LOCAL PLAN MANUAL

P U T R A J A Y A

P R E C I N C T 11

PERBADANAN PUTRAJAYA

APRIL, 2002

Contents

Glossary Of Abbreviation

PB	-	Planning Block
Min	-	Minimum
Max	-	Maximum
Ha	-	Hectares
Ac	-	Acre
Cps	-	Car Parking Space
M	-	Metre
M2	-	Aquare metre
No	-	Number

1.0 INTRODUCTION

1.1 Manual

This report forms the second part to the Draft Local Plan. It provides a manual on the detailed development guidelines, which explains further all the development strategies in the Key Plan and first report.

These guidelines aim to assist the local planning authority in facilitating the processing of plan application and in the decision making. This report also provides information to the potential developer of the physical requirements necessary to be included within this precinct.

This manual has tabulated the salient features for the development within each planning block.

There are altogether 16 planning blocks within Precinct 11. For each planning block, the key guidelines cover 3 main aspects. These are :

a. Physical Development Guidelines
   i. Planning Guidelines
   ii. Transportation Guidelines
   iii. Infrastructure Guidelines
b. Landscape Guidelines
c. Urban Design Guidelines

Each guideline will features on the main land uses within each planning block

1.2 Urban Design Guidelines

Perbadanan Putrajaya has formulated a set of Urban Design Guidelines (UDG). For any standards and guidelines not stated in this report, reference will have to be made to the UDG.

PHYSICAL PLANNING REQUIREMENTS PLANNING BLOCK 1 (PB 1)

MAIN LAND USE: Residential	PLANNING REQUIREMENT : BUILDING		
KEY PROVISION	**BUILDING SETBACKS – ZERO LOT LINE**	**BUILDING SETBACKS –BUNGALOWS**	**CAR PARKS**

KEY PROVISION

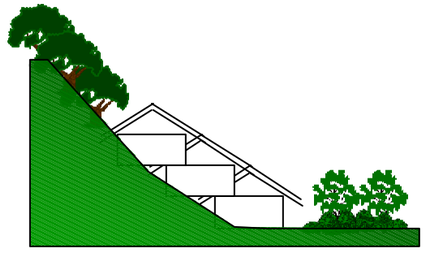
(i) Permitted Types
- Zero Lot Line
- Bungalows

(ii) Density
- Maximum 8 units per acre

(iii) Composition
- Not applicable

(iv) Minimum Lot Size
- Zero Lot Line - 442 m2
- Bungalows - 442 m2

(v) Height
- Zero Lot Line – 2 levels
- Bungalows – 2 levels on flat or gently sloping land ; 3 levels on steepy sloping land

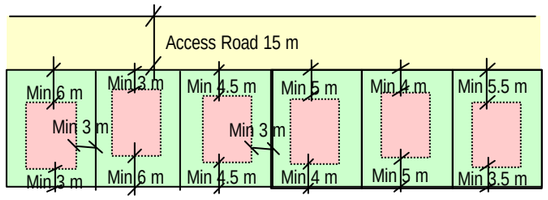


(vi) Fencing
- As per the Fencing Design Guidelines Manual, Volume 2, Chapter 4, page 32

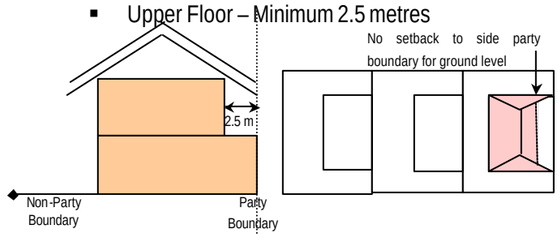
(vii) Layout Plan
- Use the setback flexibility and building design variation to break up and vary the position of the houses

BUILDING SETBACKS – ZERO LOT LINE

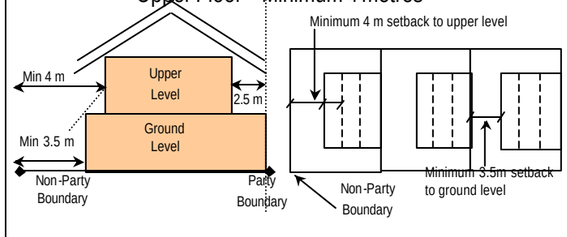
(i) Front / Rear Setback
- Total setback distance for both the front and rear setbacks must total 9 metres comprised as follows
- Street frontage – Minimum 3 metres
- Rear setback – Minimum 3 metres
- Side setback – Minimum 3 metres



(ii) Party Side Boundary
- Ground Floor – No setbacks
- Upper Floor – Minimum 2.5 metres

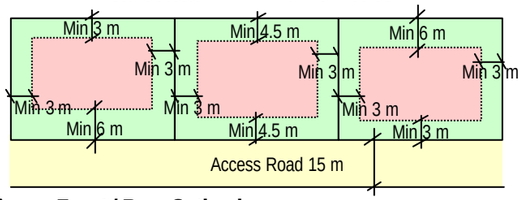


(iii) Non-Party Side Boundary
- Ground Floor – Minimum 3.5 metres
- Upper Floor – Minimum 4 metres

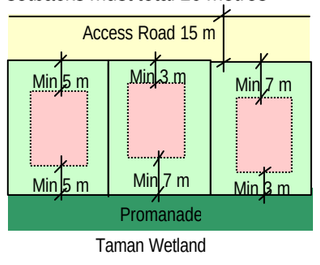


BUILDING SETBACKS –BUNGALOWS

(i) Front / Rear Setback
- These setbacks apply to all bungalows ***that do not have*** frontage to the Taman Wetlands Promenade
- Total setback distance for both the front and rear setbacks must total 9 metres comprised as follows
- Street frontage – Minimum 3 metres
- Rear setback – Minimum 3 metres

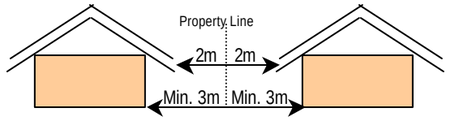


(ii) Front / Rear Setback
- These setbacks apply to all bungalows that ***do have*** frontage to the Taman Wetlands Promenade
- Total setback distance for both the front and rear setbacks must total 10 metres

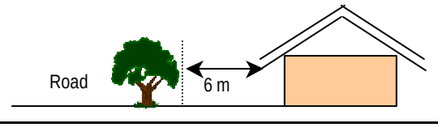


(iii) Side Setbacks
- Minimum 3 metres

(iv) Setback Between Roof's Eaves



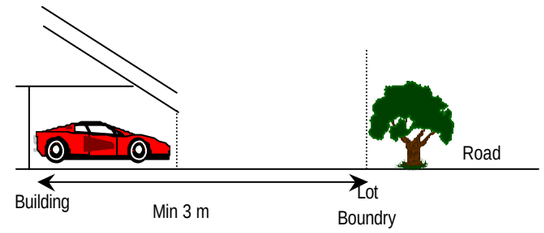
(v) Side Setback To Road



CAR PARKS

(i) Zero Lot Line
- Min 2 cps on site
- CPS to be clear of min front setback

(ii) Bungalows
- Min 2 cps on site
- CPS to be clear of min front setback

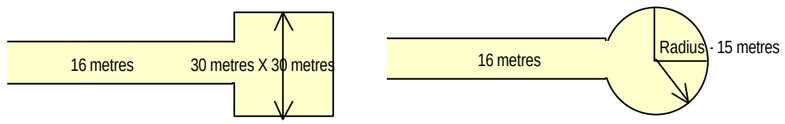


PLANNING REQUIREMENTS : TRAFFIC AND TRANSPORTATION

ROAD NETWORK AND DESIGN STANDARD

(i) Network Type

- Spine Road - 32 metres reserve
- Local Road - 22 metres reserve
- Access Road - 16 metres reserve
- Cul-De-Sac - 15 metres reserve



(ii) Road Capacity

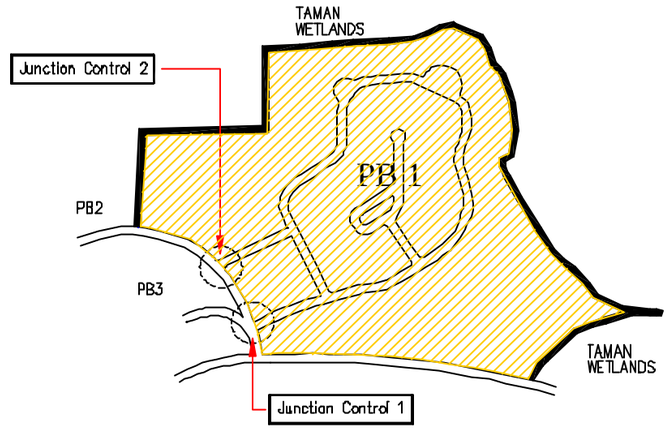
- Spine Road - 1000 pcu/hr/lane
- Local Road - 700 pcu/hr/lane

(iii) Junction Control Criteria

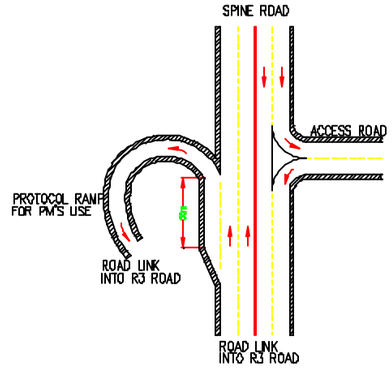
Junction Control	Total sum of 2-way traffic on the major road and heavier approach on minor road (PCU)	
	Spine Road	Local Road
Stop Control	up to 1500	up to 1500
Traffic Signal	Up to 4500	Generally not required
Grade Separation	Generally not required	Generally not required

(iv) Transport Design Guide for Putrajaya

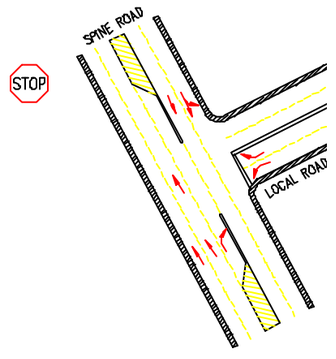
- Details on other design criteria to be referred to the Transport Design Guide for Putrajaya (1998)



Planning Block 1 (PB 1) - Key Plan



Junction Control at 1



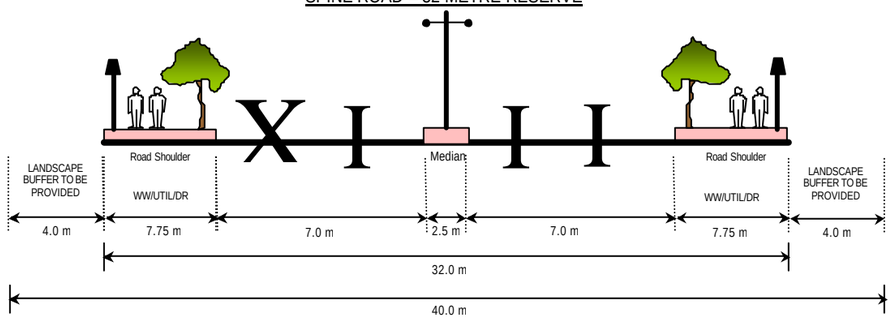
Junction Control at

PLANNING REQUIREMENTS : TRAFFIC AND TRANSPORTATION

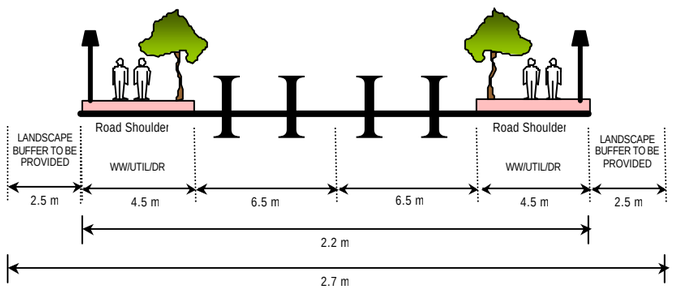
ROAD NETWORK AND DESIGN STANDARD

(v) Typical Road Cross Section

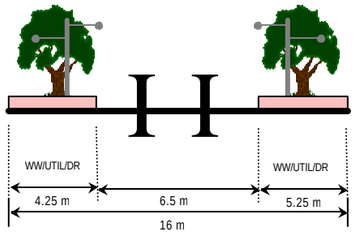
SPINE ROAD – 32 METRE RESERVE



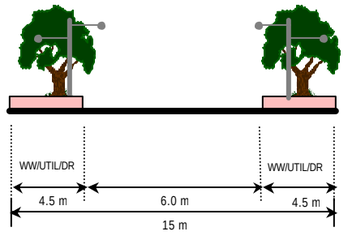
LOCAL ROAD – 22 METRE RESERVE



ACESS ROAD – 16 METRE RESERVE



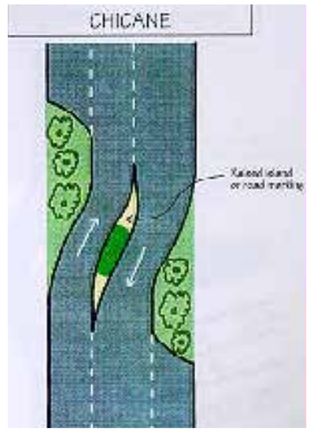
CUL-DE-SAC – 15 METRE RESERVE



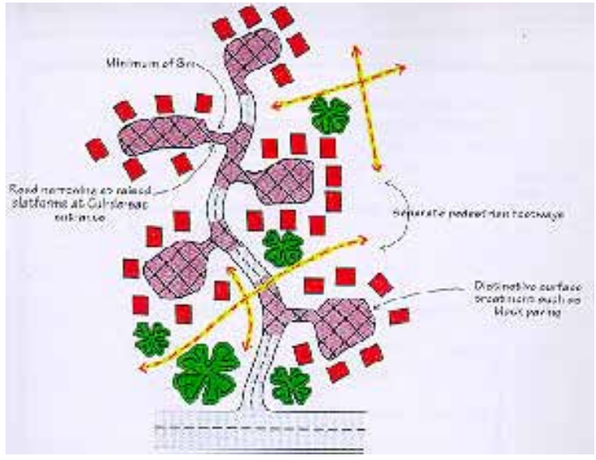
Note:
- WW/UTIL/DR : Common pedestrians walkway utility and drainage reserve
- Minimum cover to all utilities should be 15 metre
- Cul-De-Sac are permitted for bungalows only serving typically no more than 25 units
- Minimum cover to all utilities should be 15 metre

(vi) Traffic Calming

- Use Chicanes and dividers along local distributor



- The road narrowing at junction leading form local distributor roads into access roads

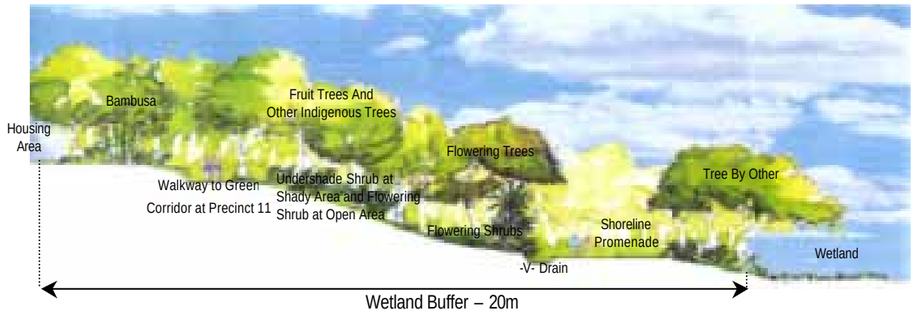


PLANNING REQUIREMENTS : INFRASTRUCTURE AND UTILITIES

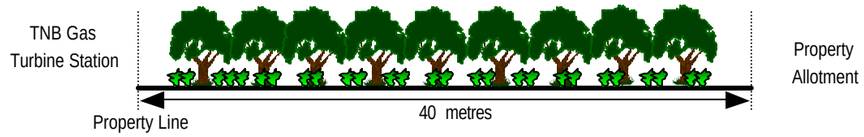
UTILITIES

(i) Environment

- PB1 fronts the environmentally sensitive Wetland Lake on the northern and eastern boundaries. A Wetland promenade of 20 metres shall be extensively landscaped.



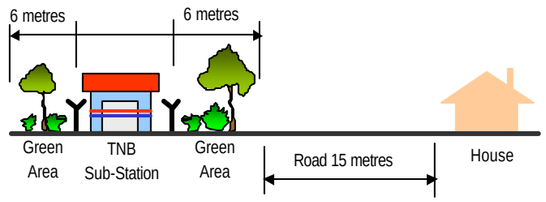
- There shall be 40 metres buffer between PB1 and the boundary of the TNB gas Turbine Station. There shall be extensively landscaped.



- The water quality standards of the Wetland Lake must comply with the Putrajaya Ambiant Lake Water Quality Standards
- The detailed platform levels shall be determined at the D.0 approval stage
- All earthworks must comply with the Environmental Management Guidelines of Putrajaya and Earthwork By-Laws (Perbadanan Putrajaya 1996)

(ii) Electricity

- The electricity supply for PB1 is mostly used for residential which are approximately 90% of the total Electrical Energy required
- Provision of adequate numbers of 33KV Main Distribution Station (MDS) to be supported by a series of 11KV Sub-Stations (Single & Double Chambers) and feeder pillars at strategic locations to comply with the electricity provider's (TNB) requirement
- Feeder pillars along public roads and areas shall have all doors to open away from road and public view.
- Electrical cabling network for overall development of PB1 shall consist of 33KV, 11KV and 415V distribution network systems
- The electrical cabling network system shall be placed along the utility reserves to conform to the no dig policy All electrical cabling shall be of the underground system
- Sub-Station: shall have a minimum 6 metres setback on all sides to the nearest residential building These shall be extensively landscaped
- Fencing of utility buildings shall abide by Fencing Design Guidelines-Vol. 2, Chap 15 pg. 132



(iii) Drainage

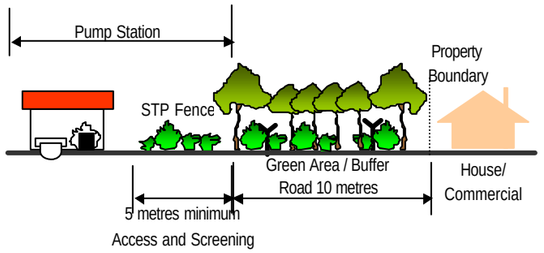
- Drainage to the site shall be provided in terms of collection, conveyance and retention of flow from the site
- Gross Pollutant Traps to be provided at the outlet of discharge points
- The drainage design shall comply with the Putrajaya Stormwater Management Design Guidelines (1998), Drainage Masterplan Study Report for Putrajaya (1996) and Urban Stormwater Management Manual for Malaysia, (JPS, 2000).

PLANNING REQUIREMENTS : INFRASTRUCTURE AND UTILITIES

UTILITIES

(iv) Sewerage

- A network of gravity sewer reticulation to collect sewage from the precinct (Level 3 works)
- From these reticulation networks, sewage will be discharged into the centralized trunk sewer system of Putrajaya (Level 1 & 2 works) at appropriate points
- The trunk sewers will terminate at two pump-stations. These two pump stations are PS1 in Precinct 9 and PS9 (Levels 1 & 2 works) located at the south of precinct 11, next to Road R3
- From PS1 and PS9, sewage will be conveyed via the centralized trunk sewer system to STP2 for treatment However, STP2 is not scheduled to be ready until Year 2003 In the interim, sewage discharge will be temporary directed to the sewage switching station PS5 for onward conveyance to STP1 for treatment until the completion of STP2
- The buffer for a closed STP shall be 10 m to the nearest property boundary
- The buffer for an open STP system shall be 30 m to the nearest property boundary

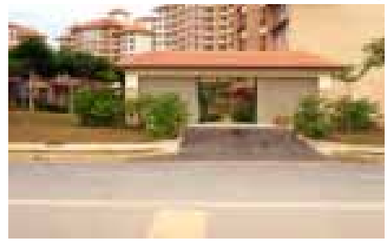


(v) Gas

- The gas supply for PB1 is mostly used for residential which are approximately 80% of the total gas requirements
- Gas supply for PB1 will be served from a District Gas Station located at Precinct 9 through a medium pressure gas pipeline
- Provisions of 4 nos of area Gas Station are allocated within the Precinct 11 development to cater for the projected gas loading requirements, with total area reserve of 113 acres
- Low-pressure gas pipeline reticulation from the Area Gas Station is planned to serve the gas requirements for the residential, commercial and other amenities
- Safety provision for construction within the vicinity
- (For details of Gas Pipeline Reserve Design refer Appendix 1)

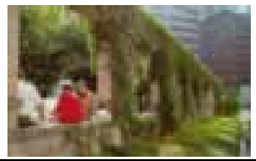
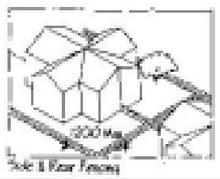
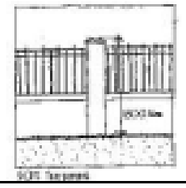
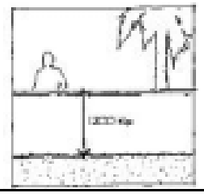
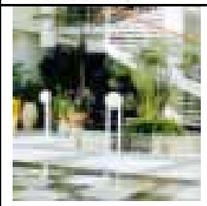
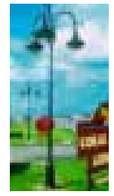
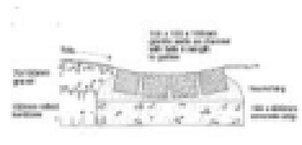
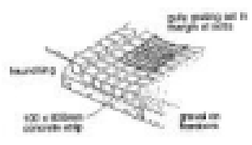
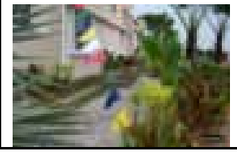
(vi) Waste Disposal

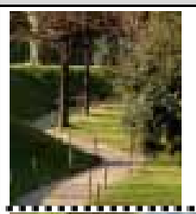
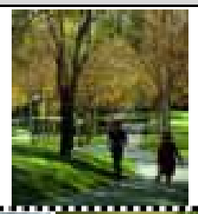
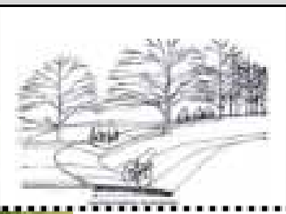
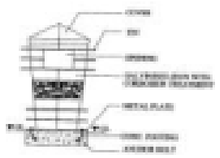
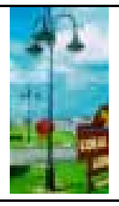
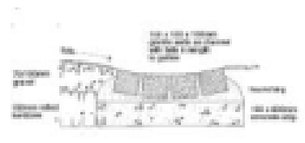
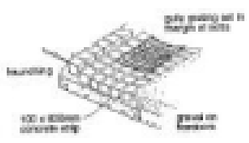
- Solid waste management in PB1 shall address reduction, reuse, recycling and recovery, the 4 R's of waste management
- Solid waste is proposed to be separated at source, by residents or employees, into three streams; dry recycles, wet waste and rubbish (all other wastes) The dry recyclable is to be further separated at source into containers and fiber materials
- The sensitivity of the site in terms of waste management relates to the operational requirements of Precinct 11, which require that no burial of material is undertaken during the construction phase
- In addition to control odour nuisance to any sensitive receptors biodegradable waste cannot be left at the site for extended periods
- The waste management shall comply with Urban Design Guidelines and Environmental Guidelines for Putrajaya
- For low rise residential, refuse chamber is to be placed in front of the house, either left or right of the driveway and near to main road for the ease of mechanical collection The estimated generation of solid waste is 5kg/unit/day
- The estimated generation of solid waste for recreation park/public transport stop station are 0.2 kg/visitor, 300L/1000m^2(gross floor area) for shopping complex and 500L/1000m^2(gross floor area) for restaurant.
- Access road must be constructed for the ease of mechanical collection and public use Obstructions to any collection vehicle's access must be disallowed at all time

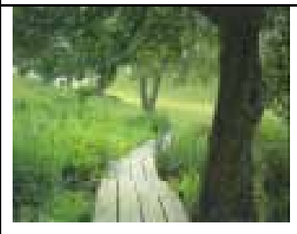
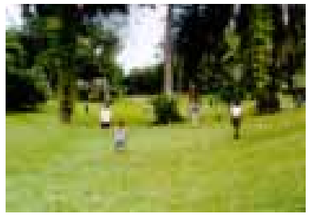


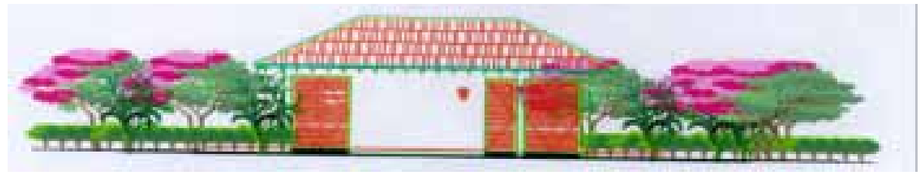
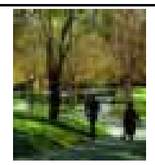
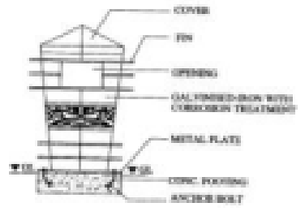
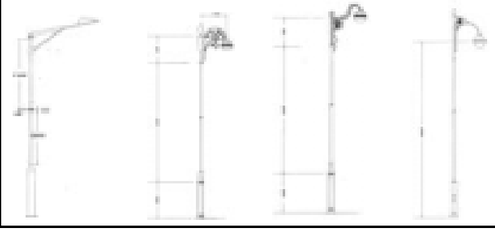
(vii) Water Supply

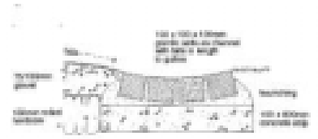
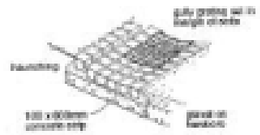
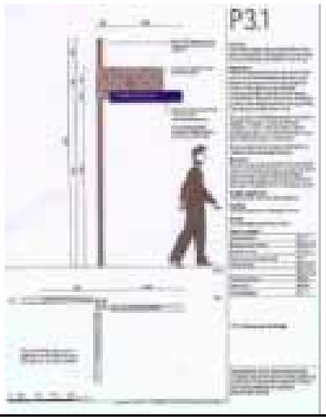
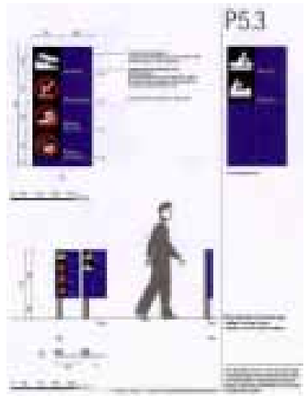
- Water supply to PB1 shall be consistent with the provision of water supply master plan for Putrajaya
- Storage reservoir and pumping station together with the rising and falling mains shall be planned to serve this area in compliance with Jabatan Bekalan Air (JBA) requirement, and Design Criteria and Standards for Water Supply System, JKR (1989)
- Platform for a water tower to follow landform and earthworks required should be sympathetic to the terrain
- Land reserve for water tower should provide for all setback requirement and necessary slopes to be accommodated
- The design of the water tower shall comply with Design Criteria and Standards for Water Supply Systems
- Approach road may be designed for occasional usage
- The design of water tower should be aesthetically compatible with the neighbourhood

PLANNING REQUIREMENT : LANDSCAPE					
LANDUSE	**DESIGN STYLE**	**MATERIALS**	**GENERAL REQUIREMENT**	**USE/LOCATION**	
❑ **Residential (Landed)**	▪ **Paving, walls and steps** ❑ Informal ❑ Formal ❑ Contemporary	❑ **Paving / Step** – Clay brick – Concrete – Interlocking block etc	– Anti slippery surface – Max. gradient 8% – Durable	– Building compound	
		❑ **Walls** – Key stone – Concrete – Fencing brick etc.	– Harmonize with surrounding	– Building compound – Building boundary	 
	▪ **Fence, Gate and Barrier** ❑ Contemporary ❑ Formal ❑ Traditional	– Hardwood – Metal – Masonry	– To follow Fencing Design Guideline Putrajaya	– Boundary line – Entrance	  
	▪ **Lighting** ❑ Contemporary ❑ Informal ❑ Formal	– Hardwood – Metal – Concrete	– Durable – Attractive – Safe – Max. height of 4 meters	– Building compound	  
	▪ **Drainage** ❑ Swales ❑ Concealed drains	– Culvert – Concrete – Drain cover on walkway to follow walkway ‘s material	– Visually attractive – Concealed drains	– Building lot	  
	▪ **Planting** ❑ Formal ❑ Informal	– Tree – Palm – Shrub – Groundcover	– Non-poisonous species – Strong branch – Medium size	– Building compound	 
	▪ **Irrigation Strategy**	– Tap from storage tank or JBA main or tap from JBA main.			

PLANNING REQUIREMENT : LANDSCAPE					
LANDUSE	**DESIGN STYLE**	**MATERIALS**	**GENERAL REQUIREMENT**	**USE/LOCATION**	
❑ **Hill Top Park**	▪ **Paving / Step, Wall and Kerbs** ❑ Informal ❑ Robust ❑ Reflect character of adjacent neighbourhood	❑ **Paving/Step** – Clay brick – Concrete – Interlocking block etc – Grasscrete	– Anti-Shipping surface – Max. gradient 8% – Durable – Attractive	– Open space – Footpaths	   
		❑ **Wall** – Key stone – Facing brick finish – Concrete finish etc.	– Harmonize with surrounding structure	– Slope areas	 
	▪ **Site Furniture** ❑ Robust ❑ Informal	– Timber – Metal – Stone concrete	– Vandalism proof – Durable – Functional – Safe	– Open space – Pedestriant walkway	  
	▪ **Lighting** ❑ Robust ❑ Minimal ❑ Reflect character of adjacent neighbourhood	– Timber – Metal – Concrete etc.	– Max. height 4m at open areas – Max. height 10m at roadside	– Footpaths – Cycle track – Car park – Open space	 
	▪ **Drainage** ❑ Swales/Natural drain ❑ Concealed drains	– Culvert – concrete – Drain cover on walkway to follow walkway ‘s material	– Visually attractive – Naturally blend with surrounding	– Where necessary	  
	▪ **Irrigation Strategy**	– Pipe reticulation from pond and supported by trucking or tap form JBA main			
	▪ **Structures and Shelter** ❑ Informal ❑ Vernacular ❑ Robust	– Stone – Timber – Metal	– Sustainable design – Proportion to human scale – Functional – Blend to the surrounding areas	– Open space	 

PLANNING REQUIREMENT : LANDSCAPE					
LANDUSE	**DESIGN STYLE**	**MATERIALS**	**GENERAL REQUIREMENT**	**USE/LOCATION**	
❑ **Hill Top Park**	▪ **Play features** ❑ Integrated ❑ Robust ❑ Minimal	– Metal – Plastic – Fiber glass	– Conform to SIRIM standards – Safe – Attractive	– Children's play areas for all age groups	 
	▪ **Sports feature** ❑ Reflecting natural features and topography ❑ Informal	– Grass – Concrete – Sand	– Durable – Safe	– Kick around areas – Games court	 
	▪ **Signage** ❑ Informal	– Timber – Metal – Stone	– To following Signage and Advertisement Design Guideline, PJC	– Directional – Entrance sign	 
	▪ **Fences, Railings and Barriers** ❑ Follow UDL guideline ❑ Robust	– Timber – Metal – Stone	– To suit Arc Design – To blend naturally to surrounding areas – To following Fencing Design Guideline, PJC	– Boundary fence to children's play areas	 
	▪ **Water features** ❑ Informal ❑ Natural	– Boulders – Stone	– Safe – Attractive	– At view point – Seating areas	 
	▪ **Planting** ❑ Informal	– Tree – Palm – Shrub – Groundcover – Turfing	– Medium size tree & palm – Flowering shrub – Non-poisonous species – Low maintenance planting	– All green areas	 

PLANNING REQUIREMENT : LANDSCAPE					
LANDUSE	**DESIGN STYLE**	**MATERIALS**	**GENERAL REQUIREMENT**	**USE/LOCATION**	
❑ **Buffer**	▪ **Planting** ❑ Natural ❑ Informal	– Palm – Shrub – Forest species – Medium trees	– Able to Screen – Safe – Attractive	– Along Roadside – Public utilities boundary – Between TNB-Turbine area and Housing area	  
❑ **Public Utilities**	▪ **Planting** ❑ Informal design	– Medium Tree – Tall Shrub	– Hormonisely with the surrounding environment – Able to screen structure – Attractive	– All public utilities – Boundary line	
❑ **Roadside**	▪ **Paving, walls and steps** ❑ Formal ❑ Contemporary	❑ **Paving / Step** – Clay brick – Concrete – Interloc king paver etc.	– Anti slippery surface – Max. gradient 8% – Max. Gradient for super elevation 2%	– Roadside	  
		❑ **Wall** – Key stone – Concrete – Granite stone etc.	– Harmonize with surrounding environment	– Slope areas	  
	▪ **Site Furniture** ❑ Contemporary	– Hardwood – Masonry – Metal	– Vandalism proof – Safe – Attractive	– Junction	  
	▪ **Lighting** ❑ Robust ❑ Minimal ❑ Reflect character of adjacent neighbourhood	– Timber – Metal	– Max. height 10m at roadside	– Footpaths – Cycle track – Car park	

PLANNING REQUIREMENT : LANDSCAPE					
LANDUSE	**DESIGN STYLE**	**MATERIALS**	**GENERAL REQUIREMENT**	**USE/LOCATION**	
❑ **Roadside**	▪ **Drainage** ❑ Swales/Natural drain ❑ Concealed drains	– Culvert – Drain cover on walkway to follow walkway 's material	– Visually attractive – Naturally blend with surrounding	– Roadside reserve	  
	▪ **Signage** ❑ Contemporary ❑ Formal ❑ Simple ❑ Clear	– Metal	– Clear – To follow Signage and Advertisement Design Guideline, PJC	– Junction	 
	▪ **Planting** ❑ Formal	– Shade medium size tree – Palm – Shrub	– Provide ample shade – Hardy Plants – Attractive	– Roadside	 

PLANNING REQUIREMENT : URBAN DESIGN

LAYOUT PLAN

(i) The layout plan must demonstrate that the following elements are addressed in the design:
- Development appropriate to topographical features
- Appropriate building orientation with respect to the sun
- Appropriate pedestrian and vehicular access systems
- Site infrastructure systems are designed in a manner which enhances site development

(ii) Illustrate the effective and efficient integration of the pedestrian, cycle and road systems

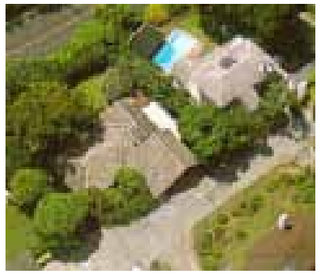
(iii) Development is to be designed to work with site contours to avoid unnecessary cut and associated retaining structures

(iv) Illustrate a high level of permeability between site uses within the Planning Block and with adjoining Planning Blocks

(v) Illustrate appropriate site building setbacks from major traffic routes or other noise generating or potentially dangerous infrastructure

(vi) Illustrate that the site will be developed in a logical sequence

(vii) The layout plan should illustrate that the form of development effectively contributes to the Planning Block's sense of place and amenity with the context of Putrajaya



BUILDING CHARACTER

(i) Avoid monotonous building designs – provide a range of housing types to meet different lifestyle choices, diversity in the marketplace and opportunity for an interesting street frontage

(ii) Ensure that buildings are designed to respect the topographical features of the site ,eg buildings should step with steeper sites – do not cut substantial benches into steep land

(iii) Building design should respect the amenity of adjoining and adjacent buildings and their residents

(iv) Building design should interpret local image and character with new materials that are energy efficient

(v) Building facades should be designed to accommodate a tropical environment

(vi) Designers should look to the use of innovative building materials that are less maintenance intensive and more environmentally efficient

(vii) While diversity is sought in building design, buildings should be designed with a common theme that provides a linkage to the style and nature of the development area

(viii) Building design should ensure good living environments for residents that do not adversely impact on neighbours

(ix) The building design should incorporate landscaping that contributes to a pleasant and safe environment and integrates well with the streetscape and adjoining open space areas

HEIGHT, MASSING AND BUILDING SPACES

(i) Building design must comply with all provisions relating to plot ratio, plinth, building height and setbacks as contained within these guidelines, and must comply with the UDG of Precinct 11 and 13

(ii) Spaces on any ground level should not directly overlook dwellings on adjacent land

(iii) Ground floor levels must be responsive to pedestrian footpaths and continuity and flow between buildings

(iv) Building design does not significantly reduce daylight to open space and habitable rooms in adjacent development

(v) Roof pitch and overlay should be designed to meet local environmental requirements

(vi) Roof overhangs should be designed to minimise the impact on sight lines from adjacent buildings

(vii) Buildings should be designed to encourage facade articulation and use of design elements that reduce building bulk and provide a pleasant street aspect Any blank wall should be avoided

(viii) The design of free standing buildings should be sympathetic with adjoining buildings, yet provide for local identity and character

COLOUR TEXTURE

(i) Building colours should harmonise with the predominant colours of the surrounding area

(ii) Use of earth tones shall be encouraged

(iii) Colours for specific building types will be subject to the approval of the Perbadanan Pastel colours are to be encouraged

MISCELLANEOUS

(i) Privacy and visual controls – overlooking to be controlled by appropriate orientation f windows and use of splay windows

(ii) Air conditioning equipment including piping– all equipment should be contained in compartments that are designed as an integral component of the building to ensure the equipment is hidden from view

(iii) Drying yards – building design should incorporate appropriate design for drying areas that allows for natural ventilation and light while ensuring they are hidden from public view

(iv) Aerials and satellite dishes – the location of aerials and satellite dishes must not impact on the amenity of adjoining buildings

(v) Service ducting shall not be exposed on the external surfaces of buildings

(vi) Carports and garages should:
- Be designed to integrate with the design of associated buildings
- Not diminish the attractiveness of the streetscape
- Not visually dominate views of the house from the street
- Cover the full length of a car

(vii) Dwellings with green frontage must address that frontage with habitable spaces and not service areas only

(viii) Dwelling design must provide sufficient outdoor open space that can act as an extension of the dwelling for relaxation, entertainment, recreation and children's play purposes

(ix) For the installations of grills, residents need to abide by the guidelines on the Uniform Design and Installation of Grills for Buildings in Putrajaya (Department of Urban Services, Putrajaya)

(x) Any changes to the façade and design of buildings must seek planning permission for Perbadanan Putrajaya

PHYSICAL PLANNING REQUIREMENTS PLANNING BLOCK 2 (PB 2)

MAIN LAND USES: Residential	PLANNING REQUIREMENT : BUILDING	
KEY PROVISION	**BUILDING SETBACKS**	**CAR PARK**

(i) Permitted Types
- Terrace

(ii) Density
- Maximum 20 units per acre

(iii) Composition
- 80% for government use

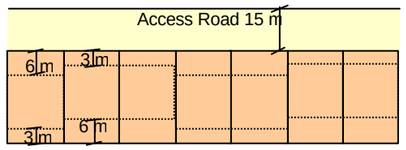
(iv) Minimum Lot Size
- 130 m2

(v) Height
- Maximum 3 levels

(vi) Fencing
- As per the Fencing Design Guidelines Manual, Volume 2, Chapter 3, page 52

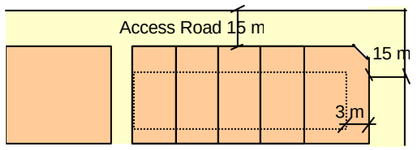
(vii) Layout Plan
- Use the setback flexibility and building design variation to break up and vary the position of the houses.

(i) Front / Rear Setback
- Total setback distance for both the front and rear setbacks must total 9 metres comprised as follows
- Street frontage – Minimum 3 metres
- Rear setback – Minimum 3 metres

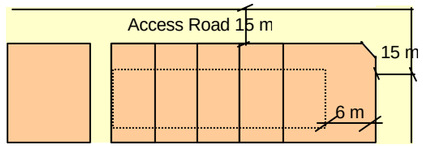


- This variation in setback is only permissible within a single block of terraces and not for individual buildings.

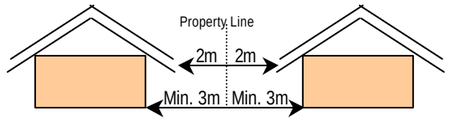
(ii) Side Setback
- Side setback to 15 metres road, for roads with 3 metres green buffer



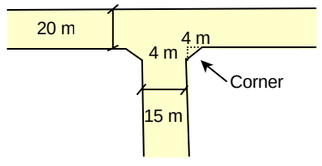
- Side setback to 15 metres road, without 3 metres buffer



(iii) Setback between roof`s Eaves

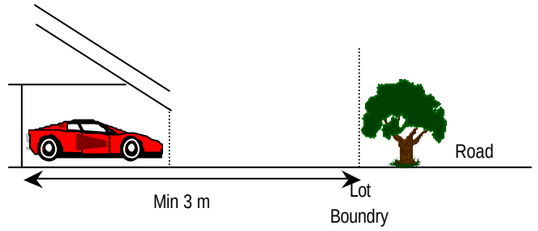


(iv) Corner Splay
- Minimum 4 metres



(iv) Visibility Standards for Priority Junctions
- Refer section on Transport

(i) Car Park
- Min. 2 cps on site
- CPS to be clear of min. front setback.



PLANNING REQUIREMENTS : TRAFFIC AND TRANSPORTATION

ROAD NETWORK AND DESIGN STANDARD

(i) Network Type

- Spine Road - 32 metres reserve
- Local Road - 22 metres reserve
- Access Road - 16 metres reserve
- Cul-De-Sac - 15 metres reserve

(ii) Road Capacity

- Spine Road - 1000 pcu/hr/lane
- Local Road - 700 pcu/hr/lane

(iii) Junction Control Criteria

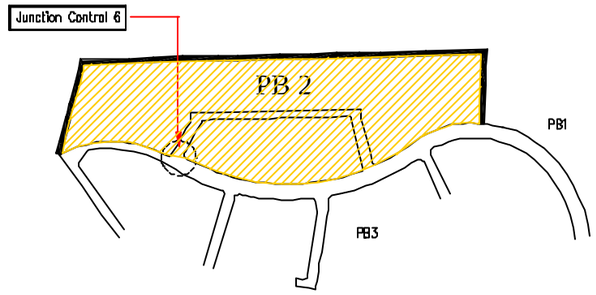
Junction Control	Total sum of 2-way traffic on the major road and heavier approach on minor road (PCU)	
	Spine Road	Local Road
Stop Control	up to 1500	up to 1500
Traffic Signal	Up to 4500	Generally not required
Grade Separation	Generally not required	Generally not required

(iv) Visibility Standards for Priority Junction

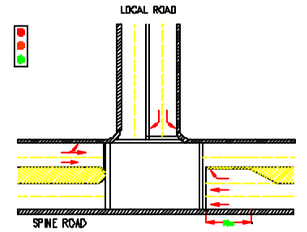
- Because minor road are uncontrolled. It is essential that adequate standards of visibility are archieved in the layout and that sight distances take account of the speed of traffic on the major road. The standards for providing clear visibility for minor road traffic are set out in the figure given

(v) Transport Design Guide for Putrajaya

- Details on other design criteria to be referred to the Transport Design Guide for Putrajaya (1998)



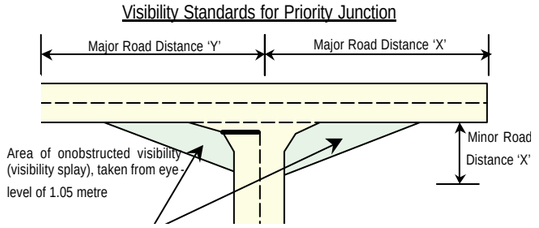
Planning Block 2 (PB 2) - Key Plan



Junction Control at 6

Note : With signal controlled pedestrian crossing phase

Visibility Standards for Priority Junction



Minor Road Distance 'X' (metre)	▪ 9.0 metre most situations ▪ 4.5 metre an absolute minimum on lighty trafficked roads (< 200 vph)

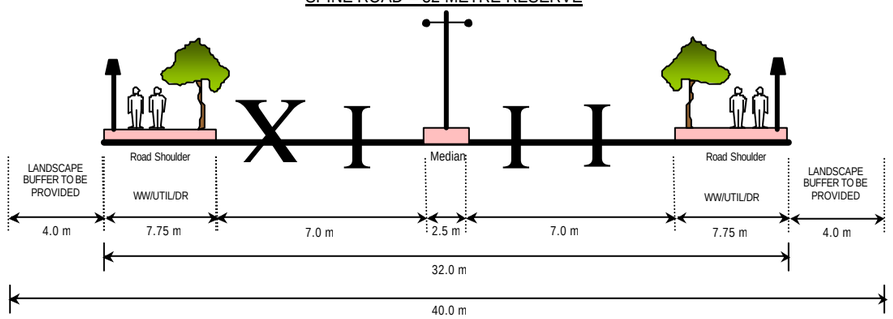
Major Road Distance 'X'(metre)	120	90	45
Speed Limit (KPH)	60	50	40

PLANNING REQUIREMENTS : TRAFFIC AND TRANSPORTATION

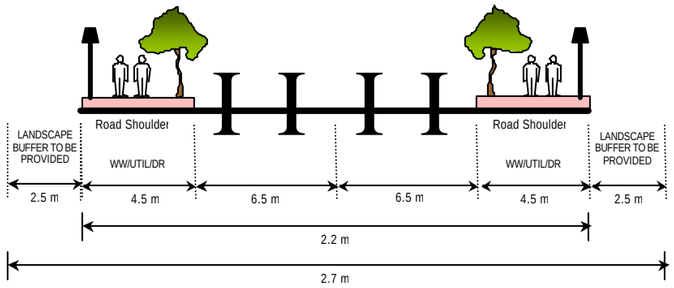
ROAD NETWORK AND DESIGN STANDARD

(vi) Typical Road Cross Section

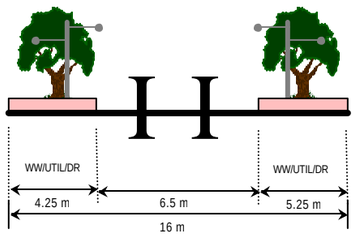
SPINE ROAD – 32 METRE RESERVE



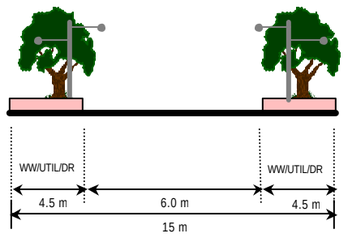
LOCAL ROAD – 22 METRE RESERVE



ACESS ROAD – 16 METRE RESERVE



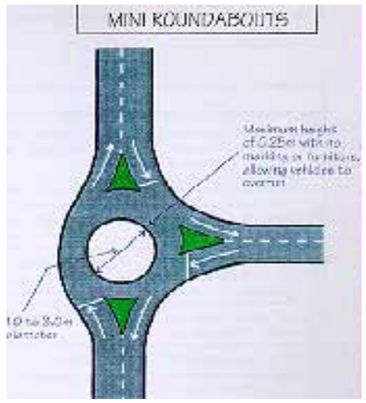
CUL-DE-SAC – 15 METRE RESERVE



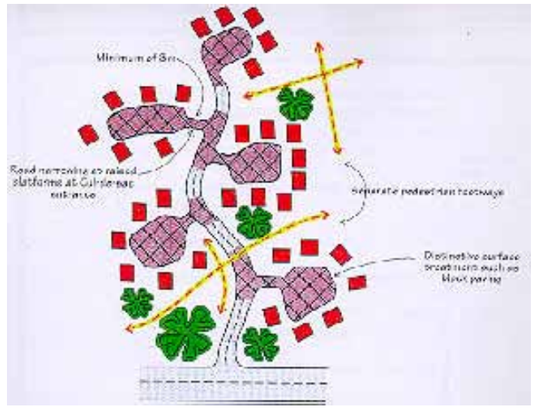
Note:
- WW/UTIL/DR : Common pedestrians walkway utility and drainage reserve
- Minimum cover to all utilities should be 15 metre
- Cul-De-Sac are permitted for bungalows only serving typically no more than 25 units
- Minimum cover to all utilities should be 15 metre

(vii) Traffic Calming

- Use Mini roundabouts at key junctions between Local road and Access roads.



- The road narrowing at junction leading form local distributor roads into access roads

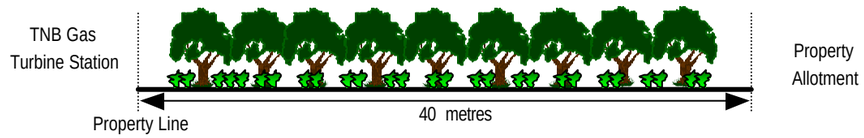


PLANNING REQUIREMENTS : INFRASTRUCTURE AND UTILITIES

UTILITIES

(i) Environment

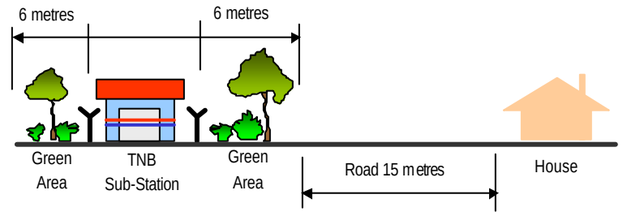
- This planning block faces the TNB Gas Turbine Station on the work. A buffer 40 metres shall be provided in the detail layout plan. This buffer zone shall be extensively planted with trees as outlined in the landscaped section.



- As the Gas Turbine Station emits residues in the process, monitoring of the Air Quality must be carried out periodically. The quality of air has to empty with the Perbadanan's Air Quality Standards.
- The detailed platform levels shall be determined at the D.0 approval stage
- All earthworks must comply with the Environmental Management Guidelines of Putrajaya and Earthwork By-Laws (Perbadanan Putrajaya 1996)

(ii) Electricity

- The electricity supply for PB2 is mostly used for residential which are approximately 90% of the total Electrical Energy required.
- Provision of adequate numbers of 33KV Main Distribution Station (MDS) to be supported by a series of 11KV Sub-Stations (Single & Double Chambers) and feeder pillars at strategic locations to comply with the electricity provider's (TNB) requirement.
- Feeder pillars along public roads and areas shall have all doors to open away from road and public view.
- Electrical cabling network for overall development of PB2 shall consist of 33KV, 11KV and 415V distribution network systems.
- The electrical cabling network system shall be placed along the utility reserves to conform to the no dig policy. All electrical cabling shall be of the underground system.
- Sub-Station: shall have a minimum 6 metres setback on all sides to the nearest residential building. These shall be extensively landscaped.
- Fencing of utility buildings shall abide by Fencing Design Guidelines-Vol. 2, Chap. 15 pg. 132

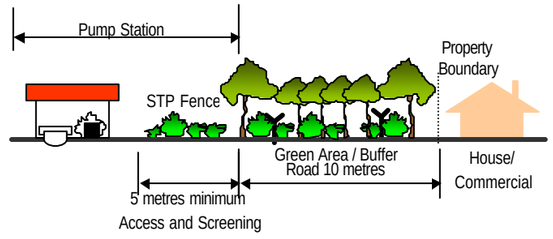


(iii) Drainage

- Drainage to the site shall be provided in terms of collection, conveyance and retention of flow from the site.
- Gross Pollutant Traps to be provided at the outlet of discharge points.
- The drainage design shall comply with the Putrajaya Stormwater Management Design Guidelines and Urban Stormwater Management Manual for Malaysia, (JPS, 2000)

(iv) Sewerage

- A network of gravity sewer reticulation to collect sewage from the precinct. (Level 3 works.)
- From these reticulation networks, sewage will be discharged into the centralized trunk sewer system of Putrajaya (Level 1 & 2 works) at appropriate points.
- The trunk sewers will terminate at two pump-stations. These two pump stations are PS1 in Precinct 9 and PS9 (Levels 1 & 2 works) located at the south of precinct 11, next to Road R3.
- From PS1 and PS9, sewage will be conveyed via the centralized trunk sewer system to STP2 for treatment. However, STP2 is not scheduled to be ready until Year 2003. In the interim, sewage discharge will be temporary directed to the sewage switching station PS5 for onward conveyance to STP1 for treatment until the completion of STP2.
- The buffer for a closed STP shall be 10 m to the nearest property boundary
- The buffer for an open STP system shall be 30 m to the nearest property boundary



PLANNING REQUIREMENTS : INFRASTRUCTURE AND UTILITIES

UTILITIES

(v) Gas

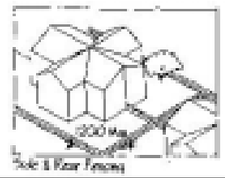
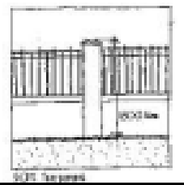
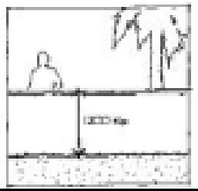
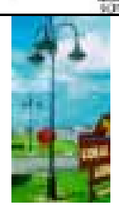
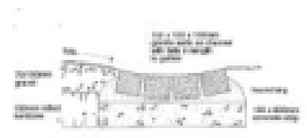
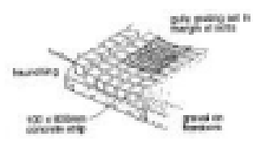
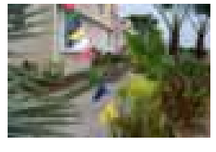
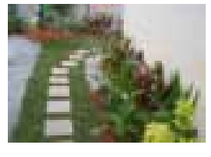
- The gas supply for PB2 is mostly used for residential which are approximately 80% of the total gas requirements.
- Gas supply for PB2 will be served from a District Gas Station located at Precinct 9 through a medium pressure gas pipeline.
- Provisions of 4 nos. of area Gas Station are allocated within the Precinct 11 development to cater for the projected gas loading requirements, with total area reserve of 1.13 acres.
- Low-pressure gas pipeline reticulation from the Area Gas Station is planned to serve the gas requirements for the residential, commercial and other amenities.
- Safety provision for construction within the vicinity.
- (For details of Gas Pipeline Reserve Design refer Appendix 1)

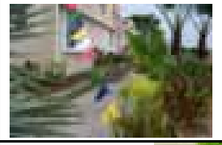
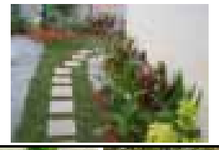
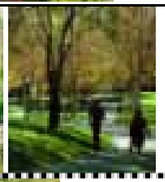
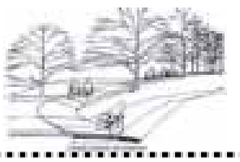
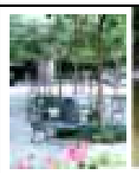
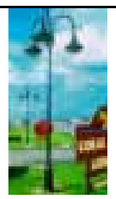
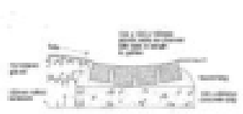
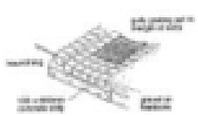
(vi) Waste Disposal

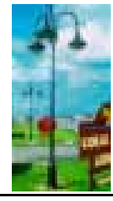
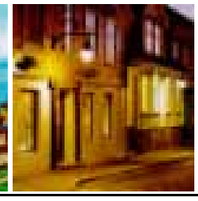
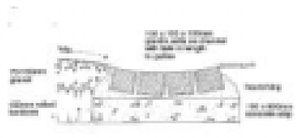
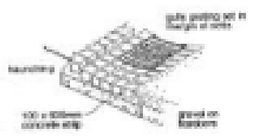
- Solid waste management in PB2 shall address reduction, reuse, recycling and recovery, the 4 R's of waste management.
- Solid waste is proposed to be separated at source, by residents or employees, into three streams; dry recycles, wet waste and rubbish (all other wastes). The dry recyclable is to be further separated at source into containers and fiber materials.
- The sensitivity of the site in terms of waste management relates to the operational requirements of Precinct 11, which require that no burial of material is undertaken during the construction phase.
- In addition to control odour nuisance to any sensitive receptors biodegradable waste cannot be left at the site for extended periods.
- The waste management shall comply with Urban Design Guidelines and Environmental Guidelines for Putrajaya.
- For low rise residential, refuse chamber is to be placed in front of the house, either left or right of the driveway and near to main road for the ease of mechanical collection. The estimated generation of solid waste is 5kg/unit/day.
- The estimated generation of solid waste for recreation park/public transport stop station are 0.2 kg/visitor, 300L/1000m^2(gross floor area) for shopping complex and 500L/1000m^2(gross floor area) for restaurant.
- Access road must be constructed for the ease of mechanical collection and public use. Obstructions to any collection vehicle's access must be disallowed at all time.

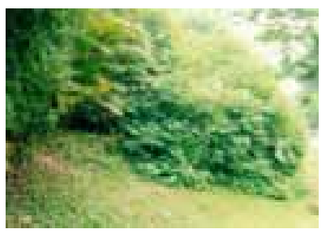
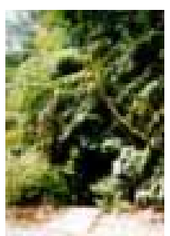
(vii) Water Supply

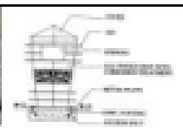
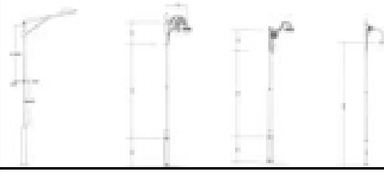
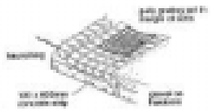
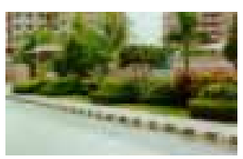
- Water supply to PB2 shall be consistent with the provision of water supply master plan for Putrajaya.
- Storage reservoir and pumping station together with the rising and falling mains shall be planned to serve this area in compliance with Jabatan Bekalan Air (JBA) requirement, and Design Criteria and Standards for Water Supply System, JKR (1989).

PLANNING REQUIREMENT : LANDSCAPE					
LANDUSE	**DESIGN STYLE**	**MATERIALS**	**GENERAL REQUIREMENT**	**USE/LOCATION**	
❑ **Residential (Landed)**	▪ **Paving, walls and steps** ❑ Informal ❑ Formal ❑ Contemporary	❑ **Paving / Step** – Clay brick – Concrete – Interlocking block etc	– Anti slippery surface – Max. gradient 8% – Durable	– Building compound	
		❑ **Walls** – Key stone – Concrete – Fencing brick etc.	– Harmonize with surrounding	– Building compound	 
	▪ **Fence, Gate and Barrier** ❑ Contemporary ❑ Formal ❑ Traditional	– Hardwood – Metal – Masonry	– To follow Fencing Design Guideline, Putrajaya	– Boundary line	  
	▪ **Lighting** ❑ Contemporary ❑ Informal ❑ Formal	– Hardwood – Metal – Concrete	– Durable – Attractive – Safe	– Building compound	 
	▪ **Drainage** ❑ Swales ❑ Concealed drains	– Culvert – Concrete – Drain cover on walkway to follow walkway ‘s material	– Visually attractive – Concealed drains	– Building lot	  
	▪ **Irrigation Strategy**	Tap from storage tank or JBA main or tap from JBA main			
	▪ **Planting** ❑ Formal ❑ Informal	– Tree – Palm – Shrub – Groundcover	– Non-poisonous species – Strong branch – Medium size trees	– Building compound	 

PLANNING REQUIREMENT : LANDSCAPE					
LANDUSE	**DESIGN STYLE**	**MATERIALS**	**GENERAL REQUIREMENT**	**USE/LOCATION**	
❑ **Public Utilities**	▪ **Planting** ❑ Informal design	– Medium Tree – Tall Shrub	– Harmonize with the surrounding environment – Able to screen structure – Attractive	– All public utilities – Boundary line	 
❑ **Open space**	▪ **Paving, walls and steps** ❑ Informal and contemporary ❑ Informal and natural ❑ Robust	❑ **Paving / Step** – Clay brick – Concrete – Grasscreate etc	– Anti slippery surface – Max. gradient 8% – Durable – Accessible for disable	– Open space – Plaza	   
		❑ **Wall** – Key stone – Facing brick – Concrete – Granite stone etc.	– Visually attractive – Harmonize with surrounding environment	– Slope areas	 
	▪ **Site Furniture** ❑ Robust ❑ Contemporary ❑ Decorative	– Hardwood timber – Concrete – Metal	– Vandalism proof – Durable – Safe	– Open space – Plaza – Along walkway	  
	▪ **Lighting** ❑ Contemporary ❑ Robust ❑ Decorative	– Hardwood timber – Metal – Fiberglass	– Max. height compound lighting 4m – Anti-corrosion finishes – Durable	– Plaza – Open space – Along walkway	 
	▪ **Drainage** ❑ Swales/Natural drain ❑ Concealed drains	– Culvert – Concrete – Drain cover on walkway to follow walkway ‘s material	– Visually attractive – Naturally blend with surrounding	– Open space – plaza	  
	▪ **Irrigation Strategy**	Pipe reticulation from pond and supported by trucking or tap from JBA main.			
	▪ **Structures and Shelters** ❑ Contemporary ❑ Simple ❑ Informal	– Timber – Concrete – Metal	– Sustainable design – Proportion to human scale – Durable	– Open space – Plaza	 

PLANNING REQUIREMENT : LANDSCAPE					
LANDUSE	**DESIGN STYLE**	**MATERIALS**	**GENERAL REQUIREMENT**	**USE/LOCATION**	
❑ **Open space**	▪ **Play feature** ❑ Robust ❑ Colorful ❑ Safe	– Timber – Rubber matting – Metal etc.	– Conform to SIRIM standard – Safe – Attractive	– Open space – Plaza	 
	▪ **Sport feature** ❑ Informal	– Timber – Rubber matting – Concrete – Grass	– Durable – Safe	– Open space	 
	▪ **Signage** ❑ Contemporary ❑ Formal	– Masonry – Metal	– As per Signage Design Guideline, Putrajaya	– Entrance – Junction – Pedestrian – Sport areas	 
	▪ **Water feature** ❑ Contemporary ❑ Formal ❑ Informal	– Rock, Natural – Tile finish – Metal sculpture – Concrete sculpture	– Safe – Attractive	– Entrance – Open space – Plaza	 
	▪ **Lighting** ❑ Contemporary ❑ Robust ❑ Decorative	– Hardwood timber – Metal – Fiberglass	– Max. height compound lighting 4m – Anti-corrosion finishes – Durable	– Plaza – Open space – Along walkway	   
	▪ **Drainage** ❑ Swales/Natural drain ❑ Concealed drains	– Culvert – Concrete – Drain cover on walkway to follow walkway ‘s material	– Visually attractive – Naturally blend with surrounding	– Open space – plaza	  

LANNING REQUIREMENT : LANDSCAPE					
LANDUSE	**DESIGN STYLE**	**MATERIALS**	**GENERAL REQUIREMENT**	**USE/LOCATION**	
❑ **Open space**	▪ **Structures and Shelters** ❑ Contemporary ❑ Simple ❑ Informal	– Timber – Concrete – Metal	– Sustainable design – Proportion to surrounding scale – Durable	– Open space – Plaza	  
	▪ **Play feature** ❑ Robust ❑ Colorful ❑ Safe	– Timber – Rubber matting – Metal	– Conform to SIRIM standard – Safe – Attractive	– Open space – Plaza	 
	▪ **Sport feature** ❑ Informal	– Timber – Rubber matting – Concrete – Grass	– Durable – Safe	– Open space	 
	▪ **Signage** ❑ Contemporary ❑ Formal	– Masonry – Metal	– As per Signage Design Guideline, Putrajaya	– Entrance – Junction – Pedestrian – Sport areas	 
	▪ **Water feature** ❑ Naturalistic ❑ Contemporary	– Rock, Natural – Tile finish – Metal sculpture – Concrete sculpture	– Safe – Attractive	– Entrance – Open space – Plaza	 
❑ **Buffer**	▪ **Planting** ❑ Natural ❑ Informal	– Palm – Shrub – Forest species – Medium trees	– Able to Screen – Safe – Attractive	– Along Roadside – Public utilities boundary – Between TNB-Turbine area and Housing area	  

PLANNING REQUIREMENT : LANDSCAPE					
LANDUSE	**DESIGN STYLE**	**MATERIALS**	**GENERAL REQUIREMENT**	**USE/LOCATION**	
❑ **Roadside**	▪ **Paving, walls and steps** ❑ Formal ❑ Contemporary	❑ **Paving / Step** – Clay brick – Concrete – Interlocking paver etc.	– Anti slippery surface – Max. gradient 8% – Max. Gradient for super elevation 2%	– Roadside	 
		❑ **Wall** – Key stone – Concrete – Granite stone etc.	– Harmonize with surrounding environment	– Slope areas	
	▪ **Site Furniture** ❑ Contemporary	– Hardwood – Masonry – Metal	– Vandalism proof – Safe – Attractive	– Junction – Along pedestrian walkway	 
	▪ **Lighting** ❑ Robust ❑ Minimal ❑ Reflect character of adjacent neighbourhood	– Timber – Metal	– Max. height 10m at roadside	– Footpaths – Cycle track – Car park	
	▪ **Drainage** ❑ Swales/Natural drain ❑ Concealed drains	– Culvert – Concrete – Drain cover on walkway to follow walkway ‘s material	– Visually attractive – Naturally blend with surrounding	– Open space – plaza	  
	▪ **Signage** ❑ Contemporary ❑ Formal ❑ Simple ❑ Clear	– Masonry – Metal – Hardwood	– Clear – Vandalism proof	– Junction	 
	▪ **Planting** ❑ Formal	– Palm – Shrub – Forest species	– Provide ample shade – Hardy Plants Attractive	– Roadside	 
	▪ **Irrigation Strategy**	– Trucking			

PLANNING REQUIREMENT : URBAN DESIGN

LAYOUT PLAN

(i) The layout plan must demonstrate that the following elements are addressed in the design:
- Development appropriate to topographical features
- Appropriate building orientation with respect to the sun
- Appropriate pedestrian and vehicular access systems
- Site infrastructure systems are designed in a manner which enhances site development

(ii) Illustrate the effective and efficient integration of the pedestrian, cycle and road systems


(iii) Development is to be designed to work with site contours to avoid unnecessary cut and associated retaining structures

(iv) Illustrate a high level of permeability between site uses within the Planning Block and with adjoining Planning Blocks

(v) Illustrate appropriate site building setbacks from major traffic routes or other noise generating or potentially dangerous infrastructure

(vi) Illustrate that the site will be developed in a logical sequence

(vii) The layout plan should illustrate that the form of development effectively contributes to the Planning Block's sense of place and amenity with the context of Putrajaya

BUILDING CHARACTER

(i) Avoid monotonous building designs – provide a range of housing types to meet different lifestyle choices, diversity in the marketplace and opportunity for an interesting street frontage

(ii) Ensure that buildings are designed to respect the topographical features of the site ,eg buildings should step with steeper sites – do not cut substantial benches into steep land

(iii) Building design should respect the amenity of adjoining and adjacent buildings and their residents

(iv) Building design should interpret local image and character with new materials that are energy efficient

(v) Building facades should be designed to accommodate a tropical environment

(vi) Designers should look to the use of innovative building materials that are less maintenance intensive and more environmentally efficient

(vii) While diversity is sought in building design, buildings should be designed with a common theme that provides a linkage to the style and nature of the development area

(viii) Building design should ensure good living environments for residents that do not adversely impact on neighbours

(ix) The building design should incorporate landscaping that contributes to a pleasant and safe environment and integrates well with the streetscape and adjoining open space areas

HEIGHT, MASSING AND BUILDING SPACES

(i) Building design must comply with all provisions relating to plot ratio, plinth, building height and setbacks as contained within these guidelines, and must comply with the UDG of Precinct 11 and 13.

(ii) Spaces on any ground level should not directly overlook dwellings on adjacent land

(iii) Ground floor levels must be responsive to pedestrian footpaths and continuity and flow between buildings

(iv) Building design does not significantly reduce daylight to open space and habitable rooms in adjacent development

(v) Roof pitch and overlay should be designed to meet local environmental requirements

(vi) Roof overhangs should be designed to minimise the impact on sight lines from adjacent buildings

(vii) Buildings should be designed to encourage facade articulation and use of design elements that reduce building bulk and provide a pleasant street aspect. Any blank wall should be avoided.

(viii) The design of free standing buildings should be sympathetic with adjoining buildings, yet provide for local identity and character


COLOUR TEXTURE

(i) Building colours should harmonise with the predominant colours of the surrounding area

(ii) Use of earth tones shall be encouraged

(iii) Colours for specific building types will be subject to the approval of the Perbadanan. Pastel colours are to be encouraged.

MISCELLANEOUS

(i) Privacy and visual controls – overlooking to be controlled by appropriate orientation f windows and use of splay windows

(ii) Air conditioning equipment including piping– all equipment should be contained in compartments that are designed as an integral component of the building to ensure the equipment is hidden from view

(iii) Drying yards – building design should incorporate appropriate design for drying areas that allows for natural ventilation and light while ensuring they are hidden from public view

(iv) Aerials and satellite dishes – the location of aerials and satellite dishes must not impact on the amenity of adjoining buildings

(v) Service ducting shall not be exposed on the external surfaces of buildings

(vi) Carports and garages should:
- Be designed to integrate with the design of associated buildings
- Not diminish the attractiveness of the streetscape
- Not visually dominate views of the house from the street
- Cover the full length of a car

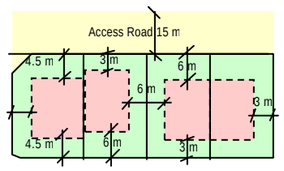
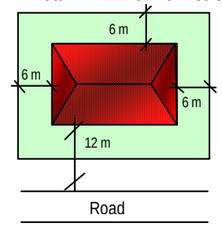
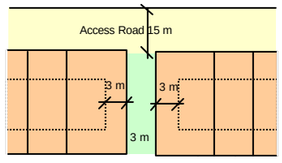
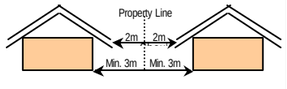
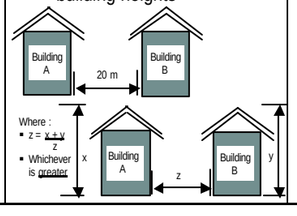
(vii) Dwellings with green frontage must address that frontage with habitable spaces and not service areas only

(viii) Dwelling design must provide sufficient outdoor open space that can act as an extension of the dwelling for relaxation, entertainment, recreation and children's play purposes.

(ix) For the installations of grills, residents need to abide by the guidelines on the Uniform Design and Installation of Grills for Buildings in Putrajaya (Department of Urban Services, Putrajaya)

(x) Any changes to the façade and design of buildings must seek planning permission for Perbadanan Putrajaya.

PHYSICAL PLANNING REQUIREMENTS PLANNING BLOCK 3 (PB 3)

MAIN LAND USES:	SEMI-DETACHED HOUSES	TERRACE HOUSES	APARTMENTS	TADIKA	SURAU	STESYEN MINYAK	STESYEN PAM KUMBAHAN UTAMA
(i) Density	▪ 5 – 7 units / ac	▪ 8 units / ac	▪ 20 units / ac	▪ One in PB3 ▪ Maximum Plinth Area : 30%	▪ One in PB3 ▪ Maximum Plinth Area : 50%	▪ One in PB3 ▪ Plot ratio – 0.5 (max) ▪ Plinth area – 40% max	▪ One in PB3
(ii) Composition			▪ 100% medium cost				
(iii) Minimum Lot size	▪ 300 m2	▪ 130 m2	▪ N/A	▪ Minimum 0.20 ha	▪ Minimum 0.30 ha	▪ Minimum 0.25 ha	▪ 0.50 ha
(iv) Height	▪ 2 levels on flat or gently sloping land ▪ 3 levels on steep land	▪ 2 levels on flat or gently sloping land		▪ 2 storey (max)	▪ Maximum 2 levels	▪ 1 storey (6m max)	▪ N/A
(v) Setbacks: ▪ Front/Rear setbacks	▪ Total setback distance for both the front and rear setbacks must total 9 metres ▪ Street frontage – Minimum 3m ▪ Rear setback – Minimum 3m 	▪ Total setback distance for both the front and rear setbacks must total 9 metres ▪ Street frontage – min. 3.0 metres ▪ Rear setback – min. 3.0 metres ▪ Variation of setback is permissable within a single block of terraces and not for individual buildings		▪ Street frontage – Minimum 6 metres ▪ Rear – Minimum 6 metres 	▪ Street frontage – Minimum 6 metres ▪ Rear – Minimum 6 metres	▪ Street frontage – Minimum 6 metres ▪ Rear – Minimum 6 metres	▪ Street frontage – Minimum 6 metres ▪ Rear – Minimum 6 metres
▪ Non-Party/side Boundary	▪ Minimum 3 metres	▪ Where applicable – Minimum 3 metres to side road with buffer ▪ Minimum 6 metres to side road without buffer 	▪ N/A	▪ Minimum 6 metres	▪ Minimum 6 metres	▪ 6m measured from the road reserve to the nearest permanent structure in the petrol station ▪ A minimum landscape buffer of 5m shall be provided for petrol station located next to residential building	▪ Minimum 6 metres
▪ Street Boundary	▪ Minimum 3 metres	▪ Minimum 3 metres	▪ Minimum 6 metres	▪ Setback from access road – 12m (min)	▪ Setback from access road – min. 12m	▪ N/A	▪ Minimum 6 metres
▪ Setback Between Roofs' Eaves		▪ Minimum 2 metres 		▪ Minimum Tadika size (if within building for strata residential development) Min. classroom size – 245m²/class Garden Play Area - 600m² (min) Total Floor Area – 1090m²			
▪ Setback Between Building			▪ 20 metres setback between buildings or average of building heights 				

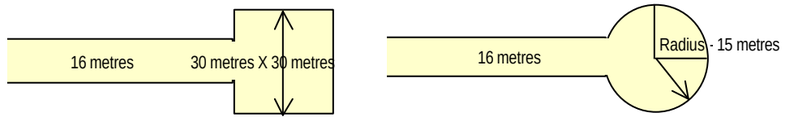
MAIN LAND USES:	SEMI-DETACHED HOUSES	TERRACE HOUSES	APARTMENTS	TADIKA	SURAU	STESYEN MINYAK	STESYEN PAM KUMBAHAN UTAMA
▪ Car Park	▪ Min. 2 cps on site ▪ CPS to be clear of min. front setback.	▪ Min. 2 cps on site ▪ CPS to be clear of min. front setback.	▪ Minimum 1 cps per unit + 10% for visitors ▪ CPS to be clear of minimum front setback ▪ Car parking for disabled at 1% of total number of cps. ▪ Covered motorcycle bays at 1:1	▪ 1 cps per 500 sq ft floorspace	▪ 1 cps for 250 sq ft floorspace ▪ Car parking for disabled at 1% of total number of cps.	▪ N/A	▪ N/A
(vi) Fencing As per the Fencing Design Guidelines Manual, Volume 1 and Volume 2, chapter 1, 2 and 3	▪ Refer Fencing Design Guidelines Manual, Volume 2, chapter 5	▪ Refer Fencing Design Guidelines Manual, Volume 2, chapter 2 and 6	▪ Refer Fencing Design Guidelines Manual, Volume 2, chapter 8	▪ Refer Fencing Design Guidelines Manual, Volume 2, chapter 11	▪ Refer Fencing Design Guidelines Manual, Volume 2, chapter 13	▪ Refer Fencing Design Guidelines Manual, Volume 2, chapter 20	▪ Refer Fencing Design Guidelines Manual, Volume 2, chapter 15
(vii) Layout Plan	▪ Use the setback flexibility and building design variation to break up and vary the position of the houses. 	▪ Use the setback flexibility and building design variation to break up and vary the position of the houses 	▪ Provide a fenced children's playground – Minimum 500m2 ▪ Suitable size surau + ruang jenazah. Calculation for surau size: 80% X No Of Units X 0.4m2 ▪ Car park to be well landscaped ▪ Min 2 m landscape buffer to all boundaries. ▪ Service areas to be aesthetically screened. ▪ Location of solid waste collection to be clearly shown ▪ Provision of community hall   ▪ Other community provision: ❑ Kindergarten ❑ Day Care Centre ❑ Laundry ❑ Car Wash Area ❑ Convenient Shop ❑ Courts Sepaktakraw or Volleyball	▪ Layout plans to show the design concept including: ❑ Total gross net areas of indoor play, outdoor play, roofed shade and other outdoor shade areas. ❑ Service areas to be aesthetically screened. ❑ Site car parking to be clearly indicated. ❑ Site car parking to be landscaped. ❑ Min 2m landscaped buffer between car parking spaces and any boundary. ❑ Initiate stacked outdoor play areas, carparking. ❑ Indicate set-down/pick-up areas to be visible from road and must be covered. ❑ Indicate pedestrian access to/from the site and connection to surrounding pedestrian pathways. ❑ Where boundaries are not residential dwellings, carefully locate potentially noisy activities to minimise impacts. ❑ Show appropriate screening that protects the amenity of abutting residential uses.	▪ Layout plan to show the design concept including: ❑ Location of all key facilities. ❑ Location of car parking spaces ❑ Location of screening devices to minimise impact of noise (for example – air conditioning equipment). ❑ Effective screening to abutting residential uses. ❑ Calculation for minimum surau size: 80% X No Of Units X 0.4 m2	▪ Layout plan to show the design concept including: ❑ Location of all key facilities. ❑ Location of car parking spaces ❑ Location of screening devices to minimise impact of noise producing machinery. ❑ Effective screening to abutting residential uses.	▪ Layout plan to show the design concept including: ❑ Location of all key facilities. ❑ Location of car parking spaces ❑ Location of screening devices to minimise impact of noise producing machinery. ❑ Effective screening to abutting residential uses.

PLANNING REQUIREMENTS : TRAFFIC AND TRANSPORTATION

ROAD NETWORK AND DESIGN STANDARD

(i) Network Type

- Spine Road - 32 metres reserve
- Local Road - 22 metres reserve
- Access Road - 16 metres reserve
- Cul-De-Sac - 15 metres reserve



(ii) Road Capacity

- Spine Road - 1000 pcu/hr/lane
- Local Road - 700 pcu/hr/lane

(iii) Junction Control Criteria

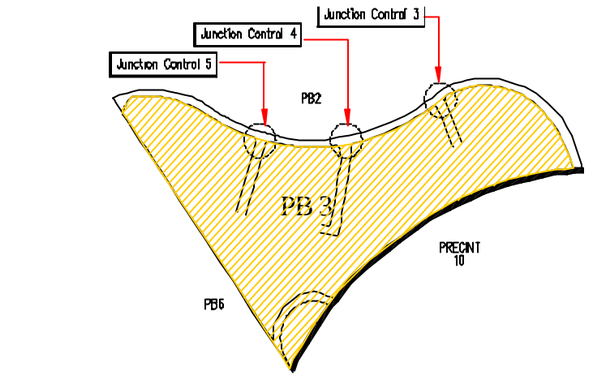
Junction Control	Total sum of 2-way traffic on the major road and heavier approach on minor road (PCU)	
	Spine Road	Local Road
Stop Control	up to 1500	up to 1500
Traffic Signal	Up to 4500	Generally not required
Grade Separation	Generally not required	Generally not required

(iv) Visibility Standards for Priority Junction

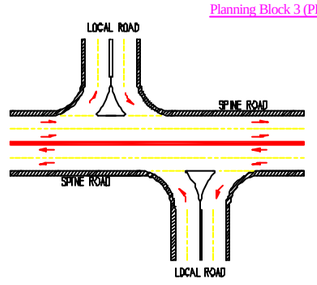
- Because minor road are uncontrolled. It is essential that adequate standards of visibility are archieved in the layout and that sight distances take account of the speed of traffic on the major road. The standards for providing clear visibility for minor road traffic are set out in the figure given

(v) Transport Design Guide for Putrajaya

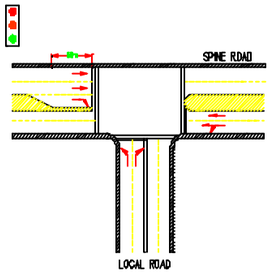
- Details on other design criteria to be referred to the Transport Design Guide for Putrajaya (1998)



Planning Block 3 (PB 3) - Key Plan

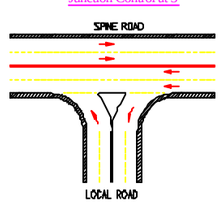


Junction Control at 3



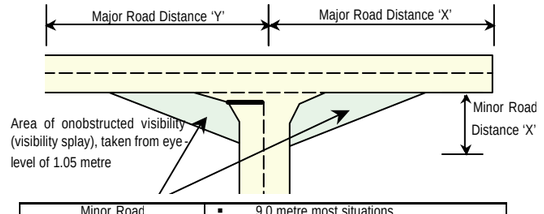
Junction Control at 4

Note : With signal controlled pedestrian crossing phase



Junction Control at 5

Visibility Standards for Priority Junction



Minor Road Distance 'X' (metre)	▪ 9.0 metre most situations ▪ 4.5 metre an absolute minimum on lighty trafficked roads (< 200 vph)

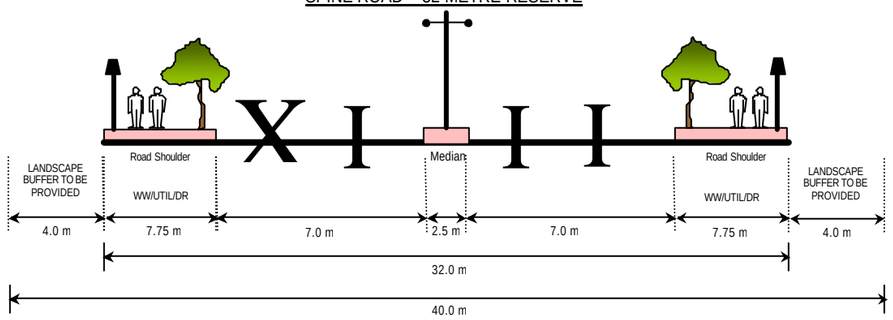
Major Road Distance 'X'(metre)	120	90	45
Speed Limit (KPH)	60	50	40

PLANNING REQUIREMENTS : TRAFFIC AND TRANSPORTATION

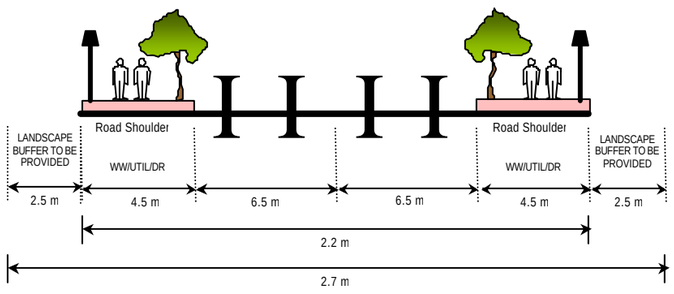
ROAD NETWORK AND DESIGN STANDARD

(v) Typical Road Cross Section

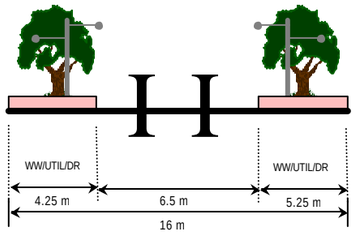
SPINE ROAD – 32 METRE RESERVE



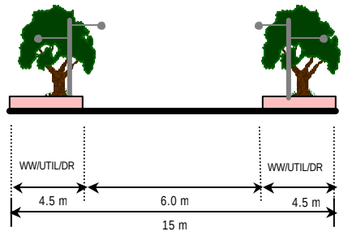
LOCAL ROAD – 22 METRE RESERVE



ACESS ROAD – 16 METRE RESERVE



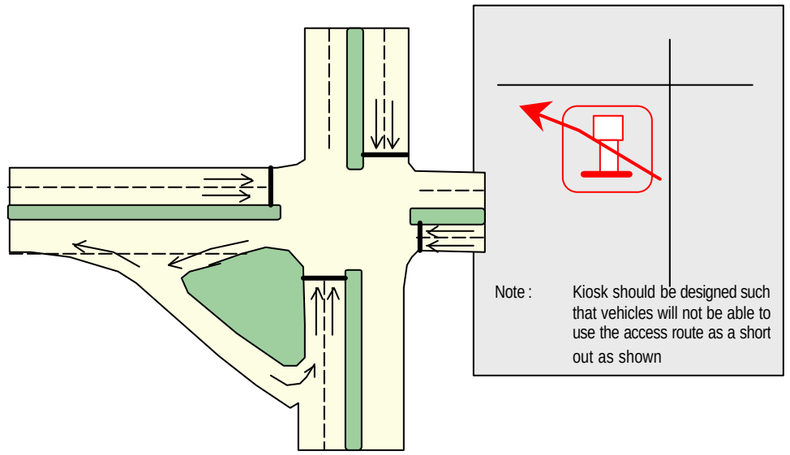
CUL-DE-SAC – 15 METRE RESERVE



Note:
- WW/UTIL/DR : Common pedestrians walkway utility and drainage reserve
- Minimum cover to all utilities should be 15 metre
- Cul-De-Sac are permitted for bungalows only serving typically no more than 25 units
- Minimum cover to all utilities should be 15 metre

(vii) Petrol Station Access

- To ensure that access egress points do not become “rat running” routes



(viii) Parking at Surau

- Road side parellel parking to be provided is the vicinity of the surau to cater for oversell of traffic on certain occasions.

(ix) Connection to PB5 (Commercial centre)

- To provide overhead pedestrian bridge linking the medium cost apartment area to the commercial precinct.

PLANNING REQUIREMENTS : INFRASTRUCTURE

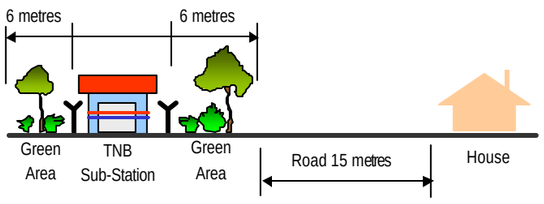
UTILITIES

(i) Environment

- The detailed platform levels shall be determined at the D.0 approval stage
- All earthworks must comply with the Environmental Management Guidelines of Putrajaya and Earthwork By-Laws (Perbadanan Putrajaya 1996)
- Set backs and buffer areas for STP are as indicated under sewerage section.

(ii) Electricity

- The electricity supply for PB3 is mostly used for residential which are approximately 90% of the total Electrical Energy required.
- Provision of adequate numbers of 33KV Main Distribution Station (MDS) to be supported by a series of 11KV Sub-Stations (Double Chambers) and feeder pillars at strategic locations to comply with the electricity provider's (TNB) requirement.
- Feeder pillars along public roads and areas shall have all doors to open away from road and public view.
- Electrical cabling network for overall development of PB3 shall consist of 33KV, 11KV and 415V distribution network systems.
- The electrical cabling network system shall be placed along the utility reserves to conform to the no dig policy. All electrical cabling shall be of the underground system.
- Sub-Station: shall have a minimum 6 metres setback on all sides to the nearest residential building. These shall be extensively landscaped.
- Fencing of utility buildings shall abide by Fencing Design Guidelines-Vol. 2, Chap. 15 pg. 132

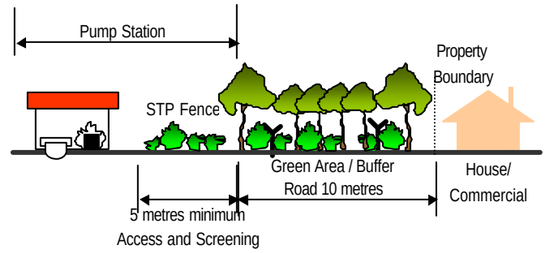


(iii) Drainage

- Drainage to the site shall be provided in terms of collection, conveyance and retention of flow from the site.
- Gross Pollutant Traps to be provided at the outlet of discharge points.
- The drainage design shall comply with the Putrajaya Stormwater Management Design Guidelines (1998), Drainage Masterplan Study Report for Putrajaya (1996) and Urban Stormwater Management Manual for Malaysia (JPS,2000)

(iv) Sewerage

- A network of gravity sewer reticulation to collect sewage from the precinct. (Level 3 works.)
- From these reticulation networks, sewage will be discharged into the centralized trunk sewer system of Putrajaya (Level 1 & 2 works) at appropriate points.
- The trunk sewers will terminate at two pump-stations. These two pump stations are PS1 in Precinct 9 and PS9 (Levels 1 & 2 works) located at the south of precinct 11, next to Road R3.
- From PS1 and PS9, sewage will be conveyed via the centralized trunk sewer system to STP2 for treatment. However, STP2 is not scheduled to be ready until Year 2003. In the interim, sewage discharge will be temporary directed to the sewage switching station PS5 for onward conveyance to STP1 for treatment until the completion of STP2.
- The buffer for a closed STP shall be 10 m to the nearest property boundary.
- The buffer for an open STP system shall be 30 m to the nearest property boundary.



(v) Gas

- The gas supply for PB3 is mostly used for residential which are approximately 80% of the total gas requirements.
- Gas supply for PB3 will be served from a District Gas Station located at Precinct 9 through a medium pressure gas pipeline.
- Provisions of 4 nos. of area Gas Station are allocated within the Precinct 11 development to cater for the projected gas loading requirements, with total area reserve of 1.13 acres.
- Low-pressure gas pipeline reticulation from the Area Gas Station is planned to serve the gas requirements for the residential, commercial and other amenities.
- Safety provision for construction within the vicinity.
- (For details of Gas Pipeline Reserve Design refer Appendix 1)

PLANNING REQUIREMENTS : INFRASTRUCTURE

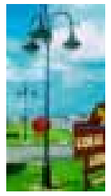
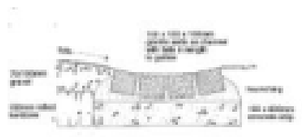
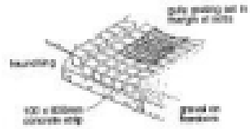
UTILITIES

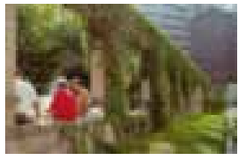
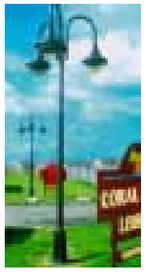
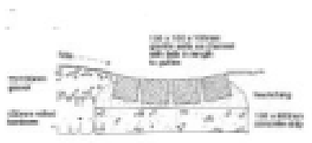
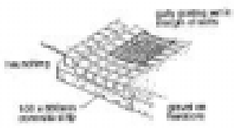
(vi) Waste Disposal

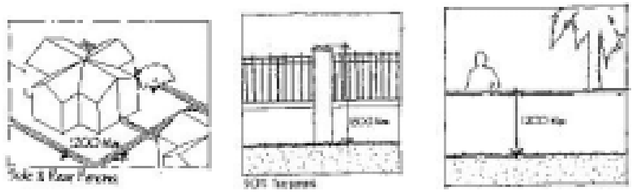
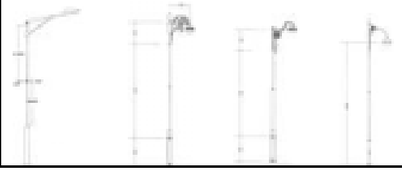
- Solid waste management in PB3 shall address reduction, reuse, recycling and recovery, the 4 R's of waste management.
- Solid waste is proposed to be separated at source, by residents or employees, into three streams; dry recycles, wet waste and rubbish (all other wastes). The dry recyclable is to be further separated at source into containers and fiber materials.
- The sensitivity of the site in terms of waste management relates to the operational requirements of Precinct 11, which require that no burial of material is undertaken during the construction phase.
- In addition to control odour nuisance to any sensitive receptors biodegradable waste cannot be left at the site for extended periods.
- The waste management shall comply with Urban Design Guidelines and Environmental Guidelines for Putrajaya.
- For low rise residential, refuse chamber is to be placed in front of the house, either left or right of the driveway and near to main road for the ease of mechanical collection. The estimated generation of solid waste is 5kg/unit/day.
- For high rise residential (apartment, condominium and government's quarters), individual refuse chamber center must be placed at each block. These refuse chambers must be built on ground floor / basement. Building management team would collect the refuses from refuse chamber and place it to the refuse chamber center. The estimated generation of solid waste is 5 kg/unit/day.
- For non-residential building, refuse chamber center can be built at the ground floor / basement or apart from the main building. The estimated generation of solid waste for recreation park/public transport stop station are 0.2 kg/visitor, 300L/1000m^2(gross floor area) for shopping complex and 500L/1000m^2(gross floor area) for restaurant.
- Access road must be constructed for the ease of mechanical collection and public use. Obstructions to any collection vehicle's access must be disallowed at all time.

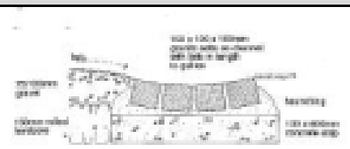
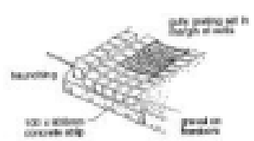
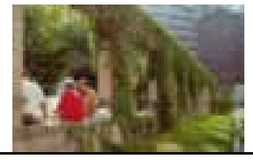
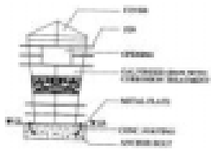
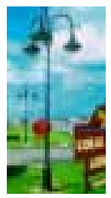
(vii) Water Supply

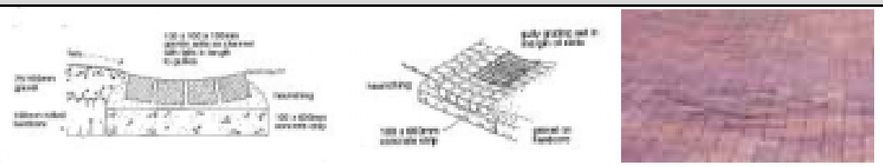
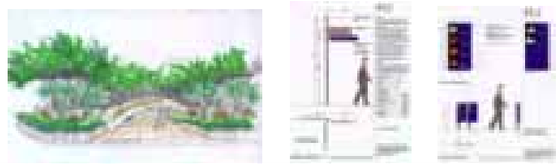
- Water supply to PB3 shall be consistent with the provision of water supply master plan for Putrajaya.
- Storage reservoir and pumping station together with the rising and falling mains shall be planned to serve this area in compliance with Jabatan Bekalan Air (JBA) requirement, and Design Criteria and Standards for Water Supply System, JKR (1989)

PLANNING REQUIREMENT : LANDSCAPE					
LANDUSE	**DESIGN STYLE**	**MATERIALS**	**GENERAL REQUIREMENT**	**USE/LOCATION**	
❑ **Public Amenity (Kindergarten)**	▪ **Play feature** ❑ Integrated ❑ Bright colour	– Hardwood – Metal – Plastic	– Conform to SIRIM standard	– Open Space	
	▪ **Lighting** ❑ Robust, minimal ❑ Reflect character of adjacent neighborhood	– Metal – Timber	– Anti-corrosion – Durable – Attractive	– Footpath – Open space	 
	▪ **Drainage** ❑ Swales ❑ Concealed drains	– Culvert – Concrete – Drain cover on walkway to follow walkway ‘s material	– Visually attractive – Concealed drains	– Building lot	  
	▪ **Planting** ❑ Formal ❑ Informal	– Medium size – Tree – Palm – Shrub	– Non-poisonous species – Safe – Attractive	– Open Space	 
	▪ **Irrigation Strategy**	Pipe reticulation from PHB and/or trucking			

PLANNING REQUIREMENT : LANDSCAPE					
LANDUSE	**DESIGN STYLE**	**MATERIALS**	**GENERAL REQUIREMENT**	**USE/LOCATION**	
❑ **Residential (Landed)**	▪ **Paving / Step, and Wall** ❑ Contemporary ❑ Natural	❑ **Clay Brick** – Homogenous tile – Concrete – Interlocking paver etc	– Anti-Slippery surface – Max. gradient 8% – Max. gradient 2% for super elevation	– Building compound	
		❑ **Wall** – Key stone – Concrete – Granite Stone etc.	– Key Stone – Concrete – Granite stone etc.	– Slope areas	 
	▪ **Lighting** ❑ Decorative	– Metal	– Anti-Corrosion – Durable – Attractive	– Building compound	 
	▪ **Drainage** ❑ Swales ❑ Concealed drains	– Concrete – Stone etc. – Drain cover on walkway to follow walkway ‘s material	– Harmonize with surrounding environment – Easy to maintain	– All area	  
	▪ **Irrigation Strategy**	Tap from storage tank or JBA main or tap from JBA main			

PLANNING REQUIREMENT : LANDSCAPE					
LANDUSE	**DESIGN STYLE**	**MATERIALS**	**GENERAL REQUIREMENT**	**USE/LOCATION**	
❑ **Residential (Landed)**	▪ **Fences, Railing and Barriers** ❑ Contemporary ❑ Elegant	– Metal – Timber – Concrete – Planting	– To follow Fencing Design Guideline, PJC	– Boundary Line	
	▪ **Water feature** ❑ Contemporary	– Metal – Concrete – Tiles – Stone	– Clean – Safe – Attractive	– Building compound – Entrance	
	▪ **Planting** ❑ Formal	– Palms – Shrub – Trees – Ground cover	– Non-poisonous species – Hardy plants – Attractive	– Building compound	
❑ **Roadside**	▪ **Paving, walls and steps** ❑ Formal ❑ Contemporary	❑ **Paving / Step** – Clay brick – Concrete – Interlocking paver etc.	– Anti slippery surface – Max. gradient 8% – Max. Gradient for super elevation 2%	– Roadside	
		❑ **Wall** – Key stone – Concrete – Granite stone etc.	– Harmonize with surrounding environment	– Slope areas	
	▪ **Site Furniture** ❑ Contemporary	– Hardwood – Masonry – Metal	– Vandalism proof – Safe – Attractive	– Junction – Along pedestrian walkway	
	▪ **Lighting** ❑ Robust ❑ Minimal ❑ Reflect character of adjacent neighborhood	– Timber – Metal	– Max. height 10m	– Footpaths – Cycle track – Car park	

PLANNING REQUIREMENT : LANDSCAPE					
LANDUSE	**DESIGN STYLE**	**MATERIALS**	**GENERAL REQUIREMENT**	**USE/LOCATION**	
❑ **Roadside**	▪ **Drainage** ❑ Swales/Natural drain ❑ Concealed drains	– Culvert – Concrete – Drain cover on walkway to follow walkway 's material	– Visually attractive – Naturally blend with surrounding	– Roadside reserve	  
	▪ **Signage** ❑ Contemporary ❑ Formal ❑ Simple ❑ Clear	– Metal	– To follow Signage and Advertisement, PJC	– Junction	
	▪ **Planting** ❑ Formal	– Shade medium size tree – Palm – Shrub	– Provide ample shade – Hardly Plants – Attractive	– Roadside	 
	▪ **Irrigation Strategy**	– Trucking			
❑ **Residential (condominium and apartment)**	▪ **Paving / Step, Wall** ❑ Formal ❑ Informal	❑ **Paving / Step** – Clay brick – Concrete – Interlocking block etc	– Anti slippery surface – Max-gradient of 8% – Durable	– Open space – Walkway	  
		❑ **Wall** – Keystone – Facing Brick – Concrete etc.	– Harmonize with surrounding environment	– Slope areas	 
	▪ **Site Furniture** ❑ Contemporary ❑ Elegant formal ❑ Specific design for neighborhood	– Hardwood – Metal – Concrete	– Vandalism proof – Durable – Functional – Safe	– Open space – Resting areas	  
	▪ **Lighting** ❑ Contemporary ❑ Elegant formal ❑ Specific design for neighborhood	– Concrete – Metal – Masonry	– Max. height 4m at open areas – Max. height 10m at roadside	– Open space – Entrance with bollard – Roadside	  

PLANNING REQUIREMENT : LANDSCAPE					
LANDUSE	**DESIGN STYLE**	**MATERIALS**	**GENERAL REQUIREMENT**	**USE/LOCATION**	
❑ **Residential (condominium and apartment)**	▪ **Drainage** ❑ Swales/Natural drain ❑ Concealed drains	– Culvert – Concrete – Drain cover on walkway to follow walkway 's material	– Harmonious with surrounding environment	– Where necessary	
	▪ **Structures and Shelter** ❑ Informal ❑ Vernacular	– Hardwood – Concrete – Masonry – Metal	– To blend harmoniously with surrounding structure – Durable – Safe	– Open space	
	▪ **Signage** ❑ Contemporary ❑ Formal ❑ Informal	– Metal – Hardwood – Concrete etc.	– To following Signage and Advertisement Design Guideline, PJC	– Entrance – Open space – Pedestrian walkway	
	▪ **Play feature** ❑ Integrated ❑ Bright colour	– Metal – Rubber matting – Plastic	– Conform to SIRIM standard – Safe – Attractive – Durable	– Open space	
	▪ **Planting** ❑ Informal ❑ Tropical	– Trees – Palms – Shrubs – Ground covers	– Non-poisonous species – Hardy plants – Low maintenance	– All green areas	
❑ **Buffer**	▪ **Planting** ❑ Natural ❑ Informal	– Palm – Shrub – Forest species – Medium trees	– Able to Screen – Safe – Attractive	– Along Roadside – Public utilities boundary – Between TNB-Turbine area and Housing area	

PLANNING REQUIREMENT : URBAN DESIGN

LAYOUT PLAN

(i) The layout plan must demonstrate that the following elements are addressed in the design:
- Development appropriate to topographical features
- Appropriate building orientation with respect to the sun
- Appropriate pedestrian and vehicular access systems
- Site infrastructure systems are designed in a manner which enhances site development

(ii) Illustrate the effective and efficient integration of the pedestrian, cycle and road systems

(iii) Development is to be designed to work with site contours to avoid unnecessary cut and associated retaining structures

(iv) Illustrate a high level of permeability between site uses within the Planning Block and with adjoining Planning Blocks

(v) Illustrate appropriate site building setbacks from major traffic routes or other noise generating or potentially dangerous infrastructure

BUILDING CHARACTER

(i) Avoid monotonous building designs – provide a range of housing types to meet different lifestyle choices, diversity in the marketplace and opportunity for an interesting street frontage

(ii) Ensure that buildings are designed to respect the topographical features of the site ,eg buildings should step with steeper sites – do not cut substantial benches into steep land

(iii) Building design should respect the amenity of adjoining and adjacent buildings and their residents

(iv) Building design should interpret local image and character with new materials that are energy efficient

(v) Building facades should be designed to accommodate a tropical environment

(vi) Designers should look to the use of innovative building materials that are less maintenance intensive and more environmentally efficient

(vii) While diversity is sought in building design, buildings should be designed with a common theme that provides a linkage to the style and nature of the development area

(viii) Building design should ensure good living environments for residents that do not adversely impact on neighbours

(ix) The building design should incorporate landscaping that contributes to a pleasant and safe environment and integrates well with the streetscape and adjoining open space areas

HEIGHT, MASSING AND BUILDING SPACES

(i) Building design must comply with all provisions relating to plot ratio, plinth, building height and setbacks as contained within these guidelines, and must comply with the UDG of Precinct 11 and 13

(ii) Spaces on any ground level should not directly overlook dwellings on adjacent land

(iii) Ground floor levels must be responsive to pedestrian footpaths and continuity and flow between buildings

(iv) Building design does not significantly reduce daylight to open space and habitable rooms in adjacent development

(v) Roof pitch and overlay should be designed to meet local environmental requirements

(vi) Roof overhangs should be designed to minimise the impact on sight lines from adjacent buildings

(vii) Buildings should be designed to encourage facade articulation and use of design elements that reduce building bulk and provide a pleasant street aspect. Any blank wall should be avoided.

(viii) The design of free standing buildings should be sympathetic with adjoining buildings, yet provide for local identity and character

COLOUR TEXTURE

(i) Building colours should harmonise with the predominant colours of the surrounding area

(ii) Use of earth tones shall be encouraged

(iii) Colours for specific building types will be subject to the approval of the Perbadanan. Pastel colours are to be encouraged

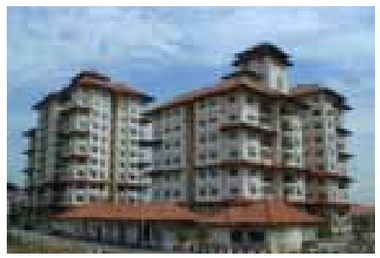
MISCELLANEOUS

(i) Privacy and visual controls – overlooking to be controlled by appropriate orientation of windows and use of splay windows

(ii) Air conditioning equipment including piping – all equipment should be contained in compartments that are designed as an integral component of the building to ensure the equipment is hidden from view

(iii) Drying yards – building design should incorporate appropriate design for drying areas that allows for natural ventilation and light while ensuring they are hidden from public view

(iv) Aerials and satellite dishes – in high rise buildings or multiple tenancy commercial buildings, a central reception system is to be incorporated in to the building design. On all other buildings, aerials and satellite dishes shall be located to avoid adverse impact on the amenity of adjoining buildings



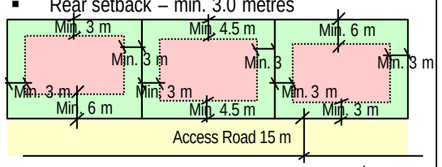
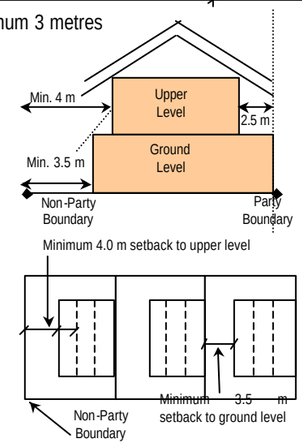
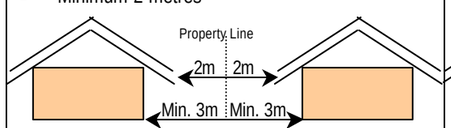
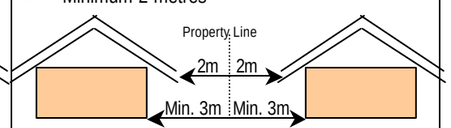
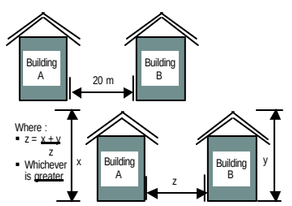
(v) Service ducting shall not be exposed on the external surfaces of buildings

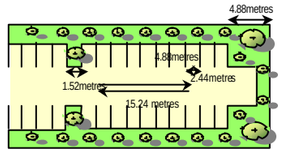
(vi) Carports and garages should:
- Be designed to integrate with the design of associated buildings
- Not diminish the attractiveness of the streetscape
- Not visually dominate views of the house from the street
- Cover the full length of a car

(vii) Dwellings with green frontage must address that frontage with habitable spaces and not service areas only

PLANNING REQUIREMENT : URBAN DESIGN				
LAYOUT PLAN	**BUILDING CHARACTER**	**HEIGHT, MASSING AND BUILDING SPACES**	**COLOUR TEXTURE**	**MISCELLANEOUS**
(vi) Illustrate that the site will be developed in a logical sequence (vii) The layout plan should illustrate that the form of development effectively contributes to the Planning Block's sense of place and amenity with the context of Putrajaya (viii) The location of tadikas should: ▪ Be in a highly accessible position for the community ▪ Minimise the introduction of non-local traffic into minor residential streets (ix) Where applicable, the provisions of suraus, within apartment complexes should be a freestanding building (x) The apartment complex must include 'drop off' points for the convenience of residents (xi) Maximum plinth foe apartment building is 60% of the site	(x) For high rise buildings: ▪ Pedestrian spaces, courts, landscape or recreation areas should be more prominent than vehicle movement and utility spaces ▪ Vehicle parking design and location should minimise impact on adjacent dwellings ▪ Safe and convenient internal access to parking, residential and service areas 			(viii) Dwelling design must provide sufficient outdoor open space that can act as an extension of the dwelling for relaxation, entertainment, recreation and children's play purposes (ix) The design of tadikas should: ▪ Ensure that the playground is visually interesting and environmentally safe for children ▪ The play area is protected from on site and off site hazards ▪ The play area has adequate shade and shelter areas ▪ The landscaping assist the educational role of the facility (x) Service station design shall: ▪ Ensure safety, minimise pollution and maintain visual amenity ▪ Be reasonably compatible in appearance and scale with nearby buildings ▪ Include appropriate screening and buffering that maintains or improves the amenity of adjoining uses ▪ Ensure that no noise emissions or vibrations from the site cause a nuisance to nearby residents (ix) For the installations of grills, residents need to abide by the guidelines on the Uniform Design and Installation of Grills for Buildings in Putrajaya (Department of Urban Services, Putrajaya) (x) Any changes to the façade and design of buildings must seek planning permission for Perbadanan Putrajaya.

PHYSICAL PLANNING REQUIREMENTS PLANNING BLOCK 4 (PB 4)

MAIN LAND USES:	BUNGALOWS	SEMI-DETACHED HOUSES	TERRACE HOUSE	GOVERNMENT APARTMENT	MOSQUE
(i) Density	▪ 8-10 unit/acre	▪ 12-18 unit/acre	▪ 20 unit/acre	▪ Maximum 75 unit/acre	▪ One in PB4 ▪ Maximum Plint Area : 50%
(ii) Composition	▪ High cost	▪ 90% government housing	▪ 5% government housing		
(iii) Minimum Lot size	▪ 740m2	▪ 300m2	▪ 130m2	▪ N/A	▪ Min 0.85 ha
(iv) Height	▪ 2 levels on flat or gently sloping land ▪ 3 levels on steep land	▪ 2 levels on flat or gently sloping land ▪ 3 levels on steep land	▪ 2 levels on flat or gently sloping land	▪ Maximum 20 storey	
(v) Setbacks:					
▪ Front/Rear setbacks	▪ Total setback distance for both the front and rear setbacks must total 9 metres ▪ Street frontage – min. 3.0 metres ▪ Rear setback – min. 3.0 metres 	▪ Total setback distance for both the front and rear setbacks must total 9 metres ▪ Street frontage – min. 3.0 metres ▪ Rear setback – min. 3.0 metres	▪ Total setback distance for both the front and rear setbacks must total 9 metres ▪ Street frontage – min. 3.0 metres ▪ Rear setback – min. 3.0 metres ▪ Variation in setback is permissable within a single block of terraces and not for individual buildings.	▪ Building to building : Minimum 20m	▪ Setback from access road – min 12m ▪ Rear setback – 6m (min) ▪ Min 6 metres
▪ Non-Party/side boundary	▪ Minimum 3 metres 	▪ Minimum 3 metres	▪ Where applicable minimum 3 metres		
▪ Street boundary	▪ Minimum 3 metres	▪ Minimum 3 metres	▪ Minimum 3 metres	▪ Minimum 6 metres	
▪ Setback Between Roof's Eaves	▪ Minimum 2 metres 	▪ Minimum 2 metres 			
▪ Setback Between Buildings					

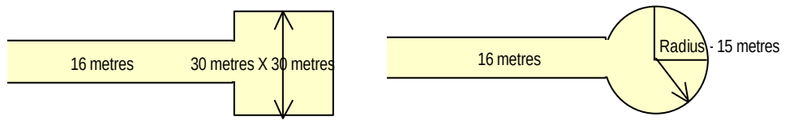
MAIN LAND USES:	BUNGALOWS	SEMI-DETACHED HOUSES	TERRACE HOUSE	GOVERNMENT APARTMENT	MOSQUE
▪ Car Park	▪ Min. 2 cps on site ▪ CPS to be clear of min. front setback.	▪ Min. 2 cps on site ▪ CPS to be clear of min. front setback	▪ Minimum 1 cps per unit ▪ CPS to be clear of minimum front setback	▪ Minimum 1 CPS per unit+10% ▪ Provision for disabled parking at 1% of total number of cps ▪ Covered motorcycle bays at 1:1 ▪ 1 CPS : 1.5 unit + 10% visitor ▪ MPS – 50% of total housing unit  ▪ BPS – 1 rack : 50 housing units	▪ Minimum 80 CPS per unit ▪ 1 CPS : 150 GFA ▪ 1 MPS: 300 GFA ▪ BPS – min. 1 rack ▪ Min. 1 bus bay ▪ Disable at 1% of total no. of CPS or min. 2 parking spaces whichever is higher
(vi) Fencing As per the Fencing Design Guidelines Manual, Volume 1 and Volume 2, chapter 1, 2 and 3	▪ Refer Fencing Design Guidelines Manual, Volume 2, chapter 4	▪ Refer Fencing Design Guidelines Manual, Volume 2, chapter 5	▪ Refer Fencing Design Guidelines Manual, Volume 2, chapter 6	▪ Refer Fencing Design Guidelines Manual, Volume 2, chapter 8	▪ Refer Fencing Design Guidelines Manual, Volume 2, chapter 13
(vii) Layout Plan	▪ Use the setback flexibility and building design variation to break up and vary the position of the houses. 	▪ Use the setback flexibility and building design variation to break up and vary the position of the houses. 	▪ Use the setback flexibility and building design variation to break up and vary the position of the houses ▪ To provide for a Tadika site of 0.5 acre 	▪ Provide a fenced children's playground ▪ Car park to be well landscaped ▪ Minimum 2m landscape buffer ▪ Service areas to be aesthetically screened ▪ Suitable size surau + ruang jenazah standard provision 80%XNo of unitsX0.4m2 ▪ Community hall standards 1/3Xno of unitsX0.9m2 ▪ 1 Tadika (standard provision : 0.5 acre)  ▪ Other community provision: ❑ Kindergarten ❑ Day Care Centre ❑ Laundry ❑ Car Wash Area ❑ Convenient Shop ❑ Courts Sepaktakraw or Volleyball	▪ Use the setback flexibility to vary the siting of the building ▪ Car park to be well landscaped ▪ Service area to be aesthetically screened ▪ Facilities for handicapped to be included in all designs

PLANNING REQUIREMENTS : TRAFFIC AND TRANSPORTATION

ROAD NETWORK AND DESIGN STANDARD

(i) Network Type

- Spine Road - 32 metres reserve
- Local Road - 22 metres reserve
- Access Road - 16 metres reserve
- Cul-De-Sac - 15 metres reserve



(ii) Road Capacity

- Spine Road - 1000 pcu/hr/lane
- Local Road - 700 pcu/hr/lane

(iii) Junction Control Criteria

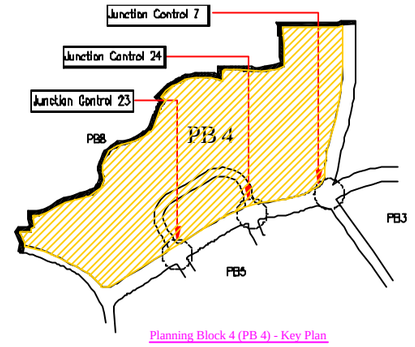
Junction Control	Total sum of 2-way traffic on the major road and heavier approach on minor road (PCU)	
	Spine Road	Local Road
Stop Control	up to 1500	up to 1500
Traffic Signal	Up to 4500	Generally not required
Grade Separation	Generally not required	Generally not required

(iv) Visibility Standards for Priority Junction

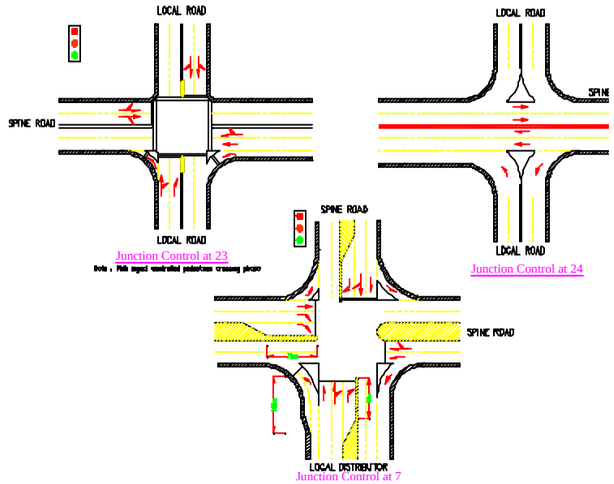
- Because minor road are uncontrolled. It is essential that adequate standards of visibility are archieved in the layout and that sight distances take account of the speed of traffic on the major road. The standards for providing clear visibility for minor road traffic are set out in the figure given

(v) Transport Design Guide for Putrajaya

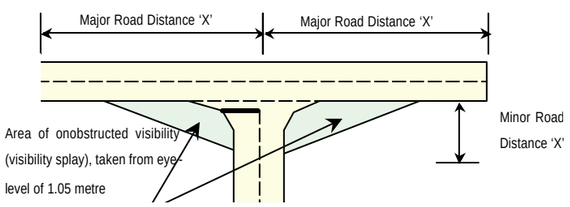
- Details on other design criteria to be referred to the Transport Design Guide for Putrajaya (1998)



Planning Block 4 (PB 4) - Key Plan



Visibility Standards for Priority Junctions



Minor Road Distance 'X' (metre)	▪ 9.0 metre most situations ▪ 4.5 metre an absolute minimum on lighty trafficked roads (< 200 vph)

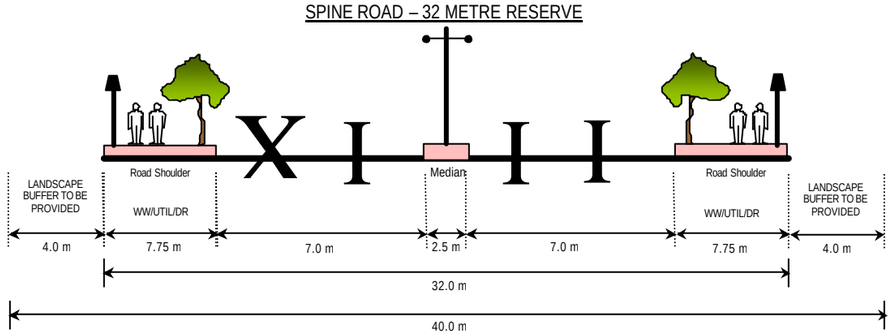
Major Road Distance 'X'(metre)	120	90	45
Speed Limit (KPH)	60	50	40

PLANNING REQUIREMENTS : TRAFFIC AND TRANSPORTATION

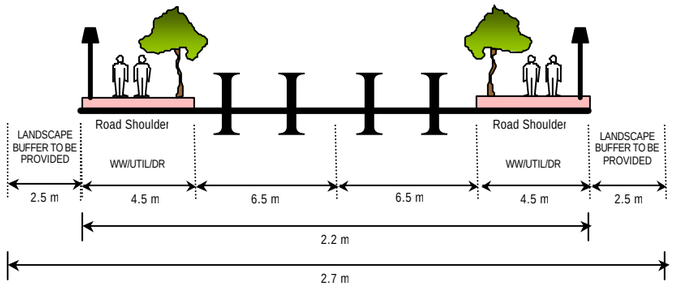
ROAD NETWORK AND DESIGN STANDARD

(v) Typical Road Cross Section

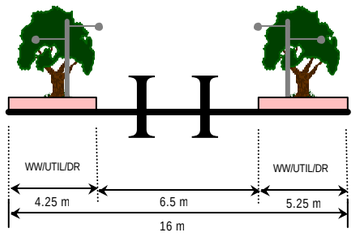
SPINE ROAD – 32 METRE RESERVE



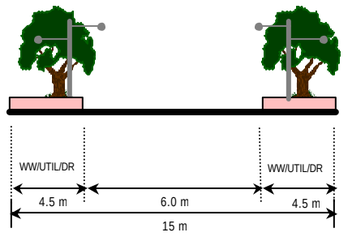
LOCAL ROAD – 22 METRE RESERVE



ACESS ROAD – 16 METRE RESERVE



CUL-DE-SAC – 15 METRE RESERVE



Note:
- WW/UTIL/DR : Common pedestrians walkway utility and drainage reserve
- Minimum cover to all utilities should be 15 metre
- Cul-De-Sac are permitted for bungalows only serving typically no more than 25 units
- Minimum cover to all utilities should be 15 metre

(vii) Traffic Calming & Pedestrian Safety

- Use pedestrian refuge island to connect Masjid area with Medium Cost Apartment areas

(viii) Access to Masjid

- To provide multiple left-in left-out ingress egress from the Spine road
- To provide for pedestrian signals at all crossings

(ix) Access to Town Centre & LRT Station

- Provide overhead pedestrian bridge linking medium cost flats area to the future Monorail station and also to link with the town centre in PB5

PLANNING REQUIREMENTS : INFRASTRUCTURE

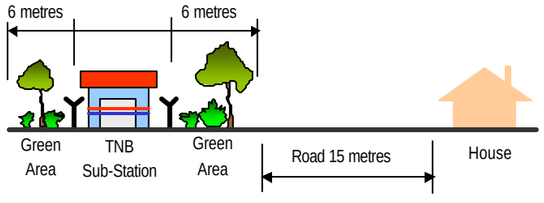
UTILITIES

(i) Environment

- The precinct mosque is located within this planning block. To ensure noise reduction from traffic along the spine road, a minimum setback of 20 metres to be provided between the boundary and the mosque building. This 20 metres area can include space for car parking, as well as a minimum of 3 metres planting strip. Extensive planting shall be provided to reduce noise and air pollution
- The noise levels and air quality of this area must comply with the Perbadanan's Noise Standards and Air Quality Standards
- The detailed platform levels shall be determined at the D.0 approval stage
- All earthworks must comply with the Environmental Management Guidelines of Putrajaya and Earthwork By-Laws (Perbadanan Putrajaya 1996)

(ii) Electricity

- The electricity supply for PB4 is mostly used for residential which are approximately 90% of the total Electrical Energy required.
- Provision of adequate numbers of 33KV Main Distribution Station (MDS) to be supported by a series of 11KV Sub-Stations (Double Chambers) and feeder pillars at strategic locations to comply with the electricity provider's (TNB) requirement.
- Feeder pillars along public roads and areas shall have all doors to open away from road and public view
- Electrical cabling network for overall development of PB4 shall consist of 33KV, 11KV and 415V distribution network systems.
- The electrical cabling network system shall be placed along the utility reserves to conform to the no dig policy. All electrical cabling shall be of the underground system.
- Sub-Station: shall have a minimum 6 metres setback on all sides to the nearest residential building. These shall be extensively landscaped.
- Fencing of utility buildings shall abide by Fencing Design Guidelines-Vol. 2, Chap. 15 pg. 132

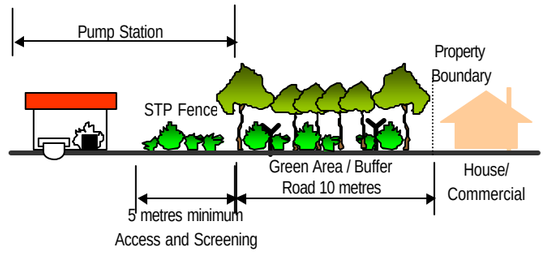


(iii) Drainage

- Drainage to the site shall be provided in terms of collection, conveyance and retention of flow from the site.
- Gross Pollutant Traps to be provided at the outlet of discharge points.
- The drainage design shall comply with the Putrajaya Stormwater Management Design Guidelines (1998), Drainage Masterplan Study Report for Putrajaya (1996), and Urban Stormwater Management Manual for Malaysia, (JPS, 2000)

(iv) Sewerage

- A network of gravity sewer reticulation to collect sewage from the precinct. (Level 3 works.)
- From these reticulation networks, sewage will be discharged into the centralized trunk sewer system of Putrajaya (Level 1 & 2 works) at appropriate points.
- The trunk sewers will terminate at two pump-stations. These two pump stations are PS1 in Precinct 9 and PS9 (Levels 1 & 2 works) located at the south of precinct 11, next to Road R3.
- From PS1 and PS9, sewage will be conveyed via the centralized trunk sewer system to STP2 for treatment. However, STP2 is not scheduled to be ready until Year 2003. In the interim, sewage discharge will be temporary directed to the sewage switching station PS5 for onward conveyance to STP1 for treatment until the completion of STP2.
- The buffer for a closed STP shall be 10 m to the nearest property boundary
- The buffer for an open STP system shall be 30 m to the nearest property boundary



PLANNING REQUIREMENTS : INFRASTRUCTURE

UTILITIES

(v) Gas

- The gas supply for PB4 is mostly used for residential which are approximately 80% of the total gas requirements.
- Gas supply for PB4 will be served from a District Gas Station located at Precinct 9 through a medium pressure gas pipeline.
- Provisions of 4 nos. of area Gas Station are allocated within the Precinct 11 development to cater for the projected gas loading requirements, with total area reserve of 1.13 acres.
- Low-pressure gas pipeline reticulation from the Area Gas Station is planned to serve the gas requirements for the residential, commercial and other amenities
- Safety provision for construction within the vicinity

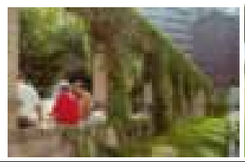
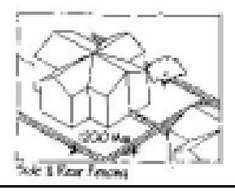
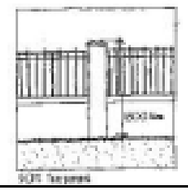
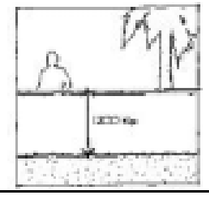
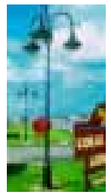
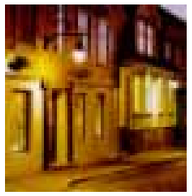
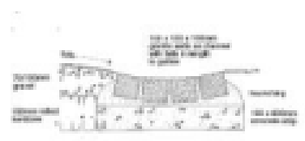
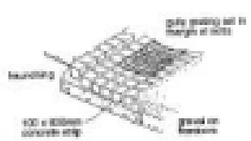
(For details of Gas Pipeline Reserve Design refer Appendix 1)

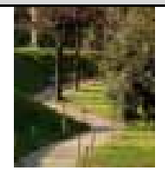
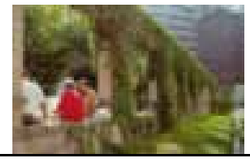
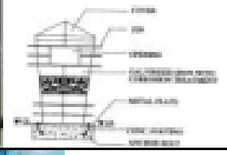
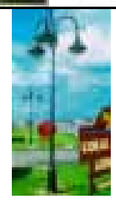
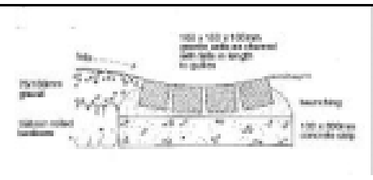
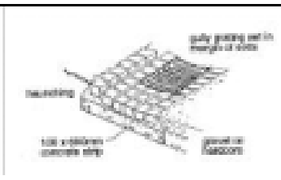
(vi) Waste Disposal

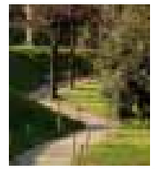
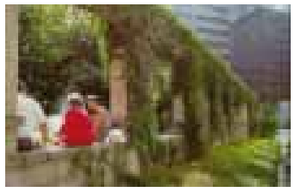
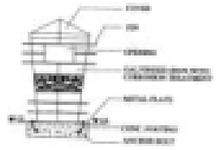
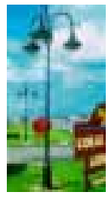
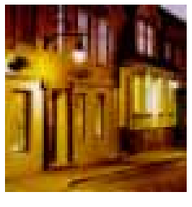
- Solid waste management in PB4 shall address reduction, reuse, recycling and recovery, the 4 R's of waste management.
- Solid waste is proposed to be separated at source, by residents or employees, into three streams; dry recycles, wet waste and rubbish (all other wastes). The dry recyclable is to be further separated at source into containers and fiber materials.
- The sensitivity of the site in terms of waste management relates to the operational requirements of Precinct 11, which require that no burial of material is undertaken during the construction phase.
- In addition to control odour nuisance to any sensitive receptors biodegradable waste cannot be left at the site for extended periods.
- The waste management shall comply with Urban Design Guidelines and Environmental Guidelines for Putrajaya.
- For low rise residential, refuse chamber is to be placed in front of the house, either left or right of the driveway and near to main road for the ease of mechanical collection. The estimated generation of solid waste is 5kg/unit/day.
- The estimated generation of solid waste for recreation park/public transport stop station are 0.2 kg/visitor, 300L/1000m^2(gross floor area) for shopping complex and 500L/1000m^2(gross floor area) for restaurant.
- Access road must be constructed for the ease of mechanical collection and public use. Obstructions to any collection vehicle's access must be disallowed at all time.

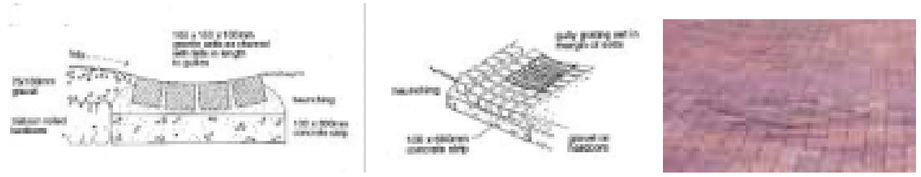
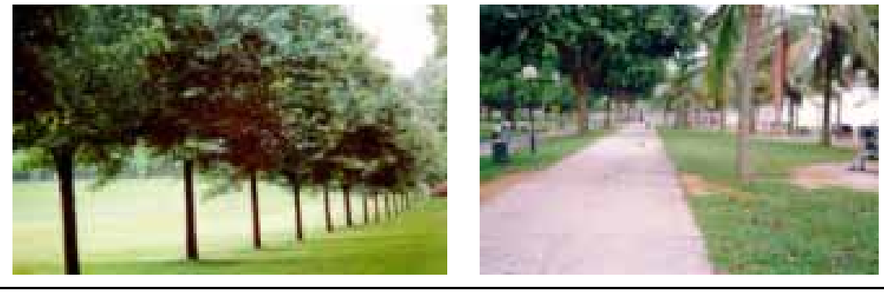
(vii) Water Supply

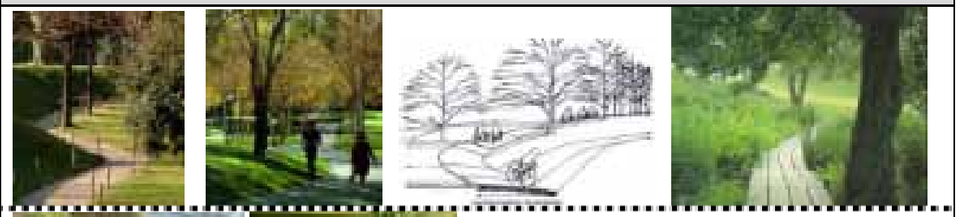
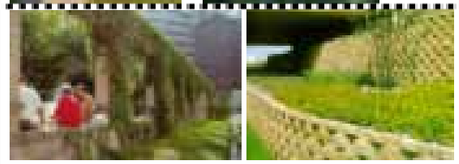
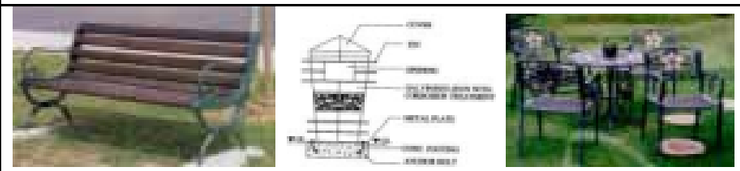
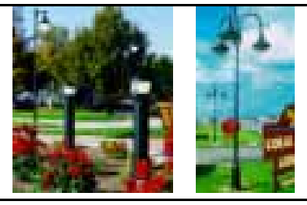
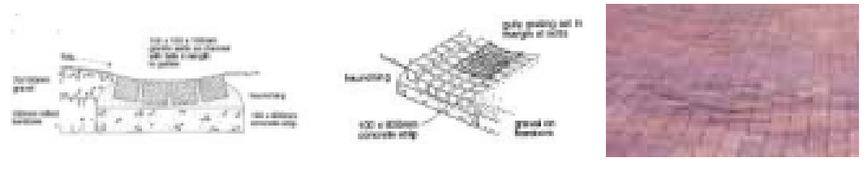
- Water supply to PB4 shall be consistent with the provision of water supply master plan for Putrajaya.
- Storage reservoir and pumping station together with the rising and falling mains shall be planned to serve this area in compliance with Jabatan Bekalan Air (JBA) requirement, and Design Criteria and Standards for Water Supply System, JKR (1989).

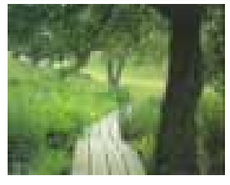
PLANNING REQUIREMENT : LANDSCAPE					
LANDUSE	**DESIGN STYLE**	**MATERIALS**	**GENERAL REQUIREMENT**	**USE/LOCATION**	
❑ **Residential (Landed)**	▪ **Paving, walls and steps** ❑ Informal ❑ Formal ❑ Contemporary	❑ **Paving / Step** – Clay brick – Concrete – Interlocking block etc	– Anti slippery surface – Max. gradient 8% – Durable	– Building compound	
		❑ **Walls** – Key stone – Concrete – Fencing brick etc.	– Harmonize with surrounding	– Boundary line	 
	▪ **Fence, Gate and Barrier** ❑ Contemporary ❑ Formal ❑ Traditional	– Hardwood – Metal – Masonry	– To follow Fencing Detail Guideline Putrajaya	– Boundary line – Entrance	  
	▪ **Lighting** ❑ Contemporary ❑ Informal ❑ Formal	– Hardwood – Metal – Concrete	– Durable – Attractive – Safe	– Building compound	   
	▪ **Drainage** ❑ Swales ❑ Concealed drains	– Culvert – Concrete – Drain cover on walkway to follow walkway ‘s material	– Visually attractive – Concealed drains	– Building lot	  
	▪ **Planting** ❑ Formal ❑ Informal	– Tree – Palm – Shrub – Groundcover	– Non-poisonous species – Strong branch – Medium size trees	– Building compound	 
	▪ **Irrigation Strategy**	Tap from storage tank or JBA main or tap from JBA main			

PLANNING REQUIREMENT : LANDSCAPE					
LANDUSE	**DESIGN STYLE**	**MATERIALS**	**GENERAL REQUIREMENT**	**USE/LOCATION**	
❑ **Residential (Condominium, Government apartment)**	▪ **Paving / Step, Wall** ❑ Formal	❑ **Paving / Step** – Clay brick – Concrete – Interlocking block etc	– Anti slippery surface – Max-gradient of 8% – Durable	– Open space – Walkway	  
		❑ **Wall** – Keystone – Facing Brick – Concrete etc.	Harmonize with surrounding environment	– Slope areas	 
	▪ **Site Furniture** ❑ Contemporary ❑ Elegant formal ❑ Specific design for neighbourhood	– Hardwood – Metal – Concrete	– Vandalism proof – Durable – Functional – Safe	– Open space – Resting areas	  
	▪ **Lighting** ❑ Contemporary ❑ Elegant formal ❑ Specific design for neighbourhood	– Concrete – Metal – Masonry	– Max. height 4m at open areas – Max. height 10m at roadside	– Open space – Entrance with bollard – Roadside	  
	▪ **Drainage** ❑ Swales/Natural drain ❑ Concealed drains	– Culvert – Concrete – Drain cover on walkway to follow walkway ‘s material	– Harmonize with surrounding environment	– Where necessary	  
	▪ **Structures and Shelter** ❑ Informal ❑ Vernacular	– Hardwood – Concrete – Masonry – Metal	– To blend harmoniously with surrounding structure – Durable – Safe	– Open space	  
	▪ **Signage** ❑ Contemporary ❑ Informal ❑ Formal	– Metal	– To following Signage and Advertisement Design Guideline, PJC	– Entrance – Open space – Pedestrian walkway	  

PLANNING REQUIREMENT : LANDSCAPE					
LANDUSE	**DESIGN STYLE**	**MATERIALS**	**GENERAL REQUIREMENT**	**USE/LOCATION**	
❑ **Residential (Condominium, Government apartment)**	▪ **Play feature** ❑ Integrated ❑ Bright colour	– Metal – Rubber matting – Plastic	– Conform to SIRIM standard – Safe – Attractive – Durable	– Open space	 
	▪ **Water features** ❑ Informal ❑ Natural	– Boulders – Stone	– Safe – Attractive	– At view point – Seating areas	  
❑ **Mosque**	▪ **Paving / Step, Wall** ❑ Formal ❑ Islamic design	❑ **Paving / Step** – Clay brick – Concrete – Tiles etc	– Anti slippery surface – Max. gradient of 8% – Max. gradient 2 % for superelevation – Durable	– Open space – Plaza	  
		❑ **Wall** – Keystone – Granite stone – Concrete etc.	– Harmonize with surrounding environment – Visually attractive	– Slope areas	 
	▪ **Site Furniture** ❑ Simple ❑ Islamic	– Hardwood – Metal – Stone	– Vandalism proof – Durable – Safe	– Open space – Plaza – Road side	  
	▪ **Lighting** ❑ Contemporary ❑ Islamic	– Concrete – Metal – Masonry	– Max. height 4m for open areas – Max. height 10m for roadside	– Entrance at bollard – Roadside – Plaza	   

PLANNING REQUIREMENT : LANDSCAPE					
LANDUSE	**DESIGN STYLE**	**MATERIALS**	**GENERAL REQUIREMENT**	**USE/LOCATION**	
❑ **Mosque**	▪ **Drainage** ❑ Swales/Natural drain ❑ Concealed drains	– Culvert – Concrete – Drain cover on walkway to follow walkway 's material	– To harmonize with surrounding environment	– All drain system	
	▪ **Structure and Shelter** ❑ Islamic ❑ Contemporary	– Hardwood – Metal – Concrete – Masonry – Poly cabonate etc.	– Sustainable design – Proportion to human scale and surrounding structure – To blend harmoniously with surrounding environment	– Plaza – Open space	
	▪ **Fences, Gates and Barriers** ❑ Formal ❑ Islamic ❑ Contemporary	– Masonry – Metal – Planting	– To suit architectural design – To blend naturally with surrounding environment – To follow Fencing Design Guideline PJC	– Entrance – Plaza – Open space	
	▪ **Water feature** ❑ Islamic ❑ Safe ❑ Natural	– Concrete – Masonry – Metal etc.	– Safe – Attractive	– Entrance – Plaza – Open space	
	▪ **Planting** ❑ Formal ❑ Natural	– Palm – Tree – Shrub – Ground cover	– Hardy – Low maintenance – Attractive – Non-poisonous	– All green areas	
	▪ **Irrigation Strategy**	Tap from storage tank, trucking or JBA main.			

PLANNING REQUIREMENT : LANDSCAPE					
LANDUSE	**DESIGN STYLE**	**MATERIALS**	**GENERAL REQUIREMENT**	**USE/LOCATION**	
❑ **Hill Top Park**	▪ **Paving / Step, Wall and Kerbs** ❑ Informal ❑ Robust ❑ Reflect character of adjacent neighbourhood	❑ **Paving/Step** – Clay brick – Concrete – Interlocking block etc – Grasscrete	– Anti-Shipping surface – Max. gradient 8% – Durable – Attractive	– Open space – Footpaths	
		❑ **Wall** – Key stone – Facing brick finish – Concrete finish etc.	– Harmonize with surrounding structure	– Slope areas	
	▪ **Site Furniture** ❑ Robust ❑ Informal	– Timber – Metal – Stone concrete	– Vandalism proof – Durable – Functional – Safe	– Open space – Pedestriant walkway	
	▪ **Lighting** ❑ Robust ❑ Minimal ❑ Reflect character of adjacent neighbourhood	– Timber – Metal – Concrete etc.	– Max. height 4m at open areas – Max. height 10m at roadside	– Footpaths – Cycle track – Car park – Open space	
	▪ **Drainage** ❑ Swales/Natural drain ❑ Concealed drains	– Culvert – Concrete – Drain cover on walkway to follow walkway ‘s material	– Visually attractive – Naturally blend with surrounding	– Where necessary	
	▪ **Irrigation Strategy**	– Pipe reticulation from pond and supported by trucking or tap form JBA main			
	▪ **Structures and Shelter** ❑ Informal ❑ Vernacular ❑ Robust	– Stone – Timber – Metal	– Sustainable design – Proportion to human scale – Functional – Blend to the surrounding areas	– Open space	

PLANNING REQUIREMENT : LANDSCAPE					
LANDUSE	**DESIGN STYLE**	**MATERIALS**	**GENERAL REQUIREMENT**	**USE/LOCATION**	
❑ **Hill Top Park**	▪ **Play features** ❑ Integrated ❑ Robust ❑ Minimal	– Metal – Plastic – Fiber glass	– Conform to SIRIM standards – Safe – Attractive	– Children's play areas for all age groups	 
	▪ **Sports feature** ❑ Reflecting natural features and topography ❑ Informal	– Grass – Concrete – Sand	– Durable – Safe	– Kick around areas – Games court	 
	▪ **Signage** ❑ Informal	– Timber – Metal – Stone	– To following Signage and Advertisement Design Guideline, PJC	– Directional – Entrance sign	 
	▪ **Fences, Railings and Barriers** ❑ Follow UDL guideline ❑ Robust	– Timber – Metal – Stone	– To suit Arc Design – To blend naturally to surrounding areas – To following Fencing Design Guideline, PJC	– Boundary fence to children's play areas	 
	▪ **Water features** ❑ Informal ❑ Natural	– Boulders – Stone	– Safe – Attractive	– At view point – Seating areas	 
❑ **Hill Top Park**	▪ **Planting** ❑ Informal	– Tree – Palm – Shrub – Groundcover – Turfing	– Medium size tree & palm – Flowering shrub – Non-poisonous species – Low maintenance planting	– All green areas	 
❑ **Buffer**	▪ **Planting** ❑ Natural ❑ Informal	– Palm – Shrub – Forest species – Medium trees	– Able to Screen – Safe – Attractive	– Along Roadside – Public utilities boundary – Between TNB-Turbine area and Housing area	  

PLANNING REQUIREMENT : URBAN DESIGN

LAYOUT PLAN

(i) The layout plan must demonstrate that the following elements are addressed in the design:
- Development appropriate to topographical features
- Appropriate building orientation with respect to the sun
- Appropriate pedestrian and vehicular access systems
- Site infrastructure systems are designed in a manner which enhances site development

(ii) Illustrate the effective and efficient integration of the pedestrian, cycle and road systems

(iii) Development is to be designed to work with site contours to avoid unnecessary cut and associated retaining structures

(iv) Illustrate a high level of permeability between site uses within the Planning Block and with adjoining Planning Blocks

(v) Illustrate appropriate site building setbacks from major traffic routes or other noise generating or potentially dangerous infrastructure

(vi) Illustrate that the site will be developed in a logical sequence

(vii) The layout plan should illustrate that the form of development effectively contributes to the Planning Block's sense of place and amenity with the context of Putrajaya

BUILDING CHARACTER

(i) Avoid monotonous building designs – provide a range of housing types to meet different lifestyle choices, diversity in the marketplace and opportunity for an interesting street frontage

(ii) Ensure that buildings are designed to respect the topographical features of the site ,eg buildings should step with steeper sites – do not cut substantial benches into steep land

(iii) Building design should respect the amenity of adjoining and adjacent buildings and their residents

(iv) Building design should interpret local image and character with new materials that are energy efficient

(v) Building facades should be designed to accommodate a tropical environment

(vi) Designers should look to the use of innovative building materials that are less maintenance intensive and more environmentally efficient

(vii) While diversity is sought in building design, buildings should be designed with a common theme that provides a linkage to the style and nature of the development area

(viii) Building design should ensure good living environments for residents that do not adversely impact on neighbours

HEIGHT, MASSING AND BUILDING SPACES

(i) Building design must comply with all provisions relating to plot ratio, plinth, building height and setbacks as contained within these guidelines

(ii) Spaces on any ground level should not directly overlook dwellings on adjacent land

(iii) Ground floor levels must be responsive to pedestrian footpaths and continuity and flow between buildings

(iv) Building design does not significantly reduce daylight to open space and habitable rooms in adjacent development

(v) Roof pitch and overlay should be designed to meet local environmental requirements

(vi) Roof overhangs should be designed to minimise the impact on sight lines from adjacent buildings

(vii) Buildings should be designed to encourage facade articulation and use of design elements that reduce building bulk and provide a pleasant street aspect. Any blank wall should be avoided.

(viii) The design of free standing buildings should be sympathetic with adjoining buildings, yet provide for local identity and character

(ix) For mosque: Roof forms of the building to reflect Islamic architecture and identity.

COLOUR TEXTURE

(i) Building colours should harmonise with the predominant colours of the surrounding area

(ii) Use of earth tones shall be encouraged

(iii) Colours for specific building types will be subject to the approval of the Perbadanan. Pastel colours are to be encouraged.

(iv) For mosque:
External façade colour scheme to blend with surrounding developments whilst promoting the purity of Islam.

MISCELLANEOUS

(i) Privacy and visual controls – overlooking to be controlled by appropriate orientation of windows and use of splay windows

(ii) Air conditioning equipment including piping – all equipment should be contained in compartments that are designed as an integral component of the building to ensure the equipment is hidden from view

(iii) Drying yards – building design should incorporate appropriate design for drying areas that allows for natural ventilation and light while ensuring they are hidden from public view

(iv) Aerials and satellite dishes – in high rise buildings or multiple tenancy commercial buildings, a central reception system is to be incorporated in to the building design. On all other buildings, aerials and satellite dishes shall be located to avoid adverse impact on the amenity of adjoining buildings

(v) Service ducting shall not be exposed on the external surfaces of buildings

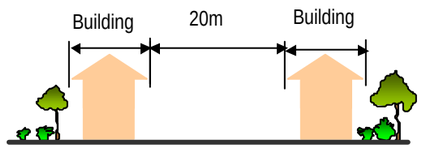
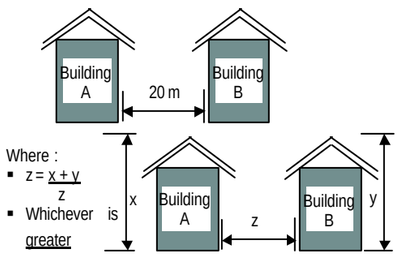
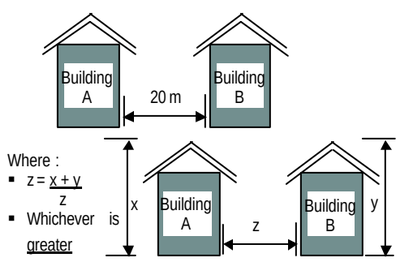
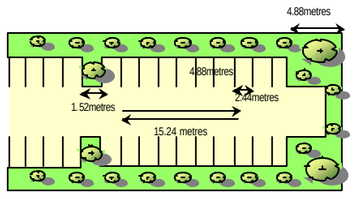
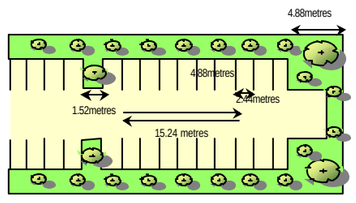
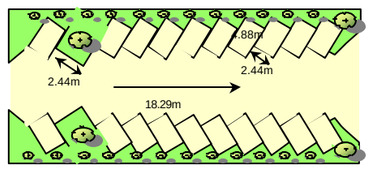
(vi) Carports and garages should:
- Be designed to integrate with the design of associated buildings
- Not diminish the attractiveness of the streetscape
- Not visually dominate views of the house from the street
- Cover the full length of a car

(vii) Dwellings with green frontage must address that frontage with habitable spaces and not service areas only

(viii) Dwelling design must provide sufficient outdoor open space that can act as an extension of the dwelling for relaxation, entertainment, recreation and children's play purposes

PLANNING REQUIREMENT : URBAN DESIGN				
LAYOUT PLAN	**BUILDING CHARACTER**	**HEIGHT, MASSING AND BUILDING SPACES**	**COLOUR TEXTURE**	**MISCELLANEOUS**
(viii) The location of tadikas should: ▪ Be in a highly accessible position for the community ▪ Minimise the introduction of non-local traffic into minor residential streets (ix) Internal layout of mosque to accommodate for mass prayers. (x) Where applicable, the provisions of suraus, within apartment complexes should be a freestanding building. (xi) The apartment complex must include 'drop off' points for the convenience of residents. (xii) Maximu m plinth foe apartment building is 60% of the site	(ix) The building design should incorporate landscaping that contributes to a pleasant and safe environment and integrates well with the streetscape and adjoining open space areas (x) For high rise buildings: ▪ Pedestrian spaces, courts, landscape or recreation areas should be more prominent than vehicle movement and utility spaces ▪ Vehicle parking design and location should minimise impact on adjacent dwellings ▪ Safe and convenient internal access to parking, residential and service areas			(ix) The design of tadikas should: ▪ Ensure that the playground is visually interesting and environmentally safe for children ▪ The play area is protected from on site and off site hazards ▪ The play area has adequate shade and shelter areas ▪ The landscaping assist the educational role of the facility (x) For the installations of grills, residents need to abide by the guidelines on the Uniform Design and Installation of Grills for Buildings in Putrajaya (Department of Urban Services, Putrajaya) (xi) Any changes to the façade and design of buildings must seek planning permission for Perbadanan Putrajaya.

PHYSICAL PLANNING REQUIREMENTS PLANNING BLOCK 5 (PB 5)

MAIN LAND USES:	CONDOMINIUM	GOVERNMENT APARTMENT	COMMERCIAL CENTRE	PUTRAJAYA SERVICE CENTRE
(i) Density	▪ Maximum 60 units/acre	▪ Maximum 75 units/acre	▪ Plot Ratio : 1:3	▪ 1 plot within commercial centre ▪ Maximum Plint Area : 40%
(ii) Composition	▪ High Cost			
(iii) Minimum Lot size	▪ N/A	▪ N/A	▪ Minimum 8 ha	▪ Minimum 0.40 hac.
(iv) Height	▪ Maximum 8 storey Note: 17 storey upon approval from PJC	▪ Maximum 12 storey Note: 17 storey upon approval from PJC	▪ Maximum 5-6 storey	
(v) Setbacks:	▪ Building to building : Minimum 20 metres 	▪ Building to building : Minimum 20 metres	▪ Building to building : Minimum 20 metres	▪ Building to building : Minimum 20 metres
▪ Street boundary	▪ Minimum 6 metres	▪ Minimum 6 metres	▪ Minimum 6 metres	▪ N/A
▪ Distance Between Building	▪ 20 metres setback between buildings or average of building heights 	▪ 20 metres setback between buildings or average of building heights 		
▪ Car Park	▪ Minimum 1 cps per unit + 10% for visitors ▪ Car parking for disabled at 1% of total number of cps. ▪ Mps – 50% of total housing ▪ Bps – 1 rack : 50 housing unit 	▪ Minimum 1 cps per unit + 10% for visitors ▪ Car parking for disabled at 1% of total number of cps. ▪ Mps – 50% of total housing ▪ Bps – 1 rack : 50 housing unit 	▪ Minimum 1 CPS per 500 sq.ft ▪ Car parking for disabled at 1% of total number of cps. ▪ 1 mps – 150 gfa ▪ 1 cps – 70 gfa 	▪ Minimum 1 CPS per 500 sq.ft

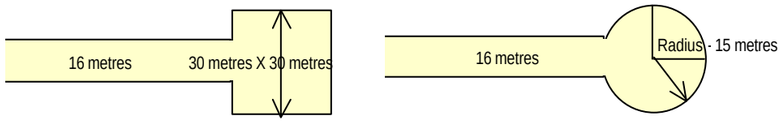
MAIN LAND USES:	CONDOMINIUM	GOVERNMENT APARTMENT	COMMERCIAL CENTRE	PUTRAJAYA SERVICE CENTRE
(vi) Fencing As per the Fencing Design Guidelines Manual, Volume 1 and Volume 2, clauses 1, 2 and 3	▪ Refer Fencing Design Guidelines Manual, Volume 2, clause 8	▪ Refer Fencing Design Guidelines Manual, Volume 2, clause 8	▪ Refer Fencing Design Guidelines Manual, Volume 2, clause 19	
(vii) Layout Plan	▪ Provide a fenced childrens playground. ▪ Suitable size surau + ruang jenazah standard provision 50%XNo of unitsX0.4m2 ▪ GYM and sport facilities ▪ Club house or community hall ▪ Car park to be well landscaped ▪ Min 2 m landscape buffer to all boundaries. ▪ Service areas to be aesthetically screened. ▪ Other community provision: ❑ Kindergarten ❑ Day Care Centre ❑ Laundry ❑ Car Wash Area ❑ Convenient Shop ❑ Courts Sepaktakraw or Volleyball	▪ Provide a fenced children's playground- Minimum 500m2 ▪ Car park to be well landscaped ▪ Minimum 2m landscape buffer ▪ Service areas to be aesthetically sereened ▪ Suitable size surau standard provision 80%XNo of unitsX0.4m2 ▪ Community hall standards 1/3Xno of unitsX0.9m2 ▪ 1 Tadika (standard provision : 0.5 acre) ▪ Other community provision: ❑ Kindergarten ❑ Day Care Centre ❑ Laundry ❑ Car Wash Area ❑ Convenient Shop ❑ Courts Sepaktakraw or Volleyball 	▪ Layout plans to show the design concept including: ❑ Total gross net areas of indoor, outdoor, roofed shade and other outdoor shade areas. ❑ Service areas to be aesthetically screened. ❑ Site car parking to be clearly indicated. ❑ Site car parking to be landscaped. ❑ Min 2m landscaped buffer between car parking spaces and any boundary. ❑ Initiate stacked outdoor play areas, carparking. ❑ Indicate car parking set down/pick up areas – to be visible from road. ❑ Indicate pedestrian access to/from the site and connection to surrounding pedestrian pathways. ❑ Where boundaries abutt residential dwellings, carefully locate potentially noisy activities to minimise impacts. ❑ Show appropriate screening that protects the amenity of abutting residential uses 	▪ Layout plan to show the design concept including: ❑ Location of all key facilities. ❑ Location of car parking spaces ❑ Location of screening devices to minimise impact of noise producing machinery. ❑ Effective screening to abutting residential uses

PLANNING REQUIREMENTS : TRAFFIC AND TRANSPORTATION

ROAD NETWORK AND DESIGN STANDARD

(i) Network Type

- Spine Road - 32 metres reserve
- Local Road - 22 metres reserve
- Access Road - 16 metres reserve
- Cul-De-Sac - 15 metres reserve



(ii) Road Capacity

- Spine Road - 1000 pcu/hr/lane
- Local Road - 700 pcu/hr/lane

(iii) Junction Control Criteria

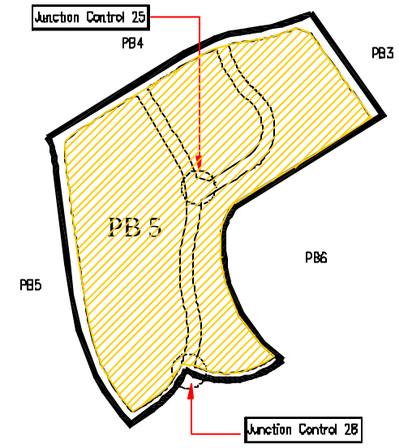
Junction Control	Total sum of 2-way traffic on the major road and heavier approach on minor road (PCU)	
	Spine Road	Local Road
Stop Control	up to 1500	up to 1500
Traffic Signal	Up to 4500	Generally not required
Grade Separation	Generally not required	Generally not required

(iv) Visibility Standards for Priority Junction

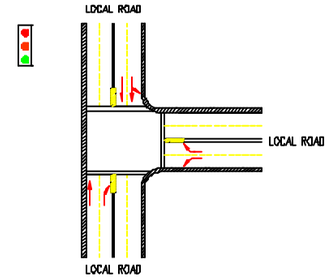
- Because minor road are uncontrolled. It is essential that adequate standards of visibility are archieved in the layout and that sight distances take account of the speed of traffic on the major road. The standards for providing clear visibility for minor road traffic are set out in the figure given

(v) Transport Design Guide for Putrajaya

- Details on other design criteria to be referred to the Transport Design Guide for Putrajaya (1998)

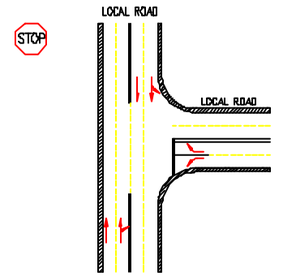


Planning Block 5 (PB 5) - Key Plan



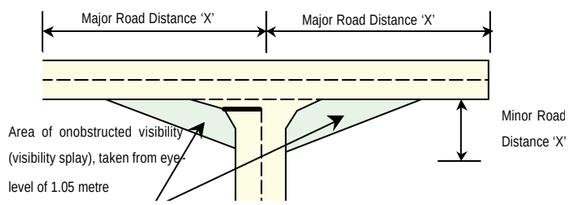
Junction Control at 25

Note : With signal controlled pedestrian crossing please



Junction Control at 28

Visibility Standards for Priority Junctions



Minor Road Distance 'X' (metre)	▪ 9.0 metre most situations ▪ 4.5 metre an absolute minimum on lighty trafficked roads (< 200 vph)

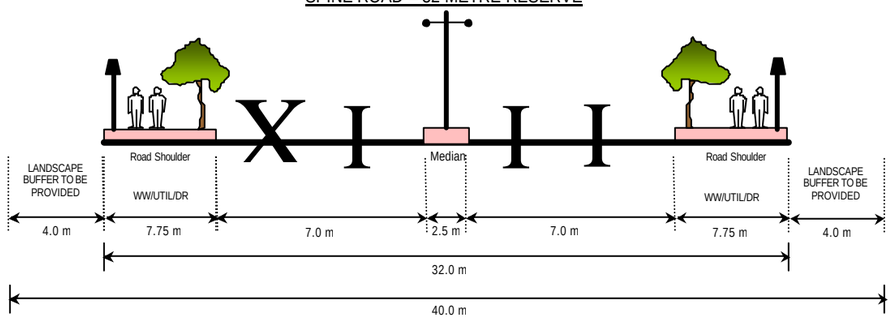
Major Road Distance 'X'(metre)	120	90	45
Speed Limit (KPH)	60	50	40

PLANNING REQUIREMENTS : TRAFFIC AND TRANSPORTATION

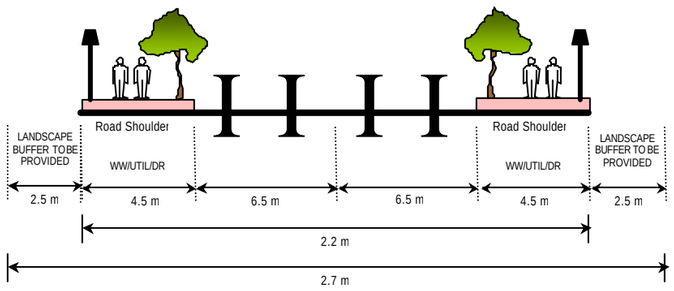
ROAD NETWORK AND DESIGN STANDARD

(v) Typical Road Cross Section

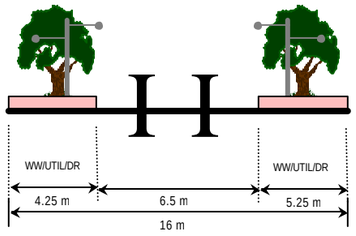
SPINE ROAD – 32 METRE RESERVE



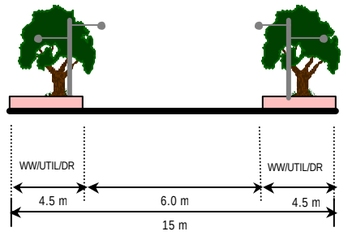
LOCAL ROAD – 22 METRE RESERVE



ACESS ROAD – 16 METRE RESERVE



CUL-DE-SAC – 15 METRE RESERVE



Note:
- WW/UTIL/DR : Common pedestrians walkway utility and drainage reserve
- Minimum cover to all utilities should be 15 metre
- Cul-De-Sac are permitted for bungalows only serving typically no more than 25 units
- Minimum cover to all utilities should be 15 metre

(vii) Rail Facilities

- To ensure that facilities for mode interchange are adequately provided, particularly for parking of cars and motorcycles, taxi stands and bus bays.
- The Monorail station will become focal points for interchange between cars, motorcycle, taxis, bus and Monorail and the station should incorporate, as a minimum the following facilities.
  - Sheltered approaches for pedestrians;
  - Lifts and/or escalators where passengers have to make a change in level;
  - Bus stops and passenger shelters for transfer from Monorail to bus;
  - Drop-off sites for car passengers, together with taxi ranks/stands;
  - Local car parking
  - Passenger information systems providing information on bus and Monorail services.

(viii) Pedestrian Walkways

- To ensure adequate pavement widths from the medium cost apartment areas towards the town centre. Incorporating several “bridges” or crossings across the streams, and Lakes

PLANNING REQUIREMENTS : INFRASTRUCTURE

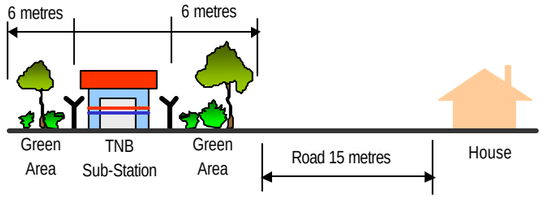
UTILITIES

(i) Environment

- The detailed platform levels shall be determined at the D.0 approval stage
- All earthworks must comply with the Environmental Management Guidelines of Putrajaya and Earthwork By-Laws (Perbadanan Putrajaya 1996)

(ii) Electricity

- The electricity supply for PB5 is mostly used for residential which are approximately 90% of the total Electrical Energy required.
- Provision of adequate numbers of 33KV Main Distribution Station (MDS) to be supported by a series of 11KV Sub-Stations (Single & Double Chambers) and feeder pillars at strategic locations to comply with the electricity provider's (TNB) requirement.
- Feeder pillars along public roads and areas shall have all doors to open away from road and public view
- Electrical cabling network for overall development of PB5 shall consist of 33KV, 11KV and 415V distribution network systems.
- The electrical cabling network system shall be placed along the utility reserves to conform to the no dig policy. All electrical cabling shall be of the underground system.
- Sub-Station: shall have a minimum 6 metres setback on all sides to the nearest residential building. These shall be extensively landscaped.
- Fencing of utility buildings shall abide by Fencing Design Guidelines-Vol. 2, Chap. 15 pg. 132

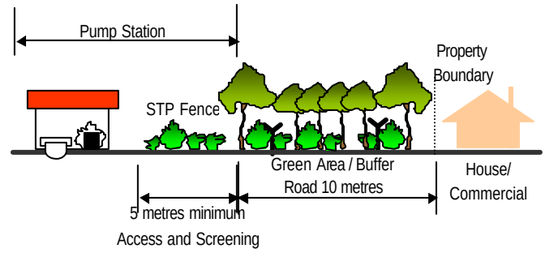


Drainage

- Drainage to the site shall be provided in terms of collection, conveyance and retention of flow from the site.
- Gross Pollutant Traps to be provided at the outlet of discharge points.
- The drainage design shall comply with the Putrajaya Stormwater Management Design Guidelines (1998) , Drainage Masterplan Study Report for Putrajaya (1996), and Urban Stormwater Management Manual for Malaysia, (JPS, 2000)

(v) Sewerage

- A network of gravity sewer reticulation to collect sewage from the precinct. (Level 3 works.)
- From these reticulation networks, sewage will be discharged into the centralized trunk sewer system of Putrajaya (Level 1 & 2 works) at appropriate points.
- The trunk sewers will terminate at two pump-stations. These two pump stations are PS1 in Precinct 9 and PS9 (Levels 1 & 2 works) located at the south of precinct 11, next to Road R3.
- From PS1 and PS9, sewage will be conveyed via the centralized trunk sewer system to STP2 for treatment. However, STP2 is not scheduled to be ready until Year 2003. In the interim, sewage discharge will be temporary directed to the sewage switching station PS5 for onward conveyance to STP1 for treatment until the completion of STP2.
- The buffer for a closed STP shall be 10 m to the nearest property boundary
- The buffer for an open STP system shall be 30 m to the nearest property boundary



(vi) Gas

- The gas supply for PB5 is mostly used for residential which are approximately 80% of the total gas requirements.
- Gas supply for PB5 will be served from a District Gas Station located at Precinct 9 through a medium pressure gas pipeline.
- Provisions of 4 nos. of area Gas Station are allocated within the Precinct 11 development to cater for the projected gas loading requirements, with total area reserve of 1.13 acres.
- Low-pressure gas pipeline reticulation from the Area Gas Station is planned to serve the gas requirements for the residential, commercial and other amenities.
- Safety provision for construction within the vicinity.
- (For details of Gas Pipeline Reserve Design refer Appendix 1)

PLANNING REQUIREMENTS : INFRASTRUCTURE

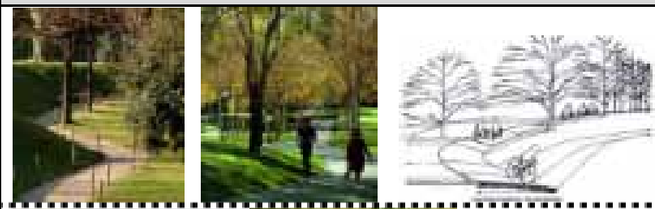
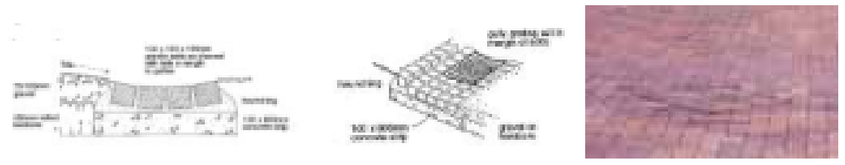
UTILITIES

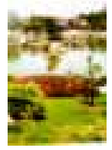
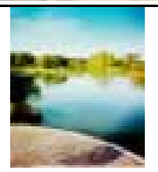
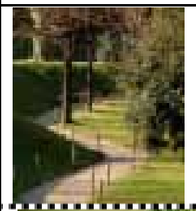
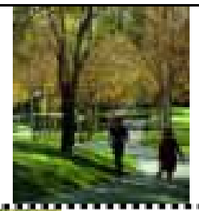
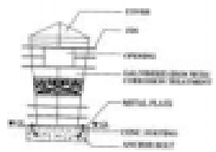
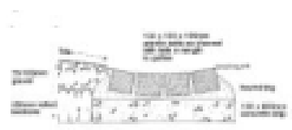
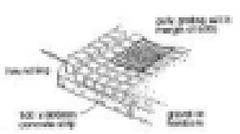
(vii) Waste Disposal

- Solid waste management in PB5 shall address reduction, reuse, recycling and recovery, the 4 R's of waste management.
- Solid waste is proposed to be separated at source, by residents or employees, into three streams; dry recycles, wet waste and rubbish (all other wastes). The dry recyclable is to be further separated at source into containers and fiber materials.
- The sensitivity of the site in terms of waste management relates to the operational requirements of Precinct 11, which require that no burial of material is undertaken during the construction phase.
- In addition to control odour nuisance to any sensitive receptors biodegradable waste cannot be left at the site for extended periods.
- The waste management shall comply with Urban Design Guidelines and Environmental Guidelines for Putrajaya.
- For high rise residential (apartment, condominium and government's quarters), individual refuse chamber center must be placed at each block. These refuse chambers must be built on ground floor / basement. Building management team would collect the refuses from refuse chamber and place it to the refuse chamber center. The estimated generation of solid waste is 5 kg/unit/day.
- For non-residential building, refuse chamber center can be built at the ground floor / basement or apart from the main building. The estimated generation of solid waste for recreation park/public transport stop station are 0.2 kg/visitor, 300L/1000m^2(gross floor area) for shopping complex and 500L/1000m^2(gross floor area) for restaurant.
- Access road must be constructed for the ease of mechanical collection and public use. Obstructions to any collection vehicle's access must be disallowed at all time.

(viii) Water Supply

- Water supply to PB5 shall be consistent with the provision of water supply master plan for Putrajaya.
- Storage reservoir and pumping station together with the rising and falling mains shall be planned to serve this area in compliance with Jabatan Bekalan Air (JBA) requirement, and Design Criteria and Standards for Water Supply System, JKR (1989).

PLANNING REQUIREMENT : LANDSCAPE					
LANDUSE	**DESIGN STYLE**	**MATERIALS**	**GENERAL REQUIREMENT**	**USE/LOCATION**	
❑ **Catchment Lake**	▪ **Paving, walls and steps** ❑ Informal ❑ Natural	❑ **Paving / Step** – Clay brick – Concrete – Interlocking block etc	– Anti slippery surface – Max. gradient 8% – Max. gradient 2% for superelevation – Durable	– Open space – Plaza	
		❑ **Walls** – Key stone – Concrete – Granite stone etc.	– Harmonize with surrounding – Visually attractive	– Slope areas	
	▪ **Site Furniture** ❑ Simple ❑ Informal	– Hardwood – Metal – Stone	– Vandalism proof – Durable – Functional – Safe	– Open space – Plaza	
	▪ **Lighting** ❑ Contemporary ❑ Hi-tech	– Concrete – Metal – Masonry	– Max. height 4m at open areas – Max. height 10m at roadside	– Bollard at entrance – Plaza – Road side	
	▪ **Drainage** ❑ Swales/Natural drain ❑ Concealed drains	– Rock boulder – Culvert – Concrete – Granite stone wall – Drain cover on walkway to follow walkway ‘s material	– Natural fence if necessary – Accessible for maintenance works	– All drainage system	
	▪ **Structures and Shelters** ❑ Informal, Vernacular, ❑ Hi-tech	❑ **Structures** – Hardwood timber – Metal – Concrete – Masonry ❑ **Roof** – Clay tile – Metal decking – Poly cabonate	– Sustainable design – Proportion to human scale and surrounding structure – Functional – To blend harmoniously with surrounding environment	– Open areas – Plaza	

PLANNING REQUIREMENT : LANDSCAPE					
LANDUSE	**DESIGN STYLE**	**MATERIALS**	**GENERAL REQUIREMENT**	**USE/LOCATION**	
❑ **Catchment Lake**	▪ **Play feature** ❑ Contemporary ❑ Robust ❑ Bright	– Steel frame – Rubber matting	– Conform to SIRIM standard	– Open space	 
	▪ **Planting** ❑ Tropical ❑ informal	– Trees – Palms – Shrubs – Ground covers	– Flowering shrubs – Tropical species – Low maintenance	– All green area	  
❑ **Office, Market and Putrajaya Service Centre**	▪ **Paving / Step, Wall** ❑ Formal ❑ Geometric	❑ **Paving/Step** – Clay brick – Concrete – Interlocking block etc	– Anti-Slippery surface – Max. gradient 8% – Durable	– Plaza	  
		❑ **Wall** – Key stone – Facing brick finish – Concrete finish etc.	– Harmonize with surrounding structures	– Slope areas	 
	▪ **Site Furniture** ❑ Contemporary ❑ Hi-tech	– Hardwood – Metal – Concrete	– Vandalism proof – Durable – Functional – Safe	– Pocket space – Plaza – Roadside	   
	▪ **Lighting** ❑ Contemporary ❑ Hi-tech	– Concrete – Metal – Masonry	– Max. height 4m at open areas – Max. height 10m at roadside	– Bollard at pedestrian entrance – Plaza – Roadside	
	▪ **Drainage** ❑ Swales/Natural drain ❑ Concealed drains	– Culvert – Concrete – Drain cover on walkway to follow walkway ‘s material	– Harmonize with surrounding design	– Plaza – Open space	  
	▪ **Irrigation Strategy**	Tap from storage tank, trucking or JBA main			