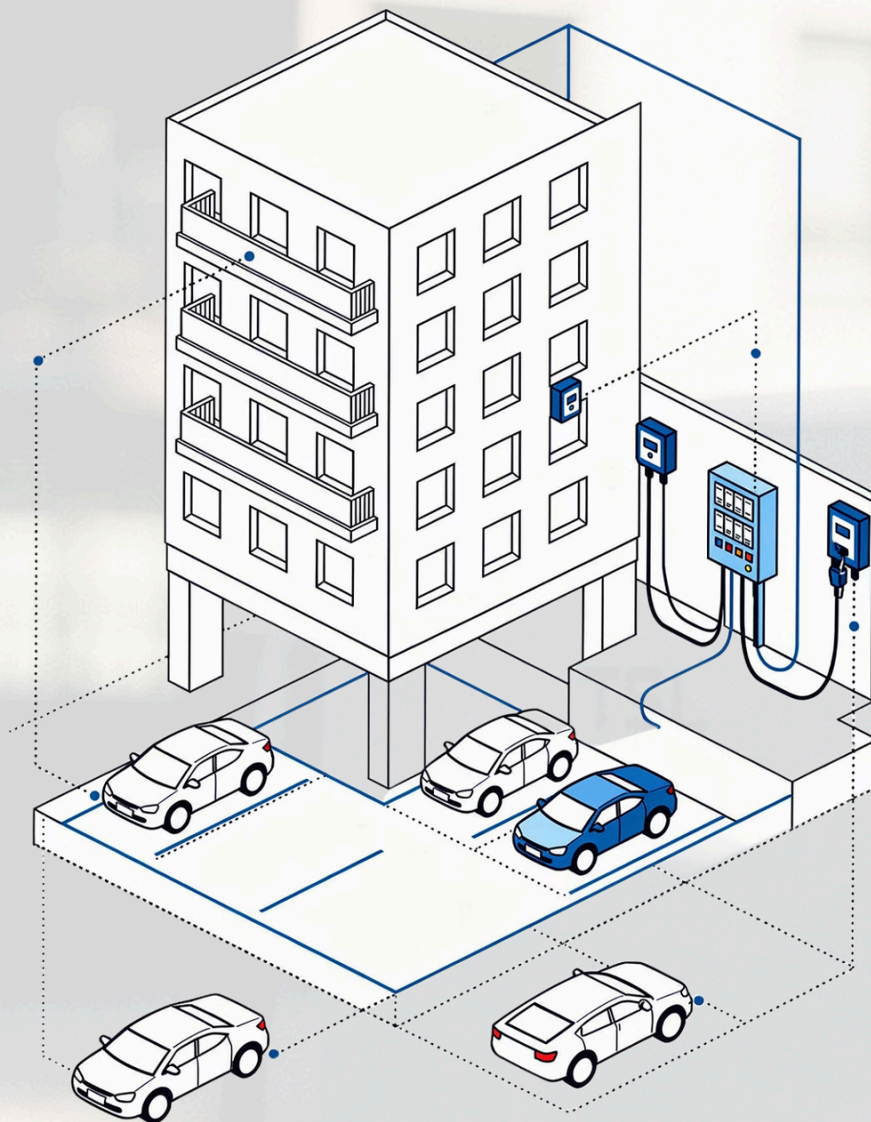


EV Charging in Apartment Buildings

Practical guidance for owners corporations and residents
with three real-world City of Yarra case studies



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Why This Matters Now

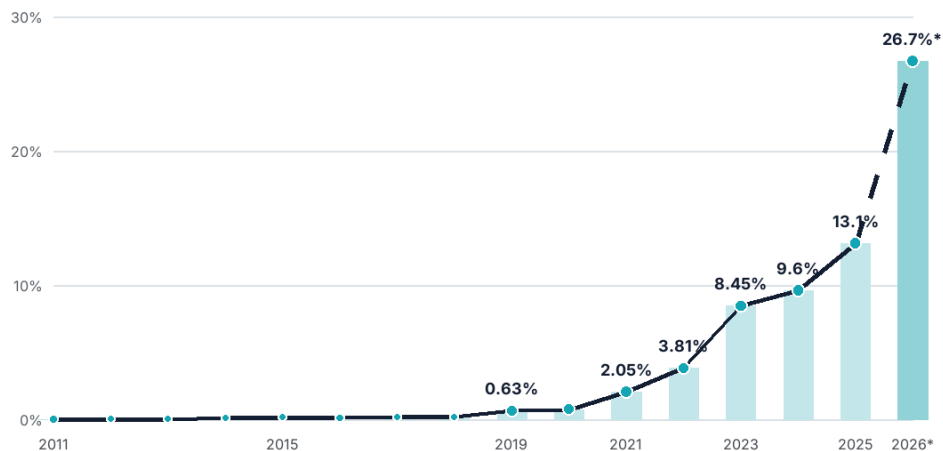
The EV transition is already underway — and apartment buildings need to prepare.

EV uptake has accelerated sharply. EVs accounted for 26.7% of Australian new-vehicle sales from January to July 2026 — more than double the 12% share recorded over the same period in 2025. Apartment buildings now need practical plans for growing charging demand.

26.7%

EV share of Australian new-vehicle sales, Jan–Jul 2026

Australian EV market share — annual results plus 2026 year-to-date



*2026 figure is year-to-date (January–July), not a completed annual result.

Source: Electric Vehicle Council, 5 August 2026; historic series retained from the original report.

House Owners

Can simply plug into their garage — a convenient, low-cost overnight charging solution already in place.

Apartment Residents

Have no equivalent option without building-wide infrastructure — and are actively held back from purchasing an EV.

Public Chargers

More expensive and less convenient than home charging — a poor long-term substitute for on-site infrastructure.

Access to convenient home charging is an important consideration in EV purchase decisions. For apartment residents, limited on-site charging may delay or discourage EV uptake.

Source: Hardman et al. (2018), Transportation Research Part D, 62, 508–523.

WHY THIS MATTERS FOR APARTMENT BUILDINGS

EV uptake has moved beyond early adoption.

More than one in four new vehicles sold in Australia during January–July 2026 was electric.

Buildings without a documented charging pathway risk falling behind resident expectations and being forced into reactive upgrades later.

Market data: Electric Vehicle Council, “EV Surge Continues”, 5 August 2026.

Apartment-building implication: findings and recommendations developed in this report.

Understanding the Basics

What you need to know about charging levels, electrical capacity, and smart charging technology.

Charging Levels Explained

01

Level 1 — Slow (1.4–3.7 kW)

Standard domestic power point. Adds 10–20 km per hour. Usable for low-mileage drivers.

03

Level 2 Fast — Public (11–22 kW)

Three-phase charger. Adds 50–130 km per hour. Common in car parks and urban locations.

02

Level 2 Slow — Standard (7 kW)

Dedicated wall charger. Adds 30–45 km per hour. The standard for home and apartment charging — fully charges a typical EV overnight.

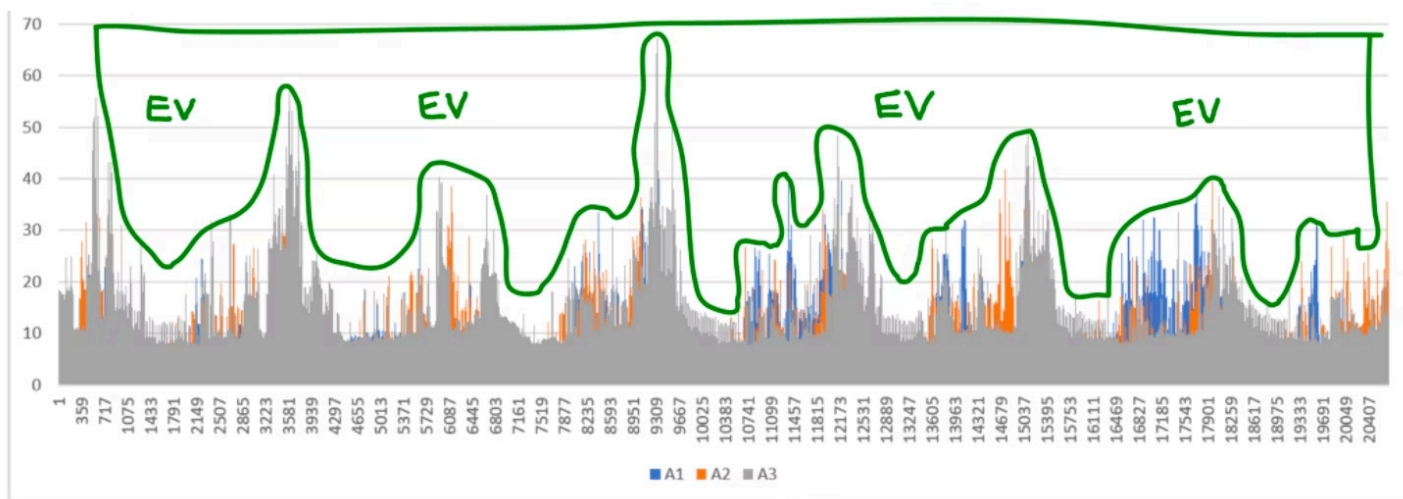
04

Level 3 — Rapid (25–350 kW)

Full charge in 10–60 minutes. Not suitable for apartment buildings — designed for roadside fast-charging hubs.

 For most apartment residents, a Level 1 or Level 2 charger is the right solution.

What Is 'Electrical Headroom' and Why Does It Matter?



Every building has a maximum electrical supply capacity — the total power available from the grid connection. Headroom is the gap between that maximum and what the building actually uses at peak times.

- EV chargers draw significant power — headroom tells you how many chargers can be added without upgrading the mains supply
- A 7-day power monitoring study is the most reliable way to measure real headroom — not just theoretical capacity based on drawings

Smart Chargers and Dynamic Load Management

Smart Chargers

Communicate with a central platform — scheduled, monitored, and billed remotely via app or RFID card.

Dynamic Load Management

Automatically balances charging across multiple chargers so the building never exceeds its electrical capacity.

OCPP Compliance

All chargers must be OCPP-compliant and carry the RCM tick — Australia's mandatory safety certification.



Many commercial and multi-residential buildings are billed on demand tariffs, where network charges are based on peak power draw, not just total consumption. Without load management, simultaneous EV charging can spike peak demand and dramatically increase electricity bills for the whole building. Smart load management prevents these spikes by throttling chargers during peak periods, protecting all residents from higher network costs.

Getting Started: The Feasibility Process

A clear, practical sequence — from gauging resident interest to commissioning expert assessment.

Step 1: Gauge Resident Demand with a Survey

What a Survey Reveals

Before spending money on assessments, understand your community. A survey uncovers:

- How many residents own or plan to buy an EV
- Appetite for different funding models — levy contributions, individual cost recovery, or a mix
- A mandate for the OC committee to act with confidence

Step 2: Commission a Site-Specific Feasibility Assessment

A feasibility assessment examines your building's electrical infrastructure, parking layout, fire safety provisions, and governance requirements.

- Must include actual power monitoring — not just a review of drawings — to confirm real electrical headroom
- Produces a staged delivery pathway with cost estimates: what to do first, what comes later, and why
- Engage a qualified electrician or electrical engineer with multi-residential EV charging experience — this is not a standard electrician job

Building Types Shape the Pathway

THE THREE CASE-STUDY TYPOLOGIES

These are the three building typologies represented by this report's case studies. They illustrate different pathways, but do not represent every apartment building.

Large All-Electric Buildings

Newer, larger apartment buildings with modern all-electric infrastructure and substantial electrical capacity are typically well-positioned for a staged rollout. A pathway from shared or visitor bays through to full private bay backbone infrastructure is often practical, especially when supported by dynamic load management. The overall approach is usually more straightforward, though scale and cost still require careful planning.

Small Older Unit Blocks

Smaller, older residential complexes — such as double-storey unit blocks — may have limited common electrical infrastructure and cost-sensitive owners corporations. A backbone-plus-individual-fitout model is often well-suited here: the OC installs conduit and cable tray on common property, and individual residents connect their own charger at their own cost and timing. This keeps upfront OC expenditure low and allows uptake to grow organically.

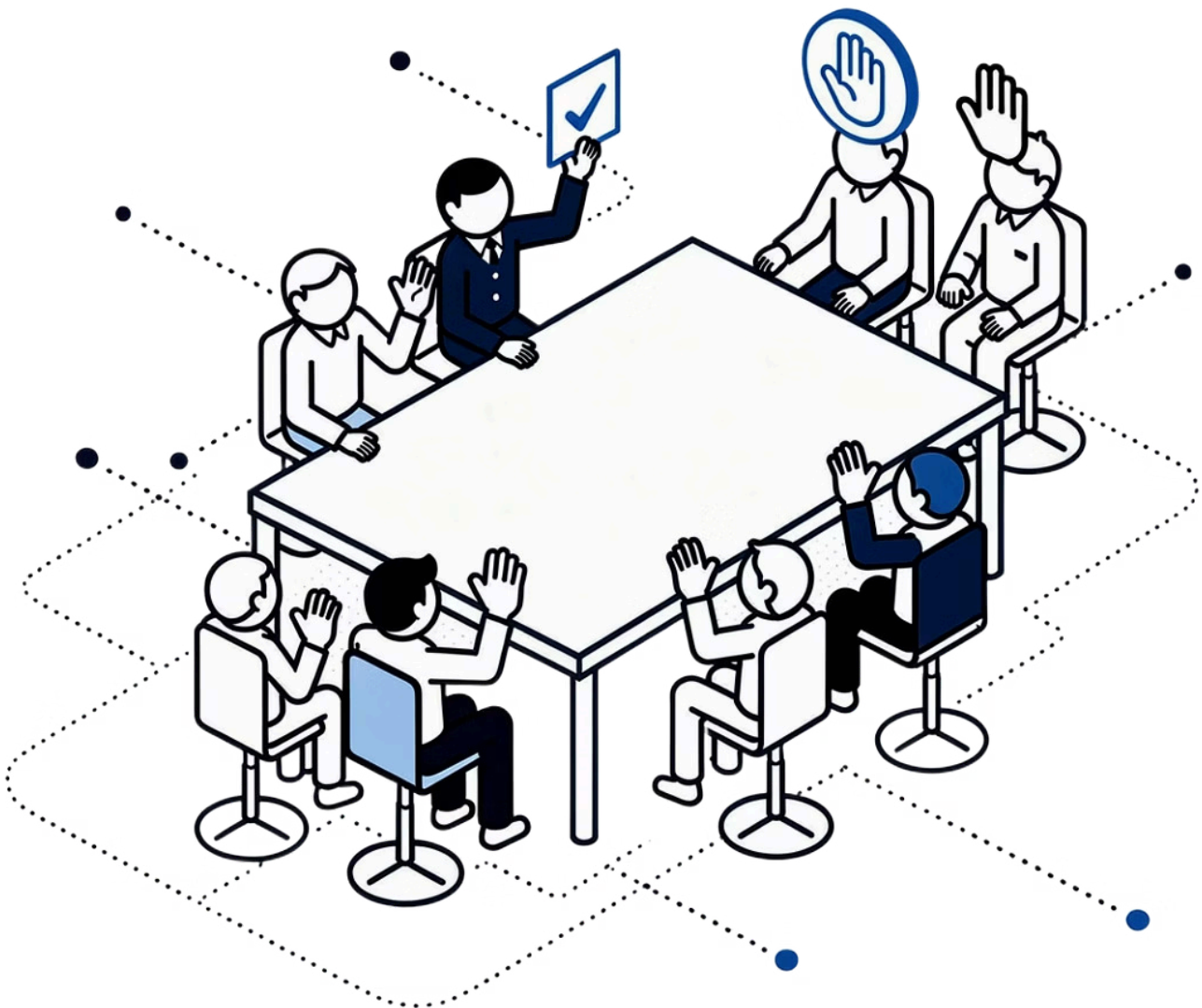
Buildings with Mechanical Car Stackers

Medium-density buildings where some or all car spaces use mechanical stacker systems often face more constraints. Pallet-type stackers are generally incompatible with EV charging in their current form, making visitor bays or ground-level spaces the near-term pathway. Longer-term planning should consider stacker replacement or upgrade as part of a broader electrification strategy.



Owners Corporation Governance

Understanding how the OC fits into the approval and management process.



Formal OC Approval Required

EV charging infrastructure on common property — including car parks, cable routes, and switchboards — requires a formal Owners Corporation vote.

Special Resolution (75%)

Works affecting common property typically require a special resolution — 75% of lot entitlements — passed at a general meeting.

Fire Safety & Compliance

What buildings must have in place — and why fire safety is manageable, not a barrier.

EVs are safe to charge, but lithium-ion batteries introduce specific fire risks that must be formally assessed — particularly in enclosed basement car parks.

Open-Air Car Parks

Inherently lower risk — natural ventilation and direct egress significantly reduce fire safety complexity.

Basement Car Parks

Require sprinkler coverage, ventilation assessment, clear egress routes, and review by a fire engineer.

All Settings

Use compliant charging equipment bearing the Regulatory Compliance Mark (RCM), installed by a licensed electrician. Provide clear signage and suitable isolation arrangements. Where chargers are exposed to vehicle impact, include protection such as wheel stops or bollards.

What Must Be in Place Before Installation

01

Fire Safety Assessment

Conducted by a qualified fire engineer or building surveyor— Only if installation of chargers compromise any of the existing fire safety services

02

Sprinkler & Ventilation Confirmation

Confirm adequate coverage and airflow — particularly critical for basement car park settings.

03

Insurer Consultation

Obtain written acknowledgement from your building insurer before works commence.

04

Licensed Electrical Installation

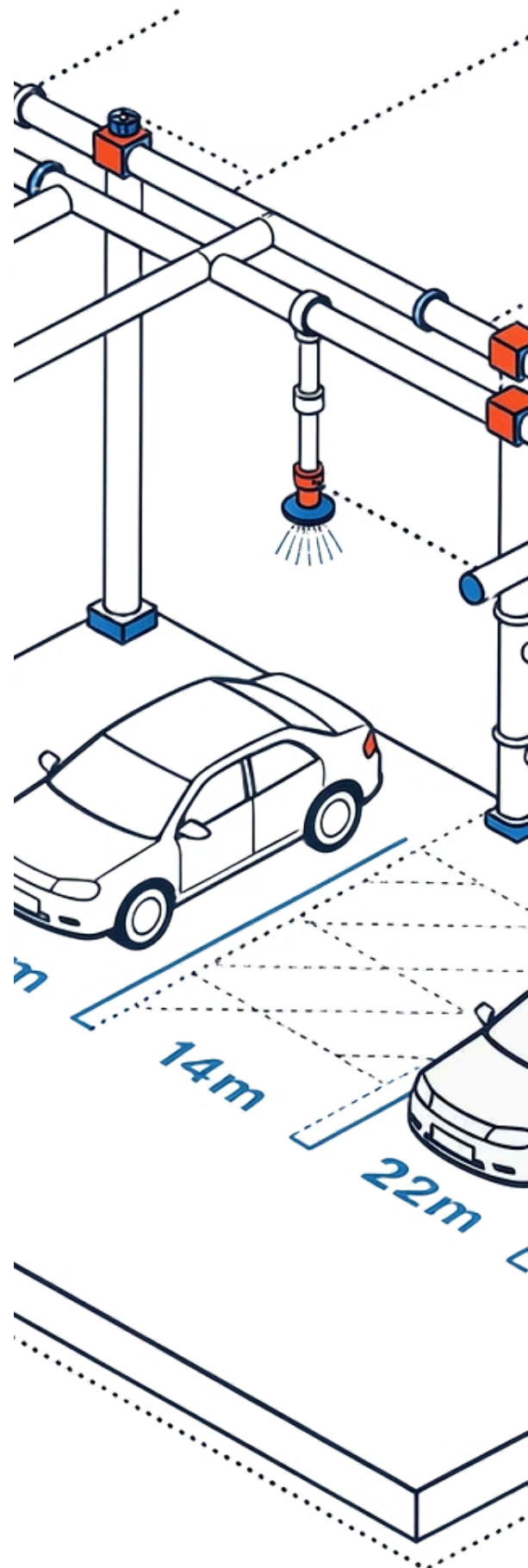
All works must be completed by a licensed electrician and signed off by an electrical inspector.

05

Ongoing Education & Maintenance

Ban extension cords and unapproved chargers. Establish weekly and annual maintenance schedules.

- ✓ Fire and compliance considerations are not barriers to proceeding — but they must be addressed early. Engaging a fire engineer and licensed electrician at the design stage will protect the OC, residents, and the project timeline.



Funding Models & Cost Recovery

How buildings can fund shared infrastructure and recover costs equitably from residents.

OC Levy (Shared Backbone)

OC funds shared infrastructure via a special levy. Residents connect individual chargers at their own cost. **Best for:** buildings with individual metering and moderate demand.

User-Pays Platform

A smart charging provider bills residents per kWh used. OC contracts the platform; residents pay only for what they charge. **Best for:** larger buildings with shared visitor bay chargers.

Individual Resident Funding

Each resident arranges and pays for their own charger from their own meter. Minimal OC capital outlay. Estimated cost: ~\$4,000 per car space. **Best for:** small buildings with individual metering.

Staged Rollout vs Full Installation

Consideration	Staged Rollout	Full Installation
Upfront cost	Lower — spread over time	Higher — all at once
Resident disruption	Smaller, staged	One larger disruption
Flexibility	Adapts to future technology	Less adaptable
OC financial risk	Lower	Higher
Future retrofit costs	Some works may still be needed	Lower

✓ **Our Recommendation:** A staged approach starting with visitor bay charging is the most common and practical first step for most buildings. It delivers near-term outcomes for current EV owners and visitors while protecting the building's ability to scale affordably — without locking the OC into a large upfront commitment. Starting small is not a compromise — it's a smart strategy that keeps options open as technology evolves.

The Broader Opportunity: Solar, Electrification & Battery Storage



Solar PV

A rooftop solar system can offset common area electricity costs and reduce the cost of EV charging. Existing systems at some buildings have potential to expand from 8 kW to 50 kW or more — sized to offset projected annual common area electricity consumption.



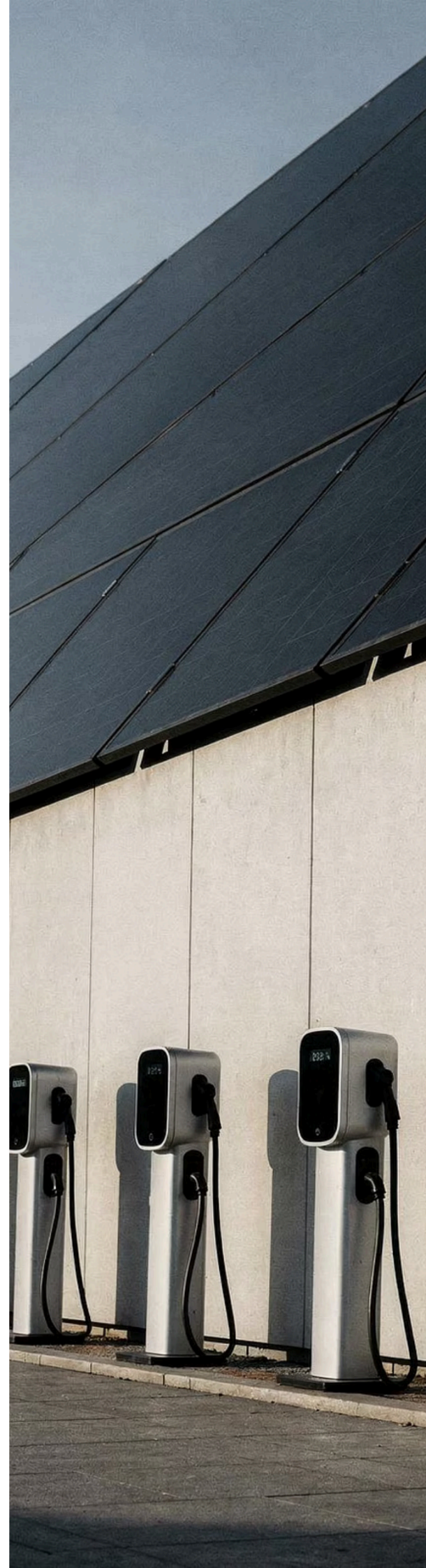
Gas Appliance Electrification

Buildings planning to replace gas heating or cooktops will increase electrical load — this must be modelled alongside EV charging to avoid future capacity constraints.



Battery Storage

Can smooth peak demand, reduce grid costs, and complement solar generation. Planning for battery storage now avoids expensive retrofits later.



Your Next Steps: A Practical Checklist

Eight steps to move your building from interest to installation.

01

Survey Residents

Gauge EV ownership, future purchase intentions, and appetite for funding contributions.

03

Consult Your Insurer

Understand implications and document risk mitigation steps taken.

05

Present Options to the OC

With staged cost estimates and a recommended path forward.

07

Draft an EV Charging By-Law and Policy

Covering access, approved equipment, billing, and safe use.

02

Commission a Feasibility Assessment

Engage a qualified electrician or electrical engineer to assess your building's specific situation.

04

Engage a Fire Engineer or Building Surveyor

Particularly important for basement car parks.

06

Pass a Special Resolution

Obtain formal OC approval for works on common property.

08

Appoint a Licensed Electrician and Smart Charging Provider

And get started.

About This Guide

This guide draws on three real-world EV charging feasibility reports prepared for apartment buildings in the City of Yarra, Victoria. The three case studies that follow this guide provide detailed, site-specific examples of how the feasibility process works in practice — covering a large all-electric apartment tower, a small older unit block, and a medium-density building with mechanical car stackers. Together, they demonstrate that no two buildings face the same challenge — and that a structured, site-specific process is the most reliable way to find the right pathway for your building.

-  The three case study buildings in this deck — Case Study 1: 40 Stanley Street, Yarra, Case Study 2: 214 Argyle Street, Fitzroy, and Case Study 3: 73–103 Nicholson Street, Abbotsford — are real buildings. The feasibility assessments were prepared by All Electric Homes.

Real-World Case Studies

The following three case studies show how the feasibility process works in practice — across three very different apartment buildings in the City of Yarra. Each case study covers site conditions, electrical feasibility, fire safety, delivery options, and recommended next steps.

📍 YARRA VIC

🔌 EV CHARGING FEASIBILITY

🏠 MULTI-RESIDENTIAL

CASE STUDY 1 OF 3

40 Stanley Street, Yarra VIC — EV Charging Case Study

BUILDING PROFILE

- ◉ Fully all-electric building
- ◉ 7 apartment levels
- ◉ 90 apartments
- ◉ 2 basement car-parking levels
- ◉ 90 private parking bays
- ◉ 18 visitor parking bays

YARRA VIC

EV CHARGING FEASIBILITY

MULTI-RESIDENTIAL

What This Case Study Covers

40 Stanley Street is a 7-level, fully all-electric, 90-apartment building in Yarra with two undercover carpark levels comprising 90 private bays and 18 visitor bays. A resident survey confirmed existing EV demand and clear appetite for on-site charging. This case study walks through the full feasibility process — from site assessment to staged delivery — so that other strata buildings and owners corporations can understand what the pathway looks like in practice.

Scope of Assessment

The assessment considered the building's parking layout, electrical infrastructure, fire and safety provisions, resident survey findings, likely charging demand, and staged delivery options to support near-term and long-term EV uptake across the site.

Overall Finding

EV charging at 40 Stanley St is technically feasible under the existing electrical installation. The building's 800A three-phase main supply, with dynamic load management, provides sufficient capacity for a staged rollout — no mains upgrade is anticipated.

Resident survey (30% response rate — 27 of 90 lots) identified 6 current EV owners and 16 residents planning to purchase an EV. 17 of 27 respondents (63%) support a levy for infrastructure costs.

The Ground Floor visitor charging area — co-located with practical access to the main electrical infrastructure — represents the lowest-cost, most practical first stage for installation.

Recommended Path

A staged rollout starting with Stage 1 (Ground Floor Visitor Charging), followed by Stage 2 (B1 Visitor Charging Expansion), and completed through Stage 3 (Full EV Backbone Infrastructure Completion). The infrastructure is designed to support up to 85 × 15A EV chargers, with 2 × EV Distribution Boards (EV-DBs) planned across the site.

A dynamic load management platform is integrated from Stage 1. User-pays cost recovery via a third-party smart charging, booking, and billing platform contracted to the Owners Corporation is central to resident uptake and satisfaction.

Why This Site Matters

40 Stanley Street is a strong candidate for EV charging not despite its complexity, but because of it. A 90-lot all-electric building with two basement carpark levels, a well-provisioned main switchboard, and an engaged resident base represents exactly the kind of site where a well-structured feasibility process can unlock real outcomes — quickly and cost-effectively.

This building's combination of all-electric services, existing three-phase 415V infrastructure, and demonstrated resident willingness to contribute financially places it ahead of many comparable apartment buildings when it comes to EV charging readiness. For other strata buildings and owners corporations, it is a valuable reference point — showing what is possible when the right conditions are in place and the right process is followed.



90 Private + 18 Visitor Bays

Two basement levels with a clear split between private and visitor bays enables a logical staged rollout — starting with visitor bays before progressing to private parking. This is a model many apartment buildings can replicate.



Engaged Resident Base

A 30% survey response rate with residents supporting a levy for infrastructure signals an Owners Corporation with the appetite to progress — a critical enabling factor that many buildings struggle to achieve.



Strong Electrical Foundation

All-electric building with 415V three-phase supply, 800A main breaker, and existing cable tray throughout the upper basement — a rare combination that dramatically reduces upgrade costs and the complexity of the retrofit.



Solar PV Opportunity

A large, unshaded, unencumbered rooftop area — subject to structural assessment — represents a significant opportunity to reduce energy costs and support EV charging with on-site generation. This opportunity is available at many comparable buildings.

Site Overview

Site Details

Property: 40 Stanley Street, Yarra VIC

Building Type: 7-level multi-residential apartment building

Total Lots: 90 apartments

Parking: Two basement levels — 90 private bays, 18 visitor bays (9 upper basement, 9 lower basement)

Energy Profile: All-electric; 415V three-phase supply; electric instant hot water to each apartment; no gas; no solar PV currently installed

Assessment Objective: Determine the most practical, cost-effective, and equitable pathway to EV charging for residents and visitors

Summary Site Observations

- Fully all-electric building with 415V three-phase supply — no gas services to complicate electrical headroom assessment
- 800A main breaker on incoming three-phase consumer mains with existing cable tray throughout upper basement — a significant cost-saving asset
- Main switchboard located on upper basement level, co-located with 9 of the 18 visitor bays
- Split system RCAC to all apartments; no central space conditioning — lower base electrical demand than many comparable buildings
- Electric instant hot water draws are predominantly daytime loads; overnight electrical headroom is well-suited to EV charging
- Large unshaded roof area available for solar PV — a significant complementary opportunity subject to structural assessment

Existing Conditions

Before any EV charging can be planned, a clear picture of the building's existing conditions is essential. At 40 Stanley Street, the site assessment revealed a combination of genuinely favourable conditions alongside the kinds of physical and governance realities that most apartment buildings will recognise. Understanding what to assess — and why — is one of the most transferable lessons from this case study.

Key Physical Considerations

- Location and configuration of resident and visitor parking bays across both basement levels
- Access to walls, columns, ceilings, and existing cable trays and service routes
- Proximity between candidate charger locations and the main switchboard supply point
- Whether bays are privately titled, allocated, or visitor common-use bays
- Vehicle circulation, sprinkler coverage, and protection requirements around chargers

What Made This Site Stand Out

At 40 Stanley Street, the existing conditions included several features that are not universal but are worth understanding:

- Existing cable tray throughout the upper basement dramatically reduced Stage 1 cabling costs
- Main switchboard co-located with visitor bays on the upper basement level — ideal proximity
- Sprinkler coverage across both basement levels already in place
- All-electric profile meant no gas load complications in the electrical headroom assessment

- ✓ Existing cable infrastructure and a well-positioned switchboard are among the biggest cost drivers in a retrofit. Buildings that already have these in place are significantly better positioned.

EV Charging Need

A resident survey is one of the most valuable tools an Owners Corporation can use to assess EV charging need. At 40 Stanley Street, the survey results provided a clear and confident picture of where the building sits on the EV readiness spectrum — and gave the OC a strong mandate to act.

For any apartment building considering EV charging, the critical question is not just whether one charger can be installed, but whether the building can support a growing number of residents over the next three to ten years in a manageable, cost-effective way.

Survey Response

27 of 90 lots responded — a 30% response rate, considered representative. 6 current EV owners and 16 residents planning to purchase — 22 residents with near-term charging need confirmed.

Levy Support

17 of 27 respondents (63%) support a levy for infrastructure costs — notably high compared to comparable buildings.

Preferred Billing Model

Dedicated metering was the most preferred billing model (41% — 11 of 27), followed by RFID/app-based billing (15% — 4 of 27). Both are compatible with third-party smart charging platforms.

Preferred Rollout

Modular staged installation was the most preferred approach (22% — 6 of 27), consistent with the three-stage rollout recommended in this assessment. A user-pays, shared booking model is the most equitable approach.

i A resident survey doesn't need a 100% response rate to be useful — 30% is sufficient to build a picture of demand. If your Owners Corporation hasn't yet surveyed residents, this is the most important first step.

Car Park Suitability

The car park layout at 40 Stanley Street presented a well-structured opportunity for phased EV charging deployment. The upper basement level — where the main switchboard is located and existing cable tray runs throughout — emerged as the natural and lowest-cost starting point. Understanding how a car park's physical layout shapes staging decisions is a key lesson for any apartment building.

Upper Basement — Stage 1 Priority

- Main switchboard (MSB) located on this level — minimises sub-distribution costs
- Existing cable tray throughout enables low-cost cabling to new EV distribution boards
- 9 visitor bays adjacent to ramp access from local street — excellent natural ventilation for fire safety
- Fire safety sprinkler systems fitted throughout both basement levels
- Recommended for up to 9 × 15A EV chargers for shared resident and visitor use

- ✓ Clustering chargers at visitor bays co-located with the MSB and existing cable tray delivers the lowest installation cost and fastest path to operational charging.

Matters to Assess in Any Car Park

- Which bays are best suited for first-stage installation — visitor bays near the switchboard are typically ideal
- Cable run distances from the electrical supply to charger positions
- Whether existing cable tray or conduit infrastructure can be reused
- Protection from vehicle impact — wheel stops and bollards required
- Ventilation conditions at each candidate location
- Sprinkler and fire detection coverage in proposed charger zones

Governance Consideration

The Owners Corporation will need to agree rules for resident use of visitor parking bays for EV charging. Planning approval from the relevant council may be required for a change of use to visitor parking bays.

Electrical Feasibility

40 Stanley Street's all-electric profile and three-phase 415V infrastructure place it in a strong position compared to many apartment buildings. The building's electrical installation was assessed and confirmed that — with dynamic load management — there is sufficient headroom to support EV charging across the entire car park without requiring a mains upgrade. Understanding how this assessment works helps any Owners Corporation know what to look for in their own building.

1

Main Supply Capacity

800A main breaker on incoming three-phase consumer mains. With dynamic load management, this supply provides sufficient headroom to support up to 85 × 15A EV chargers across the site — without a mains upgrade. In any building, this is the starting point: what is the available supply capacity at the main switchboard?

2

Sub-Distribution

2 × 160A breakers on three-phase supply to house services and apartment distribution boards. The MSB location on the upper basement level, combined with existing cable tray throughout, enables low-cost sub-distribution cabling to 2 × EV Distribution Boards (EV-DBs). Sub-distribution cost is often the largest variable in apartment retrofit projects.

3

Overnight Load Profile

All apartments have electric instant hot water — a load predominantly active during daytime. Very little of this load is in use overnight, creating significant electrical headroom precisely when EV charging demand is highest. Understanding your building's load profile is essential before sizing any charger solution.

4

Dynamic Load Management

A dynamic load management platform is central to the design. It allows multiple 15A EV chargers to operate within the existing electrical capacity — automatically balancing charging loads, preventing overload, and maximising the number of residents who can charge concurrently. This is a critical component for any multi-residential EV charging system.

5

Metering and Billing

EV charging consumption will be measured and billed via a third-party smart charging provider contracted to the OC. The cents-per-kWh fee should align with prevailing residential electricity tariffs to ensure uptake and resident satisfaction.

i The building's all-electric profile, 800A three-phase supply, existing cable tray, and overnight load headroom combine to make this one of the more electrically favourable apartment buildings for EV charging retrofit — no mains upgrade is anticipated to be required.

Fire Safety and Compliance

Compliance is not a single sign-off. The EV design must be checked against the NCC and relevant Australian Standards, with site-specific applicability confirmed by the appointed professionals. Electrical work is certified under Victorian electrical-safety law. A fire engineer develops any fire-engineered solution; the appointed relevant building surveyor determines the building-permit and NCC approval pathway.

REFERENCE BASIS [ABCB EV Advisory Note \(June 2023\)](#) · [ESV COES guidance](#) · [Victorian legislation register](#)



Suppression & Detection

STANDARDS TO CONFIRM

- NCC fire-safety provisions
- AS 2118.1 — sprinkler systems
- AS 1670.1 — detection and alarms

Existing sprinklers are an advantage, but adequacy for EV charging is not assumed. Confirm coverage, monitoring, alarm interfaces, emergency isolation and break-glass operation. The fire engineer defines the solution; the building surveyor confirms the approval pathway.



Ventilation Assessment

STANDARDS TO CONFIRM

- NCC fire-safety provisions
- AS 1668.1 and AS 1668.2 — smoke control and mechanical ventilation

Document airflow paths, fan capacity, smoke-control mode and emergency override logic. Assess the naturally ventilated upper basement and the enclosed B1/full-carpark stages before the design is fixed. Services designer and fire engineer input is required.



Charger Placement & Egress

STANDARDS TO CONFIRM

- NCC egress and fire-service access provisions
- AS 2419.1 — fire hydrants

Review egress, fire-rated elements, hydrant/booster access, cable routes, vehicle-impact protection and responder access. Confirm charger and EV-DB positions with the fire engineer and building surveyor. The report's 10 m clearance is project guidance—not a universal statutory rule—until confirmed for this site.



Electrical Standards

REQUIRED ELECTRICAL PATHWAY

- AS/NZS 3000 Appendix P
- Electricity Safety Act 1998 (Vic)
- Electricity Safety (General) Regulations 2019

Design must address dedicated circuits, suitable RCD protection, earthing, isolation, maximum demand/load management and labelling. Use a registered electrical contractor/licensed electrical worker and issue a COES. Prescribed work requires independent LEI inspection. RCM is required; OCPP is a platform requirement, not a fire standard.



Owners Corporation Approval

APPROVAL INPUTS

- Formal OC approval — common-property works and operating rules
- Staged design and load-management scope
- Fire engineer and building-surveyor advice
- Permit/planning advice if triggered
- Written insurer requirements

Package staged drawings, charger and EV-DB locations, access and billing rules, maintenance duties and emergency procedures.



Insurer & Surveyor Input

WHO CONFIRMS WHAT?

- Fire engineer — fire-risk assessment and any performance solution
- Relevant building surveyor (private or municipal) — permit/NCC decision
- LEI — prescribed electrical work
- Insurer — policy acceptance

No supplied evidence confirms Municipal Building Surveyor review. Refer the staged design for written advice before procurement. For five or more chargers, invite the local fire service to site familiarisation and pre-incident planning, consistent with the ABCB advisory note.

Delivery Options

One of the most common questions an Owners Corporation faces is whether to install the complete infrastructure in one go or to adopt a staged approach. The 40 Stanley Street assessment weighed both options in detail, and the findings are relevant to any apartment building making this decision. Three delivery stages have been designed for 40 Stanley Street, progressing from ground floor visitor charging through to full building-wide EV backbone infrastructure. The plan is designed to support up to 85 × 15A EV chargers across the site, with a dynamic load management platform integrated from Stage 1.

01	02	03
Stage 1 — Ground Floor Visitor Charging Scope: Install up to 9 × 15A EV chargers at ground floor visitor parking spaces. Connect to existing MSB via new submains. Use existing cable tray where practical, supplement with additional tray as required. Key components: 1 × EV Distribution Board (EV-DB); New submains from MSB; Dynamic load management integration; Testing, commissioning & compliance verification. Note: Lowest disruption, fastest to deliver. Natural ventilation at ground floor location reduces compliance risk.	Stage 2 — B1 Visitor Charging Expansion Scope: Install second EV-DB in B1. Expand EV backbone infrastructure into B1 visitor parking zones. Install up to 9 × 15A EV chargers at B1 visitor bays. Key components: Second EV-DB in B1; Additional cable tray and containment; Integration with Stage 1 infrastructure and load management platform. Note: Builds on Stage 1 investment. Expands visitor charging capacity to lower basement level.	Stage 3 — Full EV Backbone Infrastructure Completion Scope: Complete EV cable tray and containment throughout all practical carpark areas. Install future charger take-off provisions for resident bays. Establish scalable site-wide EV infrastructure. Key components: Full cable tray completion; Future charger take-off provisions; Expanded communications and load management infrastructure; Provisioning for up to 85 × 15A resident chargers. Note: Enables future resident charger installations on demand. Residents restricted to approved charger models and nominated load management platform.

Full Installation vs Staged Rollout

Consideration	Complete Install	Staged Rollout
Initial Capital Cost	High upfront investment	Lower staged capital expenditure
Resident Disruption	One large disruption period	Smaller staged disruptions
Future Flexibility	Less adaptable to future tech	Allows future adaptation
Financial Risk	Higher Owners Corporation exposure	Reduced financial exposure
Infrastructure Scalability	Fully installed from day one	Expanded progressively
Future Retrofit Costs	Lower future retrofit costs	Some future works may still be required
Cash Flow	Can be difficult for OCs	More manageable staged budgeting

✔ **Recommended Direction:** The staged rollout approach — beginning with Stage 1 ground floor visitor charging — delivers near-term outcomes for current EV owners and visitors while protecting the building's ability to scale affordably. The infrastructure has been designed to support up to 85 × 15A EV chargers across the site.

Additional Electrification Opportunities

40 Stanley Street's all-electric profile and large unencumbered rooftop create significant opportunities beyond EV charging. A building already engaging with its electrical infrastructure and Owners Corporation is well positioned to assess whether complementary improvements can be bundled into the same planning and delivery process — improving overall value and reducing disruption from multiple separate projects. These opportunities are not unique to this site; they are available to many comparable apartment buildings.



Solar PV

The building's large, unshaded, unencumbered roof area — subject to structural assessment — represents a significant opportunity for solar PV. This could materially reduce common area and private allotment energy costs, and provide a renewable source for EV charging loads.



Load Management Integration

Dynamic load management across the EV charging network should be designed to future-proof the building for potential further electrification — including centralised hot water plant upgrades and future electrification of gas cooking appliances in individual lots.



Common Area Efficiency

Lighting and common area load optimisation can further free up the electrical headroom already identified — benefiting both residents and the EV charging system while reducing OC energy expenditure.



Battery Storage Readiness

Battery storage paired with rooftop solar can smooth peak demand, reduce grid costs, and provide resilience for the building's all-electric services. Planning for battery integration now — alongside the EV charging backbone — avoids costly retrofits later.

Key Findings

The assessment of 40 Stanley Street identifies a building that is exceptionally well-positioned for EV charging among comparable apartment sites. The combination of all-electric infrastructure, a favourable MSB location, existing cable tray, confirmed resident demand, and majority levy support means the path from feasibility to delivery is clearer and shorter than for most multi-residential buildings of this scale. The findings also highlight what issues must be resolved before installation can proceed.

Strengths at this Site

- All-electric building with 800A three-phase supply — no mains upgrade anticipated for any stage
- Existing cable tray throughout upper basement dramatically reduces Stage 1 cabling costs
- MSB co-located with 9 visitor bays — ideal proximity for first-stage EV charger installation
- Sprinkler coverage and ventilation across both basement levels addresses key fire safety requirements
- Overnight electrical headroom confirmed — instant hot water load is predominantly daytime
- Resident support for a levy indicates financial viability
- Large unshaded roof available for solar PV — significant complementary opportunity

Matters Requiring Resolution

- OC EV Charging rules (By-law and Policy) must be agreed before Stage 1 proceeds
- City of Yarra planning approval may be required for change of use to visitor parking bays
- Cents-per-kWh billing rate must be set equitably and in line with residential tariffs
- Third-party smart charging, booking, and billing provider must be selected and contracted to the OC
- Solar PV viability subject to structural assessment of roof

📌 **Overall Conclusion:** 40 Stanley Street is among the most viable apartment buildings assessed for EV charging retrofit. The recommended staged rollout is technically sound, financially supported by residents, and deliverable under the existing electrical installation.

Recommended Next Steps

The following actions are recommended to progress 40 Stanley Street from feasibility assessment to site-specific design and delivery. The resident survey is already complete — this building is ahead of most comparable sites in the process. The next steps focus on converting that momentum into formal OC decisions and physical delivery. For other strata buildings, this sequence is directly applicable.

1

OC Rules for EV Charging

Agree Owners Corporation rules for resident use of visitor parking bays for EV charging, and confirm governance framework for future resident charger installations

2

Formal Electrical Review

Commission a licensed electrician to confirm MSB capacity, cable tray routing, EV-DB locations, and load management design across all three stages

3

Fire, Building & Insurance Review

Appoint a fire engineer and building surveyor. Confirm the NCC/permit pathway, required fire measures and insurer requirements. Seek Council advice if planning is triggered.

4

Concept Design & Costings

Prepare Stage 1 concept layout, cable routing plan, EV-DB placement, and capital cost estimates for OC consideration

5

Levy Resolution

Present levy structure and staged cost estimates to OC and residents for formal resolution

6

Billing Provider Selection

Select and contract third-party smart charging and billing provider (OCPP-compliant, integrated with load management platform); set user pricing in line with residential tariffs

7

Licensed Stage 1 Installation

Install EV-DB, submains and load management. Install up to 9 × 15A ground-floor chargers. Test, commission and certify the installation; provide COES/inspection and handover.

8

Future Expansion & Monitoring

Monitor use, demand and system capacity. Expand to B1 and the resident backbone when OC approval and capacity review support later stages, provisioning up to 85 × 15A chargers.

What This Case Study Means for Your Building

40 Stanley Street demonstrates that a well-provisioned all-electric apartment building — with the right combination of resident engagement, electrical infrastructure, and governance appetite — can move from feasibility to delivery efficiently and cost-effectively. The barriers at this site are real but notably smaller than at most comparable buildings, and the enabling factors are unusually strong.

The broader lesson is clear: buildings that are all-electric, have accessible main switchboards, existing cable infrastructure, and an engaged Owners Corporation are primed to act. What is often missing is not the technical solution — it is the structured process to reach a decision that the Owners Corporation, building manager, and residents can all support.

For Owners Corporations

This case study shows how to approach EV charging decisions in stages — without overcommitting to cost or complexity before the evidence supports it. Resident demand is confirmed, levy support is majority, and the electrical infrastructure is favourable. The case for progressing to a formal OC resolution on the staged rollout is strong.

For Current EV Owners

6 residents at 40 Stanley Street already own EVs and 16 more plan to purchase. Stage 1 visitor bay chargers will provide near-term access while the private bay rollout is planned and delivered. If you own an EV and live in an apartment, early engagement with your OC makes all the difference.

For All Residents

A fair, transparent cents-per-kWh billing model — priced in line with residential tariffs — means EV charging costs are predictable and equitable, regardless of the upfront funding model chosen. Charging at home is often cheaper than public charging, making your building more desirable for EV owners.

Looking Further Ahead

Solar PV and battery storage on the building's large unshaded roof represents the next major opportunity — one that could reduce energy costs for all residents, not just EV owners, and further strengthen the building's all-electric advantage. Planning for this now alongside the EV backbone avoids costly retrofits later.



This is Case Study 1 of 3. Two further case studies will be published using the same approach — profiling different apartment building types to help a broader range of strata buildings and owners corporations understand the EV charging pathway relevant to their situation.

CASE STUDY 2 OF 3

214 Argyle Street, Fitzroy VIC — EV Charging Case Study

BUILDING PROFILE

- 2 residential levels
- 6 apartments
- Owners Corporation building
- On-site car parking
- EV charging feasibility assessment
- Options for residents' charging needs

FITZROY VIC

EV CHARGING FEASIBILITY

MULTI-RESIDENTIAL

What This Case Study Covers

214 Argyle Street is a double-storey, 6-unit residential complex in Fitzroy with an external surface carpark comprising 6 private bays at the rear of the block. No formal resident EV survey has been undertaken; however, the OC Chair indicates low immediate demand with cost sensitivity following recent large capital outlays. This assessment identifies a practical, low-cost pathway to EV charging readiness that works within the building's existing electrical capacity and governance constraints.

Scope of Assessment The assessment considers the building's external carpark layout, electrical infrastructure condition and capacity, fire and safety considerations, EV charging demand, and the staged options available to support near-term and long-term EV uptake and building electrification.	Overall Finding EV charging at this site is technically feasible at Level 2 (32A, 7kW) standard. The existing main switchboard (circa 1995) has a 225A main breaker with measured peak demand of 11.71 kVA (51A/phase) — providing ample headroom for Level 2 'smart' charging to private car spaces with dynamic load control. The switchboard is old with discontinued breakers and an upgrade within the next 5 years is recommended.	Recommended Path The OC installs approximately 80m of 150mm cable tray from the MSB to the carpark as shared backbone infrastructure (estimated cost: \$15,000–\$20,000). Each interested resident then arranges their own licensed electrician to install a dedicated 32A circuit from their tenant meter and a 32A Level 2 'smart' charger at their car space (estimated cost: \$4,000 per space). A formal resident survey and EV charging by-law are recommended before any capital commitment.
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Why This Site Matters

214 Argyle Street is a strong candidate for the backbone-plus-individual-fitout EV charging model precisely because of its simplicity. A small 6-unit complex with individual metering, an external surface carpark, and a cost-conscious OC represents a very different challenge to a large apartment tower — and a very different solution. This case study shows how a low-cost, resident-funded approach can deliver EV charging readiness without overcommitting OC capital.

6 Private Car Spaces

External surface carpark separate from resident buildings — open-air layout eliminates enclosed-space fire risk and simplifies cable routing. A straightforward setting for EV charging infrastructure.

Individual Unit Metering

All units are individually metered for electricity. This supports a directly attributed, individually funded charging model — each resident pays for their own EV charging through their existing electricity account.

Adequate Electrical Headroom

225A main supply with measured peak demand of just 11.71 kVA (51A/phase) — significant headroom available for Level 2 (32A, 7kW) 'smart' EV charging to each private car space with dynamic load control.

Broader Electrification Opportunity

Beyond EV charging, the site assessment identifies opportunities for gas appliance replacement, hot water system upgrades, and energy efficiency improvements — relevant to all residents, not just EV owners.

Site Overview

Site Details

Property: 214 Argyle Street, Fitzroy VIC

Building Type: Double-storey residential unit complex comprising six apartment units

Primary Use: Residential

Parking Type: External surface carpark — 6 spaces at rear of block

Metering: All units individually metered for gas and electricity

Assessment Objective: Determine whether EV charging can be introduced safely, practically, and cost-effectively for building occupants, consistent with OC preferences and budget constraints

Summary Site Observations

- Double-storey unit typology with individual unit meters — supports individually funded charging model
- Surface carpark separate from resident buildings — provides inherent natural ventilation and significantly reduces enclosed-space fire risk compared to basement environments
- 6 car spaces at rear of block, approximately 80m cable run from MSB to carpark
- Low near-term EV demand and cost sensitivity following recent capital outlays (OC Chair pers comm)
- Existing 225A main switchboard (circa 1995) has measured headroom for Level 2 (32A 7kW) EV charging with dynamic load control
- Common backbone cable tray infrastructure identified as preferred shared investment, with individual fit-out at tenants' cost and timing

EV Charging Demand

No formal resident EV survey has been undertaken at 214 Argyle Street. The OC Chair (pers comm) has suggested low immediate demand for on-site EV charging, with cost sensitivity a primary concern following recent large capital outlays by the OC. Likely preference is for individually funded charging infrastructure connected to tenant meters — a model that aligns well with the building's individual metering arrangement. While near-term demand is suggested to be low, EV uptake is accelerating nationally and any infrastructure installed now should be designed to accommodate growing demand without requiring costly re-works.

Current Demand

Low immediate demand. No residents have formally requested on-site EV charging at this time. A resident survey is recommended prior to any capital commitment to confirm this position.

Cost Sensitivity

The OC has recently made significant capital outlays and has limited appetite for further shared expenditure. The recommended model minimises OC capital by limiting shared investment to the cable tray backbone only.

Individual Funding Preference

Likely preference for individually funded infrastructure connected to tenant meters. This is a practical model well suited to this building's metering arrangement and low near-term demand.

Future-Proofing

Installing the cable tray backbone now enables residents to connect their own chargers at their preferred timing, without requiring repeated disruption to common property cabling routes.

Car Park Suitability

The surface carpark at the rear of the allotment presents a relatively straightforward setting for EV charging infrastructure. Unlike basement or enclosed carpark environments, the open-air layout reduces fire safety concerns and simplifies cable routing. The primary cable pathway consideration is the approximately 80m run from the main switchboard to the carpark, which will require a dedicated cable tray installation.

1	2	3
Site Characteristics • 6 external surface car spaces at rear of block • Open-air layout — no enclosed space ventilation concerns • Approximately 80m cable run from MSB to carpark The open-air carpark configuration provides inherent natural ventilation and significantly reduces enclosed-space fire risk compared to basement environments — a meaningful advantage for this site.	Cable Pathway Strategy • 80m length of 150mm "capped" cable tray from MSB to carpark as shared OC backbone • Cable tray provides a neat, protected, and accessible pathway for individual resident cabling • Residents can arrange their own licensed electrician to run cabling through the tray and install charger at their car space when desired • No excavation or structural penetrations anticipated for the primary cable route	Preliminary View The external surface carpark is well suited to the proposed backbone-plus-individual-fitout model. The cable tray installation is the primary shared infrastructure investment required, with individual resident connections made incrementally over time.

Electrical Feasibility

The electrical assessment confirms that the building has adequate headroom in its main supply for Level 2 EV charging. The 225A main breaker, combined with a measured maximum rolling 30-minute demand of 11.71 kVA (51A per phase), leaves substantial capacity available. The building's individual unit metering arrangement further simplifies the billing model — no sub-metering infrastructure is required.

01	02	03
Main Supply Capacity	Switchboard Condition	Metering and Billing
225A main breaker. Max rolling 30-minute demand: 11.71 kVA / 8.05 kW (recorded 13 April 2026, 04:54–05:24). Peak phase current: 51.01A. Significant headroom available for Level 2 (32A, 7kW) 'smart' EV chargers to each private parking space.	Main switchboard circa 1995. Breakers have been discontinued — replacement parts are unavailable. OC should plan for switchboard upgrade within next 5 years.	All units are individually metered for electricity. EV charging circuits connected directly to tenant meters eliminate the need for sub-metering infrastructure and simplify cost attribution — each resident pays for their own EV charging consumption through their existing electricity account.

04	05
EV Charging Backbone	Connectivity
The building has a 225 A main breaker. Monitoring recorded a maximum 30-minute demand of 11.71 kVA (8.05 kW) on 13 April 2026, between 4:54 am and 5:24 am. The highest recorded current on an individual phase was 51.01 A. These figures suggest capacity may be available for EV charging, but the available capacity on each phase must be confirmed before deciding how many chargers the building can support. Individual parking spaces could then be connected to managed Level 2 chargers, typically rated at 32 A (approximately 7 kW) each.	Given the outdoor carpark at this building, it is not necessary to install a "house" wifi service for EV charger communication and load management. Most commercially available Level 2 'smart' EV chargers have in-built or plug-in cellular (4G/5G SIM) capability that can operate with a data-only SIM connected to the apartment owner's mobile phone account.

⚠ The existing switchboard (circa 1995) uses discontinued Terasaki breakers — replacement parts are unavailable. The OC should plan for a switchboard upgrade within the next 5 years, ideally coordinated alongside the EV charging backbone installation.

Fire Safety and Compliance

The external surface carpark at 214 Argyle Street presents a low fire safety risk profile compared to enclosed basement car parks — a meaningful advantage for this site. The open-air setting provides natural ventilation and direct access and egress. The key fire safety considerations specific to this site are manageable factors rather than barriers, and should be addressed during the detailed design phase.

Ventilation

The carpark is physically separate from the resident buildings. Open-air configuration provides inherent natural ventilation and significantly reduces enclosed-space fire risk compared to basement environments.

Access / Egress

The carpark has direct access/egress to the local street via a remote-controlled motorised garage door — a positive safety feature that ensures unobstructed access independent of the building's interior.

Fire Safety Equipment

The building has no fire detection or suppression equipment installed to the carpark area. For an open-air external carpark with Level 2 (32A, 7.4kW) 'smart' charging, this is unlikely to be a barrier, but should be confirmed with a fire engineer or building surveyor.

Neighbouring Property

The building carpark abuts a neighbouring multi-unit residential building built to boundary. This is likely to be a fire rated wall (FRL 60/60/60), as standard, but should be confirmed with a fire engineer or building surveyor.

Storage of Flammable Goods

Some car spaces have a small storage room (cupboard) attached. Flammable products and small electronic devices with lithium batteries such as power tools and e-mobility scooters/bikes should not be stored in these areas.

Electrical Standards & Installation

All EV charging installations must be installed by a qualified and licensed electrician and comply with relevant Australian electrical standards. Only install electrically compliant EV charging equipment that carries the RCM tick.

-  Fire and compliance considerations at this site are manageable — not barriers. The open-air carpark, natural ventilation, and direct street egress place this site in a lower risk category than enclosed basement environments. Engaging a fire engineer and licensed electrician at the design stage is still recommended.

Delivery Options

Given the low near-term demand, cost sensitivity, individual unit metering, and preference for individually funded infrastructure, the recommended solution for 214 Argyle Street prioritises minimal OC capital outlay while providing a shared backbone for future EV charging at residents' own cost and timing. This is a fundamentally different model to a large apartment building — and that's the point.

- i** The OC installs approximately 80 metres of 150mm cable tray, complete with tray lid, surface-mounted from the main electrical service area (MSB) through to the parking and garage locations. This is the shared backbone only — no EV chargers, no individual charger cabling, and no load management or billing platform are included at this stage. Residents then arrange their own licensed electrician to install a dedicated 32A circuit from their individual apartment meter and a 32A (7kW) Level 2 'smart' charger at their car space when desired.

Advantages of This Approach

- **Lower Initial Cost:** Only shared backbone installed now, reducing upfront capital costs while preparing site for future EV adoption
- **Flexible Future Upgrades:** Each resident installs a charger later based on their own requirements, budget and vehicle needs
- **Avoids Centralised Billing Complexity:** No shared charging network or software subscription required
- **Cleaner Future Installation Pathway:** Cable tray reduces future installation difficulty and avoids repeated conduit additions throughout common areas
- **Better Long-Term Site Presentation:** Neater and more organised infrastructure pathway for future EV works
- **Reduces Future Disruption:** Installing backbone once minimises repeated access works and disruptions later

Limitations / Considerations

- **Future Capacity Still Requires Review:** Future charger installations will still require assessment of apartment supply capacity, main switchboard capacity, maximum demand, and load balancing requirements through smart chargers
- **Existing Switchboard Constraints:** The existing board is relatively old and uses older Terasaki breakers, which may require future upgrade works depending on final charger quantities and loading
- **Long Cable Runs:** Future chargers may involve substantial cable distances from apartment switchboards to parking bays, affecting installation cost and voltage drop requirements
- **Difficult Installation Conditions:** Access constraints including high-level conduit/tray installation, fragile tiled areas, and inability to use scissor lifts will increase labour complexity

Building Electrification Opportunities

The site assessment identifies several broader electrification opportunities beyond EV charging. The OC and individual residents are well placed to consider bundling related electrification works into the same planning and delivery process — reducing disruption, leveraging trade mobilisation costs, and improving overall resident comfort and energy bills.

Solar PV Integration

This building has minimal common electricity use. Each apartment unit has its own roof space and therefore the business case for Solar PV should be assessed by each individual apartment owner. A common property roof covers the private parking spaces which may accommodate up to 10kW of Solar PV, subject to structural assessment. Solar power generated would need to be equitably shared to each apartment, which is not considered cost effective or practicable at this scale.

Gas Cooktop Replacement

Gas cooktops emit unhealthy gases and should be replaced with electric alternatives such as induction when kitchens are being renovated. This is best coordinated as a multi-trade renovation to improve cost efficiency.

Gas Heater & Floor Heating Replacement

Electric floor heating (multi-phase) and gas space heaters should be replaced with efficient split system RCAC units at end of life or earlier.

Low-Cost Window Treatments

Thermally efficient window coverings such as honeycomb blinds or heavy drapes with pelmets significantly reduce heat loss and gain at low cost. These can be implemented by residents immediately without OC approval.

Draught Sealing

Draught sealing windows and external doors is a low-cost, high-impact measure that residents can undertake independently. It reduces heating and cooling loads, lowering energy bills and improving comfort.

Hot Water Systems

Each unit has an electric resistive storage hot water system. Replacement with heat pump hot water systems has limited scope due to space constraints for external heat pump units — options should be assessed unit by unit. Low flow shower roses should be installed to reduce overall hot water use.

Key Findings

The assessment of 214 Argyle Street reveals a building well positioned for a low-cost, individually funded EV charging model aligned with budget constraints. The external surface carpark, individual unit metering, and available electrical headroom are meaningful advantages.

Strengths

- Individual unit metering supports directly attributed, individually funded EV charging
- 225A main supply with low measured peak demand — adequate headroom for Level 2 'smart' charging to each private car space
- Direct street egress and carpark separation from buildings are positive safety factors
- Open-air carpark eliminates enclosed-space fire risk — lower compliance burden than basement environments

Benefits

Increased Property Value

The EV market is growing and experts predict there could be almost one million EVs in Victoria by 2030. Since most EV owners prefer to charge at home, a growing EV market will increase demand for EV chargers in residential buildings. Getting your building EV ready will make your building more desirable for EV owners.

Reduced Costs for Residents

Charging at home is often cheaper than public charging. Getting your building EV ready will save money for your residents, making your building even more desirable for EV owners.

A Healthier Environment

More EVs means cleaner air for residents, while also contributing to less demand on building ventilation systems.

Challenges

- No formal resident EV demand survey undertaken — appetite and timing of individual connections uncertain
- Older main switchboard requires careful management via dedicated isolators/breakers and dynamic load management for EV charging circuits
- 80m cable run from tenant meters at MSB to carpark requires dedicated 150mm cable tray as upfront OC investment — estimated cost \$15,000–\$20,000

- ✓ **Overall Conclusion:** 214 Argyle Street is a strong candidate for the proposed backbone-plus-individual-fitout EV charging model. The recommended path minimises OC capital while enabling residents to connect at their own cost and timing — well suited to the building's metering arrangement and the OC's current budget position.

Recommended Next Steps

The following actions are recommended to progress this assessment to a site-specific delivery plan.

1

Resident Demand & Report Update

Complete the resident survey to confirm EV demand and willingness to invest. Update and circulate this feasibility report with the findings.

2

Formal Electrical Review

Licensed electrician to confirm supply capacity, maximum demand, cable route, load management and future electrification loads.

3

Fire, Building & Insurance Review

Obtain fire engineer and building surveyor advice on fire measures and the NCC/permit pathway. Obtain written insurer requirements or acceptance before procurement.

4

Backbone Design & Costings

Finalise the 80 m, 150 mm cable-tray design and obtain comparable quotes (indicatively \$15,000–\$20,000) for OC consideration.

5

OC Approval & Governance

Present the costed proposal and obtain the required OC resolution for common-property work, funding, access and charger-use rules.

6

By-Law, Access & Billing

Strata lawyer to document charger standards, resident responsibilities, access, metering, billing and safe-use procedures.

7

Licensed Installation & Handover

Licensed electricians to install the backbone and individual 7 kW smart chargers (indicatively \$4,000 per space). Complete testing, certification and handover.

8

Future Expansion & Monitoring

Monitor take-up, demand and system capacity. Approve later stages when utilisation and resident interest justify expansion.

What This Case Study Means for Your Building

214 Argyle Street demonstrates that EV charging readiness doesn't require a large building, a big budget, or a complex centralised system. A small, cost-conscious OC with individual metering and an external carpark can take a practical, low-disruption path to EV readiness — one that protects the OC's finances while giving residents the infrastructure they need to connect at their own pace.

The broader lesson: Not every building needs a centralised EV charging network. For smaller buildings with individual metering, the backbone-plus-individual-fitout model is often the most practical, equitable, and cost-effective approach. What matters is installing the shared pathway now — so residents aren't left to manage repeated disruptions to common property later.

For Owners Corporations

This case study shows how to progress EV charging without overcommitting OC capital. A shared cable tray backbone — installed once, used incrementally — is a low-risk way to future-proof the building while respecting current budget constraints.

For Individual Residents

If you own an EV or plan to buy one, the backbone model means you can connect at your own cost and timing — without waiting for the whole building to agree on a centralised system. Early engagement with your OC to get the backbone approved is the most important first step.

For All Residents

Broader electrification — replacing gas appliances, improving insulation, upgrading hot water systems — benefits all residents, not just EV owners. Bundling these works with the EV backbone installation reduces disruption and trade mobilisation costs.

Looking Further Ahead

As EV uptake grows, the backbone installed today will become increasingly valuable. Buildings that act now — even modestly — will be better positioned to meet resident demand and maintain property values as the EV market accelerates.

CASE STUDY 3 OF 3

73–103 Nicholson Street, Abbotsford VIC — EV Charging Case Study

BUILDING PROFILE

- Medium-density apartment building
- 78 apartments
- Owners Corporation building
- Mechanical car stackers
- On-site EV parking spaces
- EV charging feasibility assessment

ABBOTSFORD VIC

EV CHARGING FEASIBILITY

MULTI-RESIDENTIAL

What This Case Study Covers

73–103 Nicholson Street is a medium-density, 78-apartment building in Abbotsford with a single-level basement car park, an embedded electricity and gas network, and pallet-type mechanical car stackers serving 109 private spaces. A resident survey confirmed modest but real EV demand, with mixed community sentiment. This case study walks through the full feasibility process — from site assessment to staged delivery — with a particular focus on how buildings with mechanical parking systems can still find a practical EV charging pathway.

Scope of Assessment

The assessment considers the building's basement parking layout, including six visitor bays and 109 pallet-type mechanical stacker spaces, electrical infrastructure including the 250kW main supply and embedded network, fire and safety considerations, resident survey findings on EV charging demand, and staged delivery options for near-term EV uptake at the visitor bays.

Overall Finding

EV charging at this site is feasible via the six visitor bays in the near term. The pallet-type mechanical car stackers serving 109 private spaces are not suitable for EV charging in their current form. The building's electrical position is strong: 195kW of headroom against a 250kW supply is sufficient to support 6 × 11kW AC chargers at visitor bays without immediate supply augmentation. However, this headroom will be progressively consumed by anticipated electrification of gas heating and cooktops — making load management and solar expansion critical. Resident survey (44% response rate — 34 of 78 lots) identified 3 current EV owners and 9 residents planning to purchase an EV. 11 of 34 respondents support a levy for infrastructure costs.

Recommended Path

A staged, load-managed solution coordinated with solar expansion and longer-term electrification planning. Stage 1 (Near-Term): Install a dedicated 160A circuit breaker in the main switchboard, with an approximately 20-metre cable run to a CT chamber and new EV distribution board in the basement. Install six 11kW Type 2 AC chargers across the six visitor bays, with three bays as dedicated EV charging bays and three as hybrid visitor/EV bays (subject to OC approval). Include smart load management, line marking, and conduit provision for future DC fast charging expansion. Estimated cost: \$65,000–\$75,000 ex GST. Stage 2 (Mid-Term): Expand solar PV from the existing 8kW toward 50kW or more to offset common area electricity consumption and support anticipated gas-to-electric transition.

Why This Site Matters

73–103 Nicholson Street reflects the kinds of challenges and opportunities commonly seen across medium-density apartment buildings in established inner Melbourne suburbs. It is not an edge case — it is representative of many buildings that will need to navigate EV charging in the coming years, and that is precisely what makes it a valuable planning reference. This site presents a combination of features typical of established apartment buildings: mechanical car stackers that restrict conventional charger placement, shared visitor parking that offers an alternative pathway, an embedded electricity network, existing solar PV, and an owners corporation weighing near-term cost against longer-term electrification ambitions.

Mechanical Car Stackers

Pallet-type mechanical stackers serve 109 private spaces but are incompatible with EV charging — a common constraint in medium-density buildings built or retrofitted with space-efficient parking systems.

Owners Corporation Coordination

Decisions affecting common property and visitor bays must go through the Owners Corporation — a governance layer that shapes timing, costs, and any required planning permit applications.

Strong Electrical Headroom

With a 250kW supply and a measured peak demand of only 55kW, approximately 195kW of headroom exists — a significantly favourable starting point compared to many comparable buildings.

Electrification Context

The building has gas central heating and gas cooktops, and the OC has indicated interest in future electrification — making early electrical planning and solar expansion critical to avoid capacity constraints later.

Site Overview

Site Details

Property: 73–103 Nicholson Street, Abbotsford VIC

Building Type: Medium Density Multi-Unit Residential

Apartments: 78 apartments

Parking: Single-level basement — 6 visitor bays + pallet-type mechanical car stackers for 109 private spaces

Electricity Supply: 250kW three-phase supply to main switchboard via embedded electricity and gas networks

Assessment Objective: Determine whether EV charging can be introduced safely, practically, and cost-effectively for building occupants given the stacker constraint

Summary Site Observations

- Medium-density residential typology with 78 apartments across a single basement car park level
- Pallet-type mechanical car stackers serve 109 private spaces and are not suitable for EV charging in their current form
- Six visitor bays provide the most accessible near-term pathway for EV charger installation
- Embedded electricity network in place — billing and metering arrangements managed by Embedded Network Provider
- Existing 8kW solar PV installed with significant potential to expand to 50kW or more
- Gas central heating and gas cooktops indicate future electrification will increase electrical load — early planning is important
- Measured 30-minute peak demand of 55kW against 250kW supply yields approximately 195kW of available headroom

Existing Conditions

The site operates as a medium-density apartment building with a single-level basement car park. EV charging in this context depends not only on available physical space but also on how parking bays are allocated, how the embedded network manages billing, and how electrical distribution can be extended to charger locations. The mechanical stacker configuration is the dominant physical constraint and fundamentally shapes the near-term pathway.

Key Physical Considerations

- Pallet-type car stackers are incompatible with EV charging — vehicles on stackers cannot be connected to chargers safely
- Six visitor bays in the basement are the most practical near-term charger locations
- Access to walls, columns, and service routes from the visitor bay area needs to be confirmed
- Proximity between visitor bays and the main switchboard will influence cable run cost
- Vehicle circulation and bollard/protection requirements around any installed chargers
- Potential to replace stackers with EV-ready stackers at end of service life — subject to electrical and fire safety assessment

Early Opportunity

The visitor bay configuration, while limited to six spaces, provides a manageable and lower-cost starting point. It supports:

- Communal charging infrastructure shared across residents via booking and billing platform
- Staged deployment aligned with actual low-to-moderate near-term demand
- Load-managed charging to protect electrical capacity as electrification loads grow
- A clear, lower-risk path to OC approval compared to a whole-of-stacker replacement

i The visitor bay approach provides a practical, lower-cost starting point while the longer-term stacker replacement pathway is evaluated over time.

EV Charging Need

The resident survey provides a clear and honest picture of where this building sits on the EV readiness spectrum. Demand exists and is real — but it is more modest than at comparable buildings, and community sentiment is mixed. The survey results do not argue against proceeding — they argue for a carefully scoped, low-risk first stage that addresses resident concerns directly and does not overcommit the OC.

44%

Response Rate (34 of 78 lots)

12

Residents with Near-Term EV Charging Need

32%

Respondents Support a Levy

97%

Respondents Have Car Stacker Spaces

What the Demand Picture Tells Us

Near-term demand is real but modest. 12 residents either own or plan to buy an EV — sufficient to justify a first-stage installation at the visitor bays, but not sufficient to justify a large upfront commitment. The 44% response rate gives confidence that this picture is representative. Charging availability is a meaningful influence on EV purchase decisions for a significant share of respondents, suggesting that installing chargers could accelerate uptake over time. The visitor bay pathway is the only practical near-term route given that 97% of respondents have stacker spaces.

Resident Concerns to Address

- Fire safety and lithium battery risk — cited by multiple respondents as a primary concern
- Insurance premium impacts — concern that all owners will bear increased premiums regardless of EV ownership
- Equity of cost — the view that EV charging benefits few residents but costs are shared broadly
- Car stacker complexity — several respondents cited this as a reason to oppose or delay
- Availability of nearby public charging — cited as an alternative to on-site infrastructure



These concerns are legitimate and must be addressed transparently through the OC process. They are not barriers to proceeding — but they shape the governance framework required. A first-stage installation scoped to the visitor bays — low cost, low risk, and reversible in governance terms — is the most appropriate response to this picture.

Car Park Suitability

The car park assessment identifies where initial charger installation is most practical. The single-level basement contains two distinct environments: the six visitor bays (accessible and suitable for charging) and the pallet-type mechanical car stackers serving 109 private spaces (not suitable for EV charging in current form). This distinction fundamentally shapes the near-term delivery pathway.

Visitor Bays — Near-Term Pathway

- The proposed layout allocates three visitor bays as dedicated full-time EV charging bays and three bays as hybrid visitor/EV charging bays
- Final bay allocation is subject to OC approval
- A planning permit (change of use) may be required from Council if any visitor bays are dedicated to exclusive resident EV charging use
- Wall-mounted AC chargers at visitor bays are the recommended first-stage approach
- Bollard protection and bay marking required for each charger position
- Clustering all six chargers within the visitor bay area minimises cable run costs and simplifies load management wiring

Mechanical Stackers — Current Constraint

The pallet-type mechanical stackers serving 109 private spaces are not suitable for EV charging in their current form — vehicles on platforms cannot be safely connected to chargers. This assessment does not propose stacker replacement as a pathway. Private bay EV charging is not a near-term option for this building, and the visitor bay area is the only practical location for near-term charger installation.

i Potential to replace stackers with EV-ready stackers at end of service life — subject to electrical and fire safety assessment at that time.

Electrical Feasibility

This building is in a strong electrical position relative to many comparable apartment sites. A 250kW three-phase supply with a measured 30-minute peak demand of only 55kW — confirmed via 7-day power monitoring on the incoming consumer mains — yields approximately 195kW of available headroom. This is sufficient to support meaningful EV charging without immediate supply augmentation, subject to load management being implemented.

01

Main Supply Capacity

250kW three-phase supply to main switchboard. Measured 30-minute peak demand of 55kW via 7-day monitoring. Approximately 195kW of headroom available — sufficient for 6 × 11kW AC chargers without load management, though load management is strongly recommended.

03

Proposed EV Distribution Infrastructure

A spare slot is available within the unmetered section of the main switchboard, with capacity for a dedicated 160A circuit breaker for EV charging infrastructure. An approximately 20-metre cable run is required from the main switchboard to a CT chamber and new EV distribution board, to be mounted on a pillar in the basement. Existing cable tray infrastructure is available for partial reuse, reducing installation complexity and cost. The proposed 160A supply arrangement is sufficient to support six 11kW AC chargers with load management, and includes provision via conduit/tap-off for future DC fast charging expansion.

05

Load Management

Load management is recommended even though headroom is technically sufficient for initial charger deployment without it. Rationale: to avoid risk of overloading as electrification loads grow (gas heating and cooktop replacement), and to avoid excessive network demand charges on electricity bills.

02

Switchboard Condition

Condition of main and sub-switchboards, available spare ways, and compatibility with new EV charging circuits to be confirmed during detailed design. Embedded network configuration should be reviewed for integration with charger metering and billing.

04

Metering and Billing

An embedded electricity network is in place. EV charging consumption measurement and cost attribution should be integrated with or operate alongside the existing Embedded Network Provider's metering and billing arrangements.

06

Future Electrification Load

Gas central heating and gas cooktops are in use across the building. The OC has indicated interest in future electrification. These additional loads will consume a portion of the current headroom — making load management and solar expansion critical to preserving EV charging capacity alongside electrification.



The building's 195kW of electrical headroom is a significant asset. However, this headroom will be progressively consumed by future electrification of gas heating and cooking loads. Load management and solar expansion should be implemented early to protect long-term EV charging capacity.

Fire Safety and Compliance

Fire safety considerations must be addressed as a prerequisite to any EV charging installation at this site. Resident concerns about fire hazard and insurance impact are legitimate and must be addressed transparently through the OC process. The key message is that fire and compliance issues are not barriers to proceeding — but they must be identified, assessed, and resolved before installation begins.

01

Suppression & Detection

Fire detection and suppression coverage throughout the basement must be confirmed and documented before installation proceeds. If sprinkler coverage is not present or does not extend to the proposed charging area, this must be rectified as part of the project scope. Interconnected smoke detection with automatic isolation of power to EV chargers (EVSE) should be incorporated into the design. A break-glass fire alarm connection is also recommended.

03

Charger Placement & Egress

Charger location must be assessed relative to egress routes, fire-rated walls, and any fire hydrant or booster systems in the basement. A minimum 10-metre clearance from EV chargers and the EV distribution board to the nearest fire hydrant or booster system is recommended. High-traffic areas and ramp approach/departure angles at visitor bays must be considered in the layout.

05

Owners Corporation Approval

Works affecting common property require formal OC approval. A planning permit (change of use) may be required from Council if visitor bays are reallocated for exclusive resident EV charging use. OC rules for EV charging — including access, billing, and bay allocation — must be agreed before installation proceeds.

02

Ventilation Assessment

The single-level enclosed basement must be formally assessed for ventilation adequacy in the context of EV charging. Unlike open-air or ramp-adjacent locations, an enclosed basement presents higher risk if ventilation is insufficient. A mechanical ventilation assessment — and potentially a fire engineer review — is recommended before installation proceeds. The proximity of mechanical stacker equipment adds to the importance of this assessment.

04

Electrical Standards & Installation

All EV charging installations must comply with relevant Australian electrical standards and receive sign-off from a licensed electrical inspector. All EVSE must carry the RCM (Regulatory Compliance Mark). OCPP-compliant chargers are required to support the nominated load management platform. Individual power isolation must be provided within 2 metres of each charger, with master isolation for all EVSE at the EV distribution board.

06

Insurer & Surveyor Input

The building insurer must be consulted given resident concerns about fire hazard and insurance impact. A fire engineer or building surveyor review is recommended, particularly given the enclosed basement environment and the presence of mechanical stacker equipment. Emergency documentation — including a pre-incident plan, Emergency Services Information Plan, and block/emergency plans — should be prepared and maintained.

- ✔ Fire and compliance considerations are not barriers to proceeding — but they must be addressed early. Engaging a fire engineer and licensed electrician at the design stage, confirming suppression and ventilation provisions, and consulting the building insurer before installation will protect the OC, residents, and the project timeline.

Delivery Options

A staged delivery approach is the most practical model for 73–103 Nicholson Street given the stacker constraint and the likely pattern of apartment charging demand. The preferred near-term solution is to prioritise visitor-bay charging infrastructure now, while preserving the option to expand into DC fast charging later if utilisation materially increases.

01

Stage 1 — Visitor Bay Charging (Near-Term, Recommended)

Install a dedicated 160A circuit breaker within the unmetered section of the main switchboard, with spare capacity confirmed. Run approximately 20 metres of cable to a CT chamber and new EV distribution board mounted on a basement pillar, reusing part of the existing cable tray infrastructure. Install six 11kW Type 2 AC chargers across the six visitor bays, with bay allocation split between three dedicated full-time EV charging bays and three hybrid visitor/EV bays, subject to OC approval. Include smart load management, line marking, and conduits sized for future DC expansion via a tap-off arrangement.

Indicative cost: \$65,000–\$75,000 ex GST

02

Stage 2 — Future DC Fast Charging (Long-Term Option)

If utilisation increases significantly, the Stage 1 infrastructure allows for future installation of up to two 50kW DC fast chargers via a tap-off arrangement. This would provide a higher-speed charging pathway for heavier users, but it is best treated as a future option rather than the initial delivery model.

Consideration	Stage 1: AC Visitor Bay Charging	Stage 2: DC Fast Charging
Charger Type	6 × 11kW Type 2 AC	Up to 2 × 50kW DC
Indicative Cost	\$65,000–\$75,000 ex GST	Substantially higher — 5–10x per charger
Vehicles Charging Simultaneously	Up to 6	Up to 2
Charging Speed	~50–70km range/hr	~150–300km range/hr
Fit for Apartment Behaviour	Well suited to long dwell times	Better for short, high-speed sessions
Load Management Required	Strongly recommended	Yes — may require further electrical upgrades
Future Flexibility	Conduit provision for DC expansion	End-state option

✔ Recommended Direction: Stage 1 — six 11kW AC chargers with load management and future DC provision — is the recommended near-term approach. It offers the best balance of affordability, scalability, and fit for apartment charging behaviour, while preserving future flexibility for DC fast charging as demand grows.

Solar PV and Electrification Opportunities

This building is already engaged with both solar generation and an embedded electricity network — a strong foundation for a broader electrification strategy. The OC has indicated interest in future electrification of gas central heating and gas cooktops, which will significantly increase electrical load. Early planning for solar expansion and load management is essential to ensure this transition does not compromise the building's EV charging capacity or result in supply augmentation costs.



Solar PV Expansion

Existing 8kW solar PV system has potential to expand to 50kW or more. Solar should be sized to offset projected annual common area electricity consumption including electrified central hot water. Surplus generation can be shared across apartments via the Embedded Network Provider — a shared benefit for all 78 apartments.



Electrification of Gas Systems

Gas central heating and gas cooktops represent a future electrification opportunity and load. Transitioning these systems will consume a significant portion of the current 195kW headroom — coordinated planning with EV charging load management is essential to avoid overloading the existing supply.



Common Area Efficiency

Lighting, ventilation, and common area load optimisation can free up electrical headroom that benefits both residents and the EV charging system — and may reduce electricity bills managed through the embedded network.



Battery Readiness

Future battery storage integration can help smooth peak demand, reduce grid costs, and complement the expanded solar system — planning for this now avoids expensive retrofits later and strengthens the case for the Embedded Network Provider.

Key Findings

The assessment of 73–103 Nicholson Street reveals a building with a stronger-than-average electrical position but a significant physical constraint in its pallet-type mechanical car stackers. The visitor bay pathway is clear and practical. The building's interest in broader electrification makes early coordinated planning especially important.

Strengths

- Strong electrical headroom — 195kW available against a 250kW supply, confirmed by 7-day monitoring
- Six visitor bays provide a clear, near-term EV charging pathway independent of the stacker constraint
- Existing 8kW solar PV and embedded network provide a foundation for solar expansion and shared benefit
- Low near-term demand reduces urgency and allows for a well-planned visitor bay staging approach
- OC interest in electrification indicates willingness to engage with the broader energy transition
- Resident survey: 44% response rate (34 of 78 lots) — 12 residents own or plan to buy an EV, providing a clear near-term demand base for a first-stage visitor bay installation

Benefits



Increased Property Value

The EV market is growing and experts predict there could be almost one million EVs in Victoria by 2030. Since most EV owners prefer to charge at home, a growing EV market will increase demand for EV chargers in residential buildings. Getting your building EV ready will make your building more desirable for EV owners.



Reduced Costs for Residents

Charging at home is often cheaper than public charging. Getting your building EV ready will save money for your residents, making your building even more desirable for EV owners.



A Healthier Environment for Residents

More EVs means cleaner air for residents, while also contributing to less demand on building ventilation systems.

Challenges

- Pallet-type mechanical car stackers serving 109 private spaces are not suitable for EV charging in current form
- Planning permit (change of use) likely required if visitor bays are dedicated to resident EV charging
- Resident concerns about equity of access, fire hazard, and insurance impact must be addressed through OC process
- Future electrification of gas heating and cooktops will consume current electrical headroom — load management and solar critical
- Wi-Fi coverage to basement required for load management and booking platform
- Mixed community sentiment — fire safety, insurance premium impacts, equity of cost, and car stacker complexity were all raised as concerns
- Levy support at 32% (11 of 34 respondents) is below the level seen at comparable buildings — a carefully scoped, low-risk first stage is essential to building community confidence
- 97% of respondents have car stacker spaces, confirming that private bay charging is not a near-term option for the vast majority of residents

- ✓ **Overall Conclusion:** 73–103 Nicholson Street is a credible candidate for EV charging via visitor bays in the near term. The mechanical stacker constraint means private bay charging is not a viable pathway, and this assessment does not propose stacker replacement. A carefully scoped first stage at the visitor bays — coordinated with solar expansion and electrification planning — is the recommended path forward.

Recommended Next Steps

The resident survey is complete (44% response; 34 of 78 lots), identifying 12 current or prospective EV owners. The following actions progress the assessment from feasibility to site-specific design and delivery. They are sequenced to build OC confidence through clear, evidence-based choices.

01	02
Visitor Bay Allocation — Confirm visitor bay conditions and assess planning permit requirements for change of use with Council.	Electrical Review — Validate 195kW headroom finding, review switchboard and embedded network, model future electrification loads.
03	04
Charger Locations — Confirm preferred charger positions at visitor bays and cable routing from main switchboard.	Solar Scoping — Size solar expansion to 50kW+ to offset common area and future electrification loads.
05	06
Cost Estimates — Develop staged capital cost estimates for visitor bay chargers, load management, and solar expansion.	Fire, Building & Insurance Review Obtain fire engineer and building surveyor advice on NCC/permit path and fire measures. Get written insurer requirements or acceptance.
07	08
OC Approval & Governance Obtain formal OC approval for works, funding and visitor-bay use. Adopt access, billing, charger-use and maintenance rules.	Licensed Delivery, Handover & Monitoring Use licensed electricians; test and commission. Provide COES and any required inspection, certification and handover. Monitor use and capacity before later solar or DC stages.

What This Case Study Means for Your Building

73–103 Nicholson Street demonstrates that the path to apartment EV charging is rarely straightforward — but it is navigable. The mechanical stacker constraint means private bay charging is not a viable pathway for this building. The visitor bay pathway is clear, the electrical position is strong, and the broader electrification interest from the OC creates an opportunity to plan comprehensively rather than reactively. The broader lesson is equally clear: buildings with mechanical parking systems, embedded networks, and gas appliances need to begin coordinated electrical planning now — before electrification loads materialise and before solar expansion opportunities are missed.

For the Owners Corporation

This assessment provides a clear, staged framework for approaching EV charging and electrification decisions — without overcommitting to cost or complexity before the evidence supports it.

For the Building Manager

The assessment process outlined here provides a clear checklist for what needs to be confirmed — from visitor bay allocation through to load management and solar expansion — before any charging proposal can be properly costed or approved.

For Residents

If you live at Nicholson Street and want EV charging access, this assessment shows the path forward — and why early engagement with your Owners Corporation on both EV charging and the broader electrification agenda makes all the difference.

For the Embedded Network Provider

The combination of solar expansion, EV charging load management, and future gas electrification represents a significant opportunity to add value to residents through integrated energy management across the embedded network.

- ✔ This is Case Study 3 of 3. Together, these three case studies demonstrate that no two apartment buildings face the same EV charging challenge — and that a structured, site-specific feasibility process is the most reliable way to find the right pathway for your building.