



LOCAL PLAN MANUAL
PUTRAJAYA
PRECINCTS 7, 8, 9 AND 10



PERBADANAN PUTRAJAYA

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1.0 INTRODUCTION

1.1 PURPOSE OF MANUAL

This Manual of Physical Planning Guidelines constitutes part of the Putrajaya Local Plan Precinct 7, 8, 9 and 10, 2001. It shall only be used for areas located within Precincts 7, 8, 9 and 10, Putrajaya.

The purpose of this Manual is to guide any new development application by landowners, developers or their consultants, submitted to Perbadanan Putrajaya as part of the development application (Permohonan Kebenaran Merancang) for planning permission.

This manual is by no means formulated to limit the creative thinking of a designer. It is by nature advisory rather than mandatory and shall be used as a tool to guide the overall design and development process in order to ensure the realisation of the overall intention and aspiration of Putrajaya.

This manual is to be read together with the Local Plan, which constitute the Proposal Map and Written Statement.

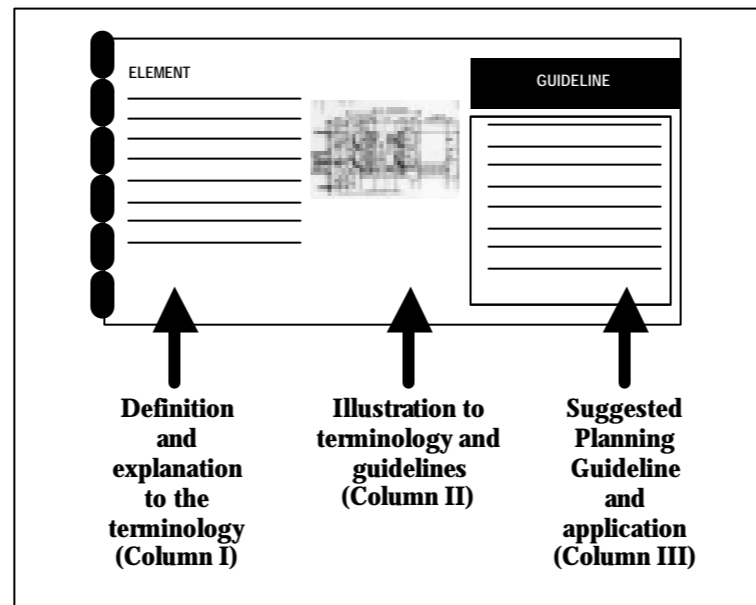


Figure 1.1
Illustration on Format of Manual

1.2 STRUCTURE OF MANUAL

This manual is structured into eleven main topics as the following in accordance to major development components as specified in the Proposal Map of the Local Plan: -

- i. Introduction
- ii. Residential
- iii. Sub-commercial Centre
- iv. Local and Neighbourhood Commercial Centre
- v. Petrol Station
- vi. Western Transport Terminal
- vii. Public Amenities
- viii. Open space
- ix. Infrastructure and Utilities
- x. Promenade, Lake Edge and Water Bodies
- xi. Circulation

1.3 APPLICATION OF MANUAL

The Manual is organised into three elements i.e. definition and simple explanation of terminologies used, guidelines and diagrammatic or schematic illustration of the guidelines (Figure 1.1).

Column I illustrates the definition and explanation of terminologies used in the guideline (Column III).

Column II shows the illustration that would give a clearer indication on the terminology and guidelines suggested in Column III.

Column III, which is shaded, contains planning and design guidelines applicable to the various categories and outlines its application within the context of the Local Plan.

2.0 RESIDENTIAL

2.1 USE

This guideline shall be used for all housing developments located within the residential zones as indicated by the Proposal Map of the Local Plan of Precincts 7, 8, 9 and 10, Putrajaya; in which the residential zones are the largest of the major landuse of the area as shown in **Figure 2.1**.

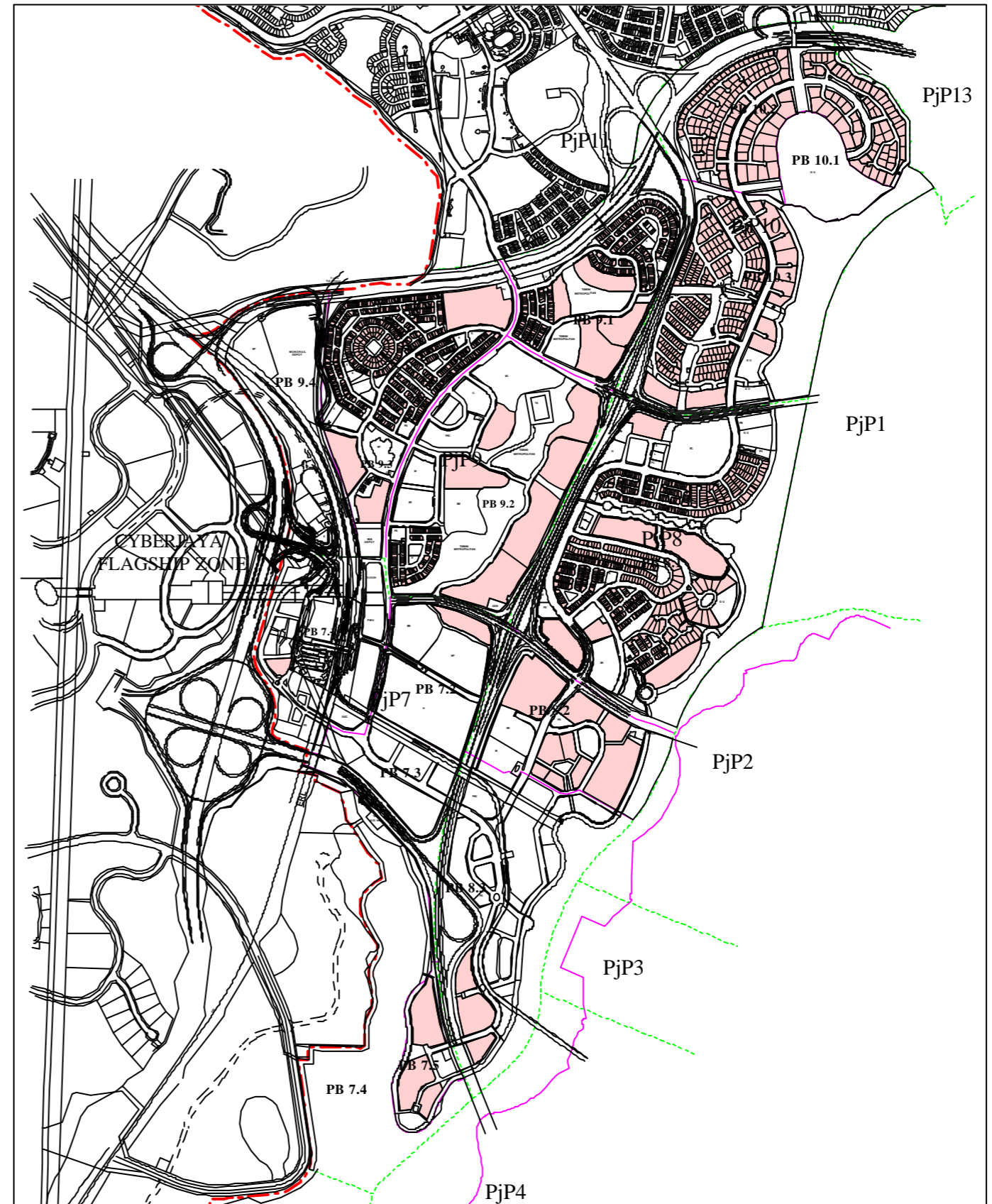


Figure 2.1
Residential Areas of Precincts 7, 8, 9 and 10, Putrajaya

2.2 PHYSICAL AND SITE PLANNING

2.2.1 Zoning and Composition

Land use zoning as indicated by the Proposal Map prescribes the intensity and type of land use allowed. Development shall not contravene with the land use zones of the Proposal Map.

The zoning for residential of the Proposal Map is categorised into four as follows: -

- Low Density,
- Medium Density,
- Medium High Density,
- High Density.

Low Density Housing is area where all housing will be subject to provisions that seek to ensure a pleasant, low-density living environment. The intended development shall be of detached and semi-detached houses in an almost exclusively low-density residential environment.

Medium Density Housing area comprises of terrace or link houses, which are in the form of row development with direct street frontage or town houses, which are multi-unit housing involving strata title.

Medium High Density Housing shall provide medium to high-density residential development in the form of multi-unit buildings of 4 storeys and above. Examples are terrace house, town house, condominium and low-rise apartment.

High Density Housing shall provide high-density residential development to meet the requirement for demand of such housing especially in the case of affordable homes. The residential development shall normally be of apartment type.

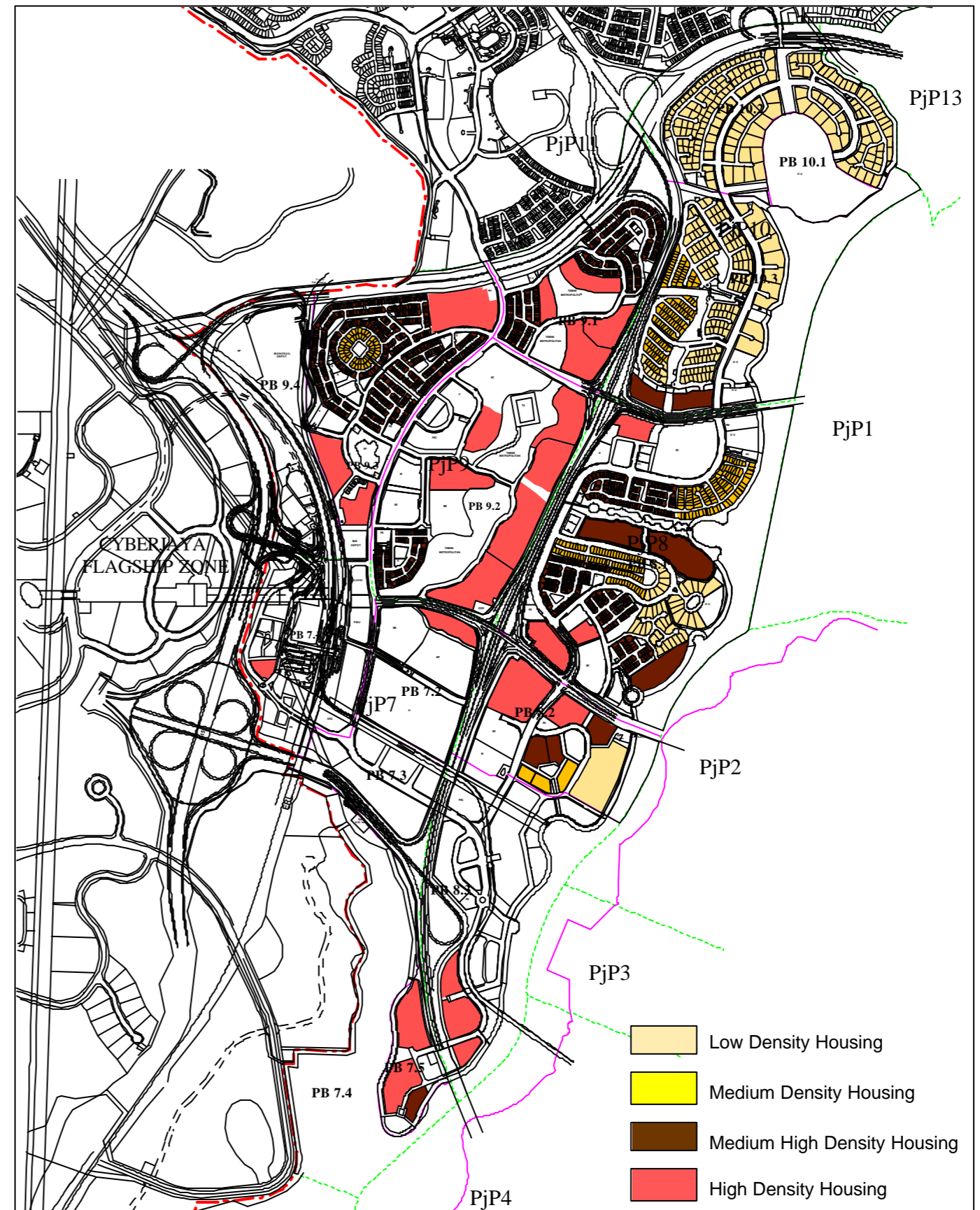


Figure 2.2 Residential Zoning

2.2.2 Density

The intensity of proposed development should not be so great as to cause congestion of buildings or to preclude the amenities of good housing. Specifically, resultant density of any proposal within the Local Plan area should be limited to provide: -

- i. Adequate daylight, sunlight, air and usable open space for all dwellings,
- ii. Adequate space for all community facilities,
- iii. A general feeling of openness and privacy.

Density refers to the ratio of dwellings to the area of the site they occupy (including communal street and communal open space). It is measured as unit per acre of land.

Single Dwelling Unit refers to residential building on landed property with individual title given to individual unit. It includes detached or bungalow housing, semi-detached housing and terrace housing.

Multi Dwelling Unit refers to residential building where strata title is involved. It includes residential buildings such as apartments, condominium, flats, as well as town houses.



Figure 2.3
Example of Low Density Housing

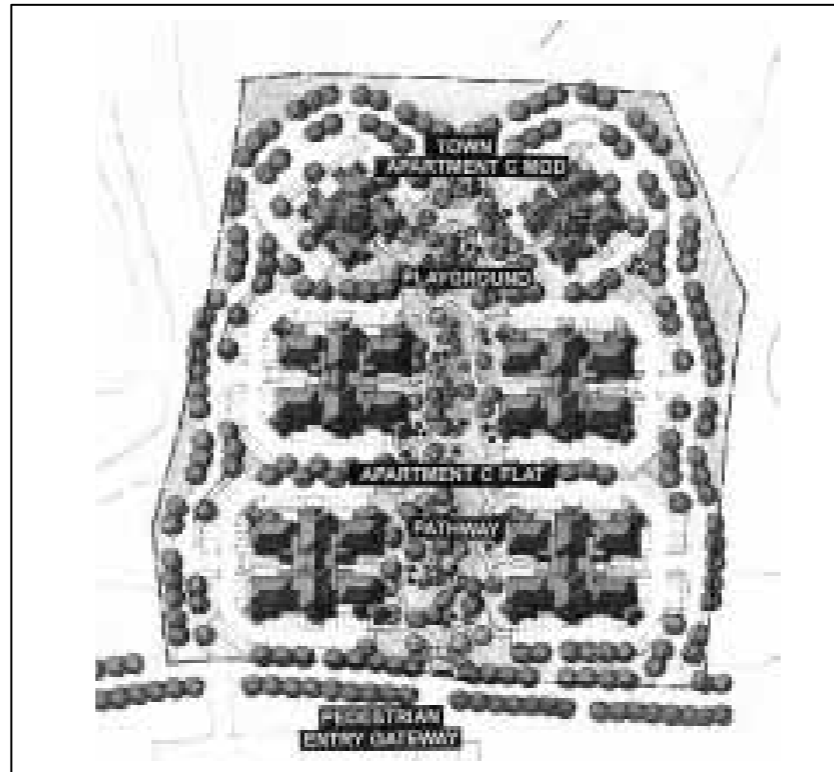


Figure 2.4
Example of High Density Housing

DENSITY

- The density for any new development within residential zones as indicated by the Proposal Map shall not exceed the maximum density as indicated in **Table 2.1**. This is based on gross density, which is the number of dwelling units per acre of gross residential land including land for streets, parking, open spaces, and non-residential buildings.

Table 2.1 Density Range for Residential Development

Zone	Density Range	Types
Low Density Housing	1-8 units/ac	<ul style="list-style-type: none"> ▪ Bungalow ▪ Zero Lot Line ▪ Semi-D
Medium Density Housing	9-24 unit/ac	<ul style="list-style-type: none"> ▪ Semi-D ▪ Cluster Terrace ▪ Terrace/Link ▪ Town House ▪ Walk-up apartments
Medium High Density Housing	25-50 units/ac	<ul style="list-style-type: none"> ▪ Terrace/Link ▪ Town house ▪ Apartment
High Density Housing	51-75 units/ac	<ul style="list-style-type: none"> ▪ Affordable Apartment ▪ Apartment ▪ Condominium

Source: Perbadanan Putrajaya

2.2.3 Subdivision and Layout

Subdivision is the division of a parcel of land into two or more parts for the purpose of enabling any of the lots to be disposed of separately.

Development should be sensitive to the topography, soil, geology and hydrology of the site. The need for excessive earthworks and substantial retaining walls should be minimised.

Layout should ensure that: -

- Easy and safe access to internal public spaces are provided,
- Front entrance of each dwelling is easily found,
- Buildings face streets, public open spaces and waterfront,
- Personal and property safety as well as security of the neighbourhood by ensuring that dwellings do not face away from public places making casual surveillance difficult.

Residential lots shall have appropriate area and dimensions to enable efficient siting and construction of a dwelling, provision of private outdoor space and adequate parking.

Lot Frontage is the boundary line or part thereof, of the lot, which coincides with the alignment of a road, public open space, or promenade.

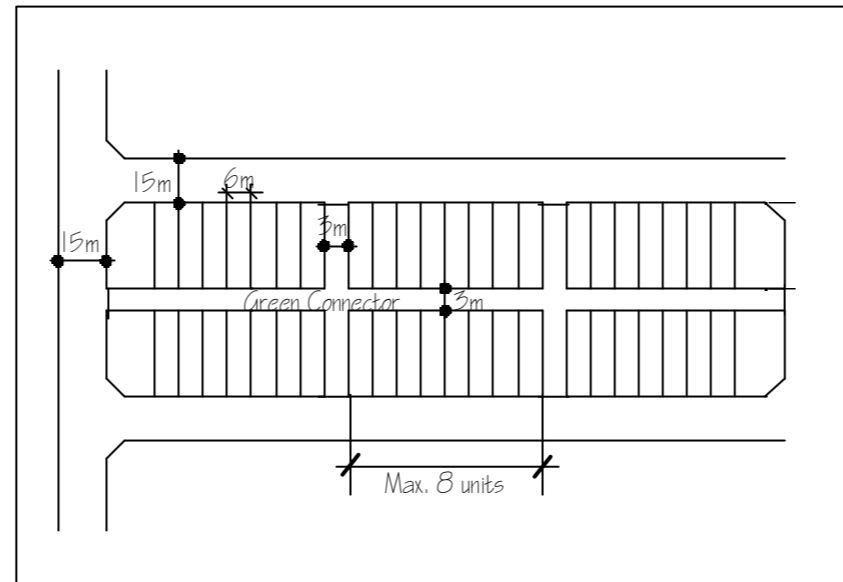


Figure 2.5
Maximum Length of Row Houses

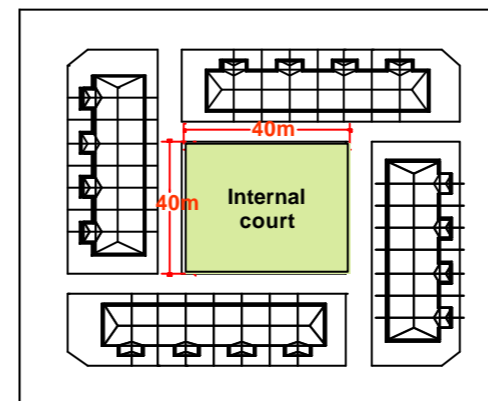


Figure 2.6
Perimeter Block for Cluster Terrace

LOT SIZE

- Lot sizes for different residential types shall not be smaller than the minimum sizes allowed as indicated in **Table 2.2**.

Table 2.2 Minimum Lot Size For Single Dwelling Units.

Type	Min. Lot Size	Min Lot Frontage	Max. Floor Area (Gross)
Bungalow			
▪ Type A & B	743 sq.m. (8000 sq.ft.)	24m (80ft.)	465 sq.m. (5000 sq.ft.)
▪ Type C	743 sq.m. (8000 sq.ft.)	24m (80ft.)	418 sq.m. (4500 sq.ft.)
▪ Type D	557 sq.m. (6000 sq.ft.)	18m (60ft.)	344 sq.m. (3700 sq.ft.)
▪ Type E	446 sq.m. (4800 sq.ft.)	18m (60ft.)	344 sq.m. (3000 sq.ft.)
Semi-detached	297 sq.m. (3200 sq.ft.)	12m (40ft.)	214 sq.m. (2300 sq.ft.)
Terrace			
▪ Type A	153 sq.m. (1650 sq.ft.)	6.7m (22ft.)	200 sq.m. (2150 sq.ft.)
▪ Type B	133 sq.m. (1430 sq.ft.)	6.7m (22ft.)	149 sq.m. (1600 sq.ft.)

- Maximum length of a row of terrace house located in **Medium Density Housing in PB8.1 and PB9.2** shall not be more than 8 units per row (subject to site condition and constraints) (**Figure 2.5**). Each row shall be separated by any of the followings and shall respond to the changing topography: -
 - a. Access road, avenues or cul-de-sac
 - b. Green connector
- Cluster terrace designed as perimeter block that creates an internal court in the centre shall not be more than 8 units in a row or internal court of not more than 40m x 40m, which ever is less to ensure human scale, safety for children and privacy for dwelling units from encroachment of non-residents into the internal court (**Figure 2.6**).

2.2.4 Setback and Distance between Buildings

Setback refers to the minimum distance between a wall and a property boundary or a wall of another building.

Street Frontage refers to setback where lot/building frontage faces the following: -

- i. Street frontage for main roads such as local or spine roads
- ii. Street frontage for roadside buffer
- iii. Park/public open space
- iv. Green corridor linking neighbourhood centres or open space
- v. Waterfront/promenade

Buildings are setback from the boundary line to provide for: -

- Landscape and visual setting for the building,
- Space for car parking,
- A noise attenuation zone,
- Privacy from the street and fencing of buildings,
- A buffer to street activity,
- An area that allows sunlight to reach the building,
- A territorial threshold between the public or communal street and the private home; and
- Continuity of the existing streetscape.

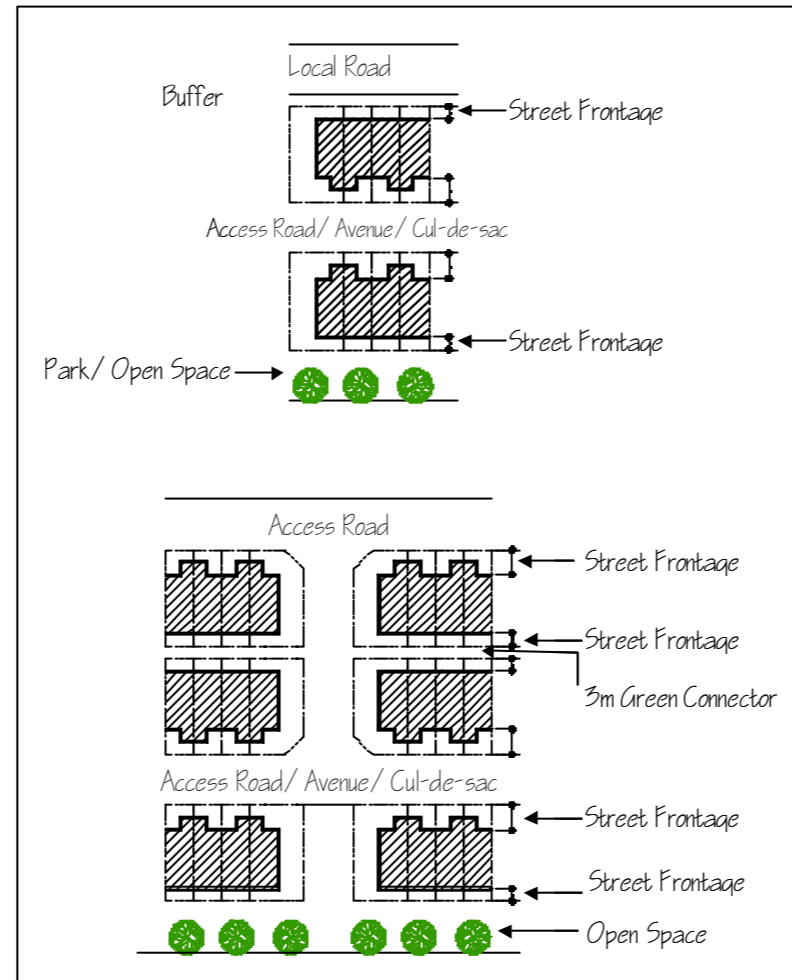


Figure 2.7 Street Frontage

BUILDING SETBACKS

- Building shall have setback to the minimum distances as indicated in **Table 2.3**.

Table 2.3 Setback for Residential Buildings

Dwelling Type	Minimum Setback		
	Front/Rear	Non-party/Side Boundary	Street Boundary
Detached/Bungalow	Minimum 3.5m for rear and 4.5m for street frontage subject to total setback distance of not less than 9.0m for both front and rear.	3.5m	<ul style="list-style-type: none"> ▪ 6m if no roadside buffer ▪ 3.0m if 3.0m roadside buffers exist.. Total clearance from road reserve to wall must be 6.0m
Zero Lot Line	Minimum 3.5m for rear and 4.5m for street frontage subject to total setback distance of not less than 9.0m for both front and rear..	<ul style="list-style-type: none"> ▪ No setback required on the zero lot boundary. Wall on the boundary line must not have windows. ▪ For side with garden/ additional land area, minimum 3.0m setback 	<ul style="list-style-type: none"> ▪ 6m if no roadside buffer ▪ 3.0m if roadside buffer exists. Total clearance from road reserve to wall must be 6.0m
Semi-detached	Minimum 3.5m for rear and 4.5m for street frontage subject to total setback distance of not less than 9.0m for both front and rear.	3.5m	<ul style="list-style-type: none"> ▪ 6m if no roadside buffer ▪ 3.0m if roadside buffer exists. Total clearance from road reserve to wall must be 6.0m

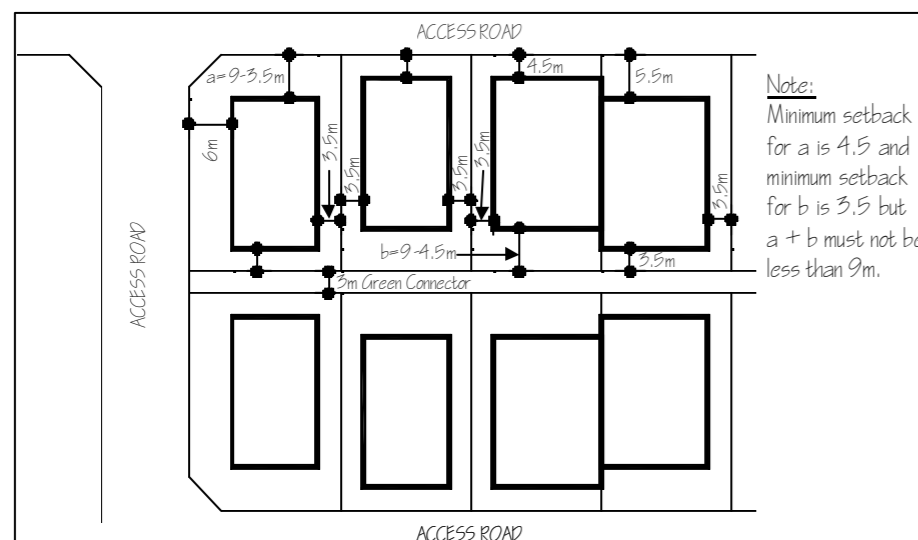


Figure 2.8 Minimum Setback for Bungalow and Semi-detached

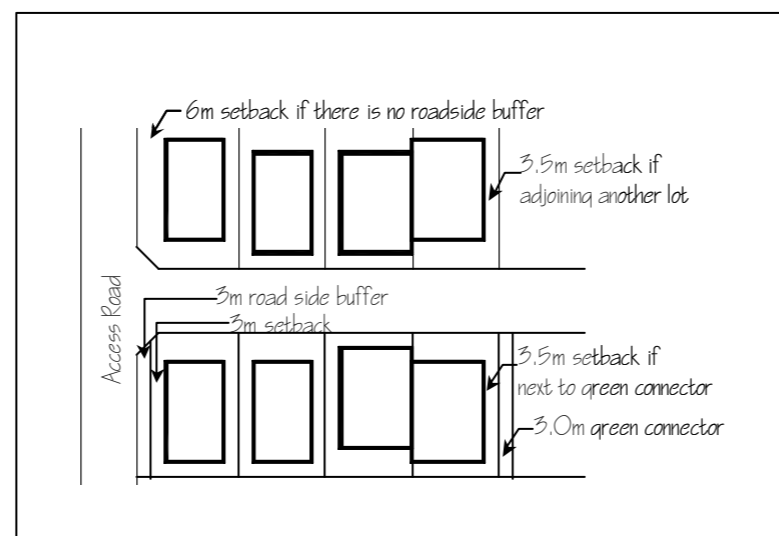


Figure 2.9 Minimum Setback for Corner Building

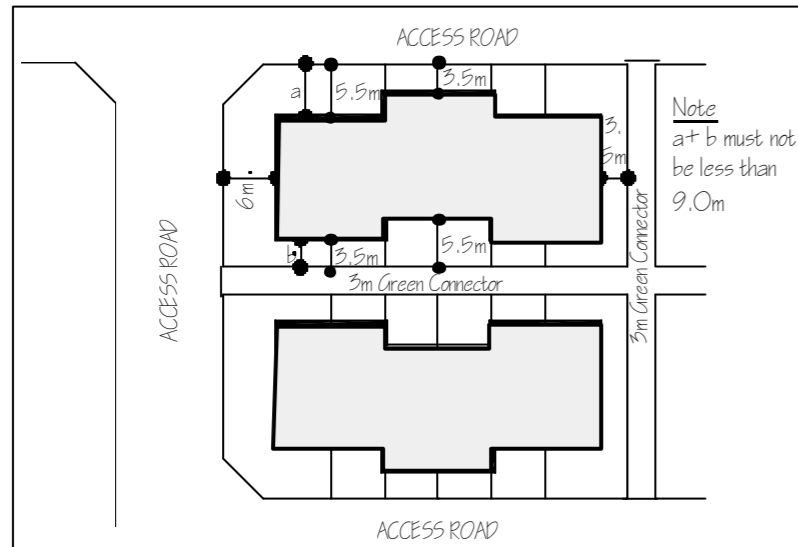


Figure 2.10
Minimum Setback for Terrace/Link

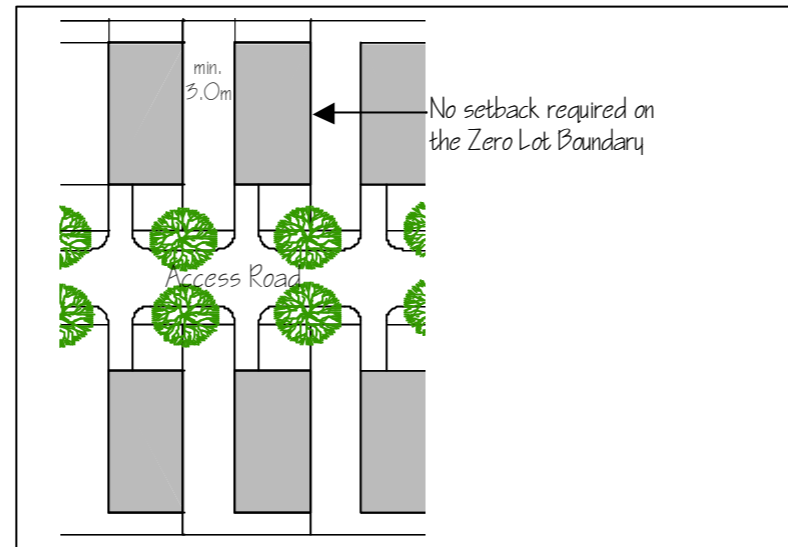


Figure 2.11
Zero Lot Line

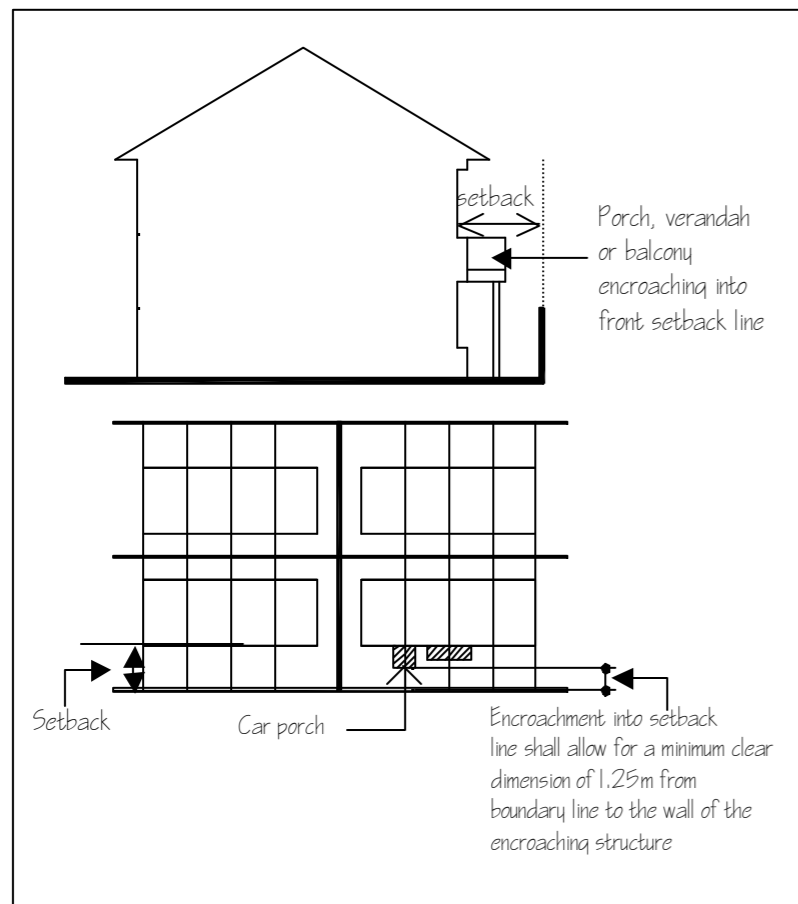


Figure 2.12
Building Encroachment on Street Frontage

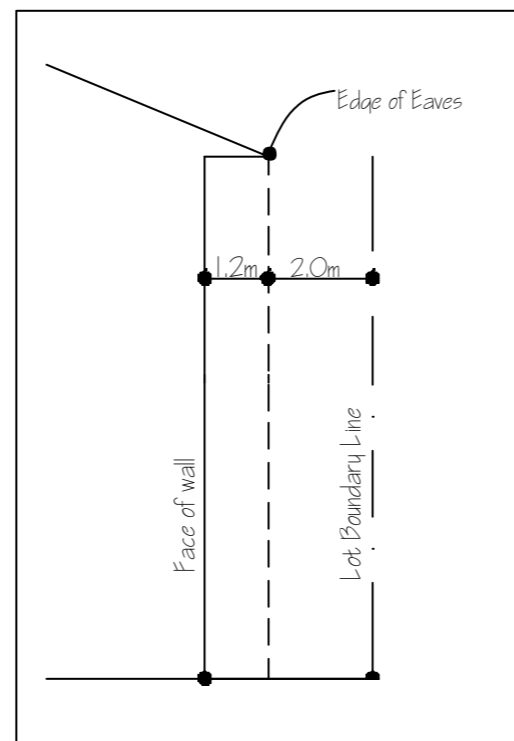


Figure 2.13
Encroachment of Roof Eave

BUILDING SETBACKS

Table 2.3 (cont) Setback for Residential Buildings

Terrace	Minimum 3.5m for rear and 4.5m for street frontage subject to total setback distance of not less than 9.0m for both front and rear.	3.5m	<ul style="list-style-type: none"> 6m if no roadside buffer 3.0m if roadside buffer exists. Total clearance from road reserve to wall must be 6.0m
Town House	Minimum 3.5 for rear and 4.5m for front subject to total setback distance for both front and rear of 9.0m	3.5m	<ul style="list-style-type: none"> 6m if no roadside buffer 3.0m if roadside buffer exists. Total clearance from road reserve to wall must be 6.0m
Condominium	½ of the total building height measured ground to the roof. Subject to a minimum distance of 6 meters	NA	6m
Apartment		NA	6m

Note: NA – Not Applicable

- Buildings must not encroach into the setback line with exception to open porches, veranda and balconies. Porch for terrace house encroaching into setback line shall have a clear dimension of 1.25m measured from the boundary/lot line to the outermost projection of the encroaching structure (**Figure 2.12**).
- For terrace house, semi-detached and bungalow, encroachment of roof eaves shall not exceed 2.0m measured from the edge of the eave to the boundary/lot line (**Figure 2.13**).

Distance between buildings is the minimum distance measured horizontally from the outermost projection of the building to another building.

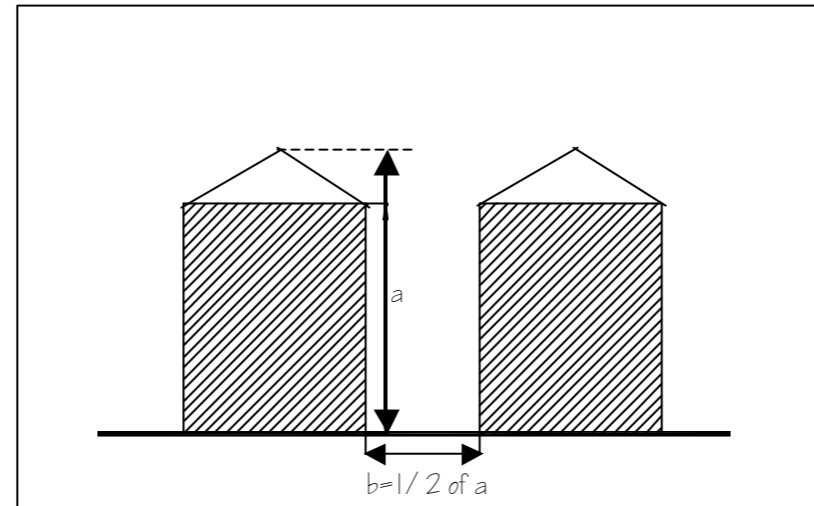


Figure 2.14
Distance between Buildings for High Rise Residential

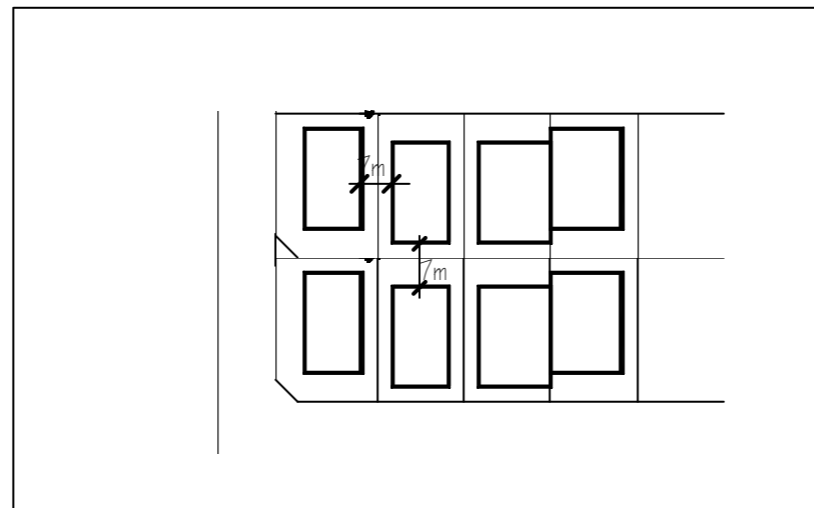


Figure 2.15
Distance between Buildings for Landed Properties

DISTANCE BETWEEN BUILDING

- Distance between two buildings for high-rise residential shall be half of the total height of the building measured from ground to top of the roof subject to a minimum distance of 6m.
- Wider distance than the above may however be required subject to the discretion of Perbadanan Putrajaya in order to accommodate for other requirements such as buffer, green connector and open space. Green connector of 3m width shall be required in between apartment and terrace houses.
- For single dwelling unit or landed properties, minimum distance between two buildings facing or backing each other shall be 7m.

2.2.5 Site Coverage/Plinth area

Plinth Area/Site Coverage as defined by the Town and Country Planning Act 1972 is the proportion to be covered by building of the area of any lot.

Open Space Coverage is the portion of plot area outside plinth area. It may comprise of internal circulation, open space and both hard and soft landscape elements.

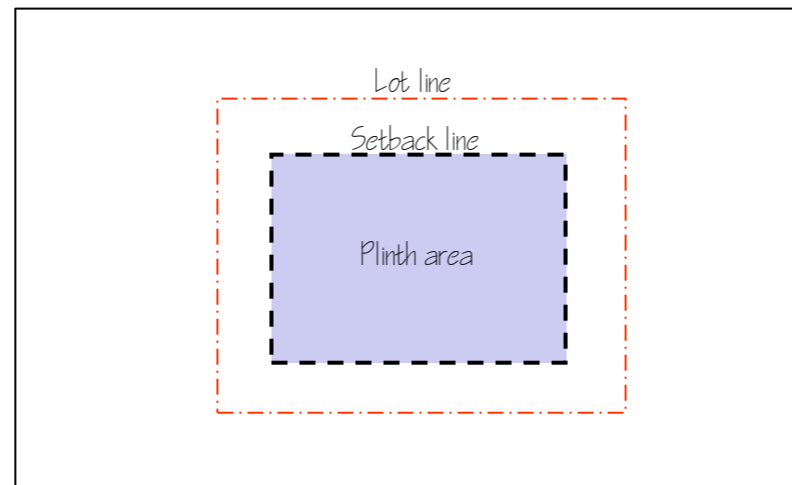


Figure 2.16
Plinth Area/Site Coverage

SITE COVERAGE

- The maximum site coverage (excluding allowable encroachments), for residential buildings shall not exceed the percentages indicated in **Table 2.4**.

Table 2.4 Site Coverage for Residential Buildings

Dwelling Type	Max. Site Coverage (%)
Detached/Bungalow	60
Zero Lot Line	60
Semi-detached	60
Terrace	50
Town House	60
Condominium	40
Apartment	40

2.2.6 Building Heights

Building Height is the limit to the vertical extent of a building. It is measured as a number of storeys or floors from the ground level.

Storey refers to the space within a building which is situated between the floor of one level and the floor of the level next above, or, if there is no level above, the top of the ceiling above. The term includes any mezzanine floor or any space on the roof of a building, which is covered by impermeable material and areas of uncovered roof, which are assessed as comprising part of the gross floor area of the building. Provided that: -

- The two topmost storeys of the building shall not be included in the calculation of building height where they are used exclusively for plant rooms containing heating, ventilation, lift and other equipment or water tanks or similar service units and maintenance facilities or common access stairs,
- Basement which extend less than 1.0meter from ground level to the top of the slab above do not constitute a storey,
- The local authority may deem the area between the ground level where there is no floor at this level and the floor above the constitute one or more storeys where such area substantially adds to the overall height of the building,
- For buildings featuring a stepped design on sloping sites, the number of storeys shall be calculated as the greatest number of storeys in any vertical plane.

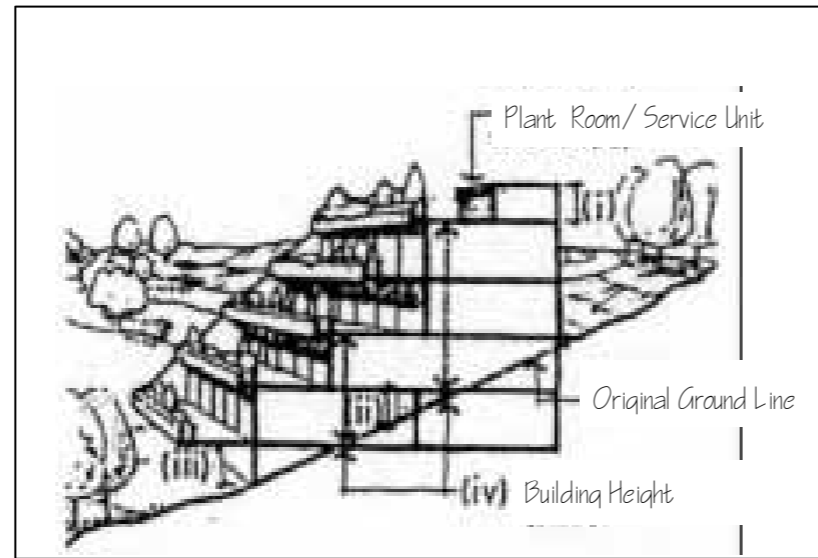


Figure 2.17
Determination Of Building Storeys On Sloping Sites
(Example for 3 Storey Building)

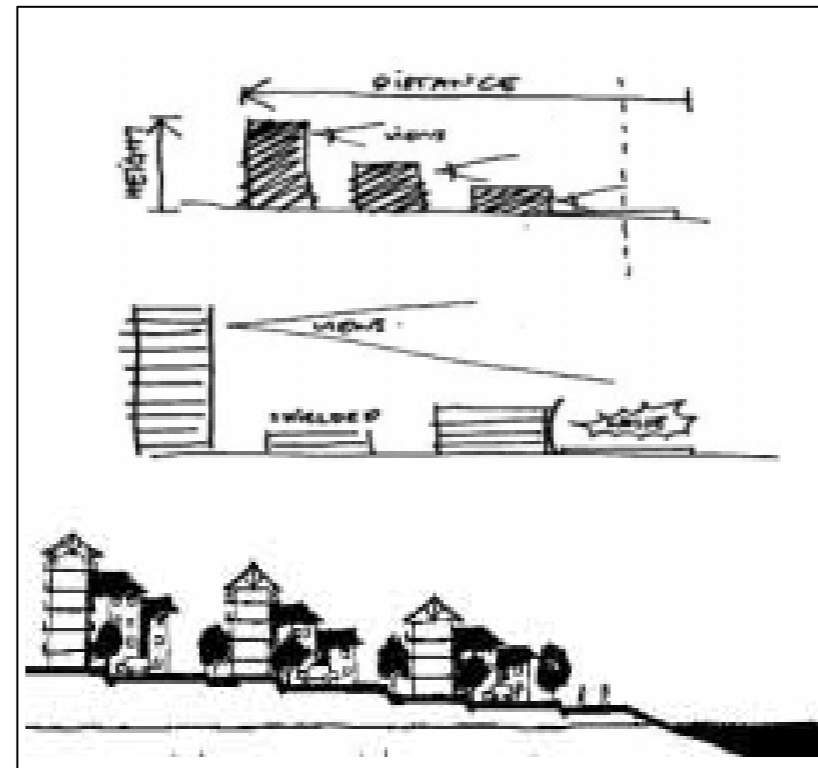


Figure 2.18
Building Profiles Adjacent to Waterfront

BUILDING HEIGHTS

- Maximum height of dwellings shall not generally exceed the number of floor as indicated in **Table 2.5 and 2.6**.

Table 2.5 Maximum Height for Residential Buildings

Dwelling Type	No. of Storeys
Detached/Bungalow	2
Zero End Lot	2
Semi-detached	2 1/2
Cluster	2
Terrace	2 1/2
Town House	3
Condominium	8*
Apartment	12*

Note: * Higher residential blocks up to a maximum height of **17 storeys** can be considered by Perbadanan Putrajaya subject to various urban design aspects for further deliberation by Perbadanan. Developers however shall submit **special report** to justify the need to have higher building for its particular scheme. Each case shall be considered on merits of the overall urban design impact for the whole of Putrajaya.

Table 2.6 Maximum Height at Waterfront Areas

Zone	Location	Maximum Height Allowable	
		Single Unit Dwelling	Multi Unit Dwelling
Low Density	Waterfront	2	NA
Medium Density	Waterfront	2	NA
Medium High Density	PB8.1 (waterfront)	2	4
High Density	PB7.5 (waterfront)	2	12
	PB8.1 (waterfront)	2	12
	PB8.2 (near SCC)*	2	6

Note: * Building fronting the waterfront refers to the first layer immediate to the waterfront.

- Blocks of multi-unit dwellings within a plot shall have a staggering general profile from the waterfront with the lowest height facing the waterfront (**Figure 2.18**). Height and block massing should maximise on the view towards the waterfront with semi-enclosed courtyard facing the water be adopted.

2.3 URBAN DESIGN

2.3.1 Streetscape

Streetscape is part of urban character of the public realm that is made up of an assemblage of landscape, walks and curbs between the lot line and the vehicular lanes. Its physical character and ambiance is further defined by the vehicular lanes and building frontages aligning the public right of way.

a. Street Type

Residential streetscape is highly influenced by the type, hierarchy, reserve and capacity of its street. Streets in residential areas serve a number of functions:-

- Access to residences,
- Parking for visitors vehicles and overspill of residents vehicles,
- Social and activity space for neighbours to interact and children to play,
- Setting and approach for residences located on it, desirably with high aesthetic and amenity quality,
- Stormwater drainage path,
- Service location for utility to residences.

Planning for street within the residential area shall aim to establish a street network that provides convenient linkages to activity centres and local facilities either within or adjoining the development.

The design of residential street shall aim for the following: -

- Fulfil their designated functions within the street network and hierarchy,
- Accommodate public utility services and drainage system,
- Provide acceptable level of safety and convenience for all street users in residential areas,
- Minimising the negative impact of through-traffic.

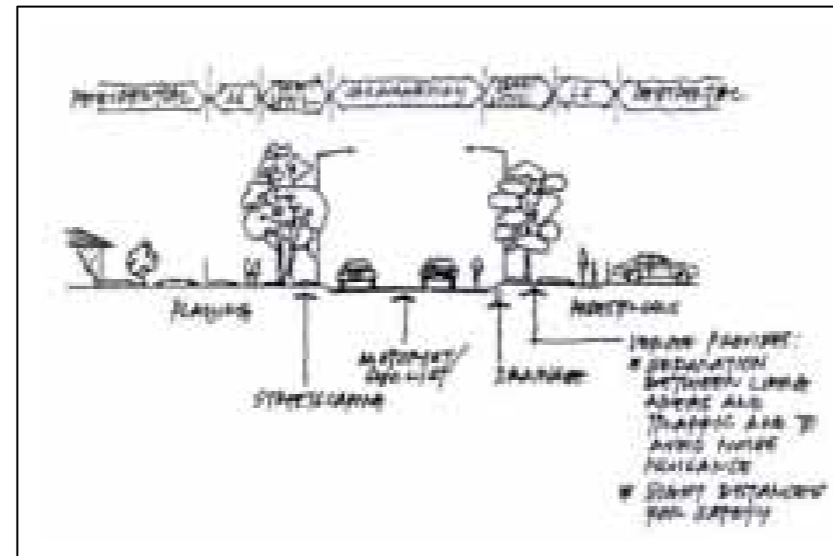


Figure 2.19
Function of Residential Street

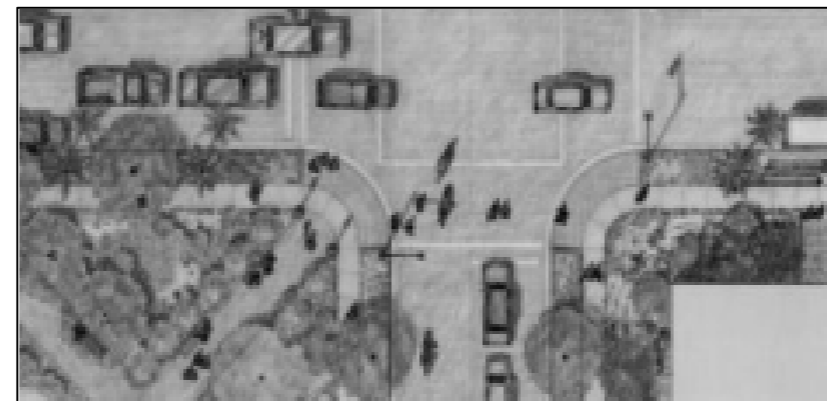


Figure 2.20
Continuous Pedestrian Route at Intersections

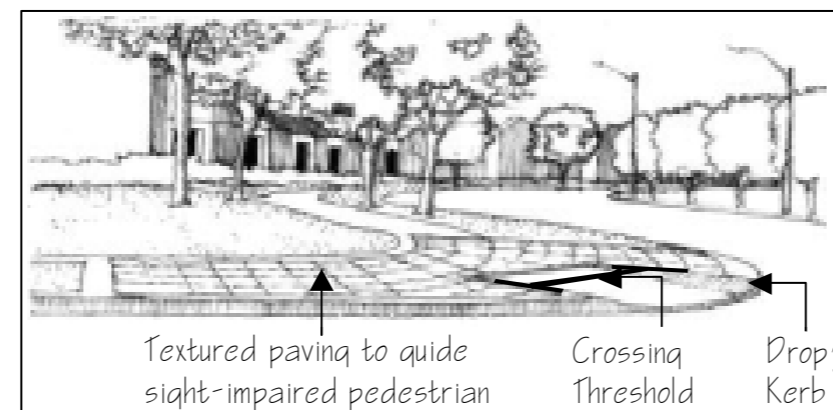


Figure 2.21
Drop Kerb

RESIDENTIAL STREETSCAPE

- Residential street shall be designed to fit into the road hierarchy systems of the Local Plan and shall have reserve as indicated in **Table 2.7**.

Table 2.7 Street Reserves

Hierarchy	Reserve
Local Road	22 m
Access Road	16m
Cul-de-sac & Avenue	15m

- Design and development of residential street shall conform to guideline on **Circulation** as specified in **Section 11.0** of this Manual. The emphasis in road layout should be on a clear structure to the road network, so that drivers are aware of the function of road type, and the control of vehicle speeds, particularly on the lower category roads.
- Layout should be used in a deliberate way to influence speeds, for example through reduced radii at junctions, though the avoidance of long, straight sections of road and through traffic calming measures such as localised road narrowing, chicanes or the interruption of sight lines. Road humps should be avoided, as they tend to create additional noise and increase vehicle pollution locally. See also *Traffic Calming*.
- Residential streetscape design shall allow for shared access for both pedestrian and vehicular traffic and shall encourage safe pedestrian friendly environment (**Figure 2.19**).
- Continuous pedestrian route shall be maintained at intersections (**Figure 2.20**). Drop kerb shall be used at every intersection (**Figure 2.21**). The width of the drop kerb crossing shall be equal to the width of crossing demarcated on the street surface. A band of 800mm tactile paving shall be positioned behind the crossing threshold and surface of crossing threshold shall be differentiated from the entire sidewalk pavement to facilitate sight-impaired pedestrians.

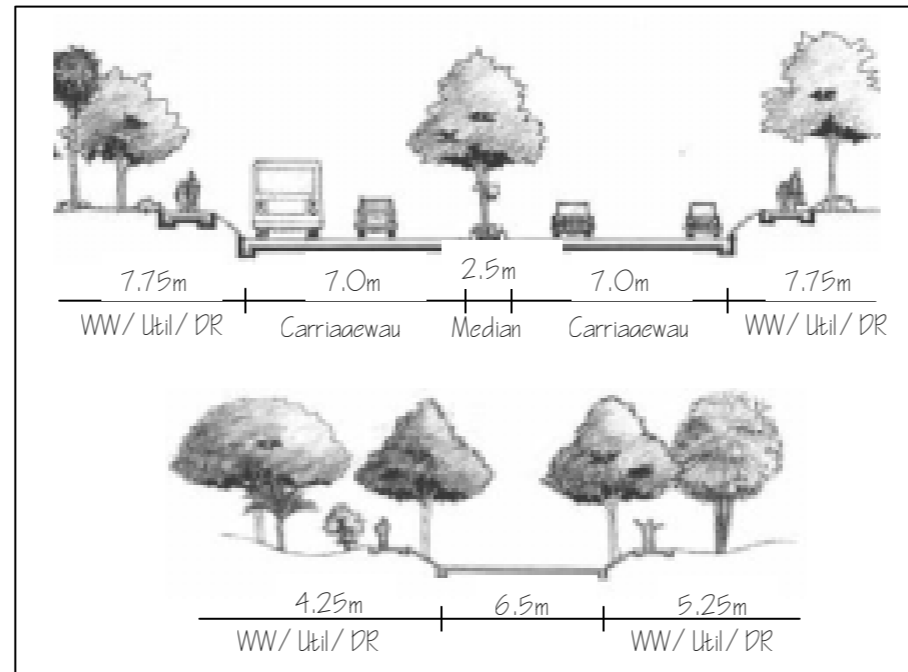


Figure 2.22
Residential Streetscape

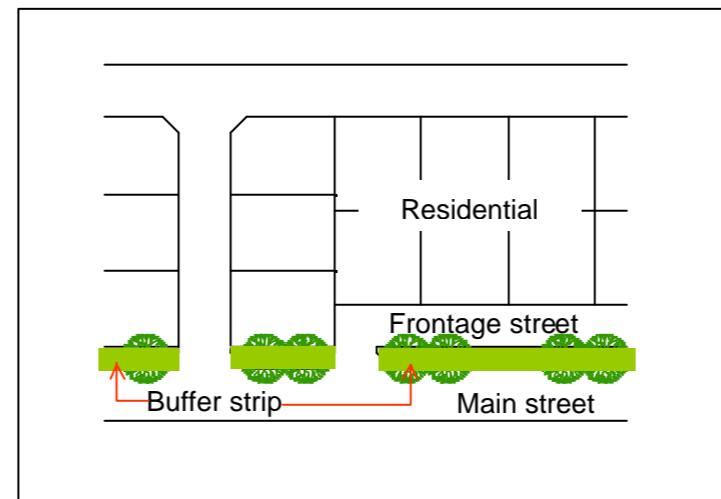


Figure 2.23
Buffer Strip/Roadside Buffer For Residential Development

RESIDENTIAL STREETSCAPE

- Streetscape detailing should establish a clear theme and identifiable character for the street. Material, pattern, planting, lighting and street furniture shall be consistent and coherent with the neighbourhood character.
- Appropriate trees should be provided in all streets except side lanes for pedestrian shelter, streetscape character, and traffic management.
- Where possible, pedestrian walkway on residential side within local and access streets with reserves of 22m or above shall be raised to a level not more than 1m higher than the carriageway level to help define the pedestrian enclave from vehicular route for safety and streetscape purposes.
- For multi-dwelling units, entrance into such development should be emphasised by identifiable character, convenient entry of fire fighting and maintenance.
- Where residential development fronts a major street, a buffer strip of marginal access/street should be provided for a more desirable streetscape (**Figure 2.23**).

b. Frontage

Frontage is the privately held layer between the façade of a building and the lot line that fronts the public streetscape. It is characterised by the dimensional depth of the front yard and the combination of architectural elements such as fences, stoops, porches and colonnades and is correlated with the distance within which the building is setback from the boundary line. See also Setback.

c. Fencing

The term “fencing” for the purpose of this manual is a generic term. It refers to a broad range of approaches to property boundary demarcation including:

- Residential and non-residential fences of masonry, timber and metal construction (hard fencing),
- Fences comprised of hedges and other forms of landscape (soft fencing),
- Walls, including retaining structures, courtyard walls, party walls.

Source: Putrajaya Fencing Design Guidelines Manual

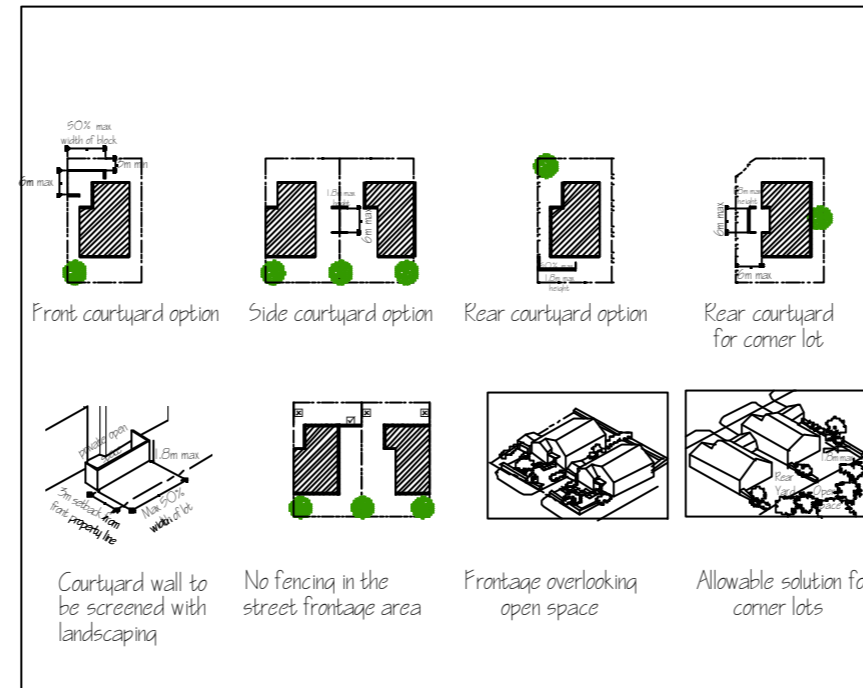


Figure 2.24
Allowable Fencing for Bungalow
Source: Putrajaya Fencing Design Guideline Manual

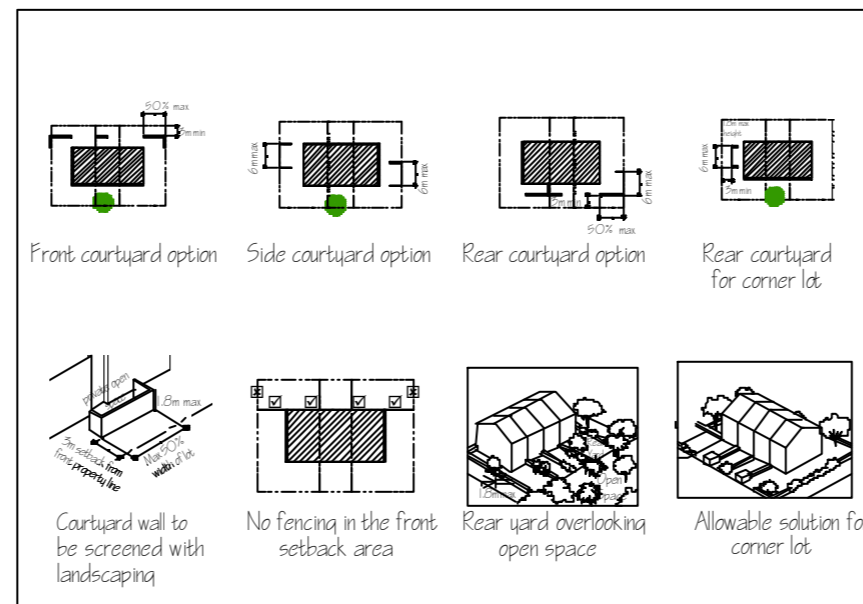


Figure 2.25
Allowable Fencing for Link House
Source: Putrajaya Fencing Design Guideline Manual

FENCING

- Boundary fence on front, rear, side and corner of residential plots shall not be encouraged. Any boundary demarcation if required should make use of landscaping elements as demarcation. Erection of fences and retaining walls shall conform to the provisions and requirements as stated in **Putrajaya Fencing Design Guidelines Manual, 1999**.
- Fences if allowed shall conform to the following specification as stated in the **Putrajaya Fencing Design Guidelines Manual, 1999** -
 - i. Front courtyard wall shall be setback 3m from the lot boundary, with maximum width of 50% of the lot boundary up to a max. height of 1.8m.
 - ii. Transparent landscape fences of side and rear boundary of max. height 1.2m.
 - iii. Side courtyard walls abutting side boundary shall not be more than 6m in length and 1.8m in height.
 - iv. If retaining walls of 0.6m exist, fence shall not be more than 1.2m in height. For corner allotments, the retaining wall shall terrace every 1.2m of vertical height.

2.3.2 Neighbourhood Character and Building Appearance

Building Orientation refers to arrangement of building façade to face certain direction normally the public realm.

Building Façade is the external vertical surfaces of buildings or structures. Façade shall respond to urban topological character and context to create a coherent urban environment and attractive streetscape. Elements such as veranda way, entrance and portals, window, vertical landscaping, exterior projections, expression lines, roof projections, utility such as gutters, drainpipes etc make up a harmonious entity of building façade.

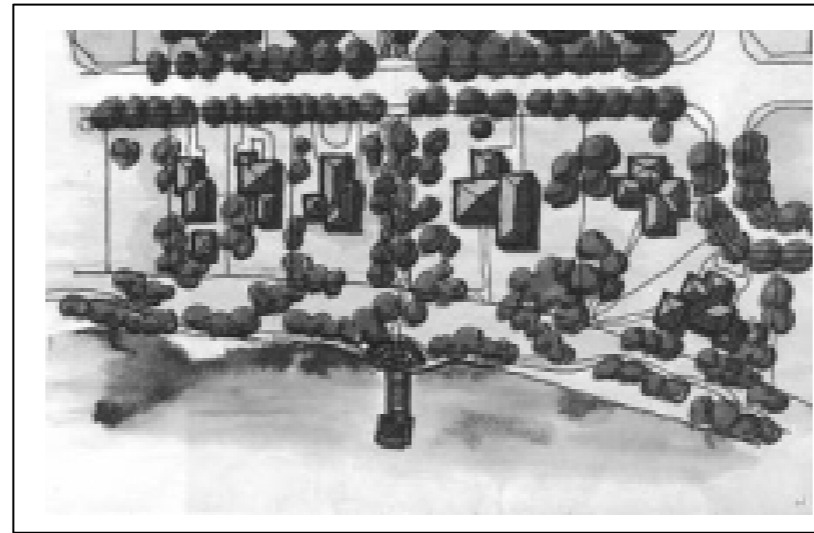


Figure 2.26
Orientation of Building to Address Public Realm

BUILDING APPEARANCE

- Building adjacent to the public street, open spaces and waterfront should address the public realm.
- Appearance of dwellings from public streets, public open space and waterfront shall be designed to ensure that it is attractive and visually compatible with the character of the locality.
- Building façade shall be designed to reflect tropical environment using materials that are less maintenance intensive and more environmentally efficient.

2.3.3 Architectural Detailing

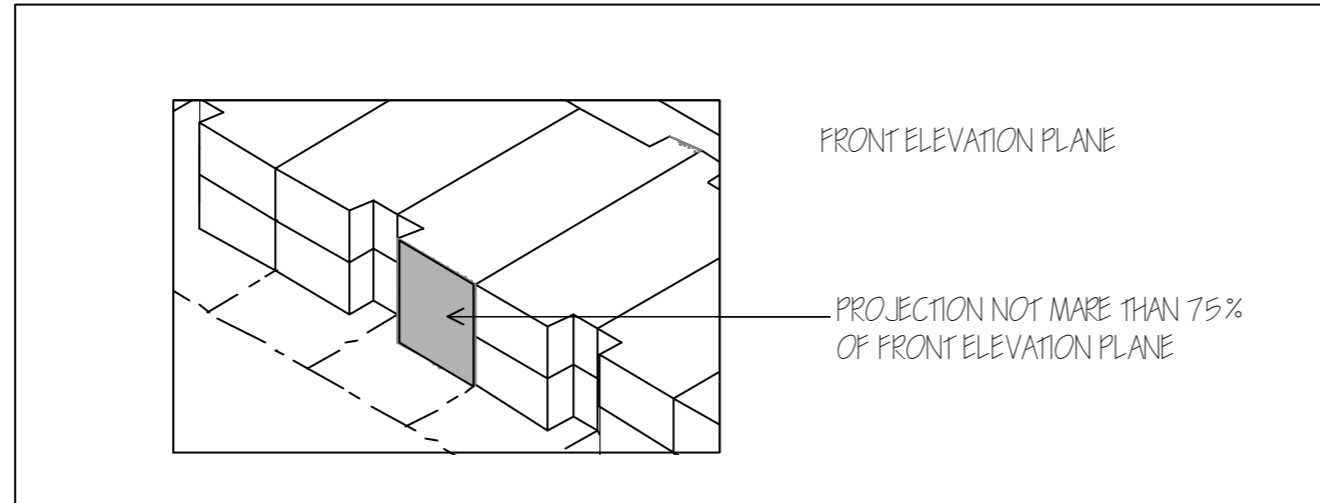


Figure 2.27
Projection on Front Elevation Plane

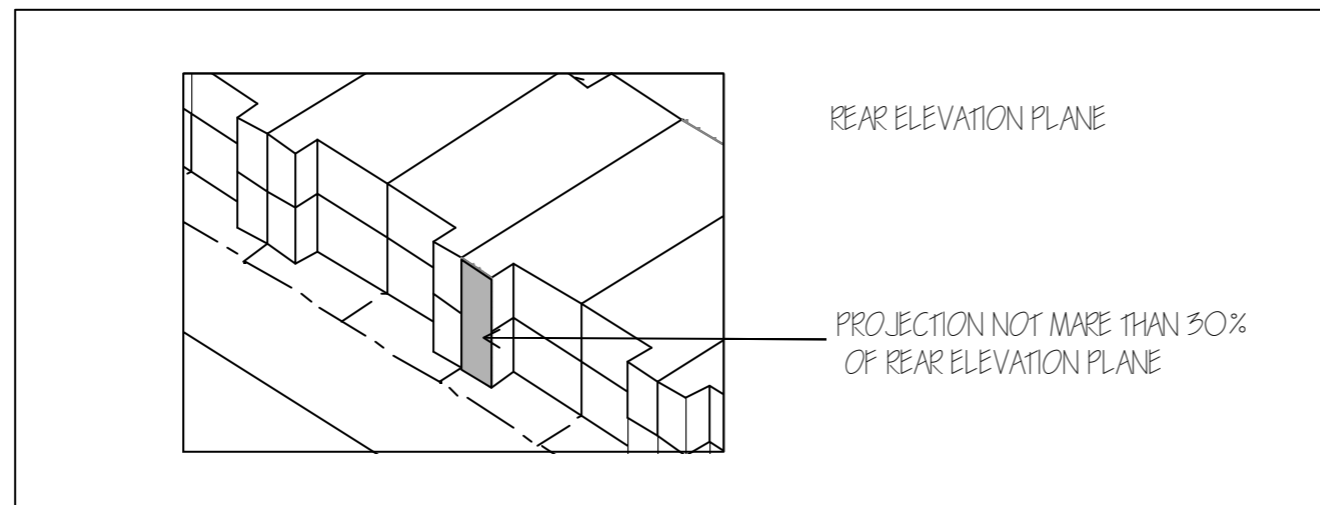


Figure 2.28
Articulation on Rear Building Elevation

ARCHITECTURAL DETAILING

RHYTHM

- Façade relief via vertical or horizontal wall breaks, insets, light and air wells, projecting decks or porches, bays, mouldings, material changes, or any other relief must be organised in a stylistically appropriate way, proportioned and scaled to create a coherent and fully integrated composition which is consistent around corners and into roof massing.

WALL OPENINGS

- Windows in any wall plane of any building elevation must align with one another or otherwise be proportionally or symmetrically composed.
- Windows should be sized and divided to be compatible with the scale of the wall or structure in which they occur, and may be stylistically or any type, shape or materials appropriate to the overall character of the project.
- Architectural shading devices shall conform to the architectural character established for the project.
- Projections are encouraged on front façade but shall not be more than 75% of the total elevation plane. Creative articulations are also encouraged for rear building elevations with a maximum projections of 30% of the total elevation plane.

ROOF FORMS

- Mechanical equipment on roofs must be completely obscured from view from the street and surrounding dwellings by parapets or screening entirely appropriate to the overall architectural character. Pitched roof massing or parapets integral with the building's character are the preferred alternatives.

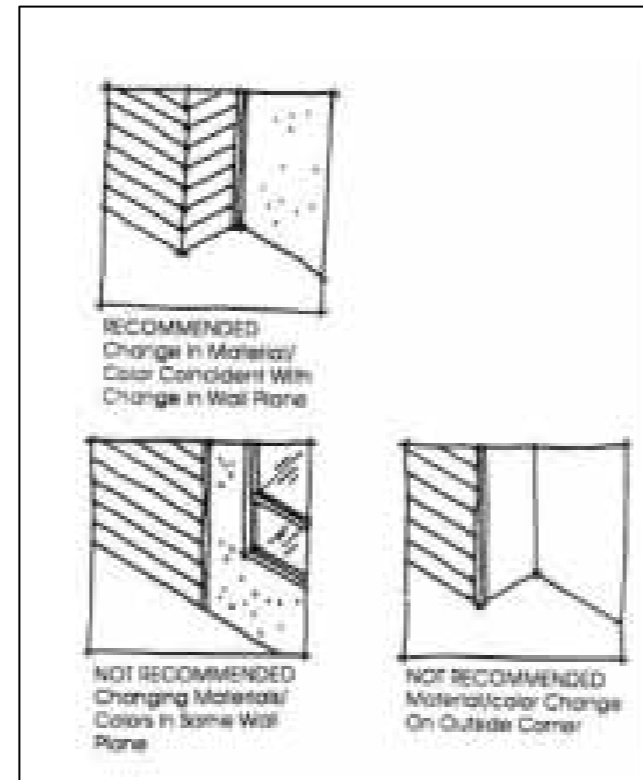


Figure 2.29
Possible Change in Colour

ARCHITECTURAL DETAILING

MATERIALS AND COLOUR

- Roofing materials exposed to public views from any angle must be architecturally appropriate thematically with respect to colour and type. Harmony between roofing materials and wall must be established.
- Use or colour variations at individual unit facades to enhance unit identity shall be considered only when facades are distinguished by vertical wall breaks or offsets.
- Colour or continuous horizontal trims shall not be changed except at inside corner breaks transitioning to another unit. Colour change to trims within the same building shall be avoided except at individual residential units such as bungalow or zero lot line.
- Variations in colour and texture at successive floor levels or varying unit facades shall also be considered.

2.3.3 Mechanical and Utility Appliances

Mechanical and utility appliances refer to appliances such as air conditioning equipments, service ducts for air-cons, drying yard, water tank, satellite dish, antenna etc.

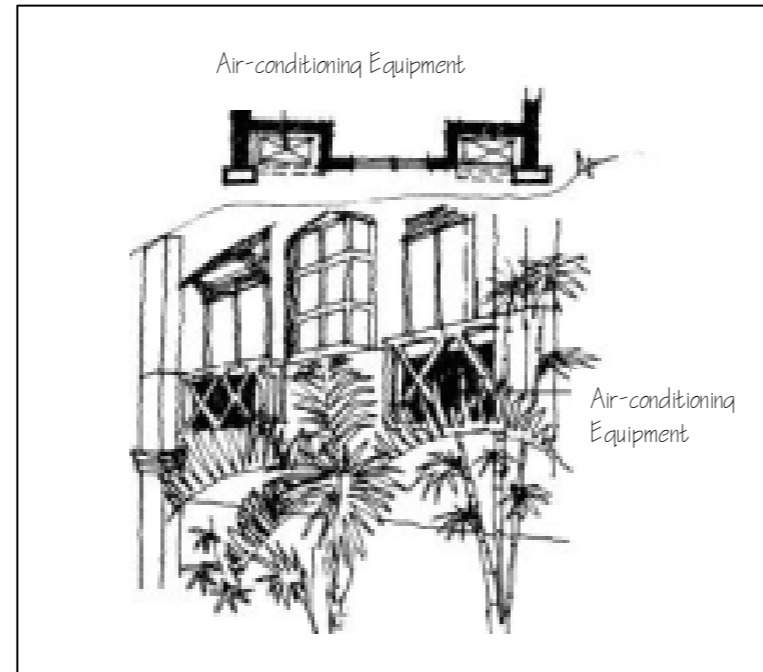


Figure 2.30
Compartment for Air Conditioning Equipment

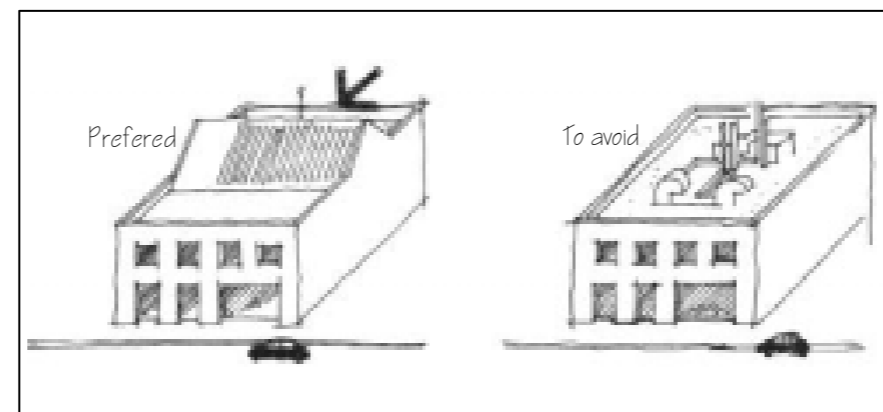


Figure 2.31
Enclosed Service Equipment on Roof

MECHANICAL & UTILITY APPLIANCES

- Air conditioning equipments should be contained in compartments that are designed as an integral component of the building to ensure they are hidden from view particularly from the public street. Air conditioning ducts shall not be exposed on the external surfaces of the buildings.
- Drying yards for multi-unit dwellings should be incorporated in building design to ensure that they are hidden from public view. Yard area should have minimum size of 6 sq.m to allow for natural ventilation and light. The minimum width shall be 1.2m.
- Building design shall also take into consideration of placements of aerial and satellite dishes. For high-rise residential buildings, a central reception system should be incorporated into building design. For other residential buildings, aerial and satellite dishes shall be located to avoid adverse impact on the amenity of adjoining buildings as well as character and appearance of the streetscape.
- Water tank for high-rise residential buildings shall be incorporated into building design and architecturally expressed as feature within the cap zone of the building.
- No service ducting shall be exposed on the external surface of the buildings.

2.4 PROVISION OF PUBLIC AMENITIES

Public amenities defined under the provision of this guideline refer to amenities that need to be provided within development plot particularly strata residential developments for the use of the residents. It includes all amenities such as surau, mortuary/holding room, nursery/kindergarten facilities, laundrette, cafeteria, multi purpose room/hall and management office.

It does not include public amenities for wider neighbourhood or community such as schools, library, food court, mosque, surau (for landed residential area) and other religious facilities, which are already demarcated in the Proposal Map of the Local Plan and will be covered under separate guideline of this Manual.

Provision Threshold is the minimum limit for any amenity to be able to provide service for. In most cases the provision threshold relates to minimum population requirement or unit for housing. This minimum provision threshold will be the minimum standards for requirement of public amenities.

PUBLIC AMENITIES

- All strata residential developments must provide for the following public amenities according to the threshold and requirements as in **Table 2.8** -
 - i. Surau
 - ii. Holding Room
 - iii. Nursery/Kindergarten
 - iv. Laundrette Room
 - v. Cafeteria
 - vi. Multi-purpose Room/Hall
 - vii. Management Office

Table 2.8 Standard for Provision of Public Amenities for Strata Residential Development

Public Amenity	Provision Threshold	Minimum Size
Surau	1 for every 500 dwellings*	0.25 ha. land area
Mortuary/holding room	0.11sm per dwelling unit	16.45sm floor area (Should be located adjoining surau)
Kindergarten & Nursery Facilities	1 for every 500 units**	0.20 ha. land area or 1090sm floor area
Laundrette Room	0.18sm per dwelling unit	87sm floor area (Min. room size shall be 4.5m x 5.8m)
Cafeteria	1 for every 1000 units	179sm floor area
Multi-purpose Room/Hall	0.45sm per dwelling unit	-
Management Office	1 for every development project	40sm floor area

Note: * Based on Piawaian Perancangan Kemudahan Masyarakat JPBD
 ** Based on the Physical Planning Guidelines for the Multimedia Super Corridor
 GFA is in square meter

PUBLIC AMENITIES

Surau

- Surau for strata residential developments shall be designed based on the following criteria: -
 - i. Freestanding building
 - ii. Located near parks and pedestrian links to facilitate easy access and be incorporated as part of the public space network
 - iii. Establish itself as a focal point to encourage a sense of identity for each neighbourhood or residential development
 - iv. Building should project an image compatible with character of the residential neighbourhood within which it is set
 - v. Design shall incorporate the iconography of Malaysian and Islamic building elements and principles
 - vi. Classes can be incorporated as part of the surau
 - vii. Provision for parking for the disabled shall also be addressed and shall follow provision standard as highlighted in **Chapter 11** of this Manual. *See also Disabled Parking*

Mortuary/Holding Room

- Such amenities is required and is most often to be placed adjoining the surau.
- The room is used mainly for preparation of burial of any residents in the strata development.
- The room should be well accessible especially from car parking areas.

Nursery And Kindergarten

- Nursery and Kindergarten facilities for strata residential developments shall be provided and designed based on the following criteria: -
 - i. Freestanding building or located at ground level of the block
 - ii. Located nearest to parks and pedestrian links to facilitate easy access without having to cross any street.
 - iii. Building design shall provide bright open space with colourful and integrated

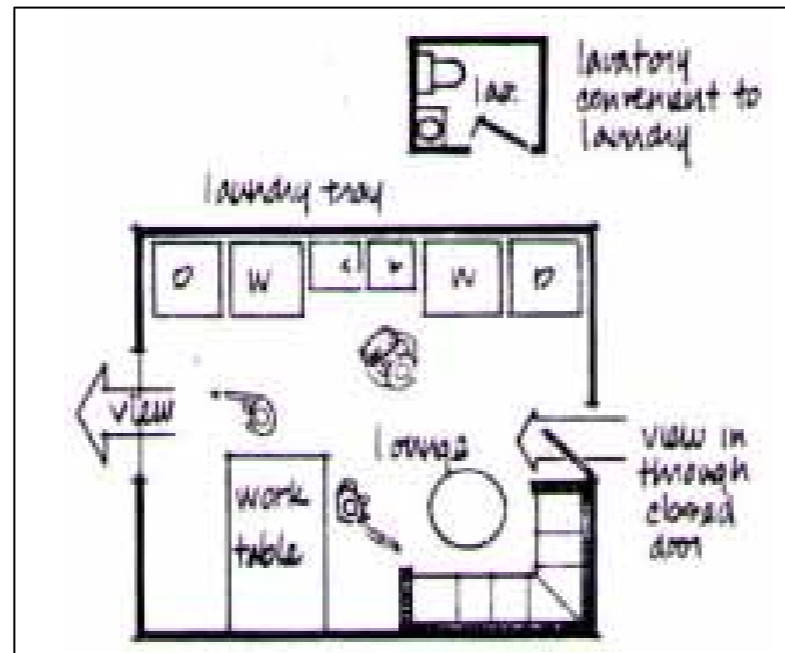


Figure 2.32
Example of Laundry Room Orientation

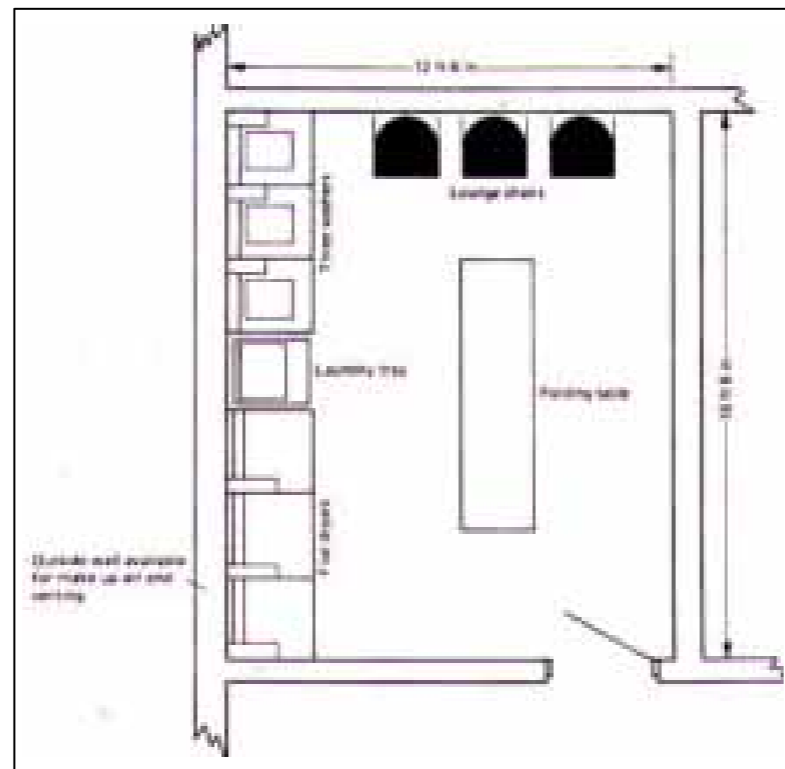


Figure 2.33
Typical Arrangement of Laundry Room

PUBLIC AMENITIES

- iv. Play equipments that can nurture and enhance the children's psychological development. Garden or play area should have a minimum area of 230 sq.m. Play equipments shall conform to SIRIM standards.
- v. Site coverage shall be not more than 30% of the total land area for free-standing building
- vi. Outdoor play area should be physically segregated from other activities particularly vehicular circulation areas such as street and car parking areas. Plant species used as fencing shall be 'child-friendly'. Guidelines as stated in **Putrajaya Fencing Design Guidelines Manual** should be adhered to.
- vii. Maximum building height 2 storeys for free-standing building
- viii. Building shall incorporate low windows at child eye level
- ix. Lay by for drop-off, pick-up area, and waiting area for parents shall be provided for a minimum length of 3 cars. Layout plan should indicate total gross net areas of indoor play, outdoor play, roofed shade and other outdoor shade areas

Laundrette Room

- Laundrette room shall be located near elevators and should be sited near main movement patterns and not in secluded areas of buildings or development site. It should also be sited on the ground floor of the building and should ideally be provided for every block within the development area.
- It should be visible from corridors and walls should be of glass or contained glass panels. Natural light and views of the outdoors should also be provided for. It is desirable to achieve a close visual link between the laundry and natural focal points in the building circulation system.
- Adequate space for the equipment, for working, for passage and for equipment servicing shall be ensured. Tables of adequate size for folding laundry should be provided as well as sufficient numbers of washers and dryers.

PUBLIC AMENITIES

Multi Purpose Room/Hall

- Multi purpose room/hall can be located on the ground floor of apartment block or ideally in separate building from the residential units.
- A multi purpose room/hall should be located so that its entrance and interior can be observed from nearby public space, apartment units, buildings or streets.
- A multi purpose room/hall might include a large activity room with adjacent kitchen, a smaller room for meeting, men's and women's toilets, appropriate storage and a janitor's closet.

Management Office

- Management office can be located on the ground floor of apartment block or ideally in separate building from the residential units and near the main entrance of the area.

Cafeteria

- Cafeteria should be located on the ground level of the apartment block and should preferably face public spaces such as parks or main entrance into the block.
- Circulation space should be allowed adjacent to doors and serving counters. Seating area should accommodate both large and small groups.
- Rubbish trap, oil interceptor and separator should be installed for all cafeteria.

2.5 PUBLIC UTILITIES

Public Utilities defined under the provision of this guideline refer to utilities that need to be provided within development plot for the use of the residents. It includes all utilities such as electric substations and feeder pillars, fibre distribution house (FDH) and solid waste storage and collection facilities. It does not include the higher catchments or capacity public utilities such as water tank, sewerage treatment plant and others, which are already demarcated in the Proposal Map of the Local Plan and will be covered under separate guideline of this Manual.

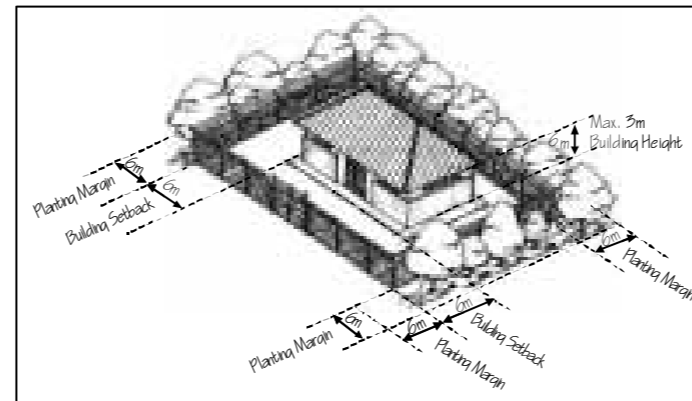


Figure 2.34
Electric Substation On Free Standing Site
Source: UDG Volume 3, Part 4: Service Industry, Transport and Public Utilities

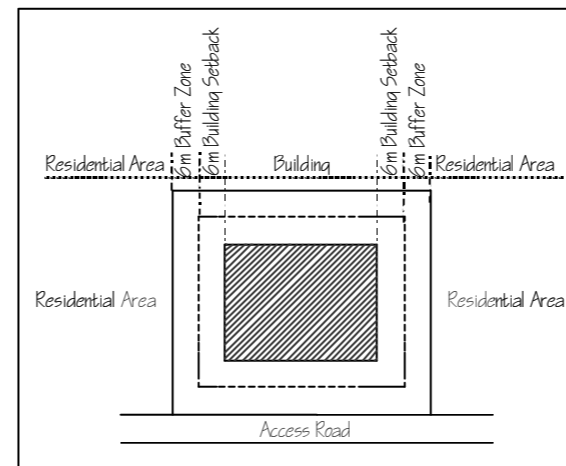


Figure 2.35
Setback for Electric Substation

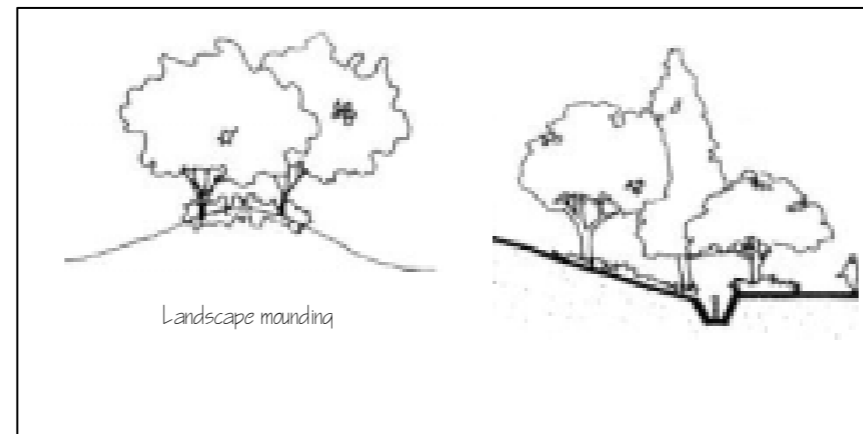


Figure 2.36
Possible Option to Fencing for Utility Reserve

PUBLIC UTILITIES

- Public utilities shall be provided by all residential development within the development plot as according to the standard requirements in **Table 2.9**.

Table 2.9 Standard for Provision of Public Utility for Residential Development

Public Utility	Provision Threshold	Min. Size
TNB sub-station	1 : 100 dwellings	0.03 ha
Fibre Distribution House (FDH)	1 FDH : 500 dwellings (final decision depends on telecom requirements/level of service)	0.02 ha
Refuse Bins	1 for every unit (landed properties)	
Refuse Collection Centre/House	1 for every cluster of strata development of minimum 500 units	

Electric Substation

- Location of electric substations for strata residential developments should be fully integrated within the development and shall be determined at preliminary layout stage. The building should be 12.2m x 5.5m built to blend with the individual residential blocks. It shall be located to have direct vehicle access for easy maintenance by the responsible agency.
- For independent substations, size of plot of land shall not be less than 16.5m x 13.5m with front road setback of minimum 6.0m and side/back of 3.0m (**Figure 2.35**). Buffer of 6m shall also be provided outside substation reserve and this buffer shall be planted with appropriate trees for screening.
- For landed residential development, electric substation shall be fully screened from view and public access using landscaping measures such as trees and earth moulding (**Figure 2.30**). Guidelines as stated in **Putrajaya Fencing Design Guidelines Manual** shall be fully adhered.

Fibre Distribution House (FDH) is telecommunication infrastructure, which terminate the fibre optic cable of the main telecommunication backbone before the final lines/coaxial lines/multi mode fibre optic lines are pulled to individual consumers.

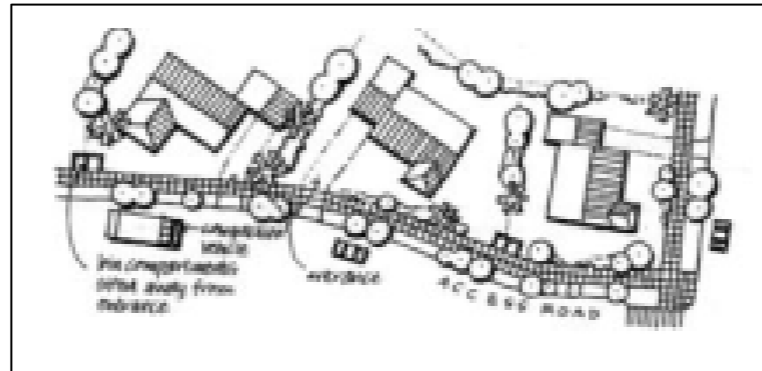


Figure 2.37
Location of Refuse Compartments for Landed Residential Development
Source: UDG Volume 3, Part 4: Service Industry, Transport and Public Utilities

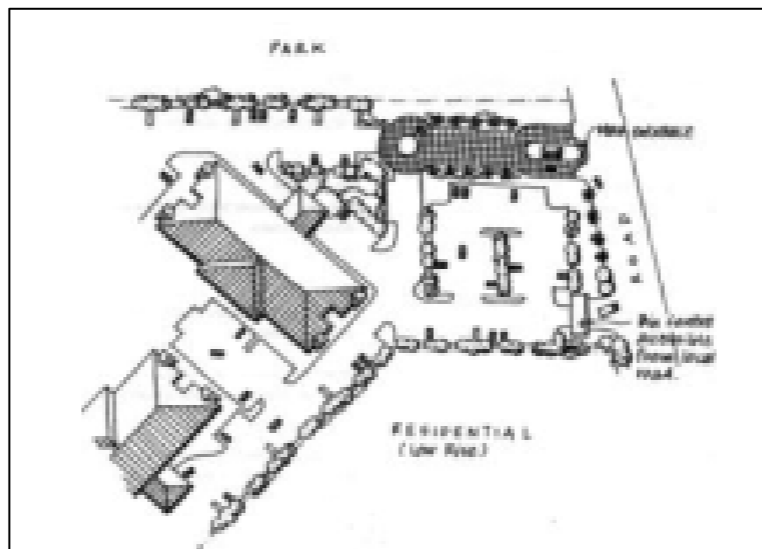


Figure 2.38
Location of Bin Centre for Strata Residential Development
Source: UDG Volume 3, Part 4: Service Industry, Transport and Public Utilities



Figure 2.39
Recycling Bin

PUBLIC UTILITIES

- Design of substations shall integrate together with the overall theme of the development and shall use the same construction materials and colour schemes as adjacent residential buildings with TNB's logo appearance on the building.

Fibre Distribution House (FDH)

- A FDH must be provided for all residential development according to threshold as indicated in table 2.10
- Appearance and finishes of FDH must be visually compatible with the character of the surrounding residential development.
- Connection to individual consumers from the FDH shall be via underground clutch buried at least 1.5m in depths within its own designated reserve.

Refuse Bins

- Bin compartments shall be provided for refuse bins and shall be conveniently accessible to garbage collectors.
- Compartments shall be appropriately located at the front but away from the main entrance of the house, be well ventilated yet enclosed to protect from rain and stray animals.

Bin Centres/Refuse Chambers/House

- Bin centres/refuse chambers shall be provided for all multi dwelling units. Size and numbers depends on the scale of the building.
- Bin centres shall be located at the basement or ground floor near loading bays.
- Design shall include the followings:-
 - Good ventilation and lighting level (daylight or artificial)
 - Glazed wall and impervious ceramic floor or similar
 - Proper drainage for access water/liquid away from public area/walkway
 - Fully screened from public view. Strong loured metal doors are encouraged.

PUBLIC UTILITIES

- Access for garbage collection should be provided at the early design stage to incorporate the following:-
 - i. To maintain a minimum height clearance of 4.1 meters, wherever the path for the garbage trucks have been identified.
 - ii. To maintain a minimum slope of 1:12 for the design of access road for garbage trucks.
 - iii. Provision for “ 3 point turns” or “cul-de-Sac” should be incorporated wherever necessary

2.6 Environmental Consideration

In order to minimize the impact of the environment it is important that the Environmental Management Plan (EMP) be complied throughout every phase of the development project.

EMP contains detail description of practices to be followed and activities to be undertaken for the environmental management of the development area.

ENVIRONMENTAL CONSIDERATION

Noise Pollution Control

- Noise at the boundary of the development should not exceed 65dB(A) during the day and 55dB(A) during the night.
- During construction times, that noise from the works shall not exceed 65dN(A) in terms of 30 min Leq at any noise sensitive receivers (NSR) at any time between 0600 to 2000 hours.
- All contractors will be required to submit lists of mechanical plants and methods statements for the control of noise level.
- An area 10m x 10m should be provided for air quality monitoring by the DOE. A signboard stating the use of the monitoring site should be erected. The criteria for the selection of the site are:-
 - i. The site should be located not less than 5m from the roadside.
 - ii. No structure that will inhibit air movement is allowed within 3m of the borders of the site.
 - iii. The site should be located in an open area with no restrictions at 120 degrees angle from above.
 - iv. The site should be located near a power source, preferably a TNB substation.

Air Quality

- Development activities shall be carried out in phase. Mitigation measures such as water spraying, wheel washing through and turfing should be provided and implemented during construction phase to control and minimize dust desparation. Air quality should not exceed the recommended Malaysian Guidelines during earthwork and construction phase as in **Table 2.10.**

Table 2. 10 Air Quality Standard

Parameter	Specification	
	Averaging Time	Malaysian Guidelines
Total Suspended Solid	24 hours	260µg/m ³
Lead	3 months	1.5µg/m ³
Sulphur dioxide	24 hours	0.04 ppm
Nitrogen Dioxide	1 hour	0.17 ppm
Carbon Monoxide	8 hours	9 ppm

ENVIRONMENTAL CONSIDERATION

- All open spaces and green corridors shall be landscaped to reduce air pollution.
- Buffer area between road and residential areas shall also be planted with tall trees to minimize noise and air pollution.

Water Quality

- Sewage, wastewater or effluent containing sand, cement, silt or any other suspended or dissolved material is not permitted to be discharged without the prior consent of the relevant Authority (DOE). Any such discharged shall comply to the Environment Quality (Perbadanan Putrajaya) (Lake Pollution Control) Regulations 1998. **Table 2.11.**

Table 2.11 Putrajaya Ambient Lake Water Quality Standards and Standard for Discharge into Lake Area and Sewer

Parameters	Unit	Putrajaya Ambient Lake Water Quality Standards	Standard for discharge into the lake area or onto land	Standard for discharge into sewer
Temperature	°C	-	38	45
pH		6.5-9.0	6.0-9.0	5.0-9.0
BOD	mg/l	3	10	400
COD	mg/l	25	30	1000
Suspended solids	mg/l	50	50	400
Mercury	mg/l	0.001	0.001	0.10
Cadmium	mg/l	0.005	0.01	1.0
Hexa-Chromium	mg/l	0.05	0.05	2.0
Arsenic	mg/l	0.05	0.05	2.0
Cyanide	mg/l	0.02	0.02	2.0
Lead	mg/l	0.05	0.05	2.0
Tri-Chromium	mg/l	-	0.20	10
Copper	mg/l	1.0	0.10	10
Manganese	mg/l	0.1	0.20	10
Nickel	mg/l	0.02	0.20	10
Tin	mg/l	0.05	0.20	10
Zinc	mg/l	5	1.0	10
Boron	mg/l	1	1.0	50
Iron	mg/l	0.3	1.0	2.0
Phenol	mg/l	0.01	0.001	2.0
Free Chlorine	mg/l	-	1.0	-
Sulphide	mg/l	-	0.5	2.0

ENVIRONMENTAL CONSIDERATION

- ? Sedimentation ponds, silt traps and drainage systems to control surface run-off must be provided before the commencement of any earthworks. Discharges from sediment basins or any other discharge point from the site shall be collected, and removed via a suitable and properly designed temporary drainage system and disposed of at a location and in a manner that will cause either pollution nor nuisance.
- Solid waste material shall not be disposed to any watercourse or drainage facility.
 - Temporary drainage works and all other precautions shall be taken to ensure the avoidance of damage by flooding and silt washed down from the site.
 - All domestic wastewater are to be connected to the central wastewater sewerage system. No discharges into the storm water drainage system are allowed. This is to ensure that the ambient water quality of all inland waters and Putrajaya Lake are preserved at their high standard.
 - No discharge of any wastewater into the drainage system is allowed. All wastewater are to be connected to the central sewerage system. The drainage system is only to be used for removal of surface runoff from rainfall.
 - All toilets, domestic and commercial wastewater is to be connected to the central sewerage system. No individual sewerage system shall be allowed.

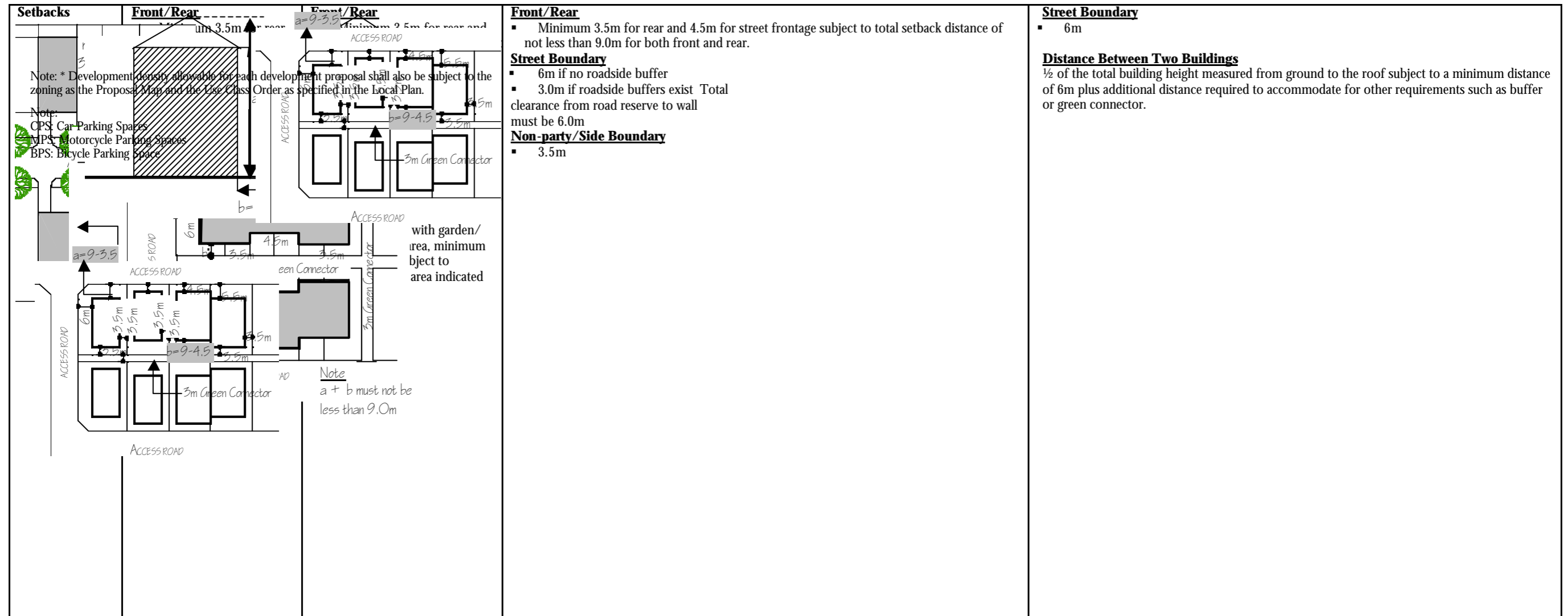
ENVIRONMENTAL CONSIDERATION

Waste Management

- The 4R's of waste management should be emphasized with reduction being the predominant "R" and followed by "Reuse", "Recycle" and "Recover". Awareness campaign should be organized to promote the 4R's of waste management.
- Recycling depot should be included in the design of community centre to encourage people to make recycling a way of life.
- Biodegradable waste should be disposed at an approved dumping site as soon as possible.
- Where necessary, drainage control measures should be constructed around waste storage areas.
- In the event those schedule wastes are generated especially at the Transport Terminal, these should be stored, handled and disposed according to the Environment Quality (Schedule Waste) Regulations, 1989.
- No open burning of solid waste shall be allowed.
- All solid waste are recommended to be sorted on site into two types-those that can be recycled and those that can be disposed.



	TYPE OF HOUSING							
	Detached/Bungalow	Zero Lot Line	Semi-Detached Houses	Terrace House	Town House (Strata)	Condominium	Apartment	Affordable Homes
Maximum Density *	8 units/ acre	12 units/ acre	10 units/acre	16 units/acre	32 units/acre	52 units/acre	60 units/acre	75 units/acre
Minimum lot size	<ul style="list-style-type: none"> ▪ Type A & B – 743m² ▪ Type C – 743m² ▪ Type D – 557m² ▪ Type E – 446m² 	▪ 260m ²	▪ 297m ²	<ul style="list-style-type: none"> ▪ Type A – 153m² ▪ Type B – 133m² 	1 hectare	1 hectare	1 hectare	1 hectare
Minimum Lot Frontage	<ul style="list-style-type: none"> ▪ Type A & B – 24m ▪ Type C – 24m ▪ Type D – 18m ▪ Type E – 18m 	▪ 10m	▪ 12m	<ul style="list-style-type: none"> ▪ Type A – 6.7m ▪ Type B – 6.7m 	Not applicable	Not applicable	Not applicable	Not Applicable
Maximum Floor Area (Gross)	<ul style="list-style-type: none"> ▪ Type A & B – 465m² ▪ Type C – 418m² ▪ Type D – 344m² ▪ Type E – 344m² 	▪ 223m ²	▪ 214m ²	<ul style="list-style-type: none"> ▪ Type A – 200m² ▪ Type B – 149m² 	<ul style="list-style-type: none"> ▪ Type A – 200m² ▪ Type B – 149m² 	▪ 130m ² (min.)	<ul style="list-style-type: none"> ▪ Type A – 111m² (min.) ▪ Type B – 88m² (min.) 	▪ 65m ² (min.)
Maximum Height	▪ 2 storeys	▪ 2 storeys	▪ 2 storeys	▪ 2 storeys	▪ 3 storeys	▪ 8 storeys	▪ 12 storeys	▪ 12 storeys
Parking	▪ 2 Car parking spaces : 1 unit	▪ 2 Car parking spaces : 1 unit	▪ 2 Car parking spaces : 1 unit	▪ 1 Car parking space : 1 unit	▪ 1 Car parking space : 1 unit	CPS : 2CPS:1unit +10% visitors MPS: 50% of total housing units BPS : 1rack:50 housing units	CPS : 1CPS:1unit +10% visitors MPS: 50% of total housing units BPS : 1rack:50 housing units	CPS : 1CPS:1.5unit +10% visitors MPS: 50% of total housing units BPS : 1rack:50 housing units
						HPS : 1% on top of the required parking provision or minimum 2 parking spaces whichever is higher		



2.12 SUMMARY

3.0 SUB COMMERCIAL CENTRE

3.1 USE

This guideline shall be used for all commercial developments in the Sub-Commercial Centre (SCC) as indicated in the Proposal Map of the Local Plan area for Precinct 7, 8, 9 and 10, Putrajaya.

The SCC within the Local Plan area is located in PB7.3 and PB8.3 (Figure 3.1).

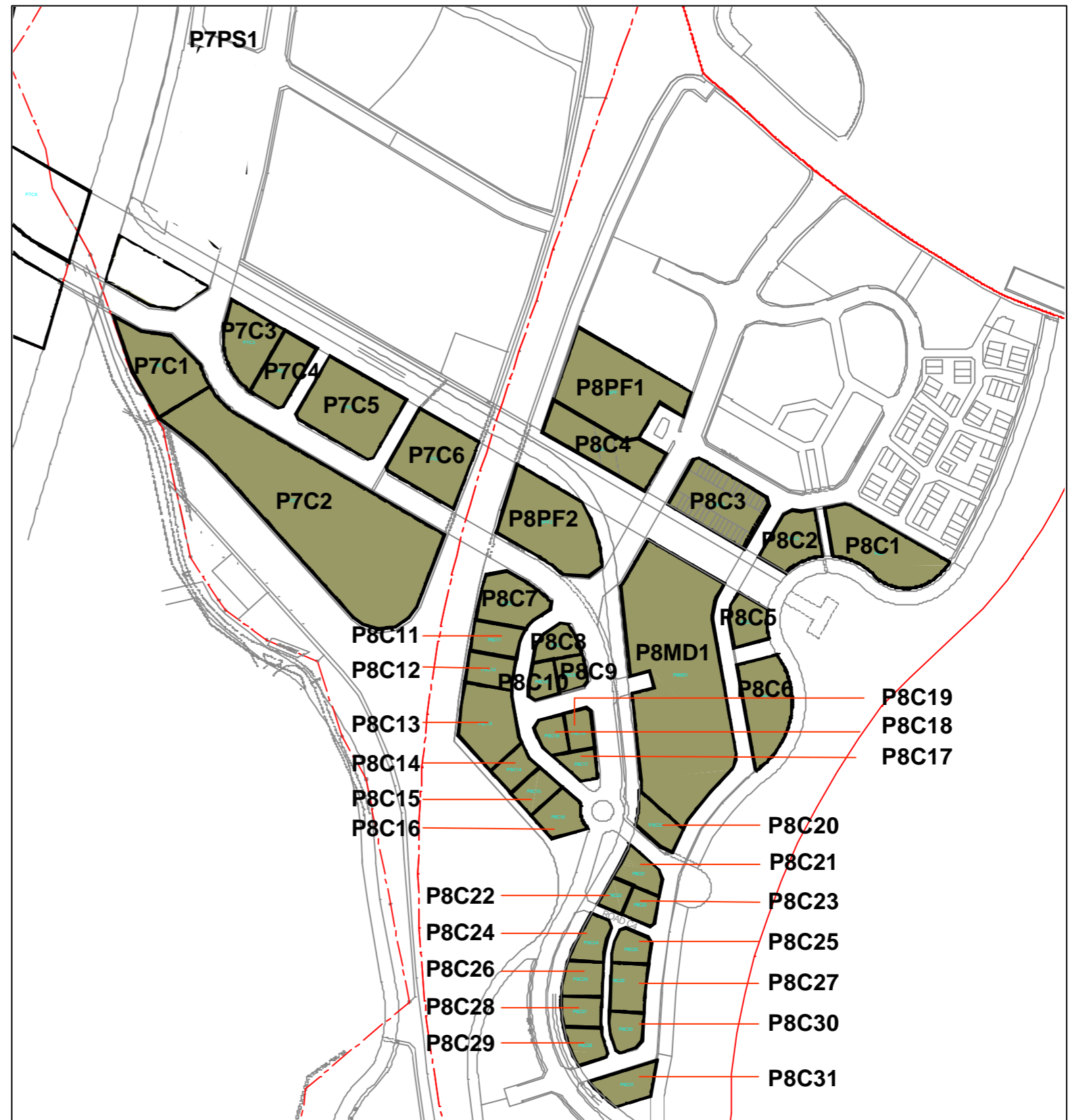


Figure 3.1
Sub-Commercial Centre and Plot Identification

3.2 PHYSICAL AND SITE PLANNING

3.2.1 Setback

Setback refers to the minimum distance and a property boundary or a wall of another building

Building are setback at different distance from the boundary line to achieve the intend urban streetscape and frontages, to allow for easements for access and landscaping, as well as to satisfy mandatory regulations as prescribed in the Building-By-Law.

Some plots in the Sub-commercial Centre may have two or more front setbacks requirements and no rear/side setback requirements depending on its location. Some plots on the other hand may have two different side setback requirements. Therefore, all plots in the Sub-commercial Centre shall need to refer to setback requirements as specified in this Manual.

Build-to-line refers to compulsory alignment along a specific edge that is parallel to the street or public open space. It is a line graphically indicated as a setback dimension along which a façade or wall must be placed to enforce building alignment along specific edge.

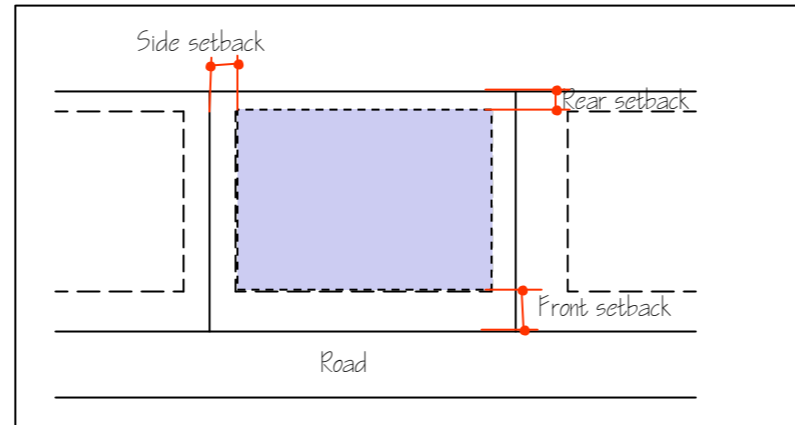


Figure 3.2
Setback

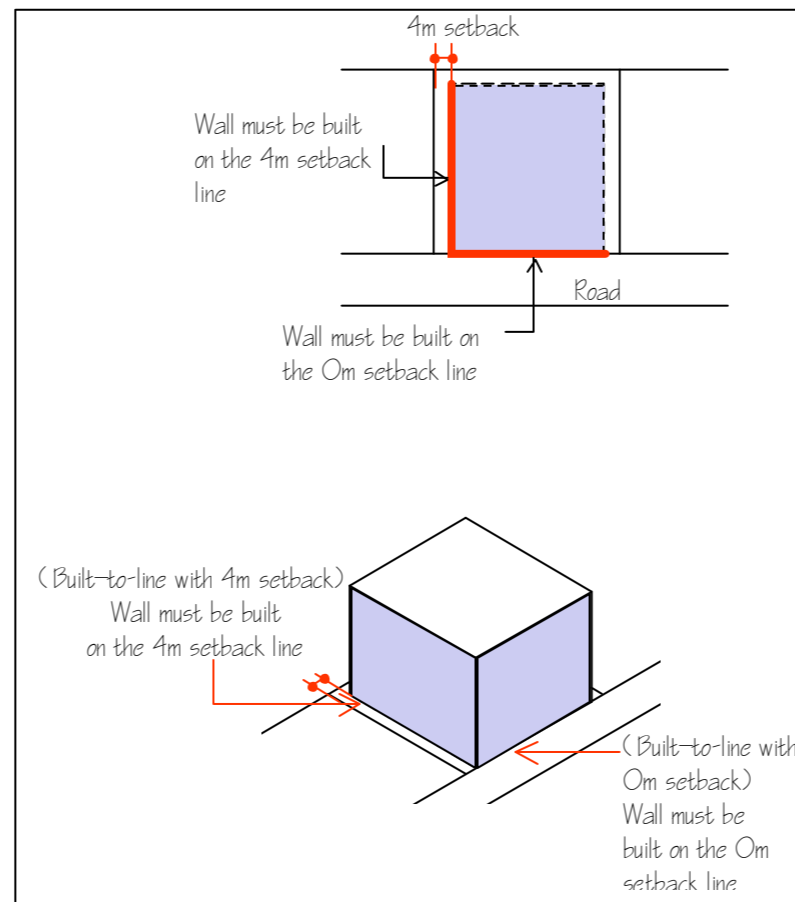


Figure 3.3
Build-to Line on Setback Line

BUILDING SETBACK

- Buildings shall be setback to the minimum dimensions as shown in the **Table 3.1, Table 3.2 and Table 3.3**.
- Where build-to-line is indicated together with the setback dimensions, façade shall be erected on the setback line (**Figure 3.3**).
- Build-to-line walls on 0m setback line shall not have any extruding projection outside the setback lines.

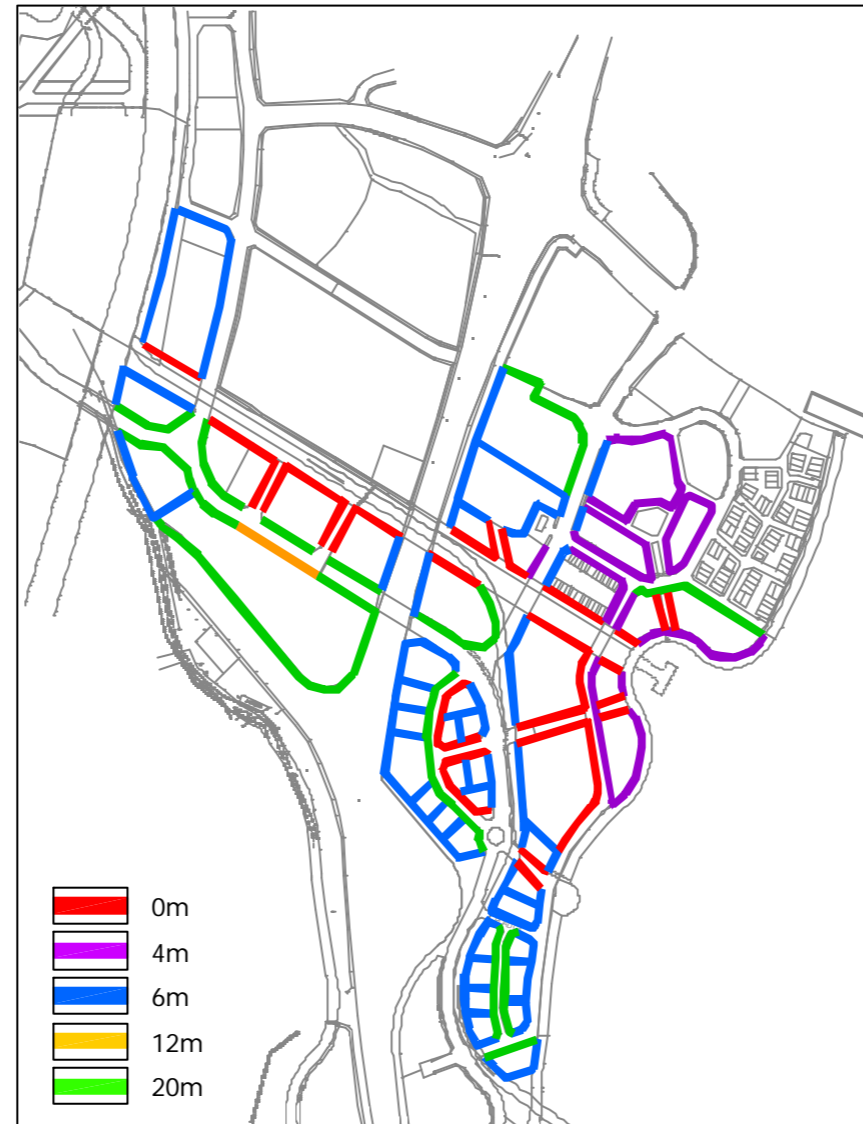


Figure 3.4
Building Setback

BUILDING SETBACK

Table 3.1 **Setback Requirements for Commercial Plots in PB 7.3**

Plot No	Min. Setback (metre)
P7C1	Front facing spine road 32m – 12m Rear – 6m Side – 6m
P7C2	Front facing spine road 32m – 12m (Built-to-line) & 20m Front facing Primary Distributor Road – 12m Side facing Secondary Distributor Road – 12m Side adjoining Plot P7C1 – 6m
P7C3	Front facing spine road 32m – 12m Front facing Urban Park – 0m (Built-to-line) Side adjoining Plot P7C4 – 0m
P7C4	Front facing spine road 32m – 12m Front facing Urban Park – 0m (Built-to-line) Side adjoining Plot P7C3 – 0m Side – 0m (Built-to-line)
P7C5	Front facing spine road 32m – 12m Front facing Urban Park – 0m (Built-to-line) Sides – 0m (Built-to-line)
P7C6	Front facing spine road 32m – 12m Front facing Urban Park – 0m (Built-to-line) Side facing Secondary Distributor Road – 6m Side – 0m (Built-to-line)

Table 3.2 **Setback Requirements for Commercial Plots in PB 8.3**

Plot No	Min. Setback (metre)
P8C1	Front facing promenade – 4m Rear – 12m Side fronting green connector – 0m
P8C2	Front facing Urban Park – 0m Front facing Local Road – 4m Side fronting green connector – 0m
P8C3	Front facing Urban Park – 0m (Built-to-line) Side fronting Spine Road – 6m Side fronting Local Road – 4m (Built-to-line) Rear – 4m (Built-to-line)
P8C4	Front facing Urban Park – 0m (Built-to-line) Side fronting Spine Road – 4m Side fronting Secondary Distributor Road – 6m Rear – 6m
P8C5	Front facing Urban Park – 0m Front facing promenade – 4m Front facing Local Road – 4m Side – 0m

BUILDING SETBACK

Table 3.2 Setback Requirements for Commercial Plots in PB 8.3 (cont.)

P8C6	Front facing promenade – 4m Front facing Local Road – 4m Side – 0m
P8C7	Front facing Local Road – 12m Rear facing Secondary Distributor Road – 6m Side facing Spine Road – 6m Side adjoining Plot P8C11 – 6m
P8C8	Front facing Spine Road – 6m Front facing Local Road – 0m Side adjoining Plot P8C9 & Plot P8C10 – 6m
P8C9	Front facing Spine Road – 6m Side adjoining Plot P8C8 – 6m Side facing access road – 0m Rear adjoining Plot P8C10 – 6m
P8C10	Front facing Local Road – 0m Side adjoining Plot P8C8 – 6m Side facing access road – 0m Rear adjoining Plot P8C9 – 6m
P8C11	Front facing Local Road – 12m Rear facing Secondary Distributor Road – 6m Side adjoining Plot P8C7 & P8C12 – 6m
P8C12	Front facing Local Road – 12m Rear facing Secondary Distributor Road – 6m Side adjoining Plot P8C11 & P8C13 – 6m
P8C13	Front facing Local Road – 12m Rear facing Secondary Distributor Road – 6m Side adjoining Plot P8C12 & P8C14 – 6m
P8C14	Front facing Local Road – 12m Rear facing Secondary Distributor Road – 6m Side adjoining Plot P8C13 & P8C15 – 6m
P8C15	Front facing Local Road – 12m Rear facing Secondary Distributor Road – 6m Side adjoining Plot P8C14 & P8C16 – 6m
P8C16	Front facing Local Road – 12m Rear facing Secondary Distributor Road – 6m Side adjoining Plot P8C15 – 6m Side fronting open space – 6m
P8C17	Front facing Spine Road – 6m Front facing Local Road – 0m Side adjoining Plot P8C18 & Plot P8C19 – 6m
PBC18	Front facing Local Road – 0m Side adjoining Plot P8C17 – 6m Side facing access road – 0m Rear adjoining Plot P8C19 – 6m

BUILDING SETBACK

Table 3.2 Setback Requirements for Commercial Plots in PB 8.3 (cont.)

PBC19	Front facing Spine Road – 6m Side adjoining Plot P8C17 – 6m Side facing access road – 0m Rear adjoining Plot P8C18 – 6m
P8C20	Front facing Local Road and promenade – 6m (Built-to-line) Rear facing monorail reserve – 6m Side facing Local Road – 0m (Built-to-line) Side adjoining Plot P8MD1 – 6m
P8C21	Front facing Local Road and promenade – 6m (Built-to-line) Rear facing monorail reserve – 6m Side facing Local Road – 0m (Built-to-line) Side adjoining Plot P8C22 – 6m
P8C22	6m all around (Built-to-line for frontage facing promenade)
P8C23	Front facing access road – 12m Rear facing monorail reserve – 6m Side facing access road – 6m Side adjoining Plot P8C25 – 6m
P8C24	Front facing Local Road and promenade – 6m (Built-to-line) Front facing access road – 12m Side facing Local Road – 6m Side adjoining Plot P8C28 – 6m
P8C25	Front facing access road – 12m Rear facing monorail reserve – 6m Side adjoining plots P8C23 & P8C26 – 6m
P8C26	Front facing access road – 12m Rear facing monorail reserve – 6m Side adjoining plots P8C25 & P8C27 – 6m
P8C27	Front facing access road – 12m Rear facing monorail reserve – 6m Side adjoining plots P8C26 – 6m Side facing Local Road – 6m (Built-to-line)
P8C28	Front facing Local Road and promenade – 6m (Built-to-line) Front facing access road – 12m Side adjoining plots P8C24 & P8C29 – 6m
P8C29	Front facing Local Road and promenade – 6m (Built-to-line) Front facing access road – 12m Side adjoining plots P8C28 – 6m Side facing Local Road – 6m (Built-to-line)
P8C30	Front facing Local Road and promenade – 6m Front facing Local Road – 12m Rear facing monorail reserve – 6m Side adjoining open space – 6m
P8MD1	Front facing Local Road – 4m (Built-to-line) Front facing Urban Park – 0m (Built-to-line) Rear facing monorail reserve – 6m Side adjoining plot P8C20 – 6m

3.2.2 Plot Ratio

Plot Ratio as defined by the Town and Country Planning Act, 1976, is the ratio of the total floor area of a building to the area of the building plot as measured between the survey boundary lines or, if there are no survey boundary lines, between the provisional boundary lines.

3.2.3 Plinth Area/Site Coverage

Plinth Area as defined by the Town and Country Planning Act, 1972, is the proportion to be covered by building of the area of any lot.

Open Space Coverage is the portion of plot area outside plinth area. It may comprise of internal circulation, open space and both hard and soft landscape elements.

3.2.4 Gross Floor Area

Gross Floor Area (GFA) is the sum of the plan areas of all floor levels (inclusive of the plan area of all walls, windows, columns, elevator shafts) and the plan area of all internal and external stairs, landing, ramps, escalators, or other means of access between levels, or at each level in the building.

3.2.5 Building Height

Building Height is the limit to the vertical extent of a building. It is measured as a number of storeys or floors from the ground level within the Sub-commercial Centre within the Local Plan area.

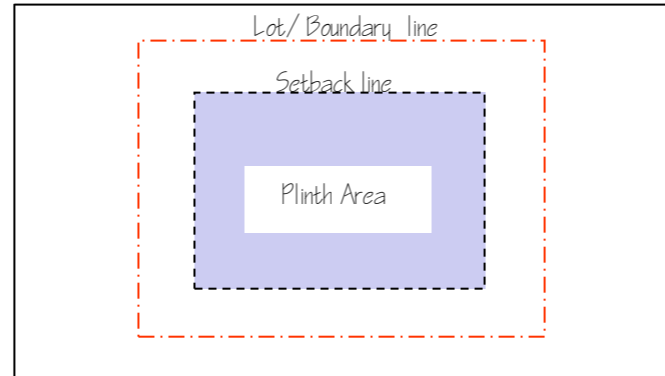


Figure 3.5
Plinth Area

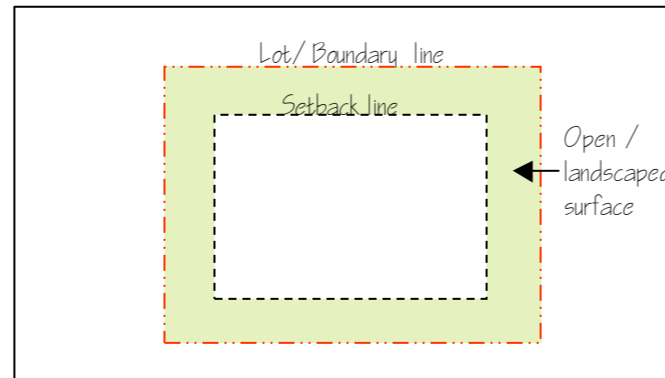


Figure 3.6
Open Space Coverage

OTHER PLANNING REQUIREMENTS

- Plot ratio, maximum gross floor area, maximum building height, plinth area and percentages of open space coverage for commercial development located within the Sub-Commercial Centre shall conform to the planning standard as indicated in **Table 3.3 and 3.4.**

Table 3.3 Planning Standard for Commercial Development in PB 7.3

Plot No	Max. Plinth (%)	Plot Ratio	Max Gross Floor Area sm (sf)	Height		Min. Open Space Coverage (%)
				No of Storey	Tower (Storey)	
P7C1	61	1.50	15479 (166,617)	4	8	39
P7C2	82	0.56	30936 (333,000)	2-3	-	18
P7C3	77	2.37	16956 (182,516)	4	8	23
P7C4	89	1.50	8680 (93,436)	2-4	-	11
P7C5	82	1.00	15175 (163,350)	2-4	8	18
P7C6	83	1.50	17421 (187,525)	2-4	-	17

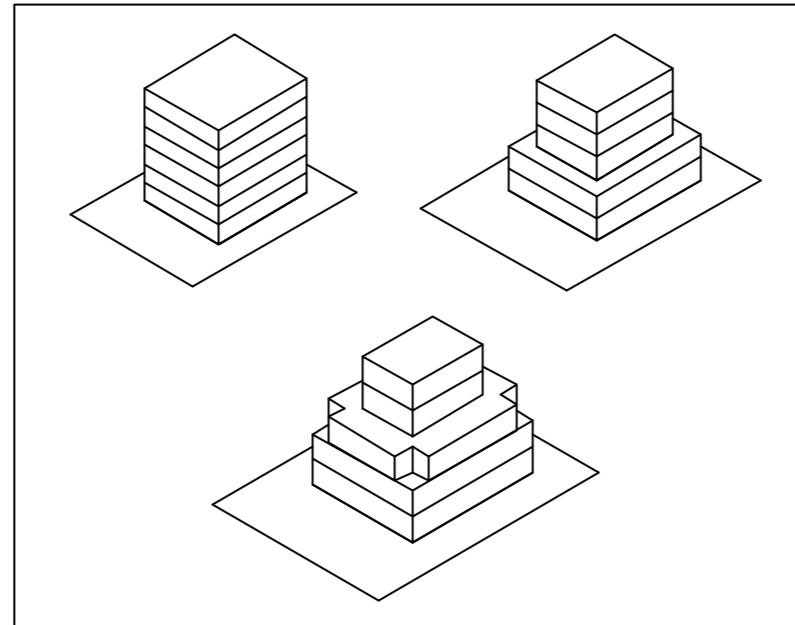


Figure 3.7
Possible Variation in Building Massing

OTHER PLANNING REQUIREMENTS

Table 3.4 Planning Standard for Commercial Development in PB 8.3

Plot No	Plinth (%)	Plot Ratio	Max. Gross Floor Area sm (sf)	Height		Open Space Coverage (%)
				No. of Storey	Tower (Storey)	
P8C1	71	2.50	31,059 (334,323)	2-4	-	29
P8C2	69	2.50	14,164 (152,460)	2-4	-	31
P8C3	94	2.08	22,891 (246,400)	4	-	6
P8C4	83	0.48	4,694 (50,530)	1	-	17
P8C5	86	0.78	2,792 (30,056)	1	-	14
P8C6	85	0.39	3,442 (39,204)	5-6	-	15
P8C7	69	2.13	(13,935) 150,000	5-6	-	31
P8C8	74	2.03	5,574 (60,000)	5-6	-	26
P8C9	63	2.55	5,574 (60,000)	5-6	-	37
P8C10	75	3.47	7,432 (80,000)	5-6	-	25
P8C11	56	2.24	7,432 (80,000)	5-6	-	44
P8C12	56	2.21	7,432 (80,000)	5-6	-	44
P8C13	70	4.00	34,478 (371,131)	5-6	14	30
P8C14	52	2.12	5,574 (60,000)	5-6	-	48
P8C15	52	2.06	5,574 (60,000)	5-6	-	48
P8C16	54	3.51	12,774 (137,500)	5-6	-	46
P8C17	75	2.75	5,574 (60,000)	5-6	-	25

OTHER PLANNING REQUIREMENTS

Table 3.4 Planning Standard for Commercial Development in PB 8.3 (cont.)

Plot No	Plinth (%)	Plot Ratio	Max. Gross Floor Area sm (sf)	Height		Open Space Coverage (%)
				No. of Storey	Tower (Storey)	
PBC18	81	2.55	5,574 (60,000)	5-6	-	19
PBC19	64	2.42	5,574 (60,000)	5-6	-	36
P8C20	70	2.30	5,574 (80,000)	4	6	30
P8C21	79	2.35	5,574 (80,000)	4	6	21
P8C22	63	2.42	5,574 (100,000)	5-6	-	37
P8C23	59	2.75	5,574 (60,000)	5-6	-	41
P8C24	54	2.19	5,574 (60,000)	5-6	-	46
P8C25	41	2.45	7,432 (80,000)	5-6	-	59
P8C26	42	2.74	7,432 (80,000)	5-6	-	58
P8C27	51	2.70	7,432 (80,000)	5-6	-	49
P8C28	45	1.45	5,574 (60,000)	5-6	-	56
P8C29	48	2.09	5,574 (60,000)	5-6	-	52
P8C30	44	2.55	9,290 (100,000)	4	6	56
P8MD1	93	1.50	74,419 (801,068)	4	8	7

- The ground floor in the principal building shall be a minimum of 3.6m floor-to-ceiling heights while other floors shall be between 3m and 4m floor-to-ceiling height.