



## Architectural Checklist

### Design Stage

Form AD/1.2

Comply N.A. Waiver

#### 1. Consider life span of building components

- For external building components such as the facade and roof whether replacement needed for aesthetic face-lift.

- Interlocking concrete paving
- Others, please specify \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- Durability of building elements should maintain a minimal expected level of performance despite the deteriorating effects of weather or mechanical forces of electrochemical corrosion and biological degeneration.
- Any waiver application for the life span of building services may be affected in future maintenance.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### 2 Building serviceability

- Building parts that need maintenance should be easily and safely accessible for inspection, cleaning, painting, oiling, sealing, fastening etc.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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#### 3 Selection of building components and building materials

- All structural hardwood timber is to be treated with wood preservative and fire retardant material.
- All structural hardwood should not have direct contact with water dampness at the ground level.
- All metal component such as bolts & nuts, angle brackets must be stainless steel or approved equivalent material.
- All steel plates, connection plates etc. must be hot dipped galvanised or approved equivalent material.
- The design for the handrail and type of material used should be flexible and allow for future replacement of damaged/defective portion, i.e. hot dipped galvanised mild steel, stainless steel minimum grade 316 hairline finish etc.
- The material selected should be aligned with Green Mark requirements and utilise eco-certified products where applicable.
- The provision of park furniture such as bench, table, litter bin, play structure, railing etc., to take the following factors into considerations:
  - Vandalism

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



**Comply N.A. Waiver**

- |   |                          |                          |                          |
|---|--------------------------|--------------------------|--------------------------|
| • Durability e.g. wear and tear   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| • Maintainability/replacement of major components   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| • Environmental factor, e.g. weathering, shrinkage, warping, etc.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| • Others, please specify _____<br>_____<br>_____  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|   |                          |                          |                          |
| • All items used such as dustbin, bench etc. should be easily available in local market for future replacement/maintenance. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|   |                          |                          |                          |
| 4. Any <b>Warranty/Guarantee</b> provided:  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| • Water Proofing – 10 years   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| • Termite Treatment – 5 years   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| • Aluminium Works – 10 years  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| • Spray Coating/Polyurethane/Fluorocarbon Painting system – 5 years   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| • Roofing – 10 years  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| • Play/Fitness Equipment – 5 years  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| • Play/Fitness Flooring (EPDM / Rubber Safety Matting) – 5 years  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| • Others, please specify _____<br>_____<br>_____  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|   |                          |                          |                          |
| 5. To confirm if structures required URA submission & approval  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**Consultant's Acknowledgement**

I am the Qualified Person appointed under Section 6(3) of the Building Control Act in respect of the above project and declare that all particulars required have been complied with.

Designation : \_\_\_\_\_

Signature and Date : \_\_\_\_\_



## Architectural Checklist

### Contract Documentation/Completion of Project

### Form AD/2.2

#### Comply N.A. Waiver

- |     |  |                          |                          |                          |
|-----|--|--------------------------|--------------------------|--------------------------|
| a)  | 1 complete set of soft copy architectural as-built drawings, with each drawing digitally endorsed by the submission Qualified Person and stamped with "As-Built Drawings" and the date of issue.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b)  | 1 soft copy of all applicable technical drawings (including survey plans, site plans, architectural drawings, structural drawings, and engineering drawings) in digitised form, formatted in SHP or other approved National Standards for the Construction Industry. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c)  | Include a complete list of Sub-contractors/Suppliers including the contact addresses, telephone, fax number, person in-charge etc.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d)  | Provide technical data/information /detail drawings for benches, litter bins, heavy duty grating/checker plate cover, bollard, road marker, signage's, play structure, fitness equipment, stainless steel railing, water proofing system, etc.                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e)  | The Contractor is required to submit the following Form of Warranty/Guarantee if applicable at the Completion stage:   |                          |                          |                          |
|     | • Water Proofing – 10 years  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|     | • Termite Treatment – 5 years  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|     | • Aluminium Works – 10 years   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|     | • Spray Coating/Polyurethane/Fluorocarbon Painting System – 5 years  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|     | • Roofing – 10 years   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|     | • Play/Fitness Equipment – 5 years   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|     | • Play/Fitness Flooring (EPDM / Rubber Safety Matting) – 5 years   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|     | • Others, please specify _____   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|     | _____  |                          |                          |                          |
| f). | A copy of the Certificate of Temporary Occupation Permit Statutory Completion issued by BCA if applicable.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

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### Consultant's Acknowledgement

I am the Qualified Person appointed under Section 6(3) of the Building Control Act in respect of the above project and I have supervised the above-mentioned building works and declare that all particulars required have been complied with.

Designation : \_\_\_\_\_

Signature and Date : \_\_\_\_\_

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## Civil & Structural Checklist Design Stage

Form CS/1.2  
Comply N.A. Waiver

### 1. To ensure structural safety

- All structural elements must be endorsed by a Professional Engineer.  
(Civil/Structural) ☐ ☐ ☐
- The design and loading requirements for the service tracks shall cater for heavy vehicular access of 20 tones. ☐ ☐ ☐
- Provided with a proper drainage system including surface run-off drain system and subsoil pipe/geotextile system especially along the tracks to prevent future water ponding on the track surface and side table. ☐ ☐ ☐
- R. C. kerb to be provided for all asphalt tracks. ☐ ☐ ☐
- To confirm if structures required BCA submission & approval ☐ ☐ ☐

### 2. Equipment lifecycle cost

- To provide indicative comprehensive maintenance cost for proposed play/fitness equipment. ☐ ☐ ☐

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### Consultant's Acknowledgement

I, the Qualified Person (Professional Engineer) have ensure that the Building Control Regulations (Cap. 29, Rg 5) in respect to the above project and all particulars required for the above proposal have been complied with.

Designation : \_\_\_\_\_

Signature and Date : \_\_\_\_\_

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## Civil & Structural Checklist

### Contract Documentation/Completion of Project

#### Form CS/2.2

#### Comply N.A. Waiver

- |  |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|
| a) Provided a complete list of Contractor/sub-contractor, manufacturer and Suppliers with address, telephone, fax, and person in-charge.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Included the Professional Engineer's endorsement for major structures including foundation/footing for play structures and signboards.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Included endorsement by Qualified Safety Inspectors for all play and fitness equipment installation complying SS 457  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Included endorsement by Licensed Exercise Physiologist for all elderly exercise equipment installation.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Included the following warranty/guarantee in the contract documents if applicable:  |                          |                          |                          |
| • Warranty and for play/fitness equipment  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| • Option for comprehensive and non-comprehensive maintenance of play/fitness equipment for 5 years   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| • Quality Warranty for other park furniture e.g.: litter bin, bench against defect, discolouration, etc.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Provide 1 set of soft copy as-built drawings for civil and structural works (including site plan and detailed structural drawings), with each drawing digitally endorsed by the submission Professional Engineer (Civil/Structural) and stamped with "As-Built Drawings" and the date of issue. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g) A copy of Form BEV/C1 - The Professional Engineer's Certificate of Supervision of Piling Works, if applicable.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h) A copy of Form BC/BC - The Builder's Certificate of Completion of the Building Works, if applicable.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| i) A copy of Form BEV/C2 - The Professional Engineer's Certificate of Supervision of Structural Works  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| j) A copy of Form BEV/C3 - Submission of 'As-built Drawings/Calculations/ Report and Supervision Certificate'.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

### Consultant's Acknowledgement

I, the Qualified Person (Professional Engineer) have inspected the above works and all particulars required for the above proposal have been complied with.

Designation : \_\_\_\_\_

Signature and Date : \_\_\_\_\_

## Mechanical & Electrical Services Checklist

Form M & E/1.2

### A. Design Stage

Comply N.A. Waiver

1. Recommended average lux level requirement are as follows:
  - a. Footpath (Ave 5 lux) ☐ ☐ ☐
  - b. Playground, Basketball/Badminton court  
(Ave of 20 lux with the darkest spot of minimum 6 lux) ☐ ☐ ☐
  - c. PCN (Ave 7.5 lux, Minimum 3 lux) ☐ ☐ ☐
  - d. Conflict areas / Attention zone (Ave 10 lux, Minimum 3 lux) ☐ ☐ ☐
  - e. Open carpark / Shelters / Amphitheatre (Ave 10 lux) ☐ ☐ ☐
  - f. Footbridge/Boardwalk (Ave 20 lux) ☐ ☐ ☐
  - g. Toilet (Average 300 lux) ☐ ☐ ☐
  - h. Others to comply with relevant B.S/S.S Codes of Practice ☐ ☐ ☐
2. Submit specification, lighting design calculation for the lighting scheme, showing the average illuminance, uniformity ratio, glare parameters with utilisation factor, etc of proposed light fittings. ☐ ☐ ☐
3. Separate circuit shall be designed for buried lights and spotlights from elevated lights. ☐ ☐ ☐
4. Avoid use of bollard fittings, spotlights, step lights and buried fittings. ☐ ☐ ☐
5. Lightings shall be looped in series and alternating circuits. ☐ ☐ ☐
6. Provision of lightning protection system in accordance with SS 555 and BCA's requirement ☐ ☐ ☐
7. At barbecue pits, 2 lamp poles shall be provided unless there are substantial spill over lights from other sources. The 2 lamp poles shall be supplied from different circuits. ☐ ☐ ☐
8. Adopt smart lighting systems incorporating adaptive controls, monitoring and integration with BMS, if applicable. ☐ ☐ ☐

### Consultant's Acknowledgement

I, the Qualified Person (Professional Engineer) have ensured that the Building Control Regulations (Cap. 29, Rg 5) in respect to the above project and all particulars required for the above proposal have been complied with.

Designation : \_\_\_\_\_

Signature and Date : \_\_\_\_\_



## B. Installation Requirements

Comply N.A. Waiver

### 1. Light Fittings

- |    |  |                          |                          |                          |
|----|--|--------------------------|--------------------------|--------------------------|
| a. | Vandal resistant type with minimum IK08 protection. To indicate the impact strength.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. | Ultraviolet (UV) stabilised.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. | Easily available from local supplier at all times for next 5 years.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. | Use energy efficiency lamps / LEDs.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. | IP65 for all outdoor fittings and IP 68 for submersible fittings.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. | Avoid use of step lights. Use poles to light up step.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g. | Avoid use of bollard lights unless a dark ambience is desired and the average lighting level of min. 5 lux is not required. Submit footing design for the prevention of vandalism. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h. | For pole top lanterns, select only from the list of approved lanterns model.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| i. | Avoid use of buried uplighters unless it is necessary. If uplighters have to be installed use only LED type uplighters.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| j. | LED fitting and driver are integral from OEM and not retrofitted   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| k. | LED are homogenous and not flickering  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| l. | LED specification such as wattage and colour temperature are provided.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| m. | Light fittings shall be of same wattage in each circuit.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| o. | IoT sensors and remote monitoring, if applicable   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

### 2. Poles

- |    |  |                          |                          |                          |
|----|--|--------------------------|--------------------------|--------------------------|
| a. | Easily accessible door with Allen key door.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. | The door (flushed with pole finishing) shall be 500mm above ground.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. | Pole should be installed at least 0.3m away from footpath and 3.5m away from park chair, trees and hedges.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. | Avoid installation of pole on sand, waterlogged and soft ground.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. | Pole shall be hot-dipped galvanised and shall be powder coated comply with ASTM D3451 and 10 years warranty. Do not use aluminium pole. Pole height to be 3.5m above ground. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

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- |    |  |                          |                          |                          |
|----|--|--------------------------|--------------------------|--------------------------|
| f. | Cable gland to be provided for cable termination in the pole.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g. | Cable entrance sealed to prevent insects' ingress.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h. | To provide labelling on the lamp poles at standardise height of 2m above ground level or 500mm below light fitting and wording size of 6mm x 19mm x 34mm retro-reflective sticker. The numbering should be in running sequence from first pole to the last pole. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| i. | Lamp pole thickness should be at least 2.5mm thick with base protective coating.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| j. | Lamp poles door cover is to be secured to the pole body using approved hinge method.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| k. | Lamp poles shall be flanged mounted at least 50mm above ground with footing designed as per the drawings and endorse by P.E.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| l. | Size of the J bolt shall be minimum M16 diameter or Professional Engineer calculation whichever higher.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**3. Earthing Arrangement**

- |     |  |                          |                          |                          |
|-----|--|--------------------------|--------------------------|--------------------------|
| a.  | Earth electrodes (minimum 2 nos) complete with precast concrete inspection pit fitted with heavy duty stainless steel removable cover must be provided and connected in ring to:   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| i.  | Main earthing terminal in OG Box/Distribution Board  |                          |                          |                          |
| ii. | Earthing continuity robustly achieved up to the earthing terminal of last pole of each circuit.  |                          |                          |                          |
| b.  | Earth point/pit to be labelled in accordance with Code of Practice requirements.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c.  | Lightning down conductors for the copper tape from the bi-metallic connector to the earth chamber to be concealed in cement. Where the down conductor is on the surface of wooden structure, the tape to be enclosed in uPVC pipes (50mm dia) up to a level not within hand reach. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



#### 4. OG Box

**Comply N.A. Waiver**

The OG box shall be:

- |    |  |                          |                          |                          |
|----|--|--------------------------|--------------------------|--------------------------|
| a. | Cabinet shall be made of aluminium mounted on concrete plinth.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. | Provided with 30% space factor for future expansion/addition. Additional compartment shall also be provided to house the fault reporting system. Separate DB is required for circuits other than the lighting circuit.               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. | Weatherproof (at least IP55) free from condensation with cable entrance sealed to prevent insect ingress.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. | Provided with single/double leave doors complete with locks as follows:  |                          |                          |                          |
|    | i. Brass type 'ABLOY' cam lock complying with universal specification, Model No.: CL 104C – NP Series under PUB master key 911047, complete with straight or offset cam and 90° cam turn with key removable in locked position only. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|    | ii. Heavy duty brass padlocks 'ABLOY' Model No.: PL 320C/20-NP series under PUB MK 911047 system   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. | To provide with viewing panel to read utility meter inside the box. The opening shall be covered with laminated/tampered glass material of high impact resistance, in accordance with SP Group's approved meter board requirement.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. | Sited in a non-conspicuous and easily accessible when carrying out maintenance.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g. | Label all MCB, RCCB, spare MCB and contactor in DB in accordance to endorsed SLD.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h. | To provide with laminated single line diagram with LEW's endorsement display at interior of OG Box's door.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| i. | OG Box foundation should be able to withstand pushing and soil erosion.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| j. | To provide programmable digital timer with seasonal timing as specified in the contract.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| k. | To paint the OG Box with colour code No. PR12/20164/CW2.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| l. | Each lighting circuits shall be protected by RCCB and should not have more than 10 light fittings in each circuit. RCCB shall have integrated surge protection characteristic complying to SS97                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**Comply N.A. Waiver**

m.	The internal base of OG boxes is to be filled with sand up to the ground levels.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n.	Outgoing final sub circuit in OG boxes shall only supply to outdoor park lighting system, it shall not be used to supply building lightings, etc. Where building (e.g toilet) tapped supply from OG boxes, it shall be through a separate sub mains circuit/DB.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o.	The maximum number of lighting point for an OG box shall not exceed 100 nos.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
p.	OG boxes shall adhere to any one of the designs as depicted in Appendixes. For OG boxes that falls outside these ranges, the design principles shall be adhered to.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
q.	To follow the naming and labelling of convention for OG boxes, lamp poles circuit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
r.	Single line diagrams/as-built drawings shall be duly endorsed by LEW of appropriate class.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
s.	To include IoT sensors and remote monitoring, if applciable.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>5. Cables</b>				
a.	Type and size of cable shall be in accordance with Singapore Standards Code of Practice SS638 or SS650.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	If the PVC conduit is used and concealed, it must be embedded at least 50mm from the surface	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	Armoured cables shall be used and buried 700mm below the finished ground level.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	Approved PVC cable protection slabs shall be laid along the entire length of the cable route. (Yellow tiles to warn other contractors carrying out excavation.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e.	150mm diameter ducts (encased in approved grade of concrete) must be provided under footpaths and concreted areas for all cable crossings. Provision of 30% spare capacity to cater for future usage.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f.	Joints, tee joints and exposed cables are prohibited. All life metal parts shall not be exposed and coated with epoxy to prevent accidental tripping due to insect ingress.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g.	Fully enclosed cable termination unit c/w HRC fuse shall be used for cable termination within the pole.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



**Comply N.A. Waiver**

- h. Connection between underground and lantern cable should be through street lighting enclosure cut out unit.

☐ ☐ ☐

**6. Distribution Box**

- a. Distribution Box within the building should be located at the common area that is accessible.

☐ ☐ ☐

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**Consultant's Acknowledgement**

I, the Qualified Person (Professional Engineer) have ensured that the Building Control Regulations (Cap. 29, Rg 5) in respect to the above project and all particulars required for the above proposal have been complied with.

Designation : \_\_\_\_\_

Signature and Date : \_\_\_\_\_

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## C. Contract Documentation/Completion of Project

Form M & E/2.2

### 1. As-Built Drawings

Comply N.A. Waiver

a. The drawings must include the following details:

- |      |   |                          |                          |                          |
|------|---|--------------------------|--------------------------|--------------------------|
| i.   | Location Plan.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| ii.  | Site Layout Plan. The plan shall include:   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|      | (1) The exact cable routes and cable sizes.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|      | (2) The cable ducts location and sizes.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|      | (3) The location of OG Box/ Distribution Box.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|      | (4) The earthing cable routes and location of earthing inspection pits.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|      | (5) The position of light fittings.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|      | (6) Lightning Protection System (LPS) layout plan (Complied with SS 555).   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| iii. | LEW endorsed Single Line Diagram.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| iv.  | OG Box/ Distribution Board Layout Plan & Installation Details.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| v.   | Lamp Poles Installation Details.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b.   | For 3 phase circuit installation, individual lamp posts must be coloured and labelled accordingly (e.g. L1, L2, L3).                            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c.   | The number of light fittings and their designated identification number connected to each circuit must be indicated in the single line diagram. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d.   | All drawings submitted must be of the same standard size.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

### 2. Light Fittings

The following details of light fittings shall be submitted.

- |    |   |                          |                          |                          |
|----|---|--------------------------|--------------------------|--------------------------|
| a. | Type of fitting (Make and Model No.) and lamp wattage with original catalogue attached. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. | Cost of fitting.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. | Manufacturer's Name.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. | The name, address, and telephone number of local supplier.                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



**Comply N.A. Waiver**

- |    |                                   |                          |                          |                          |
|----|-----------------------------------|--------------------------|--------------------------|--------------------------|
| e. | Scale drawing.                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. | Photometric data of the fittings. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**3. OG Box/ Distribution Board**

The following details of OG Box/DB shall be provided: -

- |    |  |                          |                          |                          |
|----|--|--------------------------|--------------------------|--------------------------|
| a. | Manufacturer's name.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. | The name, address, and telephone number of local agent.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. | One copy of single line diagram, in A3 or A4 size shall be laminated in plastic and fixed on to the inside of OG Box's door. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. | Scale drawing.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**4. Electrical installation Test Report from SP Services Ltd**

- |    |                                     |                          |                          |                          |
|----|-------------------------------------|--------------------------|--------------------------|--------------------------|
| a. | Certificate of Compliance (CoC)     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. | Test Report from SP Services Ltd    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. | EMA Electrical Installation Licence | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

5.	Utilities Account Opening Letter from SP Services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
----	---	--------------------------	--------------------------	--------------------------

**6. Test Results**

The test results must include the following in compliance with the SS638, SS650, SS 555, SS553 or the relevant Code of Practices.

**Electrical Installation**

- |    |   |                          |                          |                          |
|----|---|--------------------------|--------------------------|--------------------------|
| a. | Insulation resistance readings of all out-going circuits.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. | Insulation resistance readings of cables from OG boxes to all lamp poles.                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. | Polarity test results for all lighting, power, and isolator circuits.                             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. | Residual Current Circuit Breakers (RCCB) test readings (i.e. tripping current and timing reading) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. | Earth Fault Loop Impedance reading for all circuits   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. | Electrical Earth electrode resistance readings.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g. | Over Current and Earth fault current setting.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

## Comply N.A. Waiver

### Lighting Protection System

- |  |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|
| a. PE's Certificate of Supervision of Lightning Protection System Form BPD CSC03 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Electrical Earth electrode resistance readings.                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

### ACMV

- |   |                          |                          |                          |
|---|--------------------------|--------------------------|--------------------------|
| a. BPD CSC05 Certificate of Supervision of ACMV System.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. The Contractor should submit <u>Attachment A</u> together with a copy of Certificate of Compliance (CoC) when the project is ready for inspection at substantial completion of project.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. After the initial inspection, the Contractor is required to follow up on the 'Defects list' and arrange for final inspection within 1 month from the initial inspection.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. The Operation & Maintenance Manual shall comprise all items listed in this guideline and include the following details: -  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| a. Name of the project.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Name and address of consultant (QP/PE/LEW).  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Date of completion and handing over.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Soft-copy Operation and Maintenance Manual to be submitted within 1 month from certified Substantial Completion.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. <b>Site Photograph</b><br>All the relevant site progress photograph fitted on A4 MS Word document.<br>The following contents to be included: -  |                          |                          |                          |
| i. OG Box or distribution box (internal or external view).  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| ii. Lamp poles and type of lantern/lamp fitting.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| iii. Name of signboard (park/open space/playground).  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| iv. Cable duct construction and underground cable layout.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| v. Lamp poles foundation erection.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Provide soft-copy as-built drawings for the cable routing, circuit wiring, earthing, lamp post installation details, luminance level for each area achieved and indicated in the overall layout plan. Each as-built drawing to be digitally endorsed by the submission Consultant Professional Engineer(M&E), stamped with "As-built Drawings" and date of issue. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



**Comply N.A. Waiver**

- |     |   |                          |                          |                          |
|-----|---|--------------------------|--------------------------|--------------------------|
| 12. | 1 soft copy of all applicable technical drawings (including survey plans, site plans, architectural drawings, structural drawings, and engineering drawings) in digitised form, formatted in SHP or other approved National Standards for the Construction Industry.    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. | Provide all M & E catalogues and technical schedules for the weather-proof junction box, MCB, RCCB, fuse, cable, lamp, light fitting and other accessories installed. (Country of origin, manufacturer and supplier name should be included in the technical schedule). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

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**Consultant's Acknowledgement**

I, the Qualified Person (Professional Engineer) have inspected the above project and all particulars required for the above proposal have been complied with.

License No. : \_\_\_\_\_

Company address : \_\_\_\_\_  
\_\_\_\_\_

Signature and Date : \_\_\_\_\_

## Glass Door Design Checklist



e.g. Frameless glass door



e.g. Framed glass door

### 1. Glass door

	Comply	N.A.	Waiver
a. Glazed with tempered glass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Glazed with heat strengthened glass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Glazed with Laminated glass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. To comply with Singapore Standard SS341 Specification for Safety Glazing Materials for Use in Buildings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. To install safety protection flim to prevent spontaneous breakage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Glass panel evenly sealed with gasket	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Thinkness of glass panel to be recommended by Professional Engineer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Door installation method must be proposed and endorsed by Professional Engineer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>





2. **Glass door fixtures, fittings & accessories**

		Comply	N.A.	Waiver
a.	Connection such as hinges, screws, rivets latches, flush bolts should be stainless steel grade 304 or equivalent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	The number and type of hinges used must be proposed by door specialist depending on the door design	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	Ironmongery should be secured and operated smoothly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	Lockset, latches, EM lock and etc should be good fit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e.	To install stoppers at the bottom / top of the door	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f.	The selection of door closer must be compatible with the type of door	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. **The Contractor is required to submit the following Form of Warranty/Guarantee/ Certification if applicable at the Completion stage**

		Comply	N.A.	Waiver
a.	Safety Protection Film - Comprehensive warranty up to 10 years	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	Test certificate for fire-rated glass door (impact test): BS 6206 or AS 2208 or EN12600	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	Testing and certification for classification of glass type	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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**Consultant's Acknowledgement**

I, the Qualified Person (Professional Engineer) have inspected the above project and all particulars required for the above proposal have been complied with.

License No. : \_\_\_\_\_

Company address : \_\_\_\_\_  
\_\_\_\_\_

Signature and Date : \_\_\_\_\_

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