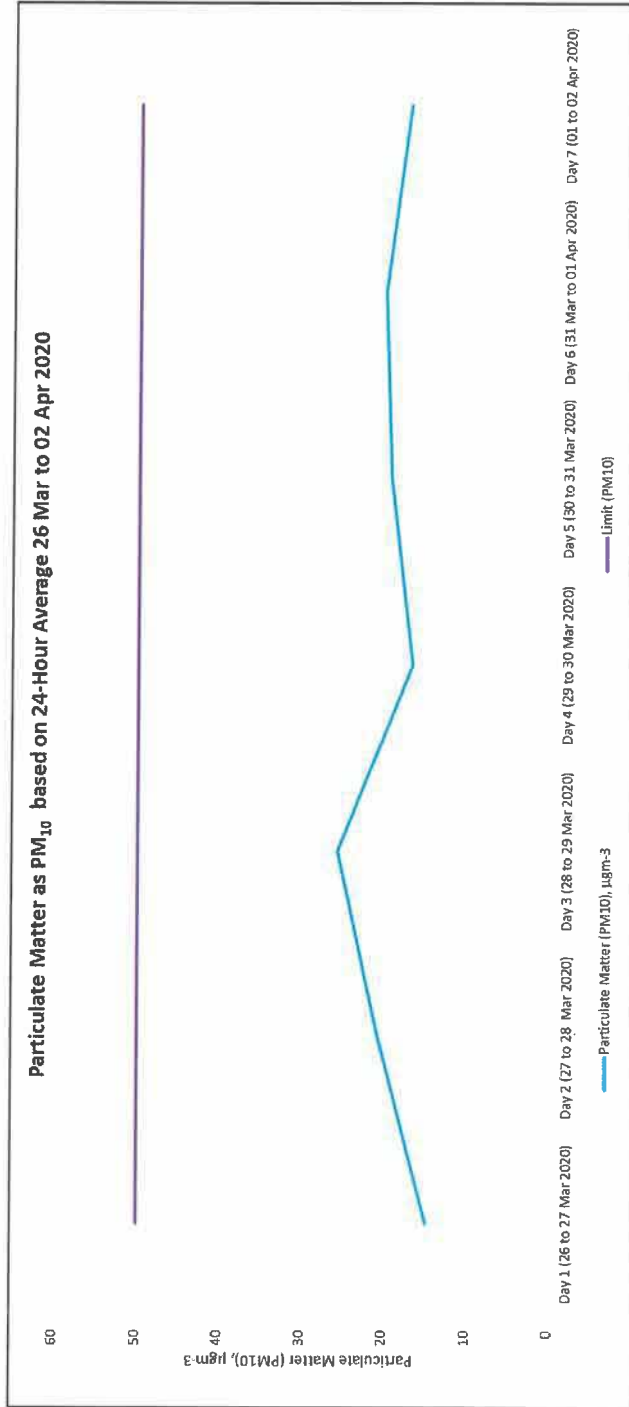


Figure 4.6: 24-Hour Average for PM₁₀ at AQ03 from 26 Mar to 02 Apr 2020



4.3 Results of Monitoring at AQ04

Table 4.4: Summary of results for Particulate Matter as PM_{2.5}, and PM₁₀ based on 24-hour average at AQ04

Sampling Point	Day	Particulate Matter (PM _{2.5}), μgm^{-3}	Particulate Matter (PM ₁₀), μgm^{-3}
North of Windsor Nature Park (AQ04)	Day 1 (19 to 20 Jun 2020)	6.36	9.41
	Day 2 (20 to 21 Jun 2020)	7.51	11.4
	Day 3 (21 to 22 Jun 2020)	9.60	13.6
	Day 4 (22 to 23 Jun 2020)	8.41	12.1
	Day 5 (23 to 24 Jun 2020)	3.34	6.33
	Day 6 (24 to 25 Jun 2020)	5.97	8.60
	Day 7 (25 to 26 Jun 2020)	6.65	10.2
Limits (μgm^{-3})		25 ^a	50 ^b

Notes:

^a Denotes as per client request, the results are compared to the limits stipulated by Singapore Ambient Air Quality Long Term Targets

^b Denotes results are compared to the limits stipulated by Singapore Ambient Air Quality Targets by 2020.

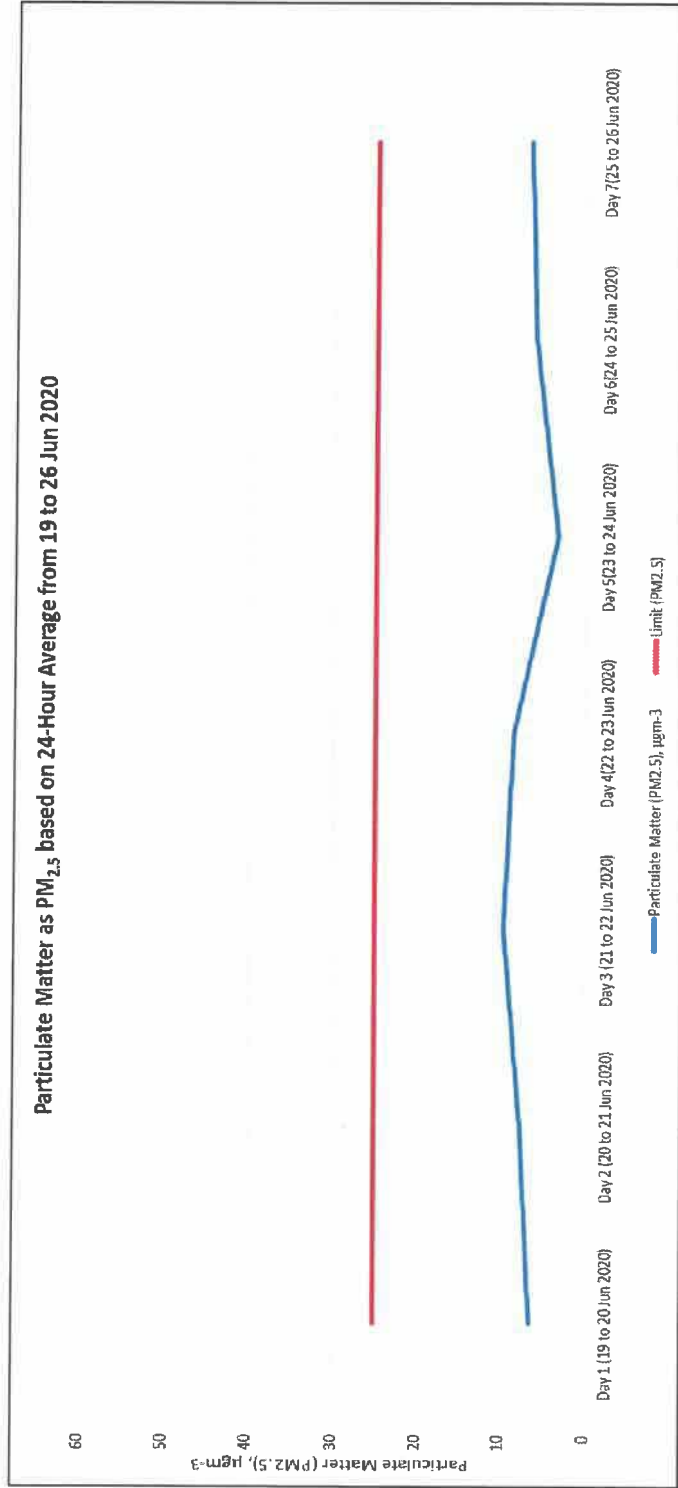


Figure 4.7: 24-Hour Average for PM_{2.5} at AQ04 from 19 Jun to 26 Jun 2020



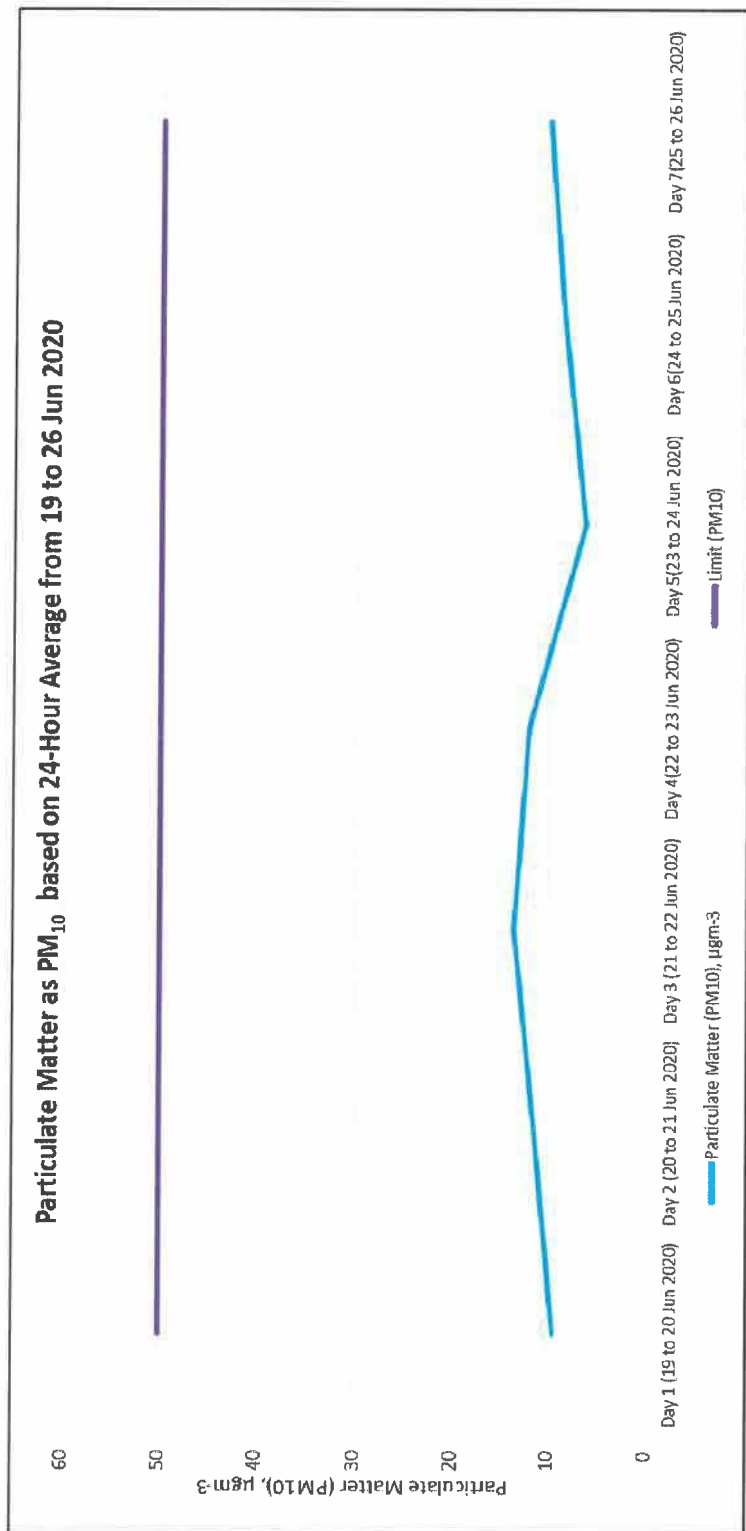


Figure 4.8: 24-Hour Average for PM₁₀ at AQ04 from 19 Jun to 26 Jun 2020



4.4 Results of Monitoring at AQ05

Table 4.5: Summary of results for Particulate Matter as PM_{2.5}, and PM₁₀ based on 24-hour average at AQ05

Sampling Point	Day	Particulate Matter (PM _{2.5}), μgm^{-3}	Particulate Matter (PM ₁₀), μgm^{-3}
Peirce Secondary School (AQ05)	Day 1 (03 to 04 Mar 2020)	11.9	15.4
	Day 2 (04 to 05 Mar 2020)	13.6	17.6
	Day 3 (05 to 06 Mar 2020)	19.2	21.5
	Day 4 (06 to 07 Mar 2020)	20.7	22.5
	Day 5 (07 to 08 Mar 2020)	15.0	17.9
	Day 6 (08 to 09 Mar 2020)	22.7	28.3
	Day 7 (09 to 10 Mar 2020)	23.7	27.4
Limits (μgm^{-3})		25^a	50^b

Notes:

^a Denotes as per client request, the results are compared to the limits stipulated by Singapore Ambient Air Quality Long Term Targets

^b Denotes results are compared to the limits stipulated by Singapore Ambient Air Quality Targets by 2020.

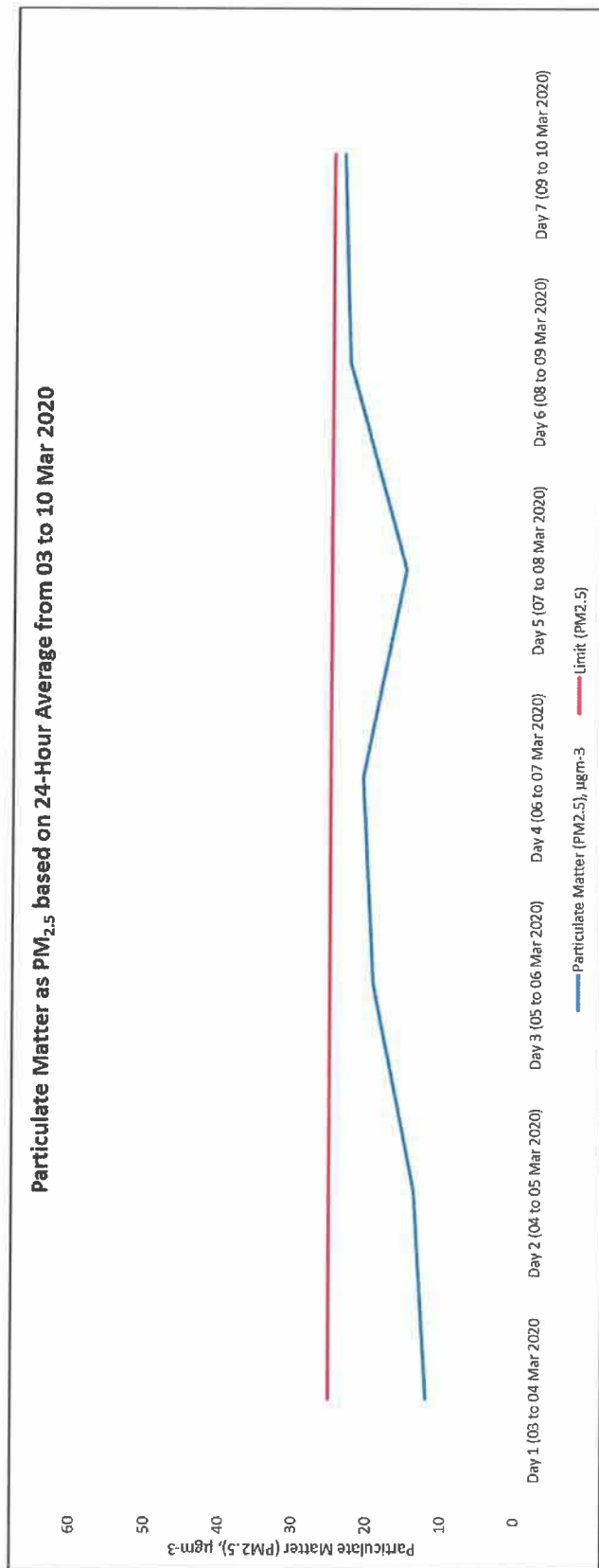


Figure 4.9: 24-Hour Average for PM_{2.5} at AQ05 from 03 to 10 Mar 2020



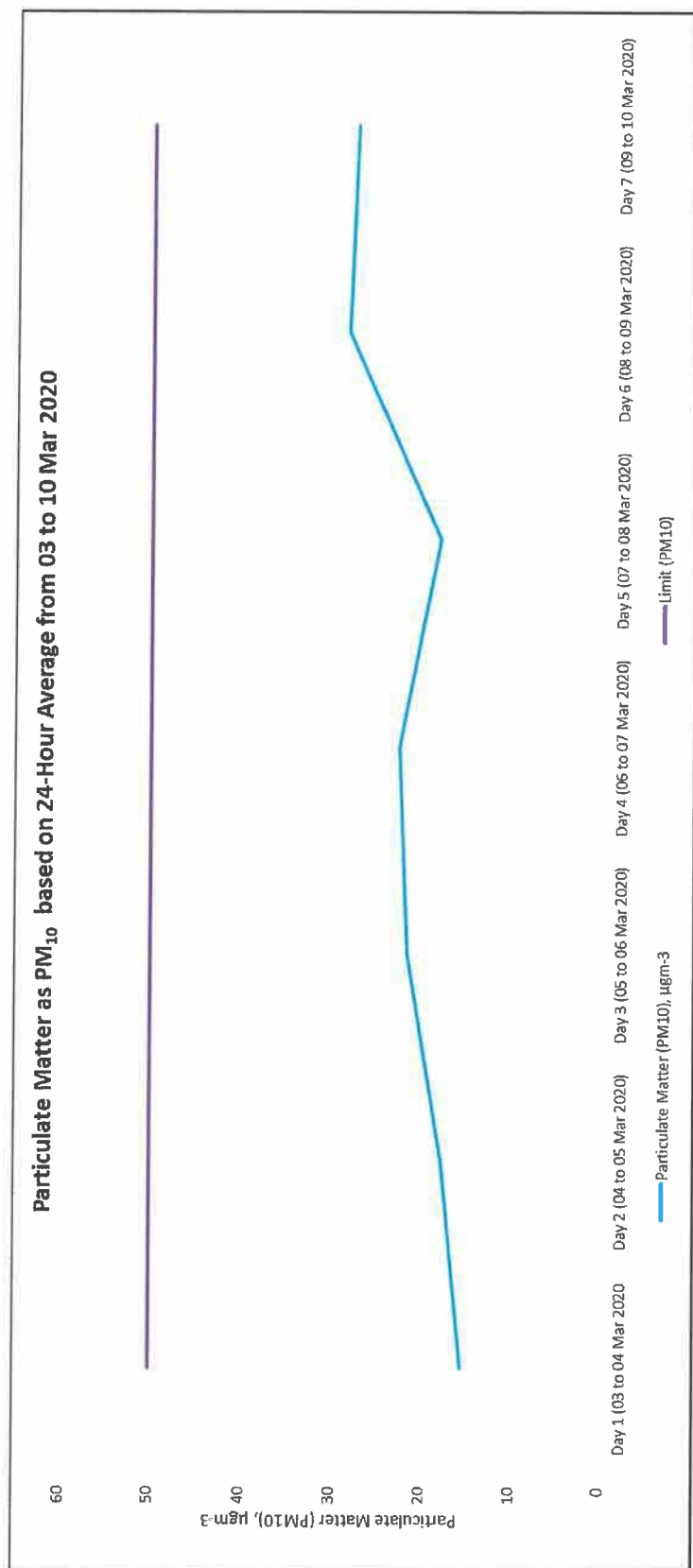


Figure 4.10: 24-Hour Average for PM₁₀ at AQ05 from 03 to 10 Mar 2020



7.0 Conclusion

The monitoring results are summarized in Tables 4.1 to 4.5. The results for PM₁₀ for all locations for all 7 days are in compliance to the Singapore Ambient Air Quality Targets by 2020.

For PM_{2.5}, the monitoring results for all locations are in compliance to the Singapore Ambient Air Quality Long Term Targets for all 7 days except for Day 1 at Singapore University of Social Sciences (AQ01). The measured value for this day (11 to 12 March 2020) is 26.5 µgm⁻³ as compared to the long-term target of 25 µgm⁻³.

It should be noted that the Ambient Air Monitoring project was carried out to the best of our knowledge and ability as well as responsibility towards the code of practice in the performance and reliability of our business to be accurate, precise and representative at the date/time and locations sampled so as to achieve a satisfactory baseline study.



Appendix 1 Certificate of Calibration of Equipment

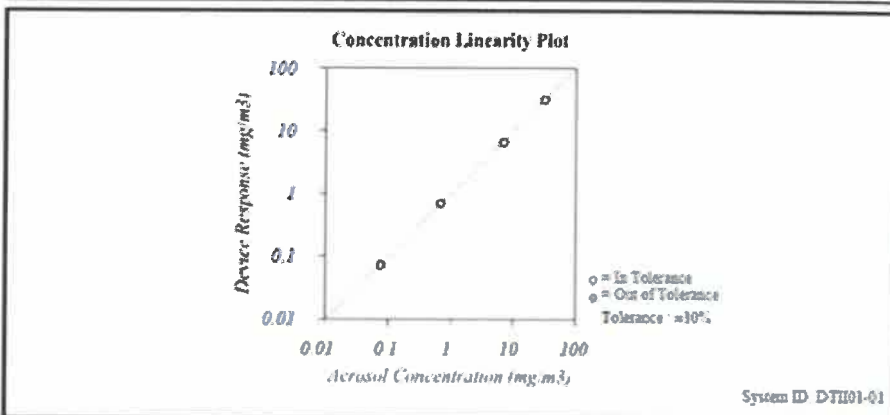


CERTIFICATE OF CALIBRATION AND TESTING

TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA
Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 <http://www.tsi.com>

Environment Conditions			Model	8543
Temperature	76.56 (24.8)	°F (°C)	Serial Number	8543191207
Relative Humidity	34.0	%RH		
Barometric Pressure	29.13 (985.9)	inHg (kPa)		

☒ As Left ☒ In Tolerance
☐ As Found ☐ Out of Tolerance



FLOW AND PRESSURE VERIFICATION				SYSTEM DTH01-01			
Parameter	Standard	Measured	Allowable Range	Parameter	Standard	Measured	Allowable Range
Flow lpm	3.00	3.07	2.91 ~ 3.09	Pressure kPa	98.8	98.8	93.86 ~ 103.74
Full Flow lpm	N/A	6.48	>3.80				

TSI Incorporated does hereby certify that all materials, components, and workmanship used in the manufacture of this equipment are in strict accordance with the applicable specifications agreed upon by TSI and the customer and with all published specifications. All performance and acceptance tests required under this contract were successfully conducted according to required specifications. There is no NIST standard for optical mass measurement. Calibration of this instrument performed by TSI has been done using emery oil and has been nominally adjusted to respirable mass per standard ISO 12103-1, All test dust (Arizona dust). Our calibration ratio is greater than 1.2:1

Measurement Variable	System ID	Last Cal	Cal Due	Measurement Variable	System ID	Last Cal	Cal Due
Photometer	E003433	03-19-19	09-30-19	Flowmeter	E002475	09-12-18	09-30-19
DC Voltage (Keithley)	E002859	08-22-18	08-31-19	Microbalance	M001324	10-03-18	10-31-20
Temp Humidity	E005410	10-15-18	10-31-19	Pressure	E003440	07-24-18	07-31-19
1 um PSL	698886	n/a	n/a	3 um PSL	180387	n/a	n/a
10 um PSL	108441	n/a	n/a	Temp Humidity	E005409	10-12-18	10-31-19

Juan Cornejo
Calibrated

March 21, 2019

Date



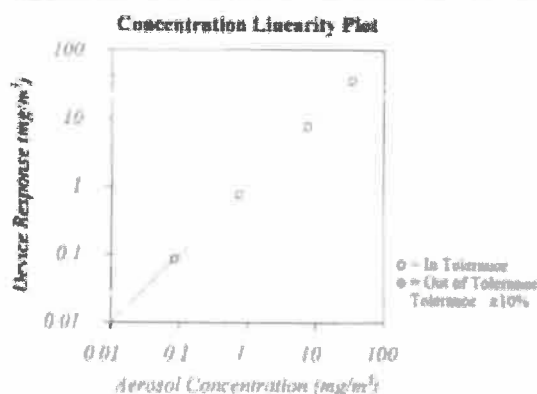


CERTIFICATE OF CALIBRATION AND TESTING

ISI Incorporated, 3501 Market Street, Philadelphia, PA 19104 USA
Tel: 1-800-874-2811 1-610-490-2811 Fax: 1-610-490-3824 <http://www.isi.com>

Environmental Conditions			Model	8543
Temperature	73.21 (22.9)	75 (°C)	Serial Number	8543192904
Relative Humidity	20.1	50(%)		
Barometric Pressure	29.21 (990.1)	1013 (hPa)		

<input type="checkbox"/> No Lat	<input type="checkbox"/> Is Tolerance	
<input type="checkbox"/> As Found	<input type="checkbox"/> Use of Tolerance	



System ID: DT114-01

FLOW AND PRESSURE VERIFICATION				SYSTEM DT101-01			
Parameter	Standard	Measured	Allowable Range	Parameter	Standard	Measured	Allowable Range
Flow lpm	100	298	291 - 309	Pressure kPa	99.9	98.9	94.01 - 102.96
Full Flow lpm	N/A	636	>300				

TSI Incorporated does hereby certify that all materials, components, and workmanship used in the manufacture of this equipment are in strict accordance with the applicable specifications agreed upon by TSI and the customer and with all published specifications. All performance and acceptance tests required under this contract have successfully concluded according to required specifications. There is no ASTM standard for optical mass measurements. Calibration of this instrument performed by TSI has been done using NIST and has been mutually accepted as responsible over previous standards.

Measurement Variable	System ID	Last Cal.	Cal. Due	Measurement Variable	System ID	Last Cal.	Cal. Due
Photometer	5104543	06-10-20	06-10-20	Flowmeter	5104570	06-13-19	06-10-20
DC Voltage Controller	1102839	08-12-16	08-31-20	Microbalance	51001324	10-03-14	10-31-20
Pressure	1105563	07-16-19	07-31-20	1 atm PSI	698800	N/A	N/A
1 atm PSI	206030	N/A	N/A	1 atm PSI	212534	N/A	N/A

Brad Halverson

March 13, 2020

4. Study Population



1376214-10-20



Appendix 2 Site Photos



AQ01 Singapore University of Social Sciences





AQ02 Methodist Girls School





AQ03 Eng Neo Woods





AQ04 North of Windsor Nature





AQ05 Peirce Secondary School



Appendix N

Baseline Airborne Noise Monitoring Results

Baseline Noise Monitoring Report

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1.0 Introduction

Under the contract “CR2005 – Provision of Services to Conduct Environmental Impact Study”, the Land Transport Authorities, Singapore (LTA) appointed AECOM Singapore Pte Ltd (AECOM) to undertake an Environmental Impact Assessment (EIA) to assess the potential environmental impacts arising from, and associated with, the construction of Cross Region Line (CRL) Phase II (hereafter referred to as the “Project”) and this covers the alignment between Bright Hill and Clementi.

Part of the study will involve assessment of the noise impacts arising from the construction activities of the project. This report details the noise monitoring plan to carry out the baseline noise monitoring at the project site due to proposed construction activities. The purpose of conducting a baseline noise monitoring is to determine the existing noise levels from these areas for further assessments and validation of noise level predictions.

1.1 Airborne Noise Monitoring Schedule

Unattended noise monitoring was conducted at the proposed points to capture the existing noise level profiles in the area. Monitoring date, location of the monitoring points are shown in provided in **Table 1**.

Table 1 Baseline Monitoring Locations

No.	Monitoring ID	Monitoring Location	Monitoring Date
1	NM01	Landed housing along Clementi Green	14 Jan - 21 Jan 2020
2	NM02	Within Clementi Forest	14 Jan – 21 Jan 2020
3	NM03	Singapore University of Social Sciences (SUSS)	24 Jan – 03 Feb 2020
4	NM04	Children’s Aid Society (Melrose)	29 Jan – 05 Feb 2020

1.2 Airborne Noise Monitoring Equipment

Four (4) Norsonic 131 Sound Level Meter (SLM) with microphones was utilized to collect data for the Project. For the purpose of QA/QC, SLM was calibrated before each monitoring session without any drift in calibration before and after monitoring to ensure that equipment readings remain within acceptable margins of error. In order to reduce the chances of recording unwanted noise caused by wind, a windshield was attached onto the microphone. Noise levels were recorded in 1-minute intervals using the L_{Aeq} descriptor, under ‘fast’ time-weighting. Calibration certificates of the noise monitoring equipment, as per Table 2 are presented in **Annex A**.

Table 2 Airborne Noise Monitoring Equipment

Instrument	Brand	Model	Serial Numbers	Type
Norsonic 131	Norsonic	Norsonic 131	1313950	1
Norsonic 131	Norsonic	Norsonic 131	1313979	1
Norsonic 131	Norsonic	Norsonic 131	1313980	1
Norsonic 131	Norsonic	Norsonic 131	1313989	1



Figure 1 Airborne Noise Monitoring Setup

1.3 Baseline Airborne Noise Monitoring Data (Construction)

The daily baseline airborne noise monitoring results for from NM01 to NM04 for 7:00 am – 7:00 pm, 7:00 pm – 10:00 pm and 10:00 pm – 7:00 am are listed in this section. The time period that will be used for the airborne noise impact assessments for Construction Phases is 7:00 am – 7:00 pm Monday to Saturday. The corresponding graphs for the daily monitoring data are displayed in **Annex A**.

The recorded background levels in Table 3 to Table 6 are used to calculate the “adjusted maximum permissible noise level” in line with the directions given in the applicable legislation for the construction airborne noise impact assessment.

Table 3 NM01- baseline noise monitoring results

Monitoring period		L _{Aeq} (12hours), dB		L _{Aeq} (1hour), dB		L _{Aeq} (5mins), dB		
		7:00 am – 7:00 pm	7:00 pm – 7:00 am	7:00 pm – 10:00 pm	10:00 pm – 7:00 am	7:00 am – 7:00 pm	7:00 pm – 10:00 pm	10:00 pm – 7:00 am
14 Jan 2020	Max	NA	NA	65	58	NA	64	53
	Min	NA	NA	66	65	NA	67	67
	Average / Overall	NA	63	66	62	NA	65	61
15 Jan 2020	Max	NA	NA	65	57	62	64	54
	Min	NA	NA	66	65	71	67	67
	Average / Overall	66	63	65	61	66	65	61
16 Jan 2020	Max	NA	NA	66	58	63	65	55
	Min	NA	NA	68	66	74	71	70
	Average / Overall	67	64	67	62	66	67	61
17 Jan 2020	Max	NA	NA	66	60	61	64	58
	Min	NA	NA	66	66	71	68	69
	Average / Overall	67	64	66	62	66	66	62
18 Jan 2020	Max	NA	NA	64	58	64	63	55
	Min	NA	NA	65	64	70	67	66
	Average / Overall	66	63	65	61	66	65	61
19 Jan 2020	Max	NA	NA	65	56	62	63	53
	Min	NA	NA	65	66	72	67	68
	Average / Overall	65	63	65	61	65	65	60
20 Jan 2020	Max	NA	NA	64	57	63	63	55
	Min	NA	NA	65	66	71	67	68
	Average / Overall	66	63	65	61	66	65	61

Table 4 NM02- baseline noise monitoring results

Monitoring period		L _{Aeq} (12hours), dB		L _{Aeq} (1hour), dB		L _{Aeq} (5mins), dB		
		7:00 am – 7:00 pm	7:00 pm – 7:00 am	7:00 pm – 10:00 pm	10:00 pm – 7:00 am	7:00 am – 7:00 pm	7:00 pm – 10:00 pm	10:00 pm – 7:00 am
14 Jan 2020	Max	NA	NA	48	40	NA	41	37
	Min	NA	NA	70	48	NA	75	51
	Average / Overall	NA	60	60	43	NA	53	43
15 Jan 2020	Max	NA	NA	48	39	43	42	38
	Min	NA	NA	54	47	68	64	50
	Average / Overall	54	47	51	42	50	48	42
16 Jan 2020	Max	NA	NA	52	40	41	45	38
	Min	NA	NA	68	65	71	75	71
	Average / Overall	56	59	59	46	48	55	45
17 Jan 2020	Max	NA	NA	45	40	41	42	38
	Min	NA	NA	67	43	64	73	46
	Average / Overall	50	57	58	41	46	52	41
18 Jan 2020	Max	NA	NA	44	42	41	40	38
	Min	NA	NA	48	44	62	48	49
	Average / Overall	49	44	46	43	45	45	42
19 Jan 2020	Max	NA	NA	44	37	40	41	36
	Min	NA	NA	61	45	57	72	47
	Average / Overall	46	51	51	40	45	46	40
20 Jan 2020	Max	NA	NA	48	42	42	42	38
	Min	NA	NA	51	46	68	57	51
	Average / Overall	53	46	49	44	48	48	44

Table 5 NM03- baseline noise monitoring results

Monitoring period		LAeq(12hours), dB		LAeq(1hour), dB		LAeq(5mins), dB		
		7:00 am – 7:00 pm	7:00 pm – 7:00 am	7:00 pm – 10:00 pm	10:00 pm – 7:00 am	7:00 am – 7:00 pm	7:00 pm – 10:00 pm	10:00 pm – 7:00 am
24 Feb 2020	Max	NA	NA	60	51	NA	59	49
	Min	NA	NA	62	60	NA	65	63
	Average / Overall	NA	58	61	55	NA	61	55
25 Feb 2020	Max	NA	NA	61	52	60	59	49
	Min	NA	NA	63	60	69	67	62
	Average / Overall	62	59	62	56	62	62	55
26 Feb 2020	Max	NA	NA	61	52	60	59	47
	Min	NA	NA	62	60	69	65	62
	Average / Overall	62	59	62	56	62	61	56
27 Feb 2020	Max	NA	NA	61	52	60	60	49
	Min	NA	NA	62	61	65	62	63
	Average / Overall	62	58	61	56	62	61	55
28 Feb 2020	Max	NA	NA	60	54	60	60	52
	Min	NA	NA	61	61	67	63	62
	Average / Overall	62	59	61	57	62	61	57
29 Feb 2020	Max	NA	NA	60	53	58	58	52
	Min	NA	NA	60	59	67	61	61
	Average / Overall	62	57	60	55	62	60	55
01 Mar 2020	Max	NA	NA	60	52	57	58	47
	Min	NA	NA	61	60	62	64	62
	Average / Overall	60	57	60	55	60	60	55

Table 6 NM04- baseline noise monitoring results

Monitoring period		L _{Aeq} (12hours), dB		L _{Aeq} (1hour), dB		L _{Aeq} (5mins), dB		
		7:00 am – 7:00 pm	7:00 pm – 7:00 am	7:00 pm – 10:00 pm	10:00 pm – 7:00 am	7:00 am – 7:00 pm	7:00 pm – 10:00 pm	10:00 pm – 7:00 am
29 Jan 2020	Max	NA	NA	67	57	NA	65	54
	Min	NA	NA	70	69	NA	72	70
	Average / Overall	NA	66	68	62	NA	68	62
30 Jan 2020	Max	NA	NA	65	57	63	64	54
	Min	NA	NA	66	65	71	67	67
	Average / Overall	66	63	66	60	66	65	60
31 Jan 2020	Max	NA	NA	65	59	64	64	57
	Min	NA	NA	66	66	70	67	70
	Average / Overall	66	63	65	62	66	65	61
01 Feb 2020	Max	NA	NA	64	58	62	63	56
	Min	NA	NA	65	64	70	67	67
	Average / Overall	66	62	65	61	66	65	61
02 Feb 2020	Max	NA	NA	64	55	60	64	53
	Min	NA	NA	65	64	67	66	66
	Average / Overall	65	62	64	60	65	64	59
03 Feb 2020	Max	NA	NA	65	56	63	64	53
	Min	NA	NA	66	65	70	67	68
	Average / Overall	66	63	65	60	66	65	60
04 Feb 2020	Max	NA	NA	65	57	63	63	54
	Min	NA	NA	66	66	70	67	69
	Average / Overall	66	63	66	60	66	65	60

1.3.1 Summary of Baseline Noise Monitoring Results for Construction Noise Impact Assessment

The baseline noise monitoring results from NM01 to NM04 are summarised in this section. These data with background noise correction factor applied will be used to develop the noise criteria for this project.

Table 7: Summary of Baseline Noise Monitoring Results for Monday to Saturday at NM01

Monitoring period		L _{Aeq} (12hours), dB		L _{Aeq} (1hour), dB		L _{Aeq} (5mins), dB		
		7:00 am – 7:00 pm	7:00 pm – 7:00 am	7:00 pm – 10:00 pm	10:00 pm – 7:00 am	7:00 am – 7:00 pm	7:00 pm – 10:00 pm	10:00 pm – 7:00 am
14 Jan 2020 to 18 Jan 2020 & 20 Jan 2020	Max	NA	NA	64	57	61	63	53
	Min	NA	NA	68	66	74	71	70
	Average / Overall	66	63	66	61	66	65	61

Table 8: Summary of Baseline Noise Monitoring Results for Sunday and Public Holiday at NM01

Monitoring period		L _{Aeq} (12hours), dB		L _{Aeq} (1hour), dB		L _{Aeq} (5mins), dB		
		7:00 am – 7:00 pm	7:00 pm – 7:00 am	7:00 pm – 10:00 pm	10:00 pm – 7:00 am	7:00 am – 7:00 pm	7:00 pm – 10:00 pm	10:00 pm – 7:00 am
19 Jan 2020	Max	NA	NA	65	56	62	63	53
	Min	NA	NA	65	66	72	67	68
	Average / Overall	65	63	65	61	65	65	60

Table 9 Summary of Baseline Noise Monitoring Results for Monday to Saturday at NM02

Monitoring period		L _{Aeq} (12hours), dB		L _{Aeq} (1hour), dB		L _{Aeq} (5mins), dB		
		7:00 am – 7:00 pm	7:00 pm – 7:00 am	7:00 pm – 10:00 pm	10:00 pm – 7:00 am	7:00 am – 7:00 pm	7:00 pm – 10:00 pm	10:00 pm – 7:00 am
14 Jan 2020 to 18 Jan 2020 & 20 Jan 2020	Max	NA	NA	44	39	41	40	37
	Min	NA	NA	70	65	71	75	71
	Average / Overall	52	52	54	43	48	50	43

Table 10: Summary of Baseline Noise Monitoring Results for Sunday and Public Holiday at NM02

Monitoring period		L _{Aeq} (12hours), dB		L _{Aeq} (1hour), dB		L _{Aeq} (5mins), dB		
		7:00 am – 7:00 pm	7:00 pm – 7:00 am	7:00 pm – 10:00 pm	10:00 pm – 7:00 am	7:00 am – 7:00 pm	7:00 pm – 10:00 pm	10:00 pm – 7:00 am
19 Jan 2020	Max	NA	NA	44	37	40	41	36
	Min	NA	NA	61	45	57	72	47
	Average / Overall	46	51	51	40	45	46	40

Table 11: Summary of Baseline Noise Monitoring Results for Monday to Saturday at NM03

Monitoring period		L _{Aeq} (12hours), dB		L _{Aeq} (1hour), dB		L _{Aeq} (5mins), dB		
		7:00 am – 7:00 pm	7:00 pm – 7:00 am	7:00 pm – 10:00 pm	10:00 pm – 7:00 am	7:00 am – 7:00 pm	7:00 pm – 10:00 pm	10:00 pm – 7:00 am
24 Feb 2020 to 29 Feb 2020	Max	NA	NA	60	51	58	58	47
	Min	NA	NA	63	61	69	67	63
	Average / Overall	62	58	61	56	62	61	56

Table 12: Summary of Baseline Noise Monitoring Results for Sunday and Public Holiday at NM03

Monitoring period		LAeq(12hours), dB		LAeq(1hour), dB		LAeq(5mins), dB		
		7:00 am – 7:00 pm	7:00 pm – 7:00 am	7:00 pm – 10:00 pm	10:00 pm – 7:00 am	7:00 am – 7:00 pm	7:00 pm – 10:00 pm	10:00 pm – 7:00 am
1 Mar 2020	Max	NA	NA	60	52	57	58	47
	Min	NA	NA	61	60	62	64	62
	Average / Overall	60	57	60	55	60	60	55

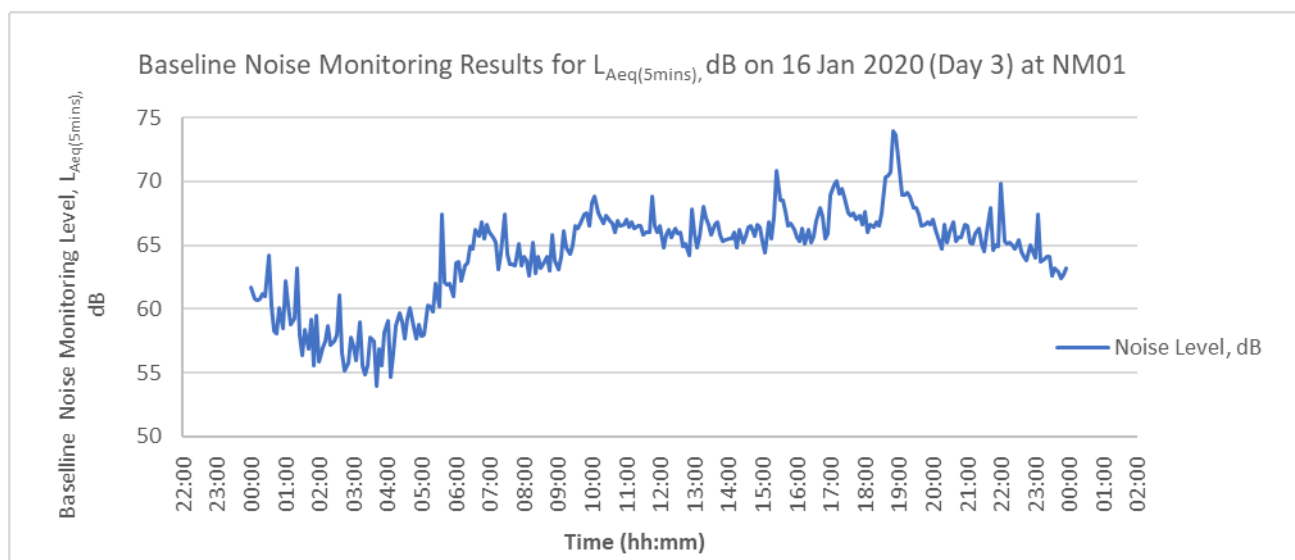
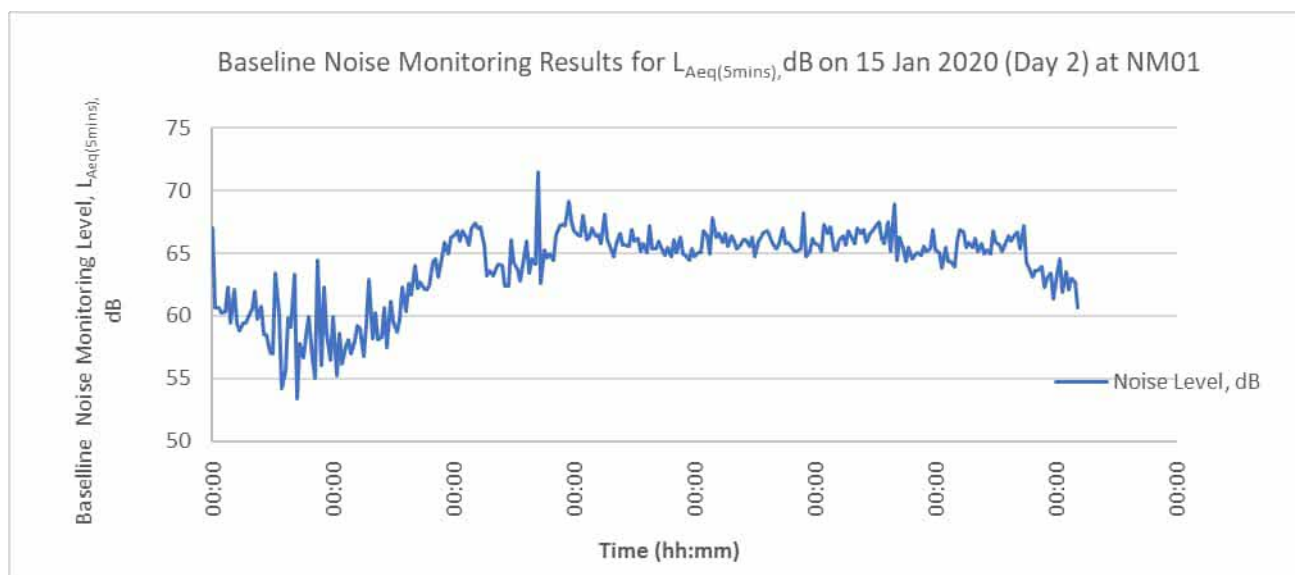
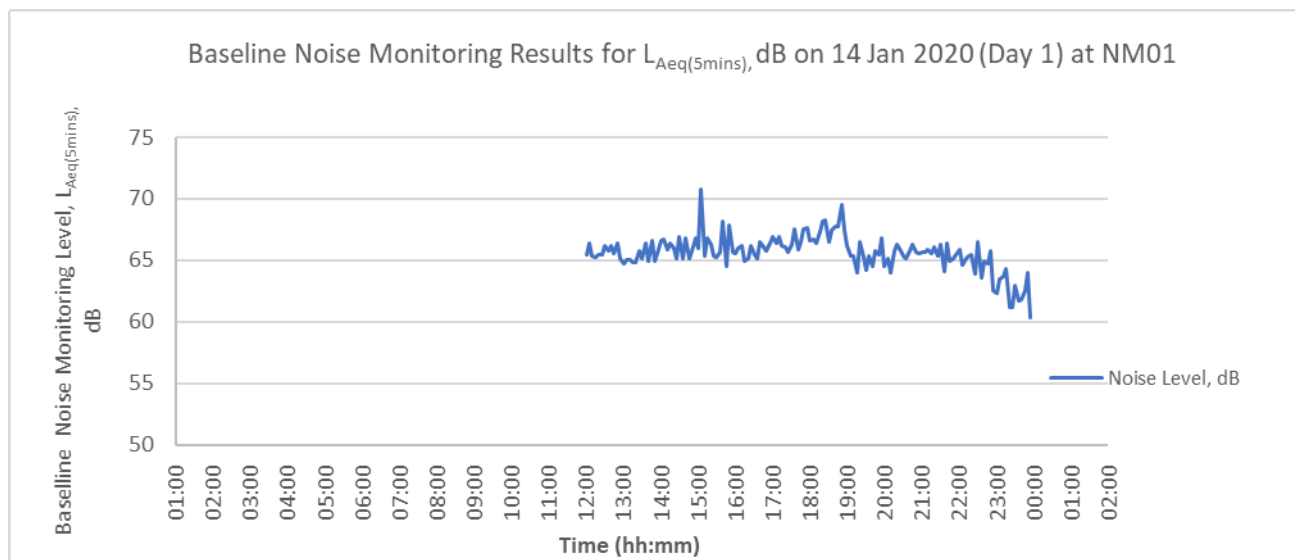
Table 13: Summary of Baseline Noise Monitoring Results for Monday to Saturday at NM04

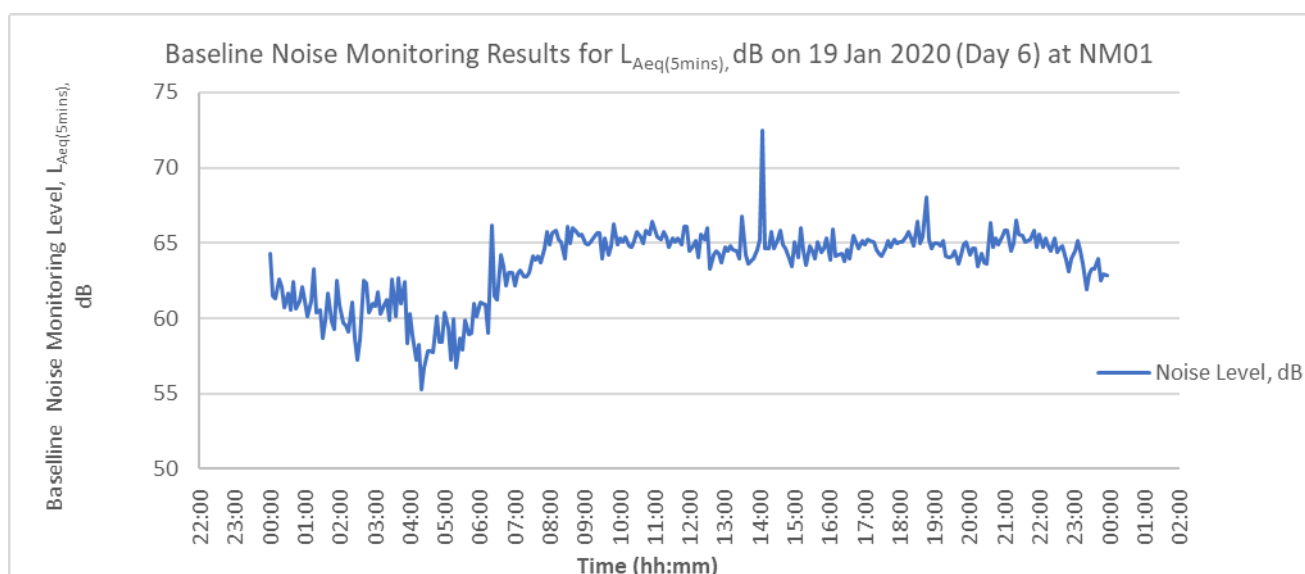
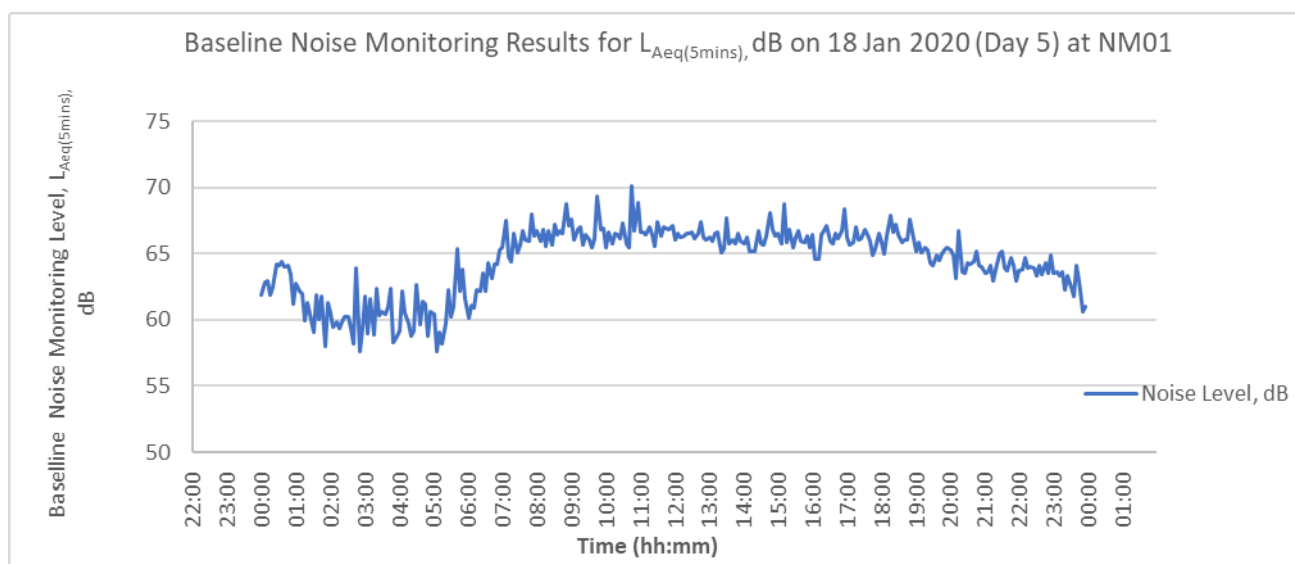
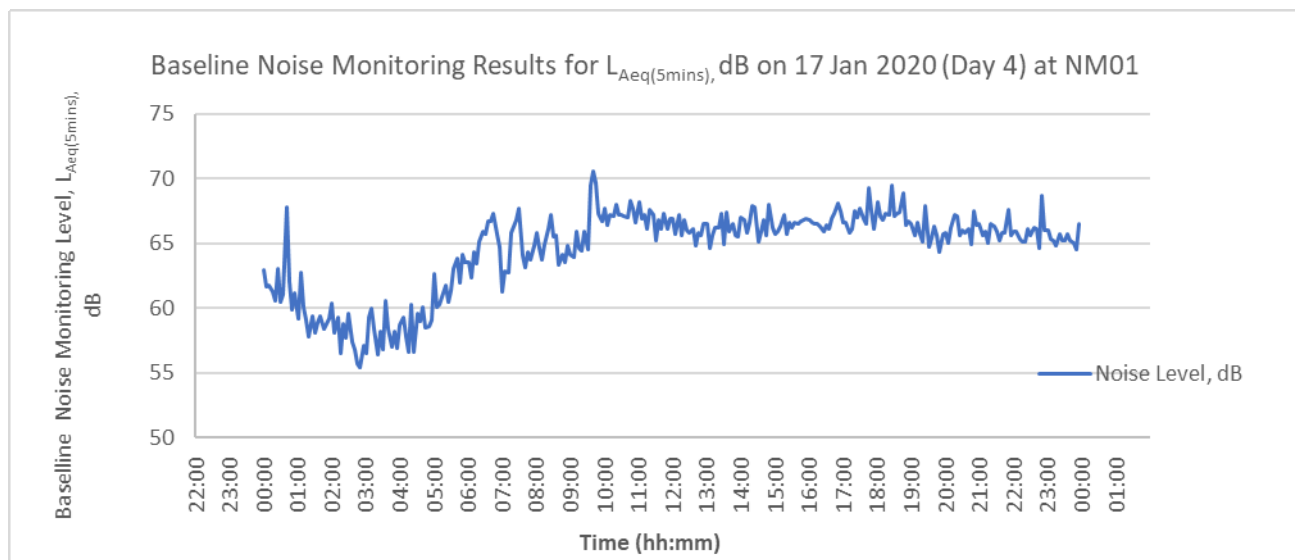
Monitoring period		LAeq(12hours), dB		LAeq(1hour), dB		LAeq(5mins), dB		
		7:00 am – 7:00 pm	7:00 pm – 7:00 am	7:00 pm – 10:00 pm	10:00 pm – 7:00 am	7:00 am – 7:00 pm	7:00 pm – 10:00 pm	10:00 pm – 7:00 am
29 Jan 2020 to 1 Feb 2020 & 3 Feb 2020 to 4 Feb 2020	Max	NA	NA	64	56	62	63	53
	Min	NA	NA	70	69	71	72	70
	Average / Overall	66	63	66	61	66	66	61

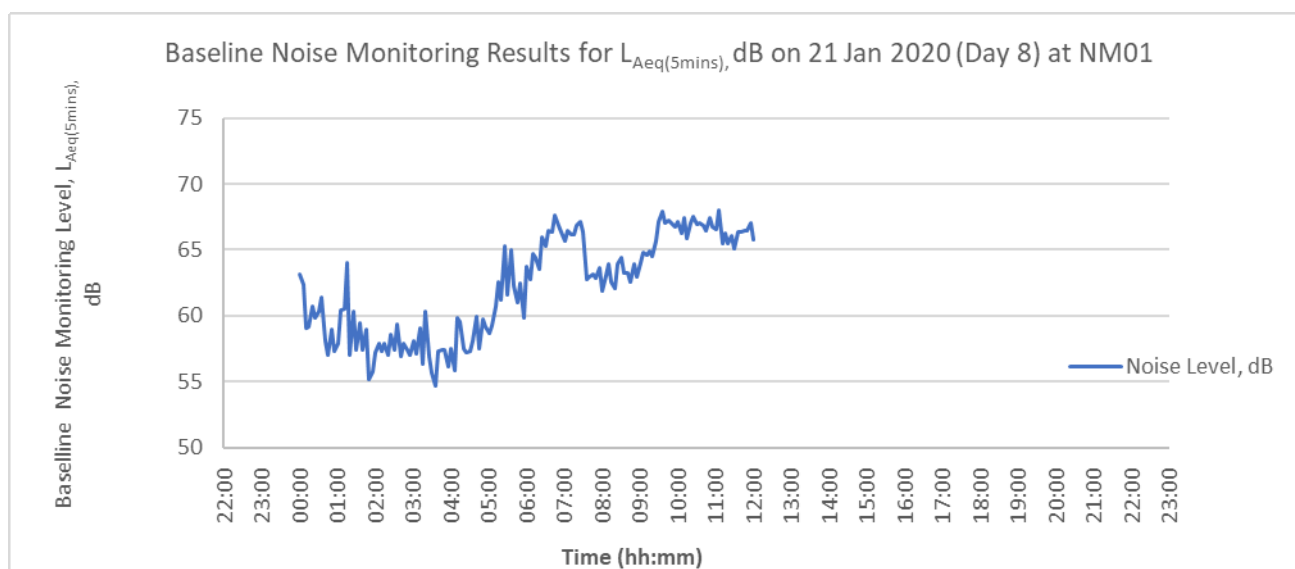
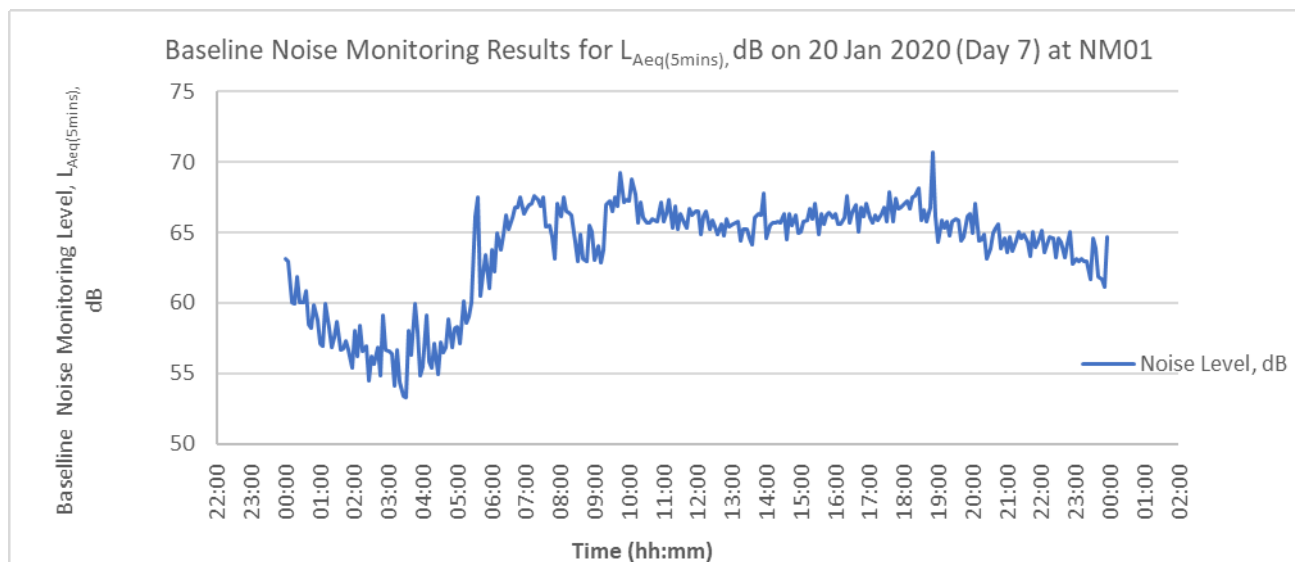
Table 14: Summary of Baseline Noise Monitoring Results for Sunday and Public Holiday at NM04

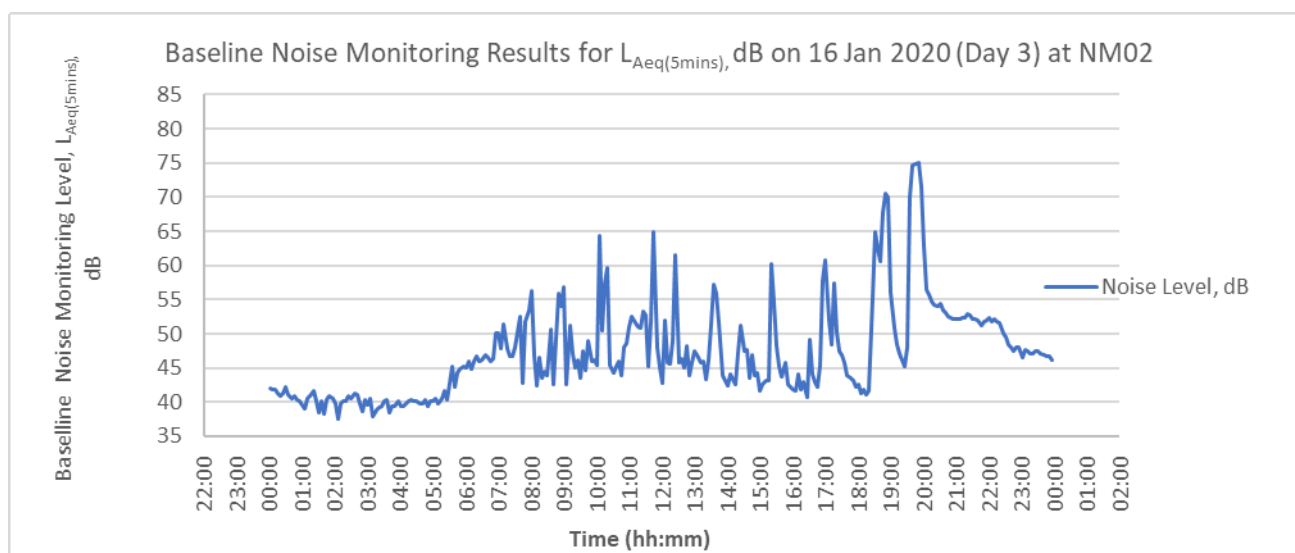
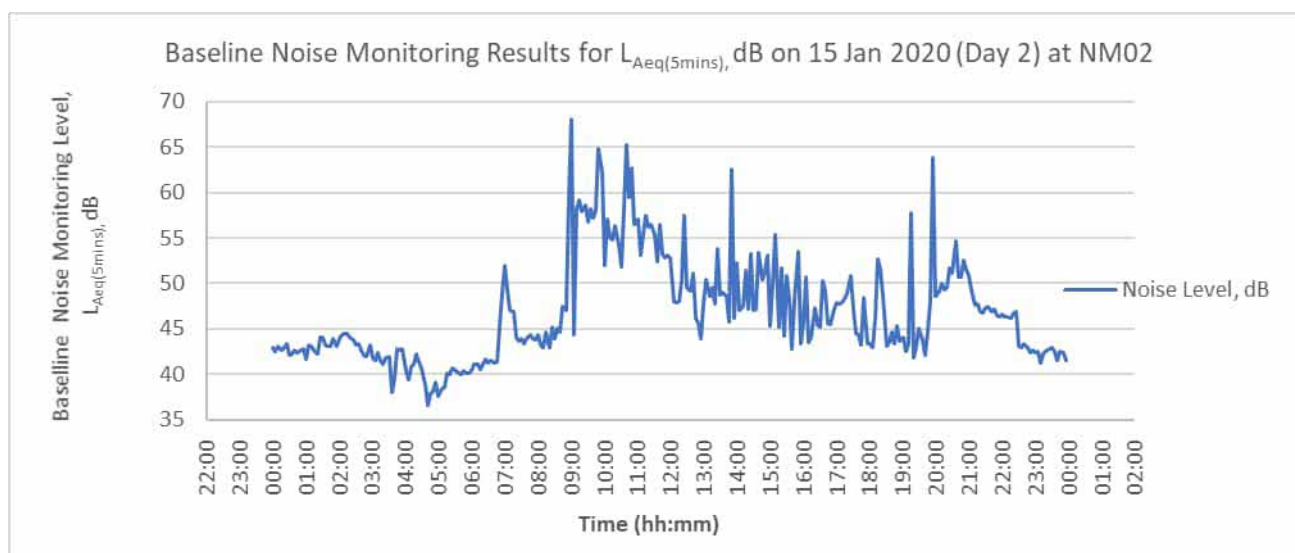
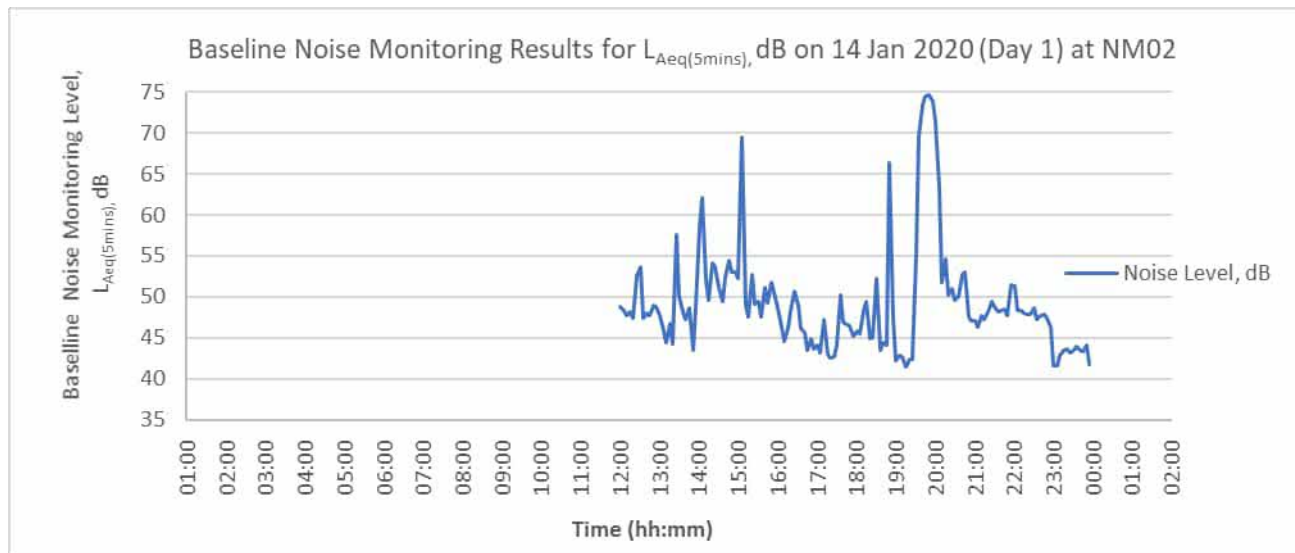
Monitoring period		LAeq(12hours), dB		LAeq(1hour), dB		LAeq(5mins), dB		
		7:00 am – 7:00 pm	7:00 pm – 7:00 am	7:00 pm – 10:00 pm	10:00 pm – 7:00 am	7:00 am – 7:00 pm	7:00 pm – 10:00 pm	10:00 pm – 7:00 am
2 Feb 2020	Max	NA	NA	64	55	60	64	53
	Min	NA	NA	65	64	67	66	66
	Average / Overall	65	62	64	60	65	64	59

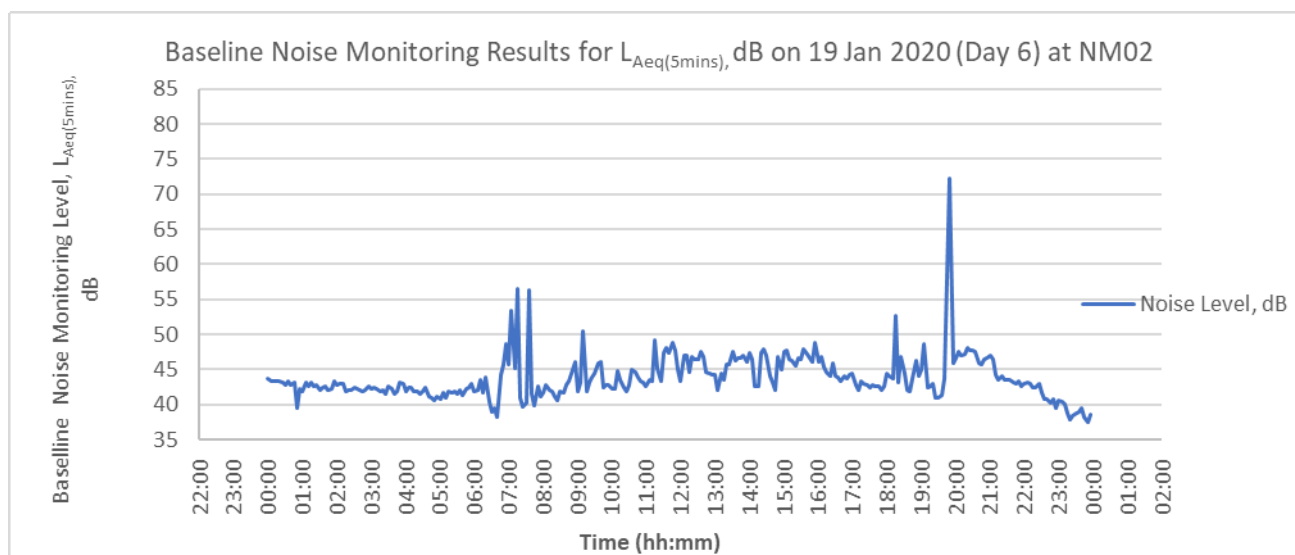
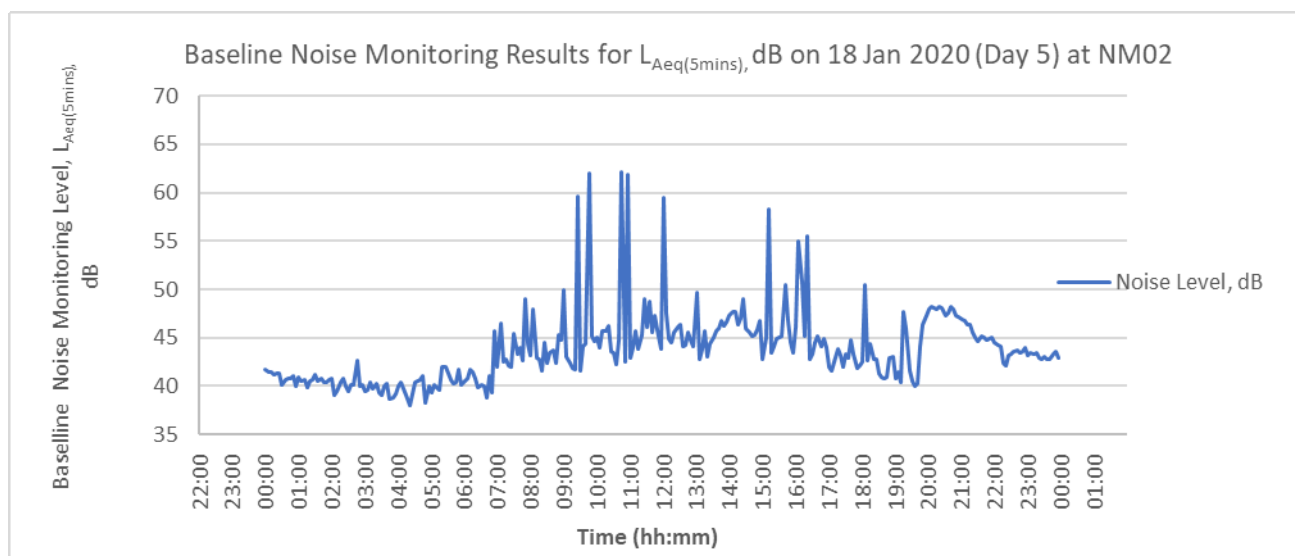
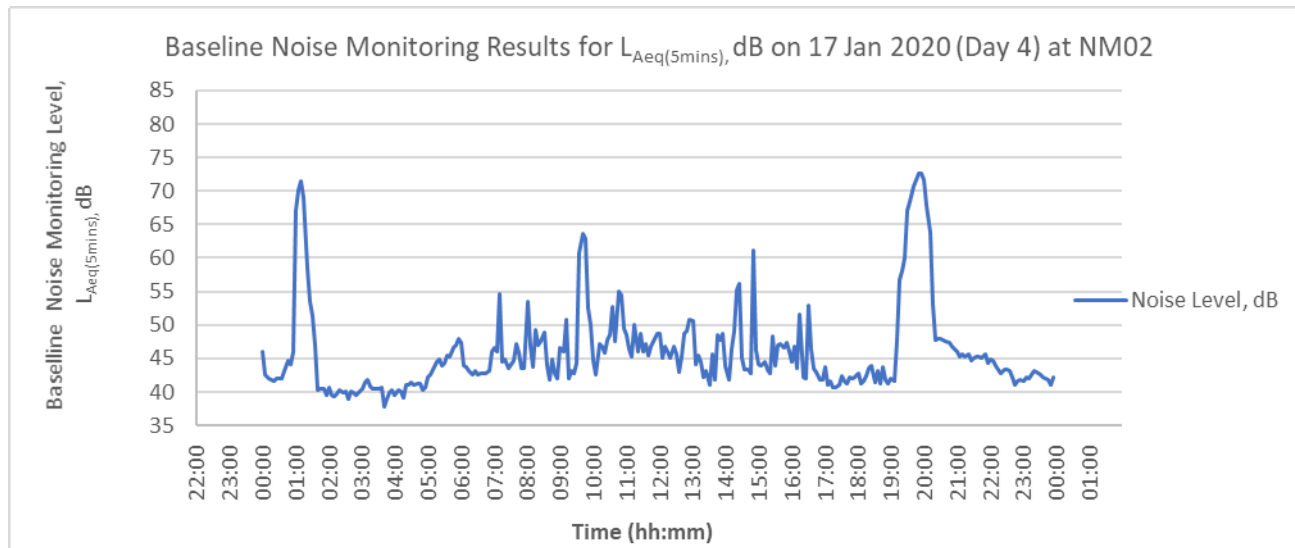
Annex A

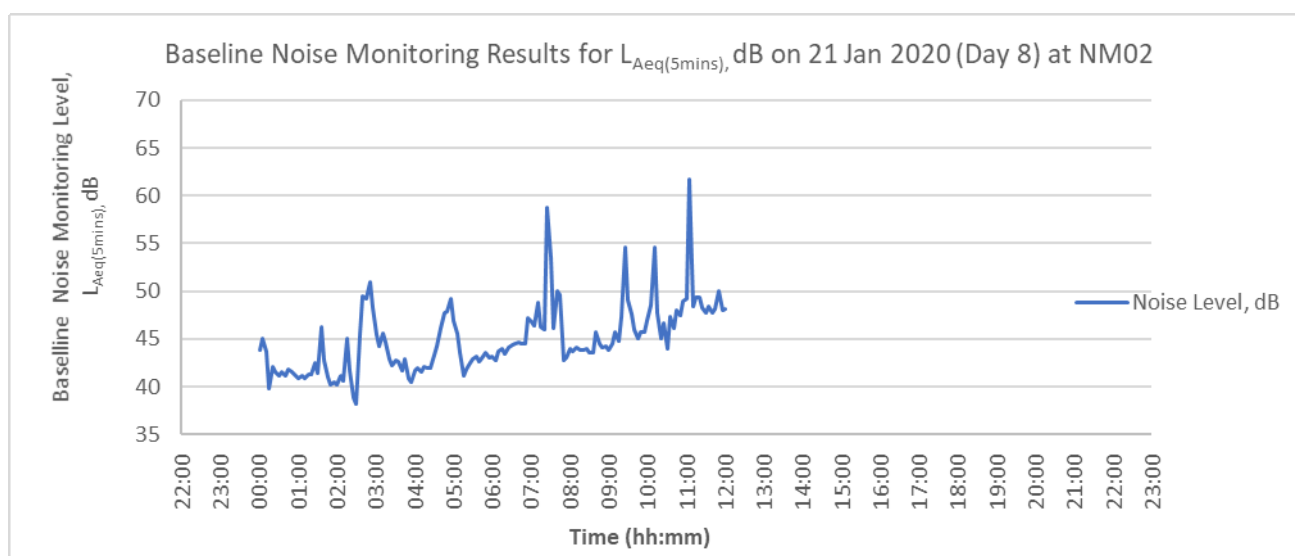
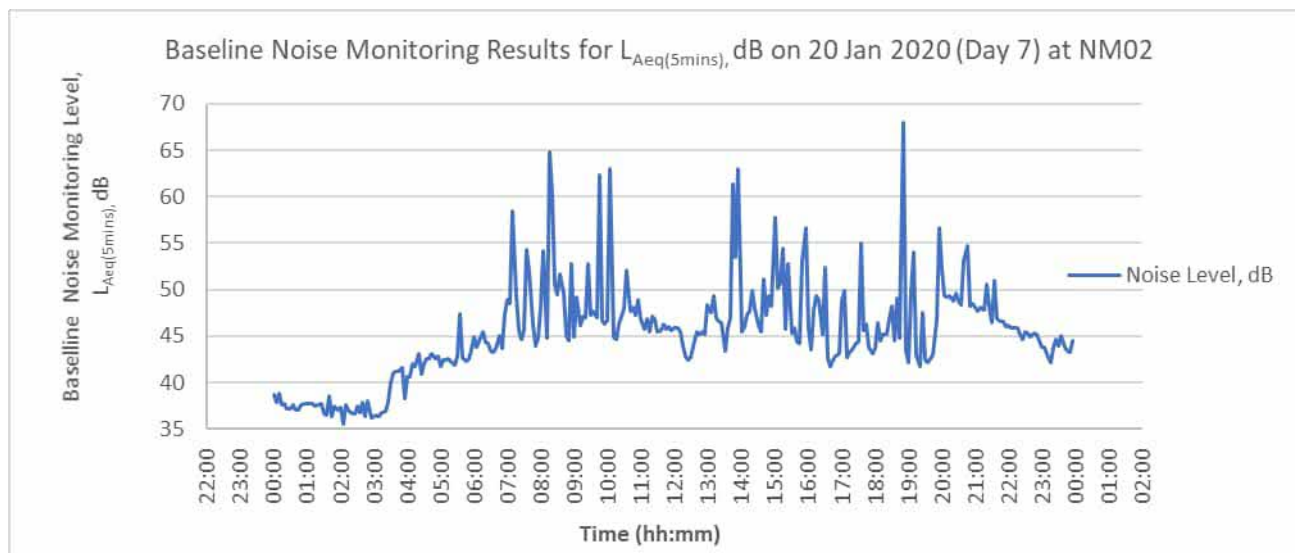


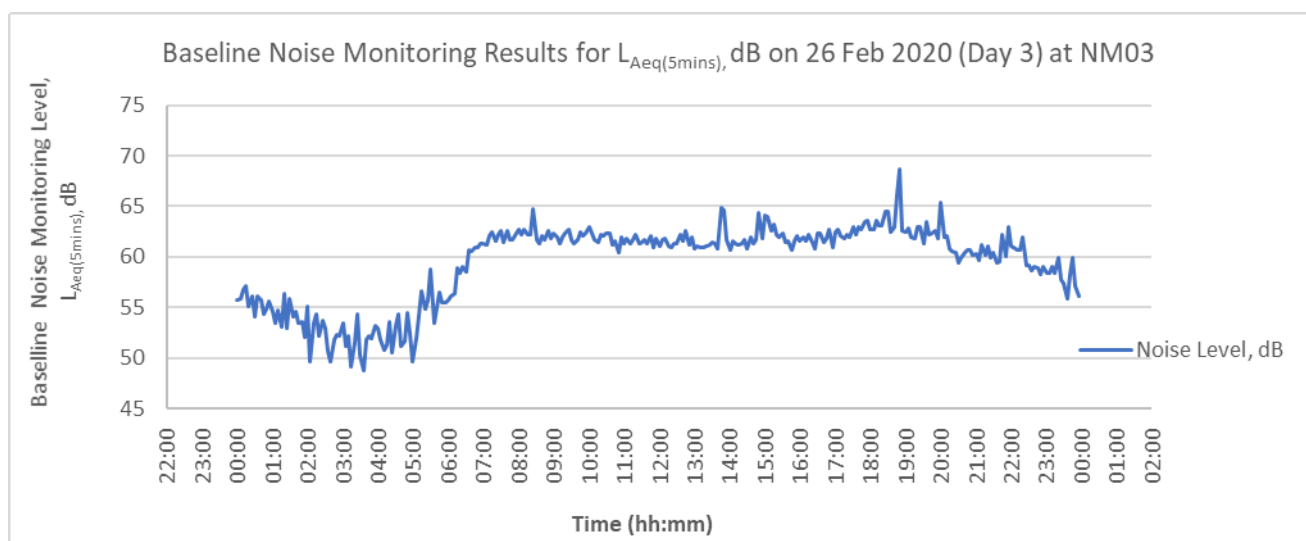
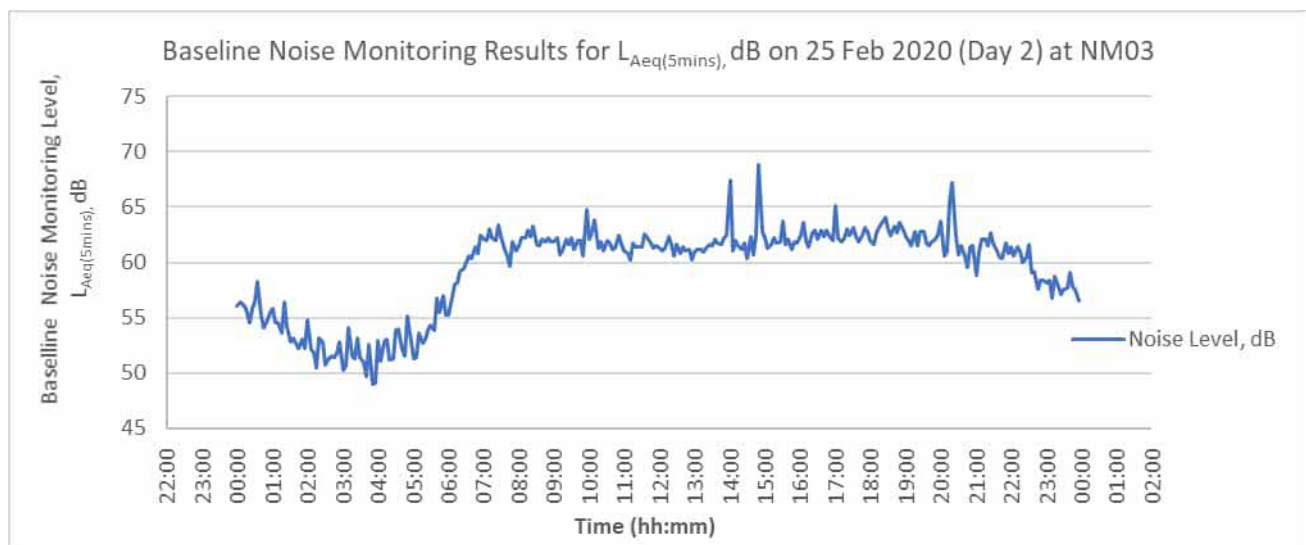
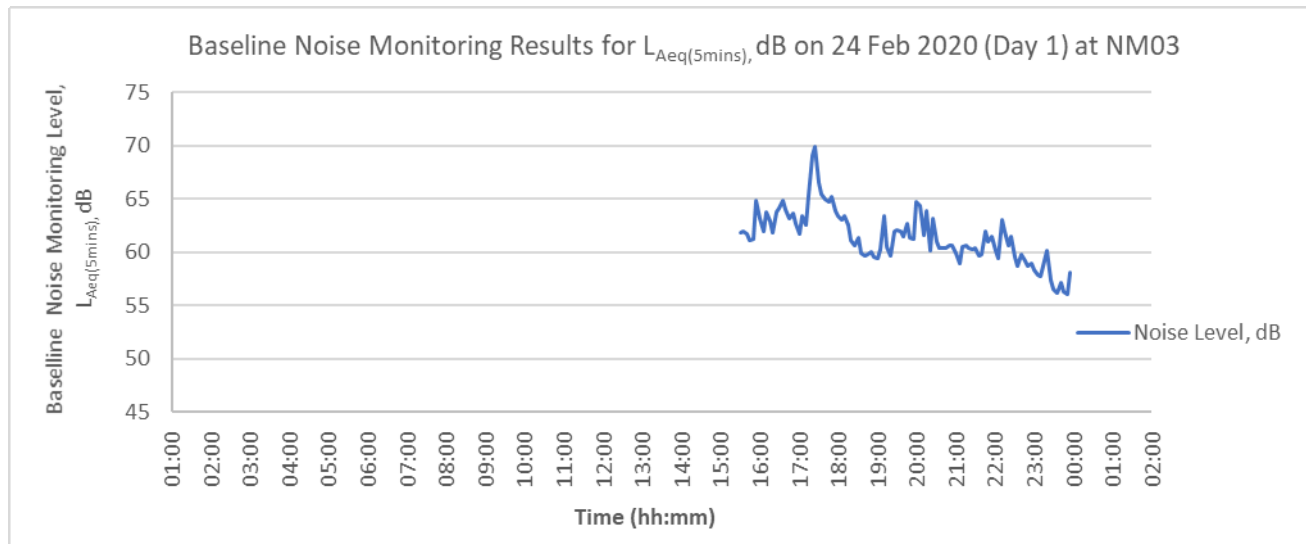


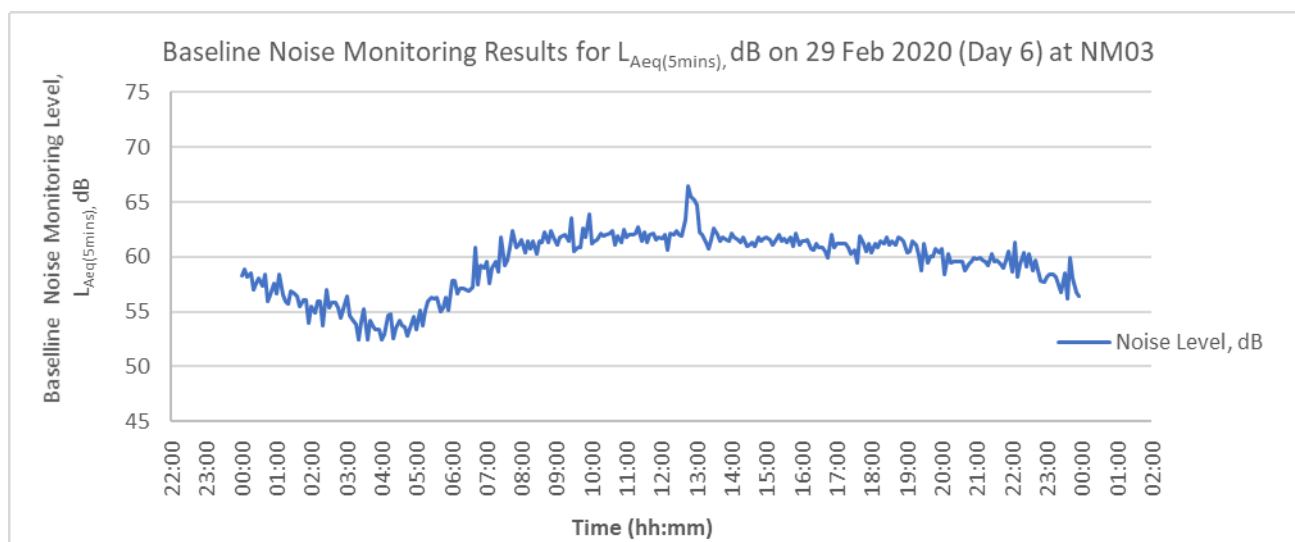
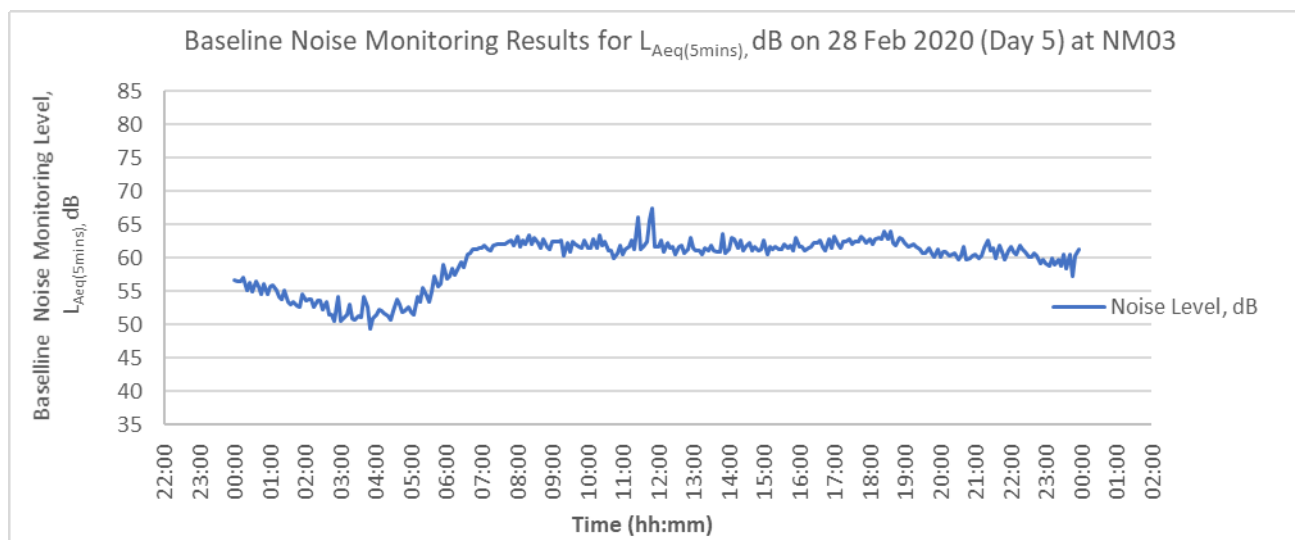
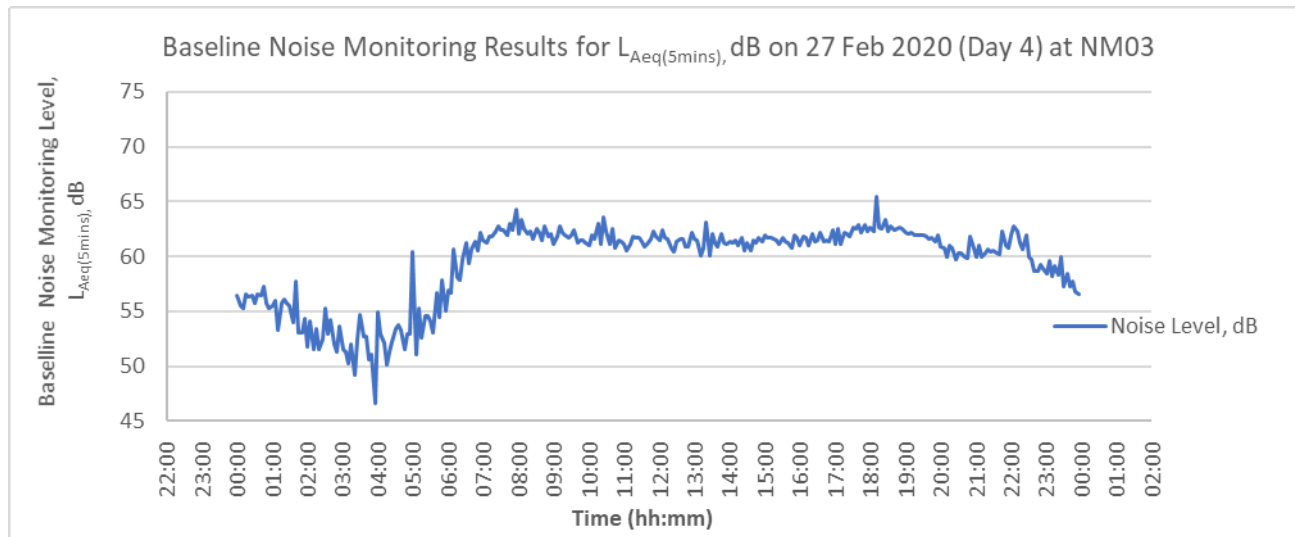


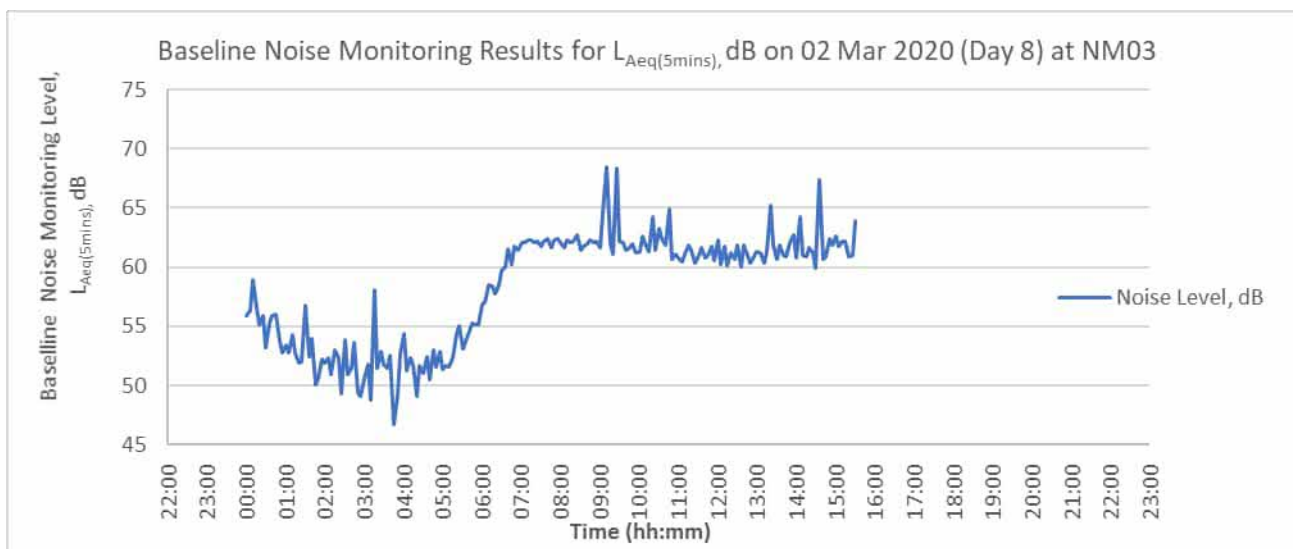
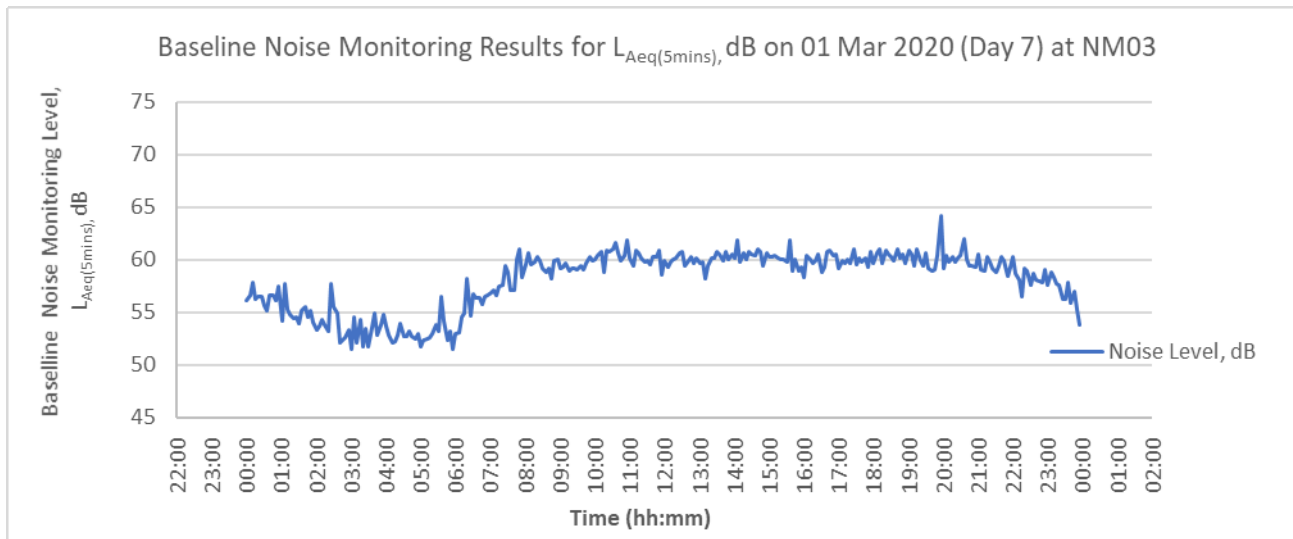


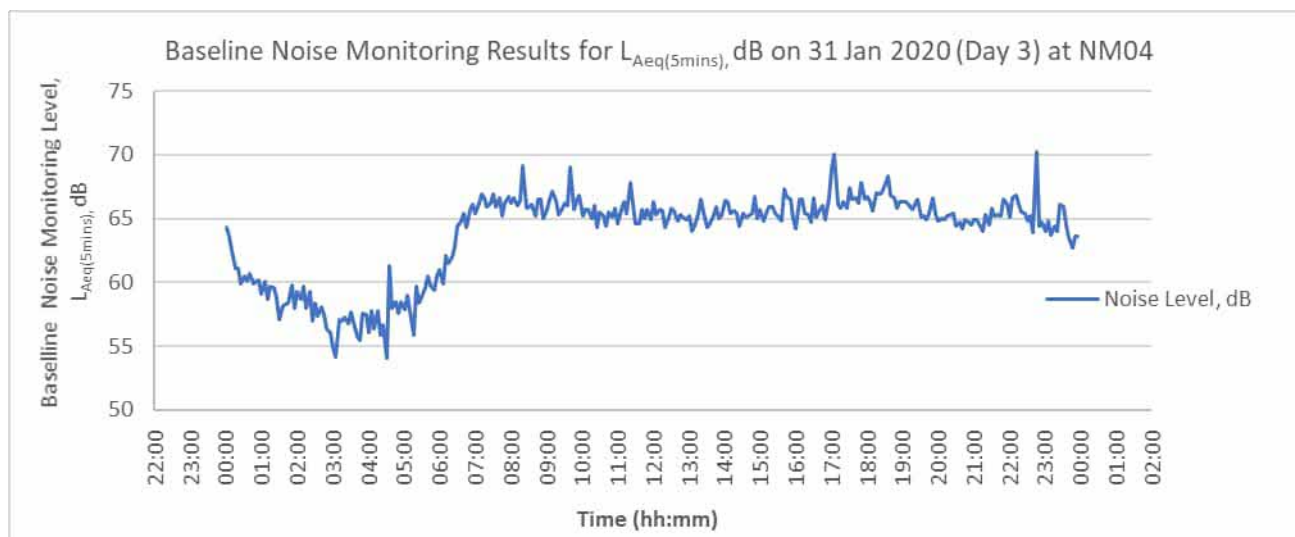
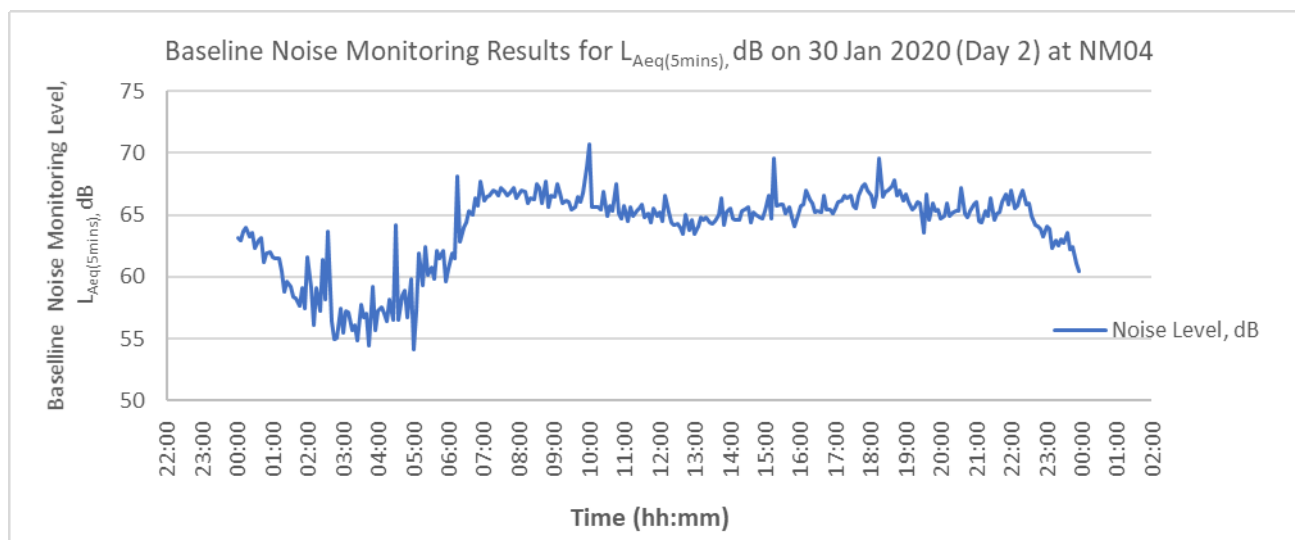
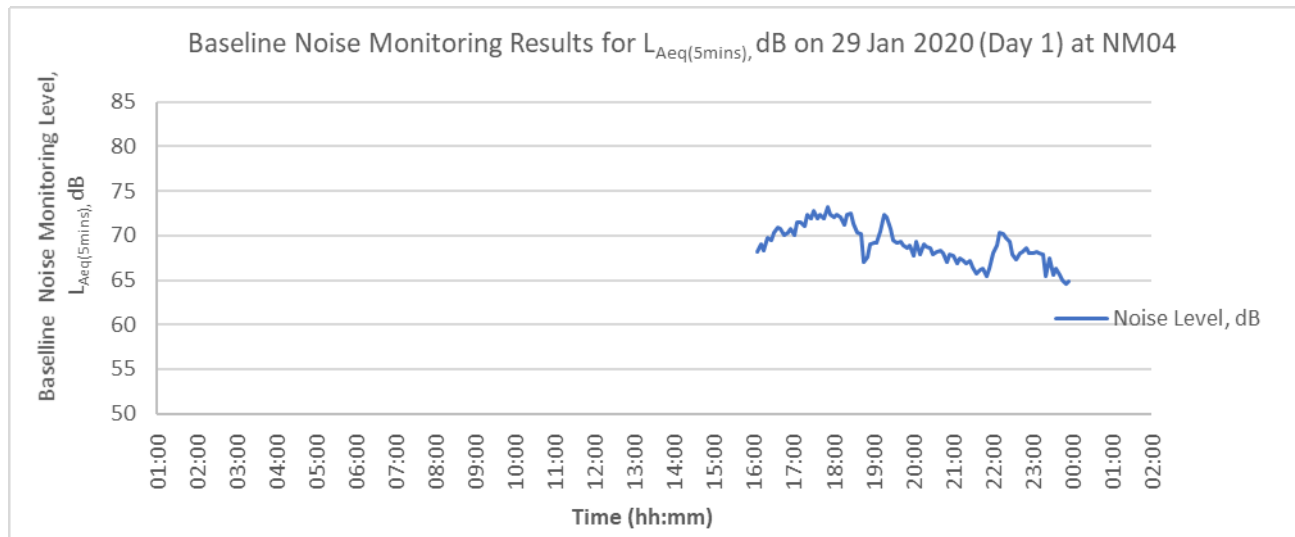


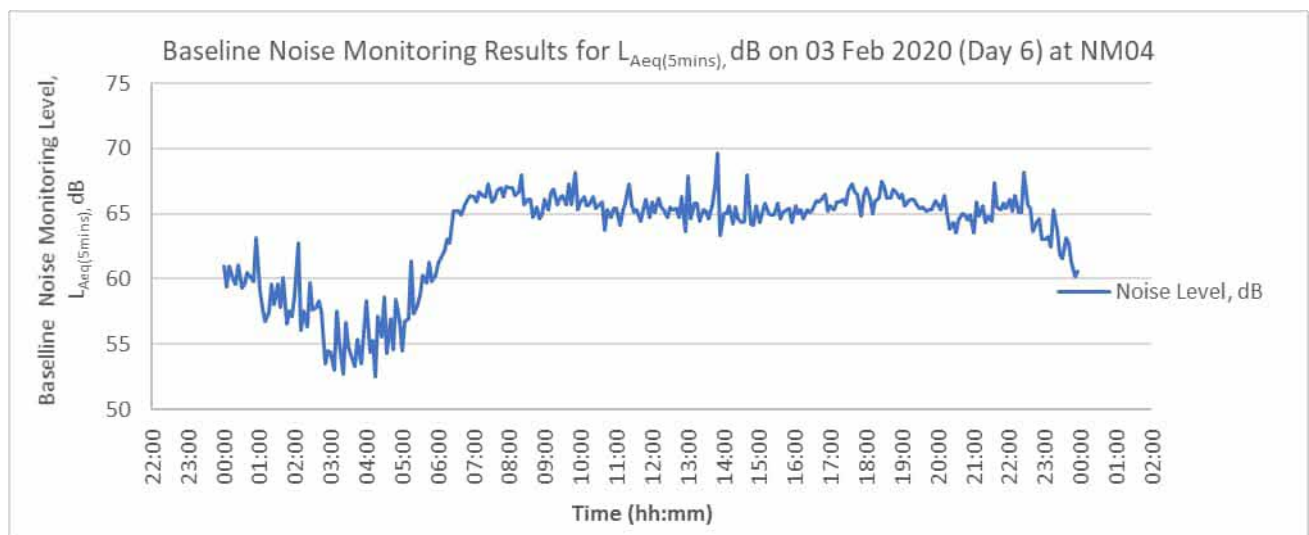
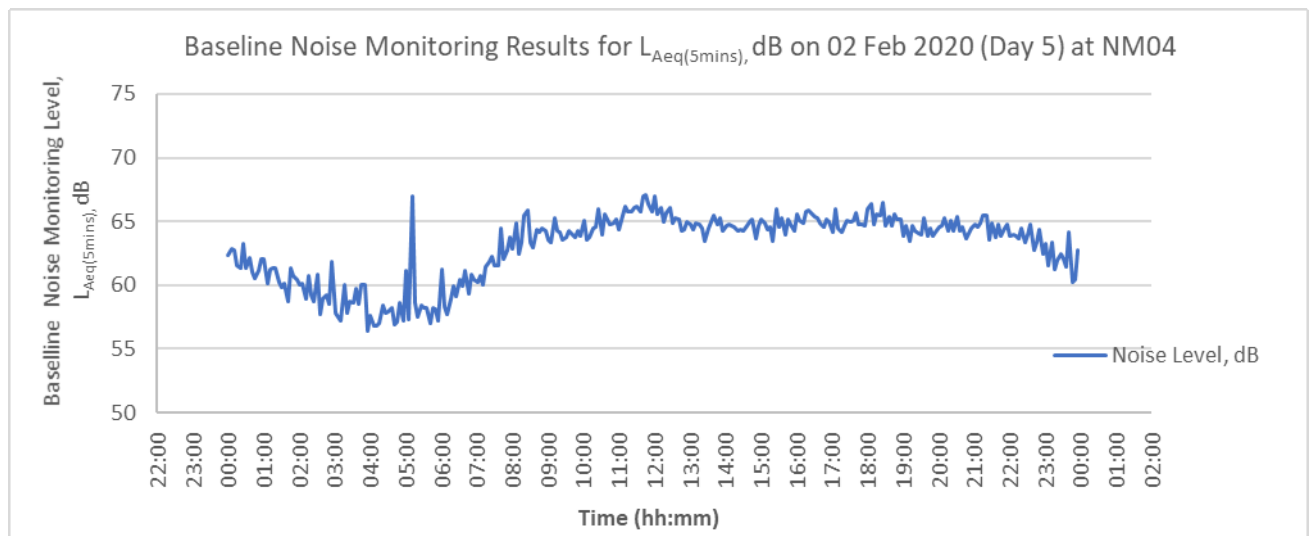
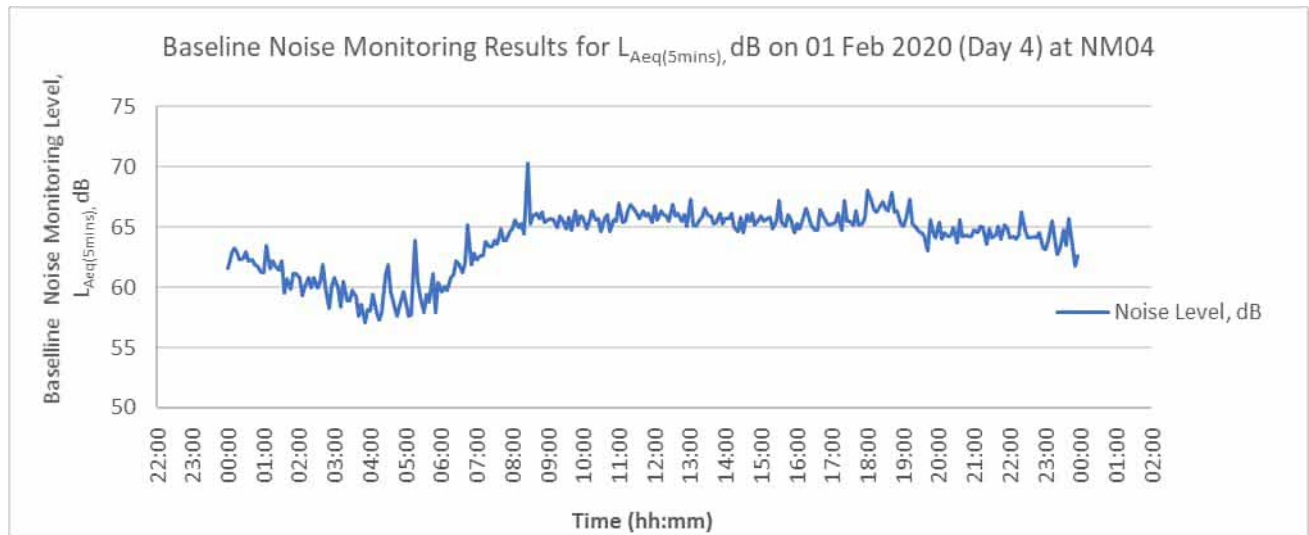


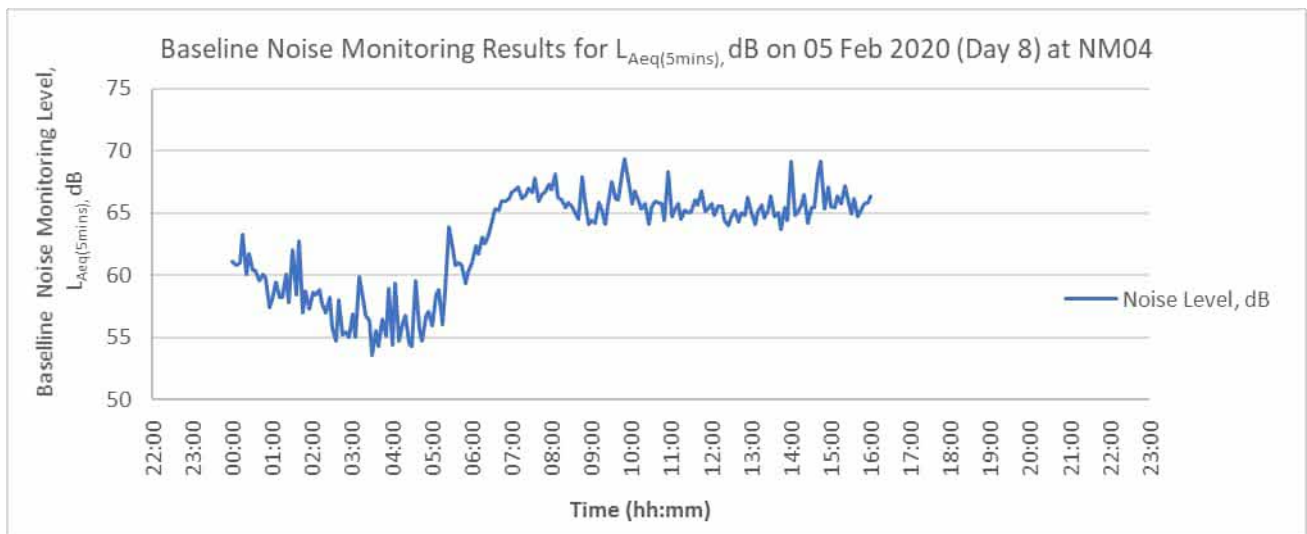
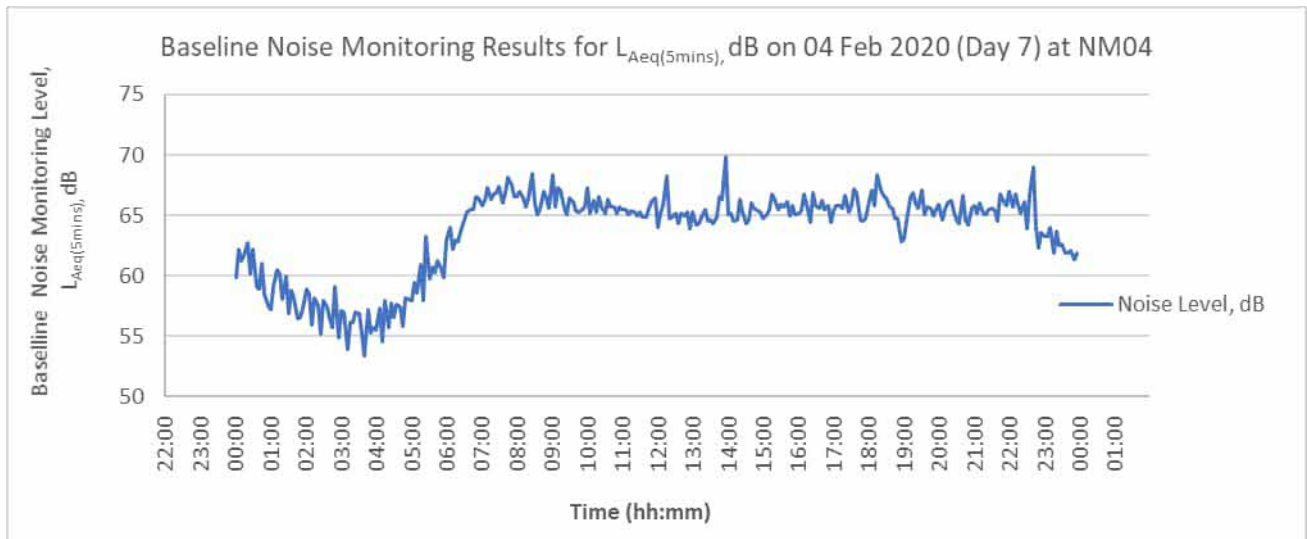












Annex B

Certificate of Calibration

Certificate No.: 475054772

Object: Precision Sound Level Meter Nor131

Supplier: Norsonic AS

Type: Nor131

Serial number: 1313979

Client: TME Systems Pte. Ltd

This instrument is tested and calibrated in accordance to the Norsonic production standard set for Nor131, ensuring that the instrument conforms to the following standards;

IEC 61672-1:2002 class 1
IEC 61260-1 class 1 Ed 1.0 2014-02
ANSI S1.4-1983 (R2001) with amd. S1.4A-1985 class 1
ANSI S1.43-1997 (R2002) class 1
ANSI S1.11-2004 class 1
DIN 45 657, Applicable parts
IEC 61094 part 4

Instrumentation used for calibration traceable to:

Electrical Parameters: MT, Norway
Acoustical Parameters: PTB, Germany
Environmental Parameters: Justervesenet. Norway

FW version: 4.0.1312 2019-03-20 13:16r

Id no.: 5054772

Accessories: Preamplifier type: 1207 S.no: 21124
Microphone type: 1228 S.no: 02786

Comments: None

Date of calibration:

2019-06-06

Calibration interval recommended:

2 years

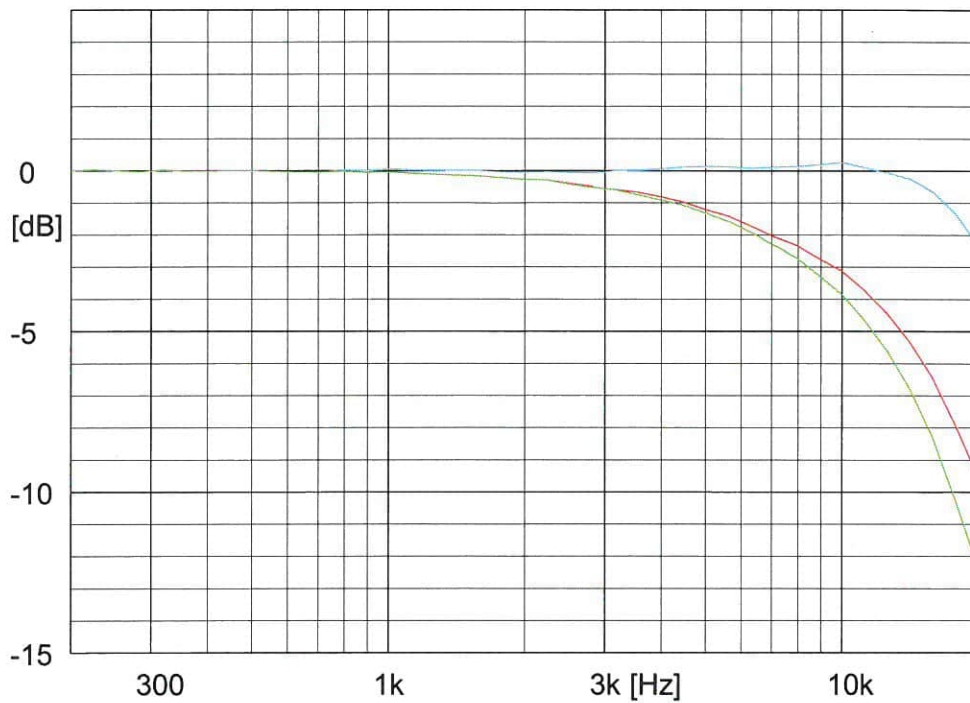
The environmental parameters applicable to this calibration are kept well within limits ensuring negligible deviation on obtained measurement results.

Calibrated by:

Anders Amundsen

Sign. 

Microphone Calibration Certificate



Norsonic
Type: 1228

Serial no: 02786

Sensitivity: 48,1 mV/Pa

-26,4 dB re. 1 V/Pa

Capacitance: 12,7 pF

Date: 2019-03-22

Signature: E. Horch

Measurement conditions:

Polarisation voltage: 0,0 V

Pressure: 99,41 kPa

Temperature: 24,1 °C

Relative humidity: 40,4 %RH

Results are normalized to
the reference conditions.

Free field response

Diffuse field response

Pressure (Actuator) response

Norsonic AS

www.norsonic.com

Microphone Specifications

Calibration of your microphone cartridge has been made with utmost care to meet all your needs for a high quality measurement device. The calibration is traceable to PTB in Germany.

Nominal Specifications

Ambient temperature coefficient: 0.01 dB/°C

Ambient pressure coefficient: -1×10^{-5} dB/Pa

Temperature range: -30 to +70°C

Diameter: 13.2 mm with protection grid on,
12.7 mm without protection grid

Thread for preamp mounting: 11.7 mm 60 UNS

Reference Values

Temperature: 23°C

Relative humidity: 50%

Ambient pressure: 101.325 kPa

Test frequency for sensitivity: 250 Hz

Norsonic Warranty Statement

The warranty period for microphones is 36 months after the time of delivery.

The warranty does not include damage due to improper handling, overload, force majeure, or normal wear and tear. The warranty is not granted if the buyer make modifications or repairs without our written consent.

Norsonic can choose either to repair or replace microphones having defects due to material or workmanship. Defective goods should be returned to our factory or one of our distributors, and shipments are to be paid and insured by the buyer unless otherwise agreed.

Certificate of Calibration

Certificate No.: 475066674

Object: Precision Sound Level Meter Nor131

Supplier: Norsonic AS

Type: Nor131

Serial number: 1313980

Client: TME Systems Pte. Ltd

This instrument is tested and calibrated in accordance to the Norsonic production standard set for Nor131, ensuring that the instrument conforms to the following standards;

IEC 61672-1:2002 class 1
IEC 61260-1 class 1 Ed 1.0 2014-02
ANSI S1.4-1983 (R2001) with amd. S1.4A-1985 class 1
ANSI S1.43-1997 (R2002) class 1
ANSI S1.11-2004 class 1
DIN 45 657, Applicable parts
IEC 61094 part 4

Instrumentation used for calibration traceable to:

Electrical Parameters: MT, Norway
Acoustical Parameters: PTB, Germany
Environmental Parameters: Justervesenet. Norway

FW version: 4.0.1312 2019-03-20 13:16r

Id no.: 5066674

Accessories: Preamplifier type: 1207 S.no: 21125
Microphone type: 1228 S.no: 03256

Comments: None

Date of calibration:

2019-06-06

Calibration interval recommended:

2 years

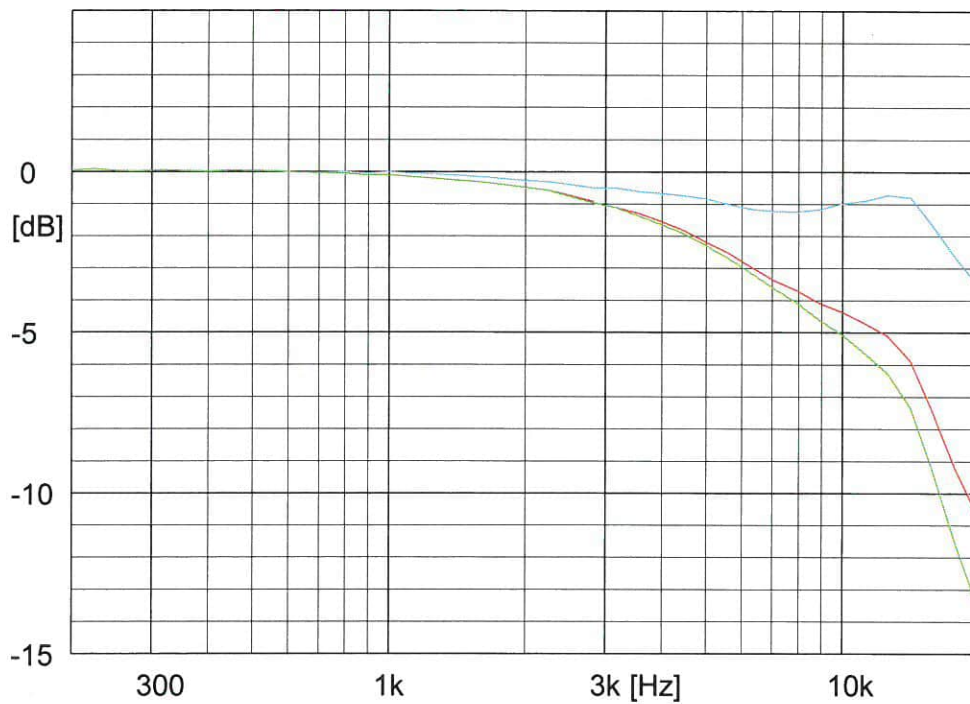
The environmental parameters applicable to this calibration are kept well within limits ensuring negligible deviation on obtained measurement results.

Calibrated by:

Anders Amundsen

Sign. 

Microphone Calibration Certificate



Norsonic
Type: 1228

Serial no: 03256

Sensitivity: 51,8 mV/Pa

-25,7 dB re. 1 V/Pa

Capacitance: 15,9 pF

Date: 2019-03-22

Signature: *E. March*

Measurement conditions:

Polarisation voltage: 0,0 V

Pressure: 99,37 kPa

Temperature: 24,2 °C

Relative humidity: 41,3 %RH

Results are normalized to
the reference conditions.

Free field response

Diffuse field response

Pressure (Actuator) response

Norsonic AS

www.norsonic.com

Microphone Specifications

Calibration of your microphone cartridge has been made with utmost care to meet all your needs for a high quality measurement device. The calibration is traceable to PTB in Germany.

Nominal Specifications

Ambient temperature coefficient: 0.01 dB/°C

Ambient pressure coefficient: -1×10^{-5} dB/Pa

Temperature range: -30 to +70°C

Diameter: 13.2 mm with protection grid on,
12.7 mm without protection grid

Thread for preamp mounting: 11.7 mm 60 UNS

Reference Values

Temperature: 23°C

Relative humidity: 50%

Ambient pressure: 101.325 kPa

Test frequency for sensitivity: 250 Hz

Norsonic Warranty Statement

The warranty period for microphones is 36 months after the time of delivery.

The warranty does not include damage due to improper handling, overload, force majeure, or normal wear and tear. The warranty is not granted if the buyer make modifications or repairs without our written consent.

Norsonic can choose either to repair or replace microphones having defects due to material or workmanship. Defective goods should be returned to our factory or one of our distributors, and shipments are to be paid and insured by the buyer unless otherwise agreed.

Certificate of Calibration

Certificate No.: 475066194

Object: Precision Sound Level Meter Nor131

Supplier: Norsonic AS

Type: Nor131

Serial number: 1313989

Client: AECOM SINGAPORE PTE LTD

This instrument is tested and calibrated in accordance to the Norsonic production standard set for Nor131, ensuring that the instrument conforms to the following standards;

IEC 61672-1:2002 class 1
IEC 61260-1 class 1 Ed 1.0 2014-02
ANSI S1.4-1983 (R2001) with amd. S1.4A-1985 class 1
ANSI S1.43-1997 (R2002) class 1
ANSI S1.11-2004 class 1
DIN 45 657, Applicable parts
IEC 61094 part 4

Instrumentation used for calibration traceable to:

Electrical Parameters: MT, Norway
Acoustical Parameters: PTB, Germany
Environmental Parameters: Justervesenet, Norway

FW version: 4.0.1312 2019-03-20 13:16r

Id no.: 5066194

Accessories: Preamplifier type: 1207 S.no: 21146
Microphone type: 1228 S.no: 03138

Comments: None

Date of calibration:

2019-08-01

Calibration interval recommended:

2 years

The environmental parameters applicable to this calibration are kept well within limits ensuring negligible deviation on obtained measurement results.

Calibrated by:

Anders Amundsen

Sign.

The logo for Norsonic AS, featuring a stylized 'N' composed of two overlapping shapes, one blue and one white, followed by the word 'Norsonic' in a blue sans-serif font.

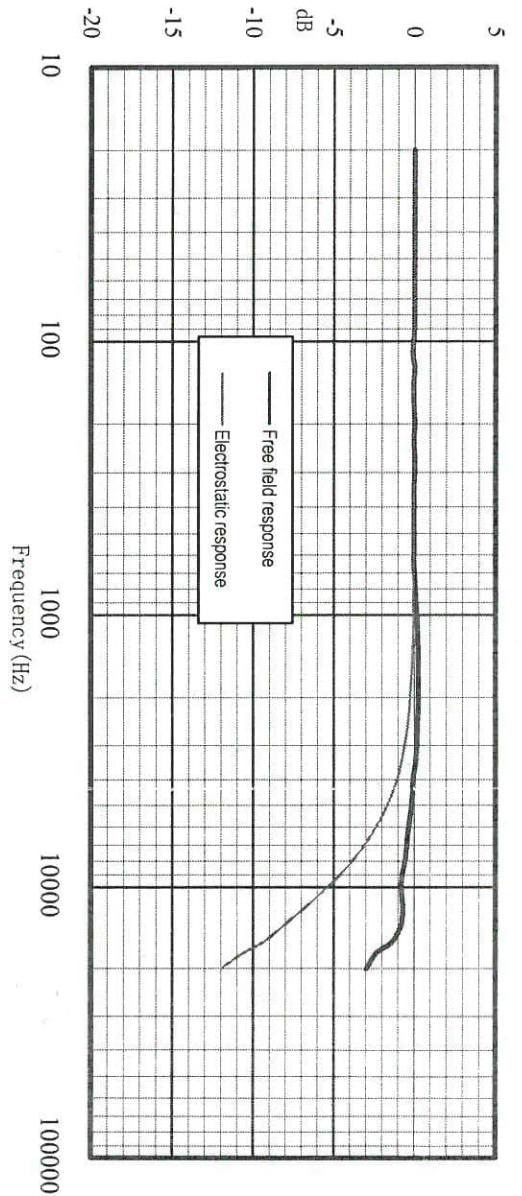
PO BOX 24, N-3420 LIERSKOGEN, NORWAY
TEL: +47 32 85 89 00

Norsonic AS, P.B 24, 3421 Lierskogen. Visitor address: Gunnersbråtan 2, Tranby, Norway.
Phone +47 32858900 Fax.: +47 32852208. email: info@norsonic.com



Model: Nor 1228 **Serial No: 03138**
Open Circuit Sensitivity Level:
-26.0dB ref 1 V/Pa or 50.2mV/Pa @ 250Hz
Signature: [Signature] **Date:** 03/06/2019

Test Conditions:
Polarization Voltage : 0 V
Relative Humidity: 47%
Temperature: 22 °C



Certificate of Calibration

Certificate No.: 475066660

Object: Precision Sound Level Meter Nor131

Supplier: Norsonic AS

Type: Nor131

Serial number: 1313950

Client: AECOM SINGAPORE

This instrument is tested and calibrated in accordance to the Norsonic production standard set for Nor131, ensuring that the instrument conforms to the following standards;

IEC 61672-1:2002 class 1
IEC 61260-1 class 1 Ed 1.0 2014-02
ANSI S1.4-1983 (R2001) with amd. S1.4A-1985 class 1
ANSI S1.43-1997 (R2002) class 1
ANSI S1.11-2004 class 1
DIN 45 657, Applicable parts
IEC 61094 part 4

Instrumentation used for calibration traceable to:

Electrical Parameters: MT, Norway
Acoustical Parameters: PTB, Germany
Environmental Parameters: Justervesenet, Norway

FW version: 4.0.1282 2018-11-02 12:39r

Id no.: 5066660

Accessories: Preamplifier type: 1207 S.no: 21094
Microphone type: 1228 S.no: 03148

Comments: None

Date of calibration:

2019-02-14

Calibration interval recommended:

2 years

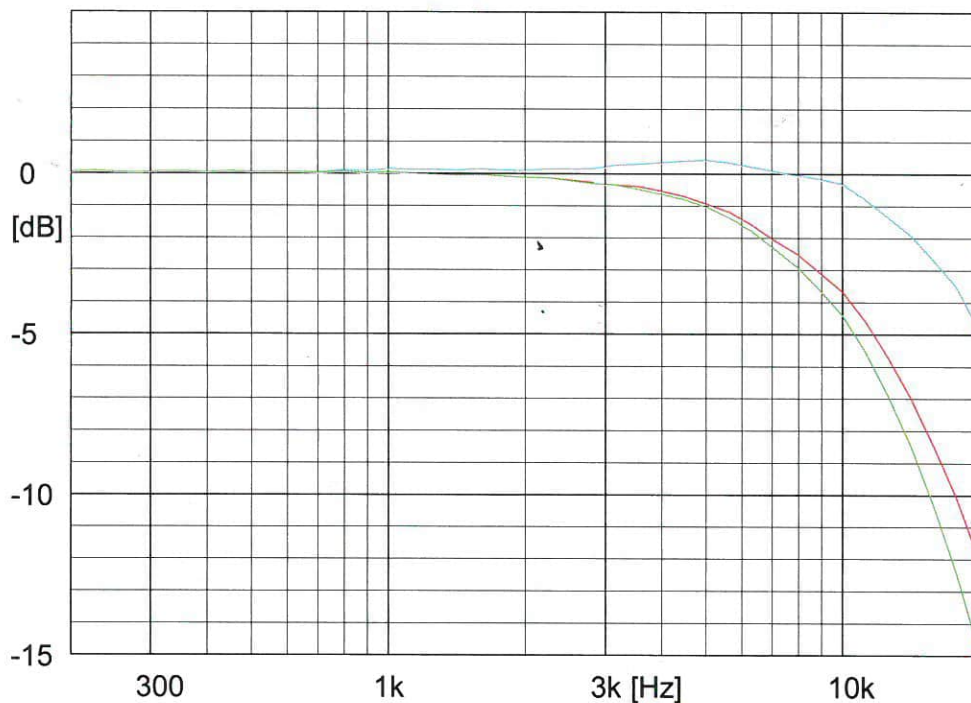
The environmental parameters applicable to this calibration are kept well within limits ensuring negligible deviation on obtained measurement results.

Calibrated by:

Anders Amundsen

Sign. 

Microphone Calibration Certificate



Norsonic
Type: 1228

Serial no: 03148

Sensitivity: 49,1 mV/Pa

-26,2 dB re. 1 V/Pa

Capacitance: 10,4 pF

Date: 2019-02-13

Signature: *E. March*

Measurement conditions:

Polarisation voltage: 0,0 V

Pressure: 98,80 kPa

Temperature: 24,4 °C

Relative humidity: 43,0 %RH

Results are normalized to
the reference conditions.

Free field response

Diffuse field response

Pressure (Actuator) response

Norsonic AS

www.norsonic.com

Microphone Specifications

Calibration of your microphone cartridge has been made with utmost care to meet all your needs for a high quality measurement device. The calibration is traceable to PTB in Germany.

Nominal Specifications

Ambient temperature coefficient: 0.01 dB/°C

Ambient pressure coefficient: -1×10^{-5} dB/Pa

Temperature range: -30 to +70°C

Diameter: 13.2 mm with protection grid on,
12.7 mm without protection grid

Thread for preamp mounting: 11.7 mm 60 UNS

Reference Values

Temperature: 23°C

Relative humidity: 50%

Ambient pressure: 101.325 kPa

Test frequency for sensitivity: 250 Hz

Norsonic Warranty Statement

The warranty period for microphones is 36 months after the time of delivery.

The warranty does not include damage due to improper handling, overload, force majeure, or normal wear and tear. The warranty is not granted if the buyer make modifications or repairs without our written consent. Norsonic can choose either to repair or replace microphones having defects due to material or workmanship. Defective goods should be returned to our factory or one of our distributors, and shipments are to be paid and insured by the buyer unless otherwise agreed.

Appendix O

Airborne Noise and
Ground-borne Vibration
Sensitive Receptors

No.	Type	Family Name	Scientific Name	Common Name	Global Status (IUCN, 2012)	Local Status	Species of Conservation Significance	Distribution/Rarity (The Biodiversity of Singapore, 2020)	Native Status	Probable Species	Recorded Species	Remarks	Vibration-sensitivity	Auditory-sensitivity	Location
1	Bee	Apidae	<i>Apis cerana</i>	Eastern Honey Bee	Not Assessed	Least Concern	No	N.A	Native		Yes		Priority 2	Priority 2	Holland Woods
2	Bee	Apidae	<i>Apis dorsata</i>	Giant Honey Bee	Not Assessed	Least Concern	No	N.A	Native		Yes		Priority 2	Priority 2	Holland Woods
3	Bee	Apidae	<i>Thyreus himalayensis</i>	N.A	Not Assessed	Least Concern	No	N.A	Native		Yes		Priority 2	Priority 2	Holland Woods
4	Bee	Apidae	<i>Xylocopa latipes</i>	Broad-handed Carpenter Bee	Not Assessed	Least Concern	No	N.A	Native		Yes		Priority 2	Priority 2	Holland Woods
5	Wasp	Crabronidae	<i>Liris subtessellatus</i>	N.A	Not Assessed	Least Concern	No	N.A	Native		Yes		Priority 2	Priority 2	Holland Woods
6	Bee	Halictidae	<i>Lipotriches (Austronomia) takauensis</i>	N.A	Not Assessed	Vulnerable	Yes	N.A	Native		Yes		Priority 1	Priority 1	Holland Woods
7	Bee	Halictidae	<i>Lipotriches (Rhopalomelissa) ceratina</i>	N.A	Not Assessed	Least Concern	No	N.A	Native		Yes		Priority 2	Priority 2	Holland Woods
8	Bee	Halictidae	<i>Nomia strigata</i>	Pearly-banded Bee	Not Assessed	Least Concern	No	N.A	Native		Yes		Priority 2	Priority 2	Holland Woods
9	Bee	Megachilidae	<i>Megachile conjuncta</i>	N.A	Not Assessed	Least Concern	No	N.A	Native		Yes		Priority 2	Priority 2	Holland Woods
10	Wasp	Vespidae	<i>Elimus sp.</i>	N.A	Not Assessed	Not Assessed	No	N.A	N.A		Yes		Priority 2	Priority 2	Holland Woods
11	Wasp	Vespidae	<i>Liostenogaster sp.</i>	N.A	Not Assessed	Not Assessed	No	N.A	Native		Yes		Priority 2	Priority 2	Holland Woods
12	Wasp	Vespidae	<i>Parapolybia varia</i>	Lesser Paper Wasp	Not Assessed	Near-Threatened	No	N.A	Native		Yes		Priority 2	Priority 2	Holland Woods
13	Wasp	Vespidae	<i>Parischnogaster mellyi</i>	N.A	Not Assessed	Least Concern	No	N.A	Native		Yes		Priority 2	Priority 2	Holland Woods
14	Wasp	Vespidae	<i>Rhynchium haemorrhoidale</i>	N.A	Not Assessed	Least Concern	No	N.A	Native		Yes		Priority 2	Priority 2	Holland Woods
15	Wasp	Vespidae	<i>Ropalidia stigma</i>	N.A	Not Assessed	Least Concern	No	N.A	Native		Yes		Priority 2	Priority 2	Holland Woods
16	Wasp	Vespidae	<i>Ropalidia sumatrae</i>	N.A	Not Assessed	Least Concern	No	N.A	Native		Yes		Priority 2	Priority 2	Holland Woods
17	Wasp	Vespidae	<i>Stenodyneriellus guttulatus</i>	N.A	Not Assessed	Least Concern	No	N.A	Native		Yes		Priority 2	Priority 2	Holland Woods
18	Wasp	Vespidae	<i>Vespa tropica</i>	Greater Banded Hornet	Not Assessed	Least Concern	No	N.A	Native		Yes		Priority 2	Priority 2	Holland Woods
19	Bee	Apidae	<i>Apis cerana</i>	Eastern Honey Bee	Not Assessed	Least Concern	No	N.A	Native		Yes		Priority 2	Priority 2	Sunset Way Woods
20	Bee	Apidae	<i>Tetragonula valdezi</i>	N.A	N.A	Least Concern	No	N.A	Native		Yes		Priority 2	Priority 2	Sunset Way Woods
21	Bee	Apidae	<i>Xylocopa latipes</i>	Broad-handed Carpenter Bee	Not Assessed	Least Concern	No	N.A	Native		Yes		Priority 2	Priority 2	Sunset Way Woods
22	Wasp	Crabronidae	<i>Liris subtessellatus</i>	N.A	Not Assessed	Least Concern	No	N.A	N.A		Yes		Priority 2	Priority 2	Sunset Way Woods
23	Wasp	Vespidae	<i>Ropalidia sumatrae</i>	N.A	Not Assessed	Least Concern	No	N.A	Native		Yes	Nest observed	Priority 2	Priority 2	Sunset Way Woods
24	Wasp	Vespidae	<i>Stenodyneriellus guttulatus</i>	N.A	Not Assessed	Least Concern	No	N.A	N.A		Yes		Priority 2	Priority 2	Sunset Way Woods

No.	Type	Family Name	Scientific Name	Common Name	Global Status (IUCN, 2012)	Local Status (Soh et al., 2019)	Species of Conservation Significance	Distribution/Rarity (Soh et al. 2019)	Probable Species	Recorded Species (ESC, 2020; ERM, 2016)	Recorded Species	Remarks	Vibration-sensitivity	Auditory-sensitivity	Location
1	Dragonfly	Aeshnidae	<i>Anax guttatus</i>	Emperor	Least Concern	Least Concern	No	Widespread but Uncommon	Yes		No		Priority 1	Priority 2	Holland Woods
2	Dragonfly	Aeshnidae	<i>Gynacantha bayadera</i>	Small Duskhawker	Least Concern	Vulnerable	Yes	Restricted and Rare	Yes		Yes		Priority 1	Priority 3	Holland Woods
3	Dragonfly	Aeshnidae	<i>Gynacantha dohrni</i>	Spear-tail Duskhawker	Not Assessed	Least Concern	No	Widespread but Uncommon	Yes		No		Priority 1	Priority 3	Holland Woods
4	Dragonfly	Aeshnidae	<i>Gynacantha subinterrupta</i>	Dingy Duskhawker	Least Concern	Least Concern	No	Widespread but Uncommon	Yes		Yes		Priority 1	Priority 3	Holland Woods
5	Damselfly	Coenagrionidae	<i>Agriocnemis femina</i>	Variable Wisp	Least Concern	Least Concern	No	Widespread & Common	Yes		Yes		Priority 1	Priority 3	Holland Woods
6	Damselfly	Coenagrionidae	<i>Agriocnemis rubescens</i>	Variable Sprite	Least Concern	Not Assessed	No	Widespread but Uncommon	Yes		No		Priority 1	Priority 3	Holland Woods
7	Damselfly	Coenagrionidae	<i>Archibasis viola</i>	Violet Sprite	Least Concern	Least Concern	No	Widespread & Common	Yes		No		Priority 1	Priority 3	Holland Woods
8	Damselfly	Coenagrionidae	<i>Ceriatagion cerinorubellum</i>	Ornate Coraltail	Least Concern	Least Concern	No	Widespread & Common	Yes		Yes		Priority 1	Priority 3	Holland Woods
9	Damselfly	Coenagrionidae	<i>Ischnura senegalensis</i>	Common Bluetail	Least Concern	Least Concern	No	Widespread & Common	Yes		Yes		Priority 1	Priority 3	Holland Woods
10	Damselfly	Coenagrionidae	<i>Onychargia atrocyana</i>	Shorttail	Least Concern	Least Concern	No	Widespread but Uncommon	Yes		No		Priority 1	Priority 3	Holland Woods
11	Damselfly	Coenagrionidae	<i>Pseudagrion microcephalum</i>	Blue Sprite	Least Concern	Least Concern	No	Widespread & Common	Yes		Yes		Priority 1	Priority 3	Holland Woods
12	Damselfly	Coenagrionidae	<i>Teinobasis ruficollis</i>	Red-tailed Sprite	Not Assessed	Near Threatened	No	Widespread but Rare	Yes		Yes		Priority 1	Priority 3	Holland Woods
13	Dragonfly	Gomphidae	<i>Ictinogomphus decoratus</i>	Common Flangetail	Least Concern	Least Concern	No	Widespread & Common	Yes		No		Priority 1	Priority 3	Holland Woods
14	Damselfly	Lestidae	<i>Lestes praemorsus</i>	Crenulated Spreadwing	Least Concern	Least Concern	No	Widespread but Uncommon	Yes		No		Priority 1	Priority 3	Holland Woods
15	Dragonfly	Libellulidae	<i>Acisoma panorpoides</i>	Trumpet Tail	Least Concern	Least Concern	No	Widespread & Common	Yes		No		Priority 1	Priority 3	Holland Woods
16	Dragonfly	Libellulidae	<i>Aethriamanta brevipennis</i>	Scarlet Adjutant	Least Concern	Not Assessed	No	Widespread but Uncommon	Yes		No		Priority 1	Priority 3	Holland Woods
17	Dragonfly	Libellulidae	<i>Aethriamanta gracilis</i>	Pond Adjutant	Least Concern	Least Concern	No	Widespread & Common	Yes		No		Priority 1	Priority 3	Holland Woods
18	Dragonfly	Libellulidae	<i>Agrioptera insignis</i>	Grenadier	Least Concern	Least Concern	No	Widespread & Common	Yes		Yes		Priority 1	Priority 3	Holland Woods
19	Dragonfly	Libellulidae	<i>Brachydiplax chalybea</i>	Blue Dasher	Least Concern	Least Concern	No	Widespread & Common	Yes		Yes		Priority 1	Priority 3	Holland Woods
20	Dragonfly	Libellulidae	<i>Brachythemis contaminata</i>	Common Amberwing	Least Concern	Least Concern	No	Widespread & Common	Yes		No		Priority 1	Priority 3	Holland Woods
21	Dragonfly	Libellulidae	<i>Camacinia gigantea</i>	Sultan	Least Concern	Least Concern	No	Widespread but Uncommon	Yes		Yes		Priority 1	Priority 3	Holland Woods
22	Dragonfly	Libellulidae	<i>Cratilla metallica</i>	Dark-tipped Forest Skimmer	Least Concern	Least Concern	No	Widespread & Common	Yes		Yes		Priority 1	Priority 3	Holland Woods
23	Dragonfly	Libellulidae	<i>Crocothemis servilia</i>	Common Scarlet	Least Concern	Least Concern	No	Widespread & Common	Yes		Yes		Priority 1	Priority 3	Holland Woods
24	Dragonfly	Libellulidae	<i>Diplacodes nebulosa</i>	Black-tipped Percher	Least Concern	Least Concern	No	Widespread but Uncommon	Yes		No		Priority 1	Priority 3	Holland Woods
25	Dragonfly	Libellulidae	<i>Diplacodes trivialis</i>	Blue Percher	Least Concern	Least Concern	No	Widespread & Common	Yes		Yes		Priority 1	Priority 3	Holland Woods
26	Dragonfly	Libellulidae	<i>Hydrobasileus croceus</i>	Water Monarch	Least Concern	Not Assessed	No	Widespread and Common	Yes		No		Priority 1	Priority 3	Holland Woods
27	Dragonfly	Libellulidae	<i>Lathrecista asiatica</i>	Scarlet Grenadier	Least Concern	Least Concern	No	Widespread & Common	Yes		Yes		Priority 1	Priority 3	Holland Woods
28	Dragonfly	Libellulidae	<i>Nannophya pygmaea</i>	Scarlet Pygmy	Least Concern	Least Concern	No	Widespread & Common	Yes		No		Priority 1	Priority 3	Holland Woods
29	Dragonfly	Libellulidae	<i>Nesoxenia lineata</i>	Striped Grenadier	Least Concern	Not Assessed	No	Widespread but Uncommon	Yes		No		Priority 1	Priority 3	Holland Woods
30	Dragonfly	Libellulidae	<i>Neurothemis fluctuans</i>	Common Parasol	Least Concern	Least Concern	No	Widespread & Common	Yes		Yes		Priority 1	Priority 3	Holland Woods
31	Dragonfly	Libellulidae	<i>Orchithemis pulcherrima</i>	Variable Sentinel	Least Concern	Least Concern	No	Widespread & Common	Yes		No		Priority 1	Priority 3	Holland Woods
32	Dragonfly	Libellulidae	<i>Orthetrum chrysus</i>	Spine-tufted Skimmer	Least Concern	Least Concern	No	Widespread & Common	Yes		Yes		Priority 1	Priority 3	Holland Woods
33	Dragonfly	Libellulidae	<i>Orthetrum glaucum</i>	Blue Skimmer	Least Concern	Least Concern	No	Widespread & Common	Yes		Yes		Priority 1	Priority 3	Holland Woods
34	Dragonfly	Libellulidae	<i>Orthetrum luzonicum</i>	Slender Blue Skimmer	Least Concern	Least Concern	No	Widespread & Common	Yes		No		Priority 1	Priority 3	Holland Woods
35	Dragonfly	Libellulidae	<i>Orthetrum sabina</i>	Variegated Green Skimmer	Least Concern	Least Concern	No	Widespread & Common	Yes		Yes		Priority 1	Priority 3	Holland Woods
36	Dragonfly	Libellulidae	<i>Orthetrum testaceum</i>	Scarlet Skimmer	Least Concern	Least Concern	No	Widespread & Common	Yes		Yes		Priority 1	Priority 3	Holland Woods
37	Dragonfly	Libellulidae	<i>Pantala flavescens</i>	Wandering Glider	Least Concern	Least Concern	No	Widespread & Common	Yes		Yes		Priority 1	Priority 3	Holland Woods
38	Dragonfly	Libellulidae	<i>Potamarcha congener</i>	Common Chaser	Least Concern	Least Concern	No	Widespread & Common	Yes		No		Priority 1	Priority 3	Holland Woods
39	Dragonfly	Libellulidae	<i>Pseudothemis jorina</i>	Banded Skimmer	Least Concern	Least Concern	No	Widespread but Uncommon	Yes		No		Priority 1	Priority 3	Holland Woods
40	Dragonfly	Libellulidae	<i>Rhodothemis rufa</i>	Common Redbolt	Least Concern	Least Concern	No	Widespread & Common	Yes		No		Priority 1	Priority 3	Holland Woods
41	Dragonfly	Libellulidae	<i>Rhyothemis obsolescens</i>	Bronze Flutterer	Least Concern	Least Concern	No	Widespread but Uncommon	Yes		No		Priority 1	Priority 3	Holland Woods
42	Dragonfly	Libellulidae	<i>Rhyothemis phyllis</i>	Yellow-barred Flutterer	Least Concern	Least Concern	No	Widespread & Common	Yes		Yes		Priority 1	Priority 3	Holland Woods
43	Dragonfly	Libellulidae	<i>Rhyothemis triangularis</i>	Sapphire Flutterer	Least Concern	Least Concern	No	Widespread but Uncommon	Yes		No		Priority 1	Priority 3	Holland Woods
44	Dragonfly	Libellulidae	<i>Tholymis tillarga</i>	White-barred Duskhawk	Least Concern	Least Concern	No	Widespread & Common	Yes		Yes		Priority 1	Priority 3	Holland Woods
45	Dragonfly	Libellulidae	<i>Tramea transmargina</i>	Saddlebag Glider	Least Concern	Not Assessed	No	Widespread and Common	Yes		No		Priority 1	Priority 3	Holland Woods
46	Dragonfly	Libellulidae	<i>Trithemis aurora</i>	Crimson Dropwing	Least Concern	Least Concern	No	Widespread & Common	Yes		No		Priority 1	Priority 3	Holland Woods
47	Dragonfly	Libellulidae	<i>Trithemis festiva</i>	Indigo Dropwing	Least Concern	Least Concern	No	Widespread & Common	Yes		Yes		Priority 1	Priority 3	Holland Woods
48	Dragonfly	Libellulidae	<i>Trithemis pallidinervis</i>	Dancing Dropwing	Least Concern	Least Concern	No	Widespread but Uncommon	Yes		No		Priority 1	Priority 3	Holland Woods
49	Dragonfly	Libellulidae	<i>Urothemis signata insignata</i>	Scarlet Basker	Not Assessed	Least Concern	No	Widespread & Common	Yes		No		Priority 1	Priority 3	Holland Woods
50	Dragonfly	Libellulidae	<i>Zygomma petiolatum</i>	Slender Duskdarter	Least Concern	Not Assessed	No	Widespread and Common	Yes		No		Priority 1	Priority 3	Holland Woods
51	Damselfly	Platycnemididae	<i>Copera marginipes</i>	Yellow Featherlegs	Least Concern	Not Assessed	No	Widespread and Common	Yes		Yes		Priority 1	Priority 3	Holland Woods
52	Damselfly	Platycnemididae	<i>Copera vittata</i>	Variable Featherlegs	Least Concern	Vulnerable	Yes	Restricted and Rare	Yes		Yes		Priority 1	Priority 2	Holland Woods
53	Dragonfly	Aeshnidae	<i>Anax guttatus</i>	Emperor	Least Concern	Least Concern	No	Widespread but Uncommon	Yes		No		Priority 1	Priority 3	Sunset Way Woods
54	Dragonfly	Aeshnidae	<i>Gynacantha dohrni</i>	Spear-tail Duskhawker	Not Assessed	Least Concern	No	Widespread but Uncommon	Yes		No		Priority 1	Priority 3	Sunset Way Woods
55	Dragonfly	Aeshnidae	<i>Gynacantha subinterrupta</i>	Dingy Duskhawker	Least Concern	Least Concern	No	Widespread but Uncommon	Yes		Yes	Gynacantha sp. Recorded	Priority 1	Priority 3	Sunset Way Woods
56	Damselfly	Coenagrionidae	<i>Agriocnemis femina</i>	Variable Wisp	Least Concern	Least Concern	No	Widespread & Common	Yes		Yes		Priority 1	Priority 3	Sunset Way Woods
57	Damselfly	Coenagrionidae	<i>Archibasis viola</i>	Violet Sprite	Least Concern	Least Concern	No	Widespread & Common	Yes		No		Priority 1	Priority 3	Sunset Way Woods
58	Damselfly	Coenagrionidae	<i>Ceriatagion cerinorubellum</i>	Ornate Coraltail	Least Concern	Least Concern	No	Widespread & Common	Yes		Yes	Recorded by Camphora in	Priority 1	Priority 3	Sunset Way Woods
59	Damselfly	Coenagrionidae	<i>Ischnura senegalensis</i>	Common Bluetail	Least Concern	Least Concern	No	Widespread & Common	Yes		No		Priority 1	Priority 3	Sunset Way Woods
60	Damselfly	Coenagrionidae	<i>Onychargia atrocyana</i>	Shorttail	Least Concern	Least Concern	No	Widespread but Uncommon	Yes		No		Priority 1	Priority 3	Sunset Way Woods
61	Damselfly	Coenagrionidae	<i>Pseudagrion microcephalum</i>	Blue Sprite	Least Concern	Least Concern	No	Widespread & Common	Yes		No		Priority 1	Priority 3	Sunset Way Woods
62	Damselfly	Coenagrionidae	<i>Teinobasis ruficollis</i>	Red-tailed Sprite	Not Assessed	Near Threatened	No	Widespread but Rare	Yes		No		Priority 1	Priority 3	Sunset Way Woods
63	Dragonfly	Gomphidae	<i>Ictinogomphus decoratus</i>	Common Flangetail	Least Concern	Least Concern	No	Widespread & Common	Yes		No		Priority 1	Priority 3	Sunset Way Woods
64	Damselfly	Lestidae	<i>Lestes praemorsus</i>	Crenulated Spreadwing	Least Concern	Least Concern	No	Widespread but Uncommon	Yes		No		Priority 1	Priority 3	Sunset Way Woods
65	Dragonfly	Libellulidae	<i>Acisoma panorpoides</i>	Trumpet Tail	Least Concern	Least Concern	No	Widespread & Common	Yes		No		Priority 1	Priority 3	Sunset Way Woods
66	Dragonfly	Libellulidae	<i>Aethriamanta brevipennis</i>	Scarlet Adjutant	Least Concern	Not Assessed	No	Widespread but Uncommon	Yes		No		Priority 1	Priority 3	Sunset Way Woods
67	Dragonfly	Libellulidae	<i>Aethriamanta gracilis</i>	Pond Adjutant	Least Concern	Least Concern	No	Widespread & Common	Yes		No		Priority 1	Priority 3	Sunset Way Woods
68	Dragonfly	Libellulidae	<i>Agrioptera insignis</i>	Grenadier	Least Concern	Least Concern	No	Widespread & Common	Yes		Yes	Recorded by Camphora in	Priority 1	Priority 3	Sunset Way Woods
69	Dragonfly	Libellulidae	<i>Brachydiplax chalybea</i>	Blue Dasher	Least Concern	Least Concern	No	Widespread & Common	Yes		No	Recorded by Camphora in	Priority 1	Priority 3	Sunset Way Woods
70	Dragonfly	Libellulidae	<i>Brachythemis contaminata</i>	Common Amberwing	Least Concern	Least Concern	No	Widespread & Common	Yes		No		Priority 1	Priority 3	Sunset Way Woods
71	Dragonfly	Libellulidae	<i>Camacinia gigantea</i>	Sultan	Least Concern	Least Concern	No	Widespread but Uncommon	Yes		No	Recorded by Camphora in	Priority 1	Priority 3	Sunset Way Woods
72	Dragonfly	Libellulidae	<i>Cratilla metallica</i>	Dark-tipped Forest Skimmer	Least Concern	Least Concern	No	Widespread & Common	Yes		No		Priority 1	Priority 3	Sunset Way Woods
73	Dragonfly	Libellulidae	<i>Crocothemis servilia</i>	Common Scarlet	Least Concern	Least Concern	No	Widespread & Common	Yes		No		Priority 1	Priority 3	Sunset Way Woods
74	Dragonfly	Libellulidae	<i>Diplacodes trivialis</i>	Blue Percher	Least Concern	Least Concern	No	Widespread & Common	Yes		No		Priority 1	Priority 3	Sunset Way Woods
75	Dragonfly	Libellulidae	<i>Lathrecista asiatica</i>	Scarlet Grenadier	Least Concern	Least Concern	No	Widespread & Common	Yes		Yes		Priority 1	Priority 3	Sunset Way Woods
76	Dragonfly	Libellulidae	<i>Neurothemis fluctuans</i>	Common Parasol	Least Concern	Least Concern	No	Widespread & Common	Yes		Yes	Recorded by Camphora in	Priority 1	Priority 3	Sunset Way Woods
77	Dragonfly	Libellulidae	<i>Orchithemis pulcherrima</i>	Variable Sentinel	Least Concern	Least Concern	No	Widespread & Common	Yes		No		Priority 1	Priority 3	Sunset Way Woods
78	Dragonfly	Libellulidae	<i>Orthetrum chrysus</i>	Spine-tufted Skimmer	Least Concern	Least Concern	No	Widespread & Common	Yes		Yes	Recorded by Camphora in	Priority 1	Priority 3	Sunset Way Woods
79	Dragonfly	Libellulidae	<i>Orthetrum glaucum</i>	Blue Skimmer	Least Concern	Least Concern	No	Widespread & Common	Yes		Yes	Recorded by Camphora in	Priority 1	Priority 3	Sunset Way Woods
80	Dragonfly	Libellulidae	<i>Orthetrum luzonicum</i>	Slender Blue Skimmer	Least Concern	Least Concern	No	Widespread & Common	Yes		No		Priority 1	Priority 3	Sunset Way Woods
81	Dragonfly	Libellulidae	<i>Orthetrum sabina</i>	Variegated Green Skimmer	Least Concern	Least Concern	No	Widespread & Common	Yes		No	Recorded by Camphora in	Priority 1	Priority 3	Sunset Way Woods
82	Dragonfly	Libellulidae	<i>Orthetrum testaceum</i>	Scarlet Skimmer	Least Concern	Least Concern	No	Widespread & Common	Yes		No	Recorded by Camphora in	Priority 1	Priority 3	Sunset Way Woods
83	Dragonfly	Libellulidae	<i>Pantala flavescens</i>	Wandering Glider	Least Concern	Least Concern	No	Widespread & Common	Yes		No	Recorded by Camphora in	Priority 1	Priority 3	Sunset Way Woods
84	Dragonfly	Libellulidae	<i>Potamarcha congener</i>	Common Chaser	Least Concern	Least Concern	No	Widespread & Common	Yes		No		Priority 1	Priority 3	Sunset Way Woods
85	Dragonfly	Libellulidae	<i>Pseudothemis jorina</i>	Banded Skimmer	Least Concern	Least Concern	No	Widespread but Uncommon	Yes		No		Priority 1	Priority 3	Sunset Way Woods
86	Dragonfly	Libellulidae	<i>Rhodothemis rufa</i>	Common Redbolt	Least Concern	Least Concern	No	Widespread & Common	Yes		No		Priority 1	Priority 3	Sunset Way Woods
87	Dragonfly	Libellulidae	<i>Rhyothemis phyllis</i>	Yellow-barred Flutterer	Least Concern	Least Concern	No	Widespread & Common	Yes		No		Priority 1	Priority 3	Sunset Way Woods
88	Dragonfly	Libellulidae	<i>Rhyothemis triangularis</i>	Sapphire Flutterer	Least Concern	Least Concern	No	Widespread but Uncommon	Yes		No		Priority 1	Priority 3	Sunset Way Woods
89	Dragonfly	Libellulidae	<i>Tholymis tillarga</i>	White-barred Duskhawk	Least Concern	Least Concern	No	Widespread & Common	Yes		Yes	Recorded by Camphora in	Priority 1	Priority 3	Sunset Way Woods
90	Dragonfly	Libellulidae	<i>Trithemis aurora</i>	Crimson Dropwing	Least Concern	Least Concern	No	Widespread & Common	Yes		Yes	Recorded by Camphora in	Priority 1	Priority 3	Sunset Way Woods

No.	Type	Family Name	Scientific Name	Common Name	Global Status (IUCN, 2012)	Local Status (Soh et al., 2019)	Species of Conservation Significance	Distribution/Rarity (Soh et al. 2019)	Probable Species	Recorded Species (ESC, 2020; ERM, 2016)	Recorded Species	Remarks	Vibration-sensitivity	Auditory-sensitivity	Location
91	Dragonfly	Libellulidae	<i>Trithemis festiva</i>	Indigo Dropwing	Least Concern	Least Concern	No	Widespread & Common	Yes		No	Recorded by Camphora in	Priority 1	Priority 3	Sunset Way Woods
92	Dragonfly	Libellulidae	<i>Trithemis pallidinervis</i>	Dancing Dropwing	Least Concern	Least Concern	No	Widespread but Uncommon	Yes		No		Priority 1	Priority 3	Sunset Way Woods
93	Dragonfly	Libellulidae	<i>Urothemis signata insignata</i>	Scarlet Basker	Not Assessed	Least Concern	No	Widespread & Common	Yes		No		Priority 1	Priority 3	Sunset Way Woods
94	Damselfly	Platynemididae	<i>Copera marginipes</i>	Yellow Featherlegs	Least Concern	Not Assessed	No	Widespread and Common	Yes		No		Priority 1	Priority 3	Sunset Way Woods
95	Damselfly	Platynemididae	<i>Copera vittata</i>	Variable Featherlegs	Least Concern	Vulnerable	Yes	Restricted and Rare	Yes		No		Priority 1	Priority 2	Sunset Way Woods

No.	Family Name	Scientific Name	Common Name	Global Status (IUCN, 2012)	Local Status (Davison et al. 2008; Jain et al. 2018)	Species of Conservation Significance	Distribution/Rarity (Khew, 2015)	Probable Species	Recorded Species (ESC, 2020; ERM, 2016)	Recorded Species	Remarks	Vibration- sensitivity	Auditory- sensitivity	Location
1	Hesperiidae	<i>Ampittia dioscorides camertes</i>	Bush Hopper	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
2	Hesperiidae	<i>Ancistroides nigrta maura</i>	Chocolate Demon	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
3	Hesperiidae	<i>Astictopterus jama jama</i>	Forest Hopper	Not Assessed	Nationally Extinct (Rediscovered)	Yes	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
4	Hesperiidae	<i>Baoris farri farri</i>	Bamboo Paintbrush Swift	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
5	Hesperiidae	<i>Baoris oceia</i>	Paintbrush Swift	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
6	Hesperiidae	<i>Borbo cinnara</i>	Formosan Swift	Not Assessed	Endangered	Yes	Moderately common	Yes		Yes		Priority 1	Priority 1	Holland Woods
7	Hesperiidae	<i>Burara harisa consobrina</i>	Orange Awlet	Not Assessed	Not Assessed	No	Moderately rare	Yes		Yes		Priority 1	Priority 1	Holland Woods
8	Hesperiidae	<i>Caltoris cornasa</i>	Full Stop Swift	Not Assessed	Not Assessed	No	Moderately rare	Yes		Yes		Priority 1	Priority 1	Holland Woods
9	Hesperiidae	<i>Caltoris malaya</i>	Malayan Swift	Not Assessed	Nationally Extinct (Rediscovered)	Yes	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
10	Hesperiidae	<i>Cephrenes acalle niasicus</i>	Plain Palm Dart	Not Assessed	Nationally Extinct (Rediscovered)	Yes	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
11	Hesperiidae	<i>Cephrenes trichopepla</i>	Yellow Palm Dart	Not Assessed	Not assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
12	Hesperiidae	<i>Erionota hiraca apicalis</i>	White Tipped Skipper	Not Assessed	Not Assessed	No	Moderately rare	Yes		Yes		Priority 1	Priority 1	Holland Woods
13	Hesperiidae	<i>Erionota thrax thrax</i>	Banana Skipper	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
14	Hesperiidae	<i>Erionota torus</i>	Torus Skipper	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
15	Hesperiidae	<i>Halpe omenes vilasina</i>	Dark Banded Ace	Not Assessed	Not Assessed	No	Rare	Yes		No		Priority 1	Priority 1	Holland Woods
16	Hesperiidae	<i>Hasora badra badra</i>	Common Awl	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
17	Hesperiidae	<i>Hasora chromus chromus</i>	Common Banded Awl	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
18	Hesperiidae	<i>Hasora vitta vitta</i>	Plain Banded Awl	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
19	Hesperiidae	<i>Hidari irava</i>	Coconut Skipper	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
20	Hesperiidae	<i>Iambrix salsala salsala</i>	Chestnut Bob	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
21	Hesperiidae	<i>Iambrix stellifer</i>	Starry Bob	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
22	Hesperiidae	<i>Matapa aria</i>	Common Redeye	Not Assessed	Not Assessed	No	Moderately rare	Yes		Yes		Priority 1	Priority 1	Holland Woods
23	Hesperiidae	<i>Notocrypta paralysos varians</i>	Banded Demon	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
24	Hesperiidae	<i>Odina hieroglyphica ortina</i>	Hieroglyphic Flat	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
25	Hesperiidae	<i>Oriens gola pseudolus</i>	Common Dartlet	Not Assessed	Not Assessed	No	Moderately common	Yes		Yes		Priority 1	Priority 1	Holland Woods
26	Hesperiidae	<i>Pelopidas agna agna</i>	Bengal Swift	Not Assessed	Endangered	Yes	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
27	Hesperiidae	<i>Pelopidas assamensis</i>	Great Swift	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
28	Hesperiidae	<i>Pelopidas conjunctus conjunctus</i>	Conjoined Swift	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
29	Hesperiidae	<i>Pelopidas mathias mathias</i>	Small Branded Swift	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
30	Hesperiidae	<i>Plastingia naga</i>	Chequered Lancer	Not Assessed	Not Assessed	No	Moderately common	Yes		Yes		Priority 1	Priority 1	Holland Woods
31	Hesperiidae	<i>Polytremis lubricans lubricans</i>	Contiguous Swift	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
32	Hesperiidae	<i>Potanthus ganda</i>	N.A	Not Assessed	Not Assessed	No	-	Yes		No		Priority 1	Priority 1	Holland Woods
33	Hesperiidae	<i>Potanthus omaha omaha</i>	Lesser Dart	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
34	Hesperiidae	<i>Potanthus serina</i>	Large Dart	Not Assessed	Not assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
35	Hesperiidae	<i>Potanthus trachala tyleri</i>	Detached Dart	Not Assessed	Nationally Extinct (Rediscovered)	Yes	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
36	Hesperiidae	<i>Pyronaura latoia latoia</i>	Yellow Vein Lancer	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
37	Hesperiidae	<i>Suasus gremius gremius</i>	Palm Bob	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
38	Hesperiidae	<i>Tagiades japetus atticus</i>	Common Snow Flat	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
39	Hesperiidae	<i>Taractrocera archias quinta</i>	Yellow Grass Dart	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
40	Hesperiidae	<i>Taractrocera ardonia lamia</i>	Spotted Grass Dart	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
41	Hesperiidae	<i>Telicota augias augias</i>	Pale Palm Dart	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
42	Hesperiidae	<i>Telicota besta bina</i>	Besta Palm Dart	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
43	Hesperiidae	<i>Telicota colon stinga</i>	Common Palm Dart	Not Assessed	Nationally Extinct (Rediscovered)	Yes	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
44	Hesperiidae	<i>Udaspes folus</i>	Grass Demon	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
45	Hesperiidae	<i>Zographetus doxus</i>	Spotted Flitter	Not Assessed	Not Assessed	No	Rare	Yes		No		Priority 1	Priority 1	Holland Woods
46	Lycaenidae	<i>Acytolepis puspa lambi</i>	Common Hedge Blue	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
47	Lycaenidae	<i>Allotinus unicolor unicolor</i>	Lesser Darkwing	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
48	Lycaenidae	<i>Anthene emolus goberus</i>	Ciliate Blue	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
49	Lycaenidae	<i>Anthene lycaenina miya</i>	Pointed Ciliate Blue	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
50	Lycaenidae	<i>Arhopala amphimuta amphimuta</i>	-	Not Assessed	Nationally Extinct (Rediscovered)	Yes	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
51	Lycaenidae	<i>Arhopala centaurus nakula</i>	Centaur Oakblue	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
52	Lycaenidae	<i>Arhopala major major</i>	-	Not Assessed	Data Deficient	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
53	Lycaenidae	<i>Catochrysops panormus exiguus</i>	Silver Forget-Me-Not	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
54	Lycaenidae	<i>Catochrysops strabo strabo</i>	Forget-Me-Not	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
55	Lycaenidae	<i>Catopryps ancyr</i>	Ancyra Blue	Not Assessed	Vulnerable	Yes	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
56	Lycaenidae	<i>Cheritra freja frigga</i>	Common Imperial	Least Concern	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
57	Lycaenidae	<i>Chilades pandava pandava</i>	Cycad Blue	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
58	Lycaenidae	<i>Curetis saronis sumatrana</i>	Sumatran Sunbeam	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
59	Lycaenidae	<i>Drupadia ravindra moorei</i>	Common Posy	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
60	Lycaenidae	<i>Drupadia ravindra moorei</i>	Common Posy	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
61	Lycaenidae	<i>Eooxylides tharis distanti</i>	Branded Imperial	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
62	Lycaenidae	<i>Euchrysops cnejus cnejus</i>	Gram Blue	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
63	Lycaenidae	<i>Everes lacturnus rileyi</i>	Indian Cupid	Not Assessed	Not Assessed	No	Rare	Yes		No		Priority 1	Priority 1	Holland Woods
64	Lycaenidae	<i>Fios apidanus saturatus</i>	Plain Plushblue	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
65	Lycaenidae	<i>Hypolycaena erylus teatus</i>	Common Tit	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
66	Lycaenidae	<i>Hypolycaena thecoides thecoides</i>	Dark Tit	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
67	Lycaenidae	<i>Ionolyce helicon merguiana</i>	Pointed Line Blue	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
68	Lycaenidae	<i>Iraota rochana boswelliana</i>	Scarce Silverstreak	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
69	Lycaenidae	<i>Jamides alecto ageladas</i>	Metallic Caerulean	Not Assessed	Nationally Extinct (Rediscovered)	Yes	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
70	Lycaenidae	<i>Jamides bochus nabonassar</i>	Dark Caerulean	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
71	Lycaenidae	<i>Jamides celeno aelianus</i>	Common Caerulean	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
72	Lycaenidae	<i>Lampides boeticus</i>	Pea Blue	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
73	Lycaenidae	<i>Logania marmorata damis</i>	Pale Mottle	Not Assessed	Not Assessed	No	Moderately common	Yes		Yes		Priority 1	Priority 1	Holland Woods
74	Lycaenidae	<i>Loxura atymnus luconius</i>	Yamfly	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
75	Lycaenidae	<i>Megisba malaya sikkima</i>	Malayan	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
76	Lycaenidae	<i>Miletus biggsii biggsii</i>	Bigg's Brownwing	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
77	Lycaenidae	<i>Miletus sp.</i>	N.A	N.A	N.A	N.A	N.A	N.A		Yes		Priority 1	Priority 1	Holland Woods

No.	Family Name	Scientific Name	Common Name	Global Status (IUCN, 2012)	Local Status (Davison et al. 2008; Jain et al. 2018)	Species of Conservation Significance	Distribution/Rarity (Khew, 2015)	Probable Species	Recorded Species (ESC, 2020; ERM, 2016)	Recorded Species	Remarks	Vibration- sensitivity	Auditory- sensitivity	Location
78	Lycaenidae	<i>Miletus symethus petronius</i>	Blue Brownwing/Great Brownie	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
79	Lycaenidae	<i>Nacaduba berenice icena</i>	Rounded Sixline Blue	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
80	Lycaenidae	<i>Nacaduba beroe neon</i>	Opaque Sixline Blue	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
81	Lycaenidae	<i>Nacaduba biocellata</i>	Two Spotted Line Blue	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
82	Lycaenidae	<i>Nacaduba kurava nemana</i>	Transparent Sixline Blue	Not Assessed	Nationally Extinct (Rediscovered)	Yes	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
83	Lycaenidae	<i>Nacaduba pavana singapura</i>	Singapore Fourline Blue	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
84	Lycaenidae	<i>Nacaduba sanaya elloti</i>	Jewel Fourline Blue	Not Assessed	Nationally Extinct (Rediscovered)	Yes	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
85	Lycaenidae	<i>Petrelaea dana</i>	Dingy Line Blue	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
86	Lycaenidae	<i>Prosotas dubiosa lumpura</i>	Tailless Line Blue	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
87	Lycaenidae	<i>Prosotas nora superdates</i>	Common Line Blue	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
88	Lycaenidae	<i>Rapala dienece dienece</i>	Scarlet Flash	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
89	Lycaenidae	<i>Rapala iarbus iarbus</i>	Common Red Flash	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
90	Lycaenidae	<i>Rapala manea chozeba</i>	Slate Flash	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
91	Lycaenidae	<i>Rapala pheretima sequeira</i>	Copper Flash	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
92	Lycaenidae	<i>Rapala suffusa barthema</i>	Suffused Flash	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
93	Lycaenidae	<i>Rapala varuna orseis</i>	Indigo Flash	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
94	Lycaenidae	<i>Semanga superba deliciosa</i>	-	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
95	Lycaenidae	<i>Spalgis epius epius</i>	Apefly	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
96	Lycaenidae	<i>Spindasis lohita senama</i>	Long Banded Silverline	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
97	Lycaenidae	<i>Spindasis syama terana</i>	Club Silverline	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
98	Lycaenidae	<i>Surendra vivarna amisena</i>	Acacia Blue	Not Assessed	Not Assessed	No	Moderately common	Yes		Yes		Priority 1	Priority 1	Holland Woods
99	Lycaenidae	<i>Tajuria cippus maxentius</i>	Peacock Royal	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
100	Lycaenidae	<i>Virachola kessuma deliochus</i>	Pitcher Blue	Not Assessed	Not Assessed	No	Rare	Yes		No		Priority 1	Priority 1	Holland Woods
101	Lycaenidae	<i>Zeltus amasa maximinianus</i>	Fluffy Tit	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
102	Lycaenidae	<i>Zizeeria maha serica</i>	Pale Grass Blue	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
103	Lycaenidae	<i>Zizina otis lampa</i>	Lesser Grass Blue	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
104	Lycaenidae	<i>Zizula hylax pygmaea</i>	Pygmy Grass Blue	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
105	Nymphalidae	<i>Acraea terpsicore</i>	Tawny Coster	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
106	Nymphalidae	<i>Amathusia phidippus phidippus</i>	Palm King	Not Assessed	Not Assessed	No	Moderately rare	Yes		Yes		Priority 1	Priority 1	Holland Woods
107	Nymphalidae	<i>Athyma kanwa kanwa</i>	Dot-Dash Sergeant	Not Assessed	Not Assessed	No	Rare	Yes		No		Priority 1	Priority 1	Holland Woods
108	Nymphalidae	<i>Athyma nefte subrata</i>	Colour Sergeant	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
109	Nymphalidae	<i>Cethosia cyane</i>	Leopard Lacewing	Not Assessed	Not assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
110	Nymphalidae	<i>Danaus chrysippus chrysippus</i>	Plain Tiger	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
111	Nymphalidae	<i>Doleschallia bisaltide bisaltide</i>	Autumn Leaf	Not Assessed	Not assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
112	Nymphalidae	<i>Elymnias hypermnestra agina</i>	Common Palmfly	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
113	Nymphalidae	<i>Elymnias panthera panthera</i>	Tawny Palmfly	Not Assessed	Not Assessed	No	Moderately common	Yes		Yes		Priority 1	Priority 1	Holland Woods
114	Nymphalidae	<i>Euploea midamus singapura</i>	Blue Spotted Crow	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
115	Nymphalidae	<i>Euploea mulciber mulciber</i>	Striped Blue Crow	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
116	Nymphalidae	<i>Euripus nyctelius euploeoides</i>	Courtesan	Not Assessed	Critically Endangered	Yes	Rare	Yes		No		Priority 1	Priority 1	Holland Woods
117	Nymphalidae	<i>Euthalia aconthea gurda</i>	Baron	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
118	Nymphalidae	<i>Euthalia adonia pinwilli</i>	Green Baron	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
119	Nymphalidae	<i>Euthalia monina monina</i>	Malay Baron	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
120	Nymphalidae	<i>Faunis canens arcesilas</i>	Common Faun	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
121	Nymphalidae	<i>Hypolimnias anomala anomala</i>	Malayan Eggfly	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
122	Nymphalidae	<i>Hypolimnias bolina bolina</i>	Great Eggfly	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
123	Nymphalidae	<i>Hypolimnias bolina jacintha</i>	Jacintha Eggfly	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
124	Nymphalidae	<i>Ideopsis vulgaris macrina</i>	Blue Glassy Tiger	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
125	Nymphalidae	<i>Junonia almana javana</i>	Peacock Pansy	Least Concern	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
126	Nymphalidae	<i>Junonia hedonia ida</i>	Chocolate Pansy	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
127	Nymphalidae	<i>Junonia orithya wallacei</i>	Blue Pansy	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
128	Nymphalidae	<i>Lasippa tita siaka</i>	Malayan Lascar	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
129	Nymphalidae	<i>Lethe europa malaya</i>	Bamboo Tree Brown	Not Assessed	Not Assessed	No	Moderately rare	Yes		Yes		Priority 1	Priority 1	Holland Woods
130	Nymphalidae	<i>Lexias pardalis dirteana</i>	Archduke	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
131	Nymphalidae	<i>Melanitis leda leda</i>	Common Evening Brown	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
132	Nymphalidae	<i>Moduza procris milonia</i>	Commander	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
133	Nymphalidae	<i>Mycalesis fusca fusca</i>	Malayan Bush Brown	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
134	Nymphalidae	<i>Mycalesis mineus macromalayana</i>	Dark Brand Bush Brown	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
135	Nymphalidae	<i>Mycalesis perseoides perseoides</i>	Burmese Bush Brown	Not Assessed	Data Deficient	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
136	Nymphalidae	<i>Mycalesis perseus cepheus</i>	Dingy Bush Brown	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
137	Nymphalidae	<i>Mycalesis visala phamis</i>	Long Brand Bush Brown	Not Assessed	Not Assessed	No	Moderately common	Yes		Yes		Priority 1	Priority 1	Holland Woods
138	Nymphalidae	<i>Neptis hylas papaja</i>	Common Sailor	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
139	Nymphalidae	<i>Orsotriaena medus cinerea</i>	Dark Grass Brown	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
140	Nymphalidae	<i>Pantoporia hordonia hordonia</i>	Common Lascar	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
141	Nymphalidae	<i>Pantoporia hordonia hordonia</i>	Common Lascar	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
142	Nymphalidae	<i>Parantica agleoides agleoides</i>	Dark Glassy Tiger	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
143	Nymphalidae	<i>Phaedyma columella singa</i>	Short Banded Sailor	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
144	Nymphalidae	<i>Phalanta phalantha phalantha</i>	Leopard	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
145	Nymphalidae	<i>Polyura hebe plautus</i>	Plain Nawab	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
146	Nymphalidae	<i>Polyura schreiber tisamenus</i>	Blue Nawab	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
147	Nymphalidae	<i>Polyura sp.</i>	Nawab	N.A	N.A	N.A	N.A	N.A		Yes		Priority 1	Priority 1	Holland Woods
148	Nymphalidae	<i>Tanaecia iapis puseda</i>	Horsfield's Baron	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
149	Nymphalidae	<i>Tanaecia pelea pelea</i>	Malay Viscount	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
150	Nymphalidae	<i>Vindula dejone erotella</i>	Cruiser	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
151	Nymphalidae	<i>Ypthima baldus newboldi</i>	Common Five-Ring	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
152	Nymphalidae	<i>Ypthima fasciata toronei</i>	Malayan Six-Ring	Not Assessed	Nationally Extinct	Yes	Very rare	No		Yes		Priority 1	Priority 1	Holland Woods
153	Nymphalidae	<i>Ypthima horsfieldii hurnei</i>	Malayan Five-Ring	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
154	Nymphalidae	<i>Ypthima huebneri</i>	Common Four-Ring	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods

No.	Family Name	Scientific Name	Common Name	Global Status (IUCN, 2012)	Local Status (Davison et al. 2008; Jain et al. 2018)	Species of Conservation Significance	Distribution/Rarity (Khew, 2015)	Probable Species	Recorded Species (ESC, 2020; ERM, 2016)	Recorded Species	Remarks	Vibration- sensitivity	Auditory- sensitivity	Location
155	Nymphalidae	<i>Ypthima pandocus corticaria</i>	Common Three-Ring	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
156	Papilionidae	<i>Chilasa clytia clytia</i>	Common Mime	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
157	Papilionidae	<i>Graphium agamemnon agamemnon</i>	Tailed Jay	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
158	Papilionidae	<i>Graphium sarpedon luctatus</i>	Common Bluebottle	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
159	Papilionidae	<i>Pachliopta aristolochiae asteris</i>	Common Rose	Not Assessed	Vulnerable	Yes	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
160	Papilionidae	<i>Papilio demoleus malayanus</i>	Lime Butterfly	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
161	Papilionidae	<i>Papilio polytes romulus</i>	Common Mormon	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
162	Papilionidae	<i>Troides helena cerberus</i>	Common Birdwing	Not assessed; CITES protected (Appendix II)	Vulnerable	Yes	Moderately common	Yes		Yes		Priority 1	Priority 1	Holland Woods
163	Pieridae	<i>Applias libythea olferna</i>	Striped Albatross	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
164	Pieridae	<i>Catopsilia pomona pomona</i>	Lemon Emigrant	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
165	Pieridae	<i>Catopsilia pyranthe pyranthe</i>	Mottled Emigrant	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
166	Pieridae	<i>Catopsilia scylla cornelia</i>	Orange Emigrant	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Holland Woods
167	Pieridae	<i>Delias hyparete metarete</i>	Painted Jezebel	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
168	Pieridae	<i>Eurema andersonii andersonii</i>	Anderson's Grass Yellow	Not Assessed	Not Assessed	No	Moderately common	Yes		Yes		Priority 1	Priority 1	Holland Woods
169	Pieridae	<i>Eurema blanda snelleni</i>	Three Spot Grass Yellow	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
170	Pieridae	<i>Eurema hecabe contubernalis</i>	Common Grass Yellow	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
171	Pieridae	<i>Eurema sari sodalis</i>	Chocolate Grass Yellow	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
172	Pieridae	<i>Eurema simulatrix tecmessa</i>	Forest Grass Yellow	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
173	Pieridae	<i>Leptosia nina malayana</i>	Psyche	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Holland Woods
174	Pieridae	<i>Pieris canidia canidia</i>	Cabbage White	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
175	Riodinidae	<i>Abisara geza niya</i>	Spotted Judy	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
176	Riodinidae	<i>Abisara saturata kausambioides</i>	Malayan Plum Judy	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Holland Woods
177	Riodinidae	<i>Abisara savitri savitri</i>	Malay Tailed Judy	Not Assessed	Not Assessed	No	Moderately rare	Yes		Yes		Priority 1	Priority 1	Holland Woods
178	Riodinidae	<i>Taxila haquinus haquinus</i>	Harlequin	Not Assessed	Endangered	Yes	Moderately rare	Yes		No		Priority 1	Priority 1	Holland Woods
179	Hesperiidae	<i>Ampittia dioscorides camerites</i>	Bush Hopper	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
180	Hesperiidae	<i>Ancistroides nigrta maura</i>	Chocolate Demon	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
181	Hesperiidae	<i>Astictopterus jama jama</i>	Forest Hopper	Not Assessed	Nationally Extinct (Rediscovered)	Yes	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
182	Hesperiidae	<i>Baoris farri farri</i>	Bamboo Paintbrush Swift	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
183	Hesperiidae	<i>Baoris ocea</i>	Paintbrush Swift	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
184	Hesperiidae	<i>Baoris</i> sp.	N.A	N.A	N.A	N.A	N.A	NA		Yes		Priority 1	Priority 1	Sunset Way Woods
185	Hesperiidae	<i>Borbo cinnara</i>	Formosan Swift	Not Assessed	Endangered	Yes	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
186	Hesperiidae	<i>Burara harisa consobrina</i>	Orange Awlet	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
187	Hesperiidae	<i>Caltoris cormasa</i>	Full Stop Swift	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
188	Hesperiidae	<i>Caltoris malaya</i>	Malayan Swift	Not Assessed	Nationally Extinct (Rediscovered)	Yes	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
189	Hesperiidae	<i>Cephrenes acalle niasicus</i>	Plain Palm Dart	Not Assessed	Nationally Extinct (Rediscovered)	Yes	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
190	Hesperiidae	<i>Cephrenes trichopepla</i>	Yellow Palm Dart	Not Assessed	Not assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
191	Hesperiidae	<i>Erionota hiraca apicalis</i>	White Tipped Skipper	Not Assessed	Not Assessed	No	Moderately rare	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
192	Hesperiidae	<i>Erionota thrax thrax</i>	Banana Skipper	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
193	Hesperiidae	<i>Erionota torus</i>	Torus Skipper	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
194	Hesperiidae	<i>Halpe ormenes vilasina</i>	Dark Banded Ace	Not Assessed	Not Assessed	No	Rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
195	Hesperiidae	<i>Hasora badra badra</i>	Common Awl	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
196	Hesperiidae	<i>Hasora chromus chromus</i>	Common Banded Awl	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
197	Hesperiidae	<i>Hasora vitta vitta</i>	Plain Banded Awl	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
198	Hesperiidae	<i>Hidari irava</i>	Coconut Skipper	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
199	Hesperiidae	<i>Iambrix salsala salsala</i>	Chestnut Bob	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
200	Hesperiidae	<i>Iambrix stellifer</i>	Starry Bob	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
201	Hesperiidae	<i>Matapa aria</i>	Common Redeye	Not Assessed	Not Assessed	No	Moderately rare	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
202	Hesperiidae	<i>Notocrypta paralysos varians</i>	Banded Demon	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
203	Hesperiidae	<i>Odina hieroglyphica ortina</i>	Hieroglyphic Flat	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
204	Hesperiidae	<i>Oriens gola pseudolus</i>	Common Dartlet	Not Assessed	Not Assessed	No	Moderately common	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
205	Hesperiidae	<i>Pelopidas agna agna</i>	Bengal Swift	Not Assessed	Endangered	Yes	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
206	Hesperiidae	<i>Pelopidas assamensis</i>	Great Swift	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
207	Hesperiidae	<i>Pelopidas conjunctus conjunctus</i>	Conjoined Swift	Not Assessed	Not assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
208	Hesperiidae	<i>Pelopidas mathias mathias</i>	Small Branded Swift	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
209	Hesperiidae	<i>Plastingia naga</i>	Chequered Lancer	Not Assessed	Not Assessed	No	Moderately common	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
210	Hesperiidae	<i>Polytremis lubricans lubricans</i>	Contiguous Swift	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
211	Hesperiidae	<i>Potanthus ganda</i>	N.A	Not Assessed	Not Assessed	No	-	Yes		No		Priority 1	Priority 1	Sunset Way Woods
212	Hesperiidae	<i>Potanthus omaha omaha</i>	Lesser Dart	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
213	Hesperiidae	<i>Potanthus serina</i>	Large Dart	Not Assessed	Not assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
214	Hesperiidae	<i>Potanthus trachala tyleri</i>	Detached Dart	Not Assessed	Nationally Extinct (Rediscovered)	Yes	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
215	Hesperiidae	<i>Pyronaura latoia latoia</i>	Yellow Vein Lancer	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
216	Hesperiidae	<i>Suastus gremius gremius</i>	Palm Bob	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
217	Hesperiidae	<i>Tagiades japetus atticus</i>	Common Snow Flat	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
218	Hesperiidae	<i>Tagiades ultra</i>	Ultra Snow Flat	Not Assessed	Not Assessed	No	Rare	No		Yes		Priority 1	Priority 1	Sunset Way Woods
219	Hesperiidae	<i>Taractrocera archias quinta</i>	Yellow Grass Dart	Not Assessed	Not Assessed	No	Moderately common	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
220	Hesperiidae	<i>Taractrocera ardonia lamia</i>	Spotted Grass Dart	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
221	Hesperiidae	<i>Telicota augias augias</i>	Pale Palm Dart	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
222	Hesperiidae	<i>Telicota besta bina</i>	Besta Palm Dart	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
223	Hesperiidae	<i>Telicota colon stinga</i>	Common Palm Dart	Not Assessed	Nationally Extinct (Rediscovered)	Yes	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
224	Hesperiidae	<i>Udaspes folus</i>	Grass Demon	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
225	Hesperiidae	<i>Zographetus doxus</i>	Spotted Flitter	Not Assessed	Not Assessed	No	Rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
226	Lycaenidae	<i>Acytolepis puspa lambi</i>	Common Hedge Blue	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
227	Lycaenidae	<i>Allotinus unicolor unicolor</i>	Lesser Darkwing	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
228	Lycaenidae	<i>Anthene emolus goberus</i>	Ciliate Blue	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
229	Lycaenidae	<i>Anthene lycaenina miya</i>	Pointed Ciliate Blue	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
230	Lycaenidae	<i>Arhopala amphimuta amphimuta</i>	-	Not Assessed	Nationally Extinct (Rediscovered)	Yes	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
231	Lycaenidae	<i>Arhopala centaurus nakula</i>	Centaur Oakblue	Not Assessed	Not Assessed	No	Moderately common	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods

No.	Family Name	Scientific Name	Common Name	Global Status (IUCN, 2012)	Local Status (Davison et al. 2008; Jain et al. 2018)	Species of Conservation Significance	Distribution/Rarity (Khow, 2015)	Probable Species	Recorded Species (ESC, 2020; ERM, 2016)	Recorded Species	Remarks	Vibration- sensitivity	Auditory- sensitivity	Location
232	Lycaenidae	<i>Arhopala major major</i>	-	Not Assessed	Data Deficient	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
233	Lycaenidae	<i>Catochrysops panormus exiguus</i>	Silver Forget-Me-Not	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
234	Lycaenidae	<i>Catochrysops strabo strabo</i>	Forget-Me-Not	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
235	Lycaenidae	<i>Catopyrops ancyra</i>	Ancyra Blue	Not Assessed	Vulnerable	Yes	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
236	Lycaenidae	<i>Cheritra freja frigga</i>	Common Imperial	Least Concern	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
237	Lycaenidae	<i>Chilades pandava pandava</i>	Cycad Blue	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
238	Lycaenidae	<i>Curetis saronis sumatrana</i>	Sumatran Sunbeam	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
239	Lycaenidae	<i>Drupadia ravindra moorei</i>	Common Posy	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
240	Lycaenidae	<i>Drupadia ravindra moorei</i>	Common Posy	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
241	Lycaenidae	<i>Eooxylides tharis distanti</i>	Branded Imperial	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
242	Lycaenidae	<i>Euchrysops cnejus cnejus</i>	Gram Blue	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
243	Lycaenidae	<i>Everes lacturnus rileyi</i>	Indian Cupid	Not Assessed	Not Assessed	No	Rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
244	Lycaenidae	<i>Flos apidanus saturatus</i>	Plain Plushblue	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
245	Lycaenidae	<i>Hypolycaena erylus teatus</i>	Common Tit	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
246	Lycaenidae	<i>Hypolycaena thecloides thecloides</i>	Dark Tit	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
247	Lycaenidae	<i>Ionolyce helicon merguiana</i>	Pointed Line Blue	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
248	Lycaenidae	<i>Iraota rochana boswelliana</i>	Scarce Silvertreak	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
249	Lycaenidae	<i>Jamides alecto ageladas</i>	Metallic Caerulean	Not Assessed	Nationally Extinct (Rediscovered)	Yes	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
250	Lycaenidae	<i>Jamides bochus nabonassar</i>	Dark Caerulean	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
251	Lycaenidae	<i>Jamides celeno aelianus</i>	Common Caerulean	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
252	Lycaenidae	<i>Lampides boeticus</i>	Pea Blue	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
253	Lycaenidae	<i>Logania marmorata damis</i>	Pale Mottle	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
254	Lycaenidae	<i>Loxura atymnus luconius</i>	Yamfly	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
255	Lycaenidae	<i>Megisba malaya sikkima</i>	Malayan	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
256	Lycaenidae	<i>Miletus biggsii biggsii</i>	Bigg's Brownwing	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
257	Lycaenidae	<i>Miletus symethus petronius</i>	Blue Brownwing/Great Brownie	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
258	Lycaenidae	<i>Nacaduba berenice icena</i>	Rounded Sixline Blue	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
259	Lycaenidae	<i>Nacaduba beroe neon</i>	Opaque Sixline Blue	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
260	Lycaenidae	<i>Nacaduba biocellata</i>	Two Spotted Line Blue	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
261	Lycaenidae	<i>Nacaduba kurava nemana</i>	Transparent Sixline Blue	Not Assessed	Nationally Extinct (Rediscovered)	Yes	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
262	Lycaenidae	<i>Nacaduba pavana singapura</i>	Singapore Fourline Blue	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
263	Lycaenidae	<i>Nacaduba sanaya elloti</i>	Jewel Fourline Blue	Not Assessed	Nationally Extinct (Rediscovered)	Yes	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
264	Lycaenidae	<i>Petrelaea dana</i>	Dingy Line Blue	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
265	Lycaenidae	<i>Prosotas dubiosa lumpura</i>	Tailless Line Blue	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
266	Lycaenidae	<i>Prosotas nora superdates</i>	Common Line Blue	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
267	Lycaenidae	<i>Rapala dienece dienece</i>	Scarlet Flash	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
268	Lycaenidae	<i>Rapala iarbus iarbus</i>	Common Red Flash	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
269	Lycaenidae	<i>Rapala manea chozeba</i>	Slate Flash	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
270	Lycaenidae	<i>Rapala pheretima sequeira</i>	Copper Flash	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
271	Lycaenidae	<i>Rapala suffusa barthema</i>	Suffused Flash	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
272	Lycaenidae	<i>Rapala varuna orseis</i>	Indigo Flash	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
273	Lycaenidae	<i>Semanga superba deliciosa</i>	-	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
274	Lycaenidae	<i>Spalgis epius epius</i>	Apefly	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
275	Lycaenidae	<i>Spindasis lohita senama</i>	Long Banded Silverline	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
276	Lycaenidae	<i>Spindasis yama terana</i>	Club Silverline	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
277	Lycaenidae	<i>Surendra vivarna amisena</i>	Acacia Blue	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
278	Lycaenidae	<i>Surendra vivarna amisena</i>	Acacia Blue	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
279	Lycaenidae	<i>Tajuria cippus maxentius</i>	Peacock Royal	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
280	Lycaenidae	<i>Virachola kessuma deliochus</i>	Pitcher Blue	Not Assessed	Not Assessed	No	Rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
281	Lycaenidae	<i>Zeltus amasa maximinianus</i>	Fluffy Tit	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
282	Lycaenidae	<i>Zizeeria maha serica</i>	Pale Grass Blue	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
283	Lycaenidae	<i>Zizina otis lampa</i>	Lesser Grass Blue	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
284	Lycaenidae	<i>Zizula hylax pygmaea</i>	Pygmy Grass Blue	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
285	Nymphalidae	<i>Acraea terpsicore</i>	Tawny Coster	Not Assessed	Not assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
286	Nymphalidae	<i>Amathusia phidippus phidippus</i>	Palm King	Not Assessed	Not Assessed	No	Moderately rare	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
287	Nymphalidae	<i>Athyma kanwa kanwa</i>	Dot-Dash Sergeant	Not Assessed	Not Assessed	No	Rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
288	Nymphalidae	<i>Athyma nefte subrata</i>	Colour Sergeant	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
289	Nymphalidae	<i>Cethosia cyane</i>	Leopard Lacewing	Not Assessed	Not assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
290	Nymphalidae	<i>Danaus chrysippus chrysippus</i>	Plain Tiger	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
291	Nymphalidae	<i>Doleschallia bisaltide bisaltide</i>	Autumn Leaf	Not Assessed	Not assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
292	Nymphalidae	<i>Elymnias hypermnestra agina</i>	Common Palmfly	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
293	Nymphalidae	<i>Elymnias panthera panthera</i>	Tawny Palmfly	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
294	Nymphalidae	<i>Euploea midanius singapura</i>	Blue Spotted Crow	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
295	Nymphalidae	<i>Euploea mulciber mulciber</i>	Striped Blue Crow	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
296	Nymphalidae	<i>Euripus nycetilus euploeoides</i>	Courtesan	Not Assessed	Critically Endangered	Yes	Rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
297	Nymphalidae	<i>Euthalia aconthea gurdy</i>	Baron	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
298	Nymphalidae	<i>Euthalia adonia pinwilli</i>	Green Baron	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
299	Nymphalidae	<i>Euthalia monina monina</i>	Malay Baron	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
300	Nymphalidae	<i>Euthalia</i> sp.	Baron	N.A	N.A	N.A	N.A	N.A		Yes		Priority 1	Priority 1	Sunset Way Woods
301	Nymphalidae	<i>Faunis canens arcesilas</i>	Common Faun	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
302	Nymphalidae	<i>Hypolimnias anomala anomala</i>	Malayan Eggfly	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
303	Nymphalidae	<i>Hypolimnias bolina bolina</i>	Great Eggfly	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
304	Nymphalidae	<i>Hypolimnias bolina jacintha</i>	Jacintha Eggfly	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
305	Nymphalidae	<i>Ideopsis vulgaris macrina</i>	Blue Glassy Tiger	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
306	Nymphalidae	<i>Junonia almana javana</i>	Peacock Pansy	Least Concern	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
307	Nymphalidae	<i>Junonia hedonia ida</i>	Chocolate Pansy	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
308	Nymphalidae	<i>Junonia orithya wallacei</i>	Blue Pansy	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods

No.	Family Name	Scientific Name	Common Name	Global Status (IUCN, 2012)	Local Status (Davison et al. 2008; Jain et al. 2018)	Species of Conservation Significance	Distribution/Rarity (Khew, 2015)	Probable Species	Recorded Species (ESC, 2020; ERM, 2016)	Recorded Species	Remarks	Vibration- sensitivity	Auditory- sensitivity	Location
309	Nymphalidae	<i>Lasippa tiga siaka</i>	Malayan Lascar	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
310	Nymphalidae	<i>Lethe europa malaya</i>	Bamboo Tree Brown	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
311	Nymphalidae	<i>Lexias pardalis dirteana</i>	Archduke	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
312	Nymphalidae	<i>Melanitis leda leda</i>	Common Evening Brown	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
313	Nymphalidae	<i>Moduza procris milonia</i>	Commander	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
314	Nymphalidae	<i>Mycalesis fusca fusca</i>	Malayan Bush Brown	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
315	Nymphalidae	<i>Mycalesis mineus macromalayana</i>	Dark Brand Bush Brown	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
316	Nymphalidae	<i>Mycalesis perseoides perseoides</i>	Burmese Bush Brown	Not Assessed	Data Deficient	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
317	Nymphalidae	<i>Mycalesis perseus cepheus</i>	Dingy Bush Brown	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
318	Nymphalidae	<i>Mycalesis visala phamis</i>	Long Brand Bush Brown	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
319	Nymphalidae	<i>Neptis hylas papaja</i>	Common Sailor	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
320	Nymphalidae	<i>Orsotriaena medus cinerea</i>	Dark Grass Brown	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
321	Nymphalidae	<i>Pantoporia hordonia hordonia</i>	Common Lascar	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
322	Nymphalidae	<i>Pantoporia hordonia hordonia</i>	Common Lascar	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
323	Nymphalidae	<i>Parantica agleoides agleoides</i>	Dark Glassy Tiger	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
324	Nymphalidae	<i>Phaedyra columella singa</i>	Short Banded Sailor	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
325	Nymphalidae	<i>Phalanta phalantha phalantha</i>	Leopard	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
326	Nymphalidae	<i>Polyura hebe plautus</i>	Plain Nawab	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
327	Nymphalidae	<i>Polyura schreiber tisamenus</i>	Blue Nawab	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
328	Nymphalidae	<i>Tanaecia iapis puseda</i>	Horsfield's Baron	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
329	Nymphalidae	<i>Tanaecia pelea pelea</i>	Malay Viscount	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
330	Nymphalidae	<i>Ypthima baldus newboldi</i>	Common Five-Ring	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
331	Nymphalidae	<i>Ypthima horsfieldii humei</i>	Malayan Five-Ring	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
332	Nymphalidae	<i>Ypthima huebneri</i>	Common Four-Ring	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
333	Nymphalidae	<i>Ypthima pandocus corticaria</i>	Common Three-Ring	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
334	Papilionidae	<i>Chilasa clytia clytia</i>	Common Mime	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
335	Papilionidae	<i>Graphium agamemnon agamemnon</i>	Tailed Jay	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
336	Papilionidae	<i>Graphium sarpedon luctatius</i>	Common Bluebottle	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
337	Papilionidae	<i>Pachliopta aristolochiae asteris</i>	Common Rose	Not Assessed	Vulnerable	Yes	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
338	Papilionidae	<i>Papilio demoleus malayanus</i>	Lime Butterfly	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
339	Papilionidae	<i>Papilio polytes romulus</i>	Common Mormon	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
340	Papilionidae	<i>Troides helena cerberus</i>	Common Birdwing	Not assessed; CITES protected (Appendix II)	Vulnerable	Yes	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
341	Pieridae	<i>Appias libythea offera</i>	Striped Albatross	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
342	Pieridae	<i>Catopsilia pomona pomona</i>	Lemon Emigrant	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
343	Pieridae	<i>Catopsilia pyranthe pyranthe</i>	Mottled Emigrant	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
344	Pieridae	<i>Catopsilia scylla comelia</i>	Orange Emigrant	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
345	Pieridae	<i>Delias hyparete metarete</i>	Painted Jezebel	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
346	Pieridae	<i>Eurema andersonii andersonii</i>	Anderson's Grass Yellow	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
347	Pieridae	<i>Eurema blanda snelleri</i>	Three Spot Grass Yellow	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
348	Pieridae	<i>Eurema hecabe contubernalis</i>	Common Grass Yellow	Not Assessed	Not Assessed	No	Common	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
349	Pieridae	<i>Eurema sari sodalis</i>	Chocolate Grass Yellow	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
350	Pieridae	<i>Eurema sari sodalis</i>	Chocolate Grass Yellow	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
351	Pieridae	<i>Eurema simulatrix tecmessa</i>	Forest Grass Yellow	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
352	Pieridae	<i>Leptosia nina malayana</i>	Psyche	Not Assessed	Not Assessed	No	Common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
353	Pieridae	<i>Pieris canidia canidia</i>	Cabbage White	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
354	Riodinidae	<i>Abisara geza niya</i>	Spotted Judy	Not Assessed	Not Assessed	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods
355	Riodinidae	<i>Abisara saturata kausambioides</i>	Malayan Plum Judy	Not Assessed	Not Assessed	No	Moderately common	Yes		No		Priority 1	Priority 1	Sunset Way Woods
356	Riodinidae	<i>Abisara savitri savitri</i>	Malay Tailed Judy	Not Assessed	Not Assessed	No	Moderately rare	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
357	Riodinidae	<i>Taxila haquinus haquinus</i>	Harlequin	Not Assessed	Endangered	No	Moderately rare	Yes		No		Priority 1	Priority 1	Sunset Way Woods

No.	Family Name	Scientific Name	Recorded Species	Remarks	Vibration-sensitivity	Auditory-sensitivity	Location
1	Arctiidae	<i>Euchromia elegantissima</i>	Yes		Priority 1	Priority 1	Holland Woods
2	Crambidae	<i>Cnaphalocrocis poeyalis</i>	Yes		Priority 1	Priority 1	Holland Woods
3	Crambidae	<i>Filodes fulvidorsalis</i>	Yes		Priority 1	Priority 1	Holland Woods
4	Crambidae	<i>Herpetogramma licarsisalis</i>	Yes		Priority 1	Priority 1	Holland Woods
5	Crambidae	<i>Parapoynx diminutalis</i>	Yes		Priority 1	Priority 1	Holland Woods
6	Crambidae	<i>Ravanao xiphilis</i>	Yes		Priority 1	Priority 1	Holland Woods
7	Crambidae	<i>Sameodes cancellalis</i>	Yes		Priority 1	Priority 1	Holland Woods
8	Crambidae	<i>Symmoracma minoralis</i>	Yes		Priority 1	Priority 1	Holland Woods
9	Crambidae	<i>Talanga sexpunctalis</i>	Yes		Priority 1	Priority 1	Holland Woods
10	Erebidae	<i>Adrapsa</i> sp.	Yes		Priority 1	Priority 1	Holland Woods
11	Erebidae	<i>Arctornis semihyalina</i>	Yes		Priority 1	Priority 1	Holland Woods
12	Erebidae	<i>Erebus</i> sp.	Yes		Priority 1	Priority 1	Holland Woods
13	Erebidae	<i>Eressa confinis</i>	Yes		Priority 1	Priority 1	Holland Woods
14	Erebidae	<i>Olene</i> sp.	Yes		Priority 1	Priority 1	Holland Woods
15	Erebidae: Aganainae	<i>Asota egens</i>	Yes		Priority 1	Priority 1	Holland Woods
16	Erebidae: Aganainae	<i>Asota subsimilis</i>	Yes		Priority 1	Priority 1	Holland Woods
17	Erebidae: Erebiniae	<i>Mocis undata</i>	Yes		Priority 1	Priority 1	Holland Woods
18	Erebidae: Herminiinae	Herminiinae	Yes		Priority 1	Priority 1	Holland Woods
19	Gelechioidea	<i>Gelechioidea</i> sp	Yes		Priority 1	Priority 1	Holland Woods
20	Geometridae	<i>Argyrocosma inductaria</i>	Yes		Priority 1	Priority 1	Holland Woods
21	Geometridae	<i>Chiasmia translineata</i>	Yes		Priority 1	Priority 1	Holland Woods
22	Geometridae	<i>Comibaena attenuata</i>	Yes		Priority 1	Priority 1	Holland Woods
23	Geometridae	<i>Heterostegane subfasciata</i>	Yes		Priority 1	Priority 1	Holland Woods
24	Geometridae	<i>Traminda aventiaria</i>	Yes		Priority 1	Priority 1	Holland Woods
25	Noctuidae	<i>Condica illecta</i>	Yes		Priority 1	Priority 1	Holland Woods
26	Noctuidae: Calpinae	<i>Gesonia obeditalis</i>	Yes		Priority 1	Priority 1	Holland Woods
27	Noctuidae: Calpinae	<i>Oxyodes scrobiculata</i>	Yes		Priority 1	Priority 1	Holland Woods
28	Nolidae	<i>Nola</i> sp.	Yes		Priority 1	Priority 1	Holland Woods
29	Pyalidae	<i>Endotricha</i> sp.	Yes		Priority 1	Priority 1	Holland Woods
30	Sphingidae	<i>Acherontia lachesis</i>	Yes		Priority 1	Priority 1	Holland Woods
31	Thyrididae	<i>Striglina scitaria</i>	Yes		Priority 1	Priority 1	Holland Woods
32	Tortricidae	Tortricidae	Yes		Priority 1	Priority 1	Holland Woods
33	Zygaenidae	<i>Artona hainana</i>	Yes		Priority 1	Priority 1	Holland Woods
34	Erebidae	<i>Araeopteron</i> sp.	Yes		Priority 1	Priority 1	Sunset Way Woods
35	Erebidae	<i>Asota subsimilis</i>	Yes		Priority 1	Priority 1	Sunset Way Woods
36	Erebidae	<i>Bocana manifestalis</i>	Yes		Priority 1	Priority 1	Sunset Way Woods
37	Erebidae	<i>Calliteara</i> sp.	Yes		Priority 1	Priority 1	Sunset Way Woods
38	Erebidae	<i>Gesonia obeditalis</i>	Yes		Priority 1	Priority 1	Sunset Way Woods
39	Erebidae	<i>Mecodina lanceola</i>	Yes		Priority 1	Priority 1	Sunset Way Woods
40	Erebidae	<i>Orgyia</i> sp.	Yes		Priority 1	Priority 1	Sunset Way Woods
41	Erebidae	Lymantriinae	Yes		Priority 1	Priority 1	Sunset Way Woods
42	Gelechioidea (superfamily)	Gelechioidea	Yes		Priority 1	Priority 1	Sunset Way Woods
43	Geometridae	<i>Comibaena cassidara</i>	Yes		Priority 1	Priority 1	Sunset Way Woods
44	Pterophoridae	<i>Pterophorus lacteipennis</i>	Yes		Priority 1	Priority 1	Sunset Way Woods
45	Tortricidae	<i>Archipini</i> sp.	Yes		Priority 1	Priority 1	Sunset Way Woods

No.	Family Name	Scientific Name	Common Name	Global Status (IUCN, 2012)	Local Status (Davison et al. 2008)	Species of Conservation Significance	Native Status (Baker & Lim, 2012)	Probable Species	Recorded Species (ESC, 2020; ERM, 2016)	Recorded Species	Remarks	Vibration- sensitivity	Auditory- sensitivity	Location
1	Gecarcinucidae	<i>Parathelphusa maculata</i>	Maculate Freshwater Crab	Least Concern	Not Assessed	No	Native	Yes		No		Priority 1	N/A	Holland Woods
2	Palaemonidae	<i>Macrobrachium lanchesteri</i>	Ghost Shrimp	Least Concern	Not Assessed	No	Non-native	Yes		No		Priority 1	N/A	Holland Woods
3	Gecarcinucidae	<i>Parathelphusa maculata</i>	Maculate Freshwater Crab	Least Concern	Not Assessed	No	Native	Yes		Yes		Priority 1	N/A	Sunset Way Woods

No.	Family Name	Scientific Name	Common Name	Global Status (IUCN, 2012)	Local Status (Davison et al. 2008)	Species of Conservation Significance	Native Status (Baker & Lim, 2012)	Probable Species	Recorded Species (ESC, 2020; ERM, 2016)	Recorded Species	Remarks	Vibration- sensitivity	Auditory- sensitivity	Location
1	Anabantidae	<i>Anabas testudineus</i>	Oriental Climbing Perch	Data Deficient	Least Concern	No	Native	Yes		No		Priority 1	N/A	Holland Woods
2	Aplocheilidae	<i>Aplocheilus armatus</i>	Whitespot	Least Concern	Least Concern	No	Non-native	Yes		No		Priority 1	N/A	Holland Woods
3	Channidae	<i>Channa striata</i>	Common Snakehead	Least Concern	Not Assessed	No	Native	Yes		Yes		Priority 1	N/A	Holland Woods
4	Cichlidae	<i>Amphilophus citrinellus</i>	Midas Cichlid	Not Assessed	Not Assessed	No	Non-native	Yes		Yes		Priority 1	N/A	Holland Woods
5	Cichlidae	<i>Cichlasoma urophthalmum</i>	Mayan Cichlid	Not Assessed	Not Assessed	No	Non-native	Yes		Yes		Priority 1	N/A	Holland Woods
6	Cichlidae	<i>Oreochromis mossambicus</i>	Mozambique Tilapia	Vulnerable	Not Assessed	No	Non-native	Yes		Yes		Priority 1	N/A	Holland Woods
7	Clariidae	<i>Clarias cf. batrachus</i>	Common Walking Catfish	Not Assessed	Least Concern	No	Native	Yes		Yes		Priority 1	N/A	Holland Woods
8	Osphronemidae	<i>Betta pugnax</i>	Malayan Forest Betta	Not Assessed	Least Concern	No	Native	Yes		No		Priority 1	N/A	Holland Woods
9	Osphronemidae	<i>Trichopsis vittata</i>	Croaking Gouramy	Least Concern	Least Concern	No	Native	Yes		No		Priority 1	N/A	Holland Woods
10	Osphronemidae (Gouramies and fighting-fishes)	<i>Trichopodus trichopterus</i>	Threespot Gouramy	Least Concern	Not Assessed	No	Native	Yes		Yes		Priority 1	N/A	Holland Woods
11	Poeciliidae	<i>Gambusia affinis</i>	Mosquitofish	Least Concern	Least Concern	No	Non-native	Yes		No		Priority 1	N/A	Holland Woods
12	Poeciliidae	<i>Poecilia reticulata</i>	Guppy	Not Assessed	Least Concern	No	Non-native	Yes		Yes		Priority 1	N/A	Holland Woods
13	Poeciliidae	<i>Poecilia sphenops</i>	Common Molly	Not Assessed	Not Assessed	No	Non-native	Yes		No		Priority 1	N/A	Holland Woods
14	Synbranchidae	<i>Monopterus javanensis</i>	Asian Swamp-eel	Not Assessed	Least Concern	No	Native	Yes		Yes		Priority 1	N/A	Holland Woods
15	Anabantidae	<i>Anabas testudineus</i>	Oriental Climbing Perch	Data Deficient	Least Concern	No	Native	Yes		No		Priority 1	N/A	Sunset Way Woods
16	Aplocheilidae	<i>Aplocheilus armatus</i>	Whitespot	Least Concern	Least Concern	No	Non-native	Yes		No		Priority 1	N/A	Sunset Way Woods
17	Clariidae	<i>Clarias cf. batrachus</i>	Common Walking Catfish	Not Assessed	Least Concern	No	Native	Yes		No		Priority 1	N/A	Sunset Way Woods
18	Osphronemidae	<i>Betta pugnax</i>	Malayan Forest Betta	Not Assessed	Least Concern	No	Native	Yes		No		Priority 1	N/A	Sunset Way Woods
19	Osphronemidae	<i>Trichopsis vittata</i>	Croaking Gouramy	Least Concern	Least Concern	No	Native	Yes		No		Priority 1	N/A	Sunset Way Woods
20	Poeciliidae	<i>Gambusia affinis</i>	Mosquitofish	Least Concern	Least Concern	No	Non-native	Yes		No		Priority 1	N/A	Sunset Way Woods
21	Poeciliidae	<i>Poecilia reticulata</i>	Guppy	Not Assessed	Least Concern	No	Non-native	Yes		Yes		Priority 1	N/A	Sunset Way Woods
22	Poeciliidae	<i>Poecilia sphenops</i>	Common Molly	Not Assessed	Not Assessed	No	Non-native	Yes		No		Priority 1	N/A	Sunset Way Woods
23	Synbranchidae	<i>Monopterus javanensis</i>	Asian Swamp-eel	Not Assessed	Least Concern	No	Native	Yes		Yes		Priority 1	N/A	Sunset Way Woods

No.	Family Name	Scientific Name	Common Name	Global Status (IUCN, 2012)	Local Status (Davison et al. 2008)	Species of Conservation Significance	Distribution/Rarity (Baker & Lim, 2012)	Native Status (Baker & Lim, 2012)	Probable Species	Recorded Species (ESC, 2020; ERM, 2016)	Recorded Species	Remarks	Vibration- sensitivity	Auditory- sensitivity	Location
1	Bufonidae	<i>Duttaphrynus melanostictus</i>	Asian Toad	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		Yes	Recorded by Camphora in 2018.	Priority 1	Priority 1	Holland Woods
2	Dicroglossidae	<i>Fejervarya cancrivora</i>	Crab-eating Frog	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		No		Priority 1	Priority 1	Holland Woods
3	Dicroglossidae	<i>Fejervarya limnocharis</i>	Field Frog	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		Yes		Priority 1	Priority 1	Holland Woods
4	Dicroglossidae	<i>Limnonectes blythii</i>	Malayan Giant Frog	Near Threatened	Not Assessed	No	Widespread & Common	Native	Yes		Yes	Recorded by Camphora in 2018 and Ho et al., 2019	Priority 1	Priority 1	Holland Woods
5	Dicroglossidae	<i>Limnonectes malesianus</i>	Malesian Frog	Near Threatened	Not Assessed	No	Restricted but Common	Native	Yes		Yes	Recorded by Camphora in 2018.	Priority 1	Priority 1	Holland Woods
6	Dicroglossidae	<i>Occidozyga sumatrana</i>	Yellow-bellied Puddle Frog	Least Concern	Not Assessed	No	Restricted but Common	Native	Yes		No		Priority 1	Priority 1	Holland Woods
7	Eleutherodactylidae	<i>Eleutherodactylus planirostris</i>	Greenhouse Frog	Least Concern	Not Assessed	No	Widespread & Common	Non-native	Yes		Yes	Recorded by Camphora in 2018. Recorded in clementi woods SBR 2017	Priority 1	Priority 1	Holland Woods
8	Microhylidae	<i>Kaloula pulchra</i>	Banded Bull Frog	Least Concern	Not Assessed	No	Widespread & Common	Non-native	Yes		Yes	Recorded by Camphora in 2018.	Priority 1	Priority 1	Holland Woods
9	Microhylidae	<i>Microhyla butleri</i>	Painted Chorus Frog	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		Yes	Recorded by Camphora in 2018.	Priority 1	Priority 1	Holland Woods
10	Microhylidae	<i>Microhyla fissipes</i>	East Asian Ornate Chorus Frog	Least Concern	Not Assessed	No	Restricted & Rare	Non-native	Yes		No		Priority 1	Priority 1	Holland Woods
11	Microhylidae	<i>Microhyla heymonsi</i>	Dark-sided Chorus Frog	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		Yes	Recorded by Camphora in 2018.	Priority 1	Priority 1	Holland Woods
12	Ranidae	<i>Chalcorana labialis</i>	Copper-cheeked Frog	Least Concern	Not Assessed	No	Restricted but Common	Native	Yes		Yes	Recorded by Camphora in 2018 and Ho et al., 2019	Priority 1	Priority 1	Holland Woods
13	Ranidae	<i>Hylarana erythraea</i>	Green Paddy Frog	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		No		Priority 1	Priority 1	Holland Woods
14	Ranidae	<i>Lithobates catesbeianus</i>	American Bullfrog	Least Concern	Not Assessed	No	Widespread & Common	Non-native	Yes		No		Priority 1	Priority 1	Holland Woods
15	Ranidae	<i>Pulchrana laterimaculata</i>	Masked Rough-sided Frog	Least Concern	Not Assessed	No	Restricted & Uncommon	Native	Yes		Yes	Recorded by Holly Siow in Holland Woods	Priority 1	Priority 1	Holland Woods
16	Rhacophoridae	<i>Polypedates leucomystax</i>	Four-lined Tree Frog	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		Yes	Recorded by Camphora in 2018.	Priority 1	Priority 1	Holland Woods
17	Bufonidae	<i>Duttaphrynus melanostictus</i>	Asian Toad	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		No	Recorded by Camphora in 2018.	Priority 1	Priority 1	Sunset Way Woods
18	Dicroglossidae	<i>Fejervarya cancrivora</i>	Crab-eating Frog	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		No		Priority 1	Priority 1	Sunset Way Woods
19	Dicroglossidae	<i>Fejervarya limnocharis</i>	Field Frog	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		No		Priority 1	Priority 1	Sunset Way Woods
20	Dicroglossidae	<i>Limnonectes blythii</i>	Malayan Giant Frog	Near Threatened	Not Assessed	No	Widespread & Common	Native	Yes		Yes	Recorded by Camphora in 2018.	Priority 1	Priority 1	Sunset Way Woods
21	Dicroglossidae	<i>Limnonectes malesianus</i>	Malesian Frog	Near Threatened	Not Assessed	No	Restricted but Common	Native	Yes		No	Recorded by Camphora in 2018.	Priority 1	Priority 1	Sunset Way Woods
22	Dicroglossidae	<i>Occidozyga sumatrana</i>	Yellow-bellied Puddle Frog	Least Concern	Not Assessed	No	Restricted but Common	Native	Yes		No		Priority 1	Priority 1	Sunset Way Woods
23	Eleutherodactylidae	<i>Eleutherodactylus planirostris</i>	Greenhouse Frog	Least Concern	Not Assessed	No	Widespread & Common	Non-native	Yes		Yes	Recorded by Camphora in 2018.	Priority 1	Priority 1	Sunset Way Woods
24	Microhylidae	<i>Kaloula pulchra</i>	Banded Bull Frog	Least Concern	Not Assessed	No	Widespread & Common	Non-native	Yes		Yes	Recorded by Camphora in 2018.	Priority 1	Priority 1	Sunset Way Woods
25	Microhylidae	<i>Microhyla butleri</i>	Painted Chorus Frog	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		Yes	Recorded by Camphora in 2018.	Priority 1	Priority 1	Sunset Way Woods
26	Microhylidae	<i>Microhyla fissipes</i>	East Asian Ornate Chorus Frog	Least Concern	Not Assessed	No	Restricted & Rare	Non-native	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
27	Microhylidae	<i>Microhyla heymonsi</i>	Dark-sided Chorus Frog	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		Yes	Recorded by Camphora in 2018.	Priority 1	Priority 1	Sunset Way Woods
28	Ranidae	<i>Chalcorana labialis</i>	Copper-cheeked Frog	Least Concern	Not Assessed	No	Restricted but Common	Native	Yes		Yes	Tadpoles. Also recorded by Camphora in 2018.	Priority 1	Priority 1	Sunset Way Woods
29	Ranidae	<i>Hylarana erythraea</i>	Green Paddy Frog	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		No		Priority 1	Priority 1	Sunset Way Woods
30	Ranidae	<i>Lithobates catesbeianus</i>	American Bullfrog	Least Concern	Not Assessed	No	Widespread & Common	Non-native	Yes		No		Priority 1	Priority 1	Sunset Way Woods
31	Ranidae	<i>Pulchrana laterimaculata</i>	Masked Rough-sided Frog	Least Concern	Not Assessed	No	Restricted & Uncommon	Native	Yes		No		Priority 1	Priority 1	Sunset Way Woods
32	Rhacophoridae	<i>Polypedates leucomystax</i>	Four-lined Tree Frog	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		Yes	Recorded by Camphora in 2018.	Priority 1	Priority 1	Sunset Way Woods

No.	Family Name	Scientific Name	Common Name	Global Status (IUCN, 2012)	Local Status (Davison et al. 2008)	Species of Conservation Significance	Distribution/Rarity (Baker & Lim, 2012)	Native Status (Baker & Lim, 2012)	Probable Species	Recorded Species (ESC, 2020; ERM, 2016)	Recorded Species	Remarks	Vibration- sensitivity	Auditory- sensitivity	Location
1	Agamidae	<i>Bronchocela cristatella</i>	Green Crested Lizard	Not Assessed	Not Assessed	No	Widespread but Uncommon	Native	Yes		Yes	Recorded in Ho et al., 2019	Priority 3	Priority 1	Holland Woods
2	Agamidae	<i>Calotes versicolor</i>	Changeable Lizard	Not Assessed	Not Assessed	No	Widespread & Common	Non-native	Yes		Yes		Priority 3	Priority 1	Holland Woods
3	Agamidae	<i>Draco sumatranus</i>	Sumatran Flying Dragon	Not Assessed	Not Assessed	No	Widespread & Common	Native	Yes		No		Priority 3	Priority 1	Holland Woods
4	Colubridae	<i>Ahaetulla prasina</i>	Oriental Whip Snake	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		Yes		Priority 1	Priority 3	Holland Woods
5	Colubridae	<i>Calamaria schlegeli</i>	Pink-headed Reed Snake	Least Concern	Vulnerable	Yes	Restricted and Rare	Native	Yes		No	Teo & Rajathurai, 1997	Priority 1	Priority 2	Holland Woods
6	Colubridae	<i>Chrysopelea paradisi</i>	Paradise Gliding Snake	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		No		Priority 1	Priority 3	Holland Woods
7	Colubridae	<i>Coelognathus flavolineatus</i>	Common Malayan Racer	Least Concern	Endangered	Yes	Widespread but Rare	Native	Yes		No		Priority 1	Priority 2	Holland Woods
8	Colubridae	<i>Dendrelaphis caudolineatus</i>	Striped Bronzeback	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		No		Priority 1	Priority 3	Holland Woods
9	Colubridae	<i>Dendrelaphis kopsteini</i>	Red-necked Bronzeback	Least Concern	Vulnerable	Yes	Widespread but Rare	Native	Yes		No	Recorded in Holland Woods	Priority 1	Priority 2	Holland Woods
10	Colubridae	<i>Dendrelaphis pictus</i>	Painted Bronzeback	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		Yes		Priority 1	Priority 3	Holland Woods
11	Colubridae	<i>Lycodon capucinus</i>	House Wolf Snake	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		No	Recorded in Ho et al., 2019	Priority 1	Priority 3	Holland Woods
12	Colubridae	<i>Oligodon octolineatus</i>	Striped Kukri Snake	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		No		Priority 1	Priority 3	Holland Woods
13	Colubridae	<i>Ptyas korros</i>	Indochinese Rat Snake	Least Concern	Not Assessed	No	Widespread but Uncommon	Native	Yes		No		Priority 1	Priority 3	Holland Woods
14	Colubridae	<i>Xenochrophis vittatus</i>	Striped Keelback	Least Concern	Not Assessed	No	Widespread and Common	Non-native	Yes		No		Priority 1	Priority 3	Holland Woods
15	Elapidae	<i>Calliophis intestinalis</i>	Banded Malayan Coral Snake	Least Concern	Not Assessed	No	Widespread but Rare	Native	Yes		No		Priority 1	Priority 3	Holland Woods
16	Elapidae	<i>Naja sumatrana</i>	Equatorial Spitting Cobra	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		Yes		Priority 1	Priority 3	Holland Woods
17	Emydidae	<i>Trachemys scripta</i>	Red-eared Slider	Least Concern	Not Assessed	No	Widespread & Common	Non-native	Yes		Yes		Priority 1	Priority 3	Holland Woods
18	Gekkonidae	<i>Gehyra mutilata</i>	Four-clawed Gecko	Not Assessed	Not Assessed	No	Widespread & Common	Native	Yes		No		Priority 3	Priority 1	Holland Woods
19	Gekkonidae	<i>Gekko monachus</i>	Spotted House Gecko	Not Assessed	Not Assessed	No	Widespread & Common	Native	Yes		Yes		Priority 3	Priority 1	Holland Woods
20	Gekkonidae	<i>Hemidactylus frenatus</i>	Spiny-tailed House Gecko	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		Yes		Priority 3	Priority 1	Holland Woods
21	Gekkonidae	<i>Hemidactylus platyurus</i>	Flat-tailed Gecko	Not Assessed	Not Assessed	No	Widespread & Common	Native	Yes		No		Priority 3	Priority 1	Holland Woods
22	Gekkonidae	<i>Lepidodactylus lugubris</i>	Mourning Gecko	Not Assessed	Not Assessed	No	Widespread but Rare	Native	Yes		Yes		Priority 3	Priority 1	Holland Woods
23	Geomydidae	<i>Cuora amboinensis</i>	Malayan Box Terrapin	Vulnerable; CITES protected (Appendix II)	Not Assessed	Yes	Restricted but Common	Native	Yes		No		Priority 1	Priority 2	Holland Woods
24	Geomydidae	<i>Siebenrockiella crassicolis</i>	Black Marsh Terrapin	Vulnerable	Not Assessed	Yes	Widespread and Common	Native	Yes		No		Priority 1	Priority 2	Holland Woods
25	Homalopsidae	<i>Homalopsis buccata</i>	Puff-faced Water Snake	Least Concern	Vulnerable	Yes	Widespread but Uncommon	Native	Yes		No		Priority 1	Priority 2	Holland Woods
26	Pythonidae	<i>Malayopython reticulatus</i>	Reticulated Python	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		No	Recorded in Ho et al., 2019	Priority 1	Priority 3	Holland Woods
27	Scincidae	<i>Eutropis multifasciata</i>	Many-lined Sun Skink	Not Assessed	Not Assessed	No	Widespread & Common	Native	Yes		Yes		Priority 3	Priority 1	Holland Woods
28	Scincidae	<i>Lygosoma bowringii</i>	Garden Supple Skink	Not Assessed	Not Assessed	No	Widespread & Common	Native	Yes		Yes		Priority 3	Priority 1	Holland Woods
29	Trionychidae	<i>Dogania subplana</i>	Malayan Forest Softshell Turtle	Least Concern	Critically Endangered	Yes	Restricted and Rare	Native	No		Yes		Priority 1	Priority 2	Holland Woods
30	Typhlopidae	<i>Indotyphlops braminus</i>	Brahminy Blind Snake	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		No		Priority 1	Priority 3	Holland Woods
31	Varanidae	<i>Varanus nebulosus</i>	Clouded Monitor	Not Assessed	Not Assessed	No	Restricted but Common	Native	Yes		Yes		Priority 1	Priority 1	Holland Woods
32	Varanidae	<i>Varanus salvator</i>	Malayan Water Monitor	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		Yes		Priority 1	Priority 1	Holland Woods
33	Xenopeltidae	<i>Xenopeltis unicolor</i>	Iridescent Earth Snake	Least Concern	Not Assessed	No	Widespread but Uncommon	Native	Yes		No	Recorded in Ho et al., 2019	Priority 1	Priority 3	Holland Woods
34	Agamidae	<i>Bronchocela cristatella</i>	Green Crested Lizard	Not Assessed	Not Assessed	No	Widespread but Uncommon	Native	Yes		Yes	Recorded by Camphora in 2018.	Priority 3	Priority 1	Sunset Way Woods
35	Agamidae	<i>Calotes versicolor</i>	Changeable Lizard	Not Assessed	Not Assessed	No	Widespread & Common	Non-native	Yes		No	Recorded by Camphora in 2018.	Priority 3	Priority 1	Sunset Way Woods
36	Agamidae	<i>Draco sumatranus</i>	Sumatran Flying Dragon	Not Assessed	Not Assessed	No	Widespread & Common	Native	Yes		No		Priority 3	Priority 1	Sunset Way Woods
37	Colubridae	<i>Ahaetulla prasina</i>	Oriental Whip Snake	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		Yes	Recorded by Camphora in 2018.	Priority 1	Priority 3	Sunset Way Woods
38	Colubridae	<i>Calamaria schlegeli</i>	Pink-headed Reed Snake	Least Concern	Vulnerable	Yes	Restricted and Rare	Native	Yes		No	Recorded in Teo & Rajathurai, 1997	Priority 1	Priority 2	Sunset Way Woods
39	Colubridae	<i>Chrysopelea paradisi</i>	Paradise Gliding Snake	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		Yes		Priority 1	Priority 3	Sunset Way Woods
40	Colubridae	<i>Coelognathus flavolineatus</i>	Common Malayan Racer	Least Concern	Endangered	Yes	Widespread but Rare	Native	Yes		No		Priority 1	Priority 2	Sunset Way Woods
41	Colubridae	<i>Dendrelaphis caudolineatus</i>	Striped Bronzeback	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		No	Recorded by Camphora in 2018.	Priority 1	Priority 3	Sunset Way Woods
42	Colubridae	<i>Dendrelaphis kopsteini</i>	Red-necked Bronzeback	Least Concern	Vulnerable	Yes	Widespread but Rare	Native	Yes		No		Priority 1	Priority 2	Sunset Way Woods
43	Colubridae	<i>Dendrelaphis pictus</i>	Painted Bronzeback	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		Yes	Recorded by Camphora in 2018.	Priority 1	Priority 3	Sunset Way Woods
44	Colubridae	<i>Lycodon capucinus</i>	House Wolf Snake	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		No		Priority 1	Priority 3	Sunset Way Woods
45	Colubridae	<i>Oligodon octolineatus</i>	Striped Kukri Snake	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		No		Priority 1	Priority 3	Sunset Way Woods
46	Colubridae	<i>Pseudorabdion longiceps</i>	Dwarf Reed Snake	Least Concern	Endangered	Yes	Widespread but Rare	Native	No		Yes		Priority 1	Priority 2	Sunset Way Woods
47	Colubridae	<i>Ptyas korros</i>	Indochinese Rat Snake	Least Concern	Not Assessed	No	Widespread but Uncommon	Native	Yes		No		Priority 1	Priority 3	Sunset Way Woods
48	Colubridae	<i>Xenochrophis vittatus</i>	Striped Keelback	Least Concern	Not Assessed	No	Widespread and Common	Non-native	Yes		No		Priority 1	Priority 3	Sunset Way Woods
49	Elapidae	<i>Calliophis intestinalis</i>	Banded Malayan Coral Snake	Least Concern	Not Assessed	No	Widespread but Rare	Native	Yes		No		Priority 1	Priority 3	Sunset Way Woods
50	Elapidae	<i>Naja sumatrana</i>	Equatorial Spitting Cobra	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		No	Recorded by Camphora in 2018.	Priority 1	Priority 3	Sunset Way Woods
51	Emydidae	<i>Trachemys scripta</i>	Red-eared Slider	Least Concern	Not Assessed	No	Widespread & Common	Non-native	Yes		No		Priority 3	Priority 3	Sunset Way Woods
52	Gekkonidae	<i>Gehyra mutilata</i>	Four-clawed Gecko	Not Assessed	Not Assessed	No	Widespread & Common	Native	Yes		No		Priority 3	Priority 1	Sunset Way Woods
53	Gekkonidae	<i>Gekko monachus</i>	Spotted House Gecko	Not Assessed	Not Assessed	No	Widespread & Common	Native	Yes		Yes	Recorded by Camphora in 2018.	Priority 3	Priority 1	Sunset Way Woods
54	Gekkonidae	<i>Hemidactylus frenatus</i>	Spiny-tailed House Gecko	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		Yes	Recorded by Camphora in 2018.	Priority 3	Priority 1	Sunset Way Woods
55	Gekkonidae	<i>Hemidactylus platyurus</i>	Flat-tailed Gecko	Not Assessed	Not Assessed	No	Widespread & Common	Native	Yes		No		Priority 3	Priority 1	Sunset Way Woods
56	Gekkonidae	<i>Lepidodactylus lugubris</i>	Mourning Gecko	Not Assessed	Not Assessed	No	Widespread but Rare	Native	Yes		No		Priority 3	Priority 1	Sunset Way Woods
57	Geomydidae	<i>Cuora amboinensis</i>	Malayan Box Terrapin	Vulnerable; CITES protected (Appendix II)	Not Assessed	Yes	Restricted but Common	Native	Yes		No		Priority 1	Priority 2	Sunset Way Woods
58	Geomydidae	<i>Siebenrockiella crassicolis</i>	Black Marsh Terrapin	Vulnerable	Not Assessed	Yes	Widespread and Common	Native	Yes		No		Priority 1	Priority 2	Sunset Way Woods
59	Pythonidae	<i>Malayopython reticulatus</i>	Reticulated Python	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		No		Priority 1	Priority 3	Sunset Way Woods
60	Scincidae	<i>Eutropis multifasciata</i>	Many-lined Sun Skink	Not Assessed	Not Assessed	No	Widespread & Common	Native	Yes		Yes	Recorded by Camphora in 2018.	Priority 1	Priority 1	Sunset Way Woods
61	Scincidae	<i>Lygosoma bowringii</i>	Garden Supple Skink	Not Assessed	Not Assessed	No	Widespread & Common	Native	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
62	Typhlopidae	<i>Indotyphlops braminus</i>	Brahminy Blind Snake	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		No		Priority 1	Priority 3	Sunset Way Woods
63	Varanidae	<i>Varanus nebulosus</i>	Clouded Monitor	Not Assessed	Not Assessed	No	Restricted but Common	Native	Yes		No	Recorded by Camphora in 2018.	Priority 1	Priority 1	Sunset Way Woods
64	Varanidae	<i>Varanus salvator</i>	Malayan Water Monitor	Least Concern	Not Assessed	No	Widespread & Common	Native	Yes		Yes	Recorded by Camphora in 2018.	Priority 1	Priority 1	Sunset Way Woods
65	Xenopeltidae	<i>Xenopeltis unicolor</i>	Iridescent Earth Snake	Least Concern	Not Assessed	No	Widespread but Uncommon	Native	Yes		No		Priority 1	Priority 3	Sunset Way Woods

No.	Family Name	Scientific Name	Common Name	Global Status (IUCN, 2012)	Local Status (Davison et al. 2008)	Species of Conservation Significance	Distribution/Rarity (NSS, 2020; Singapore Birds Project, 2020)	Native Status (NSS, 2020; Singapore Birds Project, 2020)	Probable Species	Recorded Species (Ang et al., 2020; ESC, 2020; ERM, 2016)	Recorded Species	Remarks	Vibration- sensitivity	Auditory- sensitivity	Location
1	Acanthizidae	<i>Gerygone sulphurea</i>	Golden-bellied Gerygone	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 3	Priority 1	Holland Woods
2	Accipitridae	<i>Accipiter gularis</i>	Japanese Sparrowhawk	Least Concern	Not Assessed	No	Common	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Holland Woods
3	Accipitridae	<i>Accipiter solensis</i>	Chinese Sparrowhawk	Least Concern	Not Assessed	No	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Holland Woods
4	Accipitridae	<i>Accipiter trivirgatus</i>	Crested Goshawk	Least Concern	Critically Endangered	Yes	Uncommon	Resident breeder	Yes		No		Priority 2	Priority 1	Holland Woods
5	Accipitridae	<i>Aviceda jerdoni</i>	Jerdon's Baza	Least Concern	Not Assessed	No	Uncommon	Winter visitor	Yes		No		Priority 3	Priority 1	Holland Woods
6	Accipitridae	<i>Aviceda leuphotes</i>	Black Baza	Least Concern	Not Assessed	No	Common	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Holland Woods
7	Accipitridae	<i>Buteo buteo</i>	Common Buzzard	Least Concern	Not Assessed	No	Uncommon	Winter visitor	Yes		No		Priority 3	Priority 1	Holland Woods
8	Accipitridae	<i>Haliaeetus leucogaster</i>	White-bellied Sea Eagle	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
9	Accipitridae	<i>Haliastur indus</i>	Brahminy Kite	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
10	Accipitridae	<i>Nisaetus cirrhatus</i>	Changeable Hawk-Eagle	Least Concern	Endangered	Yes	Uncommon	Resident breeder	Yes		Yes	Nest observed too.	Priority 2	Priority 1	Holland Woods
11	Accipitridae	<i>Pernis ptilorhynchus</i>	Crested Honey-buzzard	Least Concern	Not Assessed	No	Common	Winter visitor/passage migrant/non-breeding visitor	Yes		Yes		Priority 3	Priority 1	Holland Woods
12	Accipitridae	<i>Spilornis cheela</i>	Crested Serpent Eagle	Least Concern	Critically Endangered	Yes	Rare	Resident, breeding not proven	Yes		Yes		Priority 2	Priority 1	Holland Woods
13	Aegithinidae	<i>Aegithina tiphia</i>	Common Iora	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
14	Alcedinidae	<i>Alcedo atthis</i>	Common Kingfisher	Least Concern	Not Assessed	No	Common	Winter visitor	Yes		Yes		Priority 3	Priority 1	Holland Woods
15	Alcedinidae	<i>Ceyx erithaca</i>	Oriental Dwarf Kingfisher	Least Concern	Not Assessed	No	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Holland Woods
16	Alcedinidae	<i>Halcyon smymensis</i>	White-throated Kingfisher	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
17	Alcedinidae	<i>Pelargopsis capensis</i>	Stork-billed Kingfisher	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes		No		Priority 3	Priority 1	Holland Woods
18	Alcedinidae	<i>Todiramphus chloris</i>	Collared Kingfisher	Least Concern	Not Assessed	No	Abundant	Introduced resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
19	Apodidae	<i>Aerodramus fuciphagus</i>	Edible-nest Swiftlet	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 1	Priority 1	Holland Woods
20	Apodidae	<i>Aerodramus germani</i>	Germain's Swiftlet	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 1	Priority 1	Holland Woods
21	Apodidae	<i>Aerodramus maximus</i>	Black-nest Swiftlet	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 1	Priority 1	Holland Woods
22	Apodidae	<i>Aerodramus</i> sp.	Swiftlet	N.A	N.A	N.A	N.A	N.A	N.A		Yes		Priority 3	Priority 1	Holland Woods
23	Apodidae	<i>Collocalia affinis</i>	Plume-toed Swiftlet	Not Assessed	Not Assessed	No	Uncommon	Resident breeder	Yes		No		Priority 1	Priority 1	Holland Woods
24	Apodidae	<i>Cypsiurus balasensis</i>	Asian Palm Swift	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes		No		Priority 3	Priority 1	Holland Woods
25	Apodidae	<i>Hirundapus caudacutus</i>	White-throated Needletail	Least Concern	Not Assessed	No	Rare	Accidental visitor	Yes		No		Priority 3	Priority 1	Holland Woods
26	Apodidae	<i>Hirundapus cochinchinensis</i>	Silver-backed Needletail	Least Concern	Not Assessed	No	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Holland Woods
27	Apodidae	<i>Hirundapus giganteus</i>	Brown-backed Needletail	Least Concern	Not Assessed	No	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Holland Woods
28	Ardeidae	<i>Bubulcus coromandus</i>	Eastern Cattle Egret	Least Concern	Not Assessed	No	Common	Winter visitor/introduced resident, breeding not proven	Yes		No		Priority 1	Priority 1	Holland Woods
29	Ardeidae	<i>Butorides striata</i>	Striated Heron	Least Concern	Not Assessed	No	Common	Resident breeder/winter visitor	Yes		No		Priority 1	Priority 1	Holland Woods
30	Ardeidae	<i>Egretta garzetta</i>	Little Egret	Least Concern	Not Assessed	No	Common	Winter visitor	Yes		Yes		Priority 1	Priority 1	Holland Woods
31	Ardeidae	<i>Gorsachius melanolophus</i>	Malayan Night Heron	Least Concern	Not Assessed	No	Rare	Winter visitor/passage migrant	Yes		No		Priority 1	Priority 1	Holland Woods
32	Ardeidae	<i>Ixobrychus cinnamomeus</i>	Cinnamon Bittern	Least Concern	Not Assessed	No	Uncommon	Resident breeder/winter visitor	Yes		Yes		Priority 1	Priority 1	Holland Woods
33	Ardeidae	<i>Ixobrychus flavicollis</i>	Black Bittern	Least Concern	Not Listed	No	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 1	Priority 1	Holland Woods
34	Ardeidae	<i>Ixobrychus sinensis</i>	Yellow Bittern	Least Concern	Not Assessed	No	Common	Resident breeder/winter visitor	Yes		No		Priority 1	Priority 1	Holland Woods
35	Bucerotidae	<i>Anthracoceros albirostris</i>	Oriental Pied Hornbill	Critically Endangered	Critically Endangered	Yes	Uncommon	Resident breeder	Yes		Yes		Priority 2	Priority 1	Holland Woods
36	Cacatuidae	<i>Cacatua goffiniana</i>	Tanimbar Corella	Near Threatened	Not Assessed	No	Common	Introduced resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
37	Cacatuidae	<i>Cacatua sulphurea</i>	Yellow-crested Cockatoo	Critically Endangered	Not Assessed	Yes	Uncommon	Introduced resident breeder	Yes		No		Priority 2	Priority 1	Holland Woods
38	Campephagidae	<i>Lalage nigra</i>	Pied triller	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 3	Priority 1	Holland Woods
39	Campephagidae	<i>Percrocotus divaricatus</i>	Ashy Minivet	Least Concern	Not Assessed	No	Common	Winter visitor/passage migrant	Yes		Yes		Priority 3	Priority 1	Holland Woods
40	Caprimulgidae	<i>Caprimulgus affinis</i>	Savanna Nightjar	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 1	Priority 1	Holland Woods
41	Caprimulgidae	<i>Caprimulgus jotaka</i>	Grey Nightjar	Least Concern	Not Assessed	No	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 1	Priority 1	Holland Woods
42	Caprimulgidae	<i>Caprimulgus macrurus</i>	Large-tailed Nightjar	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 1	Priority 1	Holland Woods
43	Charadriidae	<i>Vanellus indicus</i>	Red-wattled Lapwing	Least Concern	Endangered	Yes	Uncommon	Resident breeder	Yes		Yes		Priority 1	Priority 1	Holland Woods
44	Chloropseidae	<i>Chloropsis cochinchinensis</i>	Blue-winged Leafbird	Least Concern	Not Assessed	No	Common	Resident, breeding not proven	Yes		No		Priority 3	Priority 1	Holland Woods
45	Cisticolidae	<i>Orthotomus atrogularis</i>	Dark-necked Tailorbird	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
46	Cisticolidae	<i>Orthotomus ruficeps</i>	Ashy Tailorbird	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 3	Priority 1	Holland Woods
47	Cisticolidae	<i>Orthotomus seniceus</i>	Rufous-tailed Tailorbird	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
48	Cisticolidae	<i>Orthotomus sutorius</i>	Common Tailorbird	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
49	Cisticolidae	<i>Prinia flaviventris</i>	Yellow-bellied Prinia	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 3	Priority 1	Holland Woods
50	Columbidae	<i>Chalcophaps indica</i>	Common Emerald Dove	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes		Yes	Recorded from camera trap	Priority 1	Priority 1	Holland Woods
51	Columbidae	<i>Columba livia</i>	Rock Dove	Least Concern	Not Assessed	No	Abundant	Introduced resident breeder	Yes		No		Priority 1	Priority 1	Holland Woods
52	Columbidae	<i>Ducula bicolor</i>	Pied Imperial Pigeon	Least Concern	Not Assessed	No	Uncommon	Non-breeding visitor	Yes		Yes		Priority 3	Priority 1	Holland Woods
53	Columbidae	<i>Geopelia striata</i>	Zebra Dove	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 1	Priority 1	Holland Woods
54	Columbidae	<i>Phapitreron jambi</i>	Jambu Fruit Dove	Near Threatened	Not Assessed	No	Uncommon	Non-breeding visitor	Yes		No		Priority 3	Priority 1	Holland Woods
55	Columbidae	<i>Spilopelia chinensis</i>	Spotted Dove	Least Concern	Not Assessed	No	Abundant	Introduced resident breeder	Yes		Yes		Priority 1	Priority 1	Holland Woods
56	Columbidae	<i>Trepon curvirostra</i>	Thick-billed Green Pigeon	Least Concern	Endangered	Yes	Uncommon	Resident breeder	Yes		No		Priority 1	Priority 1	Holland Woods
57	Columbidae	<i>Trepon vernans</i>	Pink-necked green pigeon	Least Concern	Not Assessed	No	Abundant	Introduced resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
58	Coraciidae	<i>Eurystomus orientalis</i>	Oriental Dollarbird	Least Concern	Not Assessed	No	Common	Resident breeder/winter visitor	Yes		Yes		Priority 3	Priority 1	Holland Woods
59	Corvidae	<i>Corvus macrorhynchos</i>	Large-billed Crow	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes		No		Priority 1	Priority 1	Holland Woods
60	Corvidae	<i>Corvus splendens</i>	House Crow	Least Concern	Not Assessed	No	Common	Introduced resident breeder	Yes		Yes		Priority 1	Priority 1	Holland Woods
61	Cuculidae	<i>Cacomantis merulinus</i>	Plaintive Cuckoo	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes		No		Priority 3	Priority 1	Holland Woods
62	Cuculidae	<i>Cacomantis sepulchralis</i>	Rusty-breasted Cuckoo	Least Concern	Vulnerable	Yes	Uncommon	Resident breeder	Yes		No		Priority 2	Priority 1	Holland Woods
63	Cuculidae	<i>Cacomantis sonnerati</i>	Banded Bay Cuckoo	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes		No		Priority 3	Priority 1	Holland Woods
64	Cuculidae	<i>Centropus bengalensis</i>	Lesser Coucal	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 1	Priority 1	Holland Woods
65	Cuculidae	<i>Centropus sinensis</i>	Greater Coucal	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes		Yes		Priority 1	Priority 1	Holland Woods
66	Cuculidae	<i>Chrysococcyx minutillus</i>	Little Bronze-Cuckoo	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 3	Priority 1	Holland Woods
67	Cuculidae	<i>Chrysococcyx xanthorhynchus</i>	Violet Cuckoo	Least Concern	Endangered	Yes	Uncommon	Resident breeder/winter visitor	Yes		Yes		Priority 2	Priority 1	Holland Woods
68	Cuculidae	<i>Clamator coromandus</i>	Chestnut-winged Cuckoo	Least Concern	Not Assessed	No	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Holland Woods
69	Cuculidae	<i>Cuculus micropterus</i>	Indian Cuckoo	Least Concern	Not Assessed	No	Uncommon	Winter visitor/passage migrant	Yes		Yes		Priority 3	Priority 1	Holland Woods
70	Cuculidae	<i>Eudynamis scolopacea</i>	Asian Koel	Least Concern	Not Assessed	No	Common	Resident breeder/winter visitor	Yes		Yes		Priority 3	Priority 1	Holland Woods
71	Cuculidae	<i>Hierococcyx hisicolor</i>	Hodgson's Hawk Cuckoo	Least Concern	Not Assessed	No	Uncommon	Winter visitor	Yes		No		Priority 3	Priority 1	Holland Woods
72	Cuculidae	<i>Phaenicophaeus sumatranus</i>	Chestnut-bellied Malkoha	Near Threatened	Not Assessed	No	Uncommon	Resident breeder	Yes		No		Priority 3	Priority 1	Holland Woods
73	Cuculidae	<i>Sumiculus lugubris</i>	Square-tailed Drongo-Cuckoo	Least Concern	Critically Endangered	Yes	Uncommon	Resident breeder/winter visitor	Yes		No		Priority 2	Priority 1	Holland Woods
74	Dicaeidae	<i>Dicaeum cruentatum</i>	Scarlet-backed Flowerpecker	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
75	Dicaeidae	<i>Dicaeum trigonostigma</i>	Orange-bellied Flowerpecker	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 3	Priority 1	Holland Woods
76	Dicruridae	<i>Dicrurus annectans</i>	Crow-billed Drongo	Least Concern	Not Assessed	No	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Holland Woods
77	Dicruridae	<i>Dicrurus paradiseus</i>	Greater Racket-tailed Drongo	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
78	Estrildidae	<i>Lonchura punctulata</i>	Scaly-breasted Munia	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 3	Priority 1	Holland Woods
79	Hemiprocridae	<i>Hemiprocne longipennis</i>	Grey-rumped Treeswift	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 3	Priority 1	Holland Woods
80	Hirundinidae	<i>Cecropis daurica</i>	Red-rumped Swallow	Least Concern	Not Assessed	No	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Holland Woods
81	Hirundinidae	<i>Hirundo rustica</i>	Barn Swallow	Least Concern	Not Assessed	No	Abundant	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Holland Woods
82	Hirundinidae	<i>Hirundo tahitica</i>	Pacific Swallow	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
83	Irenidae	<i>Irena puella</i>	Asian Fairy-bluebird	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes		No		Priority 3	Priority 1	Holland Woods
84	Laniidae	<i>Lanius cristatus</i>	Brown Shrike	Least Concern	Not Assessed	No	Common	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Holland Woods
85	Laniidae	<i>Lanius tigrinus</i>	Tiger Shrike	Least Concern	Not Assessed	No	Common	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Holland Woods
86	Leiothrichidae	<i>Garrulax leucolophus</i>	White-crested Laughingthrush	Least Concern	Not Assessed	No	Common	Introduced resident breeder	Yes		Yes		Priority 1	Priority 1	Holland Woods
87	Leiothrichidae	<i>Pterorhinus chinensis</i>	Black-throated Laughingthrush	Least Concern	Not Assessed	No	N.A	Introduced	No		Yes	Recorded from camera trap	Priority 1	Priority 1	Holland Woods
88	Megalaimidae	<i>Psilopogon haemacephalus</i>	Coppersmith Barbet	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
89	Megalaimidae	<i>Psilopogon lineatus</i>	Lineated Barbet	Least Concern	Not Assessed	No	Uncommon	Introduced resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
90	Meropidae	<i>Merops philippinus</i>	Blue-tailed bee-eater	Least Concern	Not Assessed	No	Common	Winter visitor	Yes		No		Priority 3	Priority 1	Holland Woods
91	Meropidae	<i>Merops viridis</i>	Blue-throated Bee-eater	Least Concern	Not Assessed	No	Common	Migrant breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
92	Monarchidae	<i>Terpsiphone affinis</i>	Blyth's Paradise Flycatcher	Least Concern	Not Assessed	No	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Holland Woods
93	Monarchidae	<i>Terpsiphone atrocaudata</i>	Japanese Paradise Flycatcher	Near Threatened	Not Assessed	No	Rare	Passage migrant	Yes		No		Priority 3	Priority 1	Holland Woods
94	Monarchidae	<i>Terpsiphone incei</i>	Amur Paradise Flycatcher	Least Concern	Not Assessed	No	Common	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Holland Woods
95	Motacillidae	<i>Anthus rufulus</i>	Paddyfield Pipit	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 1	Priority 1	Holland Woods
96	Motacillidae	<i>Dendronanthus indicus</i>	Forest Wagtail	Least Concern	Not Assessed	No	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 1	Priority 1	Holland Woods
97	Motacillidae	<i>Motacilla cinerea</i>	Grey Wagtail	Least Concern	Not Assessed	No	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 1	Priority 1	Holland Woods
98	Muscicapidae	<i>Copsychus malabaricus</i>	White-rumped Shama	Least Concern	Critically Endangered	Yes	Uncommon	Resident breeder	Yes		No				

No.	Family Name	Scientific Name	Common Name	Global Status (IUCN, 2012)	Local Status (Davison et al. 2008)	Species of Conservation Significance	Distribution/Rarity (NSS, 2020; Singapore Birds Project, 2020)	Native Status (NSS, 2020; Singapore Birds Project, 2020)	Probable Species	Recorded Species (Ang et al., 2020; ESC, 2020; ERM, 2016)	Recorded Species	Remarks	Vibration- sensitivity	Auditory- sensitivity	Location
99	Muscicapidae	<i>Copsychus saularis</i>	Oriental Magpie-Robin	Least Concern	Endangered	Yes	Uncommon	Resident breeder	Yes		No		Priority 1	Priority 1	Holland Woods
100	Muscicapidae	<i>Cyanoptila cumatilis</i>	Zaprey's Flycatcher	Least Concern	Not Listed	No	Rare	Passage migrant	Yes		No		Priority 3	Priority 1	Holland Woods
101	Muscicapidae	<i>Cyanoptila cyanomelana</i>	Blue-and-white Flycatcher	Least Concern	Not Assessed	No	Rare	Passage migrant	Yes		No		Priority 3	Priority 1	Holland Woods
102	Muscicapidae	<i>Cyornis brunneatus</i>	Brown-chested Jungle Flycatcher	Vulnerable	Not Listed	Yes	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 2	Priority 1	Holland Woods
103	Muscicapidae	<i>Ficedula elisae</i>	Green-backed Flycatcher	Least Concern	Not Assessed	No	Rare	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Holland Woods
104	Muscicapidae	<i>Ficedula mugimaki</i>	Mugimaki Flycatcher	Least Concern	Not Assessed	No	Uncommon	Passage migrant	Yes		No		Priority 3	Priority 1	Holland Woods
105	Muscicapidae	<i>Ficedula zanthopygia</i>	Yellow-rumped Flycatcher	Least Concern	Not Assessed	No	Uncommon	Passage migrant	Yes		Yes		Priority 3	Priority 1	Holland Woods
106	Muscicapidae	<i>Larvivora cyane</i>	Siberian Blue Robin	Least Concern	Not Assessed	No	Common	Winter visitor/passage migrant	Yes		Yes		Priority 1	Priority 1	Holland Woods
107	Muscicapidae	<i>Muscicapa dauurica</i>	Asian Brown Flycatcher	Least Concern	Not Assessed	No	Common	Winter visitor/passage migrant	Yes		Yes		Priority 3	Priority 1	Holland Woods
108	Muscicapidae	<i>Muscicapa ferruginea</i>	Ferruginous Flycatcher	Least Concern	Not Assessed	No	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Holland Woods
109	Muscicapidae	<i>Muscicapa sibirica</i>	Dark-Sided Flycatcher	Least Concern	Not Assessed	No	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Holland Woods
110	Muscicapidae	<i>Muscicapa williamsoni</i>	Brown-streaked Flycatcher	Least Concern	Not Assessed	No	Rare	Winter visitor	Yes		No		Priority 3	Priority 1	Holland Woods
111	Nectariniidae	<i>Aethopyga siparaja</i>	Crimson Sunbird	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
112	Nectariniidae	<i>Anthreptes malacensis</i>	Brown-throated Sunbird	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
113	Nectariniidae	<i>Arachnothera longirostra</i>	Little Spiderhunter	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes		No		Priority 3	Priority 1	Holland Woods
114	Nectariniidae	<i>Cinnyris jugularis</i>	Olive-backed Sunbird	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
115	Nectariniidae	<i>Leptocoma brasiliana</i>	Van Hasselt's Sunbird	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 3	Priority 1	Holland Woods
116	Oriolidae	<i>Oriolus chinensis</i>	Black-naped Oriole	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
117	Pandionidae	<i>Pandion haliaetus</i>	Western Osprey	Least Concern	Not Assessed	No	Common	Non-breeding visitor	Yes		No		Priority 3	Priority 1	Holland Woods
118	Passeridae	<i>Passer montanus</i>	Eurasian Tree Sparrow	Least Concern	Not Assessed	No	Common	Resident breeder/introduced?	Yes		No		Priority 1	Priority 1	Holland Woods
119	Pellorneidae	<i>Malacocincla abbotti</i>	Abbott's Babbler	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes		No		Priority 1	Priority 1	Holland Woods
120	Phasianidae	<i>Gallus gallus</i>	Red Junglefowl	Least Concern	Endangered	Yes	Uncommon	Resident breeder	Yes		Yes		Priority 1	Priority 1	Holland Woods
121	Phasianidae	<i>Gallus gallus domesticus</i>	Domestic Chicken	Not Assessed	Not Assessed	No	N.A	Introduced	Yes		No		Priority 1	Priority 1	Holland Woods
122	Phylloscopidae	<i>Phylloscopus borealis</i>	Arctic Warbler	Least Concern	Not Assessed	No	Common	Winter visitor/passage migrant	Yes		Yes		Priority 3	Priority 1	Holland Woods
123	Phylloscopidae	<i>Phylloscopus borealoides</i>	Sakhalin Leaf Warbler	Least Concern	Not Assessed	No	Rare	Accidental visitor	Yes		No		Priority 3	Priority 1	Holland Woods
124	Phylloscopidae	<i>Phylloscopus coronatus</i>	Eastern Crowned Warbler	Least Concern	Not Assessed	No	Uncommon	Winter visitor	Yes		No		Priority 3	Priority 1	Holland Woods
125	Phylloscopidae	<i>Phylloscopus inornatus</i>	Yellow-browed Warbler	Least Concern	Not Assessed	No	Rare	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Holland Woods
126	Picidae	<i>Chrysophlegma miniaceum</i>	Banded Woodpecker	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
127	Picidae	<i>Dinopium javanense</i>	Common Flameback	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
128	Picidae	<i>Micropternus brachyurus</i>	Rufous Woodpecker	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
129	Picidae	<i>Picus vittatus</i>	Laced Woodpecker	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
130	Picidae	<i>Yungipicus moluccensis</i>	Sunda Pygmy Woodpecker	Least Concern	Not Assessed	No	Abundant	Resident breeder	Yes		No		Priority 3	Priority 1	Holland Woods
131	Pittidae	<i>Pitta moluccensis</i>	Blue-winged Pitta	Least Concern	Not Assessed	No	Uncommon	Migrant breeder/winter visitor/passage migrant	Yes		No		Priority 1	Priority 1	Holland Woods
132	Pittidae	<i>Pitta sordida</i>	Hooded Pitta	Least Concern	Not Assessed	No	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 1	Priority 1	Holland Woods
133	Psittaculidae	<i>Loriculus galgulus</i>	Blue-crowned Hanging-parrot	Least Concern	Endangered	Yes	Uncommon	Resident breeder	Yes		Yes		Priority 2	Priority 1	Holland Woods
134	Psittaculidae	<i>Psittacula alexandri</i>	Red-breasted Parakeet	Near Threatened	Not Assessed	No	Common	Introduced resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
135	Psittaculidae	<i>Psittacula krameri</i>	Rose-ringed Parakeet	Least Concern	Not Assessed	No	Uncommon	Introduced resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
136	Psittaculidae	<i>Psittacula longicauda</i>	Long-tailed Parakeet	Vulnerable	Not Assessed	Yes	Common	Resident breeder	Yes		Yes		Priority 2	Priority 1	Holland Woods
137	Psittaculidae	<i>Trichoglossus haematodus</i>	Coconut Lorikeet	Least Concern	Not Assessed	No	Uncommon	Introduced resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
138	Pycnonotidae	<i>Hemixos cinereus</i>	Cinereous Bulbul	Least Concern	Not Assessed	No	Uncommon	Non-breeding visitor	Yes		No		Priority 3	Priority 1	Holland Woods
139	Pycnonotidae	<i>Pycnonotus brunneus</i>	Asian Red-eyed Bulbul	Least Concern	Endangered	Yes	Uncommon	Resident breeder	Yes		No		Priority 2	Priority 1	Holland Woods
140	Pycnonotidae	<i>Pycnonotus goiavier</i>	Yellow-vented Bulbul	Least Concern	Not Assessed	No	Abundant	Introduced resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
141	Pycnonotidae	<i>Pycnonotus jocosus</i>	Red-whiskered Bulbul	Least Concern	Not Assessed	No	Uncommon	Introduced resident breeder	Yes		No		Priority 3	Priority 1	Holland Woods
142	Pycnonotidae	<i>Pycnonotus plumosus</i>	Olive-winged Bulbul	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
143	Pycnonotidae	<i>Pycnonotus zeylanicus</i>	Straw-headed Bulbul	Critically Endangered	Endangered	Yes	Uncommon	Resident breeder	Yes		Yes		Priority 2	Priority 1	Holland Woods
144	Rallidae	<i>Amaurornis phoenicurus</i>	White-breasted Waterhen	Least Concern	Not Assessed	No	Common	Resident breeder/winter visitor	Yes		Yes		Priority 1	Priority 1	Holland Woods
145	Rallidae	<i>Porzana fusca</i>	Ruddy-breasted Crane	Least Concern	Not Assessed	No	Uncommon	Resident breeder/winter visitor	Yes		Yes		Priority 1	Priority 1	Holland Woods
146	Rallidae	<i>Rallina fasciata</i>	Red-legged Crane	Least Concern	Vulnerable	Yes	Uncommon	Resident breeder/winter visitor	Yes		Yes		Priority 2	Priority 1	Holland Woods
147	Rhipiduridae	<i>Rhipidura javanica</i>	Malaysian Pied Fantail	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 1	Priority 1	Holland Woods
148	Strigidae	<i>Bubo sumatranus</i>	Barred Eagle-Owl	Least Concern	Not Assessed	No	Rare	Resident breeder	Yes		No		Priority 3	Priority 1	Holland Woods
149	Strigidae	<i>Ketupa ketupu</i>	Buffy Fish Owl	Least Concern	Critically Endangered	Yes	Uncommon	Resident breeder	Yes		No		Priority 2	Priority 1	Holland Woods
150	Strigidae	<i>Ninox scutulata</i>	Brown Hawk-Owl	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
151	Strigidae	<i>Otus lempiji</i>	Sunda Scops Owl	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
152	Strigidae	<i>Strix seloputo</i>	Spotted Wood Owl	Least Concern	Critically Endangered	Yes	Uncommon	Resident breeder	Yes		No		Priority 2	Priority 1	Holland Woods
153	Sturnidae	<i>Acridotheres javanicus</i>	Javan Myna	Least Concern	Not Assessed	No	Abundant	Introduced resident breeder	Yes		Yes		Priority 1	Priority 1	Holland Woods
154	Sturnidae	<i>Acridotheres tristis</i>	Common Myna	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 1	Priority 1	Holland Woods
155	Sturnidae	<i>Agropsar sturninus</i>	Daurian Starling	Least Concern	Not Assessed	No	Common	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Holland Woods
156	Sturnidae	<i>Aplonis panayensis</i>	Asian Glossy Starling	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
157	Sturnidae	<i>Gracula religiosa</i>	Common Hill Myna	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
158	Timaliidae	<i>Macronus gularis</i>	Pin-striped Tit-babbler	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 1	Priority 1	Holland Woods
159	Turdidae	<i>Geokichla citrina</i>	Orange-headed Thrush	Least Concern	Not Assessed	No	Uncommon	Winter visitor	Yes		Yes	Recorded from camera trap	Priority 1	Priority 1	Holland Woods
160	Turdidae	<i>Geokichla sibirica</i>	Siberian Thrush	Least Concern	Not Assessed	No	Rare	Passage migrant	Yes		No		Priority 1	Priority 1	Holland Woods
161	Turdidae	<i>Turdus obscurus</i>	Eyebrowed Thrush	Least Concern	Not Assessed	No	Uncommon	Passage migrant	Yes		No		Priority 1	Priority 1	Holland Woods
162	Tytonidae	<i>Tyto javanica</i>	Eastern Barn Owl	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes		No		Priority 3	Priority 1	Holland Woods
163	Zosteropidae	<i>Zosterops simplex</i>	Swinhoe's White-eye	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Holland Woods
164	Acanthizidae	<i>Gerygone sulphurea</i>	Golden-bellied Gerygone	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 3	Priority 1	Sunset Way Woods
165	Accipitridae	<i>Accipiter gularis</i>	Japanese Sparrowhawk	Least Concern	Not Assessed	No	Common	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Sunset Way Woods
166	Accipitridae	<i>Accipiter solomensis</i>	Chinese Sparrowhawk	Least Concern	Not Assessed	No	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Sunset Way Woods
167	Accipitridae	<i>Accipiter trivirgatus</i>	Crested Goshawk	Least Concern	Critically Endangered	Yes	Uncommon	Resident breeder	Yes		Yes		Priority 2	Priority 1	Sunset Way Woods
168	Accipitridae	<i>Aviceda jerdoni</i>	Jerdon's Baza	Least Concern	Not Assessed	No	Uncommon	Winter visitor	Yes		No		Priority 3	Priority 1	Sunset Way Woods
169	Accipitridae	<i>Aviceda leuphotes</i>	Black Baza	Least Concern	Not Assessed	No	Common	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Sunset Way Woods
170	Accipitridae	<i>Buteo buteo</i>	Common Buzzard	Least Concern	Not Assessed	No	Uncommon	Winter visitor	Yes		No		Priority 3	Priority 1	Sunset Way Woods
171	Accipitridae	<i>Haliaeetus leucogaster</i>	White-bellied Sea Eagle	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 3	Priority 1	Sunset Way Woods
172	Accipitridae	<i>Haliastur indus</i>	Brahminy Kite	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
173	Accipitridae	<i>Nisaetus cirrhatus</i>	Changeable Hawk-Eagle	Least Concern	Endangered	Yes	Uncommon	Resident breeder	Yes		Yes	Nest observed	Priority 2	Priority 1	Sunset Way Woods
174	Accipitridae	<i>Pernis ptilorhynchus</i>	Crested Honey-buzzard	Least Concern	Not Assessed	No	Common	Winter visitor/passage migrant/non-breeding visitor	Yes		No		Priority 3	Priority 1	Sunset Way Woods
175	Accipitridae	<i>Spilornis cheela</i>	Crested Serpent Eagle	Least Concern	Critically Endangered	Yes	Rare	Resident, breeding not proven	Yes		No		Priority 2	Priority 1	Sunset Way Woods
176	Aegithinidae	<i>Aegithina tiphia</i>	Common Iora	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 3	Priority 1	Sunset Way Woods
177	Alcedinidae	<i>Alcedo atthis</i>	Common Kingfisher	Least Concern	Not Assessed	No	Common	Winter visitor	Yes		No		Priority 3	Priority 1	Sunset Way Woods
178	Alcedinidae	<i>Ceyx erithaca</i>	Oriental Dwarf Kingfisher	Least Concern	Not Assessed	No	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Sunset Way Woods
179	Alcedinidae	<i>Halcyon smyrnensis</i>	White-throated Kingfisher	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
180	Alcedinidae	<i>Pelargopsis capensis</i>	Stork-billed Kingfisher	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes		No		Priority 3	Priority 1	Sunset Way Woods
181	Alcedinidae	<i>Todiramphus chloris</i>	Collared Kingfisher	Least Concern	Not Assessed	No	Abundant	Introduced resident breeder	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
182	Apodidae	<i>Aerodramus fuciphagus</i>	Edible-nest Swiftlet	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 1	Priority 1	Sunset Way Woods
183	Apodidae	<i>Aerodramus germani</i>	German's Swiftlet	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 1	Priority 1	Sunset Way Woods
184	Apodidae	<i>Aerodramus maximus</i>	Black-nest Swiftlet	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 1	Priority 1	Sunset Way Woods
185	Apodidae	<i>Aerodramus</i> sp.	Swiftlet	N.A	N.A	N.A	N.A	N.A	N.A		Yes		Priority 3	Priority 1	Sunset Way Woods
186	Apodidae	<i>Collocalia affinis</i>	Plume-toed Swiftlet	Not Assessed	Not Assessed	No	Uncommon	Resident breeder	Yes		No		Priority 1	Priority 1	Sunset Way Woods
187	Apodidae	<i>Cypsiurus balasienis</i>	Asian Palm Swift	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes		No		Priority 3	Priority 1	Sunset Way Woods
188	Apodidae	<i>Hirundapus caudacutus</i>	White-throated Needletail	Least Concern	Not Assessed	No	Rare	Accidental visitor	Yes		No		Priority 3	Priority 1	Sunset Way Woods
189	Apodidae	<i>Hirundapus cochinchinensis</i>	Silver-backed Needletail	Least Concern	Not Assessed	No	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Sunset Way Woods
190	Apodidae	<i>Hirundapus giganteus</i>	Brown-backed Needletail	Least Concern	Not Assessed	No	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Sunset Way Woods
191	Ardeidae	<i>Bubulcus coromandus</i>	Eastern Cattle Egret	Least Concern	Not Assessed	No	Common	Winter visitor/introduced resident, breeding not proven	Yes		No		Priority 1	Priority 1	Sunset Way Woods

No.	Family Name	Scientific Name	Common Name	Global Status (IUCN, 2012)	Local Status (Davison et al. 2008)	Species of Conservation Significance	Distribution/Rarity (NSS, 2020; Singapore Birds Project, 2020)	Native Status (NSS, 2020; Singapore Birds Project, 2020)	Probable Species	Recorded Species (Ang et al., 2020; ESC, 2020; ERM, 2016)	Recorded Species	Remarks	Vibration- sensitivity	Auditory- sensitivity	Location
192	Ardeidae	<i>Gorsachius melanolophus</i>	Malayan Night Heron	Least Concern	Not Assessed	No	Rare	Winter visitor/passage migrant	Yes		Yes	Recorded from camera trap	Priority 1	Priority 1	Sunset Way Woods
193	Bucerotidae	<i>Anthraccoceros albirostris</i>	Oriental Pied Hornbill	Critically Endangered	Critically Endangered	Yes	Uncommon	Resident breeder	Yes		No		Priority 2	Priority 1	Sunset Way Woods
194	Cacatuidae	<i>Cacatua goffiniana</i>	Tanimbar Corella	Near Threatened	Not Assessed	No	Common	Introduced resident breeder	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
195	Cacatuidae	<i>Cacatua sulphurea</i>	Yellow-crested Cockatoo	Critically Endangered	Not Assessed	Yes	Uncommon	Introduced resident breeder	Yes		No		Priority 2	Priority 1	Sunset Way Woods
196	Campephagidae	<i>Lalage nigra</i>	Pied triller	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 3	Priority 1	Sunset Way Woods
197	Campephagidae	<i>Pericrocotus divaricatus</i>	Ashy Minivet	Least Concern	Not Assessed	No	Common	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Sunset Way Woods
198	Caprimulgidae	<i>Caprimulgus affinis</i>	Savanna Nightjar	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 1	Priority 1	Sunset Way Woods
199	Caprimulgidae	<i>Caprimulgus jotaka</i>	Grey Nightjar	Least Concern	Not Assessed	No	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 1	Priority 1	Sunset Way Woods
200	Caprimulgidae	<i>Caprimulgus macrurus</i>	Large-tailed Nightjar	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 1	Priority 1	Sunset Way Woods
201	Caprimulgidae	<i>Caprimulgus</i> sp.	Nightjar	N.A	N.A	N.A	N.A	N.A	N.A		Yes		Priority 1	Priority 1	Sunset Way Woods
202	Chloropseidae	<i>Chloropsis cochinchinensis</i>	Blue-winged Leafbird	Least Concern	Not Assessed	No	Common	Resident, breeding not proven	Yes		No		Priority 3	Priority 1	Sunset Way Woods
203	Cisticolidae	<i>Orthotomus atrogularis</i>	Dark-necked Tailorbird	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
204	Cisticolidae	<i>Orthotomus ruficeps</i>	Ashy Tailorbird	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 3	Priority 1	Sunset Way Woods
205	Cisticolidae	<i>Orthotomus sericeus</i>	Rufous-tailed Tailorbird	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
206	Cisticolidae	<i>Orthotomus sutorius</i>	Common Tailorbird	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 3	Priority 1	Sunset Way Woods
207	Cisticolidae	<i>Prinia flaviventris</i>	Yellow-bellied Prinia	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 3	Priority 1	Sunset Way Woods
208	Columbidae	<i>Chalcophaps indica</i>	Common Emerald Dove	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
209	Columbidae	<i>Columba livia</i>	Rock Dove	Least Concern	Not Assessed	No	Abundant	Introduced resident breeder	Yes		No		Priority 1	Priority 1	Sunset Way Woods
210	Columbidae	<i>Ducula bicolor</i>	Pied Imperial Pigeon	Least Concern	Not Assessed	No	Uncommon	Non-breeding visitor	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
211	Columbidae	<i>Geopelia striata</i>	Zebra Dove	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 1	Priority 1	Sunset Way Woods
212	Columbidae	<i>Ptilinopus jambu</i>	Jambu Fruit Dove	Near Threatened	Not Assessed	No	Uncommon	Non-breeding visitor	Yes		No		Priority 3	Priority 1	Sunset Way Woods
213	Columbidae	<i>Spilopelia chinensis</i>	Spotted Dove	Least Concern	Not Assessed	No	Abundant	Introduced resident breeder	Yes		No		Priority 1	Priority 1	Sunset Way Woods
214	Columbidae	<i>Treeron curvirostra</i>	Thick-billed Green Pigeon	Least Concern	Endangered	Yes	Uncommon	Resident breeder	Yes		No		Priority 2	Priority 1	Sunset Way Woods
215	Columbidae	<i>Treeron vernans</i>	Pink-necked Green Pigeon	Least Concern	Not Assessed	No	Abundant	Introduced resident breeder	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
216	Coraciidae	<i>Eurystomus orientalis</i>	Oriental Dollarbird	Least Concern	Not Assessed	No	Common	Resident breeder/winter visitor	Yes		No		Priority 3	Priority 1	Sunset Way Woods
217	Corvidae	<i>Corvus macrorhynchos</i>	Large-billed Crow	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes		No		Priority 1	Priority 1	Sunset Way Woods
218	Corvidae	<i>Corvus splendens</i>	House Crow	Least Concern	Not Assessed	No	Common	Introduced resident breeder	Yes		No		Priority 1	Priority 1	Sunset Way Woods
219	Cuculidae	<i>Cacomantis merulinus</i>	Plaintive Cuckoo	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes		No		Priority 3	Priority 1	Sunset Way Woods
220	Cuculidae	<i>Cacomantis sepulchralis</i>	Rusty-breasted Cuckoo	Least Concern	Vulnerable	Yes	Uncommon	Resident breeder	Yes		No		Priority 2	Priority 1	Sunset Way Woods
221	Cuculidae	<i>Cacomantis sonneratii</i>	Banded Bay Cuckoo	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes		No		Priority 3	Priority 1	Sunset Way Woods
222	Cuculidae	<i>Centropus bengalensis</i>	Lesser Coucal	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 1	Priority 1	Sunset Way Woods
223	Cuculidae	<i>Centropus sinensis</i>	Greater Coucal	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
224	Cuculidae	<i>Chrysococcyx minutillus</i>	Little Bronze-Cuckoo	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 3	Priority 1	Sunset Way Woods
225	Cuculidae	<i>Chrysococcyx xanthorhynchus</i>	Violet Cuckoo	Least Concern	Endangered	Yes	Uncommon	Resident breeder/winter visitor	Yes		No		Priority 2	Priority 1	Sunset Way Woods
226	Cuculidae	<i>Clamator coromandus</i>	Chestnut-winged Cuckoo	Least Concern	Not Assessed	No	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Sunset Way Woods
227	Cuculidae	<i>Cuculus micropterus</i>	Indian Cuckoo	Least Concern	Not Assessed	No	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Sunset Way Woods
228	Cuculidae	<i>Eudynamys scolopaceus</i>	Asian Koel	Least Concern	Not Assessed	No	Common	Resident breeder/winter visitor	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
229	Cuculidae	<i>Hierococcyx nisicolor</i>	Hodgson's Hawk Cuckoo	Least Concern	Not Assessed	No	Uncommon	Winter visitor	Yes		No		Priority 3	Priority 1	Sunset Way Woods
230	Cuculidae	<i>Phaenicophaeus sumatranus</i>	Chestnut-bellied Malkoha	Near Threatened	Not Assessed	No	Uncommon	Resident breeder	Yes		No		Priority 3	Priority 1	Sunset Way Woods
231	Cuculidae	<i>Sumiculus lugubris</i>	Square-tailed Drongo-Cuckoo	Least Concern	Critically Endangered	Yes	Uncommon	Resident breeder/winter visitor	Yes		No		Priority 2	Priority 1	Sunset Way Woods
232	Dicaeidae	<i>Dicaeum cruentatum</i>	Scarlet-backed Flowerpecker	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
233	Dicaeidae	<i>Dicaeum trigonostigma</i>	Orange-bellied Flowerpecker	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 3	Priority 1	Sunset Way Woods
234	Dicruridae	<i>Dicrurus annectans</i>	Crow-billed Drongo	Least Concern	Not Assessed	No	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Sunset Way Woods
235	Dicruridae	<i>Dicrurus paradiseus</i>	Greater Racket-tailed Drongo	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
236	Estrilidae	<i>Lonchura punctulata</i>	Scaly-breasted Munia	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 3	Priority 1	Sunset Way Woods
237	Hemiprocidae	<i>Hemiprocne longipennis</i>	Grey-rumped Treeswift	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 3	Priority 1	Sunset Way Woods
238	Hirundinidae	<i>Hirundo rustica</i>	Barn Swallow	Least Concern	Not Assessed	No	Abundant	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Sunset Way Woods
239	Hirundinidae	<i>Hirundo tahitica</i>	Pacific Swallow	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 3	Priority 1	Sunset Way Woods
240	Irenidae	<i>Irena puella</i>	Asian Fairy-bluebird	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes		No		Priority 3	Priority 1	Sunset Way Woods
241	Laniidae	<i>Lanius cristatus</i>	Brown Shrike	Least Concern	Not Assessed	No	Common	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Sunset Way Woods
242	Laniidae	<i>Lanius tigrinus</i>	Tiger Shrike	Least Concern	Not Assessed	No	Common	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Sunset Way Woods
243	Leiothrichidae	<i>Garrulax leucolophus</i>	White-crested Laughingthrush	Least Concern	Not Assessed	No	Common	Introduced resident breeder	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
244	Megalaimidae	<i>Psilopogon haemacephalus</i>	Coppersmith Barbet	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 3	Priority 1	Sunset Way Woods
245	Megalaimidae	<i>Psilopogon lineatus</i>	Lineated Barbet	Least Concern	Not Assessed	No	Uncommon	Introduced resident breeder	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
246	Meropidae	<i>Merops philippinus</i>	Blue-tailed bee-eater	Least Concern	Not Assessed	No	Common	Winter visitor	Yes		No		Priority 3	Priority 1	Sunset Way Woods
247	Meropidae	<i>Merops viridis</i>	Blue-throated Bee-eater	Least Concern	Not Assessed	No	Common	Migrant breeder	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
248	Monarchidae	<i>Terpsiphone affinis</i>	Blyth's Paradise Flycatcher	Least Concern	Not Assessed	No	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Sunset Way Woods
249	Monarchidae	<i>Terpsiphone atrocaudata</i>	Japanese Paradise Flycatcher	Near Threatened	Not Assessed	No	Rare	Passage migrant	Yes		No		Priority 3	Priority 1	Sunset Way Woods
250	Monarchidae	<i>Terpsiphone incei</i>	Amur Paradise Flycatcher	Least Concern	Not Assessed	No	Common	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Sunset Way Woods
251	Monarchidae	<i>Terpsiphone</i> sp.	Flycatcher	N.A	N.A	N.A	N.A	N.A	N.A		Yes	Recorded from camera trap	Priority 3	Priority 1	Sunset Way Woods
252	Motacillidae	<i>Anthus rufulus</i>	Paddyfield Pipit	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 1	Priority 1	Sunset Way Woods
253	Motacillidae	<i>Dendronanthus indicus</i>	Forest Wagtail	Least Concern	Not Assessed	No	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 1	Priority 1	Sunset Way Woods
254	Motacillidae	<i>Motacilla cinerea</i>	Grey Wagtail	Least Concern	Not Assessed	No	Uncommon	Winter visitor/passage migrant	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
255	Muscicapidae	<i>Copsychus malabaricus</i>	White-rumped Shama	Least Concern	Critically Endangered	Yes	Uncommon	Resident breeder	Yes		No		Priority 1	Priority 1	Sunset Way Woods
256	Muscicapidae	<i>Copsychus saularis</i>	Oriental Magpie-Robin	Least Concern	Endangered	Yes	Uncommon	Resident breeder	Yes		No		Priority 1	Priority 1	Sunset Way Woods
257	Muscicapidae	<i>Cyanoptila cumatilis</i>	Zappeg's Flycatcher	Least Concern	Not Listed	No	Rare	Passage migrant	Yes		No		Priority 3	Priority 1	Sunset Way Woods
258	Muscicapidae	<i>Cyanoptila cyanomelana</i>	Blue-and-white Flycatcher	Least Concern	Not Assessed	No	Rare	Passage migrant	Yes		No		Priority 3	Priority 1	Sunset Way Woods
259	Muscicapidae	<i>Cyornis brunneatus</i>	Brown-chested Jungle Flycatcher	Vulnerable	Not Listed	Yes	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 2	Priority 1	Sunset Way Woods
260	Muscicapidae	<i>Ficedula elisae</i>	Green-backed Flycatcher	Least Concern	Not Assessed	No	Rare	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Sunset Way Woods
261	Muscicapidae	<i>Ficedula mugimaki</i>	Mugimaki Flycatcher	Least Concern	Not Assessed	No	Uncommon	Passage migrant	Yes		No		Priority 3	Priority 1	Sunset Way Woods
262	Muscicapidae	<i>Ficedula zanthopygia</i>	Yellow-rumped Flycatcher	Least Concern	Not Assessed	No	Uncommon	Passage migrant	Yes		No		Priority 3	Priority 1	Sunset Way Woods
263	Muscicapidae	<i>Larivora cyane</i>	Siberian Blue Robin	Least Concern	Not Assessed	No	Common	Winter visitor/passage migrant	Yes		No		Priority 1	Priority 1	Sunset Way Woods
264	Muscicapidae	<i>Muscicapa dauurica</i>	Asian Brown Flycatcher	Least Concern	Not Assessed	No	Common	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Sunset Way Woods
265	Muscicapidae	<i>Muscicapa ferruginea</i>	Ferruginous Flycatcher	Least Concern	Not Assessed	No	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Sunset Way Woods
266	Muscicapidae	<i>Muscicapa sibirica</i>	Dark-Sided Flycatcher	Least Concern	Not Assessed	No	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Sunset Way Woods
267	Muscicapidae	<i>Muscicapa williamsoni</i>	Brown-streaked Flycatcher	Least Concern	Not Assessed	No	Rare	Winter visitor	Yes		No		Priority 3	Priority 1	Sunset Way Woods
268	Nectariniidae	<i>Aethopyga siparaja</i>	Crimson Sunbird	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
269	Nectariniidae	<i>Antheptes malacensis</i>	Brown-throated Sunbird	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
270	Nectariniidae	<i>Arachnothera longirostra</i>	Little Spiderhunter	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes		No		Priority 3	Priority 1	Sunset Way Woods
271	Nectariniidae	<i>Cinnyris jugularis</i>	Olive-backed Sunbird	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
272	Nectariniidae	<i>Leptocoma brasiliana</i>	Van Hasselt's Sunbird	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 3	Priority 1	Sunset Way Woods
273	Oriolidae	<i>Oriolus chinensis</i>	Black-naped Oriole	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
274	Pandionidae	<i>Pandion haliaetus</i>	Western Osprey	Least Concern	Not Assessed	No	Common	Non-breeding visitor	Yes		No		Priority 3	Priority 1	Sunset Way Woods
275	Passeridae	<i>Passer montanus</i>	Eurasian Tree Sparrow	Least Concern	Not Assessed	No	Common	Resident breeder/introduced?	Yes		No		Priority 3	Priority 1	Sunset Way Woods

No.	Family Name	Scientific Name	Common Name	Global Status (IUCN, 2012)	Local Status (Davison et al. 2008)	Species of Conservation Significance	Distribution/Rarity (NSS, 2020; Singapore Birds Project, 2020)	Native Status (NSS, 2020; Singapore Birds Project, 2020)	Probable Species	Recorded Species (Ang et al., 2020; ESC, 2020; ERM, 2016)	Recorded Species	Remarks	Vibration- sensitivity	Auditory- sensitivity	Location
276	Pellorneidae	<i>Malacocincla abbotti</i>	Abbott's Babbler	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes		No		Priority 1	Priority 1	Sunset Way Woods
277	Phasianidae	<i>Gallus gallus</i>	Red Junglefowl	Least Concern	Endangered	Yes	Uncommon	Resident breeder	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
278	Phasianidae	<i>Gallus gallus (domestic)</i>	Domestic Chicken	Not Assessed	Common	No	N.A	Introduced	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
279	Phylloscopidae	<i>Phylloscopus borealis</i>	Arctic Warbler	Least Concern	Not Assessed	No	Common	Winter visitor/passage migrant	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
280	Phylloscopidae	<i>Phylloscopus borealoides</i>	Sakhalin Leaf Warbler	Least Concern	Not Assessed	No	Rare	Accidental visitor	Yes		No		Priority 3	Priority 1	Sunset Way Woods
281	Phylloscopidae	<i>Phylloscopus coronatus</i>	Eastern Crowned Warbler	Least Concern	Not Assessed	No	Uncommon	Winter visitor	Yes		No		Priority 3	Priority 1	Sunset Way Woods
282	Phylloscopidae	<i>Phylloscopus inornatus</i>	Yellow-browed Warbler	Least Concern	Not Assessed	No	Rare	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Sunset Way Woods
283	Picidae	<i>Chrysophlegma miniaceum</i>	Banded Woodpecker	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
284	Picidae	<i>Dinopium javanense</i>	Common Flameback	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
285	Picidae	<i>Micropternus brachyurus</i>	Rufous Woodpecker	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes		No		Priority 3	Priority 1	Sunset Way Woods
286	Picidae	<i>Picus vittatus</i>	Laced Woodpecker	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
287	Picidae	<i>Yungipicus moluccensis</i>	Sunda Pygmy Woodpecker	Least Concern	Not Assessed	No	Abundant	Resident breeder	Yes		No		Priority 3	Priority 1	Sunset Way Woods
288	Pittidae	<i>Pitta moluccensis</i>	Blue-winged Pitta	Least Concern	Not Assessed	No	Uncommon	Migrant breeder/winter visitor/passage migrant	Yes		No		Priority 1	Priority 1	Sunset Way Woods
289	Pittidae	<i>Pitta sordida</i>	Hooded Pitta	Least Concern	Not Assessed	No	Uncommon	Winter visitor/passage migrant	Yes		No		Priority 1	Priority 1	Sunset Way Woods
290	Psittaculidae	<i>Loriculus galgulus</i>	Blue-crowned Hanging-parrot	Least Concern	Endangered	Yes	Uncommon	Resident breeder	Yes		Yes		Priority 2	Priority 1	Sunset Way Woods
291	Psittaculidae	<i>Psittacula alexandri</i>	Red-breasted Parakeet	Near Threatened	Not Assessed	No	Common	Introduced resident breeder	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
292	Psittaculidae	<i>Psittacula krameri</i>	Rose-ringed Parakeet	Least Concern	Not Assessed	No	Uncommon	Introduced resident breeder	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
293	Psittaculidae	<i>Psittacula longicauda</i>	Long-tailed Parakeet	Vulnerable	Not Assessed	Yes	Common	Resident breeder	Yes		Yes		Priority 2	Priority 1	Sunset Way Woods
294	Psittaculidae	<i>Trichoglossus haematodus</i>	Coconut Lorikeet	Least Concern	Not Assessed	No	Uncommon	Introduced resident breeder	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
295	Pycnonotidae	<i>Hemixos cinereus</i>	Cinereous Bulbul	Least Concern	Not Assessed	No	Uncommon	Non-breeding visitor	Yes		No		Priority 3	Priority 1	Sunset Way Woods
296	Pycnonotidae	<i>Pycnonotus brunneus</i>	Asian Red-eyed Bulbul	Least Concern	Endangered	Yes	Uncommon	Resident breeder	Yes		No		Priority 2	Priority 1	Sunset Way Woods
297	Pycnonotidae	<i>Pycnonotus goiavier</i>	Yellow-vented Bulbul	Least Concern	Not Assessed	No	Abundant	Introduced resident breeder	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
298	Pycnonotidae	<i>Pycnonotus jocosus</i>	Red-whiskered Bulbul	Least Concern	Not Assessed	No	Uncommon	Introduced resident breeder	Yes		No		Priority 3	Priority 1	Sunset Way Woods
299	Pycnonotidae	<i>Pycnonotus plumosus</i>	Olive-winged Bulbul	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
300	Pycnonotidae	<i>Pycnonotus zeylanicus</i>	Straw-headed Bulbul	Critically Endangered	Endangered	Yes	Uncommon	Resident breeder	Yes		Yes		Priority 2	Priority 1	Sunset Way Woods
301	Rallidae	<i>Amaurornis phoenicurus</i>	White-breasted Waterhen	Least Concern	Not Assessed	No	Common	Resident breeder/winter visitor	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
302	Rallidae	<i>Rallina fasciata</i>	Red-legged Crane	Least Concern	Vulnerable	Yes	Uncommon	Resident breeder/winter visitor	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
303	Rhipiduridae	<i>Rhipidura javanica</i>	Malaysian Pied Fantail	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 1	Priority 1	Sunset Way Woods
304	Strigidae	<i>Bubo sumatranus</i>	Barred Eagle-Owl	Least Concern	Not Assessed	No	Rare	Resident breeder	Yes		No		Priority 3	Priority 1	Sunset Way Woods
305	Strigidae	<i>Ketupa ketupu</i>	Buffy Fish Owl	Least Concern	Critically Endangered	Yes	Uncommon	Resident breeder	Yes		No		Priority 2	Priority 1	Sunset Way Woods
306	Strigidae	<i>Ninox scutulata</i>	Brown Hawk-Owl	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 3	Priority 1	Sunset Way Woods
307	Strigidae	<i>Otus lempiji</i>	Sunda Scops Owl	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
308	Strigidae	<i>Strix seloputo</i>	Spotted Wood Owl	Least Concern	Critically Endangered	Yes	Uncommon	Resident breeder	Yes		No		Priority 2	Priority 1	Sunset Way Woods
309	Sturnidae	<i>Acridotheres javanicus</i>	Javan Myna	Least Concern	Not Assessed	No	Abundant	Introduced resident breeder	Yes		Yes		Priority 1	Priority 1	Sunset Way Woods
310	Sturnidae	<i>Acridotheres tristis</i>	Common Myna	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 1	Priority 1	Sunset Way Woods
311	Sturnidae	<i>Agropsar sturninus</i>	Daurian Starling	Least Concern	Not Assessed	No	Common	Winter visitor/passage migrant	Yes		No		Priority 3	Priority 1	Sunset Way Woods
312	Sturnidae	<i>Aplonis panayensis</i>	Asian Glossy Starling	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
313	Sturnidae	<i>Gracula religiosa</i>	Common Hill Myna	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
314	Timaliidae	<i>Macronus gularis</i>	Pin-striped Tit-babbler	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		Yes		Priority 3	Priority 1	Sunset Way Woods
315	Turdidae	<i>Geokichla citrina</i>	Orange-headed Thrush	Least Concern	Not Assessed	No	Uncommon	Winter visitor	Yes		No		Priority 1	Priority 1	Sunset Way Woods
316	Turdidae	<i>Geokichla sibirica</i>	Siberian Thrush	Least Concern	Not Assessed	No	Rare	Passage migrant	Yes		No		Priority 1	Priority 1	Sunset Way Woods
317	Turdidae	<i>Turdus obscurus</i>	Eyebrowed Thrush	Least Concern	Not Assessed	No	Uncommon	Passage migrant	Yes		No		Priority 1	Priority 1	Sunset Way Woods
318	Tytonidae	<i>Tyto javanica</i>	Eastern Barn Owl	Least Concern	Not Assessed	No	Uncommon	Resident breeder	Yes		No		Priority 3	Priority 1	Sunset Way Woods
319	Zosteropidae	<i>Zosterops simplex</i>	Swinhoe's White-eye	Least Concern	Not Assessed	No	Common	Resident breeder	Yes		No		Priority 3	Priority 1	Sunset Way Woods

No.	Family Name	Scientific Name	Common Name	Global Status (IUCN, 2012)	Local Status (Davison et al. 2008)	Species of Conservation Significance	Distribution/Rarity (Baker & Lim, 2012)	Native Status (Baker & Lim, 2012)	Probable Species	Recorded Species (Ang et al., 2020; ESC, 2020; ERM, 2016)	Recorded Species	Remarks	Vibration- sensitivity	Auditory- sensitivity	Location
1	Canidae	<i>Canis lupus familiaris</i>	Feral Dog	Not Assessed	Not Assessed	No	N.A	Non-native	Yes		No		Priority1	Priority1	Holland Woods
2	Cercopithecidae	<i>Macaca fascicularis</i>	Long-tailed Macaque	Least Concern	Not Assessed	No	Widespread and Common	Native	Yes		Yes	Recorded visually and on camera trap. Recorded in Ho et al., 2019	Priority 3	Priority1	Holland Woods
3	Felidae	<i>Felis catus</i>	Feral Cat	Not Assessed	Not Assessed	No	N.A	Non-native	Yes		No		Priority1	Priority1	Holland Woods
4	Manidae	<i>Manis javanica</i>	Sunda Pangolin	Critically Endangered	Critically Endangered	Yes	Widespread but Rare	Native	Yes		No	Recorded in Ho et al., 2019	Priority1	Priority1	Holland Woods
5	Muridae	<i>Mus castaneus</i>	House Mouse	Least Concern	Not Assessed	No	Widespread and Common	Native	Yes		No		Priority1	Priority1	Holland Woods
6	Muridae	<i>Rattus annandalei</i>	Annandale's Rat	Least Concern	Not Assessed	No	Restricted but Common	Native	Yes		No		Priority1	Priority1	Holland Woods
7	Muridae	<i>Rattus exulans</i>	Polynesian Rat	Least Concern	Not Assessed	No	Widespread but Uncommon	Native	Yes		No		Priority1	Priority1	Holland Woods
8	Muridae	<i>Rattus norvegicus</i>	Brown Rat	Least Concern	Not Assessed	No	Widespread and Common	Non-native	Yes		No		Priority1	Priority1	Holland Woods
9	Muridae	<i>Rattus</i> sp.	Rat	N.A	N.A	N.A	N.A	N.A			Yes	Recorded visually and on camera trap.	Priority1	Priority1	Holland Woods
10	Muridae	<i>Rattus tanezumi</i>	Oriental House Rat	Least Concern	Not Assessed	No	Widespread and Common	Native	Yes		No		Priority1	Priority1	Holland Woods
11	Muridae	<i>Rattus tiomanicus</i>	Malaysian Wood Rat	Least Concern	Not Assessed	No	Widespread and Common	Native	Yes		No		Priority1	Priority1	Holland Woods
12	Mustelidae	<i>Lutrogale perspicillata</i>	Smooth-coated Otter	Vulnerable	Critically Endangered	Yes	Widespread but Rare	Native	Yes		No	Anecdotal record of Otter sp. at pond (Ho et al., 2019) - likely a transient record	Priority1	Priority1	Holland Woods
13	Sciuridae	<i>Callosciurus notatus</i>	Plantain Squirrel	Least Concern	Not Assessed	No	Widespread and Common	Native	Yes		Yes	Recorded visually and on camera trap. Recorded in Ho et al., 2019	Priority1	Priority1	Holland Woods
14	Soricidae	<i>Suncus murinus</i>	House Shrew	Least Concern	Not Assessed	No	Widespread and Common	Native	Yes		No		Priority1	Priority1	Holland Woods
15	Suidae	<i>Sus scrofa</i>	Wild Pig	Least Concern	Not Assessed	No	Widespread and Common	Native	Yes		No		Priority1	Priority1	Holland Woods
16	Tupaiaidae	<i>Tupaia glis</i>	Common Treeshrew	Least Concern	Not Assessed	No	Widespread and Common	Native	Yes		Yes	Recorded on camera trap. Recorded in Ho et al., 2019.	Priority1	Priority1	Holland Woods
17	Viverridae	<i>Paradoxurus musangus</i>	Common Palm Civet	Least Concern	Not Assessed	No	Widespread but Uncommon	Native	Yes		Yes	Recorded visually and on camera trap. Recorded in Ho et al., 2019.	Priority 1	Priority1	Holland Woods
18	Canidae	<i>Canis lupus familiaris</i>	Feral Dog	Not Assessed	Not Listed	No	N.A	Non-native	Yes		No		Priority1	Priority1	Sunset Way Woods
19	Cercopithecidae	<i>Macaca fascicularis</i>	Long-tailed Macaque	Least Concern	Not Listed	No	Widespread & Common	Native	Yes		Yes	Recorded on camera trap.	Priority 3	Priority1	Sunset Way Woods
20	Felidae	<i>Felis catus</i>	Feral Cat	Not Assessed	Not Assessed	No	N.A	Non-native	Yes		No		Priority1	Priority1	Sunset Way Woods
21	Manidae	<i>Manis javanica</i>	Sunda Pangolin	Critically Endangered	Critically Endangered	Yes	Widespread but Rare	Native	Yes		Yes	Recorded on camera trap CT05.	Priority1	Priority1	Sunset Way Woods
22	Muridae	<i>Mus castaneus</i>	House Mouse	Least Concern	Not Listed	No	Widespread & Common	Native	Yes		No		Priority1	Priority1	Sunset Way Woods
23	Muridae	<i>Rattus annandalei</i>	Annandale's Rat	Least Concern	Not Assessed	No	Restricted but Common	Native	Yes		No		Priority1	Priority1	Sunset Way Woods
24	Muridae	<i>Rattus exulans</i>	Polynesian Rat	Least Concern	Not Listed	No	Widespread but Uncommon	Native	Yes		No		Priority1	Priority1	Sunset Way Woods
25	Muridae	<i>Rattus norvegicus</i>	Brown Rat	Least Concern	Not Listed	No	Widespread & Common	Non-native	Yes		No		Priority1	Priority1	Sunset Way Woods
26	Muridae	<i>Rattus</i> sp.	Rat	N.A	N.A	N.A	N.A	N.A			Yes	Recorded visually and on camera trap.	Priority1	Priority1	Sunset Way Woods
27	Muridae	<i>Rattus tanezumi</i>	Oriental House Rat	Least Concern	Not Listed	No	Widespread & Common	Native	Yes		No	Recorded by Camphora in 2018.	Priority1	Priority1	Sunset Way Woods
28	Muridae	<i>Rattus tiomanicus</i>	Malaysian Wood Rat	Least Concern	Not Listed	No	Widespread & Common	Native	Yes		No	Recorded by Camphora in 2018.	Priority1	Priority1	Sunset Way Woods
29	Sciuridae	<i>Callosciurus notatus</i>	Plantain Squirrel	Least Concern	Not Listed	No	Widespread & Common	Native	Yes		Yes	Recorded visually and on camera trap. Recorded by Camphora in 2018.	Priority1	Priority1	Sunset Way Woods
30	Soricidae	<i>Suncus murinus</i>	House Shrew	Least Concern	Not Listed	No	Widespread & Common	Native	Yes		No	Recorded by Camphora in 2018.	Priority1	Priority1	Sunset Way Woods
31	Suidae	<i>Sus scrofa</i>	Wild Pig	Least Concern	Not Listed	No	Widespread & Common	Native	Yes		No		Priority1	Priority1	Sunset Way Woods
32	Tupaiaidae	<i>Tupaia glis</i>	Common Treeshrew	Least Concern	Not Listed	No	Widespread & Common	Native	Yes		Yes	Recorded on camera trap. Recorded by Camphora in 2018.	Priority1	Priority1	Sunset Way Woods
33	Viverridae	<i>Paradoxurus musangus</i>	Common Palm Civet	Least Concern	Not Listed	No	Widespread but Uncommon	Native	Yes		Yes	Recorded on camera trap. Recorded by Camphora in 2018.	Priority 1	Priority1	Sunset Way Woods

No.	Family Name	Scientific Name	Common Name	Global Status (IUCN, 2012)	Local Status (Davison et al. 2008)	Species of Conservation Significance	Distribution/Rarity (Baker & Lim, 2012)	Native Status (Baker & Lim, 2012)	Probable Species	Recorded Species (ESC, 2020; ERM, 2016)	Recorded Species	Remarks	Vibration-sensitivity	Auditory-sensitivity	Location
1	Emballonuridae	<i>Saccolaimus saccolaimus</i>	Pouch-bearing Bat	Least Concern	Not Listed	No	Widespread & Common	Native	Yes		No		Priority 2	Priority 2	Holland Woods
2	Emballonuridae	<i>Taphozous melanopogon</i>	Black-bearded Tomb Bat	Least Concern	Endangered	Yes	Widespread but Rare	Native	Yes		No		Priority1	Priority1	Holland Woods
3	Pteropodidae	<i>Cynopterus brachyotis</i>	Lesser Dog-faced Fruit Bat	Least Concern	Not Listed	No	Widespread & Common	Native	Yes		Yes		Priority1	Priority1	Holland Woods
4	Pteropodidae	<i>Eonycteris spelaea</i>	Cave Nectar Bat	Least Concern	Not Listed	No	Widespread but Uncommon	Native	Yes		No		Priority 2	Priority 2	Holland Woods
5	Rhinolophidae	<i>Rhinolophus lepidus</i>	Glossy Horseshoe Bat	Least Concern	Not Listed	No	Restricted but Common	Native	Yes		Yes	Recorded via acoustic sampling.	Priority1	Priority1	Holland Woods
6	Vespertilionidae	<i>Myotis horsfieldii</i>	Horsfield's Large-footed Myotis	Least Concern	N.A	No	N.A	Native	Yes		No		Priority 2	Priority 2	Holland Woods
7	Vespertilionidae	<i>Myotis muricola</i>	Whiskered Myotis	Least Concern	Not Listed	No	Widespread & Common	Native	Yes		Yes	Recorded via acoustic sampling.	Priority1	Priority1	Holland Woods
8	Vespertilionidae	<i>Pipistrellus javanicus</i>	Javan Pipistrelle	Least Concern	Not Listed	No	Widespread but Uncommon	Native	Yes		No		Priority 2	Priority 2	Holland Woods
9	Vespertilionidae	<i>Scotophilus kuhlii</i>	Asiatic Lesser Yellow House Bat	Least Concern	Not Listed	Yes	Widespread & Common	Native	Yes		Yes	Recorded via acoustic sampling.	Priority1	Priority1	Holland Woods
10	Vespertilionidae	<i>Tylonycteris pachypus</i>	Lesser Bamboo Bat	Least Concern	Critically Endangered	Yes	Rare & Restricted	Native	Yes		No		Priority1	Priority1	Holland Woods
11	Vespertilionidae	<i>Tylonycteris robustula</i>	Greater Bamboo Bat	Least Concern	Not Listed	No	Widespread & Common	Native	Yes		No		Priority 2	Priority 2	Holland Woods
12	Emballonuridae	<i>Saccolaimus saccolaimus</i>	Pouch-bearing Bat	Least Concern	Not Listed	No	Widespread & Common	Native	Yes		Yes	Recorded in Ho et al., 2019. Recorded by Camphora in 2018 and 2019 (acoustic).	Priority 1	Priority 1	Sunset Way Woods
13	Emballonuridae	<i>Taphozous melanopogon</i>	Black-bearded Tomb Bat	Least Concern	Endangered	Yes	Widespread but Rare	Native	Yes		No		Priority 1	Priority 1	Sunset Way Woods
14	Pteropodidae	<i>Cynopterus brachyotis</i>	Lesser Dog-faced Fruit Bat	Least Concern	Not Listed	No	Widespread & Common	Native	Yes		Yes	Recorded by Camphora in 2018 (trap).	Priority 1	Priority 1	Sunset Way Woods
15	Pteropodidae	<i>Eonycteris spelaea</i>	Cave Nectar Bat	Least Concern	Not Listed	No	Widespread but Uncommon	Native	Yes		No		Priority 2	Priority 2	Sunset Way Woods
16	Rhinolophidae	<i>Rhinolophus lepidus</i>	Glossy Horseshoe Bat	Least Concern	Not Listed	No	Restricted but Common	Native	Yes		Yes	Recorded by Camphora in 2018 and 2019 (acoustic).	Priority 1	Priority 1	Sunset Way Woods
17	Vespertilionidae	<i>Myotis horsfieldii</i>	Horsfield's Large-footed Myotis	Least Concern	NA	NA	NA	Native	Yes		No		Priority 2	Priority 2	Sunset Way Woods
18	Vespertilionidae	<i>Myotis muricola</i>	Whiskered Myotis	Least Concern	Not Listed	No	Widespread & Common	Native	Yes		Yes	Recorded by Camphora in 2018 and 2019 (acoustic).	Priority 1	Priority 1	Sunset Way Woods
19	Vespertilionidae	<i>Pipistrellus javanicus</i>	Javan Pipistrelle	Least Concern	Not Listed	No	Widespread but Uncommon	Native	Yes		No	Recorded by Camphora in 2018 (acoustic).	Priority 2	Priority 2	Sunset Way Woods
20	Vespertilionidae	<i>Scotophilus kuhlii</i>	Asiatic Lesser Yellow House Bat	Least Concern	Not Listed	No	Widespread & Common	Native	Yes		Yes	Recorded in Ho et al., 2019. Recorded by Camphora in 2018 and 2019 (acoustic).	Priority 1	Priority 1	Sunset Way Woods
21	Vespertilionidae	<i>Tylonycteris pachypus</i>	Lesser Bamboo Bat	Least Concern	Critically Endangered	Yes	Rare & Restricted	Native	Yes		No	Tylonycteris sp. recorded by Camphora in 2018 (trap).	Priority 1	Priority 1	Sunset Way Woods
22	Vespertilionidae	<i>Tylonycteris robustula</i>	Greater Bamboo Bat	Least Concern	Not Listed	No	Widespread & Common	Native	Yes		No	Tylonycteris sp. recorded by Camphora in 2018 (trap).	Priority 2	Priority 2	Sunset Way Woods

Table Error! No text of specified style in document.-1 Evaluation of Environmental Impacts – Construction Activities (Priority 1 & Priority 2 Ecological Sensitive Receptors in Clementi Forests)

Faunal Group	Species	Common Name	Local Status	Global Status	Vibration Sensitivity	Impact Significance (Impact Boring)	Impact Significance (Tunnel Boring)
Odonate	<i>Gynacantha bayadera</i>	Small Duskhawker	Vulnerable	Least Concern	Priority 1	Minor	Minor
Odonate	<i>Copera vittata</i>	Variable Featherlegs	Vulnerable	Least Concern	Priority 1	Minor	Minor
Butterfly	<i>Borbo cinnara</i>	Formosan Swift	Endangered	Not Assessed	Priority 1	Minor	Minor
Butterfly	<i>Troides helena cerberus</i>	Common Birdwing	Not assessed; CITES protected (Appendix II)	Vulnerable	Priority 1	Minor	Minor
Reptile	<i>Dogania subplana</i>	Malayan Forest Softshell Turtle	Critically Endangered	Least Concern	Priority 1	Minor	Minor
Bird	<i>Nisaetus cirrhatus</i>	Changeable Hawk-Eagle	Endangered	Least Concern	Priority 2	Minor	Minor
Bird	<i>Spilornis cheela</i>	Crested Serpent Eagle	Critically Endangered	Least Concern	Priority 2	Minor	Minor
Bird	<i>Anthracoceros albirostris</i>	Oriental Pied Hornbill	Critically Endangered	Critically Endangered	Priority 2	Minor	Minor
Bird	<i>Vanellus indicus</i>	Red-wattled Lapwing	Endangered	Least Concern	Priority 1	Minor	Minor
Bird	<i>Chrysococcyx xanthorhynchus</i>	Violet Cuckoo	Endangered	Least Concern	Priority 2	Minor	Minor
Bird	<i>Gallus gallus</i>	Red Junglefowl	Endangered	Least Concern	Priority 1	Minor	Minor
Bird	<i>Loriculus galgulus</i>	Blue-crowned Hanging-parrot	Endangered	Least Concern	Priority 2	Minor	Minor
Bird	<i>Psittacula longicauda</i>	Long-tailed Parakeet	Vulnerable	Not Assessed	Priority 2	Minor	Minor
Bird	<i>Pycnonotus zeylanicus</i>	Straw-headed Bulbul	Endangered	Critically Endangered	Priority 2	Minor	Minor
Bird	<i>Rallina fasciata</i>	Red-legged Crane	Vulnerable	Least Concern	Priority 2	Minor	Minor
Bird	<i>Rallina fasciata</i>	Red-legged Crane	Vulnerable	Least Concern	Priority 2	Minor	Minor

Appendix P

Baseline Ground-borne
Vibration Monitoring
Report

1. Baseline Vibration Monitoring Report

1.1 Measurement Equipment

Baseline vibration monitoring was conducted using the equipment detailed in table below.

Table 1-1 Vibration Monitoring Equipment

S/N	Equipment	Brand	Model	Serial Number	Calibration Date
1	Sound & Vibration Analyser	SVANTEK	SVAN977	36829	9 March 2020
				45484	9 March 2020
2	Accelerometer	SVANTEK	SV80	E2191	24 February 2020
				E3676	24 February 2020
3	Sound & Vibration Analyser	SVANTEK	SVAN958A	97713	27 April 2021
4	Accelerometer	SVANTEK	SV207B	97713	27 April 2021

1.2 Methodology

Baseline vibration monitoring includes primary data collection in the form of baseline ground-borne vibration monitoring in the study area. Of the criteria the Peak Particle Velocity (PPV) level is monitored. The purpose of the baseline monitoring is to understand what the existing vibration levels at the sensitive receptors are to establish the impact assessment criteria and in the event that a repeat monitoring event is to be conducted during the construction and/or operational phase of the Project, this monitoring data can be used as a reference of the existing baseline prior to any disturbance in the study area.

1.3 Baseline Vibration Monitoring Results

Baseline ground-borne vibration monitoring have been conducted on two (2) locations which are in proximity to the sensitive receptors and are representative of the baseline vibration levels of the sensitive receptors. The sources of vibration will be weather elements and the movement of the ecology in the vicinity. The vibration data monitored at the beginning and ending of the monitoring period has been omitted to exclude vibration caused while setting up and removal of the monitoring equipment.

Baseline vibration monitoring locations V01 and V10 are in a forested area within Clementi and Maju Forest respectively. Transient passers-by were the sources of vibration within the vicinity. The average, maximum and 99th percentile baseline ground-borne vibration levels are summarised in Table 1-2.



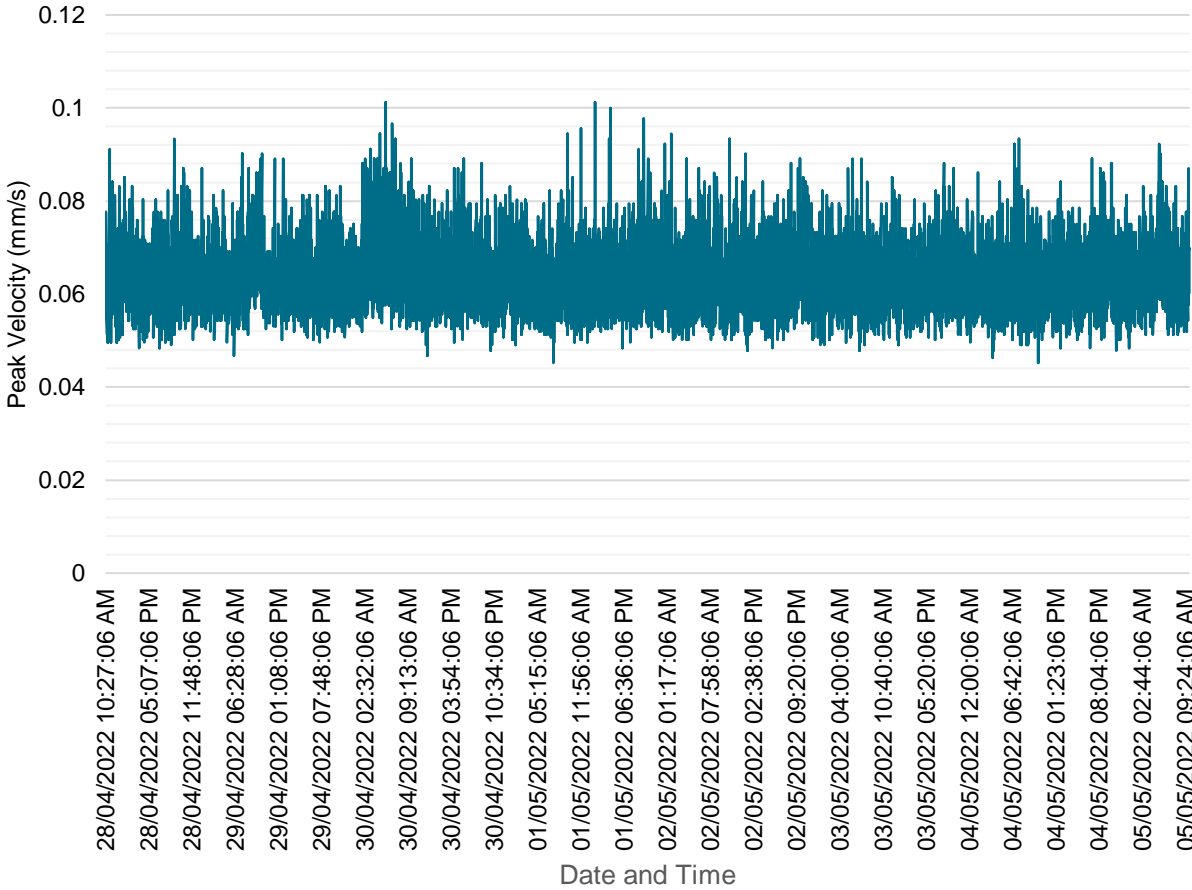
Table 1-2 Summary of Baseline Ground-borne Vibration Levels

Baseline Vibration Monitoring Location	Date	Average PPV, mm/s	Maximum PPV, mm/s	99 th Percentile Baseline Vibration Levels, PPV, mm/s
V01: Within Holland Woods	14 th June 2020 – 15 th June 2020	0.03	0.12	0.08
V10: Within Maju Forest	29 th April 2022 – 5 th May 2022	0.06	0.10	0.08

Table 1-3 Baseline Vibration Monitoring at Holland Woods

Date / Time: 1st July 2020 (16:00) – 2nd July 2020 (16:00)	
Baseline Vibration Monitoring Location	Setup of Vibration Monitoring
V01: Within Holland Woods 	
	

Table 1-4 Baseline Vibration Monitoring at Maju Forest

Date / Time: 28 th April 2022 (10:27) – 5 th May 2022 (09:24)	
Baseline Vibration Monitoring Location	Setup of Vibration Monitoring
V10: Within Maju Forest 	
<p style="text-align: center;">Baseline Vibration Monitoring Results on 28 April - 5 May 2022 at Maju Forest</p> 	

Appendix Q

Monitoring Equipment
Calibration Certificates

Calibration Certificates of Noise and Vibration Monitoring Equipment

Certificate of Calibration

Certificate No.: 475054772

Object: Precision Sound Level Meter Nor131

Supplier: Norsonic AS

Type: Nor131

Serial number: 1313979

Client: TME Systems Pte. Ltd

This instrument is tested and calibrated in accordance to the Norsonic production standard set for Nor131, ensuring that the instrument conforms to the following standards;

IEC 61672-1:2002 class 1
IEC 61260-1 class 1 Ed 1.0 2014-02
ANSI S1.4-1983 (R2001) with amd. S1.4A-1985 class 1
ANSI S1.43-1997 (R2002) class 1
ANSI S1.11-2004 class 1
DIN 45 657, Applicable parts
IEC 61094 part 4

Instrumentation used for calibration traceable to:

Electrical Parameters: MT, Norway
Acoustical Parameters: PTB, Germany
Environmental Parameters: Justervesenet. Norway

FW version: 4.0.1312 2019-03-20 13:16r

Id no.: 5054772

Accessories: Preamplifier type: 1207 S.no: 21124
Microphone type: 1228 S.no: 02786

Comments: None

Date of calibration:

2019-06-06

Calibration interval recommended:

2 years

The environmental parameters applicable to this calibration are kept well within limits ensuring negligible deviation on obtained measurement results.

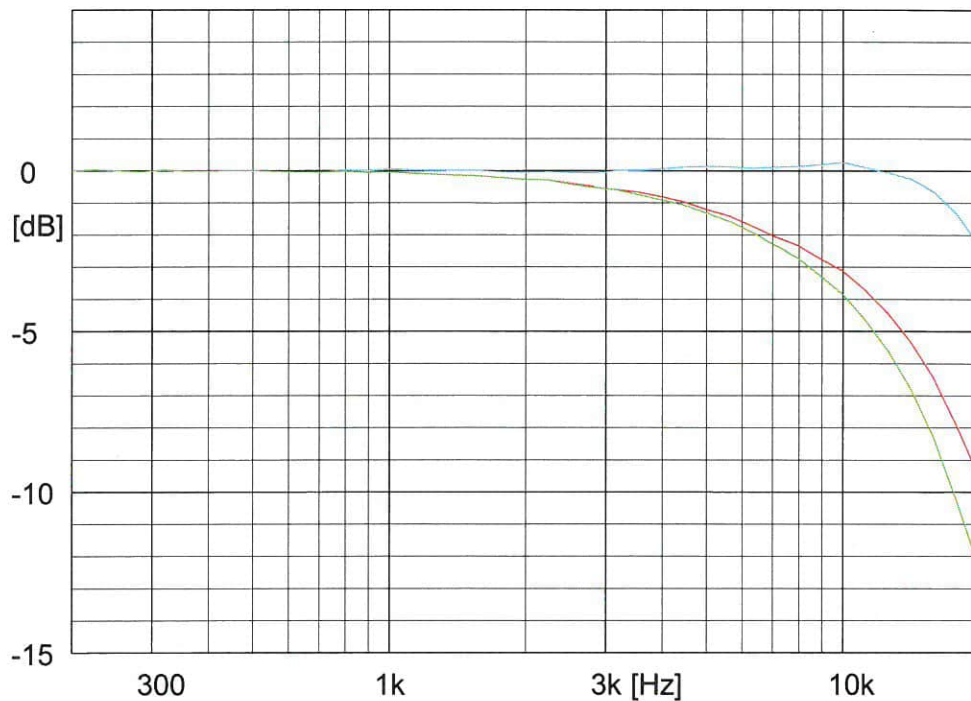
Calibrated by:

Anders Amundsen

Sign. 

Norsonic AS, P.B 24, 3421 Lierskogen. Visitor address: Gunnersbråtan 2, Tranby, Norway.
Phone +47 32858900 Fax.: +47 32852208. email: info@norsonic.com

Microphone Calibration Certificate



Norsonic
Type: 1228

Serial no: 02786

Sensitivity: 48,1 mV/Pa

-26,4 dB re. 1 V/Pa

Capacitance: 12,7 pF

Date: 2019-03-22

Signature: *E. March*

Measurement conditions:

Polarisation voltage: 0,0 V

Pressure: 99,41 kPa

Temperature: 24,1 °C

Relative humidity: 40,4 %RH

Results are normalized to the reference conditions.

Free field response

Diffuse field response

Pressure (Actuator) response

Norsonic AS

www.norsonic.com

Microphone Specifications

Calibration of your microphone cartridge has been made with utmost care to meet all your needs for a high quality measurement device. The calibration is traceable to PTB in Germany.

Nominal Specifications

Ambient temperature coefficient: 0.01 dB/°C

Ambient pressure coefficient: -1×10^{-5} dB/Pa

Temperature range: -30 to +70°C

Diameter: 13.2 mm with protection grid on,
12.7 mm without protection grid

Thread for preamp mounting: 11.7 mm 60 UNS

Reference Values

Temperature: 23°C

Relative humidity: 50%

Ambient pressure: 101.325 kPa

Test frequency for sensitivity: 250 Hz

Norsonic Warranty Statement

The warranty period for microphones is 36 months after the time of delivery.

The warranty does not include damage due to improper handling, overload, force majeure, or normal wear and tear. The warranty is not granted if the buyer make modifications or repairs without our written consent.

Norsonic can choose either to repair or replace microphones having defects due to material or workmanship. Defective goods should be returned to our factory or one of our distributors, and shipments are to be paid and insured by the buyer unless otherwise agreed.

Certificate of Calibration

Certificate No.: 475066674

Object: Precision Sound Level Meter Nor131

Supplier: Norsonic AS

Type: Nor131

Serial number: 1313980

Client: TME Systems Pte. Ltd

This instrument is tested and calibrated in accordance to the Norsonic production standard set for Nor131, ensuring that the instrument conforms to the following standards;

IEC 61672-1:2002 class 1
IEC 61260-1 class 1 Ed 1.0 2014-02
ANSI S1.4-1983 (R2001) with amd. S1.4A-1985 class 1
ANSI S1.43-1997 (R2002) class 1
ANSI S1.11-2004 class 1
DIN 45 657, Applicable parts
IEC 61094 part 4

Instrumentation used for calibration traceable to:

Electrical Parameters: MT, Norway
Acoustical Parameters: PTB, Germany
Environmental Parameters: Justervesenet. Norway

FW version: 4.0.1312 2019-03-20 13:16r

Id no.: 5066674

Accessories: Preamplifier type: 1207 S.no: 21125
Microphone type: 1228 S.no: 03256

Comments: None

Date of calibration:

2019-06-06

Calibration interval recommended:

2 years

The environmental parameters applicable to this calibration are kept well within limits ensuring negligible deviation on obtained measurement results.

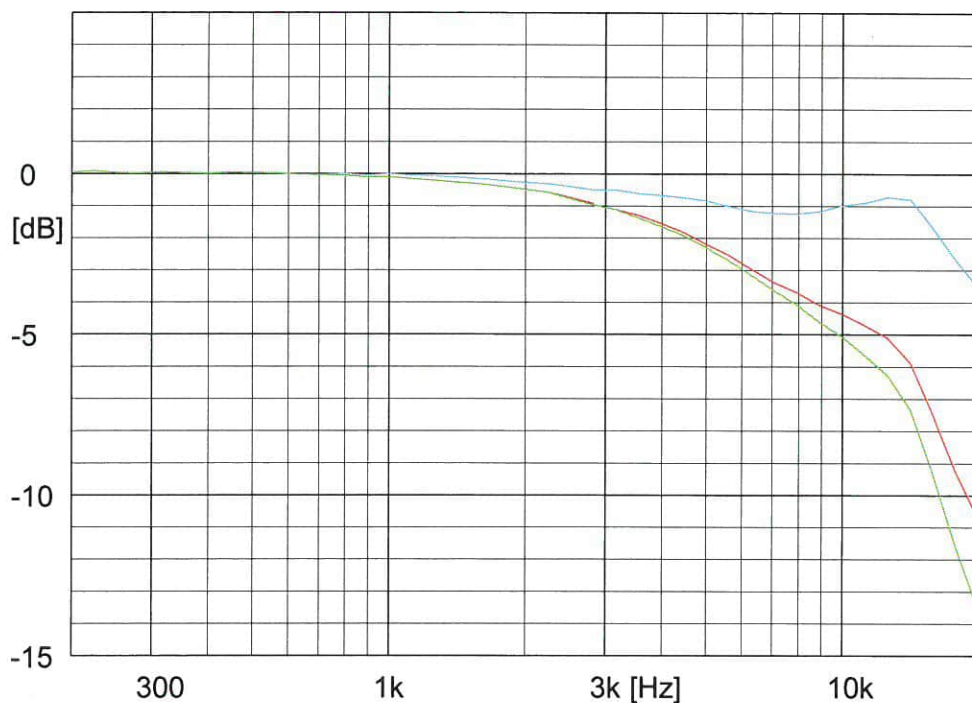
Calibrated by:

Anders Amundsen

Sign. 

Norsonic AS, P.B 24, 3421 Lierskogen. Visitor address: Gunnersbråtan 2, Tranby, Norway.
Phone +47 32858900 Fax.: +47 32852208. email: info@norsonic.com

Microphone Calibration Certificate



Norsonic
Type: 1228

Serial no: 03256

Sensitivity: 51,8 mV/Pa

-25,7 dB re. 1 V/Pa

Capacitance: 15,9 pF

Date: 2019-03-22

Signature: *E. Harch*

Measurement conditions:

Polarisation voltage: 0,0 V

Pressure: 99,37 kPa

Temperature: 24,2 °C

Relative humidity: 41,3 %RH

Results are normalized to the reference conditions.

Free field response

Diffuse field response

Pressure (Actuator) response

Norsonic AS

www.norsonic.com

Microphone Specifications

Calibration of your microphone cartridge has been made with utmost care to meet all your needs for a high quality measurement device. The calibration is traceable to PTB in Germany.

Nominal Specifications

Ambient temperature coefficient: 0.01 dB/°C

Ambient pressure coefficient: -1×10^{-5} dB/Pa

Temperature range: -30 to +70°C

Diameter: 13.2 mm with protection grid on,
12.7 mm without protection grid

Thread for preamp mounting: 11.7 mm 60 UNS

Reference Values

Temperature: 23°C

Relative humidity: 50%

Ambient pressure: 101.325 kPa

Test frequency for sensitivity: 250 Hz

Norsonic Warranty Statement

The warranty period for microphones is 36 months after the time of delivery.

The warranty does not include damage due to improper handling, overload, force majeure, or normal wear and tear. The warranty is not granted if the buyer make modifications or repairs without our written consent.

Norsonic can choose either to repair or replace microphones having defects due to material or workmanship. Defective goods should be returned to our factory or one of our distributors, and shipments are to be paid and insured by the buyer unless otherwise agreed.

Certificate of Calibration

Certificate No.: 475066194

Object: Precision Sound Level Meter Nor131

Supplier: Norsonic AS

Type: Nor131

Serial number: 1313989

Client: AECOM SINGAPORE PTE LTD

This instrument is tested and calibrated in accordance to the Norsonic production standard set for Nor131, ensuring that the instrument conforms to the following standards;

IEC 61672-1:2002 class 1
IEC 61260-1 class 1 Ed 1.0 2014-02
ANSI S1.4-1983 (R2001) with amd. S1.4A-1985 class 1
ANSI S1.43-1997 (R2002) class 1
ANSI S1.11-2004 class 1
DIN 45 657, Applicable parts
IEC 61094 part 4

Instrumentation used for calibration traceable to:

Electrical Parameters: MT, Norway
Acoustical Parameters: PTB, Germany
Environmental Parameters: Justervesenet, Norway

FW version: 4.0.1312 2019-03-20 13:16r

Id no.: 5066194

Accessories: Preamplifier type: 1207 S.no: 21146
Microphone type: 1228 S.no: 03138

Comments: None

Date of calibration:

2019-08-01

Calibration interval recommended:

2 years

The environmental parameters applicable to this calibration are kept well within limits ensuring negligible deviation on obtained measurement results.

Calibrated by:

Anders Amundsen

Sign.


PO BOX 24, N 3420 LIERSKOGEN, NORWAY
TEL: +47 32 85 89 00

Norsonic AS, P.B 24, 3421 Lierskogen. Visitor address: Gunnersbråtan 2, Tranby, Norway.
Phone +47 32858900 Fax.: +47 32852208. email: info@norsonic.com



Model: Nor 1228 Serial No: 03138

Open Circuit Sensitivity Level:

-26.0dB ref 1 V/Pa or 50.2mV/Pa @ 250Hz

Signature: [Signature] Date: 03/06/2019

Test Conditions:

Polarization Voltage :

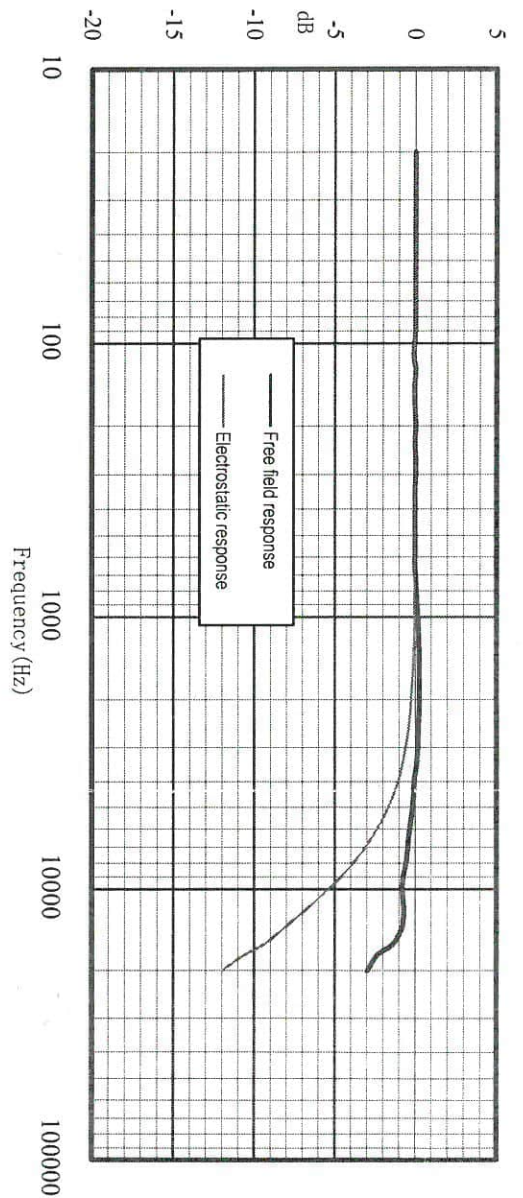
Relative Humidity:

Temperature:

0 V

47%

22 °C



Certificate of Calibration

Certificate No.: 475066660

Object: Precision Sound Level Meter Nor131

Supplier: Norsonic AS

Type: Nor131

Serial number: 1313950

Client: AECOM SINGAPORE

This instrument is tested and calibrated in accordance to the Norsonic production standard set for Nor131, ensuring that the instrument conforms to the following standards;

IEC 61672-1:2002 class 1
IEC 61260-1 class 1 Ed 1.0 2014-02
ANSI S1.4-1983 (R2001) with amd. S1.4A-1985 class 1
ANSI S1.43-1997 (R2002) class 1
ANSI S1.11-2004 class 1
DIN 45 657, Applicable parts
IEC 61094 part 4

Instrumentation used for calibration traceable to:

Electrical Parameters: MT, Norway
Acoustical Parameters: PTB, Germany
Environmental Parameters: Justervesenet, Norway

FW version: 4.0.1282 2018-11-02 12:39r

Id no.: 5066660

Accessories: Preamplifier type: 1207 S.no: 21094
Microphone type: 1228 S.no: 03148

Comments: None

Date of calibration:

2019-02-14

Calibration interval recommended:

2 years

The environmental parameters applicable to this calibration are kept well within limits ensuring negligible deviation on obtained measurement results.

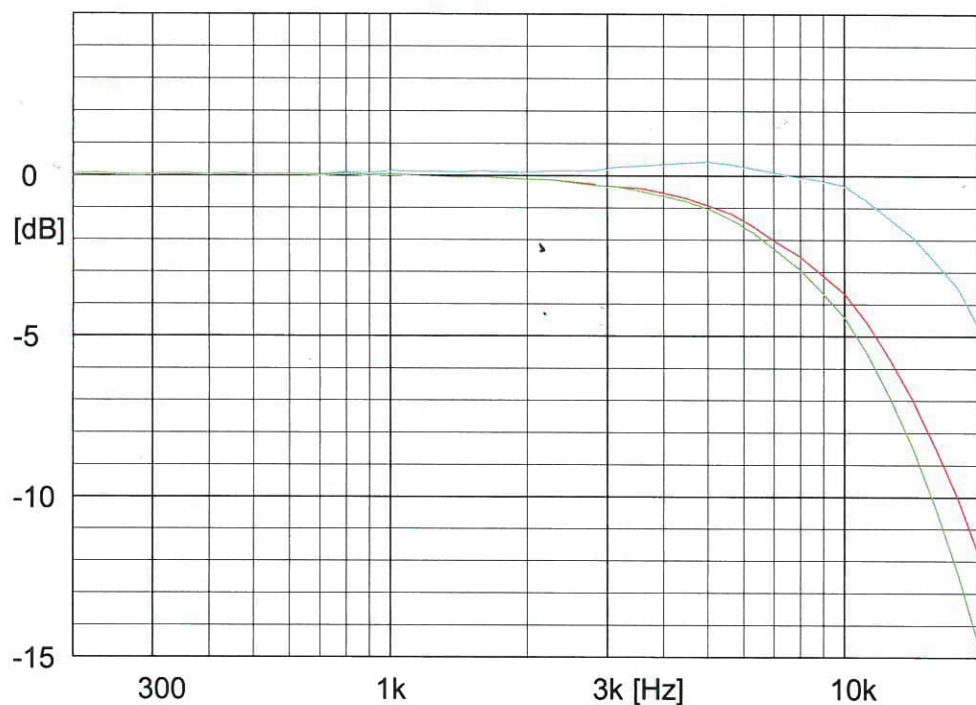
Calibrated by:

Anders Amundsen

Sign. 

Norsonic AS, P.B 24, 3421 Lierskogen. Visitor address: Gunnersbråtan 2, Tranby, Norway.
Phone +47 32858900 Fax.: +47 32852208. email: info@norsonic.com

Microphone Calibration Certificate



Norsonic
Type: 1228

Serial no: 03148

Sensitivity: 49,1 mV/Pa

-26,2 dB re. 1 V/Pa

Capacitance: 10,4 pF

Date: 2019-02-13

Signature: *E. March*

Measurement conditions:

Polarisation voltage: 0,0 V

Pressure: 98,80 kPa

Temperature: 24,4 °C

Relative humidity: 43,0 %RH

Results are normalized to the reference conditions.

Free field response

Diffuse field response

Pressure (Actuator) response

Norsonic AS

www.norsonic.com

Microphone Specifications

Calibration of your microphone cartridge has been made with utmost care to meet all your needs for a high quality measurement device. The calibration is traceable to PTB in Germany.

Nominal Specifications

Ambient temperature coefficient: 0.01 dB/°C

Ambient pressure coefficient: -1×10^{-5} dB/Pa

Temperature range: -30 to +70°C

Diameter: 13.2 mm with protection grid on,
12.7 mm without protection grid

Thread for preamp mounting: 11.7 mm 60 UNS

Reference Values

Temperature: 23°C

Relative humidity: 50%

Ambient pressure: 101.325 kPa

Test frequency for sensitivity: 250 Hz

Norsonic Warranty Statement

The warranty period for microphones is 36 months after the time of delivery.

The warranty does not include damage due to improper handling, overload, force majeure, or normal wear and tear. The warranty is not granted if the buyer make modifications or repairs without our written consent.

Norsonic can choose either to repair or replace microphones having defects due to material or workmanship. Defective goods should be returned to our factory or one of our distributors, and shipments are to be paid and insured by the buyer unless otherwise agreed.

CALIBRATION REPORT

Report No. : AL001457

Page 1 of 3

Customer : AECOM Singapore Pte Ltd
300 Beach Road
Unit 23-00 The Concourse
Singapore 199555

Subject Details

Subject : Accelerometer
Manufacturer : Svantek
Model : SV80
Serial No. : E3676

Sales Order No. : 2028027064/2
Calibration Date : 2020-02-24

Ambient Conditions

Temperature : $(23 \pm 3) ^\circ\text{C}$
Relative Humidity : $(55 \pm 5) \%$ relative humidity



Chan Chee Keong
Calibration Officer



Cui Shan
Approving Officer
Mechanical Metrology
Date of Issue: 2020-03-02

For further enquiries, please contact the Approving Officer, Cui Shan at Tel: +65 6279 1912, Fax: +65 6279 1994 or Email: cui_shan@nmc.a-star.edu.sg

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Method of Calibration

The accelerometer has been calibrated at the National Metrology Centre under the ambient conditions stated on page 1.

The calibration was performed as set out in procedure MM/ACC/01 as appropriate, which is based on ISO 16063-21:2003, Methods for the calibration of vibration and shock transducers – Part 21: Vibration calibration by comparison to a reference transducer.

The accelerometer was exposed to sinusoidal acceleration which was applied by means of an electrodynamic vibration exciter. The accelerometer was mounted at a torque of about 2 Nm using a stainless steel screw. Exciting axis was vertical, relative to the earth gravity.

The sensitivity of the accelerometer was calculated as the ratio of the amplitude of the output voltage of the accelerometer to the amplitude of the acceleration acting on the accelerometer under test.

The calibration was performed using the following instruments and standards traceable to national reference standards maintained at the National Metrology Centre:

- | | |
|--|----------------------------------|
| 1) Spektra SRS 35 Vibration Control System | (serial no.: 201307) |
| 2) PCB M353B17 ICP Accelerometer | (serial no.: LW166504) |
| 3) Spektra SE-09 Vibration Exciter | (serial no.: 760) |
| 4) Spektra PA14-500 Power Amplifier | (serial no.: B14-500E02A13K0156) |
| 5) Spektra CS18 Software | (serial no.: Ver. 2.15.15.2) |
| 6) Rotronic NT3-D-CL Thermohygrometer | (serial no.: 60140834) |

Results of Calibration

The user should determine the suitability of the instrument for its intended use. The recalibration interval should be determined based on the user's requirements.



Calibration Officer

Report No. : AL001457

Page 3 of 3

Results of Calibration

Frequency Hz	Acceleration g Peak	Sensitivity mV/g	Expanded uncertainty of measurement %
20	1.214	103.0	0.8
40	4.844	102.5	0.8
80	5.129	102.0	0.8
160	5.114	101.5	0.8
315	5.106	100.9	0.8
630	5.104	100.3	0.8
1250	10.19	99.58	1.1
2500	10.19	99.16	1.1
5000	10.14	100.5	1.1
10000	10.20	105.0	2.0
14000	10.22	116.6	4.0

The expanded uncertainties of measurement stated in this report are estimated at a confidence level of approximately 95% with a coverage factor $k=2$.


Calibration Officer



National
Metrology Centre

National Metrology Centre
1 Science Park Drive Singapore 118221
Tel: (65) 6279 1900 Fax: (65) 6279 1992
Website: www.a-star.edu.sg/nmc

CALIBRATION REPORT

Report No. : AL001458

Page 1 of 3

Customer : AECOM Singapore Pte Ltd
300 Beach Road
Unit 23-00 The Concourse
Singapore 199555

Subject Details

Subject : Accelerometer
Manufacturer : Svantek
Model : SV80
Serial No. : E2191

Sales Order No. : 2028027064/1
Calibration Date : 2020-02-24

Ambient Conditions

Temperature : $(23 \pm 3) ^\circ\text{C}$
Relative Humidity : $(55 \pm 5) \%$ relative humidity

Chan Chee Keong
Calibration Officer

Cui Shan
Approving Officer
Mechanical Metrology
Date of Issue: 2020-03-03

For further enquiries, please contact the Approving Officer, Cui Shan at Tel: +65 6279 1912, Fax: +65 6279 1994 or Email: cui_shan@nmc.a-star.edu.sg

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A member of A*STAR Research Entities (Co. Reg. No. 199702110H)

Method of Calibration

The accelerometer has been calibrated at the National Metrology Centre under the ambient conditions stated on page 1.

The calibration was performed as set out in procedure MM/ACC/01 as appropriate, which is based on ISO 16063-21:2003, Methods for the calibration of vibration and shock transducers – Part 21: Vibration calibration by comparison to a reference transducer.

The accelerometer was exposed to sinusoidal acceleration which was applied by means of an electrodynamic vibration exciter. The accelerometer was mounted at a torque of about 2 Nm using a stainless steel screw. Exciting axis was vertical, relative to the earth gravity.

The sensitivity of the accelerometer was calculated as the ratio of the amplitude of the output voltage of the accelerometer to the amplitude of the acceleration acting on the accelerometer under test.

The calibration was performed using the following instruments and standards traceable to national reference standards maintained at the National Metrology Centre:

- | | |
|--|--------------------------------|
| 1) Spektra SRS 35 Vibration Control System | (serial no.: 201307) |
| 2) PCB 3701G2FA3G Capacitive Accelerometer | (serial no.: 8832) |
| 3) APS 113AB Long-stroke Vibration Exciter | (serial no.: 2275) |
| 4) APS 125 Power Amplifier | (serial no.: B125E03A13K0087) |
| 5) APS 0109 Zero Position Controller | (serial no.: B0109E01A09K0141) |
| 6) Spektra CS18 Software | (serial no.: Ver. 2.15.15.2) |
| 7) Rotronic NT3-D-CL Thermohygrometer | (serial no.: 60140834) |

Results of Calibration

The user should determine the suitability of the instrument for its intended use. The recalibration interval should be determined based on the user's requirements.



Calibration Officer

Results of Calibration

Frequency Hz	Acceleration g Peak	Sensitivity mV/g	Expanded uncertainty of measurement %
0.5	0.013	85.49	4.6
1	0.050	98.36	1.1
2	0.203	102.5	0.8
4	0.813	103.3	0.8
8	1.023	103.1	0.8
16	0.996	102.5	0.8
31.5	0.994	102.0	0.8
63	0.996	101.6	0.8
125	0.998	101.1	1.1
160	1.001	100.7	1.1

The expanded uncertainties of measurement stated in this report are estimated at a confidence level of approximately 95% with a coverage factor $k=2$.



Calibration Officer



National
Metrology Centre

National Metrology Centre
1 Science Park Drive Singapore 118221
Tel: (65) 6279 1900 Fax: (65) 6279 1992
Website: www.a-star.edu.sg/nmc

CALIBRATION REPORT

Report No. : AL001469

Page 1 of 9

Customer : AECOM Singapore Pte Ltd
300 Beach Road
Unit 23-00 The Concourse
Singapore 199555

Subject Details

Subject : Sound & Vibration Analyser
Manufacturer : Svantek
Model : Svan 977
Serial No. : 45484

Sales Order No. : 2028027064/3
Calibration Date : 2020-03-09

Ambient Conditions

Temperature : $(23 \pm 3) ^\circ\text{C}$
Relative Humidity : $(55 \pm 5) \% \text{ relative humidity}$

Chan Chee Keong
Calibration Officer

Cui Shan
Approving Officer
Mechanical Metrology
Date of Issue: 2020-03-10

For further enquiries, please contact the Approving Officer, Cui Shan at Tel: +65 6279 1912, Fax: +65 6279 1994 or Email: cui_shan@nmc.a-star.edu.sg

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A member of A*STAR Research Entities (Co. Reg. No. 199702110H)

Method of Calibration

The sound & vibration analyser (SLM) was calibrated as set out in procedure MM/SLM/01 as appropriate, which is based on the procedures from IEC 61672-3:2013 Electroacoustics – Sound level meters – Part 3: Periodic tests.

The SLM was calibrated as received. No adjustment was carried out.

The calibration was performed using the following instruments and standards traceable to national reference standards maintained at the National Metrology Centre:

1) SRS DS360 Function Generator	(serial no.: 33187)
2) HP 34401A Multimeter	(serial no.: US36018527)
3) Norsonic 483B Calibration Unit	(serial no.: 31048)
4) Norsonic 1447/2 ½" Preamplifier	(serial no.: 31547)
5) Norsonic 1019 Calibration Program	(serial no.: Version 6.1 2016-05-24)
6) B&K 4191 Free-field ½" Microphone	(serial no.: 3024406)
7) Microtech Gefell MV203 ½" Microphone Preamplifier	(serial no.: 2392)
8) B&K 4231 Sound Calibrator	(serial no.: 3019941)
9) Spektra CS18 Control Unit	(serial no.: 201804)
10) Spektra SQ-101.2 Anechoic Chamber	(serial no.: 1801)
11) Spektra Calibration Program	(serial no.: Rev. 3.5.4.0)
12) Spektra PA 14-180 Power Amplifier	(serial no.: BS14180E02A17K0011)
13) Vaisala HMP233 Humidity & Temperature Transmitter	(serial no.: S0310023)
14) Druck 141 Resonant Sensor Barometer	(serial no.: 389/96-06)

Environmental conditions during calibration,

Air pressure: (100.625 – 100.651) kPa
 Air temperature: (20.9 – 21.5) °C
 Relative humidity: (51.7 – 52.8) % relative humidity

Results of Calibration

The SLM submitted for testing successfully completed the periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed. However, no general statement or conclusion can be made about conformance of the SLM to the full specifications of IEC 61672-1:2013 because evidence was not publicly available, from an independent testing organization responsible for the pattern approvals, to demonstrate that the SLM fully conformed to the class 1 specifications in IEC 61672-1:2013 and because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.



Calibration Officer

Report No. : AL001469

Page 3 of 9

Results of Calibration**Preliminary Inspection – IEC 61672-3 section 5**

The SLM was visually inspected. All relevant controls and display were in working order.

Microphone : ACO 7052E No 59465
 Preamplifier : Svantek SV 12L No. 42585
 Software : Version 1.26.2
 Instruction manual : -

Indication at the calibration check frequency – IEC 61672-3 section 10

The indication of the SLM at the calibration level and frequency was checked by application of a calibrated acoustic calibrator. SLM setting: SPL Fast A.

Ref SPL [dB] at 1 kHz	SLM before adjust [dB]	SLM after adjust [dB]	Measurement uncertainty [dB]
114.02	114.0	-	0.2

Self-generated noise, microphone installed – IEC 61672-3 section 11.1

The SLM microphone was inserted into a closed coupler to minimize environmental noise. SLM setting: Leq Fast. Measurement time was about 30 seconds.

Frequency weighting	SLM [dB]
A	36.7

The A-weighted level of self-generated noise is reported for information only and is not used to assess conformance to a requirement. The level of self-generated noise is reported without an associated uncertainty (IEC 61672-3 section 11.1, Note 2).


Calibration Officer

Results of Calibration**Self-generated noise by the electrical input-signal device – IEC 61672-3 section 11.2**

A low impedance 18 pF adapter was substituted for the SLM microphone. SLM setting: Leq Fast. Measurement time was 30 seconds.

Frequency weighting	SLM [dB]
A	18.5
C	18.4
Z	21.8

The level of self-generated noise is reported for information only and is not used to assess conformance to a requirement. The level is reported without an associated uncertainty (IEC 61672-3 section 11.2, Note).

Acoustical signal tests of a frequency weighting – IEC 61672-3 section 12

Response to acoustical signal at frequency-weighting C was tested in an anechoic chamber under free-field conditions. Expected level was calculated as the reference SPL with the corresponding C-weighted level. SLM setting: SPL Fast C.

Freq [Hz]	Reference SPL [dB]	Expected [dB]	SLM [dB]	Acceptance limits [dB]		Measurement uncertainty [dB]
125	84.01	83.8	84.0	82.8	84.8	0.4
250	84.01	84.0	84.2	83.0	85.0	0.3
500	84.00	84.0	84.2	83.0	85.0	0.3
1000	84.03	84.0	84.1	83.3	84.7	0.3
2000	84.02	83.8	84.2	82.8	84.8	0.3
4000	84.02	83.2	83.8	82.2	84.2	0.3
8000	84.04	81.0	82.3	78.5	82.5	0.3



Calibration Officer

Results of Calibration**Electrical signal tests of frequency weightings – IEC 61672-3 section 13**

The SLM microphone was substituted with an electrical input adaptor and the frequency response relative to level at 1 kHz using electrical signal was measured at 45 dB below the top of the SLM full scale range.

A weighting

Freq [Hz]	Expected [dB]	SLM [dB]	Deviation [dB]	Acceptance limits [dB]	Uncertainty [dB]
63.1	95.0	95.0	0.0	-1.0 1.0	0.2
125.9	95.0	95.0	0.0	-1.0 1.0	0.2
251.2	95.0	94.9	-0.1	-1.0 1.0	0.2
501.2	95.0	94.9	-0.1	-1.0 1.0	0.2
1000.0	95.0	95.0	0.0	-0.7 0.7	0.2
1995.3	95.0	95.0	0.0	-1.0 1.0	0.2
3981.1	95.0	95.0	0.0	-1.0 1.0	0.2
7943.3	95.0	95.1	0.1	-2.5 1.5	0.2
15848.9	95.0	94.8	-0.2	-16.0 2.5	0.2

C weighting

Freq [Hz]	Expected [dB]	SLM [dB]	Deviation [dB]	Acceptance limits [dB]	Uncertainty [dB]
63.1	95.0	95.0	0.0	-1.0 1.0	0.2
125.9	95.0	95.0	0.0	-1.0 1.0	0.2
251.2	95.0	95.0	0.0	-1.0 1.0	0.2
501.2	95.0	95.0	0.0	-1.0 1.0	0.2
1000.0	95.0	95.0	0.0	-0.7 0.7	0.2
1995.3	95.0	95.0	0.0	-1.0 1.0	0.2
3981.1	95.0	95.0	0.0	-1.0 1.0	0.2
7943.3	95.0	95.1	0.1	-2.5 1.5	0.2
15848.9	95.0	94.8	-0.2	-16.0 2.5	0.2



Calibration Officer

Report No. : AL001469

Page 6 of 9

Results of Calibration**Z weighting**

Freq [Hz]	Expected [dB]	SLM [dB]	Deviation [dB]	Acceptance limits [dB]	Uncertainty [dB]
63.1	95.0	95.0	0.0	-1.0 1.0	0.2
125.9	95.0	95.0	0.0	-1.0 1.0	0.2
251.2	95.0	95.0	0.0	-1.0 1.0	0.2
501.2	95.0	95.0	0.0	-1.0 1.0	0.2
1000.0	95.0	95.0	0.0	-0.7 0.7	0.2
1995.3	95.0	95.0	0.0	-1.0 1.0	0.2
3981.1	95.0	95.0	0.0	-1.0 1.0	0.2
7943.3	95.0	95.0	0.0	-2.5 1.5	0.2
15848.9	95.0	95.0	0.0	-16.0 2.5	0.2

Frequency and time weightings at 1 kHz – IEC 61672-3 section 14

Deviation of measurement relative to A-weighted and Fast response shall not differ more than 0.1 dB acceptance limits given in IEC 61672-1:2013.

Time	Weighting	Expected [dB]	SLM [dB]	Deviation [dB]	Uncertainty [dB]
Fast	A	114.0	114.0	Reference SPL	0.2
Fast	C	114.0	114.0	0.0	0.2
Fast	Z	114.0	114.0	0.0	0.2
Slow	A	114.0	114.0	0.0	0.2
Leq	A	114.0	114.0	0.0	0.2
SEL	A	134.0	134.0	0.0	0.2

Long-term stability – IEC 61672-3 section 15

The SLM stability was evaluated for difference between levels with a steady 1 kHz signal applied at the beginning and end of a period of operation. SLM setting: SPL Fast A.

Period [mm:ss]	Initial level [dB]	Final level [dB]	Difference [dB]	Acceptance limits [dB]	Uncertainty [dB]
35:04	114.0	114.0	0.0	-0.1 0.1	0.1


Calibration Officer

Results of CalibrationLevel linearity on the reference level range – IEC 61672-3 clause 16

The SLM linearity was tested with a steady electrical signal at 8 kHz. The test began with the signal adjusted to the reference level of 114 dB and increasing the signal level up to the 1st indication of overload or upper boundary operating range and decreasing the signal level down to the SLM lower boundary operating range. SLM setting: SPL Fast A.

Expected [dB]	SLM [dB]	Deviation [dB]	Acceptance limits [dB]	Uncertainty [dB]	
114.0	114.0	0.0	-0.8 0.8	0.2	
119.0	119.0	0.0	-0.8 0.8	0.2	
124.0	124.0	0.0	-0.8 0.8	0.2	
129.0	129.0	0.0	-0.8 0.8	0.2	
134.9	134.9	0.0	-0.8 0.8	0.2	
135.9	135.9	0.0	-0.8 0.8	0.2	Overload
114.0	114.0	0.0	-0.8 0.8	0.2	
109.0	109.0	0.0	-0.8 0.8	0.2	
104.0	104.0	0.0	-0.8 0.8	0.2	
99.0	99.0	0.0	-0.8 0.8	0.2	
94.0	94.0	0.0	-0.8 0.8	0.2	
89.0	89.0	0.0	-0.8 0.8	0.2	
84.0	84.0	0.0	-0.8 0.8	0.2	
79.0	79.0	0.0	-0.8 0.8	0.2	
74.0	74.0	0.0	-0.8 0.8	0.2	
69.0	69.0	0.0	-0.8 0.8	0.2	
64.0	64.0	0.0	-0.8 0.8	0.2	
59.0	59.0	0.0	-0.8 0.8	0.2	
54.0	54.0	0.0	-0.8 0.8	0.2	
49.0	49.0	0.0	-0.8 0.8	0.2	
44.0	44.1	0.1	-0.8 0.8	0.2	
43.0	43.1	0.1	-0.8 0.8	0.2	
42.0	42.1	0.1	-0.8 0.8	0.2	
41.0	41.1	0.1	-0.8 0.8	0.2	
40.0	40.1	0.1	-0.8 0.8	0.2	


Calibration Officer

Results of Calibration**Toneburst response – IEC 61672-3 section 18**

Response to 4 kHz toneburst, relative to continuous signal were measured at frequency weighting A.

Burst type		Expected [dB]	SLM [dB]	Deviation [dB]	Acceptance limits [dB]		Uncertainty [dB]
Fast	200 mSec	137.0	137.0	0.0	-0.5	0.5	0.3
Fast	2.0 mSec	120.0	120.0	0.0	-1.5	1.0	0.3
Fast	0.25 mSec	111.0	110.9	-0.1	-3.0	1.0	0.3
Slow	200 mSec	130.6	130.6	0.0	-0.5	0.5	0.3
Slow	2.0 mSec	111.0	111.0	0.0	-3.0	1.0	0.3
SEL	200 mSec	131.0	131.0	0.0	-0.5	0.5	0.3
SEL	2.0 mSec	111.0	111.0	0.0	-1.5	1.0	0.3
SEL	0.25 mSec	102.0	101.9	-0.1	-3.0	1.0	0.3

C-weighted peak sound level – IEC 61672-3 section 19

Peak response to 8 kHz 1-cycle and 500 Hz ½-cycle sine were measured.

Pulse type	Pulse [Hz] [dB]		Expected peak [dB]	SLM peak [dB]	Deviation [dB]	Acceptance limits [dB]		Uncertainty [dB]
1 cycle	8 k	129.0	132.4	131.5	-0.9	-2.0	2.0	0.3
Positive ½ cycle	500	132.0	134.4	134.2	-0.2	-1.0	1.0	0.3
Negative ½ cycle	500	132.0	134.4	134.2	-0.2	-1.0	1.0	0.3

Overload indication – IEC 61672-3 section 20

Overload indication was determined with a 4 kHz ½-cycle signal. SLM setting: Leq Fast A.

	SLM [dB]	Acceptance limits [dB]		Uncertainty [dB]
Difference of positive and negative pulses:	0.0	-1.5	1.5	0.2
Positive ½ cycle, overload occurred at:	139.6			
Negative ½ cycle, overload occurred at:	139.6			



Calibration Officer

Results of Calibration**High-level stability – IEC 61672-3 section 21**

Measured with a steady 1 kHz signal at 1 dB below the SLM maximum level range over 5 minutes period.

Initial level [dB]	Final level [dB]	Difference [dB]	Acceptance limits [dB]	Uncertainty [dB]
139.0	139.0	0.0	-0.1 0.1	0.1

The expanded uncertainties of measurement stated in this report are estimated at a confidence level of approximately 95% with a coverage factor $k=2$.

The user should determine the suitability of the instrument for its intended use. The recalibration interval should be determined based on the user's requirements.



Calibration Officer



National
Metrology Centre

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CALIBRATION REPORT

Report No. : AL001470

Page 1 of 9

Customer : AECOM Singapore Pte Ltd
300 Beach Road
Unit 23-00 The Concourse
Singapore 199555

Subject Details

Subject : Sound & Vibration Analyser
Manufacturer : Svantek
Model : Svan 977
Serial No. : 36829

Sales Order No. : 2028027064/4
Calibration Date : 2020-03-09

Ambient Conditions

Temperature : $(23 \pm 3) ^\circ\text{C}$
Relative Humidity : $(55 \pm 10) \%$ relative humidity

Chan Chee Keong
Calibration Officer

Cui Shan
Approving Officer
Mechanical Metrology
Date of Issue: 2020-03-11

For further enquiries, please contact the Approving Officer, Cui Shan at Tel: +65 6279 1912, Fax: +65 6279 1994 or Email: cui_shan@nmc.a-star.edu.sg

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Method of Calibration

The sound & vibration analyser (SLM) was calibrated as set out in procedure MM/SLM/01 as appropriate, which is based on the procedures from IEC 61672-3:2013 Electroacoustics – Sound level meters – Part 3: Periodic tests.

The SLM was calibrated as received. No adjustment was carried out.

The calibration was performed using the following instruments and standards traceable to national reference standards maintained at the National Metrology Centre:

1) SRS DS360 Function Generator	(serial no.: 33187)
2) HP 34401A Multimeter	(serial no.: US36018527)
3) Norsonic 483B Calibration Unit	(serial no.: 31048)
4) Norsonic 1447/2 ½" Preamplifier	(serial no.: 31547)
5) Norsonic 1019 Calibration Program	(serial no.: Version 6.1 2016-05-24)
6) B&K 4191 Free-field ½" Microphone	(serial no.: 3024406)
7) Microtech Gefell MV203 ½" Microphone Preamplifier	(serial no.: 2392)
8) B&K 4231 Sound Calibrator	(serial no.: 3019941)
9) Spektra CS18 Control Unit	(serial no.: 201804)
10) Spektra SQ-101.2 Anechoic Chamber	(serial no.: 1801)
11) Spektra Calibration Program	(serial no.: Rev. 3.5.4.0)
12) Spektra PA 14-180 Power Amplifier	(serial no.: BS14180E02A17K0011)
13) Vaisala HMP233 Humidity & Temperature Transmitter	(serial no.: S0310023)
14) Druck 141 Resonant Sensor Barometer	(serial no.: 389/96-06)

Environmental conditions during calibration,

Air pressure: (100.623 – 100.712) kPa
 Air temperature: (20.4 – 21.9) °C
 Relative humidity: (47.3 – 55.2) % relative humidity

Results of Calibration

The SLM submitted for testing successfully completed the periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed. However, no general statement or conclusion can be made about conformance of the SLM to the full specifications of IEC 61672-1:2013 because evidence was not publicly available, from an independent testing organization responsible for the pattern approvals, to demonstrate that the SLM fully conformed to the class 1 specifications in IEC 61672-1:2013 and because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.



Calibration Officer

Report No. : AL001470

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Results of Calibration**Preliminary Inspection – IEC 61672-3 section 5**

The SLM was visually inspected. All relevant controls and display were in working order.

Microphone : ACO 7052E No 64207
 Preamplifier : Svantek SV 12L No. 49875
 Software : Version 1.25.1
 Instruction manual : -

Indication at the calibration check frequency – IEC 61672-3 section 10

The indication of the SLM at the calibration level and frequency was checked by application of a calibrated acoustic calibrator. SLM setting: SPL Fast A.

Ref SPL [dB] at 1 kHz	SLM before adjust [dB]	SLM after adjust [dB]	Measurement uncertainty [dB]
114.02	114.0	-	0.2

Self-generated noise, microphone installed – IEC 61672-3 section 11.1

The SLM microphone was inserted into a closed coupler to minimize environmental noise. SLM setting: Leq Fast. Measurement time was about 30 seconds.

Frequency weighting	SLM [dB]
A	29.9

The A-weighted level of self-generated noise is reported for information only and is not used to assess conformance to a requirement. The level of self-generated noise is reported without an associated uncertainty (IEC 61672-3 section 11.1, Note 2).


Calibration Officer

Results of Calibration**Self-generated noise by the electrical input-signal device – IEC 61672-3 section 11.2**

A low impedance 18 pF adapter was substituted for the SLM microphone. SLM setting: Leq Fast. Measurement time was 30 seconds.

Frequency weighting	SLM [dB]
A	9.8
C	13.1
Z	17.6

The level of self-generated noise is reported for information only and is not used to assess conformance to a requirement. The level is reported without an associated uncertainty (IEC 61672-3 section 11.2, Note).

Acoustical signal tests of a frequency weighting – IEC 61672-3 section 12

Response to acoustical signal at frequency-weighting C was tested in an anechoic chamber under free-field conditions. Expected level was calculated as the reference SPL with the corresponding C-weighted level. SLM setting: SPL Fast C.

Freq [Hz]	Reference SPL [dB]	Expected [dB]	SLM [dB]	Acceptance limits [dB]		Measurement uncertainty [dB]
125	83.98	83.8	83.9	82.8	84.8	0.4
250	84.01	84.0	84.2	83.0	85.0	0.3
500	84.01	84.0	84.2	83.0	85.0	0.3
1000	84.03	84.0	84.1	83.3	84.7	0.3
2000	84.02	83.8	84.0	82.8	84.8	0.3
4000	84.03	83.2	83.0	82.2	84.2	0.3
8000	84.05	81.1	80.3	78.6	82.6	0.3



Calibration Officer

Results of Calibration**Electrical signal tests of frequency weightings – IEC 61672-3 section 13**

The SLM microphone was substituted with an electrical input adaptor and the frequency response relative to level at 1 kHz using electrical signal was measured at 45 dB below the top of the SLM full scale range.

A weighting

Freq [Hz]	Expected [dB]	SLM [dB]	Deviation [dB]	Acceptance limits [dB]	Uncertainty [dB]
63.1	95.0	95.0	0.0	-1.0 1.0	0.2
125.9	95.0	94.9	-0.1	-1.0 1.0	0.2
251.2	95.0	94.9	-0.1	-1.0 1.0	0.2
501.2	95.0	94.9	-0.1	-1.0 1.0	0.2
1000.0	95.0	95.0	0.0	-0.7 0.7	0.2
1995.3	95.0	95.0	0.0	-1.0 1.0	0.2
3981.1	95.0	95.0	0.0	-1.0 1.0	0.2
7943.3	95.0	95.1	0.1	-2.5 1.5	0.2
15848.9	95.0	94.8	-0.2	-16.0 2.5	0.2

C weighting

Freq [Hz]	Expected [dB]	SLM [dB]	Deviation [dB]	Acceptance limits [dB]	Uncertainty [dB]
63.1	95.0	94.9	-0.1	-1.0 1.0	0.2
125.9	95.0	95.0	0.0	-1.0 1.0	0.2
251.2	95.0	94.9	-0.1	-1.0 1.0	0.2
501.2	95.0	95.0	0.0	-1.0 1.0	0.2
1000.0	95.0	95.0	0.0	-0.7 0.7	0.2
1995.3	95.0	95.0	0.0	-1.0 1.0	0.2
3981.1	95.0	95.0	0.0	-1.0 1.0	0.2
7943.3	95.0	95.1	0.1	-2.5 1.5	0.2
15848.9	95.0	94.8	-0.2	-16.0 2.5	0.2


Calibration Officer

Results of Calibration**Z weighting**

Freq [Hz]	Expected [dB]	SLM [dB]	Deviation [dB]	Acceptance limits [dB]	Uncertainty [dB]
63.1	95.0	95.0	0.0	-1.0 1.0	0.2
125.9	95.0	95.0	0.0	-1.0 1.0	0.2
251.2	95.0	94.9	-0.1	-1.0 1.0	0.2
501.2	95.0	94.9	-0.1	-1.0 1.0	0.2
1000.0	95.0	95.0	0.0	-0.7 0.7	0.2
1995.3	95.0	94.9	-0.1	-1.0 1.0	0.2
3981.1	95.0	94.9	-0.1	-1.0 1.0	0.2
7943.3	95.0	95.0	0.0	-2.5 1.5	0.2
15848.9	95.0	95.0	0.0	-16.0 2.5	0.2

Frequency and time weightings at 1 kHz – IEC 61672-3 section 14

Deviation of measurement relative to A-weighted and Fast response shall not differ more than 0.1 dB acceptance limits given in IEC 61672-1:2013.

Time	Weighting	Expected [dB]	SLM [dB]	Deviation [dB]	Uncertainty [dB]
Fast	A	114.0	114.0	Reference SPL	0.2
Fast	C	114.0	114.0	0.0	0.2
Fast	Z	114.0	114.0	0.0	0.2
Slow	A	114.0	114.0	0.0	0.2
Leq	A	114.0	114.0	0.0	0.2
SEL	A	134.0	134.0	0.0	0.2

Long-term stability – IEC 61672-3 section 15

The SLM stability was evaluated for difference between levels with a steady 1 kHz signal applied at the beginning and end of a period of operation. SLM setting: SPL Fast A.

Period [mm:ss]	Initial level [dB]	Final level [dB]	Difference [dB]	Acceptance limits [dB]	Uncertainty [dB]
26:40	114.0	114.0	0.0	-0.1 0.1	0.1



Calibration Officer

Results of Calibration**Level linearity on the reference level range – IEC 61672-3 clause 16**

The SLM linearity was tested with a steady electrical signal at 8 kHz. The test began with the signal adjusted to the reference level of 114 dB and increasing the signal level up to the 1st indication of overload or upper boundary operating range and decreasing the signal level down to the SLM lower boundary operating range. SLM setting: SPL Fast A.

Expected [dB]	SLM [dB]	Deviation [dB]	Acceptance limits [dB]	Uncertainty [dB]	
114.0	114.0	0.0	-0.8 0.8	0.2	
119.0	119.0	0.0	-0.8 0.8	0.2	
124.0	124.1	0.1	-0.8 0.8	0.2	
129.0	129.1	0.1	-0.8 0.8	0.2	
134.9	135.0 ↑	0.1	-0.8 0.8	0.2	Overload
114.0	114.0	0.0	-0.8 0.8	0.2	
109.0	109.0	0.0	-0.8 0.8	0.2	
104.0	104.0	0.0	-0.8 0.8	0.2	
99.0	99.0	0.0	-0.8 0.8	0.2	
94.0	94.0	0.0	-0.8 0.8	0.2	
89.0	89.0	0.0	-0.8 0.8	0.2	
84.0	84.0	0.0	-0.8 0.8	0.2	
79.0	79.0	0.0	-0.8 0.8	0.2	
74.0	74.0	0.0	-0.8 0.8	0.2	
69.0	69.0	0.0	-0.8 0.8	0.2	
64.0	64.0	0.0	-0.8 0.8	0.2	
59.0	59.0	0.0	-0.8 0.8	0.2	
54.0	54.0	0.0	-0.8 0.8	0.2	
49.0	49.0	0.0	-0.8 0.8	0.2	
44.0	44.1	0.1	-0.8 0.8	0.2	
43.0	43.0	0.0	-0.8 0.8	0.2	
42.0	42.0	0.0	-0.8 0.8	0.2	
41.0	41.1	0.1	-0.8 0.8	0.2	
40.0	40.1	0.1	-0.8 0.8	0.2	



Calibration Officer

Results of Calibration**Toneburst response – IEC 61672-3 section 18**

Response to 4 kHz toneburst, relative to continuous signal were measured at frequency weighting A.

Burst type		Expected [dB]	SLM [dB]	Deviation [dB]	Acceptance limits [dB]		Uncertainty [dB]
Fast	200 mSec	137.0	137.0	0.0	-0.5	0.5	0.3
Fast	2.0 mSec	120.0	119.9	-0.1	-1.5	1.0	0.3
Fast	0.25 mSec	111.0	110.8	-0.2	-3.0	1.0	0.3
Slow	200 mSec	130.6	130.5	-0.1	-0.5	0.5	0.3
Slow	2.0 mSec	111.0	110.9	-0.1	-3.0	1.0	0.3
SEL	200 mSec	131.0	131.0	0.0	-0.5	0.5	0.3
SEL	2.0 mSec	111.0	110.9	-0.1	-1.5	1.0	0.3
SEL	0.25 mSec	102.0	101.9	-0.1	-3.0	1.0	0.3

C-weighted peak sound level – IEC 61672-3 section 19

Peak response to 8 kHz 1-cycle and 500 Hz ½-cycle sine were measured.

Pulse type	Pulse [Hz]	[dB]	Expected peak [dB]	SLM peak [dB]	Deviation [dB]	Acceptance limits [dB]		Uncertainty [dB]
1 cycle	8 k	129.0	132.4	131.7	-0.7	-2.0	2.0	0.3
Positive ½ cycle	500	132.0	134.4	134.1	-0.3	-1.0	1.0	0.3
Negative ½ cycle	500	132.0	134.4	134.1	-0.3	-1.0	1.0	0.3

Overload indication – IEC 61672-3 section 20

Overload indication was determined with a 4 kHz ½-cycle signal. SLM setting: Leq Fast A.

	SLM [dB]	Acceptance limits [dB]		Uncertainty [dB]
Difference of positive and negative pulses:	0.0	-1.5	1.5	0.2
Positive ½ cycle, overload occurred at:	138.6			
Negative ½ cycle, overload occurred at:	138.6			



Calibration Officer

Results of Calibration**High-level stability – IEC 61672-3 section 21**

Measured with a steady 1 kHz signal at 1 dB below the SLM maximum level range over 5 minutes period.

Initial level [dB]	Final level [dB]	Difference [dB]	Acceptance limits [dB]	Uncertainty [dB]
138.8	138.8	0.0	-0.1 0.1	0.1

The expanded uncertainties of measurement stated in this report are estimated at a confidence level of approximately 95% with a coverage factor $k=2$.

The user should determine the suitability of the instrument for its intended use. The recalibration interval should be determined based on the user's requirements.



Calibration Officer

Appendix R1

Impact Assessment for
Habitats, Plant and
Faunal Species at Maju
Forest

					Pre-mitigated				Post-mitigated (Residual)			
Phase	Impact type	Habitat	Ecological Value	Sensitivity	Impact intensity	Consequence	Likelihood	Impact significance	Impact intensity	Consequence	Likelihood	Impact significance
Construction	Loss of vegetation	Native-dominated Secondary Forest	High	Priority 1	Low	Low	Certain	Moderate	Negligible	Very low	Unlikely	Negligible
		Scrubland and Herbaceous Vegetation	Moderate	Priority 2	Negligible	Imperceptible	Unlikely	Negligible	Negligible	Imperceptible	Unlikely	Negligible
		Waste Woodland	Moderate	Priority 2	Negligible	Imperceptible	Unlikely	Negligible	Negligible	Imperceptible	Unlikely	Negligible
		Managed Vegetation	Low	Priority 3	Negligible	Imperceptible	Unlikely	Negligible	Low	Very low	Certain	Minor
	Habitat degradation	Native-dominated Secondary Forest	High	Priority 1	Medium	Medium	Possible	Moderate	Low	Medium	Less likely	Minor
		Scrubland and Herbaceous Vegetation	Moderate	Priority 2	Low	Very low	Less likely	Negligible	Low	Very low	Less likely	Negligible
		Waste Woodland	Moderate	Priority 2	Low	Very low	Less likely	Negligible	Low	Very low	Less likely	Negligible
		Managed Vegetation	Low	Priority 3	Low	Very low	Less likely	Negligible	Low	Very low	Less likely	Negligible
	Change in species composition	Native-dominated Secondary Forest	High	Priority 1	Medium	Medium	Likely	Moderate	Medium	Medium	Less likely	Minor
		Scrubland and Herbaceous Vegetation	Moderate	Priority 2	Low	Very low	Less likely	Negligible	Low	Very low	Less likely	Negligible
		Waste Woodland	Moderate	Priority 2	Low	Very low	Less likely	Negligible	Low	Very low	Less likely	Negligible
		Managed Vegetation	Low	Priority 3	Low	Very low	Less likely	Negligible	Low	Very low	Less likely	Negligible
Operational	Habitat degradation	Native-dominated Secondary Forest	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Scrubland and Herbaceous Vegetation	Moderate	Priority 2	Low	Very low	Less likely	Negligible	Low	Very low	Unlikely	Negligible
		Waste Woodland	Moderate	Priority 2	Low	Very low	Less likely	Negligible	Low	Very low	Unlikely	Negligible
		Managed Vegetation	Low	Priority 3	Low	Very low	Less likely	Negligible	Low	Very low	Unlikely	Negligible
	Change in species composition	Native-dominated Secondary Forest	High	Priority 1	Medium	Medium	Likely	Moderate	Medium	Medium	Unlikely	Negligible
		Scrubland and Herbaceous Vegetation	Moderate	Priority 2	Low	Very low	Less likely	Negligible	Low	Very low	Unlikely	Negligible
		Waste Woodland	Moderate	Priority 2	Low	Very low	Less likely	Negligible	Low	Very low	Unlikely	Negligible
		Managed Vegetation	Low	Priority 3	Low	Very low	Less likely	Negligible	Low	Very low	Unlikely	Negligible

Phase	Impact type	Species	Family	Origin	Status	Habit	Sensitivity	Pre-mitigated			Post-mitigated (residual)				
								Impact intensity	Consequence	Likelihood	Impact significance	Impact intensity	Consequence	Likelihood	Impact significance
Construction	Mortality	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	Priority 1	Low	Low	Almost certain	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Amphineuron opulentum</i>	Thelypteridaceae	Native	Endangered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Angiopteris evecta</i>	Marattiaceae	Native	Vulnerable	Herb	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Archidendron cf. jiringa</i>	Fabaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Aspidopterys concava</i>	Malpighiaceae	Native	Endangered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Bridelia stipularis</i>	Phyllanthaceae	Native	Vulnerable	Shrub	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Caesalpinia sumatrana</i>	Fabaceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Callicarpa longifolia</i>	Lamiaceae	Native	Endangered	Shrub	Priority 1	Low	Low	Almost certain	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Cansjera rheedii</i>	Opiliaceae	Native	Vulnerable	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Connarus semidecandrus</i>	Connaraceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Cryptocarya ferrea</i>	Lauraceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Dalbergia cf. junghunii</i>	Fabaceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Dioscorea orbiculata</i> var. <i>tenuifolia</i>	Dioscoreaceae	Native	Not assessed; recently rediscovered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Dissochaeta gracilis</i>	Melastomataceae	Native	Vulnerable	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Dysoxylum cauliflorum</i>	Meliaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Ficus apicarpa</i>	Moraceae	Native	Endangered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Ficus benjamina</i>	Moraceae	Cryptogenic		Strangler	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Ficus fistulosa</i>	Moraceae	Native	Common	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Ficus grossularioides</i> var. <i>grossularioides</i>	Moraceae	Native	Common	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Ficus heteropleura</i>	Moraceae	Native	Common	Climber	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Unlikely	Negligible
		<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Ficus punctata</i>	Moraceae	Native	Common	Climber	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Unlikely	Negligible
		<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Galearia fulva</i>	Pandaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Garcinia griffithii</i>	Clusiaceae	Native	Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Gymnacranthera farquhariana</i> var. <i>farquhariana</i>	Myristicaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Gymnacranthera forbesii</i>	Myristicaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Horsfieldia polyspherula</i>	Myristicaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Litsea castanea</i>	Lauraceae	Native	Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Litsea cf. grandis</i>	Lauraceae	Native	Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Lomariopsis lineata</i>	Lomariopsidaceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Oncosperma horridum</i>	Arecaceae	Native	Vulnerable	Shrub	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Pteris semipinnata</i>	Pteridaceae	Native	Vulnerable	Herb	Priority 1	High	High	Almost certain	Major	Negligible	Very low	Unlikely	Negligible
		<i>Salacia cf. korthalsiana</i>	Celastraceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Selaginella intermedia</i>	Selaginellaceae	Native	Vulnerable	Herb	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Smilax cf. megacarpa</i>	Smilacaceae	Native	Not assessed; recently rediscovered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Strophanthus cf. caudatus</i>	Apocynaceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Tectaria cf. semipinnata</i>	Dryopteridaceae	Native	Endangered	Herb	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Uncaria longiflora</i> var. <i>pteropoda</i>	Rubiaceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Xanthophyllum eurhynchum</i>	Polygalaceae	Native	Vulnerable	Shrub	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Litsea firma</i>	Lauraceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Macaranga griffithiana</i>	Euphorbiaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Macaranga hulletii</i>	Euphorbiaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Samanea saman</i>	Fabaceae	Exotic	Casual	Tree	Priority 2	Negligible	Imperceptible	Unlikely	Negligible	Negligible	Imperceptible	Unlikely	Negligible
		<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	Priority 2	Negligible	Imperceptible	Unlikely	Negligible	Negligible	Imperceptible	Unlikely	Negligible
		<i>Xylopia caudata</i>	Annonaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
	Impediment to seedling recruitment	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	Priority 1	Low	Low	Possible	Minor	Low	Low	Possible	Minor
		<i>Amphineuron opulentum</i>	Thelypteridaceae	Native	Endangered	Climber	Priority 1	Low	Low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Angiopteris evecta</i>	Marattiaceae	Native	Vulnerable	Herb	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Archidendron cf. jiringa</i>	Fabaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Aspidopterys concava</i>	Malpighiaceae	Native	Endangered	Climber	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Possible	Minor
		<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	Priority 1	Negligible	Very low	Almost certain	Minor	Negligible	Very low	Almost certain	Minor
		<i>Bridelia stipularis</i>	Phyllanthaceae	Native	Vulnerable	Shrub	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor

Phase	Impact type	Species	Family	Origin	Status	Habit	Sensitivity	Pre-mitigated			Likelihood	Post-mitigated (residual)			
								Impact intensity	Consequence	Impact significance		Impact intensity	Consequence	Likelihood	Impact significance
		<i>Caesalpinia sumatrana</i>	Fabaceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Callicarpa longifolia</i>	Lamiaceae	Native	Endangered	Shrub	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Possible	Minor
		<i>Cansjera rheedii</i>	Opiliaceae	Native	Vulnerable	Climber	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Connarus semidecandrus</i>	Connaraceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Cryptocarya ferrea</i>	Lauraceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Dalbergia cf. junghunii</i>	Fabaceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Dioscorea orbiculata</i> var. <i>tenuifolia</i>	Dioscoreaceae	Native	Not assessed; recently rediscovered	Climber	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Dissochaeta gracilis</i>	Melastomataceae	Native	Vulnerable	Climber	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Dysoxylum cauliflorum</i>	Meliaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Ficus apiocarpa</i>	Moraceae	Native	Endangered	Climber	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Possible	Minor	Low	Low	Possible	Minor
		<i>Ficus benjamina</i>	Moraceae	Cryptogenic	-	Strangler	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Ficus fistulosa</i>	Moraceae	Native	Common	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Ficus grossularioides</i> var. <i>grossularioides</i>	Moraceae	Native	Common	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Ficus heteropleura</i>	Moraceae	Native	Common	Climber	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Ficus punctata</i>	Moraceae	Native	Common	Climber	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	Priority 1	Low	Low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Galearia fulva</i>	Pandaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Garcinia griffithii</i>	Clusiaceae	Native	Endangered	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Gymnacranthera farquhariana</i> var. <i>farquhariana</i>	Myristicaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Gymnacranthera forbesii</i>	Myristicaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Horsfieldia polysperula</i>	Myristicaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Litsea castanea</i>	Lauraceae	Native	Endangered	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Litsea cf. grandis</i>	Lauraceae	Native	Endangered	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Lomariopsis lineata</i>	Lomariopsidaceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Oncosperma horridum</i>	Arecaceae	Native	Vulnerable	Shrub	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Pteris semipinnata</i>	Pteridaceae	Native	Vulnerable	Possible	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Salacia cf. korthalsiana</i>	Celastraceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Selaginella intermedia</i>	Selaginellaceae	Native	Vulnerable	Herb	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Smilax cf. megacarpa</i>	Smilacaceae	Native	Not assessed; recently rediscovered	Climber	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Strophanthus cf. caudatus</i>	Apocynaceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Tectaria cf. semipinnata</i>	Dryopteridaceae	Native	Endangered	Herb	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Uncaria longiflora</i> var. <i>pteropoda</i>	Rubiaceae	Native	Critically Endangered	Climber	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Possible	Minor
		<i>Xanthophyllum eurhynchum</i>	Polygalaceae	Native	Vulnerable	Shrub	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Litsea firma</i>	Lauraceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Macaranga griffithiana</i>	Euphorbiaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Macaranga hullettii</i>	Euphorbiaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Samanea saman</i>	Fabaceae	Exotic	Casual	Tree	Priority 2	Negligible	Imperceptible	Possible	Negligible	Negligible	Imperceptible	Possible	Negligible
		<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	Priority 2	Negligible	Imperceptible	Possible	Negligible	Negligible	Imperceptible	Possible	Negligible
		<i>Xylopia caudata</i>	Annonaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
	Competition from exotic species	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Likely	Moderate
		<i>Amphineuron opulentum</i>	Thelypteridaceae	Native	Endangered	Climber	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Likely	Minor
		<i>Angiopteris evecta</i>	Marattiaceae	Native	Vulnerable	Herb	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor
		<i>Archidendron cf. jiringa</i>	Fabaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor
		<i>Aspidopterys concava</i>	Malpighiaceae	Native	Endangered	Climber	Priority 1	Medium	Medium	Unlikely	Negligible	Negligible	Very low	Likely	Minor
		<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor
		<i>Bridelia stipularis</i>	Phyllanthaceae	Native	Vulnerable	Shrub	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor
		<i>Caesalpinia sumatrana</i>	Fabaceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor
		<i>Callicarpa longifolia</i>	Lamiaceae	Native	Endangered	Shrub	Priority 1	Medium	Medium	Unlikely	Negligible	Negligible	Very low	Likely	Minor
		<i>Cansjera rheedii</i>	Opiliaceae	Native	Vulnerable	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor
		<i>Connarus semidecandrus</i>	Connaraceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor
		<i>Cryptocarya ferrea</i>	Lauraceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor
		<i>Dalbergia cf. junghunii</i>	Fabaceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor
		<i>Dioscorea orbiculata</i> var. <i>tenuifolia</i>	Dioscoreaceae	Native	Not assessed; recently rediscovered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor

Phase	Impact type	Species	Family	Origin	Status	Habit	Sensitivity	Pre-mitigated				Post-mitigated (residual)				
								Impact intensity	Consequence	Likelihood	Impact significance	Impact intensity	Consequence	Likelihood	Impact significance	
		<i>Dissochaeta gracilis</i>	Melastomataceae	Native	Vulnerable	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
		<i>Dysoxylum cauliflorum</i>	Meliaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
		<i>Ficus apiocarpa</i>	Moraceae	Native	Endangered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
		<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Low	Low	Likely	Moderate	
		<i>Ficus benjamina</i>	Moraceae	Cryptogenic	-	Strangler	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
		<i>Ficus fistulosa</i>	Moraceae	Native	Common	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
		<i>Ficus grossularioides</i> var. <i>grossularioides</i>	Moraceae	Native	Common	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
		<i>Ficus heteropleura</i>	Moraceae	Native	Common	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
		<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
		<i>Ficus punctata</i>	Moraceae	Native	Common	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
		<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
		<i>Galearia fulva</i>	Pandaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
		<i>Garcinia griffithii</i>	Clusiaceae	Native	Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
		<i>Gymnacranthera farquhariana</i> var. <i>farquhariana</i>	Myristicaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
		<i>Gymnacranthera forbesii</i>	Myristicaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
		<i>Horsfieldia polyspherula</i>	Myristicaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
		<i>Litsea castanea</i>	Lauraceae	Native	Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
		<i>Litsea</i> cf. <i>grandis</i>	Lauraceae	Native	Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
		<i>Lomariopsis lineata</i>	Lomariopsidaceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
		<i>Oncosperma horridum</i>	Arecaceae	Native	Vulnerable	Shrub	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
		<i>Pteris semipinnata</i>	Pteridaceae	Native	Vulnerable	Herb	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
		<i>Salacia</i> cf. <i>korthalsiana</i>	Celastraceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
		<i>Selaginella intermedia</i>	Selaginellaceae	Native	Vulnerable	Herb	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
		<i>Smilax</i> cf. <i>megacarpa</i>	Smilacaceae	Native	Not assessed; recently rediscovered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
		<i>Strophanthus</i> cf. <i>caudatus</i>	Apocynaceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
		<i>Tectaria</i> cf. <i>semipinnata</i>	Dryopteridaceae	Native	Endangered	Herb	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
		<i>Uncaria longiflora</i> var. <i>pteropoda</i>	Rubiaceae	Native	Critically Endangered	Climber	Priority 1	Medium	Medium	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
		<i>Xanthophyllum eurhynchum</i>	Polygalaceae	Native	Vulnerable	Shrub	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
		<i>Litsea firma</i>	Lauraceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Low	Low	Unlikely	Negligible	
		<i>Macaranga griffithiana</i>	Euphorbiaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Low	Low	Unlikely	Negligible	
		<i>Macaranga hulletii</i>	Euphorbiaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Low	Low	Unlikely	Negligible	
		<i>Samanea saman</i>	Fabaceae	Exotic	Casual	Tree	Priority 2	Negligible	Imperceptible	Unlikely	Negligible	Low	Very low	Unlikely	Negligible	
		<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	Priority 2	Negligible	Imperceptible	Unlikely	Negligible	Low	Very low	Unlikely	Negligible	
		<i>Xylopia caudata</i>	Annonaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
		Decline in plant health and survival	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Likely	Moderate
			<i>Amphineuron opulentum</i>	Thelypteridaceae	Native	Endangered	Climber	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Likely	Minor
			<i>Angiopteris evecta</i>	Marattiaceae	Native	Vulnerable	Herb	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor
			<i>Archidendron</i> cf. <i>jiringa</i>	Fabaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor
			<i>Aspidopterys concava</i>	Malpighiaceae	Native	Endangered	Climber	Priority 1	Medium	Medium	Unlikely	Negligible	Negligible	Very low	Likely	Minor
			<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor
			<i>Bridelia stipularis</i>	Phyllanthaceae	Native	Vulnerable	Shrub	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor
			<i>Caesalpinia sumatrana</i>	Fabaceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor
			<i>Callicarpa longifolia</i>	Lamiaceae	Native	Endangered	Shrub	Priority 1	Medium	Medium	Unlikely	Negligible	Negligible	Very low	Likely	Minor
			<i>Cansjera rheedii</i>	Opiliaceae	Native	Vulnerable	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor
	<i>Connarus semidecandrus</i>		Connaraceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
	<i>Cryptocarya ferrea</i>		Lauraceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
	<i>Dalbergia</i> cf. <i>jungthunii</i>		Fabaceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
	<i>Dioscorea orbiculata</i> var. <i>tenuifolia</i>		Dioscoreaceae	Native	Not assessed; recently rediscovered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
	<i>Dissochaeta gracilis</i>		Melastomataceae	Native	Vulnerable	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
	<i>Dysoxylum cauliflorum</i>		Meliaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
	<i>Ficus apiocarpa</i>		Moraceae	Native	Endangered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
	<i>Ficus aurata</i> var. <i>aurata</i>		Moraceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Low	Low	Likely	Moderate	
	<i>Ficus benjamina</i>		Moraceae	Cryptogenic	-	Strangler	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
	<i>Ficus fistulosa</i>		Moraceae	Native	Common	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	
	<i>Ficus grossularioides</i> var. <i>grossularioides</i>		Moraceae	Native	Common	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor	

Phase	Impact type	Species	Family	Origin	Status	Habit	Sensitivity	Pre-mitigated			Post-mitigated (residual)						
								Impact intensity	Consequence	Likelihood	Impact significance	Impact intensity	Consequence	Likelihood	Impact significance		
		<i>Ficus heteropleura</i>	Moraceae	Native	Common	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor		
		<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor		
		<i>Ficus punctata</i>	Moraceae	Native	Common	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor		
		<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Likely	Minor		
		<i>Galearia fulva</i>	Pandaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor		
		<i>Garcinia griffithii</i>	Clusiaceae	Native	Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor		
		<i>Gymmacranthera farquhariana</i> var. <i>farquhariana</i>	Myristicaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor		
		<i>Gymmacranthera forbesii</i>	Myristicaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor		
		<i>Horsfieldia polyspherula</i>	Myristicaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor		
		<i>Litsea castanea</i>	Lauraceae	Native	Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor		
		<i>Litsea cf. grandis</i>	Lauraceae	Native	Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor		
		<i>Lomariopsis lineata</i>	Lomariopsidaceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor		
		<i>Oncosperma horridum</i>	Arecaceae	Native	Vulnerable	Shrub	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor		
		<i>Pteris semipinnata</i>	Pteridaceae	Native	Vulnerable	Herb	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor		
		<i>Salacia cf. korthalsiana</i>	Celastraceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor		
		<i>Selaginella intermedia</i>	Selaginellaceae	Native	Vulnerable	Herb	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor		
		<i>Smilax cf. megacarpa</i>	Smilacaceae	Native	Not assessed; recently rediscovered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor		
		<i>Strophanthus cf. caudatus</i>	Apocynaceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor		
		<i>Tectaria cf. semipinnata</i>	Dryopteridaceae	Native	Endangered	Herb	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor		
		<i>Uncaria longiflora</i> var. <i>pteropoda</i>	Rubiaceae	Native	Critically Endangered	Climber	Priority 1	Medium	Medium	Unlikely	Negligible	Negligible	Very low	Likely	Minor		
		<i>Xanthophyllum eurhynchum</i>	Polygalaceae	Native	Vulnerable	Shrub	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor		
		<i>Litsea firma</i>	Lauraceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Low	Low	Unlikely	Negligible		
		<i>Macaranga griffithiana</i>	Euphorbiaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Low	Low	Unlikely	Negligible		
		<i>Macaranga hulletii</i>	Euphorbiaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Low	Low	Unlikely	Negligible		
		<i>Samanea saman</i>	Fabaceae	Exotic	Casual	Tree	Priority 2	Negligible	Imperceptible	Unlikely	Negligible	Low	Very low	Unlikely	Negligible		
		<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	Priority 2	Negligible	Imperceptible	Unlikely	Negligible	Low	Very low	Unlikely	Negligible		
		<i>Xylopia caudata</i>	Annonaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Likely	Minor		
		Operational	Mortality	<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
				<i>Amphineuron opulentum</i>	Thelypteridaceae	Native	Endangered	Climber	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
				<i>Angiopteris evecta</i>	Marattiaceae	Native	Vulnerable	Herb	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
				<i>Archidendron cf. jiringa</i>	Fabaceae	Native	Vulnerable	Tree	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
				<i>Aspidopterys concava</i>	Malpighiaceae	Native	Endangered	Climber	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
				<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
				<i>Bridelia stipularis</i>	Phyllanthaceae	Native	Vulnerable	Shrub	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
				<i>Caesalpinia sumatrana</i>	Fabaceae	Native	Critically Endangered	Climber	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
				<i>Callicarpa longifolia</i>	Lamiaceae	Native	Endangered	Shrub	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
				<i>Cansjera rheedii</i>	Opiliaceae	Native	Vulnerable	Climber	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
				<i>Connarus semidecandrus</i>	Connaraceae	Native	Critically Endangered	Climber	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
				<i>Cryptocarya ferrea</i>	Lauraceae	Native	Critically Endangered	Tree	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
				<i>Dalbergia cf. junghunii</i>	Fabaceae	Native	Critically Endangered	Climber	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
<i>Dioscorea orbiculata</i> var. <i>tenuifolia</i>	Dioscoreaceae			Native	Not assessed; recently rediscovered	Climber	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible		
<i>Dissochaeta gracilis</i>	Melastomataceae			Native	Vulnerable	Climber	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible		
<i>Dysoxylum cauiliflorum</i>	Meliaceae			Native	Vulnerable	Tree	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible		
<i>Ficus aplocarpa</i>	Moraceae			Native	Endangered	Climber	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible		
<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae			Native	Vulnerable	Tree	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible		
<i>Ficus benjamina</i>	Moraceae			Cryptogenic	-	Strangler	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible		
<i>Ficus fistulosa</i>	Moraceae			Native	Common	Tree	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible		
<i>Ficus grossularioides</i> var. <i>grossularioides</i>	Moraceae			Native	Common	Tree	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible		
<i>Ficus heteropleura</i>	Moraceae			Native	Common	Climber	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible		
<i>Ficus microcarpa</i>	Moraceae			Native	Common	Strangler	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible		
<i>Ficus punctata</i>	Moraceae			Native	Common	Climber	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible		
<i>Ficus variegata</i>	Moraceae			Native	Common	Tree	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible		
<i>Galearia fulva</i>	Pandaceae			Native	Vulnerable	Tree	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible		
<i>Garcinia griffithii</i>	Clusiaceae			Native	Endangered	Tree	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible		
<i>Gymmacranthera farquhariana</i> var. <i>farquhariana</i>	Myristicaceae			Native	Critically Endangered	Tree	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible		

Phase	Impact type	Species	Family	Origin	Status	Habit	Sensitivity	Pre-mitigated			Post-mitigated (residual)				
								Impact intensity	Consequence	Likelihood	Impact significance	Impact intensity	Consequence	Likelihood	Impact significance
Flora	Competition from exotic species	<i>Gymnacranthera forbesii</i>	Myristicaceae	Native	Critically Endangered	Tree	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Horsfieldia polyspherula</i>	Myristicaceae	Native	Vulnerable	Tree	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Litsea castanea</i>	Lauraceae	Native	Endangered	Tree	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Litsea cf. grandis</i>	Lauraceae	Native	Endangered	Tree	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Lomariopsis lineata</i>	Lomariopsidaceae	Native	Critically Endangered	Climber	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Oncosperma horridum</i>	Arecaceae	Native	Vulnerable	Shrub	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Pteris semipinnata</i>	Pteridaceae	Native	Vulnerable	Herb	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Salacia cf. korthalsiana</i>	Celastraceae	Native	Critically Endangered	Climber	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Selaginella intermedia</i>	Selaginellaceae	Native	Vulnerable	Herb	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Smilax cf. megacarpa</i>	Smilacaceae	Native	Not assessed; recently rediscovered	Climber	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Strophanthus cf. caudatus</i>	Apocynaceae	Native	Critically Endangered	Climber	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Tectaria cf. semipinnata</i>	Dryopteridaceae	Native	Endangered	Herb	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Uncaria longiflora</i> var. <i>pteropoda</i>	Rubiaceae	Native	Critically Endangered	Climber	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Xanthophyllum eurhynchum</i>	Polygalaceae	Native	Vulnerable	Shrub	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Litsea firma</i>	Lauraceae	Native	Vulnerable	Tree	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Macaranga griffithiana</i>	Euphorbiaceae	Native	Vulnerable	Tree	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Macaranga hullettii</i>	Euphorbiaceae	Native	Critically Endangered	Tree	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Samanea saman</i>	Fabaceae	Exotic	Casual	Tree	Priority 2	Low	Very low	Unlikely	Negligible	Negligible	Imperceptible	Unlikely	Negligible
		<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	Priority 2	Low	Very low	Unlikely	Negligible	Negligible	Imperceptible	Unlikely	Negligible
		<i>Xylocarpus caudatus</i>	Annonaceae	Native	Vulnerable	Tree	Priority 1	Low	Low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Alseodaphne latifolia</i>	Cyatheaceae	Native	Vulnerable	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Amphineuron opulentum</i>	Thelypteridaceae	Native	Endangered	Climber	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Angiopteris evecta</i>	Marattiaceae	Native	Vulnerable	Herb	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Archidendron cf. jiringa</i>	Fabaceae	Native	Vulnerable	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Aspidopterys concava</i>	Malpighiaceae	Native	Endangered	Climber	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Bidella stipularis</i>	Phyllanthaceae	Native	Vulnerable	Shrub	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Caesalpinia sumatrana</i>	Fabaceae	Native	Critically Endangered	Climber	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Callicarpa longifolia</i>	Lamiaceae	Native	Endangered	Shrub	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Cansjera rheedii</i>	Opiliaceae	Native	Vulnerable	Climber	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Connarus semidecandrus</i>	Connaraceae	Native	Critically Endangered	Climber	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Cryptocarya ferrea</i>	Lauraceae	Native	Critically Endangered	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Dalbergia cf. junghunii</i>	Fabaceae	Native	Critically Endangered	Climber	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Dioscorea orbiculata</i> var. <i>tenuifolia</i>	Dioscoreaceae	Native	Not assessed; recently rediscovered	Climber	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Dissochaeta gracilis</i>	Melastomataceae	Native	Vulnerable	Climber	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Dysoxylum cauliflorum</i>	Meliaceae	Native	Vulnerable	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Ficus apicarpa</i>	Moraceae	Native	Endangered	Climber	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Ficus benjamina</i>	Moraceae	Cryptogenic	-	Strangler	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Ficus fistulosa</i>	Moraceae	Native	Common	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Ficus grossularioides</i> var. <i>grossularioides</i>	Moraceae	Native	Common	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Ficus heteropleura</i>	Moraceae	Native	Common	Climber	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Ficus punctata</i>	Moraceae	Native	Common	Climber	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Galearia fulva</i>	Pandaceae	Native	Vulnerable	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Garcinia griffithii</i>	Clusiaceae	Native	Endangered	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Gymnacranthera farquhariana</i> var. <i>farquhariana</i>	Myristicaceae	Native	Critically Endangered	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Gymnacranthera forbesii</i>	Myristicaceae	Native	Critically Endangered	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Horsfieldia polyspherula</i>	Myristicaceae	Native	Vulnerable	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Litsea castanea</i>	Lauraceae	Native	Endangered	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Litsea cf. grandis</i>	Lauraceae	Native	Endangered	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Lomariopsis lineata</i>	Lomariopsidaceae	Native	Critically Endangered	Climber	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Oncosperma horridum</i>	Arecaceae	Native	Vulnerable	Shrub	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Pteris semipinnata</i>	Pteridaceae	Native	Vulnerable	Herb	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible

Phase	Impact type	Species	Family	Origin	Status	Habit	Sensitivity	Pre-mitigated				Post-mitigated (residual)			
								Impact intensity	Consequence	Likelihood	Impact significance	Impact intensity	Consequence	Likelihood	Impact significance
		<i>Salacia cf. korthalsiana</i>	Celastraceae	Native	Critically Endangered	Climber	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Selaginella intermedia</i>	Selaginellaceae	Native	Vulnerable	Herb	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Smilax cf. megacarpa</i>	Smilacaceae	Native	Not assessed; recently rediscovered	Climber	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Strophanthus cf. caudatus</i>	Apocynaceae	Native	Critically Endangered	Climber	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Tectaria cf. semipinnata</i>	Dryopteridaceae	Native	Endangered	Herb	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Uncaria longiflora</i> var. <i>pteropoda</i>	Rubiaceae	Native	Critically Endangered	Climber	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Xanthophyllum eurhynchum</i>	Polygalaceae	Native	Vulnerable	Shrub	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Litsea firma</i>	Lauraceae	Native	Vulnerable	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Macaranga griffithiana</i>	Euphorbiaceae	Native	Vulnerable	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Macaranga hullettii</i>	Euphorbiaceae	Native	Critically Endangered	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Samanea saman</i>	Fabaceae	Exotic	Casual	Tree	Priority 2	Medium	Low	Possible	Minor	Negligible	Imperceptible	Unlikely	Negligible
		<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	Priority 2	Medium	Low	Possible	Minor	Negligible	Imperceptible	Unlikely	Negligible
		<i>Xylopia caudata</i>	Annonaceae	Native	Vulnerable	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Unlikely	Negligible

									Pre-mitigated				Post-mitigated (Residual)					
Phase	Impact type	Taxon	Scientific name	Common name	National status	Global status	Ecological value	Sensitivity	Impact intensity	Consequence	Likelihood	Impact significance	Impact intensity	Consequence	Likelihood	Impact significance		
	Loss or reduction in habitats and food sources	Bird	<i>Accipiter trivirgatus</i>	Crested goshawk	Critically Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible		
		Bird	<i>Nisaetus cirrhatus</i>	Changeable hawk-eagle	Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible		
		Bird	<i>Gallus gallus</i>	Red junglefowl	Endangered	Least Concern	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Low	Low	Unlikely	Negligible
		Bird	<i>Loriculus galgulus</i>	Blue-crowned hanging-parrot	Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Low	Low	Unlikely	Negligible
		Bird	<i>Pycnonotus zeylanicus</i>	Straw-headed bulbul	Endangered	Critically Endangered; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Low	Low	Unlikely	Negligible
		Bird	<i>Rallina fasciata</i>	Red-legged crane	Vulnerable	Least Concern	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Low	Low	Unlikely	Negligible
		Bird	<i>Psittacula longicauda</i>	Long-tailed parakeet	Not Assessed	Vulnerable; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Low	Low	Unlikely	Negligible
		Mammal	<i>Manis javanica</i>	Sunda pangolin	Critically Endangered	Critically Endangered; CITES protected (Appendix I)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Low	Low	Unlikely	Negligible
		Mammal	<i>Macaca fascicularis</i>	Long-tailed macaque	Least Concern	Vulnerable; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Low	Low	Unlikely	Negligible
		Bat	<i>Tylonycteris sp.</i>	Bamboo bat	Vulnerable	Least Concern	High	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Negligible	Very low	Unlikely	Negligible	
	Injury or mortality	Bird	<i>Accipiter trivirgatus</i>	Crested goshawk	Critically Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Low	Low	Unlikely	Negligible
		Bird	<i>Nisaetus cirrhatus</i>	Changeable hawk-eagle	Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Low	Low	Unlikely	Negligible
		Bird	<i>Gallus gallus</i>	Red junglefowl	Endangered	Least Concern	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Low	Low	Unlikely	Negligible
		Bird	<i>Loriculus galgulus</i>	Blue-crowned hanging-parrot	Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Low	Low	Unlikely	Negligible
		Bird	<i>Pycnonotus zeylanicus</i>	Straw-headed bulbul	Endangered	Critically Endangered; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Low	Low	Unlikely	Negligible
		Bird	<i>Rallina fasciata</i>	Red-legged crane	Vulnerable	Least Concern	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Low	Low	Unlikely	Negligible
		Bird	<i>Psittacula longicauda</i>	Long-tailed parakeet	Not Assessed	Vulnerable; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Low	Low	Unlikely	Negligible
		Mammal	<i>Manis javanica</i>	Sunda pangolin	Critically Endangered	Critically Endangered; CITES protected (Appendix I)	High	Priority 1	High	High	Possible	Moderate	High	High	High	High	Less likely	Minor
		Mammal	<i>Macaca fascicularis</i>	Long-tailed macaque	Least Concern	Vulnerable; CITES protected (Appendix II)	High	Priority 1	High	High	Possible	Moderate	High	High	High	High	Less likely	Minor
		Bat	<i>Tylonycteris sp.</i>	Bamboo bat	Vulnerable	Least Concern	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Low	Low	Unlikely	Negligible
	Loss of ecological connectivity for faunal movement	Bird	<i>Accipiter trivirgatus</i>	Crested goshawk	Critically Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Low	Low	Unlikely	Negligible

									Pre-mitigated				Post-mitigated (Residual)			
Phase	Impact type	Taxon	Scientific name	Common name	National status	Global status	Ecological value	Sensitivity	Impact intensity	Consequence	Likelihood	Impact significance	Impact intensity	Consequence	Likelihood	Impact significance
		Bird	<i>Nisaetus cirrhatus</i>	Changeable hawk-eagle	Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Bird	<i>Gallus gallus</i>	Red junglefowl	Endangered	Least Concern	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Bird	<i>Loriculus galgulus</i>	Blue-crowned hanging-parrot	Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Bird	<i>Pycnonotus zeylanicus</i>	Straw-headed bulbul	Endangered	Critically Endangered; CITES protected (Appendix II)	High	Priority 1	Low	Low	Possible	Minor	Low	Low	Unlikely	Negligible
		Bird	<i>Rallina fasciata</i>	Red-legged crane	Vulnerable	Least Concern	High	Priority 1	Low	Low	Possible	Minor	Low	Low	Unlikely	Negligible
		Bird	<i>Psittacula longicauda</i>	Long-tailed parakeet	Not Assessed	Vulnerable; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Mammal	<i>Manis javanica</i>	Sunda pangolin	Critically Endangered	Critically Endangered; CITES protected (Appendix I)	High	Priority 1	High	High	Likely	Major	Low	Low	Less likely	Minor
		Mammal	<i>Macaca fascicularis</i>	Long-tailed macaque	Least Concern	Vulnerable; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
Operational	Collisions with buildings (birds only)	Bat	<i>Tylonycteris sp.</i>	Bamboo bat	Vulnerable	Least Concern	High	Priority 1	Low	Low	Possible	Minor	Low	Low	Unlikely	Negligible
		Bird	<i>Accipiter trivirgatus</i>	Crested goshawk	Critically Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		Bird	<i>Nisaetus cirrhatus</i>	Changeable hawk-eagle	Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		Bird	<i>Gallus gallus</i>	Red junglefowl	Endangered	Least Concern	High	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		Bird	<i>Loriculus galgulus</i>	Blue-crowned hanging-parrot	Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		Bird	<i>Pycnonotus zeylanicus</i>	Straw-headed bulbul	Endangered	Critically Endangered; CITES protected (Appendix II)	High	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		Bird	<i>Rallina fasciata</i>	Red-legged crane	Vulnerable	Least Concern	High	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		Bird	<i>Psittacula longicauda</i>	Long-tailed parakeet	Not Assessed	Vulnerable; CITES protected (Appendix II)	High	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
	Loss of ecological connectivity for faunal movement	Bird	<i>Accipiter trivirgatus</i>	Crested goshawk	Critically Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Bird	<i>Nisaetus cirrhatus</i>	Changeable hawk-eagle	Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Bird	<i>Gallus gallus</i>	Red junglefowl	Endangered	Least Concern	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Bird	<i>Loriculus galgulus</i>	Blue-crowned hanging-parrot	Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Bird	<i>Pycnonotus zeylanicus</i>	Straw-headed bulbul	Endangered	Critically Endangered; CITES protected (Appendix II)	High	Priority 1	Low	Low	Possible	Minor	Low	Low	Unlikely	Negligible
		Bird	<i>Rallina fasciata</i>	Red-legged crane	Vulnerable	Least Concern	High	Priority 1	Low	Low	Possible	Minor	Low	Low	Unlikely	Negligible

									Pre-mitigated				Post-mitigated (Residual)			
Phase	Impact type	Taxon	Scientific name	Common name	National status	Global status	Ecological value	Sensitivity	Impact intensity	Consequence	Likelihood	Impact significance	Impact intensity	Consequence	Likelihood	Impact significance
	Injury or mortality	Bird	<i>Psittacula longicauda</i>	Long-tailed parakeet	Not Assessed	Vulnerable; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Mammal	<i>Manis javanica</i>	Sunda pangolin	Critically Endangered	Critically Endangered; CITES protected (Appendix I)	High	Priority 1	High	High	Likely	Major	Low	Low	Unlikely	Negligible
		Mammal	<i>Macaca fascicularis</i>	Long-tailed macaque	Least Concern	Vulnerable; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Bat	<i>Tylonycteris sp.</i>	Bamboo bat	Vulnerable	Least Concern	High	Priority 1	Low	Low	Possible	Minor	Low	Low	Unlikely	Negligible
		Bird	<i>Accipiter trivirgatus</i>	Crested goshawk	Critically Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Bird	<i>Nisaetus cirrhatus</i>	Changeable hawk-eagle	Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Bird	<i>Gallus gallus</i>	Red junglefowl	Endangered	Least Concern	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Bird	<i>Loriculus galgulus</i>	Blue-crowned hanging-parrot	Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Bird	<i>Pycnonotus zeylanicus</i>	Straw-headed bulbul	Endangered	Critically Endangered; CITES protected (Appendix II)	High	Priority 1	Medium	Medium	Less likely	Minor	Low	Low	Unlikely	Negligible
		Bird	<i>Rallina fasciata</i>	Red-legged crane	Vulnerable	Least Concern	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Bird	<i>Psittacula longicauda</i>	Long-tailed parakeet	Not Assessed	Vulnerable; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Mammal	<i>Manis javanica</i>	Sunda pangolin	Critically Endangered	Critically Endangered; CITES protected (Appendix I)	High	Priority 1	Medium	Medium	Less likely	Minor	Low	Low	Unlikely	Negligible
		Mammal	<i>Macaca fascicularis</i>	Long-tailed macaque	Least Concern	Vulnerable; CITES protected (Appendix II)	High	Priority 1	Negligible	Very low	Less likely	Negligible	Low	Low	Unlikely	Negligible
		Bat	<i>Tylonycteris sp.</i>	Bamboo bat	Vulnerable	Least Concern	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible

Appendix R2

Impact Assessment for
Habitats, Plant and
Faunal Species at
Clementi Forest

Appendix R2 Impact Assessment for Habitats, Plant and Faunal Species at Holland Woods

Phase	Impact type	Habitat	Ecological Value	Sensitivity	Pre-mitigated				Post-mitigated (Residual)			
					Impact intensity	Consequence	Likelihood	Impact significance	Impact intensity	Consequence	Likelihood	Impact significance
Construction	Loss of vegetation	D/S1 and D/S2 Waterbody	High	Priority 1	Medium	Medium	Certain	Major	Negligible	Very low	Unlikely	Negligible
		D/S22 Waterbody	Medium	Priority 2	Medium	Low	Certain	Moderate	Medium	Low	Certain	Moderate
		Waterlogged areas along the Old Jurong Railway	High	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		A5 Pond	Low	Priority 3	Negligible	Imperceptible	Unlikely	Negligible	Negligible	Imperceptible	Unlikely	Negligible
		Abandoned-land Forest	High	Priority 1	Medium	Medium	Certain	Major	Medium	Medium	Certain	Major
		Scrubland and Herbaceous Vegetation	Moderate	Priority 2	Medium	Low	Certain	Moderate	Medium	Low	Certain	Moderate
		Waste Woodland	Moderate	Priority 2	Negligible	Imperceptible	Unlikely	Negligible	Negligible	Imperceptible	Unlikely	Negligible
		Managed Vegetation	Low	Priority 3	High	Low	Certain	Moderate	High	Low	Certain	Moderate
	Habitat degradation	D/S1 and D/S2 Waterbody	High	Priority 1	High	High	Likely	Major	High	High	Less likely	Minor
		D/S22 Waterbody	Medium	Priority 2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
		Waterlogged areas along the Old Jurong Railway	High	Priority 1	High	High	Possible	Moderate	High	High	Less likely	Minor
		A5 Pond	Low	Priority 3	Low	Very low	Possible	Minor	Low	Very low	Possible	Minor
		Abandoned-land Forest	High	Priority 1	High	High	Possible	Moderate	High	High	Less likely	Minor
		Scrubland and Herbaceous Vegetation	Moderate	Priority 2	High	Medium	Possible	Moderate	High	Medium	Less likely	Minor
		Waste Woodland	Moderate	Priority 2	High	Medium	Less likely	Minor	High	Medium	Unlikely	Negligible
		Managed Vegetation	Low	Priority 3	Low	Very low	Possible	Minor	Low	Very low	Possible	Minor
	Change in species composition	D/S1 and D/S2 Waterbody	High	Priority 1	Low	Low	Possible	Minor	Low	Low	Less likely	Minor
		D/S22 Waterbody	Medium	Priority 2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
		Waterlogged areas along the Old Jurong Railway	High	Priority 1	Low	Low	Possible	Minor	Low	Low	Less likely	Minor
		A5 Pond	Low	Priority 3	Low	Very low	Possible	Minor	Low	Very low	Possible	Minor
		Abandoned-land Forest	High	Priority 1	High	High	Possible	Moderate	High	High	Less likely	Minor
		Scrubland and Herbaceous Vegetation	Moderate	Priority 2	High	Medium	Possible	Moderate	High	High	Less likely	Minor
		Waste Woodland	Moderate	Priority 2	High	Medium	Less likely	Minor	High	High	Less likely	Minor
		Managed Vegetation	Low	Priority 3	Low	Very low	Less likely	Negligible	N.A.	N.A.	N.A.	N.A.
Operational	Habitat degradation	D/S1 and D/S2 Waterbody	High	Priority 1	Low	Low	Possible	Minor	Low	Low	Possible	Minor
		D/S22 Waterbody	Medium	Priority 2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
		Waterlogged areas along the Old Jurong Railway	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Less likely	Minor
		A5 Pond	Low	Priority 3	Low	Very low	Less likely	Negligible	Low	Very low	Less likely	Negligible
		Abandoned-land Forest	High	Priority 1	Low	Very low	Less likely	Negligible	Low	Very low	Less likely	Negligible
		Scrubland and Herbaceous Vegetation	Moderate	Priority 2	Low	Very low	Less likely	Negligible	Low	Very low	Less likely	Negligible
		Waste Woodland	Moderate	Priority 2	Low	Very low	Less likely	Negligible	Low	Very low	Less likely	Negligible
		Managed Vegetation	Low	Priority 3	Low	Very low	Less likely	N.A.	N.A.	N.A.	N.A.	N.A.
	Change in species composition	D/S1 and D/S2 Waterbody	High	Priority 1	Low	Low	Possible	Minor	Low	Low	Less likely	Minor
		D/S22 Waterbody	Medium	Priority 2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
		Waterlogged areas along the Old Jurong Railway	High	Priority 1	Low	Low	Possible	Minor	Low	Low	Negligible	Negligible
		A5 Pond	Low	Priority 3	Low	Very low	Possible	Minor	Low	Very low	Possible	Minor
		Abandoned-land Forest	High	Priority 1	High	High	Possible	Moderate	Medium	Medium	Less likely	Minor
		Scrubland and Herbaceous Vegetation	Moderate	Priority 2	High	Medium	Possible	Moderate	Medium	Medium	Less likely	Minor
		Waste Woodland	Moderate	Priority 2	High	Medium	Less likely	Minor	Medium	Medium	Negligible	Negligible
		Managed Vegetation	Low	Priority 3	Low	Very low	Less likely	Negligible	N.A.	N.A.	N.A.	N.A.

Appendix R2 Impact Assessment for Habitats, Plant and Faunal Species at Holland Woods

								Pre-mitigated			Post-mitigated (residual)				
Phase	Impact type	Species	Family	Origin	Status	Habit	Sensitivity	Impact intensity	Consequence	Likelihood	Impact significance	Impact intensity	Consequence	Likelihood	Impact significance
Construction	Mortality	<i>Agelaea borneensis</i>	Connaraceae	Native	Vulnerable	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Agelaea macrophylla</i>	Connaraceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	Priority 1	Low	Low	Almost certain	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Ampelocissus gracilis</i>	Vitaceae	Native	Endangered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Amphineuron opulentum</i>	Thelypteridaceae	Native	Endangered	Climber	Priority 1	Low	Low	Almost certain	Moderate	Low	Low	Unlikely	Negligible
		<i>Angiopteris evecta</i>	Marattiaceae	Native	Vulnerable	Herb	Priority 1	Low	Low	Almost certain	Moderate	Negligible	Very low	Unlikely	Negligible
		<i>Aporosa benthamiana</i>	Phyllanthaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Asplenium nitidum</i>	Aspleniaceae	Native	Presumed Extinct	Epiphyte	Priority 1	High	High	Almost certain	Major	Negligible	Very low	Unlikely	Negligible
		<i>Bambusa heterostachya</i>	Poaceae	Exotic	Casual	Shrub	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	Priority 1	Low	Low	Almost certain	Moderate	Low	Low	Almost certain	Moderate
		<i>Blechnum finlaysonianum</i>	Blechnaceae	Native	Vulnerable	Herb	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Bridelia stipularis</i>	Phyllanthaceae	Native	Vulnerable	Shrub	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Callicarpa longifolia</i>	Lamiaceae	Native	Endangered	Shrub	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Chassalia chartacea</i>	Rubiaceae	Native	Vulnerable	Shrub	Priority 1	High	High	Almost certain	Major	High	High	Unlikely	Negligible
		<i>Chassalia curviflora</i>	Rubiaceae	Native	Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Chisocheton cf. patens</i>	Meliaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Denia ophrydis</i>	Orchidaceae	Native	Critically Endangered	Herb	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Dysoxylum cauliflorum</i>	Meliaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Endospermum diadenum</i>	Euphorbiaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	Priority 1	Low	Low	Almost certain	Moderate	Low	Low	Almost certain	Moderate
		<i>Ficus benjamina</i>	Moraceae	Cryptogenic	-	Strangler	Priority 1	Medium	Medium	Almost certain	Major	Low	Low	Almost certain	Moderate
		<i>Ficus elastica</i>	Moraceae	Exotic	Casual	Strangler	Priority 1	Medium	Medium	Almost certain	Major	Negligible	Very low	Unlikely	Negligible
		<i>Ficus fistulosa</i>	Moraceae	Native	Common	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Ficus grossularioides</i> var. <i>grossularioides</i>	Moraceae	Native	Common	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Ficus heteropleura</i>	Moraceae	Native	Common	Climber	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	Priority 1	Medium	Medium	Almost certain	Major	Negligible	Very low	Unlikely	Negligible
		<i>Ficus punctata</i>	Moraceae	Native	Common	Climber	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	Priority 1	Medium	Medium	Almost certain	Major	Medium	Medium	Unlikely	Negligible
		<i>Ficus vasculosa</i>	Moraceae	Native	Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Ficus villosa</i>	Moraceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Guioa pubescens</i>	Sapindaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Horsfieldia polysperula</i>	Myristicaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Litsea castanea</i>	Lauraceae	Native	Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Lygodium longifolium</i>	Schizaeaceae	Native	Vulnerable	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Macaranga hulletii</i>	Euphorbiaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Memecylon floridum</i>	Melastomataceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Neoscortechinia cf. sumatrensis</i>	Euphorbiaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Oldenlandia cristata</i>	Rubiaceae	Native	Vulnerable	Herb	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Oncosperma tigillarum</i>	Arecaceae	Native	Vulnerable	Shrub	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Oxyceros longiflorus</i>	Rubiaceae	Native	Vulnerable	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Parkia speciosa</i>	Fabaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Phytocrene bracteata</i>	Icaciniaceae	Native	Vulnerable	Climber	Priority 1	Low	Low	Almost certain	Moderate	Low	Low	Almost certain	Moderate
		<i>Pterocarpus indicus</i>	Fabaceae	Exotic	Casual	Tree	Priority 3	High	Low	Almost certain	Moderate	Low	Very low	Almost certain	Minor
		<i>Selaginella argentea</i>	Selaginellaceae	Native	Critically Endangered	Herb	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Sterculia cf. cordata</i>	Malvaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Sterculia parviflora</i>	Malvaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Streblus elongatus</i>	Moraceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	Priority 2	Low	Very low	Almost certain	Minor	Low	Very low	Almost certain	Minor
		<i>Syzygium oblatum</i> var. <i>oblatum</i>	Myrtaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Tetracera faqifolia</i>	Dilleniaceae	Native	Vulnerable	Climber	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible

Appendix R2 Impact Assessment for Habitats, Plant and Faunal Species at Holland Woods

Phase	Impact type	Species	Family	Origin	Status	Habit	Sensitivity	Pre-mitigated			Post-mitigated (residual)				
								Impact intensity	Consequence	Likelihood	Impact significance	Impact intensity	Consequence	Likelihood	Impact significance
	Impediment to s	<i>Thyrsostachys siamensis</i>	Poaceae	Exotic	Casual	Shrub	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		<i>Agelaea borneensis</i>	Connaraceae	Native	Vulnerable	Climber	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Agelaea macrophylla</i>	Connaraceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Alsophila latebrosa</i>	Cyatheaaceae	Native	Vulnerable	Tree	Priority 1	Low	Low	Possible	Minor	Low	Low	Possible	Minor
		<i>Ampelocissus gracilis</i>	Vitaceae	Native	Endangered	Climber	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Amphineuron opulentum</i>	Thelypteridaceae	Native	Endangered	Climber	Priority 1	Negligible	Very low	Possible	Minor	Low	Low	Possible	Minor
		<i>Angiopteris evecta</i>	Marattiaceae	Native	Vulnerable	Herb	Priority 1	Negligible	Very low	Possible	Minor	Low	Low	Possible	Minor
		<i>Aporosa benthamiana</i>	Phyllanthaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Asplenium nitidum</i>	Aspleniaceae	Native	Presumed Extinct	Epiphyte	Priority 1	Negligible	Very low	Unlikely	Negligible	High	High	Unlikely	Negligible
		<i>Bambusa heterostachya</i>	Poaceae	Exotic	Casual	Shrub	Priority 1	Low	Low	Almost certain	Moderate	Low	Low	Almost certain	Moderate
		<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	Priority 1	Low	Low	Almost certain	Moderate	Low	Low	Almost certain	Moderate
		<i>Blechnum finlaysonianum</i>	Blechnaceae	Native	Vulnerable	Herb	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Bridelia stipularis</i>	Phyllanthaceae	Native	Vulnerable	Shrub	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Callicarpa longifolia</i>	Lamiaceae	Native	Endangered	Shrub	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Chassalia chartacea</i>	Rubiaceae	Native	Vulnerable	Shrub	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Chassalia curviflora</i>	Rubiaceae	Native	Endangered	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Possible	Minor
		<i>Chisocheton cf. patens</i>	Meliaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Denia ophrydis</i>	Orchidaceae	Native	Critically Endangered	Herb	Priority 1	Negligible	Very low	Almost certain	Minor	Negligible	Very low	Almost certain	Minor
		<i>Dysoxylum cauliflorum</i>	Meliaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Endospermum diadenum</i>	Euphorbiaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	Priority 1	Low	Low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Ficus benjamina</i>	Moraceae	Cryptogenic	-	Strangler	Priority 1	Low	Low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Ficus elastica</i>	Moraceae	Exotic	Casual	Strangler	Priority 1	Low	Low	Possible	Minor	Medium	Medium	Possible	Moderate
		<i>Ficus fistulosa</i>	Moraceae	Native	Common	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Ficus grossularioides</i> var. <i>grossularioides</i>	Moraceae	Native	Common	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Ficus heteropleura</i>	Moraceae	Native	Common	Climber	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	Priority 1	Negligible	Very low	Possible	Minor	Low	Low	Possible	Minor
		<i>Ficus punctata</i>	Moraceae	Native	Common	Climber	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	Priority 1	Low	Low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Ficus vasculosa</i>	Moraceae	Native	Endangered	Tree	Priority 1	High	High	Possible	Moderate	Negligible	Very low	Possible	Minor
		<i>Ficus villosa</i>	Moraceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Guioa pubescens</i>	Sapindaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Horsfieldia polyspherula</i>	Myristicaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Litsea castanea</i>	Lauraceae	Native	Endangered	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Lygodium longifolium</i>	Schizaeaceae	Native	Vulnerable	Climber	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Macaranga hullettii</i>	Euphorbiaceae	Native	Critically Endangered	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Possible	Minor
		<i>Memecylon floridum</i>	Meistomataceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Neoscortechinia cf. sumatrensis</i>	Euphorbiaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Oldenlandia cristata</i>	Rubiaceae	Native	Vulnerable	Herb	Priority 1	High	High	Possible	Moderate	Negligible	Very low	Possible	Minor
		<i>Oncosperma tigillarum</i>	Arecaceae	Native	Vulnerable	Shrub	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Oxycceros longiflorus</i>	Rubiaceae	Native	Vulnerable	Climber	Priority 1	Low	Low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Parkia speciosa</i>	Fabaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Phytocrene bracteata</i>	Icacinaceae	Native	Vulnerable	Climber	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Pterocarpus indicus</i>	Fabaceae	Exotic	Casual	Tree	Priority 3	Negligible	Imperceptible	Possible	Negligible	Negligible	Imperceptible	Possible	Negligible
		<i>Selaginella argentea</i>	Selaginellaceae	Native	Critically Endangered	Herb	Priority 1	High	High	Possible	Moderate	Negligible	Very low	Possible	Minor
		<i>Sterculia cf. cordata</i>	Malvaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Sterculia parviflora</i>	Malvaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Streblus elongatus</i>	Moraceae	Native	Vulnerable	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Possible	Minor
		<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	Priority 2	Negligible	Imperceptible	Possible	Negligible	Negligible	Imperceptible	Possible	Negligible
		<i>Syzygium oblatum</i> var. <i>oblatum</i>	Myrtaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Possible	Minor	Negligible	Very low	Possible	Minor

Appendix R2 Impact Assessment for Habitats, Plant and Faunal Species at Holland Woods

Phase	Impact type	Species	Family	Origin	Status	Habit	Sensitivity	Pre-mitigated			Post-mitigated (residual)				
								Impact intensity	Consequence	Likelihood	Impact significance	Impact intensity	Consequence	Likelihood	Impact significance
Flora	Competition from	<i>Tetracera fagifolia</i>	Dilleniaceae	Native	Vulnerable	Climber	Priority 1	Low	Low	Possible	Minor	Negligible	Very low	Possible	Minor
		<i>Thyrsostachys siamensis</i>	Poaceae	Exotic	Casual	Shrub	Priority 1	Negligible	Very low	Almost certain	Minor	Negligible	Very low	Almost certain	Minor
		<i>Agelaea borneensis</i>	Connaraceae	Native	Vulnerable	Climber	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Agelaea macrophylla</i>	Connaraceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	Priority 1	Low	Low	Likely	Moderate	Low	Low	Likely	Moderate
		<i>Ampelocissus gracilis</i>	Vitaceae	Native	Endangered	Climber	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Amphineuron opulentum</i>	Thelypteridaceae	Native	Endangered	Climber	Priority 1	Negligible	Very low	Likely	Minor	Low	Low	Likely	Moderate
		<i>Angiopteris evecta</i>	Marattiaceae	Native	Vulnerable	Herb	Priority 1	Negligible	Very low	Likely	Minor	Low	Low	Likely	Moderate
		<i>Aporosa benthamiana</i>	Phyllanthaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Asplenium nitidum</i>	Aspleniaceae	Native	Presumed Extinct	Epiphyte	Priority 1	Negligible	Very low	Likely	Minor	High	High	Likely	Major
		<i>Bambusa heterostachya</i>	Poaceae	Exotic	Casual	Shrub	Priority 1	Low	Low	Likely	Moderate	Negligible	Very low	Likely	Minor
		<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	Priority 1	Low	Low	Likely	Moderate	Low	Low	Likely	Moderate
		<i>Blechnum finlaysonianum</i>	Blechnaceae	Native	Vulnerable	Herb	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Bridelia stipularis</i>	Phyllanthaceae	Native	Vulnerable	Shrub	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Callicarpa longifolia</i>	Lamiaceae	Native	Endangered	Shrub	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Chassalia chartacea</i>	Rubiaceae	Native	Vulnerable	Shrub	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Chassalia curviflora</i>	Rubiaceae	Native	Endangered	Tree	Priority 1	Medium	Medium	Likely	Moderate	Negligible	Very low	Likely	Minor
		<i>Chisocheton cf. patens</i>	Meliaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Denia ophrydis</i>	Orchidaceae	Native	Critically Endangered	Herb	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Dysoxylum cauliflorum</i>	Meliaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Endospermum diadenum</i>	Euphorbiaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Ficus aurata var. aurata</i>	Moraceae	Native	Vulnerable	Tree	Priority 1	Low	Low	Likely	Moderate	Negligible	Very low	Likely	Minor
		<i>Ficus benjamina</i>	Moraceae	Cryptogenic	-	Strangler	Priority 1	Low	Low	Likely	Moderate	Negligible	Very low	Likely	Minor
		<i>Ficus elastica</i>	Moraceae	Exotic	Casual	Strangler	Priority 1	Low	Low	Likely	Moderate	Negligible	Very low	Likely	Minor
		<i>Ficus fistulosa</i>	Moraceae	Native	Common	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Ficus grossularioides var. grossularioides</i>	Moraceae	Native	Common	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Ficus heterophylla</i>	Moraceae	Native	Common	Climber	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Ficus punctata</i>	Moraceae	Native	Common	Climber	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	Priority 1	Low	Low	Likely	Moderate	Negligible	Very low	Likely	Minor
		<i>Ficus vasculosa</i>	Moraceae	Native	Endangered	Tree	Priority 1	High	High	Likely	Major	Negligible	Very low	Likely	Minor
		<i>Ficus villosa</i>	Moraceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Guioa pubescens</i>	Sapindaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Horsfieldia polysperula</i>	Myristicaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Litsea castanea</i>	Lauraceae	Native	Endangered	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Lygodium longifolium</i>	Schizaeaceae	Native	Vulnerable	Climber	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Macaranga hulletii</i>	Euphorbiaceae	Native	Critically Endangered	Tree	Priority 1	Medium	Medium	Likely	Moderate	Negligible	Very low	Likely	Minor
		<i>Memecylon floridum</i>	Melastomataceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Neoscortechinia cf. sumatrensis</i>	Euphorbiaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Oldenlandia cristata</i>	Rubiaceae	Native	Vulnerable	Herb	Priority 1	High	High	Likely	Major	Negligible	Very low	Likely	Minor
		<i>Oncosperma tigillarum</i>	Arecaceae	Native	Vulnerable	Shrub	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Oxyceros longiflorus</i>	Rubiaceae	Native	Vulnerable	Climber	Priority 1	Low	Low	Likely	Moderate	Negligible	Very low	Likely	Minor
		<i>Parkia speciosa</i>	Fabaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Phytocrene bracteata</i>	Icaciniaceae	Native	Vulnerable	Climber	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Pterocarpus indicus</i>	Fabaceae	Exotic	Casual	Tree	Priority 3	Negligible	Imperceptible	Likely	Negligible	Negligible	Imperceptible	Likely	Negligible
		<i>Selaginella argentea</i>	Selaginellaceae	Native	Critically Endangered	Herb	Priority 1	High	High	Likely	Major	Negligible	Very low	Likely	Minor
		<i>Sterculia cf. cordata</i>	Malvaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Sterculia parviflora</i>	Malvaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Streblus elongatus</i>	Moraceae	Native	Vulnerable	Tree	Priority 1	Medium	Medium	Likely	Moderate	Negligible	Very low	Likely	Minor
		<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	Priority 2	Negligible	Imperceptible	Likely	Negligible	Negligible	Imperceptible	Likely	Negligible

Appendix R2 Impact Assessment for Habitats, Plant and Faunal Species at Holland Woods

								Pre-mitigated			Post-mitigated (residual)				
Phase	Impact type	Species	Family	Origin	Status	Habit	Sensitivity	Impact intensity	Consequence	Likelihood	Impact significance	Impact intensity	Consequence	Likelihood	Impact significance
	Decline in plant h	<i>Syzygium oblatum</i> var. <i>oblatum</i>	Myrtaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Tetracera fagifolia</i>	Dilleniaceae	Native	Vulnerable	Climber	Priority 1	Low	Low	Likely	Moderate	Negligible	Very low	Likely	Minor
		<i>Thyrsostachys siamensis</i>	Poaceae	Exotic	Casual	Shrub	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Agelaea borneensis</i>	Connaraceae	Native	Vulnerable	Climber	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Agelaea macrophylla</i>	Connaraceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	Priority 1	Low	Low	Likely	Moderate	Low	Low	Likely	Moderate
		<i>Ampelocissus gracilis</i>	Vitaceae	Native	Endangered	Climber	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Amphineuron opulentum</i>	Thelypteridaceae	Native	Endangered	Climber	Priority 1	Negligible	Very low	Likely	Minor	Low	Low	Likely	Moderate
		<i>Angiopteris evecta</i>	Marattiaceae	Native	Vulnerable	Herb	Priority 1	Negligible	Very low	Likely	Minor	Low	Low	Likely	Moderate
		<i>Aporosa benthamiana</i>	Phyllanthaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Asplenium nitidum</i>	Aspleniaceae	Native	Presumed Extinct	Epiphyte	Priority 1	Negligible	Very low	Likely	Minor	High	High	Likely	Major
		<i>Bambusa heterostachya</i>	Poaceae	Exotic	Casual	Shrub	Priority 1	Low	Low	Likely	Moderate	Negligible	Very low	Likely	Minor
		<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	Priority 1	Low	Low	Likely	Moderate	Low	Low	Likely	Moderate
		<i>Blechnum finlaysonianum</i>	Blechnaceae	Native	Vulnerable	Herb	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Bridelia stipularis</i>	Phyllanthaceae	Native	Vulnerable	Shrub	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Callicarpa longifolia</i>	Lamiaceae	Native	Endangered	Shrub	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Chassalia chartacea</i>	Rubiaceae	Native	Vulnerable	Shrub	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Chassalia curviflora</i>	Rubiaceae	Native	Endangered	Tree	Priority 1	Medium	Medium	Likely	Moderate	Negligible	Very low	Likely	Minor
		<i>Chisocheton</i> cf. <i>patens</i>	Meliaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Denia ophrydis</i>	Orchidaceae	Native	Critically Endangered	Herb	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Dysoxylum cauliflorum</i>	Meliaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Endospermum diadenum</i>	Euphorbiaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	Priority 1	Low	Low	Likely	Moderate	Negligible	Very low	Likely	Minor
		<i>Ficus benjamina</i>	Moraceae	Cryptogenic	-	Strangler	Priority 1	Low	Low	Likely	Moderate	Negligible	Very low	Likely	Minor
		<i>Ficus elastica</i>	Moraceae	Exotic	Casual	Strangler	Priority 1	Low	Low	Likely	Moderate	Negligible	Very low	Likely	Minor
		<i>Ficus fistulosa</i>	Moraceae	Native	Common	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Ficus grossularioides</i> var. <i>grossularioides</i>	Moraceae	Native	Common	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Ficus heteroppleura</i>	Moraceae	Native	Common	Climber	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Ficus punctata</i>	Moraceae	Native	Common	Climber	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	Priority 1	Low	Low	Likely	Moderate	Negligible	Very low	Likely	Minor
		<i>Ficus vasculosa</i>	Moraceae	Native	Endangered	Tree	Priority 1	High	High	Likely	Major	Negligible	Very low	Likely	Minor
		<i>Ficus villosa</i>	Moraceae	Native	Critically Endangered	Climber	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Guioa pubescens</i>	Sapindaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Horsfieldia polyspherula</i>	Myristicaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Litsea castanea</i>	Lauraceae	Native	Endangered	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Lygodium longifolium</i>	Schizaeaceae	Native	Vulnerable	Climber	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Macaranga hulletii</i>	Euphorbiaceae	Native	Critically Endangered	Tree	Priority 1	Medium	Medium	Likely	Moderate	Negligible	Very low	Likely	Minor
		<i>Memecylon floridum</i>	Meistomataceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Neoscortechinia</i> cf. <i>sumatrensis</i>	Euphorbiaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Oldenlandia cristata</i>	Rubiaceae	Native	Vulnerable	Herb	Priority 1	High	High	Likely	Major	Negligible	Very low	Likely	Minor
		<i>Oncosperma tigillarum</i>	Arecaceae	Native	Vulnerable	Shrub	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Oxycceros longiflorus</i>	Rubiaceae	Native	Vulnerable	Climber	Priority 1	Low	Low	Likely	Moderate	Negligible	Very low	Likely	Minor
		<i>Parkia speciosa</i>	Fabaceae	Native	Vulnerable	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Phytocrene bracteata</i>	Icaciniaceae	Native	Vulnerable	Climber	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Pterocarpus indicus</i>	Fabaceae	Exotic	Casual	Tree	Priority 3	Negligible	Imperceptible	Likely	Negligible	Negligible	Imperceptible	Likely	Negligible
		<i>Selaginella argentea</i>	Selaginellaceae	Native	Critically Endangered	Herb	Priority 1	High	High	Likely	Major	Negligible	Very low	Likely	Minor
		<i>Sterculia</i> cf. <i>cordata</i>	Malvaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Sterculia parviflora</i>	Malvaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Streblus elongatus</i>	Moraceae	Native	Vulnerable	Tree	Priority 1	Medium	Medium	Likely	Moderate	Negligible	Very low	Likely	Minor

Appendix R2 Impact Assessment for Habitats, Plant and Faunal Species at Holland Woods

								Pre-mitigated			Post-mitigated (residual)				
Phase	Impact type	Species	Family	Origin	Status	Habit	Sensitivity	Impact intensity	Consequence	Likelihood	Impact significance	Impact intensity	Consequence	Likelihood	Impact significance
		<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	Priority 2	Negligible	Imperceptible	Likely	Negligible	Negligible	Imperceptible	Likely	Negligible
		<i>Syzygium oblatum</i> var. <i>oblatum</i>	Myrtaceae	Native	Critically Endangered	Tree	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
		<i>Tetracera fagifolia</i>	Dilleniaceae	Native	Vulnerable	Climber	Priority 1	Low	Low	Likely	Moderate	Negligible	Very low	Likely	Minor
		<i>Thyrsostachys siamensis</i>	Poaceae	Exotic	Casual	Shrub	Priority 1	Negligible	Very low	Likely	Minor	Negligible	Very low	Likely	Minor
Operational	Mortality	<i>Agelaea borneensis</i>	Connaraceae	Native	Vulnerable	Climber	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Agelaea macrophylla</i>	Connaraceae	Native	Critically Endangered	Climber	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Ampelocissus gracilis</i>	Vitaceae	Native	Endangered	Climber	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Amphineuron opulentum</i>	Thelypteridaceae	Native	Endangered	Climber	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Angiopteris evecta</i>	Marattiaceae	Native	Vulnerable	Herb	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Aporosa benthamiana</i>	Phyllanthaceae	Native	Vulnerable	Tree	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Asplenium nitidum</i>	Aspleniaceae	Native	Presumed Extinct	Epiphyte	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Bambusa heterostachya</i>	Poaceae	Exotic	Casual	Shrub	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Blechnum finlaysonianum</i>	Blechnaceae	Native	Vulnerable	Herb	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Bridelia stipularis</i>	Phyllanthaceae	Native	Vulnerable	Shrub	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Callicarpa longifolia</i>	Lamiaceae	Native	Endangered	Shrub	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Chassalia chartacea</i>	Rubiaceae	Native	Vulnerable	Shrub	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Chassalia curviflora</i>	Rubiaceae	Native	Endangered	Tree	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Chisocheton</i> cf. <i>patens</i>	Meliaceae	Native	Critically Endangered	Tree	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Denia ophrydis</i>	Orchidaceae	Native	Critically Endangered	Herb	Priority 1	Medium	Medium	Almost certain	Major	Medium	Medium	Almost certain	Major
		<i>Dysoxylum caulliflorum</i>	Meliaceae	Native	Vulnerable	Tree	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Endospermum diadenum</i>	Euphorbiaceae	Native	Vulnerable	Tree	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Ficus benjamina</i>	Moraceae	Cryptogenic	-	Strangler	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Ficus elastica</i>	Moraceae	Exotic	Casual	Strangler	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Ficus fistulosa</i>	Moraceae	Native	Common	Tree	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Ficus grossularioides</i> var. <i>grossularioides</i>	Moraceae	Native	Common	Tree	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Ficus heteropleura</i>	Moraceae	Native	Common	Climber	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Ficus punctata</i>	Moraceae	Native	Common	Climber	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Ficus vasculosa</i>	Moraceae	Native	Endangered	Tree	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Ficus villosa</i>	Moraceae	Native	Critically Endangered	Climber	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Guioa pubescens</i>	Sapindaceae	Native	Vulnerable	Tree	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Horsfieldia polyspherula</i>	Myristicaceae	Native	Vulnerable	Tree	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Litsea castanea</i>	Lauraceae	Native	Endangered	Tree	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Lygodium longifolium</i>	Schizaeaceae	Native	Vulnerable	Climber	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Macaranga hulletii</i>	Euphorbiaceae	Native	Critically Endangered	Tree	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Memecylon floridum</i>	Melastomataceae	Native	Critically Endangered	Tree	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Neoscortechinia</i> cf. <i>sumatrensis</i>	Euphorbiaceae	Native	Critically Endangered	Tree	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Oldenlandia cristata</i>	Rubiaceae	Native	Vulnerable	Herb	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Oncosperma tigillarum</i>	Arecaceae	Native	Vulnerable	Shrub	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Oxyceros longiflorus</i>	Rubiaceae	Native	Vulnerable	Climber	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Parkia speciosa</i>	Fabaceae	Native	Vulnerable	Tree	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Phytocrene bracteata</i>	Icacinales	Native	Vulnerable	Climber	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Pterocarpus indicus</i>	Fabaceae	Exotic	Casual	Tree	Priority 3	Low	Very low	Unlikely	Negligible	Low	Very low	Unlikely	Negligible
		<i>Selaginella argentea</i>	Selaginellaceae	Native	Critically Endangered	Herb	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Sterculia</i> cf. <i>cordata</i>	Malvaceae	Native	Critically Endangered	Tree	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Sterculia parviflora</i>	Malvaceae	Native	Critically Endangered	Tree	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible

Appendix R2 Impact Assessment for Habitats, Plant and Faunal Species at Holland Woods

								Pre-mitigated			Post-mitigated (residual)				
Phase	Impact type	Species	Family	Origin	Status	Habit	Sensitivity	Impact intensity	Consequence	Likelihood	Impact significance	Impact intensity	Consequence	Likelihood	Impact significance
	Competition from	<i>Streblus elongatus</i>	Moraceae	Native	Vulnerable	Tree	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	Priority 2	Low	Very low	Unlikely	Negligible	Low	Very low	Unlikely	Negligible
		<i>Syzygium oblatum</i> var. <i>oblatum</i>	Myrtaceae	Native	Critically Endangered	Tree	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Tetracera fragifolia</i>	Dilleniaceae	Native	Vulnerable	Climber	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Thyrsostachys siamensis</i>	Poaceae	Exotic	Casual	Shrub	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		<i>Agelaea borneensis</i>	Connaraceae	Native	Vulnerable	Climber	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Agelaea macrophylla</i>	Connaraceae	Native	Critically Endangered	Climber	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Alsophila latebrosa</i>	Cyatheaceae	Native	Vulnerable	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Ampelocissus gracilis</i>	Vitaceae	Native	Endangered	Climber	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Amphineuron opulentum</i>	Thelypteridaceae	Native	Endangered	Climber	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Angiopteris evecta</i>	Marattiaceae	Native	Vulnerable	Herb	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Aporosa benthamiana</i>	Phyllanthaceae	Native	Vulnerable	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Asplenium nitidum</i>	Aspleniaceae	Native	Presumed Extinct	Epiphyte	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Bambusa heterostachya</i>	Poaceae	Exotic	Casual	Shrub	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Bambusa vulgaris</i>	Poaceae	Exotic	Casual	Shrub	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Blechnum finlaysonianum</i>	Blechnaceae	Native	Vulnerable	Herb	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Bridelia stipularis</i>	Phyllanthaceae	Native	Vulnerable	Shrub	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Callicarpa longifolia</i>	Lamiaceae	Native	Endangered	Shrub	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Chassalia chartacea</i>	Rubiaceae	Native	Vulnerable	Shrub	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Chassalia curviflora</i>	Rubiaceae	Native	Endangered	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Chisocheton</i> cf. <i>patens</i>	Meliaceae	Native	Critically Endangered	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Denia ophrydis</i>	Orchidaceae	Native	Critically Endangered	Herb	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Dysoxylum cauliflorum</i>	Meliaceae	Native	Vulnerable	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Endospermum diadenum</i>	Euphorbiaceae	Native	Vulnerable	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Ficus aurata</i> var. <i>aurata</i>	Moraceae	Native	Vulnerable	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Ficus benjamina</i>	Moraceae	Cryptogenic	-	Strangler	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Ficus elastica</i>	Moraceae	Exotic	Casual	Strangler	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Ficus fistulosa</i>	Moraceae	Native	Common	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Ficus grossularioides</i> var. <i>grossularioides</i>	Moraceae	Native	Common	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Ficus heteropleura</i>	Moraceae	Native	Common	Climber	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Ficus microcarpa</i>	Moraceae	Native	Common	Strangler	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Ficus punctata</i>	Moraceae	Native	Common	Climber	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Ficus variegata</i>	Moraceae	Native	Common	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Ficus vasculosa</i>	Moraceae	Native	Endangered	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Ficus villosa</i>	Moraceae	Native	Critically Endangered	Climber	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Guioa pubescens</i>	Sapindaceae	Native	Vulnerable	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Horsfieldia polyspherula</i>	Myristicaceae	Native	Vulnerable	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Litsea castanea</i>	Lauraceae	Native	Endangered	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Lygodium longifolium</i>	Schizaeaceae	Native	Vulnerable	Climber	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Macaranga hulletii</i>	Euphorbiaceae	Native	Critically Endangered	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Memecylon floridum</i>	Melastomataceae	Native	Critically Endangered	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Neoscortechinia</i> cf. <i>sumatrensis</i>	Euphorbiaceae	Native	Critically Endangered	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Oldenlandia cristata</i>	Rubiaceae	Native	Vulnerable	Herb	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Oncosperma tigillarum</i>	Arecaceae	Native	Vulnerable	Shrub	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Oxyceros longiflorus</i>	Rubiaceae	Native	Vulnerable	Climber	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Parkia speciosa</i>	Fabaceae	Native	Vulnerable	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Phytocrene bracteata</i>	Icacinaceae	Native	Vulnerable	Climber	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Pterocarpus indicus</i>	Fabaceae	Exotic	Casual	Tree	Priority 3	Medium	Very low	Possible	Minor	Negligible	Imperceptible	Likely	Negligible
		<i>Selaginella argentea</i>	Selaginellaceae	Native	Critically Endangered	Herb	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Sterculia</i> cf. <i>cordata</i>	Malvaceae	Native	Critically Endangered	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor

								Pre-mitigated				Post-mitigated (residual)			
Phase	Impact type	Species	Family	Origin	Status	Habit	Sensitivity	Impact intensity	Consequence	Likelihood	Impact significance	Impact intensity	Consequence	Likelihood	Impact significance
		<i>Sterculia parviflora</i>	Malvaceae	Native	Critically Endangered	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Streblus elongatus</i>	Moraceae	Native	Vulnerable	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Syzygium grande</i>	Myrtaceae	Native	Common	Tree	Priority 2	Medium	Low	Possible	Minor	Negligible	Imperceptible	Likely	Negligible
		<i>Syzygium oblatum</i> var. <i>oblatum</i>	Myrtaceae	Native	Critically Endangered	Tree	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Tetracera fagifolia</i>	Dilleniaceae	Native	Vulnerable	Climber	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor
		<i>Thyrsostachys siamensis</i>	Poaceae	Exotic	Casual	Shrub	Priority 1	Medium	Medium	Possible	Moderate	Negligible	Very low	Likely	Minor

Appendix R2 Impact Assessment for Habitats, Plant and Faunal Species at Holland Woods

Phase	Impact type	Taxon	Scientific name	Common name	National status	Global status	Ecological value	Sensitivity	Pre-mitigated				Post-mitigated (Residual)			
									Impact intensity	Consequence	Likelihood	Impact significance	Impact intensity	Consequence	Likelihood	Impact significance
Construction	Loss or reduction in habitats and food sources	Aculeate Hymenopteran	<i>Lipotriches takauensis</i>	N.A.	Vulnerable	Not Assessed	High	Priority 1	Medium	Medium	Possible	Mo derate	Negligible	Very low	Unlikely	Negligible
		Odonate	<i>Gynacantha bayadera</i>	Small duskhawker	Vulnerable	Least Concern	High	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		Odonate	<i>Copera vittata</i>	Variable featherlegs	Vulnerable	Least Concern	High	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		Butterfly	<i>Borbo cinnara</i>	Formosan swift	Endangered	Not Assessed	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Less likely	Minor
		Butterfly	<i>Troides helena cerberus</i>	Common birdwing	Not assessed; CITES protected (Appendix II)	Vulnerable	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Less likely	Minor
		Reptile	<i>Dogania subplana</i>	Malayan forest softshell turtle	Critically Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Medium	Medium	Possible	Mo derate	High	High	Unlikely	Minor
		Bird	<i>Nisaetus cirrhatus</i>	Changeable hawk-eagle	Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Medium	Medium	Possible	Mo derate	Medium	Medium	Less likely	Minor
		Bird	<i>Spilornis cheela</i>	Crested serpent eagle	Critically Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Medium	Medium	Possible	Mo derate	Medium	Medium	Less likely	Minor
		Bird	<i>Anthraceroceros albirostris</i>	Oriental pied hornbill	Critically Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Medium	Medium	Possible	Mo derate	Medium	Medium	Less likely	Minor
		Bird	<i>Vanellus indicus</i>	Red-wattled lapwing	Endangered	Least Concern	High	Priority 1	Medium	Medium	Possible	Mo derate	Medium	Medium	Less likely	Minor
		Bird	<i>Chrysococcyx xanthorhynchus</i>	Violet cuckoo	Endangered	Least Concern	High	Priority 1	Medium	Medium	Possible	Mo derate	Medium	Medium	Less likely	Minor
		Bird	<i>Gallus gallus</i>	Red junglefowl	Endangered	Least Concern	High	Priority 1	Medium	Medium	Possible	Mo derate	Medium	Medium	Less likely	Minor
		Bird	<i>Loriculus galgulus</i>	Blue-crowned hanging-parrot	Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Medium	Medium	Possible	Mo derate	Medium	Medium	Less likely	Minor
		Bird	<i>Psittacula longicauda</i>	Long-tailed parakeet	Not Assessed	Vulnerable; CITES protected (Appendix II)	High	Priority 1	Medium	Medium	Possible	Mo derate	Medium	Medium	Less likely	Minor
		Bird	<i>Pycnonotus zeylanicus</i>	Straw-headed bulbul	Endangered	Critically Endangered; CITES protected (Appendix II)	High	Priority 1	Medium	Medium	Possible	Mo derate	Medium	Medium	Less likely	Minor
		Bird	<i>Rallina fasciata</i>	Red-legged crane	Vulnerable	Least Concern	High	Priority 1	Medium	Medium	Possible	Mo derate	Medium	Medium	Less likely	Minor
		Non-Volant Mammal	<i>Manis javanica</i>	Sunda pangolin	Critically Endangered	Critically Endangered; CITES protected (Appendix I)	High	Priority 1	Medium	Medium	Possible	Mo derate	Medium	Medium	Less likely	Minor
		Non-Volant Mammal	<i>Macaca fascicularis</i>	Long-tailed macaque	Least Concern	Vulnerable; CITES protected (Appendix II)	High	Priority 1	Medium	Medium	Possible	Mo derate	Medium	Medium	Less likely	Minor
		Bat	<i>Tylonycteris</i> sp.	Bamboo bat	Vulnerable	Least Concern	High	Priority 1	High	High	Certain	Major	High	High	Unlikely	Negligible
	Injury or mortality	Aculeate Hymenopteran	<i>Lipotriches takauensis</i>	N.A.	Vulnerable	Not Assessed	High	Priority 1	High	High	Unlikely	Negligible	High	High	Unlikely	Negligible

Appendix R2 Impact Assessment for Habitats, Plant and Faunal Species at Holland Woods

Phase	Impact type	Taxon	Scientific name	Common name	National status	Global status	Ecological value	Sensitivity	Pre-mitigated				Post-mitigated (Residual)			
									Impact intensity	Consequence	Likelihood	Impact significance	Impact intensity	Consequence	Likelihood	Impact significance
Fauna	Loss of ecological connectivity for faunal	Odonate	<i>Gynacantha bayadera</i>	Small duskhawker	Vulnerable	Least Concern	High	Priority 1	High	High	Unlikely	Negligible	High	High	Unlikely	Negligible
		Odonate	<i>Copera vittata</i>	Variable featherlegs	Vulnerable	Least Concern	High	Priority 1	High	High	Unlikely	Negligible	High	High	Unlikely	Negligible
		Butterfly	<i>Borbo cinnara</i>	Formosan swift	Endangered	Not Assessed	High	Priority 1	High	High	Unlikely	Negligible	High	High	Unlikely	Negligible
		Butterfly	<i>Troides helena cerberus</i>	Common birdwing	Not assessed; CITES protected (Appendix II)	Vulnerable	High	Priority 1	High	High	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		Reptile	<i>Dogania subplana</i>	Malayan forest softshell turtle	Critically Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	High	High	Possible	Moderate	High	High	Unlikely	Negligible
		Bird	<i>Nisaetus cirrhatus</i>	Changeable hawk-eagle	Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	High	High	Less likely	Minor	High	High	Less likely	Minor
		Bird	<i>Spilornis cheela</i>	Crested serpent eagle	Critically Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	High	High	Less likely	Minor	High	High	Less likely	Minor
		Bird	<i>Anthraceros albirostris</i>	Oriental pied hornbill	Critically Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	High	High	Less likely	Minor	High	High	Less likely	Minor
		Bird	<i>Vanellus indicus</i>	Red-wattled lapwing	Endangered	Least Concern	High	Priority 1	High	High	Less likely	Minor	High	High	Less likely	Minor
		Bird	<i>Chrysococcyx xanthorhynchus</i>	Violet cuckoo	Endangered	Least Concern	High	Priority 1	High	High	Less likely	Minor	High	High	Less likely	Minor
		Bird	<i>Gallus gallus</i>	Red junglefowl	Endangered	Least Concern	High	Priority 1	High	High	Less likely	Minor	High	High	Less likely	Minor
		Bird	<i>Loriculus galgulus</i>	Blue-crowned hanging-parrot	Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	High	High	Less likely	Minor	High	High	Less likely	Minor
		Bird	<i>Psittacula longicauda</i>	Long-tailed parakeet	Not Assessed	Vulnerable; CITES protected (Appendix II)	High	Priority 1	High	High	Less likely	Minor	High	High	Less likely	Minor
		Bird	<i>Pycnonotus zeylanicus</i>	Straw-headed bulbul	Endangered	Critically Endangered; CITES protected (Appendix II)	High	Priority 1	High	High	Less likely	Minor	High	High	Less likely	Minor
		Bird	<i>Rallina fasciata</i>	Red-legged crane	Vulnerable	Least Concern	High	Priority 1	High	High	Less likely	Minor	High	High	Less likely	Minor
		Non-Volant Mammal	<i>Manis javanica</i>	Sunda pangolin	Critically Endangered	Critically Endangered; CITES protected (Appendix I)	High	Priority 1	High	High	Possible	Moderate	High	High	Less likely	Minor
		Non-Volant Mammal	<i>Macaca fascicularis</i>	Long-tailed macaque	Least Concern	Vulnerable; CITES protected (Appendix II)	High	Priority 1	High	High	Possible	Moderate	Low	Low	Less likely	Minor
		Bat	<i>Tylonycteris sp.</i>	Bamboo bat	Vulnerable	Least Concern	High	Priority 1	High	High	Less likely	Minor	High	High	Unlikely	Negligible
	Loss of ecological connectivity for faunal	Aculeate Hymenopteran	<i>Lipotriches takauensis</i>	N.A.	Vulnerable	Not Assessed	High	Priority 1	High	High	Unlikely	Negligible	High	High	Unlikely	Negligible
		Odonate	<i>Gynacantha bayadera</i>	Small duskhawker	Vulnerable	Least Concern	High	Priority 1	High	High	Unlikely	Negligible	High	High	Unlikely	Negligible
		Odonate	<i>Copera vittata</i>	Variable featherlegs	Vulnerable	Least Concern	High	Priority 1	High	High	Unlikely	Negligible	High	High	Unlikely	Negligible

Appendix R2 Impact Assessment for Habitats, Plant and Faunal Species at Holland Woods

Phase	Impact type	Taxon	Scientific name	Common name	National status	Global status	Ecological value	Sensitivity	Pre-mitigated				Post-mitigated (Residual)			
									Impact intensity	Consequence	Likelihood	Impact significance	Impact intensity	Consequence	Likelihood	Impact significance
	movement	Butterfly	<i>Borbo cinnara</i>	Formosan swift	Endangered	Not Assessed	High	Priority 1	High	High	Unlikely	Negligible	High	High	Unlikely	Negligible
		Butterfly	<i>Troides helena cerberus</i>	Common birdwing	Not assessed; CITES protected (Appendix II)	Vulnerable	High	Priority 1	High	High	Unlikely	Negligible	High	High	Unlikely	Negligible
		Reptile	<i>Dogania subplana</i>	Malayan forest softshell turtle	Critically Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	High	High	Possible	Moderate	High	High	Unlikely	Negligible
		Bird	<i>Nisaetus cirrhatus</i>	Changeable hawk-eagle	Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	High	High	Less likely	Minor	High	High	Unlikely	Negligible
		Bird	<i>Spilornis cheela</i>	Crested serpent eagle	Critically Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	High	High	Less likely	Minor	High	High	Unlikely	Negligible
		Bird	<i>Anthraceroceros albirostris</i>	Oriental pied hornbill	Critically Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	High	High	Less likely	Minor	High	High	Unlikely	Negligible
		Bird	<i>Vanellus indicus</i>	Red-wattled lapwing	Endangered	Least Concern	High	Priority 1	High	High	Less likely	Minor	High	High	Unlikely	Negligible
		Bird	<i>Chrysococcyx xanthorhynchus</i>	Violet cuckoo	Endangered	Least Concern	High	Priority 1	High	High	Less likely	Minor	High	High	Unlikely	Negligible
		Bird	<i>Gallus gallus</i>	Red junglefowl	Endangered	Least Concern	High	Priority 1	High	High	Less likely	Minor	High	High	Unlikely	Negligible
		Bird	<i>Loriculus galgulus</i>	Blue-crowned hanging-parrot	Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	High	High	Less likely	Minor	High	High	Unlikely	Negligible
		Bird	<i>Psittacula longicauda</i>	Long-tailed parakeet	Not Assessed	Vulnerable; CITES protected (Appendix II)	High	Priority 1	High	High	Less likely	Minor	High	High	Unlikely	Negligible
		Bird	<i>Pycnonotus zeylanicus</i>	Straw-headed bulbul	Endangered	Critically Endangered; CITES protected (Appendix II)	High	Priority 1	High	High	Less likely	Minor	High	High	Unlikely	Negligible
		Bird	<i>Rallina fasciata</i>	Red-legged crane	Vulnerable	Least Concern	High	Priority 1	High	High	Less likely	Minor	High	High	Unlikely	Negligible
		Non-Volant Mammal	<i>Manis javanica</i>	Sunda pangolin	Critically Endangered	Critically Endangered; CITES protected (Appendix I)	High	Priority 1	High	High	Likely	Major	High	High	Less likely	Minor
		Non-Volant Mammal	<i>Macaca fascicularis</i>	Long-tailed macaque	Least Concern	Vulnerable; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Less likely	Minor
Operational	Collisions with buildings (birds only)	Bat	<i>Tylonycteris</i> sp.	Bamboo bat	Vulnerable	Least Concern	High	Priority 1	High	High	Less likely	Minor	High	High	Less likely	Minor
		Bird	<i>Nisaetus cirrhatus</i>	Changeable hawk-eagle	Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		Bird	<i>Spilornis cheela</i>	Crested serpent eagle	Critically Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible

Appendix R2 Impact Assessment for Habitats, Plant and Faunal Species at Holland Woods

Phase	Impact type	Taxon	Scientific name	Common name	National status	Global status	Ecological value	Sensitivity	Pre-mitigated				Post-mitigated (Residual)			
									Impact intensity	Consequence	Likelihood	Impact significance	Impact intensity	Consequence	Likelihood	Impact significance
Fauna		Bird	<i>Anthraceroceros albirostris</i>	Oriental pied hornbill	Critically Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		Bird	<i>Vanellus indicus</i>	Red-wattled lapwing	Endangered	Least Concern	High	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		Bird	<i>Chrysococcyx xanthorhynchus</i>	Violet cuckoo	Endangered	Least Concern	High	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		Bird	<i>Gallus gallus</i>	Red junglefowl	Endangered	Least Concern	High	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		Bird	<i>Loriculus galgulus</i>	Blue-crowned hanging-parrot	Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		Bird	<i>Psittacula longicauda</i>	Long-tailed parakeet	Not Assessed	Vulnerable; CITES protected (Appendix II)	High	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		Bird	<i>Pycnonotus zeylanicus</i>	Straw-headed bulbul	Endangered	Critically Endangered; CITES protected (Appendix II)	High	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
	Loss of ecological connectivity for faunal movement	Bird	<i>Rallina fasciata</i>	Red-legged crane	Vulnerable	Least Concern	High	Priority 1	Low	Low	Unlikely	Negligible	Low	Low	Unlikely	Negligible
		Aculeate Hymenopteran	<i>Lipotriches takauensis</i>	N.A.	Vulnerable	Not Assessed	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Odonate	<i>Gynacantha bayadera</i>	Small duskhawker	Vulnerable	Least Concern	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Odonate	<i>Copera vittata</i>	Variable featherlegs	Vulnerable	Least Concern	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Butterfly	<i>Borbo cinnara</i>	Formosan swift	Endangered	Not Assessed	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Butterfly	<i>Troides helena cerberus</i>	Common birdwing	Not assessed; CITES protected (Appendix II)	Vulnerable	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Reptile	<i>Dogania subplana</i>	Malayan forest softshell turtle	Critically Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Bird	<i>Nisaetus cirrhatus</i>	Changeable hawk-eagle	Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Bird	<i>Spilornis cheela</i>	Crested serpent eagle	Critically Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Bird	<i>Anthraceroceros albirostris</i>	Oriental pied hornbill	Critically Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Bird	<i>Vanellus indicus</i>	Red-wattled lapwing	Endangered	Least Concern	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Bird	<i>Chrysococcyx xanthorhynchus</i>	Violet cuckoo	Endangered	Least Concern	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Bird	<i>Gallus gallus</i>	Red junglefowl	Endangered	Least Concern	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Bird	<i>Loriculus galgulus</i>	Blue-crowned hanging-parrot	Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible

Appendix R2 Impact Assessment for Habitats, Plant and Faunal Species at Holland Woods

Phase	Impact type	Taxon	Scientific name	Common name	National status	Global status	Ecological value	Sensitivity	Pre-mitigated				Post-mitigated (Residual)			
									Impact intensity	Consequence	Likelihood	Impact significance	Impact intensity	Consequence	Likelihood	Impact significance
Fauna		Bird	<i>Psittacula longicauda</i>	Long-tailed parakeet	Not Assessed	Vulnerable; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Bird	<i>Pycnonotus zeylanicus</i>	Straw-headed bulbul	Endangered	Critically Endangered; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Bird	<i>Rallina fasciata</i>	Red-legged crane	Vulnerable	Least Concern	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Unlikely	Negligible
		Non-Volant Mammal	<i>Manis javanica</i>	Sunda pangolin	Critically Endangered	Critically Endangered; CITES protected (Appendix I)	High	Priority 1	High	High	Likely	Major	High	High	Less likely	Minor
		Non-Volant Mammal	<i>Macaca fascicularis</i>	Long-tailed macaque	Least Concern	Vulnerable; CITES protected (Appendix II)	High	Priority 1	Low	Low	Less likely	Minor	Low	Low	Less likely	Minor
		Bat	<i>Tylonycteris sp.</i>	Bamboo bat	Vulnerable	Least Concern	High	Priority 1	N.A.	N.A.	N.A.	N.A.	High	High	Less likely	Minor
	Injury or mortality	Aculeate Hymenopteran	<i>Lipotriches takauensis</i>	N.A.	Vulnerable	Not Assessed	High	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		Odonate	<i>Gynacantha bayadera</i>	Small duskhawker	Vulnerable	Least Concern	High	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		Odonate	<i>Copera vittata</i>	Variable featherlegs	Vulnerable	Least Concern	High	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		Butterfly	<i>Borbo cinnara</i>	Formosan swift	Endangered	Not Assessed	High	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		Butterfly	<i>Troides helena cerberus</i>	Common birdwing	Not assessed; CITES protected (Appendix II)	Vulnerable	High	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		Reptile	<i>Dogania subplana</i>	Malayan forest softshell turtle	Critically Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		Bird	<i>Nisaetus cirrhatus</i>	Changeable hawk-eagle	Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		Bird	<i>Spilornis cheela</i>	Crested serpent eagle	Critically Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		Bird	<i>Anthraceroceros albirostris</i>	Oriental pied hornbill	Critically Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		Bird	<i>Vanellus indicus</i>	Red-wattled lapwing	Endangered	Least Concern	High	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		Bird	<i>Chrysococcyx xanthorhynchus</i>	Violet cuckoo	Endangered	Least Concern	High	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		Bird	<i>Gallus gallus</i>	Red junglefowl	Endangered	Least Concern	High	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		Bird	<i>Loriculus galgulus</i>	Blue-crowned hanging-parrot	Endangered	Least Concern; CITES protected (Appendix II)	High	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible

Appendix R2 Impact Assessment for Habitats, Plant and Faunal Species at Holland Woods

Phase	Impact type	Taxon	Scientific name	Common name	National status	Global status	Ecological value	Sensitivity	Pre-mitigated				Post-mitigated (Residual)			
									Impact intensity	Consequence	Likelihood	Impact significance	Impact intensity	Consequence	Likelihood	Impact significance
		Bird	<i>Psittacula longicauda</i>	Long-tailed parakeet	Not Assessed	Vulnerable; CITES protected (Appendix II)	High	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		Bird	<i>Pycnonotus zeylanicus</i>	Straw-headed bulbul	Endangered	Critically Endangered; CITES protected (Appendix II)	High	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		Bird	<i>Rallina fasciata</i>	Red-legged crane	Vulnerable	Least Concern	High	Priority 1	Negligible	Very low	Unlikely	Negligible	Negligible	Very low	Unlikely	Negligible
		Non-Volant Mammal	<i>Manis javanica</i>	Sunda pangolin	Critically Endangered	Critically Endangered; CITES protected (Appendix I)	High	Priority 1	Medium	Medium	Possible	Moderate	Medium	Medium	Less likely	Minor
		Non-Volant Mammal	<i>Macaca fascicularis</i>	Long-tailed macaque	Least Concern	Vulnerable; CITES protected (Appendix II)	High	Priority 1	Medium	Medium	Possible	Moderate	Medium	Medium	Less likely	Minor
		Bat	<i>Tylonycteris</i> sp.	Bamboo bat	Vulnerable	Least Concern	High	Priority 1	Medium	Medium	N.A.	N.A.	Medium	Medium	Less likely	Minor

Appendix S

Construction Worksite Inventory

INVENTORY LIST - CR16 (Base Scenario)

					Activities (7am -7pm) 12 hours / L _{Aeq} (12 Hours)			Activities (7pm -7am) 12 hours / L _{Aeq} (12 Hours)			L _{Aeq} (5min)			L _{Aeq} (5min)		
Activity by sequence	Construction Activity	PME	Total No	Approximate no of months for this activity	Day Time (7am - 7pm) Equipment No.	Day Time (7am - 7pm) On-Time (%)	PWL, dB(A)	Night Time (7pm - 7am) Equipment No.	Night Time (7pm - 7am) On - Time (%)	PWL, dB(A)	Day Time (7am - 7pm) Equipment No.	Day Time (7am - 7pm) On-Time (%)	PWL, dB(A)	Night Time (7pm - 7am) Equipment No.	Night Time (7pm - 7am) On-Time (%)	PWL, dB(A)
1. Clearance for Construction Area (Daytime)																
1	a. Setting up of hoarding	Lorry Cranes	2	6	2	80%	90	-	-		2	100%	91			
		Hand held Breaker	1	6	1	50%	110	-	-		1	100%	113			
2	b. Level (Cut and fill)	Front end loader	1	6	1	80%	112	-	-		1	100%	113			
3	c. Tree removal	Lorry Cranes	1	6	1	50%	85	-	-		1	100%	88			
		Hand Held ChainSaw	1	6	1	50%	112	-	-		1	100%	115			
4	d. Debris removal	Dump Truck	1	6	1	80%	96	-	-		1	100%	97			
5	e. For power supply	Generator	1	18	1	100%	86	1	100%	86	1	100%	86	1	100%	86
							116			86			119			86
2. TERS (Sheet piling/ CBP)																
Sheet piling	Daytime															
1	For power supply	Generator	1	18	1	100%	86	1	100%	86	1	100%	86	1	100%	86
2	Mobilizing of Hoarding boards, Delivery of decking	Lorry Cranes	1	2	1	50%	85	1	50%	85	1	100%	88	1	100%	88
3	Delivery of rebar, sheel piles , king post, decking	40 ft Trailer	1	2	1	50%	105	1	50%	105	1	100%	108	1	100%	108
4	Installation for sheet pile	Excavator mounted with Vibrator Pile Driver	1	2	1	70%	114	-	-		1	100%	116	-	-	
5	Installation of sheet pile at no access area for equipment	Crane mounted with Vibrator Pile Driver	1	2	1	70%	114	-	-		1	100%	116	-	-	
6	Installation of King post of decking support	Hydraulic Foundation Drill	1	2	1	50%	102	-	-		1	100%	105	-	-	
7	Excavation of working platform	Excavator	1	2	1	50%	93	1	50%	93	1	100%	96	1	100%	96
8	hoisting for Rebar cage & materials	Crane	1	2	1	50%	85	1	50%	85	1	100%	88	1	100%	88
9	Installation of decking	Crane	1	2	1	50%	85	1	50%	85	1	100%	88	1	100%	88
CBP (south west)	24 hrs						118			105			120			108
1	For power supply	Generator	1	18	1	100%	86	1	100%	86	1	100%	86	1	100%	86
2	Mobilizing of Hoarding boards, Delivery of decking	Lorry Cranes	1	2	1	50%	85	1	50%	85	1	100%	88	1	100%	88
3	Delivery of rebar, sheel piles , king post, decking	40 ft Trailer	1	2	1	50%	105	1	50%	105	1	100%	108	1	100%	108
4	Installation for sheet pile	Excavator mounted with Vibrator Pile Driver	1	2	1	70%	114	-	-		1	100%	116	-	-	
5	Installation of sheet pile at no access area for equipment	Crane mounted with Vibrator Pile Driver	1	2	1	70%	114	-	-		1	100%	116	-	-	
6	Installation of King post of decking support	Hydraulic Foundation Drill	1	2	1	50%	102	-	-		1	100%	105	-	-	
7	Excavation of working platform	Excavator	1	2	1	50%	93	1	50%	93	1	100%	96	1	100%	96
8	hoisting for Rebar cage & materials	Crane	1	2	1	50%	85	1	50%	85	1	100%	88	1	100%	88
9	Installation of decking	Crane	1	2	1	50%	85	1	50%	85	1	100%	88	1	100%	88
							118			105			120			108
3. Levelling (Cut and Fill) to Work Platform Level- Daytime																
1	for ECM supply	Generator	1	18	1	100%	86				1	100%	86			
2	Removal of Spoils and delivery of Hard Core	Dump Truck	1	18	1	30%	92				1	100%	97			
3	Levelling of working platform	Front end loader	1	18	1	30%	108				1	100%	113			
4	Excavation to platform level & ECM trenches	Excavator	3	18	3	50%	98				3	100%	101			
5	Platform preparation	Roller	1	18	1	40%	97				1	100%	101			
6	Delivery of Steel plates and materials	Lorry Cranes	1	18	1	50%	85				1	100%	88			
7	Spoil removal	Dump Truck	3	18	1	50%	94				1	100%	97			
							109						114			
4 Station ERSS - Installation of D Wall/ SBP/ Sheet Pile- 24 hrs (Station Box)																
1	Excavation of D wall Trenches	D-wall rig with Grab	6	24	6	100%	109	6	100%	109	6	100%	109	6	100%	109
2	To Hoist Tremie Pipe & Re-bar D wall Cages	Truck Mounted Crane	2	24	2	100%	91	2	100%	91	2	100%	91	2	100%	91
3	Handle tremie pipe & re-bar	Mobile Crane	2	24	2	100%	103	2	100%	103	2	100%	103	2	100%	103
4	For casting wall	Ready Mix Concrete Truck	6	24	6	100%	106	6	100%	106	6	100%	106	6	100%	106
5	Concreting works	Concrete pump	2	24	2	100%	89	2	100%	89	2	100%	89	2	100%	89
6	Batching Plant	Colloidal Mixer (bentonite)		24		-		-	-			-		-	-	
		Compressor		24		-		-	-			-		-	-	
		Generator		24		-		-	-			-		-	-	
		Ripple Screen (included in STP)	1	24	1	80%	81	1	80%	81	1	100%	82	1	100%	82
		Measuring Tank & Agitator		24		-		-	-			-		-	-	
		Slurry Pump		24		-		-	-			-		-	-	
		Clean Water Tanks		24		-		-	-			-		-	-	
		Bentonite Slurry Tanks		24		-		-	-			-		-	-	
7	Earth Removal from Tanks	Excavator	4	24	4	50%	99	4	50%	99	4	100%	102	4	100%	102
8	Spoil & slurry disposal	Dump Truck	4	24	4	50%	100	4	50%	100	4	100%	103	4	100%	103
							112			112			112			112
5. Installation of Wallers & Struts/Stage excavation -Daytime																
1	Hot works - welding of steel beams, brackets, etc	Welding Equipment	3	18	1	100%	81				1	100%	81			
2	Delivery ofSteel sections	40 ft Trailer	1	18	1	50%	105				1	100%	108			
3	Hoisting of Waler & Struts	Mobile Crane	1	18	1	80%	99				1	100%	100			
4	Stage excavation for walers & struts	Crane	1	18	1	80%	87				1	100%	88			
5	Stage Excavation	Excavator	2	18	2	80%	98				2	100%	99			

INVENTORY LIST - CR16 (Base Scenario)

Activity by sequence	Construction Activity	PME	Total No	Approximate no of months for this activity	Day Time (7am - 7pm) Equipment No.	Day Time (7am - 7pm) On-Time (%)	PWL, dB(A)	Night Time (7pm - 7am) Equipment No.	Night Time (7pm - 7am) On - Time (%)	PWL, dB(A)	Day Time (7am - 7pm) Equipment No.	Day Time (7am - 7pm) On-Time (%)	PWL, dB(A)	Night Time (7pm - 7am) Equipment No.	Night Time (7pm - 7am) On-Time (%)	PWL, dB(A)
6	Stage Excavation	Mini Excavator	2	18	2	80%	88				2	100%	89			
7	Spoil and slurry removal	Dump truck	4	18	4	80%	102				4	100%	103			
							108						110			
6. TBM (Launching to CR15)- 24 hrs																
1	TBM- Assemble tunneling equipment	TBM & Gantries	1	10	1	50%	95	1	50%	95	1	100%	98	1	100%	98
		40T Gantry Crane	1	10	1	50%	95	1	50%	95	1	100%	98	1	100%	98
		30T Excavator	1	10	1	50%	97	1	50%	97	1	100%	100	1	100%	100
		Grout mixing plant	1	10	1	50%	105	1	50%	105	1	100%	108	1	100%	108
		slurry separation plant	1	10	1	50%	101	1	50%	101	1	100%	104	1	100%	104
		Segment Delivery	1	10	1	50%	104	1	50%	104	1	100%	107	1	100%	107
		Muckaway truck	1	10	1	50%	104	1	50%	104	1	100%	107	1	100%	107
		Water chiller plant	1	10	1	50%	87	1	50%	87	1	100%	90	1	100%	90
		Ventilation air cooling plant	1	10	1	50%	89	1	50%	89	1	100%	92	1	100%	92
		Ventilation supply fans	1	10	1	50%	89	1	50%	89	1	100%	92	1	100%	92
		Shaft hoist	1	10	1	50%	98	1	50%	98	1	100%	101	1	100%	101
		Air compressor	1	10	1	50%	100	1	50%	100	1	100%	103	1	100%	103
		Air Receiver	1	10	1	50%	100	1	50%	100	1	100%	103	1	100%	103
		Air Chiller	1	10	1	50%	89	1	50%	89	1	100%	92	1	100%	92
		200 T crane	1	10	1	50%	96	1	50%	96	1	100%	99	1	100%	99
							111			111			114			114
2	Lowering of TBM	Air compressor	1	10	1	50%	100	1	50%	100	1	100%	103	1	100%	103
		Air Receiver	1	10	1	50%	100	1	50%	100	1	100%	103	1	100%	103
		500 t crane	1	10	1	50%	103	1	50%	103	1	100%	106	1	100%	106
3	TBM Main Drive	TBM & Gantries	1	10	1	100%	98	1	100%	98	1	100%	98	1	100%	98
		40T Gantry Crane	1	10	1	100%	98	1	100%	98	1	100%	98	1	100%	98
		30T Excavator	1	10	1	100%	100	1	100%	100	1	100%	100	1	100%	100
		Grout mixing plant	1	10	1	100%	108	1	100%	108	1	100%	108	1	100%	108
		slurry separation plant	1	10	1	100%	104	1	100%	104	1	100%	104	1	100%	104
		Segment Delivery	1	10	1	100%	107	1	100%	107	1	100%	107	1	100%	107
		Muckaway truck	1	10	1	100%	107	1	100%	107	1	100%	107	1	100%	107
		Water chiller plant	1	10	1	100%	90	1	100%	90	1	100%	90	1	100%	90
		Ventilation air cooling plant	1	10	1	100%	92	1	100%	92	1	100%	92	1	100%	92
		Ventilation supply fans	1	10	1	100%	92	1	100%	92	1	100%	92	1	100%	92
		Shaft hoist	1	10	1	100%	101	1	100%	101	1	100%	101	1	100%	101
		Air compressor	1	10	1	100%	103	1	100%	103	1	100%	103	1	100%	103
		Air Receiver	1	10	1	100%	103	1	100%	103	1	100%	103	1	100%	103
		Air Chiller	1	10	1	100%	92	1	100%	92	1	100%	92	1	100%	92
							115			115			115			115
7. Construction of Permanent Structure- Day time																
1	Pumping of water from ground or rain	Tempoary Water Pump	20	12	20	100%	106					100%	106			
2	Power supply for lighting , pumps and temporary ventilation fans	Generator	3	12	1	100%	86					100%	86			
3	Excavation below surface for working platform	Excavator	8	12	8	50%	102					100%	105			
4	Stage Excavation to prepare Lean concrete	Mini Excavator	8	12	8	80%	94					100%	95			
5	Excavation below surface - removal of spoil	Crane	4	12	4	50%	91					100%	91			
6	Spoil removal	Dump Truck	8	12	8	50%	103					100%	106			
8	Air compressor for cleaning formwork before casting	Compressor	1	12	1	50%	80					100%	83			
7	Handle re-bar & hoisting of false work, scaffolding, temporary working platforms	Mobile Crane	1	12	1	50%	97					100%	100			
8	For Casting	Ready Mix Concrete Truck	6	12	6	50%	103					100%	106			
9	For Casting	Concrete pump	2	12	2	50%	86					100%	89			
							110						112			
8. Resintatement of Work & Exiting Road																
1	Levelling of road subbase, base	Excavator	1	6	1	80%	95	1	80%	95	1	100%	96	1	100%	96
2	Power supply for lighting , pumps and temporary ventilation fans	Generator	3	12	1	100%	86	1	100%	86	1	100%	86	1	100%	86
3	Road compaction	Roller	1	6	1	80%	100	1	80%	100	1	100%	101	1	100%	101
4	Levelling works	Front end loader	1	6	1	80%	112	1	80%	112	1	100%	113	1	100%	113
5	Delivery of Mill (Premix)	Dump Truck	1	6	1	80%	96	1	80%	96	1	100%	97	1	100%	97
6	Levelling	Grader	1	6	1	80%	105	1	80%	105	1	100%	106	1	100%	106
7	Asphalt laying	Asphalt Paver	1	6	1	80%	111	1	80%	111	1	100%	112	1	100%	112
							115			115			116			116
Subway- 2025																
9 Entrances - Construction of D Wall & Sheet piles (Shaft construction) 2025																
1	Excavation of D wall Trenches	D-wall rig with Grab	2	6	2	100%	104				1	100%	101			
2	Power supply for lighting , pumps and temporary ventilation fans	Generator	3	12	1	100%	86				1	100%	86			
3	To Hoist Tremie Pipe & Re-bar D wall Cages	Truck Mounted Crane	2	6	2	100%	91				1	100%	88			
4	Handle tremie pipe & re-bar	Mobile Crane	2	6	2	100%	103				1	100%	100			
5	For casting wall	Ready Mix Concrete Truck	6	6	6	100%	106				1	100%	98			
6	Concreting works	Concrete pump	2	6	2	100%	89				1	100%	86			
7	Spoil & slurry disposal	Dump Truck	4	6	4	80%	102				1	100%	97			
8	Delivery of rebar, sheel piles , king post, decking	40 ft Trailer	1	6	1	50%	105				1	100%	108			

INVENTORY LIST - CR16 (Base Scenario)

Activity by sequence	Construction Activity	PME	Total No	Approximate no of months for this activity	Day Time (7am - 7pm) Equipment No.	Day Time (7am - 7pm) On-Time (%)	PWL, dB(A)	Night Time (7pm - 7am) Equipment No.	Night Time (7pm - 7am) On - Time (%)	PWL, dB(A)	Day Time (7am - 7pm) Equipment No.	Day Time (7am - 7pm) On-Time (%)	PWL, dB(A)	Night Time (7pm - 7am) Equipment No.	Night Time (7pm - 7am) On-Time (%)	PWL, dB(A)
9	Installation for sheet pile	Excavator mounted with Vibrator Pile Driver	1	6	1	80%	115				1	100%	116			
10	Installation of sheet pile at no access area for equipment	Crane mounted with Vibrator Pile Driver	1	6	1	80%	115				1	100%	116			
							119						120			
Subway- 2026																
9 Entrances - Construction of D Wall & Sheet piles (Subway -2026)																
1	Excavation of D wall Trenches	D-wall rig with Grab	2	6	2	100%	104				1	100%	101			
2	Power supply for lighting , pumps and temporary ventilation fans	Generator	3	12	1	100%	86				1	100%	86			
3	To Hoist Tremie Pipe & Re-bar D wall Cages	Truck Mounted Crane	2	6	2	100%	91				1	100%	88			
4	Handle tremie pipe & re-bar	Mobile Crane	2	6	2	100%	103				1	100%	100			
5	For casting wall	Ready Mix Concrete Truck	6	6	6	100%	106				1	100%	98			
6	Concreting works	Concrete pump	2	6	2	100%	89				1	100%	86			
7	Spoil & slurry disposal	Dump Truck	4	6	4	80%	102				1	100%	97			
8	Delivery of rebar, sheel piles , king post, decking	40 ft Trailer	1	6	1	50%	105				1	100%	108			
9	Installation for sheet pile	Excavator mounted with Vibrator Pile Driver	1	6	1	80%	115				1	100%	116			
10	Installation of sheet pile at no access area for equipment	Crane mounted with Vibrator Pile Driver	1	6	1	80%	115				1	100%	116			
							119						120			
9 Entrances - Construction of Elevated Linkway - Sunset Way Wood- Daytime																
1	Excavation of D wall Trenches	D-wall rig with Grab	2	6	2	100%	104				1	100%	101			
2	Power supply for lighting , pumps and temporary ventilation fans	Generator	3	12	1	100%	86				1	100%	86			
3	To Hoist Tremie Pipe & Re-bar D wall Cages	Truck Mounted Crane	2	6	2	100%	91				1	100%	88			
4	Handle tremie pipe & re-bar	Mobile Crane	6	6	6	100%	108				1	100%	100			
5	For casting wall	Ready Mix Concrete Truck	2	6	2	100%	101				1	100%	98			
6	Concreting works	Concrete pump	4	6	4	100%	92				1	100%	86			
7	Spoil & slurry disposal	Dump Truck	1	6	1	80%	96				1	100%	97			
8	Delivery of rebar, sheel piles , king post, decking	40 ft Trailer	1	6	1	50%	105				1	100%	108			
9	Installation for sheet pile	Excavator mounted with Vibrator Pile Driver	1	6	1	80%	115				1	100%	116			
10	Installation of sheet pile at no access area for equipment	Crane mounted with Vibrator Pile Driver	1	6	1	80%	115				1	100%	116			
							119						120			
11. Construction of Site office																
1	Land clearance	Excavator	1	3	1	70%	94	1	50%	93	1	100%	96	1	100%	96
2	Installation of office	crane	1	3	1	70%	86	1	50%	85	1	100%	88	1	100%	88
							95			94			97		97	96.63892034

INVENTORY LIST - CR16 (Mitigated Scenario - Advance work)

					Activities (7am -7pm) 12 hours / L _{Aeq} (12 Hours)			Activities (7pm -7am) 12 hours / L _{Aeq} (12 Hours)			L _{Aeq} (5min)			L _{Aeq} (5min)		
Activity by sequence	Construction Activity	PME	Total No	Approximate no of months for this activity	Day Time (7am - 7pm) Equipment No.	Day Time (7am - 7pm) On-Time (%)	PWL, dB(A)	Night Time (7pm - 7am) Equipment No.	Night Time (7pm - 7am) On - Time (%)	PWL, dB(A)	Day Time (7am - 7pm) Equipment No.	Day Time (7am - 7pm) On-Time (%)	PWL, dB(A)	Night Time (7pm - 7am) Equipment No.	Night Time (7pm - 7am) On - Time (%)	PWL, dB(A)
1. Clearance for Construction Area including Tree felling (From 01/2023 to 05/2023) - A1																
1	a. Setting up of hoarding	Lorry Cranes	2	1	2	50%	88	2	50%	88	2	100%	91	2	100%	91
2	b. Tree removal	Lorry Cranes	3	3	3	50%	90	3	50%	90	3	100%	93	3	100%	93
		Hand Held ChainSaw	3	3	3	50%	117	3	50%	117	3	100%	120	3	100%	120
3	c. Earthworks	Excavator	3	15	3	70%	99	3	70%	99	3	100%	101	3	100%	101
4	d. For power supply	Generator	2	24	2	100%	89	2	100%	89	2	100%	89	2	100%	89
							117			117			120			120
2. Levelling (Cut and Fill) to Work Platform Level- Daytime (02/2023 to 02/2024) - A1																
1	for ECM supply	Generator	1	18	1	100%	86	1	100%	86	1	100%	86	1	100%	86
2	Removal of Spoils and delivery of Hard Core	Dump Truck	1	18	1	30%	92	1	30%	92	1	100%	97	1	100%	97
3	Levelling of working platform	Front end loader	1	18	1	30%	108	1	30%	108	1	100%	113	1	100%	113
4	Excavation to platform level & ECM trenches	Excavator	3	18	3	50%	98	3	50%	98	3	100%	101	3	100%	101
5	Platform preparation	Roller	1	18	1	40%	97	1	40%	97	1	100%	101	1	100%	101
6	Delivery of Steel plates and materials	Lorry Cranes	1	18	1	50%	85	1	50%	85	1	100%	88	1	100%	88
7	Spoil removal	Dump Truck	3	18	1	50%	94	1	50%	94	1	100%	97	1	100%	97
							109			109			114			114
3. Soil Nailing (From 03/2023 to 02/2024) - A1																
1	c. Installation of Soil Nails	Micropile Machine	3	15	3	70%	107	3	70%	107	3	100%	109	3	100%	109
		Shotcrete	3	15	3	50%	108	3	50%	108	3	100%	111	3	100%	111
							111			111			113			113
4. Pumping Mains Diversion (06/2023 to 12/2024) - A1																
1	a. Delivery of Caisson casing and sewer pipes	Trailer	1	24	1	50%	104	1	50%	104	1	100%	107	1	100%	107
2	b. Installation of Caisson	Vibro Machine	2	24	2	50%	108	2	50%	108	2	100%	111	2	100%	111
		Shotcrete	2	24	2	50%	106	2	50%	106	2	100%	109	2	100%	109
3	c. Pipe Jacking	Pipe Jacking Machine	2	24	2	70%	105	2	70%	105	2	100%	107	2	100%	107
							112			112			115			115
5. Pumping Mains Diversion (Open Cut) (06/2023 to 12/2024) - A1																
1	a. Delivery of Caisson casing and sewer pipes	Trailer	1	24	1	50%	104	1	50%	104	1	100%	107	1	100%	107
2	b. Installation of Caisson	Vibro Machine	2	24	2	50%	108	2	50%	108	2	100%	111	2	100%	111
		Shotcrete	2	24	2	50%	106	2	50%	106	2	100%	109	2	100%	109
							111			111			114			114
6. Utility diversion/Temp Drain diversion (From 03/2023 to 12/2024) - A1																
1	For power supply	Generator	1	18	1	100%	86	1	100%	86	1	100%	86	1	100%	86
3	Delivery of sheet piles and drain pipes	40 ft Trailer	1	6	1	50%	105	1	50%	105	1	100%	108	1	100%	108
4	Installation for sheet pile	Excavator mounted with Vibrator Pile Driver	1	6	1	70%	114				1	100%	116			
5	Excavation	Excavator	1	8	1	50%	93	1	50%	93	1	100%	96	1	100%	96
6	hoisting for materials	Crane	1	8	1	50%	85	1	50%	85	1	100%	88	1	100%	88
							115			105			117			108
7. Construction of Site office (From 01/2023 to 04/2023) - A2																
1	Land clearance	Excavator	1	3	1	70%	94	1	50%	93	1	100%	96	1	100%	96
2	Installation of office	crane	1	3	1	70%	86	1	50%	85	1	100%	88	1	100%	88
							95			94			97			97
Note:																

INVENTORY LIST - CR16 (Mitigated Scenario- Main Civil Work Stage 1)

					Activities (7am -7pm) 12 hours / L _{Aeq} (12 Hours)			Activities (7pm -7am) 12 hours / L _{Aeq} (12 Hours)			L _{Aeq} (5min)			L _{Aeq} (5min)		
Activity by sequence	Construction Activity	PME	Total No	Approximate no of months for this activity	Day Time (7am - 7pm) Equipment No.	Day Time (7am - 7pm) On-Time (%)	PWL, dB(A)	Night Time (7pm - 7am) Equipment No.	Night Time (7pm - 7am) On - Time (%)	PWL, dB(A)	Day Time (7am - 7pm) Equipment No.	Day Time (7am - 7pm) On-Time (%)	PWL, dB(A)	Night Time (7pm - 7am) Equipment No.	Night Time (7pm - 7am) On - Time (%)	PWL, dB(A)
1. Station ERSS - Installation of D Wall/ SBP/ Sheet Pile- 24 hrs (Station Box) (10/2024 to 11/2025) - B1 & B2																
1	Excavation of D wall Trenches	D-wall rig with Grab	6	24	6	100%	109	6	100%	109	6	100%	109	6	100%	109
2	To Hoist Tremie Pipe & Re-bar D wall Cages	Truck Mounted Crane	2	24	2	100%	91	2	100%	91	2	100%	91	2	100%	91
3	Handle tremie pipe & re-bar	Mobile Crane	2	24	2	100%	103	2	100%	103	2	100%	103	2	100%	103
4	For casting wall	Ready Mix Concrete Truck	6	24	6	100%	106	6	100%	106	6	100%	106	6	100%	106
5	Concreting works	Concrete pump	2	24	2	100%	89	2	100%	89	2	100%	89	2	100%	89
6	Batching Plant	Colloidal Mixer (bentonite)		24		-		-	-			-		-	-	
		Compressor		24		-		-	-			-		-	-	
		Generator		24		-		-	-			-		-	-	
		Ripple Screen (included in STP)	1	24	1	80%	81	1	80%	81	1	100%	82	1	100%	82
		Measuring Tank & Agitator		24		-		-	-			-		-	-	
		Slurry Pump		24		-		-	-			-		-	-	
		Clean Water Tanks		24		-		-	-			-		-	-	
		Bentonite Slurry Tanks		24		-		-	-			-		-	-	
7	Earth Removal from Tanks	Excavator	4	24	4	50%	99	4	50%	99	4	100%	102	4	100%	102
8	Spoil & slurry disposal	Dump Truck	4	24	4	50%	100	4	50%	100	4	100%	103	4	100%	103
							112			112			112			112
2. Installation of Wallers & Struts/Stage excavation -Daytime (06/2025 to 11/2025) - B1																
1	Hot works - welding of steel beams, brackets, etc	Welding Equipment	3	18	1	100%	81				1	100%	81			
2	Delivery ofSteel sections	40 ft Trailer	1	18	1	50%	105				1	100%	108			
3	Hoisting of Waler & Struts	Mobile Crane	1	18	1	80%	99				1	100%	100			
4	Stage excavation for walers & struts	Crane	1	18	1	80%	87				1	100%	88			
5	Stage Excavation	Excavator	2	18	2	80%	98				2	100%	99			
6	Stage Excavation	Mini Excavator	2	18	2	80%	88				2	100%	89			
7	Spoil and slurry removal	Dump truck	4	18	4	80%	102				4	100%	103			
							108						110			
4. Construction of Permanent Structure- Day time (07/2025 to 11/2025) - B1																
1	Pumping of water from ground or rain	Tempoary Water Pump	20	12	20	100%	106				20	100%	106			
2	Power supply for lighting , pumps and temporary ventilation fan	Generator	3	12	1	100%	86				1	100%	86			
3	Excavation below surface for working platform	Excavator	8	12	8	50%	102				8	100%	105			
4	Stage Excavation to prepare Lean concrete	Mini Excavator	8	12	8	80%	94				8	100%	95			
5	Excavation below surface - removal of spoil	Crane	4	12	4	50%	91				2	100%	91			
6	Spoil removal	Dump Truck	8	12	8	50%	103				8	100%	106			
8	Air compressor for cleaning formwork before casting	Compressor	1	12	1	50%	80				1	100%	83			
7	Handle re-bar & hoisting of false work, scaffolding, temporary working platforms	Mobile Crane	1	12	1	50%	97				1	100%	100			
8	For Casting	Ready Mix Concrete Truck	6	12	6	50%	103				6	100%	106			
9	For Casting	Concrete pump	2	12	2	50%	86				2	100%	89			
							110						112			
5. Traffic Diversion (08/2024 to 09/2024) - B2																
1	Excavating and Backfilling	Excavator	1	1	1	50%	93	1	50%	93	1	100%	96	1	100%	96
2	Premixing of road pavement	Premix Machine	1	3days	1	50%	94	1	50%	94	1	100%	97	1	100%	97
3	Installation of concrete barriers	Lorry Cranes	1	2days	1	50%	85	1	50%	85	1	100%	88	1	100%	88
							97			97			100			100
6. Construction of Site office (From 04/2024 to 08/2024) - B4																
1	Land clearance	Excavator	2	3	1	70%	94	1	50%	93	1	100%	96	1	100%	96
2	Installation of office	crane	1	3	1	70%	86	1	50%	85	1	100%	88	1	100%	88
							95			94			97			97
7. Demolition of POB (From 04/2024 to 08/2024) - B3																
1	a. Breaking of POB Column and Staircase	Excavator	2	3	1	70%	94				1	100%	96			
2	b. Breaking of Beam Corbel	Hand Held Breaker	2	3	1	70%	111				1	100%	113			
3	c. Lifiting Operation of the Beam	Mobile Crane	3	2 days	1	70%	98				1	100%	100			
							112						113			
Note:																

(Mitigated Scenario- Main Civil Work Stage 2)

					Activities (7am - 7pm) 12 hours / L _{Aeq} (12 Hours)			Activities (7pm - 7am) 12 hours / L _{Aeq} (12 Hours)			L _{Aeq} (5min)			L _{Aeq} (5min)		
Activity by sequence	Construction Activity	PME	Total No	Approximate no of months for this activity	Day Time (7am - 7pm) Equipment No.	Day Time (7am - 7pm) On-Time (%)	PWL, dB(A)	Night Time (7pm - 7am) Equipment No.	Night Time (7pm - 7am) On - Time (%)	PWL, dB(A)	Day Time (7am - 7pm) Equipment No.	Day Time (7am - 7pm) On-Time (%)	PWL, dB(A)	Night Time (7pm - 7am) Equipment No.	Night Time (7pm - 7am) On - Time (%)	PWL, dB(A)
1. Station ERSS - Installation of D Wall/ SBP/ Sheet Pile- 24 hrs (Station Box) (12/2025 to 07/2026) - C1																
1	Excavation of D wall Trenches	D-wall rig with Grab	6	24	6	100%	109	6	100%	109	6	100%	109	6	100%	109
2	To Hoist Tremie Pipe & Re-bar D wall Cages	Truck Mounted Crane	2	24	2	100%	91	2	100%	91	2	100%	91	2	100%	91
3	Handle tremie pipe & re-bar	Mobile Crane	2	24	2	100%	103	2	100%	103	2	100%	103	2	100%	103
4	For casting wall	Ready Mix Concrete Truck	6	24	6	100%	106	6	100%	106	6	100%	106	6	100%	106
5	Concreting works	Concrete pump	2	24	2	100%	89	2	100%	89	2	100%	89	2	100%	89
6	Batching Plant	Colloidal Mixer (bentonite)		24		-			-			-			-	
		Compressor		24		-			-			-			-	
		Generator		24		-			-			-			-	
		Ripple Screen (included in STP)	1	24	1	80%	81	1	80%	81	1	100%	82	1	100%	82
		Measuring Tank & Agitator		24		-			-			-			-	
		Slurry Pump		24		-			-			-			-	
		Clean Water Tanks		24		-			-			-			-	
		Bentonite Slurry Tanks		24		-			-			-			-	
7	Earth Removal from Tanks	Excavator	4	24	4	50%	99	4	50%	99	4	100%	102	4	100%	102
8	Spoil & slurry disposal	Dump Truck	4	24	4	50%	100	4	50%	100	4	100%	103	4	100%	103
							112			112			112			112
2. Installation of Wallers & Struts/Stage excavation -Daytime (12/2025 to 01/2028) - C1																
1	Hot works - welding of steel beams, brackets, etc	Welding Equipment	3	18	1	100%	81				1	100%	81			
2	Delivery ofSteel sections	40 ft Trailer	1	18	1	50%	105				1	100%	108			
3	Hoisting of Waler & Struts	Mobile Crane	1	18	1	80%	99				1	100%	100			
4	Stage excavation for walers & struts	Crane	1	18	1	80%	87				1	100%	88			
5	Stage Excavation	Excavator	2	18	2	80%	98				2	100%	99			
6	Stage Excavation	Mini Excavator	2	18	2	80%	88				2	100%	89			
7	Spoil and slurry removal	Dump truck	4	18	4	80%	102				4	100%	103			
							108						110			
4. Construction of Permanent Structure- Day time (12/2025 to 02/2029) - C1																
1	Pumping of water from ground or rain	Tempoary Water Pump	20	12	20	100%	106					100%	106			
2	Power supply for lighting , pumps and temporary ventilation	Generator	3	12	1	100%	86					100%	86			
3	Excavation below surface for working platform	Excavator	8	12	8	50%	102					100%	105			
4	Stage Excavation to prepare Lean concrete	Mini Excavator	8	12	8	80%	94					100%	95			
5	Excavation below surface - removal of spoil	Crane	4	12	4	50%	91					100%	91			
6	Spoil removal	Dump Truck	8	12	8	50%	103					100%	106			
8	Air compressor for cleaning formwork before casting	Compressor	1	12	1	50%	80					100%	83			
7	Handle re-bar & hoisting of false work, scaffolding, temporary working platforms	Mobile Crane	1	12	1	50%	97					100%	100			
8	For Casting	Ready Mix Concrete Truck	6	12	6	50%	103					100%	106			
9	For Casting	Concrete pump	2	12	2	50%	86					100%	89			
							110						112			
5. Traffic Diversion (08/2024 to 09/2024) - B2																
1	Excavating and Backfilling	Excavator	1	1	1	50%	93	1	50%	93	1	100%	96	1	100%	96
2	Premixing of road pavement	Premix Machine	1	3days	1	50%	94	1	50%	94	1	100%	97	1	100%	97
3	Installation of concrete barriers	Lorry Cranes	1	2days	1	50%	85	1	50%	85	1	100%	88	1	100%	88
							97			97			100			100
6. Construction of Site office (From 04/2024 to 08/2024) - B4																
1	Land clearance	Excavator	2	3	1	70%	94	1	50%	93	1	100%	96	1	100%	96
2	Installation of office	crane	1	3	1	70%	86	1	50%	85	1	100%	88	1	100%	88
							95			94			97			97
7. TBM (Launching to CR15)- 24 hrs (07/2027 to 09/2028) - C1																
		TBM & Gantries	1	10	1	50%	95	1	50%	95	1	100%	98	1	100%	98
		40T Gantry Crane	1	10	1	50%	95	1	50%	95	1	100%	98	1	100%	98
		30T Excavator	1	10	1	50%	97	1	50%	97	1	100%	100	1	100%	100
		Grout mixing plant	1	10	1	50%	105	1	50%	105	1	100%	108	1	100%	108
		slurry separation plant	1	10	1	50%	101	1	50%	101	1	100%	104	1	100%	104
		Segment Delivery	1	10	1	50%	104	1	50%	104	1	100%	107	1	100%	107
		Muckaway truck	1	10	1	50%	104	1	50%	104	1	100%	107	1	100%	107

(Mitigated Scenario- Main Civil Work Stage 2)

Activity by sequence	Construction Activity	PME	Total No	Approximate no of months for this activity	Activities Day Time (7am - 7pm) Equipment No.	7am -7pm) L-Add (12 Hours) (7am - 7pm) On-Time (%)	12 hours / PWL, dB(A)	Night Time (7pm - 7am) Equipment No.	Night Time (7pm - 7am) On - Time (%)	PWL, dB(A)	Day Time (7am - 7pm) Equipment No.	Day Time (7am - 7pm) On-Time (%)	PWL, dB(A)	Night Time (7pm - 7am) Equipment No.	Night Time (7pm - 7am) On - Time (%)	PWL, dB(A)
1	TBM- Assemble tunneling equipment	Water chiller plant	1	10	1	50%	87	1	50%	87	1	100%	90	1	100%	90
		Ventilation air cooling plant	1	10	1	50%	89	1	50%	89	1	100%	92	1	100%	92
		Ventilation supply fans	1	10	1	50%	89	1	50%	89	1	100%	92	1	100%	92
		Shaft hoist	1	10	1	50%	98	1	50%	98	1	100%	101	1	100%	101
		Air compressor	1	10	1	50%	100	1	50%	100	1	100%	103	1	100%	103
		Air Receiver	1	10	1	50%	100	1	50%	100	1	100%	103	1	100%	103
		Air Chiller	1	10	1	50%	89	1	50%	89	1	100%	92	1	100%	92
		200 T crane	1	10	1	50%	96	1	50%	96	1	100%	99	1	100%	99
							111			111			114			114
2	Lowering of TBM	Air compressor	1	10	1	50%	100	1	50%	100	1	100%	103	1	100%	103
		Air Receiver	1	10	1	50%	100	1	50%	100	1	100%	103	1	100%	103
		500 t crane	1	10	1	50%	103	1	50%	103	1	100%	106	1	100%	106
3	TBM Main Drive	TBM & Gantries	1	10	1	100%	98	1	100%	98	1	100%	98	1	100%	98
		40T Gantry Crane	1	10	1	100%	98	1	100%	98	1	100%	98	1	100%	98
		30T Excavator	1	10	1	100%	100	1	100%	100	1	100%	100	1	100%	100
		Grout mixing plant	1	10	1	100%	108	1	100%	108	1	100%	108	1	100%	108
		slurry separation plant	1	10	1	100%	104	1	100%	104	1	100%	104	1	100%	104
		Segment Delivery	1	10	1	100%	107	1	100%	107	1	100%	107	1	100%	107
		Muckaway truck	1	10	1	100%	107	1	100%	107	1	100%	107	1	100%	107
		Water chiller plant	1	10	1	100%	90	1	100%	90	1	100%	90	1	100%	90
		Ventilation air cooling plant	1	10	1	100%	92	1	100%	92	1	100%	92	1	100%	92
		Ventilation supply fans	1	10	1	100%	92	1	100%	92	1	100%	92	1	100%	92
		Shaft hoist	1	10	1	100%	101	1	100%	101	1	100%	101	1	100%	101
		Air compressor	1	10	1	100%	103	1	100%	103	1	100%	103	1	100%	103
		Air Receiver	1	10	1	100%	103	1	100%	103	1	100%	103	1	100%	103
		Air Chiller	1	10	1	100%	92	1	100%	92	1	100%	92	1	100%	92
							115			115			115			115
8 Entrances - Construction of D Wall & Sheet piles (Shaft construction) 2025 (01/2026 to 07/2030) - C2																
1	Excavation of D wall Trenches	D-wall rig with Grab	2	6	2	100%	104				1	100%	101			
2	Power supply for lighting , pumps and temporary ventilation	Generator	3	12	1	100%	86				1	100%	86			
3	To Hoist Tremie Pipe & Re-bar D wall Cages	Truck Mounted Crane	2	6	2	100%	91				1	100%	88			
4	Handle tremie pipe & re-bar	Mobile Crane	2	6	2	100%	103				1	100%	100			
5	For casting wall	Ready Mix Concrete Truck	6	6	6	100%	106				1	100%	98			
6	Concreting works	Concrete pump	2	6	2	100%	89				1	100%	86			
7	Spoil & slurry disposal	Dump Truck	4	6	4	80%	102				1	100%	97			
8	Delivery of rebar, sheel piles , king post, decking	40 ft Trailer	1	6	1	50%	105				1	100%	108			
9	Installation for sheet pile	Excavator mounted with Vibrator Pile Driver	1	6	1	80%	115				1	100%	116			
10	Installation of sheet pile at no access area for equipment	Crane mounted with Vibrator Pile Driver	1	6	1	80%	115				1	100%	116			
							119						120			
Subway- 2026																
9 Entrances - Construction of D Wall & Sheet piles (Subway -2026) (01/2026 to 07/2030) - C3)																
1	Excavation of D wall Trenches	D-wall rig with Grab	2	6	2	100%	104				1	100%	101			
2	Power supply for lighting , pumps and temporary ventilation	Generator	3	12	1	100%	86				1	100%	86			
3	To Hoist Tremie Pipe & Re-bar D wall Cages	Truck Mounted Crane	2	6	2	100%	91				1	100%	88			
4	Handle tremie pipe & re-bar	Mobile Crane	2	6	2	100%	103				1	100%	100			
5	For casting wall	Ready Mix Concrete Truck	6	6	6	100%	106				1	100%	98			
6	Concreting works	Concrete pump	2	6	2	100%	89				1	100%	86			
7	Spoil & slurry disposal	Dump Truck	4	6	4	80%	102				1	100%	97			
8	Delivery of rebar, sheel piles , king post, decking	40 ft Trailer	1	6	1	50%	105				1	100%	108			
9	Installation for sheet pile	Excavator mounted with Vibrator Pile Driver	1	6	1	80%	115				1	100%	116			
10	Installation of sheet pile at no access area for equipment	Crane mounted with Vibrator Pile Driver	1	6	1	80%	115				1	100%	116			
							119						120			
10. Reinstatement of Work & Exiting Road (11/2029 to 06/2032) - C1																
1	Levelling of road subbase, base	Excavator	1	6	1	80%	95	1	80%	95	1	100%	96	1	100%	96
2	Power supply for lighting , pumps and temporary ventilation	Generator	3	12	1	100%	86	1	100%	86	1	100%	86	1	100%	86
3	Road compaction	Roller	1	6	1	80%	100	1	80%	100	1	100%	101	1	100%	101
4	Levelling works	Front end loader	1	6	1	80%	112	1	80%	112	1	100%	113	1	100%	113
5	Delivery of Mill (Premix)	Dump Truck	1	6	1	80%	96	1	80%	96	1	100%	97	1	100%	97
6	Levelling	Grader	1	6	1	80%	105	1	80%	105	1	100%	106	1	100%	106
7	Asphalt laying	Asphalt Paver	1	6	1	80%	111	1	80%	111	1	100%	112	1	100%	112
							115			115			116			116

Appendix T

Vibration Impact Predications and Assessment Details

The maximum PPV and impact significances for spot pipe jacking (Advance Works) and low vibratory compactors (Stage 1 and Stage 2) can be seen in Table 1 and Table 2. Heatmaps can be seen from Figure T-1 to Figure T-3.

Table 1 Summary of Maximum PPV for Pipe Jacking (Spot) and Low Vibratory Compactors

Stage	Activity	Max PPV (mm/s)		Exceedances of Vibration Threshold for Partial Burrow Collapse of 8 mm/s, mm/s	
		Maju Forest	Clementi Forest	Maju Forest	Clementi Forest
Advance Works	Pipe Jacking (Spot)	0.1	8.4	-	0.4**
Stage 1	Low Vibratory Compactor	1.4	1.4	-	-
Stage 2		0.4	1.2	-	-

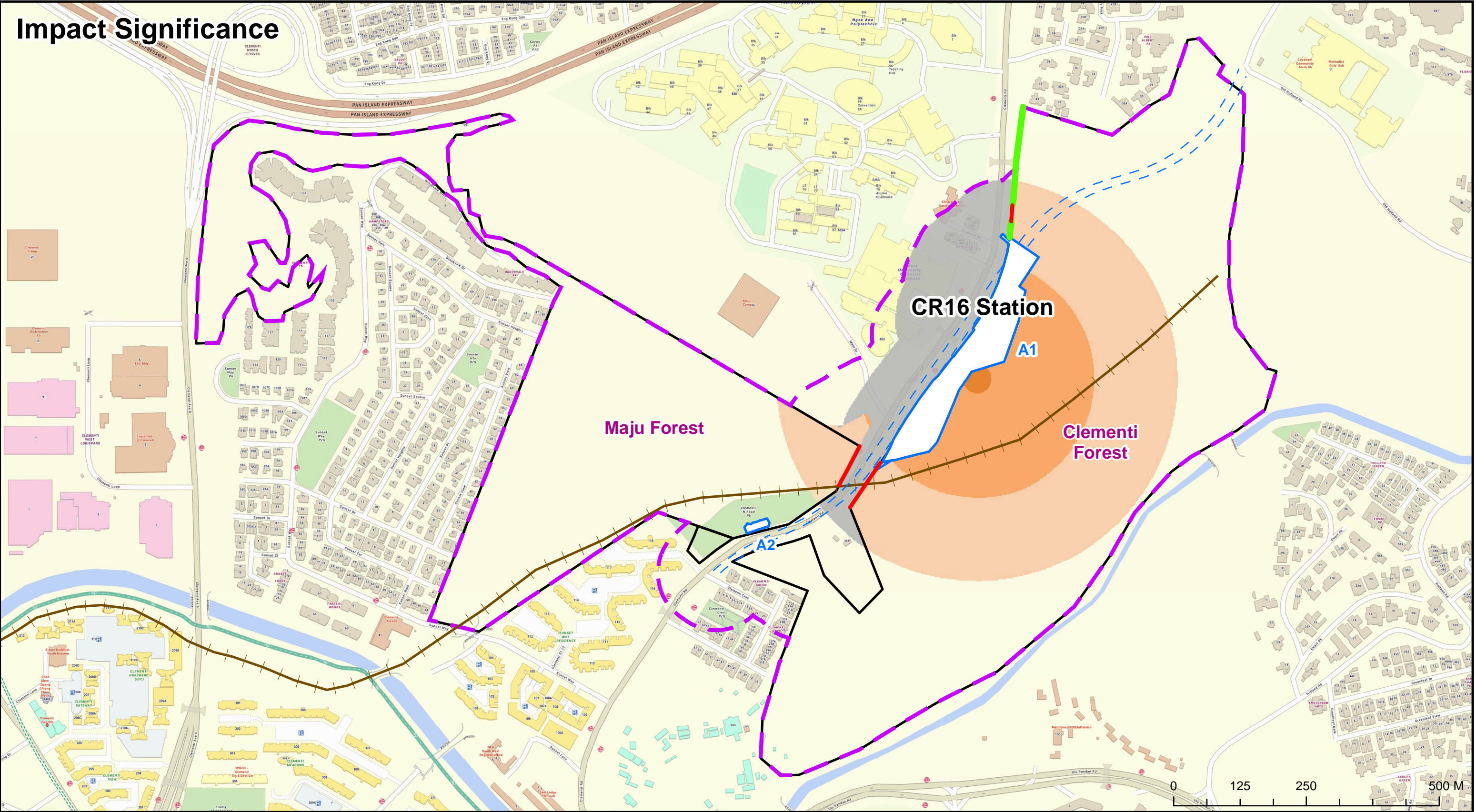
Since the PPV has exceeded the threshold of 8 mm/s, the construction activities may potentially cause partial burrow collapse. Thus, additional mitigation measures are required:

1. Ecologists should be present to survey for burrows. If burrows are detected within the Biodiversity Study Areas, camera traps should be deployed to assess fauna activity, if any. If there are no burrows or fauna activity detected, construction works are allowed to be continued.
2. The Contractor shall control construction vibration levels for pipe jacking and high vibratory compactors using the best available techniques (BAT). The Contractor shall ensure that the vibration levels at Maju Forest and Clementi Forest (excluding the worksite area) for any construction activities do not exceed PPV, 8 mm/s.
3. As high vibratory compactors produced PPVs exceeding 5 mm/s, it is recommended to use low vibratory compactors to reduce vibration impacts on burrows.

Table 2 Summary of Impact Significances for Pipe Jacking (Spot) and Low Vibratory Compactors

Construction Worksite and Activities	Base Scenario Impact Significance		Mitigation Measures	Mitigated Scenario Impact Significance		Changes in Impact Significance (Increased/Decreased/No Change?)	Further Mitigation Measures	Resultant Impact Significance
	Maju Forest	Clementi Forest		Maju Forest	Clementi Forest			
Advance Works								
Pipe Jacking (Spot)	NA		NA	Negligible – Minor	Minor – Major Moderate, 7.8 ha Major, 0.2 ha	Increased due to additional activity	1. No night works after 7 pm should be conducted. 2. Temporary barriers (i.e. water barriers of 1 m height) should be implemented along Brookvale Drive and Clementi Road. Canvas sheets should also be used to cover the holes on the existing railings along Brookvale Drive and Clementi Forest. Hoardings must also be implemented along existing construction site at Brookvale Drive and along CR16 Worksites. These will potentially mitigate roadkills due to the impacted fauna trying to dash onto a road during the construction activity.	Negligible – Moderate Since the impact significance is still Moderate, EMMP measures should be further enhanced, monitored and applied.
Stage 1								
Low Vibratory Compactor	NA		NA	Negligible – Minor	Negligible – Minor	Increased due to additional activity	None required as the impact significance is Minor	Minor
Stage 2								
Low Vibratory Compactor	NA		NA	Negligible	Negligible	Increased due to additional activity	None required as the impact significance is Negligible	Negligible
Summary: Overall, the construction activities produce impact significances of Negligible, Minor, Moderate and Major . <ul style="list-style-type: none">For Negligible impact significances, there should be no detectable behavioural change to indicator species;For Minor impact significances, some sensitive fauna may be impacted, while other species may avoid the area because of the increased levels of activity in the area. Many species would become habituated to the tunnel boring machine and would return to normal activity in a few days when the machine has passed by;For Moderate impact significances, it may impact sensitive fauna on their day to day activities (communication/ foraging/ breeding activities) for a short period in the zone of impact and may leave the area. Displacement is expected to be temporary, and they are expected to return after a while; andFor Major impact significances, it may cause permanent effects and affected indicator species are not expected to adapt to using this area. Reasonable to assume that vibration from tunnel boring may impact part of their habitat (pangolins' burrows), breeding and foraging opportunities. The mousedeer (<i>Tragulus kanchil</i>) and Sunda pangolin (<i>Manis javanica</i>) may move out of affected areas during the day and return at night to forage in these areas where food sources are available nearby.<ul style="list-style-type: none">During rock breaking and excavation, sensitive fauna may also flee, freeze or be frightened by the instantaneous vibration.								

Impact Significance



Legend

- Proposed CRL Alignment (Mitigated)
- Mitigated Construction Worksite Footprint
- Vibration Study Area
- Old Jurong Railway Corridor
- Biodiversity Study Area
- Water-filled Barrier for Advance Works Only (Pipejacking Activity), 220 m
- Existing Fence To Be Covered in Advance Works & Stage 2, 220 m

Impact Significance

- Below Ambient
- Negligible
- Minor
- Moderate
- Major
- Not Assessable

A	JUL 2022	EGY	EIS (Clementi Forest and Maju Forest)	JAG/NHT	JAG
-	MAY 2022	EGY	EIS (Clementi Forest and Maju Forest)	JAG/NHT	JAG
Rev.	Date	By	Description	Chk'd	App'd

Qualified Person Endorsement : NA

LTA Endorsement : NA

Consultant : **AECOM**

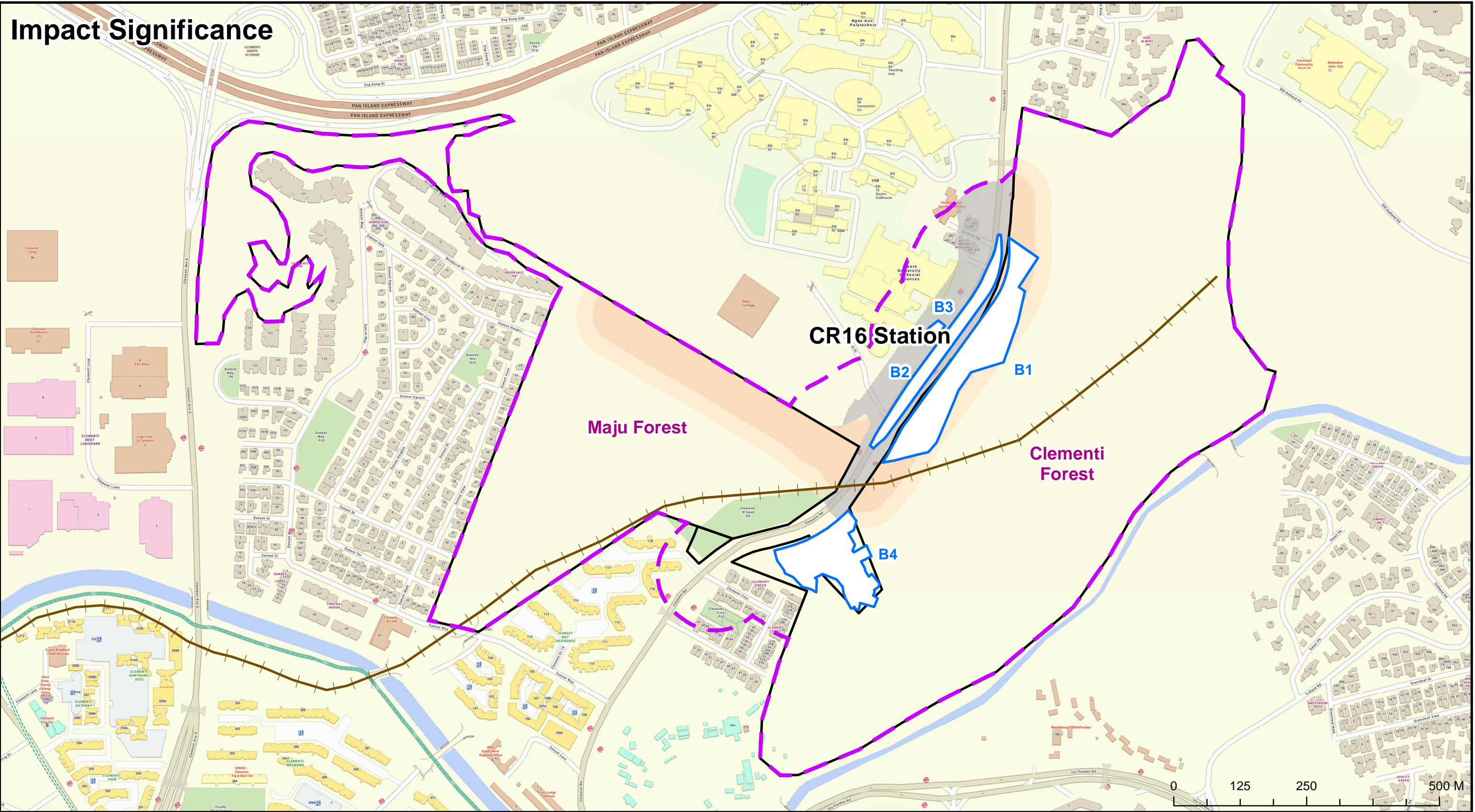
Project Title : **CONTRACT CR2005 ENVIRONMENTAL IMPACT STUDY (CLEMENTI FOREST AND MAJU FOREST)**

Designed EGY	Checked JAG/NHT	Approved JAG
	Drawn EGY	Date JUL 2022

Figure Title : **VIBRATION ASSESSMENT FOR PIPE JACKING (SPOT) MITIGATED SCENARIO (ADVANCE WORKS)**

Figure No. : T-1	Rev. A	Sheet 1 of 1
CAD File Name : NA		A3

Impact Significance



Legend

- Proposed CRL Alignment (Mitigated)
- Mitigated Scenario Construction Worksite Footprint
- Vibration Study Area
- Old Jurong Railway Corridor
- Biodiversity Study Area

Impact Significance

- Below Ambient
- Negligible
- Minor
- Not Assessable

A	JUL 2022	EGY	EIS (Clementi Forest and Maju Forest)	JAG/NHT	JAG
-	MAY 2022	EGY	EIS (Clementi Forest and Maju Forest)	JAG/NHT	JAG
Rev.	Date	By	Description	Chk'd	App'd

Qualified Person Endorsement :
NA

LTA Endorsement :
NA

Consultant :
AECOM

Project Title :
**CONTRACT CR2005
ENVIRONMENTAL IMPACT STUDY
(CLEMENTI FOREST AND
MAJU FOREST)**

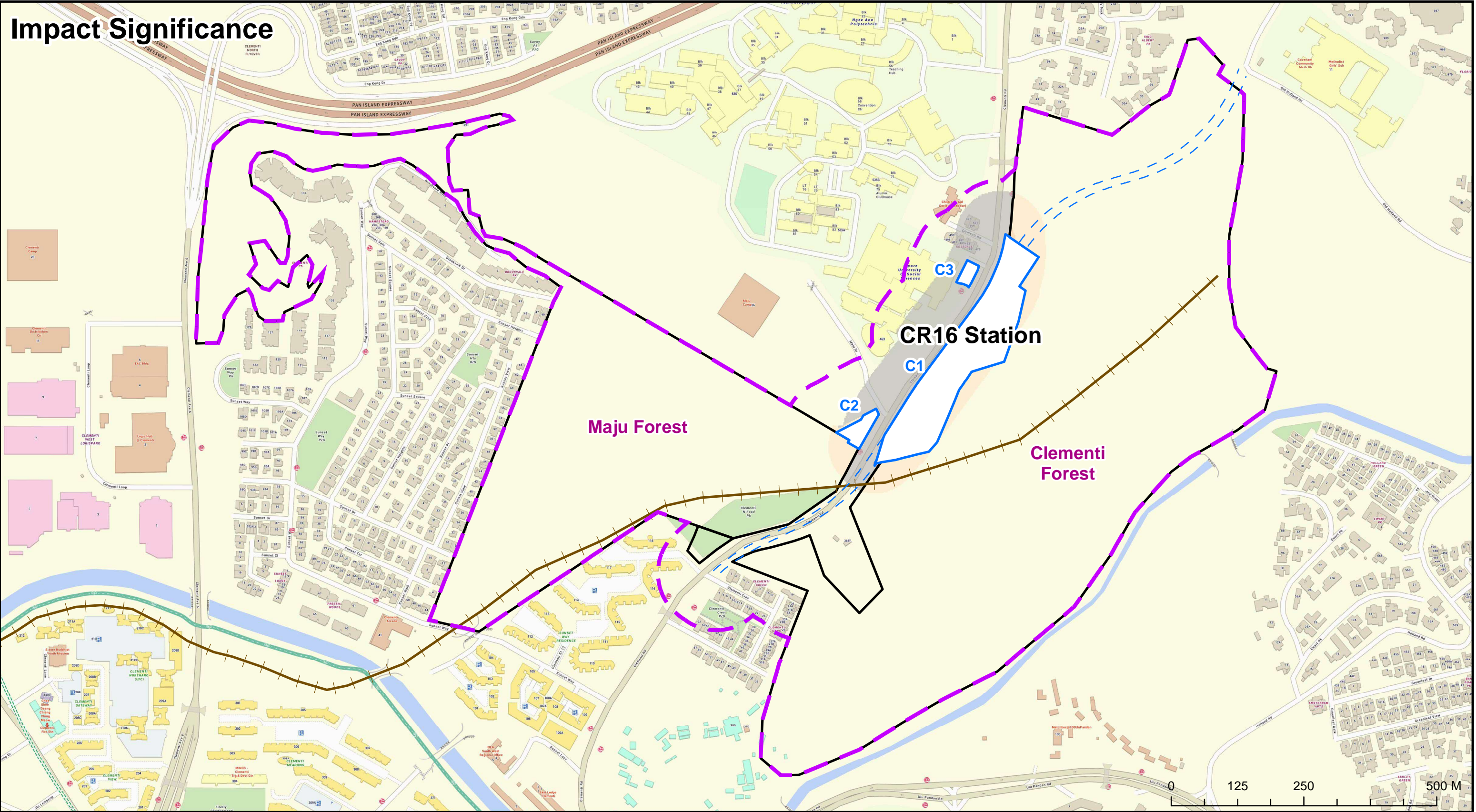
Designed EGY	Checked JAG/NHT	Approved JAG
	Drawn EGY	Date JUL 2022

Land Transport Authority
We Keep Your World Moving

Figure Title :
**VIBRATION ASSESSMENT FOR
LOW VIBRATORY COMPACTOR
FOR TRAFFIC DIVERSION
MITIGATED SCENARIO (STAGE 1)**

Figure No. : T-2	Rev. A	Sheet 1 of 1
CAD File Name : NA		A3

Impact Significance



<div>Legend</div> <div><div><div><div></div></div><div>Proposed CRL Alignment (Mitigated)</div></div><div><div><div></div></div><div>Mitigated Scenario Construction Worksite Footprint</div></div><div><div><div></div></div><div>Vibration Study Area</div></div><div><div><div></div></div><div>Old Jurong Railway Corridor</div></div><div><div><div></div></div><div>Biodiversity Study Area</div></div></div> <div><div>Impact Significance</div><div><div><div></div><div>Below Ambient</div></div><div><div></div><div>Negligible</div></div><div><div></div><div>Minor</div></div><div><div></div><div>Not Assessible</div></div></div></div> <div><div><div></div><div>N</div></div></div>							Qualified Person Endorsement : NA	Consultant : <div><div>AECOM</div></div>			<div><div>Land Transport Authority</div><div>We Keep Your World Moving</div></div>				
								LTA Endorsement : NA	Project Title : <div><div>CONTRACT CR2005</div><div>ENVIRONMENTAL IMPACT STUDY</div><div>(CLEMENTI FOREST AND MAJU FOREST)</div></div>			Figure Title : <div><div>VIBRATION ASSESSMENT FOR</div><div>LOW VIBRATORY COMPACTOR</div><div>FOR TRAFFIC DIVERSION</div><div>MITIGATED SCENARIO (STAGE 2)</div></div>			
									Designed EGY	Checked JAG/NHT	Approved JAG	Figure No. : T-3		Rev. A	Sheet 1 of 1
										Drawn EGY	Date JUL 2022	CAD File Name : NA		A3	
	A	JUL 2022	EGY	EIS (Clementi Forest and Maju Forest)	JAG/NHT	JAG									
	-	MAY 2022	EGY	EIS (Clementi Forest and Maju Forest)	JAG/NHT	JAG									
	Rev.	Date	By	Description	Chk'd	App'd									

Appendix U

Wildlife Incident Form

Wildlife Incident Form

Date (YYYY/MM/DD):	Time:
Description of Location:	GPS Coordinates:
Wildlife Observed:	Animal Condition (circle): Alive / Killed / Dead / Injured Animal activity (circle): Moving / Resting / Trapped
Photographs Taken:	MFLG and NParks notified: Yes / No Name of staff notified:
Describe Incident (e.g., activities being carried out; what animal was doing; personnel involved):	
Actions Taken:	
Reported by:	Reported to:
Contact no.:	Contact no:
Remarks:	

Appendix V

Fauna Inspection Form

Fauna Inspections

Inspection Round:
Date of Inspection:
Start and End Time:
Project Title:

Contractor:
Conducted by:
Weather:

Fauna inspections across site include: (a) inspection of hoarding integrity and possibility of wildlife entry into site, (b) inspection of erosion control blankets for wildlife entrapment, and (c) inspection within and around TPZs on site for wildlife presence. Ad-hoc fauna inspections will be conducted when the need arises, e.g. when vegetation needs to be removed on site.

[illegible]

Appendix W

Tree Protection and Conservation Guidelines

TREE PROTECTION AND CONSERVATION GUIDELINES

By

Derek Yap

Lead Arborist

Camphora Pte Ltd

ISA certified

SG-0117A

CONTENT REQUIREMENTS

This document outlines specific measures to protect trees during construction or other site disturbance. The content and scope of the document will vary based on the site, type of construction, tree species, tree location and other factors.

TREE PROTECTION AND CONSERVATION GUIDELINES

This section outlines the general provisions for tree protection before, during and after construction. Additional measures may be added by the attending arborist on a case-by-case basis.

PRE-DEMOLITION/PILING/CONSTRUCTION

1. Pre-Construction Meeting

The attending arborist shall attend a pre-construction meeting with the project contractor or construction supervisor to explain the tree protection and monitoring requirements as outlined in this document.

In addition, the project contractor or construction supervisor shall complete the ‘VERIFICATION OF TREE PROTECTION CHECKLIST’ as attached in Annex A before the onset of the construction.

1.1 Tree Protection Zone

Prior to any site clearing (demolition works), piling works, grading, trenching or other soil disturbance, a tree protection zone (TPZ) must be installed as follows:

i. Type

The barriers should be temporary, made of a hard material, 1.8-m tall and firmly installed into the ground.

ii. Ground protection

Mulching material (can be compost or woodchips) at 100-mm thick to be laid within the TPZ. If woodchips are used, termicide treatment is necessary to prevent the introduction of harmful termites.

Apply complete fertilizer (N:P:K 15:15:15) upon or together with the application of mulch.

iii. Signage

A readily-visible and waterproof sign shall be installed on all sides of the fencing around each individual protected tree. The size of each sign must be a minimum of 300mm wide and must contain the wording below:



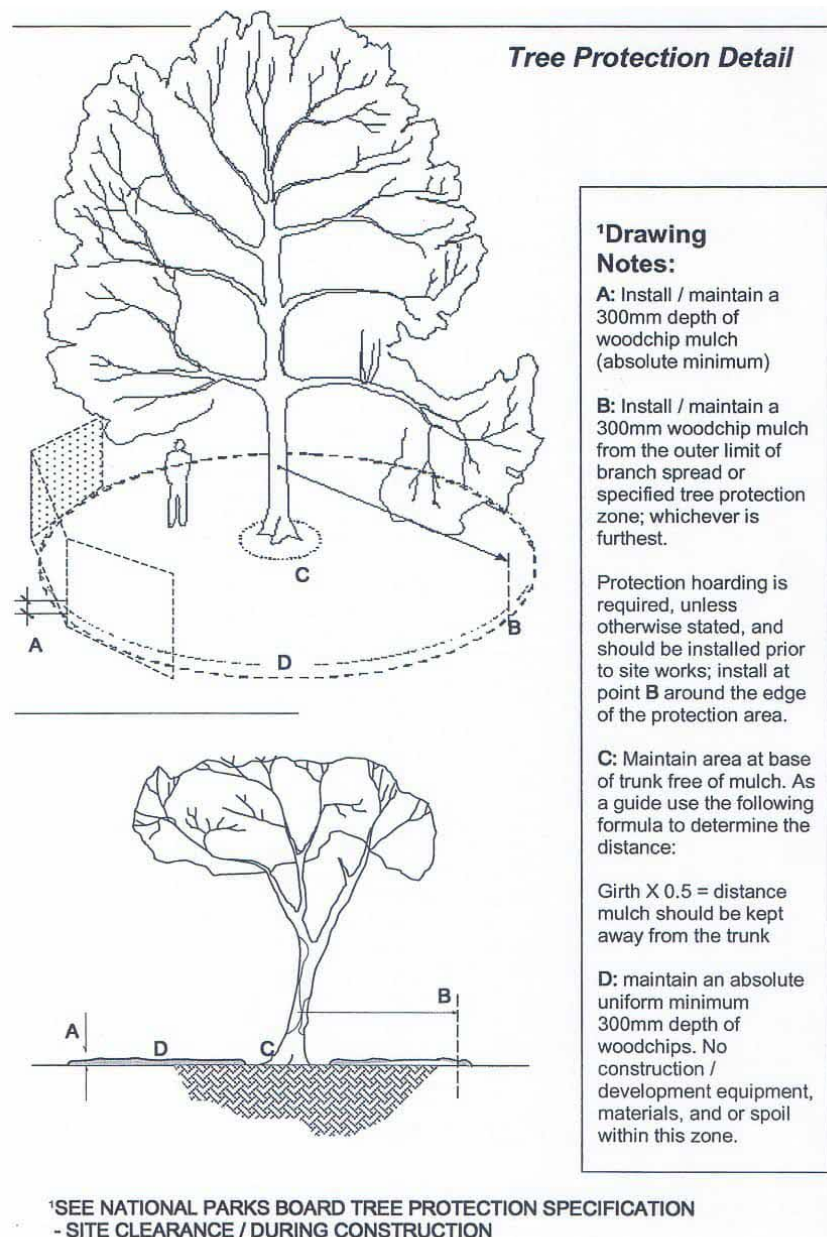
KEEP OUT!
TREE PROTECTION
ZONE

Entry prohibited. This fence shall remain in place throughout the entire construction period.

iv. Fencing installation

Installation must be approved by the attending arborists and/or the approved authority prior to construction.

A diagrammatic representation of a proper Tree protection zone is presented below.



1.2 Tree pruning and removal

Various trees may need to be pruned away from structures or proposed construction activity. **Construction or contractor personnel shall not attempt pruning or removal.** Consultation and written approval with attending arborist must be obtained prior to pruning.

Removal of trees adjacent to trees that are to be retained requires planning and skilled arboriculture workers. Trees should not be removed by pushing with excavators/heavy

machinery or with lumberjack (one cut) methods. Directional felling methods (notch and back-cut) should be deployed during removal of trees.

Removal of trees that extend into branches or roots of protected trees shall not be attempted by the demolition or construction crew, or by grading or other heavy equipment. Before removing tree stumps, the project manager shall seek the advice from the attending arborist determine if roots are entangled with trees that are to remain. If so, these stumps shall have their roots severed before extracting them.

1.3 Site Clearance

To avoid lumber jack felling of trees that may severely damage the canopy of conserved trees, it is recommended that qualified (see Point 4.3 Tree Conservation Guidelines) Arboriculture contractors be engage to fell trees adjacent to protected trees to ensure that the trees (when cut) fall away from the protected trees and their associated TPZs.

Contractors carry out tree felling works near assigned TPZs of conserved trees should

- i. Employ directional felling through the use of notch and back cuts
- ii. Deploy cranes to tension trunks in the direction of the drop
- iii. Carry out pruning of canopy branches to remove entangling branches
- iv. If trees to be removed are taller than neighbouring trees to be retained, removal of branches should be carried out in a controlled manner using ropes and cranes to avoid damaging canopy of the lower trees.
- v. To avoid pruning of conserved trees at the proximity unless consultation and approval from attending arborist has been obtained.
- vi. No tree should be removed by pushing with an excavator or heavy machinery.

DURING DEMOLITION/PILING/CONSTRUCTION

2. Tree Protection Zone Restrictions

- No ground disturbance, grading, trenching or other construction activities shall occur within the TPZ except as specified and/or approved by the attending arborist or authority.
- No construction material, debris, machinery (e.g. generators) or other construction waste shall be stored within the TPZ. Weight and presence of these materials increases

soil compaction and reduces the area exposed for water infiltration and gaseous exchange.



Figure 1: Construction material and heavy machinery are prohibited within the TPZ

- Excavation works within the TPZ are strictly prohibited. Unless otherwise specified by the attending arborist, all work done within the TPZ shall be completed with manual trenching with hand tools or other hand held power tools that will not cause any root/tree damage.

If roots need to be cut, it shall be done using proper equipment (e.g. pruning saw, chain saw) under the supervision of the attending arborist.



Figure 2: Trial trench by skilled workers using hand tools exposing root architecture

- Nailing, tying or pasting of materials on trees is prohibited. The tree shall not be used

as an anchor for supporting structures during the construction.



Figure 3: Using tree as anchor may damage its bark.



Figure 4: No nails shall be driven into the tree as it promotes infiltration of pests/diseases

- Phytotoxic materials such as fuels, oils, cement, chemicals, and paint shall be kept away and stored/mixed at least 2.5m from the tree protection zone. Such chemicals can significantly change the cation exchange capacity and pH of the soil, rendering nutrient uptake inefficient and creating an environment too toxic for the roots to grow.

Construction slug especially from piling works should not be deposited within the TPZ. Such sludge is usually high in clay content and when layered over and within the TPZ could significantly alter the water infiltration and gaseous exchange rates of the root absorption area of the tree.

Canvass sheets/Eco-mat must be laid on the existing soil near the tree in view of soil protection during the demolition, drilling or other construction activities pertaining to concrete structures.



Figure 5: Construction cement deposited at tree base.



Figure 6: Tree showing signs of decline overtime.

- Lowering the grade around trees can have an immediate and long-term effect on trees. Typically, most roots are within the top 1m of soil, and most of the fine roots active in water and nutrient absorption are in the top 300mm.
 - A) Grade changes within the TPZ are not permitted.
 - B) Grade changes outside the TPZ shall not significantly alter drainage.
 - C) Grade changes under specifically approved circumstances shall not allow more than

200mm of fill soil or allow more than 150mm of existing soil to be removed from natural grade, unless mitigated.

D) Grade fills over 200mm or impervious overlay shall incorporate an approved permanent aeration system, permeable material, or other approved mitigation.

E) Grade cuts exceeding 150mm shall incorporate retaining walls or an appropriate transition equivalent.

No removal of the TPZ will be permitted under any circumstances.



Figure 7: Inappropriate installation/maintenance of TPZ during construction.

2.2 Proximity of Heavy machinery/vehicles

Heavy vehicles and machinery (e.g. excavators, piling cranes, 10 wheelers) movement should be limited near TPZs. Temporary access/passageways should be planned to avoid conserved trees.

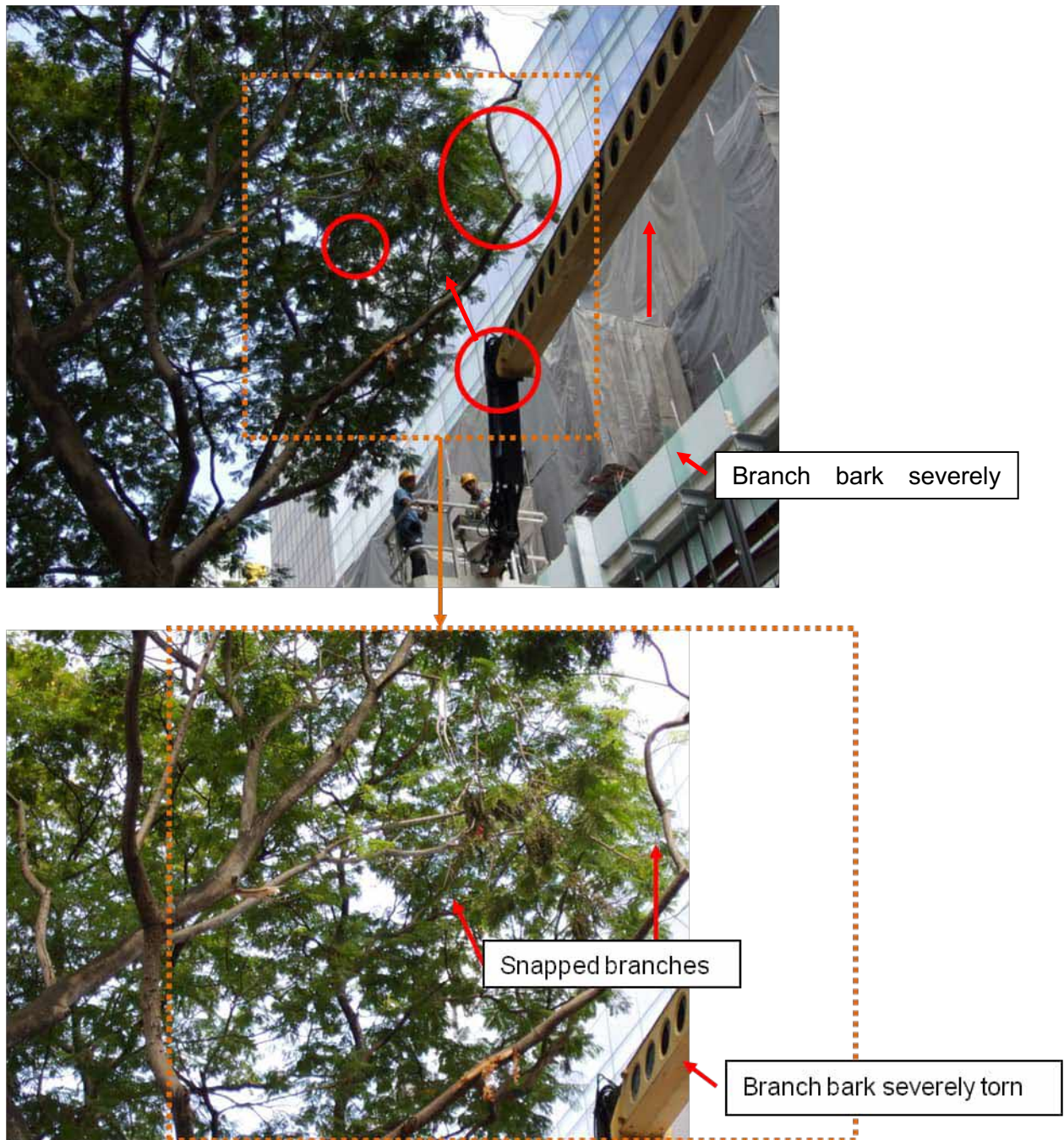


Figure 8: Tree branches were severed due to the negligence of the crane operator.

2.3 Drainage Considerations

In the event that water ponding conditions develop in the course of construction due to change in grade/platform levels, construction events or any other unforeseeable factors, the contractor is required to improve drainage around or within the TPZ in consultation with the attending arborist.

2.4 Trenching, Excavation and Equipment use

Trenching, excavation or boring within the TPZ shall be limited to activities approved by the architect and/or attending Arborist. Explore alternatives for trenching outside the root zone. Avoid exposing roots during hot, dry weather. Backfill trenches as soon as possible with soil and soak with water the same day. Small roots can die in 10 to 15 minutes and large roots may not survive an hour of exposure. If the trench must be left open all roots must be kept moist by wrapping them in peat moss and burlap.

i. Root Severance

No roots greater than 0.2m in diameter shall be cut without approval of the attending Arborist. Tunneling under roots is the approved alternative. Prior to excavation for foundation/footing/walls, or grading or trenching within the TPZ, roots shall be severed cleanly outside the TPZ to the depth of the planned excavation. When roots must be cut, they shall be cut cleanly with a sharp saw to sound wood and flush with the trench site.

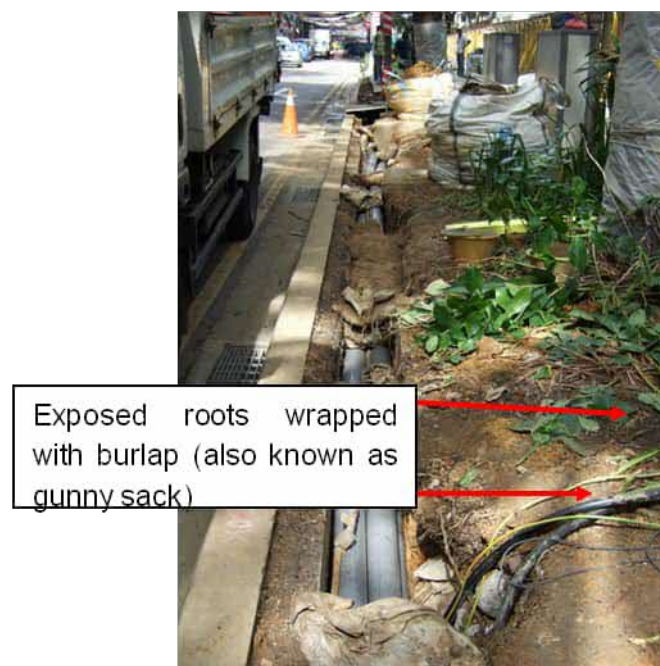


Figure 9: Tunneling under roots.

ii. Excavation

Any approved excavation, demolition, or extraction of material shall be performed with equipment that is placed outside the TPZ. Hand digging, hydraulic, or pneumatic excavation (e.g. air spading) are permitted methods for excavation within the TPZ.



Figure 10: Root exploratory works using an air spade. Air spading avoids damage of structural and even feeder roots of the tree.

iii. Heavy Equipment

Use of backhoes, Ditch-Witches, steel tread tractors or other heavy vehicles within the TPZ is prohibited unless approved by the attending Arborist. If allowed, a protective root buffer is required.

2.5 Tree Care

In the course of construction, the following measures may be necessary to reduce the effects of construction stress on protected trees. Quantum, duration and extent to be advised by attending arborist.

(A) Fertilization

A1 Vertical trenches and Nutrient Sinks

Create vertical trenching and nutrient sinks. These nutrient sinks should go down to at least 300mm deep and should be filled with high grade compost and 12% Humic acid (dilution 1:100). These sinks will act to reduce construction stress by conditioning the soil, increasing soil microbiological activity and increasing organic matter. At least 24 numbers of vertical trenches / nutrient sinks are required for trees greater than 2m in girth. Vertical trenches for trees under 2m in girth will be

determined empirically by the attending arborist and will take into account site conditions, tree species and its pre construction vigor. Top up nutrient sinks every 3 months.

A2 Soil Injection of Biostimulants

Mandatory if TPZ has been infringed into, soil compaction has occurred, tree condition has observed to have declined (indicators: reduction in Live crown ratios, twig die back at canopy and change in leaf colour/size/density)

- **Purpose :** To de-compact soil using a hydraulic pressurized delivery of biostimulants that both hydrates and aerates at the same time. Aim to reduce compaction to less than 400psi in the first 500mm of the soil.
- Mixed bio stimulants – serves 2 functions

Decompaction

- Humic acid – as soil conditioner and chelating agent (Nutrients are mobilized in forms that the plants can accept), facilitate release of nutrients and reduces leaching. Also improves water holding capacities of soil.
- Liquid gypsum / Dolomite – soil conditioner, improve soil structure and facilitate release of nutrients in clay soils typical of local conditions.

To feed and increase soil microbiology to increase tree vigor post damage. Soil microbiology helps nutrient uptake and encourages healthy root growth critical to prevent construction stress.

- Mollases – High CE for immediate uptake,
- Fish Kelp – Protein source. Organic fertilisers
- Slow release fertilizers (Osmocote)

(B) Watering

- Water supplement during periods of drought.
- Watering duration and extent depends on site conditions and species.
- Watering is carried out until first signs of inundation are observed (i.e. water infiltration observe to slow down significantly).

(C) Myconate treatment

- To trigger and stimulate growth of existing mycorrhizae.

(D) Pesticide treatment

- To control pest (e.g. termites, borers, caterpillars etc) when it occurs.
- Fungicide or bacteriocide as required or as determined by attending arborist to control microbe pathogens.

(E) Additonal pruning

To be carried out in consultation with the attending Arborist. Trees are living things and may require some form of pruning during the course of the development.

- Crown cleansing- Prune to remove dead branches that may have developed through time.
- Crown lifting- Prune to lift crown to avoid new amenities.
- Crown thinning- Prune to reduce canopy branches and loading.

Structural pruning (including crown reduction) to remove branches that may obstruct new amenities and/or movement of critically necessary equipment may require the planning and standing supervision of the attending arborist.

2.6 Engaging Arboriculture Contractors

All arboriculture works should be carried out by skilled and trained arboriculture teams. As such, it is preferred that only Arboriculture contractors which have at least 8 years working experience and must show previous work experience in developments of similar size or complexity. Arboriculture contractors should meet NParks safety requirements for work at height, LTA's requirements for temporary works along roadsides (where necessary) and have a certified arborist to supervise the pruning/felling/planting works.

All arboriculture workers engaged in tree climbing and chainsaw work shall possess a valid basic tree climbing certification base upon demonstrated competence in the WSQ module conducted by CUGE or an equivalent WSQ approved training organization.

Each Arboriculture crew shall possess the following VALID competences,

Operation of chainsaw for ground work (LS-MT-103E-1)

Chainsaw safety and maintenance (LS-MT-102E-1)

Perform formative pruning of young trees (LS-MT-114E-1)

Provide Arboriculture support on site (LS-MT-116E-1)

Workplace safety and health – operators (ES-WSH-101G-1)

Respond to Emergency (LS-HM-208E-1)

Perform advance rigging and climbing techniques (LS-HM-308S-1)

Perform aerial tree access and aerial rescue skills (Ls-HM-204S-1)

Implement and apply appropriate risk and safety management to sector practices (LS-BP-301S-1)

Prepare risk assessment report (LS-HM-406S-1)

Operate and work from an elevated work platform (CUGE-ARB-3501)

POST-CONSTRUCTION

3. Soft Landscaping

Ground works, site preparation and implementation of all landscaping near protected trees must be undertaken carefully.

TPZ barriers can only be removed at this juncture for the purpose. However, when working near trees, cultivation of soils in these areas must be cautiously handled using hand tools. Planting of shrubs shall be at a distance of at least 300mm away from existing root collar.

Avoid changes to ground levels or unnecessary compaction of soils within proximity to existing trees during the course.



Figure 10: New plantings at a minimum distance of 300mm (all round) from root collar

ANNEX A

VERIFICATION OF TREE PROTECTION CHECKLIST

Note: The project contractor or construction supervisor shall verify in writing that all **preconstruction** tree preservation conditions have been met as follows:

Submitted by: _____

Company/Project: _____

Date/Time: _____

S/N	Action	Checked (✓)	Remarks
1	Installation of tree fencing around identified trees within/near site (hard material at 1.8m tall)		
2	Tree protection zone (TPZ) dimensions meets specifications (from NParks and/or attending arborist)		
3	Warning signs prominently displayed on all sides of the fencing, including designated tree number		
4	Removal of construction material (ie machinery, debris, tools etc) within TPZ		
5	Mulching of high grade compost of 100mm thick around identified trees		
6	Completion of tree pruning (if necessary) under the supervision/written approval with the attending arborist		
7	Establishment of a tree maintenance schedule according to arborist recommendations (to be submitted to attending arborist)		

Verified by (attending arborist): _____

Date/Time: _____

Appendix X

Pre-felling Tree
Inspection Form

[illegible]

Appendix Y

Powered Mechanical Equipment List

Activity	Indicative Equipment/ Facility	Sound Power Level, PWL, dB(A)
Site preparatory works	40 ft Trailer	108
	Breaker	100
	Concrete pump	86
	Crane	88
	Drum Compactor	106
	Dump Truck	97
	Excavator	96
	Vibrator Pile Driver	116
	Front end loader	113
	Hand held Breaker	113
	Hand Held ChainSaw	115
	Hydraulic Foundation Drill	105
	Lorry Cranes	88
	Telehandler 5t	88
	Tracked excavator	96
	Tractor	88
	Truck mixer	97
Piling/D-wall works	Bentonite separation plant	94
	Bentonite Slurry Tanks	94
	Clean Water Tanks	108
	Colloidal Mixer (bentonite)	103
	Compressor	83
	Concrete pump	86
	Crane: Crawler 50t	88
	Dump truck	97
	D-wall rig with Grab	101
	Excavator	96
	Flat truck	97
	Generator	86
	Lime dosing plant	93
	Loader	97
	Measuring Tank & Agitator	104
	Mobile Crane	100
	Pneumatic rock drill mounted on tracked excavator	100
	Ready Mix Concrete Truck	98
	Slurry Pump	86
	Tracked excavator	96
Excavation / Reinforced Concrete Works	Truck mixer	97
	Truck Mounted Crane	88
	Concrete pump	86
	Crane crawler	88
	Dump Truck	97
	Excavator	96
	Flat truck	97
	Front end loader	113
	Generator	86
	Loader	97
	Lorry Cranes	88
	Roller	101
	Tracked excavator	96
Tunnelling	Truck mixer	97
	Air Chiller	92
	Air compressor	83
	Air Receiver	83
	Crane	88
	Excavator	96
	Gantry Crane	88
	Grout mixing plant	108
	Muckaway truck	97
	Segment Delivery	97
	Shaft hoist	101
	slurry separation plant	94
	Tunnel Boring Machine	88
	Ventilation air cooling plant	92
	Ventilation supply fans	92
	Water chiller plant	90
Construction of Permanent Structure	Compressor	83
	Concrete pump	86
	Crane	88
	Dump Truck	97
	Excavator	96
	Generator	86
	Mini Excavator	86
	Mobile Crane	100
	Ready Mix Concrete Truck	98
	Temporary Water Pump	93
	Forklift	104
Reinstatement and Finishing Works	Electric Tower Cranes	88
	Asphalt Paver	112
	Concrete pump	86
	Crane mounted with Vibrator Pile Driver	116
	Dump Truck	97
	D-wall rig with Grab	101
	Excavator	96
	Front end loader	113
	Grader	106
	Mobile Crane	100
	Ready Mix Concrete Truck	98
	Roller	101
	Truck Mounted Crane	88

Note:: PWL based on noise levels obtained within British Standard BS5228-1:2009

Appendix Z

Airborne Noise Criteria Correction Calculator

Background Noise Correction Calculations for $L_{Aeq(12hrs)}$, dB

Types of Affected Buildings	Noise Criteria for $L_{Aeq(12hrs)}$, dB (Monday to Saturday)								Noise Criteria for $L_{Aeq(12hrs)}$, dB (Sunday & Public Holiday)							
	NM01		NM02		NM03		NM04		NM01		NM02		NM03		NM04	
	7am – 7pm	7pm – 7am	7am – 7pm	7pm – 7am	7am – 7pm	7pm – 7am	7am – 7pm	7pm – 7am	7am – 7pm	7pm – 7am	7am – 7pm	7pm – 7am	7am – 7pm	7pm – 7am	7am – 7pm	7pm – 7am
(a) Hospitals, schools, institutions of higher learning, homes for the aged or sick etc.																
Construction noise criteria	60	50	60	50	60	50	60	50	60	50	60	50	60	50	60	50
Overall baseline noise level	66	63	52	52	62	58	66	63	65	63	46	51	60	57	65	62
Difference between maximum permissible construction noise level and overall baseline noise level	6	13	8	2	2	8	6	13	5	13	14	1	0	7	5	12
Background noise correction factor	1	0	1	2	2	1	1	0	1	0	0	3	3	1	1	0
Corrected noise sensitive receptor criteria	67	63	61	54	64	59	67	63	66	63	60	54	63	58	66	62
(b) Residential buildings located less than 150 m from the construction site where the noise is being emitted																
Construction noise criteria	75	NA	75	NA	75	NA	75	NA	75	NA	75	NA	75	NA	75	NA
Overall baseline noise level	66	63	52	52	62	58	66	63	65	63	46	51	60	57	65	62
Difference between maximum permissible construction noise level and overall baseline noise level	9	NA	23	NA	13	NA	9	NA	10	NA	29	NA	15	NA	10	NA
Background noise correction factor	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Corrected noise sensitive receptor criteria	76	NA	75	NA	75	NA	76	NA	75	NA	75	NA	75	NA	75	NA
(c) Buildings (other than those in paragraphs (a) and (b))																
Construction noise criteria	75	65	75	65	75	65	75	65	75	65	75	65	75	65	75	65
Overall baseline noise level	66	63	52	52	62	58	66	63	65	63	46	51	60	57	65	62
Difference between maximum permissible construction noise level and overall baseline noise level	9	2	23	13	13	7	9	2	10	2	29	14	15	8	10	3
Background noise correction factor	1	2	0	0	0	1	1	2	0	2	0	0	0	1	0	2
Corrected noise sensitive receptor criteria	76	67	75	65	75	66	76	67	75	67	75	65	75	66	75	67

Background Noise Correction Calculations for $L_{Aeq(1hr)}$, dB

Types of Affected Buildings	Noise Criteria for $L_{Aeq(1hr)}$, dB (Monday to Saturday)								Noise Criteria for $L_{Aeq(1hr)}$, dB (Sunday & Public Holiday)							
	NM01		NM02		NM03		NM04		NM01		NM02		NM03		NM04	
	7pm – 10pm	10pm – 7am	7pm – 10pm	10pm – 7am	7pm – 10pm	10pm – 7am	7pm – 10pm	10pm – 7am	7pm – 10pm	10pm – 7am	7pm – 10pm	10pm – 7am	7pm – 10pm	10pm – 7am	7pm – 10pm	10pm – 7am
(b) Residential buildings located less than 150 m from the construction site where the noise is being emitted																
Construction noise criteria	65	55	65	55	65	55	65	55	NA	NA	NA	NA	NA	NA	NA	NA
Overall baseline noise level	66	61	54	43	61	56	66	61	65	61	51	40	60	55	64	60
Difference between maximum permissible construction noise level and overall baseline noise level	1	6	11	12	4	1	1	6	NA	NA	NA	NA	NA	NA	NA	NA
Background noise correction factor	3	1	0	0	2	3	3	1	0	0	0	0	0	0	0	0
Corrected noise sensitive receptor	69	62	65	55	67	59	69	62	NA	NA	NA	NA	NA	NA	NA	NA

Background Noise Correction Calculations for $L_{Aeq(5min)}$, dB

Types of Affected Buildings	Noise Criteria for $L_{Aeq(5min)}$, dB (Monday to Saturday)												Noise Criteria $L_{Aeq(5min)}$, dB (Sunday & Public Holiday)											
	NM01			NM02			NM03			NM04			NM01			NM02			NM03			NM04		
	7am – 7pm	7pm – 10pm	10pm – 7am	7am – 7pm	7pm – 10pm	10pm – 7am	7am – 7pm	7pm – 7am	10pm – 7am	7am – 7pm	7pm – 7am	10pm – 7am	7am – 7pm	7pm – 10pm	10pm – 7am	7am – 7pm	7pm – 10pm	10pm – 7am	7am – 7pm	7pm – 7am	10pm – 7am	7am – 7pm	7pm – 7am	10pm – 7am
(a) Hospitals, schools, institutions of higher learning, homes for the aged or sick etc.																								
Construction noise criteria	75	55	55	75	55	55	75	55	55	75	55	55	75	55	55	75	55	55	75	55	55	75	55	55
Overall baseline noise level	66	65	61	48	50	43	62	61	56	66	66	61	65	65	60	45	46	40	60	60	55	65	64	59
Difference between maximum permissible construction noise level and	9	10	6	27	5	12	13	6	1	9	11	6	10	10	5	30	9	15	15	5	0	10	9	4
Background noise correction factor	1	0	1	0	1	0	0	1	3	1	0	1	0	1	1	0	1	0	0	1	3	0	1	1
Corrected noise sensitive receptor criteria	76	65	62	75	56	55	75	62	59	76	66	62	75	66	61	75	56	55	75	61	58	75	65	60
(b) Residential buildings located less than 150 m from the construction site where the noise is being emitted																								
Construction noise criteria	90	70	55	90	70	55	90	70	55	90	70	55	90	70	55	75	55	55	75	55	55	75	55	55
Overall baseline noise level	66	65	61	48	50	43	62	61	56	66	66	61	65	65	60	45	46	40	60	60	55	65	64	59
Difference between maximum permissible construction noise level and	24	5	6	42	20	12	28	9	1	24	4	6	25	5	5	30	9	15	15	5	0	10	9	4
Background noise correction factor	0	1	1	0	0	0	0	1	3	0	1	1	0	1	1	0	1	0	0	1	3	0	1	1
Corrected noise sensitive receptor criteria	90	71	62	90	70	55	90	71	59	90	71	62	90	71	61	75	56	55	75	61	58	75	65	60
(c) Buildings (other than those in paragraphs (a) and (b))																								
Construction noise criteria	90	70	70	90	70	70	90	70	70	90	70	70	90	70	70	90	70	70	90	70	70	90	70	70
Overall baseline noise level	66	65	61	48	50	43	62	61	56	66	66	61	65	65	60	45	46	40	60	60	55	65	64	59
Difference between maximum permissible construction noise level and	24	5	9	42	20	27	28	9	14	24	4	9	25	5	10	45	24	30	30	10	15	25	6	11
Background noise correction factor	0	1	1	0	0	0	0	1	0	0	1	1	0	1	1	0	0	0	0	0	0	0	1	0
Corrected noise sensitive receptor criteria	90	71	71	90	70	70	90	71	70	90	71	71	90	71	71	90	70	70	90	70	70	90	71	70

Background Noise Correction Calculations for LAeq(15min), dB

Type of Affected Premises	Noise Criteria for L _{Aeq} (15mins), dB											
	NM01			NM02			NM03			NM04		
	7am - 7pm	7pm - 11pm	11pm - 7am	7am - 7pm	7pm - 11pm	11pm - 7am	7am - 7pm	7pm - 11pm	11pm - 7am	7am - 7pm	7pm - 11pm	11pm - 7am
Noise Sensitive Premises such as hospital, home for the aged sick, library, etc.												
Construction noise criteria	60	55	50	60	55	50	60	55	50	60	55	50
Overall baseline noise level	66	65	61	48	49	42	62	61	55	66	66	60
Difference between maximum permissible construction noise level and overall baseline noise level	6	10	11	12	6	8	2	6	5	6	11	10
Background noise correction factor	1	0	0	0	1	1	3	1	1	1	0	0
Corrected noise sensitive receptor criteria	67	65	61	60	56	51	65	62	56	67	66	60
Residential Premises												
Construction noise criteria	65	60	55	65	60	55	65	60	55	65	60	55
Overall baseline noise level	66	65	61	48	50	42	62	61	55	66	66	60
Difference between maximum permissible construction noise level and overall baseline noise level	1	5	6	17	10	13	3	1	0	1	6	5
Background noise correction factor	3	1	1	0	0	0	2	3	3	3	1	1
Corrected noise sensitive receptor criteria	69	66	62	65	60	55	67	64	58	69	67	61
Others												
Construction noise criteria	70	65	60	70	65	60	70	65	60	70	65	60
Overall baseline noise level	66	65	61	48	50	42	62	61	55	66	66	60
Difference between maximum permissible construction noise level and overall baseline noise level	4	0	1	22	15	18	8	4	5	4	1	0
Background noise correction factor	2	3	3	0	0	0	1	1	1	1	3	3
Corrected noise sensitive receptor criteria	72	68	64	70	65	60	71	66	61	71	69	63

Project Criteria for Construction Noise Impact Assessment

No	Types of Affected Buildings	Noise Criteria for $L_{Aeq}(12\text{hours})$, dB		Noise Criteria for $L_{Aeq}(1\text{hr})$, dB		Noise Criteria for $L_{Aeq}(5\text{mins})$, dB		
		7am - 7pm	7pm - 7am	7pm -10pm	10pm - 7am	7am - 7pm	7pm - 10pm	10pm - 7am
Monday to Saturday								
NM01	(a) Hospitals, schools, institutions of higher learning, homes for the aged or sick etc.	67	63	NA	NA	76	65	62
	(b) Residential buildings located less than 150 m from the construction site where the noise is being emitted	76	NA	69	62	90	71	62
	(c) Buildings (other than those in paragraphs (a) and (b))	76	67	NA	NA	90	71	71
NM02	(a) Hospitals, schools, institutions of higher learning, homes for the aged or sick etc.	61	54	NA	NA	75	56	55
	(b) Residential buildings located less than 150 m from the construction site where the noise is being emitted	75	NA	65	55	90	70	55
	(c) Buildings (other than those in paragraphs (a) and (b))	75	65	NA	NA	90	70	70
NM03	(a) Hospitals, schools, institutions of higher learning, homes for the aged or sick etc.	64	59	NA	NA	75	62	59
	(b) Residential buildings located less than 150 m from the construction site where the noise is being emitted	75	NA	67	59	90	71	59
	(c) Buildings (other than those in paragraphs (a) and (b))	75	66	NA	NA	90	71	70
NM04	(a) Hospitals, schools, institutions of higher learning, homes for the aged or sick etc.	67	63	NA	NA	76	66	62
	(b) Residential buildings located less than 150 m from the construction site where the noise is being emitted	76	NA	69	62	90	71	62
	(c) Buildings (other than those in paragraphs (a) and (b))	76	67	NA	NA	90	71	71

No	Types of Affected Buildings	Noise Criteria for $L_{Aeq}(2\text{hours})$, dB		Noise Criteria for $L_{Aeq}(1\text{hr})$, dB		Noise Criteria for $L_{Aeq}(5\text{mins})$, dB		
		7am - 7pm	7pm - 7am	7pm -10pm	10pm - 7am	7am - 7pm	7pm - 10pm	10pm - 7am
Sunday and Public Holiday								
NM01	(a) Hospitals, schools, institutions of higher learning, homes for the aged or sick etc.	66	63	NA	NA	75	66	61
	(b) Residential buildings located less than 150 m from the construction site where the noise is being emitted	75	NA	NA	NA	90	71	61
	(c) Buildings (other than those in paragraphs (a) and (b))	75	67	NA	NA	90	71	71
NM02	(a) Hospitals, schools, institutions of higher learning, homes for the aged or sick etc.	60	54	NA	NA	75	56	55
	(b) Residential buildings located less than 150 m from the construction site where the noise is being emitted	75	NA	NA	NA	75	56	55
	(c) Buildings (other than those in paragraphs (a) and (b))	75	65	NA	NA	90	70	70
NM03	(a) Hospitals, schools, institutions of higher learning, homes for the aged or sick etc.	63	58	NA	NA	75	61	58
	(b) Residential buildings located less than 150 m from the construction site where the noise is being emitted	75	NA	NA	NA	75	61	58
	(c) Buildings (other than those in paragraphs (a) and (b))	75	66	NA	NA	90	70	70
NM04	(a) Hospitals, schools, institutions of higher learning, homes for the aged or sick etc.	66	62	NA	NA	75	65	60
	(b) Residential buildings located less than 150 m from the construction site where the noise is being emitted	75	NA	NA	NA	75	65	60
	(c) Buildings (other than those in paragraphs (a) and (b))	75	67	NA	NA	90	71	70

Project Criteria for Operation Noise Impact Assessment

No	Type of Affected Premises	Noise Criteria for $L_{Aeq}(15mins)$, dB		
		7am - 7pm	7pm - 11pm	11pm - 7am
NMO1	Noise Sensitive Premises such as hospital, home for the aged sick, library, etc.	67	65	61
	Residential Premises	69	66	62
	Others	72	68	64
NMO2	Noise Sensitive Premises such as hospital, home for the aged sick, library, etc.	60	56	51
	Residential Premises	65	60	55
	Others	70	65	60
NMO3	Noise Sensitive Premises such as hospital, home for the aged sick, library, etc.	65	62	56
	Residential Premises	67	64	58
	Others	71	66	61
NMO4	Noise Sensitive Premises such as hospital, home for the aged sick, library, etc.	67	66	60
	Residential Premises	69	67	61
	Others	71	69	63

