

ii) *Distribution uniformity*

Distribution of water to each area of coverage should be as uniform in application as possible. A coefficient is used to measure the uniformity of coverage. This coefficient is designated as the Christiansen Coefficient or Uniformity Coefficient (C_u) and is defined by the equation,

$$C_u = 100 \times \left(1.0 - \frac{\sum x}{m n} \right)$$

In which x is the deviation of individual observations from the mean value m and n is the number of observations. $\sum x$ is the sum of the deviations of the individual observations from the mean value.

An absolutely uniform application is represented by a uniformity coefficient of 100 percent; a less uniform application by some lower percentage.

This coefficient is more important for large spray sprinklers of radius more than 15 m. A uniformity coefficient of 80% and above is recommended.

iii) *Spacing patterns and distances*

The amount of water applied to an area decreases as the distance from sprinkler increases. In order to obtain a reasonable uniformity of application, sprinkler heads should be placed so that adjacent sprinklers overlap each other and the end of the spray radius of one head hits the adjacent head's spray. The overlapped spacings are based on a percentage of sprinklers' measurable wetted diameter. Sprinkler heads can be located in either a square or triangular pattern. The triangular method results in wider spacing and is usually better for irregular boundaries.

Table F2 shows the adjustment spacing recommended for estimated wind conditions.

iv) *Precipitation rate*

The precipitation rate (PR) of individual sprinkler operating zones is an important factor for design and system operation. Precipitation rate describes the length of time required to deposit a given depth of water on an area. PR is normally measured in inches per hour .

The following formula is used to derive the precipitation rate in inches per hour.

$$\text{Precipitation Rate in inches per hour} = \frac{96.3 \times \text{the total gpm in a given area}}{\text{Square feet of the area being covered}}$$

The figure 96.3 above is a constant that helps to convert the gallons per minute (gpm) and the square feet of the area being sprinkled into an inches per hour figure.

v) *Soil and slope type*

Soil is composed of particles of sand, loam, clay, and organic matter. The speed that at which the water travels deeper into the soil structure varies with the texture and structure of the soil, and is called the *percolation* or *infiltration* rate.

There are two considerations that affect the soil's infiltration rate. They are the composition of the soil and the slope of the soil. The application rate of water should be kept below the infiltration rate of the soils to avoid occurring of surface runoff.

Table F3 lists the maximum precipitation rate based on soil and slope type.

vi) *System efficiencies*

More water than the actual amount absorbed into the ground must be discharged by the sprinkler system due to the following distribution inefficiencies:

- Water is lost through evaporation into the air from the time it is discharged from the head until it lands on the ground. This loss is greater during the daytime than at night.
- Loss of water through wind drift must be allowed for.
- System is rarely shut off at the exact instant that the soil demand has been satisfied.
- Water should not be applied faster than the infiltration rate of the soil (the rate at which the soil can accept the water), otherwise water will be lost through runoff on the surface of the ground. The infiltration rate and the slope of the land determine the maximum infiltration rate.

- The difference in water pressure between the first head in any branch and the last head causes the head with less pressure to discharge less water. Good practice calls for a maximum difference of 10 percent.
- Plant water demand

1.1.2 *Filtration System*

Filtration of the source water is necessary to prevent the damaging effects of dissolved and suspended solids which can clog water outlets, damage components or cause failure of moving parts. Automatic self-cleaning screen filter units are proposed to be the filtration equipment for the spray system.

1.1.3 *Drip System*

Drip irrigation or "trickle irrigation" refer to slow application of water through mechanical devices called emitters (drippers or applicators) located at selected points along water delivery lines to the root zone of a plant. The objective of drip irrigation is to frequently supply each plant with sufficient soil moisture to meet evapotranspiration demands.

Emitter

The emitter acts as the sprinkler head for the drip method of watering. Water is sent under pressure in a tube and the emitter controls the flow to the soil. Two types of emitters are identified to be relevant for Putrajaya application, i.e. *on-line* and *in-line* emitter.

On-line emitters have a "barbed" inlet port which is inserted through a hole in the hose. They are generally inserted into the hose after the hose has been laid out in the field. This includes micro-jets which may utilise a barbed coupler.

In-line emitters are attached or welded to the inside of the hose, with a hole provided in the hose for the flow discharge. They cannot be seen unless the hose is cut apart.

Generally, the following specifications of emitters shall be considered:

- Resistance to sunlight. Housing constructed of durable, UV resistant plastic is recommended.
- Pressure compensating mechanism to be incorporated.

- Self-flushing action to minimise clogging.
- Anticipated life for at least two years.

Design Considerations

Objective of good drip irrigation system design and management is to provide sufficient system flow capacity to adequately irrigate all the plants. The four important design considerations are as follows:

i) *Water quality*

Water quality is an important consideration in drip design to prevent emitter plugging. Drip systems have very small outlets, ranging from about 0.3 mm – 1.8 mm in diameter. A rule of thumb in the drip design is that all particles greater than 1/10 the diameter of the emission holes must be removed from water to prevent clogging. Therefore, drip filtration must remove particles down to the 0.03 mm - 0.18 mm diameter size.

ii) *Soil Types*

For design purposes, soil classifications of clay (heavy), loam (medium) and sand (light) are used in conjunction with plant types to determine the emitter and lateral spacings necessary to provide a uniform subsurface soil moisture regime for the plant material.

Drip emitters create different subsurface wetting patterns in different soil types. The wetted area on the surface and the shape of the wetted pattern below surface are influenced by the type of soil. The wetted pattern of soil will affect the selection of emitter (application rate), emitter spacing and the operating time.

As with all types of landscape irrigation systems, properly prepared soil is necessary to provide a homogenous bed for proper plant establishment, plant growth and uniform water distribution. Heavily compacted and layered soils should be ripped and tilled at a uniform eight- to twelve-inch depth to improve the consistency and tilth of the soil.

Table F4 shows the emitter flow rate with proper emitter and lateral spacing for different soil and plant types.

iii) *Plant Types and Layout*

Emitter and lateral spacings are determined by soil and plant material classifications. Planting layouts determine the size and type of subsurface irrigation design necessary to provide uniform moisture distribution.

Narrow, linear tree and shrub plantings require narrow, linear subsurface grids consisting of two to four laterals. More intense plantings that provide a complete foliage canopy at maturity require a grid design that applies uniform moisture levels within the foliage canopy (turf, groundcover, and dense shrub and tree plantings).

Table F4 shall be used as a guideline to determine the proper emitter and lateral spacing.

iv) *Slope and elevation differences*

Driplines should be located parallel to the contour of slopes whenever possible. Since subsurface runoff occurs on areas with a slope of greater than 3%, consideration must be given to dripline density from the top to the bottom of the slope. The dripline on the top two-thirds of the slope should be placed at the recommended spacings for the soil type and plant material in use. On the lower one-third, the driplines should be spaced 25% wider. The last dripline can be eliminated on slopes exceeding 5%. For areas exceeding ten feet in elevation change, zone the lower one-third of the slope separately from the upper two-thirds in order to help control drainage.

When utilising non-pressure-compensating dripline, elevation differences of five feet or more require separate zones or individual pressure regulators for each six-foot difference on uniform slopes.

When working with rolling landscapes with elevation differences of five feet or more within a zone, it is best to use pressure-compensating dripline to equalise pressure differentials created by the elevation differences.

Subsurface irrigation zones must have a vacuum relief valve at the highest point in order to eliminate the vacuum created by low-line drainage, which causes soil ingestion. This is especially crucial when the dripline laterals are placed

perpendicular to the contour of the slope as in street medians. All dripline laterals within the elevated area must be connected with an air relief lateral.

In-line spring-check or swing-check valves should be used on slopes where low-line drainage could cause wet areas in the lowest areas of an irrigation zone

Filtration System

Most water must be as clean as drinking water to be used in drip system. To accomplish this, two stage of filtration design is introduced. Sand media filter is considered as the initial filtration process after pump; followed by the disc strainer located at the connection point between dripper lines and lateral lines.

Water Quality

Quality standards have been recommended for irrigation that are as complete as those issued for portable water. Table F5 lists recommended maximum levels of trace constituents in irrigation water.

Owing to the large volume of water used for crop irrigation generally, water treatment for removal of specific constituents has historically been considered uneconomical. For the most part, the only treatment being practised is threshold treatment for (1) scale control in distribution systems and (2) to prevent calcium carbonate precipitation in flume water to which ammonia has been added as a fertiliser. The addition of ammonia to irrigation water with a positive Langelier index may cause calcium carbonate to precipitate, but this can be controlled by the use of polyphosphates. In the newer drip-irrigation systems, where very small volumes of water are brought to individual plants, because of the small flow through the individual distribution units, plugging is an ever-present threat. Clarification, treatment with dispersants, application of biocides, or a combination of these may be necessary to keep the system functioning.

The use of municipal sewerage plant effluent for irrigation of croplands can serve both the municipality and agricultural interests. Spray irrigation has proved to be an effective tertiary treatment for both municipal and certain industrial wastes such as food processing wastes. There will undoubtedly be increased use of waste effluents for irrigation. However, the tertiary treatment system required at the sewage treatment plant to treat the effluent can be expensive in order to meet the quality suitable for the irrigation system.

2. Irrigation Scheduling Concept

Irrigation scheduling concept refers to the methodology which are chosen to run the watering system. The concept chosen affects not only the sprinklers or drippers but also the valves, pipe and fittings and control lines. The three basic concepts are as follows:

- Block System
- Valve-In-Head System
- Quick Coupling System

2.1 Block System

The block system is the most common and appropriate system proposed for Putrajaya application. The block system is simply a branch with several sprinklers or drippers and is controlled by a valve. Figure F1 illustrates the schematic diagram of a block system.

Advantage of block system includes less usage of individual valves and control lines. However, it is realised that the block system applied in vast areas is impractical due to the large components required. Large valves are often not available or extremely expensive.

Considering the cost and availability of spares, the 50 mm diameter is preferred as the optimum size of the system. The favoured size is sufficient for most application unless highlighted for special applications.

2.2 Valve-In-Head System (VIH)

The Valve-In-Head (VIH) system is a special technique used primarily in large area irrigation which originated with the placement of a remote control valve in the riser assembly below each large rotary sprinkler to allow individual automatic control. Using one valve per sprinkler, the maximum flexibility can be achieved. The pipes and fittings size can be standardised and dispensation of large, unwieldy and expensive valves. However, the system requires many additional control stations and control lines. Moreover, each extra valve represents some level of future maintenance and repair. Figure F2 shows the schematic diagram of VIH system.

2.3 Quick Coupling System

The quick coupling system refers to the system that consists of several tapping points or coupler valves which can be coupled on with relative ease with a hose or sprinkler. This system requires manpower to move hoses or sprinklers from locations to locations. The matching coupler or sprinkler is forced into the coupler valve, opening it and allowing water to flow through the coupler valve. The system is not recommended as a main system but shall be used extensively to complement the block or VIH system.

The system is used frequently as a temporary mean of watering areas such as areas to be re-developed at a later date. The system also fits into areas where supplemental watering is required. Besides, the system is installed on pressure mains of a system to provide water for a myriad of uses other than normal sprinkling. For instance, deep-watering for newly planted trees.

3. Irrigation Centralised Control System

3.1 System Overview

Irrigation Centralised Control (ICC) system proposed for Putrajaya is a computer driven central management and control system for irrigation water management.

Irrigation Centralised Control (ICC) is a driven central management and control system for irrigation water management. ICC is capable of monitoring as well as controlling irrigation scheduling according to data received by external sensing devices. ICC mainly consists of, in control descending order:

- Central Computer – This is a software based controller used to monitor and control the entire irrigation system.
- Field Controller – Executes field device by sending out high signals upon receiving directives from ICC.
- Field Devices –
 - Sub-Controllers provides signals for control outputs for valve station monitoring.
 - Valve Actuators provides hardwire or wireless Command only receiver for irrigation valve actuating.
 - Valve Station refers to signal operated valves.

Two transmission path options are proposed for the ICC system. Radio communication allows data transmission through radio frequencies; while hardwire communication provides data transmission through wireline.

3.2 System Configuration Layout

Irrigation Centralised Control (ICC) system shall offer a “two layer” design, one layer links a central computer to one or more Field Controller, the other layer links a Field Controller to Field Devices i.e. Sub-Controller, Valve-Actuator and Valve-Station. System may be installed with just Field Controller communicating with Field Devices as a first step, later on

adding the central computer control. This provides a maximum flexibility for staged development of Putrajaya. The system shall have an adequate capacity to meet the demand of Putrajaya.

Figure F3 illustrates the layout of Irrigation Centralised Control System.

3.3 Typical ICC Scheme Within The Field Controller And Field Devices

The master central computer monitors and controls the slave field controller units. The central computer allows upload, change and download irrigation programs to any linked field controller unit. Signals received from the central computer will be used to perform subsequent irrigation cycles by the field controller. Similar as above, data will be transferred to begin or stalled certain irrigation cycle. The field controller unit is capable of controlling various field devices distributed over a specific area. Data or high signal will instruct the Field Devices to begin irrigation cycle.

3.4 Typical ICC Scheme Within The Central Computer

Data acquired from Decision Support System (DSS) will be taken into account for the rescheduling of all irrigation cycle. Watering window for all cycles will be reschedule to suit the site condition. Depending on the weather condition received from DSS, certain irrigation cycle will not be carried out. Water conservation too shall be determined from the DSS input.

3.5 Data Acquisition from Decision Support System (DSS)

DSS is proposed to gather relevant information namely soil moisture, rainfall, evaporation etc. All data acquired shall be in the form of software to be interfaced with the ICC. A minor SCADA working platform forms the element for DSS-ICC. ICC will gather all information obtained from DSS and reschedule the necessary to suit the present condition of data acquisition.

3.6 Irrigation Watering Windows

“Watering windows” refers to the time frame allows for irrigation watering. It is one of the major design considerations for the sizing of pipe and pump capacity, and scheduling of water management. The allowable watering windows is proposed as follows:

- i) Drip system - 24 hours

- ii) Spray system
 - Public access area - 8 hours (10pm – 6 am)
 - Non-public access area - 12 hours (7pm – 7 am)

Table F1 Application System for Each Plant Group

Group of Plant	Application System
Tree	Drip system
Palm	Drip System
Shrub - less than 0.3m high - more than 0.3m high	Spray System Drip System
Groundcover and Lawn	Spray System

Table F2 Adjustment in Head Spacing for Wind Conditions

Wind Velocities	Maximum Spacings
0 to 3 m/hr	60% of diameter
4 to 7 m/hr	55% of diameter
8 to 12 m/hr	50% of diameter

Table F3 Maximum Precipitation Rate Based on Soil and Slope Type

Soil texture	0 to 5% slope	5 to 8% slope	8 to 12% slope	12%+ slope
Coarse sandy soils	2.00	2.00	1.50	1.00
Coarse sandy soils over compact subsoils	1.75	1.25	1.00	0.75
Light sandy loams uniform	1.75	1.25	1.00	0.75
Light sandy loams over compact subsoils	1.25	1.00	0.75	0.50
Uniform silt loams	1.00	0.80	0.60	0.40
Silt loams over compact subsoil	0.60	0.50	0.40	0.30
Heavy clay or clay loam	0.20	0.15	0.12	0.10

Table F4 Emitter Flow Rate with Proper Emitter and Lateral Spacing for Different Soil and Plant Types

Soil And Plant Type	Emitter Flow	Emitter Spacing	Row Spacing
Medium Sand - Trees or Shrubs	3.8 l/h (1.0 USg/h)	300mm (12")	450mm (18")
Loam - Trees or Shrubs	3.8 l/h (1.0 USg/h)	450mm (18")	450mm (18")
Clay - Trees or Shrubs	1.9 l/h (0.5 USg/h)	600mm (24")	600mm (24")

Source: *TORO Inc.*

Table F5 Recommended Maximum Concentrations of Trace Element in Irrigation Water

Element	Maximum concentrations In irrigation water, mg/L
Aluminium	5.000
Arsenic	0.100
Beryllium	0.100
Boron	0.750
Cadmium	0.010
Chromium	0.100
Cobalt	0.050
Copper	0.200
Fluoride	1.000
Iron	5.000
Lead	5.000
Lithium	0.075
Manganese	0.200
Molybdenum	0.010
Nickel	0.200
Selenium	0.020
Vanadium	0.100
Zinc	2.000

Source: *The Nalco Water Handbook*

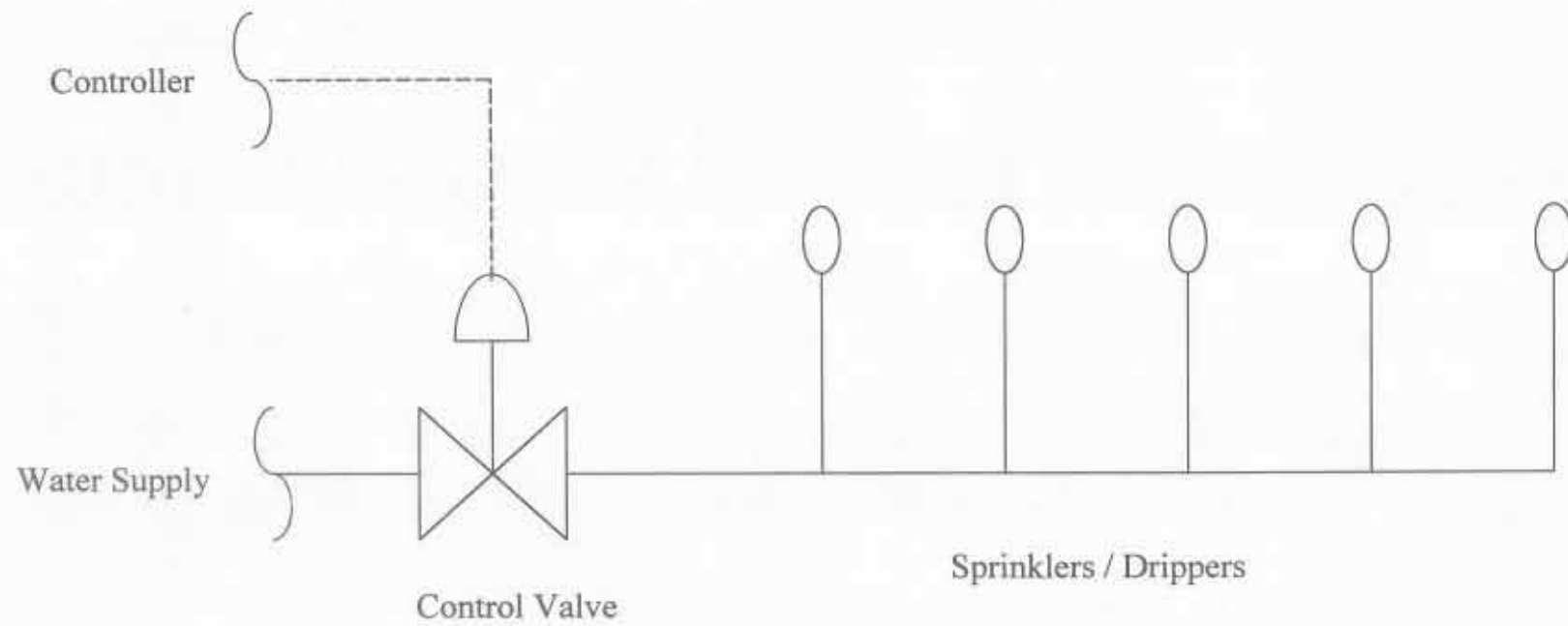


Figure F1 Schematic Diagram of Block System

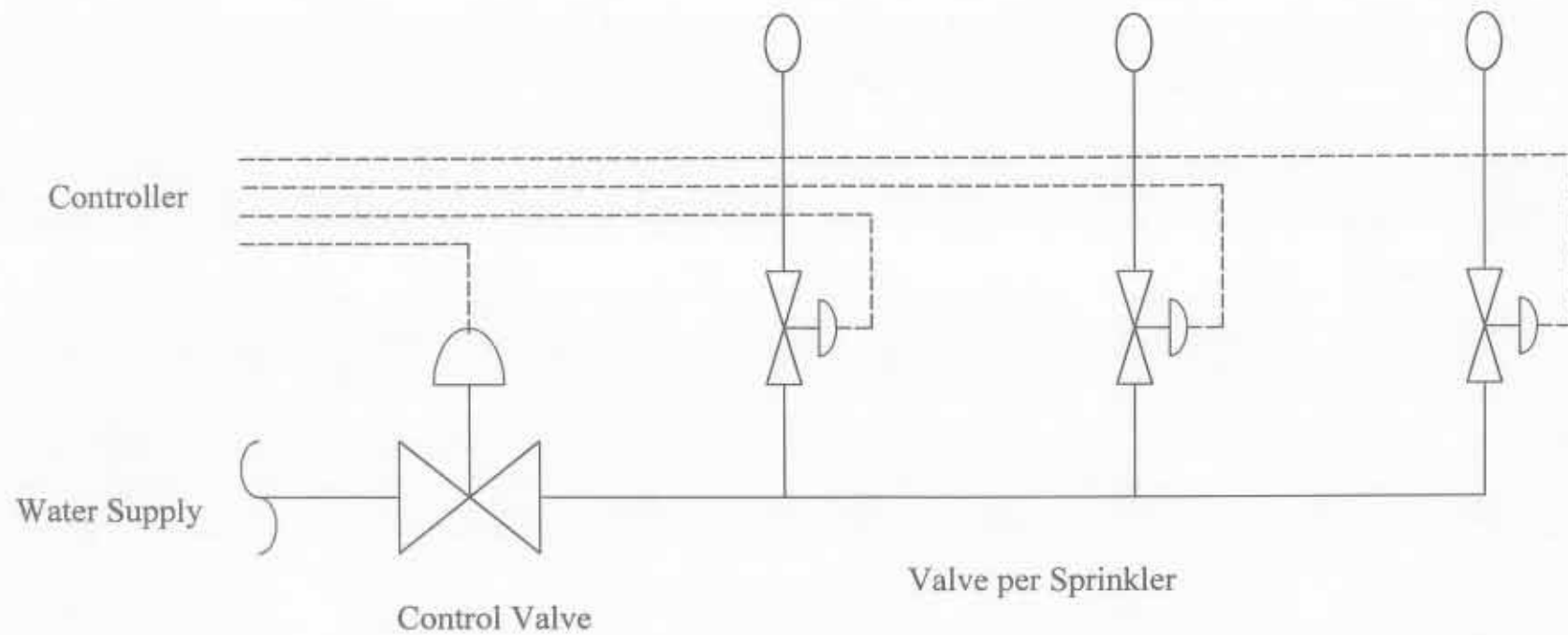


Figure F2 Schematic Diagram of Valve-In-Head System

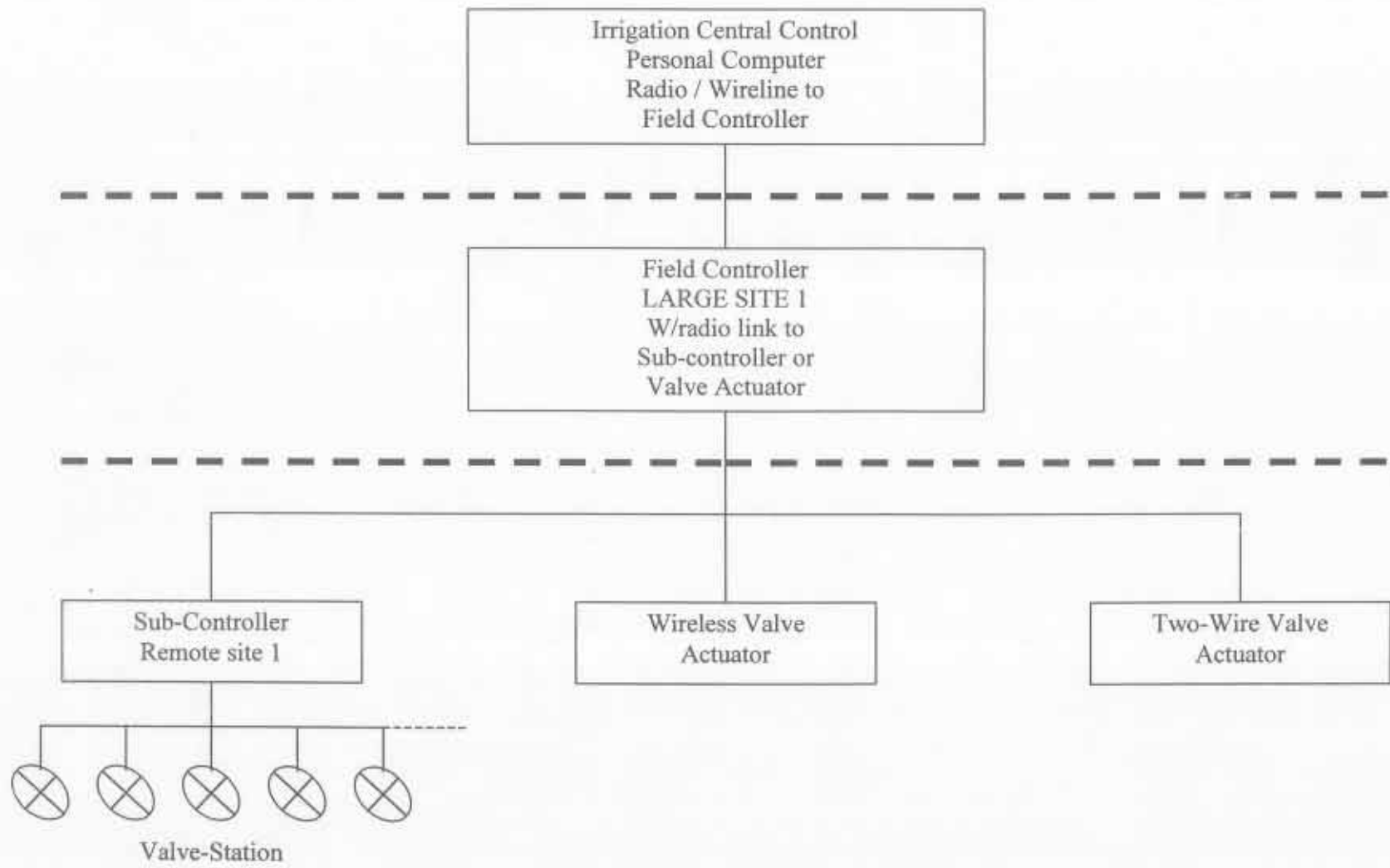


Figure F3 Irrigation Centralised Control System Layout

APPENDIX G

PROVISION UNDER WATERS ACT, 1920 (REVISED 1989)

- 1 Introduction
- 2 Interpretation of "river" includes
- 3 Property in rivers
- 4 Restoration of a river banks
- 5 Prohibition of acts affecting rivers, except under license
- 6 Prohibition of diversion of water from rivers, except under license
- 7 Prohibition of pollution of rivers
- 8 License to divert water may authorise interference with State land or alienated land
- 9 Fees Licensing

PROVISION UNDER WATERS ACT, 1920 (Revised 1989)

1. Introduction

It is expected that the provisions under the Waters Act will be the key factor during the implementation of the Irrigation Master Plan. Key Provisions of the Waters Act are reported as follows:

2. Interpretation of "river" includes

- (a) a tributary of a river and any other stream or natural water course; and
- (b) any canal declared by the State Authority of the State in which such canal is situated by notification in the Gazette to be subject to this Act;

3. Property in rivers

Subject to the terms of any express grant made by or on behalf of the Ruler of a State; the entire property in and control of all rivers in any State is and shall be vested solely in the Ruler of such State; provided that in the case of lands by the Government under grant or lease or reserved for a public purpose and maintained by a Government Department, such control may be exercised by the Head of such Department, under the direction of the State Authority.

4. Restoration of a river banks

Any person who shall in any State interfere with the bank of any river may by order of the State Authority be required to restore the same to the condition in which it was immediately prior to such interference or to remake the same in such manner as may be specified in such order.

5. Prohibition of acts affecting rivers, except under license

No person shall, except under and in all accordance with the terms of a license under this Act;

- (a) fell any tree so that it falls into a river;
- (b) in any manner obstruct or interfere with any river;
- (c) build any bridge, jetty, or landing stage (other than a bath-house) over or beside any river at a point where the width of such river exceeds twenty feet.

Licenses to do in any district any of the acts specified may be issued by the District Officer of such district with the approval, in each case, of the State Authority, any such license may be subject to such conditions and restrictions as the State Authority approves; all such conditions and restrictions shall be set out in the license.

6. Prohibition of diversion of water from rivers, except under license

Save as may be expressly authorised under the provisions of any other law no person shall, except under and in accordance with the terms of a license under this act, by means of any ditch, drain, channel, pipe, or otherwise divert water of any river from its natural course.

Whenever any such diversion shall have been made, the occupier or occupiers of the lands (if any) benefited by such diversion shall, in the absence of proof to the contrary, be presumed to have made it.

Licenses to divert water from a river in any State for use in the generation of electricity may be granted by the State Authority of such State.

Licenses to divert water from a river in any district for use:

- (a) for private or domestic purposes;
- (b) in the cultivation of rice;
- (c) for industrial and other purposes,

maybe granted by the District Officer of such district with the approval, in each case of this subsection, of the State Authority.

Every license granted under this section shall set out the purpose for which the same is granted and shall be for such period and subject to such conditions and restrictions as may be stated therein.

7. Prohibition of pollution of rivers

Save as may be expressly authorized under any written law or the terms of any express grant made by or on behalf of the State Authority no person shall except under and in accordance with the terms and conditions of license issued under this section cause to enter or discharge into any river:-

- (a) any poisonous, noxious or polluting matter that will render or is likely to render or contribute to rendering such river or part thereof harmful or detrimental or injurious to public health, safety or welfare, or to animal or vegetable life or health or to other beneficial uses of such river;
- (b) any matter which by virtue of its temperature, chemical or biological content or its effect in discolouring the waters makes or contributes to making such river or part thereof a potential danger to public health, safety or welfare or to animal or vegetable life or health, or affects other beneficial uses of such river;
- (c) any matter which by virtue of its physical nature, or its effect in discolouring waters, makes or contributes to making such water, difficult to treat; or
- (d) oil of any nature, used, waste or otherwise.

For purpose of this section the word "river" shall without prejudice to be deemed to further include-

- (a) any inland waters whether or not such inland waters fall within the definition of "river" in section 2;
- (b) any subterranean water resources; and
- (c) any water in an estuary or sea adjacent to the coast of the State.

Whenever any such entry or discharge shall have been made, the owner or occupier of the property from which such entry or discharge originates shall, in the absence of proof to the contrary, be presumed to have made it.

- (1) License to enter or discharge into a river any of the matter described of this section may be granted by the State Secretary in which the river or part thereof is located.

- (2) Every license granted under this section shall set out the purpose for which the same is granted and shall be for such period and such conditions and restrictions as may be laid down in the license.

8. License to divert water may authorise interference with State land or alienated land

- (1) A license under this Act to divert water from a river in any State may extend to authorising the licensee to erect, cut, or construct and maintain upon or through any State lands or alienated lands specified in that behalf in the license any pump, line of pipes, flume, race, drain, dam, or reservoir and, subject to such conditions and restrictions as may be specified in the license, to take and use the water therefrom in such quantities and in such manner as in the opinion of the State Authority of such State may be necessary for carrying out the purpose of the license.
- (2) A license so authorised as aforesaid may enter upon the State lands or alienated lands so specified as aforesaid for the purposes expressed in such license and carry out all or any of the works thereby sanctioned and exercise all or any of the rights thereby granted; provided that he shall be liable to make compensation to the owner or lawful occupier of any alienated land upon which such work shall be carried out or such rights exercised.

9. Fees Licensing

There shall be payable in respect of every license under this Act in any State such annual fee as may be prescribed, or if no such annual fee be prescribed then, such annual fee as the State Authority may impose.

APPENDIX H

Checklist for Development Approval

- Form SA (Pindaan 1)
- Form SAI (Pindaan 1)
- Form PB (Pindaan 1)
- Form PBI (Pindaan 1)
- Form PBS1 (Pindaan 1)
- Lampiran B(i) (Pindaan 1)
- Lampiran B(i) (Pindaan 1)

FORM SA (Pindaan 1)

**Senarai Semakan Permohonan untuk Permohonan Kebenaran Merancang Bagi Kelulusan
Susun Atur (Seksyen 21, Akta Perancangan Bandar dan Desa, 1976)**



PERBADANAN PUTRAJAYA

PERMOHONAN KEBENARAN MERANCANG BAGI PENDIRIAN BANGUNAN SEMENTARA
{Seksyen 21(3) Mengenai Pendirian Bangunan, Akta Perancangan Bandar dan Desa, 1976}

Tajuk Projek :

.....
.....
.....

Tarikh Penerimaan

SENARAI SEMAKAN PERMOHONAN

NAMA FAIL

1. Permohonan hendaklah disertakan dengan surat rasmi (cover letter) daripada Jururancang/Arkitek Bertauliah

SA_SURAT_
RASMI.TIF

2. Melengkapkan Borang A yang diisi dengan lengkap (Jadual Pertama Kaedah Kawalan Perancangan Am)

SA_BORANG_A.
TIF

3. Satu (1) salinan suratan hak milik.

SA_HAK_MILIK.
TIF

4. Satu (1) salinan Surat Perlantikan perunding.

SA_LANTIK_
RUNDING.TIF

5. Satu (1) salinan profil syarikat perunding.

SA_PROFIL_SYKT.
TIF

6. Mengemukakan dua (2) salinan Laporan Cadangan Pemajuan ketika mengemukakan permohonan.

Mengemukakan lapan (8) salinan untuk pengesahan (endorsement) apabila diarahkan oleh Perbadanan.

(Kandungan serta format laporan yang dikemukakan hendaklah mengikut format Senarai Semakan SA2)

(Laporan Cadangan Pemajuan perlu disediakan dan disahkan oleh Jururancang Bandar Bertauliah)

7. Mengemukakan dua (2) salinan termasuk satu (1) linen pelan-pelan berikut ketika mengemukakan permohonan.

Mengemukakan lapan (8) salinan termasuk satu (1) linen untuk pengesahan (endorsement) apabila diarah oleh Perbadanan.

(Pelan-pelan yang dikemukakan hendaklah mengikut format berikut:-)

- a) Sempadan Presint bagi semua Pelan hendaklah berdasarkan bacaan koordinat, 'bearing' dan jarak.
- b) Sempadan lot (berdasarkan nombor PT) hendaklah ditunjukkan.
- c) Skala : 1:2000
- d) Pelan-pelan/ lukisan hendaklah disahkan oleh ahli profesional yang berkaitan.
- e) Pelan-pelan tersebut perlu diwarnakan dan dijilid bersama.
- f) Lukisan perspektif seperti di para 12 (bersaiz A3) perlu ditampal di atas kertas bersaiz A1/A0 berserta tajuk projek sebagai kulit luar Pelan-pelan yang dijilid bersama).

7.1 Pelan Susun Atur

Pelan tersebut perlu mempamerkan Pelan Kunci (keseluruhan Putrajaya), Pelan Lokasi (Presint berkenaan dan Presint bersebelahan), Pelan Susun Atur dan Jadual Cadangan Gunatanah (Pelan-pelan perlu disahkan oleh Jururancang Bertauliah)

SA_SUSUN_ATUR.
DXF

7.2 Pelan Analisa Kecerunan

Merangkumi perkara seperti Senarai Semakan SA1, para 3.11. (Pelan perlu disahkan oleh Jurutera Bertauliah)

SA_KECERUNAN.DXF

7.3 Pelan Kerja Tanah

Merangkumi perkara seperti Senarai Semakan SA1, para 5.2. (Pelan perlu disahkan oleh Jurutera Bertauliah).

SA_KERJA_TANAH.
DXF

7.4 Pelan Infrastruktur dan Utiliti (Pelan Jajaran)

7.4.1 Pelan Pengangkutan/ Sistem Sirkulasi (Trafik, Laluan Basikal & Pejalan Kaki dan Pengangkutan Awam)

SA_PENGGANGKUTAN.
DXF

7.4.2 Pelan Saliran & Perparitan

SA_SALIRAN.DXF

7.4.3 Pelan Pembedungan

SA_PEMBEDUNGAN.
DXF

7.4.4 Pelan Bekalan Elektrik

SA_BEKALAN_
ELEKTRIK.DXF

7.4.5	Pelan Bekalan Air	SA_BEKALAN_AIR.DXF
7.4.6	Pelan Telekomunikasi	SA_TELEKOM.DXF
7.4.7	Pelan Bekalan Gas	SA_BEKALAN_GAS.DXF
7.4.8	Pelan 'Gas District Cooling' (GDC)	SA_GDC.DXF
7.4.9	Pelan Kemudahan Sisa Pepejal	SA_SISA_PEPEJAL.DXF
7.4.10	Pelan Utiliti Hub	SA_HUB.DXF
7.4.11	Pelan 'Common Utiliti Trench' (CUT)	SA_CUT.DXF
7.4.12	Pelan Pengairan	SA_PENGAIRAN.DXF
7.6	Pelan Konsep Landskap (<i>Pelan perlu disahkan oleh Arkitek Landskap Bertauliah</i>)	
7.6.1	<i>Taman dan Kawasan Lapang</i>	
	i. Pelan Landskap Lembang	SA_LSKP_LEMBUT.DXF
	ii. Pelan Landskap Pejal (Perabut Kelengkapan Landskap, Papan Tanda, Pagar, Kemudahan Rekreasi, Landskap Berciri Air, Sirkulasi Pejalan Kaki & Basikal)	SA_LSKP_PEJAL.DXF
	iii. Pelan Landskap Pencahayaan	SA_LSKP_PENCAHAYAAN.DXF
	iv. Pelan Pengairan	SA_LSKP_PENGAIRAN.DXF
7.6.2	Koridor/ Rangkaian Hijau	SA_LSKP_KORIDOR_HIJAU.DXF
7.6.3	Jalanan Pejalan Kaki	SA_LSKP_JALAN_KAKI.DXF
8.	Satu (1) salinan lukisan perspektif (bird's eye view) (<i>format penyerahan rujuk lampiran A</i>)	SA_PERSPEKTIF.TIF

9. Model cadangan pembangunan, sila kemukakan salah satu dari berikut:

9.1 Model susun atur
(format penyerahan rujuk Lampiran B)

PBS_SENIBINA.DOC

9.2 Model berkomputer (3D simulation ataupun virtual reality)

SA_MODEL_3D.DXF

10. Sura-surat dan ulasan berserta pelan-pelan pengesahan agensi/ syarikat utiliti berkaitan:-

10.1 Bekalan Air (Jabatan Bekalan Air Selangor)

SA_SURAT_AIR.TIF

10.2 Telekomunikasi (Telekom Malaysia Berhad)

SA_SURAT_TELEKOM
.TIF

10.3 Chilled Water (GDC) - P1, P2, P3, P4, P5, P7 & P8 (Sub Commercial Centre)

SA_SURAT_GDC.TIF

10.4 Sisa Pepejal (Alam Flora Sdn. Bhd.)

SA_SURAT_SISA_
PEJAL.TIF

10.5 Pembedungan (Jabatan Perkhidmatan Pembedungan)

SA_SURAT_
PEMBETUNGAN.TIF

10.6 Bekalan Gas (Gas Malaysia)

SA_SURAT_GAS.TIF

10.7 Bekalan Elektrik (Tenaga Nasional Berhad)

SA_SURAT_TNB.TIF

10.8 Bomba dan Penyelamat (Jabatan Bomba, Ibu Pejabat)

SA_SURAT_BOMBA.
TIF

10.9 Syarikat Koneksi 'Common Utility Trench'

SA_SURAT_CUT.TIF

11. Mengemukakan dua (2) salinan Laporan Ringkas Cadangan Pemajuan bersaiz A3 ketika mengemukakan permohonan

SA_RINGKAS_LCP.
DOC

Mengemukakan Lima Belas (15) salinan (10 salinan berwarna dan 5 salinan hitam/putih), sekurang-kurangnya tiga(3) hari sebelum Mesyuarat JKPP.

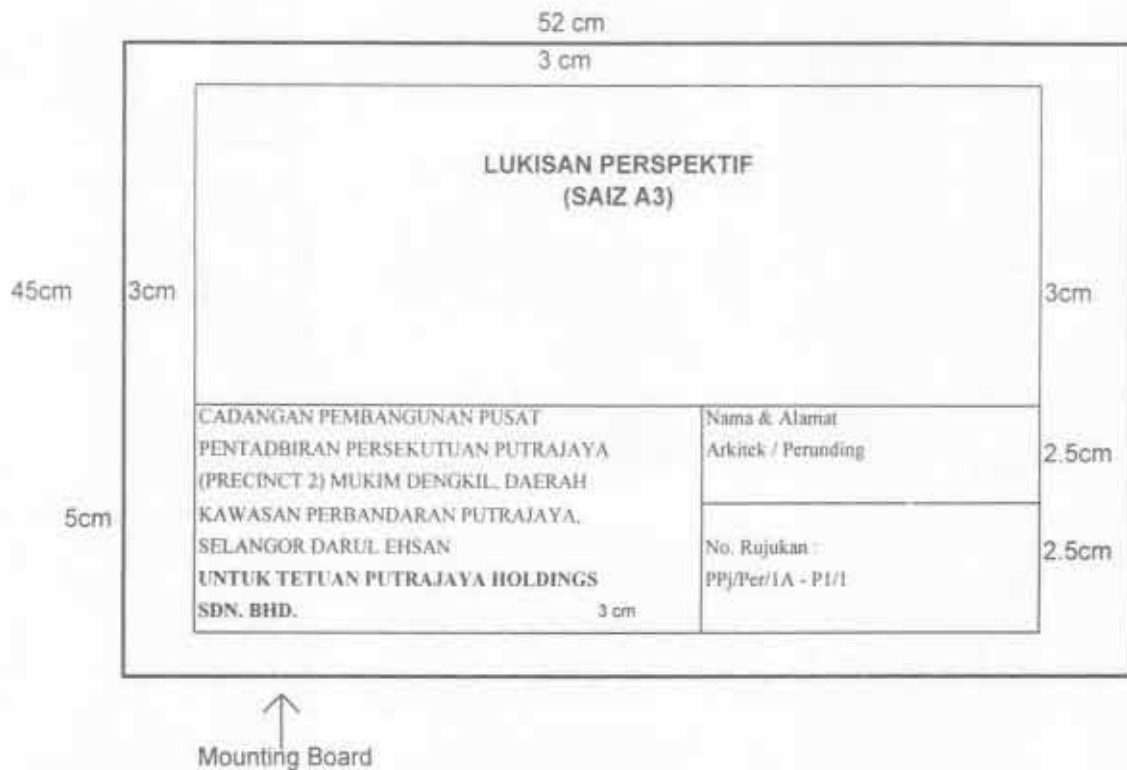
12. Satu (1) salinan Pelan Susun Atur dan Satu Salinan Lukisan Perspektif (bird's eye view) ditampal di atas 'mounting board' dan menggunakan saiz yang bersesuaian untuk taklimat semasa mesyuarat JKPP.

Nota:

 - Amendment

JABATAN PERANCANGAN B ANDAR
Perbadanan Putrajaya

Panduan Penyediaan Lukisan Perspektif Untuk
Permohonan Kelulusan Kebenaran Merancang



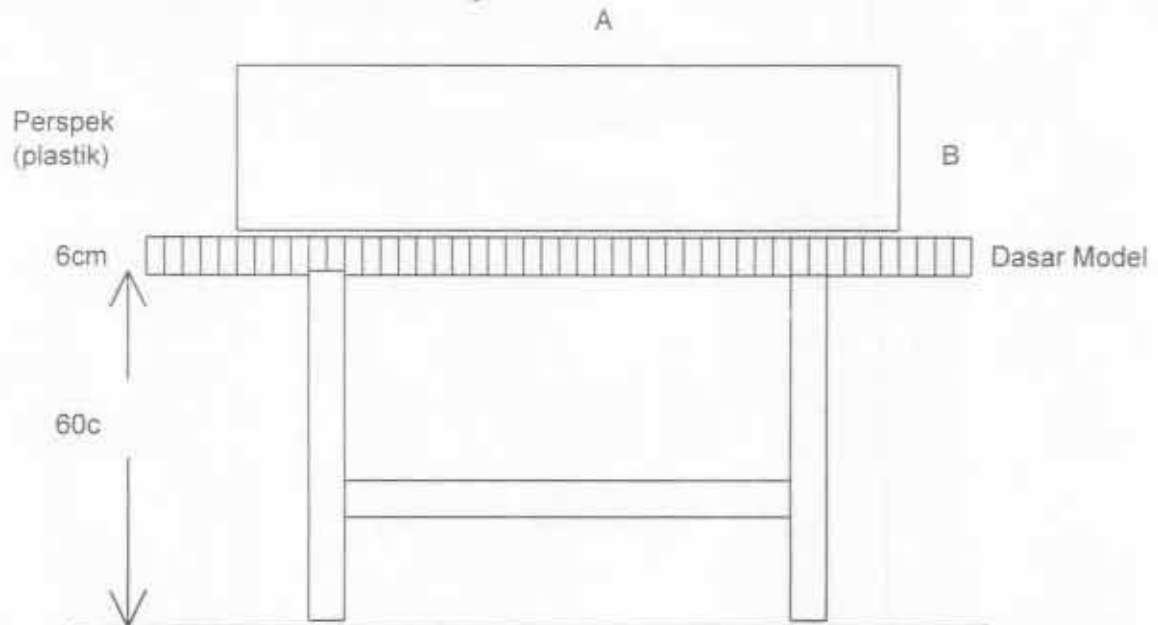
Syarat-syarat Am

1. Lukisan perspektif hendaklah diwarnakan dan disediakan di dalam saiz A3 (1 salinan).
2. Tajuk perspektif hendaklah mengandungi :-
 - i. Jenis cadangan pembangunan
 - ii. Alamat tapak cadangan
 - iii. Nama pemilik
3. Lukisan perspektif hendaklah disertakan nama dan alamat perunding dan nombor rujukan Perbadanan Putrajaya.
4. Ruang tajuk lukisan perspektif hendaklah ditulis dengan tulisan hitam dan latarbelakang putih.
5. Lukisan perspektif hendaklah dilekatkan di atas 'mounting board' hitam dan ukuran sisi kelilingnya ialah 3cm lebar.
6. Setiap lukisan yang digunakan pada tajuk ialah 1cm dan hendaklah lebih besar daripada nama dan alamat perunding.
7. Lukisan perspektif yang dikemukakan adalah hak milik Perbadanan Putrajaya.

JABATAN PERANCANGAN BANDAR

PERBADANAN PUTRAJAYA

Panduan Penyediaan Model Untuk
Permohonan Kelulusan Kebenaran Merancang



A & B - Lebar dan tinggi perspek bergantung kepada skil model bangunan.

Syarat-Syarat Am (Model)

1. Skala 1:3,000
2. Ikut sempadan Precinct
3. Model & dasar mesti boleh ditanggalkan (mudah alih)
4. Model tersebut hendaklah menunjukkan semua perkara yang dicadang berdasarkan pelan lulus termasuk pelan susun atur, landskap, 'footprint' bangunan, senitaman, kontor, perparitan dan infrastruktur.
5. Perspektif yang diperbuat dari plastik hendaklah dari jenis mudah alih.
6. Dasar model hendaklah diperbuat daripada kayu.
7. Model hendaklah disediakan oleh pembuat model yang dilantik oleh Perbadanan bagi tujuan penyeragaman pengkelasan penggunaan warna, bahan & reka bentuk supaya boleh dicantum-cantumkan.
8. Model yang diserahkan adalah hakmilik Perbadanan Putrajaya.

FORM SA 1 (Pindaan1)

**Senarai Semakan Permohonan untuk Permohonan Kebenaran Merancang Bagi Keluasan
Susun Atur (Seksyen 21(3), Akta Perancangan Bandar dan Desa, 1976)**

SA1 (Pindaan 1)



PERBADANAN PUTRAJAYA

PERMOHONAN KEBENARAN MERANCANG BAGI PENDIRIAN BANGUNAN SEMENTARA
{Seksyen 21(3) Mengenai Pendirian Bangunan, Akta Perancangan Bandar dan Desa, 1976}

Tajuk Projek :
.....
.....
.....

Tarikh Penerimaan

SENARAI SEMAKAN PERMOHONAN

(For Manual Submission)

KANDUNGAN LAPORAN CADANGAN PEMAJUAN

Laporan Cadangan Pemajuan hendaklah dikemukakan sebanyak dua(2) salinan ketika mengemukakan permohonan dan lapan (8) salinan untuk pengesahan (endorsement) apabila diarahkan oleh Perbadanan.

Laporan Cadangan Pemajuan perlulah mengikut format seperti berikut:

- Saiz laporan : A4
- Saiz pelan : A3
- Binding : Fail berkulit tebal serta bernombor siri.
- Pengesahan Professional : Bagi perkara 1 hingga 4 hendaklah disediakan dan disahkan oleh Jururancang Bertauliah dan perkara 5 hendaklah disediakan dan disahkan oleh profesional berkaitan.
- Kandungan setiap perkara perlu menerangkan dengan ringkas mengenai pematuhan dengan kehendak Garis Panduan Reka Bentuk Bandar.

NAMA FAIL

1. Tajuk permohonan / pengenalan

SA1_SURAT_
PENGENALAN.DOC

2. Perihal Tapak
(penerangan hendaklah dikecilkan skopnya kepada Kawasan
Putrajaya sahaja)

2.1 Laporan Perihal Tapak (penerangan hendaklah dikecilkan skopnya kepada Kawasan Putrajaya sahaja)	SA1_PERIHAL_TAPAK K.DOC
2.1.1 Lokasi tapak	
2.1.2 Butir-butir Hak Milik Tanah	
2.1.3 Sekatan Terhadap Tanah (jika ada)	
2.2 Pelan Perihal Tapak	
2.2.1 Pelan Lokasi	SA1_LOKASI_TAPAK. TIF
2.2.2 Pelan Kunci	SA1_KUNCI.TIF
2.2.3 Pelan Hak Milik Tanah	SA1_HAK_MILIK.TIF
3. Keadaan Semasa dan Analisa Tapak	
3.1 Laporan Keadaan Semasa dan Analisa Tapak	SA1_KEADAAN_ SEMASA.DOC
3.1.1 Topografi dan Rupa Bumi	
3.1.2 Gunatanah Sediada	
3.1.3 Faktor Iklim	
a. Arah Angin	
b. 'Sun Orientation'	
c. Taburan Hujan	
d. Kelembapan	
e. Suhu	
3.1.4 Saliran Air, badan air dan tadahan air semulajadi	
3.1.5 Jalan Keluar Masuk	
3.1.6 Jenis Tanah	
3.1.7 Geologi & Air Bawah Tanah	
3.1.8 Fauna	

3.1.9 Flora (Perintah Pemeliharaan Pokok)

Penerangan berdasarkan perkara-perkara berikut:

- a. Spesis Pokok
- b. Kategori Pokok
- c. Spesifikasi Pokok
- d. Kuantiti Pokok
- e. Lokasi dan Umur Pokok
- f. Nilai Estetika Pokok
- g. Kaedah Pengekalan/Penebangan/Pengalihan-Tanam Semula Pokok
- h. Foto-foto Digital Pokok Sedia ada

3.1.10 Pemandangan dan Vista

3.1.11 Analisa Kecerunan

Menerangkan kecerunan berdasarkan kelas berikut:

- Less than 10°
- 10° - 15°
- 15° - 20°
- >above 20°

3.1.12 Analisa Gunatanah Kawasan Berhampiran Samada Precint Bersebelahan atau Luar Perbadanan Putrajaya.

3.1.13 Analisa Kualiti Alam Sekitar Semasa

- a. Kualiti Air
- b. Kualiti Udara
- c. Kebisingan

3.1.14 Sosio ekonomi Meliputi Tapak dan Kawasan Sekitar

3.1.15 Analisis Potensi dan Halangan Pembangunan

- a. Kawasan yang boleh dibangunkan
- b. Kawasan halangan pembangunan

3.2 Pelan Keadaan Semasa dan Analisa Tapak

3.2.1 Pelan Topografi dan Rupa Bumi

SA1_KS_TOPO.TIF

3.2.2 Pelan Gunatanah Sedia Ada

SA1_KS_GUNATANAH.TIF

3.2.3 Pelan Faktor Iklim

SA1_KS_FAKTOR_IKLIM.TIF

3.2.4 Pelan Saliran Air, Badan Air dan Tadahan Semujadi

SA1_KS_SALIRAN_AIR.TIF

3.2.5 Pelan Jalan Keluar Masuk (aksesibiliti ke tapak sedia ada)

SA1_KS_AKSES.TIF

3.2.6 Pelan Jenis Tanah	SA1_KS_JENIS_TANAH.TIF
3.2.7 Pelan Geologi & Air Bawah Tanah	SA1_KS_GEOLOGI.TIF
3.2.8 Fauna	SA1_KS_FAUNA.TIF
3.2.9 Flora (Pelan Inventori Pokok)	SA1_KS_INV_POKOK.TIF
3.2.10 Pelan Pemandangan dan Vista	SA1_KS_VISTA.TIF
3.2.11 Pelan Analisis Kecerunan	SA1_KS_KECERUNAN.TIF
<p>Menerangkan kecerunan berdasarkan kelas berikut:</p> <ul style="list-style-type: none"> • Less than 10° • 10° - 15° • 15° - 20° • >above 20° 	
3.2.12 Pelan analisa gunatanah kawasan berhampiran samada precinct bersebelahan atau kawasan luar Perbadanan Putrajaya	SA1_KS_GTANAH_SEBELAH.TIF
3.2.13 Pelan Sosio-ekonomi meliputi kawasan sekitar	SA1_KS_SOCIO_EKONOMI.TIF
3.2.14 Pelan Analisis Kualiti Alam Sekitar Semasa	SA1_KS_ALAM_SEKITAR.TIF
<ul style="list-style-type: none"> i. Kualiti Air ii. Kualiti Udara iii. Kebisingan 	
3.2.15 Pelan Analisis Potensi dan Halangan Pembangunan	SA1_KS_POTENSI_HALANGAN.TIF
4. Cadangan Pembangunan	
4.1 Laporan Cadangan Pembangunan	SA1_CDG_PEMBANGUNAN.DOC

4.1.1 Matlamat, Objektif, Strategi Pembangunan Precint

4.1.2 Konsep dan Justifikasi Pembangunan Precint

Menerangkan rangkakerja pembangunan dari aspek:

- i. Pelan Pengezonan
- ii. Konsep Zon Kepadatan
- iii. Konsep Reka Bentuk Bandar
 - Identiti Tempatan
 - 'Organisation'
 - 'Access Point'
 - 'Vertical Treatment'
 - 'Horizontal Treatment'
 - Tarikan Pelancong
 - 'Public Realm'
- iv. Rangkaian Utiliti
- v. Rangkaian Pengangkutan
 - Sirkulasi Kenderaan
 - Sirkulasi bukan Kenderaan
 - Pengangkutan Awam
 - Tempat Letak Kenderaan
- vi. Kordinasi Ruang Landskap
- vii. Saliran/ Hidrologi
- viii. Perancangan Alam Sekitar (Pematuhan Syarat EIA)
- ix. Kesan Cadangan Pembangunan kepada Gunatanah Kawasan bersebelahan samada Precint Bersebelahan atau Kawasan Luar Putrajaya

4.1.3 Cadangan Pelan Susun Atur

Menerangkan butiran terperinci berikut:

- i. Pecahan guna tanah (pecahan guna tanah yang seperti perumahan, perdagangan, kerajaan, kemudahan kawasan lapang, kemudahan ameniti, kemudahan utiliti dan kemudahan infrastruktur)
- ii. Aspek-aspek densiti (kepadatan), nisbah plot, 'plinth area', ketinggian bangunan, garisan anjakan;
- iii. Langkah-langkah bagi melindungi dan memperelok alam sekitar dari segi fizikal.
- iv. Langkah- langkah bagi melindungi topografi semulajadi
- v. Langkah-langkah bagi memperelok landskap
- vi. Langkah-langkah bagi memelihara dan menanam pokok-pokok.

4.2 Pelan-pelan Cadangan Pembangunan

4.2.1 Pelan Pengezonan

SA1_CP_ZON.TIF

4.2.2 Pelan Konsep Reka Bentuk Bandar

SA1_CP_REKA_BANDAR.TIF

4.2.3 Pelan Konsep Rangkaian Utiliti

SA1_CP_UTILITI.TIF

4.2.4	Pelan Konsep Rangkaian Pengangkutan	SA1_CP_PENGANGKUTAN.TIF
4.2.5	Pelan Kordinasi Ruang Landskap	SA1_CP_LANDSKAP.TIF
4.2.6	Pelan Konsep Saliran / Hidrologi	SA1_CP_SALIRAN_HIDROLOGI.TIF
4.2.7	Pelan Kesan Cadangan Pembangunan Terhadap Guna Tanah Kawasan Bersebelahan	SA1_CP_KESAN_GTANAH_SEBELAH.TIF
4.2.8	Pelan Susun Atur Terperinci	SA1_CP_SUSUN_ATUR.TIF
4.2.9	Jadual Pecahan Gunatanah	SA1_CP_JADUAL_GTANAH.TIF
4.2.10	Pelan Densiti	SA1_CP_DENSITI.TIF
4.3	Pandangan Perspektif Cadangan Susun Atur (Bird's Eye View)	SA1_CP_PERSPEKTIF.TIF
4.4	Gambarajah / Ilustrasi Cadangan Pembangunan Lain	SA1_CP_LAIN.TIF
5.	Laporan-laporan sokongan - impak dan implikasi aspek-aspek berikut:	
5.1	Geoteknikal (perlu disahkan oleh Jurutera Bertauliah)	
5.1.1	Laporan Geoteknikal	SA1_LS_GEOTEKNIKAL.DOC
	<ul style="list-style-type: none"> i. Geologi Tanah ii. Kerja-kerja Penyiasatan Tanah iii. Keadaan Sub-permukaan dan Penerangan Lubang Gerek iv. Analisis Kestabilan Cerun 	
5.1.2	Pelan Geoteknikal yang mengandungi:-	SA1_LS_GT_PELAN.TIF
	<ul style="list-style-type: none"> i. Nod Lubang Gerek ii. Kontur sedia ada & Cadangan iii. Profil Tanah (Perkawasan) 	
5.1.3	Keratan Rentas Lubang Gerek & Profil Tanah	SA1_LS_GT_KERATAN.TIF

5.1.4	Gambarajah/ Ilustrasi Geoteknikal Lain	SA1_LS_GT_LAIN.TIF
5.2	Kerja Tanah <i>(perlu disahkan oleh Jurutera Bertauliah)</i>	
5.2.1	Laporan Kerja Tanah	SA1_LS_KERJA_TANAH.DOC
5.2.2	Pelan Kerja Tanah	SA1_LS_KT_PELAN.TIF
	<ul style="list-style-type: none"> i. Kontur sedia ada ii. Cadangan awal pemotongan dan penambakan iii. Aras muktamad iv. Cerun muktamad v. Kontur Cadangan vi. Punca Tanah Penambakan vii. Isipadu Pemotongan dan Penambakan viii. Lokasi stockpile ix. Saliran Sementara x. 'Silt trap' 	
5.2.3	Keratan Rentas Tapak dan Aras (sekurang-kurangnya 3)	SA1_LS_KT_KERATAN.TIF
5.2.4	Rajah/ Ilustrasi Kerja Tanah Lain	SA1_LS_KT_LAIN.TIF
5.3	Penilaian Kesan Lalulintas (TIA) <i>(perlu disahkan oleh Jurutera/ Jururancang Pengangkutan Bertauliah)</i>	
5.3.1	Laporan Penilaian Kesan Lalulintas (TIA)	SA1_LS_TIA.DOC
	<ul style="list-style-type: none"> i. Penjanaaan Lalulintas ii. Analisa impak lalulintas (keselamatan & keselesaan) iii. Cadangan sirkulasi trafik, sistem pejalan kaki, laluan basikal, sistem pengangkutan awam dsb. iv. Cadangan Tempak Letak Kenderaan 	
5.3.2	Pelan Sistem Pengangkutan	SA1_LS_ANGKUT_PELAN.TIF
5.3.3	Keratan Rentas Pengangkutan	SA1_LS_ANGKUT_KERATAN.TIF
5.3.4	Gambarajah/ Ilustrasi Pengangkutan Lain	SA1_LS_ANGKUT_LAIN.TIF
5.4	Saliran	

- i. Keperluan Maklumat Hidrologi
 - Saliran Utama
 - Saliran Sederhana/ Kecil
 - Lengkung IDF bagi Putrajaya untuk 'basis' pengiraan rekabentuk saliran
- ii. Pengiraan rekabentuk saliran (saiz, bentuk saliran dan sebagainya)

5.4.2 Pelan Saliran

SA1_LS_SL_PELAN.TIF

5.4.3 Keratan Rentas Saliran

SA1_LS_SL_KERATAN.TIF

5.4.4 Rajah / Ilustrasi Saliran Lain

SA1_LS_SL_LAIN.TIF

5.5 Kemudahan Utiliti

(perlu disahkan oleh Jurutera Bertauliah)

5.5.1 Laporan Kemudahan Utiliti

SA1_LS_UTILITI.DOC

- i. Pembedungan
- ii. Bekalan Air
- iii. Bekalan Elektrik
- iv. Telekomunikasi
- v. Bekalan Gas
- vi. Bekalan 'Gas District Cooling (GDC)
- vii. Kemudahan Sisa Pepejal
- viii. 'Common Utility Trench (CUT)

5.5.2 Pelan Kemudahan Utiliti

i. Pelan Pembedungan

SA1_LS_UT_PEMBETUNGAN.TIF

ii. Pelan Bekalan Air

SA1_LS_UT_AIR.TIF

iii. Pelan Bekalan Elektrik

SA1_LS_UT_ELEKTRIK.TIF

iv. Pelan Telekomunikasi

SA1_LS_UT_TELEKOM.TIF

v. Pelan Bekalan Gas

SA1_LS_UT_GAS.TIF

vi. Pelan Bekalan GDC

SA1_LS_UT_GDC.TIF

vii. Pelan Kemudahan Sisa Pepejal

SA1_LS_UT_SISA_ PEPEJAL.TIF

viii. Pelan 'Common Utility Trench'

SA1_LS_UT_CUT_TIF

5.5.3 Keratan Rentas 'Common Utility Trench'

SA1_LS_UT_CUT_ KERATAN.TIF

5.6 Landskap

(perlu disahkan oleh Arkitek Landskap Bertauliah)

5.6.1 Laporan Konsep Landskap

SA1_LS_LANDSKAP. DOC

- a) Hirarki Taman dan Kawasan Lapang
- b) Katategori Landskap
- c) Matlamat dan Objektif
- d) Konsep Senireka Landskap
- e) Isu-isu Rekabentuk
Mengambil kira :
 - Pokok sedia ada
 - Kordinasi Ruang
- f) Program Implementasi
- g) Program Penyelenggaraan Landskap
- h) Pengurusan Operasi & Penyelenggaraan (O&M)

5.6.2 Pelan Konsep Landskap

Yang merangkumi konsep-konsep berikut:

i. Taman dan Kawasan Lapang

- Landskap Lembut
- 'Hard Landscape'
(Perabot Landskap, Papan Tanda, Pagar, Kemudahan Rekreasi, Landskap Berciri Air, Sirkulasi Pejalan Kaki & Basikal)
- Landskap Pencahayaan
- Pengairan

SA1_LS_LSKP_ LEMBUT.TIF

SA1_LS_LSKP_ PEJAL.TIF

SA1_LS_LSKP_ PENCAHAYAAN.TIF

SA1_LS_LSKP_ PENGAIRAN.TIF

ii. Koridor/ Rangkaian Hijau

SA1_LS_LSKP_KORI DOR_HIJAU.TIF

iii. Jalanan Pejalan Kaki

SA1_LS_LSKP_ JALAN_KAKI.TIF

5.6.3 Keratan Rentas Landskap	SA1_LS_LSKP_KERATAN.TIF
5.6.4 Gambarajah/ Ilustrasi Landskap Lain	SA1_LS_LSKP_LAIN.TIF
5.7 Alam Sekitar <i>(perlu disahkan oleh Perunding Alam Sekitar Bertauliah)</i>	
5.7.1 Pelan Pengurusan Alam Sekitar (EMP)	SA1_LS_EMP.DOC
5.7.2 Lampiran yang mengandungi pelan-pelan bersaiz A3 seperti berikut:	
i. Pelan topografi bersama-sama dengan analisa kecerunan	SA1_LS_AS_TOPO_CERUN.TIF
ii. Pelan lokasi sungai dan lain-lain badan air	SA1_LS_AS_BADAN_AIR.TIF
iii. Pelan jalan logistik dan kawasan penyimpanan "stockpile"	SA1_LS_AS_LOGISTIK.TIF
iv. Pelan pengezonan dan pengfasaan kerja tanah	SA1_LS_AS_KT_ZON_FASA.TIF
v. Pelan pemotongan dan penambakan kerja tanah	SA1_LS_AS_KT_POTONG_TAMBAK.TIF
vi. Pelan lokasi	
a) 'silt trap'	SA1_LS_AS_SILT_TRAP.TIF
b) 'silt fence'	SA1_LS_AS_SILT_FENCE.TIF
c) 'kolam takungan'	SA1_LS_AS_KOLAM.TIF
d) sistem perparitan sementara dan kekal	SA1_LS_AS_PARIT.TIF
e) kawasan yang akan ditanam dengan rumput/ 'hydroseed'	SA1_LS_AS_HYDROSEED.TIF
f) perangkap minyak dan gris	SA1_LS_AS_MINYAK_GRIS.TIF

vii. Pelan analisis sedimen dan kawasan hakisan	SA1_LS_AS_SEDIMEN.TIF
viii. Pelan kawasan servis dan tempat penyimpanan minyak diesel	SA1_LS_AS_DIESEL.TIF
ix. Pelan lokasi stesen pengawasan air, udara dan bunyi bising	SA1_LS_AS_STESEN_AWASAN.TIF
x. CV dan Sijil Pendaftaran Perunding Alam Sekitar	SA1_LS_AS_CV.TIF
5.7.3 Surat-surat kelulusan dari agensi-agensy yang berkaitan seperti:	
i. Jabatan Alam Sekitar	
a. Kelulusan untuk pembinaan bagi pelepasan effluent/ kumbahan baru	SA1_LS_AS_SURAT_EFFLUEN.TIF
b. Kelulusan mendirikan 'batching plant'	SA1_LS_AS_SURAT_BPLANT.TIF
c. Kelulusan EIA tambahan	SA1_LS_AS_SURAT_EIA_TAMBAH.TIF
ii. Lain - lain kelulusan berkaitan	SA1_LS_AS_SURAT_LAIN.TIF

5.8 Pengairan
(*perlu disahkan oleh Jurutera Bertauliah*)

5.8.1 Laporan Pengairan

SA1_LS_PENGAIRAN.DOC

- i. Konsep Pengairan
- ii. Kualiti Air dan Implikasi Kos
- iii. Kriteria Rekabentuk
- iv. Inner/ Outer Reticulation System
- v. Punca Air/ Keperluan
- vi. Sistem Pengairan (Manual)
 - Tap/ Tap Point/ Quick Coupling/ Standpipe
 - Mobile Tanker
 - Rainwater Harvesting Tank
- vii. Sistem Pengairan Separuh Automatik/ Automatik
 - Movable Pulsator/ Rotary Sprinkler Standpipe
 - Sprinkler System (Pop-up Spray, Misting, Bubble Spray)
 - Drip Irrigation (Drip Emitter, Dripper Line)
 - Programmable Logic Controller (PLC)/ Control Panel
 - Rain Sensor/ Lighting Arrestor
 - Cabling Work (M&E)
 - Tapping Point from Irrigation Main
 - Pump House

5.8.2 Pelan Pengairan

SA1_LS_PENGAIRAN
PELAN.TIF

- i. Petunjuk
- ii. Sistem Pengairan (Manual)
 - Tap/ Tap Point/ Quick Coupling/ Standpipe
 - Mobile Tanker
 - Rainwater Harvesting Tank
- iii. Sistem Pengairan Separuh Automatik/ Automatik
 - Movable Pulsator/ Rotary Sprinkler Standpipe
 - Sprinkler System (Pop-up Spray, Misting, Bubble Spray)
 - Drip Irrigation (Drip Emitter, Dripper Line)
 - Programmable Logic Controller (PLC)/ Control Panel
 - Rain Sensor/ Lighting Arrestor
 - Cabling Work (M&E)
 - Tapping Point from Irrigation Main
 - Pump House

5.8.3 Keratan Bujur Saliran

SA1_LS_PENGAIRAN
KERATAN.TIF

6. Fasa Pembangunan

6.1 Laporan Fasa Pembangunan

SA1_FASA_
PEMBANGUNAN.DOC

6.2 Jadual Fasa Pembangunan

SA1_JAD_FASA_
PEMBANGUNAN.TIF

7. Anggaran Harga Jualan Premis


7.1 Laporan Anggaran Harga Jualan Premis

SA1_HARGA_
JUALAN.DOC

7.2 Jadual Anggaran Harga Jualan Premis

SA1_JAD_HARGA_
JUALAN.TIF

Nota:

 - Amendment

FORM PB (Pindaan 1)

Senarai Semakan Permohonan Untuk Permohonan Kebenaran Merancang Bagi Pendirian Bangunan (Seksyen 21(3) Mengenai Pendirian Bangunan, Akta Perancangan Bandar dan Desa, 1976)

PB (Pindaan 1)



PERBADANAN PUTRAJAYA

PERMOHONAN KEBENARAN MERANCANG BAGI PENDIRIAN BANGUNAN
{Seksyen 21(3) Mengenai Pendirian Bangunan, Akta Perancangan Bandar dan Desa 1976}

Tajuk Projek :

.....
.....
.....

Tarikh Penerimaan

SENARAI SEMAKAN PERMOHONAN

	NAMA FAIL
1. Permohonan hendaklah disertakan dengan surat rasmi (cover letter) daripada Jururancang Bertauliah	PB_SURAT_RASMI.TIF
2. Melengkapkan Borang A (Jadual Pertama Kaedah Kawalan Perancangan Am)	PB_BORANG_A.TIF
3. Satu (1) salinan suratan hak milik	PB_HAK_MILIK.TIF
4. Satu (1) salinan surat perlantikan perunding.	PB_LANTIK_RUNDING.TIF
5. Satu (1) salinan profil syarikat perunding.	PB_PROFIL_SYKT.TIF
6. Satu (1) salinan Surat Kelulusan Kebenaran Merancang untuk Pelan Susun Atur Precint berkaitan.	PB_KELULUSAN_SA.TIF
7. Mengemukakan dua (2) salinan pelan-pelan dan lukisan-lukisan termasuk satu (1) linen ketika mengemukakan permohonan.	

Mengemukakan lapan (8) salinan pelan-pelan dan lukisan-lukisan termasuk satu (1) linen untuk pengesahan (endorsement) apabila diarah oleh Perbadanan.

(Pelan-pelan yang dikemukakan hendaklah berdasarkan kepada format seperti berikut:

- a) Kesemua pelan kecuali Pelan-pelan Bangunan hendaklah berdasarkan kepada Pelan Pra-Hitungan (pre-comp plan) yang mengandungi bacaan koordinat, jarak, "bearing" dan menunjukkan aras platform.
- b) Saiz pelan : A1
- c) Pelan-pelan / lukisan hendaklah disahkan oleh ahli profesional yang berkaitan
- d) Pelan-pelan hendaklah diwarnakan dan dijilid bersama
- e) Lukisan perspektif seperti di para 7.2.5 (bersaiz A3) perlu ditampal di atas kertas bersaiz A1 berserta tajuk projek sebagai kulit luar Pelan-pelan/ lukisan yang dijilid bersama)

7.1 PELAN TAPAK

(Pelan-pelan perlu disahkan oleh Jururancang Bertauliah)

PB_TAPAK.DXF

- i. Pelan kunci (menunjukkan tapak cadangan dalam keseluruhan Putrajaya)
- ii. Pelan lokasi (menunjukkan tapak cadangan dan pembangunan di sekitarnya)
- iii. Pelan tapak yang berdasarkan pelan pra-hitungan.
- iv. Maklumat dan jadual kawalan pembangunan.

7.2 PELAN DAN LUKISAN SENIBINA

(Pelan-pelan perlu disahkan oleh Arkitek Bertauliah)

7.2.1 Pelan Lantai

PB_SB_LANTAI.TIF

7.2.2 Pelan Bumbung

PB_SB_BUMBUNG.
TIF

7.2.3 Pandangan Tampak mengikut skim warna sebenar (sekurang-kurangnya 4 pandangan Tampak)

PB_SB_TAMPAK.TIF

7.2.4 Keratan Rentas (sekurang-kurangnya 2 keratan rentas)

PB_SB_KERATAN.TIF

7.2.5 Lukisan Perspektif berukuran minimum A3

PB_SB_PERSPEKTIF.
TIF

7.3 PELAN KERJA TANAH

(Pelan perlu disahkan oleh Jurutera Bertauliah yang mengandungi perkara-perkara berikut:

- a. Kontor sedia ada
- b. Cadangan awal pematangan dan penambakan
- c. Aras Muktamad