

# Geelong Microvillage Project:

Viability of Affordable  
Compact Homes for People  
Seeking Sustainable and  
Socially Connected Lives



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We wish to acknowledge the Wadawurrung people of the Kulin nations, the traditional owners of the land on which this research was conducted.

We pay our respects to their Country, and to their Elders: past, present, and future.

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Cover image: Prefab 21, winning student design project by Andrew Galea

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## Acknowledgements

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First and foremost, the research team wishes to thank all the participants who contributed to the knowledge created during this study. We acknowledge their work and thank them all for their invaluable insights, expertise, and passion for change.

Through regular meetings with the project team, a Taskforce of community stakeholders provided crucial direction and advice to guide this research project. Led by two members of Geelong Sustainability, Vicki Perrett (President) and Peter Clapinski, the Microvillage Geelong Taskforce contributed expertise, experience, and insights that were integral to the research.

We would also like to acknowledge the support of the two organisations that provided funds for this research via competitive grants programs: the Geelong Community Foundation, and the Lord Mayor's Charitable Foundation.



# EXECUTIVE SUMMARY

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## Project Overview

The Microvillage Project explores the viability of increasing the supply of affordable, small houses. It focuses on people with limited funds who want to live in homes that minimise consumption of building materials, land, and energy, and which integrate and link with the community in meaningful ways.

Our study context is the growing public interest in “tiny homes”, with increased marketing, media coverage, and availability of this dwelling type. There has been a recent upswell in community groups and specialist businesses based around tiny homes, along with magazines, documentary films, and even a reality TV series dedicated to the topic. This publicity has prompted questions about whether tiny houses can offer a viable affordable housing model. The Microvillage Project seeks to address this question by investigating the viability of tiny dwellings in relation to four key issues:

1. Building and design<sup>1</sup>
2. Regulatory planning barriers
3. Finance, and
4. Community integration.

The project seeks to construct an evidence base to inform the possible development of small home models. It comes at a time when both local councils and Victoria’s State Government are open to exploring innovative solutions to increase the supply of affordable housing, and a range of passionate stakeholders are eager to build.

This research project followed two lines of investigation. While separately funded, these two enquiries ran in parallel, with overlapping goals and outcomes:

- **Grey Nesters: Exploring the Viability of Affordable Small Houses for Those with Limited Funds and a Desire for Modestly Sized Homes.** Funded by the Lord Mayor’s Charitable Foundation, this research focused on the planning regulatory framework, financial modelling, viability, and design options for sustainability and ageing-in place.
- **Homes for Grey Nesters: Social Integration of a Microvillage of Small Houses Supporting Community Wellbeing in Geelong.** Funded by the Geelong Community Foundation, this research looked at appropriate and effective ways to enable a microvillage to integrate and thrive within an existing community.

Our research found that it is difficult to untangle the range of issues and possible solutions associated with the design, building, financing, and community integration of innovative housing models. Thus, this report presents the combined findings from both enquiries.

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<sup>1</sup> Including universal design (for ageing in place) and environmental performance

For the duration of the project, the HOME Research Hub collaborated with the Microvillage Geelong Taskforce, a group of like-minded individuals supported by Geelong Sustainability, who provided insight and guidance throughout the process.

## Scope and Terminology

In this study we focus on Tiny Homes on Wheels (THOWs) and Tiny Homes on Foundations (THOFs). We consider housing models ranging from 20 sqm for THOWs, up to 48sqm for THOFs. In this report we use the term “small homes” to describe this full range of options (that is, from 20sqm to 48sqm). As the study progressed via stakeholder input, our focus shifted to a preferred model: clusters of stand-alone, permanent homes (THOFs) of 40sqm–48sqm. This latter size is the smallest area for a fixed foundation home designed according to universal design (UD) principles – that is, usable by all people, to the greatest extent possible, without the need for adaptation or specialised design. For this preferred size range of THOFs (40sqm to 48sqm) we use the more accurate term “compact homes”. As a cluster of compact homes, the proposed microvillage falls under a housing type commonly referred to as Tiny Home Communities (THCs).

## Methodology

At the heart of this research is a fundamental challenge: people’s housing needs are diverse, complex, and individual. This makes it difficult to address the lack of affordable housing models in a holistic way.

To address this complexity, we used a mixed methodology that prioritised meaningful community engagement with key informants in Victoria, particularly Geelong, to understand the issues they face. The project team conducted a series of focus groups and interviews with community stakeholders and experts in the fields of planning, finance, and design, along with interviews and workshops with potential residents. Our aim was to seed a “collective impact” approach (i.e., where stakeholders enable a shared vision to be developed and then addressed through collaborative strategies and approaches) for implementing any Recommendations arising from this study. To this end, we used a systems thinking tool called STICKE to run workshops with participants. Designed by Deakin University researchers in collaboration with the World Health Organisation, [the Systems Thinking in Community Knowledge Exchange \(STICKE\)](#) app facilitates community knowledge exchange to foster shared understandings of complex problems.

Using STICKE enabled us to engage a wide range of stakeholders across the housing sector and offered three key advantages: (1) directly sharing knowledge and experience between people with and without precarious housing security; (2) allowing diverse stakeholders to generate a mutually agreed plan of action; and (3) maximising the sustainability of change by providing opportunities for positive attitude shift towards innovative housing models that challenge sector norms.

Before commencing this primary data collection, we conducted an evidence review of the existing research literature pertaining to tiny homes (see Part 1 of this report). To generate our Recommendations, we synthesised the findings from our primary data collection (community engagement research) and our review of the academic research literature. This was a six-stage process:

**Stage 1:** Review the research on tiny homes. Our evidence review uncovered a limited pool of academic literature, with much of the recent work focused on lack of recognition of THOWs in

local government planning schemes. Most research did not include formal empirical evaluation, so it largely lacks critical appraisal of the viability of tiny homes beyond meeting a niche demand. There are some research gaps, particularly around lack of viable finance, hostility from neighbouring communities, environmental performance, reducing construction costs, and poor adaptability and accessibility for ageing in place.

**Stage 2:** Consult with community members and other stakeholders. Our focus groups and interviews with project Taskforce members and potential residents revealed two preferred models of tiny/compact home development (see Key Findings, below).

**Stage 3:** From two STICKE workshops, participants used systems thinking to generate a consolidated list of 21 actions to improve the supply of compact, affordable housing in the Geelong region.

**Stage 4:** In collaboration with the research team, workshop participants then ranked these 21 actions according to their predicted impact and feasibility. As a result, 12 were identified as “priority actions” (see [Table 4.17](#)).

**Stage 5:** These 12 priority actions were analysed using Meadows’ (1999) “leverage points” framework for systems analysis to establish the hierarchy and relationships between them.

**Stage 6:** Finally, the viability of the 12 priority actions was assessed by qualifying them against the findings of research Stages 1 and 2 (above).

## Key Findings

Community stakeholders identified two preferred models for small-home developments. In both models, the notion of “tiny homes” was rejected as a long-term living option in favour of permanent “compact homes” on foundations of 40sqm to 48sqm. There was also a preference for a microvillage (i.e., a form of intentional community), made up of 8–30 compact homes, which fosters community integration via careful consideration for people (especially diversity of residents), place (with communal spaces for activities and shared resources), and processes that instil a sense of community and ensure the homes meet diverse needs.

- The clearly preferred development model was co-ownership with a community housing provider (CHP), which removes some of the financial and managerial burdens of ownership. The chief issue here is finding a community housing provider that is willing and able to co-fund a small microvillage development, especially in light of issues around this model’s financial feasibility, as highlighted in our financial analysis.
- The second preference was a residential park “ownership” model, whereby microvillage residents do not own the land. This model requires either a change in State law, similar to provisions in Queensland, or a local government willing to provide land with a 99-year lease.

The synthesis and validation process outlined above (under Methodology) informed five Recommendations to increase the supply of affordable, sustainable compact homes that foster residents’ sense of community and are well connected to local neighbourhoods.

Below we briefly summarise the key findings that informed our Recommendations. Findings are grouped under the four principal areas of enquiry: building and design, planning, financing, and community integration. Our study findings are synthesised in Part 5.2 of this report.

## Building and Design

The narratives of “less is more” and “debt-free living” promoted by tiny house advocates contradict a dominant principle that underpins Australian housing norms: the need to prioritise investment return. Our workshop participants saw this opposition in both positive and negative terms: while tiny and compact homes could disrupt a market norm that equates size with quality, this disruptive potential may elicit resistance from the construction and housing finance sectors.

Participants from the financial sector suggested this resistance could be partially alleviated by shifting the common perception that compact homes are of lower quality than larger homes. The research literature also identifies significant cost barriers to improving the viability of financing small homes. Exemplar projects can help counter the widespread belief that tiny and compact homes have poor quality design and construction.

There is a need for further research and design work in three main areas: (1) explore and evaluate the design characteristics that help achieve a sense of community for villages of compact homes; (2) develop co-design processes that meet individual and community needs; and (3) address conspicuous knowledge gaps around tiny and compact houses, including: a rigorous empirical assessment of their environmental footprint; increase energy efficiency; construction innovation to improve Bushfire Attack Level (BAL); and reduce costs and improve performance via prefabrication and mass production.

Looking at comparative costs, a professionally built Tiny House on Wheels (THOW) can currently cost three times more per square metre than a standard house. Moreover, our financial modelling demonstrates that over 20 years, a 6-Star rated Tiny House on Foundations (THOF) measuring 40sqm or 48sqm currently costs over 50 percent more than owning a one-bedroom apartment in Geelong. This is principally due to high construction and financing costs. Owning a THOF, however, compares favourably to renting (see Tables 1.2, 1.3 and 1.4).

## Planning

In view of the often-negative local responses to proposals for Tiny Home Communities (THCs), and the current lack of definitions around dwelling types, there is a need to revisit and reform planning frameworks. Planning nomenclature should be amended to include definitions of “tiny”, “small”, or “compact homes”, and “microvillages” or “THCs” made up of such homes. There is also a need to ease the prescriptive requirements around car parking, setbacks, and open space, and reconsider the scope of third party appeals. Popular acceptance could be increased if one locality – such as the City of Greater Geelong, as part of its Social Housing Policy – made land available for the construction of an exemplar microvillage that could be used as a model for other LGAs in Victoria.

## Financing



On the face of it, microvillages of compact homes seem to represent a viable dwelling option for people on lower incomes due to their reduced size and perceived affordability. Smaller individual dwellings are theoretically cheaper to construct and have a smaller footprint than traditional houses. However, costs and barriers to entry can be higher than they appear on the surface: the costs of land, construction, site remediation, common services, and infrastructure must be funded. Meeting the needs of an ageing cohort by building to universal design and high energy standards increases the cost and reduces this perceived benefit.

Shared facilities bring economies of scale and may reduce overall space requirements, enabling more homes to be located on the same site. However, these facilities add extra costs, including ongoing maintenance, and are much less economically feasible in the context of smaller developments where extra costs are split between a small number of residents. Microvillage developments are also more likely to require governance structures (for example, strata), which impose additional costs. The non-standard nature of the dwellings also raises serious challenges for financing, particularly where residents are older people and/or people on low incomes.

The financing solutions we identify as applicable to a microvillage model rely mostly on private-sector solutions that require little to no government incentives, such as relaxing planning restrictions and using social impact developers. However, without additional government or philanthropic support, many of these options may not be viable in the proposed context – that is, low-density microvillages for older residents on low incomes.

## Community Integration

Our research found that a co-designed exemplar project – involving potential residents and the existing community, supported by key stakeholders, such as local government – is essential to developing a successful community-integrated microvillage. Aligning with the findings of our evidence review, residents identified a set of design features that were key to supporting this community integration. These included a design that complements and provides good access to an existing neighbourhood, a balance of private and communal indoor and outdoor spaces, and communal space that allows connection with the existing community. While there was some flexibility amongst participants regarding the ideal size and layout of Tiny Home Communities (THCs), our evidence review (Part 1) suggests clusters of 20–30 units are optimal for supporting social connections.

Showcasing an exemplar model could provide a form of stakeholder-wide education, assisting community integration by breaking down resistance, stigmatisation, and/or stereotyping of present and future cohousing initiatives. More targeted education of local governments is also needed to reduce resistance to planning applications and increase support for any future microvillage model.

Finally, our research highlights the importance of people for the successful community integration of any future microvillage. Internal governance processes and key personal attributes of residents were identified as important factors here. Furthermore, while our informants had a strong interest in this model, an integrated community was seen as one that was open to a diverse group of residents. Thus, further research is required to explore the broader demand for compact homes, particularly among vulnerable groups who are not well served by existing housing options.

## Outcomes

Along with our five Recommendations (see next section), this study has also led to other valuable outcomes. In bringing together novel research teams, the study has helped forge new collaborative structures and facilitated attitudinal transformation. Collaboration between HOME's interdisciplinary team, individual external stakeholders, and representatives from housing organisations has led to knowledge-sharing, knowledge creation, and new partnerships that promise sustained and fruitful collaboration beyond the lifespan of this study. Moreover, the HOME research team has evidenced its capacity to achieve the primary aim of interdisciplinary research: addressing complex problems in fundamentally new ways.

Over the course of the project, the HOME research team and stakeholder Taskforce directly informed the brief and outcomes of a Deakin University student competition to build and design a compact home. Prefab 21 (described in detail [here](#)) was a partnership between Deakin's School of Architecture and Built Environment, HOME, FormFlow, and Samaritan House, a Geelong-based organisation providing crisis accommodation and support for men experiencing homelessness. The project focused on the design and fabrication of a prototype small house based on new construction technologies developed by FormFlow at Deakin ManuFutures. The Prefab 21 compact home was built and displayed as part of the Geelong Design Week. The overall project has received funding from the Victorian State Government to develop a microvillage of seven units for Samaritan House to provide transitional housing for men experiencing homelessness.

## Conclusion

At a time when climate change requires us to significantly reduce our resource consumption, Australia is building the biggest houses in the world. The average new house built in 2019–2020 measured 235.8sqm, up 2.9 percent on the previous year, and the biggest increase in 11 years (James & Felsman, 2020). This expansion is occurring in tandem with widespread housing stress, with 11.5 percent of Australian households spending 30–50 percent of their gross income on housing costs, and another 5.5 percent spending 50 percent or more (ABS 2019).

This project sought to determine the viability of increasing the supply of affordable housing for people with limited funds and a desire to live in modest-sized homes that minimise consumption of building materials, land, and energy, and which integrate and link with the community in meaningful ways. The context for the study is the increasing marketing, availability, and media promotion of tiny homes which position them as a possible affordable housing solution for people with limited income and wealth.

Our findings show that tiny and compact homes are not currently a viable affordable housing option for people with limited funds who wish to live in sustainable and socially connected ways. We found that the viability of small-house models is being hindered by a range of barriers in four key areas: building and design (Including universal design (for ageing in place) and environmental performance), regulatory planning barriers, finance, and community integration. The chief deterrent is regulatory barriers, particularly in the planning realm. As a recently published study explains, there is clear scope to “review, simplify and change the regulatory regimes across Australia that affect tiny houses so that they are more consistent and so that tiny houses are not treated *prima facie* as undesirable or as a problematic

planning outcome” (Shearer & Burton, 2021b, p. 17). However, in opening the way for building smaller homes, planners are advised to be wary of the possible gradual erosion of amenity standards.

After regulatory barriers, the next challenge is financial. Small homes are relatively expensive to build, and unless situated on owned land, offer little to no return on investment, so financiers are unwilling to lend. In addition, small home designers have yet to prove that they can meet the diverse needs of residents at all life stages, or shift the attitudes of existing residents who see small homes as an inferior or low-quality form of housing. Our research participants have helped frame solutions to overcoming these barriers. These proposed solutions are captured in our Recommendations.

Five Recommendations are set out in the following section. In brief, our Recommendations are to: advance the issue via research into and co-design of exemplar pilot projects; educate stakeholders to shift negative attitudes towards compact homes amongst builders, financiers, regulators, and the wider community; undertake planning reform to permit tiny and compact homes to occupy space on appropriate properties; conduct research to determine actual demand for tiny and compact homes; and reduce costs, remove existing financial barriers, improve accessibility for buyers and renters on low incomes, and publicise the benefits of and demand for well-designed compact homes. To effect real and lasting change in the housing sector, these five Recommendations cannot be implemented in isolation, but must be actioned in combination, in a systemic and holistic way.

As Australia faces the dual crises of climate change and housing affordability, a radical shift is clearly needed if the housing sector is to provide an expanded choice of affordable, high-quality compact homes suitable for residents across their lifespan. This study provides an evidence base to inform the possible development of compact, affordable housing models. The findings are timely, given local councils in Victoria are now open to exploring innovative models for increasing the supply of affordable housing, and with passionate stakeholders eager to build a cluster of 6–12 compact homes in Geelong.

# RECOMMENDATIONS

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Based on the findings from our evidence reviews, focus groups, and interviews, our research participants identified, qualified, and refined 12 priority actions. Developed during two STICKE (systems thinking) workshops, these priority actions form the basis of the five Recommendations set out below. Importantly, to be effective, these Recommendations should not be approached in isolation: rather, they should be implemented in a systemic and holistic way, at different leverage points across the system. Our Recommendations are summarised below and described in full in Part 5.3.

## **Recommendation 1: Co-Design Exemplar Projects with Potential Residents and Neighbouring Communities**

Work with potential residents and neighbouring communities to co-design exemplar projects for clusters of tiny homes. Actively involve all stakeholders. Prioritise high-quality design outcomes that are affordable, exemplify sustainable and universal design principles, and thus meet the varying and long-term needs of a diversity of residents. These projects should be informed by the best global precedents for achieving an affordable, sustainable, ecofriendly, safe, and community-focused way of living.

Research for these exemplar projects will also need to explore ownership and design models that enable resident diversity, and construction innovations that achieve both high-level energy performance and cost reductions via prefabrication and mass production techniques. The projects will need to be empirically evaluated to determine their environmental performance, including construction and running costs, and to assess their social performance in terms of improving social connectedness, both between residents and with neighbouring communities.

## **Recommendation 2: Educate Stakeholders to Change Negative Perceptions of Compact Homes**

Stigma, stereotypes, and negative public attitudes present a significant barrier to wider acceptance of compact homes and microvillages as viable affordable housing options. This barrier should be addressed via education strategies to promote the environmental, financial, and community benefits of living in compact homes, with a view to increasing both acceptance and demand. Education should target a range of stakeholders including builders, financiers, regulators, and the wider community. Activities could include public writings, events, online campaigns, advocacy, and lobbying. These education strategies should seek to:

- Showcase global exemplars of different models in different contexts, including both individual compact homes and clustered models (microvillages)
- Publicise well-designed compact homes that meet diverse needs
- Demonstrate demand for compact homes and microvillages as a choice, rather than a need
- Disrupt the cultural norm of aspiring to own a large house, and
- Catalyse demand, thus providing impetus to develop innovative production technologies to reduce costs and improve environmental performance.

## Recommendation 3: Planning Reform

To make compact homes a viable affordable housing option, planning reform is required at both nationwide and local level.

### Recommendation 3.1: Nationwide Reform

- Across Australia, all state and territory planning systems should be revised to explicitly define and permit the construction of smaller homes (down to 40sqm) and microvillages within designated Residential Zones.
- Local governments should be educated about the many benefits of compact homes to alleviate stigma and reduce resistance in planning applications.

### Recommendation 3.2: Local Reform

- The City of Greater Geelong should amend its existing Planning Scheme to include definitions of a range of acceptable dwellings in Residential Zones, including small homes (down to 40sqm).
- The City of Greater Geelong should amend its existing Planning Scheme to allow the waiver or modification of prescriptive car parking, setback, and open space requirements where these can be met in alternative ways.
- The City of Greater Geelong (CoGG) should work with applicants to approve construction of a microvillage on well-located surplus land within the existing Planning Scheme. This work should be undertaken in the context of CoGG's Social Housing Policy and the Victorian State Government's commitment to expand the supply of affordable housing.

## Recommendation 4: Conduct Research to Assess Demand for Tiny and Compact Homes in Geelong and Australia

To date, there has been no empirical research to assess the demand for different models of compact homes in Australia. There is a pressing need to address this gap in knowledge in order to help build an evidence base for future action. This is particularly pertinent as governments begin to prioritise affordable housing, and Australians reevaluate the suitability of our housing in the face of the climate change crisis and the COVID-19 pandemic.

## Recommendation 5: Promote Benefits, Reduce Costs, Remove Financial Barriers, and Increase Access to Compact Homes for People on Low Incomes

Existing financial barriers place smaller homes out of reach for many would-be purchasers and renters on low incomes. To make compact homes a viable affordable housing option, there is a need to remove financial barriers and reduce costs. Demonstrating the benefits of well-designed compact homes also presents an opportunity to stimulate demand, which may contribute to cost reductions.

**Recommendation 5.1:** Publicise the social, environmental, and economic benefits of smaller homes. Increasing awareness by promoting the benefits of well-designed, prefabricated dwellings could increase demand, reduce costs, and make compact housing options more affordable and feasible.

**Recommendation 5.2:** Provide financial incentives and/or remove existing financial disincentives to developing, building, and owning well-designed, energy-efficient compact homes (possible mechanisms include planning regulations and personal taxation).

**Recommendation 5.3:** Increase the supply of high-quality social housing and intentional communities designed for ageing in place, with a focus on housing single-person households on very low incomes. Home ownership will likely remain unattainable for this group, and they are increasingly locked out of the private rental market.

**Recommendation 5.4:** Assess the feasibility of a government loan or guarantee scheme for aspiring owners of compact homes. The scheme would seek to reduce barriers, mitigate lender aversion to borrower characteristics and security property, and contribute to an evidence base and track record.

**Recommendation 5.5:** Continue pursuing tenancy reform to strengthen tenant rights and improve security of tenure. This issue came up repeatedly during our study, with participants equating security of tenure solely with home ownership, not renting.

## What's Next?

While our research has found that the appeal of tiny homes may currently be limited, compact homes clearly have potential to provide a viable alternative to market norms. This is particularly relevant given Australia's housing affordability crisis and the need to drastically reduce the carbon footprint of housing. In a recently published study, Shearer and Burton (2021b) conclude that tiny houses may:

provide greater diversity and choice in the wider Australian housing market and are consistent with the policy agendas of more mainstream housing advocates, such as increasing affordable housing supply and building at greater density in certain areas.

In sum, the compact home model is worth further investigation. As the evidence base builds, our hope is to facilitate future funding to research the design, construction, and evaluation of an exemplar project: a microvillage of compact homes for 6–12 residents in the Geelong region. The proposed project would be founded on co-design principles and community engagement processes to inform the harmonious integration of the village with the local community and environment.

The aim would be to develop a “living village” model that can evolve over time to support people as needed, thus providing an opportunity for residents to age in place. Flexibility in design would allow the dwellings to be adapted to support different age groups, modes of mobility, and changing circumstances. Ultimately, the aim is to work with prospective residents and their neighbours to determine what factors enable strong community connections to support positive health outcomes and meaningful social engagement.



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