Part S 2021

Where to start

Future Homes Hub

Electric vehicle charging infrastructure for new homes:
A guide for housebuilders and their advisors

26.04.2023

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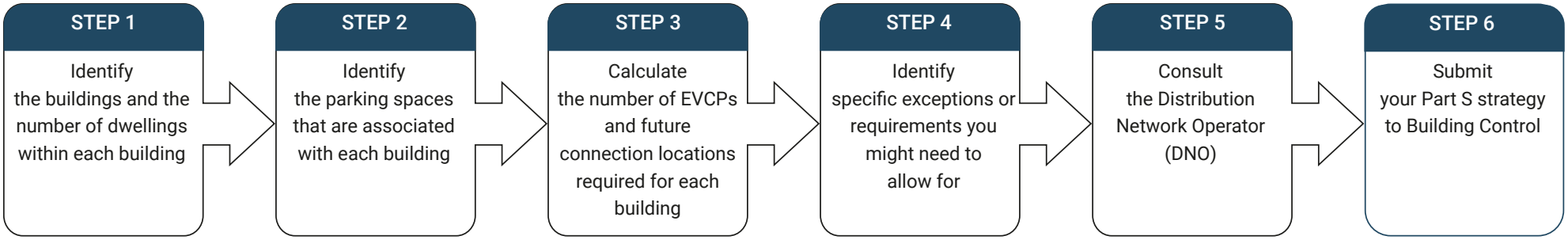


When you must include charge points

Under Part S (2021) of the Building Regulations in England, all relevant new build properties with car parking must have infrastructure for the charging of electric vehicles, which will typically be electric vehicle charge points (otherwise known as EVCPs).

When you build a new home you must meet two main requirements:

EVCP requirement:

- provide one EVCP for each new dwelling (a self-contained unit for a single household) – if there are fewer associated parking spaces than dwellings, all spaces will need an EVCP

Future connection location requirement:

- for buildings with more than 10 associated car parking spaces only – additionally provide cable routes to future connection locations for all associated car parking spaces without an EVCP

Note that 'associated spaces' is a defined term under Part S.

See step 2 for further details on how to identify which parking spaces are associated with which buildings.

Electric vehicle charging infrastructure does not need to be included if either:

- no parking is included with the development site, or
- you applied for a building notice or initial notice before 15 June 2022, so long as your site has started before 15 June 2023

Find out more in the Transitional Arrangements for Approved Documents from NHBC.

Recommended approach to meet Part S

Use the following steps when you build new homes so you can design for EVCPs and cable routes to comply with Part S:

1. Identify the buildings and the number of dwellings in each building
2. Identify the parking spaces that are associated with each building
3. Calculate the number of EVCPs and the cable routes for each building
4. Identify any specific exceptions or requirements you might need to allow for
5. Consult the Distribution Network Operator (DNO)
6. Submit your Part S strategy to Building Control

Workflow for developers

STEP 1
Identify the buildings and the number of dwellings within each building

STEP 2
Identify the parking spaces that are associated with each building

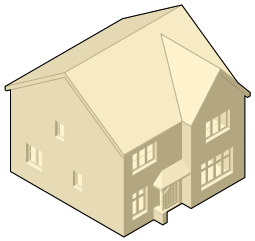
STEP 3
Calculate the number of EVCPs and future connection locations required for each building

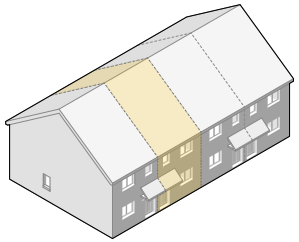
STEP 4
Identify specific exceptions or requirements you might need to allow for

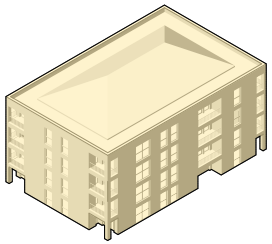
STEP 5
Consult the Distribution Network Operator (DNO)

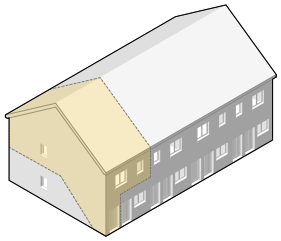
STEP 6
Submit your Part S strategy to Building Control

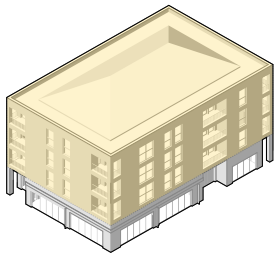
STEP 1: Identify the Buildings and number of dwellings


Detached dwelling


Terrace dwelling


Apartment building


Maisonette dwelling


Apartment building with commercial facilities on ground floor

Compliance under Part S is assessed on a building basis. You will need to identify the buildings and the number of dwellings in each to calculate how many EVCPs and future connection locations you need to comply.

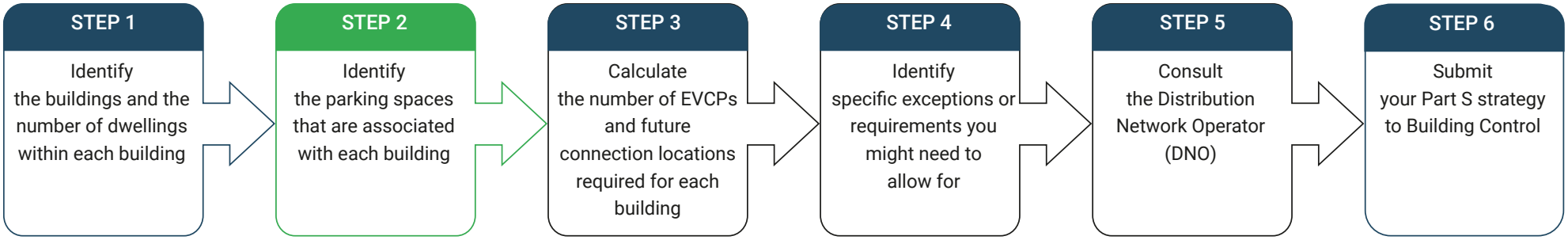
Note that 'building' is a defined term under the Building Regulations – it can refer to an individual dwelling or a building containing several dwellings depending on the context.

Your calculation will depend on the type or types of buildings on your development.

For example:

- a detached dwelling is one building
- each semi-detached or terraced dwelling may be considered to be one building – i.e. a row of terraced homes may be several buildings
- an apartment building with communal facilities (e.g. entrance / lifts / stair core) may be considered to be one building, despite being made up of multiple flats
- maisonettes or flats over a garage with their own entrance door may be considered to be one building
- the non-residential part of a mixed-use building is considered as a separate building

Workflow for developers



STEP 2: Identify the associated parking spaces

You will need to identify the parking spaces that are associated with each building on your development site to calculate the number of EVCPs and cable routes you must provide.

All parking spaces within your development site boundary must be associated with one or more buildings.

Identify **associated parking spaces** as follows:

1. Parking spaces demised to a specific dwelling for the exclusive use of the occupant of, or visitor to, that dwelling (often conveyed as part of the sale)
2. Any communal or visitor spaces demised to a specific building
3. Communal spaces shared by occupants of more than one building (but not for general public use)
4. Communal or visitor spaces for general public use

Communal or visitor spaces for more than one building may be associated with these buildings on a pro-rata basis, based on the number of dwellings in each building – even if this creates a decimal or fraction number of spaces.

Communal or visitor spaces for general public use (e.g. spaces within the highway) may be associated with all buildings on the development site on a pro-rata basis.

Remote spaces

Spaces can only be associated with buildings within the same continuous site development boundary.

If your development site is not continuous – for example, developments with areas on both sides of an existing adopted road/footpath or bisected by land under other ownership (at the time a building notice, full plans application or initial notice has been submitted) – it is effectively considered to be two separate development sites under Part S.

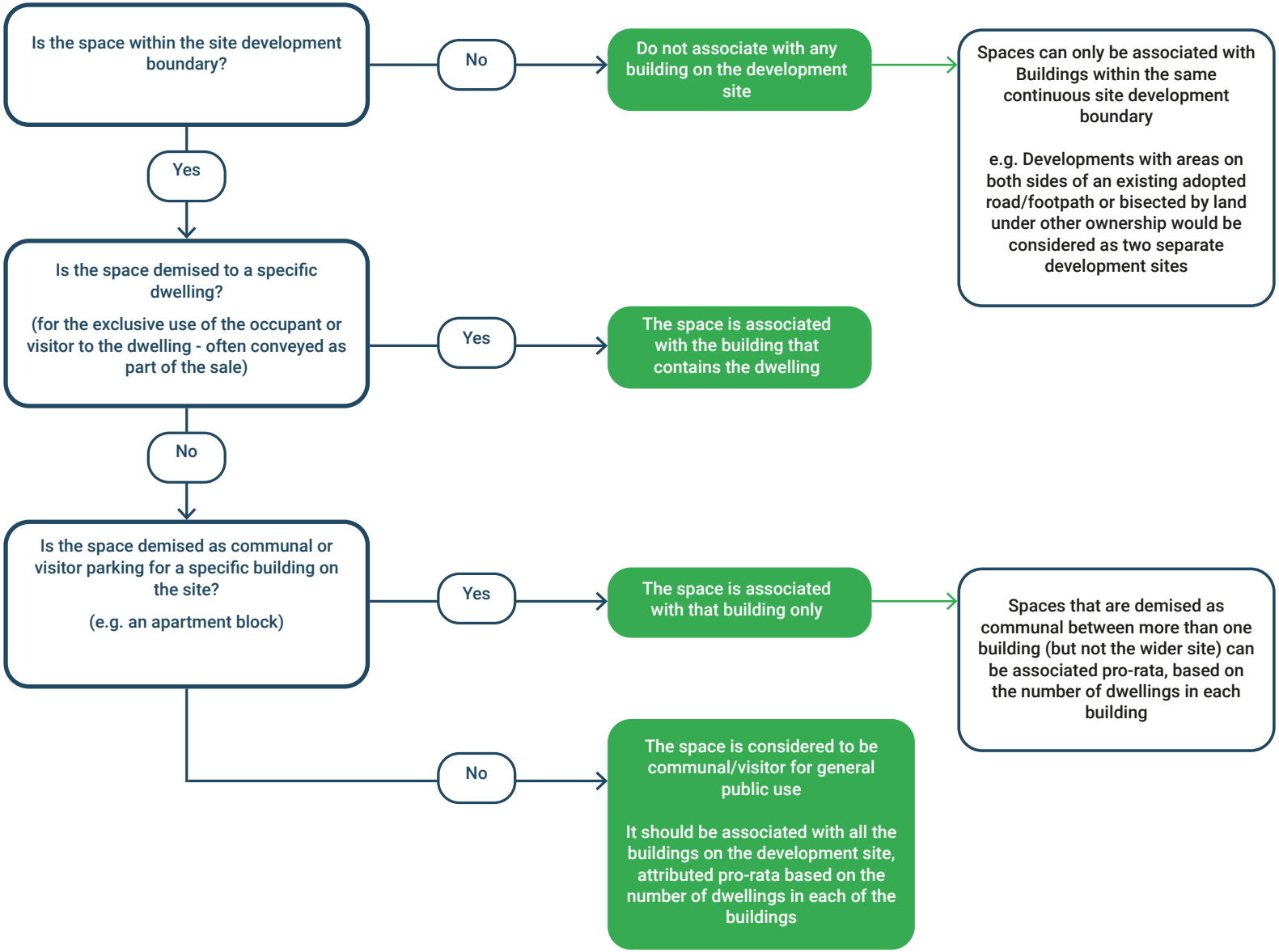
Mixed use buildings

Non-residential buildings and parking spaces are considered separately from residential buildings under Part S. Mixed use buildings are therefore split into residential and non-residential buildings.

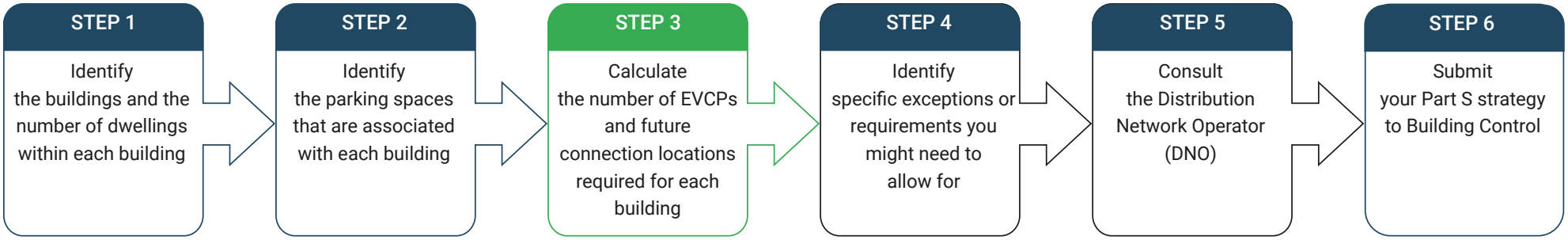
Any parking spaces designated for use by customers/employees of the non-residential part of a mixed-use building are associated with the relevant non-residential building.

Flowchart 1. Associates spaces

How to decide whether to associate a space with a particular building



Workflow for developers



STEP 3: Calculate the number of EVCPs and future connection locations

Residential buildings

Apply the requirements on a per building basis:

					Refer to Approved Document Part S:
EVCPs required	=	Number of dwellings in the building	**or**	All associated spaces where there are fewer spaces associated with the building than dwellings	**Requirement S1 (2)**
Future connection locations required	=	Cable routes to all associated spaces without an EVCP where there are 10 or more spaces are associated with the building			**Requirement S1 (3)**

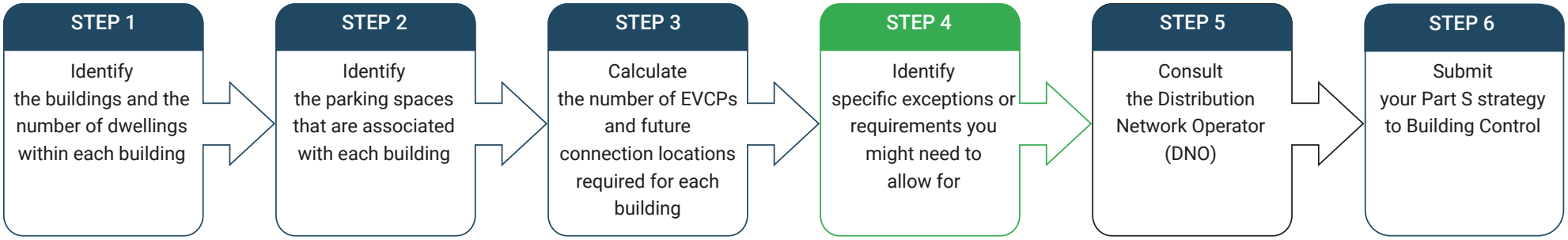
Non-residential buildings

Apply the requirements on a per building basis:

EVCPs required	=	1 EVCP where there are 10 or more spaces associated with the building	**Requirement S4**
Future connection locations required	=	Cable routes to a minimum of 20% of spaces without an EVCP where there are 10 or more spaces are associated with the building	**Requirement S4**

Remember: mixed use buildings are split into residential and non-residential buildings.

Workflow for developers



STEP 4: Identify site-specific exceptions or requirements

EVCP and future connection location requirements might change depending on your specific development, if any of the following apply:

- accessible parking spaces
- covered parking
- connection cost cap

Accessible parking spaces

When you have accessible parking spaces (for disabled users) associated with your building, you must have at least one accessible parking space with access to either of the following:

- an EVCP
- a future connection location

Covered parking spaces

When you have covered parking spaces associated with a building, an exception to the EVCP requirement S1(2) may apply.

Covered parking spaces means a car park with a roof, unless it is:

- garages or car ports only for occupants of or visitors to a dwelling
- car ports that cover otherwise open spaces

If there are more EVCPs required than uncovered spaces associated with the building then you will need to install both of the following, in order:

1. EVCPs to all uncovered spaces
2. Future connection locations and cable routes in lieu of EVCPs to covered parking spaces, up to the number required by S1(2)

Note that the future connection location requirement S1(3) will apply additionally, regardless of whether spaces are covered or uncovered. Buildings with more than 10 associated car parking spaces will need future connection locations to all spaces without an EVCP.

Connection cost cap

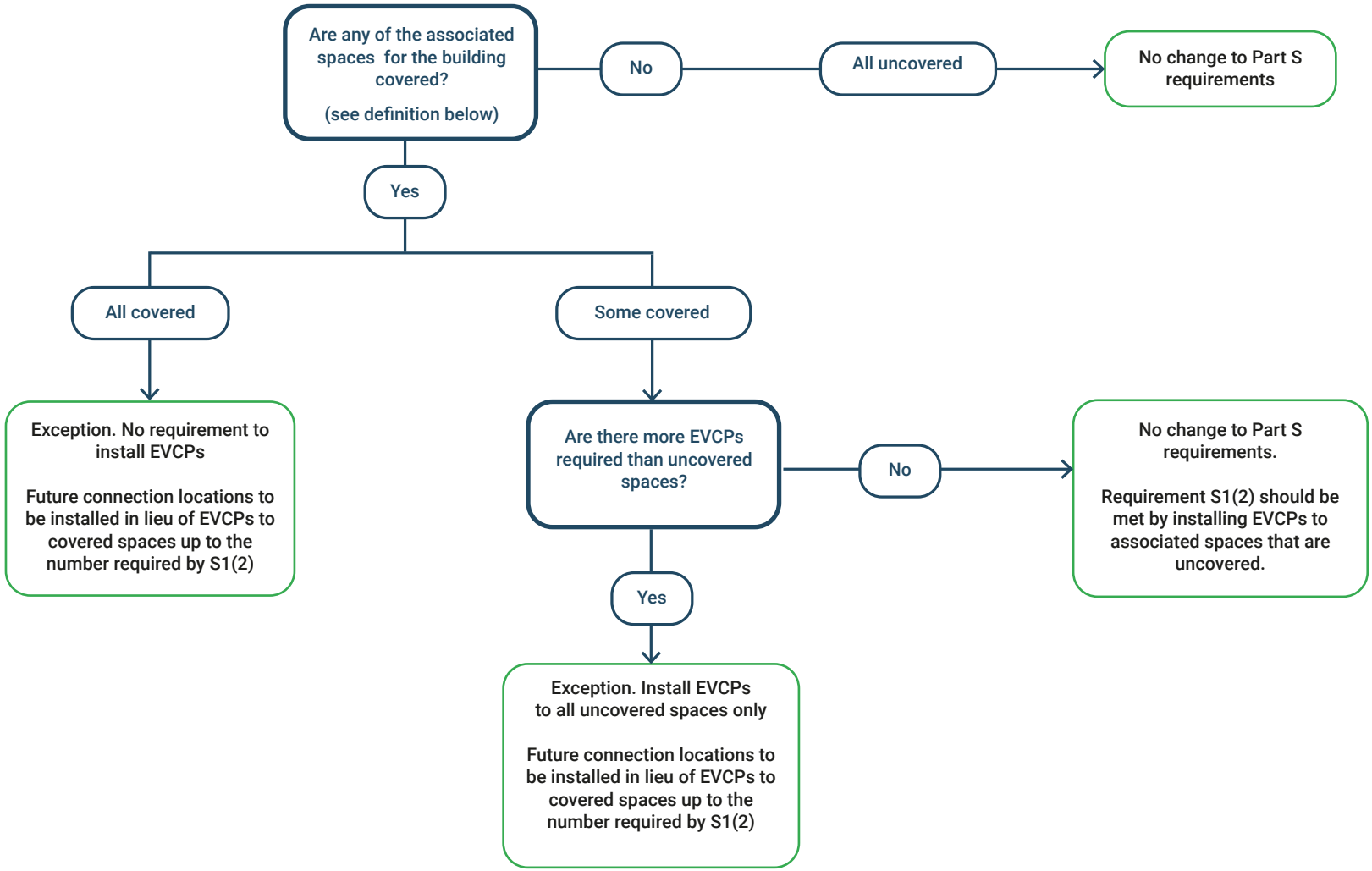
If the additional connection cost to install the EVCPs required by Part S (for the site as a whole vs. the same site without EVCPs) exceeds an average of £3,600 per EVCP then the requirement may be capped.

See Step 5 .

Refer to Approved Document Part S, Regulation 44D for when the covered parking and connection cost cap exceptions apply.

Flowchart 2. Covered spaces

How to decide whether an exception applies for covered parking – reference Part S, Regulation 44D(4)

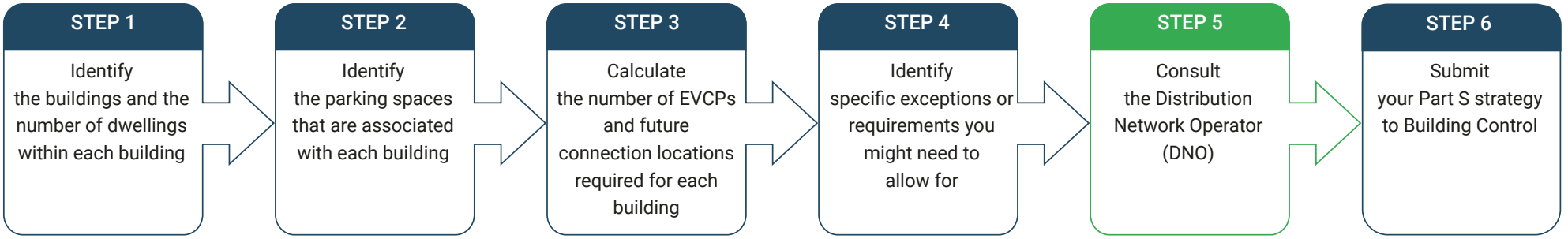


Definition: Covered parking spaces means a car park with a roof, unless it is:

- *garages or car ports only for occupants of or visitors to a dwelling*
- *car ports that cover otherwise open spaces*

Note: the future connection location requirement S1(3) will apply additionally for buildings with more than 10 associated car parking spaces.

Workflow for developers



STEP 5: Consult the Distribution Network Operator (DNO)

Check if you go above the £3,600 cap cost

An exception to requirement S1(2) may apply if the connection cost for EVCPs is excessive.

However, the cap is unlikely to apply in most domestic new build scenarios, because the network capacity required for an EV charge point (of 7.2kW or less) is usually accounted for within the standard allowance made by your DNO (including IDNO) for each new build home.

Where public / communal / workplace EVCPs are included as part of the scheme, an additional maximum demand allowance is likely to be relevant and this may or may not require offsite network reinforcement depending on the specific circumstance. Your DNO will be able to advise.

Part S (regulation 44D) requires that you install the maximum number of EVCPs before the average connection cost exceeds £3,600 per EVCP.

The connection cost relates to the additional offsite network reinforcement cost vs. the same development without the EVCPs required by Part S. As such, it excludes the cost of any building work or the EVCPs themselves. If there are additional local authority requirements such as the London Plan, or customer requirements, that exceed Part S, these should be excluded.

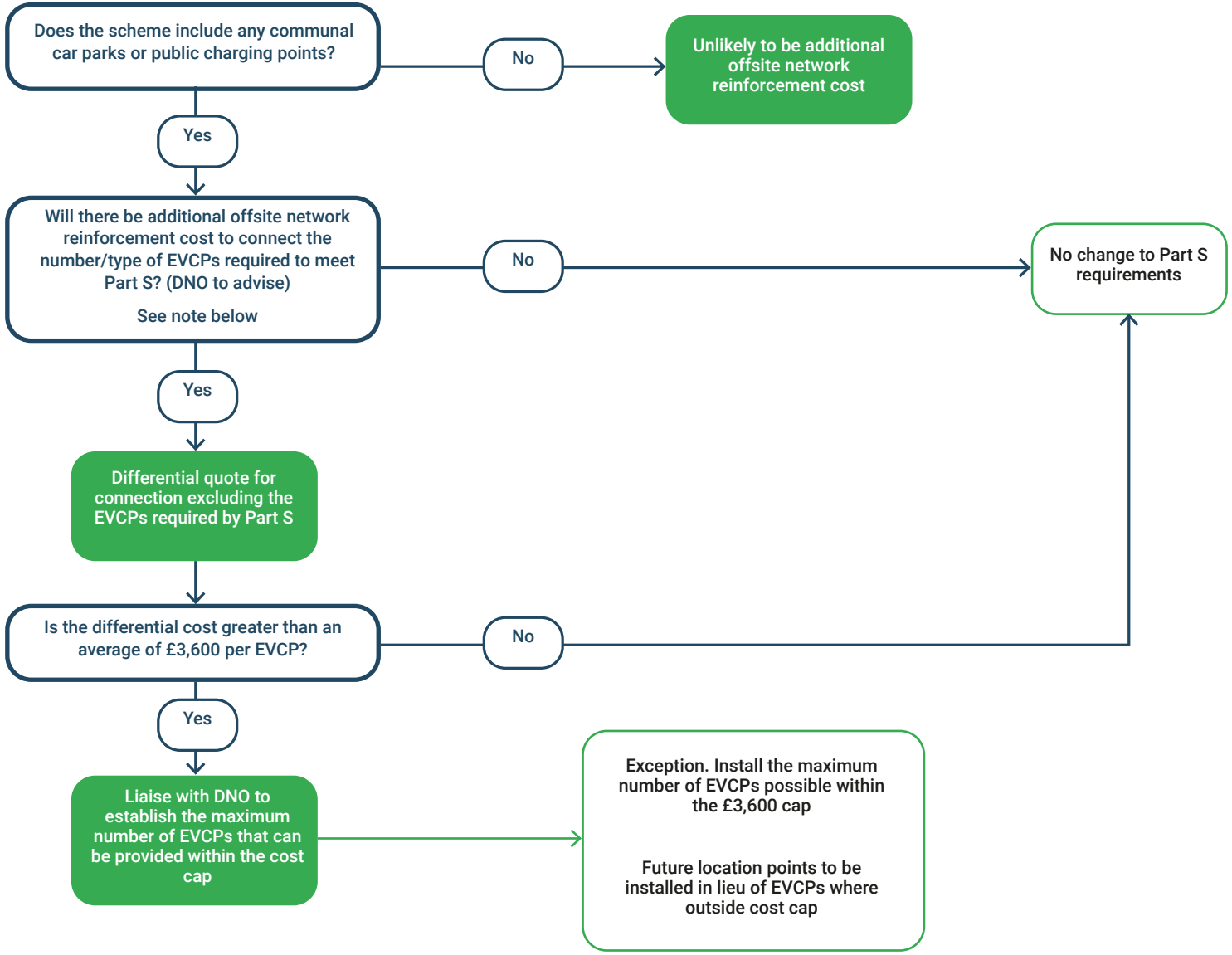
If your DNO advises that there would be additional offsite network reinforcement costs to connect the required number of EVCPs, and those charges are in excess of the £3,600 cap, then you will need to liaise with the DNO to establish the maximum number of EVCPs that can be provided within the cost cap

You will need to install future connection locations in lieu of EVCPs if you cannot satisfy the full EVCP requirement within the £3,600 cap.

Note: this exception does not affect future connection location requirement S1(3). It will apply additionally for buildings with more than 10 associated car parking spaces.

Flowchart 3. The £3,600 cap

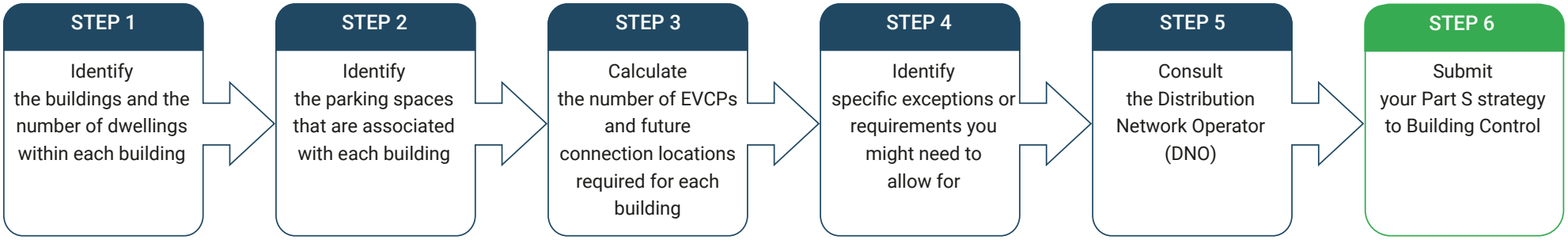
How to decide whether an exception applies



Note: the additional connection cost should not include EV charging infrastructure beyond the Part S requirement e.g. where Local Authority requirements exceed Part S

Note: the future connection location requirement S1(3) will apply additionally for buildings with more than 10 associated car parking spaces.

Workflow for developers



STEP 6: Submit your Part S strategy to Building Control

Building Control will require you to submit a full strategy showing how infrastructure for the charging of electric vehicles will be included on the development.

Highlight in your strategy:

- where EVCPs and cable routes for future connection locations are to be provided either on a plot by plot basis, or a building basis.
- which parking spaces are associated with which buildings, on a demised or communal basis

This information could be presented in a schedule and on the site plan to assist building control in checking the provision.

If the cost cap is applicable, you should provide;

- a quotation from a DNO, or equivalent, noting the average additional connection cost exceeds £3,600 per EVCP
- a further statement from the DNO confirming the maximum number of EVCPs which can be supported within the £3,600 cap.

Your strategy should also refer to:

- the minimum 'technical requirements for electric vehicle charge points' in line with paragraph 6.2 of Approved Document Part S
- 'cable routes and locations for EVCPs' in line with paragraphs 6.3 to 6.10
- 'future connection locations' in line with paragraphs 6.11 and 6.12

Full details of the actual installation will not be required at application stage. However, building inspectors would expect to see full provision as per the strategy with the technical standards for EVCPs, future connection locations and cable routes as per Section 6 of the Approved Document before compliance is signed off.

Where this can not be provided immediately at handover - for example, where communal parking may not be complete - it may affect the completion process for Building Control and Warranty. Talk to your service provider early on if this situation is likely to happen so you can complete handing over the dwelling to your customer.

Worked Example 1 - Single dwellings

KEY

- 1 EVCP
- Uncovered parking
- Car port/garage
- Existing adopted road/footpath
- Site ownership boundary

Building 1 *(This example also applies to building 2)*

Number of dwellings	1	A detached building is one dwelling
Number of associated spaces	4	Building 1 has 4 demised spaces
Number of EVCPs required	1	There is 1 dwelling in the building
Number of future connection locations required	0	There are not more than 10 spaces associated to this building

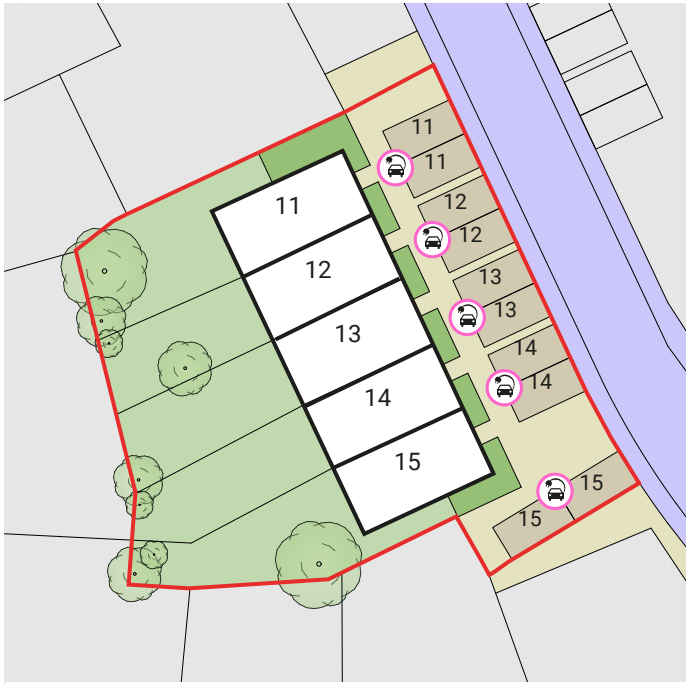
Building 4

Number of dwellings	1	A detached building is one dwelling
Number of associated spaces	1	Building 4 has 1 demised space
Number of EVCPs required	1	There is 1 dwelling in the building
Number of future connection locations required	0	There are no more than 10 spaces associated with this building

Technical Notes

- Car ports or garages for single dwellings do not count as "covered"
- Challenges: Parking space for building 4 is not adjacent to dwelling. Not recommended to mount EVCPs inside garages. EVCPs cannot practically be mounted on fences, which are considered movable objects.
- Possible solution: wall mount on the pier of garage if appropriate clearances per manufacturers guidelines. (Note that space requirements stated in diagrams 6.4 and 6.5 of Part S are for future connection locations, not EVCPs)
- Possible solution: install an EVCP post next to driveway, wired from the consumer unit (distribution board) in the house.

Worked Example 2 - Terraced houses



Building 11 *(This example also applies to Buildings 12, 13, 14 and 15)*		
Number of dwellings	1	Each dwelling in a row of terraces is considered to be a building
Number of associated spaces	2	Building 11 has 2 demised spaces
Number of EVCPs required	1	There is 1 dwelling in the building
Number of future connection locations required	0	There are no more than 10 spaces associated with the building

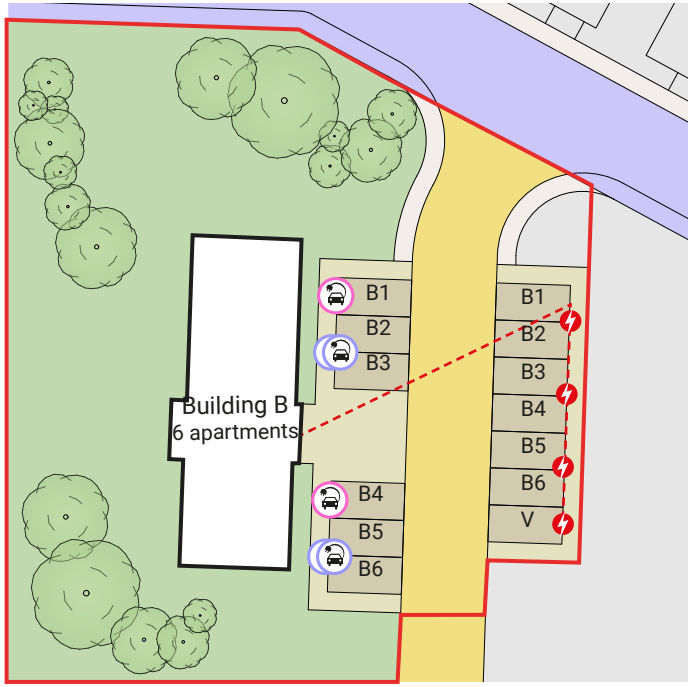
KEY

- 1 EVCP
- Uncovered parking
- Existing adopted road/footpath
- Site ownership boundary

Technical Notes

- Challenges: A private shared footpath runs between the spaces and the dwellings. Potential trip hazard of cables crossing the path.
- Possible solution: install EVCP posts next to spaces. Cable runs from each house distribution board under the private path.

Worked Example 3 - Apartment blocks



KEY

- Future connection location
- 1 EVCP
- 2 EVCPs
- Uncovered parking
- Accessible uncovered parking
- Private road
- Existing adopted road/footpath
- Site ownership boundary

Building A

Number of dwellings	6	An apartment building with communal facilities is considered to be one building
Number of associated spaces	7	Spaces labelled A are communal and demised to Building A.
Number of EVCPs required	6	There are 6 dwellings in the building
Number of future connection locations required	0	There are no more than 10 spaces associated with this building

Building B

Number of dwellings	6	An apartment building with communal facilities is considered to be one building
Number of associated spaces	13	Spaces labelled B1 to B6 are demised to dwellings B1 to B6. Space labelled V is for visitors to Building B.
Number of EVCPs required	6	There are 6 dwellings in the building
Number of future connection locations required	7	There are more than 10 spaces associated with this building so cable routes are required to all spaces that don't have EVCPs

Technical Notes

- Double charge posts can be installed where appropriate, which serve two spaces. Future connection locations can also be located similarly. Refer to Approved Document Part S paragraph 6.6.
- Building A has an accessible space so one of the EVCPs needs to serve this.

Worked Example 4 - Terraced houses with unequal designation of parking spaces

KEY

- 1 EVCP
- Uncovered parking
- Existing adopted road/footpath
- Site ownership boundary

Building 31 *(This example also applies to Buildings 32, 33 and 34)*

Number of dwellings	1	Each dwelling in a row of terraces is considered to be a building
Number of associated spaces	2	Building 31 has 2 demised spaces
Number of EVCPs required	1	There is 1 dwelling in the building
Number of future connection locations required	0	There are no more than 10 spaces associated with this building

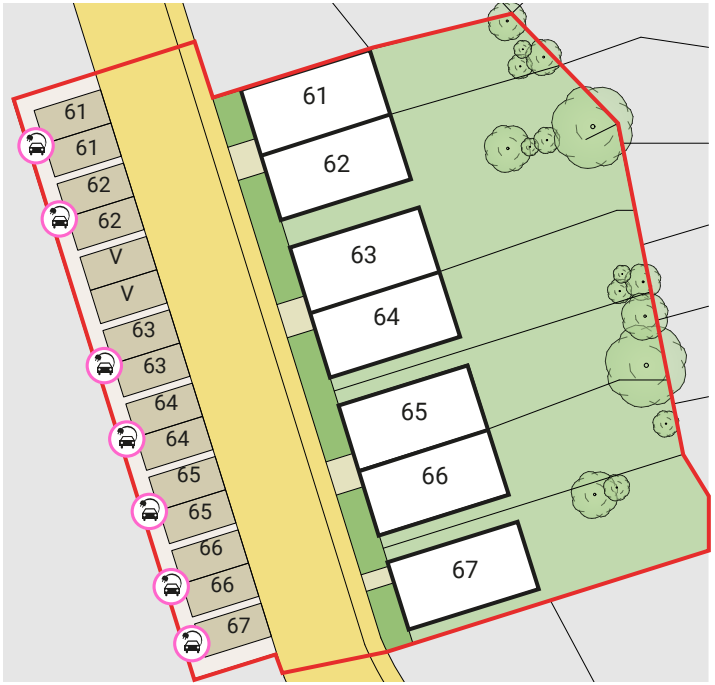
Building 35

Number of dwellings	1	Each dwelling in a row of terraces is considered to be a building
Number of associated spaces	0	No spaces are available to building 35. (All spaces on the development site are demised to other buildings)
Number of EVCPs required	0	There are 0 associated spaces so no requirement for EVCPs
Number of future connection locations required	0	There are 0 associated spaces so no requirement for cable routes

Technical Notes

- Challenges: A private footpath runs between the spaces and the dwellings. Potential trip hazard of cables crossing the path.
- Possible solution: install EVCP posts next to spaces. Cable runs from each house distribution board under the private path.

Worked Example 5 - Semi-detached houses with parking on the other side of the road



KEY

- 1 EVCP
- Uncovered parking
- New road/footpath to be adopted
- Site ownership boundary

Building 61 *(This example also applies to Buildings 62, 63, 64, 65 and 66)*

Number of dwellings	1	Each dwelling in a row of terraces is considered to be a building
Number of associated spaces	2.28	Building 61 has 2 demised spaces. There are also 2 communal visitor spaces for the use of buildings 61 to 67. These are associated pro-rata based on the number of dwellings: 2 demised spaces + (2 visitor spaces / 7 dwellings) = 2.28 associated spaces
Number of EVCPs required	1	There is 1 dwelling in the building
Number of future connection locations required	0	There are less than 10 spaces associated with this building

Building 67

Number of dwellings	1	
Number of associated spaces	1.28	Building 67 has 1 demised space. There are also 2 communal visitor spaces for the use of dwellings 61 to 67. These are associated pro-rata based on the number of dwellings: 1 space + (2 visitor spaces / 7 dwellings) = 1.28 associated spaces
Number of EVCPs required	1	
Number of future connection locations required	0	

Technical Notes

- Challenge: due to the risk and liability for future maintenance, a Local Authority is likely to choose **not** to adopt any road or footpath that has privately owned street furniture (e.g. EVCPs) or cable routes running underneath it. The implication is that many roads in new build estates that might otherwise be expected to be adoptable would not be.
- Possible solution: a dedicated feeder pillar may be appropriate. Consider the size and footprint required for the cabinet (installed by developer, new connection by DNO/ IDNO). Consider that each new connection carries a separate standing charge for the home owner.
- Possible solution: A single feeder pillar could serve several EVCPs - however, this would require a management company to allocate the charging costs to individual home owners.
- A third-party-operated EVCP service with a smart method of metering may be an acceptable way to meet the Part S requirements. EVCPs would have to be private, not public charge points.

Worked Example 6 - Remote spaces separated from building by existing adopted road or footpath

KEY

- Uncovered parking
- Existing adopted road
- Site ownership boundary

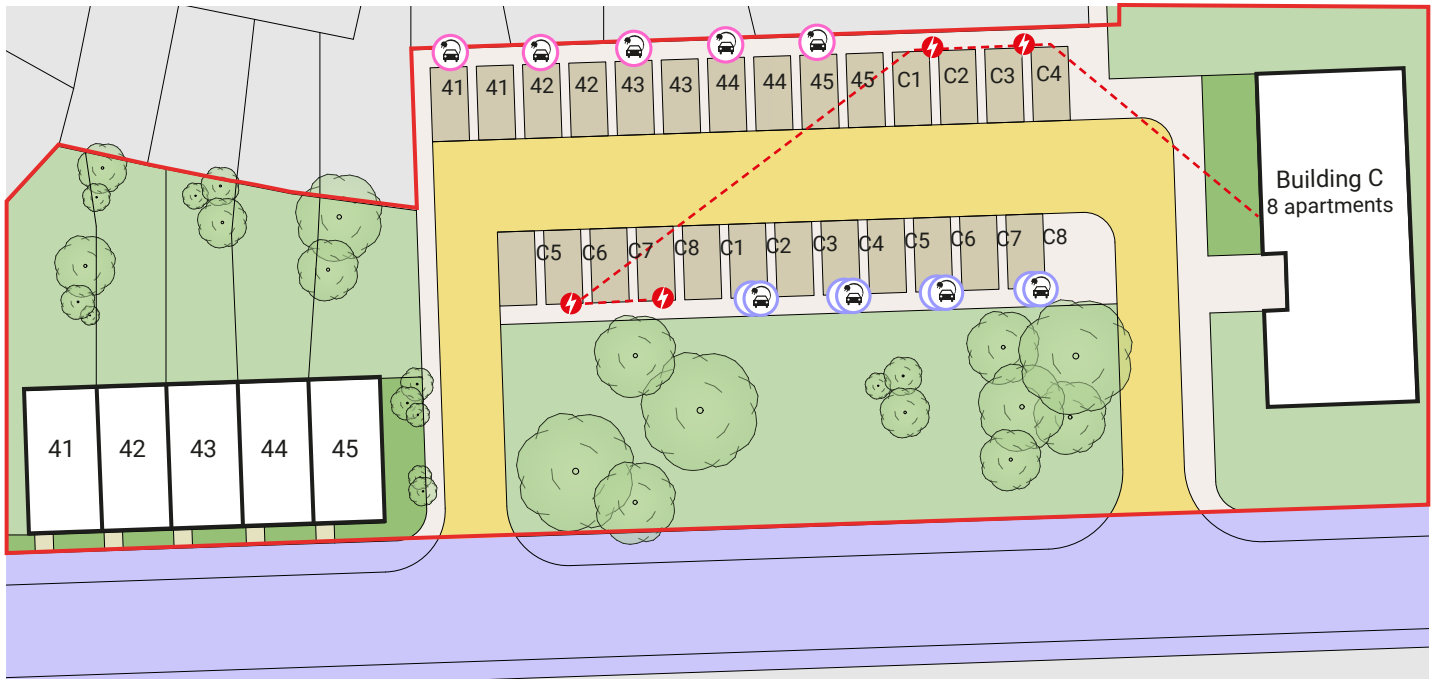
Building 71 *(This example also applies to Buildings 72, 73, 74, 75 and 76)*

Number of dwellings	1	
Number of associated spaces	0	Building 71 has 2 demised spaces. These spaces are separated from the building by an existing adopted road or footpath (or land in other ownership at the time of construction) and therefore are not considered to be associated.
Number of EVCPs required	0	There are no associated spaces and therefore no EVCPs required
Number of future connection locations required	0	

Technical Notes

- None

Worked Example 7 - Dwellings with communal parking



KEY

- Future connection location
- 1 EVCP
- 2 EVCPs
- Uncovered parking
- Private road
- Existing adopted road/footpath
- Site ownership boundary

Building 41 *(This example also applies to Buildings 42, 43, 44 and 45)*

Number of dwellings	1	Each dwelling in a row of terraces is considered to be a building
Number of associated spaces	2	Building 41 has two demised spaces
Number of EVCPs required	1	There is 1 dwelling in the building
Number of future connection locations required	0	There are no more than 10 spaces associated with this building

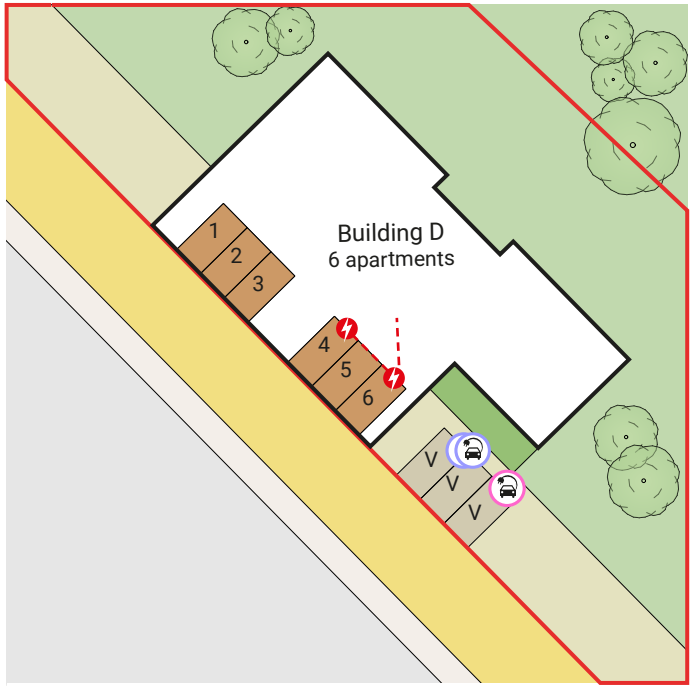
Building C

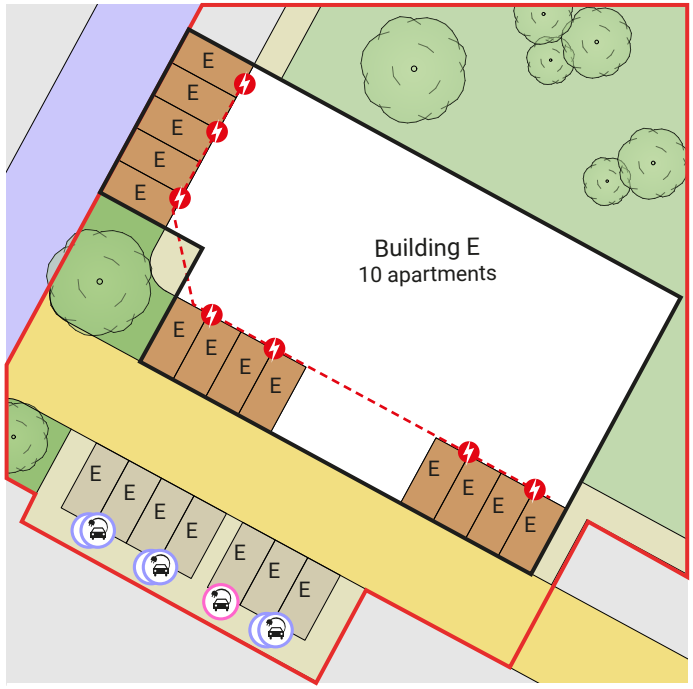
Number of dwellings	8	An apartment building with communal facilities is considered to be a single building
Number of associated spaces	16	Spaces C1 to C8 are demised to the dwellings in Building C.
Number of EVCPs required	8	There are 8 dwellings in the building so 8 EVCPs are required
Number of future connection locations required	16	There are more than 10 spaces associated with this building so cable routes are required to all spaces that don't have EVCPs

Technical Notes

- Cable routes are not required to the second demised space to each of the terraced houses
- Double charge posts / future connection locations can be installed where appropriate.
- Challenge: spaces associated with the terraced dwellings are remote from the dwelling and would require very long cable runs.
- Possible solution: a dedicated feeder pillar may be appropriate. Consider the size and footprint required for the cabinet (installed by developer, new connection by DNO/ IDNO). Consider that each new connection carries a separate standing charge for the home owner.
- Possible solution: In this case it might make sense to have a single management company across the apartments and terraced dwellings to allocate the charging costs to individual home owners.

Worked Example 8 - Apartment blocks with covered parking





KEY

- Future connection location
- 1 EVCP
- 2 EVCPs
- Uncovered parking
- Covered parking
- Existing adopted road/footpath
- Private road
- Site ownership boundary

Building D

Number of dwellings	6	An apartment building with communal facilities is considered to be one building
Number of associated spaces	9	Spaces 1 to 6 are demised to the apartments in building D. There are also 3 communal visitor spaces. There are 6 uncovered spaces and 3 covered spaces
Number of EVCPs required	3	The maximum number of EVCPs is limited by the number of uncovered spaces
Number of future connection locations required	3	Future connection locations will be required to 3 of the covered spaces, in lieu of EVCPs. There are no more than 10 associated spaces, so future connection locations do not have to be installed to the remaining covered spaces.

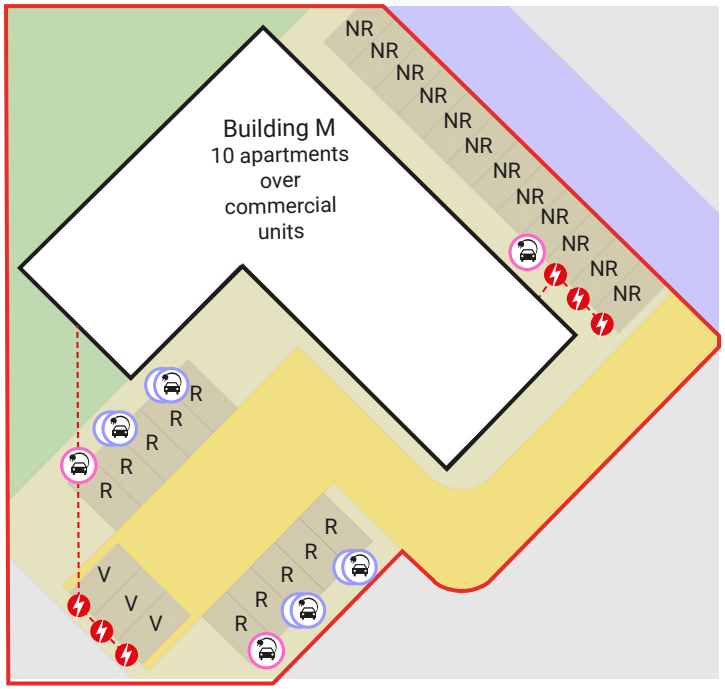
Building E

Number of dwellings	10	
Number of associated spaces	20	There are 13 covered spaces and 7 uncovered spaces demised to Building E.
Number of EVCPs required	7	The maximum number of EVCPs is limited by the number of uncovered spaces
Number of future connection locations required	13	There are more than 10 associated spaces, so all remaining spaces will require future connection locations

Technical Notes

- None

Worked Example 9 - Mixed-use apartment block with non-residential units



KEY

- Future connection location
- 1 EVCP
- 2 EVCPs
- Uncovered parking
- Private road
- Existing adopted road/footpath
- Site ownership boundary

Residential (upper floor)

Number of dwellings	10	
Number of associated spaces	13	Spaces labelled R and V are demised for the use of the apartments in building M
Number of EVCPs required	10	
Number of future connection locations required	3	There are more than 10 spaces associated with the residential building so cable routes are required to all spaces without EVCPs

Non-residential (ground floor)

Number of dwellings	0	
Number of associated spaces	12	Spaces labelled NR are demised to the non-residential commercial units in the building
Number of EVCPs required	1	There are more than 10 spaces associated with the non-residential building, so 1 EVCP is required.
Number of future connection locations required	3	There are more than 10 associated spaces, so future connection locations are required to at least 20% of remaining spaces. 11 remaining associated spaces (without EVCP) x 20% = 2.2 spaces. Therefore future connection locations to 3 additional spaces are required.

Technical Notes

- None

Definitions

Dwelling: A self-contained unit designed to accommodate a single household (houses or flats).

Building: A "building" is defined in the Building Regulations 2010 as "any permanent or temporary building but not any other kind of structure or erection, and a reference to a building includes a reference to part of a building."

With respect to Part S, the term can refer to an individual dwelling or a building containing several dwellings depending on the context. (see Step 1)

Associated parking space: Any (car) parking space that is available for use by the occupant of, or a visitor to, one or more of the buildings within the site boundary of the development.

Demised parking space: Any parking space that is for the exclusive use of the occupant of, or a visitor to, a specific dwelling or building.

Development site boundary: The boundary of land, upon which the building is situated, that is controlled or owned by the developer. Per the definition of 'site boundary' in Approved Document S.

Accessible Parking Space: A parking space that meets the provisions of Approved Document M.

Cable route: A safe, unobstructed route from the power supply to the envisaged electric vehicle future connection location, for electrical cabling to be installed in the future.

Connection cost: The cost of upgrades needed to the electricity system in order to accommodate a charge point, excluding the cost of any building work or the cost of the charge point itself.

Covered car park: Any car park which is enclosed by a roof, except garages or car ports that are intended to be used solely by the occupant of, or visitor to, a dwelling or car ports that cover otherwise open spaces.

Electric vehicle charge point (EVCP): A device intended for charging a vehicle that is capable of being propelled by electric power derived from a storage battery.

Future connection location: An identified location at which an electric vehicle charging point may be installed in future to serve relevant parking spaces. Specific requirements apply - refer to Approved Document S.

Mixed-use building: A building that contains one or more dwellings AND one or more premises that are not dwellings.

Further Resources

Where to go for further information:

Find all the regulations and official Approved Documents on GOV.UK:

- Building regulation in England for the installation of electric vehicle charge points or cable routes: Approved Document S: Infrastructure for charging electric vehicles
- The government FAQ page to support the regulation: Approved Document S: Infrastructure for charging electric vehicles, frequently asked questions

Other related resources that may be helpful:

- Transitional Arrangements for Approved Documents from NHBC
- The Electric Vehicles (Smart Charge points) Regulations 2021 require all charge points sold in Great Britain for private (domestic or workplace) use to have smart functionality to help manage the increase in electricity demand from the transition to electric vehicles. The Office for Product Safety and Standards (OPSS) is responsible for ensuring compliance with these regulations.

Future Homes Hub

If you have any queries or would like to give feedback on the report please contact us.

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