



C210021 – J47, Land adjacent to
O C Jewers & Sons Ltd, Woolpit

Electric Vehicle Charging Study

18th October 2023

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REVISIONS		
Revision	Date	Description
00	18.10.2023	Preliminary Issue

Contents

Introduction	3
Section 1 – Site Description	4
Section 2 – Planning and Statutory Requirements	5
Section 3 – Summary	7

Introduction

calfordseaden have been instructed by Boone Consultancy to undertake a study of the requirements for electric vehicle charging at the proposed J47 site located on land adjacent to O C Jewers & Sons Ltd, Elmswell Road, Woolpit, IP30 9RH.

The purpose of this document is to discharge the pre-commencement planning condition no.20 relating to the provision of EV charging points on site.

This study considers the requirements for the provision of EV charging point on site to satisfy Building Regulations Part S and Suffolk Guidance for Parking (2019), the latter being cited in the planning condition, the former is not mentioned.

As part of this study we have reviewed the planning and statutory requirements and have investigated a number of technical solutions for supply of the required power to serve the EV charging outlet installation.

Section 1 – Site Description

The development consists of a 40,000 square foot distribution warehouse located close to the A14 on the outskirts of Woolpit in Suffolk. The building is currently being speculatively built and no end user has been confirmed.

The building purpose is a warehouse for storage and distribution. The site is provided with 56no. car parking spaces for employees and visiting guests. The general site arrangement is shown in fig 1.1 below.

Figure 1.1: Site Plan



Section 2 – Planning and Statutory Requirements

The development has obtained planning approval and a number of conditions have been included in the determination, one of these (no.20) relates to the provision of electric vehicle charging on site. The condition requires the development to comply with the Suffolk Guidance for Parking (2019) requirements.

In addition to the planning requirements the development will also be subject to compliance with Building Regulations Part S which relates to electrical vehicle charger provision, in particular for this development the scheme would need to meet the requirements of regulation S4.

Suffolk Guidance for Parking (2019)

This requires that a site designated for Storage and Distribution should be provided with 20% of all parking spaces fitted with a charging system (Active) and an additional 20% of parking spaces with infrastructure for future connection (Passive). See fig 1.2 below.

Figure 1.2: Suffolk Guidance for Parking (2019)

Suffolk Guidance for Parking 2019

A3 Restaurants and cafes	15% of all parking spaces to be fitted with a charging system, with an additional 15% of parking spaces with the infrastructure in place for future connectivity	7.4kw to 100kw subject to individual assessment/justification
A4 Drinking establishments	15% of all parking spaces to be fitted with a charging system, with an additional 15% of parking spaces with the infrastructure in place for future connectivity	7.4kw to 100kw subject to individual assessment/justification
A5 Hot food takeaways	15% of all parking spaces to be fitted with a charging system, with an additional 15% of parking spaces with the infrastructure in place for future connectivity	7.4kw to 100kw subject to individual assessment/justification
B1 Business	20% of all parking spaces to be fitted with a charging system, with an additional 20% of parking spaces with the infrastructure in place for future connectivity	7.4kw
B2 General Industrial	20% of all parking spaces to be fitted with a charging system, with an additional 20% of parking spaces with the infrastructure in place for future connectivity	7.4kw
B8 Storage & Distribution	20% of all parking spaces to be fitted with a charging system, with an additional 20% of parking spaces with the infrastructure in place for future connectivity	7.4kw
D1 Non-residential Institutions	15% of all parking spaces to be fitted with a charging system, with an additional 15% of parking spaces with the infrastructure in place for future connectivity	7.4kw
D2 Assembly and leisure	15% of all parking spaces to be fitted with a charging system, with an additional 15% of parking spaces with the infrastructure in place for future connectivity	7.4kw
Other, Sui Generis and short-stay uses	EV Charging Requirement	Minimum Charge Specification
Including all other uses not mentioned above	Individual assessment / justification	7.4kw to 100kw subject to individual assessment/justification

Building Regulations Part S (S4)

This requires that a site designated as new buildings other than residential or mixed use should be provided with one parking space with an electric vehicle charge point (Active) and at least one in five of the remaining parking spaces having access to cable routes for future connection (Passive).

Figure 1.3: Building Regulations Part S (S4)

Requirement S4 and regulation 44G: New buildings other than residential or mixed-use buildings

This section deals with requirement S4 from Part S of Schedule 1 and regulation 44G of the Building Regulations 2010.

Requirement
<p>Erection of new buildings which are not residential buildings or mixed-use buildings</p> <p>S4. Where a new building which is not a residential building or a mixed-use building has more than 10 parking spaces—</p> <ul style="list-style-type: none"> (a) one of those parking spaces must have access to one electric vehicle charge point; and (b) cable routes for electric vehicle charge points must be installed in a minimum of one fifth of the total number of remaining parking spaces.
Regulation
<p>Application of paragraph S4 of Schedule 1 (erection of new buildings which are not residential buildings or mixed-use buildings)</p> <p>44G. (1) The requirements of paragraph S4 of Schedule 1 apply to the erection of a new building which is not a residential building or a mixed-use building ("new building") as follows.</p> <p>(2) If such a new building has, or will have, within its site boundary, more than 10 parking spaces—</p> <ul style="list-style-type: none"> (a) if there are or will be any parking spaces situated in a position other than in a covered car park— <ul style="list-style-type: none"> (i) the requirements of paragraph S4 of Schedule 1 must first be applied in relation to those parking spaces; then (ii) if the number of parking spaces which are situated in a position other than in a covered car park is insufficient to completely fulfil the requirements of paragraph S4 of Schedule 1, cable routes for electric vehicle charge points must be installed in a sufficient number of parking spaces in the covered car park in order to ensure compliance with the requirements of paragraph S4(b) of Schedule 1; (b) if all the parking spaces are situated in a covered car park, cable routes for electric vehicle charge points must be installed in a minimum of one fifth of the total number of those parking spaces.

NOTE: Where the **building control body** is an approved inspector, see regulation 8 of the Building (Approved Inspectors etc.) Regulations 2010 (as amended).

In order to understand the requirements outlined above and what is required for the EVC provision in each case we have defined the two categories, as follows.

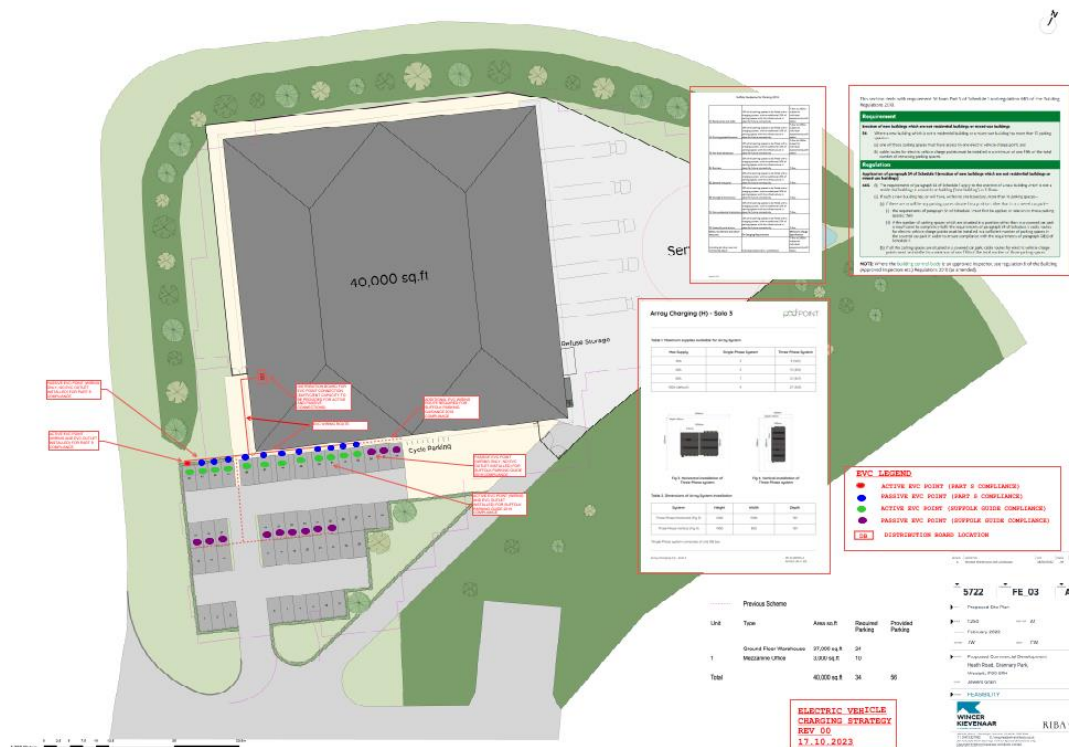
Active Point – This requires that the parking bay is provided with a dedicated or shared EVC outlet point connected by power cabling to the buildings electrical distribution system, and is fully functional on completion of the works.

Passive Point – This requires that the parking bay is provided with a means of future connection of an EVC outlet only, this would require that all cabling facility, connection point with the electrical distribution system are suitable for the future connected installation and requiring only the provision of the charger outlet to complete the system.

Section 3 – Summary

It is noted that the requirements of the Suffolk Guidance for Parking (2019) are greater than that of the current building regulations standards in Part S. This has been represented graphically in fig 1.2 below.

Figure 1.2: Site Plan – EVC Requirements



Whilst it is acknowledged that the planning condition cites the Suffolk standards we would assume that as the Building Regulations Part S allowance would provide the provision for a potential 12no. EVC points once fully utilised, that this would be sufficient for needs of the anticipated building occupants and visitors needs. Using the guidance from Part S would lessen the impact of the EVC system on the electrical mains infrastructure connection point. The impact on infrastructure would be further reduced by using a managed array system for the charging points which would share the connected load equally amongst the total EVC points when in operation.

We would therefore propose to provide EVC charging in accordance with Part S building regulations and employ a managed array EV charging system for this development.