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# E-Car Charges Report

The Shoreline Partnership

SHD Baldoyle-Stapolin

Growth Area 3,

Baldoyle,

Dublin 13.

Project No. R500



# Electrical Vehicle Charges Report



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## DOCUMENT CONTROL & HISTORY

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## 1. INTRODUCTION

The proposed development site is located at Baldoyle-Stapolin, Dublin 13. It is a site of c.6.89 hectares, and comprises lands referred to as Growth Area 3 (GA3) within the Baldoyle-Stapolin Local Area Plan. The lands are bound by the Dublin-Belfast / DART train line to the west, existing and proposed residential areas to the south and east, and future Racecourse Park to the north.

The proposed development will consist of the development of 1,221 no. residential apartment/duplex dwellings in 11 no. blocks ranging in height from 2 to 15 storeys and including for residential tenant amenity, restaurant/café, crèche, car and bicycle parking and public realm. Residential Tenant Amenity Facilities are located in Blocks E3, E4, G3, G4 & G5 and external communal amenity space is provided at ground, podium and terrace levels throughout the scheme. Car Parking is provided in a mix of undercroft for Blocks E1-E2, F1 and F2 and at basement level for Blocks G1-G3 and G4-G5. Cycle parking spaces are provided for residents, visitors and commercial uses, in secure locations and within the public realm throughout the scheme. A new central public space between Blocks E1-E2 and E3 and E4 and a new linear space between Blocks G2-G3 and G4-G5 provides pedestrian and cycle connectivity from Longfield Road to the proposed future Racecourse Park to the north. A proposed new bus, cycle, pedestrian and taxi ramp to the south of the site and north of Stapolin Square provides access from Longfield Road to Clongriffin Train Station. For a full description of the development please see the Statutory Notices.

This report outlines the design criteria and considerations taken into account with regard provision for charging of electrical vehicles within the proposed development at

Baldoyle, Co Dublin.

The development will comprise 1221 no. residential units

Blocks E 1-4                      306 units

Blocks F1-2                      213 units

Blocks G east and west    702 units

Landscaping will include extensive communal amenity areas, and significant public open space provision.

The proposed development shall make provision for the charging of electrical vehicles. All car parking spaces shall be provided with electrical connections, to allow for the provision of future charging points.

Electrical charging points will be provided by the developer as follows

- a) 10% of covered spaces
- b) 1% of surface spaces.

Details of how it is proposed to comply with these requirements, including details of design of, and signage for, the electrical charging points and the provision for the operation and maintenance of the charging points (where they are not in the areas to be taken in charge) shall be submitted to, and agreed in writing with, the planning authority prior to commencement of development.

This report outlines design approach to achieve compliance with car charging requirements in residential developments in Fingal.

This report shall be read in conjunction with OCSC drawings:

R500-OCSC-GA03-BE-GF-DR-E-2000	Block E
R500-OCSC-GA03-BF1-GF-DR-E-2100	Block F1
R500-OCSC-GA03-BG45-GF-DR-E-2400	Block G4/5
R500-OCSC-GA03-BF2-GF-DR-E-2200	Block F2
R500-OCSC-GA03-BG13-GF-DR-E-2300	Block G1/3
R500-OCSC-GA03-ZZ-XX-DR-E-010	SITE

Electric vehicles chargers (EVC) today ranges from 3 kW to 100 kW and the charging time depends on type of the electric car charger, the model of vehicle and how full the car battery is when it is plugged in.

The following standards currently apply to EVSE (Electric Vehicle Supply Equipment);

- IEC 62196 – Vehicle Connector and Inlets

- IEC 61851 – Electric Vehicle Conductive Charging System
- IEC 15118 – Road Vehicles V2G
- I.S. 10101:2020 5<sup>th</sup> edition /CRU/Safe Electric
- OCPP (Open Charge Point Protocol) /OCA (Open Charge Alliance)
- EMI3 Ertico

## 2. THE DESIGN

There are total 632 covered parking spaces & 33 on street parking in the GA03 development distributed as follows:

### Covered parking 10% Allowance

Area	Total spaces	EV space allocation
Block E	150	15
<u>Total</u>	<u>150</u>	<u>15</u>
Block F1	45	4
Block F2	56	<u>6</u>
<u>Total</u>	<u>101</u>	<u>10</u>
G west Block G1, G2 & G3	261	26
G east Block G4 & G5	120	12
<u>Total</u>	<u>381</u>	<u>38</u>
<b>Overall total</b>	<b>632</b>	<b>63</b>

### On street parking 1% Allowance

	Total spaces	EV space allocation
	33	1
<u>Total</u>	<u>33</u>	<u>1</u>

To comply with the above requirement, 63 no. EV charges will be supplied and installed as part of the proposed development.

The attached drawings show proposed locations of EV chargers.

The proposed EVCs are Zaptec 7.3 kW twin stations with average charging time from 2-3 hours to 8 hours depending on model of vehicle. Data sheet for the proposed station is presented in the Appendix.

The final installation may use EVCs by other manufacturer with modified positioning and aiming to achieve the same result.

All EV charges will be controlled and maintained by the appointed management company.

Power supply for the EV charges will be taken from metered Landlord supplies.

ESB mini Pillars will provide metered 63 Amp TP supplies to the dedicated Car Charger mini pillars. EV Charger mini pillars will have sufficient power to power 15-20 EV chargers. EV charger Mini Pillars will be positioned around the development to accommodate future expansion of the car charger network up to 100%.

The EV chargers will be complete with Sim cards to allow for billing.

To optimise energy usage and vehicle charging time a Dynamic Load Management (DLM) system will be installed for EV chargers.

The system is designed for an intelligent energy management of several charging stations that work simultaneously. It allows charging more EV cars in less time using the available power more efficiently.

Data sheet for the proposed DLM system is presented in the Appendix.

The final installation may use different software aiming to achieve the same result.

All wiring will be designed in accordance with National Rules for Electrical Installations 5<sup>TH</sup> EDITION I.S. 10101:2020

## 2.2 Provision for future 100% EV Charges.

- The provision of the load management system allows for the most economical use of the available power in the development. This system allows several cars to be charged simultaneously reducing the MIC required across the site by managing the charging power and prioritising power to cars with lower battery levels.

Undercroft carparks - will be fitted with dedicated cableways to provide for the extension of the carpark EV charging and management network to every space.

Street parking - EV charger Mini Pillars will be positioned around the development to accommodate future expansion of the EV car charger network and management system to cater for all spaces. Ducting will be provided from EV charger mini pillars to local banks of car parking spaces to allow easy installation of future charging stations as they are required.

Any future EV charging stations can be easily added to the existing network and integrated into the existing load management system (DLM). All future EV charging stations will be controlled and maintained by the appointed management company.

Underground ducts will be installed to 100% of external car parking spaces allowing for installation of EV charging stations in the future.

All wiring will be designed in accordance with National Rules for Electrical Installations. 5<sup>th</sup> edition I.S. 10101:2020