

Section 1  
INTRODUCTION



# **Architectural Design Criteria - Introduction**

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<b>1</b>	<b>DOCUMENT SCOPE</b>
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The scope of this document is to define the criteria and parameters for the architectural layout, design and construction of land transport facilities in Singapore.

The Architectural Design Requirements (Section 2) are intended to reflect general common requirements across the various transport facilities. Sections 3 and 4 refer to further documents which give more detailed requirements particular to the individual facility. Sections 5 and 6 include further Guidelines and Criteria to assist in the designing of particular facilities. Section 6 includes Guidelines and Criteria particular to the design and application of signage throughout the facilities. It is the designer's responsibility to be familiar with all the general requirements as well as all the particular requirements relevant to their works.

It is intended that, from time to time, revisions will be made individually to pages and subjects within these Design Criteria. This will, as far as possible, be done without disruption to the organisation of the whole document. It is the responsibility of the Designers using these Design Criteria to ensure that they are making reference to the latest revision.

The Authority requires excellent solutions to the design challenges of transport facility planning and architecture. Many of these design challenges have been successfully met in existing transport facilities. While the Authority seeks further improvement to transport facility design, it is recommended that designers inspect the planning of existing facilities as a point of reference for further improvements.

It is the responsibility of the designer to highlight to LTA any contradiction or conflicts within the criteria set out hereafter. In addition, the designer shall notify and seek the Authority's acceptance to any change or new requirement that may arise during the use of these criteria either in whole or in part.

Where statutory requirements or particular contract conditions overlap with requirements stipulated in the ADC the designer shall comply with the most onerous or seek formal direction from the Authority.

2	REFERENCES
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The whole of the architectural works shall generally be constructed to comply with the current editions of the Standards for Building and Codes of Practice produced by the following organisations:-

- American Society for the Testing of Materials (ASTM)
- Standards Australia
- British Standards Institution (BSI).
- International Standards Organisation (ISO)
- Standard, Productivity and Innovation Board (SPRING) Singapore

The Designer shall be required to identify all relevant Standards and Codes of Practices. Where Singapore Standards exist, these shall be adopted.

The design of transport facilities shall comply with the current requirements of the following, and all relevant laws and regulations and with such additional requirements as may be stated in the Contract Documents or where appropriate.

- Singapore Land Authority
- Singapore Energy Marketing Authority
- Singapore Infocomm Development Authority
- Singapore Urban Renewal Authority (URA)
- National Environment Agency
- Public Utilities Board (PUB)
- National Parks Board (NParks)
- Building and Construction Authority
- Building Control Regulations
- Fire Safety and Shelter Department (FSSD)
- Code on Accessibility in the Built Environment
- Code of Practice for Fire Precaution in Buildings
- Factories (Building Operations and Works of Engineering Construction) Regulations
- Code Of Practice For Railway Protection
- Rapid Transit Systems (Development And Building Works In Railway Corridor And Railway Protection Zone) Regulations
- Guide To Carrying Out Restricted Activities Within Railway Protection And Safety Zones
- Infocomm Development Authority of Singapore Code of Practice for Info Communications Facilities in Buildings (IDA COPIF)
- Singapore Post: Letter boxes, Guidelines and General Information
- Civil Defence Design Criteria issued by Building and Construction Authority
- Guidebook for Better Public Toilet Design and Maintenance published by the Ministry of the Environment.
- Defence Science and Technology Agency (DSTA)

In addition the following documents produced by the Land Transport Authority shall be followed:

- Standard Details for Road Elements (SDRE)
- Civil Design Criteria (CDC)
- Civil Defence Design Criteria
- Materials and Workmanship (M&W) Specification (Architectural and Civil)\*
- Standard For Fire Safety In Rapid Transit Systems
- Vehicle Transit Licenses (VTL)

\* M&W Specifications (Architecture) shall be expanded to quantify the performance requirements specific to the materials used at each location in the design.

### 3 ACRONYMS AND DEFINITIONS

Accepted, Reviewed, Directed, Rejected, Endorsed and similar expressions	Mean accepted, reviewed, directed, rejected, endorsed in writing by the Engineer.
Add Value Machine (AVM)	A machine for adding value to cash cards.
Authority, the	The Land Transport Authority (LTA)
Automatic Fare Collection (AFC)Gates	An automatic gate system which enables the operator to collect fares and control passage between the free and paid areas of the station
Automatic Teller Machines (ATM)	A machine owned, installed and maintained by the banks for the purposes of providing automated banking services.
Combined Services Drawings (CSD)s	Drawings reflecting all services in both the horizontal and vertical plane used to ensure they all fit within the allotted space.
Commuter Facilities	All forms of road related facilities connected to various transport nodes to cater the needs of pedestrians and commuters.
Covered Linkway	An independent covered footpath connecting multiple facilities.
Covered Walkway	A covered footpath integrated within the building envelope.
Current Edition	The edition of any document current at the date on which the design is being carried out, including all amendments and revisions made to the document.
Designer	A qualified person registered with the Singapore Board of Architects.
Duct	A passageway for conveying air.
E&M or M&E	Electrical and Mechanical
Fare Barrier	The separation device within a station between the paid area and the free area consisting of fare gates, emergency gates and accessible gates and railings.
Firemen's Staircase	A staircase that has its enclosure constructed of non-combustible material and shall have a fire resistance of not less than that for the element of structure and designated for use by the firemen.
Fire Essential Room	Often termed as 'Essential Rooms'. Rooms required for the operation of the fire fighting systems during a fire.
Free Area	That portion of public space within the station structure that a person can occupy without paying a fare.
General Ticketing Machines (GTM)	Passenger operated machines for the sale of tickets.
Lot Boundary	The boundary of the land allocated by the Singapore Land Authority for the construction of the facility.
Minimum Clear Distance	The distance, measured in a straight horizontal line, in front of an item within the facility which shall be kept clear of any obstacles or obstructions. For escalators this is measured from the front of the comb plate.
Minimum Clear Width	The distance, measured in a straight horizontal line, between two elements devoid of any obstacles or obstructions.
Non-combustible	As defined by B.S. 476, part 4. Test reports must be submitted to support all claims that a material is non combustible. The material must also be issued with a PSB Certificate of Conformity and listed as a Class 2 material under the PSB Product Listing Scheme.
Operation Control Centre (OCC)	The area where all control and communications systems, controls, displays and monitors are housed. It is also the area where all emergency and malfunction alarms are sounded and recorded, and from which the Operator's controllers can intervene and manage system operations.
Operationally Critical Room	Room containing items which if inoperable prevent the basic operation of the transport system.
Paid Area	That portion of public space within the station structure that a person can occupy after having paid a fare.
Pedestrian Overhead Bridge (POB)	An elevated structure for pedestrians to cross above a road/canal.

Pedestrian Underpass	An underground pedestrian crossing.
Platform	The area of the station directly adjacent to the tracks, where trains stop to load and unload passengers.
Platform Level	The floor level which includes the platform.
Protected Shaft	As defined in the Standard For Fire Safety In Rapid Transit Systems and Code of Practice for Fire Precaution in Buildings
Queuing Area. Also Surge, Run-off.	Area of a facility where pedestrians line up without interrupting passenger flow.
Railway Area	As defined in the RTS Act.
Riser	A passageway for conveying cables and/or pipe.
Shaft	A general space used for the conveyance of any element (includes risers and ducts)
Station	All areas within the boundaries of the station site located within LTA property lines which includes structures, platforms, entrances, approaches, and the commuter areas.
System Wide Contractor (SWC)	A contractor engaged to supply services over the entire length of the line or system under construction
Timekeeper (TK)	An operator for a selected number of bus services usually located at bus interchanges.
Top-of-Rail Profile (TOR)	The profile line representing the elevation of the top of running rail surfaces
Top Up Machine (TUM) -	A machine for adding value to contactless smartcard
Trainway / Trackway	That portion of a station or structure through which the trains run.
Qualified Person (QP)	Qualified Person (architect) registered in Singapore.
Wet Rooms	Rooms which, in their normal operation, frequently have water deposited on the floor.