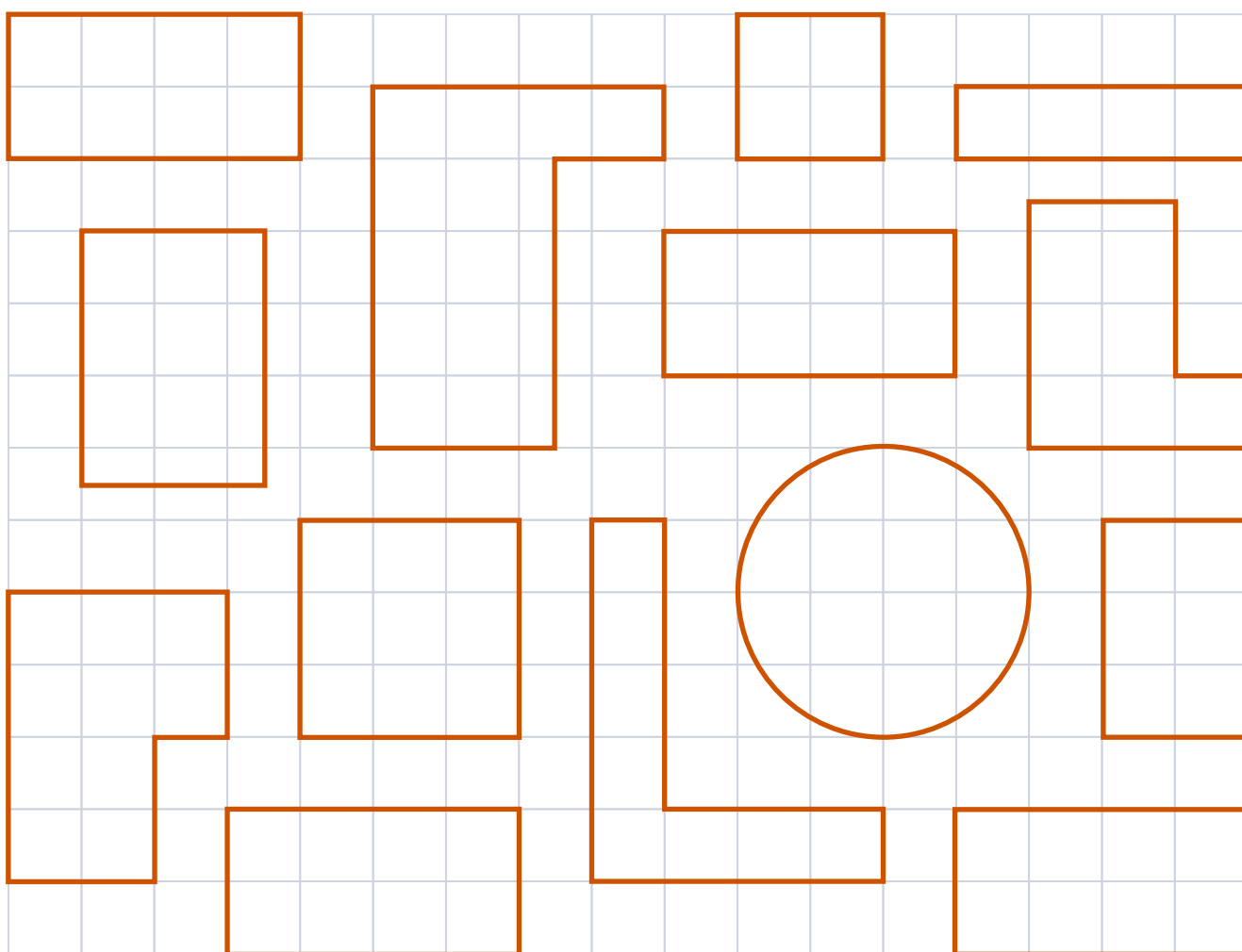


Chapter

8

# Internal Transport Facilities



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*To enhance the availability of charging facilities at parking spaces in new buildings, the Environmental Protection Department has completed its review of the requirements of Electric Vehicle Charging Facilities under HKPSG and updated the requirements regarding the installation of electric vehicle charging facilities at all parking spaces in new developments, including those for private cars, motorcycles, goods vehicles, light buses and coaches. This edition contains revisions to Sub-section 7.2 (Part).*

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# INTERNAL TRANSPORT FACILITIES

## 1. Introduction

### 1.1 Policy Objective

1.1.1 The New Transport Strategy entitled “Hong Kong Moving Ahead – A Transport Strategy for the Future” underpins the policy objective of providing and maintaining a safe, efficient and reliable transport system in an environmentally acceptable manner for the development of Hong Kong. The objectives of this strategy can be summarised as follows :

- Better integration of transport and land use planning;
- Better use of railways;
- Better public transport services and facilities;
- Better use of technology in traffic management; and
- Better environmental protection measures in relation to transport infrastructure and activities.

1.1.2 All the objectives and initiatives of the Transport Strategy that are related to land use planning have been incorporated into the relevant sections of the HKPSG to ensure that due consideration will be given in the planning process. Details of these objectives and initiatives are in Appendix 1.

### 1.2 Relationship with other Chapters of the HKPSG and Transport Planning and Design Manual (TPDM)

1.2.1 In general, internal transport facilities such as roads, railways, terminals, depots, petrol filling stations etc. have the potential to cause damage to the environment. The transport/environment interaction forms one of the considerations in the evaluation of transport projects at the planning stage. Environmental Protection Department should be consulted on the environmental aspects of these projects. The environmental guidelines pertaining to internal transport facilities provided in Chapter 9 - "Environment", should be followed, as far as possible. For designated projects specified in the Environmental Impact Assessment (EIA) Ordinance, the statutory EIA process should be followed.

1.2.2 Technical details are excluded in this Chapter but may, if necessary, be referred to in the TPDM prepared by Transport Department. A tabulated list of reference to appropriate sections in the Manual is provided in Appendix 2 for that purpose.

## **2. Rail Facilities**

### **2.1 General Objective**

2.1.1 Rail will form the backbone of the passenger public transport network. There has been increasing development pressure for population and employment growth along existing and planned rail corridors. The Railway Development Strategy 2000 sets out the railway expansion plan for Hong Kong up to 2016.

2.1.2 As a matter of principle, in planning for new development areas and major population and employment centres, due consideration shall be given to maximise use of existing and proposed railway lines and stations. In planning for the provision of road access, care should be taken for such to complement the rail system and that there should be proper integration of road-based and rail-based transport.

### **2.2 Types of Rail Systems**

2.2.1 At present, there are four different rail systems, serving different parts of the Territory:

- The Peak Tramway
- Hong Kong Tramways
- The Mass Transit Railway
- The North-west Railway (Tuen Mun - Yuen Long Light Rail System)

2.2.2 The above rail systems can be broadly classified into light rail and heavy rail, although the distinction is sometimes difficult to make when considering inter-urban railways. In general, the Mass Transit Railway may be termed heavy rail system, whereas the North-west Railway and the Hong Kong Tramways are light rail systems. Light rail systems consisting of short trains but with frequent stops are suitable for a lower passenger carrying capacity. On the other hand, heavy rail systems have much higher passenger carrying capacity in the transport system.

### **2.3 Standards for Rail Systems**

2.3.1 The technical requirements for the various rail systems are not the same and are dependent on their operational characteristics.

- 2.3.2 The width, curvature and gradients of the rail tracks, size and design of stations/stops and depots, etc. should all be subjected to special feasibility studies to be approved by Transport Department, Highways Department and relevant Committees.

## **2.4 Locational Factors**

- 2.4.1 In the process of planning either a new rail or a rail reserve, consideration should be given to integrating the rail project with the land use planning. A rail project can enhance development opportunities and vice-versa. It should take into account key planning parameters such as the distribution of population and employment centres to ensure that they would be best served by the rail. To enhance viability of the rail services, the development opportunities around rail stations, depots and public transport interchanges should be capitalised wherever practicable without compromising planning considerations such as infrastructure and environment.
- 2.4.2 Stations/public transport interchanges should preferably be located within a walking distance of 500m from major housing, employment, shopping, commercial, cultural and other population intensive activity centres with properly planned pedestrian walkway systems to improve connectivity. Within the longer range of this walking distance, and for distance up to 1000m, consideration should be given as early as possible in the planning process to including facilities, such as traveller or moving walkway, to assist pedestrian movement between the stations/public transport interchanges and the other developments. This will help to promote usage of public transport services and to ease road congestion by alleviating the reliance on private vehicles.
- 2.4.3 Consideration should also be given to minimising the potential impact of the rail on noise sensitive receivers. Typical considerations would include optimum distance separation between rail alignments and noise sensitive receivers, provision of screening and absorbing elements and decking of depots. The planning considerations for underground and above ground railway lines and stations are also quite different. An underground railway would have less noise and visual concerns than an above ground railway. On the other hand, there could be certain ventilation shafts or fire access requirements for underground railway which should be taken into account in land use planning. Such differences in environmental impacts and associated planning implications should be take into account when planning railways and developments associated or near them. For details on specific environmental considerations, readers may refer to Chapter 9 and seek advice from Environmental Protection Department as appropriate.

## **2.5 Railway Protection**

- 2.5.1 Railway Development Office (RDO) of Highways Department will issue from time to time administrative route protection plans before gazetting the railway schemes. Planning and development matters that may affect the railway protection zones should be referred to RDO for consideration.
- 2.5.2 The intention of administrative route protection is not to create planning blight, nor freeze development unnecessarily but to ensure that these proposed railway projects will not be frustrated by other developments. By adopting administrative route protection procedures, departments will have an early understanding of the interfacing issues arising from the railway proposals. Where there are likely conflicts, necessary and appropriate actions in line with Government's objective and policy could be taken timely to resolve them.

## **3. Road**

### **3.1 Hierarchy of Roads**

- 3.1.1 An exact hierarchy of roads is difficult to define given the historical development of the road network within the Territory. However, roads may be classified broadly according to the particular functions they are intended to serve.
- 3.1.2 Expressways are roads connecting the main centres of population and activities and are designated under the Road Traffic Ordinance. Although they would perform similar functions to trunk roads and perhaps some primary distributor roads, they would be designed to a higher standard. Expressways are not confined to an urban or rural area but could traverse through both areas. Not all trunk or primary distributor roads will necessarily be expressways.
- 3.1.3 In urban areas (including Hong Kong, Kowloon and New Towns) the hierarchy comprises :
- (a) trunk roads: for longer-distance traffic movements between main centres of population and activities;
  - (b) primary distributor roads: for traffic between centres within the main urban areas forming a primary road network;
  - (c) district distributor roads: for traffic between the primary road network and districts within the main urban areas; and
  - (d) local distributor roads: giving direct access from district distributor roads to buildings and land within districts.

3.1.4 In rural areas roads may be classified as :

- (a) trunk roads: defined as in para. 3.1.3;
- (b) rural roads A: for the movement of traffic from the smaller centres of population or popular recreation areas to the major road network;
- (c) rural roads B: for traffic from villages to rural roads A;
- (d) feeder roads: for traffic from more remote settlements to rural roads B; and
- (e) single track access roads: for traffic from isolated developments to rural roads B.

3.1.5 As shown in Figures 1 - 5, the total width of any road is derived from a number of components which may include, depending on the type and function of the road, the following :

- (a) a carriageway or carriageways;
- (b) footways;
- (c) hard shoulders;
- (d) verges, with or without planting reserves and marginal strips;
- (e) central reserve and traffic island;
- (f) service roads;
- (g) noise barriers; and
- (h) cycle tracks.

Although guidance as to the appropriate widths of these components are given in later paragraphs, it is important that the design criteria actually adopted, particularly in terms of geometric features, traffic signing and road marking, are appropriate for the likely speed of traffic expected on the road. Many of the standards, therefore, should not be considered absolute maxima or minima but may need to be adjusted to suit particular circumstances including economic, environmental and road safety considerations. Reference should also be made to the Transport Planning and Design Manual Volume 2 Chapter 3 for the typical cross sections.



## 3.2 Standards for Urban Roads

3.2.1 The general design characteristics for the different road types may be described as follows :

(a) *Expressways*

Dual carriageway roads with access only at widely spaced grade-separated junctions. A nearside hard shoulder should be provided on all sections and stopping restrictions apply at all times. Junctions should preferably be spaced at about 5 km intervals but closer spacing desirably not less than 2 km may be adopted depending on particular circumstances. Any pedestrian facilities provided should be completely segregated from vehicular traffic.

(b) *Trunk Roads*

Dual carriageway roads with no direct frontage access and stopping restrictions applying at all times. Grade-separated junctions are preferred. When provided, junction centres should not be less than 1 km apart. In case at-grade junctions are required because of physical or other constraints, they should be at least 300m apart. Any pedestrian facilities provided should be completely segregated from vehicular traffic.

(c) *Primary Distributor Roads*

Dual carriageway roads similar in character to trunk roads.

(d) *District Distributor Roads*

May be dual carriageway or single carriageway roads, with high capacity junctions, and peak hour stopping restrictions. On-street parking should not generally be provided. Direct frontage access may be permitted where necessary.

(e) *Local Distributor Roads*

Generally single carriageway roads with direct frontage access. Stopping restrictions may be required, but normally only in the vicinity of junctions. On-street parking provision may be permitted.

3.2.2 Recommended carriageway widths in accordance with the TPDM are shown in Table 1.

**Table 1 : Minimum Carriageway Widths in Urban Areas (TPDM)**

Road Type	Single Carriageway	Dual Carriageway
Expressway and Trunk Road	-	7.3 m (2-lane) 11.0 m (3-lane) 14.6 m (4-lane)
Primary Distributor Road+	-	6.75 m (2-lane) 10.0 m (3-lane) 13.5 m (4-lane)
District Distributor Road+	7.3 m ( 2-lane) 10.3 m (2-lane)* 13.5 m (4-lane)	6.75 m (2-lane) 10.0 m (3-lane)
Local Distributor Road+	7.3 m ( 2-lane) 10.3 m (2-lane)* 13.5 m (4-lane)	6.75 m (2-lane)

+ Where there are tram tracks, a 5.5m wide tram reserve must be allowed for a double track system.

\* When the peak hour traffic volume (two-way) exceeds 1 600 vehicles but is less than 2 400 vehicles, a wider 2-lane single carriageway should be used. The use of a 3-lane single carriageway is not recommended for safety reasons.

3.2.3 An additional 3m width on either or both sides of the carriageway should be provided on district and local distributor roads to accommodate parking and/or loading/unloading if either of these activities, when permitted, are likely to interfere with through traffic flow.

3.2.4 Private streets and access roads within private developments would normally be designed to criteria prescribed in the Buildings Ordinance, Cap 123 and the Building (Private Streets and Access Roads) Regulations. However, when it is intended that such roads should be open to public use and form part of the overall public road system, or where public transport is to be provided, the roads should instead be designed and constructed to standards in the TPDM and the requirements of Highways Department.

- 3.2.5 Minimum carriageway widths stipulated in the Building (Private Streets and Access Roads) Regulations are shown in Table 2. For private streets and access roads less than 6m wide which are required for Emergency Vehicle Access (EVA) purpose, a minimum clear width of 6m, which may include adjacent footways or verges, is required to allow fire service appliances to operate.

**Table 2 : Minimum Carriageway Widths for Private Streets and Access Roads ( Buildings Ordinance)**

Road Type	Residential	Industrial/Mixed Usage
Major Private Street	7.3 m	10.5m
Minor Private Street	5.5 m	7.3m
Cul-de-sac	5.0 m	7.3m
Access Road	5.0 m	Not Applicable
Access Road with passing bay	2.75m	Not Applicable

- 3.2.6 The minimum standard for industrial access roads is illustrated in Figure 6. The minimum width of carriageway for the roads giving principal access to industrial premises is 13.5m. The minimum width of footpath on either side is 3.5m. Hence, the overall width of the standard road is 20.5m.
- 3.2.7 The minimum width of carriageway for roads giving secondary access to industrial premises is 7.3m for 1-way traffic and 10.3m for 2-way traffic. The minimum width of footpath on either side is 3.5m. Hence, the overall road widths of secondary access roads are 14.3m for 1-way traffic and 17.3m for 2-way traffic.
- 3.2.8 Fire escape and rear service roads in industrial areas should be at least 9m wide.
- 3.2.9 Central reserve widths on urban roads will vary according to particular circumstances and will be influenced by street furniture requirements. Table 3 provides guidance as to the minimum widths for central reserves for urban roads with barrier fences or similar.

**Table 3 : Minimum Widths of Central Reserves for Urban Roads**

Road Type	Reserve Width
Expressway	2.3 m
Trunk Road	2.3 m
Primary Distributor Road	2.3 m
District/Local Distributor Road	1.8 m

- 3.2.10 Where planting is to be incorporated along central reserves, widths shown in Table 3 will need to be increased. Requirements for planting adjacent to carriageways are given in the TPDM Volume 2 Chapter 5.
- 3.2.11 On trunk roads and primary distributor roads a 2m verge in addition to a 1m marginal strip should normally be provided. However on elevated primary distributor roads the verge may be omitted, but the 1m marginal strip must always be provided.
- 3.2.12 The desirable gradient on expressways, trunk roads, primary distributors and bus routes should not exceed 4%. On other roads, the desirable gradient should not exceed 5%. Where topographical difficulties can influence considerably the economics of a road scheme, steeper gradients may be used, but should not exceed an absolute maximum of 8% for the former and 10% for the latter. This standard is applicable to both urban and rural roads.

### **3.3 Standards for Rural Roads**

- 3.3.1 General design characteristics for the different road types may be described as follows :

(a) *Expressways*

Dual carriageway roads with access only at widely spaced grade-separated junctions preferably at about 5 km intervals. Closer spacing not less than 2 km may be adopted depending on particular circumstances. A nearside hard shoulder should be provided throughout and stopping restrictions apply at all times. Pedestrian facilities should be completely segregated from vehicular traffic.

(b) *Trunk Roads*

Dual carriageway roads with no direct frontage access and stopping restrictions applying at all times. At-grade junctions should normally be spaced at least 550m apart. Grade-separated junctions are preferred. When provided, junction centres should not be less than 1 km apart. Pedestrian facilities should not be provided adjacent to the carriageway and any crossing points must be grade-separated.

(c) *Rural Roads A*

Dual or single carriageway roads with high capacity grade separated or at-grade junctions. Direct frontage access should be avoided where possible. Whether stopping restrictions need to be imposed will depend upon the particular site conditions,

taking into account frontage development, traffic flow characteristics etc. Provision for on-street parking should not be made.

(d) *Rural Roads B*

Dual or single carriageway roads, with at-grade junctions. Direct frontage access may be provided. The imposition of stopping restrictions will depend upon particular circumstances. It will not normally be appropriate to make provision for on-street parking.

(e) *Feeder Roads*

Single carriageway roads with the design commensurate with the traffic flow likely to use it. Because of the generally narrow width of the road, local widening in the form of parking lay-bys (3m wide) will be necessary if on-street parking is required.

(f) *Single Track Access Roads*

Single carriageway roads with suitably located passing bays, preferably at least 12m long plus nominal tapers of 1:3, where 2-way traffic volumes do not exceed 500 vehicles per day and there is little or no kerbside activity and no parking is provided.

3.3.2 Table 4 shows recommended widths for roads in rural areas.

**Table 4 : Minimum Carriageway Widths in Rural Areas**

Road Type	Single Carriageway	Dual Carriageway
Expressway and Trunk Road	-	7.3 m (2-lane) 11.0 m (3-lane) 14.6 m (4-lane)
Rural Road A	7.3 m (2-lane) 10.3 m (2-lane)*	7.3 m (2-lane) -
Rural Road B	6.75 m (2-lane) 10.3 m (2-lane)*	7.3 m (2-lane) -
Feeder Road	6.0 m ( 2-lane)	-
Single Track Access Road	3.5 m (1-lane) Widened to 6 m at passing bays 6.0m (2-lane)	- - -

\* When the peak hour traffic volume (2-way) exceeds 1 600 vehicles but is less than 2 400 vehicles, a wider 2-lane single carriageway should be used. The use of a 3-lane single carriageway is not recommended for safety reasons.

- 3.3.3 Central reserve widths will be influenced by junction design and street furniture requirements but minimum reserve widths should be in accordance with Table 5.

**Table 5 : Minimum Central Reserve Widths for Rural Roads**

Road Type	Minimum Central Reserve Width
Expressway	3.2m
Trunk Road	3.2m
Rural Road A	1.8m
Rural Road B	1.8m

- 3.3.4 Planting in the central reserve would provide environmental benefits but should be viewed with caution because the high traffic speeds could introduce maintenance problems and create safety hazards. However, if planting is considered appropriate a central reserve width of at least 4m should be provided.
- 3.3.5 For trunk roads a verge of 2m in width should be provided in addition to a 1m marginal strip on the left hand side of the road. On rural A and B roads a verge width of 3m is desirable but this may be reduced to 2m and 1.6m respectively where necessary.

### 3.4 Standards for Service Roads

- 3.4.1 On roads where no direct frontage access is permitted, and the alternative of providing a rear access road system connecting adjacent buildings or properties to the principal road through a proper junction is found to be impracticable, a service road is provided. It usually runs adjacent to the principal road and is connected to it at selected points for providing access to the adjacent buildings or properties.
- 3.4.2 The verge between the main carriageway and the service road should generally be 2m or more in width and never less than 1.5m.
- 3.4.3 Table 6 indicates appropriate widths for service roads.

**Table 6 : Carriageway Width of Service Roads**

Carriageway Type	Cars/Light Goods Only	All Vehicles
One-Way	4.5m	5.5m
Two-Way	5.5m	6.75m
Industrial Fire Escape and Service Road	-	9.0m

- 3.4.4 For service roads less than 6m in width, an overall clear width of at least 6m, which may include adjacent footways or verges, must be provided to allow fire service appliances to operate in the event of an emergency.

### **3.5 Locational Factors**

- 3.5.1 The alignment of a road is usually dictated by certain geometric design features such as horizontal and vertical curvature, sight-distance, gradients, super-elevation etc. which are correlated by design speed, which itself is related to the road hierarchy, extent of access control and type of junctions.
- 3.5.2 Considering the compactness of the Territory, the high density development in the urban areas and the severe terrain in most of the rural areas, some acceptable deviation from the standards may be necessary for practical and economic reasons. However, such deviation should be the exception rather than the rule.
- 3.5.3 Apart from the geometric design features, there are several other factors that need consideration in determining a suitable alignment. A transport facility could be elevated, at-grade or below grade in entirety or along sections of its alignment. Each of these positions would impose varying environmental, visual, physical and economic considerations that must be investigated, quantified when practicable and evaluated in the planning process.
- 3.5.4 The alignment of a transport facility should present the least obtrusive visual impact of the engineering features associated with the facility on areas of sensitive land use. Engineering features would include bulk cuts and fill that could scar a wooded hillside. Wherever possible, suitable landscaping should be incorporated to minimise obtrusive visual impact, in which case its cost should be a consideration. Visual impact is somewhat difficult to quantify. Hence, a suitably scaled qualitative assessment may be necessary.
- 3.5.5 All roads have potential to cause damage to the environment. Their location and alignment should be suitably selected so as to avoid potential environmental problems. Adequate protective measures should be provided, in particular for expressways, trunk roads and distributors, to satisfy the environmental guidelines to minimise pollution. In planning new strategic roads, consideration should be given to adopt measures (which may possibly include decking over the road or putting it underground) to reduce the potential environmental and visual impacts, subject to their technical feasibility and implications on capital costs, maintenance/operation cost, visual impact, traffic safety and other relevant factors. The built form of the

road should also be subject to assessment of its visual impact to identify practical means, including landscaping, to protect or enhance visual amenity.

- 3.5.6 Consideration also needs to be given at the design stage to the traffic aids and street furniture requirements. It is necessary to ensure that there is adequate space to erect traffic signs, lighting columns, noise shielding elements and barrier fences in their proper positions without causing danger or obstruction by being too close to vehicular or pedestrian paths. It is also important to ensure a continuity and conformity of design in terms of the location, and type of street furniture used throughout a route. It may therefore be necessary to arrange consultation among interested parties to ensure this when the construction of a particular route is divided into several adjacent schemes.
- 3.5.7 Where a cul-de-sac is constructed adequate turning area must be provided at the end to enable vehicles to manoeuvre without causing damage to adjacent footways, street furniture, buildings or other structures.
- 3.5.8 Other locational factors that may require consideration in the planning process are marine clearances and tidal levels, wind exposure, physical constraints such as antiquated buildings, sites of scientific interest, reservoirs and water catchment areas, aerial and subterranean structures, and "fung shui". The last consideration is of significance because inadequate assessment at the planning stage could result in inordinate and costly delays during implementation.

### **3.6 Total Land Requirement for Roads**

- 3.6.1 According to the zoning, a guide to the allowance which should be made for the provision of carriageways, footways, on-street parking and bus bays in urban areas is shown in Table 7.

**Table 7 : Guide to the Percentage of Total Land Area Required for Access Purposes**

Zone	Average %
Residential Zone 1	35%
Residential Zone 2	20%
Residential Zone 3	18%
Industrial	30%



- 3.6.2 The Planning Department, Lands Department, Highways Department, Civil Engineering and Development Department and other concerned departments should be consulted on the proposed alignments and land requirements of new roads to ensure that any conflict with other proposed land uses is avoided.

## **4. Public Transport Terminals**

### **4.1 Franchised Bus Facilities**

#### *General*

- 4.1.1 In terms of capacity per passenger car unit, franchised buses are the most efficient mode of road transport. Franchised bus services will continue to be a major passenger carrier and will play an important role in providing passengers with choices, particularly in feeding passengers to the railways and providing service to areas not accessible by railways.
- 4.1.2 In general, every bus route requires two terminal points which fall into three basic categories, namely :
- (a) A service terminal point which is a simple turning only facility that gives access to a stacking area that may be in the form of an off-street lay-by for operation of 1 or 2 routes;
  - (b) A bus terminus which includes bus turning, stacking and passenger waiting facilities and accommodates a number of bus routes; and
  - (c) A public transport interchange which includes provision for buses, minibuses, taxis, kiss-and-ride and possibly park-and-ride facilities and a rail station.
- 4.1.3 For operational efficiency and passenger convenience and safety, all bus termini and public transport interchanges should be located off-street as far as possible. However, in some circumstances a service terminal point may be temporarily located on-street, provided it does not obstruct vehicular and pedestrian circulation and other essential kerbside activities.
- 4.1.4 The land requirement for a bus terminus or public transport interchange is determined by several factors which include the number of routes served and their peak frequency, volume of waiting passengers, spaces for bus stacking during off-peak/meal break periods, the mix of terminating and passing services, overtaking and internal vehicle and passenger circulation.

#### *Standards for Service Terminal Points*

- 4.1.5 Service terminal points are usually provided where 1 or 2 bus routes are terminated and where the number of departure bays is unlikely to exceed four. A regulator's kiosk, a staff restroom and toilet facilities will be required at such terminal point.

#### *Standards for Bus Termini*

- 4.1.6 Bus termini are usually provided in large residential developments and in localised commercial or industrial areas. Normally, a minimum of 4 departure bays are provided for operation of services and stacking of buses during off-peak/meal break periods. One of these bays should be sufficiently wide to permit overtaking a stationary vehicle. A regulator's kiosk, a staff restroom and toilet facilities will be required at such bus terminus.
- 4.1.7 If bus-bus interchange is to be pursued at the bus termini, additional bays would be needed.

#### *Locational Factors*

- 4.1.8 Bus terminal facilities should be centrally located so as to be conveniently accessible on foot to residential, commercial and industrial activities. Access to the existing and proposed road system should be convenient and the ingress and egress points so located as not to cause conflict with traffic circulation on the adjacent road system and to facilitate satisfactory internal circulation.
- 4.1.9 Where they form part of a public transport interchange, access would be physically separated but walking distances between modes should be minimal.
- 4.1.10 Bus terminal facilities may be located in multi-storey developments, preferably on the ground floor. As they have potential to cause air pollution and noise impacts on nearby sensitive uses, they should be so sited or designed as to minimise such impacts.

#### *Standards for Bus Bays*

- 4.1.11 Bus bays are provided to enable buses to stop for boarding/alighting passengers without obstructing other traffic.
- 4.1.12 The provision of bus bays should be considered on rural roads, feeder roads, primary distributor roads and 2-lane, 2-directional single carriageway district and local distributor roads. Where bus bays are required, the carriageway width in Tables 1 and 4 should be increased by 3.25 m. The length of bay for operation of one bus route would normally be 40 m.

### *Locational Factors*

- 4.1.13 Bus bays are located at bus stops. The location of bus stops are determined by bus passenger demand and a need to minimise access time and maximise a potential catchment area. They are normally located 400 m apart in urban areas. In rural areas a longer spacing may be acceptable.
- 4.1.14 Detailed guidance on the location and design of bus stops, bus bays and termini is provided in Chapter 2 of the TPDM Volume 9.

### *Standards for Bus Depots*

- 4.1.15 Bus depots are provided in accordance with Section 19 of the Public Bus Services Ordinance on a regional basis to facilitate the construction, repair and maintenance of buses and their parking when not in operation. The land requirement would be dependent on the size of fleet to be serviced. Because of the need to provide ramps and circulation areas, and the ramps must not have gradients exceeding 1 in 10, the preferred dimension for a multi-storey depot is that its width should be at least 80m; its length would depend on the number of buses to be serviced. Taking into account the dead space occupied by the ramps and circulation areas, the minimum size for a reasonably efficient multi-storey depot of regular shape is 8 000 m<sup>2</sup> to 10 000 m<sup>2</sup>. Guidance on location and planning of bus depots is provided in Chapter 2 of the TPDM Volume 9.

### *Locational Factors*

- 4.1.16 Bus depots should be on level terrain with suitable vehicular access to the road system and centrally located in relation to bus terminal facilities to enable dead mileage to be minimised.
- 4.1.17 The siting of bus depots should take into account the environmental intrusion due to 24-hour operation of maintenance and repair activity and noise nuisance caused by buses travelling to and from the bus depot at late night and early morning.

## **4.2 Public Light Bus Termini**

### *General*

- 4.2.1 A policy of containment of public light bus operations restricts the extension of public light bus activity into new towns, limited access roads and areas where the nature of their operations could present traffic problems. The policy also encourages the gradual conversion of red minibuses into the regulated green minibuses.

- 4.2.2 Green minibus routes are normally introduced in areas where a public transport demand exists but is insufficient to financially sustain the operation of higher capacity modes of public transport. Also physical accessibility constraints or a demand for more frequent service makes minibus operation more attractive. Green minibuses could also be used to provide feeder services to railway stations.

#### *Standards*

- 4.2.3 Minibus termini should preferably be located off-street in close proximity to existing or future centres of demand. If possible, they should be incorporated into public transport interchanges. On average a 3-bay terminus with each bay accommodating 3 vehicles should be adequate. The minimum land requirement is about 800 m<sup>2</sup>.
- 4.2.4 Where off-street space is not available, on-street termini may be provided but they should preferably be physically segregated from other traffic in lay-bys with specific entry and exit points. The lay-bys should have a minimum length of 21 m and should preferably be 6 m wide to enable a stationary vehicle being overtaken within the lay-by and fire service vehicles to operate within the lay-by in an emergency.
- 4.2.5 Where on-street lay-bys are proposed, the carriageway widths should be increased as appropriate along the length of roadway where the lay-by is proposed.

#### *Locational Factors*

- 4.2.6 Minibus termini should preferably be provided off-street. When on-street termini are to be provided, they should be located in side streets to avoid causing congestion on the main roads.
- 4.2.7 When green minibus termini are provided for interchange with other forms of public transport such as rail or ferry, their location should not affect the operation of franchised bus services. Specific provision for red minibuses should not normally be made at such locations. However, where franchised bus, green and red minibus termini are located in close proximity, they must be physically separated.

### **4.3 Taxi Stands**

#### *Standards*

- 4.3.1 Single or dual-bay taxi stands should be provided off-street at centres of heavy demand, preferably within large developments or public transport interchanges. Adequate covered provision should be available for queuing passengers.

- 4.3.2 About 500 m<sup>2</sup> would be required for a single bay stand holding up to 5 vehicles and inclusive of access and turnaround area. Double bays should be considered wherever feasible to facilitate passing through of taxis as required. The number of bays would depend on the scale and types of developments in the vicinity.
- 4.3.3 Outside of public or private developments, on-street single-bay taxi stands are acceptable if located on side streets where they would not obstruct traffic circulation. Preferably, they should be located within lay-bys with convenient access to entrances of developments.
- 4.3.4 Shelters should be provided for queuing passengers where necessary and as far as possible to protect passengers from inclement weather.
- 4.3.5 Additional openings should be provided at the railings of taxi stands located at popular places to facilitate multiple boarding.
- 4.3.6 In places where loading of luggage is common and space is not a problem, saw-tooth layout should be considered.
- 4.3.7 Dropped kerbs at taxi stands should be provided to facilitate wheel-chair users.

#### *Locational Factors*

- 4.3.8 Taxi stands should be provided at ferry terminals, rail stations, major public transport interchanges, the airport, hospital, cultural, entertainment or retail centres, and in large housing developments and locations in proximity to cross harbour tunnels and cross-boundary points.
- 4.3.9 They should be located at convenient access to entrances of nearby developments, near pedestrianised areas, or at pedestrian desire lines but should avoid queuing vehicles obstructing other traffic.
- 4.3.10 At locations like the airport where heavy demand is anticipated, adequate area should be provided for stacking of taxis and provision of ancillary facilities such as toilets for taxi drivers.
- 4.3.11 On-street locations in business and commercial districts should be in close proximity to centres of demand.

## 4.4 Ferry Terminals

### *Standards*

- 4.4.1 A ferry terminal is the point of embarkation or disembarkation on a particular ferry route. Its size and design are related to the number of routes served, the type of vessels use, the frequency of service, the nature (passengers/freight or vehicles) and volume of patronage.
- 4.4.2 Facilities within a passenger ferry terminal should include segregated waiting areas for each deck on the pier and each route where applicable, passenger queuing areas, ticket offices (with storage areas for computers or electronic passenger display equipment, etc.), turnstiles, staff rooms and public toilets. Consideration should also be given for passengers with disabilities, refuse collection point, as well as freight transport. Works and maintenance areas should also be provided, where necessary.
- 4.4.3 Normally, the waiting area is designed to accommodate 1½ boatloads of passengers (assuming 500-1 500 passengers per boat, depending on vessel types) at a minimum provision of 0.65 m<sup>2</sup> of waiting area per person. Due consideration should also be given to the passenger volume at weekends and public holidays, in particular for the outlying island services.
- 4.4.4 As interchange with other modes of land transport will normally be provided, terminals should be designed to avoid conflicting pedestrian and vehicular movements.
- 4.4.5 For vehicular ferry piers adequate vehicle waiting areas segregated from other traffic will need to be provided.

### *Locational Factors*

- 4.4.6 Ferry terminals should be located in proximity to residential, commercial or industrial developments which generate potential passenger movements.
- 4.4.7 Adequate interchange facilities with other types of public transport such as franchised buses, green minibuses, and taxis should be available within or adjacent to the ferry terminal. For piers designated for outlying island services, adequate general loading and unloading facilities should also be provided outside the piers. Dropped kerbs should be provided at loading and unloading points for goods vehicles and to cater for the need of passengers with disabilities.

- 4.4.8 The surrounding road network should have sufficient capacity for the anticipated volume of vehicular traffic generated, particularly in respect of vehicular ferries, and should have adequate footway and crossing facilities for pedestrian movements. With regard to the latter, provision of covered walkways linking adjacent areas to the ferry pier and grade-separated facilities should be provided as far as possible. Provision of travellers should be considered where justified.
- 4.4.9 Piers should be sited taking into account various factors such as exposure to wind, water currents, wave height and swell, depth of water, presence of any underwater utilities and the draft of vessels using the piers. They should be so sited as to avoid any conflict with sewage or drainage outfall and other marine activity, and to enable the proper disposal of waste and wastewater arising from the operation of the terminals.

## **4.5 Public Transport Interchanges**

### *General*

- 4.5.1 In pursuing the government's objective of enhancing inter-modal co-ordination and having railway as the backbone of passenger transport, in the planning of new major land-use or transport developments the opportunity should be taken to plan for a network of high standard public transport interchanges. Public transport interchanges should be conveniently located and as far as possible provide a comfortable environment in order to encourage public transport ridership.
- 4.5.2 Major public transport interchanges should facilitate bus-bus or multi-modal interchange. They should normally be located at or near a mass rail carrier station. Accessibility will be the key to the planning and design of such public transport interchanges.

### *Standards*

- 4.5.3 The design requirements for public transport interchanges can generally be grouped into four categories:
- (a) Layout design: such as number and size of bays and platforms for various modes, stacking space, swept path, space for operators' and other public transport interchange facilities, ingress/egress arrangement, headroom, pedestrian walkway, stair, lift and escalator provision etc. In planning for future public transport interchanges, the saw-tooth layouts which would provide the best environment to passengers and the most efficient use of bus bays and layover facilities should be pursued as far as possible, depending on site configuration or constraints. In general, the following guidelines can be adopted :

Types of Public  
Transport Interchanges

Application to Sites

Traditional parallel bays

A small site with only a limited number of bays (e.g. 3 – 4)

Peripheral saw-tooth bus bay, central stacking

(i) A site of minimum width of 60m. Otherwise, there will not be enough space for buses to manoeuvre.

(ii) Major pedestrian generator would be at the same level. An example is Tsing Yi where both MTR passengers and other passengers would be at podium or footbridge level. Another example is Mei Foo.

(iii) Any development above can be supported by large column spacing.

Central island passenger platform

(i) A site of minimum width of 60m.

(ii) Major pedestrian generator at a different level. An example is Tsuen Wan where very few passengers access the public interchanges at the same level.

For major interchanges along the railway line, it is preferable to have them integrated into the concourse of the railway stations or otherwise direct and convenient linkages should be provided.

- (b) Environment considerations: such as lighting, ventilation, noise protection, etc. To provide better waiting environment, it is recommended that where possible for new public transport interchanges particularly those facilitating multi-modal interchanges, consideration should be given to air-condition the waiting areas depending on need. The illumination, noise level and other environmental effects arising therefrom should meet the requirements stipulated by Highways Department, Electrical and Mechanical Services Department, Environmental Protection Department and other relevant departments. Reference should also be made to EPD's Practice Note for Professional Persons for control of air pollution in semi-confined public transport interchange (ProPECC PN 1/98).



- (c) Passenger and operators' facilities and security and safety installations: such as queue railing, toilets, seating facilities, ticket machine, public telephones, fire-fighting equipment, CCTV, regulators' office, etc. Subject to availability of space, it is recommended that these essential facilities should be provided at the public transport interchanges.
- (d) Passenger information facilities: such as passenger information centre/kiosk, direction signs, route/destination display, departure time indicator, etc. To enhance passengers to transfer between modes, an efficient message display and directional signs or public announcement system which help channelise passengers to their required destinations should be provided.

4.5.4 Normally, a public transport interchange will comprise not less than 8 departure bays for operation of different public transport services. For public transport interchanges with parallel bays, two of the bays should be sufficiently wide enough to permit overtaking of a stationary vehicle. The actual size of the public transport interchange should be determined by the Transport Department.

4.5.5 Detailed guidelines for provision of public transport interchanges are given in Chapter 8 in the TPDM Volume 9.

#### *Locational Factors*

4.5.6 Public transport interchanges are usually provided in town centres or other regional focal points where passengers interchange between services and modes. Preferably interchange between rail and other transport modes should be at the same level. However, if interchange between modes have to be at different levels, escalators and/or lifts should be provided for the convenience and efficiency of interchange passengers.

## **4.6 Cross-boundary Coach Termini/Stops**

### *General*

4.6.1 Cross-boundary coach is one of the most popular cross-boundary transport services in Hong Kong. Termini/stops for cross-boundary coach should be planned at suitable locations to meet the growth of future demand. The proposed cross-boundary coach termini/stops should take into account the existing facilities nearby (e.g. considering possible alternatives such as upgrading the existing facilities) with a view to raising the standards of existing facilities.

4.6.2 As cross-boundary travellers usually carry luggage which could be bulky, attention should be paid in the planning of cross-boundary coach termini/stops to cater for their needs, including easily accessible locations, convenient modal change, and provision of dedicated

loading/unloading bay(s) and essential ancillary facilities.

#### *Standards*

- 4.6.3 Cross-boundary coach termini/stops should preferably be provided off-street and in public transport interchanges. Particular attention shall be paid to the internal design of a cross-boundary coach terminus/stop located in public transport interchange/public transport terminus. Adequate space should be planned for the provision of essential ancillary facilities including dedicated loading/unloading bay(s), segregation of inbound and outbound pedestrian traffic, pedestrian connection facilities, waiting/seating area, ticketing office/booth, coach information facilities, roof cover, toilets, etc. as far as possible with sufficient ventilation and lighting. The scale of these facilities should be subject to site conditions and operational needs whereas the design should be user-friendly.
- 4.6.4 Where off-street location is not available, on-street termini/stops could be considered provided that the locations (a) are safe; (b) facilitate operation without causing adverse impact on local traffic; and (c) have sufficient sheltered waiting and queuing space for cross-boundary passengers as far as site conditions allow. The other essential ancillary facilities mentioned in para. 4.6.3 above should be provided as far as possible, taking account of space constraint and operational needs.
- 4.6.5 Due consideration should be given to the design and provision of user-friendly pedestrian facilities which facilitates good connection of the cross-boundary termini/stops with the surrounding developments or other public transport facilities nearby.
- 4.6.6 TPDM which provides the relevant provision guidelines and requirements should be referred to when designing a cross-boundary coach terminus/stop, including its size and scale.

#### *Locational Factors*

- 4.6.7 The cross-boundary coach termini/stops should preferably be located at places where they are near transportation hub, hotels, retail facilities, commercial developments and tourism spots. If demand warrants and the location is deemed suitable with appropriate design and relevant issues addressed, consideration may also be given to locate cross-boundary coach termini/stops in major residential areas to meet the cross-boundary travelling needs of Hong Kong residents.
- 4.6.8 Off-street locations for cross-boundary termini/stops in public transport interchange is more preferred to facilitate convenient and efficient interchange with other transport modes. Alternatively, locations of the termini/stops in close vicinity of other public transport

facilities could also be contemplated. For example, locations next to rail stations may create synergy effect and hence could be considered.

## **5. Planning for Pedestrians**

### **5.1 Walking and Pedestrian Environment**

- 5.1.1 Walking is part of our daily life and a basic human activity. As a mode of transport, it is also the environmental friendliest. Hong Kong's compact, mixed use development pattern is suited to walking as most people never live too far from essential services such as shops, schools, parks and various community facilities. Walking is manageable from distance point of view.
- 5.1.2 However, pedestrians often encounter problems including congestion, gradients, pedestrian/vehicular conflict, barriers, air and noise pollution as well as monotonous streetscape. In many cases, problems for pedestrian movement are a result of numerous competing interests for street space and a lack of overall co-ordination.
- 5.1.3 Notwithstanding, walking should be promoted as a regular mode of travel in the town planning and development process. Pedestrian environment should be conducive to walking and accessible by all persons. Pedestrian facilities/schemes should not be planned in isolation but need to be integrated with the surrounding land uses. More importantly, a comprehensive approach to pedestrian planning that balances the needs of different users of space should be adopted.

### **5.2 Broad Framework for Pedestrian Planning**

#### **(1) A Comprehensive and Integrated Approach**

- 5.2.1 As a compact city with a high population density and efficient public transport, Hong Kong has opportunities to become a pedestrian-friendly city. As the public realm for people, streets/pedestrian areas should be an attractive and enjoyable place where people are able to walk, meet and take leisure in safety and comfort. The needs of pedestrians should be given priority in the pedestrian planning process. To achieve this, pedestrian planning should be an integral part of new development and redevelopment. Retrofitting pedestrian facilities in the existing urban areas should also be considered.
- 5.2.2 To improve the pedestrian environment, a comprehensive and integrated approach in pedestrian planning should be adopted throughout the development process from planning, design,

implementation, management and maintenance. The comprehensive approach should integrate the land use, transport, land management, economic, social, community and environmental aspects.

## **(2) Strategy for Pedestrian Planning**

5.2.3 To turn Hong Kong into a pedestrian-friendly city, a strategy for pedestrian planning comprising the following three components should be adopted :

### **(a) Promotion of pedestrian planning for railway catchment areas**

Railway will form the backbone of land use planning and the passenger public transport network. As almost 70% of population and 80% of jobs will be placed within the catchment area of railways, railway-walking should be promoted as an integrated mode of transport through better pedestrian planning within the catchment area. Future strategic developments should be located around rail stations to facilitate pedestrian planning.

### **(b) Strengthening of pedestrian planning for non-rail based public transport network**

The railway network should be complemented by the non-rail based public transport modes including franchised buses, public light buses, trams and ferries. Public transport interchanges should be co-located with rail stations to facilitate convenient modal interchange. Non-rail based public transport networks, particularly at key public transport interchange points, should be supported by good pedestrian planning.

### **(c) Development of pedestrian network at local level**

Well-designed pedestrian networks would promote walking and are the cornerstone of a pedestrian city. Well-planned and designed pedestrian network/facilities (including mechanised facilities) would bring people from the transport nodes to their destinations and facilitate walking within the locality. Pedestrian networks within large public and private residential estates or other developments and their linkages to transport nodes should also be promoted.

## **(3) Principles for Pedestrian Planning**

5.2.4 To have better and more effective pedestrian planning, four guiding principles should be employed in the process :

(i) Linkage

Pedestrian routes should be clear, direct and with signage for easy recognition. They should be free of barriers to users (including those requiring special needs) and take pedestrians directly to where they want to go. Mechanised pedestrian facilities such as escalators, lifts and travellers could be considered to enhance pedestrian linkages and overcome level differences.

(ii) Safety

Pedestrian and vehicular conflict should be minimised. The design should enhance pedestrian safety and personal safety. Footways should be separated from vehicles and pedestrian facilities should be well-lit.

(iii) Accessibility and Comfort

Accessible and properly designed pedestrian facilities as well as adequately wide footpaths with rationalized street furniture, landscaping, good air circulation and where possible, weather protection measures, should be provided.

(iv) Attractiveness and Vibrancy

The pedestrian environment should be attractive, vibrant and identifiable. Suitable pedestrian areas could be used for a variety of activities such as outdoor performances, alfresco dining, flea markets to promote vibrancy of the general area.

**(4) Planning and Development Concepts**

5.2.5 In the planning and development process, the following concepts should be considered to improve pedestrian planning :

(i) Integration of Land Use with Major Pedestrian Generators/Attractors

This would include integrating developments of major pedestrian generator (rail station, ferry pier, public transport terminus) with major attractor (residential area, shopping centre, employment area, point of interests); putting activity nodes, generators and attractors within the neighbourhood or walking distance of 500m in early stage of land use planning or in an incremental approach for the existing urban area; and concentrating high density housing, employment and other land uses at or close to rail stations and other transport termini.

(ii) Pedestrian Connectivity in Land Use Planning

Pedestrian connectivity should be incorporated in the land use planning process through better linkage of generators and attractors; provision of pedestrian spine, landscaped deck, walkway/subway system and open space; and planning of pedestrian network within large public and private residential estates as well as major developments.

(iii) Creation of a Vehicle-free Environment

In land use planning, it is desirable to create a vehicle-free environment through developing piazza, providing sunken road in the district centre, locating major roads outside town centre, placing public transport interchange at the periphery of housing estate, using mega deck development concept and applying other segregation measures of pedestrians and vehicles.

(iv) Urban Redevelopment

In existing areas with urban renewal potential, comprehensive pedestrian network and better pedestrian environment should be provided through opportunities for urban redevelopment and renewal.

(v) Area Enhancement

For existing areas with limited scope for urban renewal, enhancement of existing linkages with various pedestrian generators and attractors should be implemented through area improvement plans, pedestrianisation, pedestrian priority areas and traffic regulatory and management measures.

(vi) Developments / Buildings Conducive to Pedestrian Planning

At street level, future developments/buildings conducive to pedestrian planning should be encouraged. This would include dedication of part of building lot for pedestrian passage, pavement widening and public areas and also enhancement of pedestrian environment such as provision of canopies to protect pedestrians from inclement weather.

(vii) Vibrancy of Pedestrian Areas

At local level, enhancement or introducing vibrancy of pedestrian areas would add value to pedestrian planning. This would include linking up pedestrian areas with activity nodes, creating special design themes and arranging outdoor activities in pedestrian areas, and also promotion of leisure walking.

### **5.3 Area Improvement Plan as a Tool for Integrated Improvement**

- 5.3.1 Whilst it is easier to adopt the above guiding principles and development concepts for pedestrian planning in new development areas, there are more constraints in the existing urban areas. Integrated Area Improvement Plan (AIP) should be prepared to bring about an overall framework for improvement including pedestrian planning improvement to the existing congested urban areas.
- 5.3.2 AIP is basically a guiding plan which provides a framework for the comprehensive improvement of an area. It should recommend enhancement measures of short, medium and long term including land use restructuring and redevelopment proposals, urban design and environmental improvement proposals, traffic management proposals, pedestrian linkage improvement proposals, streetscape and landscape improvement proposals, proposals to sustain or increase the vibrancy and ambience within an area.

### **5.4 Guidelines on Planning for Pedestrian Facilities**

- 5.4.1 Pedestrian facilities include integrated pedestrian network, pedestrian priority area, pedestrian precinct or mall/centre, pedestrianised street, traffic calming street, elevated or underground walkway system, mechanised facilities such as escalator and travellator, at grade signalised crossing, footpath and promenade, etc.
- 5.4.2 Pedestrian facilities should provide convenient and pleasant access to residential areas, employment centres as well as various transport and activity nodes. It is important that at the initial stage of planning, the needs of pedestrians are catered for and pedestrian facilities are planned as an integral part of the new development areas and in major redevelopment schemes within the existing built-up areas as appropriate.
- 5.4.3 Pedestrian facilities should be planned comprehensively to form an integrated network. The network could be provided three-dimensionally comprising grade-separated linkage by elevated walkway, subway, escalator, etc. The pedestrian facilities network near rail stations and major transport interchanges should cover a wide catchment area and to encourage use of the rail and public transport. To extend the normal walking distance of 500m from major residential area/activity centres, mechanised pedestrian facilities such as travellator could be provided where situation permits.
- 5.4.4 Pedestrian facilities should be user friendly and, as far as possible, incorporate universal design; avoid frequent change of levels; provide direct access to buildings and connected by ramps, escalator approaches or lifts at ground level. Natural and artificial surveillance

should be provided where justified along subways and in the stairway of footbridges to enhance security. For walkways connecting to major residential area/activity centres with high pedestrian flow, they should preferably be covered to provide weather protection for pedestrians. Moreover, the walking distance for carrying goods along footway should preferably not exceed 100m.

## **5.5 Guidelines for Improvement of Pedestrian Environment**

### **(1) Provision of Public Spaces**

- 5.5.1 Public space including piazza, green corridor, pedestrian precinct, etc. could be planned as a vehicle-free environment to enhance the pedestrian connectivity between activity areas. Public spaces should be integrated with existing and intended pedestrian desire lines and circulation routes to facilitate pedestrian movement.
- 5.5.2 Design of public spaces should be attractive to pedestrians. Special streetscape design can give character to public spaces, and promote its identity, use and role. The choice of colour, pattern and materials for street furniture and paving, etc. are important considerations. Public spaces should have good visibility across/ along streets, and have adequate shade and weather protection.
- 5.5.3 Local identity and sense of place should be created by the combination of pedestrian routes, activity spaces, careful use of materials in the public realm, and incorporation of landmark features and public art along pedestrian routes. District themes should be identified to enhance local identity and to reflect local history and contexts. Suitable local characteristics and elements (e.g. street markets, historic buildings, temples etc.) should be adopted/adapted into pedestrian themes and designs.
- 5.5.4 To increase the vibrancy of public spaces, they should be designed flexibly to accommodate a wide variety of activities for use by all persons. In prominent open spaces, outdoor performance venues, cafes or food stands and public conveniences may be provided to support longer stay. Piazza and square are potential spaces to promote public art in the city. Pedestrians would be exposed to more artwork, whilst the artwork would enhance the legibility of the urban environment.

### **(2) Pedestrian Precinct/Pedestrianisation**

- 5.5.5 In existing urban areas, the scope for provision of public spaces is rather limited. To provide more punctuation space and better walking environment for pedestrians, consideration should be given to creating a pedestrian precinct in the existing urban areas where the volume of pedestrian flow along roads or sections of roads is high, vehicular



through traffic can be diverted to alternative roads and where servicing activity can be controlled.

*Selection of Streets for Pedestrianisation*

5.5.6 The objectives and criteria for selection of streets for pedestrianisation as shown in Table 8 should be used for guidance. To provide a pleasant environment, extensive planting in the pedestrian areas should also be considered as far as possible.

**Table 8 : Objectives and Criteria for the Selection of Streets<sup>1</sup> for Pedestrianisation<sup>2</sup>**

<b>General Guidelines</b>	
To provide pedestrians with a safe, healthier and more convenient street environment by giving more sympathetic consideration to pedestrians over vehicles.	
Objective	Criteria
(1) To resolve or minimise conflicts between pedestrians and vehicles	(a) Observed conflicts which cannot be resolved and where alternative solutions (like widening of footpaths, subways and footbridges) are uneconomical and/or impracticable.
(2) To provide a better environment for pedestrians	(a) The street is amenable to attractive landscape and street finishes. (b) The street, when pedestrianised, will complement the existing pedestrian flow network.
(3) To improve pedestrian flow and to provide a more favourable shopping environment for pedestrians without impeding servicing of buildings	(a) Existing/anticipated commercial development depends on attracting large number of customers. (b) The street when pedestrianised will improve the shopping environment and may provide additional commercial opportunities. (c) Pedestrianisation should enhance retail viability and not bring any reduction in trade. (d) Adequate provision should be made for vehicular servicing to buildings in the pedestrianised street either by an alternative direct access or by providing a limited specific period for vehicular servicing from the pedestrianised street. (e) Adequate measures should be undertaken to cater for traffic diverted as a result of the closure of the street to vehicular traffic.
(4) To increase open space provision and upgrade the quality of the environment in congested urban areas	(a) Open space is deficient in the locality. (b) The street when pedestrianised will enhance the existing/proposed open space system.

<sup>1</sup> Streets selected for pedestrianisation are mainly local roads. Primary distributor and district distributor roads may be considered if necessary and appropriate. Trunk roads will not be included.

<sup>2</sup> Pedestrianisation is the permanent or temporary closure of all or parts of an existing vehicular street for the exclusive use of pedestrians. However, if these streets/roads are designated emergency vehicular access, such access must be preserved and provision must be made to facilitate access of emergency vehicles when required.

### **(3) Traffic Management Schemes**

- 5.5.7 Apart from full pedestrianisation, other traffic management and improvement schemes can be considered to achieve pedestrian priority. Such measures include footpath widening by reducing traffic lanes, part-time pedestrianisation, traffic calming of a busy street by provision of special traffic management measures such as speed table or special road layout so as to achieve a better balance between pedestrians and vehicles in using road spaces.
- 5.5.8 Various layout, physical design and functional measures of street environment can be applied in different combinations to produce a more pedestrian friendly environment. Choice of traffic management measures depends on the environment to be created as well as the current and future use patterns. The Transport Planning and Design Manual can be referred to for more information on traffic management schemes.

## **5.6 Streetscape and Footpath**

- 5.6.1 Street is the basic and most important element in pedestrian planning and pedestrian environment. Block structure should be well designed to allow permeable and legible pedestrian routes. A good street environment would enhance the linkage, safety, accessibility and comfort of pedestrians and reduce the need for vehicular journeys. Streetscape enhancement should be given due consideration in the pedestrian planning process. Careful choice of street furniture, landscaping, paving materials and other street treatments is essential to emphasize the various street functions.
- 5.6.2 Footpath can provide various functions to satisfy pedestrian needs and the street requirement. Footpath can be sub-divided into three zones, namely the Through Zone, Street Furniture and Greening Zone (SF&GZ), and the Building Frontage Zone. More in-depth examination on the functions, guidelines and standards of footpath are provided in Section 5.8.

### *Street Furniture*

- 5.6.3 Street furniture provides basic ingredients to enable the street to perform various functions. Basic street furniture may include traffic sign post, street name plate, street lamp, railing, seating, bus stops, fire hydrant, litter bin, signage, etc. Street furniture should preferably be provided within the designated SF&GZ and in a co-ordinated manner to avoid visual congestion and obstruction to the pedestrian movement. Well-designed street furniture can contribute to the character and local identity of a place or the street environment.

- 5.6.4 Street furniture, street-side artwork and different paving materials can be used to delineate different parts of the footpath and to channel pedestrian flows and sightlines. Certain streetscape elements, such as cable boxes, may be hidden amidst the planting or painted with pictures to lessen visual intrusion of the streetscape.

#### *Signage and Lighting*

- 5.6.5 Provision of signage should be made in a co-ordinated approach to avoid clutter and confusion. Pedestrian signage, traffic sign and information boards should be erected at key junctions to provide clear direction to pedestrians. They should be legible and identifiable.
- 5.6.6 Signage could reinforce the identity and themes of the district/community. A vibrant mix of lighting and signage may even provide special characteristics and tourist highlights. Lighting and signage schemes should therefore correspond to local/district needs. For prime commercial, tourist and other high profile areas, comprehensive signage and pedestrian direction schemes should be provided to facilitate convenient navigation by pedestrians.
- 5.6.7 Adequate street lighting provides better visibility at night-time and is essential from safety point of view. However, in the provision of street lighting, it is necessary to minimise light pollution to the residential developments.

#### *Landscaping*

- 5.6.8 Trees and landscaping provide a sense of nature and natural shading in the urban environment. They can also buffer traffic emissions and noise to sensitive uses. Since greening is an established policy to improve the urban environment, trees and planting should be incorporated into pedestrian areas.
- 5.6.9 Trees, shrubs and groundcovers in dedicated amenity strip or built-in planters and/or street trees in pits are preferred to potted plants. Planting strips separated completely from underground utilities are also desirable. Portable planters may be considered at locations where there are too many underground constraints and where small or medium size tree species are not possible.

#### *Street Surface*

- 5.6.10 Different paving patterns and textures should be used to define different uses within the public realm. Special paving patterns and insets can be used to add character, indicate pedestrian orientation and important routes as well as highlight points of interest of the pedestrian environment.

### *Weather Protection*

- 5.6.11 On large building blocks, building canopies are encouraged to provide shade and weather protection. Where provision of building canopies are not feasible, stand-alone canopies may be considered to provide a continuous link and to achieve consistency in design. The length of covered links should reflect actual pedestrian flow characteristics and the actual distance between attractors and generators. Canopies should be located at least 3.3 m from ground level and in accordance with the requirements of Transport Planning and Design Manual to prevent impediment to pedestrian flows. They should generally not encroach over the SF&GZ as they would inhibit plant provision and growth.

### *Active frontages along Shopping Streets*

- 5.6.12 Commercial and retail activities with active frontages are encouraged at ground level of developments to increase ground-level transparency, vitality and reduce “dead frontage”. In shopping streets, mixed-use development should be encouraged with active retail frontage at ground and first floor levels. Lobbies for office, residential or hotel use should be discouraged along primary retail facades.

## **5.7 Universal Access for All**

- 5.7.1 The principles of universal design should be adhered to in planning the public space and street environment so that all people including the elderly and disabled persons can have full access to all public facilities. The needs of the disabled should be integrated into design solution at the outset.

### *Footpaths*

- 5.7.2 Footpaths should be well maintained and free from obstacles. Railings, kerbs or tactile warning strips should be placed at the edge of the footpath where appropriate as a warning for the visually impaired. Long, steep grades should have level areas and/or benches at intermittent distances to provide rest areas for the elderly and disabled. Steep ramps and steps should be provided with handrails.

### *Street Furniture*

- 5.7.3 Street furniture should have well defined bases for easy recognition by the blind. Spaces beneath footbridge ramps or stairway with low headroom, where it is not suitable for pedestrians to pass through, should be clearly defined and provided with landscaping features. High visual contrast should be used to maximise visibility for low-vision people.

### *Pedestrian Facilities*

- 5.7.4 Pedestrian crossings should be clearly marked with tactile warning strip for both the visually and physically impaired. Disabled crossing facilities including ramps or raised platforms, audible signals and obstruction-free routes should be provided. Ramps should be incorporated into pedestrian areas and footpaths/walkways where minor level change will occur, e.g. kerbs and piazzas.
- 5.7.5 Major grade changes in footpaths/walkways should be avoided unless they are part of a comprehensively planned network. Lifts and ramps should be considered as part of grade-separated walkway systems.

## **5.8 Provision of Desirable Footpath**

### **(1) Functions of Footpath and Three-zone Concept**

- 5.8.1 Footpath is the basic component in the pedestrian network. The normal form of a footpath is the footway adjacent to a carriageway and it provides at-grade separation between pedestrians and vehicular traffic.
- 5.8.2 Footpath should be of sufficient width and should be able to cater for the pedestrian needs and various street functions including: (i) facilitate walking to destinations and access to buildings; (ii) provide traffic aids/ facilities (e.g. traffic light, street lamp, bus stop and road signs); (iii) satisfy street furniture requirements (e.g. post box and litter bin); (iv) enhance streetscape and walking environment (e.g. tree planting, seating, sculpture); and (v) accommodate utilities (underground and above-ground) where necessary.
- 5.8.3 To cater for its various functions, a three-zone concept should be adopted in planning for footpath. The concept comprises the “Through Zone” for pedestrian flow, “SF&GZ” for various street furniture, landscaping, etc. and “Building Frontage Zone” for area adjacent to building frontages. The prototype illustrating the three-zone concept is indicated in Figure 7.

### *Through Zone*

- 5.8.4 The Through Zone is the key space available for through movement. This zone should be free of obstructions and dedicated exclusively to pedestrian movement. It should be of sufficient width to cater for pedestrian flow at a satisfactory level of service (LOS) so that pedestrians can enjoy a comfortable walking environment without the need to spill-over onto other sub-zones or the carriageway. A satisfactory LOS would provide adequate space for pedestrians to select normal walking speeds and free bypassing of other pedestrians

in a primarily unidirectional streams within a footpath. Highway Capacity Manual (HCM) 2000 can be referred to for details on LOS. LOS C is considered as an optimal level of service in the HCM.

- 5.8.5 In view of the public expectation for a better walking environment, the upper end of LOS C (23 pedestrians/minute/m as stated in the HCM) is recommended as the minimum acceptable standard to serve as a reference for the required width for Through Zone. Such LOS would offer an improvement, but at the same time provide a reasonable compromise for better pedestrian environment and the congested urban setting where space is at a premium.
- 5.8.6 In addition to catering for pedestrian flow, in deciding the width of the Through Zone, other functional requirements including urban design, air circulation and visual effects should be taken into account. Depending on the nature and intensity of the adjacent land use zones, a wider footpath width than that required under stated pedestrian flow level may be necessary. For lower density residential zone and industrial areas in particular, a wider footpath may be needed for better urban design and air circulation.

#### *Street Furniture and Greening Zone*

- 5.8.7 The SF&GZ acts as a buffer between the Through Zone and the road and incorporates landscaping and a variety of street furniture to serve the various street functions. Pavement tree planting can improve the comfort of pedestrian environment with minimal impact to pedestrian space. In line with the greening policy, the allocation of space for pavement tree planting in street of substandard width should be considered favourably. Tree planting should be included to provide natural shading and improve the microclimate of the urban areas.
- 5.8.8 When situation permits, such as in the new development area, the zone can be sub-divided into two separate zones to allow for separate street furniture and planting strips. On the other hand, some street furniture such as signs, street lights and railings may be placed within the planting strip if necessary. The zone width may be further increased along streets with high vehicular traffic speeds and volumes so as to provide a more comfortable and safer walking environment.

#### *Building Frontage Zone*

- 5.8.9 Building Frontage Zone is the area between the Through Zone and the edge of buildings. This zone accommodates cross movements into adjacent buildings, areas for browsing and shopping frontages, and provide pedestrians with the additional space when walking along building edge/dead areas.

## **(2) Guidelines on Footpath Width Provision**

- 5.8.10 The minimum width standards for Through Zone, Street Furniture and Greening Zone as well as Building Frontage Zone of a footpath/walkway on public roads for various land uses is shown in Table 9. While a wider footpath is desirable to cater for various street functions, it is more appropriate to have a minimum width standard to provide a reasonable compromise for better pedestrian environment and the scarce land resources, particularly in the existing urban areas. The width shown in Table 9 should be flexibly applied to suit individual circumstance or design. In addition, it should be flexibly increased where practical to accommodate bus bays, urban design feature, etc.
- 5.8.11 To cater for basic pedestrian flow and barrier-free access by the disabled including wheelchair users, the minimum Through Zone width should be 2m wherever possible. The 2m width is considered sufficient to provide a reasonably good environment for two-way flow by pedestrians and wheelchair users, especially on streets with moderate to low pedestrian flow.
- 5.8.12 The minimum widths of footways along private streets and access roads that do not form part of the public road system are as indicated in the Building (Private Streets and Access Roads) Regulations.
- 5.8.13 Footways providing access to buildings generally, and particularly in Residential Zone 1, should have a minimum width of 3.5m. The minimum width should be increased to 6m if the access is also required to serve emergency vehicles.

### *Underground utilities*

- 5.8.14 In addition to catering for various street functions, the footpath should be of adequate width to allow reserves for underground utilities installations. In the existing urban areas, provision of footpath is subject to severe land constraints and the footpath should be widened to meet the required standard where opportunity arises.
- 5.8.15 To avoid interference with tree planting along the footpath, underground utilities should avoid encroaching onto the SF&GZ. However, utilities serving the following functions would normally be allowed below the SF&GZ by Highways Department :
- (a) utility services, such as lighting cables or power/water supply, which are necessary for the proper functioning of facilities within the SF&GZ; and

**Table 9 : Recommended Minimum Width Standards for Footpaths/Walkways**

Land Use Type	Through Zone Width / Peak Pedestrian Volume (Pedestrians per minute)	Street Furniture and Greening Zone Width	Building Frontage Zone Width
Commercial Commercial / Residential Residential Zone 1 and those other areas near pedestrian generators such as cinemas, rail stations, some GIC facilities (e.g. schools), etc.	4.5 m Very high (Over 100)	1.5 m <sup>(2)-(4)</sup>	0.5 m for dead areas and increase to 1m for shopping frontages
Residential Zone 1	3.5 m High (80-100)		
Residential Zone 2	2.75 m Medium (60-80)		
Residential Zone 3	2.0 m Low (Below 60)		
Rural	2.0 m Very Low		
Business	4.5 m Medium (80)		
General Industrial Use <sup>(1)</sup>	4.5 m Medium	4 m <sup>(3)-(4)</sup>	
Special Industrial Use <sup>(1)</sup>	3.5 m Low to Medium	2 m <sup>(2)-(4)</sup>	
Rural Based Industrial Use	2.5 m Low	1.5 m <sup>(2)-(4)</sup>	

Notes: (1) For classification of industrial use, please refer to Chapter 5 of the HKPSG.

(2) The SF&GZ width should be increased to 3m for planting of large trees or understorey planting along boulevards or main roads. The boulevard or main road should have one or more of the following characteristics :

- as major transport and pedestrian corridors in a district
- clustering with major community and tourist attractions
- developing with line of high-grade offices, retail and hotel developments
- as important district retail street
- a road of wide scale (e.g. dual 2 or 3 lane carriageway)

(3) If bus shelter exceeding 1m width is provided along the footpath corridor, additional width of up to 2m should be suitably allowed in the SF&GZ.

(4) When street furniture exceeding normal object width of 1m (such as gateway and artwork) is required, the SF&GZ would need to be widened to cater for its provision.



- (b) utility services crossing the SF&GZ from the carriageway to the Through Zone of the footpath.

Apart from the above functions, utilities would not be permitted under the SF&GZ and approval would only be granted by Highways Department under exceptional circumstances.

#### *Application of Footpath Standards*

- 5.8.16 In view of different development opportunities and constraints between the new development area and the existing urban area, the application of footpath standards in the two areas should be different. For new development area and redevelopment area, the optimum width of footpaths should be formulated in a layout plan under a planning study and the footpath width standards should be flexibly applied. For the existing urban area, opportunities should be sought to increase the width of sub-standard footpaths to tie in with the footpath standards by suitable pedestrian schemes or building setback in area improvement plans/town plans for upgrading of pedestrian environment.

### **5.9 Implementation**

- 5.9.1 Pedestrian planning is an essential component of transport and traffic planning. Planning for pedestrians should be incorporated in the planning and development process from planning, design, implementation, management and maintenance.
- 5.9.2 The subject of pedestrian planning should be included in development studies, statutory and departmental plans, area improvement plans, planning briefs, urban renewal schemes, planning applications, etc. to provide guidance for both public and private sectors to achieve an enhanced pedestrian environment.
- 5.9.3 In the existing built-up areas, area improvement plans should be prepared as a planning framework for improving the pedestrian environment. Traffic management and improvement schemes together with streetscape enhancement schemes could be implemented under the current mechanisms. Careful co-ordination of public and private resources and monitoring of various responsible agents would be important in implementation, management and maintenance of pedestrian planning projects and facilities.

## **6. Cycling**

### **6.1 General Objective**

- 6.1.1 In Hong Kong, cycling is essentially a recreational sport. However, in certain new development areas, it is also a supplementary transport mode that facilitates short-distance travel in an environmentally friendly manner. The Government supports the adoption of cycling as a more regular transport mode where the geographical and topographical circumstances and road safety conditions so permit.
- 6.1.2 In the planning of new towns and new development areas, adequate attention should be given to the provision of cycle tracks and related facilities for the dual purposes of recreation/tourism and for intra-district travel.

### **6.2 Cycle Tracks**

- 6.2.1 Safety is of paramount importance. The choice of location for cycle tracks, the road surface conditions of such tracks and the traffic management measures in the precinct should be designed to support safe cycling.
- 6.2.2 Functional cycle tracks meant for short-distance intra-district travel should be connected to major residential developments, major transport interchanges, rail stations and other activity centres in the vicinity.
- 6.2.3 Recreational/tourism cycle routes should be provided along scenic spots and promenade areas if possible. These routes should preferably be connected to a "cycle park" along the route or to cycle tracks in the nearby new towns where cycling rental facility is available. The convenience of public transport connection to such cycle parks shall have a bearing on the choice of locations.
- 6.2.4 Wherever possible, cycle traffic should be segregated from other road users. Physical segregation in the form of kerb and/or railings should be provided to separate cycle traffic from pedestrians. Where it is not possible to segregate cyclists from other road users, appropriate measures shall be introduced to require cyclists to dismount before proceeding on the relevant road section which is shared between cyclists and other users.
- 6.2.5 Segregation could take the form of cycle tracks parallel to carriageways, or cycle paths totally separated from other vehicle routes. The arrangement would depend upon the overall system being planned, taking into consideration the estimated future demand and land availability and the attractiveness of the routes in terms of cyclists' preferences.

6.2.6 Care should be taken to avoid over-provision, as under-utilised cycle tracks/facilities may lead to undesirable uses.

### 6.3 Standards for Cycle Track

6.3.1 The width of segregated cycle tracks should be based on a capacity flow of 500 bicycles per metre width per hour for 1-way operation and 400 bicycles per metre width per hour for 2-way operation. The desirable and minimum widths for cycle tracks are shown in Table 10. For cycle track which operates in both directions, appropriate measures (e.g. centre-line marking) should be provided to channelise directional flow to improve traffic safety. Two-way cycle tracks should be at least 3.5 m wide.

**Table 10 : Cycle Track Widths**

	<b>Desirable</b>	<b>Minimum</b>
One-way	2.8 m	2.0 m
Two-way	4.0 m	3.5 m

6.3.2 Cycle tracks should be separated from adjacent carriageways by verges of at least 1.8 m in width. Where this is impracticable, except for trunk roads, the width may be reduced to not less than 1m to allow a reasonable clearance. Where a cycle track crosses a carriageway, it should do so at right angles to the kerb.

6.3.3 Where cycle track is provided along a roadway, its gradient is normally dictated by the road alignment. At subways and footbridges, the desirable and normal maximum gradients should be 3% and 5% respectively. In exceptional circumstances, gradients of up to 10% may be accepted for a short distance. Where excessively long gradient is anticipated, consideration should be given to alternative route for the cycle track.

6.3.4 Horizontal radii should preferably be not less than 5 m, but in difficult conditions, radii of 2 m may be acceptable.

6.3.5 Cyclists on cycle tracks should have a clear view ahead for a distance of preferably 25 m but not less than 15 m. Attention should be paid to pedestrian/cycle crossing points to ensure that street furniture, including trees, will not obstruct the sight of pedestrians or cyclists.

6.3.6 Along popular recreational routes, areas should be designated at about 1 km intervals en-route for the cyclists to rest, to visit places of interest or to enjoy scenic views, if required. Bicycle parking spaces should be provided in these areas. These resting areas should preferably be located near tourist and/or scenic vistas and other places

of interest to the public.

## **6.4 Cycle Park**

6.4.1 When a scenic cycle route is planned, consideration should be given subject to availability of land to provide in a nearby site a cycle park connectable with the cycle track and cycle rental facility. Such rental facility can also extend to both ends of the route to enable one way rental line. This kind of rental facility will of course be essentially a commercial initiative.

## **6.5 Cycle Parking Areas**

6.5.1 In areas where cycle tracks meant for short-distance intra-district travel are provided, cycle parking facilities should be provided to avoid illegal parking which may cause obstruction to other road users. In general, cycle parking shall be provided in major residential developments, activity centres, markets, public transport interchanges, rail stations and relevant GIC facilities. The requirement for cycle parking may vary depending on a number of factors including the type and location of development, the availability of cycle tracks in the area as well as the popularity of cycling in the area, etc. While a comprehensive guideline may not be necessary, advice on the level of parking provision should be sought from the Transport Department.

6.5.2 Bicycle parking spaces shall be provided in the residential developments where proper cycle tracks with direct connection to rail stations are accessible. The following guidelines on the level of bicycle parking provision for these residential developments are recommended:

- (a) within a 0.5-2km radius of a rail station, 1 bicycle parking space for every 15 flats with flat size smaller than 70m<sup>2</sup>.
- (b) outside a 2km radius of a rail station, 1 bicycle parking space for every 30 flats with flat size smaller than 70m<sup>2</sup>.

6.5.3 A designated cycle parking area shall be provided at the rail stations where cycle tracks are provided at a rate of 30 bicycle parking spaces per 10 000 population within the 2-km radius of the station.

## **6.6 Standards for Cycle Parking Areas**

6.6.1 Cycle parking areas shall be provided off road/cycle track to avoid obstruction to vehicular, pedestrian and cycle traffic. They shall be provided at open locations with full public view in order to deter theft. To encourage use of the designated parking areas and to discourage illegal parking, cycle parking areas shall be conveniently located close to the general destinations. For short and long term parking, these

areas shall not be located more than 30 m and 70 m respectively away from these destinations.

- 6.6.2 Suitable fixed stands or cycle racks shall be provided in the parking area to support the cycle and to enable the cycle to be securely chained to these fixtures to deter theft. The layout of these stands or racks shall be designed to maximise the parking capacity available at the site. Further information on cycle parking is available in Volume 3 Chapter 6 of the TPDM.
- 6.6.3 Direction signs shall be provided where appropriate to inform cyclists of the direction to the nearby parking areas.
- 6.6.4 At the designated bicycle parking area at railway stations, signs shall be erected to inform cyclists of the terms and conditions of use of the bicycle parking area.

## **7. Parking**

### **7.1 General**

- 7.1.1 Provision of parking spaces should be compatible with Government's overall transport policy as set out in the Introduction of this Chapter. As a general principle, parking should be provided at a level which will not unduly attract potential passengers to use private vehicles in preference to public transport. In particular, for developments which are close to railway stations and large public transport interchanges, lower parking standards should be adopted.
- 7.1.2 Optimum use should be made of existing parking facilities and the demand for such facilities should be carefully managed. In those situations where demand for facilities still exceeds supply, consideration should be given to providing additional facilities provided that such provision would not be contrary to the Transport Strategy and that it would not overload the road system.
- 7.1.3 Other practical considerations which should be taken into account when determining the appropriate level of provision of parking facilities include:
  - (a) Availability of public transport services in the vicinity;
  - (b) Availability of public car parks in the vicinity;
  - (c) Proximity to and quality of pedestrian access linking railway stations and other major public transport interchanges;
  - (d) Traffic conditions of local road networks; and
  - (e) Parking demand and supply condition in the vicinity.

- 7.1.4 For any particular on-street location or off-street development, consideration of all of the above factors and deciding on the appropriate level of provision of parking facilities will be the responsibility of the Transport Department (TD). Flexibility may be allowed, within and beyond/below the standard ranges, to meet special circumstances such as redevelopment in the built-up urban areas with severe site constraints. If any project proponent wishes to appeal against the decision of TD, it may provide justifications to TD for further consideration. In consultation with relevant bureaux/departments, TD may determine an appropriate parking provision for such site.
- 7.1.5 Volume 7 of the TPDM offers detailed advice on parking including relevant legislation and design considerations. Volume 6 Chapter 8 of the TPDM provides technical details and design on parking for drivers with disabilities.

## **7.2 Off-street Parking**

- 7.2.1 Parking for all types of vehicles should preferably be provided off-street so as to minimise the need for on-street parking, thereby reducing the risk of obstruction to vehicular circulation.
- 7.2.2 Off-street parking can be subdivided into "private parking", which services the particular requirements of the development in which it is located and is restricted to owners and authorised users; and "public parking", which is available to the general public and services the area around which the car park is located.

### *Private Parking*

- 7.2.3 The standards for private parking are set out in detail in Table 11 at the end of this Chapter. They include the parking standards for residential developments, community facilities, commercial facilities and industrial and business developments. The standards in Table 11 also include requirements for loading and unloading facilities for each type of development. In residential developments, provision should be sufficient to match existing and forecast car ownership of residents, subject to road capacity considerations. For GIC, commercial and industrial and business developments, provision should be adequate to fully meet the operational requirements with visitor parking as deemed reasonable, thereby avoiding the necessity for on-street parking and loading/unloading. While the standards should be followed as far as possible, flexibility may need to be exercised, taking account of the particular factors relevant to individual developments. To assist in the application of this flexible approach, more detailed guidelines are set out in the Statement of Intent in Table 11.

- 7.2.4 In determining the standards for private parking, it should be remembered that these parking spaces will need to serve the building throughout its whole life. Catering just for existing peaks or troughs in demand would be short-sighted and must be avoided. The forecast demand for parking spaces throughout the life of the building should form the basis for the assessment of provision.

#### *Public Parking*

- 7.2.5 New public car parks should normally be built by the private sector, although they may also be developed through the public works programme if there is a significant shortfall and private sector participation is not forthcoming. For better land utilisation and in line with the principle of “single site, multiple uses”, public car parks may be provided in suitable GIC and public open space developments with due consideration of the planned uses.

- 7.2.6 It is Government policy to encourage the development of “park-and-ride” and “kiss-and-ride” facilities at suitably located rail stations and public transport interchanges with a view to encouraging public transport ridership. Such locations would normally be outside the busy urban areas and close to major transport routes providing good access to the intended catchment areas.

#### *Electric Vehicle Charging Facilities*

- 7.2.7 The Government has been actively promoting the wider use of electric vehicles (EVs) in Hong Kong, with a view to improving road side air quality, reducing greenhouse gas emissions and creating green business opportunities. To set out the long-term policy objectives and plans to promote the adoption of EVs and their associated supporting facilities in Hong Kong, the Government announced the first “Hong Kong Roadmap on Popularisation of Electric Vehicles” (“the EV Roadmap”) in 2021. As one of the key measures to promote EVs under the EV Roadmap, a comprehensive and proper EV charging network comprising public and private charging facilities will be developed. The setting up of EV charging facilities at vehicle parks basically involves installation of EV chargers with associated fixed electrical installations (FEI).
- 7.2.8 To cater for charging of EVs, all parking spaces, including those for private cars, motorcycles, goods vehicles, light buses and coaches, of new developments are encouraged to be EV charging-enabling with reservation of adequate space for installation of EV chargers and associated FEI. The detailed technical requirements are specified in the “Technical Guidelines for EV Charging-enabling for Car Parks of

New Building Developments” (“Technical Guidelines”) issued by the Environment and Ecology Bureau\*.

- 7.2.9 The guideline and technical requirements in para. 7.2.8 do not apply to on-street parking spaces or temporary outdoor vehicle parks (with or without shelter).
- 7.2.10 The design and installation of EV chargers and associated FEI should be done in compliance with relevant legislation (i.e. the Electricity Ordinance (Cap. 406) and regulations made thereunder), relevant guidelines and circulars issued by Government Bureaux/Departments (such as the Environment and Ecology Bureau, the Electrical and Mechanical Services Department and the Fire Services Department) from time to time.

#### *Park-and-ride*

- 7.2.11 To achieve a better co-ordinated public transport system and to promote the use of public transport, park-and-ride (PnR) facilities should be provided at suitable rail stations and major public transport interchanges in the New Territories and/or fringe of urban areas as far as practicable. This is to encourage motorists to switch to mass transport, thus alleviating traffic congestion problems along strategic route corridors and reducing parking demand in the inner urban areas. When assessing the choice of PnR site, it is important to make sure:
- The facility is located close to the public transport node in order to enhance interchangeability.
  - The facility is not located at a congested area since the facility may attract a large amount of traffic at peak hours.
  - The facility is convenient to drivers who live in the less accessible areas and need to use their car as a feeder to the rail system.
- 7.2.12 Park-and-ride facilities are usually provided and run by commercial operators or as part of the lease conditions.

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\* The Government encourages the installation of EV charging-enabling facilities in the parking spaces of new developments to cater for the anticipated growing demand of EV charging. Those car parks of new developments where the parking spaces therein have satisfied the requirements of Technical Guidelines and other requirements as stipulated in Practice Note for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers (PNAP APP-2) issued by Buildings Department are qualified for gross floor area concessions.



### *Cycle Parking Areas*

- 7.2.13 It is Government policy to encourage, through the planning process, non-polluting travel. Where appropriate, cycling as a supplementary transport mode should be promoted in areas where proper cycle tracks are available. More information on the provision of cycle parking is provided in Section 6 of this Chapter.

### *Coach Parking*

- 7.2.14 Coach picking-up/setting-down bays should be provided at the airport, cruise terminals, transport interchanges, hotels and at or near major tourist attractions.
- 7.2.15 On-street/off-street picking-up/setting down bays should be provided where direct pleasant pedestrian linkages with nearby tourist attractions are available. Designation of such on-street coach facilities should be subject to local traffic condition and availability of public parking in the vicinity.
- 7.2.16 Adequate signage shall be provided where appropriate to guide tourists to nearby destinations.
- 7.2.17 At or near major tourist attractions, dedicated coach parking facilities should be provided for serving as holding facilities for coaches waiting to pick up tour groups.

### *LPG-powered Vehicle Parking*

- 7.2.18 LPG-powered vehicles should best be parked in open areas or above ground multi-storey car parks served by natural ventilation.
- 7.2.19 LPG-powered vehicles can be parked also in underground car parks installed with effective and reliable forced ventilation systems.
- 7.2.20 Maintenance of LPG-powered vehicles in car parks should be prohibited. While parking in the underground car parks, the LPG supply main valves on the fuel tanks of the vehicles should be kept closed as in accordance with their user manual.
- 7.2.21 LPG-powered vehicle should not be parked in small enclosed garages.

## **7.3 On-Street Parking**

- 7.3.1 On-street parking should normally only be considered on local distributors and roads lower in the hierarchy. On such roads, on-street parking spaces may be provided where off-street facilities are inadequate to meet demand and where provision would not adversely affect the flow of traffic. On-street parking spaces should generally

cater for short term parking needs and parking meters should be installed to encourage turnover of vehicles parked there.

- 7.3.2 Both parking and loading/unloading should be provided off-street as far as possible unless circumstances dictate that on-street facilities must be provided on local roads to suit the needs of developments or certain special users such as disabled drivers. An early decision is required on whether on-street parking and loading/unloading will be provided in order to determine the required width of road.
- 7.3.3 Where on-street parking spaces for buses, containers and heavy goods vehicles are required, they should be so sited as to avoid causing noise nuisance to residential areas.

#### **7.4 Parking for Persons with Disabilities**

- 7.4.1 Where opportunity arises, on-street parking spaces for persons with disabilities should be provided near the facilities that the persons with disabilities often visit and where off-street provision is proven inadequate in the vicinity. These facilities may include clinics, hospitals, banks, retail markets, post offices, community halls, etc.
- 7.4.2 Off-street parking requirements to facilitate use by persons with disabilities are given in the General Note (h) of Statement of Intent of Table 11.

## Table 11 : Parking Standards

### **Statement of Intent**

#### **1. (a) Parking standards for residential developments (Section 1)**

The overall intention of the standards is to ensure that subject to road capacity considerations, future residential developments should have sufficient parking provision to match the car ownership of residents.

#### **(b) Parking standards for community facilities (Section 2)**

The provision of parking for community facilities should generally be limited to operational requirements. Users of community facilities will generally be expected to use public transport or public car parks. However, for certain major GIC facilities such as cultural/recreational complexes which are of territorial significance, there may be a need to provide sufficient parking spaces commensurate with the nature of such facilities.

#### **(c) Parking standards for commercial facilities (Section 3)**

The overall intention of the standards is to ensure that, except in special circumstances, future commercial developments should have sufficient on-site parking to match manifest operational requirements.

#### **(d) Parking standards for industrial and business developments (Section 4)**

The overall intention of the standards is to ensure that sufficient parking and loading/unloading spaces are provided to satisfy requirements.

In all cases, the level of provision in a development is to be decided by the Authority. The standards serve to provide guidelines on which the Authority will base the decision.

#### **2. The parking standards have been formulated for new development and redevelopment projects. However, the Authority will need to have flexibility, within and beyond/below the standard ranges, to meet special circumstances, such as redevelopment in the built-up urban areas. The Authority will consider, inter alia, the following aspects of land use/transport interactions:**

(a) proximity to and quality of pedestrian access linking railway stations and other major public transport interchanges;

(b) availability of public transport services in the vicinity;

- (c) availability of public car parks in the locality;
- (d) projected road capacity and traffic volumes in both the immediate vicinity and the wider district;
- (e) feasibility of providing safe entry/exit points;
- (f) existence of closed road permit policies (e.g. South Lantau Island);
- (g) area and shape of specific site; and
- (h) parking demand and supply condition in the vicinity.

### **3. General Notes**

- (a) The Authority shall be the Commissioner for Transport in respect of parking standards and provisions, the Director of Lands in respect of leases, the Building Authority in respect of building plans, and the respective District Planning Conferences in respect of planning briefs, taking advice from other relevant departments.
- (b) The minimum provision of parking agreed by the Authority shall not normally count for the gross floor area of a proposed development; any higher provision may be counted for gross floor area. The agreed standard shall, where appropriate, be incorporated in lease conditions.
- (c) For all unspecified commercial and community facilities, provision shall be determined by the Authority in line with the Statement of Intent. Wherever feasible, provision shall be within the site.
- (d) All traffic access dimensions shall be in accordance with specifications in the Buildings Ordinance and appropriate standard drawings of the Highways Department and details of design in TD's Transport Planning and Design Manual.
- (e) Where different types of development (e.g. residential development, community facilities) are included on the same site, the appropriate standards should be applied cumulatively; some reduction may be permitted, however, when it is evident that demand will occur substantially at different times.
- (f) In all non-residential developments, additional parking spaces for motorcycles at the rate of 5 to 10% of the total provision for private cars with respect to each type of development should be provided. In the case of subsidised housing, the calculation shall be based on 1 motorcycle parking space per 110-250 flats excluding one person/two persons flats as well as non-residential elements. In the case of private housing, the calculation shall be based on 1 motorcycle parking space per 100-150 flats excluding

non-residential elements. As a general guideline, parking spaces for motorcycles, whether on-street or off-street, should be 1m (width) x 2.4m (length). However, in cases of site constraint, a minimum standard of 1m (width) x 2m (length) could be considered acceptable.

(g) Dimensions for standard parking spaces and loading/unloading bays are as follows:

<b>Type of Parking Space and Loading/Unloading Bay</b>	<b>Length (m)</b>	<b>Width (m)</b>	<b>Minimum Headroom (m)</b>
Private Cars, Van-type Light Goods Vehicles and Taxis	5	2.5	2.4
Light Goods Vehicles (LGV)	7	3.5	3.6
Medium / Heavy Goods Vehicles (M/HGV)	11	3.5	4.7
Container Vehicles	16	3.5	4.7
Coaches/buses	12	3.5	3.8
Light buses	8	3.0	3.3
“Shared-use” for LGV and Light buses	8	3.5	3.6
“Shared-use” for Coaches/buses and M/HGV	12	3.5	4.7

Notes:

- i) Coaches/buses mean a motor vehicle constructed or adapted for the carriage of more than 19 passengers and their personal effects.
- ii) Light buses mean a motor vehicle which is constructed or adapted for use solely for the carriage of not more than 19 passengers and their personal effects, but does not include an invalid carriage, motorcycle, motor tricycle, private car and taxi.
- iii) Minimum headroom means the clearance between the floor and the lowest projection from the ceiling, including any lighting units, ventilation duct, conduits or similar installations
- iv) The design of lay-bys would be subject to the satisfaction of TD.
- v) In general, the dimension of spaces should follow the types stipulated in Table 11 (Details of Standards). Request for adoption of “shared-use” dimensions will be considered by TD on a case-by-case basis.

(h) Parking for persons with disabilities:

- i) Sufficient number of off-street car parking spaces shall be designated as parking for persons with disabilities as below.

- ii) The minimum requirements of parking for persons with disabilities in residential developments, commercial facilities, industrial and business developments, community facilities and other developments with reference to Regulation 72 of the Building (Planning) Regulations are as follows:

<b>Total Number of Parking Spaces</b>	<b>Minimum Number of Accessible Parking Spaces</b>
1-50	1
51-150	2
151-250	3
251-350	4
351-450	5
Above 450	6

- iii) In addition to the above requirements, where (a) the residential development is required to provide visitor parking spaces, at least one visitor car parking space shall be provided in accordance with the requirements for accessible parking space which will enable persons with disabilities to use without undue difficulties, and (b) for medical facilities, at least one of the visitor parking spaces for persons with disabilities shall be located in close proximity to Accident and Emergency (A & E) departments.
- iv) Where the number of accessible parking spaces to be provided are more than the required minimum provision as stated in para. (h)(ii) above, the additional accessible parking spaces may be used by persons without disabilities when there is no demand.
- v) Accessible parking spaces shall be located on horizontal and level ground and closer to accessible entrances. For a multi-storey car park, these parking spaces shall be provided on each level in order to achieve greater access in terms of accessible entrance and convenience. If a communal car park serves different buildings, accessible parking spaces shall be dispersed so that convenient access to each building is provided.
- vi) The minimum width for an accessible parking space shall be 3.5m. Where there is more than one accessible parking space to be provided, the effect of the additional width can be lessened by having a shared common loading/unloading area with a width of 1.2m and the width of such parking spaces shall be not less than 2.5m. The parking spaces should be provided in covered areas as far as possible. The technical details and design on parking for drivers with disabilities are provided in Volume 6 Chapter 8 of TPDM and the Third Schedule to the Building (Planning) Regulations (Cap 123F).

- vii) Signage clearly indicating the exact locations of the designated parking spaces for persons with disabilities shall be erected in a conspicuous place at the entrance of the car park and where appropriate in the development. The signage is required to be placed so as not to be obscured and can be seen from the driver's seat.

## Details of Standards

### Section 1 : Parking Standards for Residential Developments

Type of Development	Parking Requirements			Loading/Unloading Requirements	
	Standards		Remarks	Standards	Remarks
1. Subsidised Housing #	- Private Car:			See Notes (1) – (5).	Provision of 2 “shared-use” coaches/buses and M/HGV loading / unloading bays around each residential block for service vehicles and overnight parking.
	Global Parking Standard (GPS)		1 car space per 4-7 flats		
	Demand Adjustment Ratio (R1)	All Subsidised Housing	0.52		
	Accessibility Adjustment Ratio (R2)	Within a 500m-radius of rail station [see Note (3)]	0.85		
		Outside a 500m-radius of rail station [see Note (3)]	1		
	Parking Requirement = GPS x R1 x R2				
- Light Goods Vehicle and Light Bus: 1 “shared-use” LGV and Light Bus space per 260 flats					
- Medium/Heavy Goods Vehicle, Coach/Bus:  To utilise loading/unloading bays at estate commercial centres and around residential blocks for overnight parking in estates.					

*(Refer to Statement of Intent for further guidance)*

# The parking standards for subsidised housing in Section 1 of Table 11 are applicable to both public rental housing and subsidised sale flats developments. For public rental housing developments with large site area and subsidised sale flats developments, GPS towards the upper end (i.e. 1 car space per 4 flats) should be considered, while the lower end (i.e. 1 car space per 7 flats) of the GPS should be considered for small sites or sites with severe constraints. A mid-range standard should be adopted for sites with housing type yet to be determined. The L/UL standard including the overnight parking requirement should be applied with due consideration of the site constraint and local situation.



Table 11 Section 1 (cont'd)

Type of Development	Parking Requirements			Loading/Unloading Requirements		
	Standards			Standards	Remarks	
2. Private Housing	- Private Car:			See Notes (1) – (2) & (6) – (8).	<ul style="list-style-type: none"> <li>- Minimum of 1 loading / unloading bay for goods vehicles within the site for every 800 flats or part thereof, subject to a minimum of 1 bay for each housing block or as determined by the Authority.</li> <li>- Space should also be provided around each block for service vehicles.</li> </ul>	
	Global Parking Standard (GPS)		1 car space per 4-7 flats			
	Demand Adjustment Ratio (R1)	Flat Size (FS) (m <sup>2</sup> ) (GFA)	FS ≤ 40			0.5
			40 < FS ≤ 70			1.2
			70 < FS ≤ 100			2.4
			100 < FS ≤ 130			4.1
			130 < FS ≤ 160			5.5
		FS > 160	7.0			
	Accessibility Adjustment Ratio (R2)	Within a 500m-radius of rail station [see Note (6)]				0.75
		Outside a 500m-radius of rail station [see Note (6)]				1.00
Development Intensity Adjustment Ratio (R3)	Domestic Plot Ratio (PR)	0.00 < PR ≤ 1.00	1.30			
		1.00 < PR ≤ 2.00	1.10			
		2.00 < PR ≤ 5.00	1.00			
		5.00 < PR ≤ 8.00	0.90			
		PR > 8.00	0.75			
Parking Requirement = GPS x R1 x R2 x R3						
3. Village Housing	- Up to 1 car parking space for each standard NTEH (65m <sup>2</sup> ), with 10-15% of provision for overnight goods vehicles.			- Provision generally in communal parking area(s) within the village environ.	-	

(Refer to Statement of Intent for further guidance)

Notes:

All Residential Developments

- (1) Within the limits of the Global Parking Standards, TD will determine the parking provision for each individual development according to the prevailing demand/supply conditions in the vicinity, traffic conditions, proximity and convenience for access to public transport services (excluding rail), etc.
- (2) Request for provision lower than the parking standards may be considered by TD for small sites, sites with severe constraints, or those carrying unique circumstances, on a case-by-case basis. In handling these requests, TD may consider factors including but not limited to, area and shape of the site, technical constraints attached to the site, insurmountable difficulties of construction of excessively deep levels of basement car parks, significant impact on delivery of flat yield, etc.

Subsidised Housing

- (3) A 15% discount should be applied to the provision of residential car parking spaces where over 50% of the site area of the development fall within a 500m radius of rail stations. The 500m-radius catchment area of a rail station should be drawn from the centre of the station irrespective of the configuration and layout of the station.
- (4) "One person/two persons" flats shall be excluded from the calculation of the overall parking provision of private car, motorcycle parking spaces and shared-use spaces for LGV and light bus.
- (5) Visitor car parking for subsidised housing should be up to 5 visitor spaces per residential block subject to individual site and design constraints.

Private Housing

- (6) A 25% discount should be applied to the provision of residential car parking spaces where over 50% of the site area of the development fall within a 500m radius of rail stations. The 500m-radius catchment area of a rail station should be drawn from the centre of the station irrespective of the configuration and layout of the station.
- (7) The standard for the developments of flat size greater than 160m<sup>2</sup> is a minimum requirement. Request for provision beyond the standard will be considered by TD on a case-by-case basis.
- (8) Visitor car parking for private residential developments with more than 75 units per block should be provided at 5 visitor spaces per block in addition to the requirements, or as determined by the Authority. For private residential developments with 75 units or less per block, the visitor car parking provision will be determined by TD on a case-by-case basis.

*(Refer to Statement of Intent for further guidance)*

## Section 2 : Parking Standards for Community Facilities

Type of Development	Parking Requirements		Loading/Unloading Requirements	
	Standards	Remarks	Standards	Remarks
1. Education				
(a) Primary Schools	<ul style="list-style-type: none"> <li>- 1 car parking space for every 4 to 6 classrooms.</li> </ul>	<ul style="list-style-type: none"> <li>- Provision covers school principal, senior teachers, itinerant specialist teachers, inspectors and visitors.</li> <li>- Punctual arrival at work is especially important for principals and senior teachers for assemblies / supervision.</li> </ul>	<ul style="list-style-type: none"> <li>- 1 lay-by for taxis and private cars for every:               <ul style="list-style-type: none"> <li>(i) 2 to 3 classrooms in primary schools;</li> <li>(ii) 3 to 5 classrooms in secondary schools and technical institutes.</li> </ul> </li> <li>- For school buses, there should be a minimum of 3 lay-bys within the school boundary for primary schools and up to 3 lay-bys for secondary schools. However, for all schools within public housing estates, the requirement for bus lay-bys should be examined on an individual basis taking account of the catchment area and the expected traffic conditions on the roads with the estate.</li> </ul>	
(b) Secondary Schools and Technical Institutes	<ul style="list-style-type: none"> <li>- 1 car parking space for every 3 to 4 classrooms.</li> </ul>			

*(Refer to Statement of Intent for further guidance)*

Table 11 Section 2 (cont'd)

Type of Development	Parking Requirements		Loading/Unloading Requirements	
	Standards	Remarks	Standards	Remarks
(c) Special Schools	– 1 car parking space for every 4 to 8 classrooms.	– Usually combined for both primary and secondary pupils.	– 1 lay-by for taxis and private cars for every 2 to 3 classrooms.  – A minimum of 3 lay-bys for school buses (within the site).	– Provision is mainly to meet normal and emergency requirements of mentally and/or physically handicapped pupils.
(d) Kindergartens	– 0 to 1 car parking space per 4 to 6 classrooms.	– Nil provision may be permitted for those kindergartens within general purpose buildings.	– 1 lay-by for taxis and private cars for every 5 to 8 classrooms.  – A minimum of 2 lay-bys for school buses. (Note: The requirement may be substituted by 5 lay-bys of size 3m x 7m for mini-bus / nanny van which can provide a total number of seats equivalent to that provided by 2 large school buses.)	– Nil provision may be permitted for those kindergartens within general purpose buildings.
(e) Tertiary Institutions	In general, no standards should apply. To be determined by the Authority.			

*(Refer to Statement of Intent for further guidance)*

Note:

- For schools and kindergartens within public housing estates, the carparking provisions, taxi and private car lay-bys and loading/unloading provisions should be subject to the requirements of Housing Authority.

Table 11 Section 2 (cont'd)

Type of Development	Parking Requirements		Loading/Unloading Requirements	
	Standards	Remarks	Standards	Remarks
2. Medical (a) Clinics and Polyclinics	<ul style="list-style-type: none"> <li>- 1 to 1.5 car parking spaces for each consulting room.</li> <li>- Additionally, for polyclinics, 3 parking spaces (9m x 3m) for ambulances.</li> </ul>	<ul style="list-style-type: none"> <li>- Spaces are intended for operational needs and not for out-patients' parking. However, 1 to 2 spaces should be reserved for disabled persons driving their own cars.</li> </ul>	<ul style="list-style-type: none"> <li>- 1 to 2 lay-bys (9m x 3m) for ambulances to be provided under cover.</li> <li>- 0 to 1 taxi/private car lay-by per consulting room to be provided under cover.</li> <li>- 1 to 2 lay-bys for M/HGVs.</li> </ul>	<ul style="list-style-type: none"> <li>- Provision should be adequate to serve the special requirements of handicapped persons.</li> </ul>
(b) Hospitals	<ul style="list-style-type: none"> <li>- 1 car parking space per 3 to 12 beds.</li> <li>- In addition, 2 to 5 spaces should be allocated for disabled visitor parking.</li> <li>- Additionally, for hospitals with Accident and Emergency (A+E) departments, 8 parking spaces (9m x 3m) for ambulances and for hospitals</li> </ul>	<ul style="list-style-type: none"> <li>- In determining the number of car parking spaces to be provided within the range permitted, it should be noted that hospitals with A+E departments require more parking spaces than other hospitals. Spaces are normally intended for operational needs, but some spaces are recommended for visitors, especially at hospitals which provide emergency services. Adequacy of public transport facilities, the availability of public parking in the vicinity, and the location of the hospitals should be taken into account in assessing the overall parking requirement and the need for visitor parking.</li> </ul>	<ul style="list-style-type: none"> <li>- 1 lay-by for taxis and private cars to be provided under cover for every: <ul style="list-style-type: none"> <li>(i) 80 beds, or part thereof, in hospitals with A+E departments.</li> <li>(ii) 160 beds, or part thereof, in hospitals without A+E departments.</li> </ul> </li> <li>- 1 lay-by (8m x 3m) for PLBs or maxicabs for every:</li> </ul>	<ul style="list-style-type: none"> <li>- Provision should be adequate to serve the special requirements of handicapped persons.</li> </ul>

*(Refer to Statement of Intent for further guidance)*

Table 11 Section 2 (cont'd)

Type of Development	Parking Requirements		Loading/Unloading Requirements	
	Standards	Remarks	Standards	Remarks
	without A+E departments, 3 parking spaces (9m x 3m) for ambulances.	<ul style="list-style-type: none"> <li>– If visitor parking is provided, a number of the most conveniently located spaces should be reserved for emergency cases.</li> <li>– Disabled visitor parking spaces should be located at the most convenient places for disabled drivers visiting the out-patients departments and A+E departments.</li> </ul>	<ul style="list-style-type: none"> <li>(i) 200 beds, or part thereof, in hospitals with A+E departments.</li> <li>(ii) 400 beds, or part thereof, in hospitals without A+E departments.</li> <li>– ambulance lay-bys:               <ul style="list-style-type: none"> <li>(i) 2 for hospitals with A+E departments.</li> <li>(ii) 1 to 2 for hospitals without A+E departments.</li> <li>(iii) all lay-bys to be under cover.</li> </ul> </li> <li>– 1-3 lay-bys for M/HGVs.</li> </ul>	

*(Refer to Statement of Intent for further guidance)*

Note:

1. For private clinics/polyclinics within public housing estates, the car parking provisions, taxi and private car lay-bys and loading/unloading provisions should be subject to the requirements of Housing Authority.

Table 11 Section 2 (cont'd)

Type of Development	Parking Requirements		Loading/Unloading Requirements	
	Standards	Remarks	Standards	Remarks
3. Churches	– Up to 1 car parking space for every 16 seats or equivalent.	– The term "church" includes other places of worship such as temples and mosques.  – In determining parking requirements within the range of standards given, account should be taken of such factors as location, size of church and proximity to public transport.	– One to two bays (9m x 3.5m) for small coaches.	
4. Electric Substations	– 66kV and above substation, one space for private car.	– To be provided in the open yard within each substation site.	– One M/HGV space.	– To be provided in the access corridor or open yard within each substation site.
	– 33kV substation, one space for private car.		– One LGV space.	– To be provided in the open yard within each substation site.
5. Arts Venues	In general, no standards should apply. To be determined by the Authority.			

*(Refer to Statement of Intent for further guidance)*

### Section 3 : Parking Standards for Commercial Facilities

Type of Development	Parking Requirements		Loading/Unloading Requirements	
	Standards	Remarks	Standards	Remarks
1. Retail	<ul style="list-style-type: none"> <li>- 1 car space per 150 - 300m<sup>2</sup> GFA.</li> </ul>	<ul style="list-style-type: none"> <li>- Generally nil provision is permitted for small road-side retail shops which are mainly serving local residents.</li> <li>- Retail is taken to include restaurants and allied services commonly found in shopping complexes, but not retail markets apart from those integrated in location and design with the centre.</li> </ul>	<ul style="list-style-type: none"> <li>- 1 loading/ unloading bay for goods vehicles for every 800 to 1 200m<sup>2</sup>, or part thereof, GFA.</li> </ul>	<ul style="list-style-type: none"> <li>- Large comprehensive developments may be allowed to adopt the low side of the provision due to economy of scale.</li> <li>- Points of access should not interrupt the main shopping frontage.</li> <li>- The manoeuvring of goods vehicles should be within the curtilages of the site; generally no reversing movement into/ from a public road will be permitted.</li> </ul>

*(Refer to Statement of Intent and General Notes for Section 3 for further guidance)*

#### General Notes for Section 3:

1. Request for provision lower than the parking standards may be considered by TD for small sites, sites with severe constraints, or those carrying unique circumstances, on a case-by-case basis. In handling these requests, TD may consider factors including but not limited to, area and shape of the site, technical constraints attached to the site, insurmountable difficulties of construction of excessively deep levels of basement car parks, significant impact on delivery of floor space, etc.
2. Parking and loading/unloading provision calculated should be rounded up to the next whole number.
3. Goods vehicle provision is divided into 65% LGV and 35% HGV but does not apply to Housing Authority development.
4. Having regard to the site constraints, sufficient vehicle queuing area inside the car parks of retail developments, or any other mitigation measures shall be provided to the satisfaction of TD.



Table 11 Section 3 (cont'd)

Type of Development	Parking Requirements		Loading/Unloading Requirements	
	Standards	Remarks	Standards	Remarks
2. Office	<ul style="list-style-type: none"> <li>- For the first 15 000m<sup>2</sup> GFA: 1 car space per 150 - 200m<sup>2</sup> GFA.</li> <li>- Above 15 000m<sup>2</sup> GFA: 1 car space per 200 - 300m<sup>2</sup> GFA.</li> </ul>	<ul style="list-style-type: none"> <li>- For office blocks with car lifts, adequate queuing spaces should be provided to avoid tailing back onto public roads.</li> <li>- Flexibility should be applied to permit a reduction of standards or nil provision for office blocks located very close to high capacity public transport systems, or for cases with severe site constraints.</li> </ul>	<ul style="list-style-type: none"> <li>- 1 loading/unloading bay for goods vehicles for every 2 000 to 3 000m<sup>2</sup> or part thereof, GFA.</li> <li>- For sites of at least 5 000m<sup>2</sup> net site area, 1 picking up/ setting down lay-by for taxis and private cars for every 20 000m<sup>2</sup>, or part thereof, GFA.</li> </ul>	<ul style="list-style-type: none"> <li>- Point of access should not interrupt any main shopping frontage.</li> <li>- The manoeuvring of goods vehicles should be within the curtilages of the site; generally no reversing movement into/ from a public road will be permitted.</li> </ul>
3. Retail Markets	<ul style="list-style-type: none"> <li>- Generally nil.</li> </ul>	<ul style="list-style-type: none"> <li>- Marketing is still mainly by pedestrians from the locality, making frequent trips for small purchases. However, parking provision in specific locations is not precluded.</li> </ul>	<ul style="list-style-type: none"> <li>- 1 medium/heavy goods vehicle bay per 20 - 30 large stalls, 1 medium/heavy goods vehicle bay per 40 - 60 small stalls. (Subject to a minimum provision of 2 medium / heavy goods vehicle bays.)</li> </ul>	<ul style="list-style-type: none"> <li>- The definitions of stall sizes will be according to relevant Tables in Chapter 6 of HKPSG.</li> <li>- The manoeuvring of goods vehicles should be within the curtilages of the site; generally no reversing movement into/ from a public road will be permitted.</li> </ul>

*(Refer to Statement of Intent and General Notes for Section 3 for further guidance)*

Table 11 Section 3 (cont'd)

Type of Development	Parking Requirements		Loading/Unloading Requirements	
	Standards	Remarks	Standards	Remarks
			<ul style="list-style-type: none"> <li>- 1 loading/ unloading bay, same dimensions as those for a medium/heavy goods vehicle, for each refuse collection point.</li> <li>- In preparation of development plans, some lay-bys for taxis and private cars should be incorporated in the vicinity of markets.</li> </ul>	<ul style="list-style-type: none"> <li>- Dry goods are generally still delivered at irregular intervals by bicycles or small vans.</li> <li>- To facilitate loading/unloading in the bulk purchasing of retail goods.</li> </ul>

*(Refer to Statement of Intent and General Notes for Section 3 for further guidance)*

Notes:

1. The provisions relating to retail markets apply to free standing retail markets and not those built as part of retail centres. Parking and loading/unloading bay provision for markets which are integrated in location and design with the retail centres should still be determined as part of the general retail requirement (see Type 1 of this Section) and be calculated according to the overall floor space of the retail centre, including any market area.
2. Flexibility in application of the standards is allowed in case of severe site constraints.

Table 11 Section 3 (cont'd)

Type of Development	Parking Requirements		Loading/Unloading Requirements																	
	Standards	Remarks	Standards	Remarks																
4. Hotels (a) Main Urban Areas & New Towns	<ul style="list-style-type: none"> <li>- 1 car space per 100 rooms.</li> <li>- In addition, for hotels with conference and banquet facilities: 0.5-1 car space per 200m<sup>2</sup> GFA of conference and banquet facilities.</li> </ul>	<ul style="list-style-type: none"> <li>- Car parking spaces are for the use of hotel limousines and the operational needs of staff.</li> </ul>	<ul style="list-style-type: none"> <li>- Loading/unloading bays for goods vehicles: 0.5-1 goods vehicle bay per 100 rooms.</li> <li>- Lay-by for taxi and private cars : <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Hotel Type</th> <th>Min. No.</th> </tr> </thead> <tbody> <tr> <td>≤299 rooms</td> <td>2</td> </tr> <tr> <td>300-599 rooms</td> <td>3</td> </tr> <tr> <td>≥600 rooms</td> <td>4</td> </tr> </tbody> </table> </li> <li>- Lay-by for single-deck tour buses: <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Hotel Type</th> <th>Min. No.</th> </tr> </thead> <tbody> <tr> <td>≤299 rooms</td> <td>1</td> </tr> <tr> <td>300-899 rooms</td> <td>2-3</td> </tr> <tr> <td>≥900 rooms</td> <td>3</td> </tr> </tbody> </table> </li> <li>- Additional provision for convention centres and banquet facilities to be determined by the Authority.</li> </ul>	Hotel Type	Min. No.	≤299 rooms	2	300-599 rooms	3	≥600 rooms	4	Hotel Type	Min. No.	≤299 rooms	1	300-899 rooms	2-3	≥900 rooms	3	<ul style="list-style-type: none"> <li>- Bays to be located close to the service entrance. Manoeuvring of goods vehicles should be within the curtilage of the site; generally no reversing movement into/from a public road will be permitted.</li> <li>- Layout should be such that vehicles ingress, pick-up/set down, egress with no reversing movement nor tailback into a public road. Adequate passenger waiting area to be provided adjacent to lay-by.</li> <li>- Lay-by should be such that bus ingress, egress with no tailback into a public road. Adequate passenger waiting area to be provided adjacent to lay-by.</li> </ul>
Hotel Type	Min. No.																			
≤299 rooms	2																			
300-599 rooms	3																			
≥600 rooms	4																			
Hotel Type	Min. No.																			
≤299 rooms	1																			
300-899 rooms	2-3																			
≥900 rooms	3																			

*(Refer to Statement of Intent and General Notes for Section 3 for further guidance)*

Table 11 Section 3 (cont'd)

Type of Development	Parking Requirements		Loading/Unloading Requirements	
	Standards	Remarks	Standards	Remarks
(b) Other areas	<ul style="list-style-type: none"> <li>- Not less than 1 single-deck tour bus parking space for every 200 guest rooms or part thereof.</li> <li>- Not less than 1 car parking space for every 10 guest rooms.</li> <li>- Additional provision for hotels with conference and banquet facilities:  2-5 car spaces per 200m<sup>2</sup> GFA of conference and banquet facilities.</li> </ul>	<ul style="list-style-type: none"> <li>- Access to and egress from parking areas should be from a minor road within the confines of the sites.</li> <li>- Provision is subject to any Closed Road Permit policies et al.</li> </ul>	<ul style="list-style-type: none"> <li>- Not less than 1 bay for goods vehicles for every 100 guest rooms or part thereof.</li> <li>- Additional provision for convention centres and banquet facilities to be determined by the Authority.</li> </ul>	

*(Refer to Statement of Intent and General Notes for Section 3 for further guidance)*

Table 11 Section 3 (cont'd)

Type of Development	Parking Requirements		Loading/Unloading Requirements	
	Standards	Remarks	Standards	Remarks
5. Commercial Entertainment Facilities (e.g. cinemas, theatres.)	<ul style="list-style-type: none"> <li>- Range of 0 to 1 car parking space for every 20 seats or part thereof.</li> </ul>	<ul style="list-style-type: none"> <li>- Generally no provision for cinemas in the Metropolitan Area as these are mostly in areas well served by public transport.</li> </ul>	<ul style="list-style-type: none"> <li>- Except for cinemas, 1 loading/ unloading bay for goods vehicles where practicable.</li> <li>- Not less than 1 picking up/setting down lay-by for taxis and private cars for every 400 seats or part thereof.</li> <li>- In preparation of development plans, some additional lay-bys for taxis and private cars should be incorporated in the vicinity of known cinemas, theatres and the like.</li> </ul>	

*(Refer to Statement of Intent and General Notes for Section 3 for further guidance)*

## Section 4 : Parking Standards for Industrial and Business Developments

### Section 4.1: General Industrial Use (GIU) and Business Use [“OU(B)”]

Type of Development		Parking Requirements		Loading/unloading Requirements	
		Standards	Remarks	Standards	Remarks
General Industrial Use (GIU)	Industrial Use (I)	<ul style="list-style-type: none"> <li>- Private car: 1 per 1 000-1 200m<sup>2</sup> GFA.</li> </ul>	See Notes (3) – (4)	<ul style="list-style-type: none"> <li>- 1 goods vehicle bay per 700-900m<sup>2</sup> GFA, 50% of which should be for parking of goods vehicles.</li> <li>- One container vehicle loading/unloading bay with turning circle of 11.6m outer radius should be provided for a site with dimensions not less than 45m x 40m.</li> </ul>	See Notes (5) – (8) & (12)
	Industrial/ Office Uses (I/O)	<ul style="list-style-type: none"> <li>- Private car: 1 per 600-750m<sup>2</sup> GFA.</li> </ul>		<ul style="list-style-type: none"> <li>- 1 goods vehicle bay per 1 000-1 200m<sup>2</sup> of 50% of the I/O GFA; and 1 per 2 000-3 000m<sup>2</sup> of the remaining 50% of the I/O GFA.</li> <li>- 50% of all the above required goods vehicle bays shall be for parking of goods vehicles.</li> <li>- 1 goods vehicle bay per 800-1 200m<sup>2</sup> for commercial GFA solely for loading/unloading.</li> <li>- One container vehicle loading/unloading bay with turning circle of 11.6m outer radius should be provided for a site with dimensions not less than 45m x 40m.</li> </ul>	See Notes (5) – (12)

*(Refer to Statement of Intent and General Notes for Section 4.1 for further guidance)*

Table 11 Section 4.1 (cont'd)

Type of Development		Parking Requirements		Loading/unloading Requirements	
		Standards	Remarks	Standards	Remarks
Business Use [“OU(B)”]	Industrial Buildings (I)	– Private car: 1 per 600-750m <sup>2</sup> GFA.		<ul style="list-style-type: none"> <li>– 1 goods vehicle bay per 1 000-1 200m<sup>2</sup> of 50% of the GFA; and 1 per 2 000-3 000m<sup>2</sup> of the remaining 50% of the GFA.</li> <li>– 50% of all the above required goods vehicle bays shall be for parking of goods vehicles.</li> <li>– One container vehicle loading/unloading bay with turning circle of 11.6m outer radius should be provided for a site with dimensions not less than 45m x 40m.</li> </ul>	See Notes (5) – (8) & (12).
	Industrial/ Office (I/O) Buildings	– Private car: 1 per 600-750m <sup>2</sup> GFA.		<ul style="list-style-type: none"> <li>– 1 goods vehicle bay per 1 000-1 200m<sup>2</sup> of 50% of the I/O GFA; and 1 per 2 000-3 000m<sup>2</sup> of the remaining 50% of the I/O GFA.</li> <li>– 50% of all the above required goods vehicle bays shall be for parking of goods vehicles.</li> <li>– 1 goods vehicle bay per 800-1 200m<sup>2</sup> for commercial GFA solely for loading/unloading.</li> <li>– One container vehicle loading/unloading bay with turning circle of 11.6m outer radius should be provided for a site with dimensions not less than 45m x 40m.</li> </ul>	See Notes (5) – (12).

*(Refer to Statement of Intent and General Notes for Section 4.1 for further guidance)*

Table 11 Section 4.1 (cont'd)

Type of Development		Parking Requirements		Loading/unloading Requirements	
		Standards	Remarks	Standards	Remarks
	Office Buildings	<ul style="list-style-type: none"> <li>- Private car: 1 per 150-200m<sup>2</sup> GFA for the first 15 000m<sup>2</sup> GFA; 1 per 200-300m<sup>2</sup> GFA for the remaining GFA.</li> </ul>		<ul style="list-style-type: none"> <li>- 1 goods vehicle bay per 2 000-3 000m<sup>2</sup> GFA.</li> <li>- For sites of at least 5 000m<sup>2</sup> net site area, 1 picking up/setting down lay-by for taxis and private cars for every 20 000m<sup>2</sup>, or part thereof, GFA.</li> </ul>	Nil
	Business Buildings	<ul style="list-style-type: none"> <li>- Private car: 1 per 200-300m<sup>2</sup> GFA</li> </ul>		<ul style="list-style-type: none"> <li>- 1 goods vehicle bay per 800-1 200m<sup>2</sup> GFA, 50% of which should be for parking of goods vehicles.</li> <li>- A minimum of 1 picking up/setting down lay-by for taxis and private cars shall be provided for sites of at least 5 000m<sup>2</sup> net site area.</li> <li>- One container vehicle loading/unloading bay with turning circle of 11.6m outer radius should be provided for a site with dimensions not less than 45 m x 40 m.</li> </ul>	See Notes (5) – (12).

*(Refer to Statement of Intent and General Notes for Section 4.1 for further guidance)*

#### General Notes for Section 4.1:

1. Request for provision lower than the parking standards may be considered by TD for small sites, sites with severe constraints, or those carrying unique circumstances, on a case-by-case basis. In handling these requests, TD may consider factors including but not limited to, area and shape of the site, technical constraints attached to the site, insurmountable difficulties of construction of excessively deep levels of basement car parks, significant impact on delivery of floor space, etc.
2. Parking and loading/unloading provision calculated should be rounded up to the next whole number.
3. In preparation of planning layouts for industrial areas, provision should be made for public parking areas to cater for transit vehicles which cannot be accommodated within individual lots.
4. The following design standards apply:
  - (i) For private cars: Turning circle - 7.5m outer radius.
  - (ii) For goods vehicles: turning circle - 11.5m outer radius.
5. Goods vehicle provision is divided into 65 % LGV and 35 % HGV.



6. The space provided for loading/unloading is required to abut a goods handling platform or area which must be provided and so laid out that the goods loading/unloading from/to such platform or area may be transported within the lot to all parts of the building both horizontally and vertically. It does not apply to those goods vehicle bays being used for parking of goods vehicles.
7. The goods handling platform or area must give access to the building in accordance with the Code of Practice for Provision of Means of Escape in Case of Fire and allied requirements made under the Buildings Ordinance.
8. All parking and loading/unloading bays shall be laid out in such a way to avoid the need for vehicles to reverse onto roads abutting the lot.
9. The handling of all goods must be through designated goods entrances, goods lifts lobbies and goods lifts that are segregated from those for passengers.
10. Points of access should not interrupt the main shopping frontage.
11. The manoeuvring of goods vehicles should be within the curtilages of the site; generally no reversing movement into/from a public road will be permitted.
12. The provision of container vehicle loading/unloading bay on sites with dimensions less than 45m x 40m should be considered on a case-by-case basis and in consultation with TD.

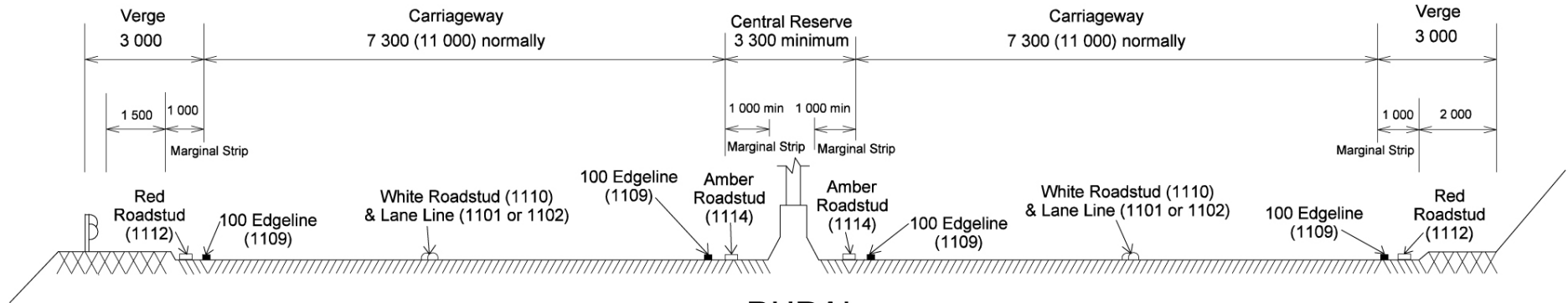
### **Section 4.2: Special Industrial Use (SIU)**

<b>Type of Development</b>	<b>Parking Requirements</b>		
	<b>Private Car</b>	<b>Lorry</b>	<b>Container Vehicle</b>
1. Industrial Estate (IE)	1 per 900m <sup>2</sup> GFA or 1 per 450m <sup>2</sup> site area, whichever is the greater. Of the spaces provided, 50% shall be for parking of private cars and light vans and 50% shall be for parking and loading/unloading of lorries.		One container bay should be provided for a site with dimensions not less than 45m x 40m.
2. Science Park (SP) <sup>5</sup>	1 per 75m <sup>2</sup> GFA (75% for cars; 25% for vans).	1 per 5 000m <sup>2</sup> GFA.	Nil
3. Rural Based Industrial Use (RI)	1 parking space per establishment or 1 parking space for every 900m <sup>2</sup> GFA of the establishment, whichever is the greater, for lorry/visitor parking.		
4. Other Industrial Uses with Special Requirements (SI)	As per functional needs.		

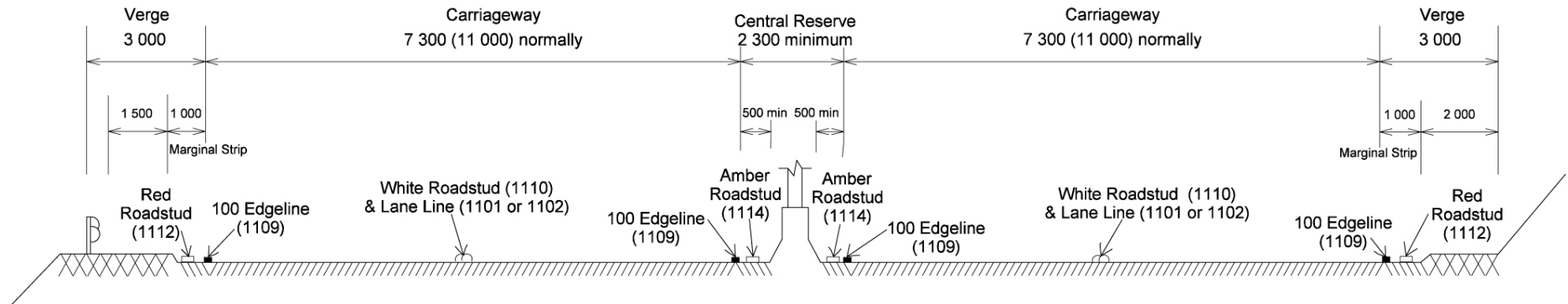
*(Refer to Statement of Intent for further guidance)*

Notes:

1. 50% of all the above required goods vehicle bays shall be for parking of goods vehicles.
2. Goods vehicle provision is divided into 65 % LGV and 35 % HGV.
3. Provision referring to gross floor area (GFA) includes part thereof the specified m<sup>2</sup> GFA.
4. For Industrial Estates, the parking requirement is the minimum provision. The Hong Kong Science and Technology Parks Corporation will assess the actual parking provision on an individual site basis.
5. For Science Park, parking requirement for Heavy Goods Vehicle will not apply.



### RURAL



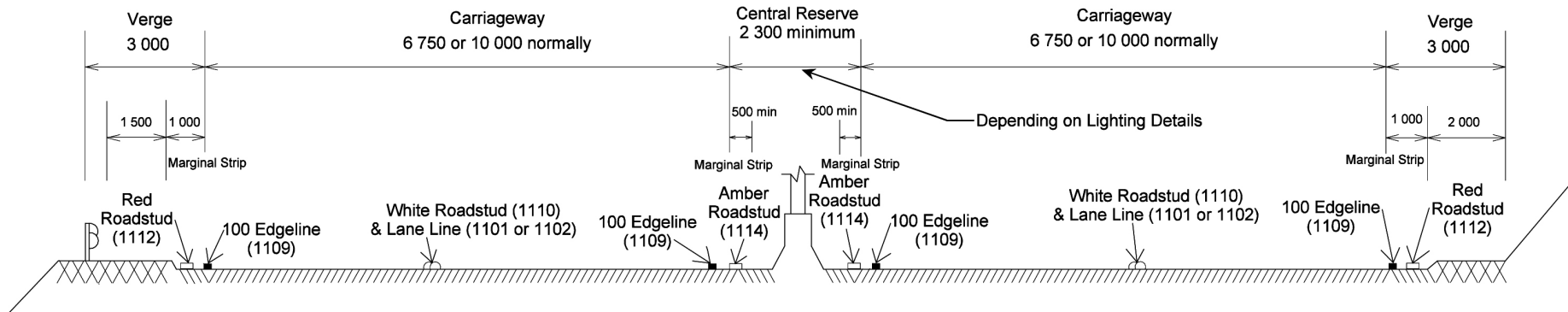
### URBAN

**Note:**

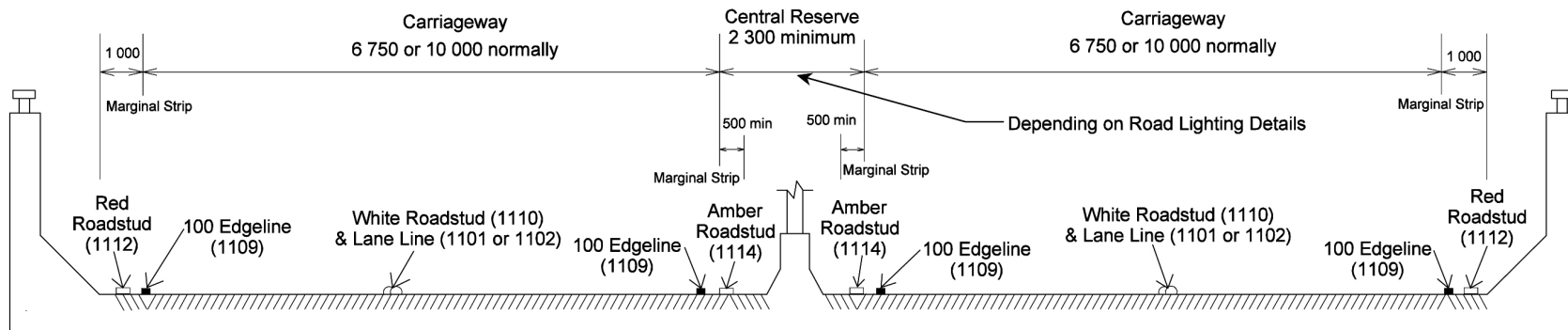
1. For details of road studs and markings see volume 3 of TPDM.
2. Verge/Marginal strip edge detail will be dependent on drainage requirements.
3. Actual verge and reserve width will be dependent on street furniture requirements.

NOT TO SCALE

SOURCE	<b>TYPICAL CROSS SECTIONS OF TRUNK ROADS</b>	PLANNING DEPARTMENT	
TRANSPORT DEPARTMENT		PLAN REF. No. PSS/00/275	DATE OCT 00
		FILE REF. No. TS C / PSSC / 802	FIG.No. 1



### PRIMARY DISTRIBUTOR ROAD



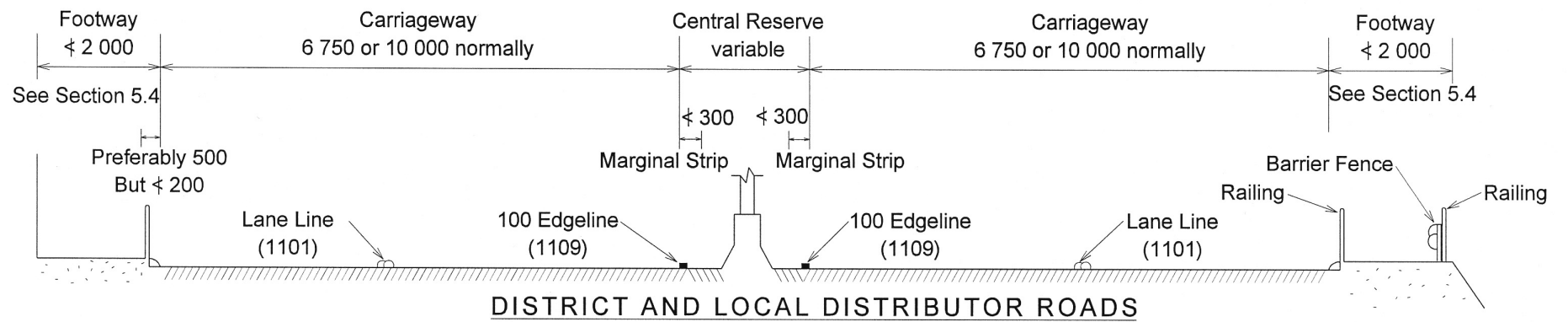
### ELEVATED ROAD

Note:

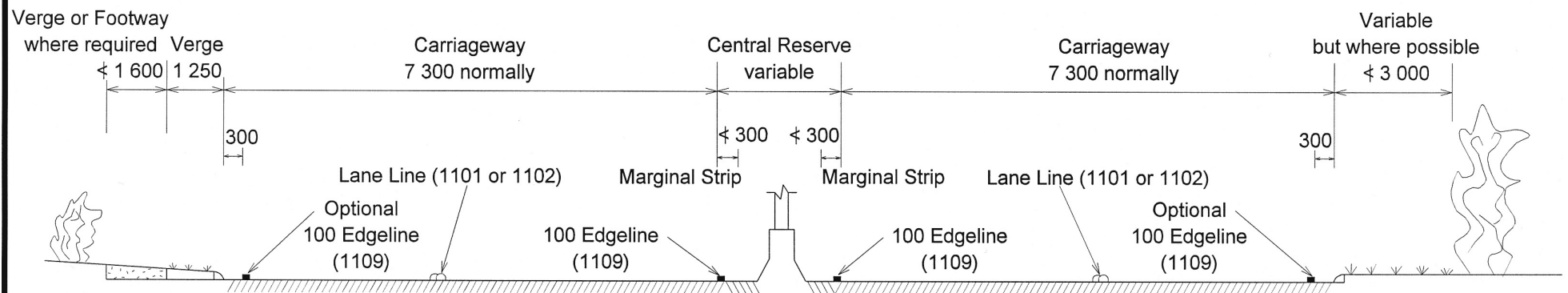
1. For details of road studs and markings see volume 3 of TPDM.
2. Actual verge and reserve width will be dependent on street furniture requirements.

NOT TO SCALE

SOURCE	<h2>TYPICAL CROSS SECTIONS OF PRIMARY DISTRIBUTOR ROADS</h2>	PLANNING DEPARTMENT		
TRANSPORT DEPARTMENT		PLAN REF. No. PSS / 00 / 276	DATE	FIG.No.
		FILE REF. No. TS C / PSSC / 802 <sup>1</sup>	OCT 00	2



**DISTRICT AND LOCAL DISTRIBUTOR ROADS**



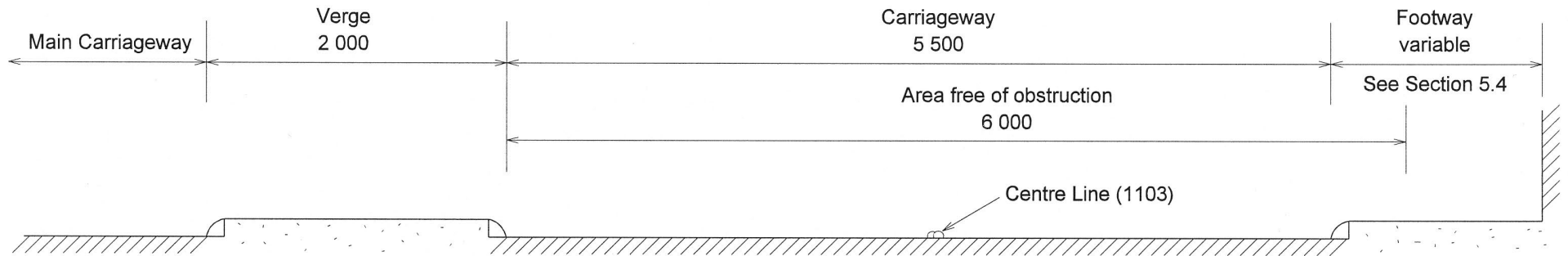
**RURAL ROADS A & B**

Note :

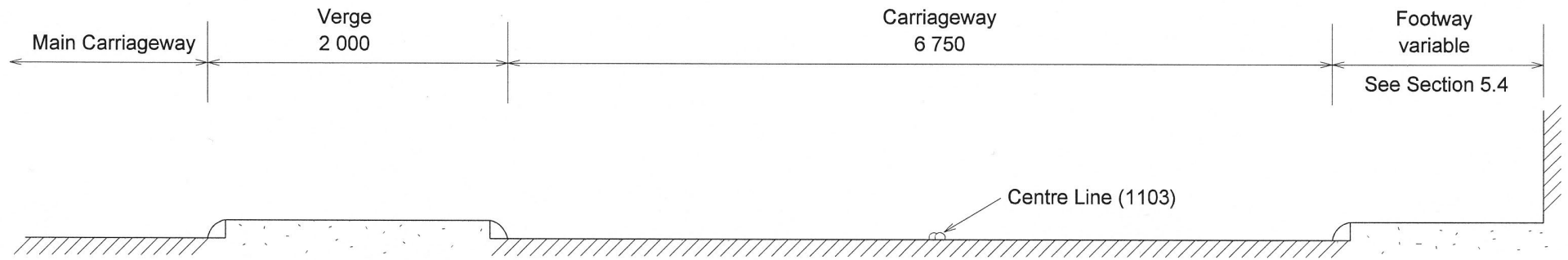
1. The central reserve concrete profile barrier may be replaced by a suitable dwarf wall and kerb but the marginal strip should be retained.
2. On local distributor roads an additional 3 000 mm parking width may be provided on one or both sides.
3. Actual central reserve width will be dependent on street furniture requirements.

NOT TO SCALE

SOURCE	<b>TYPICAL CROSS SECTIONS OF DUAL CARRIAGEWAY ROADS</b>	PLANNING DEPARTMENT		
TRANSPORT DEPARTMENT		PLAN REF. No. PSS / 00 / 277	DATE	FIG.No.
		FILE REF. No. TS C / PSSC / 802 <sup>1</sup>	OCT 00	3




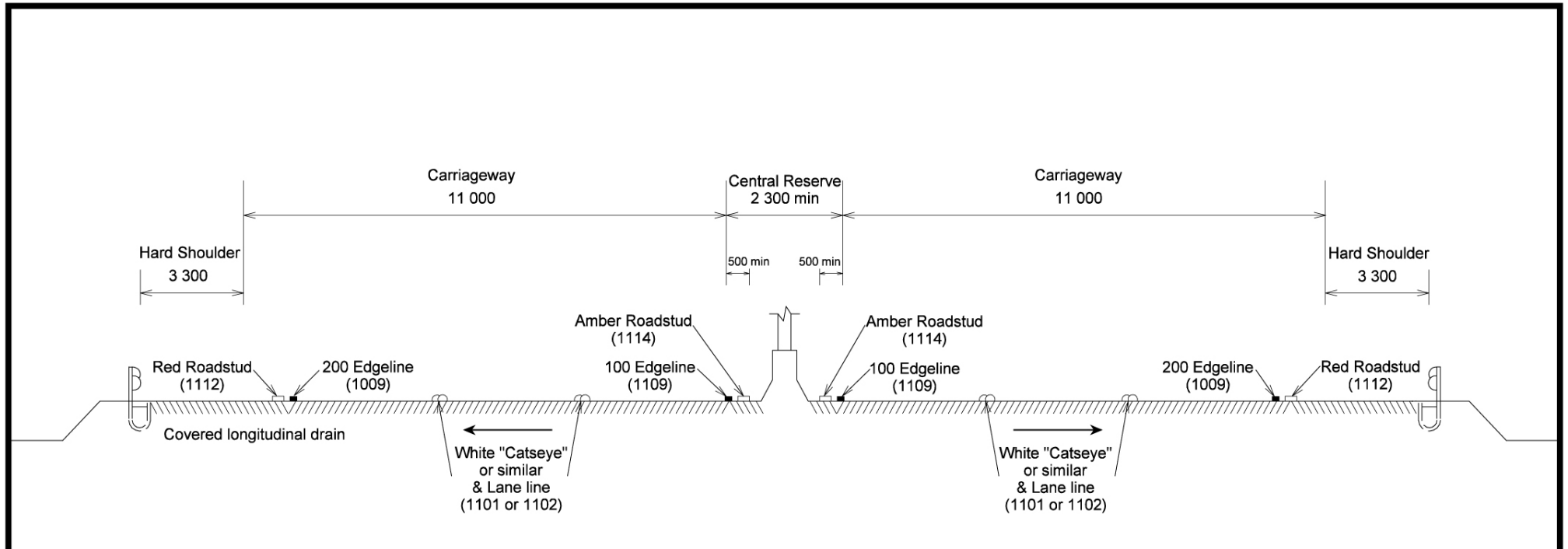
ALL VEHICLES (ONE WAY)



ALL VEHICLES (TWO WAY)

NOT TO SCALE

SOURCE	<b>TYPICAL CROSS SECTIONS OF SERVICE ROADS</b>	PLANNING DEPARTMENT 	
TRANSPORT DEPARTMENT		PLAN REF. No. PSS / 00 / 278	DATE OCT 00
		FILE REF. No. TS C / PSSC / 802 I	FIG.No. 4



## URBAN EXPRESSWAY

**Note:**

1. For details of road studs and markings see T.P.D.M. volume 3.
2. Additional verge width will be necessary to accommodate road signs and street furniture, and may be necessary to achieve visibility requirements and if flat ground is required for landscaping works.
3. All dimensions in millimetres.

NOT TO SCALE

SOURCE	<b>TYPICAL CROSS SECTION OF URBAN EXPRESSWAY</b>	PLANNING DEPARTMENT		
TRANSPORT DEPARTMENT		PLAN REF. No. 1. 91. 14	DATE	FIG.No.
		FILE REF. No. TS C / PSSC / 802 <sup>1</sup>	DEC 91	5

### LARGE SITES

(OVER 1 860m<sup>2</sup>)

### MEDIUM SITES

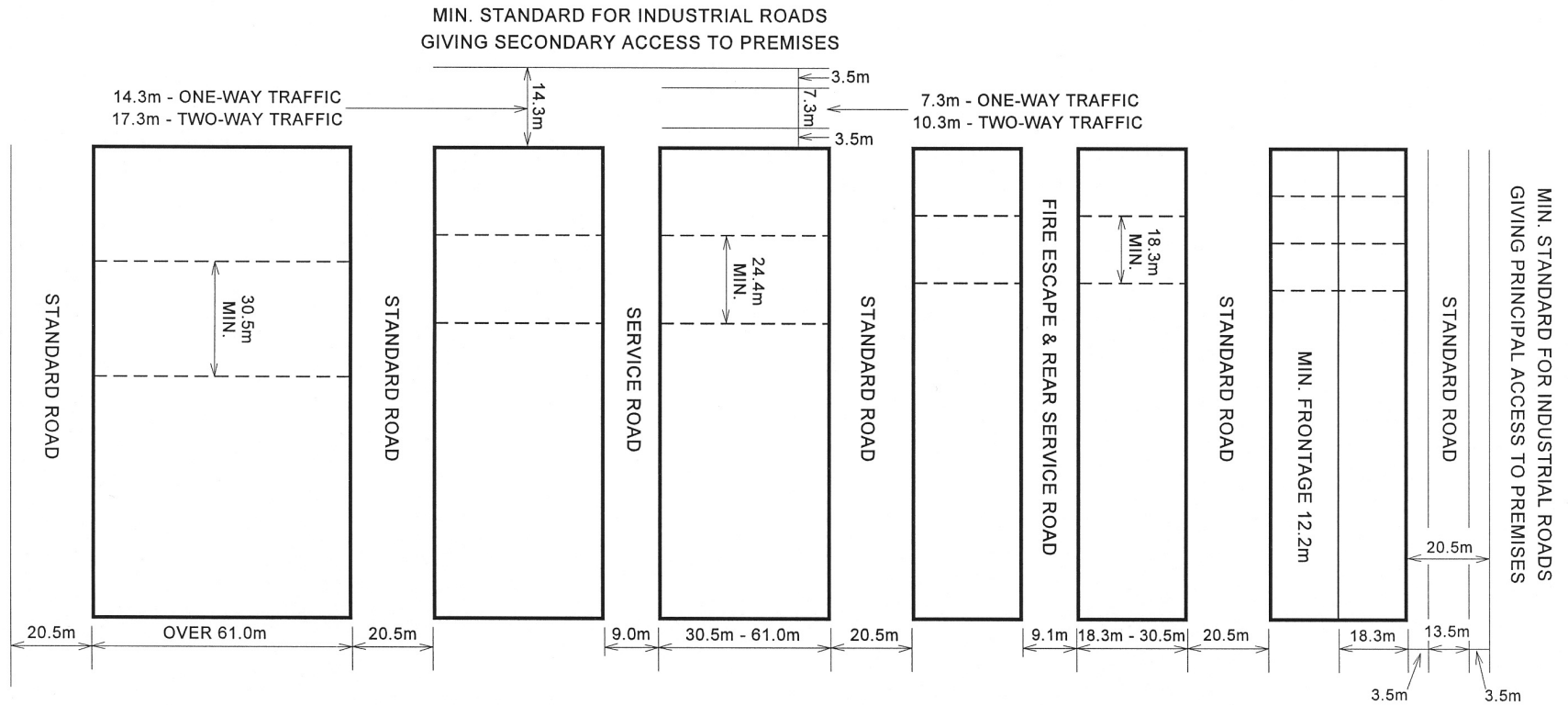
(750 - 1 860m<sup>2</sup>)

### SMALL SITES

(335 - 750m<sup>2</sup>)

### VERY SMALL SITES

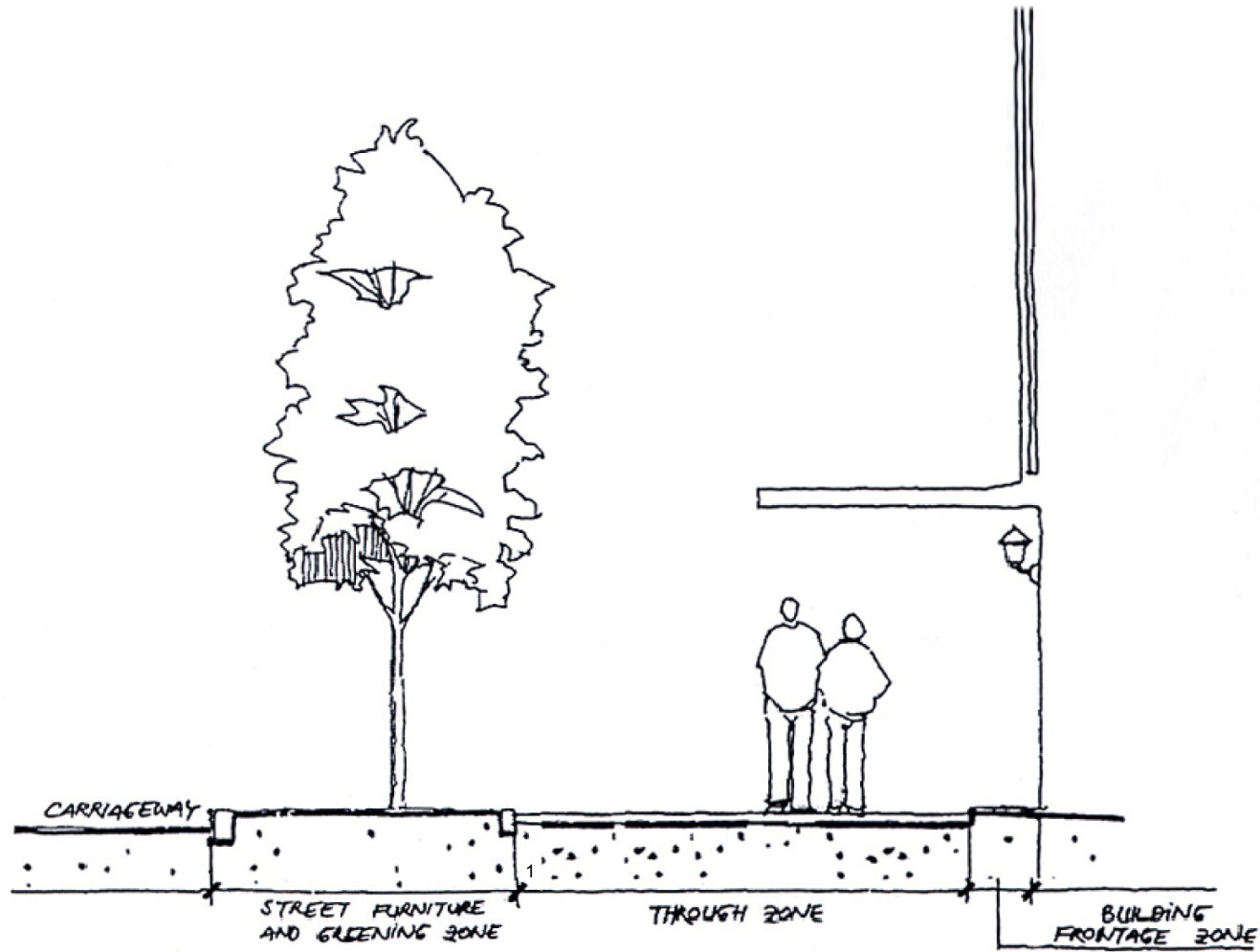
(225 - 335m<sup>2</sup>)



NOTE : LOT DEPTHS IN RELATION TO ROAD STANDARDS SHOULD TAKE INTO ACCOUNT FIRE SAFETY REQUIREMENTS AND SHOULD NOT BE EXCEEDED EXCEPT IN CONSULTATION WITH THE FIRE SERVICES DEPARTMENT

NOT TO SCALE

SOURCE	MINIMUM STANDARD INDUSTRIAL ACCESS ROADS	PLANNING DEPARTMENT		
PLANNING DEPARTMENT		PLAN REF. No. 2. 75. 40 <sup>D</sup>	DATE JAN 90	
			FILE REF. No. 602 / COP	



NOT TO SCALE

SOURCE	THREE - ZONE CONCEPT OF A FOOTPATH	PLANNING DEPARTMENT 		
PLANNING DEPARTMENT		PLAN REF. No. M / SS / 06 / 37	DATE	FIG.No.
		FILE REF. No. C / PSSC / 802	NOV 06	7



## Transport Strategy

The following paragraphs summarise those objectives and initiatives of the Transport Strategy, announced by the Government in October 1999, that have a bearing on land use planning.

### *Better integration of transport and land use planning*

- 1.1 The interactive relation between land use and transport planning is well recognised. Better integration of land use and transport planning can reduce travel demands, thus alleviating the pressures placed on the transport system and the adverse impact on the environment. It can also avoid the conflict between some types of land use and transport activities. Initiatives under this objective include:
- Siting more intensive developments and major employment centres within easy pedestrian reach of rail stations and major public transport interchanges.
  - Making provision for comprehensive grade-separated walkways at the early stage of the land use planning and wherever possible including the requirement in planning briefs/development parameters and land leases for such provision. This is to promote walking, to reduce the number of short motorised trips and to enhance road safety.
  - Pedestrianising selected roads to facilitate pedestrian movement.

### *Better use of railways*

- 1.2 Railways, being an environmentally friendly and efficient mass carrier, will form the backbone of the passenger public transport network. This will be supplemented by other public transport modes. Special attention will be given at the land use planning stage to providing better pedestrian connection to developments, adequate feeder routes and transport interchange facilities to enable the railways to perform as the trunk carrier.
- 1.3 Future strategic developments (including major residential, commercial and retail centres) should be located around rail stations as far as possible. This will reduce the reliance on road-based transport and enhance the efficiency of the rail network.

*Better public transport services and facilities*

- 1.4 To enhance the capacity and efficiency of existing road space, the public are encouraged to make use of public transport services rather than private vehicles. It is essential to co-ordinate and integrate railways as the backbone of the system with other public transport services in order to minimise wasteful competition. Franchised buses and other public transport modes will play a prominent role in providing services to areas where the demand cannot be met by the railways. Initiatives under this objective include:
- Convenient and comfortable interchange facilities at strategic locations, especially rail stations, should be provided.
  - Park-and-ride facilities should be planned at rail stations and major transport interchanges on the fringe of urban areas.
  - Parking provision at developments, especially residential developments, around rail stations should be minimised where appropriate.
  - Kiss-and-ride facilities should be planned at rail stations and major transport interchanges to encourage the use of public transport services.

*Better environmental protection*

- 1.5 Traditional road-based transport modes represent a constant source of noise and air pollution. With development in technological know-how and good transport planning, the Government aims to reduce their impact on the environment as far as possible. Initiatives under this objective include:
- According priority to rail.
  - Exploring new environmentally friendly transport modes e.g. trolley bus, travellers, people movers, etc.
  - Promoting walking and cycling as a mode of transport. To plan around the pedestrians in new towns and redevelopments by providing suitable pedestrian and cycling facilities and in built-up areas by enhancing the facilities as far as practicable.
  - Improve the environmental performance of existing modes of transport by adopting modern design and equipment as much as possible.
  - Introducing more park-and-ride schemes, kiss-and-ride facilities and pedestrianisation areas, etc.

**Summary of References for Technical Details**

SUBJECT	TRANSPORT PLANNING AND DESIGN MANUAL REFERENCE		
	VOLUME	CHAPTER	SECTION / PARAGRAPH
Bus Terminal and Station	9	2	2.8; 2.9
Central Reserve	2	3, 5 & 6	3.4.7; 5.6.2; 6.3.3.11 & 12; 6.10.2.4
Climbing Lane	2	3	3.3.8; 3.3.9
Cross-boundary Coach Termini/Stops	1	3	3.7.3.3
	2	5	5.5
	9	2 & 6	2.7; 6.3.3.2; 6.3.4.2
	9	8	8.4.4; 8.6.1.4; 8.7.23
Curve Widening	2	3	3.4.4
Cycle Track	2	3	3.8
Facilities for Disabled	6	8	8.3.2 - 8.4
Ferry Pier	9	7	7.5
Gradient	2	3	3.3.6
Hard Shoulder	2	6	6.3.3.5-10; 6.10.2
Horizontal Curvature	2	3	3.3.3
Pedestrian Facilities	2	3	3.4.11; 3.7; 3.11.8
Petrol Filling Station	2	5 & 6	5.3; 6.9
Planting	2	5	5.6.2
Public Light Bus Stand and Terminus	9	3	3.5
Sight Distance	2	3	3.3.5
Traffic Sign Location	2	3 & 6	3.5.2; 6.4;
	3	2	2.2.2; 2.2.3
Turning Facility	2	2 & 3	2.2.3; 3.4.5.6; 3.11.11.1
Verge	2	3 & 5	3.4.9; 5.6.2.8
Vertical Curvature	2	3	3.3.7