Office for Low Emission Vehicles

Consultation: Electric Vehicle Charging in Residential and Non-Residential Buildings

HBF Technical Conference
September 2019

Consultation on EV charging in Building Regulations

Office for Low Emission Vehicles

- Consultation: *Electric vehicle chargepoints in residential and non-residential buildings* published on the 15th of July. Close **7 October 2019**

- Seeks views on the government's proposal to alter the Building Regulations to include requirements for EV chargepoints in new residential and non-residential buildings with associated car parking + setting minimum chargepoint requirements for existing buildings

- Follows the commitment in the Road to Zero to consult as soon as possible on introducing a requirement for every new home to have a chargepoint

- Covers the transposition of the electromobility sections in the EU Energy Performance of Buildings Directive

- The consultation covers England only

Consultation timeline

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Stage	Time
Consultation Period	Until 7 October 2019
Consultation Analysis and Policy Development	Autumn 2019
Building Regulations laid in Parliament	Winter 2019
Transposition	By March 2020

Lead in times

- We are consulting on the appropriate lead-in times for the requirements
- For the EPBD requirements for new buildings the requirements must come into force by March 2021
- The EPBD requirement for existing buildings will come into force from 2025

Proposed requirement for new residential buildings

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The government proposes new regulations for every:

- ***new dwelling***,
- buildings undergoing ***material change of use*** to create a new dwelling

with an associated dedicated car parking space that are within the site boundary of the building to have a chargepoint.

And for every residential building undergoing ***major renovations*** with more than 10 car parking spaces within the site boundary of the building to have cable routes for electric vehicle chargepoints in every space.

Policy rationale

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- We are doing this as it:
  - Ensures future homes are EV ready
    - ❖Most charging currently happens at home
    - ❖Home charging is cheaper
    - ❖98% of journeys are under 50 miles
  - Provides the best value for money (*Upfront vs retrofit = cost saving of £1,064 per chargepoint*)
  - Provides a 'nudge' to help support EV uptake
  - Electricity system benefits
  - Creates increased demand for chargepoints to bring down their cost
  - Deters customers from defaulting to dangerous solutions to charge their vehicles

- England is the first country in the world with plans for every newly built home with an associated car parking space to be fitted with an electric vehicle chargepoint

Options considered

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- Minimum EPBD requirements: Ducting for all spaces in residential buildings with more than 10 car parking spaces
  - Less cost savings.
  - Future costs for consumer – requires electrician to visit the house
  - No “nudge factor”

- Cabling only in all new homes
  - Still includes grid connection costs
  - No “nudge factor”

- Optional Building Regulation Requirement (on top of minimum EPBD requirement as mandatory). This would leave it up to the discretion of the individual Local Planning Authority to apply the requirement in their area.
  - EV access is not a localised issue
  - No consistent national approach
  - Slower pace of installation – only when LPA review their planning policies
  - Will not apply when dwellings are created through permitted development rights

Limits of application: New dwellings

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- The requirement is per dwelling rather than per parking space

- Consulting on appropriate lead-in time for these regulations. The EPBD requirements (cable routes in every parking space for residential buildings with more than 10 car parking spaces) must come into force by the latest 10 March 2021.

- Technical feasibility criteria:

  "For new dwellings, the installation of an electric vehicle chargepoint should be considered technically feasible if the additional costs of reinforcement and upgrades to the local electrical distribution network would not exceed [£x] per dwelling. This cost should be calculated as the additional capital cost for electrical infrastructure, as compared to that which would be required without the chargepoints."

  - Propose setting this at three times the high scenario cost of the average electrical capacity connection required for a chargepoint in a multi-dwelling building = £3,600
  - Intention is to only exempt developments where the installation of chargepoints would result in developments not being taken forward as a result of this cost
  - High threshold creates an incentive for developers to work with chargepoint operators and distribution network managers to find innovative solutions in circumstances where the electrical capacity is constrained (e.g. battery storage)

Limits of application: Material change of use and major renovations

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- Consulting on appropriate lead-in time for these regulations. For ***major renovations***, under the EPBD, the requirements come into force by the latest 10 March 2021

- The requirements are not to apply when a new power supply is needed. The requirement will then be reduced to the number of chargepoints that can be accommodated within the existing power supply, if any

- For ***material change of use*** requirements: Exemption for listed buildings or buildings in conservation areas

- For ***major renovation*** requirements: Exemption where the cost of installing the cable routes exceeds 7 per cent of the total cost of the major renovation of the building

Policy proposal for non-residential buildings

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New non-residential

- The government proposes for every new non-residential building and every non-residential building undergoing a major renovation, with more than 10 car parking spaces within the site boundary of the building to have ***one chargepoint*** and ***cable routes for electric vehicle chargepoint cabling for one in five spaces***.

Existing non-residential buildings

- A minimum of ***one chargepoint*** per existing non-residential building with more than 20 car parking spaces
- Seeking views on appropriate enforcement regime

Technical Guidance

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- Each part of the Building Regulations comes with an associated Approved Document to provide technical guidance on how to comply with the regulations

- We publish a draft version of the Approved Document with the consultation document and invite comments on whether it is clear, appropriate and fit for purpose

- We also propose that the installation, addition or alteration of dedicated circuits and earthing and bonding arrangements for electric vehicle chargepoints should be notifiable building work under Part P of the Building Regulations

Definitions

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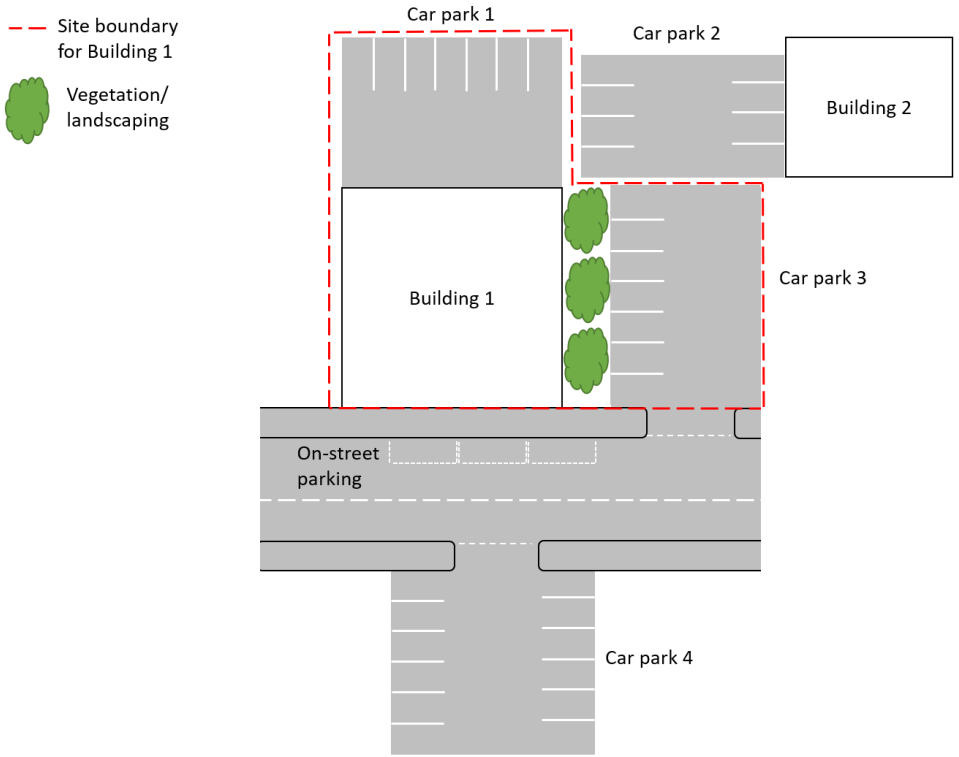
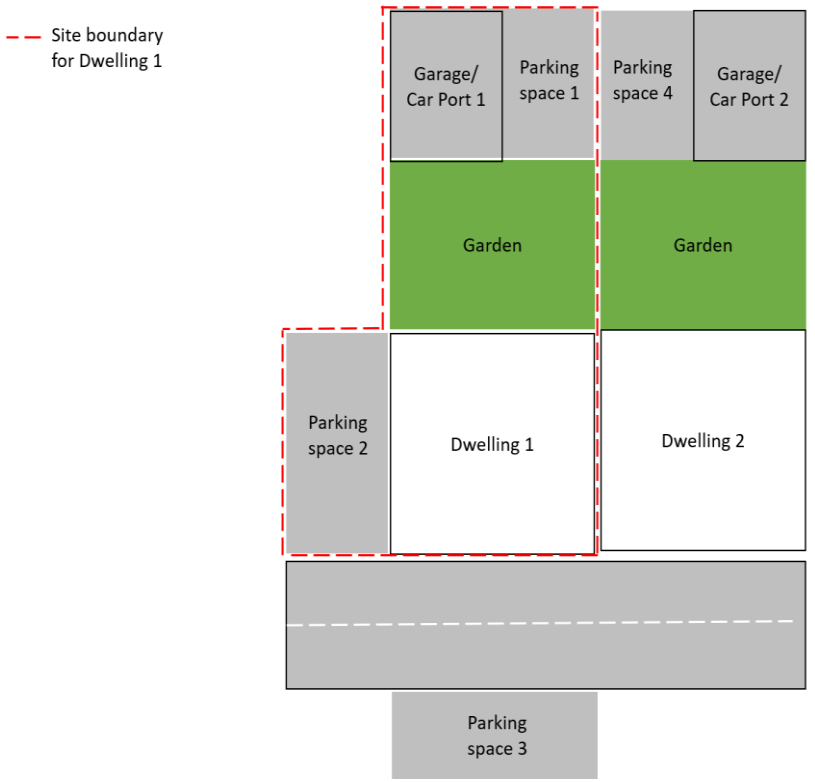
- The relationship between the building and the car park
  - “within the site boundary of the dwelling or building containing the dwelling“
- Up to the individual local building control authorities to decide what is within scope of the regulations.





Infrastructure specifications

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We intend to include requirements for infrastructure in the Approved Document that ensures universality and futureproofing of the chargepoints. That includes the following specifications:

- Designed in compliance with BS EN 61851
- Minimum rated output of 7kW power
- Universal socket (Untethered)
- Mode 3 or equivalent
- Compliance with forthcoming smart functionality regulations

Location and accessibility

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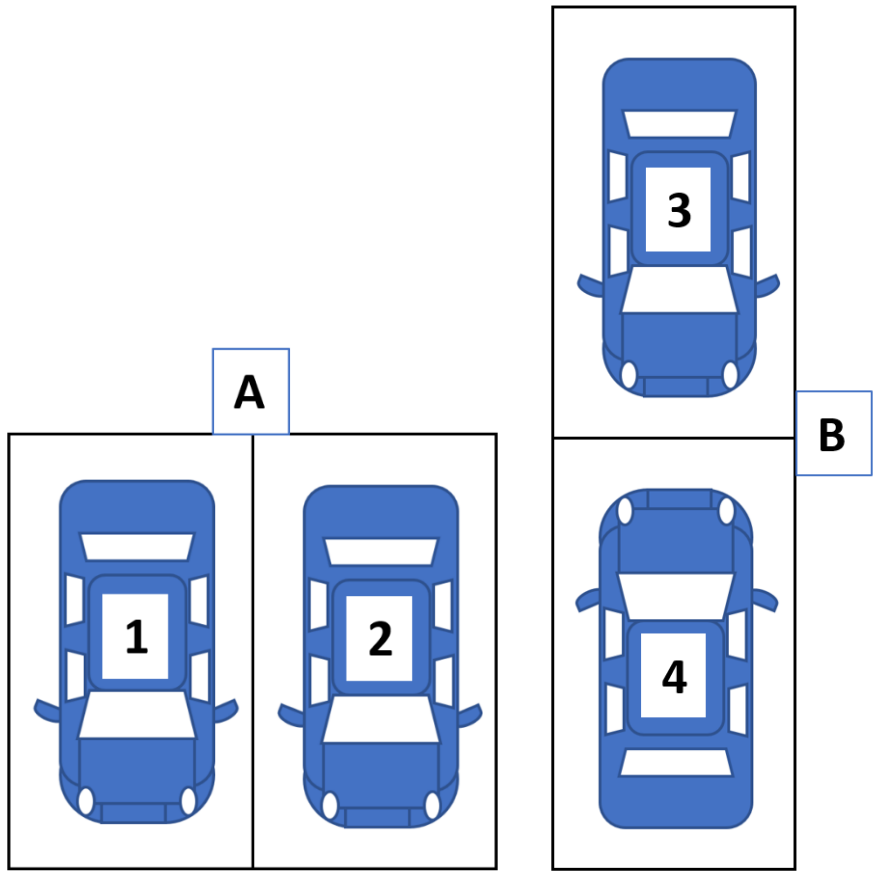
Future connection location which may serve more than one parking space



The enabling infrastructure should be provided from a metered electricity supply point up to a future connection point.
Including:

- Sufficient space for a new electrical connection at metered supply point
- A dedicated, safe, unobstructed route for electrical cabling
- A future connection location
- Provision to facilitate the safe installation of an EV chargepoint

A suitable strategy should be identified to ensure that a future EV chargepoint installation meet the standards given in BS7671:

- Earthing
- Simultaneous contact with extraneous parts

Location and accessibility

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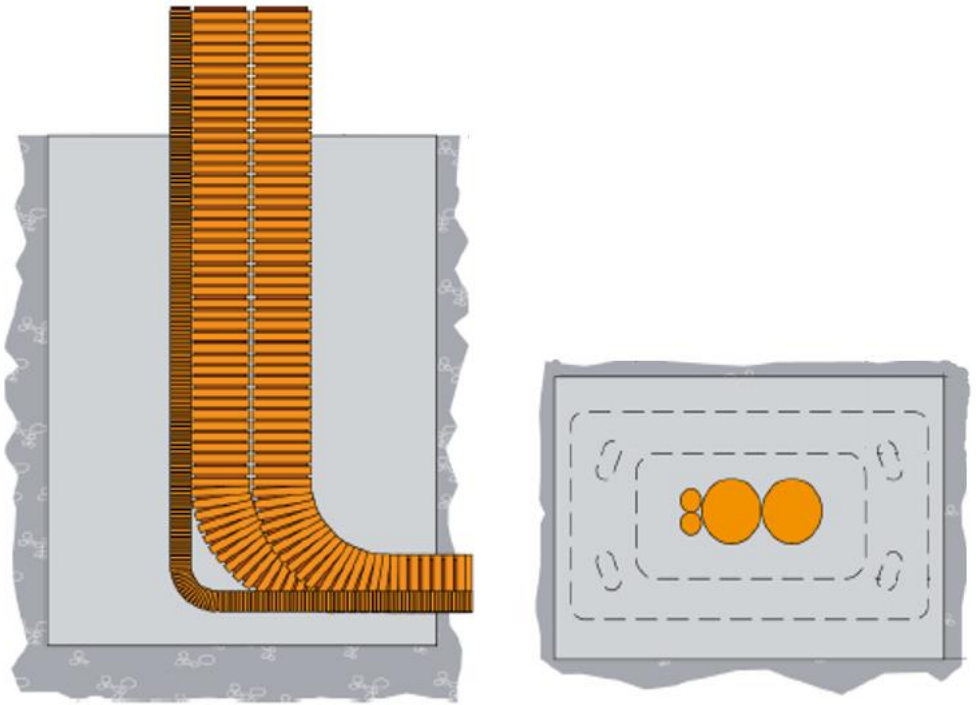
Example electrical ducting as part of the enabling infrastructure for a floor-standing electric vehicle chargepoint to serve two parking spaces



- A dedicated, safe, unobstructed route should be made from the electrical supply point which allows for the future provision of all necessary electrical cabling to each identified future connection location without the need for builders work in connection to the electrical cabling installation.
- This may be achieved using any combination of electrical containment systems, such as:
  - electric cable ducting including drawstrings;
  - electric cable trunking or conduits;
  - electric cable trays and cable ladders
- The future location connection should be clearly labelled.

Location and accessibility

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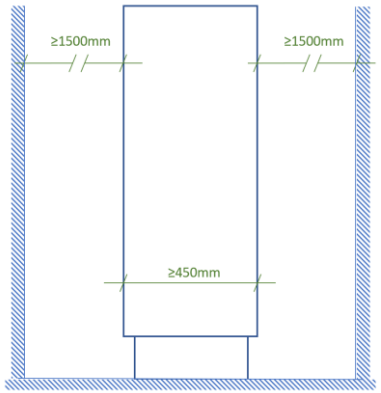
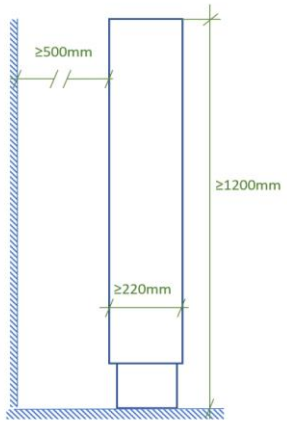
Minimum space requirements for a floor-mounted and a wall-mounted electric vehicle chargepoint, not including vehicle barriers

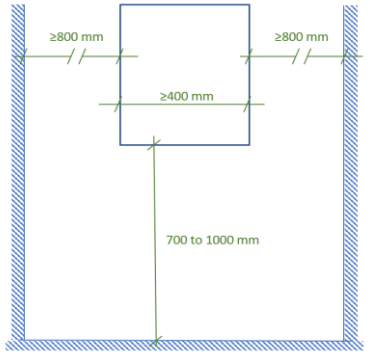
Front elevation



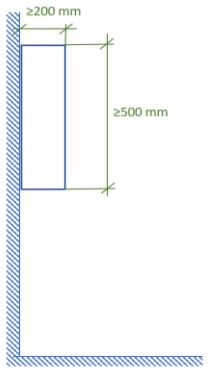
Side elevation



Front elevation



Side elevation



- The future connection location should be designed with adequate space for the full installation of an electric vehicle chargepoint incorporating the necessary space for:
  - access for the purposes of recharging an electric vehicle;
  - access for installation and maintenance of the electric vehicle chargepoint;
  - vehicle barriers as necessary.

- Guidance on the accessibility requirements of the Building Regulations, including the location of sockets and switches, is given in **Approved Document M**.

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THANK YOU

chargepointsinbuildings@dft.gov.uk