

# Design Requirements for RTS-integrated Developments



## 1. PREFACE

This quick guide clarifies LTA's design requirements for developments integrated with Rapid Transit Systems (RTS). Proposed developments integrated with existing RTS may be initiated by the Developer to enhance the connectivity of the precincts. However, it is subjected to the review and approval by the Authority; it may be stipulated in Urban Redevelopment Authority (URA)'s Government Land Sales (GLS) agreements for developer to provide direct access from the proposed development to RTS stations.

The case studies presented in this series aim to explain and guide you on the basic design requirements to be incorporated in your proposal:

1. UPL connection at station concourse level via station knock-out panels
2. EPL connection to elevated station
3. At-grade connection to station entrance via covered linkways
4. General Mechanical & Electrical (M&E) provision at the interface

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## 2. EXPERIENCE

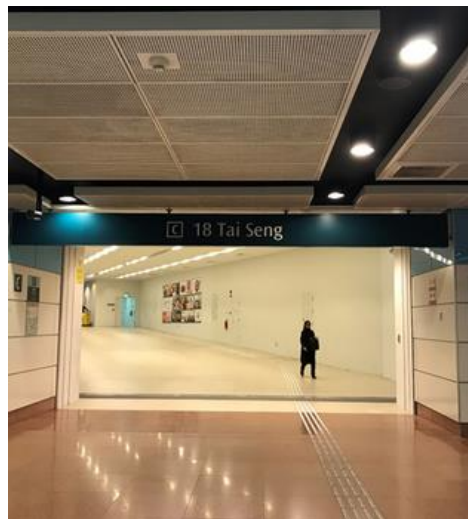
The successful integration of private developments with the RTS will provide a seamless, safe and comfortable journey for commuters. This RTS integration process will require a comprehensive approach that not only addresses the design and functionality of the interface at these boundaries but also the maintenance and ownership of the assets.

Design considerations should include:

1. The ease of maintenance and upkeep of the entrance/exit structures,
2. Protection of assets during construction (artwork/murals),
3. Integrated signage and improved wayfinding features and
4. The prevention of water ingress into the station due to rain while achieving efficient cross-ventilation at the entrances / exits.



High roof over station entrance attracts rainwater



Floor slopes towards RTS side will create flooding issue



Eaves of entrance is too short and attracts rainwater



Features are difficult to maintain



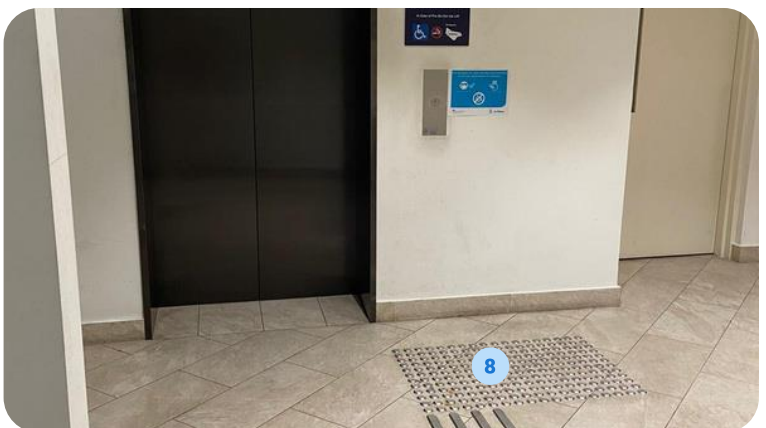
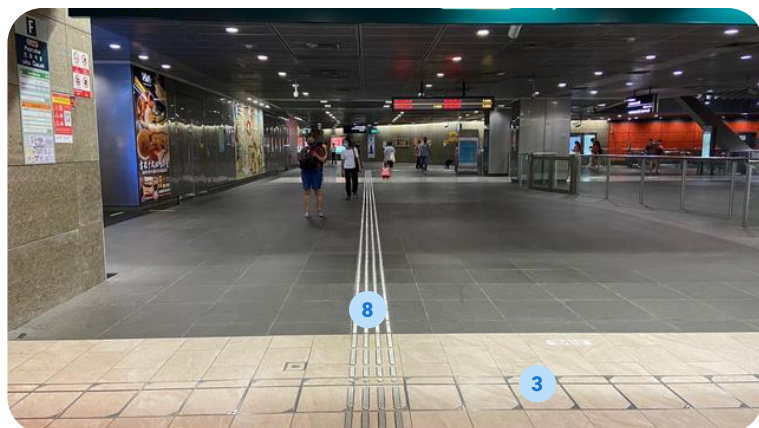
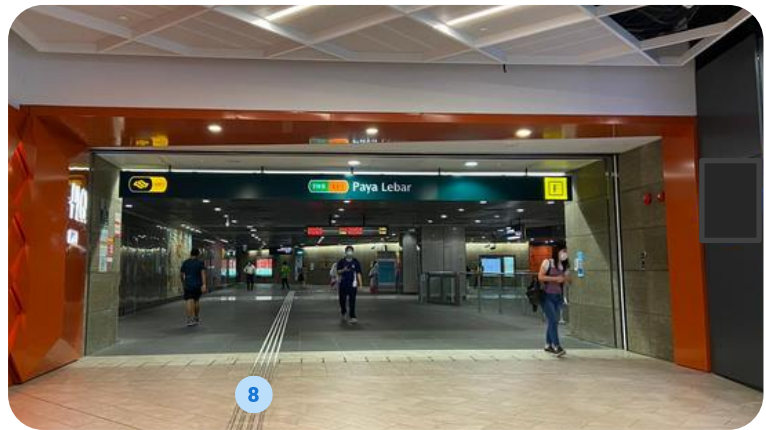
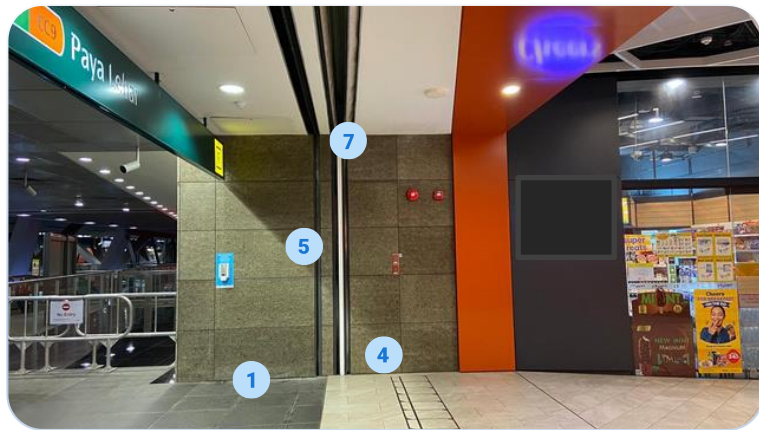
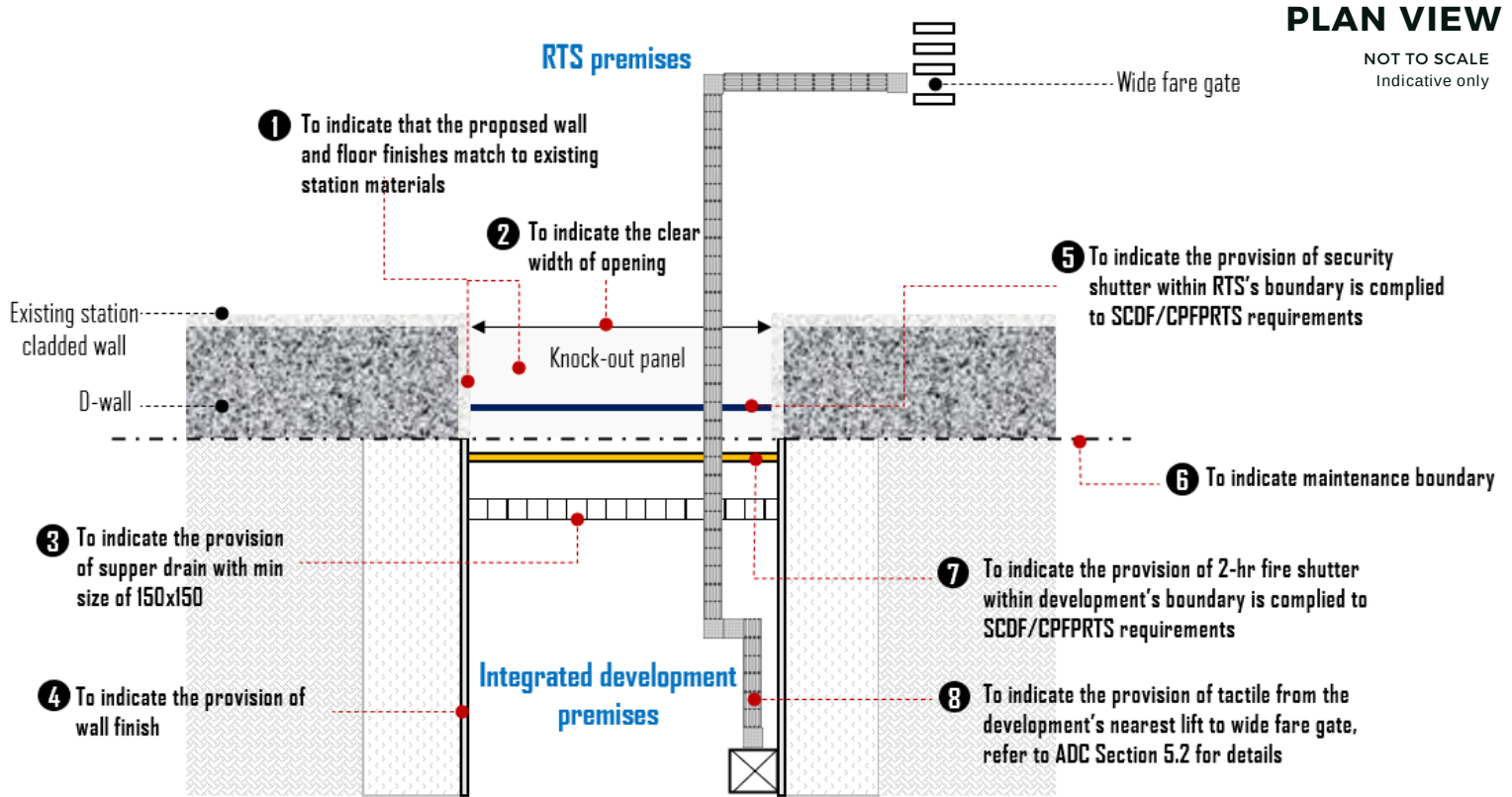
Signage and wayfinding to be updated



Murals to be protected during A&A work

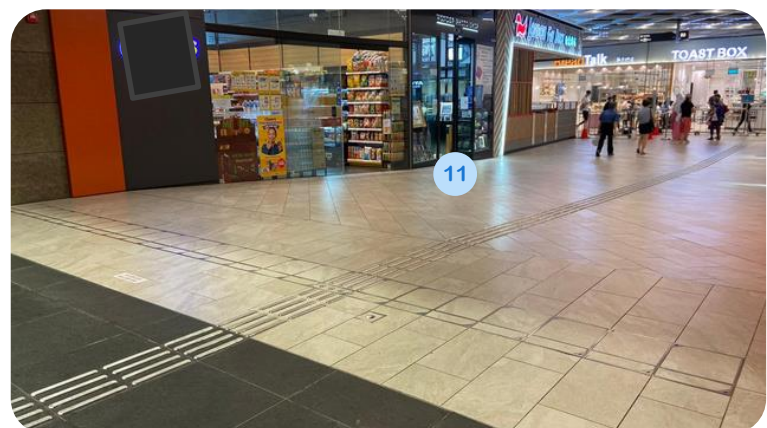
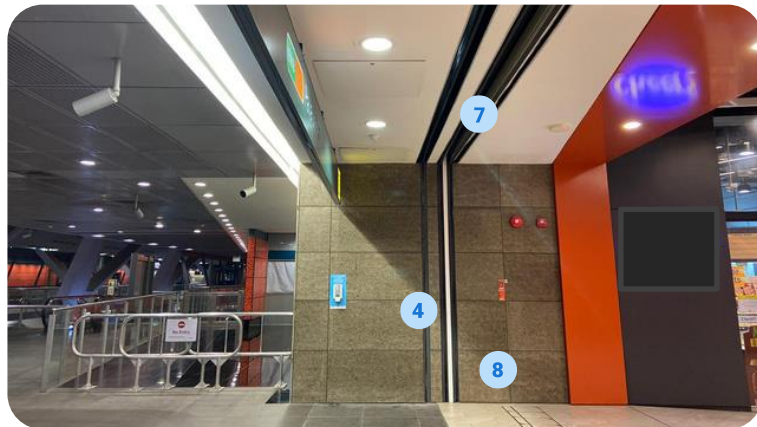
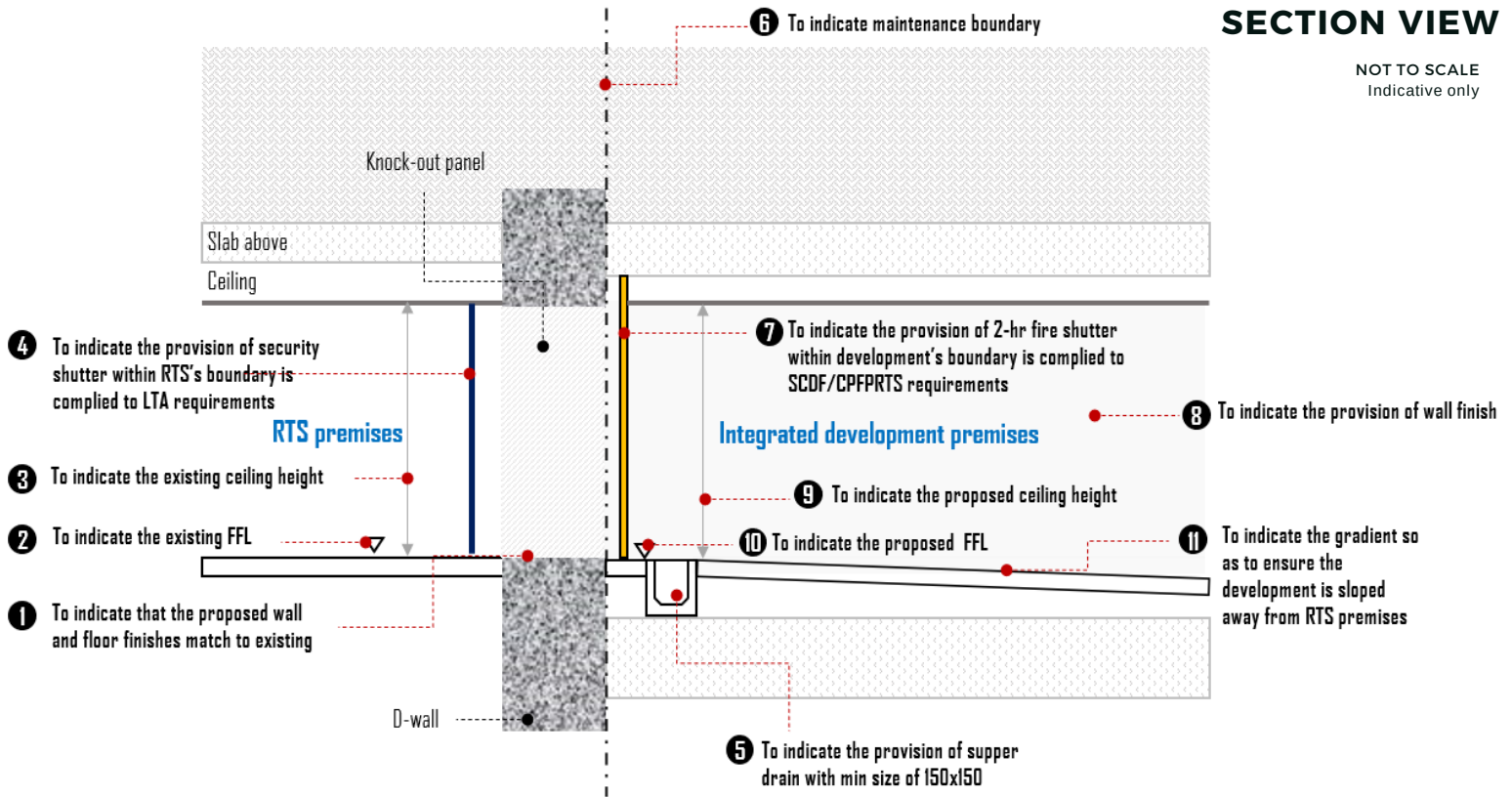
### 3. CASE STUDY

## CASE 1 – UPL CONNECTION AT STATION CONCOURSE LEVEL VIA THE STATION KNOCK-OUT PANELS





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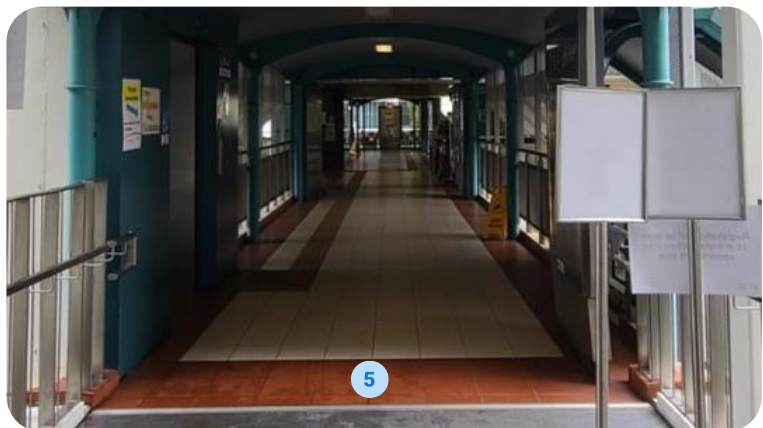
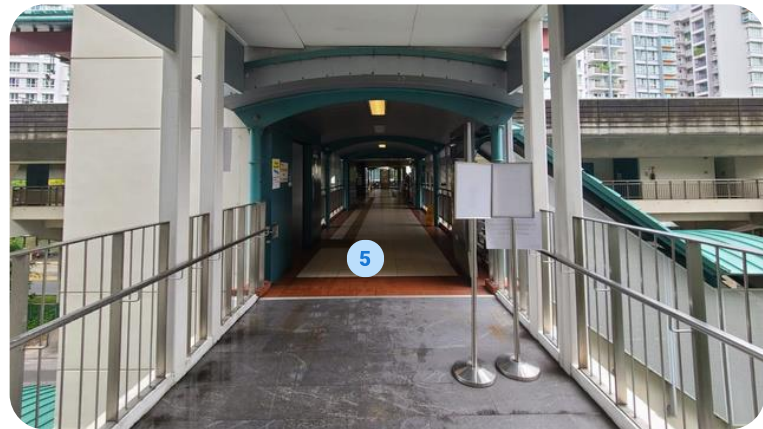
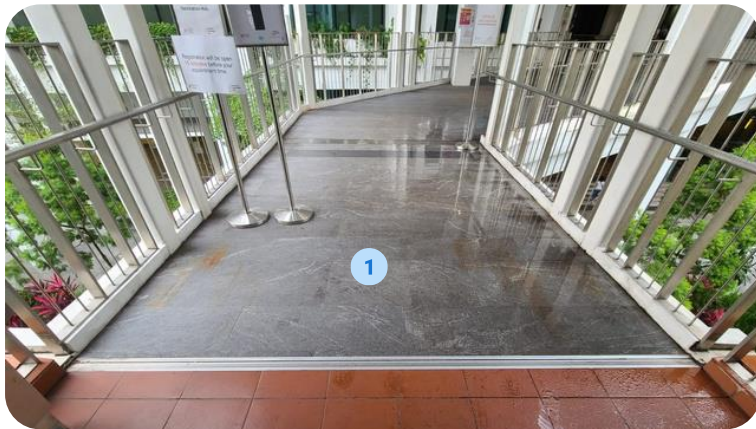
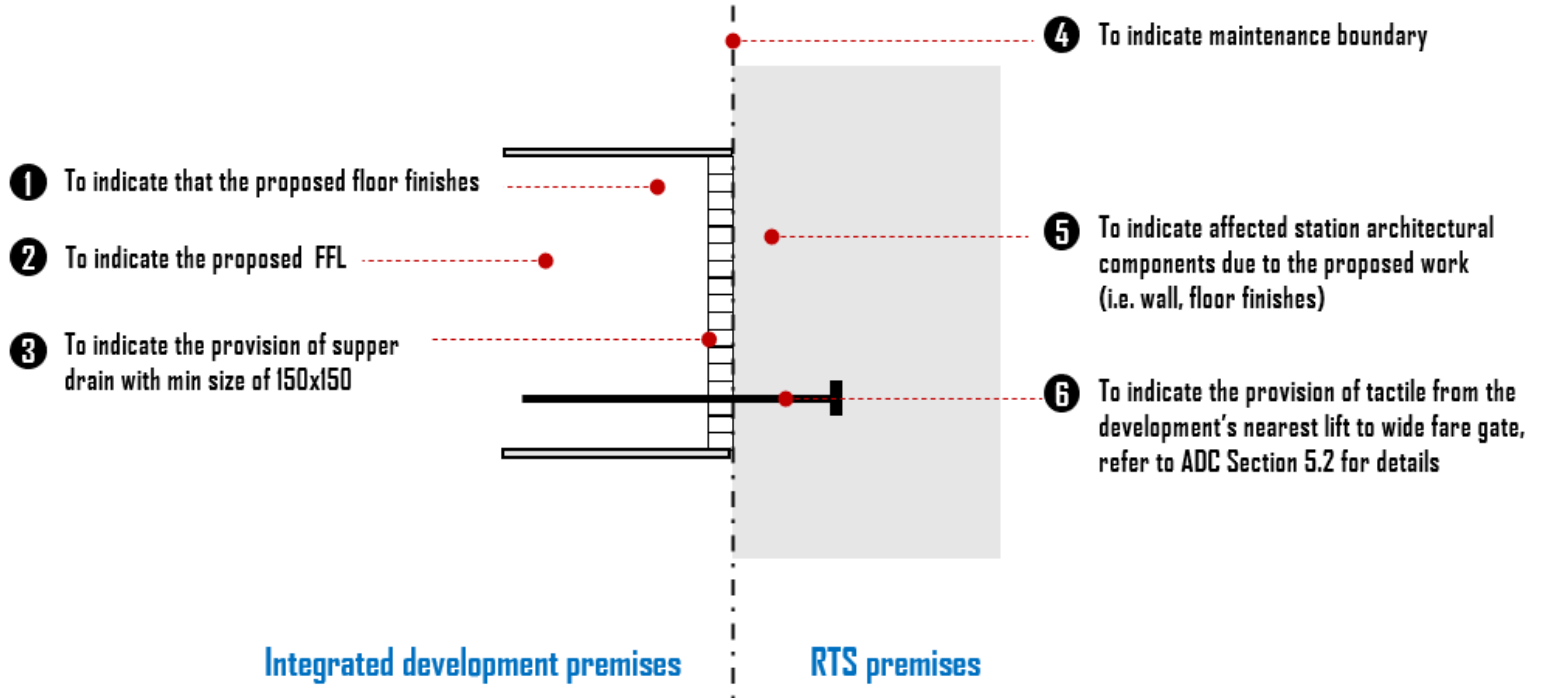




# CASE 2 - ELEVATED PEDESTRIAN LINK (EPL) CONNECTION TO ELEVATED STATION

## PLAN VIEW

NOT TO SCALE  
Indicative only





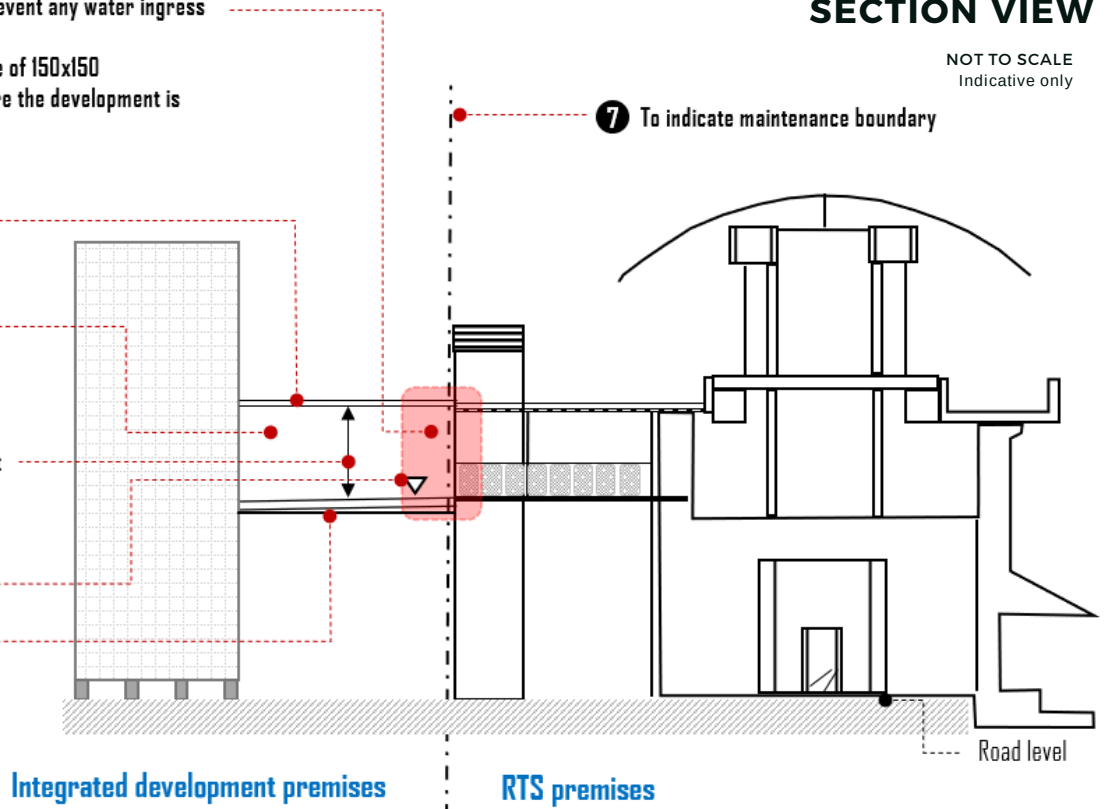
# CASE 2 - ELEVATED PEDESTRIAN LINK (EPL) CONNECTION TO ELEVATED STATION

- 1 • To provide the treatment details to prevent any water ingress
- To provide weather protection details
- To provide scupper drain with min size of 150x150
- To indicate the gradient so as to ensure the development is sloped away from RTS premises

## SECTION VIEW

NOT TO SCALE  
Indicative only

- 2 To provide roof plan and indicate the direction of water flow
- 3 To indicate that the proposed materials for wall (if any) and floor finishes
- 4 To indicate the proposed ceiling height
- 5 To indicate the proposed FFL
- 6 To confirm that the UPL is of independent structure and does not transfer any loading to existing RTS structure

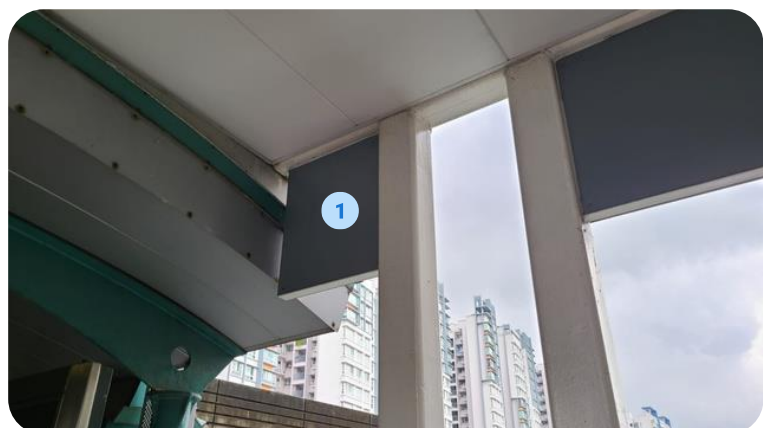
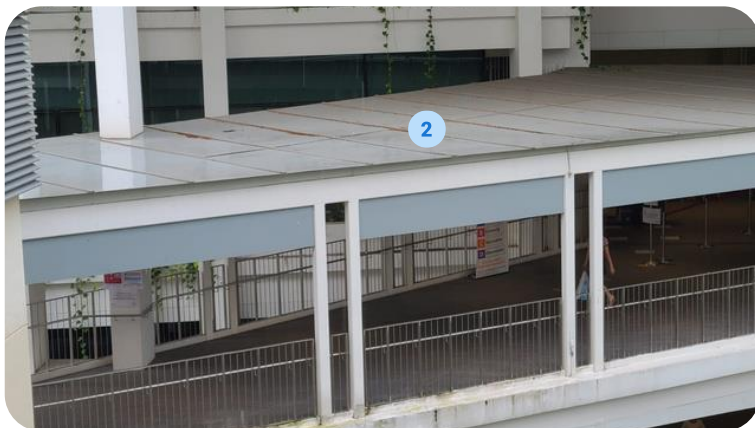
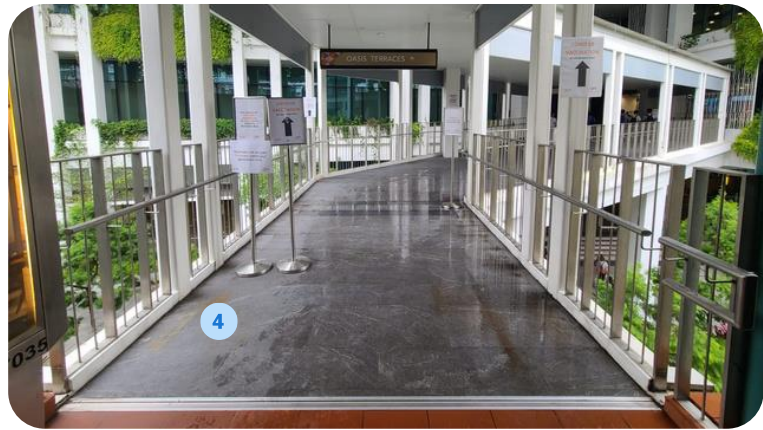


- 7 To indicate maintenance boundary

Integrated development premises

RTS premises

Road level

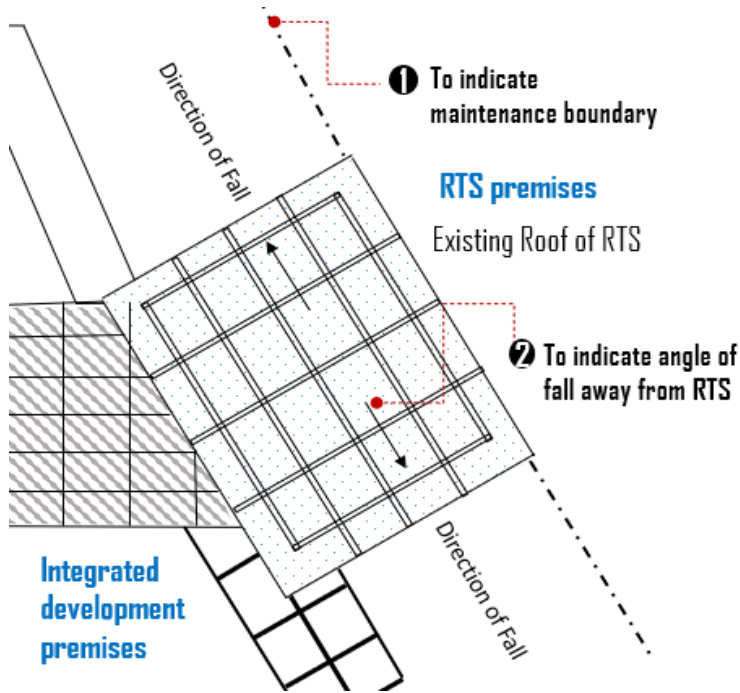




# CASE 3 – AT-GRADE CONNECTION TO STATION ENTRANCE VIA COVERED LINKWAYS

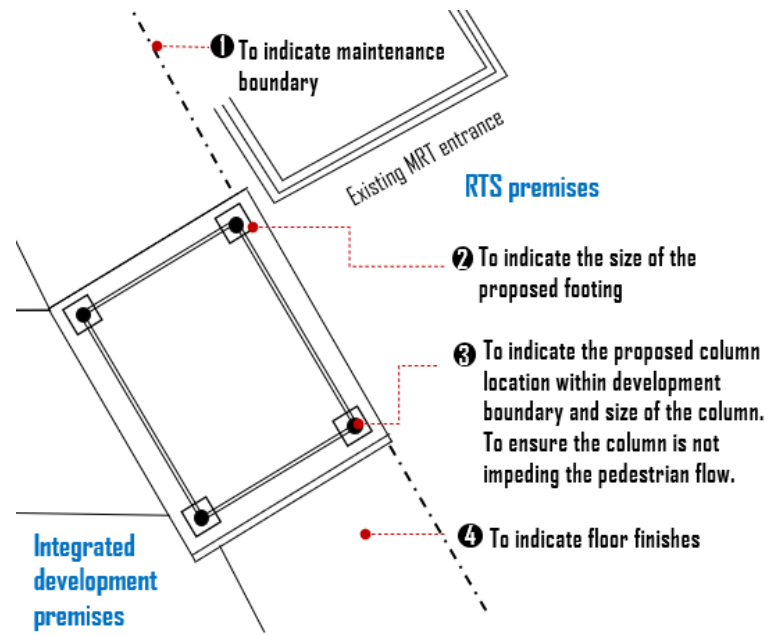
## ROOF PLAN

NOT TO SCALE  
Indicative only



## FLOOR PLAN

NOT TO SCALE  
Indicative only

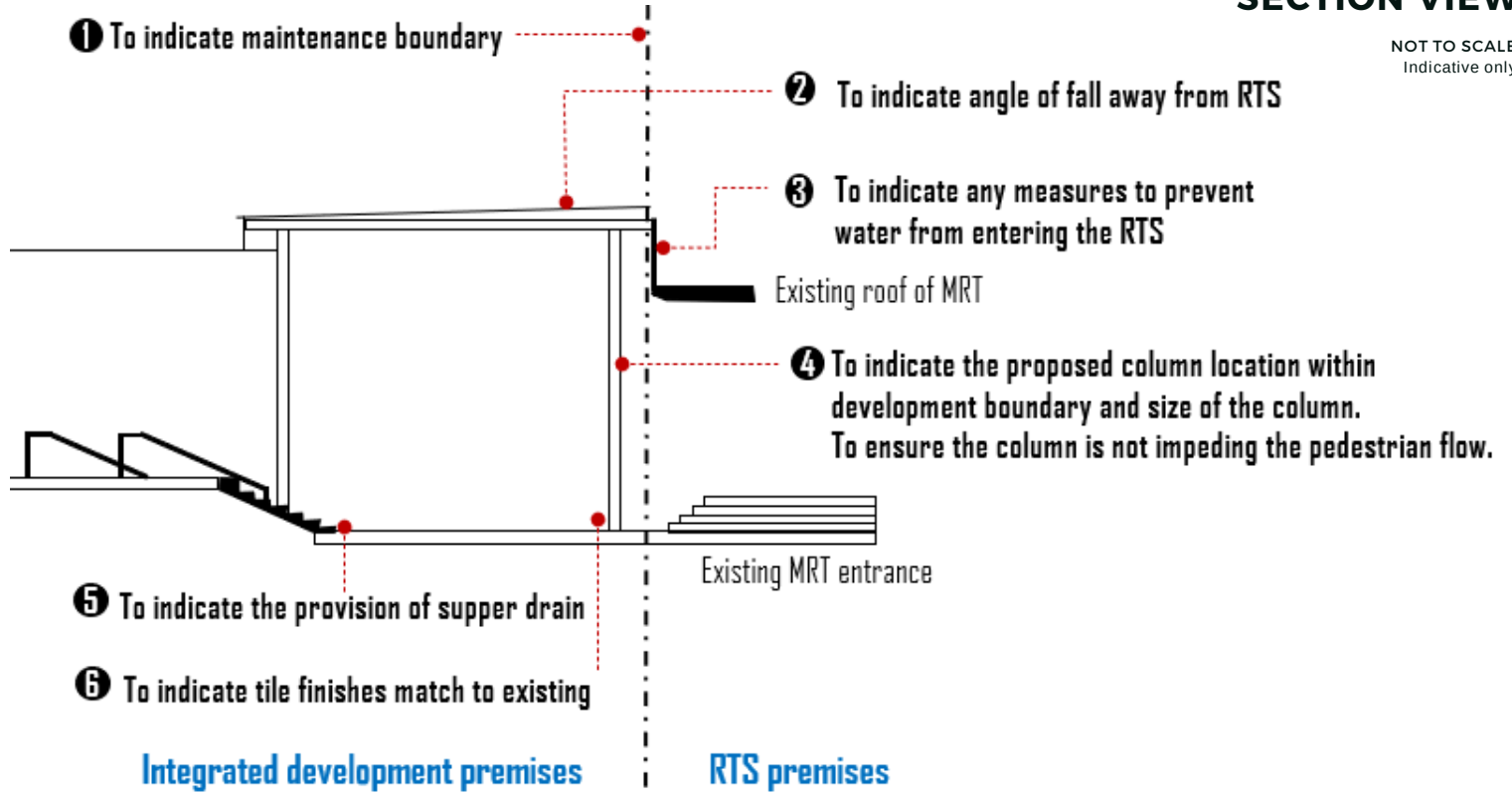




# CASE 3 – AT-GRADE CONNECTION TO STATION ENTRANCE VIA COVERED LINKWAYS

## SECTION VIEW

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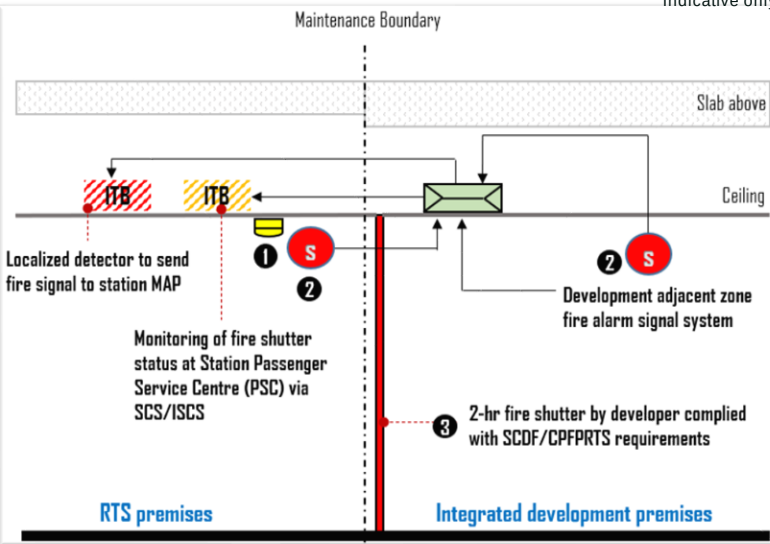




# CASE 4 – GENERAL MECHANICAL & ELECTRICAL (M&E) PROVISION AT THE INTERFACE

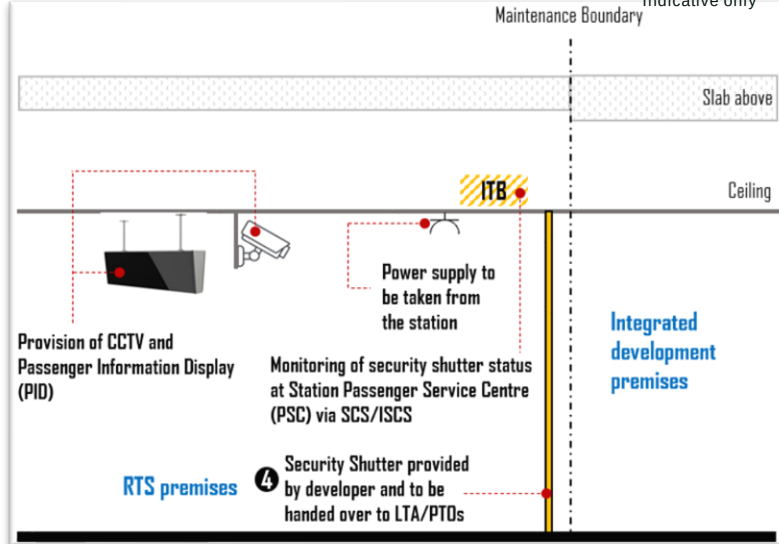
## FIRE SHUTTER DETAIL

NOT TO SCALE  
Indicative only



## SECURITY SHUTTER DETAIL

NOT TO SCALE  
Indicative only



Provision of Fire Shutter at the Knock Out Panel area

Provision of Security Shutter, PID and CCTV at the Knock Out Panel area (to be complied with LTA requirements)

**Legend**



Localized Smoke Detector



Interface Terminal Box (ITB)



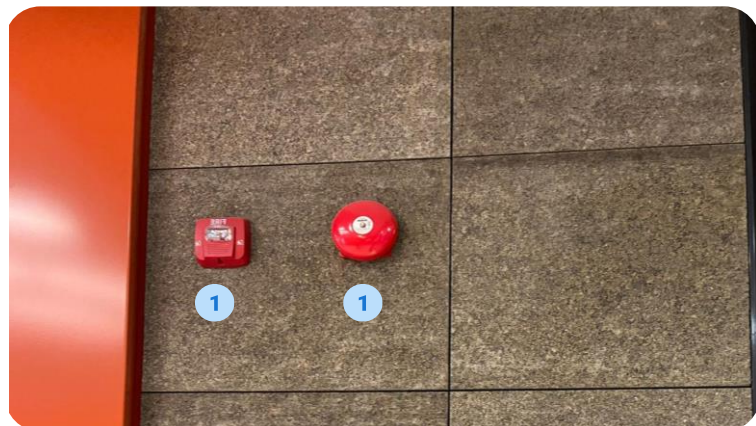
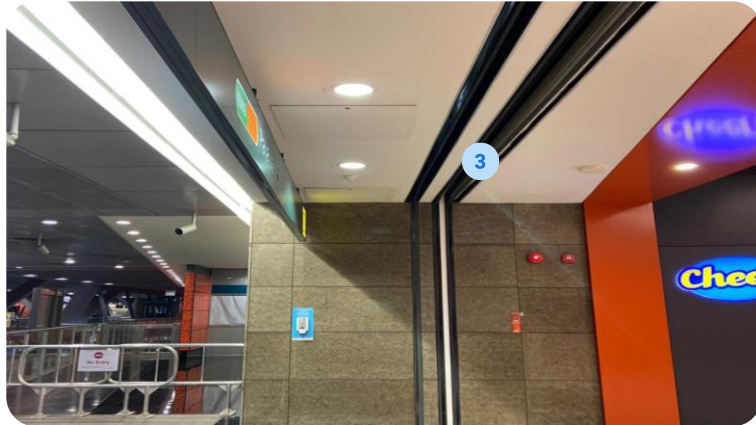
Shutter Control Panel



Strobe Light with alarm



Socket



## 4. CONCLUSION

This Quick Guide has demonstrated good practices and examples taken from many past projects and experiences. We endeavor to regularly update this Quick Guide by sharing new experiences, initiatives and solutions.

LTA has also developed a checklist that specifies the plans and details to be provided for Architectural Submissions. The checklist is only applicable if the proposed work falls within station boundary and to be handed over to LTA upon completion. You can access this checklist by scanning the following QR Codes:



Covered Linkway



Floor Finishes



Pedestrian Underpass

All publications are made available at LTA's corporate website, under Who We Are > Statistics & Publications > Journals & Newsletters > Quick Guides for Development Proposals.