Technical Note

Project:	Pumanawa Downtown		
Our reference:	705100160		
Prepared by:	Anthony Calderone	**Date:**	10/12/2024
Subject:	Auckland Unitary Plan Change 79: Electric Vehicle Charging		

1 Background

Plan Change 79 has added a requirement E27.6.7 as follows:

> ***E27.6.7 Provision for electric vehicle charging***
>
> *Purpose: to ensure that any undercover car parks for new semi-detached dwellings or for new dwellings within a terrace or apartment building are provided with the capability to install Electric Vehicle Supply Equipment.*
>
> *(1) Any new dwellings with car parking (with the exception of new detached dwellings) must provide each undercover car park with the capability to install Electric Vehicle Supply Equipment with designated space for the necessary conduit, circuit and metering between the car park and an electrical distribution board on the same building storey, or ground level if the car parking space is at ground level.*
>
> *Note:*
>
> *(a) This standard does not apply to any car parking permanently allocated to visitors.*
>
> *Refer to the following standards and guidelines:*
>
> - *Australian/New Zealand Wiring Rules AS/NZS 3000:2018*
> - *SNZ PAS 6011:2021 Electric Vehicle Charges for Residential Use*
> - *SNZ PAS 6011:2012 Electric Vehicle Chargers for Commercial Applications*
> - *WorkSafe EV charging safety guidelines 2nd addition plus addendums 1 and 2*

From a building infrastucture perspective this rule requires the following:

1. At least one distribution boards at each carparking level
2. Space for electrical distrubution of cabling to each carpark
3. Provision for metering of power usage
4. Compliance with the electrical wiring rules (as per the building code), relevant standards and WorkSafe guidelines.

2 Project EV Charging Provisions

We note that the project is only at a concept design level of information however can confirm that the provisions for EV charging have been made across both commercial and residential carparking spaces as follows:

Switchboards: Each carparking level within the development is proposed to have three distribution boards. This meets the requirements of rule 27.6.7; i.e. to have at least one distribution board per level.

Distribution: Each carparking level is proposed to have electrical cable tray distributed around the floor plate to enable the installation of cabling to carparking spaces should they desire the installation of EV charging facilities. Charging equipment can be located either on a wall or column adjacent to the parking space or on the cable tray itself. This meets the requirements of rule 27.6.7; i.e. to have designated space for the necessary conduit and circuit.

Metering: the proposed electrical vehicle (EV) charging will be managed via dynamic load management system using smart EV chargers. This method allows an automatic sharing of the available electricity capacity to all connected chargers by dynamically changing the charge rate based on how many chargers are in use. This approach requires the EV chargers to communicate to the internet and be managed by a proprietary software platform (many are available in the New Zealand market). The system selected will include metering for each individual charger connected to enable apportioning of costs to individual dwelling or commercial tenant. This type of system is preferred as it avoids facility disruption, reduces energy and electrical infrastructure costs and makes operations more efficient.

Compliance: achieving the requirements of the building code and all relevant standards will be mandatory for the construction works. The dynamic load management and smart EV charger systems currently available in New Zealand comply with the standards listed.

Typical Floor Layout showing distribution board locations (pink cloud):