

# DENSITY DONE WELL DESIGN LED HOUSING SOLUTIONS:

An Australian Institute of Architects Policy Paper



**Nightingale Village, Brunswick**

National Architecture Awards 2023

*David Oppenheim Award for Sustainable Architecture*

*Frederick Romberg Award for Residential Architecture – Multiple Housing*



**Australian  
Institute of  
Architects**



The Australian Institute of Architects recognises the unceded sovereign lands and rights of Aboriginal and Torres Strait Islander peoples as the First Peoples of these lands and waters.

This recognition generates acknowledgement and respect for Aboriginal and Torres Strait Islander Countries, Cultures and Communities, and their ways of being, knowing and doing.

Caring for Country practices including architecture and place shaping have existed on this continent since time immemorial.

The Institute recognises a professional commitment to engage and act meaningfully through reciprocal partnership and relationships with Aboriginal and Torres Strait Islander peoples.

Together we will support and develop the emergence of new possibilities for our shared future.



## Information about the Institute



- The Australian Institute of Architects (Institute) is the peak body for the architectural profession in Australia. It is an independent, national member organisation with more than 14,000 members across Australia and overseas.
- **Our members work across the spectrum of housing delivery and are responsible for leading the multi-disciplinary design teams currently implementing the Victorian Government's program of social and affordable housing projects, the Big Housing Build.**
- The Institute's vision is: Everyone benefits from good architecture.
- The Institute's purpose is: To demonstrate the value of architecture and support the profession.
- At the time of this Policy Paper, the Victorian Chapter President is David Wagner FRAIA, and the Executive Director Victoria is Daniel Moore.

## Purpose of this Report

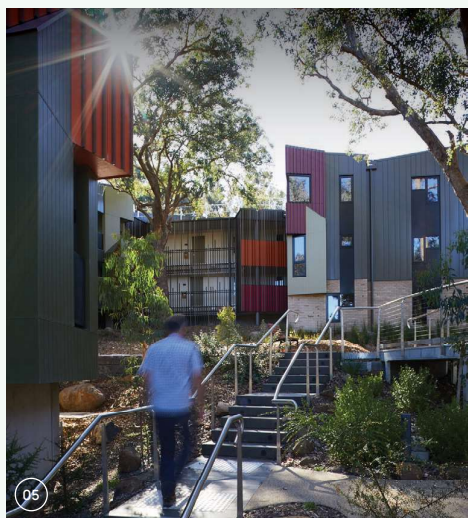
The Australian Institute of Architects (Institute) strongly supports the State Government's commitment to an updated and expanded planning strategy through Plan for Victoria and with this, the merit of having an aligned Housing Statement.

The Housing Statement outlines the enormous scale of the housing delivery challenge with an estimated 80,000 homes required annually over the next 10 years to meet the demands of growth and to address rising unaffordability.

We commend the commitments to:

- Reform and streamline the planning process.
- Focus on densification with a preference for infill over greenfield .
- Situate housing near existing infrastructure, services and jobs.
- Focus on social and affordable housing to address historic underinvestment.

This paper outlines a series of Institute policy positions around housing delivery, with practical recommendations to support rapid delivery of housing at scale while providing a positive legacy for the community.



## Introduction

**Housing is foundational to social equity and community cohesion. It affects the productivity of the state and the sustainability of our settlement strategies.**

Addressing housing need is not simply a matter of adding to the stock of housing. It is about making housing that people want to live in, where they want to live.

The urgent need for more affordable housing, delivered in the right locations across the state, needs to be anchored by principles of good design.

A design – led approach, to precinct planning and housing delivery, will be critical to sustaining community support for increased housing density in established areas, and to build future resilience in greenfield suburbs.

Multi-unit housing, particularly apartment projects, with disparate strata ownership, tend to have long lives and are difficult and expensive to retrofit and maintain if poorly designed.

Promoting good design outcomes will also help build back confidence in the market around buying off the plan.

We require skilled design teams and improved design assessment to facilitate rapid decision making.

Delivery of housing at the scale required in Victoria, will be dependant on building significant capacity within the construction industry and innovative approaches to design, procurement and construction technology.

The Institute supports the initiatives of Government to address these challenges. We welcome the opportunity to assist these efforts by providing advice and input into the development and testing of housing design and planning policy, and by sharing our expertise on how density done well can improve the health and sustainability of our communities and places.

It is about putting the resident front and centre and always asking the question, "Would I want to live here?"





# Policy Positions

The policy positions outlined below focus on the architectural and urban design considerations, as well as the industry innovation required, to address large scale housing design and implementation.

## **Policy Position 1: Recognise the value of good design in creating livable communities.**

Housing needs to be well designed for long life, lower occupancy costs and resident wellbeing to create homes people want to live in.

Success in the supply of housing needs to be measured by long term amenity, livability and lifecycle costs, not only cost of delivery.

## **Policy Position 2: Build community support for density through public space and precinct benefits.**

Good urban design is critical to successful housing outcomes, both at high and lower density.

As density increases, public spaces are relied upon more to provide the shared walkable, high amenity streets and open space.

Investment in green space and social infrastructure needs to be co-ordinated at a precinct level and implemented within densifying communities to build community support for change.

## **Policy Position 3: Expand supply through a streamlined, design-led approach to housing policy and planning reform**

Strategic urban design and architectural frameworks are needed at a precinct level to set the vision for the place and guide co-ordinated transformation of our neighbourhoods.

Good decision making and fast track outcomes, require qualified design teams for apartment projects and the provision of skilled guidance and assessment through urban design policy and design review.

## **Policy Position 4: Place sustainable design and resilience at the core of housing delivery.**

Sustainable design needs to be demonstrated and incentivised at every level.

Sustainability is inherent to all recommendations in this paper, but specifically - the appropriateness of housing in climate sensitive locations should be further interrogated. This incidentally gives opportunity to address the need for biodiversity, tree cover and the natural flow to waterways in both rural and urban areas.

Prioritising mandated measurement of carbon in new and existing buildings and greater support for low carbon and circular economy materials would reduce emissions and support a culture of making housing to last.

## **Policy Position 5: Incentivise design and construction innovation**

Developing innovative approaches to housing requires regulatory frameworks to be updated to remove barriers to the use of modern methods of construction (MMC) such as pre-fabrication and mass timber construction. Government has a critical role to play in underpinning industry investment, through policy and incentives and applying MMC at scale within government housing pipelines.

# Recommendations

## Policy Position 1: Recognise the value of good design in creating livable communities.

**R1.1:** Take a *precinct first* approach, establishing clear design frameworks for density, built form, housing types and provision of amenity.

**R1.2:** Implement appropriate density targets to expand supply of diverse housing types to support the livability and productivity of our communities.

**R1.3:** Require professionally qualified and experienced design teams for apartments above three levels with the required urban design, architectural, landscape and technical engineering skills.

**R1.4:** Facilitate industry knowledge sharing, including from Traditional Custodians and contemporary research.

## Policy Position 2: Build community support for density through public space and precinct benefits.

**R2.1:** Better define policy expectations for urban design quality and streetscape activation across metro and regional centres e.g.: *Central Melbourne Design Guide*.

**R2.2:** Prioritise investment in gaps in public space and social infrastructure, and scale appropriately, to facilitate housing densification.

**R2.3:** Engage proactively with communities to understand local needs and develop design frameworks for future densification.

**R2.4:** Implement and enforce tree canopy and biodiversity targets for areas of urban renewal.

**R2.5:** Promote well designed, built projects and precincts of varying density within policy documents, and through community and industry engagement, to demonstrate the benefits of *density done well*.

## Policy Position 3: Expand supply through a streamlined, design-led approach to housing policy and planning reform

**R3.1:** Implement recommendations from Infrastructure Victoria, *Our Home Choices* report, to provide deemed to comply fast track approval pathways for townhouses and apartments up to three levels that meet minimum design standards.

**R3.2:** Draw on architectural and urban design experts when developing *deemed to comply* design and planning controls.

**R3.3:** Expand use of *Design Review Panels* for strategic assessment of apartments above three levels to support better decisions within fast track approval processes.

**R3.4:** Unlock commercial zones to allow for increased key-worker build to rent housing.

**R3.5:** Implement recommendations from Infrastructure Victoria, *Our Home Choices* report, to increase housing diversity within established suburbs by developing a dual occupancy and townhouse code, reforming car parking provisions and expand use of the residential growth zone.

**R3.6:** Identify well serviced locations where supply will address specific housing needs such as affordable student or short term accommodation.

**R3.7:** Regularly review outcomes of policy reforms of completed projects for lessons learned.



#### **Policy Position 4: Place sustainable design and resilience at the core of housing delivery.**

**R4.1:** Carefully consider where housing is located relative to climate risks, and implement policy through Plan Victoria to assist councils in appropriate zoning of land.

**R4.2:** Continue the progressive increase of the environmental performance requirements of new residential buildings under NCC.

**R4.3:** Require measurement of embodied carbon in demolition permits, new and renovated buildings, with the eventual requirement to decrease the carbon footprints of all projects, in order to help meet Victoria's emission reduction commitments.

**R4.4:** Incentivise and support industry and training to increase the use of low carbon and circular economy materials.

#### **Policy Position 5: Incentivise design and construction innovation**

**R5.1:** Reform building regulations that act as barriers to the application and certification of low-carbon and emerging technologies such as mass timber construction.

**R5.2:** Define *housing innovation* within the planning scheme to include financial, design and construction innovation.

**R5.3:** Incentivise projects demonstrating *housing innovation* by making them eligible for facilitated planning pathways.

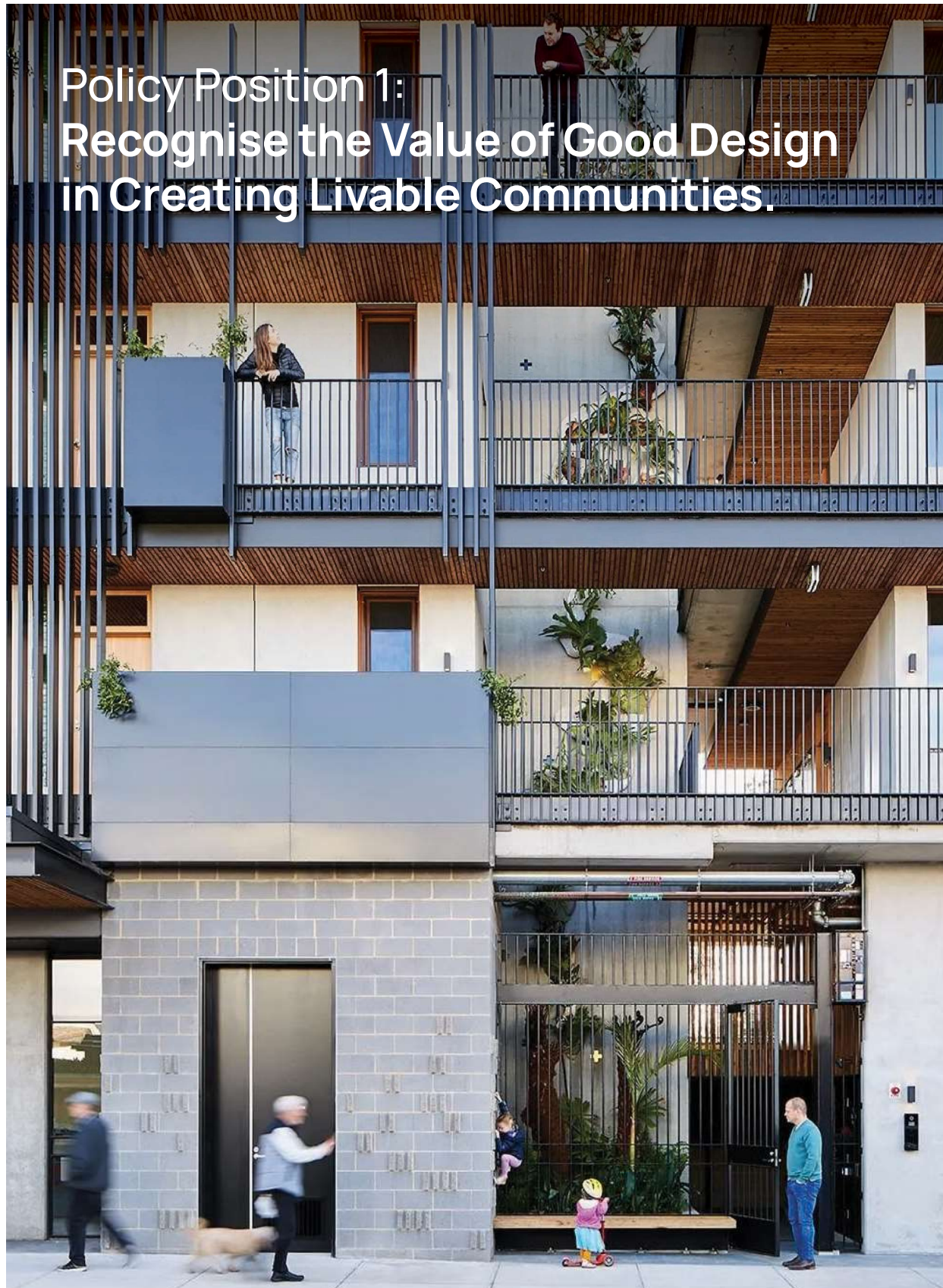
**R5.4:** Increase flexibility within government procurement processes to allow for early/ pre-tender engagement with pre-fabrication contractors.

**R5.5:** Include targets within the government delivery pipeline for modular & prefabricated housing to underpin industry development.

#### **Further recommendations to increase industry and government productivity:**

- Tailor procurement requirements for government housing projects to project scale
- Adopt pre-qualification panels for consultants and contractors to reduce complex and protracted tender processes for individual projects
- Provide greater transparency around government delivery programs
- Reduce layered bureaucracy and compliance and reporting requirements within government project design processes
- Train, hire and support new building surveyors who are in critical shortage
- Prioritise the reform around government consultancy agreements.

# Policy Position 1: Recognise the Value of Good Design in Creating Livable Communities.





## **What are the fundamentals of successful higher density housing design?**

How density is applied within the urban context is fundamental to the making of our cities, towns and suburbs.

Careful consideration of the appropriate typology sets up the urban experience and the likely household types that will live there.

More diverse application of housing types and tenure is essential to provide affordable choices and meet the needs of individuals through different stages of life.

Understanding and acknowledging the wider context is vital to ensuring the appropriate density in the appropriate places. This becomes even more important as the density increases.

The ground floor of an apartment building should not be an afterthought, or simply a series of grilles hiding carparking, electrical and mechanical services. It should give back to the street and help activate the precinct in which it sits.

New apartment buildings can add life and vitality to a district, but they need to carefully consider what they are giving back, particularly at street level. They should contribute positively to the experience of the pedestrian through the scaling and selection of detail and texture.

Importantly, new dense housing should enable and foster the development of community, not erode it.

The interaction of these design considerations are complex and require suitably qualified design teams with the urban design, architectural, landscape and technical engineering skills needed to achieve good quality outcomes.

## How can this be achieved?



### Precinct Level Design Thinking

Consideration of the wider precinct is important, by asking:

- Is there access to public transport, bike paths, social amenities, retail, council and health services, open space?
- What are the distances between buildings and equitable development requirements?
- How can the new building contribute positively to the skyline?
- Can it present an active face to the street?
- Can it include landscape and urban greening?

Four isometric diagrams illustrating different housing typologies. Each diagram shows a 3D perspective of a building or group of buildings, with a color-coded base indicating the density or type of housing. The diagrams are arranged in a 2x2 grid.

**Town/City centre**  
A typical dense city typology with over 120 dwellings per hectare (dph) and a strong mix of uses.

**Urban neighbourhood**  
Urban neighbourhoods with net housing densities of 60-120 dph and a mix of uses.

**Suburbs**  
Neighbourhoods with net residential densities of 40-60 dph. A mix of short terraces and semi-detached units.

**Outer suburbs**  
Lower density suburbs with net densities of 20-40 dph, few apartments and less of a mix of uses.

The National Model Design Code sets out clear design parameters to help local authorities and communities decide what good quality design looks like in their area. The NMDC forms part of the UK Government's planning practice guidance and expands on the 10 characteristics of good design. Ministry of Housing, Communities and Local Government, UK.

### Appropriate Application of Building Types and Density

Developing or selecting a housing typology (such as detached house, duplex, townhouse, courtyard apartments or towers) is a critical design decision and significantly influences the quality of our streets and in turn our neighbourhoods and cities as this:

- Configures the dwelling & therefore household types.
- Establishes a pattern for subdivision and density.
- Informs how dwellings relate to the street and neighbours.
- Relates public, private and common space.





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## Designing for the Residents

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Apartments need to be designed for the people who will be living in them and should meet the test "Would I want to live here?" Liveable housing includes:

- Care in the design of the building entry and experience of coming home.
- Good indoor air quality and ventilation.
- Optimized access to natural light whatever way the apartments are facing.
- Good thermal performance to ensure low running costs.
- Robust materials to ensure low maintenance costs but which provide warmth and sense of home.
- Adequate storage and room dimensions to sensibly allow furniture to be set out and rooms to be used efficiently.
- Purposeful and well defined public, private and common spaces, for social opportunity and private retreat.
- Homes that are designed with equitable access for all stages of life and all people.

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## Public Space and Streetscape Activation

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How an apartment building lands in its context is important for the making of our streets and neighbourhoods. In urban contexts, this should include:

- Detail and texture of the ground floor scaled to the pedestrian to make a positive impact to the experience and activity at street level.
- Careful integration of carparking and building services (guided by well resolved urban design policy.)
- Opportunities for mixed uses at ground level that support the resident communities.
- Integration of planting and greenery within the urban environment.

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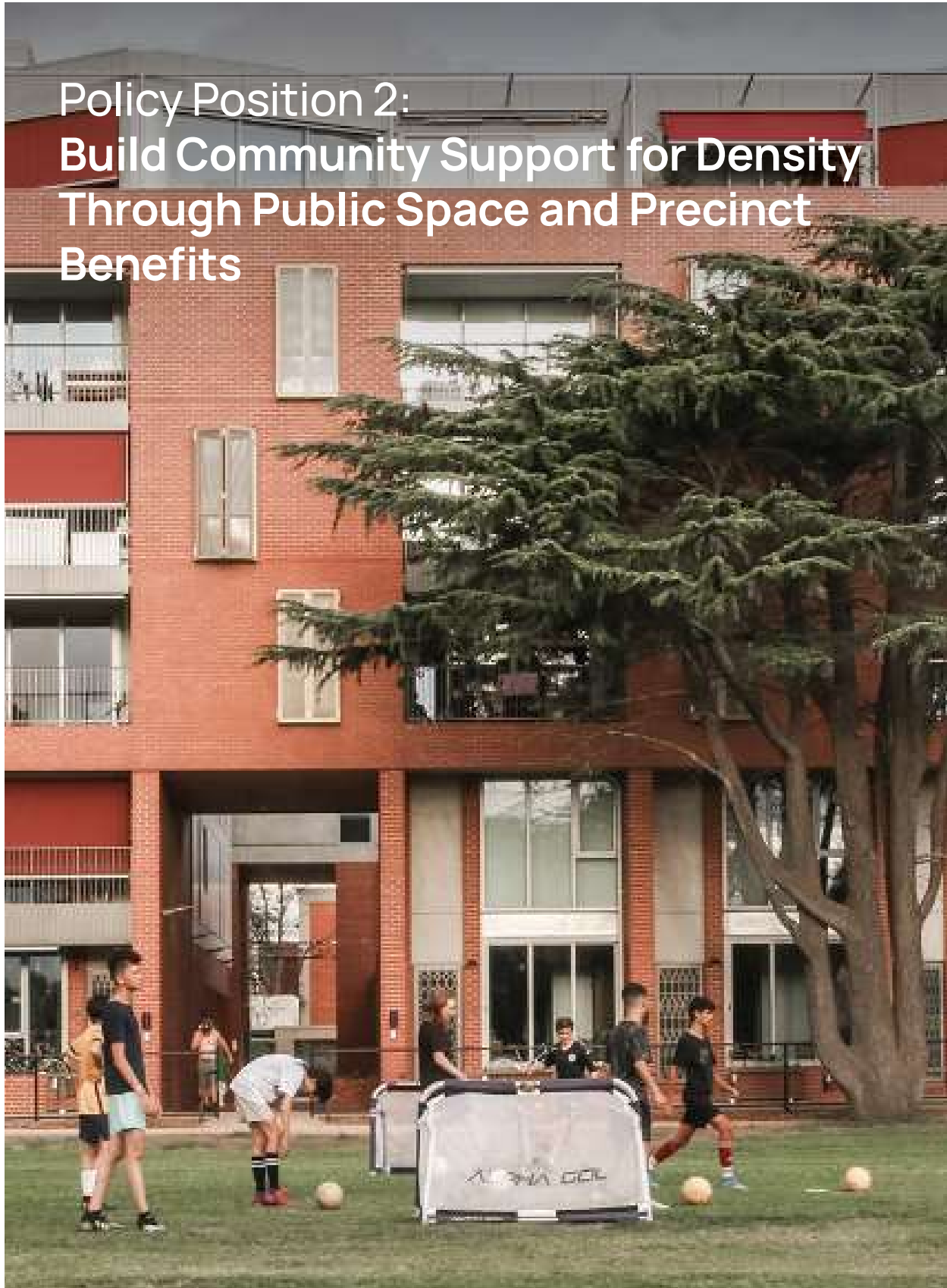
## Building Communities

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Forming good communities within high density living becomes more challenging as projects increase in scale. This can be addressed by:

- Breaking development into smaller community sizes e.g. different entries, varied building expressions, creating a series of different communal areas that identify with smaller cohorts within a large building.
- Providing spaces that allow interaction between neighbours e.g. rooftop gardens, open walkways, landscaped entries, shared laundries, bicycle facilities, workshops or common rooms.
- Nuanced management of privacy and the relationship between dwellings which balances social interaction, security and access to outlook and amenity.

## Policy Position 2: Build Community Support for Density Through Public Space and Precinct Benefits







Cities such as Singapore and Vienna have prioritized extensive provision of public green space in its program of social and affordable housing

***“The goal of Vienna’s housing policy is to combine affordable housing, sustainability and public infrastructural development to achieve the highest possible quality of life.”***

Vienna City Councillor for Housing,  
Kathrin Gaál

A focus on improvements to public space and the precinctual benefits brought about by well planned, well designed increased density, will help to convince the public that more housing in their neighbourhood is a good thing.

This cannot be fully implemented without a focus on location, community and local benefits.

Ad-hoc and inappropriate development, built in inappropriate settings, is contributing to community dissatisfaction with urban living. A design-led approach would instead focus on developing communities, not simply housing units.

As density increases, dwellings become more complex and have a greater impact on the public realm. An apartment building that has zero lot setback, by its very nature, becomes a part of the streetscape. It needs to be considered and designed in such a way that it gives back to its precinct.

The denser the housing, the greater the need for expenditure on, and consideration of the quality of public spaces. It is vital that government recognises and embeds this in policy and requirements on councils and developers.

While we applaud the ambition of increased housing choice in activity centres, the development economics for investment at scale in the northern, southern, and outer eastern areas require government support. The underlying development economics in Camberwell, Melbourne, and Essendon do not exist in Broadmeadows or Epping, and Governments will need to consider measures to fund the gap.

### Policy Position 3: Expand supply through a streamlined, design-led approach to housing policy and planning reform







This example of robust structure planning including a commitment to affordable housing, allows government and private investment to understand priorities, and provides certainty, with detailed guidance around mix of uses and built form.

Strategic design frameworks are needed at a precinct level to set the vision for the place and guide co-ordinated transformation of our neighbourhoods.

Robust structure planning is needed to ensure an approach that allows Government and private investment to understand priorities, areas for open space and community facilities, areas for substantial change, and preferred land use mixes, providing opportunity and certainty around development. A well considered structure plan provides a road map for the development of a suburb and a clear vision of the future for its residents.

This integrated approach should be replicated across the suburbs, towns and regional centres identified by the Government and integrated in Plan Victoria.

Good decision making while still achieving fast track outcomes, requires qualified design teams, particularly for more complex apartment projects.

Accelerated implementation also relies on clear guidance through urban design policies, which can set expectations around the quality of built form and urban design.

Currently Commercial 2 Zone prohibits the development of housing. Integrating affordable key-worker BtR into commercial zone C2Z would permit workers to affordably live near their workplaces, reducing commute times and infrastructure needs. To maintain the commercial character of the zone, any housing should be limited to a set percentage of the zone, and housing be limited to those who work in or close to the zone.

Mixed-use commercial zones that integrate retail, office, and hospitality (C3Z) could be opened up to include more housing. Currently, these zones must favour commercial activity. Easing these restrictions will allow people to live close to their offices, local shops and restaurants. This will improve community integration as well as address the housing shortage.



## How can this be achieved?



### Design Review

One of the most effective tools for ensuring design of larger projects is appropriate, is using a Design Review Panel (DRP), made up of design experts such as urban designers, architects, landscape designers, planners, and others. Their primary functions are to:

- Provide independent expert design advice on applications.
- Assist in improving the design quality.

While the use of a DRP may, on the surface, seem to be an additional time and cost burden, in Victoria, the typical review lasts under two hours. Using a DRP can reduce a project's time and total cost by highlighting early, poor or inappropriate design and material uses. Identifying and correcting potential design defects early can minimise the need for more expensive changes and design amendments.



### Streamlined Applications where Minimum Design Requirements are Met

Where a housing project meets the agreed minimum housing design standards (ResCode) or an apartment project both meets the minimum apartment design standards (Clause 58 BADS) and is reviewed and supported by a DRP, the project should be fast tracked for approval.

It is only in circumstances that do not meet these requirements, that there should be any additional review and approval process, whether that be by a local area government or the Minister. Providing fast track approval where good design and urban design principles are met, can encourage developers to prioritise better design and lead to improved housing delivered more quickly.



### Demonstration of Viable Typologies to Complement *Clause 53.24 Future Homes template designs*

The Institute supports the initiative to demonstrate examples of good design as set out in the *Clause 53.24 Future Homes template designs*. However, the slow pace of actual Future Homes builds, together with the small number of available options, demonstrate a possible misalignment between underlying development economics and diversity of need.

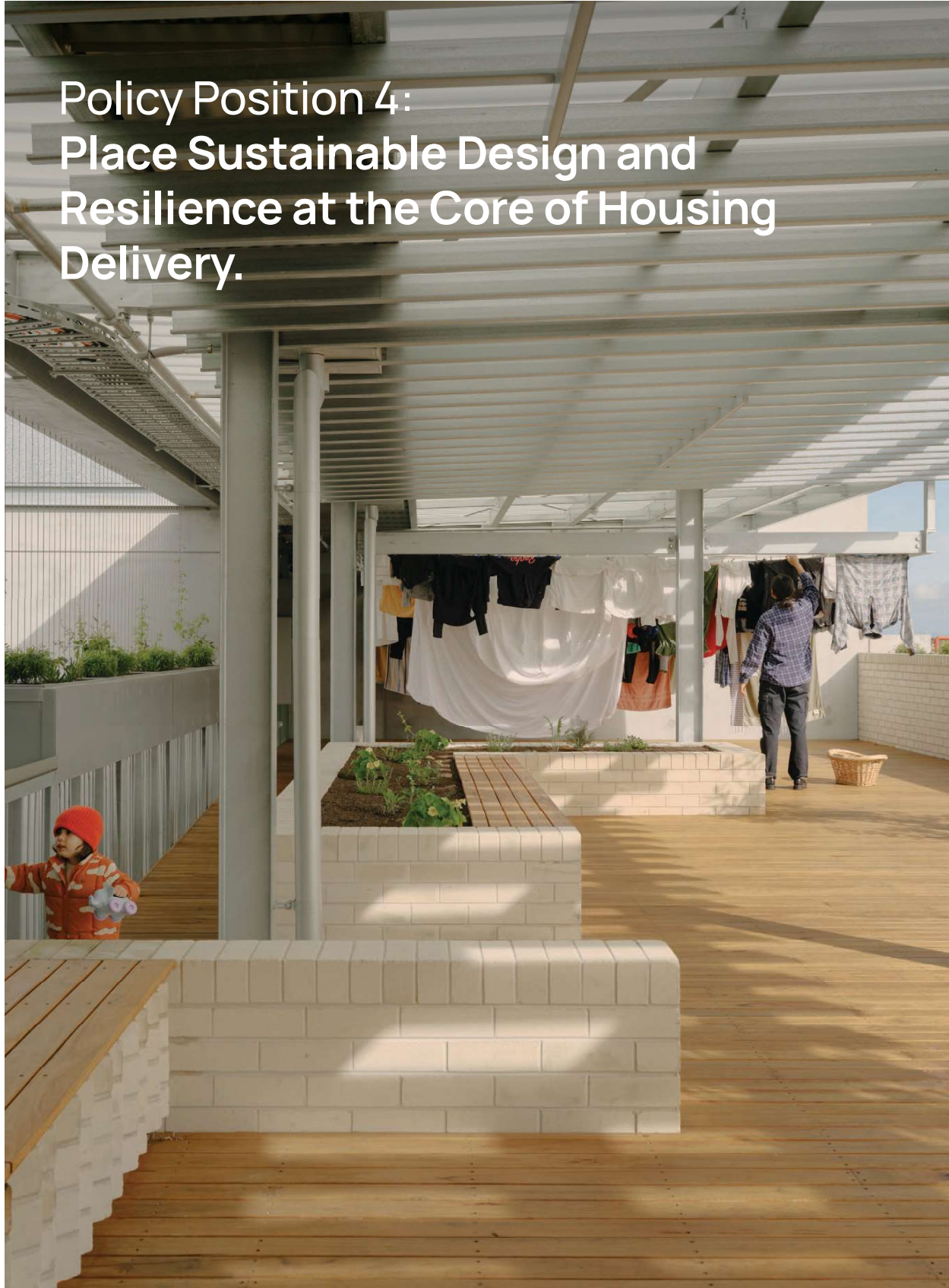
We commend the proposed development of additional exemplars and robust architectural review and testing of ResCode updates.

This can be reinforced by publicising built demonstrations of good design and fit from recent architecture and local government design awards through policy documents, interactive maps and industry training.

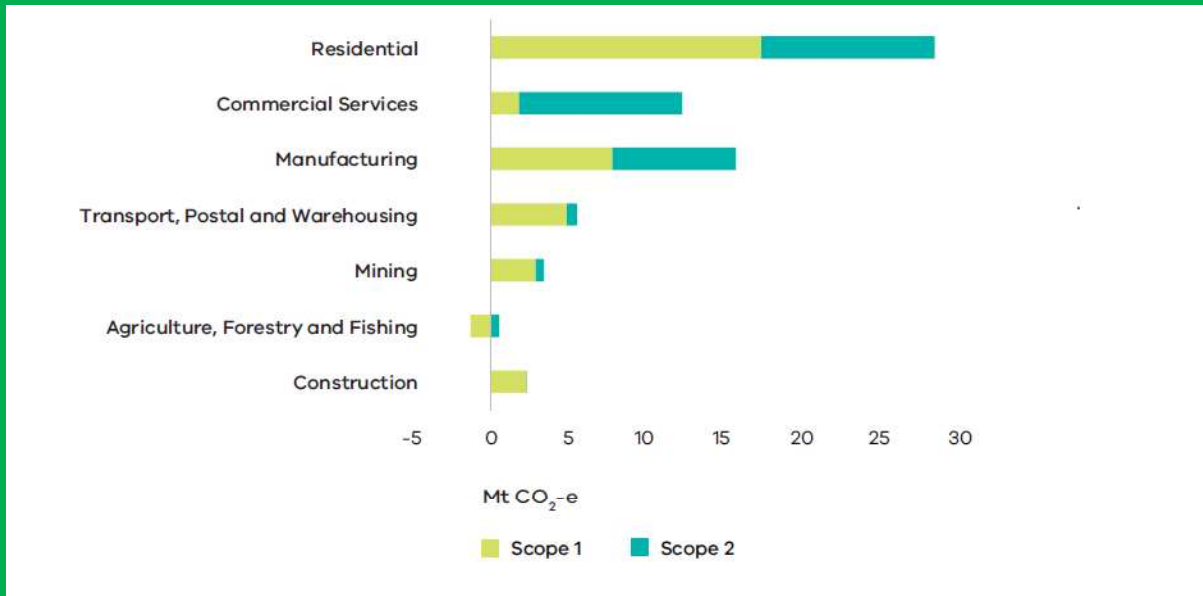
**“Our housing map showcases over 100 examples of well-designed low- and mid-rise housing across NSW. See how the featured houses contribute positively to their area and provide inspiration for future housing.”**

NSW Government Planning Good Design for Housing Interactive Map

## Policy Position 4: Place Sustainable Design and Resilience at the Core of Housing Delivery.







**Households are responsible for most of Victoria's greenhouse gas emissions.**

<https://www.climatechange.vic.gov.au/greenhouse-gas-emissions>

Poor-quality housing has been linked to numerous health conditions including poor mental health. Measures to continue to improve existing and proposed building performance, particularly for social and low income housing, will be critical to mitigate the affects of climate change and more extreme weather events.

A report by the University of Sydney and the NSW Department of Planning, Industry and Environment found:

*In Australia, studies of projected climate change impacts show that heat risk also coincides with spatial patterns of relative socioeconomic disadvantage, with lower-cost housing often located in areas more exposed to extreme weather events.<sup>1</sup>*

The built environment in both embedded and operational carbon is also a major driver of emissions. According to Australian Sustainable Built Environment Council (ASBEC):

*Buildings account for over 50% of electricity use in Australia and almost a quarter of its emissions. The built environment presents some of the lowest cost – and largely untapped – emissions reduction opportunities.<sup>2</sup>*

In Victoria, household impacts are now the greatest contributor to greenhouse gas emissions and further addressing building performance, operational and embodied carbon in housing delivery will be essential to meeting the State's carbon reduction targets, moving towards net zero by 2045.

1. Climate change, housing, and health: A scoping study on intersections between vulnerability, housing tenure, and potential adaptation responses The University of Sydney and the NSW Department of Planning, Industry and Environment <https://www.sydney.edu.au/content/dam/corporate/documents/faculty-of-medicine-and-health/research/centres-institutes-groups/hhsi/final-report--climate-change-housing-and-health.pdf>

2. [https://www.asbec.asn.au/211025-asbec-five-ways-cop26-advocacy-piece\\_final-1/](https://www.asbec.asn.au/211025-asbec-five-ways-cop26-advocacy-piece_final-1/)

## How can this be achieved?

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### A Design-Led Approach to Climate Response is Required at every Scale.

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Improved precinct and site planning to properly orientate housing and allow for sufficient green space is a fundamental step in improving individual building performance at a detail design level.

Siting of lots, wall and roof systems, shading, passive ventilation, integration with landscape and selection of building materials will all impact the operational emissions (and occupants' costs) for heating and cooling.

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### Addressing Carbon and Greenhouse Emissions in New Housing.

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One of the most effective method of reducing embodied carbon in a building is to reduce its size and increase efficiency and function. Good design can deliver beautiful, functional, accessible homes at density and scale, and within the tight cost constraints of the current development market. Exemplar projects can demonstrate prototypes and broader housing options for the wider commercial market.

Reductions in embodied carbon are also achieved by adopting low and eventually zero-carbon building products. Using materials such as lower embodied carbon steel and cement and alternate materials that act as a "carbon-sink", such as timber, are pathways to reducing the embodied carbon in new buildings.

These alternatives must be supported with pragmatic compliance requirements and incentives to offset the moderate cost premiums that come with these materials in the sensitive economic environment of construction.



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### Adaptive Re-use and Longevity

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It must be recognised that there is a large amount of embedded carbon in our existing housing stock. Embedded carbon needs to be factored into the decision-making process when assessing options to demolish or adapt and renovate existing buildings.

Alternatives to demolition must be considered, such as how existing housing stock can be elevated in terms of its thermal efficiency, replacing gas with electric appliances and changing internal layouts to maximise space and modern convenience.

Adaptive re-use can often result in best practice environmental performance for less cost and time and significantly less carbon than a new build.

Flexible application of design standards (such as Clause 58) is required when assessing adaptive reuse projects (such as converting commercial to residential use) acknowledging non-typical solutions may be required when retrofitting existing buildings.

Finally, in considering embodied carbon, it is also important that new buildings are designed with the need for future updates and renovation in mind. Designing with the expectation of renovation in the future requires careful consideration about structural and servicing elements and materials used.



## Reducing Operational Energy

While the building process is responsible for around 13% of the carbon emissions in the building sector, a more significant 27% comes from the building's operational emissions, principally active heating and cooling.

Design led solutions minimise active heating and cooling through passive design measures such as proper orientation, integration of landscape to cool our streets and cities and focus on building envelope performance.

The Institute welcomes the Government's policies to remove gas from future housing and support for the use of home solar systems. Induction cooktops and other electric appliances such as heat pumps and reverse-cycle air conditioning paired with home solar can significantly reduce a home's operational emissions.



## Housing to Mitigate Climate Risks

We are seeing increased floods, particularly in urban environments that were designed for less extreme weather events. Hard urban spaces with limited trees and green spaces are prone to flooding and unmanageable heat island effects. This is often exacerbated by streetscapes that do not account for the natural flow of water or allow for natural catchment.

Knowledge should be welcomed, established and shared including from Traditional Custodians and contemporary research, including mapping of flood and bush-fire threats.

Housing and public space design must account for all these issues which will be supported by:

- Resisting land release in areas sensitive to natural weather events and continuing to review planning scheme reform to allow for medium density alternatives in middle and outer ring locations.
- Promote prototype projects to provide comfort for these higher density alternatives.
- Develop more up-to-date maps of fire, flooding and urban heat risks.
- Ensure sufficient green spaces to improve amenity, natural cooling and to minimise storm water collection & run off.



## Policy Position 5: Incentivise Design and Construction Innovation.





**St Albans Housing** NMBW Architecture Studio and Monash Art, Design and Architecture used an Australian Research Council Linkage grant to rethink the design of accessible, affordable housing and create a new model for densification of a suburban block in outer Melbourne. Photographer: Peter Bennetts

However, innovation often needs support in the initial phase to move from idea to commercialisation and then broad adoption. Building innovation involves taking on risk above the level of a regular project. For example:

- Developing a new housing typology carries a sales risk as the market is unknown.
- Trialling a new construction system not approved by the Building Code means there is a disincentive in the form of additional compliance burdens required to demonstrate the technology is compliant, and conversely, there is an incentive to stick with the “tried and tested” methods.
- The high costs of setting up a prefabrication process requires a commitment that there will be sufficient volume to underpin this massive upfront and risky investment.

In the 21st century, it is broadly accepted that innovation and technological advancement is positive, bringing enormous benefits to our communities. However, within the delivery of housing construction, little has changed technologically in many decades.

It is encouraging to see a shift both from the construction sector and government policy, that sees potential for innovation to ensure we can build better, faster and more cost-effectively, with technical advancement in materials and assembly such as:

- Modular prefabrication (whether the whole or parts of a building, structures and internal fit and finish).
- Low carbon steel, concrete or alternatives.
- Cross-Laminate Timber.
- 3D printing and use of robotics.

Similarly innovation is growing in financing and partnerships such as co-operatives, institutional scale Build to Rent (BtR) and other novel (in Australia) ownership models.



**Assemble Housing- Fieldwork- 38 Albermarle St Kensington** Rent to Buy financing model as a prototype for further development of affordable build to rent. Photographer: Tom Ross

## How can this be achieved?



### Facilitated Planning Pathways

Consider projects pursuing Housing Innovation eligible for a “facilitated planning pathway” in the same way as affordable housing projects, allowing them to gain planning approval through the DFP program rather than through the council and the removal of third-party objector rights. This should apply without meeting the other triggers such as affordability or scale (>\$50M construction value), as innovation tends to occur in smaller projects and have additional costs associated with their higher risk.



### An industry plan for research and development for low-carbon building materials

There is a need to invest in the development of low-carbon and eventually zero or negative-carbon building products. It will take time for the commercialisation of many of these products and time for the sector to build the necessary infrastructure and capacity.



This zero-energy, prefab apartment design by David Barr Architects won the Western Australia medium-density housing competition *Step-Up*





## Reform Government Procurement and Pre-Tender Probity Requirements

Account for design innovation by enabling government procurement such as by Homes Victoria, the *Victorian School Building Authority* and *Development Victoria* to engage with prefabrication contractors early in the project cycle. Currently the process of engaging with a contractor only at the post design tender phase means that projects will not be designed to be built using prefabrication.



## Targets for Modular Housing within Government Housing Pipeline

Consider a requirement government housing targets, for a proportion of Homes Victoria's new dwellings (e.g. 10-15%), to be constructed using modular prefabrication.

Research and investment in new construction processes was a feature of post war large scale housing delivery which accelerated the development of concrete prefabrication.

These initiatives could form part of a broader construction sector innovation pathway to provide incentives for the development of such technologies in Victoria.

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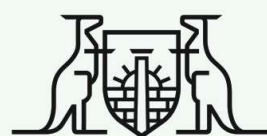
Cover	Nightingale Village Brunswick. Image courtesy of Hacer.
Page 2	Aboriginal Housing Victoria by Breathe Architecture. Artwork by Tahnee Edwards. Photographer: Andrew Wuttke
Page 4	<ol style="list-style-type: none"><li>1. McIntyre Drive Social Housing by MGS Architecture. Photographer: Jason South</li><li>2. Escala by Six Degrees. Photographer: Alex Reinders</li><li>3. Tarakan Street Social Affordable Housing by NH Architecture, Bird de la Coeur Architects and Openwork. Photographer: Diana Snape</li><li>4. CRT+YRD, Nightingale Village Brunswick by Hayball. Photographer: Gosia Sum</li><li>5. Treetops by MGS Architecture. Photographer: Andrew Lloyd- Leith Park</li><li>6. Clyde Street Mews by Six Degrees. Photographer: Alice Hutchison</li></ol>
Page 6	122 Roseneath St, Clifton Hill by Fieldwork. Photographer: Tom Ross
Page 10	Nightingale 2.0 by Six Degrees. Photographer: Tess Kelly
Page 12	Aerial photo of Burwood Brickworks from the Frasers Property Burwood Brickworks Homeowner's Manual.
Page 13	Ferrars York by Six Degrees. Photographer: Dan Preston
Page 14	Balfe Park Lane, Nicholson Street by KTA. Photographer: Leo Showell
Page 16	Nightingale Ballarat by Breathe. Photographer: Derek Swalwell
Page 18	<ol style="list-style-type: none"><li>1. OVGA Design Review Panel. Photo courtesy of the Office of Victorian Government Architect</li><li>2. Davison Collaborative by Archier. Photographer: Sharyn Cairns</li></ol>
Page 19	Women's Property Initiative Older Women's Housing Project by Studio Bright. Photographer: Rory Gardiner
Page 20	CRT+YRD, Nightingale Village Brunswick by Hayball. Photographer: Tom Ross
Page 22	Wilam Ngarrang Retrofit by Kennedy Nolan. Photographer: Eve Wilson
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Page 27	<ol style="list-style-type: none"><li>1. Advanced Timber Composite Guide by ASH</li><li>2. Holmesglen Prefabrication Facility. Image from the Housing Commission of Victoria</li></ol>

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The Institute would like to thank the following members for their contribution to the development of this policy paper:

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