TN01 – New EV Car Charging Provision Technical Note

Site: Winnersh Triangle Plot 1180, Winnersh Business Park
Prepared by: WMC/PdeJ
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Date: 4th September 2025

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1.0 Introduction

1.1 This Technical Note has been prepared on behalf of Winnersh Midco S.A.R.L to accompany a planning application relating to development proposals at Winnersh Triangle Plot 1180, Winnersh Business Park (herein after referred to as 'the site').

1.2 The site is located on the northern side of Winnersh Business Park, approximately 1.5 kilometres northwest of Winnersh village centre, and falls within the administrative boundary of Wokingham Borough Council (Unitary Authority).

1.3 The site currently forms part of the 1180 Plot and the application area comprises 54 existing car parking spaces to the north of the plot which serve Building 1180 to the south. The application site is part of the full car parking provision for Building 1180, part of the parking is below the building (under croft) and the remainder around the building at ground level. The general arrangements for Building 1180 is presented on Figure 1.1.

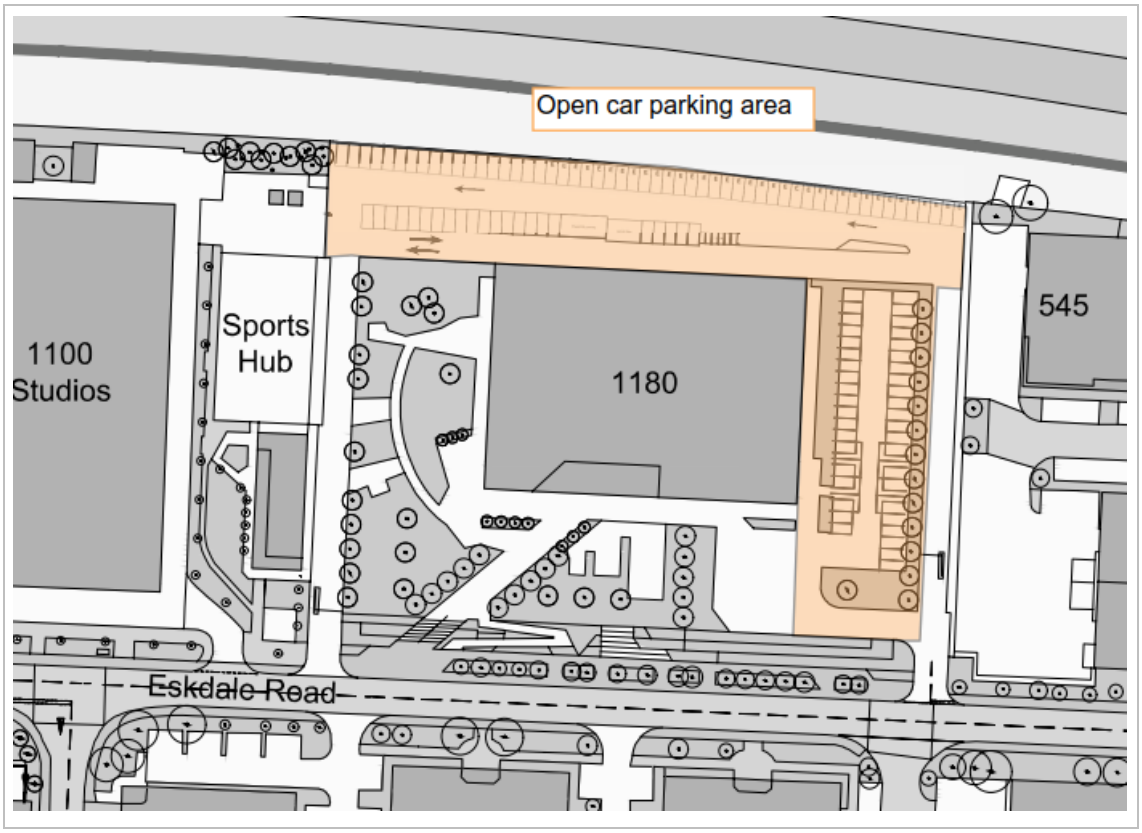


Figure 1.1 – Building 1180 – General layout and surface level/open car parking

1.4 The development proposals seek to create new electric vehicle charging points on the existing car parking spaces to create up to 54 vehicle charging points, using all the spaces along the northern car park boundary. It is proposed to deliver 36 spaces as 'active' with the chargers installed at an early stage with 18 spaces being allocated as 'passive' which will be introduced when demand for the charging points is required. The new electric vehicle charging facility will be accompanied by a new transformer and distribution board to the west of the site.

1.5 This Technical Note has been prepared to provide further detail on the proposed electric vehicle charging stations and associated infrastructure within part of the Winnersh Triangle Estate.

2.0 Existing Conditions

2.1 The site currently comprises of 54 car parking spaces that serve Building 1180 to the south, the site location in relation to Winnersh Triangle is included in Figure 2.1.

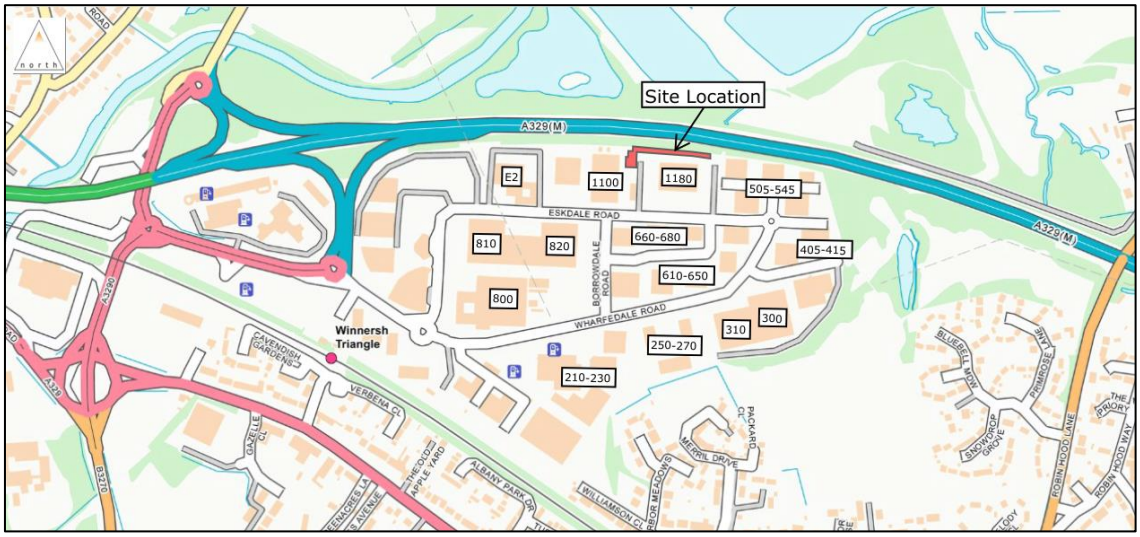


Figure 2.1 – Winnersh Triangle - Site location of proposed EV Charging Points

3.0 Development Proposals

Overview

3.1 This section provides further detail on the development proposals having regard to relevant design guidance. The development proposals comprise of the following:

- Retention of existing car parking spaces and introduction of EC charging points to serve the future occupant of Building 1180 at the Winnersh Triangle Business Park; and
- Provision of a new transformer and distribution board to serve the new electric vehicle charging points located to the west of the EV spaces.

Proposed Parking

3.2 The proposed parking layout is illustrated on Motion Drawing 2507082-04 which is included in **Appendix A**. The drawing demonstrates that the proposed electric vehicle charging stations will be installed within the existing area of hardstanding within the car park. The proposed arrangement will provide up to 54 car parking along the northern boundary.

3.3 The charging points will be contained within part of the existing car parking spaces. The particular spaces will be provided with hatching to the south of the EV charging spaces which will accommodate vehicles if necessary.

Specifications and Dimensions

3.4 The proposed electric vehicle charging points are to be installed within the existing area of hardstanding (e.g. car parking area) and will measure 600mm in width by 600mm in depth. The installation of the electric vehicle charging stations will be exercised in accordance with the guidance contained in Hoare Lea's Winnersh 1180 - EV Charging – Scope of Works document included in **Appendix B**.

3.5 In addition to the installation of the electric vehicle charging stations, it is proposed that a transformer will be installed to the west of the proposed electric vehicle charging stations. The proposed transformer will be similar in terms of dimensions and appearance to the existing transformers located around the Winnersh Triangle Business Park, an image of one of them is provided in Figure 3.1.

Figure 3.1 – Proposed Transformer – Example of appearance/elevation (image from Google Streetview – September 2023)

3.6 General details of the proposed transformer are also provided in **Appendix B** to this note. The proposed elevation drawings of transformer and distribution board and the upstands (chargers) for Winnersh 1180 are provided on Motion drawing 2507082-05 and 2507082-06 included in **Appendix C**.

Cabling Details

3.7 The proposed cabling route between the transformer and the EV chargers is presented on Hoare Lea drawing 0710735-HLEA-XX-B1-GA-E-700600 provided in **Appendix D**. The cable will be installed within a dedicated tray along the northern boundary / kerbing of the car park.

Development Impact on Parking Provision

3.8 The proposed new EV charging points will be provided within existing car parking spaces and there are no proposals to change the overall number of spaces. The EV charging points will allow people working in Building 1180 and visitors the opportunity charge vehicles whilst at this part of the Winnersh Business Park. There will not be any impact of the development on the existing parking provision for Building 1180.

4.0 Summary

4.1 This Technical Note has been prepared on behalf of Winnersh Midco S.A.R.L to accompany a planning application relating to development proposals at Winnersh Triangle Plot 1180, Winnersh Business Park.

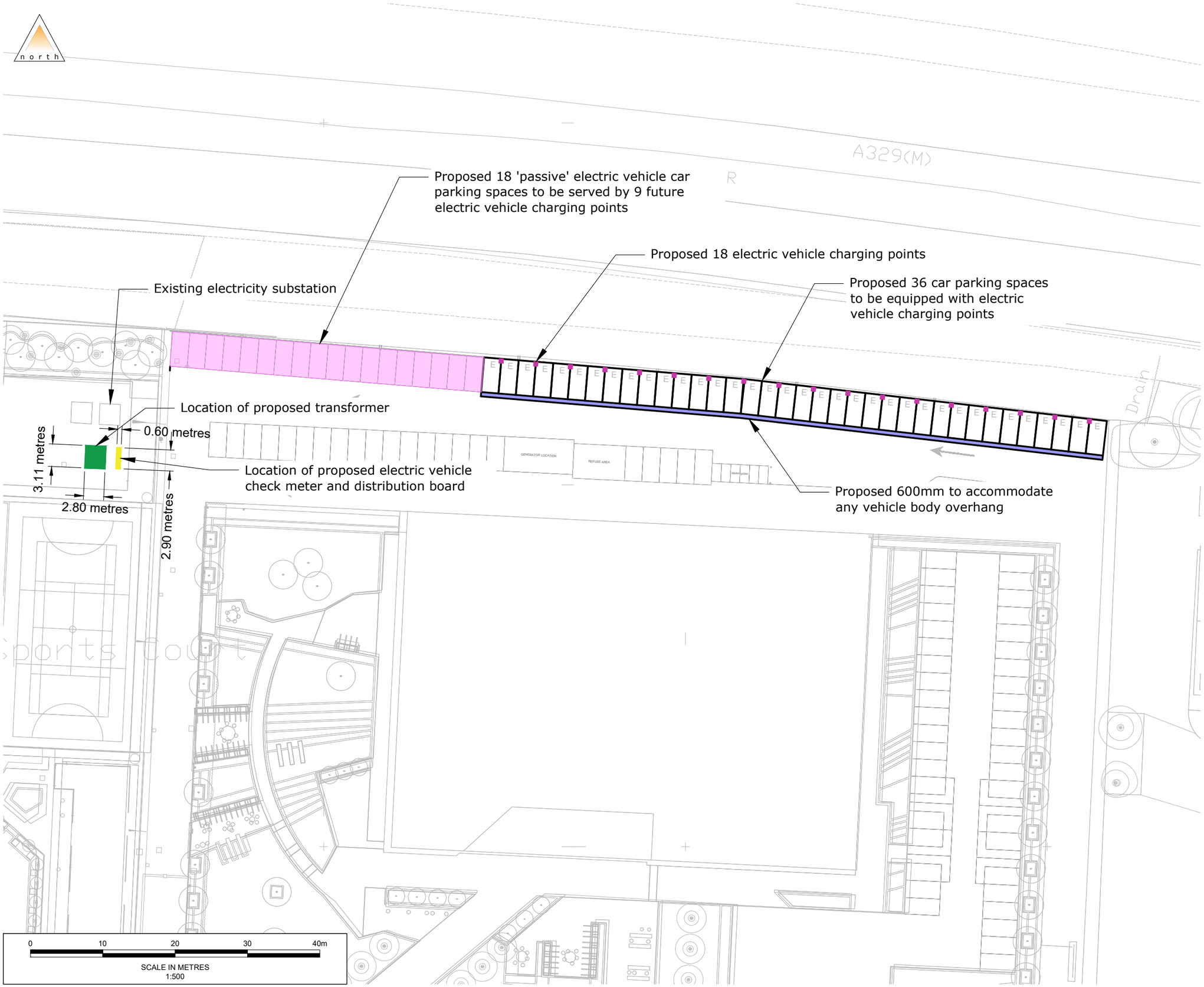
4.2 The site currently forms part of the 1180 Plot and the application area comprises 54 existing car parking spaces to the north of the plot which serve Building 1180 to the south. The development proposals seek to create new electric vehicle charging points on the existing car parking spaces to create up to 54 vehicle charging points (36 active spaces and 18 passive spaces). The electric vehicle charging stations will be accompanied by a new transformer and distribution board to the west of the site.

4.3 In summary, this Technical Note demonstrates that the existing car parking spaces will be retained and the new EV charging points accommodated within the existing parking infrastructure. This Technical Note also demonstrates that the development proposals will not have an adverse impact on local car parking availability within Winnersh Business Park.

4.4 On the basis of the above, it is concluded that there is no reason why the development proposals should be resisted on traffic or transportation grounds.

Appendix A

Proposed Car Parking Arrangement



C:\Users\williammcaney\Motion\StaffSite - Frwi15 2507082\Drawings\2507082-01, 02 & 03.dwg

Notes

1. All levels and dimensions to be checked on site before any work commences. All dimensions in metres unless stated otherwise.
2. This drawing is based on topographical survey information and Motion cannot guarantee the accuracy of the data provided.
3. This drawing is based on OS mapping and Motion cannot guarantee the accuracy of the data.
4. Proposed transformer dimensions have been determined with reference to drawing TR18 SSE prepared by Envico Engineering Ltd.

Legend

- Proposed EV Charging Parking Space
- Proposed EV Charging Points
- Proposed Transformer
- Proposes Electric Vehicle Check Meter and Distribution Board
- Proposed 600mm Buffer
- Proposed Passive EV Spaces

Rev.	Description	Drn	Chk	App	Date
-	First Issue	WMC	PdeJ	PdeJ	03/09/2025

Drawing Status:

FOR PLANNING
NOT FOR CONSTRUCTION

motion
Guildford - Reading - London
www.motion.co.uk

Client:
Winnersh Midco S.A.R.L

Project:
Winnersh Triangle 1180 EV Chargers

Title:
Proposed Parking Arrangements

Scale: 1:500 (@ A3)

Drawing: 2507082-04

Revision: -

Appendix B

Hoare Lea document – Building 1180 EV Charging Scope

HOARE LEA

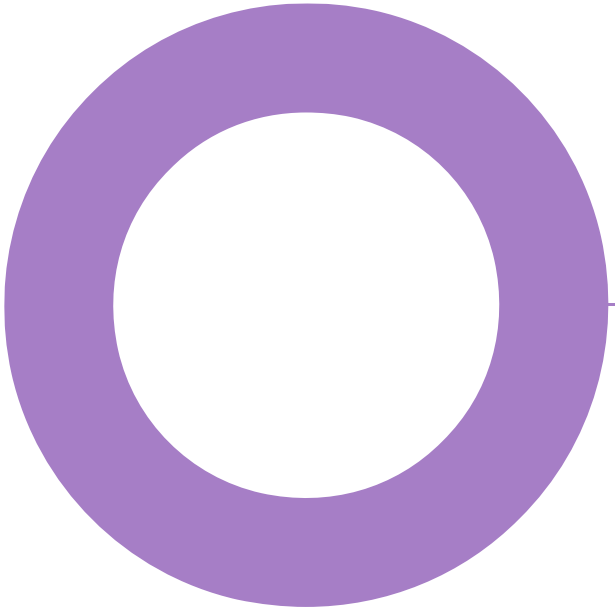
Winnersh 1180.
Wokingham.
Frasers Property UK.

MEP ENGINEERING

EV CHARGING - SCOPE OF WORKS

0710735-HLE-XX-XX-SP-CS-100200

REVISION P02 – 20 JUNE 2025



Audit sheet.

Rev.	Date	Description of change / purpose of issue	Prepared	Reviewed	Authorised
P01	28 May 2025	Tender issue	GR	ML	MB
P02	20 June 2025	Tender Issue – EVC option updated	ML		MB

Project number: 07/10735
Document reference: 0710735-MB-20250528-Winnersh 1180 EV Charging.docx

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1. Background and information.

The 1180 site is located directly off Eskdale Road on the Winnersh Triangle Business Park. As part of providing additional electricity capacity to the park for future developments a 5MVA Supply has been provided from SSE Little Hungerford Primary Substation. The installation from this Point of Connection (PoC) to the SSE was installed by Power-On as an ICP.

A 11kV Ring Main Unit (RMU) has been located on the 1180 as shown on the layout drawings provided as part of the ICP works completed (Green Box noted as "existing electricity substation"). To complete the ICP works, Power-On require to extend the 11kV network by connection to their 11kV cabling in Eskdale Road to the RMU and terminate the cabling.

2. Liaison with the ICP.

As part of the works the tenderer shall include for all liaison and management of the ICP to complete their works, including but not limited to the following:

a. 11kV metering connection points/module
b. Submission and approval of the proposed contractors' work by the ICP including cable type and
c. termination on the load side of the RMU
d. Programming coordination between the site works and the remaining ICP works to minimise disruption to traffic on Eskdale Road and access to the wider 1180 site
e. Connection to the RMU including access to the RMU enclosure and cable duct to the point of termination at the RMU
f. Provision of load site documentation including testing certificates to the ICP prior to the connection and energisation of the supply to the works
g. Location and connection of the MOP 11kV metering equipment

3. Metering.

The works to include the installation of a Meter Operator (MOP) 11kV metering equipment for a rated capacity of not less than 2 MVA. Include the cost of the installation of the MOP metering equipment and confirm the proposed MOP six weeks prior to having to place the order for the metering equipment to the client team for approval.

All works associated with the MOP metering equipment to be included with the tender.

4. Design responsibility.

The contractor shall be responsible for the design of the complete works, including but not limited the following:

a. All BWIC including trenching, bases for transformer and LV cabinet
b. All cable sizing
c. Meeting all requirements of the ICP
d. Meeting all requirements of Pod Point
e. All relevant British Standards
f. The IET wiring regulations

5. HV works.

The contractor shall include for all works required to connect to the ICP RMU and then extend and terminate the 11kV cabling into the cable terminations on the primary side of the 11kV/400V transformer. The cable capacity to be rated at the transformer capacity plus 20% and take into consideration the ground conditions and installation method of the cabling.

The cabling type and proposed terminations into the ICP RMU to meet the requirements of the host ICP.

6. 11kV/400V transformer and earthing.

Install a 500 kVA Tier 2 11kV 400V 3 phase 50Hz aluminium wound oil cooled ONAN distribution transformer in a free-breathing tank.

Transformer to include an off-circuit tap switch to give HV variations of +/- 2.5% & 5% and plus 7.5% and be pad lockable. See appendix A and B for transformer schedule and quotation.

A provisional order has been placed with Bowers Electrical Limited to hold the 500 kVA transformer detailed within the Appendix B quotation. The tender to liaise with Bowers and include within their tender the full cost of the supply and installation of the 500 kVA transformer and all required associated equipment to meet in full the requirements of this specification.

The contractor shall include for all earthing pits/mesh and testing points on both the HV and LV side and incorporate these within the footprint of the base for the encloser for the transformer. The transformer shall be earthed using a TN-S earthing system, as per the requirements of BS 7671 (IET Wiring Regulations). A dedicated earthing electrode shall be installed for the transformer to ensure effective grounding. Soil resistivity should be assessed prior to installation, as it can significantly affect the performance of the earthing system.

7. BWIC and enclosures.

The contractor to provide a full set of BWIC drawings including but not limited to cover the following aspects:

a. Base for transformer and its housing showing all cable routing and ducts on both the LV and HV side
b. Earthing provisions on both the HV and LV side
c. Base for the LV distribution cabinet including cable entry ducts and routes
d. All cable routes and trenches.
e. Bases and cable ducting for each EVC point

All cable routes to be formed including routing to minimise any potential damage to tree roots. As part of the early stage works, contactor to explore all cabling routes in order to identify any potential risk to tree roots so that these can be exposed and options discussed and agreed with the landscape architect in order to “prove” the proposed cable routes to be details on the BWIC drawings.

All cable trenches to be hand dug and formed where in the “soft” surface and cables laid direct and back filled with sand to a minimum of 300mm above the cable(s). All cables to be laid at a depth of 600mm or more, where this is identified as a potential impact on tree roots a minimum depth can be reduced to 400mm, with concreate cable tiles and warning tape laid on top of the sand bedding below the topsoil.

A Green enclosure to match the existing ICP enclosure, sized to suit the enclosed equipment and with personnel doors located such as to provide suitable access to inspect and maintain the enclosed equipment. Enclosure to be provided with lifting eyes to allow the complete enclosure to be removed by a crane.

The above enclosure to be fixed securely to the base and be provided with suitable locking system with six sets of keys to be handed over on completion, together with the security codes for the keys to allow further keys to be cut in the future.

8. LV cabinet, distribution and metering.

An 800A ACB mounted on the transformer to be installed and initially set to 600A. From the ACB cabling to be extended to the LV Cabinet and terminated into 600A isolator.

A feeder pillar with 18ways with 20% spare capacity to be installed with LV metering to record complete EVC use (total for all EVC points). The twin 7kW EVC points to each be provided with two 32A rated three phase and neutral cables, with separate full-size CPC (or five core cable with suitable core colours) and protected by two separate 32A rated MCCBs (each EVC point has two 7kW ports, to be wired as a separate cable and MCB/RCD for each 7kW port). MCB/RCD 3phase 32A to be used for the installation to the EVC points,

All LV cables to be LSF/SWA/XPLE. All cables are to be sized to achieve a maximum 1.5% voltage drop (from the transformer secondary terminals to each EVC point).

An additional feeder pillar to be installed as an option for future EV provision. The ACB rating should be adjusted as required for the latest EVC Capacity.

Containment / Cable routing

Provide cost options for cable routes and containment from the feeder pillar to the EVC

Option 1: Above Ground

Provide cable containment from the feeder pillar routed above ground along the rear boundary of the car park. The containment to run vertically on supports at the rear of the curb. Containment is to be provided with fixed lid with security screws along its length.

All cables are to be supported with metal supports along the length.

Option 2: Within below ground ducts

Provide below ground ducts from the feeder pillar along the rear boundary of the car park to each EVC location. Ensure all ducts are coordinated with existing below ground services.

9. EVC companies

The preferred manufacturers/providers for the electric vehicle charging system are:

- Pod Point
- RAW

For tendering provide cost options from both manufacturers to provide the charging points and charge management systems.

10. Liaison with EVC provider.

All cabling, protective equipment being proposed to be approved by the chosen EVC manufacturer/installer at working drawing stage. The chosen EVC company will install the chargers themselves from the cabling and electrical distribution equipment installed to each EVC point.

The tenderer to include for all liaison and approvals by the EVC company, which includes all technical details of the installation and the physical arrangement at each EVC point. All requirements for the EVC installation to be included within the tender to meet the EVC companies full requirements.

See Appendix C for Pod Point installation requirements, & Appendix D for RAW installation requirements.

11. Management of the works.

The contractor's team to include the following key elements for the management of the works

a. HV specialist
b. Electrical Design manager to oversee the production of all technical information and approvals from both the ICP and Pod Point
c. BWIC liaison to confirm cable routes following on site testing for tree roots
d. Commissioning engineers for both the HV and LV elements
e. Project manager

12. Record Information.

A full set of record information to be issued in both electronic and hard copy form (two copies) with all drawings in both PDF and DWG format. The record information to include a minimum of the following:

a. Layout drawing(s) with coordinates for all equipment and cable routes.
b. All cable routes to be noted in detail to state the depth, cover and installation method (direct laid or in ducts with duct details)
c. Full details of the routes, access points and draw ropes for the spare ducts
d. All testing and commissioning corticates
e. Handover documents signed by the ICP
f. Handover documents signed by Pod Point

13. Testing and commissioning.

The HV installation testing to be carried out to the ICPs requirements and arrange such that both the client's technical representation and the ICP have a minimum of two week notice so they can attend the testing on site of the HV works.

The transformer to be set up on site at its 0% tapping and to be tested at the LV cabinet and each EVC point to demonstrate the voltage and the no load losses of the transformer.

A NICEIC certificate to be issued with full test results for the complete LV installation.

Appendix A – Transformer schedule.

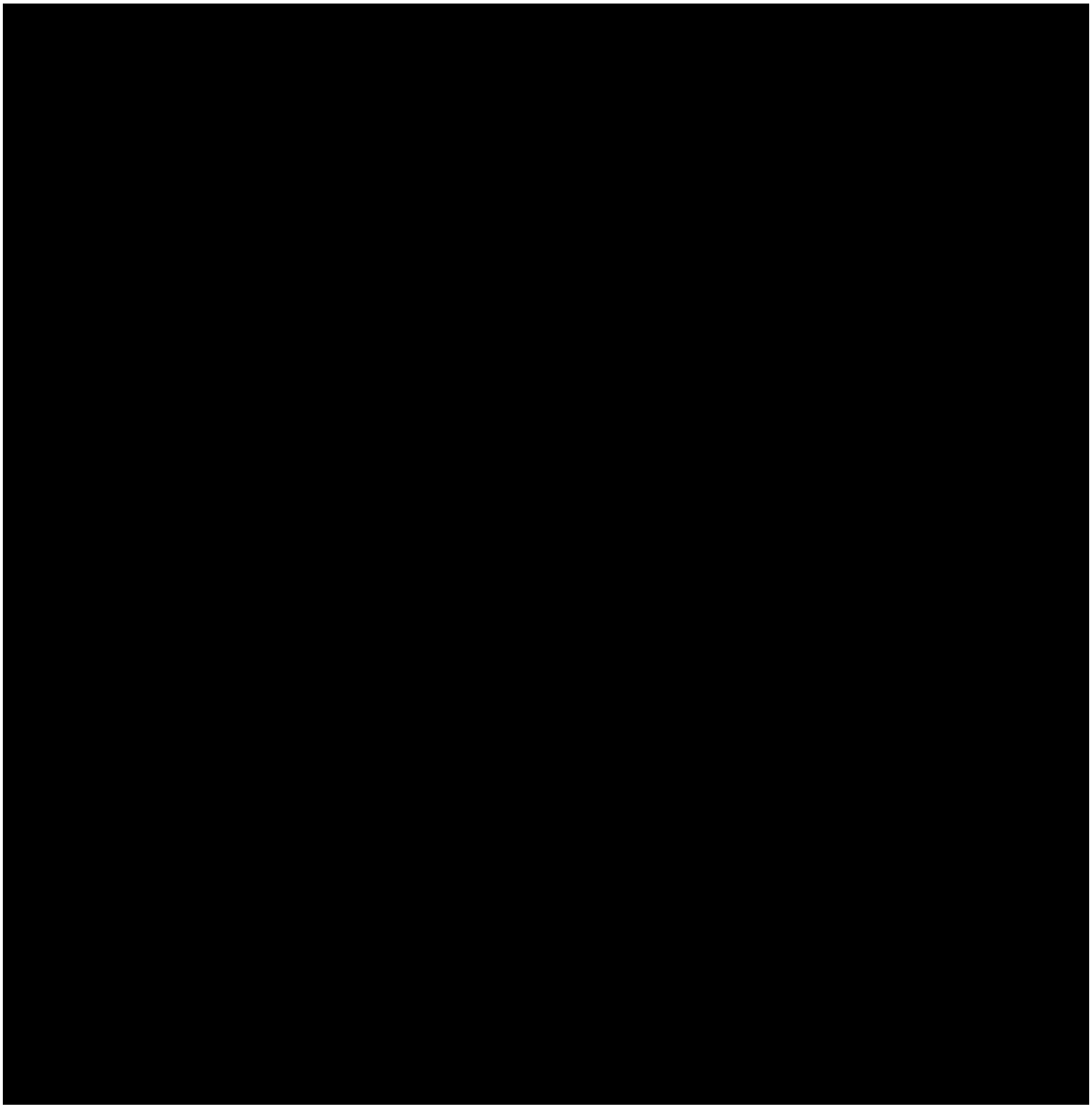
PROJECT NAME	SYSTEM
Winnersh 1180	EV Charging
HL PROJECT NUMBER	**CLASSIFICATION**
07/10735	

GENERAL	Units					
Unit reference		TX-1				
Type reference		TX				
Class to EU Regulation no.548/2014		Tier 2				
Location		TX Enclosure				
Indoor / Outdoor		Outdoor				
IP rating		IP54				
Rating	kVA	500				
Mounting arrangement						
Paint colour						

ELECTRICAL CHARACTERISTICS	Units					
Primary system fault capacity	MVA	250				
Impedance	%	4.75				
Full load loss Pk (BS 7844-1)	W	3900				
No load loss Po (BS 7844-1)	W	459				
Electrical power for cooling at no load	W	0				
Efficiency at 50% load and pf 1.0	%	99.45				
Peak efficiency index	%	99.51				

CONNECTIONS	Units					
HV cable termination type		Cable - enclosure				
HV cable termination entry		Bottom				
HV cable material		Copper				
HV cable size	mm^2	185				
LV termination type		Cable - enclosure				
Number of LV cables		3 per phase				
Number of LV cable cores		1				
LV cables material		Copper				
LV termination cable size	mm^2	400				
Transformer mounted HV RMU / Disconnector / switchgear?		No				

Appendix B – Transformer quotation.



pod POINT

Twin Charger

Enabling Works Requirements

7kW - External Environment

PP-D-Com-FC-031-8

Legal Notice

Pod Point is not responsible for installation and/or commissioning works performed by a 3rd party

In the absence of any negligence or other breach of duty by Pod Point, Pod Point is not responsible for any injury, loss or damage caused by any works, services, products or equipment provided or performed by the customer or a third party (and not by Pod Point or a party for which it is responsible) in relation to the installation and/or commissioning of the Twin Charger.

If the installation and/or commissioning of the charger is not performed by Pod Point, it is the customer's responsibility to ensure that any third party appointed to install and/or commission the Twin Charger is appropriately qualified and does so in compliance with all applicable regulations and with reference to the guidance provided in this document (and associated documents linked within). Pod Point provides this guidance as a reference only and it is not a substitute for the appointment of competent persons to carry out installation and commissioning.

Do not open, move, modify, rewire, tamper or interfere with your Twin Charger once it has been installed.

The customer must ensure that an installed Twin Charger. is not opened, moved, modified, re-wired, or otherwise tampered or interfered with, without first referring to Pod Point's latest technical guides and/or notifying Pod Point directly and complying with Pod Point's recommendations.

Please also see the charger's applicable warranty terms which may be affected by taking such action. If you have any concerns in relation to a Pod Point that has already been opened, moved, re-wired or otherwise has been tampered or interfered with, please notify Pod Point directly so that appropriate advice can be provided, noting that Pod Point assumes no responsibility for your installation by virtue of providing such advice.

In the absence of any negligence or other breach of duty by Pod Point, Pod Point is not responsible for injury, loss or damage caused by the Twin Charger being opened, moved, modified, re-wired or otherwise tampered or interfered with by the customer or a third party (and not by Pod Point or a party for which it is responsible).

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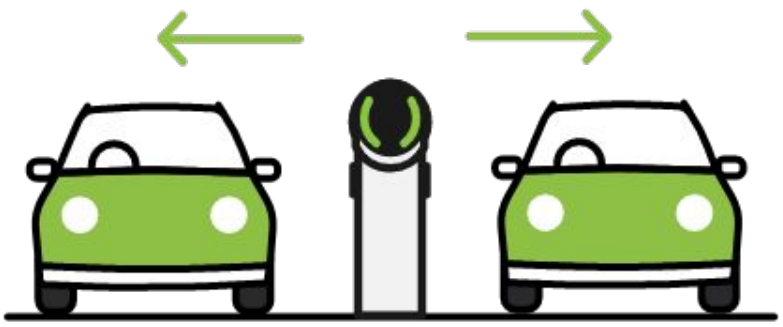


Intro

Pod Point 7kW Twin Chargers are a dual-socket electric vehicle charger with two single-phase universal sockets. These should only be installed by competent electricians, with knowledge on EV chargers. All installations must be compliant with current regulations, BS7671.

This document provides guidance on the Enabling Works Requirements in preparation for Pod Point attending to fix and commission commercial 7kW Twin Charger (T7-S-06-ABA-BLK or T7-S-06-ABC-BLK) installed externally on a dedicated poly-phase or single-phase supply.

Responsibilities

This guidance should be read and followed by installers undertaking the enabling works in preparation for Pod Point`s attendance. Evidence of completed enabling works must be provided to your allocated Pod Point Project Manager for review prior to requesting an installation date.

Failure to confirm that the works are fully completed may result in Pod Point's attendance being delayed, and in some circumstances rectification works being required prior to the system being commissioned.

1 Power capacity

Customer is responsible for ensuring there is sufficient power capacity.

2 Cabling

Customer is responsible for all Civil works and the installation of all cabling.

3 Circuit protection

Customer is responsible for the installation of all circuit protection.

4 Earthing

Customer is responsible for installing the Earthing hardware to latest regulatory standards.

5 Fix & commission

Pod Point is responsible for the fixing and commissioning of chargepoints on-site.

Related Documents

This document should be read in conjunction with the following documents:

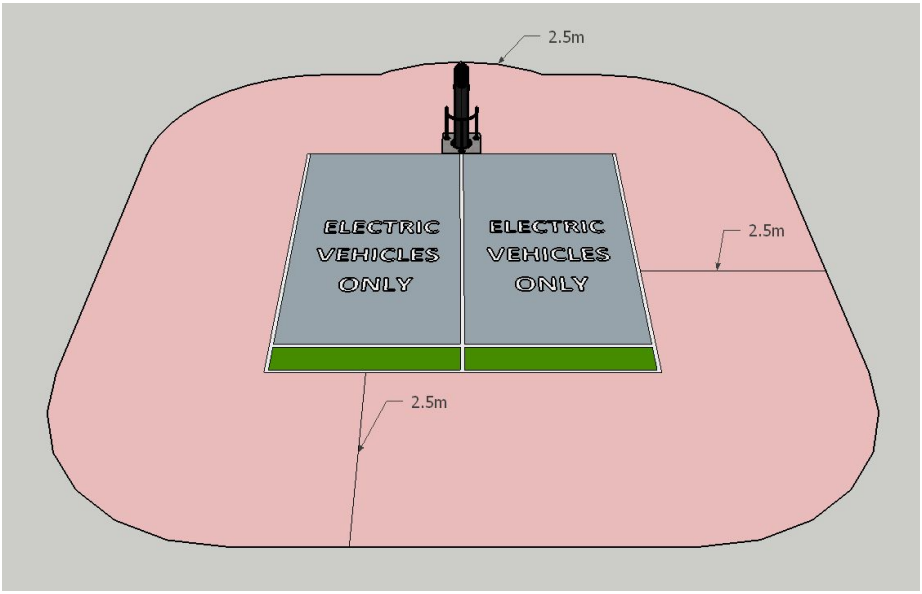
- Pod Point Twin Charger Install Guide https://pod-point.com/technical/installation
- Pod Point Twin Charger Datasheet https://pod-point.com/technical/hardware
- Pod Point Twin Mount Guard https://pod-point.com/technical/hardware
- Pod Point Twin Charger User Guide https://pod-point.com/technical/hardware

EV charger proposed location:

The optimal Twin Charger location should be between the two dedicated EV charging bays, ensuring 300mm spare space available behind the chargepoint base (away from any wall or obstacle) for final connection and to allow access for maintenance through the back door of the chargepoint.

The Twin Charger, its signage, or charging cables when in use, should not obstruct the pavement. Under no circumstances should the width of a public footway be restricted to less than 1.2m, to allow suitable access for wheelchair users.

Where possible, there should be no other electrical equipment such as lamp posts, powered bollards or gates etc within a 2.5m radius of the charger or intended bay.

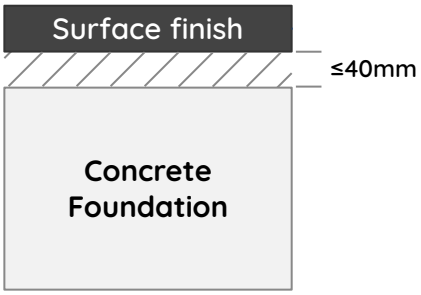


If the charger and bay cannot be distanced 2.5m from other electrical equipment, they must share an earthing system. Please refer to the Earthing section for more information. If you are unsure what does or doesn't apply for this 2.5m rule, please contact your Pod Point Project Manager.

Mounting Surface

The Twin Charger must be installed on a concrete foundation, if a finished tarmac or block paving surface is required then a concrete foundation **must** be in place directly underneath those surface finishes. The concrete foundation underneath the chosen surface must be within 40mm of the underside of the chosen surface.

All mounting surfaces **must be flush and level.**

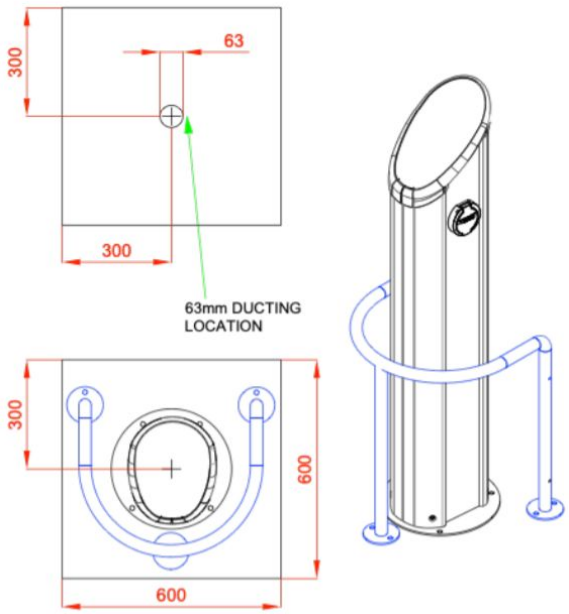


The finishing surface must be completed and surface type highlighted to the assigned Project Manager prior to Pod Point's attendance to ensure the correct fixing kit is selected.

Concrete Foundation

The concrete base should be constructed to the following specifications:

- The base should be a minimum of 600mm x 600mm x 400mm (WxLxD).
- The foundation must have a flush and levelled surface finish.
- Non reinforced concrete must be used.
- Cable ducting must run directly to the centre of the foundation.



⚠ Off-centre ducting can cause issues when positioning the charger and guard rail.

Cable Entry

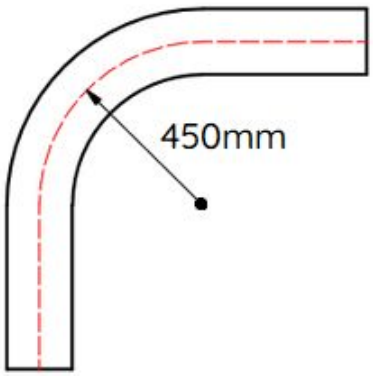
The Twin Charger Mounting plate has a central hole capable of accommodating the duct sizes mentioned below.

Pod Point require a minimum of **1.5m of spare cable** to be left coiled up above ground level to ensure successful termination.

Supply Cable Duct

When selecting the appropriate cable ducting, the following design rules apply:

- Cable Duct sizes should be calculated to a 50% fill factor and be within the tolerances listed below.
- Ducting from the supply point to the charger should be a twin wall duct for the entirety of its length. Single wall ducting is not acceptable.
- Ducting should be black in colour.
- The ducting should terminate directly to the centre of the chargepoint's concrete foundation for cable entry to the charger from below.
- The recommended minimum depth of ducting under footways is 450mm below ground level, except for carriageways where the depth should be at least 600mm.
- The recommended minimum twin wall duct outside diameter is 63mm which should be adequate for the cable size running through.
- There is a maximum duct size constraint of 110mm outside diameter to the concrete foundation.
- All ducting should have a minimum bend radius of 450mm.



Power Capacity & Circuit Protection

Power Capacity

Pod Point Twin Charger has 2 x 7kW sockets capable of supplying power to two electric vehicles simultaneously.

Power can be provided from either;

- **Three-phase supply (32A on two phases)** or
- **Single-phase supply (64A on one phase)**, per charger.

It is the customer's responsibility to ensure that there is constant dedicated capacity on the metered supply for the proposed chargepoints with no diversity applied to the chargepoint. (Reference regulation BS7671 - section 722.311)

Assessment of available power capacity should be undertaken by a qualified electrician and evidence should be provided to Pod Point.

Circuit Protection

Circuit protection must be installed in alignment with current BS7671 regulations. Under Pod Point's Fix & Commission installation terms, Pod Point require a minimum **40A rated overcurrent protection** to be installed for the 7kW Twin Charger circuits.

Three-phase supply	Single-phase supply
1 x C40 Double Pole 10kA MCB **or** 1 x C40 Triple Pole 10kA MCB (using 2-pole)	1 x C80 Single Pole 10kA MCCB **or** 1 x C63 Single Pole 10KA MCB

Caution:

1) For safety reasons, on a three-phase supply with a common neutral (option 1 page 9) Live conductors must be switched together. The use of 2 x single pole MCBs is prohibited
2) A single overcurrent protective device cannot supply power to multiple Twin chargers..
3) "B" curve MCBs and devices rated at 32A or below will not be accepted unless the charger has been de-rated to a power less than 7kW. Please consult with your project manager if this is the case.

Surge Protection

It is the customer's responsibility to consider appropriate surge protection for the Twin Chargers and determine whether a Surge Protection Device (SPD) should be installed.

Earth leakage protection

Each socket on the Twin Charger has a 30mA type "A" resettable RCD (earth leakage protection) device built in.

Additional RCD's will be required within the supply circuit if the Twin Charger is installed using a TT earthing system.

Electrical Supply Cable

Below is a table outlining the possible supply cable setups for the Twin Charger. All conductors should be identified by standard colours where possible.

Option 1	Option 2	Option 3	Option 4
1 x Poly-phase Circuit Single Cable Installation	**1 x Single-phase circuit** Single Cable Installation	**2 x Single-phase circuit** Dual cable installation	**2 x Single-phase circuit** Single Cable Installation
1 x 5 core SWA Cable (L1+L2+L3+N+E)	**1 x 3 core SWA Cable** (L+N+E)	**2 x 3 core SWA Cable** (L+N+E)	**1 x 5 core SWA Cable** (L1+N+L1+N+E)
Cable sizes to be calculated based on cable length and reference method for a 40A supply.	Cable sizes to be calculated based on cable length and reference method for a 63A or 80A supply depending on circuit protective device chosen.	Cable sizes to be calculated based on cable length and reference method for a 40A supply.	Cable sizes to be calculated based on cable length and reference method for a 40A supply.

A separate dedicated Circuit Protective Conductor (earth) is acceptable for both cases, but must be sized in accordance with total prospective fault current i.e. for a **1 x 3 core SWA cable**, we will accept **1 x 2 core + earth**.

⚠ Dual Supply Labelling

Where a dual supply has been installed to the Twin Charger (from separate MCBs) a prominent warning label must be displayed - please let your project manager know when you are considering the use of two separate supplies to the Twin Charger.

Cable Sizing

The customer is responsible for producing their own cable calculations in alignment with the latest version of the IET wiring regulations (BS7671).

When sizing your cabling please consider:

- Cable routes where multiple cables are sharing a duct as this could affect current carrying capacity.
- The maximum cable size that can be terminated into the chargepoint is 25mm^2. For any installation where a greater cable size is required after cable calculations are completed, the customer is advised to consult with the assigned project manager.
- All power cables must include a CPC (dedicated protective earthing conductor). SWA armouring will not be accepted as a means of adequate CPC.
- Maximum earth fault loop impedance (Zs) values of overcurrent protective devices.

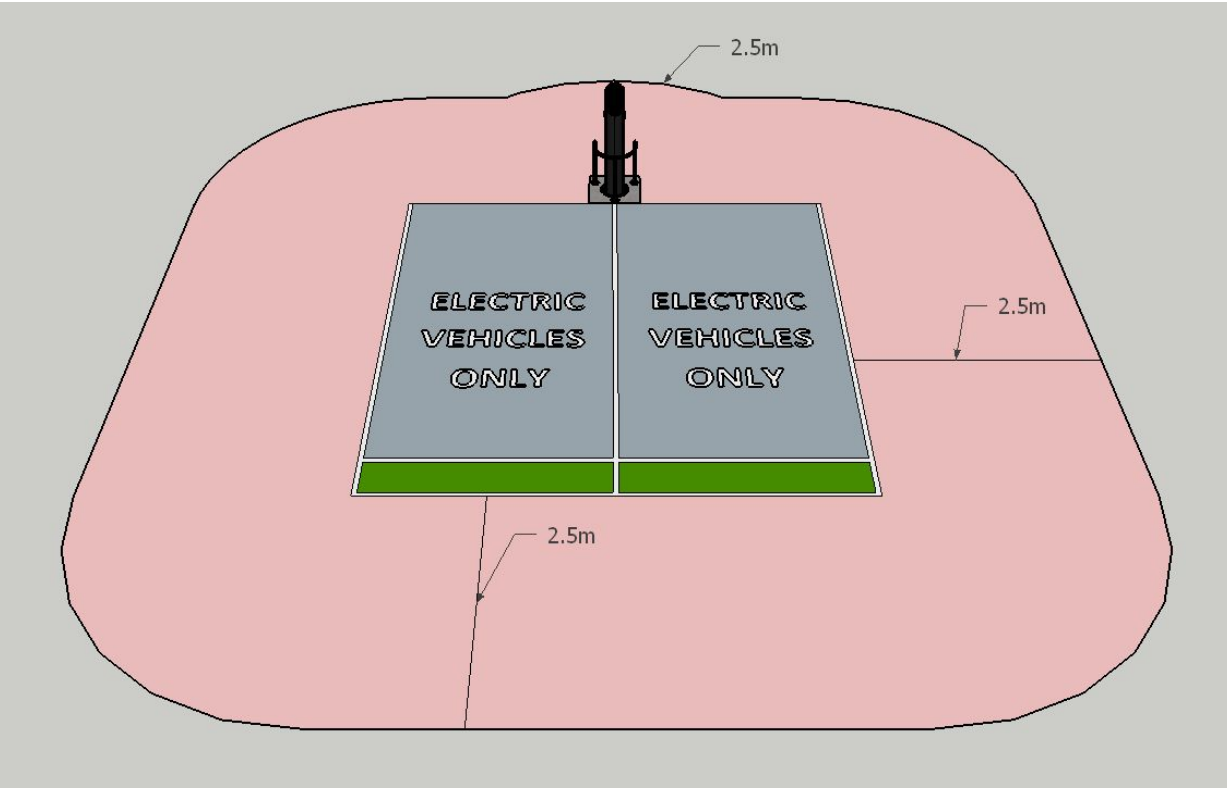
Considering Equipotential Zones - Touch distance:

Electric vehicle chargers must be installed to current BS7671 regulations and in line with the IET Electric Vehicle Charging Equipment Installation Code of Practice.

This requires the Twin Charger to be installed in a location that ensures that both the exposed conductive parts of this equipment and the vehicle on charge **are at least 2.5m** from any extraneous or exposed conductive parts that are connected to a different earthing system.

The customer is to complete a risk assessment ensuring that the risks of simultaneous contact with electrical installations connected to different earthing systems, including other street furniture with PME earthing, are minimized.

Examples of acceptable risk assessments can be found within the IET Electric Vehicle Charging Equipment Installation Code of Practice.



If equipment such as lamp posts, bollards, powered gates, metal clad or steel frame buildings etc. are within touch distance (2.5m) then the chargepoint must be connected to the same earthing system.

Planned Earthing Arrangement:

After completing an assessment on touch distances, the customer is to confirm the planned site earthing arrangements for the chargepoints to the assigned Project Manager

TN-C-S (PME) Earthing - Recommended

Pod Point Twin Chargers have built-in PME fault protection which allows the charger to be connected to a PME earthing system. If the Twin Charger forms part of an Array system, further guidance is required.

TN-S Earthing

Pod Point Twin Chargers can be safely connected to a TN-S earthing system. If the Twin Charger forms part of an Array system, further guidance is required.

TT Earthing

Pod Point Twin Chargers can be connected to a TT earthing system, however it is not recommended that a TT earthing system is introduced unless it cannot be avoided. For example where an existing install is connected to a TT earth, a TN-S or TN-C-S earthing system is not available or a simultaneous contact risk assessment has indicated that a TT earth is required.

There are 2 scenarios of a TT earthing system - In both cases the customer is required to complete a simultaneous contact risk assessment, to ensure there are no different earthing systems within 2.5m of the charger and vehicle parking bay.

Where a TT earthing system has been adopted, a suitably rated 100mA-300mA time delayed RCD must be installed at the source of supply, inline with the overcurrent device (MCB/MCCB).

Whole Installation TT earthing

This applies where the existing installation is connected to a TT earth or where a new supply has been provided remotely from the charger location and is utilising a TT earthing arrangement (earth electrode installed at source of supply). The earthing must be distributed downstream to the charging units via a dedicated CPC (circuit protective conductor) within the cable.

Local TT earthing

This applies where an earth electrode is installed locally to the Twin Charger. The CPC within the supply cable and the earthed armour will be isolated at point of entry to the charger, and the Twin Charger is connected directly to the TT earth electrode. The earth electrode must be installed next to the chargepoint's foundation (within 5m).

TT RCD Requirements

Where a TT earthing system has been adopted, a suitably rated 100mA-300mA time delayed RCD shall be installed at the source of supply, inline with the overcurrent device (MCB/MCCB).

Where a single circuit has been opted to supply both charging doors, the RCD must be type "B". Where individual circuits are supplying each door, 2 x type "A" RCDs are acceptable.

Any additional upstream RCDs must be type "B".

See table below for RCD requirements for different cabling options.

Option 1	Option 2	Option 3
1 x Poly-phase Circuit Single Cable Installation	**1 x Single-phase circuit** Single Cable Installation	**2 x Single-phase circuit** Dual cable installation
1 x 5 core SWA Cable (L1+L2+L3+N+E)	**1 x 3 core SWA Cable** (L+N+E)	**2 x 3 core SWA Cable** (L+N+E)
1 x C40 DP or TP MCB + 1 x 4 Pole 100ma-300ma time delayed type "B" RCD 	1 x C40 DP or TP MCB + 1 x 4 Pole 100ma-300ma time delayed type "B" RCD 	2 x C40 SP MCB + 2 x 2 Pole 100ma-300ma time delayed type "A" RCD 

TT Earth electrode requirements

Any earth electrodes must be mechanically protected by the use of an earth pit, with the correct clamp that allows a crimped termination to be made.

The following design rules apply:

- Earth reading must be **under 100 Ohms.**
- 16mm^2 sheathed green/yellow earthing cables should be connected between the earth rod and either the feeder pillar main earthing terminal (Whole System TT earthing arrangement), or the chargepoint (local TT earthing arrangement).
- Earthing cables can be run in the same duct as supply cables.
- Where a separate earth cable duct (50mm sized twin wall) is to be installed, the entirety of the run must be enclosed within a duct.
- Protection against corrosion must also be provided by using a suitable conductive grease on the electrode connection.

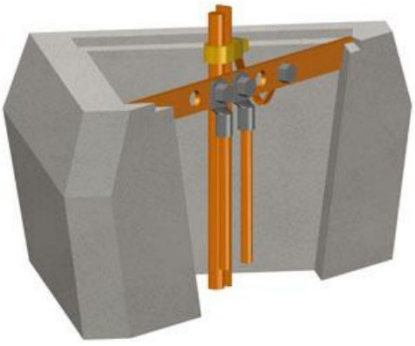
Earthing Pit

Earthing pits should be designed and installed following the guidance in BS7671:

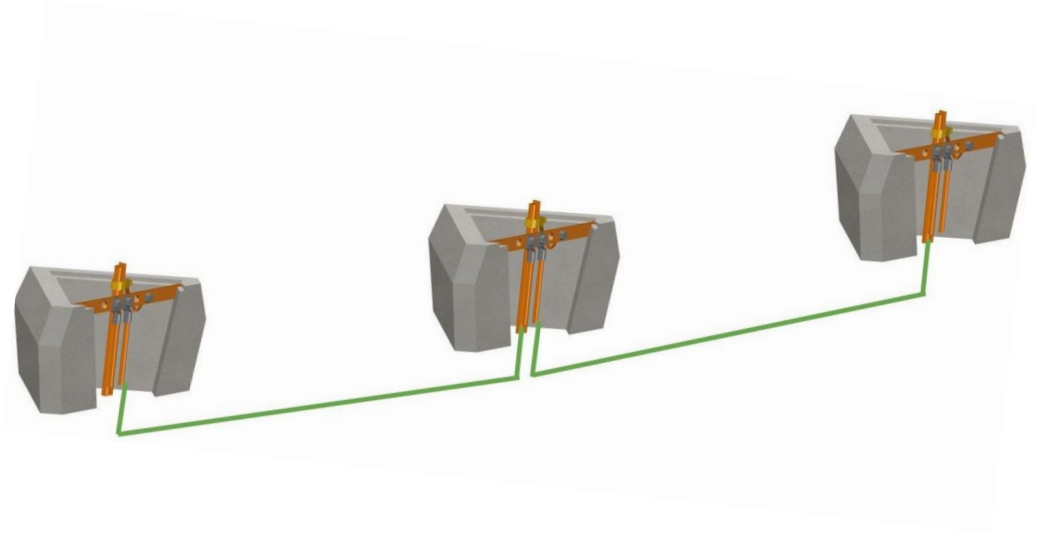
- The earth pit should be free draining.
- The earth cable should be ducted into the pit.
- The cable connection should be crimped and taped.
- The connection should be protected against corrosion.
- The connection should be labelled correctly.

Multiple chargepoints/equipment on locally shared TT earthing

If a single earth electrode is serving multiple chargers or equipment, an earth bar is to be installed to allow multiple lugged cable connections. The earth bar shall be installed diagonally in the pit to allow for an easier and more secure termination.



Where multiple earth pits and rods have been installed, and the earthed equipment and the EV dedicated bays are within touch distance (2.5m), **the earth rods must be linked together**.



Communication

Communication with Smart Reporting system

Pod Point commercial chargepoints are required to communicate with the Smart Reporting system at all times, through an available 3G or accessible Wi-Fi signal to reach the charger's location. Chargepoints that do not communicate cannot be warrantied.

External with 3G/4G signal

Where chargepoints are installed outdoors with available 3G signal, Pod Point will supply a suitable amount of chargers to the site with inbuilt 3G routers.

Up to 3 Twin Chargers can connect to the same 3G router providing they are in adjacent parking bays and the signal is not interfered with by any obstructions such as concrete pillars.

Pod Point should be consulted if one router is to be used for multiple chargers to connect to.

External with Wi-Fi signal

Customers should provide an external accessible Wi-Fi communication signal to reach each chargepoint. Passwords must be shared with the Pod Point Project Manager and Pod Point must be informed of password changes to avoid drop-out in service.

You can find our Wi-Fi connection guide here: https://pod-point.com/technical/installation

The following requirements must be met if using a Wi-Fi connection setup.

- 2.4Ghz frequency
- **Not** a public network requiring login/email confirmation
- **Not** a network with a regularly changing password,
- **Not** a network with additional security features,
- The name of the Wi-Fi profile (SSID) should be **less than** 10 characters.

The customer is to confirm the proposed chargepoint(s) location(s) and accessible signal availability (3G/4G or Wi-Fi signal) to the appointed project manager. The customer must take responsibility for any cost and revisits related to signal coverage issues.

Completion Confirmation & Evidence

Enabling Works Completion Evidence

The customer must provide evidence of the completed enabling works prior to Pod Point allocating any labour resources or install dates being provided.

Please inform your Pod Point Project Manager if there are any reasons as to why you may be unable to provide the evidence of completed enabling works upfront and - due to strict handover dates or site requirements - need to set a date for Pod Point to attend.

We may be able to provide you with a preliminary installation date, but be aware that we still require all evidence to be submitted no later than 14 working days prior to the preliminary date given. If the site's readiness cannot be verified within this time, then any allocated labour resources will be automatically reassigned.

To reduce any potential delays on-site, your allocated Pod Point Project Manager will review the **Photographs and Electrical Installation Certificate (EIC)** sent to them to confirm that the enabling works have been completed to specification.

If needed, they will advise on any required rectifications or amendments and assist as much as possible to get the site ready for the engineer(s) to attend.

Electrical Installation Certificate (EIC)

The customer is to provide an EIC for the installed supply circuits containing all supply details and test results which will verify that the installed circuits are safe to connect to. In order to satisfy live testing requirements, temporary termination of the newly installed circuit may be required. This can be achieved by means of using a suitable weatherproof enclosure as seen in the image below. Failure to provide an EIC prior to Pod Point's installation visit could result in delay of install.

Photographs

All photos sent must be clear (high resolution) and include close ups of equipment and wide shots of areas. Blurry pictures will not be accepted as Pod Point must be able to identify the specific equipment installed. Please check the Examples of Acceptable Enabling Works (pg. 20) for example of photographs required:

Installation Hardware

- ❑ Close up of upstream circuit protective device installed (fuses/switchfuse/MCCB/MCB/SPD).
- ❑ Wide angle of supply distribution board prepared, cables connected supply end.
- ❑ Close range of earthing hardware installed (if required).
- ❑ Cable management system installed towards chargepoints (trunking, tray work).
- ❑ If TT earthing system: type “B” time delayed RCD (at supply source) and earthing rod installed.
- ❑ If TN-C-S (PME) or TN-S earthing system: No additional photos required.

Chargepoint locations

- ❑ Concrete foundations with centrally located ducting with finishing surface completed.
- ❑ Min. 1.5m spare cable left coiled up above finishing ground surface and terminated into an adaptable box.
- ❑ Wide angle of proposed EV charging bays shown.

Checklist

The checklist below can be used to ensure all Installation and Evidence activities have been completed.

Installation

- ❑ Ensure sufficient dedicated capacity for the proposed chargepoint(s) with no diversity applied to the EVCP.
- ❑ Correct circuit protection installed (functionality verified).
- ❑ Earthing hardware installed (if required):
  - ❑ If TN-C-S(PME) or TN-S earthing: No additional earthing hardware required,
  - ❑ If TT earthing system: type “B” time delayed RCD (at supply source) and earthing rod installed.
- ❑ All civil works completed with sufficient sized ducting to the centre of the suitable, levelled concrete base (600mm x 600mm x 400mm).
- ❑ Correct sized cabling installed (verified with cable calculation), connected at the supply end.
- ❑ Min. 1.5m cable left coiled up above finished surface at proposed charger location and terminated into an adaptable box.

Confirmation and Evidence

- ❑ Share a site plan/drawings with chargepoint locations and confirm the configuration.
- ❑ Confirm planned earthing arrangement and complete assessment for any exposed earthed metal structure within touch distance (2.5m) from proposed EV charger(s) and the boundaries of the dedicated EV charging bays.
- ❑ Confirm chargepoint locations has accessible signal availability (3G/4G or Wi-Fi signal).
- ❑ Provide an Electrical Installation Certificate for the installed circuits.
- ❑ Provide photographic evidence of installed circuit protections, cabling, proposed chargepoint base locations with cabling in place.
- ❑ Confirm to the appointed Pod Point Project Manager that the above responsibilities have been completed in full prior to requesting Pod Point`s attendance to fix and commission the Twin Chargers.

Pod Point Information

Key Pod Point Responsibilities

- Pod Point to notify the customer of the proposed shutdown time for the relevant distribution board (if required).
- Pod Point to install the Twin Charger using surface mount plate between the relevant car parking bays with guard rail protection.
- Pod Point to use the existing cables to connect the chargepoint (charger end only).
- Pod Point to use the existing circuit breaker.
- Pod Point to complete functional testing.
- Pod Point to commission chargepoint.
- Pod Point to complete Minor Works Certificate.
- Pod Point to conduct site handover.

Contact Us

Please contact the project manager assigned to your order with any questions. If you are unclear who your Pod Point Project Manager is please email us quoting the Pod Point quotation number (found in the top left of your Pod Point Quote).

Enquiries@pod-point.com

www.pod-point.com

Company details

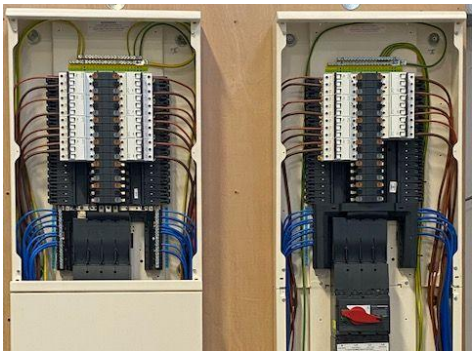
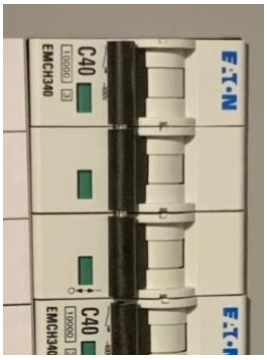
Pod Point Limited, Registered in England, no: 6851754

Registered Office

Ground Floor,
Discovery House,
28-42 Banner St,
London
EC1Y 8QE

Photograph Examples

Circuit protection:

Configuration	TP MCB	DP MCB	SP MCB
			

Chargepoint location:




pod POINT

Appendix D – RAW EVC details.

ELECTRIC VEHICLE (EV) SITE PREPARATION GUIDE

CP6000 – Dual Port – Pedestal and Wall Mounted (External)

Whilst RAW Charging offers a full turnkey design and installation service on every project, integrating with contractors in new build and refurbishment developments at a stage that best suits you are key when delivering multiple refurbishment projects.

The following document serves as a guide for how 3rd party contract teams can utilise their own resources in qualifying and preparing a site for RAW Charging's install partners to bolt down and commission charging stations thereafter.

The information will provide the details and requirements of the minimum standards and expectations of work related to EV charger installation services. In addition to the information provided in this document, all installation teams are directed and instructed to review and reference the relevant ChargePoint installations guides and site ready guides that are most relevant for each piece of ChargePoint hardware.

There is a checklist and sign-off at the bottom of this document that needs to be completed and returned to RAW Charging prior to the installation being confirmed. Any failure to suitably complete the site preparation works which leads to our installation partners requiring a re-visit could incur additional costs.

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- Site Connection Size/Rating 3
- Load Study 3
- Cable Calculations 4
- Harmonics & PF correction 4
- Labelling & Identification 4
- Datasheet & Circuit Protection 4

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Please note writing in:

Purple relates specifically to wall-mounted units

Green relates specifically to pedestal-mounted units

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Layouts & Positioning

Electric Vehicle Charging Point (EVCP)'s must be positioned in order not to block:

- Existing footpaths
- Access and egress routes
- Emergency escape routes

If situated on an existing footpath, to allow for wheelchairs to pass, there must still be a minimum width of 1500mm from the rear of the EVCP. If this cannot be achieved, exceptional cases may allow a minimum width of 1000mm, but this must be checked with local legislation and the Employer.

As the dual port chargers service (2x) parking/charging bays, they should be positioned at the centre line of the two bays it is servicing.

For example, see the (3x) dual ports chargers below, servicing (6x) parking bays.

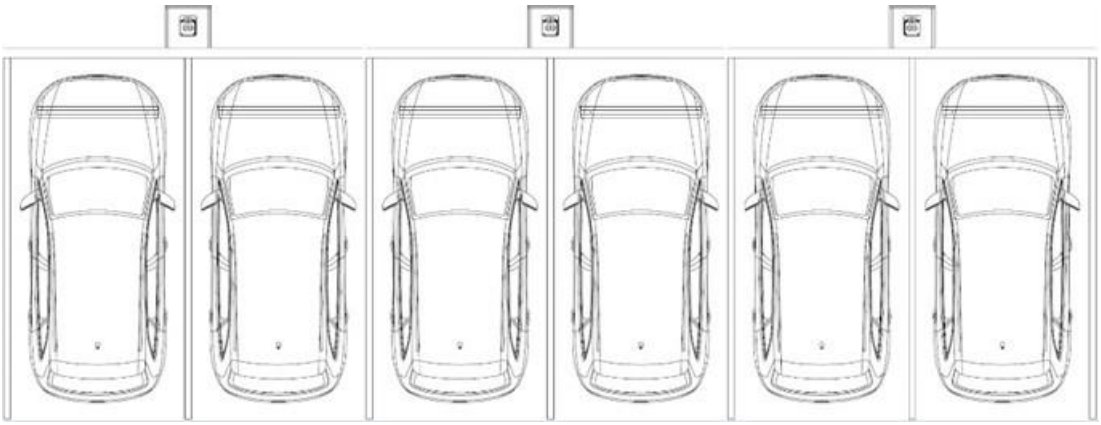

FIGURE 1: INDICATIVE 6 BAY LAYOUT

Electrical requirements

Installation Standards

EV charging points must be installed in accordance with BS7671 18th edition giving particular attention to section 722. In addition to this the following should be adhered to: Institution of Engineering & Technology Code of Practice for Electric Vehicle Charging Equipment Installation, 4th Edition.

Site Connection Size/Rating

To ensure reliability of supply the site connection size and rating of all associated equipment must be confirmed to ensure that the system cannot be overloaded due to the addition of additional EV charging points.

Load Study

A load study must be performed to ensure charging points do not pose a risk to core business supply. In the event that the current loading of the MDB is not known a load study must be carried out giving particular attention to times of peak usage, peak usage will be dependent on the nature of the business and operating hours. Seasonal changes will need to be considered.

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Cable Calculations

Calculations must be performed for all new cables and devices to ensure cable selection is adequate, it is not enough to assume that minimum cable size in guidance below is acceptable as length of run and installation methods will vary from site to site

Harmonics & PF correction

The Installer must ensure that the installation meets the requirements of BS EN IEC 61000-6-3 EMC compatibility & BS 7671.

Labelling & Identification

All cables and devices must be labelled in accordance to previously used labelling system on site. In the event that labelling has not been carried out on the installation then a suitable labelling method must be adapted to ensure installation is clearly identified.

Datasheet & Circuit Protection

See the below table, showing the electrical requirements for the various configurations of the CP6000 dual port charger. **Note -** All chargers are 22kW 3-phase capable but will be installed as Circuit-shared and might not be at full capacity.

Three-Phase Electrical Input (3Ø)

Electrical input	Dual port		
	Input current	Input power connection	Minimum service panel breaker
Standard 63A 3Ø Circuit Shared*	3Ø 63A	One 3Ø 63A branch circuit	63A 4 pole
Standard 32A 3Ø	3Ø 32A x 2	Two independent 3Ø 32A branch circuits	32A 4 pole x 2
Standard 32A 3Ø Circuit Shared*	3Ø 32A	One 3Ø 32A branch circuit	32A 4 pole
Power Select 25A 3Ø	3Ø 25A x 2	Two independent 3Ø 25A branch circuits	25A 4 pole x 2
Power Select 25A 3Ø Circuit Shared*	3Ø 25A	One 3Ø 25A branch circuit	25A 4 pole
Power Select 20A 3Ø	3Ø 20A x 2	Two independent 3Ø 20A branch circuits	20A 4 pole x 2
Power Select 20A 3Ø Circuit Shared*	3Ø 20A	One 3Ø 20A branch circuit	20A 4 pole
Power Select 16A 3Ø	3Ø 16A x 2	Two independent 3Ø 16A branch circuits	16A 4 pole x 2
Power Select 16A 3Ø Circuit Shared*	3Ø 16A	One 3Ø 16A branch circuit	16A 4 pole
Power Select 12A 3Ø	3Ø 12A x 2	Two independent 3Ø 12A branch circuits	12A 4 pole x 2

Single Phase Electrical Input (1Ø)

Electrical input	Dual port		
	Input current	Input power connection	Minimum service panel breaker
Standard 63A 1Ø Circuit Shared*	1Ø 63A	One 1Ø 63A branch circuit	63A dual pole
Standard 32A 1Ø	1Ø 32A x 2	Two independent 1Ø 32A branch circuits	32A dual pole x 2
Standard 32A 1Ø Circuit Shared*	1Ø 32A	One 1Ø 32A branch circuit	32A dual pole
Power Select 25A 1Ø	1Ø 25A x 2	Two independent 1Ø 25A branch circuits	25A dual pole x 2
Power Select 25A 1Ø Circuit Shared*	1Ø 25A	One 1Ø 25A branch circuit	25A dual pole
Power Select 20A 1Ø	1Ø 20A x 2	Two independent 1Ø 20A branch circuits	20A dual pole x 2
Power Select 20A 1Ø Circuit Shared*	1Ø 20A	One 1Ø 20A branch circuit	20A dual pole
Power Select 16A 1Ø	1Ø 16A x 2	Two independent 1Ø 16A branch circuits	16A dual pole x 2
Power Select 16A 1Ø Circuit Shared*	1Ø 16A	One 1Ø 16A branch circuit	16A dual pole
Power Select 12A 1Ø	1Ø 12A x 2	Two independent 1Ø 12A branch circuits	12A dual pole x 2

FIGURE 2: CP6000 DUAL PORT CHARGER CONFIGURATIONS

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Cabling and Circuit Protection

Cable Size

At minimum 10mm SWA cable per charger shall be used installed. For a Matt:e device a 5 core cable should be used.

Cable calculations must be performed to determine the correct cable to use (considering the voltage drop and grouping factors). The maximum diameter of the cable entering the charger is 16mm.

- At each pedestal-mounted charger, 2m+ cabling must be left protruding from the duct to allow for connection within each charger

Circuit Breakers

A 40Amp MCB should be installed at the distribution board upstream of the 32Amp RCBOs within the charger to be installed.

Ideally, to allow for expansion of chargers in future, install a dedicated 6 Way 3 phase distribution board: 100 to 250Amp depending on the available capacity and site requirements.

Miniature Circuit Breaker's (MCB's) must be Type C curve.

The MCB's must be able to isolate all lives and the neutral within the board, if on a TT system.

Note that the CP6000 range of AC stations are fitted with internal 30mA Type A RCCBs (one per port) in conjunction with internal 6mA DC earth leakage monitoring, removing the need for upstream Type B RCD.

Cable Installation Methods

For all or part of the route there may be a combination of cable routing via voids, ducts, cable trays etc. The selected method(s) of installation and route should be agreed in advance to ensure that it is aesthetically pleasing and is unlikely to cause obstruction in the future. All installation methods must comply with BS7671 & manufacturers recommendations.

Earthing Arrangement

Section 722 of BS7671:2018 gives specific installation requirements for Electric Vehicle chargers, when it comes to earthing, and states that when a charging station is installed outdoors the Protective Multiple Earth (PME) from a TN-C-S supply scheme must **not** be used. Usually, the above regulation results in the need for a localized TT earth spike or a Matt:e O-PEN device to be installed, converting the installation to a TT supply scheme. We strongly recommend a Matt:e device over using a TT earth spike.

Matt:e O-PEN Device

An earth rod is not able to be installed in circumstances due to;

- Surface type (not able to excavate or poor soil resistivity)
- Too close to the building foundations (which could result in the rod picking up the buildings PME)
- Within touching distance of other electrical street furniture (lampposts, ticket machines, etc.)
- Charging units are wall-mounted so connecting to an earth pit is awkward

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In these circumstances, a Matt:e O-PEN device must be installed as the earthing system. This needs to be connected to the charger using 5 core SWA cable. Should more than one charger be installed they should ideally be earthed back to a single O-PEN device (up to a maximum of 3 chargers per unit currently). Please refer to Institution of Engineering & Technology Code of Practice for Electric Vehicle Charging Equipment Installation, 4th Edition for further recommendations on the use of O-PEN Device.

Earth Pit & Rod

FIGURE 3: LOCALIZED TT EARTH SPIKE

When installing an earth spike, you must check there are no underlying services below the earthing to facilitate the sinking of the earthing rods.

If installing more than one charger (within the same equipotential zone), they should all be earthed back to a **single** pit.

To allow for an easier and more secure connection, a Star Bar should be installed (horizontally across the pit). See example below.

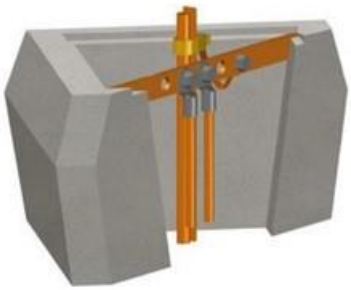

FIGURE 4: EARTHING STAR BAR EXAMPLE

Metering

Where the installation forms part of an existing installation independent metering is required at the core business distribution board and charging distribution board. Metering should be installed in accordance to Metering COP5.

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Testing & Commissioning

The Contractor must complete IR & continuity tests on all circuits prior to requesting permission to energise. This includes testing of earth mat where installed.

The Contractor must perform controlled energisation of all circuits ensuring that all settings are implemented as required. In addition to installation test certificate, testing of O-PEN device must be carried out and certificate provided.

Ducting Requirements

Supply Cable Duct:

Continuous twin wall duct to be installed, for the entirety of the cable run underground. Each charger shall have an independent 75mm duct. Cables are brought up from the independent duct to the charger pedestal.

The duct is to be laid at a minimum depth of 450mm, except on roadways where a minimum depth of 600mm is required.

Ducting size and layout are dependent on cable calculations (considering voltage drop and grouping factors).

The duct must enter the foundation at the dimensions shown in the 'Concrete Foundations' section.

Electrical warning tape must be laid above the ducting, when backfilling the trench.

Draw cord must be left inside the ducting, to allow to the cable to be pulled into position.

Draw pits must be installed on longer runs or where there is a change of direction to ensure cables can be installed without risk of damage.

Earth Cable Duct - Earth pit

Continuous twin wall duct (50mm diameter) to be installed, for the entirety of the cable run (from the concrete foundation to the earth pit) to cater for the 10mm earth cable.

The duct should protrude from the ground within the hole of the charger mounting bracket.

Foundation Requirements

Dimensions and General Arrangements

See the below diagrams, showing the default concrete foundation dimensions and arrangement of street furniture. Take note of the placement of bollards and ground mounts for the pedestal of the CP4K units. Should this **not be possible** you must contact RAW Operations to discuss the change.

Concrete Foundations – Minimum Requirements

- Grade C30 concrete must be used for the foundation
- Ensure that the top surface of the foundation is flush to any paving and sits level with surrounding area. Nothing should be protruding.

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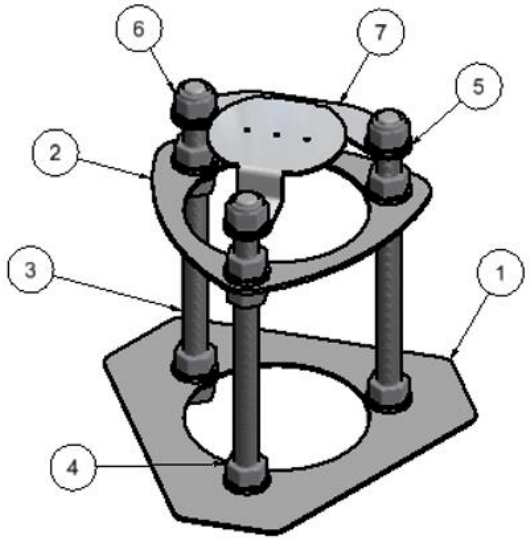
Mounting Kits

Before pouring the concrete foundation, the Contractor must ensure that it has the 'Pedestal Mounting Kit' (provided to the Contractor by RAW) ready on site. You must order this with sufficient lead time before site construction. This will need to be set into the concrete foundation and is shipped separately. **Please contact RAW if you have not received this.** *Note this is not required for Make Ready units.*



Parts List		
ITEM	QTY	PART NUMBER
1	1	EPM-4Y 1-1 Bottom Plate
2	1	EPM-4Y 1-2 Top Plate
3	3	M16 studding 245mm lg
4	12	M16 nut
5	15	M16 washer
6	3	M16 nyloc
7	1	EPX-2G 1-1 Glanding Plt

FIGURE 6: PEDESTAL MOUNTING KIT PARTS

The Contractor shall fit the mounting kit in accordance with the following instructions:

- Trench and excavate an opening to accommodate the wiring conduit and the concrete mounting pad. Run conduit to each station as needed.
- Build the form and lay rebar for the foundation. The concrete block must measure at least 600mm on all sides. The conduit stub-up needs to measure between 152mm and 590mm above the concrete surface.
- Align the Pedestal Mounting Kit over the conduit stub-ups with the two bolts facing forwards and the third bolt to the rear. Slide the kit over the conduit stub-ups until the top surface of the template is level with the top surface of the concrete when poured. The surface of the concrete must align with the bottom of the upper template.
- Ensure the conduits are plumb. Before pouring concrete, tie the mounting kit to rebar to hold it in place. The mounting kit and conduit must be secured in place to prevent them from rising or floating out of position while the concrete is curing.
- Use a spirit level and ensure level from front to back and side to side. Ensure correct alignment and that the top 60 mm of the bolts remain exposed, as shown in Fig 9. The CP6000 pedestal mounted charging station can now be installed onto the foundation.

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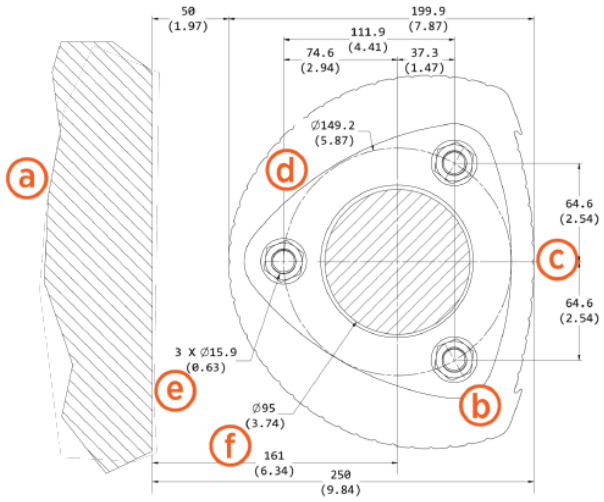

Pedestal Mount without Cable Management Kit Template Dimensions

a. Wall

b. Pedestal footprint

c. Front

d. Bolt circle

e. Bolt or anchor

f. Conduit stub-up within this area

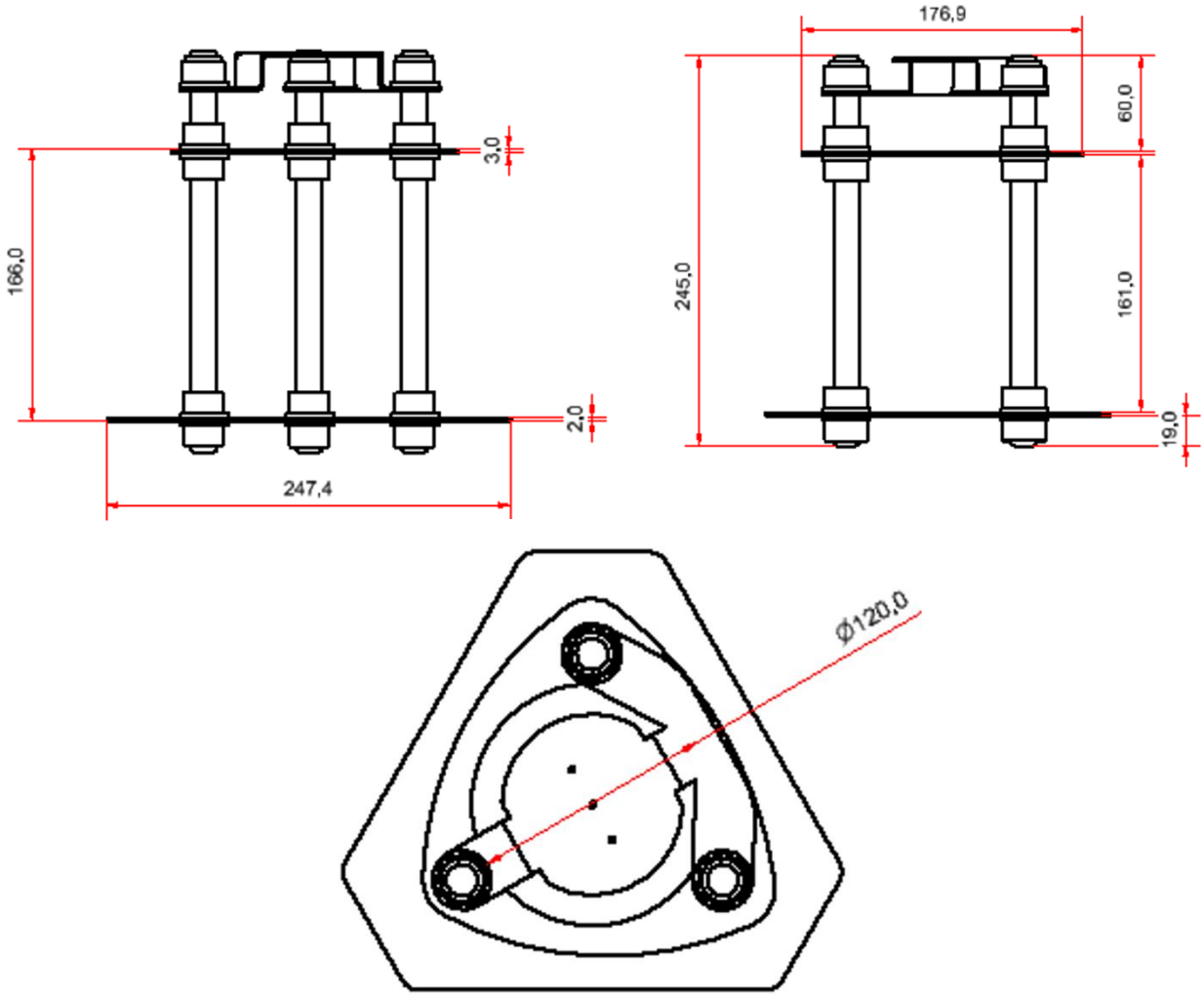

FIGURE 7: PEDESTAL MOUNT TEMPLATE DIMENSIONS

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FIGURE 8: PEDESTAL MOUNTING KIT DETAILS

The following should be visible for the installation to occur:

a) Concrete mounting template
b) Three bolts set into concrete
c) Two nuts and three washers on each bolt
d) Template front
e) Each bolt extending 60 mm (2 1/3 in) to 100 mm (4 in) above the concrete surface
f) Conduit stub-up measuring 152 mm (6 in) to 590 mm (2 ft)
g) g. Approximately 1.5 m (5 ft) of service wiring

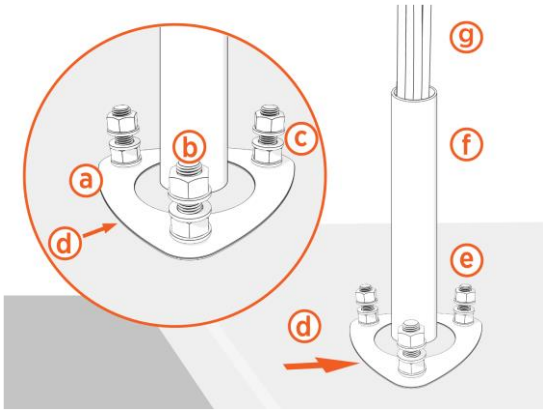

FIGURE 9: SITE PREPARATION HANDOVER

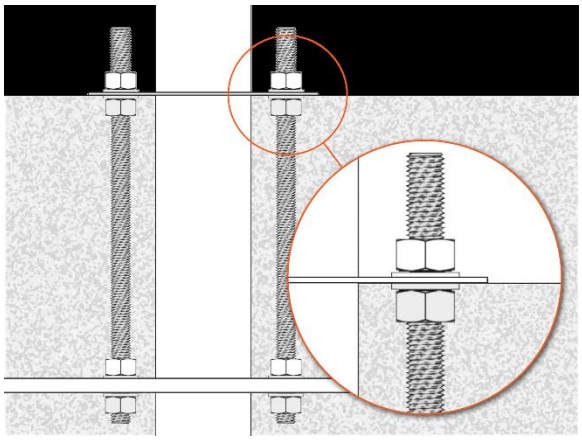

FIGURE 10: CONCRETE ALIGNMENT WITH UPPER TEMPLATE

Service Pits

Depending on the length or route of the cable run (underground), service pits may be required to be installed. This is true for the below situations:

- Any bends or corners in the route, service pit must be installed at these points
- Longer distance runs, service pits must also be installed every 25m – 30m.

The service pits must be a minimum of 600mm x 600mm square.

Vehicle Protection

Equipment installed in public areas and car park sites shall be protected against mechanical damage (impact of medium severity AG2). Protection of the equipment shall be afforded by one or more of the following:

- The position or location shall be selected to avoid damage by any reasonably foreseeable impact

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- Local or general mechanical protection shall be provided
- Equipment shall be installed that complies with a minimum degree of protection against external mechanical impact of IK07 in accordance with BS EN 62262.

Two recommended options are protective barriers and wheel stops – see details below.

Note: no protection is required for make-ready units

Protection Barriers

Protection barriers are not provided by RAW Charging unless specified.

2no stainless steel posts are to be set directly into the concrete pad (see dimensions above, in the 'Concrete Foundations' section), to prevent cars from driving in to the EVCP.

Semi Dome Top Posts in Grade 304 stainless steel, with length 1200mm, diameter 114mm and a brushed finish to a 1K standard. 3-6mm Wall thickness.

FIGURE 5: STAINLESS STEEL PROTECTION POSTS

Make-Ready units will have bolted bollards or wheel stops.

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Wheel Stops

In some circumstances, wheel stops may be used as crash protection for the EVCP. This may be in addition to the protective bollards, or in their place.

To protect the EVCP from all vehicle models (all of which have various front and rear bumper overhangs), the wheel stop must be placed 1100mm in front of the charger (or protective bollards, if they are in place), as indicated below.

1.8m wheelstops are to be placed centred on the parking bay to cover both wheels. 0.9m wheelstops are to be placed aligned to the side of the parking bay closest to the charging unit.

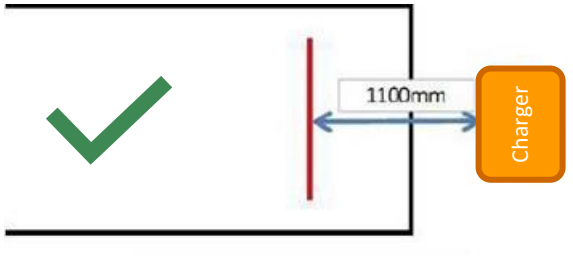

FIGURE 11: WHEEL STOP ARRANGEMENTS (1.8M WHEELSTOPS)

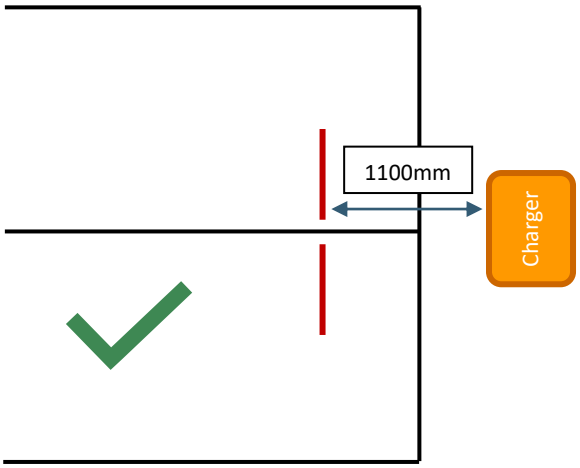

FIGURE 12: WHEEL STOP ARRANGEMENTS (0.9M WHEELSTOPS)

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Site Preparation Completion Sign-Off

Please ensure that all the below requirements are completed prior to the installation and provide signature below to confirm before we send our installation partner to site:

Requirement	Completed
The correct cable type has been installed and is of suitable diameter based on cable calculations	
The cable diameter is less than 16mm at the point of entry into the charger	
A suitable cable length has been left available at the foundation (2m protruding from concrete foundation)	
The cable has been suitably capped	
All of the installed electrical system is rated to the correct specification as stated in this guide and to BS7671 18th edition	
A suitable earthing system has been installed (Matt:e, Earth pit or approved alternative)	
Concrete foundation(s) with suitable ducting and ground mount are installed (level and with a good finish) and are in the correct location	
Suitable charger protection has been installed (Bollards, Wheelstops or suitable alternative)	
The site has a suitable power supply and is able to be energised during the installation and commission	
The electrical system has been correctly and suitably tested	
There will be an electrician/qualified person to energise the chargers whilst our installation partner is on-site for the installation and commission	
Photos of the completed site preparation works have been provided to RAW Charging: - Photo of concrete base with ground mount fixed - Photo of installed protection - Photo of installed earthing system - Photo of electrical infrastructure including supply distribution board	

Name:	Job Title:
Signature:	Date:

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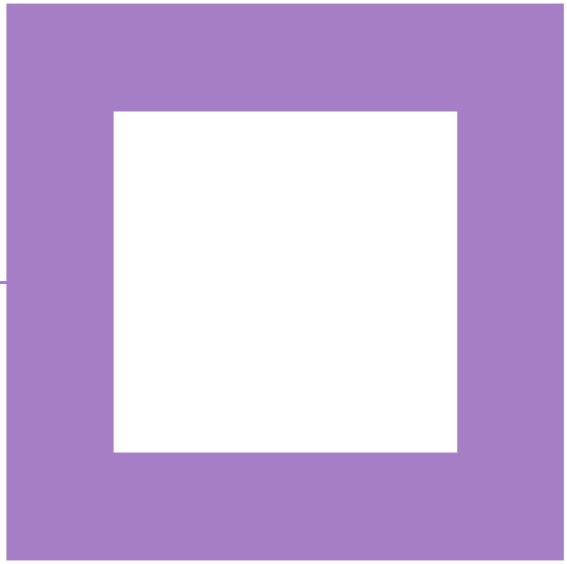
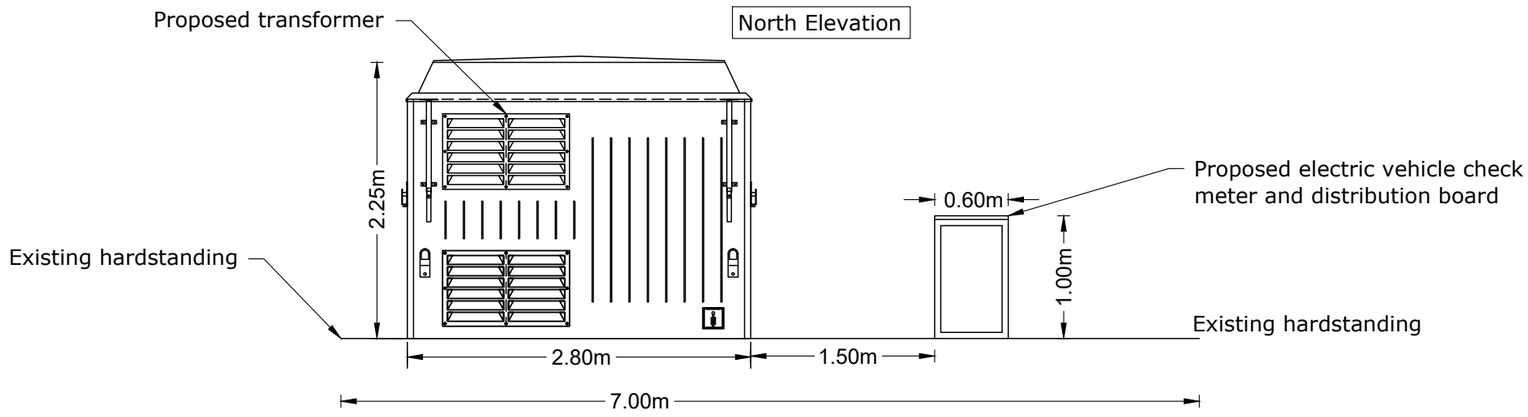


Appendix C

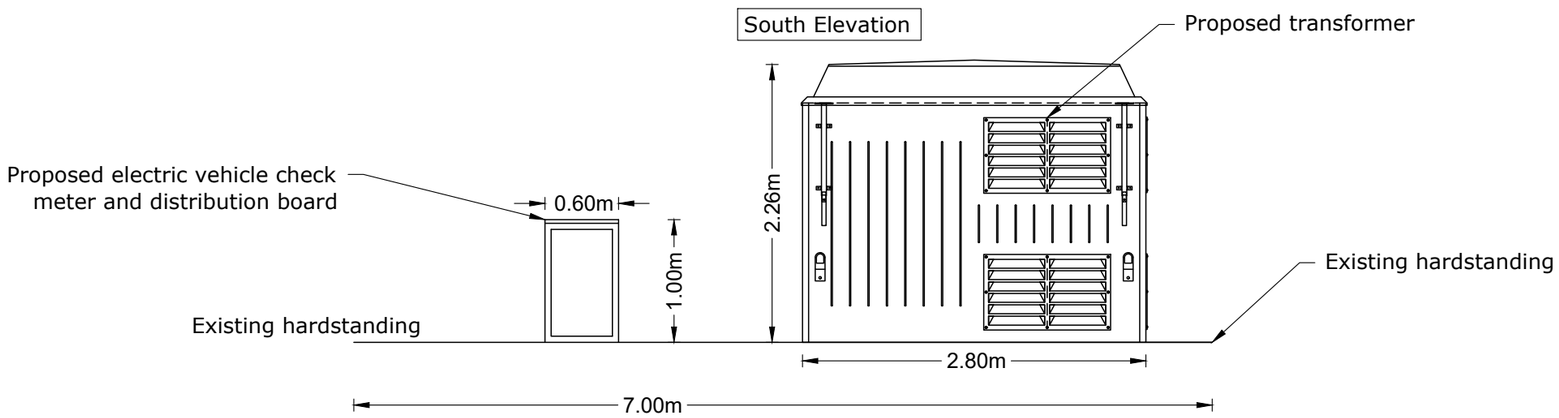
Elevations and upstand drawings

north

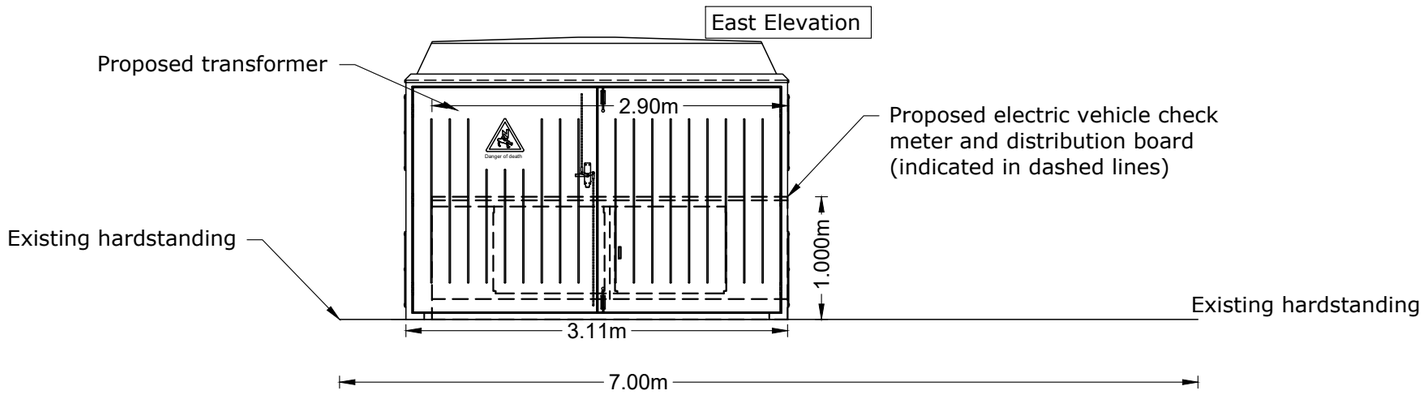
North Elevation



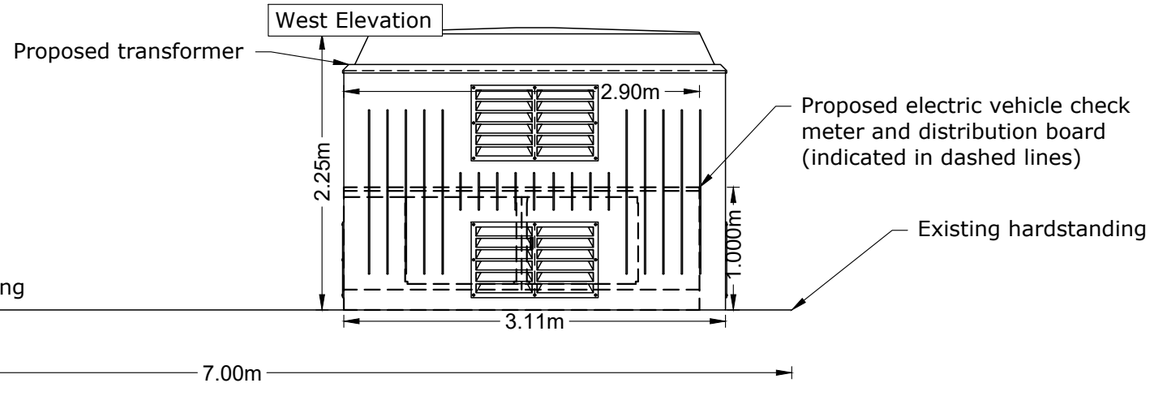
South Elevation

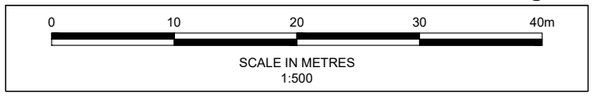


East Elevation



West Elevation





Notes

1. All levels and dimensions to be checked on site before any work commences. All dimensions in metres unless stated otherwise.
2. This drawing is based on topographical survey information and Motion cannot guarantee the accuracy of the data provided.
3. This drawing is based on OS mapping and Motion cannot guarantee the accuracy of the data.
4. Site location boundary includes indicative location of cabling proposed to serve car parking space equipped with electric vehicle charging.

Rev.	Description	Drn	Chk	App	Date
-	First Issue	WMC	PdeJ	PdeJ	02/09/2025

Drawing Status:

FOR PLANNING
NOT FOR CONSTRUCTION

motion
Guildford - Reading - London
www.motion.co.uk

Client:
Winnersh Midco S.A.R.L

Project:
Winnersh Triangle 1180 EV Chargers

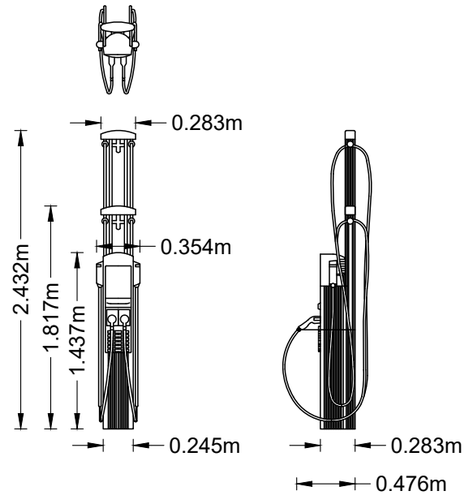
Title:
Proposed Elevations

Scale: 1:500 (@ A3)

Drawing: 2507082-05

Revision: -

C:\Users\williammcaney\Motion\StaffSite - Frwi15 2507082\Drawings\2507082-01, 02 & 03.dwg



0 1 2 3 4m

SCALE IN METRES
1:50

C:\Users\williammcaney\Motion\StaffSite - Frwi15 2507082\Drawings\2507082-06 [Upstands].dwg

Notes

1. All levels and dimensions to be checked on site before any work commences. All dimensions in metres unless stated otherwise.
2. This drawing is based on topographical survey information and Motion cannot guarantee the accuracy of the data provided.

Rev.	Description	Drn	Chk	App	Date
-	First Issue	RW	WMC	PdeJ	04/09/2025

Drawing Status:

FOR PLANNING
NOT FOR CONSTRUCTION

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www.motion.co.uk

Client:
Winnersh Midco S.A.R.L

Project:
Winnersh Triangle 1180 EV Chargers

Title:
Proposed Upstands

Scale: 1:50 (@ A3)

Drawing: 2507082-06

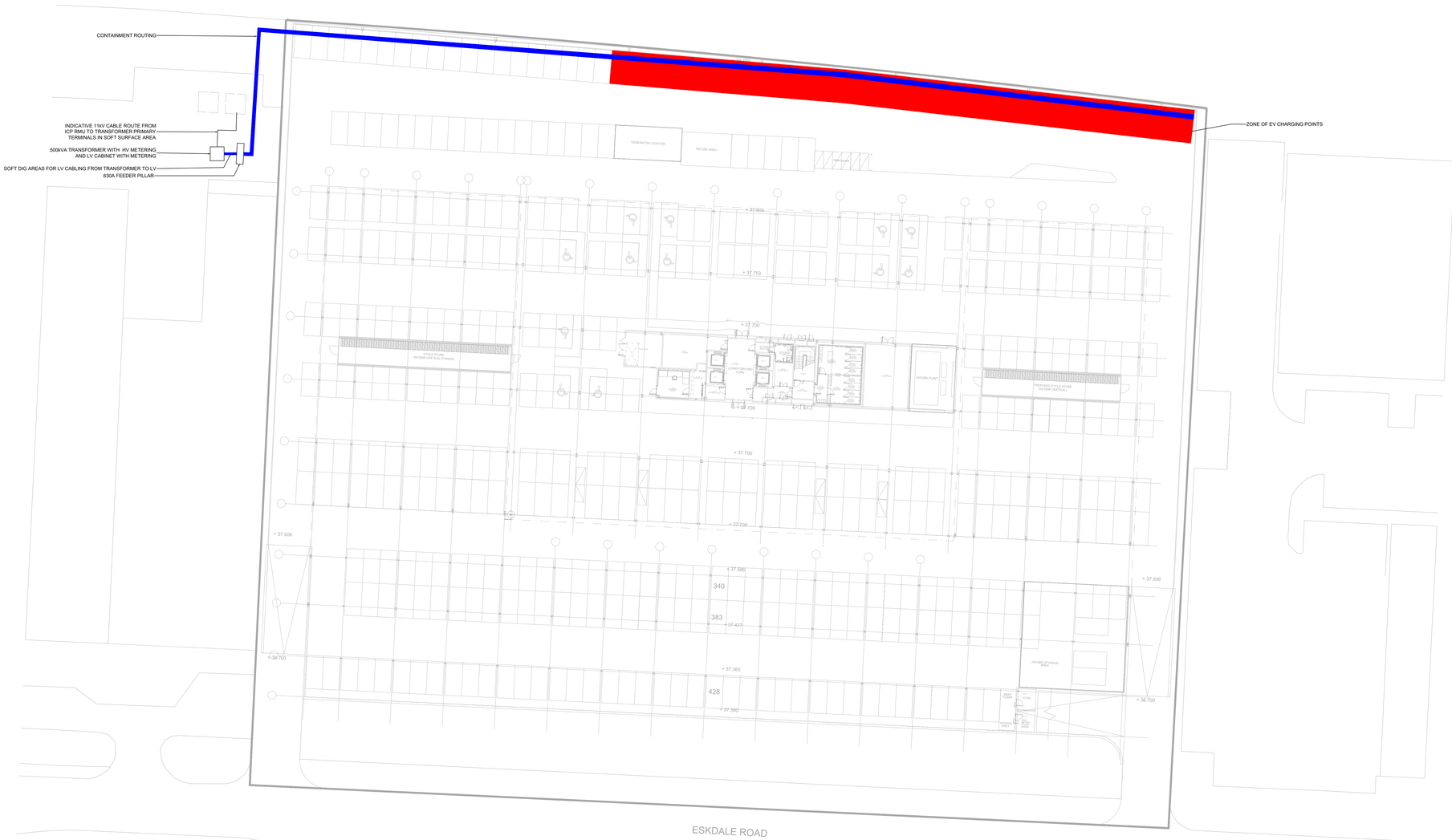
Revision: -

Appendix D

Hoare Lea - Cabling Plan

A0

This drawing shall not be scaled.
Work from the dimensions shown in the drawing or given in relevant specifications



CDM Regulations:

In addition to any information included in this drawing or the model from which it is derived, refer also to the project CDM Risk Register for information on residual risks.

General Notes:

- The drawing does not necessarily show all the information needed to interpret the design intent or the construction details.
- The drawing contains information from more than one source and must be read in conjunction with all relevant specifications.
- Any apparent drafting errors and differences between other drawings and specifications shall be brought to our attention.

Project Notes:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL SETTING OUT.
2. THE LOCATION OF ELECTRICAL EQUIPMENT IS FOR INFORMATIONAL PURPOSES ONLY.THE CONTRACTOR MUST MAKE COMMERCIAL ALLOWANCES FOR ANY FURTHER MODIFICATIONS REQUIRED.
3. CONTRACTOR TO PROVIDE COST OPTION FOR CABLE ROUTES AND CONTAINMENT FROM FEEDER PILLAR TO EVC. OPTIONS SHOULD INCLUDE BOTH ABOVE-GROUND AND BELOW-GROUND DUCT INSTALLATION.

Index	Description	Designed	Reviewed	Authorised	Date
P01	STAGE 3 TENDER ISSUE	GR	ML	MB	05/25

REVISIONS:

HOARE LEA

ARCHITECT:
SPRATLEY & PARTNERS

CLIENT:
FRASERS PROPERTY UK

PROJECT TITLE:
WINNERSH 1180, GROUND AND FIRST FLOOR

DRAWING TITLE:
ELECTRICAL SYSTEM
EV CHARGING LAYOUT
LOWER GROUND

STAGE 3 TENDER

PERSON RESPONSIBLE FOR:		
Design: GR	Review: ML	Authorising Issue: MB
Project No: 0710735	Date: MAY 2025	Scale @ A0: 1:100

DRAWING NUMBER:	Status:	Rev:
0710735-HLEA-XX-B1-GA-E-700600	S4	P01