
# Guidelines

## Planning and Development of Johor Electric Vehicle Charging Bay (EVCB)

Guidelines



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MAJU
JOHOR

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# List of Abbreviations

| | |
|---|---|
| AC | Alternating Current |
| CCC | Certificate Of Completion And Compliance |
| CCTV | Closed-Circuit Television |
| CFO | Certificate of Fitness for Occupation |
| CPO | Charge Point Operator |
| DC | Direct Current |
| EV | Electric Vehicle |
| EVCB | Electric Vehicle Charging Bay |
| EVCP | Electric Vehicle Charging Point |
| EVCS | Electric Vehicle Charging System |
| FSG | Fire Safety Guidelines |
| JBPM | Fire and Rescue Department of Malaysia |
| JKPTG | Director General of Lands and Mines Department |
| JMB | Joint Management Body |
| KKB | Conditional Approval of Concept |
| KKR | Ministry of Works |
| KM | Planning Permission |
| KPKT | Ministry of Housing and Local Government |
| LCMB | Low Carbon Mobility Blueprint |
| LLM | Malaysian Highway Authority |
| MC | Management Corporation |
| NRECC | Natural Resources, Environment and Climate Change Ministry |
| OKU | Person with Disabilities |
| OSC | One Stop Centre |
| PB | Development Plan |
| PBT | Local Authority |
| PK | Engineering Plan |
| PSP | Principal Submitting Person |
| ST | Energy Commission |
| TNB | Tenaga Nasional Berhad |
| TOL | Temporary Occupation Licence |
| UBBL | Uniform Building By-Laws |
| VFB | Vehicle Fire Blanket |

# 1.0
## Purpose

This document is prepared as a guideline for local authorities (PBT) and all stakeholders in planning, designing, and providing electric vehicle charging bays (EVCB) within the State of Johor. The guidelines aim to ensure the effective and efficient development of electric vehicle charging infrastructure, taking into account various aspects such as location, design, safety, and ease of use.

With these guidelines, it is hoped that PBT and stakeholders can collaborate more effectively in the effort to achieve the target of 1,245 EVCB units by the year 2030, there by supporting the use of electric vehicles (EV) in the State of Johor.

# 2.0 Related Policies and Guidelines

In enhancing efforts and facilitating the transition toward a more environmentally friendly mode of transportation, various policies and guidelines related to the use of electric vehicles have been made. These policies and guidelines include:

i. **The Twelfth Malaysia Plan;**

ii. **The 4th National Physical Plan;**

iii. **National Energy Policy 2022–2040;**

iv. **National Transport Policy;**

v. **National Automotive Policy 2020;**

vi. **Malaysia Smart City Framework;**

vii. **Green Technology Master Plan Malaysia;**

viii. **Low Carbon Mobility Blueprint 2021–2030;**

ix. **Johor Sustainable Development Plan 2030;**

x. **Johor State Structure Plan 2030 (Amendment);**

xi. **Johor Sustainable Development Plan (Johor State Secretary's Office);**

xii. **Low Carbon Society Blueprint for Iskandar Malaysia 2025 (IRDA);**

xiii. **Low Carbon Society Blueprint for Iskandar 2030 Climate Action Plan (IRDA);**

xiv. **Johor State Public Transport Master Plan (Replacement) 2021-2045 (PAJ);**

xv. **Johor Green Deal (Johor Sustainability Centre);**

xvi. **Johor Port Authority: Green Port Policy 2014-2020 (LPJ);**

xvii. **Johor State Smart City Blueprint 2030 (PLANMalaysia Johor);**

xviii. **Local District Plan (Local Authorities of Johor State).**

The government has outlined specific policies regarding the use of more efficient and renewable energy sources in low-carbon transportation within the framework of the Low Carbon Mobility Blueprint, as shown in Figure 1.

Additionally, PLANMalaysia has issued the 2023 Planning Guidelines for Electric Vehicle Charging Bays (EVCB), and the Natural Resources, Environment and Climate Change Ministry (NRECC), through the Energy Commission (ST), has prepared the 2022 Electric Vehicle Charging System (EVCS) Guidelines. Both guidelines outline the minimum requirements and specifications for planning, installing, inspecting, testing, monitoring, operating, and maintaining EV infrastructure in Malaysia. These guidelines also serve as primary references throughout the preparation of this planning document.


*Figure 1 Framework of the Low Carbon Mobility Blueprint 2021–2030 (LCMB)*

Moreover, the Malaysian Fire and Rescue Department (JBPM) has also published Fire Safety Guidelines for the Installation of Electric Vehicle Charging Stations on Premises. This guideline outlines the fire safety components for the installation of EVCB in outdoor and indoor areas, or on unenclosed rooftops.

## 2.1 Comparison of International EVCB Installation Guidelines

According to international guidelines, several countries emphasize similar safety and operational measures for EV charging infrastructure. For example, the United States' National Fire Protection Association (NFPA) outlines detailed requirements for automatic sprinkler systems and fire safety measures in similar facilities. In Europe, the International Electrotechnical Commission (IEC) standards provide guidelines for safe installation practices and environmental considerations at EV charging stations.

In addition, for the installation of EVCBs at airports in the United States, guidelines from the Federal Aviation Administration (FAA) emphasize safety measures and operational protocols for EV charging stations at airports, ensuring compliance with aviation safety standards. These guidelines serve as a reference to optimize EV charging infrastructure at airport premises worldwide.

In Europe, universities are encouraged to align the development of EV charging infrastructure with regional sustainability goals and educational initiatives that promote clean energy and transportation. These guidelines highlight the role of universities in fostering innovation and sustainability through the use of EV infrastructure.

In Singapore, the Guidelines on Minimum Electric Vehicle Charging Provisions in Developments serve as a foundational reference for the development of EVCBs and the infrastructure required for EV charging stations. Singapore's EV policies, including its goal to phase out the sale of fossil fuel-powered vehicles by 2030, have the potential to positively

impact the state of Johor. With increasing demand for EVs, Johor could position itself as a hub for the manufacturing of EV components, battery chargers, and charging stations to meet the needs of the Singaporean market. Additionally, this could stimulate foreign direct investment, create employment opportunities in the green technology sector, and accelerate the development of EV infrastructure in Johor to support more sustainable cross-border economic and tourism activities.

The range of these guidelines aims to ensure the safe and effective installation and operation of EVCBs in various environments, enhancing user convenience and public safety.

# 3.0 Scope of the EVCB Planning and Development Guidelines

This document contains two (2) main scopes:

a. Planning and design guidelines for EVCB, which include the requirements of the Fire Safety Guidelines for Electric Vehicle Charging Bay (EVCB) on Premises provided by JBPM.

b. Application and approval procedures for EVCB development for existing and new developments that are aligned with the OSC 3.0 Plus Manual (Process and Procedure for Development Proposals and Implementation of One-Stop Centres (OSC)).

# 4.0 Definition

**a. Electric Vehicle (EV)**

A vehicle powered by an electric motor that draws electrical energy from a rechargeable battery system.

**b. Electric Vehicle Charging Bay (EVCB)**

A parking space equipped with an EV charging point and a charging device to supply electrical energy to EV.

**c. Electric Vehicle Charging Point (EVCP)**

A device used to charge the battery of an EV.

**d. Charge Point Operator (CPO)**

A CPO is an operator of charging points responsible for installing and maintaining EV charging bays for public use. A CPO may own and operate a set of charging bays or act as a third party managing these facilities.

**e. AC Charger**

An AC-type EV charger is a charging station that supplies alternating current (AC) to EV, where the vehicle's onboard charging system converts the current to direct current (DC) to charge the battery.

**f. DC Charger**

A DC-type EV charger is a high-power charging station that directly supplies DC to an EV's battery, enabling fast charging by bypassing the vehicle's onboard charging system.

# 5.0
## General Guidelines

This guideline serves as a framework for providing EVCBs in both existing and new developments, with varying requirements based on the type of charging devices.

### a. Existing Developments

i. Developments that have received a Certificate of Completion and Compliance (CCC) or Certificate of Fitness for Occupation (CFO) and have installed EVCBs; or

ii. Developments with a CCC or CFO where EVCBs have yet to be installed.

### b. New Developments

i. Any new developments, including revised plans, where applications for planning permission (KM), engineering plans (PK), and building plans (PB) have yet to be submitted to PBT; or

ii. New developments where KM, PK, and PB applications have been submitted to PBT but are still awaiting approval.

### c. Types of Charging Devices

There are two (2) types of charging devices: AC and DC devices. Both types must be installed and operated following the provisions stipulated in the Electric Vehicle Charging System (EVCS) Guidelines published by the Energy Commission in 2022.

## 5.1 Location and Placement of EVCBs

a. EVCBs can be installed at the following locations:
   i. Residential areas and serviced apartments including both strata and non-strata properties;
   ii. Non-residential areas, such as commercial, industrial, and institutional;
   iii. Petrol stations; and
   iv. Rest and Service Areas (R&R).

b. EVCB placement can be categorized as follows:
   i. Outdoor;
   ii. Indoor;
   iii. On open or unenclosed rooftops.

To ensure EVCBs do not obstruct access during a fire or emergency, it is essential to avoid installing EVCBs near or at:

a. Stairways;
b. Emergency exits.

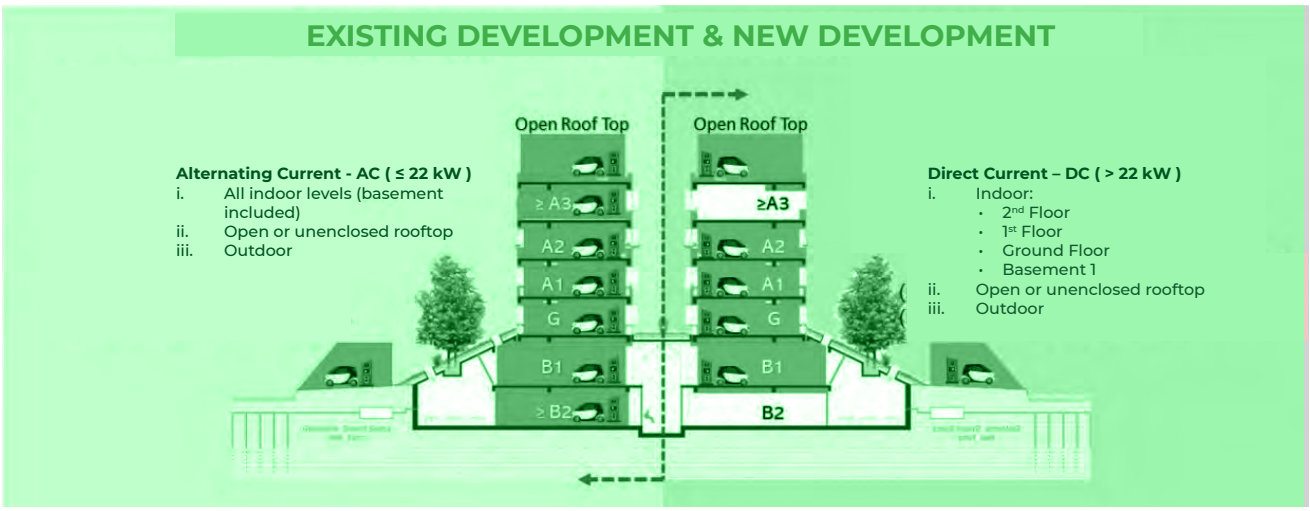
## 5.2 Provision of EVCBs Based on Device Type and Location

The choice of charging device for installation depends on the suitability of the location, whether in existing or new developments. Different types of charging devices require varying levels of electrical power supply and present different types of fire risks.

DC chargers consume more electrical power and therefore pose a higher fire risk compared to AC chargers. Therefore, selecting and installing charging devices based on location suitability is critical to minimise fire risks and enhance fire safety management (refer to Table 1 and Figure 2).

*Table 1: Allocation of EVCBs by device type and location*

| DEVICE TYPE | AC *(≤22 kW)* | *DC* (>22 kW) |
|---|---|---|
| Location<br>(For existing and new developments) | • Outdoor;<br>• On open or unenclosed rooftops. | |
| | • All levels in a multi-story building. | Inside the building at the following four (4) levels only.<br>• Ground Level;<br>• 1 level above the ground floor (1st Floor);<br>• 2 levels above the ground floor (2nd Floor); and<br>• 1 level below ground level (Basement 1). |




*Source: Electric Vehicle Charging Bay (EVCB) Planning Guidelines by PlanMalaysia*

*Figure 2: Provision of EVCBs Based on Charging Device Type and Location*

## 5.3 Number of EVCBs

Existing and new developments should consider allocating charging bays to meet future EV demands. The determination of the number of EVCBs falls under the jurisdiction of PBT.

### a. Existing Developments

i. The number of EVCBs required is based on demand.

ii. Parking spaces converted to EVCBs do not need to be substituted.

### b. New Developments

i. For landed residential developments (strata and non-strata), EVCBs are provided based on demand.

ii. For high-rise strata residential developments:

- At least 2% of the total parking spaces must be EVCBs.
- If only one EVCB is required, it should be located at the visitor parking area.
- Visitor parking EVCBs are encouraged to be person with disabilities (OKU) friendly to accommodate disabled drivers (refer to Section 5.4 for parking spaces).
- Providing at least one EVCB for motorcycles is encouraged.

iii. For non-residential developments:

- For PBT with City Council or Municipal Council status, a minimum of 4% of EVCBs must be provided if the required number of parking spaces exceeds 25 units, or at least one EVCB must be provided if the required parking spaces range between 10 and 25 units. If only one EVCB is required, it must be located in the visitor parking area. This guideline accounts for the potential influx of EVs from Singapore.
- For PBT with Municipal Council or District Council status, a minimum of 2% of EVCBs must be provided if the required number of parking spaces exceeds 50 units, or at least one EVCB must be provided if the required parking spaces range between 20 and 50 units. If only one EVCB is required, it must be located in the visitor parking area.

- One OKU friendly EVCB is encouraged.
- Providing at least one EVCB for motorcycles is encouraged.

iv. Providing more EVCBs than the minimum requirement is permitted and encouraged.

## 5.4 Bay Size

EVCBs must comply with the specified dimensions, as shown in Figure 3:

### a. Existing Developments

i. Maintain the existing size of parking spaces.

### b. New Developments

i. The minimum size for an EVCB is 2.5 meters x 6 meters.

ii. The minimum size for a shared OKU EVCB is 3.5 meters x 6 meters. Larger spaces can better accommodate OKU drivers.

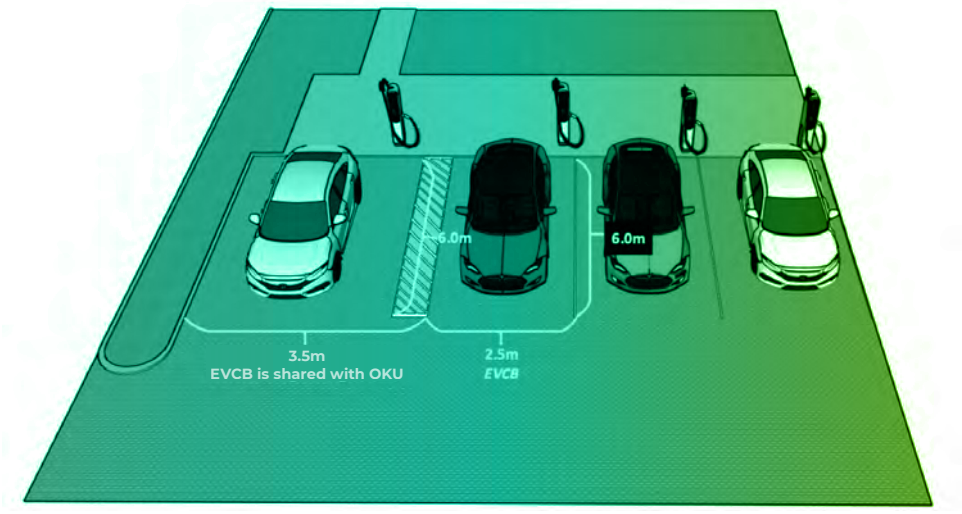



*Figure 3 EVCB Size in New Developments*

## 5.5 EV and Non-EV Parking Space Separation

EVCBs need to be separated from non-EV parking bays to minimise fire risks. This can be achieved either by separation distance or fire separation wall.

a. Three (3) factors determine the appropriate separation methods between EVCB and non-EV parking spaces in both existing and new developments:
   i. Charging device type: DC chargers require stricter separation than AC chargers.
   ii. Total EVCB floor area: Areas exceeding 216 square meters ($m^2$) require stricter separation. An area of 216 $m^2$ can accommodate 14 EVCBs, each measuring 2.5 meters x 6.0 meters.
   iii. Location of EVCB: EVCBs located indoors are subject to stricter requirements compared to those located outside.

b. Details on the separation distance between EVCBs and non-EV parking spaces for AC (≤22 kW) are provided in Table 2.

*Table 2 Separation Distance between EVCB and Non-EV Parking Spaces for AC (≤22 kW)*

| TYPE OF DEVELOPMENT | SEPARATION DISTANCE | |
|---|---|---|
| | AC (≤22 KW) | |
| | OPEN ROOFTOP, R&R, AND PETROL STATIONS | INDOOR |
| Existing | No separation required. | |
| New | A minimum distance of 2.5 meters is required on both sides of the EVCB (see Figure 4). This separation may consist of pedestrian pathways, road reserves, or perimeter planting. Grouped EVCBs is recommended. | |

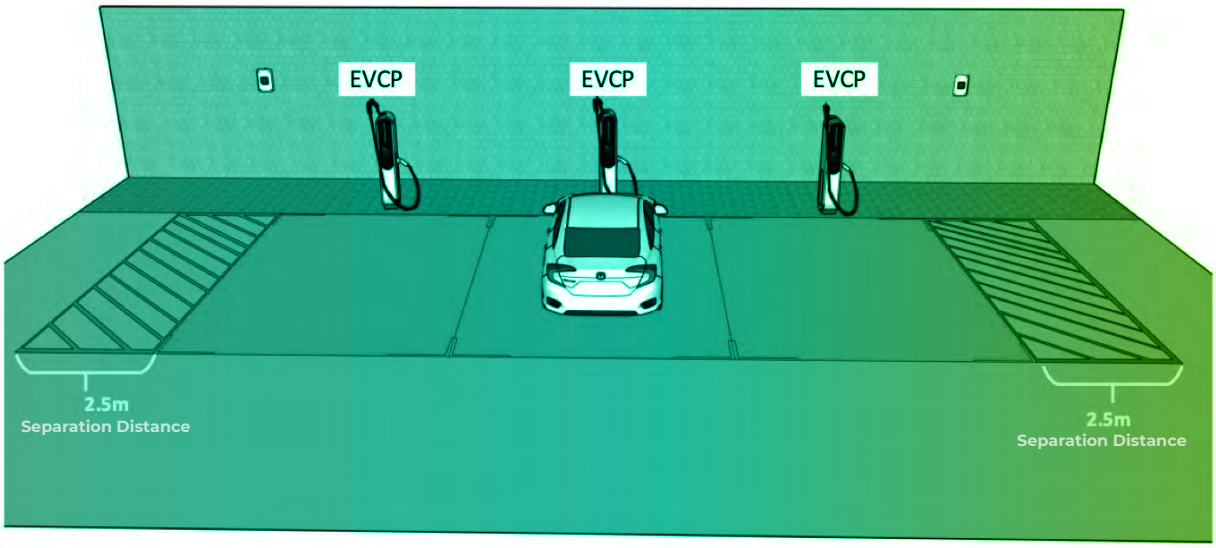



***Figure 4 EVCB with AC chargers located outside a building must be separated by a distance of 2.5 meters from non-EV parking spaces***
****Note: EVCP – Electric Vehicle Charging Point***

c. Details regarding the separation distance of EVCB and non-EV parking spaces for DC (>22 kW) are shown in Table 3.

*Table 3 Separation Distance Between EVCB and Non-EV Parking Spaces for DC (>22 kW)*

| TYPE OF DEVELOPMENT | SEPARATION DISTANCE | |
|---|---|---|
| | DC (>22 kW) | |
| | OPEN ROOFTOP, R&R, AND PETROL STATIONS | INDOOR |
| Existing | At least 2.5 meters on both left and right sides of the EVCB is required (see Figure 5). Separation can be in the form of pedestrian pathways, road reserves, and area perimeters. Placement of EVCBs in clusters is encouraged. | For EVCB floor areas exceeding 216 m², a fire separation wall with a minimum height of 1.5 meters and at least 2 hours of fire resistance is required (see Figure 6).<br><br>For EVCB floor areas less than 216 m², either a minimum distance of 5 meters on both sides of the EVCB (see Figure 7) or a fire separation wall with a minimum height of 1.5 meters and at least 2 hours of fire resistance is required. |
| New | | |

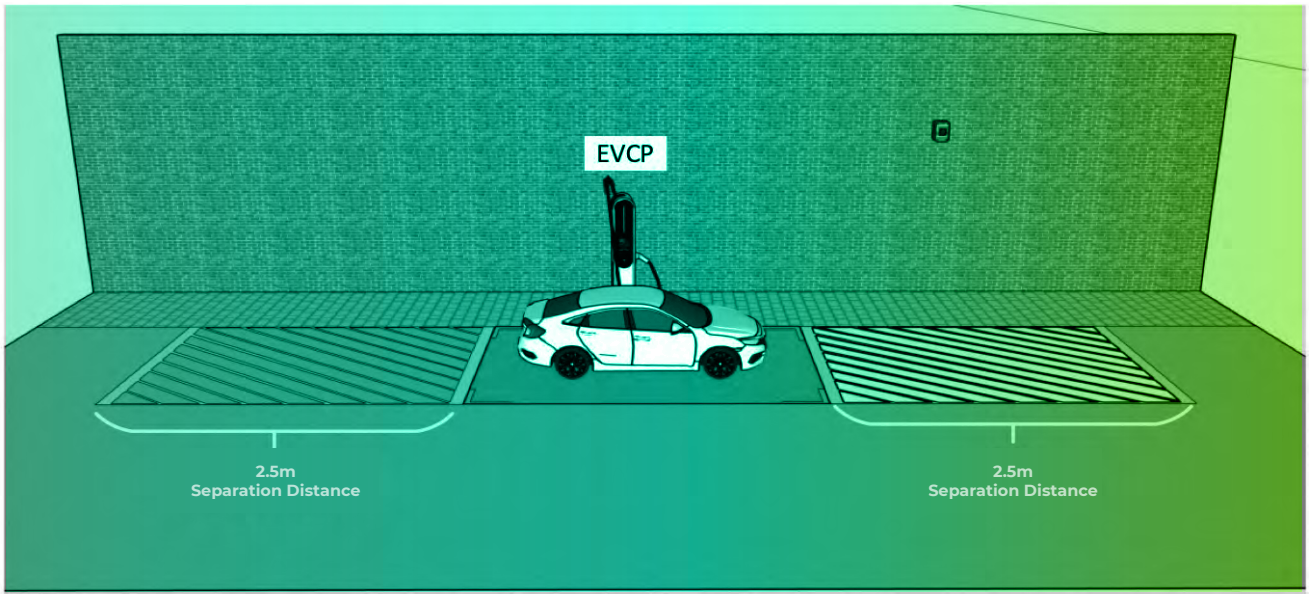



*Figure 5 EVCB with DC chargers located outside a building must be separated by a distance of 2.5 meters from non-EV parking spaces*
**Note: EVCP – Electric Vehicle Charging Point*

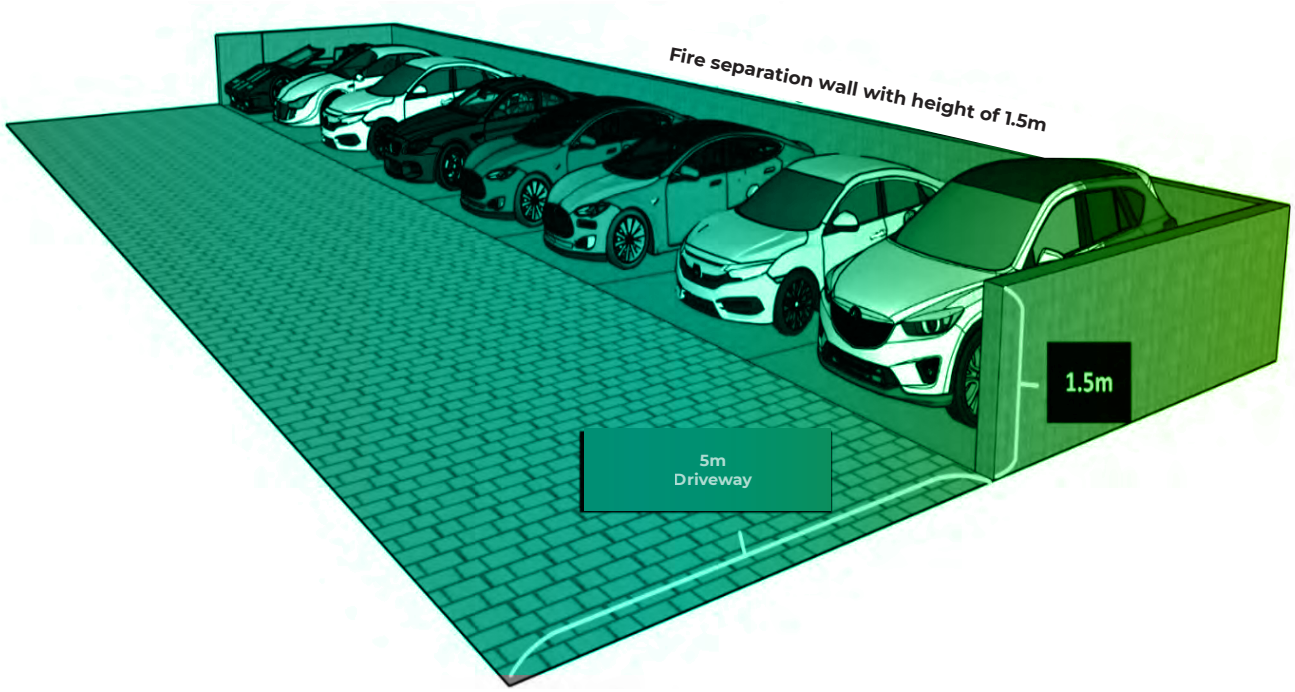



*Figure 6 EVCB inside buildings with a floor area exceeding 216 m² must have a fire separation wall with a minimum height of 1.5 meters and at least 2 hours of fire resistance*

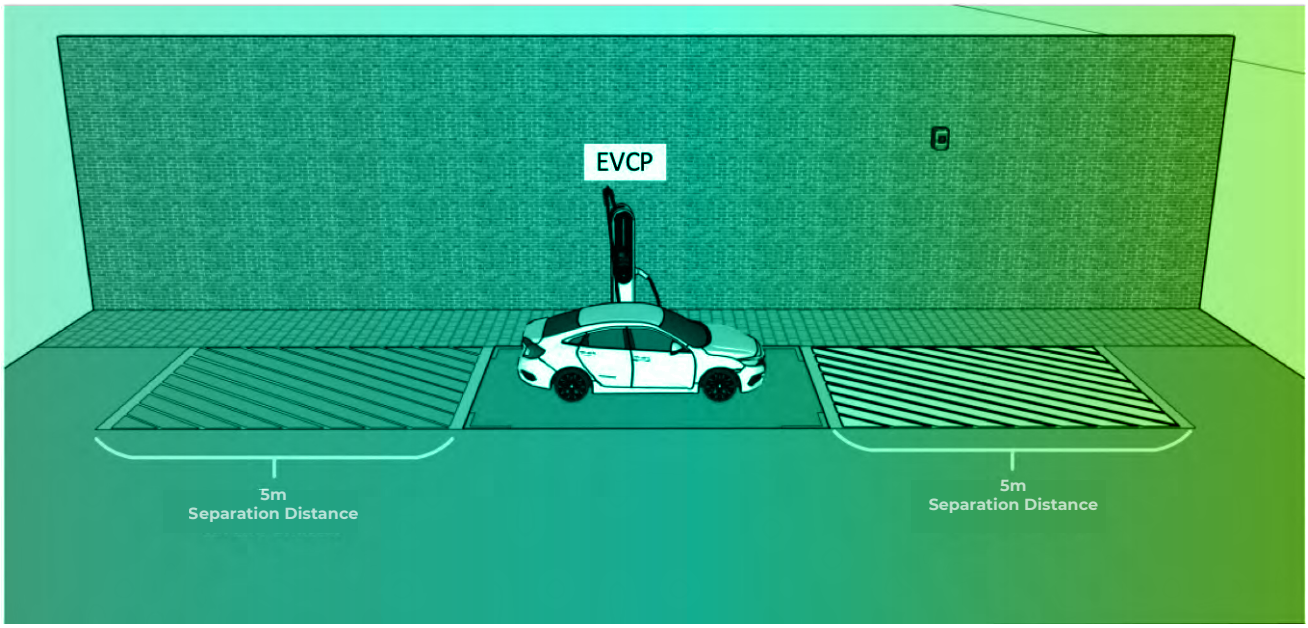


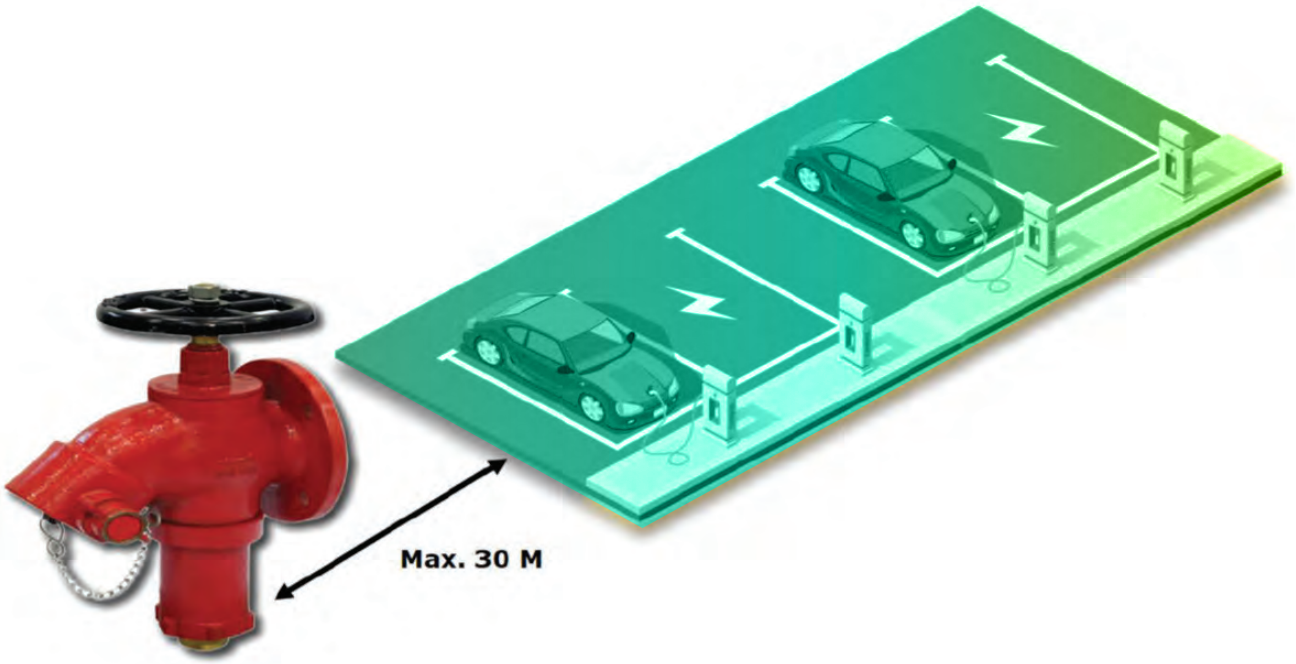

*Figure 7 EVCB inside buildings with DC chargers and a floor area of less than 216 m² must be separated from non-EV parking spaces by a distance of 5 meters*

## 5.6 Location of Wet Risers, Dry Risers or Fire Hydrants

As a safety measure, EVCBs, especially those with DC chargers, should be located near a water source (refer to Table 4, Figure 8, and Figure 9).

*Table 4 Location of EVCB from Wet Risers, Dry Risers, or Fire Hydrants*

| TYPE OF DEVELOPMENT | EVCB DISTANCE FROM WATER SOURCE | |
|---|---|---|
| | AC (≤22 KW) | DC (>22 KW) |
| Existing | No distance limit. | • Indoor EVCBs and those located on open or unenclosed rooftops must be within 30 meters of a wet riser or dry riser landing valve (Figure 8).<br>• Outdoor EVCBs, including those at petrol stations and R&R, must be within 90 meters of a fire hydrant (Figure 9). |
| New | • Indoor EVCBs and those on open or unenclosed rooftops must be within 30 meters of a wet riser or dry riser landing valve (Figure 8).<br>• Outdoor EVCBs, including at petrol stations and R&R, must be within 90 meters of a fire hydrant (Figure 9). | |




*Source: Planning Guidelines for Electric Vehicle Charging Bays (EVCB): PlanMalaysia*

*Figure 8 Position of DC device EVCB relative to wet risers and dry risers inside buildings*

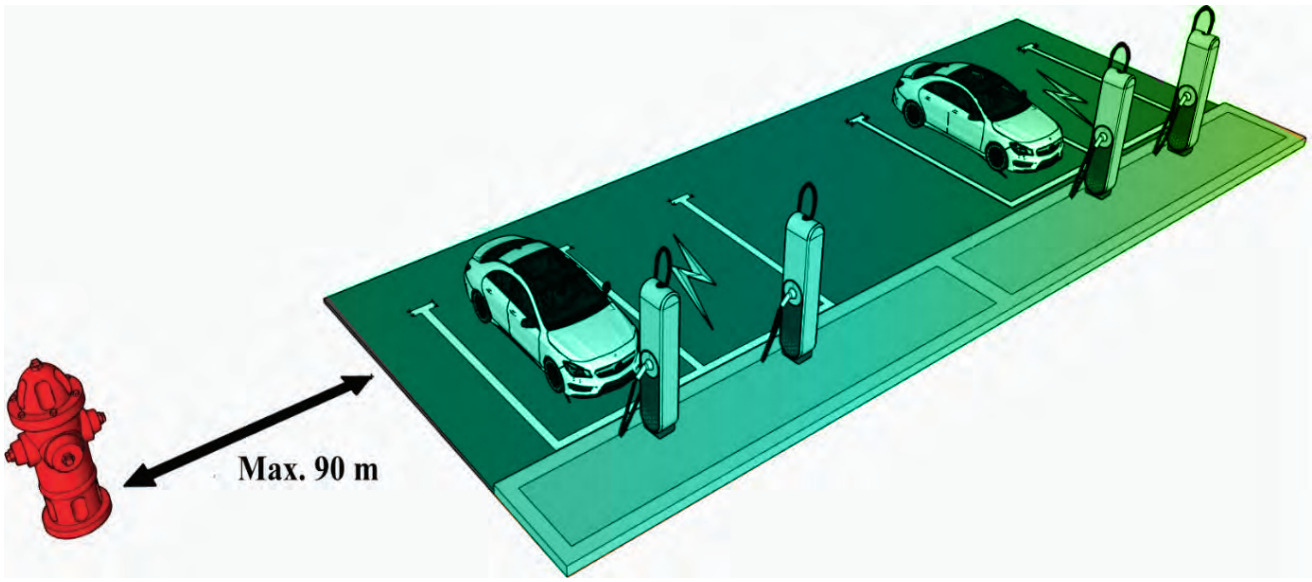



*Figure 9 Position of DC device EVCB relative to fire hydrant outside buildings*

## 5.7 Automatic Sprinkler System Requirements

The automatic sprinkler system is one of the fire safety measures for EVCB. Details for its installation are provided in Table 5.

*Table 5 Automatic Sprinkler System Requirements*

| TYPE OF DEVELOPMENT | AUTOMATIC SPRINKLER SYSTEM | |
|---|---|---|
| | AC (≤22 kW) | DC (>22 kW) |
| Existing | To comply with the requirements of the Uniform Building By-Laws (UBBL) 1986. | • EVCBs located outdoors on ground level and above (including multi-level residential buildings), must be equipped with at least an automatic fire detection system or a multi-sensor detection system, if the building does not have an automatic sprinkler system.<br>• For EVCBs located in basement areas (including multi-level residential buildings), an automatic sprinkler system, water mist system, deluge system, or continuous operating water monitoring system must be installed. |
| New | Follow the same requirement for the installation of DC-type EVCB in existing developments. | |

## 5.8 Main Isolation Switch

EVCB facilities must be equipped with a main isolation switch to serve as a fire safety measure. The guidelines for the installation of the isolation switch for both existing and new developments are as follows:

a. Each EVCB shall be equipped with both automatic and manual main isolation switches. These switches must be located at least 3 meters and no more than 15 meters from the EVCP (Figure 10).

b. The main isolation switch can be shared by multiple EVCPs as long as the required distances are adhered to. Activating any isolation switch will disconnect the power supply to all EVCPs (Figure 11).

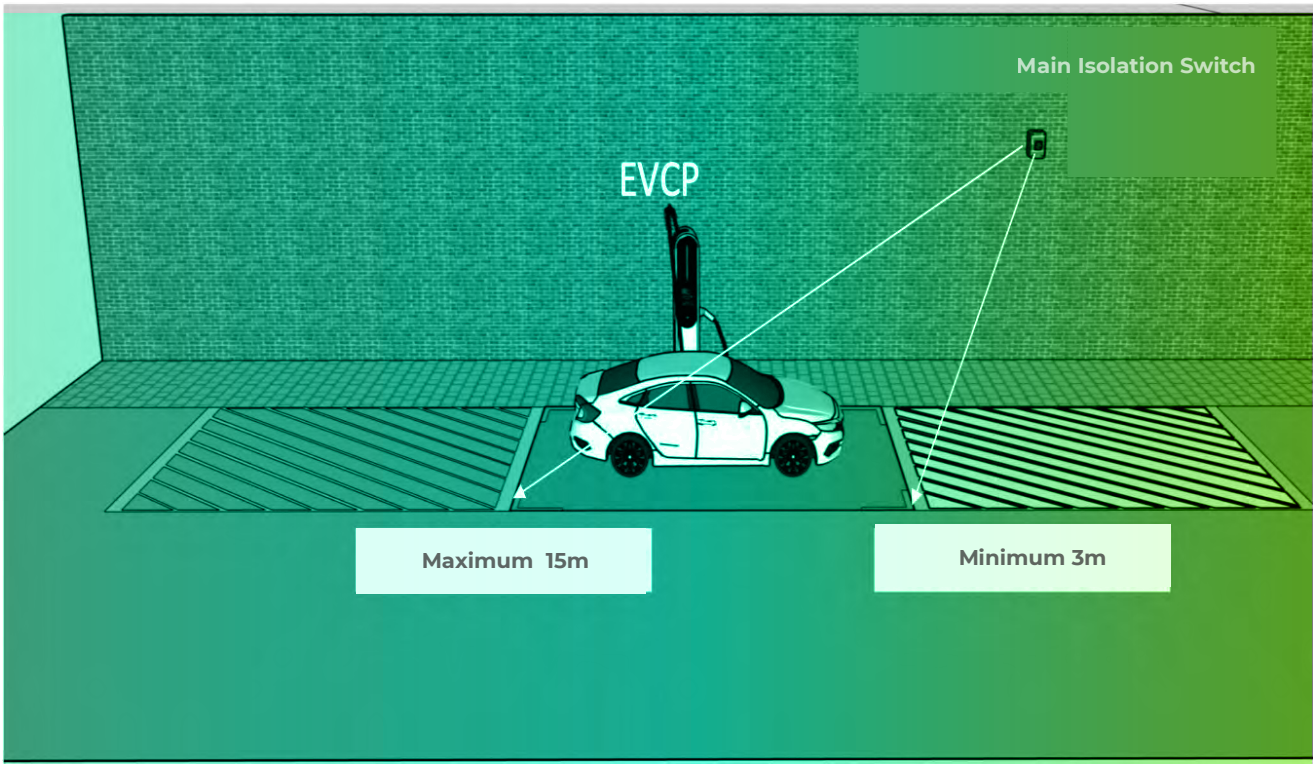



*Figure 10 Position of the main isolation switch*

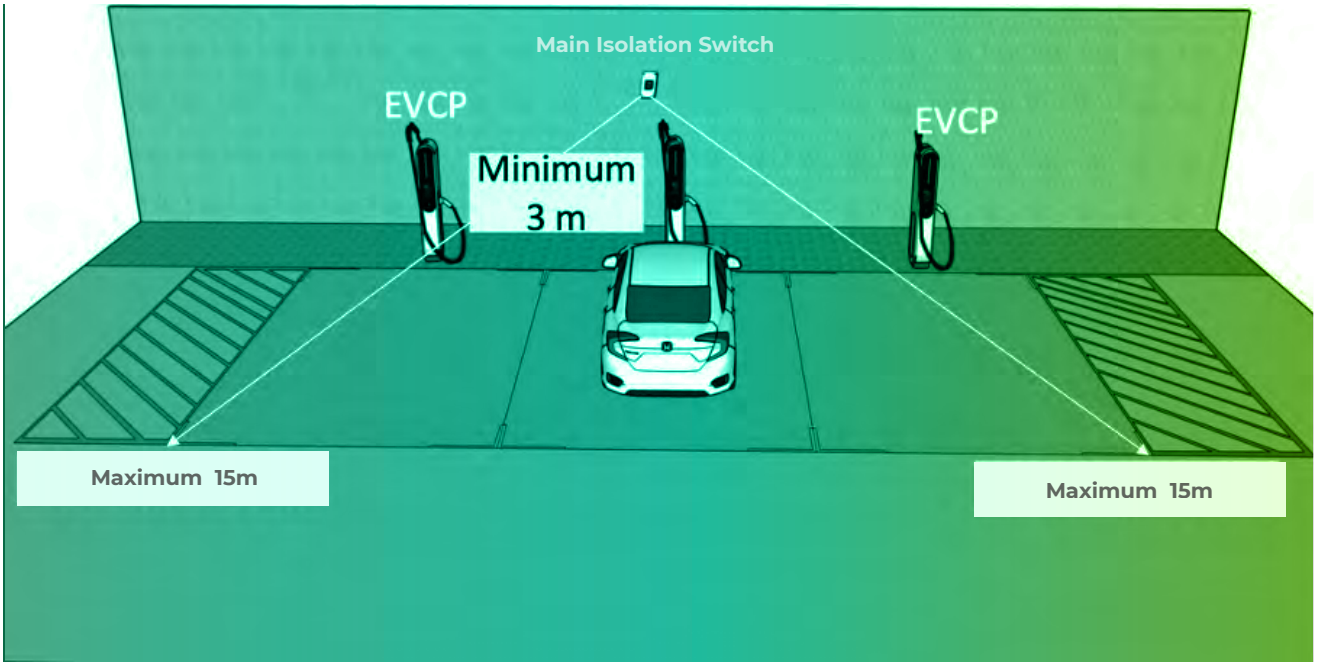



*Figure 11 Shared Use of the Main Isolation Switch*

c. If the main isolation switch is located at a distance of less than 3 metres from the EVCP, an additional main isolation switch has to be installed. This additional switch has to be located at least 3 metres away from the EVCP and not exceed 15 metres. (Figure 12).

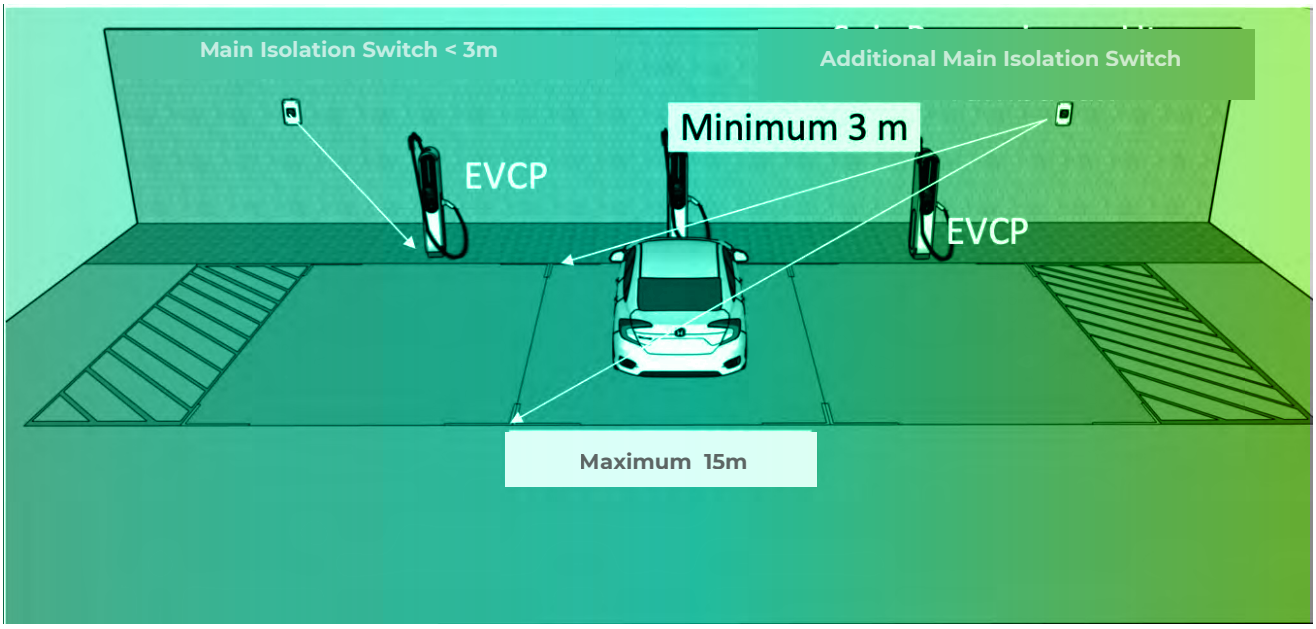



*Figure 12 Additional Requirements for the Main Isolation Switch*

d. Connect the EVCB main isolation switch to the fireman switch.
e. Position the main isolation switch between 0.8 meters and 1.2 meters above ground level for easy visibility and accessibility.
f. Ensure all isolation switches are labelled with clear operating instructions.
g. Provide additional signage if the main isolation switch is not visible from the EVCP and charging area.

For existing developments with AC device, a main isolation switch is required for public-use EVCBs. Public-use EVCBs are intended for public use and involve CPO services.

## 5.9 Vehicle Fire Blanket (VFB) Requirements

EVCBs must be equipped with a Vehicle Fire Blanket (VFB), as illustrated in Figure 13, to contain fires originating from electric vehicles until emergency assistance arrives. Both existing and new developments must comply with the requirements outlined in Table 6.

*Table 6 Requirements for VFB*

| TYPE OF DEVELOPMENT | NUMBER OF EVCB | NUMBER OF VFB |
|---|---|---|
| Existing and new development | 1 | 1 |
| | 2 – 10 | 2 |
| | 11 – 15 | 3 |
| | Additional 1 VFB for every 1 - 5 EVCBs | |


*Source: https://www.firefighter.com.my/pages/electric-vehicle-fire-blanket*

*Figure 13 Vehicle Fire Blanket (VFB)*

# 6.0 Specific Guidelines

## 6.1 EVCB at Petrol Stations

Existing petrol stations are highly suitable for EVCB development, as most of these stations have electric power reserves. Figure 14 dan Figure 15 illustrate the specific guidelines for EVCBs located at petrol stations, as follows:

a. Ensure that a fire hydrant is located within 90 meters from the EVCB.
b. Position the EVCB at least 12 meters away from refilling points and vent pipes.
c. Maintain a minimum distance of 6 meters between the EVCB and designated fuel tank areas.
d. Ensure a minimum distance of 8 meters between the EVCB and fuel dispensing units.
e. Install the EVCP at a height of 0.5 meters above the floor level, ensuring no electrical installations or connections along the EVCP.
f. The EV charging station must be fully enclosed unless the openings are at least 1 meter above the floor level.
g. Mark a 2.5 meter separation zone on both the left and right sides of the EVCB with yellow hatching and install parking barriers to prevent unauthorized access.

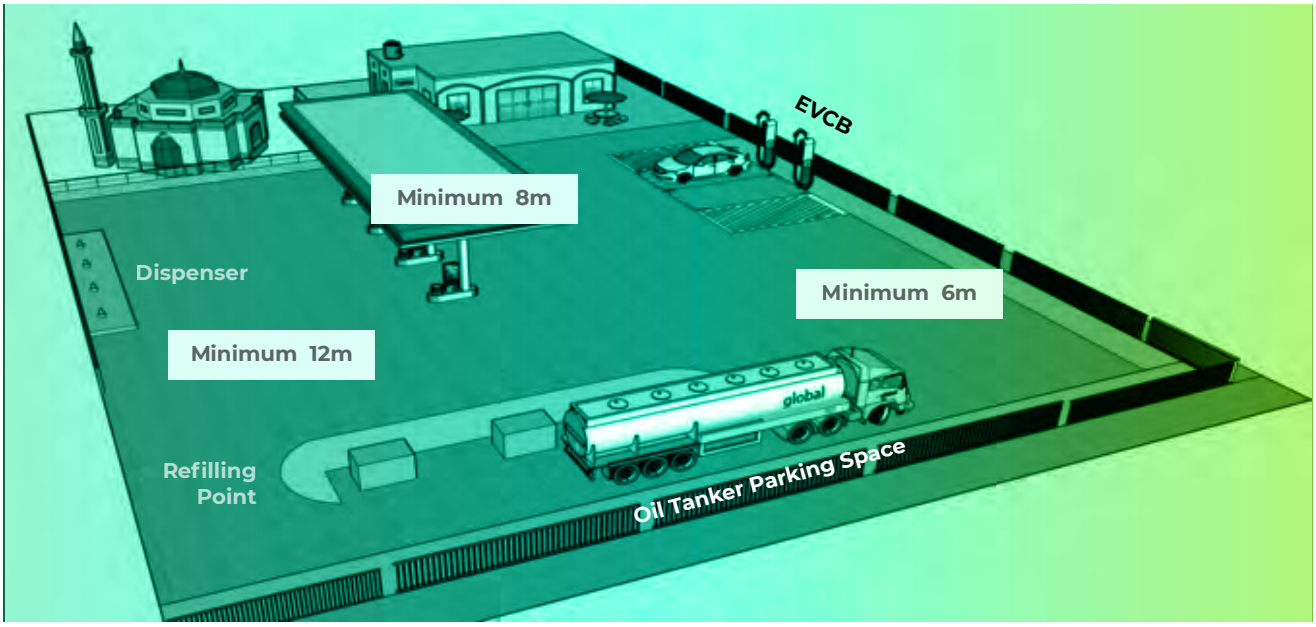



*Figure 14 Placement of EVCB at Petrol Stations*

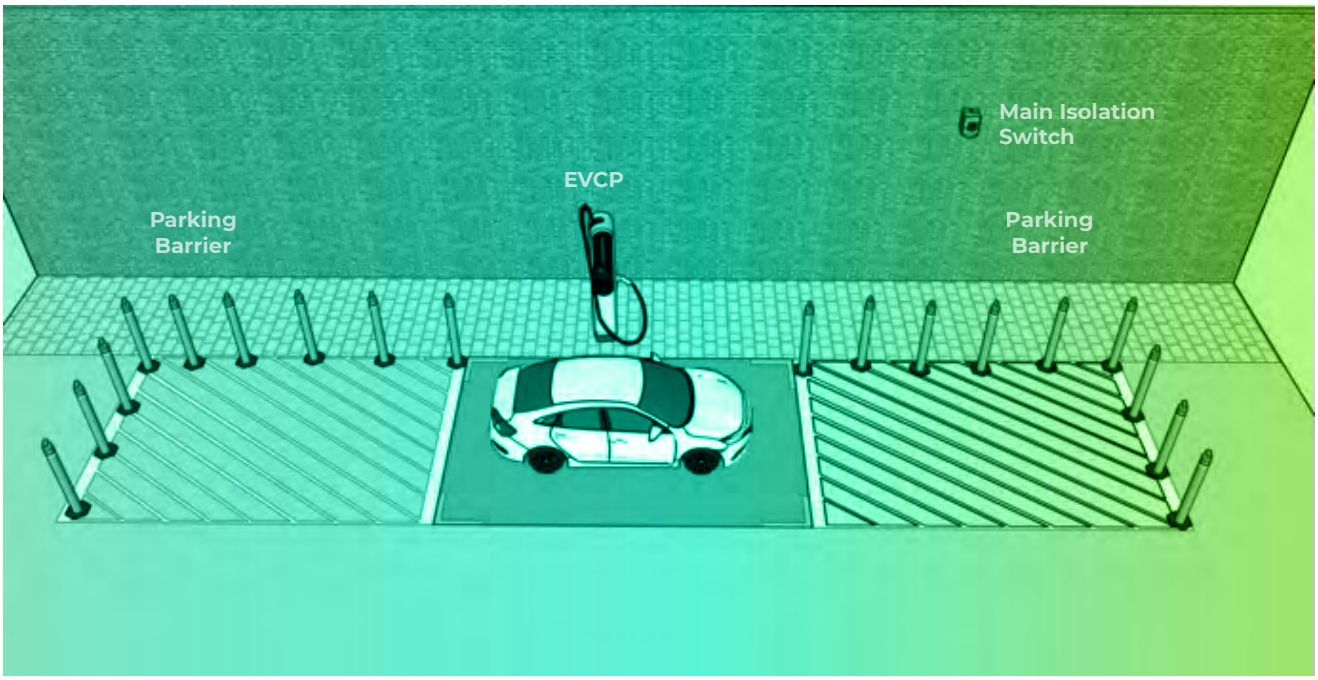



*Figure 15 Positioning of EVCB Parking Barriers at Petrol Stations*

These guidelines ensure the safe installation and operation of EVCBs at petrol stations, minimising risks associated with fuel-related activities.

## 6.2 EVCB at Rest and Service Areas (R&R)

The guidelines for EVCBs at R&R areas include:

a. The placement of fire hydrants within 90 meters of the EVCB.
b. Maintain a separation distance of 2.5 meters on the left and right sides of the EVCB.
c. Mark the clear area with yellow hatching and install parking barriers to prevent unauthorized access.

## 6.3 EVCB on Open or Unenclosed Rooftops

For EVCBs located on open or unenclosed rooftops, follow these guidelines:

a. Position the EVCB within 30 meters of a fire hydrant or wet/dry riser landing valve.
b. Maintain a separation distance of 2.5 meters on the left and right sides of the EVCB.
c. Mark the separated area with yellow hatching and install parking barriers to prevent any activities in that zone.

## 6.4 Electric Motorcycle Charging Bay

The requirements for electric motorcycle charging bay align with the dimensions for non-electric motorcycle spaces as outlined in the Planning Guidelines for Parking by PLANMalaysia (2018) or the respective regulations of PBT. Each development is encouraged to provide at least one EVCB for electric motorcycles. Figures 16 and 17 illustrate battery-swapping technology pioneered by Blueshark in Malaysia.


*Source:*
*https://www.thestar.com.my/metro/metro-news/2022/06/25/charging-ahead-with-plan-to-boost-use-of-electric-m-bikes*

*Figure 16 The Battery Swapping Station owned by Blueshark at Petronas Fuel Station.*


*Figure 17 Battery Swapping Technology*

## 6.5 Electric Bus Charging Bay

Electric bus charging bays must meet the minimum size requirements for non-electric bus parking spaces as outlined in the Planning Guidelines for Parking by PLANMalaysia 2018 or current PBT regulations. Table 7 shows the recommended sizes for electric bus charging bays.

*Table 7 Recommended Size for Electric Bus Charging Bay*

| BUS TYPE | MINIMUM SIZE |
|---|---|
| Bus (more than 25 passengers) | 3m x 12m |
| Small/ Mini Bus (not exceeding 25 passengers) | 3m x 7.5m |

## 6.6 Electric Lorry Charging Bay

The size of the electric lorry charging bay must meet the minimum requirements for non-electric truck parking spaces as specified in the Planning Guidelines for Parking by PLANMalaysia 2018 or the relevant PBT guidelines. Table 8 presents the recommended sizes for electric lorry charging bays, and Figure 18 shows an example of an electric truck charging bay.

*Table 8 Recommended Size for Electric Lorry Charging Bay*

| LORRY TYPE | MINIMUM SIZE |
|---|---|
| Small Lorry | 3m x 12m |
| Large Lorry | 3m x 7.5m |
| Trailer | 4m x 18m |


*Figure 18 Electric Lorry Charging Bay*

## 6.7 EVCB at Airports

EV charging infrastructure at airports plays a crucial role in supporting sustainable transportation options for travellers and airport staff. The guidelines for EVCB at airports include:

a. Ensuring fire hydrants are strategically located within a 90 meter radius of the EVCB.

b. Implementing a 2.5 meter separation zone on both the left and right sides of the EVCB, marked with yellow hatching and equipped with parking barriers to prevent unauthorized access.

c. Installing the EVCB near the terminal building for user convenience and operational efficiency.

d. Providing adequate directional signage to assist users in locating the EV charging station and understanding emergency protocols.

e. Incorporating smart charging capabilities to effectively manage electricity demand and optimize charging times for users.

f. Guidelines from the Federal Aviation Administration (FAA) for the development of EV Charging Bays (EVCB) at airports must be adhered to. This is to emphasise safety measures and operational protocols for EV charging stations within airport premises.

## 6.8 EVCB at Universities

Universities are increasingly integrating EV charging infrastructure to support sustainable mobility solutions for students, faculty, and visitors. The guidelines for EVCB at universities include:

a. Installing fire hydrants within a 90 meter radius of the EVCB to ensure compliance with fire safety regulations.

b. Designating a 2.5 meter separation zone on both the left and right sides of the EVCB, marked with yellow hatching and equipped with parking barriers to manage traffic flow and ensure safety.

c. Integrating EV charging stations into campus planning, considering accessibility, visibility, and proximity to academic buildings and student residences.

d. Implementing a charging station management system to monitor usage, optimize charging times, and facilitate the billing process.

e. Providing educational resources and awareness campaigns to promote EV adoption and sustainable transportation practices within the university community.

# 7.0 Proposed Components of EVCB

To enhance the safety and comfort of EV users, road users, and the public, EVCBs should be encouraged to incorporate components as illustrated in Figure 19 and 20. These components include:

a. Chargers that comply with the guidelines set by the Energy Commission (ST), refer to (Appendix 1 - EVCS Standards requirement in guide on Electric Vehicle Charging System (EVCS) (Energy Commission));
b. Closed-circuit television (CCTV);
c. A comfortable waiting area integrated with other facilities such as cafes, kiosks, gazebos, and benches;
d. EVCB design that complies with universal design requirements, such as larger spaces for OKU;
e. Information signage displaying pricing, payment methods, user guides, and digital application details;
f. Wheel stoppers;
g. Roofing; and
h. Adequate lighting.

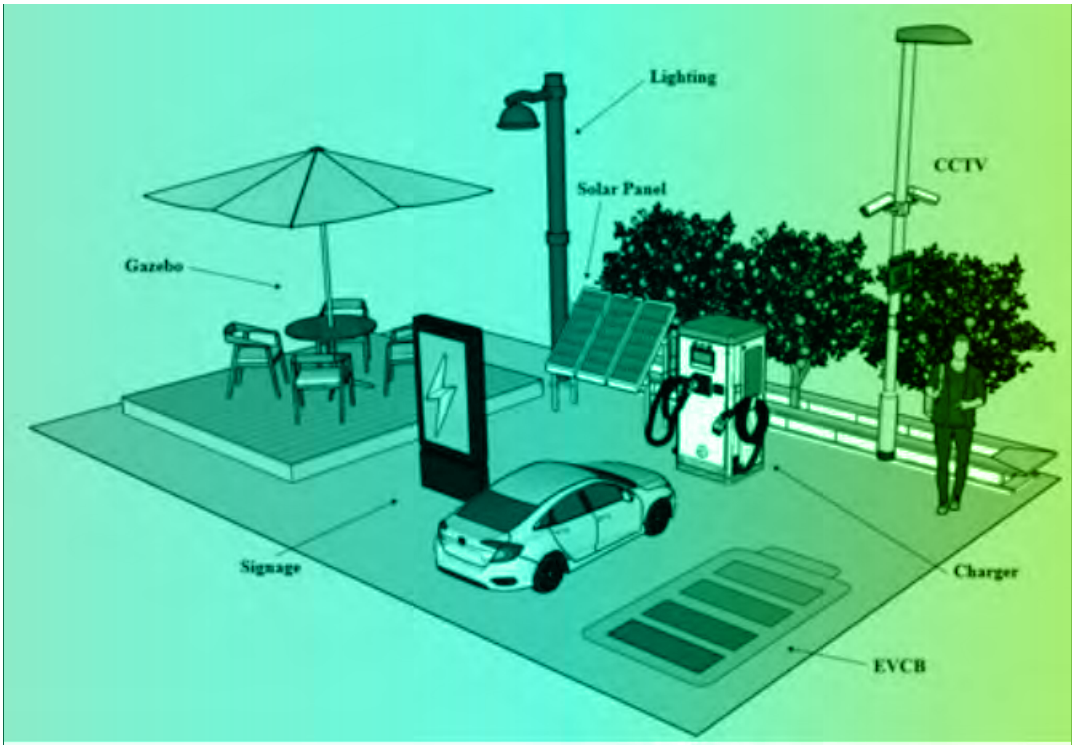



*Figure 19 Proposed Components of EVCB*

**Solar Roof Panels**

**Wheel Stopper**

**Lighting**


**Landscape Elements**

**Integrated waiting area with facilities such as cafes, kiosks and benches.**

*Source: Guidelines for Planning Electric Vehicle Charging Bays (EVCB): PlanMalaysia*

*Figure 20 Proposed Components of EVCS*

# 8.0 Procedure for EVCB Development Approval Application

Applications for the installation of EVCBs must obtain approval from the PBT based on the proposed location of the EVCB to be developed. Each PBT has a One Stop Centre (OSC) Unit that will process land development approval, planning permission, and building plans simultaneously. The OSC will shorten the approval process for land development as an alternative to expedite the land approval process, directly improving the delivery system for land development proposals at the PBT level. Applicants must submit their applications through the OSC 3.0 Plus Online System under the management of the relevant PBT. A special lane within the OSC 3.0 Plus system is created to facilitate the EVCB installation application process. This special lane includes: -

### i. Application for Building Plan Approval for EVCB Additions/Alterations

Applicants wishing to develop an EVCB must obtain Building Plan Approval for the addition or alteration from the PBT.

### ii. Application for Minor Construction Permit for EVCB

This permit is granted to developers for the installation of EVCBs where the construction, modification, or addition works are carried out on existing buildings without altering the structure, space, external appearance, function of a room or building, or reducing the allocated open space.

### iii. Application for Temporary Permit for EVCB

A Temporary Permit is granted for buildings constructed within the specified period under the UBBL 1984 in a temporary form for 5 years, with the condition that the permit is renewed annually. After this 5 years period, a new application must be submitted to the PBT according to specific conditions.

### iv. Application for Special Permit for EVCB

This special permit is an authorization granted to developers to install EVCBs in open areas for a period of 5 years, provided that the permit is renewed annually. After this 5 years period, a new application must be submitted to the PBT in accordance with specific requirements.

## 8.1 Types of EVCB Development Applications

#### 8.1.1 Existing Developments

The application for installing an EVCB in an existing development process involves the following steps:

a. Process 1: Pre-Consultation;
b. Process 2: Consideration of Development Plans (Type of EVCB Development);
c. Process 3: Notification of Construction Work Commencement,
d. Process 4: Construction Site Monitoring and Interim Inspection Notification,
e. Process 5: Final Inspection Notification for Stage I and II; and
f. Process 6: Deposition of CCC / Work Completion Letter by Principal Submitting Person (PSP).

### Process 1: Pre-Consultation

Before starting the application process at the PBT OSC, the CPO or applicant must obtain a Verification Letter from Tenaga Nasional Berhad (TNB) / Public Distribution Licensee for safety and electrical capacity consideration.

Depending on the location, if the proposed EVCB is situated along a highway, the CPO or applicant must obtain consent from the Malaysian Highway Authority (LLM) and the Ministry of Works (KKR). This step is crucial for projects located in highway areas (refer to Table 9).

If the proposed EVCB development requires the construction of a compact substation or a feeder pillar, the Director of the Johor Land and Mines Office or the Federal Land Commissioner, the Department of Director General of Lands and Mines (JKPTG) will issue a temporary entry permit to the applicant for the compact substation or feeder pillar. At the same time, the applicant must also handle land-related matters such as lease or rental agreements.

*Table 9 Checklist for TNB, Public Distribution Licence, Malaysian Highway Authority (LLM) and Ministry of Works (KKR)*

| AGENCY | APPROVAL DOCUMENT | DURATION | CHECKLIST |
|---|---|---|---|
| TNB / Public Distribution License Operator* | TNB Verification Letter / Public Distribution Licensee Verification Letter | 14 days | **Mandatory Documents:**<br>• Official Application Letter;<br>• Estimated Maximum Load Calculation;<br>• Layout/Building Plan; and<br>• Copy of Electricity Bill (existing premises) (optional). |
| LLM / KKR | Consent Letter for Upgrading Work | 40 days | **Type A:**<br>Development of EVCB in Existing Buildings (Petrol Station, R&R)<br>• Obtain a design technical review from the Concession Company; and<br>• Application Checklist Form. |
| | Conditional Concept Approval Letter (KKB) | 90 days | **Type B:**<br>Development of EVCB at R&R parking areas, R&R green areas and new development sites<br>• Obtain a design technical review from the Concession Company; and<br>• Application Checklist Form; and<br>• Approval from the Minister of Works (KKR) |

**Note: For areas under the regulation of the Public Distribution Licensee, TNB will only issue letters stating that the applications are under the regulation of the Public Distribution Licensee and that TNB has no objections.*

In situations where an application involves the provision of a compact substation and requires the surrendering of land to the state/TNB, the applicant must submit a KM (Subdivision) application. However, if the compact substation can be leased to TNB, the applicant is exempted from the KM application. Instead, they must apply for a Building Plan (Addition/Alteration), Small Construction Permit, Temporary Permit, or Special Permit, as deemed appropriate by the PBT. The type of application for the compact substation or feeder pillar is outlined in Table 10.

*Table 10 Compact Substation or Feeder Pillar Preparation*

| TYPE OF DEVELOPMENT | TYPE OF APPLICATION |
|---|---|
| Constructing compact substations in existing public or private buildings. | **Compact Substation leased to TNB**<br><br>**Option 1**<br>a. Building Plan (Addition/Alteration)<br>b. CCC deposition<br>or<br><br>**Option 2**<br>a. Minor Construction Permit<br>b. Letter of Work Completion by PSP<br><br>**Handover of Land to TNB**<br>a. Application for KM (Subdivision) |
| Additional provision of a compact substation in privately owned parking lot/ On Street Parking. | **Compact Substation leased to TNB**<br><br>**Option 1**<br>a. Building Plan (Addition/Alteration)<br>b. CCC deposition<br>or<br><br>**Option 2**<br>a. Minor Construction Permit<br>b. Letter of Work Completion by PSP<br><br>**Land surrender to TNB**<br>a. Application for KM (Subdivision) |
| Additional provision of a compact substation in the public parking lot or On Street Parking (road reserve) | ***Compact Substation* dipajakan kepada TNB**<br>a. Temporary Permit<br>b. Letter of Work Completion by PSP |
| Feeder Pillar Requirement | PBT Dredging Permit (approval within 7 days, subject to the current enforced procedure by PBT) |
| TNB Substation Requirement<br>*Note EVCB development is not allowed in saturated construction areas if it requires the provision of a substation. | Planning Permission Application, Engineering Plan, Building Plan, CCC Deposition. Procedures and duration are as stated in the OSC 3.0 Plus Manual |

## Process 2: Submission, Consideration, and Approval of EVCB Development

### a. Approval Duration

The EVCB development proposals will be approved within 7 or 14 days, as follows:

i. 7 days (AC chargers located outdoor, indoor, or on an open/unenclosed roof); and
ii. 14 days (DC chargers located outdoor, indoor, or on an open/unenclosed roof).

If the EVCB application includes both AC and DC chargers, the approval duration will be 14 days. If the proposed EVCB development (AC or DC) involves the construction of a roof structure or solar roof, modifications to existing parking layouts, construction of a compact substation or leased feeder pillar, or requires review by the Land Office for government-owned land, or involves areas under the administration of LLM, the approval duration will be 14 days (Figure 21 and Figure 22).

### b. Technical Department Review

Applications with a 7-day approval duration do not require a review from the technical department. However, for 14-day approval applications, the PBT must obtain comments from the following departments or agencies:

i. The Building Department or Engineering Department of the PBT (endorsing department);
ii. PBT Planning Department;
iii. PBT Engineering Department;
iv. Building Commissioner (if applicable);
v. Fire and Rescue Department of Malaysia (JBPM) (if related to DC-type EVCB development only);
vi. Malaysian Highway Authority (LLM) (if within the LLM administrative area); or
vii. State Land Administrator (if related to Temporary Occupation License or the provision of leased compact substations and feeder pillars).

### c. Self-Compliance Declaration Form

The Self-Compliance Declaration form must be completed and endorsed by the PSP and attached with the application for the proposed EVCB development when submitted to the PBT. The form is considered as a form of self regulation and self assessment for the development of EVCBs and the Fire Safety Guidelines for EVCBs at premises by JBPM (Appendix 1). The applicant must act transparently in accordance with professional ethics when declaring in this form.

### d. Document Checklist

The checklist for Building Plans (Addition/Alteration) can be found in Table 11, the Minor Construction Permit in Table 12, the Temporary Permit in Table 13, and the Special Permit in Table 14.

### e. Application Consideration and Decision

Authorisation is given to the Building Department or Engineering Department at PBT for the consideration or decision of the EVCB application. However, the decision must be recorded and communicated to the OSC Committee of the PBT.

### f. Development Application Fee

Development plans submitted to the PBT for approval are subject to fees as stipulated in the General Planning Control Regulations and the UBBL 1986.

In cases where work has begun or been completed before the building plan is approved or the permit is obtained, a penalty in the form of a multiplied fee will be imposed, subject to enforcement as outlined in the UBBL 1986.

### g. Public Distribution License Application to the Energy Commission (ST)

The applicant has the option to apply for a Public Distribution License to the ST simultaneously, without needing prior approval of the plan from the PBT. Following this, ST will issue approval on a Pre-Conditional Approval. It is important to note that the installation of EVCBs is also subject to compliance with other relevant laws.

The applicant must appoint a competent person registered with the ST when applying for a public distribution license. This individual could be an Electrician (PW4), Electrical Supervisor, Competent Electrical Engineer, and Electrical Services Engineer. This requirement aligns with Regulation 65 of the Electricity Regulations 1994.

## Process 3: Notice to Commence Construction, Process 4: Site Monitoring and Interim Inspection Notification, and Process 5: Final Inspection Notifications Stage I and II

The implementation of Processes 3, 4, and 5 for the development of EVCBs within existing developments must adhere to the guidelines provided in the OSC 3.0 Plus of the respective PBTs.

## Process 6: Deposition of CCC or Completion Certification Letter by PSP

### a. Deposition of CCC

Any building proposal approved under the Building Plan (Addition/Alteration), and subsequently completed according to the approved plans, requires the issuance of a CCC. This certificate must be issued by the PSP under the provisions of By-Law 25, UBBL 1986, and subsection 70(20) of the Street, Drainage, and Building Act 1974 [Act 133].

The PSP must issue a completed CCC (Forms G1-G21 and Form F). All forms must be filled out and certified before the CCC is issued. The relevant forms for the issuance of the CCC for DC-type EVCB developments are as follows:

i. G7: Internal Electrical (TNB);
ii. G8: Passive Fire Protection (JBPM);
iii. G9: Active Fire Protection (JBPM);
iv. G16: External Electrical Supply System (TNB);
v. G12, G17, and G18 (PLANMalaysia)

For the development of EVCBs with AC devices that do not require reviews from JBPM, the following forms must be submitted:

i. G7: Internal Electrical (TNB);
ii. G16: External Electrical Supply System (TNB);
iii. G8 and G9 (PLANMalaysia)

The PSP must submit the CCC to the PBT within 14 days after the date Form F is signed. One of the purposes of issuing the CCC for EVCB is to allow the CPO to establish an assurance element when obtaining insurance.

### b. Completion Certification Letter by PSP

Once the construction and installation of the EVCB are completed, the PSP is required to provide a Completion Certification Letter for the application of the Minor Construction Permit/Temporary Permit. This letter must be submitted to the PBT. The development plan application must include detailed information about the development, which is supervised and submitted by the PSP. Further reference can be found in Appendix 2.

### 8.1.2 New Developments

In the case of new developments, the installation of EVCBs will be incorporated as part of the components in the proposed development or as a new dedicated site specifically designated for EVCBs and this requires obtaining a Planning Permission from OSC. The submission must align with the guidelines outlined in the OSC 3.0 Plus System and comply with the EVCB Planning and Development Guidelines of Johor, as well as the Fire Safety Guidelines for EVCBs on Premises by JBPM.

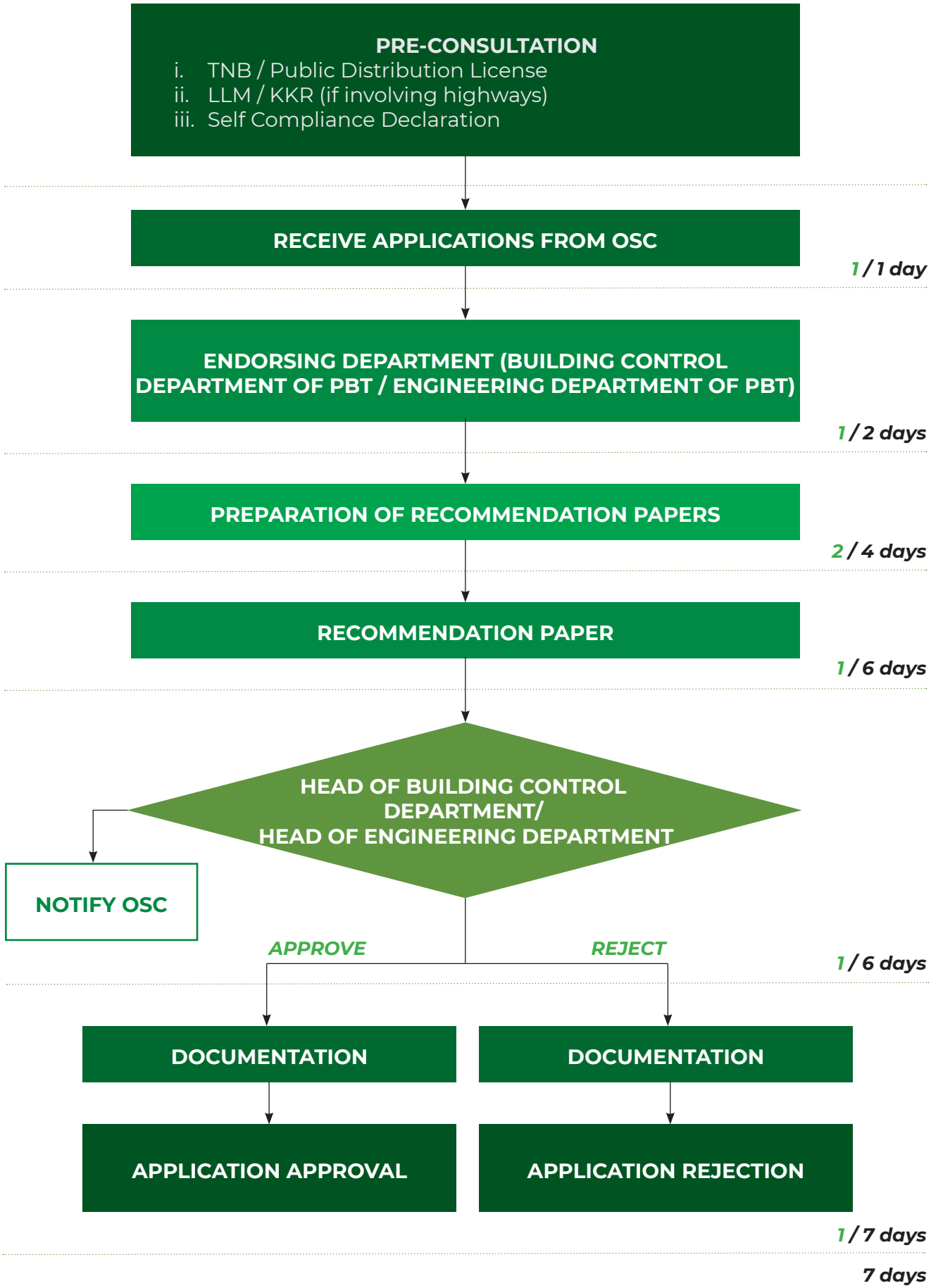



*Figure 21 Approval of Building Plan (Addition/Alteration), Minor Construction Permit, Temporary Permit, and Special Permit (7 days) (For outdoor, indoor or open rooftop AC chargers)*

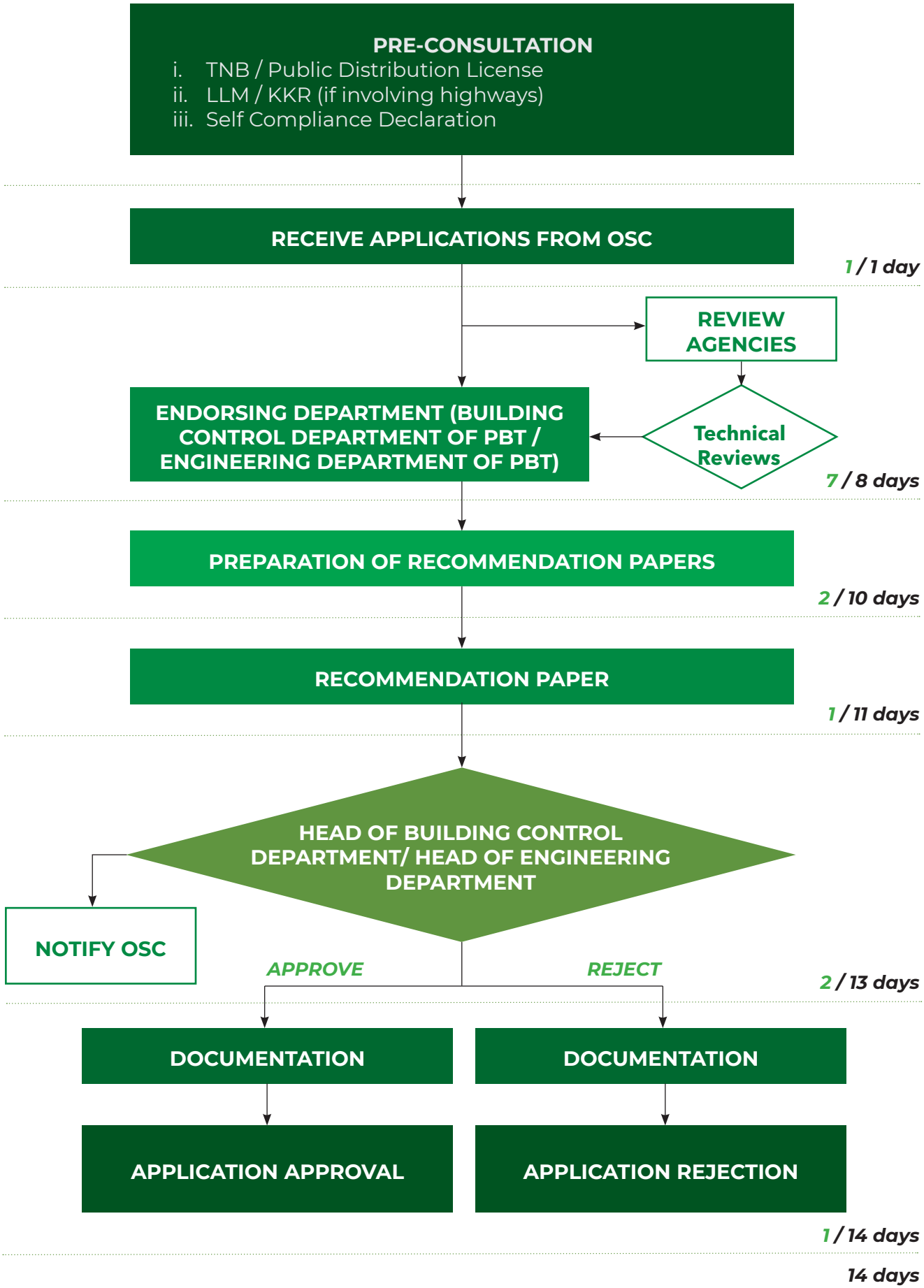



*Figure 22 Approval of Building Plan (Addition/Alteration), Minor Construction Permit, Temporary Permit, and Special Permit (14 days)*
*(For outdoor, indoor or open rooftop DC chargers)*

*Table 11 Checklist for Building Plan (Additions/Alterations)*

| NO. | DOCUMENTS | NOTE |
|---|---|---|
| **A** | **ALL TECHNICAL AGENCIES / DEPARTMENTS** | |
| 1 | OFFICIAL APPLICATION LETTER AND FORM A<br>(Certification of Buildings/Structural Plans) | Refer to the Second Schedule of UBBL 1986 |
| 2 | CERTIFICATE OF FITNESS FOR OCCUPATION (CFO) or<br>CERTIFICATE OF COMPLETION AND COMPLIANCE (CCC) | |
| 3 | SITE PLAN / LAYOUT | |
| 4 | JOINT MANAGEMENT BODY (JMB) / MANAGEMENT CORPORATION (MC) CONSENT LETTER (if applicable) | |
| 5 | TNB/PUBLIC DISTRIBUTION LICENSE HOLDER VERIFICATION LETTER | |
| 6 | CONDITIONAL CONCEPT APPROVAL LETTER (KKB) FROM LLM/KKR or APPROVAL LETTER FOR UPGRADING WORKS FROM LLM/KKR (highway routes) | |
| 7 | SELF COMPLIANCE DECLARATION FORM | |
| 8 | BUILDING PLAN WHICH INCLUDES:<br>• Location plan<br>• Floor Plan<br>• Cross-Sectional Plan<br>• Side View Plan<br>• 1 set of perspective drawings<br>• The scale of plans must be 1:100 or 1:200 (other scales allowed with approval)<br>» Certified by a Registered Professional<br>» Preparation of Plans in Metric Scale | Refer to UBBL 1986 |
| **B** | **DEVELOPMENT DEPARTMENT** | |
| 9 | LAND TITLE/ LETTER OF BANK APPROVAL/ SALE AND PURCHASE AGREEMENT/ OFFICIAL CERTIFICATE OF SEARCH<br>(Caveat Mortgage Or Privatization Agreement) | |
| 10 | COMPANY REGISTRATION DOCUMENTS *<br>[Memorandum and Articles (M&A), Form 24 and Form 49 together with a letter of authorization for signing plans and documents in the event that the signatory is not listed in Form 49A] | |
| 11 | LAND TAX/PARCEL TAX PAYMENT RECEIPT (Current Tax Receipt) | |
| 12 | ASSESSMENT TAX RECEIPT (Current Tax Receipt) | |
| 13 | BUILDING PLAN FEE PAYMENT RECEIPT (with fee calculation) | |
| 14 | IMAGE OF CURRENT SITE | |

*Table 12 Checklist for Minor Construction Permit*

| NO. | DOCUMENTS | NOTE |
|---|---|---|
| **A** | **ALL TECHNICAL AGENCIES / DEPARTMENTS** | |
| 1 | FORM A (Second Schedule UBBL 1986) | Application refers to Clause 18, Temporary Permit, Uniform Building By-Laws 1986. |
| 2 | PAYMENT FOR PROCESSING plan according to UBBL 1986 | |
| 3 | ADDITION/ALTERATION PLAN | In accordance with the format, together with the signature and identification card number of the rightful owner and the architect/ draughtsman/consulting engineer, including the professional practice stamp on each plan, signed by the owner and the Registered Consultant/Architect/ Draughtsman (Covering Letter) |
| 4 | OFFICIAL APPLICATION LETTER | |
| 5 | JMB / MC CONSENT LETTER (if applicable) | |
| 6 | TNB / PUBLIC DISTRIBUTION LICENSE HOLDER VERIFICATION LETTER | |
| 7 | CONDITIONAL CONCEPT APPROVAL LETTER (KKB) FROM LLM/KKR or APPROVAL LETTER FOR UPGRADING WORKS FROM LLM/KKR (highway routes) | |
| 8 | *SELF COMPLIANCE DECLARATION FORM* | |
| 9 | COPY OF CURRENT PROPERTY TAX or tax confirmation from the Valuation Department with proof of ownership transfer | |
| 10 | Latest COPY OF LAND TAX | |
| 11 | COPY OF PROPERTY OWNERSHIP TRANSFER TAX has been made (if property tax name has not been updated) / copy of the sale and purchase agreement/ power of attorney document | |
| 12 | COPY OF LATEST LAND TITLE (GRANT) | |
| 13 | COPY OF FORM 49 (if application is under company's name) | |
| 14 | COPY OF IDENTIFICATION CARD (if application is under individual's name) | |
| 15 | Latest COPY OF THE COMPANIES COMMISSION DOCUMENT OF (if the application is under enterprise/trading) | |
| 16 | SITE PHOTOS (IN COLOUR) | |

*Table 13 Checklist for Temporary Permit*

| NO. | DOCUMENTS | NOTE |
|---|---|---|
| **A** | **ALL TECHNICAL AGENCIES / DEPARTMENTS** | |
| 1 | OFFICIAL APPLICATION LETTER | |
| 2 | DEVELOPMENT PLAN in complete format | |
| 3 | TEMPORARY PERMIT PROCESSING FEE PAYMENT | |
| 4 | TEMPORARY PERMIT FEE PAYMENT | |
| 5 | JMB / MC CONSENT LETTER (if applicable) | |
| 6 | TNB/PUBLIC DISTRIBUTION LICENSE HOLDER VERIFICATION LETTER | |
| 7 | CONDITIONAL CONCEPT APPROVAL LETTER (KKB) FROM LLM/KKR or APPROVAL LETTER FOR UPGRADING WORKS FROM LLM/KKR (highway routes) | |
| 8 | SELF COMPLIANCE DECLARATION FORM | |
| 9 | COPY OF LAND OWNERSHIP DEED WITH LATEST ASSESMENT/ LAND TAX RECEIPT (if applicable) | |
| 10 | PLANS, SITE PHOTOS and DRAWINGS | |
| 11 | COPY OF IDENTIFICATION CARD AND FORM 49 | |
| **B** | **STATE LAND ADMINISTRATION** | |
| 12 | COPY OF THE LATEST PROPERTY TAX RECEIPT or property tax confirmation (if applicable) | |
| 13 | TEMPORARY OCCUPANCY LICENSE (TOL) (if applicable) | |

*Table 14 Checklist for Special Permit*

| NO. | DOCUMENTS | NOTE |
|---|---|---|
| **A** | **ALL TECHNICAL AGENCIES / DEPARTMENTS** | |
| 1 | OFFICIAL APPLICATION LETTER | |
| 2 | DEVELOPMENT PLAN in complete format | |
| 3 | SPECIAL PERMIT PROCESSING FEE PAYMENT | |
| 4 | SPECIAL PERMIT FEE PAYMENT | |
| 5 | JMB / MC CONSENT LETTER (if applicable) | |
| 6 | TNB/PUBLIC DISTRIBUTION LICENSE HOLDER VERIFICATION LETTER | |
| 7 | CONDITIONAL CONCEPT APPROVAL LETTER (KKB) FROM LLM/KKR or | |
| 8 | SELF COMPLIANCE DECLARATION FORM | |
| 9 | COPY OF LAND OWNERSHIP DEED WITH LATEST ASSESMENT/ QUIT RENT RECEIPT (if applicable) | |
| 10 | PLANS, SITE PHOTOS and DRAWINGS | |
| 11 | COPY OF IDENTIFICATION CARD AND FORM 49 | |
| **B** | **STATE LAND ADMINISTRATION** | |
| 12 | COPY OF THE LATEST PROPERTY TAX RECEIPT or property tax confirmation (if applicable) | |
| 13 | TEMPORARY OCCUPANCY LICENSE (TOL) (if applicable) | |

# 9.0 Conclusion

**The Johor Planning and Development Guidelines for Electric Vehicle Charging Bays (EVCB) provide a fundamental framework for interpreting both existing and new developments related to EVCBs. These guidelines encompass aspects of location, design principles, recommended components, and implementation mechanisms for the installation of EVCBs. The adoption of these guidelines is crucial to ensure that various authorities and stakeholders have clear and consistent directions in planning and implementing EVCB infrastructure effectively in Johor. This will contribute to advancing the EV ecosystem in the state in a more systematic and efficient manner, thereby accelerating the transition towards a more sustainable and cleaner future.**

## APPENDIX 1

### SELF-COMPLIANCE DECLARATION FORM (OUTDOOR / INDOOR / OPEN ROOFTOP AC)

**REMINDER:** ALL PRINCIPAL SUBMITTING PERSONS (PSPs) ARE ADVISED TO ADHERE TO AND IMPLEMENT ITEMS LISTED IN THE CHECKLIST.

**1. PROJECT DETAILS**

**PROJECT TITLE** (to be filled in by the PSP)

.....

.....

.....

**NAMA / ALAMAT PEMILIK LOT / NAME / ADDRESS OF LOT / BUILDING OWNER** *(PROJECT TITLE)*

.....

.....

.....

**DATE OF ORIGINAL BUILDING PLAN APPROVAL:**

.....

**DATE OF COMPLETION AND COMPLIANCE CERTIFICATE (CCC):**

.....

**2. NUMBER OF PROPOSED AC DEVICE INSTALLATIONS**

*(Specify*: .....

**3. AC UNIT PLACEMENT**

| | | NO. OF UNITS |
|---|---|---|
| A. | OUTDOOR | |
| B. | INDOOR | |
| C. | UNENCLOSED/OPEN ROOFTOP LEVEL | |

**4. DEVELOPMENT TYPE**

| | | |
|---|---|---|
| A. | BUILDING PLAN (ADDITION/ALTERATION) | |
| B. | MINOR CONSTRUCTION PERMIT | |
| C. | TEMPORARY PERMIT | |

**5. WE ACKNOWLEDGE THAT THE DEVELOPMENT OF EVCBs IS ENCOURAGED TO BE BUILT OUTSIDE BUILDINGS** ☐

**6. *SELF COMPLIANCE CHECKLIST* - AC-TYPE DEVICES IN EXISTING DEVELOPMENTS**

| NO. | TECHNICAL REQUIREMENTS OF THE PLAN | | PLEASE MARK (√) | PBT REVIEW PLEASE MARK (√) |
|---|---|---|---|---|
| 1. | Size of the EVCB follows the size of the existing TLK. | | | |
| 2. | EVCB must be installed away from stairways, emergency exits, or building exit paths to prevent obstruction during fires or emergencies. | | | |
| 3 | Charging Bay layout can be perpendicular (90°), parallel (180°), or angled (30°/45°/60°).<br><br>Specify the layout : _____ | | | |
| 4 | Provide access to firefighting equipment as per UUKBS 140 requirements. | | | |
| 5 | Provide dry powder fire extinguishers (APA) as specified in MS 1539 – Specification for Portable Extinguishers. | | | |
| 6 | Provide Vehicle Fire Blankets (VFB) based on the number of charging bays..<br>Specify the number of VFB : _____ | | | |
| 7 | Provide fire safety markings as specified by JBPM. | | | |
| 8 | Install a natural or mechanical smoke control system. | | | |
| 9 | Install a main electrical isolation switch for public EVCB use. | | | |
| | i. | Each EVCB must have an automatic and manual main electrical isolation switch. The location must be at least 3 meters away from the charging bay and EVCP but not more than 15 meters. | | |
| | ii. | A main electrical isolation switch can serve multiple EVCPs as long as the specified distance is adhered to. Activating any isolation switch will cut off the electrical supply to all EVCPs. | | |

| | | | | |
|---|---|---|---|---|
| | iii. | If the main isolation switch is located less than 3 meters from the EVCP, an additional switch must be installed at least 3 meters away but not more than 15 meters from the EVCP. | | |
| | iv. | Connect the EVCB main isolation switch with a fireman switch. | | |
| | v. | The main isolation switch must be located between 800mm and 1200mm above floor level and be easily visible and accessible. | | |
| | vi. | All main isolation switches must be labelled and include clear operating instructions. | | |
| | vii. | If the main isolation switch is not clearly visible or within line-of-sight from the EVCP and parking area, additional signage must be provided to indicate its location. | | |
| 10. | Provide Heat Detection Systems or Automatic Sprinkler Systems at EVCBs (for non-residential buildings) | | | |

LEMBAGA ARKITEK MALAYSIA

(Stamp, Name and LAM Registration No.)

*(Stamp, Name and LAM Registration No.)*

.....

**(Appointed Consultant)**

Details of qualified person:

NAME:
ADDRESS:
REGISTRATION NO.:

.....

**(Appointed Consultant)**

Details of qualified persons:

NAME:
ADDRESS:
REGISTRATION NO:

## SELF-COMPLIANCE DECLARATION FORM (OUTDOOR / INDOOR / OPEN ROOFTOP DC)

**REMINDER:** ALL PRINCIPAL SUBMITTING PERSONS (PSPs) ARE ADVISED TO ADHERE TO AND IMPLEMENT ITEMS LISTED IN THE CHECKLIST..

### 1. PROJECT DETAILS

**PROJECT TITLE** *(to be filled in by the PSP)*

.....

.....

.....

**NAME / ADDRESS OF LOT / BUILDING OWNER** *(PROJECT TITLE)*

.....

.....

.....

**DATE OF ORIGINAL BUILDING PLAN APPROVAL:**

.....

**DATE OF COMPLETION AND COMPLIANCE CERTIFICATE (CCC):**

.....

### 2. NUMBER OF PROPOSED DC DEVICE INSTALLATIONS

*(Specify)*: .....

### 3. DC UNIT PLACEMENT

| | | NO. OF UNITS |
|---|---|---|
| A. | OUTDOOR | |
| B. | INDOOR | |
| i. | Level 1 | |
| ii. | Level 2 | |

iii. Ground Floor ☐

iv. Basement 1) ☐

C. UNENCLOSED/OPEN ROOFTOP LEVEL ☐

**4. DEVELOPMENT TYPE**

i. BUILDING PLAN (ADDITION/ALTERATION) ☐

ii. MINOR CONSTRUCTION PERMIT ☐

iii. TEMPORARY PERMIT ☐

**5. WE ACKNOWLEDGE THAT THE DEVELOPMENT OF EVCBs IS ENCOURAGED TO BE BUILT OUTSIDE BUILDINGS** ☐

**6. SELF COMPLIANCE CHECKLIST – DC-TYPE DEVICES IN EXISTING DEVELOPMENTS**

| NO. | TECHNICAL REQUIREMENTS OF THE PLAN | PLEASE MARK (√) | PBT REVIEW PLEASE MARK (√) |
|---|---|---|---|
| **GENERAL FIRE SAFETY GUIDELINES (FSG) REQUIREMENTS FOR EVCBs (MANDATORY TO FILL IN)** | | | |
| 1. | Size of the EVCB follows the size of the existing TLK. | | |
| 2. | EVCB must be installed away from stairways, emergency exits, or building exit paths to prevent obstruction during fires or emergencies. | | |
| 3 | Charging Bay layout can be perpendicular (90°), parallel (180°), or angled (30°/45°/60°).<br><br>Specify the layout: _____ | | |
| 4 | Provide access to firefighting equipment as per UUKBS 140 requirements. | | |
| 5 | Provide dry powder fire extinguishers (APA) as specified in MS 1539 – Specification for Portable Extinguishers. | | |
| 6 | Provide Vehicle Fire Blankets (VFB) based on the number of charging bays.<br><br>Specify the number of VFB: _____ | | |
| 7 | Provide fire safety markings as specified by JBPM. | | |
| 8 | Install a natural or mechanical smoke control system. | | |
| 9 | Install a main electrical isolation switch for public EVCB use. | | |
| | i. Each EVCB must have a main electrical isolation switch that can be operated both automatically and manually. The main electrical isolation switch should be located at least 3 meters from the charging bay and EVCP but not more than 15 meters away. | | |

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| | ii. | The main electrical isolation switch of the EVCB can be shared among several EVCPs, provided the specified distance requirements are adhered to. Activating any isolation switch will cut off the power supply to all connected EVCPs | | |
| | iii. | If the main isolation switch is located less than 3 meters from the EVCP, an additional switch must be installed at least 3 meters away but not more than 15 meters from the EVCP. | | |
| | iv. | Connect the EVCB main isolation switch with a fireman switch. | | |
| | v. | The main isolation switch must be located between 800mm and 1200mm above floor level and be easily visible and accessible. | | |
| | vi. | All main isolation switches must be labelled and include clear operating instructions. | | |
| | vii. | If the main isolation switch is not clearly visible or within line-of-sight from the EVCP and parking area, additional signage must be provided to indicate its location. | | |
| **OUTDOOR** | | | | |
| **a.** | **Petrol Stations** | | | |
| 1. | The fire hydrant must be located within a distance not exceeding 90 meters from the EVCB. | | | |
| 2. | The EVCB must be at least 12 meters away from refilling points and vent pipes. | | | |
| 3. | The EVCB must be at least 6 meters away from the designated oil tanker parking area. | | | |
| 4. | The EVCB must be at least 8 meters away from the fuel dispensing unit. | | | |
| 5. | No additional electrical connections or installations are permitted within the EV charging area that are lower than 500mm above floor level. | | | |
| 6. | The EV charging station must be fully enclosed unless openings are located at least 1 meter above the floor level. | | | |
| 7. | Maintain a separation distance of 2.5 meters on both the left and right sides of the charging bay. | | | |
| 8. | The segregated area must be marked with yellow hatching and fitted with parking barriers to prevent any activities in the area | | | |
| **b.** | **Rest and Service Areas (R&R), Open Outdoor Areas, or Open Parking Lots** | | | |
| | The fire hydrant must be located within a distance not exceeding 90 meters from the EVCS. | | | |
| | Maintain a separation distance of 2.5 meters on both the left and right sides of the charging bay (Refer to Figure 5 and Figure 6 above). | | | |
| | The segregated area must be marked with yellow hatching and equipped with parking barriers to prevent any activities within the designated area. | | | |

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| **c.** | **EVCB on Unenclosed / Open Roof Top Level** | | | |
| | The EVCB must be located no more than 30 meters from a fire hydrant, landing valve wet riser, or dry riser. | | | |
| | Other requirements must follow the safety guidelines for EVCBs in rest and service areas (R&R), open outdoor spaces, or open parking lots. | | | |
| **FIRE SAFETY REQUIREMENTS (PKK) FOR EVCBs INSIDE BUILDINGS** | | | | |
| **a.** | **Ground Floor and Above (e.g., podium, multistorey carpark)** | | | |
| | 1. | The EVCB (DC) must be located within 30 meters of a landing valve wet/dry riser or a fire hydrant. | | |
| | 2. | The EVCB (DC) must not exceed the two floors above the designated ground floor, i.e., ground floor, Level 1, and Level 2. | | |
| | 3. | Provide a fire separating wall of at least 1.5 meters in height, constructed using wet construction methods, with a fire resistance rating of at least 2 hours for EVCBs of the direct current (DC) type that exceed 216m$^2$ in floor area. | | |
| | 4. | Provide a separation distance of at least 5 meters on both the left and right sides of the charging bay for EVCBs of the direct current (DC) type with a floor area not exceeding 216m$^2$. Alternatively, a fire separating wall of at least 1.5 meters in height, constructed using wet construction methods and with a fire resistance rating of at least 2 hours, may be implemented. | | |
| | 5. | Install an Automatic Fire Detection System that uses heat or multi-sensor detection in areas without Automatic Sprinkler Systems | | |
| | 6. | The fire detection system must be directly connected to the Fire Alarm Panel, fire safety system (PKK), and roller shutters (if present). | | |
| | 7. | Install a smoke management system, either natural or mechanical. | | |
| **b.** | **Basement Levels** | | | |
| 1. | The EVCB (DC) must be located no more than 30 meters from a landing valve wet/dry riser or a fire hydrant. | | | |
| 2. | The EVCB (DC) must not exceed one basement level below the designated ground floor (i.e., Basement 1). | | | |
| 3. | Provide a fire separating wall of at least 1.5 meters in height, constructed using wet construction methods, with a fire resistance rating of at least 2 hours for EVCBs of the direct current (DC) type with a floor area exceeding 216m$^2$. | | | |

| | | | |
|---|---|---|---|
| 4. | Provide a separation distance with a minimum width of 5 meters on the left and right sides of the charging bay for EVCBs of the direct current (DC) type with a floor area not exceeding 216m$^2$. Alternatively, install a fire separating wall at least 1.5 meters in height, constructed using wet construction methods, with a fire resistance rating of at least 2 hours. | | |
| 5. | Install fire safety systems such as an Automatic Sprinkler System, water mist system, deluge system, or water monitor system with continuous operation. | | |
| 6. | Install a smoke management system, either natural ventilation or mechanical ventilation. | | |

LEMBAGA ARKITEK MALAYSIA

*(Stamp, Name and LAM Registration No.)*

.....

**(Appointed Consultant)**

Details of qualified persons:

NAME:
ADDRESS:
REGISTRATION NO.:

*(Stamp, Name and LAM Registration No.)*

.....

**(Appointed Consultant)**

Details of qualified persons:

NAME:
ADDRESS:
REGISTRATION NO.:

# APPENDIX 2

## EXAMPLE FORMAT FOR PSP COMPLETION CERTIFICATE LETTER

Reference: .....  Date: .....

**To:**

**(ADDRESS OF PBT)**

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**Mayor / YDP**

Council of .....

I / We hereby attach the Approved Plan and Self-Compliance Declaration Form for the application:

***(APPLICATION TITLE)***

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.....

I / We certify that this plan complies with the approved plan, and requirements of the standards and guidelines as indicated in the Self-Compliance Declaration Form.

LEMBAGA ARKITEK MALAYSIA

*(Stamp, Name and LAM Registration No.)*

.....

**(Appointed Consultant)**

Details of qualified persons:

NAME:
ADDRESS:
REGISTRATION NO.:

*(Stamp, Name and BEM Registration No.)*

.....

**(Appointed Consultant)**

Details of qualified persons:

NAME:
ADDRESS:
REGISTRATION NO.: