Land Transport Authority

INFRASTRUCTURE DESIGN & ENGINEERING GROUP
KEY DOCUMENT

INFRASTRUCTURE DESIGN CRITERIA
VOLUME A

E/GD/09/130/VOLA/A1

CONTROLLED DOCUMENT

INTRODUCTION & OBJECTIVES

VOLUME A- INTRODUCTION & OBJECTIVES

Table of Contents

1. Scope of Infrastructure Design Criteria (IDC)

1.1. General

1.1.1 The scope of this document is to provide guidelines and set the criteria and parameters for designing Land Transport Facilities in Singapore.

1.1.2 The criteria and parameters in the IDC aim to establish the base requirements for design. It is also recommended that the Designer inspects the planning of existing facilities as a point of reference for further improvements, where feasible.

1.1.3 The Designer may utilise alternative solutions for such improvements, provided that these alternative solutions, which may differ completely or partially from those in the IDC, can satisfy the prescribed objectives and base requirements.

1.1.4 It is intended that, from time to time, revisions will be made to pages and/or subjects within the IDC. This will, as far as possible, be done without disruption to the organisation of the whole document. It is the responsibility of the Designer using the IDC to ensure that they are referring to the latest revision.

1.1.5 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.

1.1.6 Where statutory requirements or particular contract conditions overlap with requirements stipulated in the IDC, the Designer shall comply with the most onerous requirement or seek formal direction from the Authority.

1.1.7 Where "must" or "shall" is used within the IDC, it refers to mandatory design requirements and where "should" is used, it refers to recommended design requirements.

2. Structure of IDC

2.1. The IDC consists of 4 Volumes, each covering a different type of Land Transport Facilities.

2.2. Each Volume is further divided into Chapters covering requirements and criteria pertaining to different disciplines. Each Volume also has associated Annexes containing specific requirements for certain parts/elements of the transport facility. The Designer is required to refer to all chapters and annexes in tandem/conjunction with each other to have a wholistic view for design of the transport facilities.

2.3. The table below shows the overall structure and contents for each Volume of the IDC.

Infrastructure Design Criteria (IDC)

VOLUMES	A. Introduction	B. Rail Infrastructure	C. Commuter Infrastructure	D. Bus Infrastructure
PARTS	Introduction & Objectives	I. MRT Station Design Criteria	Commuter Infrastructure & Active Mobility Requirements	I. Bus Interchanges/ Bus Terminals
CHAPTERS	1. Scope of Infrastructure Design Criteria (IDC) 2. Structure of IDC 3. General References 4. Terms and Definitions	1. Architecture Requirements 2. Electrical and Mechanical Requirements 3. Operation and Maintenance Requirements 4. Security Requirements 5. Sustainability and Building Performance Requirements 6. Safety Guidelines	1. Commuter Infrastructure Requirements 2. Active Mobility Requirements 3. Electrical and Mechanical Requirements 4. Operation and Maintenance Requirements 5. Security Requirements 6. Safety Guidelines	1. Architecture Requirements 2. Electrical and Mechanical Requirements 3. Operation and Maintenance Requirements 4. Security Requirements 5. Safety Guidelines
PARTS		II. MRT Depot Design Guidelines		II. Bus Depots
CHAPTERS		1. Depot Requirements 2. Architecture Requirements 3. Electrical and Mechanical Requirements 4. Operation and Maintenance Requirements 5. Security Requirements 6. Sustainability and Building Performance Requirements 7. Safety Guidelines		1. Architecture Requirements 2. Electrical and Mechanical Requirements 3. Operation and Maintenance Requirements 4. Security Requirements 5. Safety Guidelines

3. General References

3.1. General

3.1.1 The whole of the works shall generally be designed and constructed to comply with the current editions of Singapore Standards (SS) and Codes of Practice (COP). The Designer is required to identify all relevant Standards and Codes applicable to the project.

3.1.2 Adopt Singapore Standards where available. Otherwise, the following shall be used:

a. International Standards Organisations (ISO) Standards
b. British Standards (BS)
c. European Standards (EN)
d. American Society for Testing and Materials (ASTM)
e. Australian Standards (AS) or Australian/New Zealand (AS/NZ) Standards
f. Other Standards as agreed with the Authority.

3.1.3 The design of transport facilities shall also comply with all current relevant laws and regulations as well as any additional requirements that may be stated in the Contract Documents.

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

a. Standard Details for Road Elements (SDRE)
b. Civil Design Criteria (CDC)
c. Civil Defence Design Criteria
d. Materials and Workmanship (M&W) Specifications (Architectural and Civil)
e. Code of Practice for Railway Protection

4. Terms and Definitions

4.1. General

4.1.1 The Designer shall refer to the table below for a list of terms and definitions applicable to all Volumes:

Terms	Definitions
Accepted Reviewed Directed Rejected Endorsed and similar expressions	Mean accepted, reviewed, directed, rejected, endorsed in writing by the Engineer
The Authority	The Land Transport Authority (LTA)
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
E&M or M&E	Electrical and Mechanical
Fire Essential Room	Rooms required for the operation of the firefighting systems during a fire
Linkbridge	An elevated public corridor connecting the concourse of an MRT station to an Exit/Entrance structure or neighbouring development
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
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
O&M	Operations and Maintenance
Operationally Critical Room	Room containing items which if inoperable, would prevent the basic operation of the transport system
Pedestrian Overhead Bridge (POB)	An elevated pedestrian crossing

Terms	Definitions
Pedestrian Underpass	An underground pedestrian crossing
Subway	An underground public corridor connecting the concourse of an MRT station to an Exit/Entrance structure or neighbouring development
Underground Linkway	An underground public corridor (ticketed or non-ticketed) connecting two or more MRT stations or an MRT station with other transport facilities
Queuing Area. Also Surge, Run-off	Area of a facility where commuters line up without interrupting passenger flow
Railway Area	As defined in the RTS Act
Station	All areas within the boundaries of the station site located within LTA Legal Boundary and Operator's Maintenance Area of stations, which include 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
Top-of-Rail Profile (TOR)	The profile line representing the elevation of the top of running rail surfaces
Trainway / Trackway	The portion of a station or structure through which the trains run
Qualified Person (QP)	Qualified Person (Architect/Civil) registered in Singapore
Wet Rooms	Rooms which, in their normal operation, potentially have water deposited on the floor