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3rd February 2023

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To whom it may concern,

Merri-bek City Council National Energy Performance Strategy Consultation Submission

Merri-bek City Council welcomes the opportunity to provide a submission to the National Energy Performance Strategy.

Merri-bek is proud of its record in developing and delivering innovative initiatives that help lead the way for the local government sector across Australia. Merri-bek acknowledges we are in a state of climate emergency that requires urgent action by all levels of government. Council has also committed to collaborate with others to investigate innovations that transition our community to a smart, decarbonised, decentralised and socially just energy system.

The following submission has been prepared by officers and is based on endorsed Council strategy and policy positions.

Alignment with current Merri-bek Council policies

Merri-bek's Zero Carbon Merri-bek 2040 Framework sets out Council's vision for a zero carbon future by 2040. Part of this vision is for homes and businesses to be powered only by renewable electricity, following a supported phase-out of gas. Given that the impacts of climate change are escalating rapidly, Council, in 2021, adopted more ambitious targets for a zero carbon community by 2035 and interim goals to set us on the course to zero carbon.

Council's Zero Carbon Merri-bek Climate Emergency Action Plan 2020 -2025 has specific actions to accelerate the energy transition including:

- Ensure Merri-bek residents, community organisations, schools and businesses have access to trusted information and advice, services and funding options that support their adoption of energy efficiency and renewable energy.
- Lead the collaborative project to raise the standards of Environmentally Sustainable Design (ESD) through the planning scheme required in new homes, commercial and industrial development (Towards Zero Carbon in the Planning Scheme).

- Partner with others to advocate for and provide targeted support for low income and vulnerable households to avoid 'energy poverty' and be more comfortable (thermal comfort) in their homes during extreme weather.
- Ensure Council builds highly energy efficient facilities, including onsite renewables and 'no new fossil gas'.

Strategy Focus Areas

2.1.i Governance – Energy Governance

We support the collaboration currently being undertaken by the Australian, State and Territory governments to coordinate and collaborate energy policy including the National Energy Performance Strategy. However, the consultation paper is silent on the role of local government.

As the level of government closest to communities, local government plays a significant role in the delivery of energy performance projects and promoting / supplementing Federal and State government incentives and programs. Australian local governments have ambitious plans for emissions reduction in their communities. When the targets set by Australian local governments are met, 88,200 kt CO₂e emissions will be reduced.¹ 67% of Australian councils responding to the 2021 Local Government Climate Survey have set or are in the process of developing community emissions reductions targets, with an understanding that anything other than a net zero target is not acceptable from a climate risk or ambition perspective.²

Councils have a proven history in delivering energy efficiency and renewable energy projects, not only on their own assets, but also with their communities. Local governments also play a significant role in the planning process, including influencing the performance of how new homes and businesses are built. Within the top five emission reduction projects that Australian councils are undertaking is the requirement for strict sustainability criteria factored into planning processes.³ Further, 29% of Australian councils conduct energy efficiency retrofits and upgrades programs.⁴ Not only have councils become a trusted source within their communities, they have a wealth of knowledge and capacity to help deliver on the key objectives of a National Energy Performance Strategy. Local governments have access to local data, population and housing growth data all at a level which can be utilised to inform future demand estimates.

Merri-bek is leading by example by setting new benchmarks and initiatives to increase the energy performance of buildings within our municipality. Through this work, Council, and our development

¹ Lynch, A., Oke, C & A. Leavesley (2021). *State of play: Local governments and city networks accelerating climate action in Australia*. ICLEI Oceania. June 2021.

² <https://www.globalcovenantofmayors.org/impact2019/>

³ Lynch, Oke and Leavesley, *State of Play*.

⁴ Lynch, Oke and Leavesley, *State of Play*.

community, have gained knowledge and key insights on how to make our homes and businesses healthy, comfortable and reduce emissions.

Recommendations:

1. Improve the coordination mechanisms, and information and knowledge flow by including Local Governments in the Governance arrangements for a National Energy Performance Strategy
2. Clearly outline the role/linkages/contribution of the National Energy Performance Strategy:
 - a. in responding to Climate Change/Australia's obligations under COP27, UNFCCC, and to limiting global warming to 1.5°C.
 - b. to the National Electric Vehicle Strategy for the transport sector, and reforms to the Safeguard Mechanism for the large resources and industrial sectors
 - c. to the Roles and responsibilities of private sector, industry, community and different levels of government.

2.1.ii Governance – Targets

Merri-bek supports the development of energy efficiency targets to provide the framework to drive Government policies and programs for energy efficient buildings in Australia. The establishment of short and long-term targets will take into consideration the need to take urgent action ('no regrets measures') this decade as well as providing a pathway to net zero. Targets should be set for economy-wide and sectoral targets for residential buildings, commercial buildings, industry and transport.

With the target established, progress should be measured and reported yearly to allow for public accountability, opportunity to track progress and adjust initiatives as needed. Yearly progress reports should be undertaken by the Climate Change Authority and included in the Minister's annual climate change statement to Parliament.

Recommendations:

3. Develop targets for 2030 and 2050 with economy-wide and sectoral targets for residential buildings, commercial buildings, industry and transport; and
4. Ensure methodologies used for establishing and implementing targets include a delineation between demand and supply side improvements to avoid double counting.

2.2.i Residential – General

For local government the key opportunities to improve the energy performance of new and existing residential buildings are:

- **Improving energy performance via state and territory-based Planning Schemes**

A national strategy needs to recognise and support the associated state and territory Planning Schemes, and the integral role in implementation that local governments play in improving the energy performance of homes and businesses through the planning scheme. Consistency across state and territory borders, as well as strengthening the partnerships between all levels of governments is therefore needed in a future National Energy Performance Strategy. Victorian local governments have long had both the desire for planning scheme improvements, as well as success in delivering on these ambitions.

An action of the Merri-bek City Council's Zero Carbon Action Plan is *Achieving Zero Carbon within the Planning Scheme*. Through Merri-bek's leadership, 24 Victorian councils have collaborated to lodge a joint planning scheme amendment that elevates sustainability requirements for new buildings and encourages a move towards net zero carbon development. The councils are all members of the Council Alliance for a Sustainable Built Environment (CASBE) and the project supported by the Municipal Association of Victoria (MAV).

The [Elevating ESD Targets Planning Policy Amendment](#) seeks to build on the current Environmentally Sustainable Development (ESD) requirements for new developments and in doing so, better protect the natural environment, reduce resource and energy consumption, and support the health and wellbeing of future occupants. The amendments include detailed, measurable targets that will deliver meaningful outcomes in practice.

The 24 Councils represent approximately half the Victorian population and planning activity. By working together councils can share costs and knowledge and provide clarity and consistency for the development community. An indicator of a successful Energy Performance Strategy at the national level would be one that could drive more consistency across all planning schemes in relation to improving energy performance.

- **Gas free and all electric new buildings**

Merri-bek has a successful history of engaging with developers to encourage all-electric buildings. We have developed a strong body of evidence showing that gas-free developments are technologically feasible, commercially viable and acceptable to the people who live in them. Merri-bek is seeing a growing trend for all-electric builds with no gas connections across a range of development scenarios and typologies.

Merri-bek strongly encourages new buildings to be gas free and fully electric in the National Construction Code.

- **Compliance and Enforcement.**

While there has been an increase in the thermal performance of buildings, there is the need for robust, independent compliance processes to ensure energy performance standards are built.

Merri-bek has an active Environmentally Sustainable Design (ESD) compliance and verification program. ESD onsite non-compliance occurs when ESD measures are committed to in sustainability tools such as the Built Environment Sustainability Scorecard (BESS) and Green Star through the Planning Process but not included in the final constructed development.

In 2020, Merri-bek undertook an ESD Compliance research project which included a desktop⁵ review of planning and building permit drawings of 277 developments, 16 site inspections by staff and another 28 via aerial imagery, Occupancy Permits and drive by inspections. The research found that the level of ESD features approved at the planning stage, that were also in the building permit documentation, was only 45%. This means that 55% of the dwellings had markedly reduced energy performance in the construction stage, compared with planning, resulting in higher energy costs for residents and reduced building energy performance.

Merri-bek has introduced new initiatives to reduce the levels of non-compliance including education reports and an increase of on-site inspections. However, we need a systematic approach to improve compliance. Merri-bek's ESD compliance program is unique in Victoria with most Councils unable to fund compliance staff and programs.

To improve compliance the strategy needs to include:

- Development of an independent, well-resourced regulator with adequate tools and powers to address non-compliance;
- Funding for Planning and ESD Enforcement in local government;
- Inclusion of compliance and verification in the National Construction Code; and
- Mandatory training of Building Surveyors, certification and auditing.

Existing Programs:

- Support expansion of programs like the Victorian Residential Scorecard and mandatory disclosure at point of sale and lease.

⁵ Desktop because of Melbourne covid restrictions.

- **Support local governments' communications and programs for electrification**

Merri-bek Council is supporting our community to be a part of Australia's transition to clean energy by going all-electric. We launched our [Electrify Everything communications campaign](#) which includes practical tips, resources and delivery partners to help Merri-bek residents electrify their homes.

In late 2021, Merri-bek launched its [Electrify Everything: Communications Message Guide for Households](#). An Australian-first, the guide is based on qualitative market research we undertook to inform our communications campaign for homes and businesses. Merri-bek is now leading a Community of Practice with over 90 local councils from across Australia focused on communicating the importance of electrification for Australia's energy transition and how households can get involved. The Community of Practice aims to share resources, learnings, and knowledge, to amplify impact, and to support each other throughout the campaign.

The local government sector is currently planning a national collaborative communications campaign to fill a gap not currently being addressed by state or federal government. The shared communications resources will be tailored for local communities and programs. Whilst we are proud of our work in this space, all communities across Australia should have access to the same, consistent information. There is a significant opportunity for the National Energy Performance Strategy to provide this access.

- **Reach diverse communities with trusted communicators and local-specific information in everyday language.**

To empower consumers to undertake energy improvements in their homes, we need to ensure that we are reaching a diverse audience and members of our community most impacted by increases in energy prices and underperforming housing.

There is a cultural and language barrier to accessing existing energy rebates and information. Trusted communicators and local-specific information in everyday language is needed to reach diverse communities.

In response to the COVID pandemic, Merri-bek established the Merri-bek Connectors program to help us communicate with and hear from community members who speak languages other than English. Connectors help us to understand our community's needs and barriers to inclusion. Merri-bek Connectors sit between Merri-bek City Council and the community. They share weekly messages using existing community communication channels (e.g. WhatsApp groups, meetings etc.) and give us advice on the best ways to communicate with their community.

We have been working with our Community Connectors to communicate our energy efficiency services and subsidies and how to access state government subsidies. The funding of local energy advisers (on a regional level) from diverse cultural backgrounds would assist in the delivery of energy services and information. With secure funding, culturally-diverse energy experts can use their local networks, build trust, and deliver energy performance services supported by federal, state and local governments directly to residents.

- **Introduce funding mechanisms for residential energy performance improvements**

With the average Australian home performing at 1.7 stars⁶, the enormity of the retrofit requirement within the residential sector to improve energy performance standards cannot be understated.

Despite this opportunity, many households are also experiencing significant cost of living pressures, which are likely to prevent many households acting to improve their energy performance.

A future strategy needs to include how State and/or Federal governments can provide access to sustainable funding streams to support these retrofits over the long term. Prioritisation should be given to populations with increased vulnerabilities/ low-income homes.

Residential General Recommendations:

5. Work closely with states and territories to introduce consistent ESD Policies for developments into their respective State Planning Policy Framework and local ESD Planning Policies, that are also consistent with the National Energy Performance Strategy.
6. Inclusion of 'de-gasification' and prioritising fully electrified buildings in the National Construction Code;
7. Improve compliance and verification with the development of an independent, well-resourced regulator with adequate tools and powers to address non-compliance;
8. Work with all levels of government to establish sustainable funding models for ESD enforcement in local government;
9. Include compliance and verification in the National Construction Code;
10. Support mandatory disclosure of energy performance of residential properties at point of sale and lease;
11. Develop a public communications campaign to promote energy efficient, all-electric homes as safe, healthy, and part of a clean energy future;
12. Support local governments' communications and programs for electrification;
13. Develop information resources and fund education programs that include trusted communicators and local-specific information in everyday language to reach diverse communities;

⁶ COAG Energy Council (2019) Report for Achieving Low Energy Existing Homes.

14. Fund the employment of local energy advisers from diverse cultural backgrounds to deliver energy services and information;
15. Provide people with user-friendly information and tools to understand energy performance “star” ratings, and the potential long-term benefits of energy efficiency to encourage take-up beyond the minimum performance standard;
16. Devise sustainable funding mechanisms to allow for all residents and households to have access to finance for energy performance improvements; and
17. Expand MEPS scheme, and rollout point of sale information for household appliances.

2.2.ii Residential - Low-income households

We agree that more can be done to assist low-income households who are at greater risk with increasing energy prices, poor performing homes, and health vulnerability.

Merri-bek recognises the need to support people on a low-income and have undertaken a number of support programs. Merri-bek currently offers a Solar/Thermal Support program (20/21 - current) for low income and culturally and linguistically diverse residents to undertake energy efficiency upgrades and the installation of roof-top solar to reduce energy bill stress and improve thermal comfort. This program was built on the Cooling Communities Program, developed by Merri-bek and delivered in partnership with Aboriginal Housing Victoria and the Australian Energy Foundation. This program won a United Nations Environment Program Award in 2017.

Merri-bek has also worked with the Victorian Government on the Energy Savvy Upgrades program offering subsidised energy efficiency and renewable energy upgrades to households struggling to pay energy bills. The Healthy Homes program delivered by Sustainability Victoria demonstrated similar outcomes with a focus on public and social housing residents.

We have found that the administration and trusted facilitation process that Council provides is critical for delivering long-term program outcomes. Program participants are typically inexperienced with managing upgrades, and rarely knowledgeable about subject matter. Without the facilitation process, retrofit programs are at risk of failing to obtain take-up, and when homes have been upgraded, they are at risk of failing to deliver on their original intent.

Residential - Low Income Recommendations:

18. Utilise the findings and success of programs such as Victorian Energy Smart Upgrades, Healthy Homes and Energy Savvy, and support the expansion of well-designed programs to provide financial and energy advice services, and improved thermal comfort (in heat waves, and cold winters) for low income and households at risk of energy stress;

19. Utilise the findings of the Healthy Homes program to set standards to improve the thermal efficiency and comfort of new public and social housing, thereby also improving health outcomes for those most vulnerable;
20. Work with state and territory governments to ensure additional funding is provided to ensure all new social housing is 7.5 stars, all-electric and renewably powered; and
21. Provide further funding to address climate vulnerability among existing social/ public housing tenants.

2.2.iii Residential – Renters

Merri-bek has a high proportion of renters with 34.7% of households living in private rentals. As acknowledged, renters face significant disadvantage in improving the energy performance of their homes due to the split incentive. From Merri-bek's experience, rental properties can only be improved by increasing regulatory requirements.

We recommend that the two regulatory changes to be implemented by 2025 are:

- Mandatory minimum energy efficiency performance standards for rental properties.
- Mandatory disclosure of energy performance for all buildings when they are sold and leased.

Remove disadvantage for rental apartments

From March 2023, Victorian rental properties must have a fixed, energy efficient heater in the main living area. However, in apartment buildings, the heater does not need to be energy efficient if:

- It would cost more than the average cost of installation
- It would cost more to meet other Acts or local laws
- The owners corporation rules prohibit it.

We recommend that this variation for apartments be removed otherwise apartment renters will continue to be disadvantaged.

Residential – Renters Recommendations:

22. Mandate minimum energy efficiency performance standards for rental properties by 2025;
23. Mandate mandatory disclosure of energy performance for all buildings when they are sold and leased by 2025; and
24. Remove any variation that disadvantages apartment renters.

2.2.iv Residential Apartments

Merri-bek has a very high proportion of residents living in apartments with 48.2% of households in medium and high-density housing.

In 2022, Merri-bek, in partnership with Yarra City Council, commissioned the research project *Unlocking Sustainable Strata*. The project brought together collaborators to learn, trial and design effective solutions so people who live in existing apartments and town houses benefit from sustainability retrofits and enjoy comfortable, efficient homes.

As the number of Australians living in these dwellings grows, retrofitting multi-dwelling buildings becomes more challenging but solutions do exist, as does the desire for improvement. A concerted and collaborative effort is required to develop mechanisms - legislation, incentives, funding, programs - specifically to help retrofit these buildings.

The process of implementing apartment building retrofits requires technical sustainability knowledge, an understanding of strata legislation, and the ability to engage, educate, and convince a large group of people to agree and invest their money.

This complexity creates a huge number of barriers to retrofitting apartments to improve thermal comfort, sustainability and efficiency. The three key areas that need to be addressed are:

- Navigating legislation and governance
- Technical sustainability advice and support
- Community building and communication guidance

The *Unlocking Sustainable Strata* report recommends the following 15 potential interventions that Merri-bek is currently exploring with partners:

- I. **Develop a Repository** - Developing and hosting a centralised, online repository of sustainable strata information, resources and case studies that is trusted, maintained and updated over the long-term
- II. **Document Case Studies** - Stories and case studies will be needed to build the confidence of committees and owners corporations to invest in retrofits.
- III. **Guides and Proformas** - As momentum grows behind sustainability retrofits in apartments, there will be opportunities to produce and maintain proformas and guides to short-cut the research owners corporation committees generally need to undertake. For example, guidance on how a committee can inform and campaign to their owners corporation about a major retrofit decision that is going to a ballot.
- IV. **Education and Events** - Apartment owners, particularly committee members or those retrofitting their own homes, will benefit from connecting with and learning from each other, suppliers and experts.

- V. **Electrification Research** - Owners corporations need information so they can financially plan for electrification costs.
- VI. **Climate Resilience** - Develop a deeper understanding and awareness of climate resilience and adaptation needs in the apartment context. Apartment residents are particularly exposed to heat stress.
- VII. **Retrofitting Action Research** - Action research to track and understand how retrofitting occurs in the apartment context, and what additional supports are needed to accelerate the process. Due to the lack of ongoing programs for apartment owners and committees, there is a knowledge gap as to the process to drive sustainability retrofits, including the duration it takes to make and implement decisions
- VIII. **Community Connection** - Alongside technical sustainability information, owners corporation committees need advice and resources to help them connect their community (this includes those living on-site and rental provider owners), and make good decisions together.
- IX. **Mentorship Program** - A mentorship program could support representatives from owners corporations through the retrofit process, bringing in guest experts to walk them through all the different elements of the change process.
- X. **Strata Sustainability Fund** - Develop packages so that existing state sustainability funding eg. Rooftop solar and electric vehicle charging, is accessible and explicitly offered to apartments and townhouse complexes governed under the Owners Corporation Act.
- XI. **A Partnership Approach** - A partnership approach that includes SCA (Vic), State and local governments could efficiently deliver a program which leverages the particular strengths, resources and communication channels of the different stakeholders to maximise impact.
- XII. **Re-Engage and Support FMA** - Re-engage Facilities Management Australia to ensure FMs are increasingly upskilled in terms of sustainability. Update the Good Practice Facilities Management Guide and associated training.
- XIII. **Educate Maintenance Plan Consultants** - Education for consultants engaged to develop Maintenance Plans for new buildings to ensure they are specifying efficient all-electric technologies at the end of life of current infrastructure.
- XIV. **Educate the Sustainability Sector — Consultants and Suppliers** - Opportunities for the sustainability sector to better understand the opportunities and challenges of working with owners corporations. If demand for sustainability services in apartments increases, sustainability consultants and technology providers need to be equipped to deliver.
- XV. **Embedded Network Legislation** - Through the second phase of the Embedded Network Review, ensure the General Exemption Order makes it easy for existing buildings with embedded networks to access renewable energy at competitive rates.

For more Information see Appendix 1. Unlocking Sustainable Strata Barriers and Opportunities.

Residential - Apartments Recommendations

25. Develop and resource specific interventions for apartments that build on the knowledge and experiences of strata peak bodies, sustainability strata organisations and local councils.

2.3 Commercial

The types of development that are most frequent within Merri-bek are categorised as Class 1 (domestic residential – attached houses, such as townhouses and dual occupancies) and Class 2 (domestic apartment) development. Class 7 and 8 (warehouse storage and industrial facilities) and Class 5 and 6 (office and retail), whilst present within the City of Merri-bek, are less common when an application for development is lodged before Council.

Our feedback on commercial buildings is focussed on Council buildings.

- **Supporting Local Councils switch to electrification**

Although Council has reduced its overall carbon emissions by 70% since 2010/11, gas consumption currently contributes to around 30% of our (remaining) corporate carbon footprint. Merri-bek is committed to ensuring all our buildings are electric-only and is taking advantage of scheduled work to transition all our sites off gas. We consider that electric heat pumps (for provision of domestic hot water, and heating water) are capable of meeting the necessary heat demand at the vast majority of our Council facilities. We have installed electric heat pumps at six sports pavilions, two community centres and our main administrative offices.

Our current focus is our four heated aquatic centres, which account for 89% of our gas consumption. We are currently investing in a \$37 million major redevelopment of our Fawkner Aquatic Centre - this will be the first all-electric aquatic centre in Merri-bek. Electrification of aquatic centres is both relatively new, and expensive in comparison to a typical gas-fired boiler. The key barriers to heat pumps for aquatic centres are the extra plant room required, heritage restrictions, and the need to upgrade electrical infrastructure to deal with higher electricity demand. The last varies and is hard to estimate, but distributors can charge up to \$350,000 to upgrade local sub-stations. As first movers of switching from gas to all-electric, Council pays for the upfront costs for distribution upgrades. Modelling suggests that all-electric aquatic centres are marginally cheaper to run than gas-powered centres. As a result, the payback period is greater than 15 years. The up-front investment to ensure that an aquatic centre is all-electric is estimated from \$1-4 million. Merri-bek is committed to moving all its sites off gas, noting that with budget constraints this may take some time to achieve.

- **Supporting Local Councils to build energy-efficient, renewable and climate resilient community facilities.**

In early 2022 we opened our new Glenroy Community Hub, Australia's first passive house public building. It also achieves Living Building Challenge Petal certification. The airtight and thermally-efficient building envelope has largely eliminated heating and cooling bills and keeps the building comfortable year-round. As a net positive energy building, the hub generates more energy than it consumes. 125% of energy needs are met via solar PV and storage

Glenroy Community Hub is centred around the new contemporary public library, with co-located kindergarten, maternal child health, prayer and meditation rooms, a community health provider, neighbourhood learning centre and childcare.

The Hub demonstrates Merri-bek Council's community and sustainability leadership and is part of Council's action on climate change. Council invested in a public building that will benefit its immediate community and become a demonstration project for other councils and public institutions.

Commercial Recommendations:

26. Provide funding to local councils to remove gas from sites with high consumption such as aquatic centres;
27. Provide minimum performance standards for heat pumps to enable easy and standardised assessment of the performance of heat pumps;
28. Encourage DNSPs to make the process of upgrading sub-stations more transparent and less costly for first-movers who transition sites from gas to all-electric;
29. Incentivise DNSPs to invest in network augmentation - knowing that buildings will eventually transition off gas, to all electric;
30. Provide modelling on future gas prices to assist Councils in making informed decisions on capital investments to enable electrification;
31. Require timely disclosure of aggregated real time data from electricity distribution businesses; and
32. Invest in energy efficiency in existing buildings and homes. It is a "no regrets" measure that reduces demand for heating, reduces bills and improves comfort.

2.5 Supply chains and workforce

To improve the energy performance of new builds and retrofit existing homes we need an educated and qualified workforce. This is to ensure that residents and businesses are receiving the right advice on best options to reduce energy bills and emissions and does not lock building owners into redundant and old technologies such as gas appliances. The roll-out of local government energy efficiency and electrification programs are at risk without suitably trained plumbers, electricians and builders.

Supply Chains and Workforce Recommendations:

33. Provide education training for plumbers, electricians, builders, architects, building designers and other building professionals, who provide advice to consumers. This initiative should specifically include training for plumbers and electricians in the installation of technologies such as heat pumps, draught proofing and insulation to reduce gas demand and improve thermal comfort.

Conclusion

We congratulate the Australian Government in taking action for an equitable, resilient and zero carbon future. We look forward to working with the Australian Government in the implementation of the strategy.

Should you require further information please contact either Joseph Tabacco, Director Place and Environment on jtabacco@merri-bek.vic.gov.au or Victoria Hart, Branch Manager Sustainability and Climate vhart@merri-bek.vic.gov.au.

Your sincerely



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UNLOCKING **SUSTAINABLE** **STRATA** REPORT



UNLOCKING SUSTAINABLE STRATA

Unlocking Sustainable Strata brings together collaborators to learn, trial and design effective solutions so people who live in existing apartments and town houses benefit from sustainability retrofits and enjoy comfortable, efficient homes.

We seek systemic change and on-ground action.

Acknowledgement

We respectfully acknowledge that every apartment building in Australia exists on traditional Aboriginal lands which have been sustained for thousands of years.

We honour their ongoing connection to these lands, and seek to respectfully acknowledge the Traditional Custodians.

Disclaimer

This document and any information provided have been prepared in good faith based on the best and most up-to-date advice available. The costings, energy use and pay back periods are indicative only, based on information current at the time of publication and will likely fluctuate in the future.

Unlocking Sustainable Strata and its partners cannot be held liable for the accuracy of the information presented in this document. Any images included are for illustrative purposes only.

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FOUNDING PARTNERS

HIP V. HYPE Sustainability

HIP V. HYPE Sustainability provides advice that is commercially grounded, yet ambitious. We pursue exceptional outcomes that are socially, economically and environmentally sustainable and enable action across government, institutions and organisations. Our responsibility is to leave our cities and regions in a better condition than we found them.

The Knight

The Knight is an Owners Corporation, Strata and Body Corporate management company with offices in Melbourne and Geelong. We pride ourselves on our commitment to strong family values and real hands-on experience. This enables us to give you a more personal, supportive and effective Body Corporate service.

Merri-bek City Council

Merri-bek City Council, located in the inner north of Melbourne, five kms from the central business district, are a leader in sustainability and are always looking to improve services to create a better future for our planet, our city, our community and our children.

City of Yarra

City of Yarra is an inner metropolitan municipality, home to a diverse community of approximately 100,000 people. Yarra was one of the first Council's to declare a climate emergency, recognised the planet's climate is already too hot and that effort is needed across all levels of government, businesses, and communities to address the climate crisis.

Strata Community Association Victoria

Strata Community Association Victoria SCA (VIC) is the pre-eminent member-based association for the Victorian Owners Corporation industry. With almost 800 members, SCA (VIC) represents more than 80% of all professional owners corporation managers, along with industry suppliers.

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THE STORY SO FAR

This report is the culmination of phase one of the Unlocking Sustainable Strata project, which consisted of:

1.

Sustainability audits for 12 multi-unit residential buildings, covering townhouses, low, medium and high rise apartments. Sustainability solutions for both common areas and homes were investigated

2.

Consultation with participating owners corporations about the sustainability visions and challenges in their buildings

3.

The development of Unlocking Sustainable Strata infographics to showcase the sustainability opportunities likely to be available in each of the four building typologies, covering both common areas and private homes

4.

The development of A Guide to Electrifying Your Apartment Building or Townhouse which, along with the infographics, will be freely available for use by owners corporations, strata managers and other stakeholders

5.

Two stakeholder workshops to ensure this report reflects the experience and needs of the sector

This project builds on experience from previous projects, Sustainable Living in the City and Smart Blocks, led by the City of Melbourne with support from Strata Community Association Vic.

REPORT PURPOSE

This report seeks to expose the sustainability challenges particular to multi-unit residential buildings. It suggests potential solutions, the ways in which different stakeholders can contribute, and the support needed to unlock sustainable strata.

With this report we hope to garner support from across the strata sector, the sustainability sector and government to work on solutions to retrofitting multi-unit dwellings across Victoria.

In the face of rising utility prices, the negative health impacts of gas, and growing climate change vulnerability, the need for all-electric, low or zero carbon, thermally comfortable, and efficient homes is more pressing than ever.

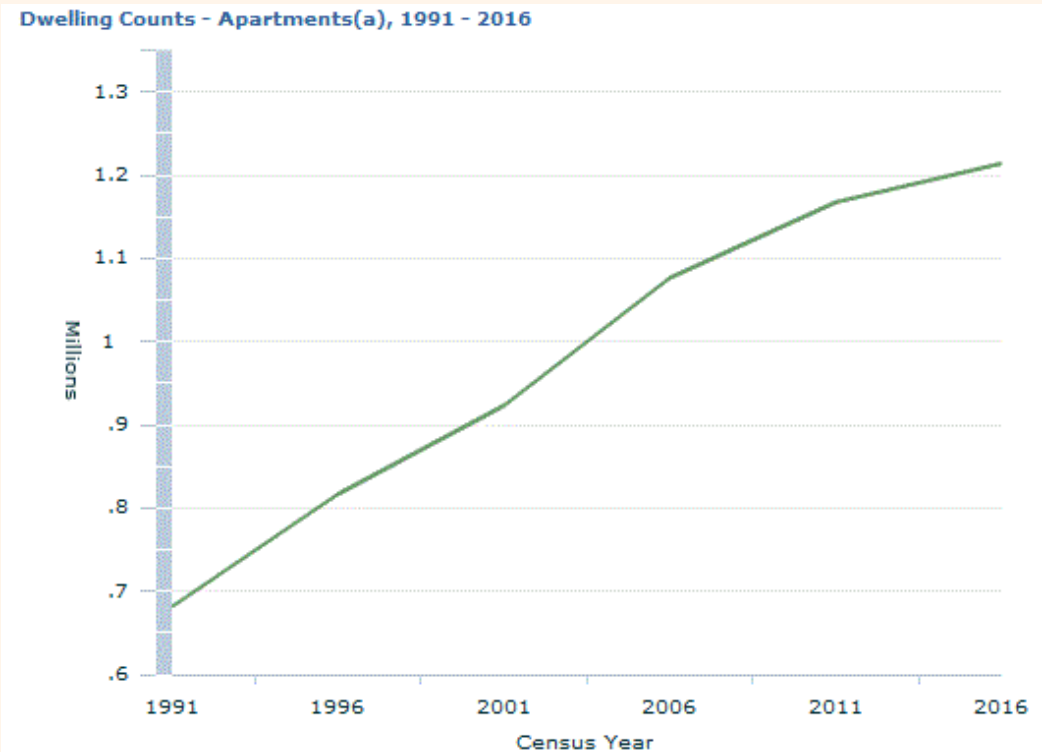
As work continues to build and retrofit standalone homes to meet Victoria's net-zero emissions and adaptation targets, people living in apartments, units, villas and townhouses are being left behind, even as the number of Australians living in these dwellings grows.

Of course, retrofitting multi-dwelling buildings is more challenging than retrofitting standalone homes but solutions do exist, as does the desire for improvement.

A concerted and collaborative effort is required to develop mechanisms - legislation, incentives, funding, programs - specifically to help retrofit these buildings.

MORE PEOPLE ARE
LIVING IN APARTMENTS
AND TOWNHOUSES

The apartment sector is expected to continue its growth trajectory. [IBIS World](#) forecasting for 2022-2027 states ‘The multi-unit apartment and townhouse construction industry (in Australia) is forecast to regain solid growth over the next five years, as the economy gradually recovers from the COVID-19 pandemic.’



Census dwelling counts 1991 - 2016 flats, units and apartments

The number of people living in apartments is large and growing. According to 2021 Census data:



↑ 1 IN 4

In 2021, more than 1 in 4 Victorians were living in apartments or townhouses (26%), up from 22.5% in 2011

26.8%

Nationally, 26.8% of people were living in apartments or townhouses in 2021



31.8%

In greater Melbourne the number is even higher, with 31.8% of people living in apartments or townhouses in 2021

Images: Allume SolShare system for apartments (left). Tess Kelly (above) ©

APARTMENT POPULATIONS ARE VULNERABLE TO HEAT STRESS

[2017 research from The University of Melbourne](#) demonstrated that if the power were to go off during a heat wave most of Melbourne's apartment blocks would fail international health standards.

Lead researcher and construction scientist Mr Chris Jensen says action is needed to encourage the retrofitting of existing buildings.

“The research highlights to the public that heat stress inside apartments is a real issue and that we need to do more to control for this, not only in new buildings, but also for existing buildings,” says Mr Jensen. “It isn't a new problem, but climate change science expects more frequent and possibly longer heatwaves, so the health risk is only going to increase.”

“What we need to be concerned about are existing apartment buildings that lack air conditioning and are susceptible to overheating, but we also need to be concerned about most buildings should a heat wave coincide with a power black out which would eliminate all air-conditioning.”

The risks of power outages are real. During the January 2019 heatwave, over 200,000 homes across Victoria were affected by power blackouts.

“The research highlights to the public that heat stress inside apartments is a real issue and that we need to do more to control for this, not only in new buildings, but also for existing buildings.”

Mr Chris Jensen

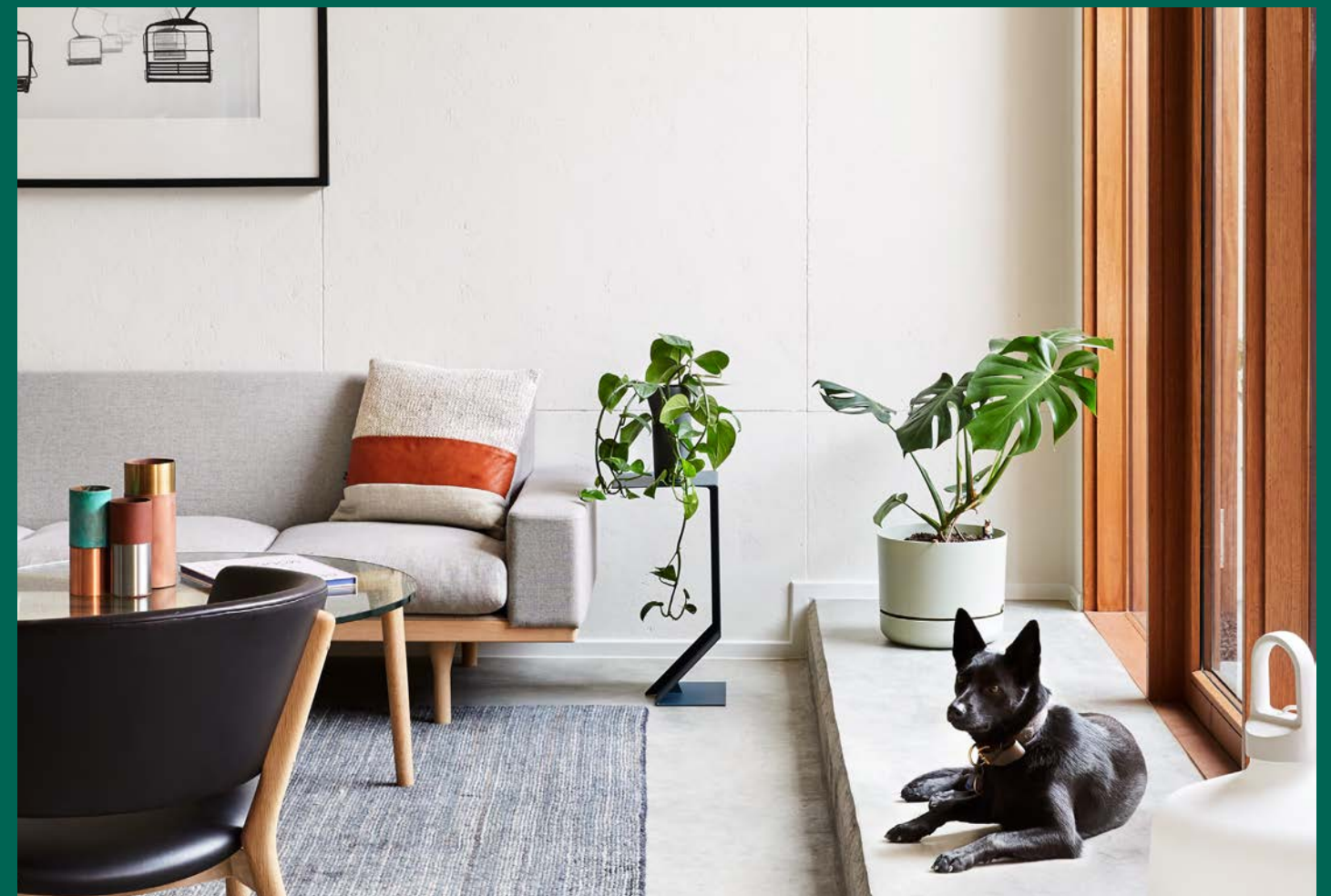
Renters remain at a bigger disadvantage.

From March 2023 rental properties must have a fixed, energy efficient heater in the main living area. However, in apartment buildings, the heater does not need to be energy efficient if:

- It would cost more than the average cost of installation
- It would cost more to meet other Acts or local laws
- The owners corporation rules prohibit it.

Without a broader focus on sustainability in apartment sector, apartment renters will continue to be at a huge disadvantage.

Source: [Tenants Victoria](#) and [Consumer Affairs Victoria](#)



Multi-unit dwellings are in their very nature, complex:

1.

Owners corporation fees are sometimes inadequate to effectively maintain and manage the property.

2.

There are lots of stakeholders associated with each building, with varying priorities.

The priorities of a rental provider may be geared towards a return on investment. An owner occupier may be keen to invest in quality of life improvements, while others may not have the financial capacity to invest in common-good projects at all.

3.

Multi-residential buildings are governed by complex legislation which mandates different requirements depending on the size and nature of the owners corporation.

Within the legislation, a renter will be informed about the owners corporation rules and can make a complaint using the approved owners corporation complaint form.

4.

These buildings aren't just infrastructure, they are people's homes. Ideas about what is or isn't appropriate at home varies for different people within an owners corporation, which can sometimes lead to conflict and an inability to make decisions.

5.

Each owners corporation has a unique (and sometime opaque) operating culture, which can make collective decision-making more challenging.

For a reminder about roles and responsibilities in strata please see appendix 2, page 28.

This complexity creates a huge number of barriers to retrofitting buildings to improve thermal comfort, sustainability and efficiency. However, given the need, we must look at these barriers and find ways to overcome them or turn them into opportunities.

The following pages outline the challenges to sustainability retrofitting in apartments, and the opportunities that could be harnessed.

These insights have been drawn from previous reports, and lived experience of apartment owners/renters, strata managers and program managers.



APARTMENT OWNER OCCUPIERS

Apartment owner occupiers own and live in the apartment and are part of the owners corporation.



Who's responsible?

It is important to note that no stakeholder has a clear, dedicated responsibility for driving and leading sustainability and efficiency improvements in apartment buildings, including the committee.

Challenges

- Knowing where to start. A sense it's too hard
- Finding trusted information tailored to the apartment context, which considers both technology solutions and the associated governance processes that need to occur
- Understanding and being able to sell the cost-benefit of retrofits to the committee/owners corporation
- Finding trusted sustainability suppliers that can work confidently within the apartment context
- Fear of 'rocking the boat' and causing conflict by wanting to make changes in the common area/ spend money (because people know they will run into each other around the building)
- Lack of confidence in navigating the necessary governance and decision-making processes
- Owners not being aware of their automatic role and obligations as a member of the owners corporation
- Understanding the boundaries of private and common property and the interplay between common and private property. E.g. Common hot water systems service the apartments or where a resident wants to pay for their own solar system the owners corporation still needs to be involved as the roof space is typically classed as common property
- A lack of strata specific sustainability funding that they can access and use to encourage action by the owners corporation
- In many buildings, water usage is not individually metered. Water costs are attributed to Owners based on a contribution schedule so there is less incentive to reduce water use as it does not result in a direct cost saving
- How to fairly distribute common property usage e.g. private solar panels on a common roof
- How to apply fair and equitable costs e.g. investing in shared electric vehicle charging infrastructure v. a standalone charger for a lot

Opportunities to leverage

- Can raise ideas with the owners corporation/ committee
- Can join the committee and can directly contact the Manager
- Direct benefit from cost saving and improved comfort resulting from efficiency upgrades in the apartment
- Efficiency upgrades in the common areas will result in lower owners corporation utility bills. Because the saving is for the owners corporation as a whole, the savings will not go directly back into the pocket of the owner. However, it will reduce overall and long-term running costs which could lead to lower or more stable owners corporation fees. Especially in larger owners corporations, there may be opportunities to monitor the utility saving costs, and reinvest these savings into other tangible benefits for the owners corporation. This could help to amplify the feeling of benefit
- Can benefit from the updated Owners Corporation Act 2021 which states 'An owners corporation must not make rules that unreasonably prohibit the installation of sustainability items on the exterior of a lot' (although these are challenges around defining what constitutes 'unreasonable')



APARTMENT RENTERS

Renters rent the apartment from the owner. They are not part of the owners corporation.



Challenges

- Reduced incentive to invest in sustainability improvements as they will not have a physical experience of the benefits as they do not live in the building
- Knowing where to start. A sense it's too hard and not worth the effort given leases are typically only 12 months
- Finding trusted information tailored to the apartment context, and considers both technology solutions and the associated governance processes that need to occur within the apartment context
- Understanding and being able to sell the cost-benefit of retrofits to the committee/owners corporation
- Finding trusted sustainability suppliers that can work confidently within the apartment context
- Lack of confidence in navigating the governance processes in order to get decisions made and funds invested
- Not aware of their automatic role and obligations as a member of the owners corporation
- A lack of strata specific sustainability funding that they can access and use to encourage action by the owners corporation
- Reduced legislative obligations for apartments (under the [minimum rental standard Victoria](#)) to supply energy efficient heating



Opportunities to leverage

- Potential to leverage the strengthened minimum rental standards coming into effect in 2023 (however, the minimum standards are not fully enforceable in apartment buildings, see page 7 for details)
- Working with rental providers to access the Victorian Governments Home Heating and Cooling Upgrades Program aimed at rental properties

APARTMENT RENTAL PROVIDERS

Apartment rental providers own, but do not live in the apartment, They are part of the owners corporation.



Challenges

- Reduced incentive to invest in sustainability improvements as they will not have a physical experience of the benefits as they do not live in the building
- Not knowing where to start. A sense that it's too hard
- Finding trusted information tailored to the apartment context, and considers both technology solutions and the associated governance processes that need to occur within the apartment context
- Understanding and being able to sell the cost-benefit of retrofits to the committee/owners corporation
- Finding trusted sustainability suppliers that can work confidently within the apartment context
- Lack of confidence in navigating the governance processes in order to get decisions made and funds invested
- Not aware of their automatic role and obligations as a member of the owners corporation
- Do not directly control the decisions about the common areas of their buildings
- A lack of strata specific sustainability funding that they can access and use to encourage action by the owners corporation
- Reduced legislative obligations for apartments (under the [minimum rental standard Victoria](#)) to supply energy efficient heating

Opportunities to leverage

- Can raise ideas with the owners corporation/ committee
- Can join the committee and can directly contact the manager
- Efficiency upgrades in the common areas will result in lower owners corporation utility bills. Because the saving is for the owners corporation as a whole, the savings will not go directly back into the pocket of the owner. However, it will reduce overall and long-term running costs which could lead to lower or more stable owners corporation fees. Especially in larger owners corporations, there may be opportunities to monitor the utility saving costs, and reinvest these savings into other tangible benefits for the owners corporation. This could help to amplify the feeling of benefit
- Potential to make their investment property more appealing to future renters and buyers
- Access the Victorian Governments Home Heating and Cooling Upgrades Program aimed at rental properties
- Leverage tax benefits available to rental providers who make upgrades

COMMITTEE

The committee consists of elected lot owners or lot owners’ proxies. The committee can make decisions on all matters delegated to it by the owners corporation except on matters that the owners corporation has determined must be decided at a general meeting.

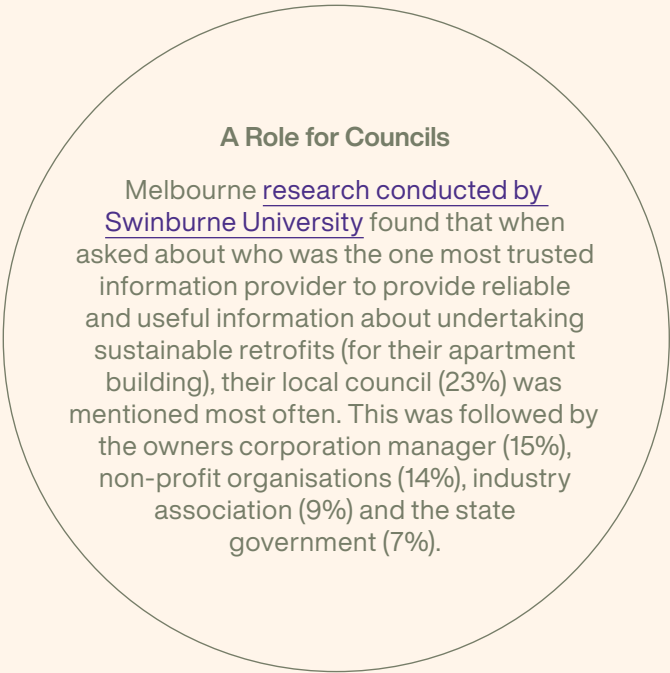


Challenges

- Not knowing where to start and what interventions will maximise benefit
- Finding trusted technical information tailored to the apartment context that can be passed through to the owners corporation
- Finding trusted sustainability suppliers who understand the strata context
- A lack of strata specific sustainability funding
- Sustainability initiatives being seen by many owners as a nice to have (outside the Maintenance Plan)
- The need for majority approval by the committee or owners corporation, depending on the size/cost implications of the decision
- Physical limitations of the building (e.g. typically the space on the roof is not large enough to accommodate solar that can adequately cover the energy use of common areas and apartments). Many of Victoria’s existing multi-unit residential buildings were not constructed with sustainability in mind and may be limited in what can be done to retrofit them to become more sustainable
- Having the time and skills to effectively communicate complex strata processes, technologies, costs, and benefits
- Engaging enough owners in the voting process for special and ordinary resolutions within the set time periods

Opportunities to leverage

- Has some independent decision-making powers (but more costly decisions to be referred to all owners as a special resolution)
- Likely to have knowledge of the necessary governance and decision-making protocols
- Generally understand the cultural norms and processes within their owners corporation
- Can benefit from the lift in property values
- Can sell the opportunity to keep their building competitive with newer buildings



OWNERS CORPORATION MANAGERS

Owners corporation managers are employed by the owners corporation to help manage the running of the building and the owners corporation in line with legislated processes.



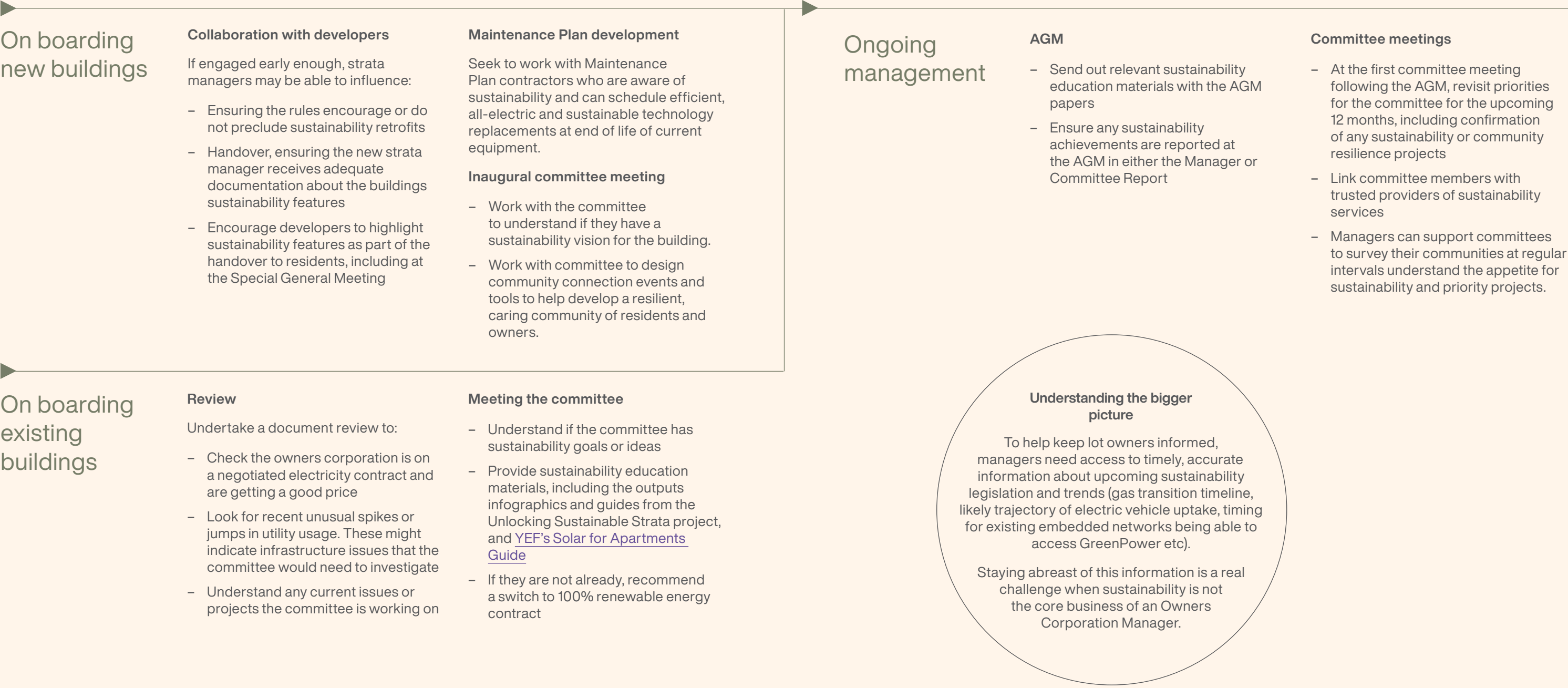
Challenges

- The breadth and depth of their role. Managers have to be across a huge amount of information across many buildings/owners corporations. It can be hard to find time to effectively support initiatives beyond core business, and to be adequately paid for their time
- The role of the manager is opaque, and in many cases, not well understood by owners. Much of the work done by the manager is invisible to the average owner. High expectations from some owners (who may expect the manager to be an expert on everything, including sustainability), can sometimes erode trust between the manager and the owner/s
- Finding trusted technical information tailored to the apartment context that can be passed through to the owners corporation
- Understanding and being able to explain the cost-benefit of retrofits to the committee/ owners corporation
- Finding trusted sustainability suppliers
- Lack of strata specific sustainability funding, programs or support they can promote to clients
- The manager has no decision-making powers and can only support the requests of the owners corporation/committee
- Managers are used to dealing with the complexity of the legislation but are not always proficient at communicating this in plain language
- Easy access to timely accurate information about upcoming sustainability legislation and trends (gas transition timeline, likely trajectory of electric vehicle uptake, timing for existing embedded networks being able to access GreenPower etc)

Opportunities to leverage

- Owners corporation managers are the only external and easily identifiable stakeholder who has contact details for all owners. [Research by Swinburne University](#) showed email was by far the most preferred way of receiving information about sustainable retrofits
- They generally have a relationship and contact with committee members, and can play an influencing and advisory role
- They hold expert knowledge about governance and decision-making protocols as outlined in the Owners Corporation Act. They can guide owners corporations through their sustainability decision-making processes, with awareness to the cultural norms and processes within the buildings they manage. Importantly, they can remind owners that the Owners Corporation Act includes the directive that 'An owners corporation must not make rules that unreasonably prohibit the installation of sustainability items on the exterior of a lot'
- They are in a position to distribute information and education about sustainability initiatives to a large audience
- Could potentially develop sustainability services for their clients and build relationships with high-quality service providers

There are key points in the building management life-cycle where owners corporation managers could support sustainability outcomes.



FACILITY MANAGERS

Facility Managers (FM) are employed by the owners corporation to manage the infrastructure and physical aspects of the building.

FMs are not the norm, and are generally only present in larger buildings. For many buildings FMs are only part time and will not spend a lot of time on-site



**Facility Managers
Good Practice Guide**

There has been some attempt to raise sustainability knowledge within the FM sector through the Good Practice Guide. The Facility Management Association have generally been advocates for sustainability from a policy perspective but it's unclear how deeply sustainability and efficiency knowledge has penetrated into the sector.



Challenges

- The role of the FM varies from building to building. Some FMs take on a more technical, hands on role to ensure the infrastructure is optimised, while others are more focused on day-to-day building administration (e.g. helping residents who get locked out of their apartment and coordinating with cleaners)
- The FM may not see driving sustainability improvements as part of their role or have the expertise to provide advice and recommendations
- The FM has no decision-making power, beyond basic maintenance decisions, unless delegated by the owners corporation
- Finding trusted technical information tailored to the apartment context that can be passed through to the owners corporation
- Understanding and being able to explain the cost-benefit of retrofits to the committee/ owners corporation
- Finding trusted sustainability suppliers to recommend or refer to clients
- A lack of strata specific sustainability funding, programs or support that they can promote to their clients

Opportunities to leverage

- Working in partnership with Facilities Management Association to provide more sustainability and efficiency training to FMs
- FMs that work on-site regularly often have relationships with the committee and deep working knowledge of the building
- Well positioned to raise sustainability and efficiency ideas with the committee or engaged owners
- Providing sustainability services to clients could grow the reputation of the business or increase income (although this is yet to be fully tested)

To be comfortable, affordable to run, and respond to climate change, our residential buildings need to be highly efficient, all-electric, powered with renewable energy, be warm in winter and cool in summer.

The technical solutions needed to achieve these ambitions are available in the marketplace today and can be applied to the strata sector.



What Needs to be Retrofitted?

As part of the Unlocking Sustainable Strata project, 12 sustainability audits were undertaken, across four typologies; townhouses, low rise, medium rise, and high rise apartment buildings. In addition to common area audits, six apartment/townhouse audits were undertaken to understand opportunities in private spaces.



Findings from the audits were combined with the information sets listed below to develop a master list of retrofit opportunities (see over page).

Information sets:

- Smart Blocks case studies
- Smart Green Apartment case studies
- SOCs and Blocks case studies
- Experience of HIP V. HYPE Projects and Sustainable Buildings teams in developing new sustainable apartments, and in delivering ESD assessments of new apartment buildings



Opportunities were categorised as being largely driven by the apartment owner or by the owners corporation.

Consideration was also given to the age of the building. Due to changes to the building code, buildings constructed after 2005 may find the opportunities with an asterisk were integrated into the original build.

Lastly, it was recognised that different opportunities are more relevant to particular typologies. As such, an opportunities infographic was developed for each building typology (see appendix 3).

A guide to electrifying your apartment building or townhouse

The world is electrifying but few multi-unit residential buildings have made the switch from gas to all-electric. To support this transition, the Unlocking Sustainable Strata project developed a strata specific guide.

What Needs to be Retrofitted?

Apartment retrofit opportunities

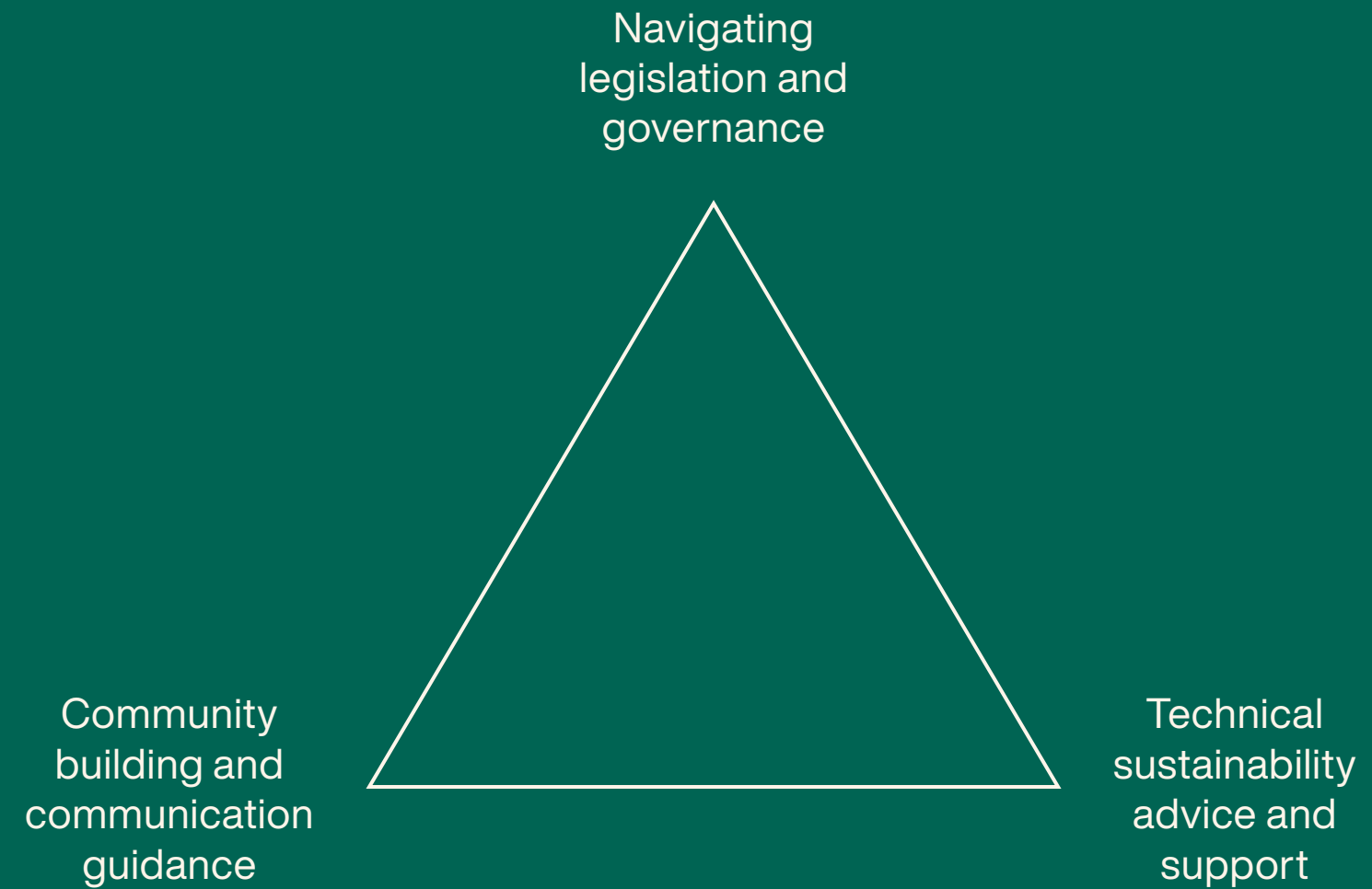
- Install double glazing
- Install external shading
- Insulate your ceiling (if you're on the top floor)*
- Reduce water use*
- Switch to all-electric cooking
- Switch to efficient, electric heating and cooling*
- Switch to LED lighting*
- Upgrade to an all-electric efficient hot water system

Owners corporation (common area) opportunities

- Buy renewable electricity for your common area
- Install a Building Management System
- Install a water tank*
- Install an efficient air conditioning system
- Install bike parking*
- Install or facilitate electric vehicle charging
- Install solar
- Let nature cool your building by planting trees, shrubs and vines
- Maintain your solar panels
- Start a community garden in your common area
- Switch to a centralised hot water heat pump
- Switch to LED lighting*
- Tune your building
- Turn food scraps into a resource by installing a common area worm farm or compost bin
- Upgrade outdoor lighting*

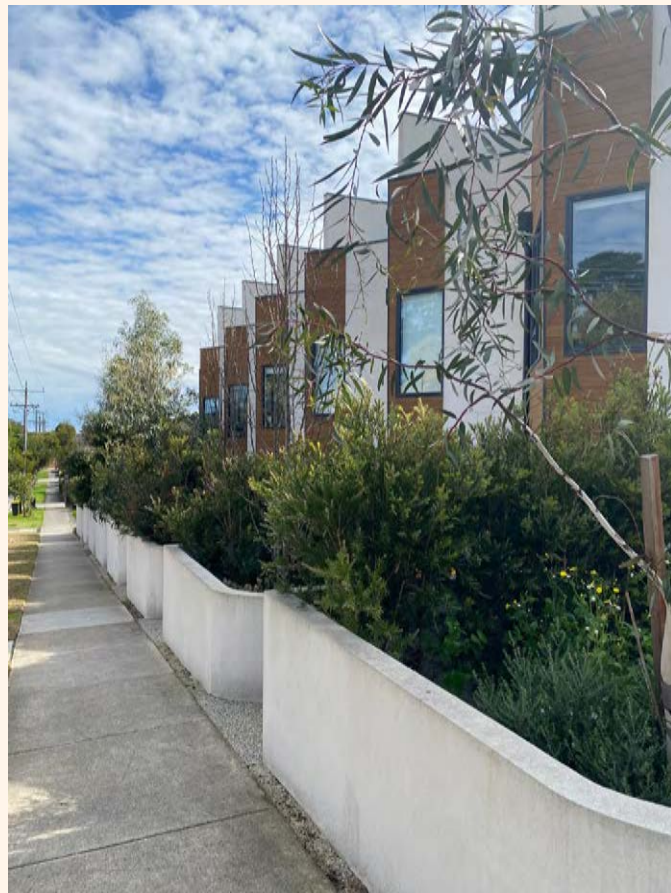


There are three key areas that need to be addressed to increase resilience and drive retrofitting in existing apartment buildings and townhouses.



Through the Unlocking Sustainable Strata project, a range of interventions were tabled and are summarised here, along with a potential model for how the interventions could be stitched together into an ongoing program.

Further investigation, and engagement with lot owners, is needed to refine the ideas and program model.



1. Develop a Repository

Developing and hosting a centralised, online repository of sustainable strata information, resources and case studies that is trusted, maintained and updated over the long-term.

2. Document Case Studies

Stories and case studies will be needed to build the confidence of committees and owners corporations to invest in retrofits. These stories and case studies should cover the technology, decision-making processes and financing across townhouse, low-, medium-, and high-rise buildings.

They will need to highlight the benefits experienced by a range of stakeholders, owner-occupiers, rental providers, renters and, if relevant, owners corporation managers where they experience increased job satisfaction in the process of supporting positive change.

3. Guides and Proformas

As momentum grows behind sustainability retrofits in apartments, there will be opportunities to produce and maintain proformas and guides to short-cut the research owners corporation committees generally need to undertake.

For example, guidance on how a committee can inform and campaign to their owners corporation about a major retrofit decision that is going to a ballot. To get cut-through, communication is needed in the lead up to and during the legislated 14 days the ballot is open. Engaging the whole owners corporation in this ballot process is a huge challenge given the sheer number of people, and the fact that many do not live on site.

Another example is retrofitting double-glazed windows. owners corporations want to maintain a consistent look to the building façade but cannot always raise enough funds to retrofit the entire building in one go. Developing a template for window retrofit guidelines will allow owners to retrofit their windows anytime their personal funds allow, without negatively impacting the look of the façade. The template would guide the committee to specify size, style, colour and acceptable materials for any window retrofits.

In coming years, the recently created guides (YEF's Solar for Apartments Guide, USS All-electric Guide and USS sustainability infographics) will need to be updated as new information and technology becomes available.



4. Education and Events

Apartment owners, particularly committee members or those retrofitting their own homes, will benefit from connecting with and learning from each other, suppliers and experts. This could occur at events and programs lead by Strata Community Association (SCA), local or state governments, or even more formal learning institutions such as TAFEs, or a combination.

5. Electrification Research

Apartment buildings need to electrify, including making the switch to electric vehicle charging infrastructure. Owners corporations need information so they can financially plan for electrification costs.

Currently, there is little research to help owners corporations understand and plan for electrification costs. Information about the electricity load profiles of existing buildings, how these load profiles will change with full electrification, and therefore the likely costs of upgrading electrical services, switchboards and substations.

Research is needed to address this need in low, medium and high-rise buildings, and case studies of buildings that switch to all-electric are need to drive confidence in the process. Electricity distributors have a role too and could participate in this research.

6. Climate Resilience

Develop a deeper understanding and awareness of climate resilience and adaptation needs in the apartment context.

With the growing frequency, severity, and duration of extreme weather events because of climate change, apartment buildings and communities need to understand and prepare for their unique risks.

Research from The University of Melbourne demonstrated that apartment residents are particularly exposed heat stress, which will only be exacerbated as heatwaves and consecutive hot days increase.

When buildings convert to all-electric, will they be able to supply enough electricity to ensure all residents can run their air conditioners?

Could solutions like the [Climate Safe Rooms](#), along with back-up batteries, be applied in an apartment context to keep residents cool during heatwaves and keep them warm in winter?

7. Retrofitting Action Research

Action research to track and understand how retrofitting occurs in the apartment context, and what additional supports are needed to accelerate the process.

Due to the lack of ongoing programs for apartment owners and committees, there is a knowledge gap as to the process to drive sustainability retrofits, including the duration it takes to make and implement decisions.

Anecdotal evidence suggests long-lead times for decision making and a degree of burnout amongst committee members. Of course, strata managers are often involved in these processes, but they do not have the time or the remit to document, gather insights across buildings and report back. And in some cases, committees drive projects quite independently.

Action research could identify specific needs that will accelerate retrofits, and produce much needed case studies, stories and advice.

8. Community Connection

Alongside technical sustainability information, owners corporation committees need advice and resources to help them connect their community (this includes those living on-site and rental provider owners), and make good decisions together.

Community connection underpins climate resilience but in the context of strata, it's even more important. Community connection and the ability to work together is critical to good decision-making. In turn, good decision making is required to get the agreement and funding to undertake sustainability retrofits.

While some apartment communities are well connected, that's not always the case. [Research undertaken during the covid-19 pandemic](#) revealed high-levels of loneliness in apartment buildings, and insights about how this can be combated.

Action research is needed to understand how communities are created and maintained in apartment buildings, how to ensure renters are not left out, and what tools or supports are needed to make community building in apartments wide-spread.

9. Mentorship Program

The process of driving apartment building retrofits is long; requires a degree of technical sustainability knowledge; an understanding of strata legislation; and the ability to engage, educate, and essentially convince a large group of people to agree and invest their money.

This process is largely driven the committee, with support from their Owners Corporation Manager. Most committees are run by volunteers with limited time. Reports of burnout are relatively common.

A mentorship program could support representatives from owners corporations through the retrofit process, bringing in guest experts to walk them through all the different elements of the change process as described in paragraph one above.

The mentorship program would have co-benefits of connecting committee members across building so they can support each other, and the opportunity to document the experiences, needs and challenges of these owners corporations as they move through the process to help inform others following in their footsteps.

A mentorship program could be designed and then rolled out across multiple municipalities.





10. Strata Sustainability Fund

Develop packages so that existing state sustainability funding is accessible and explicitly offered to apartments and townhouse complexes governed under the Owners Corporation Act. This council include Solar Victoria funding, electric vehicle charging programs and Victorian Energy Upgrades

11. A Partnership Approach

A partnership approach that includes SCA (Vic), State and local governments, could efficiently deliver a program which leverages the particular strengths, resources and communication channels of the different stakeholders to maximise impact.

Through partnership effective advice, education and mentorship could be delivered, alongside much needed research so that the strata sector can contribute to Victoria's emission targets and adaptation goals.

12. Re-Engage and Support FMA

Re-engage Facilities Management Australia to ensure FMs are increasingly upskilled in terms of sustainability. Update the Good Practice Facilities Management Guide and associated training.

13. Educate Maintenance Plan Consultants

Education for consultants engaged to develop Maintenance Plans for new buildings to ensure they are specifying efficient all-electric technologies at the end of life of current infrastructure.

14. Educate the Sustainability Sector — Consultants and Suppliers

Opportunities for the sustainability sector to better understand the opportunities and challenges of working with owners corporations. If demand for sustainability services in apartments increases, sustainability consultants and technology providers need to be equipped to deliver. Consultants and tech providers will be able to design better-fit solutions if they are engaged in dialogue about sector challenges and needs.

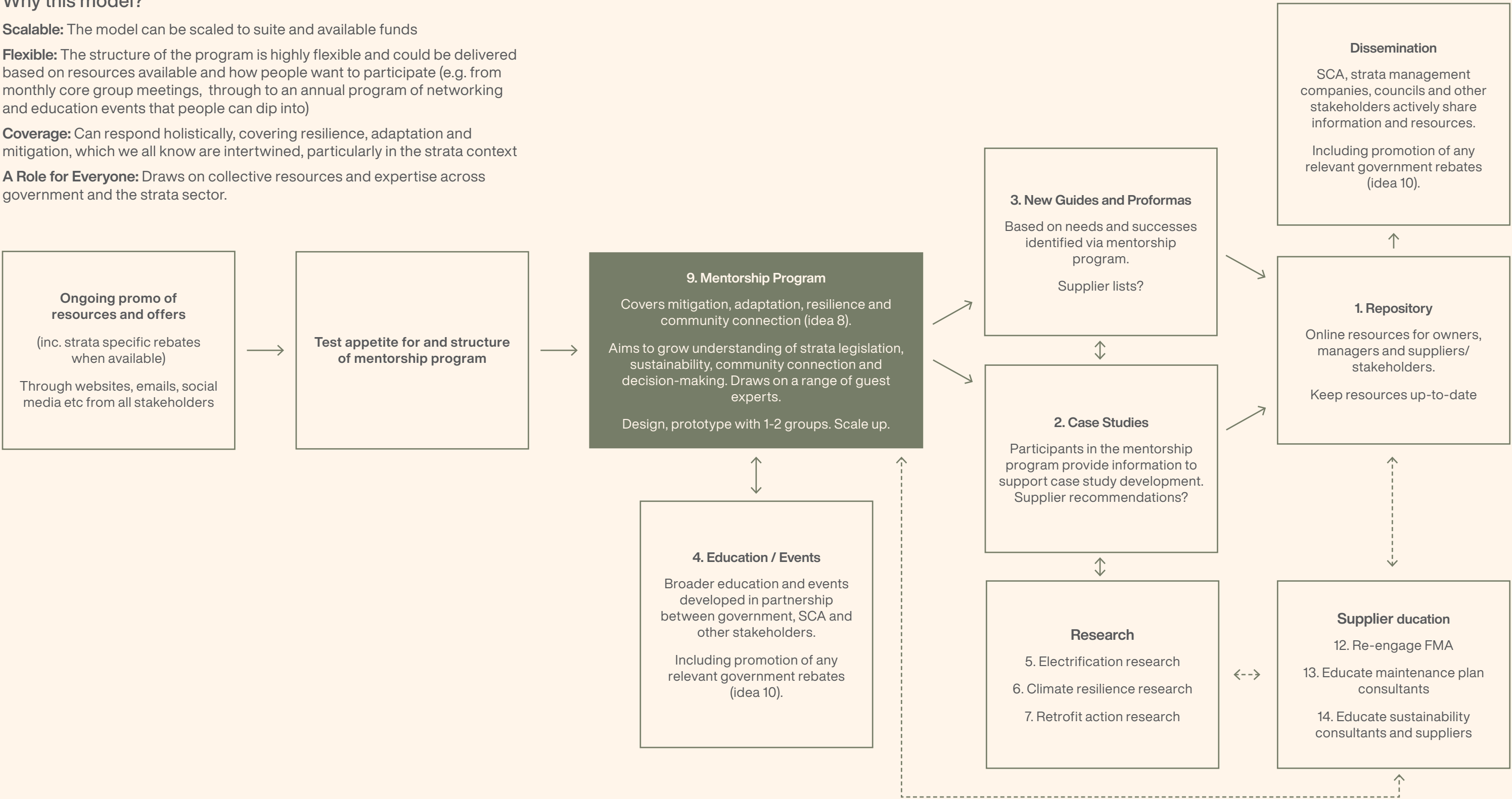
15. Embedded Network Legislation

Through the second phase of the Embedded Network Review, ensure the General Exemption Order makes it easy for existing buildings with embedded networks to access renewable energy at competitive rates.

A Potential Model for Unlocking Sustainable Strata

Why this model?

- Scalable:** The model can be scaled to suite and available funds
- Flexible:** The structure of the program is highly flexible and could be delivered based on resources available and how people want to participate (e.g. from monthly core group meetings, through to an annual program of networking and education events that people can dip into)
- Coverage:** Can respond holistically, covering resilience, adaptation and mitigation, which we all know are intertwined, particularly in the strata context
- A Role for Everyone:** Draws on collective resources and expertise across government and the strata sector.



APPENDIX

THIS REPORT HAS DRAWN ON INSIGHTS FROM PREVIOUS RESEARCH ALONG WITH PAST AND CURRENT APARTMENTS PROGRAMS.

Research, Reports And Information

- [Multi-unit Residential Facilities Management Good Practice Guide](#), Facilities Management Australia (2012)
- [Understanding the knowledge and information requirements for sustainable retrofits: A two stage study of apartment owners in Melbourne, Australia](#). Swinburne University of Technology (2012)
- [Future Living Community Engagement Findings](#), City of Melbourne (2013)
- [Apartments, Co-ownership and Sustainability: Implementation Barriers for Retrofitting the Built Environment](#), Journal of Environmental Policy & Planning (2013)
- [Accelerating Net-Zero High-Rise Residential Buildings in Australia](#), Pitt and Sherry (2016)
- [Greening Strata Title Schemes in WA](#), Curtin University (2011)
- [Adapting strata and community title buildings for climate change](#), Griffith University and NCCARF (2013)
- [Living well in greater density](#), FutureCities UNSW (2010)
- Consumer Affairs Victoria website, [owners corporation pages](#)
- [Delivering Sustainable Solutions for Apartments, Final Report for the Higher Density Residential Efficiency Solutions \(Hi-RES\) Project](#), City of Melbourne (2012)



Past Programs and Initiatives

- City of Port Phillip, SOCS and Blocks: SOCs (Sustainable Owners Corporations) and Blocks which helps apartment blocks understand how they can improve the sustainability of the buildings are designed to work together with the community to take action on climate change
- Green Strata: NSW based sustainable strata program and advice led by [Christine Byrne](#)
- City of Melbourne, SLiC and Hi Res: Research projects into sustainable strata
- City of Melbourne/City of Sydney/Strata Community Association, Smart Blocks: A national programs, Smart Blocks provided an interactive online toolkit to guide energy improvements for common areas

Current Programs and Initiatives

- [City of Sydney, Smart Green Apartments](#): An award-winning, targeted program that helps make buildings more energy and water efficient
- [Waverley Council, Building Futures](#): A free Council program aiming to help selected larger strata buildings (35+ units) save money on their energy and water bills and to improve environmental performance

WHAT IS AN OWNERS CORPORATION?

Roles and decision-making in most multi-unit dwellings are governed by the Owners Corporations Act 2006. The Act is 188 pages long and sets out a complex set of regulations under which owners corporations function. While no more complex than any other legislation, it can be challenging for the everyday apartment owner to understand.

Following is a very high-level summary of key roles and decision-making mechanisms summarised from the

. It has been included to aid the comprehension of readers who are unfamiliar with the functions of owners corporations but is not intended to be instructional.

An owners corporation (formerly body corporate) manages the common property of a residential, commercial, retail, industrial or mixed-use property development.

An owners corporation must:

- Manage and administer the common property
- Repair and maintain the common property, fixtures and services
- Take out and maintain required insurance
- Raise fees from the lot owners to meet financial obligations
- Prepare financial statements and keep financial records
- Provide owners corporations certificates when requested
- Keep an owners corporation register

It must also:

- Carry out any functions and duties under the Owners Corporations Act 2006, the Owners Corporations Regulations 2018, the owners corporation rules and any other law or regulation
- Ensure compliance with the Act, the Regulations and the rules

The Four Levels of the Owners Corporation

The owners corporation operates at four levels:

1. The owners corporation, consisting of all the lot owners. It:
 - + Keeps control of all decision-making
 - + Can delegate powers, but only for matters that do not require a unanimous or special resolution or that are required to be dealt with
 - + Can overturn an earlier decision of the owners corporation. Only the owners corporation can do this
 - + Can appoint sub-committees to advise the owners corporation. Sub-committees cannot make decisions.
2. The committee, consisting of elected lot owners or lot owners' proxies. The committee can make decisions on all matters delegated to it by the owners corporation except on matters that the owners corporation has determined must be decided at a general meeting.
3. A delegate of the owners corporation. For example: the chairperson, the secretary, a committee member, a lot owner, or an employee of the owners corporation. A delegate:
 - + Can make decisions within the limits set by the owners corporation
 - + Cannot overturn a decision of the owners corporation or the committee.
4. A delegate of the committee. The committee may delegate to a lot owner, a manager or sub delegate to a member of the committee.

Decision-making in owners corporations

The owners corporation makes a decision or resolution when its members vote at a meeting or by ballot.

Decisions can be made by ordinary, special or unanimous resolutions, each requiring different percentages of the total votes.



What about renters?

Renters do not have an official role in decision-making within the owners corporation.

They should receive a copy of the owners corporation rules when they move in and should be given contact details for the committee. Anecdotal evidence suggests this does not always occur.

The role of an Owners Corporation Managers

Many owners corporations use paid professional managers to assist with finances, insurance, administration, meetings and maintenance.

An owners corporation may appoint a manager to carry out any powers or functions it is able to delegate (matters that require an ordinary resolution and that do not require a general meeting). The owners corporation usually delegates powers to a manager in a contract or instrument of delegation. This enables the manager to make decisions on behalf of the owners corporation. The appointment must be in writing or through a written contract.

All professional managers must:

- Register with the Business Licensing Authority
- Be appointed by an instrument or by contract of appointment
- Act honestly and in good faith
- Have professional indemnity insurance
- Hold all owners corporation money in trust
- Account separately for money held for each owners corporation they manage
- Report to the owners corporation at each annual general meeting
- Report to the committee as required
- Lodge an annual statement with the Business Licensing Authority.

The role of a Facilities Managers

The Facilities Manager organises and coordinates the operational management of buildings and facilities in order to ensure the proper and efficient operation of all its physical aspects, creating and sustaining safe and productive environments for residents.

In residential buildings this is typically conducted at all times of the day, every day of the year.

The Facilities Manager can consist of a single individual or a team, with services able to be delivered by dedicated ‘in-house’ professionals or ‘out-sourced’ in whole or part to external providers.

Typically, facilities managers are only employed in larger multi-residential buildings.

More information

For more information about decision-making in owners corporations visit the Consumer Affairs Victoria website or read the [Guide to owning, managing and living in an owners corporation.](#)

For townhouse owners,
owners corporations & managers

UNLOCKING SUSTAINABLE TOWNHOUSES

You deserve an efficient, comfortable, safe and healthy home. You deserve clean energy and affordable bills. Identify the efficiency and sustainability opportunities that are right for your townhouse. Consult with your owners corporation committee about making improvements in the common area too.

Don't forget to check if you're eligible for [Victorian Energy Upgrades](#) or [Solar Victoria](#) rebates.

The Victorian Owners Corporation Act Supports Sustainability

Window shading, double glazing, split system air conditioners, and heat pumps all require external infrastructure visible from the outside of your building. You may need permission from your owners corporation prior to retrofitting these items.

Remember, the Victorian Owners Corporation Act states that “An owners corporation must not make rules that unreasonably prohibit the installation of sustainability items on the exterior of a lot”.

Ready to retrofit, not sure where to start?

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Plan for an All-Electric Building

We are living in the clean energy revolution. Rooftops are now resources and in the near future, an electric vehicle will act like a big battery. Our homes will be all-electric, powered by renewable energy and have cleaner indoor air that's good for our health.

It's important that apartment buildings aren't left behind. Unlocking Sustainable Strata's Guide to Electrifying Your Apartment Building will help you and your owners corporation committee electrify common areas and private townhouses. It outlines the steps to take and provides options for the best all-electric retrofit technologies across heating, hot water, cooking and more.

WHAT YOUR OWNERS CORPORATION COULD DO

1. Upgrade outdoor lighting*
2. Install a water tank*
3. Install solar
4. Maintain your solar panels
5. Turn your food scraps into a resource
6. Let nature cool your building
7. Make it easy for residents to live sustainably
8. Start a community garden in your common area
9. Buy renewable electricity for your common area

WHAT YOU COULD DO IN YOUR TOWNHOUSE

- A. Upgrade to an all-electric efficient hot water system
- B. Install double glazing
- C. Install solar
- D. Draught proof your townhouse
- E. Reduce water use*
- F. Insulate your ceiling*
- G. Switch to LED lighting*
- H. Buy electric, energy efficient appliances
- I. Switch to all-electric cooking
- J. Switch to efficient, electric heating and cooling*
- K. Buy renewable electricity
- L. Install external shading

* If your building was constructed after 2005, these actions may not be relevant to you.

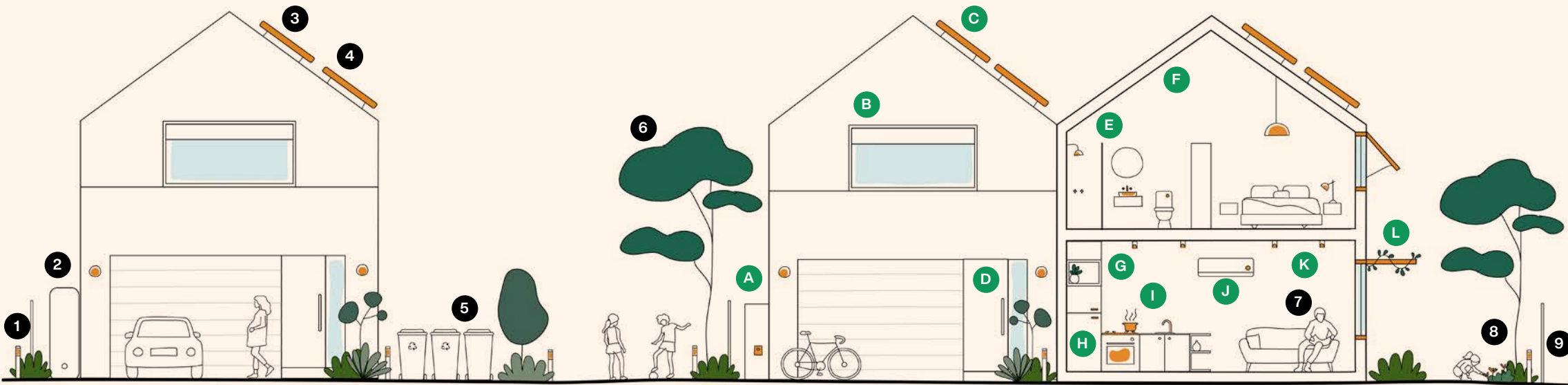


Illustration by Nayan Puri

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Got the basics? Check out our detailed outline below for more information to assist with your retrofitting journey.

OWNERS CORPORATIONS

1. Upgrade outdoor lighting*

Outdoor lighting can run up to 12 hours a day, consuming significant amounts of electricity. Switching to LED lights is one of the lowest cost, highest benefit actions you can take, using up to 80% less electricity.

When replacing or upgrading, make sure the waterproof seals around the fittings are intact and fitted properly.

2. Install a water tank*

Rainwater is a valuable natural resource. Using rainwater can reduce water bills, provide an alternative supply during water restrictions, and help maintain a green, healthy common area garden.

Slimline water tanks are a perfect solution for townhouse complexes where space is at a premium.

3. Install solar

The vast majority of Australians want their homes powered by renewable energy, so it’s no surprise that we have the highest penetration of solar PV per capita in the world. The average solar system in Australia pays for itself within 4 years, and after that, the electricity it generates is free.

New Solshare technology is making it easy for owners corporations to install one solar system to power the common area and individual apartments. This means cutting electricity costs for common areas and for residents. The Yarra Energy Foundation has developed a [Guide to Solar for Apartments](#) to help you understand the process.

4. Maintain your solar panels

Solar PV and solar hot water systems require some maintenance to operate efficiently. The surface of the panels should be cleaned every 6-12 months. Many local solar businesses offer cleaning and maintenance services.

5. Turn your food scraps into a resource

Check if your council or waste contractor offers a food and garden organics collection to turn your food waste into compost. If not, consider a installing a common worm farm or compost. If well managed, these systems have little to no smell as they transform food scraps into nutrients that can be used in gardens.

6. Let nature cool your building

Concrete driveways and paving act like heat traps, making your townhouse hotter, increasing the need for air conditioning. Planting trees and plants through the common area will shade the concrete and help to reduce the temperature of air moving into homes.

Plants and soil provide a cooling effect through the process of evapotranspiration, and plants can also be used to provide shade and funnel cooling breezes. Shading to the north of a home should be provided by deciduous plants which lose their leaves in winter.

7. Make it easy for residents to live sustainably

Some sustainability upgrades - double glazed windows and window awnings - provide a huge benefit to residents. They also impact the look of your complex and therefore typically need approval from the owners corporation.

Often there is a desire to maintain a consistent look to the building facade. To do this, owners corporations can develop style guidelines that specify colours, materials, size of the windows or awnings. This gives owners the freedom to undertake upgrades, while respecting the visual amenity of other occupants.

8. Start a community garden in your common area

Communal gardens provide health and wellbeing benefits. Residents can access fresh food and green space, stay active maintaining the garden, and connect socially. Knowing your neighbours makes your complex safer and builds social resilience.

Start with a small garden, managed by a group of residents. Expand the garden as interest grows.

9. Buy renewable electricity for your common area

Become part of Victoria’s clean energy transition and support the green economy. The [Green Electricity Guide](#) can help you select a sustainable electricity retailer.

TOWNHOUSE OWNERS

A. Upgrade to an all-electric efficient hot water system

Hot water systems are the second highest user of energy in Australian homes. Gas is no longer the most efficient way to heat water and is being phased out across Victoria to support the transition to zero emissions.

If you have a gas hot water system servicing your townhouse, the best replacement is a heat pump hot water system. Electric instantaneous hot water systems are also good, but cost more to run.

For more information, visit the [A Guide to Electrifying your Apartment Building or Townhouse](#).

B. Install double glazing

Double glazing can improve the thermal performance of windows by around 30%, and reduce outside noise entering your townhouse.

Windows can be made from timber, aluminium or uPVC. Both timber and uPVC have excellent thermal properties. However, timber windows require maintenance, whereas uPVC windows do not.

C. Install solar

The vast majority of Australians want their homes powered by renewable energy, so it’s no surprise that we have the highest penetration of solar PV per capita in the world. The average solar system in Australia pays for itself within 4 years, after that the electricity it generates is free.

You may want to install solar just for your townhouse, or you could talk to your owners corporation committee about installing solar for your whole complex using [Solshare](#) technology. Before installing solar, remember to check your Plan of Subdivision to see if you own the roof or if it belongs to the owners corporation.

D. Draught proof your townhouse

Up to 25% of winter heat loss from homes is caused by drafts (gaps and cracks in walls and around doors and windows). Draught proofing will make your home more comfortable and cheaper to heat and cool.

Draught proofing is something you may be able do yourself with products from your local hardware shop or you can employ a tradesperson. The [Sustainability Victoria website](#) has useful guidance.

E. Reduce water use*

Reducing hot water use will not only cut your water bills, it will also reduce your energy bills.

In Victoria we should be using a maximum of 155L of water per person per day. If you are using more than that, first make sure you have a modern, low flow showerhead. You can also upgrade your taps or you can DIY install flow restrictors from your local hardware shop. Lastly, replace your single flush toilet cistern with a low water, dual flush alternative.

When purchasing, look for the [WELS water star rating](#) on taps, showerheads, toilets, dishwashers and washing machines.

You could also look to [install a rainwater tank](#) to use for toilet flushing and/or to water your garden.

F. Insulate your ceiling*

Effective ceiling insulation is the best barrier against the summer heat and the winter cold, saving you up to 20% on your heating and cooling energy costs.

If you have a hatch into your ceiling space, you can have bulk insulation installed. Before calling an installer, check if you have any insulation already installed. If your insulation is older than 15 years, it will likely need to be replaced.

If your ceiling cavity can’t accommodate insulation, and you have a dark coloured roof, consider working with your owners corporation to paint the roof in a [light or reflective coating](#).

G. Switch to LED lighting*

LED lights use up to 80% less electricity. Switching to LEDs is one of the lowest cost, highest benefit actions you can take.

Halogen downlights and old incandescent bulbs are the most energy guzzling and should be replaced immediately. Fluorescent lights should also be switched to LED. This can be done on failure if funds are limited.

H. Buy electric, energy efficient appliances

Home appliances and equipment use an average of 25% of household energy. Buying highly efficient appliances will reduce ongoing electricity bills.

Energy star rating labels will help you purchase efficient appliances when shopping for an air conditioner, dryer, computer monitor, dishwasher, fridge, freezer, washing machine or TV. However, it is important to [understand how to use the label](#), especially when comparing between different sized products.

I. Switch to all-electric cooking

Gas cooktops are inefficient and lead to poor indoor air quality. A child living with gas cooking in the home [faces a comparable risk of asthma](#) to a child living with household cigarette smoke. Switch to an induction cooktop and electric oven. For more information, see the [Guide to Electrifying your Apartment Building or Townhouse](#)

J. Switch to efficient electric heating and cooling*

Gas is no longer the most efficient way to heat your home and is being phased out across Victoria to support the transition to zero emissions. The best replacement is a split system air conditioner, which can also cool your home in summer. For more information, see the [Guide to Electrifying your Apartment Building or Townhouse](#).

Ceiling fans are also a low cost way to cool your home, and can also be used in reverse during winter to push hot air down into living spaces.

During summer, remember to open all your windows when the temperature drops. This will cool your home overnight and reduce the need for air conditioning the following day

K. Buy renewable electricity

Become part of Victoria’s clean energy transition and support the green economy. The [Green Electricity Guide](#) can help you select a sustainable electricity retailer.

L. Install external shading

Windows are the main source of heat gain into your home. Appropriate shading over windows and doors will help keep your home cool in summer, and allow sunlight in during winter. Shading is most effective when installed externally, so an awning will be more effective than an internal blind.

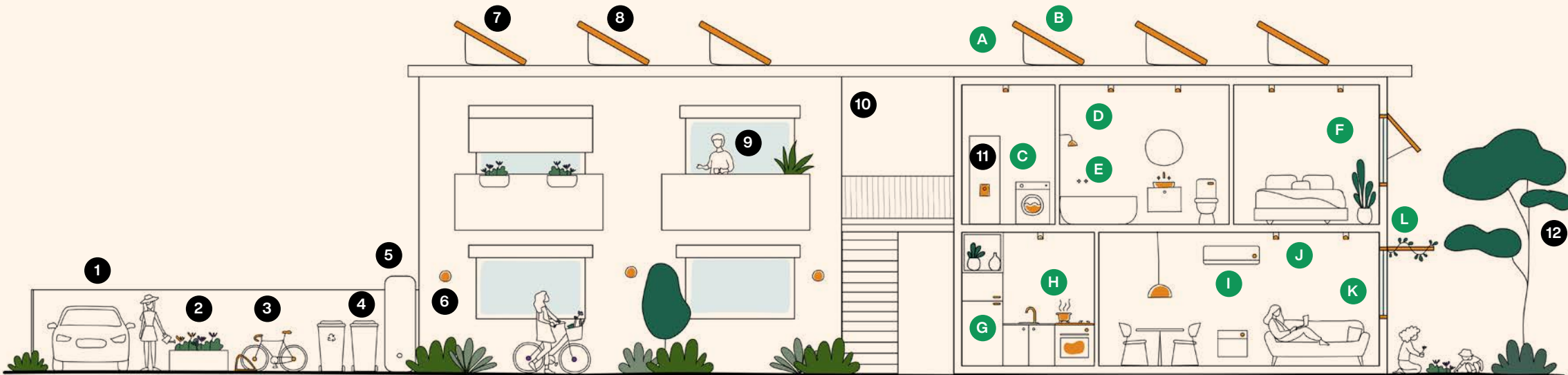
The type of shading you require will depend on the orientation of your windows and doors. The [Your Home website](#) provides advice to help you select the best solution.

Remember your owners corporation may have guidelines regarding changes to the building facade so remember to check with your owners corporation committee or manager before proceeding. Don’t forget to talk with your neighbours too, they might like to follow your example.

UNLOCKING SUSTAINABLE APARTMENTS

You deserve an efficient, comfortable, safe and healthy home. You deserve clean energy and affordable bills. Identify the efficiency and sustainability opportunities that are right for your apartment. Consult with your owners corporation committee about making improvements in the common area too.

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WHAT YOUR OWNERS CORPORATION COULD DO

1. Install or facilitate electric vehicle (EV) charging
2. Start a community garden in your common area
3. Install bike parking*
4. Turn your food scraps into a resource
5. Install a water tank*
6. Switch to LED lighting*
7. Install solar
8. Maintain your solar panels
9. Make it easy for residents to live sustainably
10. Buy GreenPower for your common area
11. Switch to a centralised hot water heat pump
12. Let nature cool your building

WHAT YOU COULD DO IN YOUR APARTMENT

- A. Insulate your ceiling (if you're on the top floor)*
- B. Install solar
- C. Upgrade to an all-electric efficient hot water system
- D. Switch to LED lighting*
- E. Reduce water use
- F. Draught proof your apartment
- G. Buy electric, energy efficient appliances
- H. Switch to all-electric cooking
- I. Switch to efficient electric heating and cooling
- J. Buy renewable electricity
- K. Install double glazing
- L. Install external shading

* If your building was constructed after 2005, these actions may not be relevant to you.

For low rise apartment owners,
owners corporations & managers

Got the basics? Check out our detailed
outline below for more information to
assist with your retrofitting journey.

OWNERS CORPORATIONS

1. Install or facilitate electric vehicle (EV) Charging

The transition to EVs has already begun, including a [growing secondhand market](#). EVs are expected to match petrol vehicles on purchase price and range by the mid 2020s, so the demand for EV charging in apartment car parks is likely to skyrocket in just a few years.

EV charging can have a significant impact on your building’s energy demand. The vast majority of EV charging is done at home overnight during off-peak times, when electricity prices are lowest. An EV charging installer will be able to determine the most appropriate solution for your building, taking future demand into consideration. Following, your committee can discuss whether charging stations will be funded by the owners corporation or by individual owners.

2. Start a community garden in your common area

Communal gardens provide health and wellbeing benefits. Residents can access fresh food and green space, stay active maintaining the garden, and connect socially. Knowing your neighbours makes your complex safer and builds social resilience.

Start with a small garden, managed by a group of residents. Expand the garden as interest grows.

3. Install bike parking*

More and more people are discovering the health, economic and environmental benefits of travelling by bike. Most new apartment buildings include bike parking so older buildings need to play catch up to maintain market appeal and to ensure bikes can be parked safely and in a tidy fashion in basements or other common areas.

Install bike hoops or racks to basements or common areas so bikes can be parked safely and securely, encouraging active transport. [Bicycle Network Victoria](#) or [this guide from the City of Sydney](#) can help find the right parking solutions.

4. Turn your food scraps into a resource

Check if your council or waste contractor offers a food and garden organics collection to turn your food waste into compost. If not, consider a installing a common worm farm or compost. If well managed, these systems have little to no smell as they transform food scraps into nutrients that can be used in gardens.

5. Install a water tank*

Rainwater is a valuable natural resource. Using rainwater can reduce water bills, provide an alternative supply during water restrictions, and help maintain a green, healthy common area garden.

Slimline water tanks are a perfect solution for apartment yards where space is at a premium.

6. Switch to LED lighting*

LED lights use up to 80% less electricity. Switching to LEDs is one of the lowest cost, highest benefit actions you can take.

Halogen downlights and old incandescent bulbs are the most energy guzzling and should be replaced immediately. Fluorescent lights should also be switched to LED. This can be done on failure if funds are limited.

7. Install solar

The vast majority of Australians want their homes powered by renewable energy, so it’s no surprise that we have the highest penetration of solar PV per capita in the world. The average solar system in Australia pays for itself within 4 years, and after that, the electricity it generates is free.

New [Solshare](#) technology is making it easy for owners corporations to install one solar system to power the common area and individual apartments. This means cutting electricity costs for common areas and for residents. The Yarra Energy Foundation has developed a [Guide to Solar for Apartments](#) to help you understand the process.

8. Maintain your solar panels

Solar PV and solar hot water systems require some maintenance to operate efficiently. The surface of the panels should be cleaned every 6-12 months. Many local solar businesses offer cleaning and maintenance services.

9. Make it easy for residents to live sustainably

Some sustainability upgrades - double glazed windows and window awnings - provide a huge benefit to residents. They also impact the look of your complex and therefore typically need approval from the owners corporation.

Often there is a desire to maintain a consistent look to the building facade. To do this, owners corporations can develop style guidelines that specify colours, materials, size of the windows or awnings. This gives owners the freedom to undertake upgrades, while respecting the visual amenity of other occupants.

10. Buy renewable electricity for your common area

Become part of Victoria’s clean energy transition and support the green economy. The [Green Electricity Guide](#) can help you select a sustainable electricity retailer.

11. Switch to a centralised hot water heat pump

Gas is no longer the most efficient way to heat water and is being phased out across Victoria to support the transition to zero emissions.

If your building has a centralised gas hot water system, switch to a heat pump. For centralised solar hot water systems, keep the existing solar system and replace the gas equipment with a new heat pump.

12. Let nature cool your building

Concrete acts like a heat trap, making your building hotter, increasing the need for air conditioning. Planting trees and plants throughout common spaces will shade the concrete and help to reduce the temperature of air moving into apartments.

Plants and soil provide a cooling effect through the process of evapotranspiration, and plants can also be used to provide shade and funnel cooling breezes. Shading to the north of a home should be provided by deciduous plants which lose their leaves in winter.

APARTMENT OWNERS

A. Insulate your ceiling (if you’re on the top floor)*

Ceiling insulation is the best barrier against summer heat and winter cold, saving up to 20% on your heating and cooling energy costs. If you have a hatch into your ceiling, check if there is bulk insulation in place before calling an installer. If your insulation is older than 15 years, it will likely need replacing.

If your ceiling cavity can’t accommodate insulation, and you have a dark coloured roof, consider working with your owners corporation to paint the roof in a [light or reflective coating](#).

B. Install solar

See item 7 under Owners Corporation.

C. Upgrade to an all-electric efficient hot water system

Hot water systems are the second highest user of energy in Australian homes. Gas is no longer the most efficient way to heat water and is being phased out across Victoria to support the transition to zero emissions.

If you have a gas hot water system dedicated to your apartment, the best replacement is an electric instantaneous hot water system. For more information, visit the [A Guide to Electrifying your Apartment Building or Townhouse](#).

D. Switch to LED lighting

LED lights use up to 80% less electricity. Switching to LEDs is a low cost, high benefit action.

Halogen downlights and old incandescent bulbs are the most energy guzzling and should be replaced immediately. Fluorescent lights should also be switched to LED. This can be done on failure if funds are limited.

E. Reduce water use

Reducing hot water use will not only cut your water bills, it will also reduce your energy bills.

In Victoria we should use a maximum of 155L of water per person per day. If you are using more, first make sure you have a modern, low flow showerhead. You can also upgrade your taps or you can DIY install flow restrictors from your local hardware shop. Lastly, replace your single flush toilet cistern with a low water, dual flush alternative.

When purchasing, look for the [WELS water star rating](#) on taps, showers, toilets, dishwashers and washing machines.

F. Draught proof your apartment

Up to 25% of winter heat loss from homes is caused by draughts (gaps and cracks in walls, and around doors and windows). Draught proofing will make your home more comfortable and cheaper to heat and cool.

Draught proofing can be done by a tradesperson or using products from your local hardware shop. The [Sustainability Victoria website](#) has some useful guidance.

G. Buy electric, energy efficient appliances

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Unlocking Sustainable Strata

Low Rise Apartments

H. Switch to all-electric cooking

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I. Switch to efficient electric heating and cooling

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Ceiling fans are also a low cost way to cool your home, and can also be used in reverse during winter to push hot air down into living spaces.

During summer, remember to open all your windows when the temperature drops. This will cool your home overnight and reduce the need for air conditioning the following day.

J. Buy renewable electricity

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K. Install double glazing

Double glazing can improve the thermal performance of windows by around 30%, and reduce outside noise entering your apartment.

Windows can be made from timber, aluminium or uPVC. Timber and uPVC have excellent thermal properties. However, timber windows require maintenance, whereas uPVC windows do not so they are usually a better solution for apartments.

Windows are an intersection between private and common property. Work with your owners corporation to confirm any agreements around aesthetic guidelines and how the window retrofits will be funded.

L. Install external shading

Windows are the main source of heat gain into your home. Appropriate shading over windows and doors will help keep your home cool in summer, and allow sunlight in during winter. Shading is most effective when installed externally, so an awning is better than an internal blind.

The type of shading you require will depend on the orientation of your windows and doors. The [Your Home website](#) provides advice to help you select the best solution.

Remember your owner corporation may have guidelines regarding changes to the building facade so remember to check with your owners corporation committee or manager before proceeding. Don’t forget to talk with your neighbours too, they might like to follow your example.

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WHAT YOUR OWNERS CORPORATION COULD DO

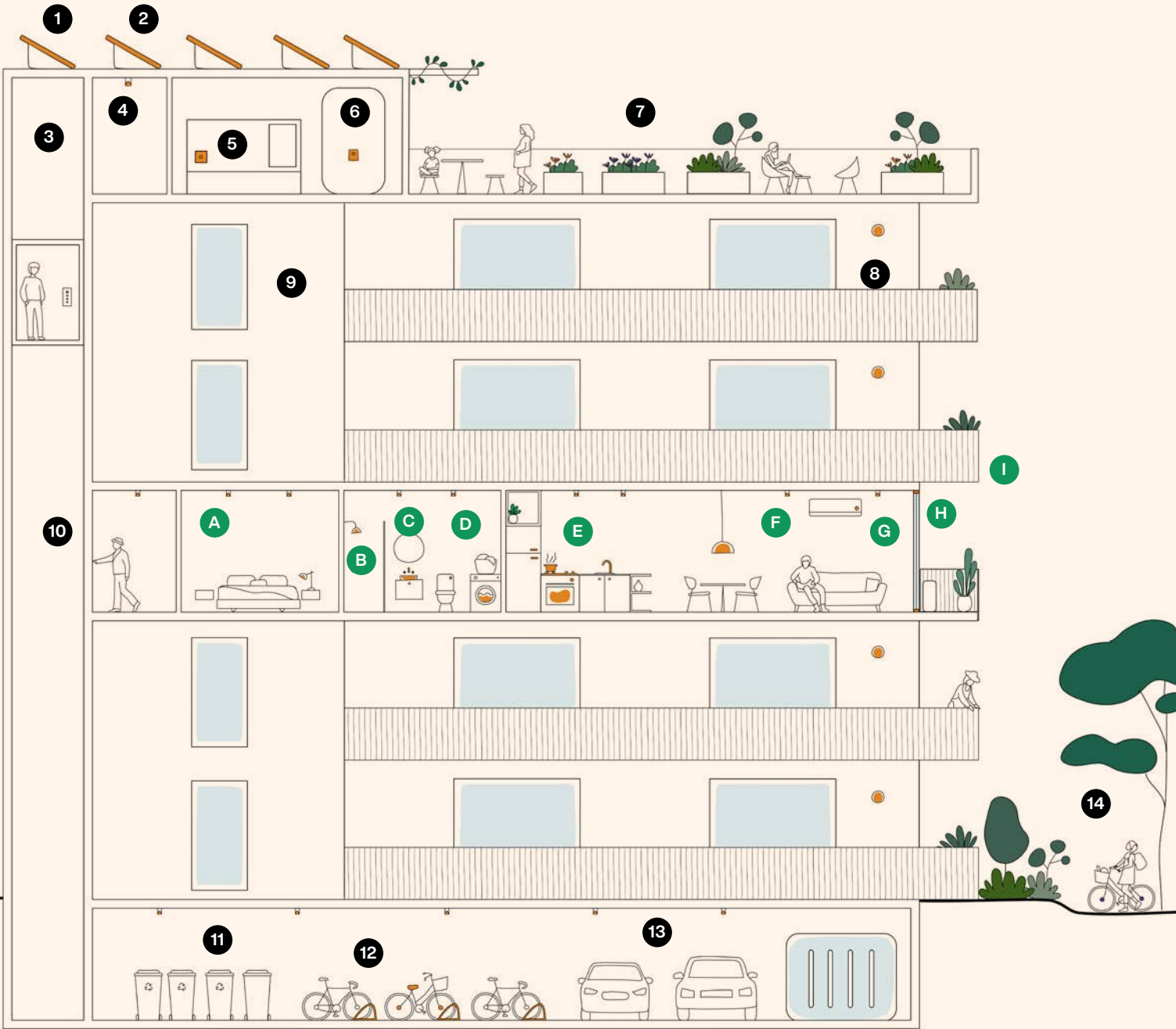
1. Install solar
2. Maintain your solar panels
3. Tune your building
4. Switch to LED lighting*
5. Switch to a centralised hot water heat pump
6. Install an efficient air conditioning system
7. Start a community garden in your common area
8. Buy GreenPower
9. Install a Building Management System (BMS)
10. Make it easy for residents to live sustainably
11. Turn your food scraps into a resource
12. Install bike parking*
13. Install or facilitate electric vehicle (EV) charging
14. Let nature cool your building

WHAT YOU COULD DO IN YOUR APARTMENT

- A. Switch to LED lighting*
- B. Upgrade to an all-electric efficient hot water system
- C. Reduce water use*
- D. Buy electric energy efficient appliances
- E. Switch to all-electric cooking
- F. Switch to efficient electric heating and cooling
- G. Draught proof your apartment
- H. Install double glazing
- I. Install external shading

* If your building was constructed after 2005, these actions may not be relevant to you.

Illustration by Nayan Puri



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OWNERS CORPORATIONS

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2. Maintain your solar panels

Solar PV and solar hot water systems require some maintenance to operate efficiently. The surface of the panels should be cleaned every 6-12 months. Many local solar businesses offer cleaning and maintenance services.

3. Tune your building

Buildings can commonly achieve a 15 - 30% reduction in energy use just by ensuring control set points are reset, based on demand and regularly servicing equipment to maximise performance.

Talk with your facilities management company to understand how your equipment is being tuned and maintained. The [Good Practice Facilities Management Guide](#) can help identify opportunities for improved building turning.

4. Switch to LED lighting*

LED lights use up to 80% less electricity. Switching to LEDs is one of the lowest cost, highest benefit actions you can take. Halogen downlights and old incandescent bulbs are the most energy guzzling and should be replaced immediately. Fluorescent lights should also be switched to LED. This can be done on failure if funds are limited.

5. Switch to a centralised hot water heat pump

Gas is no longer the most efficient way to heat water and is being phased out across Victoria to support the transition to zero emissions. If your building has a centralised gas hot water system, switch to a heat pump. For centralised solar hot water systems, keep the existing solar system and replace the gas equipment with a new heat pump.

6. Install an efficient air conditioning system

Buildings with significant common areas or facilities, may have centralised heating supplied by gas fired boilers. Gas is no longer the most efficient way to heat and is being phased out across Victoria to support the transition to zero emissions. The best replacement for a centralised heating system is a VRF air conditioning system, which can also provide cooling during summer. Air-sourced heat pumps are also a good option. For single common area rooms, split system air conditioners are the best option.

7. Start a community garden in your common area

Communal gardens provide health and wellbeing benefits. Residents can access fresh food and green space, stay active maintaining the garden, and connect socially. Knowing your neighbours makes your complex safer and builds social resilience. Start with a small garden, managed by a group of residents. Expand the garden as interest grows.

8. Buy GreenPower

Become part of Victoria’s clean energy transition and support the green economy. Historically, long running contracts with embedded network operators limited access to GreenPower. This is no longer the case. Sparked by Victorian embedded network regulatory changes and retailers recognising the switch to renewable energy is inevitable, embedded network operators are starting to offer GreenPower to existing customers. Contact your embedded network operator to ask about GreenPower offers. If none are available, let them know your owners corporation will switch to a new operator when your contract ends.

9. Install a Building Management System (BMS)

Poorly controlled and monitored buildings are unable to quickly and easily identify systems that are not working or working inefficiently. A Building Management System (BMS) is an ‘intelligent’ controller network installed to monitor and control a building’s services, including how efficiently they are operating. Reach out to your facilities management company to understand the benefits and application of a BMS in your apartment building.

10. Make it easy for residents to live sustainably

Some sustainability upgrades - double glazed windows and window awnings - provide a huge benefit to residents. They also impact the look of your complex and therefore typically need approval from the owners corporation. Often there is a desire to maintain a consistent look to the building facade. To do this, owners corporations can develop style guidelines that specify colours, materials, size of the windows or awnings. This gives owners the freedom to undertake upgrades, while respecting the visual amenity of other occupants.

11. Turn your food scraps into a resource

Check if your council or waste contractor offers a food and garden organics collection to turn your food waste into compost. If not, consider a installing a worm farm. A well-managed worm farm has little to no smell and recycles food scraps in nutrients that can be used on gardens. Worm farms have been effectively used [in apartment basement car parks in Melbourne](#).

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APARTMENT OWNERS

A. Switch to LED lighting*

LEDs use up to 80% less electricity. Switching to LEDs is one of the lowest cost, highest benefit actions you can take. Halogen downlights and old incandescent bulbs are the most energy guzzling and should be replaced immediately. Fluorescent lights should also be switched to LED. This can be done on failure if funds are limited.

B. Upgrade to an all-electric efficient hot water system

Hot water systems are the second highest user of energy in Australian homes. Gas is no longer the most efficient way to heat water and is being phased out across Victoria to support the transition to zero emissions. If you have a gas hot water system dedicated to your apartment, the best replacement is an electric instantaneous hot water system. For more information, visit the [A Guide to Electrifying your Apartment building or Townhouse](#).

C. Reduce water use*

Reducing hot water use will cut your water bills and reduce your energy bills. In Victoria we should use a maximum of 155L of water per person per day. If you are using more, make sure you have a modern, low flow showerhead. Then upgrade your taps or DIY install flow restrictors from your local hardware shop. Lastly, replace your single flush toilet cistern with a low water, dual flush alternative. When purchasing, look for the WELS water star rating on taps, showers, toilets, dishwashers and washing machines.

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Home appliances and equipment use an average of 25% of household energy. Buying highly efficient appliances will reduce ongoing electricity bills. Energy star rating labels will help you purchase efficient appliances when shopping for an air conditioner, dryer, computer monitor, dishwasher, fridge, freezer, washing machine or TV. However, it is important to [understand how to use the label](#), especially when comparing between different sized products.

E. Switch to all-electric cooking

Gas cooktops are inefficient and lead to poor indoor air quality. A child living with gas cooking in the home [faces a comparable risk of asthma](#) to a child living with household cigarette smoke. Switch to an induction cooktop and electric oven. For more information, see the [Guide to Electrifying your Apartment Building or Townhouse](#).

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Gas is no longer the most efficient way to heat your home and is being phased out across Victoria to support the transition to zero emissions. The best replacement is a split system air conditioner, which can also cool your home in summer. For more information, see the [Guide to Electrifying your Apartment Building or Townhouse](#). Ceiling fans are also a low cost way to cool your home, and can be used in reverse during winter to push hot air down into living spaces. During summer, remember to open all your windows when the temperature drops. This will cool your home overnight and reduce the need for air conditioning the following day.

G. Draught proof your apartment

Up to 25% of winter heat loss from homes is caused by drafts (gaps and cracks in walls and around doors and windows). Draught proofing will make your home more comfortable and cheaper to heat and cool. Draught proofing can be done by a tradesperson or using products from your local hardware shop. The [Sustainability Victoria website](#) has some useful guidance.

H. Install double glazing

Double glazing can improve the thermal performance of windows by around 30%, and reduce outside noise entering your apartment. Windows can be made from timber, aluminium or uPVC. Timber and uPVC have excellent thermal properties. However, timber windows require maintenance, whereas uPVC windows do not so they are usually a better solution for apartments. Windows are an intersection between private and common property. Work with your owners corporation to confirm any agreements around aesthetic guidelines and how the window retrofits will be funded.

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Windows are the main source of heat gain into your home. Appropriate shading over windows and doors will help keep your home cool in summer, and allow sunlight in during winter. Shading is most effective when installed externally, so an awning is better than an internal blind. The type of shading you require will depend on the orientation of your windows and doors. The [Your Home website](#) provides advice to help you select the best solution. Remember your owners corporation may have guidelines regarding changes to the building facade so remember to check with your owners corporation committee or manager before proceeding. Don’t forget to talk with your neighbours too, they might like to follow your example.

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UNLOCKING SUSTAINABLE APARTMENTS

You deserve an efficient, comfortable, safe and healthy home. You deserve clean energy and affordable bills. Identify the efficiency and sustainability opportunities that are right for your apartment. Consult with your owners corporation committee about making improvements in the common area too.

Don't forget to check if you're eligible for [Victorian Energy Upgrades](#) or [Solar Victoria](#) rebates.

The Victorian Owners Corporation Act Supports Sustainability

Window shading, double glazing, split system air conditioners, and heat pumps all require external infrastructure visible from the outside of your building. You may need permission from your owners corporation prior to retrofitting these items.

Remember, the Victorian Owners Corporation Act states that “An owners corporation must not make rules that unreasonably prohibit the installation of sustainability items on the exterior of a lot”.

Ready to retrofit, not sure where to start?

Share this guide with your owners corporation committee and manager to start the discussion. For more information about how to work with and make decisions with your owners corporation, visit the [Owners Corporation on the Consumer Affairs Victoria website](#).

Plan for an All-Electric Building

We are living in the clean energy revolution. Rooftops are now resources and in the near future, an electric vehicle will act like a big battery. Our homes will be all-electric, powered by renewable energy and have cleaner indoor air that's good for our health.

It's important that apartment buildings aren't left behind. Unlocking Sustainable Strata's Guide to Electrifying Your Apartment Building will help you and your owners corporation committee electrify common areas and private apartments / townhouses. It outlines the steps to take and provides options for the best all-electric retrofit technologies across heating, hot water, cooking and more.

WHAT YOUR OWNERS CORPORATION COULD DO

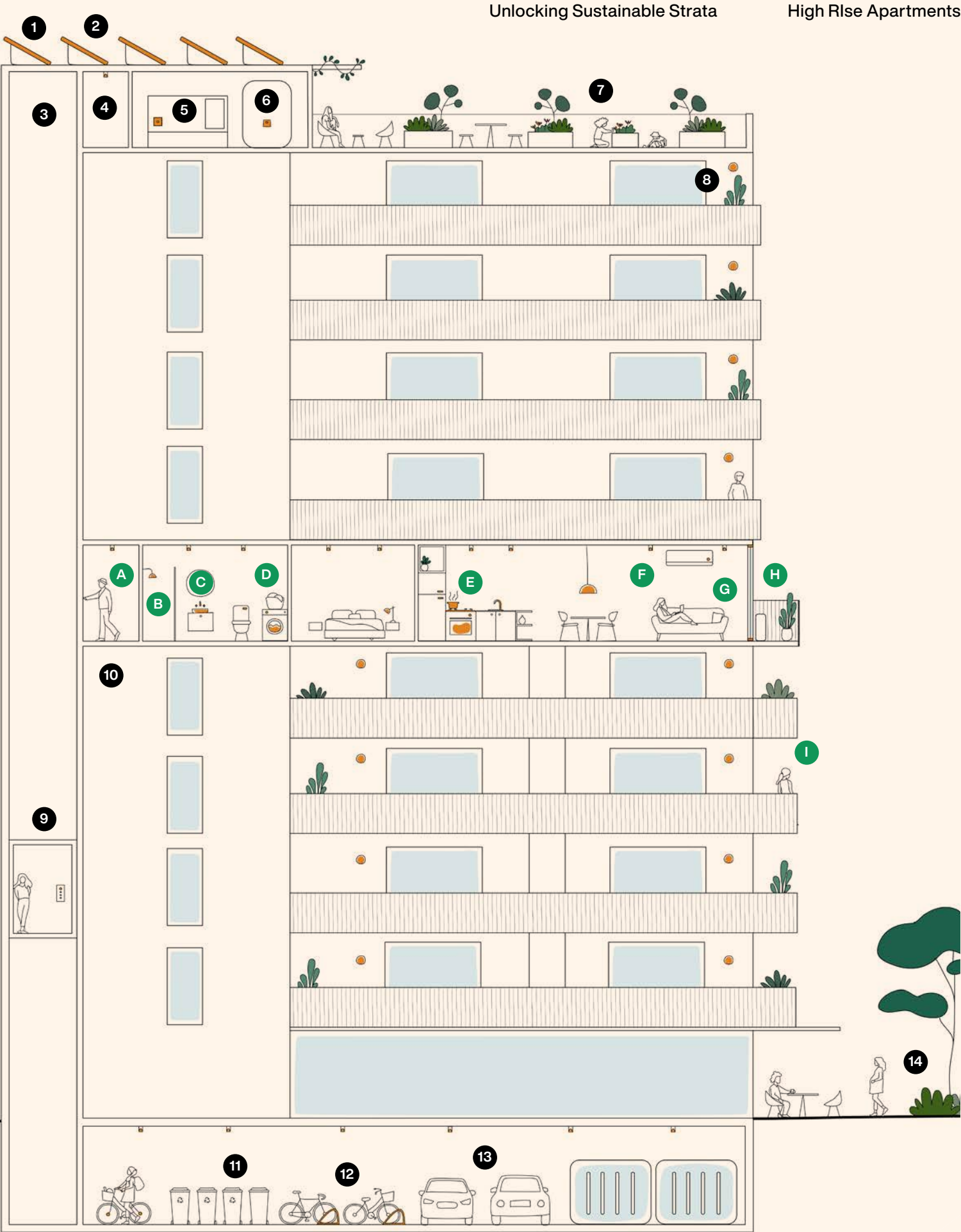
1. Install solar
2. Maintain your solar panels
3. Tune your building
4. Switch to LED lighting*
5. Switch to a centralised hot water heat pump
6. Install an efficient air conditioning system
7. Start a community garden in your common area
8. Buy GreenPower
9. Install a Building Management System (BMS)
10. Make it easy for residents to live sustainably
11. Turn food scraps into a resource
12. Install bike parking*
13. Install or facilitate electric vehicle (EV) charging
14. Let nature cool your building

WHAT YOU COULD DO IN YOUR APARTMENT

- A. Switch to LED lighting*
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- D. Buy electric energy efficient appliances
- E. Switch to all-electric cooking
- F. Switch to efficient electric heating and cooling
- G. Draught proof your apartment
- H. Install double glazing
- I. Install external shading

* If your building was constructed after 2005, these actions may not be relevant to you.

Illustration by Nayan Puri



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For high rise apartment owners,
owners corporations & managers

Got the basics? Check out our detailed
outline below for more information to
assist with your retrofitting journey.

OWNERS CORPORATIONS

1. Install solar

The vast majority of Australians want their homes powered by renewable energy, so it’s no surprise that we have the highest penetration of solar PV per capita in the world. The average solar system in Australia pays for itself within 4 years, and after that, the electricity it generates is free. New [Solshare](#) technology is making it easy for owners corporations to install one solar system to power the common area and individual apartments. This means cutting electricity costs for common areas and for residents. The Yarra Energy Foundation has developed a [Guide to Solar for Apartments](#) to help you understand the process.

2. Maintain your solar panels

Solar PV and solar hot water systems require some maintenance to operate efficiently. The surface of the panels should be cleaned every 6-12 months. Many local solar businesses offer cleaning and maintenance services.

3. Tune your building

Buildings can commonly achieve a 15 - 30% reduction in energy use just by ensuring control set points are reset, based on demand and regularly servicing equipment to maximise performance. Talk with your facilities management company to understand how your equipment is being tuned and maintained. The [Good Practice Facilities Management Guide](#) can help identify opportunities for improved building turning.

4. Switch to LED lighting*

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5. Switch to a centralised hot water heat pump

Gas is no longer the most efficient way to heat water and is being phased out across Victoria to support the transition to zero emissions.

If your building has a centralised gas hot water system, switch to a heat pump. For centralised solar hot water systems, keep the existing solar system and replace the gas equipment with a new heat pump.

6. Install an efficient air conditioning system

Buildings with significant common areas or facilities, may have centralised heating supplied by gas fired boilers. Gas is no longer the most efficient way to heat and is being phased out across Victoria to support the transition to zero emissions. The best replacement for a centralised heating system is a VRF air conditioning system, which can also provide cooling during summer. Air-sourced heat pumps are also a good option.

For single common area rooms, split system air conditioners are the best option.

7. Start a community garden in your common area

Communal gardens provide health and wellbeing benefits. Residents can access fresh food and green space, stay active maintaining the garden, and connect socially. Knowing your neighbours makes your complex safer and builds social resilience. Start with a small garden, managed by a group of residents. Expand the garden as interest grows.

8. Buy GreenPower

Become part of Victoria’s clean energy transition and support the green economy. Historically, long running contracts with embedded network operators limited access to GreenPower. This is no longer the case. Sparked by Victorian embedded network regulatory changes and retailers recognising the switch to renewable energy is inevitable, embedded network operators are starting to offer GreenPower to existing customers. Contact your embedded network operator to ask about GreenPower offers. If none are available, let them know your owners corporation will switch to a new operator when your contract ends.

9. Install a Building Management System (BMS)

Poorly controlled and monitored buildings are unable to quickly and easily identify systems that are not working or working inefficiently. A Building Management System (BMS) is an ‘intelligent’ controller network installed to monitor and control a building’s services, including how efficiently they are operating. Reach out to your facilities management company to understand the benefits and application of a BMS in your apartment building.

10. Make it easy for residents to live sustainably

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Often there is a desire to maintain a consistent look to the building facade. To do this, owners corporations can develop style guidelines that specify colours, materials, size of the windows or awnings. This gives owners the freedom to undertake upgrades, while respecting the visual amenity of other occupants.

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Unlocking Sustainable Strata

High Rise Apartments

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