

**Submission  
No 43**

## **INQUIRY INTO APARTMENT DESIGN STANDARDS**

**Organisation:** Project HOME

**Date Received:** 31 October 2021

Centre for Urban Research  
School of Global, Urban and Social Studies  
RMIT University

# **Inquiry into apartment design standards**

## **Submission on behalf of Project HOME (Housing Outcomes Metrics and Evaluation)**

October 2021

---

Dear Environment and Planning Committee Members,

This submission is made by Prof Ralph Horne, Dr Louise Dorignon, Dr Megan Nethercote, Dr Andrew Martel and Dr Nicola Willand on behalf the ARC-funded Project HOME (2016-22), on apartment design and liveability.

This submission is made by the research team at RMIT University and does not necessarily represent the views of all the parties, partners and funders involved in Project HOME. The submission is presented as follows:

- (1) a description of Project HOME;
- (2) a summary of our key research findings;
- (3) seven short case studies demonstrating key new evidence on apartment outcomes and design assessment; and
- (4) implications of Project HOME findings for future apartment design standards and policy.

On 4 August 2021 the Legislative Assembly agreed to the following motion:

That this House refers an inquiry into apartment design standards to the Environment and Planning Standing Committee for consideration and report no later than 30 March 2022\* and the Committee should consider better apartment design standards, in a global context including, but not limited to, an examination of the:

- (a) **current apartment living standards** in Victoria;
- (b) **improvements** that can be made to the liveability in apartments and apartment building developments, including communal areas; and
- (c) **initiatives undertaken by other states or nations** that have improved apartment design standards.

\*The reporting date was extended to 30 June 2022 by resolution of the Legislative Assembly on 7 September 2021.

# 1. About Project HOME

Project HOME is an ARC (Australian Research Council LP150100089) funded project based at RMIT University focusing on design quality in multi-residential housing across four Australian and European cities: Melbourne, Perth, Barcelona and London. It links housing outcomes to metrics and evaluation of housing design to develop a better understanding of the liveability of the housing produced by the rapidly growing infill multi-residential sector.

In the face of rapid urbanisation, multi-residential housing has been and remains the most rapidly growing housing typology in Australia. Households increasingly live in apartments, yet widespread evidence indicates the post-millennium housing market has not provided sufficient quality or diversity in urban homes to meet the needs of current and future apartment residents. The project started with the question: in contemporary westernised cities, *what characterises 'good' design for infill multihousehold developments and what policy settings assist in delivering good design?*

With different origins and policy and practice contexts for urban infill multi-residential design across London, Barcelona, Perth and Melbourne, each city is facing the dilemma of how to improve design outcomes in higher density housing for the long term in an era of demographic and climate change.

Project HOME draws on a unique combination of design and social science methods. The project selected two neighbourhoods in each of the four cities and then selected recently built apartment blocks in each neighbourhood, across social, private rental, and owner occupier tenures. The project team (1) assessed building designs via plan analyses, and (2) documented the lived experience of these designs through the lives of their occupants. Outcomes include robust design evaluation evidence and insights into the shortcomings and needs of apartment design for current and future households.

The project involved a team of academic and industry professionals with diverse expertise spanning from architecture, planning, construction management, human geography, and housing studies.

## 2. Key findings

Project HOME provides the largest single study of its type, and the diversity range of households who participated in study corroborates the need for diverse and adaptable apartment offerings, including a range of dwelling sizes and configuration to provide Victorians with high quality higher density housing options.

Apartment dwellers in Victoria are a diverse bunch; far beyond the narrow stereotype of mid-week executives and empty-nesters who dominated developers' original visions. To raise a family, to flat-share, to accommodate guests, and maintain comfort and privacy, apartments must meet a basic level of functionality. Added to this, accelerating environmental pressures and the public health disaster of the COVID-19 pandemic have reinforced the need for well-designed, liveable, and future-proofed apartment stock.

Good design produces apartments that feel like home, as well as providing functional requirements across diverse and flexible household needs, from the basics of functional kitchens and bedrooms, adequate useable space and zoning and circulation considerations to access to sustainable design considerations such as cross-ventilation, natural light, and appropriate acoustic partitioning and insulation. Tenure, security and location are all contingent factors.

Across London, Barcelona, Perth and Melbourne, project results reveal that various approaches to design regulations have led to the production of uneven socio-material conditions for the people who inhabit apartment buildings. The plan analyses, together with design guideline assessments,

show that, in order to most positively impact the way apartments are produced, design guides need to be prescriptive rather than aspirational.

The way apartments and apartment buildings are designed has consequences for the way urban dwellers interact with their surroundings. This is important as the borders between home and the city tend to become blurred when living in an apartment. Limited internal spaces, and the availability of nearby services, mean that people tend to rely more on social and urban infrastructures outside of their homes for leisure and consumption practices. The experiences of householders during the COVID-19 lockdowns have highlighted that some apartments lack critical functionality and amenities within the boundaries of the individual unit.

There are notable issues with the way the apartment stock has been produced in Victoria in the last two decades and resulting uneven urban and housing outcomes. While some of these issues are design related, our multi-sited, mixed-methods 5-year research project reveals that there is a need to address the broader way in which apartment living is imagined, produced, administered, financed, governed and maintained if Victoria is to ensure apartment liveability.

Key empirical findings from the study include:

- The intensity of and desire for social interactions varies greatly across householders' profiles. People living in buildings where there are no common spaces tend to express a lack of connectedness with their neighbours, but at the same time common amenities in well-serviced apartments tend to be underused (based on householder's accounts).
- In Melbourne and Perth, low-income residents and affordable housing tenants who are more at risk of being left out of social relationships tend to live in buildings where there are few common spaces, and which tend to be in suburban neighbourhoods with fewer amenities such as green spaces, public infrastructures, etc.
- Good apartment design promotes good amenity, plus, where desired, neighbourly interaction, solidarity and mutual support, leading to physical and emotional well-being; on the other hand, poor design creates additional hurdles to daily living and amplifies inconvenience, discomfort, stress and anxiety.
- Design and build quality are key concerns among apartment residents – not only among apartment owners/home-occupiers but particularly among tenants who disproportionately grapple with everyday design outcomes when they experience reduced ability to make adjustments to their homes under rental agreements.
- Owners can get 'stuck' as the cost (time, money, emotional) of moving is high. Yet, as life changes often in unexpected ways, it is not always easy for householders to predict whether the dwelling they will live in is adequately designed for their needs into the future.
- Design outcomes have consequences for the way building and facility managers and owners' corporations oversee building matters, organise maintenance and plan for future upgrades and longer-term maintenance.
- Apartment dwellers develop various strategies and habits to overcome and/or bypass design or material issues, but the success of these strategies depends on household capability. Some households are more equipped (financially, physically, emotionally, socially etc.) to live with and/or cope with such challenges.
- Covid-19 has challenged apartment dwellers in specific ways, pushing residents within the confines of their smaller domestic spaces for extended periods and requiring unplanned home-working and home-schooling in inadequately designed spaces. An associated study undertaken during the 2020 lockdown by this RMIT team found that longer hours spent at home has accentuated the inadequacies of some high-rise building infrastructure (in terms of waste management, hygiene, flows etc.) which points clearly to necessary revisions to design guidelines for apartments.

### 3. At home in the post-millennium apartment: householders' experiences from Melbourne, Perth, Barcelona and London

This section provides a range of examples of evidence from Project HOME research through 7 case studies presented across 3 main themes: apartment design and regulations; building management and adaptation; and well-being in apartments.

#### 3.1. Apartment design and regulations

Apartment life cycles involve multiple stakeholders with varying interests and needs, creating multiple possible split incentives. For example, investors are generally responsible for capital costs, while occupiers are responsible for household energy bills – which may be shaped by the energy efficiency of the design and infrastructure in the block – a capital cost and design issue. Purchasers of new apartments are not adequately informed about their rights and responsibilities as co-owners and also poorly placed to consider the needs of future occupants in buildings they are charged with maintaining. Indeed, due to the limited reconfigurability of apartment designs, they should be viewed as social infrastructure. Design assessment tools provide an important means to ensure but also improve minimum standards; thus addressing split incentives through the life cycle, and enhancing accessible urban liveability.

#### Case-study 1 – Assessing design standards through plan analysis

This case-study draws on the following Project HOME doctoral thesis:

**Gower, A. (2020). Evaluating design quality assessment of apartments in policy and practice. RMIT University.**

Summary: 'Despite recognition of the importance and complexity of design regulation in apartments, there is a lack of empirical testing and detailed understanding of how such tools operate and are produced. A nuanced understanding of the efficacy of DATs (Design Assessment Tools), including both the 'how' and 'why' of their functionalities, possibilities, limitations and expectations, is important to our understanding of how design quality in apartments can best be regulated and ensured in the public interest. (Gower, 2020, p. 10)

Underlining the limitations of a predominantly quantitative understanding of apartment design assessments, the research highlights the importance of three factors in resident's everyday use of their apartments: proportion, shape, and adaptability.

Key findings:

- 'DATs (Design Assessment Tools) do not define design quality at an overall or broad level ... Instead the finer level of the individual standards enables the DAT, as a quantitative tool, to engage with / detect the design of the apartment and the design quality experienced by the resident.' (Gower, 2020, p. 64).
- 'While the specific nature of the different components measured by the BADS 'Functional Layout' standard was shown to assist the clarity and certainty of the design quality detected by the tool, this specificity separates elements of design and prevents the tool from being able to differentiate the qualitative relationships between rooms, particularly when there are subtle differences in rooms as occur in practice. Room arrangement and the detailed configuration of how the spaces work together vary as they interact with subtle differences in the proportions of the site or the design layout.' (Gower, 2020, p. 70). Shape and proportion are often not driven by design considerations but by site dimensions and development yield metrics.

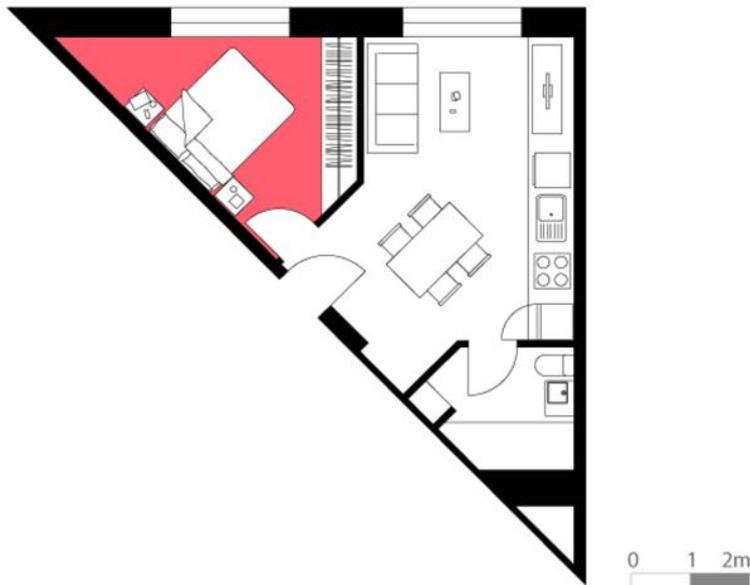


Figure 5.1: Triangle shaped apartment includes bedroom with surplus space past the bed but insufficient depth to be able to pass around the end of the bed.

Figure 1 Triangular bedroom and apartment plan, Melbourne. Source: (Gower, 2020, p. 70).

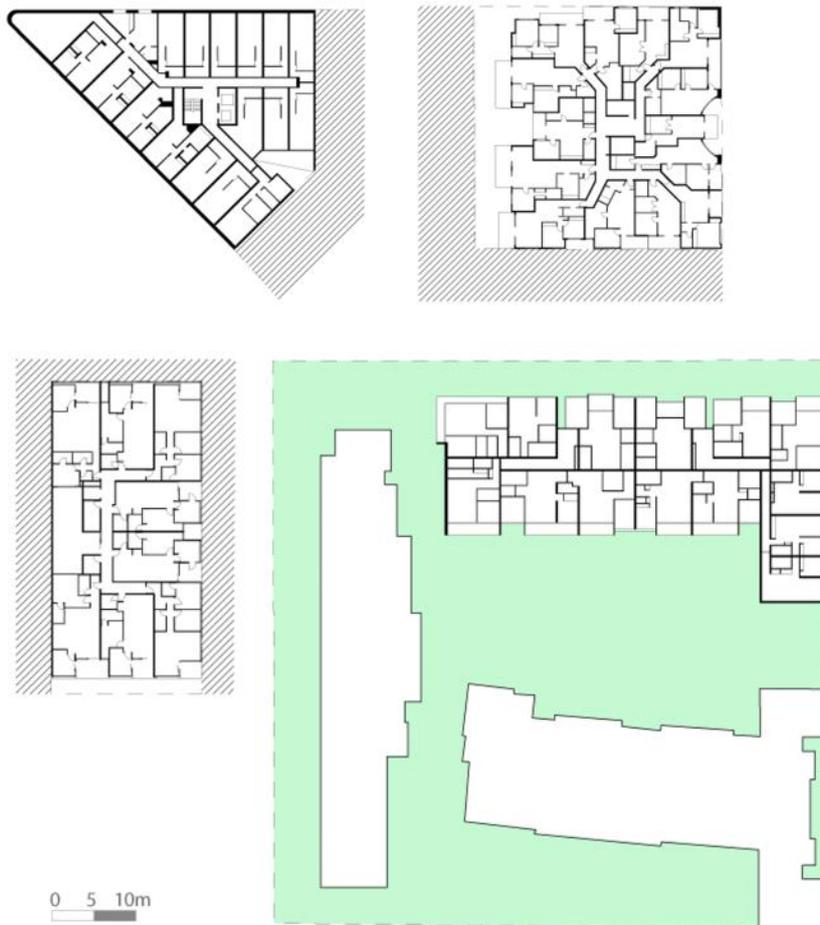


Figure 5.10: Examples of the different site conditions and shapes within the data set in Melbourne. Despite these differences, all but one building had identical apartment room arrangements and full site coverage. The exception (highlighted in green) arranged a collection of smaller buildings around a common landscaped open space.

Figure 2 The depth of apartments stretched to spread across the site. Source: (Gower, 2020, p.86)

## Case-study 2 – Learning from apartment design assessment in London

There are multiple ways in which to measure aspects of design quality. Hence different Design Assessment Tools, that employ different metrics to preference different aspect of design quality, produce different outcomes. Project HOME and Alexa Gower's PhD examined two sets of standards; Melbourne's 'Better Apartment Design Standards' (BADs) and London's 'London Housing Supplementary Planning Guide' (LHSPG).

How the design guidelines are framed matters, even when they appear on the surface to be similar. While BADs and LHSPG both referred to the same element of design quality, for example 'Functional Space' in the apartment, each tool specified different ways in which to measure this element. This produced different assessments of the design quality in the apartment from each tool. Tool configuration 'has a significant impact on what the tool can detect and define as design quality. Furthermore, this demonstrates the complexity of how DATs operate and the need for a more detailed method of analysis that appreciates the design of the apartment in order to better understand the functions and limitations of DATs'. (Gower, 2020, p. 65). 'Rather than only considering the dwelling size, the project revealed the importance of spatial proportions to avoid awkward movements and configurations and lead to unpractical space and orientations. It also underscored that 'the lack of a holistic "whole of apartment" approach to the standard prevents [BADs] from recognising the qualitative relationships of one room to another' (Gower, 2020, p. 72).

The LHSPG/BADs work also showed that in London, social housing is leading the way in promoting good apartment design and sustainable housing, and showing that it is achievable even at a lower cost.



Figure 3 Rowan Apartments in Woodberry Down, London.

### 3.2. Building management and adaptation

#### Case-study 3 – Structural limitations to adapting high-rise apartments in Melbourne

This case-study draws on the following Project HOME research output:

**Martel, A and Marfella, G. (2019), Design-to-live or Design-to-build: The impact of delegated design responsibility in Melbourne's high-rise residential buildings, Proceedings of the 4th international conference on structures and architecture (ICSA 2019), Lisbon, Portugal, 24-26 July 2019**

Summary: Accompanying post-millennium apartment 'boom' has been a growth in the use of Design, Novate, and Construct (DNC) contract arrangements, which shift responsibility of key design decisions around structure, services and facades to the head contractor (builder). The construction technology applied in Melbourne combines commercial building inspired curtain wall façade systems with a system of internal concrete sheer walls. This places restrictions on

apartment layouts on typical floorplates and has had a noticeable effect on spatial quality and liveability. Problems arise where façade concepts, structural performance, and ease-of-construction inputs prevail over spatial integration and apartment integrity. The shift in design influence away from architects and engineers is likely a factor in the narrowing of innovation in tall buildings to a focus on constructability and speed of construction (Marfella & Martel, 2019).

#### Key findings:

- There is a correlation between the amount of vertical structural elements (columns and sheer walls) working in conjunction with the circulation core and the gross floor area of the typical floor levels. This reflects the decision by the head contractors to prioritise the efficiency of concrete pour cycle rates. By utilising flat, thin (200 mm), post-tensioned concrete floors, head contractors in Melbourne can typically achieve a 4 or 5-day pour cycle, representing a very efficient building methodology for constructing tall buildings. The added vertical members necessary to resist sheer forces due to wind in tall buildings are internalised (i.e. not placed on the external façade) and so are not visible externally and do not need to be incorporated into the façade design. This in turn frees the façade to employ glass curtain wall systems derived from commercial (office building) traditions. The internalised structural system typically has the concrete circulation core at its centre, and a grid of vertical structural elements across the floorplate. The distances between the structural elements is typically between 6 and 7 meters. This structural outcome, derived from the head contractors preferred building methodology, has immediate implications for the lay-out of the apartments on each floor.
- In a general sense, the structural elements come first and the apartments are then arranged to fit around them, rather than designing optimal, or at least logical, apartment layouts and then adapting the structural system accordingly. There is a conflict in the relationship between the typical distances between shear walls observed in residential floor plates and the minimum dimensional criteria for rooms set by the Better Apartment Design Standards (BADS). The more spacious arrangements observed in the case studies, suggest that shear walls supporting flat slabs can rarely span beyond 8.5 meters. Two-bedroom apartments are therefore not possible to be accommodated within such spans, unless the second bedroom is setback as a deep and narrow L-shaped 'saddleback' with a very restricted exposure along the façade. In all of the case studies observed, two-bedroom apartments are forced to work around the structural grid, with second bedrooms and bathrooms having to swallow thick, deep shear walls in their interiors. This limited integration with structural elements is often at odds with spatial quality along the corners of the buildings whereby apartments are not placed within discrete spaces between structural elements and are forced into a patchwork of spaces that does not bear a direct relationship to patterns of use and distribution. By contrast, the layout of internal structural elements in the basements that house car-parking respond with clinical success to the dimensions of the space required for the circulation of cars.
- The current regulatory response in highlighting the health benefits of natural ventilation and sunlight, and of minimum room dimensions in the BADS, and floor-to-area ratios and setbacks, will not be successful because they are divorced from the reality of what is driving the construction process and what barriers that in turn erects to apartment quality. The case studies suggest the existence of a disconnection between architectural expression and structural engineering in contemporary tall residential buildings. These two central disciplines should be integrated to meet the specific physical and technological challenges of innovation that are implied by the very definition of a tall building and by the tradition of architectural engineering associated with this building typology. The evidence of recent high-rise developments in Melbourne indicates a historical counter-tendency, where the two disciplines have been relegated to fit into a minimum common denominator that satisfies development return and large-volume production, above all else, rather than innovation in the production of spatial quality and high rise living to meet growing demand for apartment living.

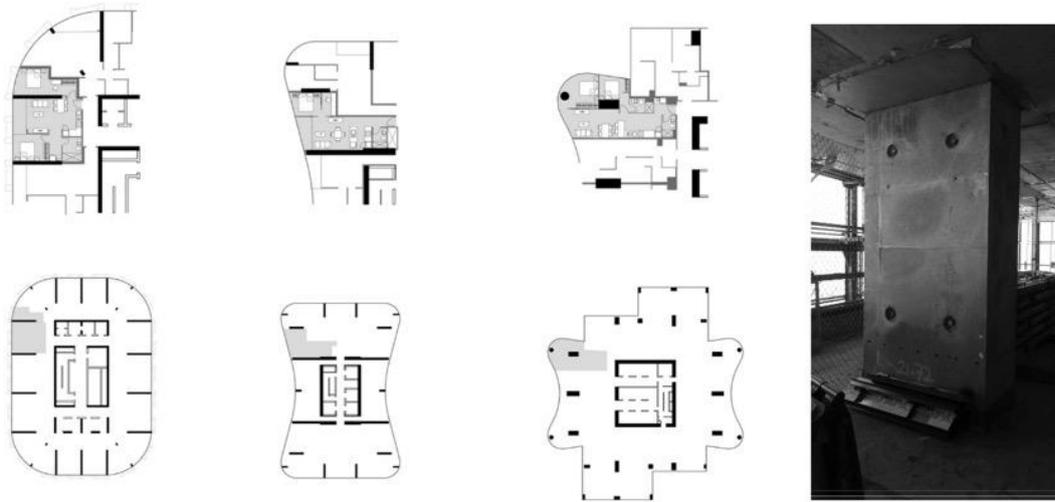


Figure 4 Examples of structural systems and apartments from high-rise residential apartments in Melbourne L, and example of a concrete shear wall R, (Martel and Marfella 2019) (Image by A. Gower and G. Marfella)

## Case-study 4 – Facilitating waste management & recycling practices in apartments

This case-study draws on the following Project HOME research output:

**Horne, R., Dorignon, L & Middha, B. (Unpublished manuscript). High-rise plastic: Socio-material entanglements in apartments.**

Key findings:

- Plastic must be progressively removed from waste and pollution channels to address ocean pollution, climate change, and other environmental impacts. However, recycling rates have been found to be lower in apartments than other housing typologies (Reijonen et al., 2021)
- Studies concerning recycling and waste in apartments tend to focus on occupant behaviours, yet the provision of information and/or ease of participation is not necessarily a significant contributor to higher recycling.
- Plastic affords and assists ordinary, everyday practices in cramped, household spaces, by enabling waste management, storage, and provisioning of affordable durable yet consumable items. It is a utilitarian substrate to apartment life, providing waste bags, furniture, and personal mementos amongst many others.
- The lived experience of high-rise involves a vast array of arrangements, from Airbnb short stays, transient international households, to blended families with dependents at various ages, and lower income key workers who have traded off space for the affordances of location. Plastic packaging, especially when contaminated, is a problem in the majority of small apartments:

*“The glass goes on the counter until we leave, then the plastic bottles too, we’d like to recycle more but due to space we only care about bottles” (Research participant, Barcelona)*

*“There just isn’t the room here. I’m just quite time poor and because I’m doing everything myself I often end up sadly to admit, throw everything into the one chute.” (Research participant, Melbourne)*

- Some apartments actively resist plastic packaging from entering and crossing the threshold:

*“I’ve been disappointed since living in this building, I’m very big on recycling. And in Geelong I would recycle every toilet roll holder, every milk carton, every paper carton that biscuits come in. ... here there’s no room even to have a rubbish bin in the kitchen... I think recycling is important and I think developers need to have two rubbish chutes.” (Research participant, Melbourne)*

- As these households adapt and make do, their homes are being reconfigured both physically and symbolically, and their practices (from food provisioning to laundry to care-giving), reshaped by and through plastic.

- This has implications for policy directions aimed at reducing or eliminating plastic.
- For instance, the comingled recycling schemes in Melbourne and Perth ostensibly offer a lower barrier to participation, reducing the need for cleaning and sorting. However, the fact that such schemes do not accept soft plastics such as shopping bags, which are widely used for sorting recycling in apartments, operates against participation and may increase contamination rates.
- Resource levies and new responsibilities regressively and disproportionately weigh upon more marginalised, hard-pressed households who have less space, time and resources (Horne et al., n.d.).
- As policies target plastic waste and pollution, significant attention must be paid to both the design of apartments and infrastructures to support recycling and plastic alternatives, and to the needs of lower income and disadvantaged apartment households with limited options.



Figure 5 Apartment kitchens involving use of plastic bags and objects and garbage chute, Melbourne.

### Case-study 5 – Promoting functional and liveable outside spaces and balconies

This case-study draws on the following Project HOME research output:

**Willand, N., & Nethercote, M. (2020). Smoking in apartment buildings – Spatiality, meanings and understandings. *Health & Place*, 61, 102269. <https://doi.org/10.1016/j.healthplace.2019.102269>**

Abstract: 'Increased higher density urban living may exacerbate exposure to environmental tobacco smoke. Using a social practices lens, this research explored the locations, experiences and governance of smoking in apartment buildings in Melbourne, Australia, through semi-structured interviews in high-rise buildings ranging from subsidised housing to luxury apartments. Tacit rules on acceptable locations, building rules and smoke alarms in public areas consigned smoking to balconies and building entrances. The perceived health threat from second hand smoke and mental stress due to invasion of olfactory and visual privacy undermined the full enjoyment of the home environment. Interventions may benefit from targeting the link between smoking and balconies.' (Willand & Nethercote, 2020, p. 1)

Key findings:

- 'First, smoking emerged as a practice with the potential to create a spatial segregation between smokers and non-smokers, at least during the practice itself. Smoking bans displaced smokers to street entrances and the space of the balcony, and the identity of the smokers appeared bound.' (Willand & Nethercote, 2020, p. 5).
- However, in our study, the confinement of smoking to defined places seemed to interrupt social cohesion and to result in subversion and behaviours that were interpreted as anti-social. As smokers segregated themselves, they were physically distanced from people inside the apartment and/or formed groups with other smokers.' (Willand & Nethercote, 2020, p. 5).
- 'Smoking on balconies meanwhile also extended the physical imposition of the apartment residents, both visually by more extensive surveillance of the street and neighbouring apartments, and physically by enabling butts to be ejected from the apartments, including onto other balconies.' (Willand & Nethercote, 2020, p. 5).

- ‘Hence, apartment stakeholders may need to weigh up further the potential for (perceived) nuisance as well as associated social divisions that may be fostered through allowing smoking in certain areas.’ (Willand & Nethercote, 2020, p. 5).

*“I don’t really [use the balcony]. It’s really messy at the moment. Neighbours throw cigarette butts on it [...]” (Research participant)*

*“He can’t help it, [...]. They’re heavy smokers, and so they try and open up their windows and do what they can, but really, they can’t stop smoking. And you can’t really expect people to go downstairs to smoke.” (Research participant)*

- ‘Second, our findings corroborated butt littering as a form of public nuisance and risk for wellbeing (Sajan and Nicole Johnston, 2015) and expanded our understanding of this to an important new urban site—the apartment building.’ (Willand & Nethercote, 2020, 5).
- This suggests decision-makers and researchers should potentially consider not only the physiological, but also the wellbeing risks of allowing smoking in apartments buildings.’ (Willand & Nethercote, 2020, 5).
- Third, our findings raise concerns about the likely exacerbation of the problem in the move to denser and more energy efficient city living. Our analysis corroborates evidence that tobacco smoke may travel between apartments and through open windows
- As the prevention of smoke drift is currently technologically not possible, designs of energy efficient and naturally ventilated multi-unit housing developments may need to be combined with a comprehensive smoking ban, including smoking on balconies, public areas and in front of the buildings.

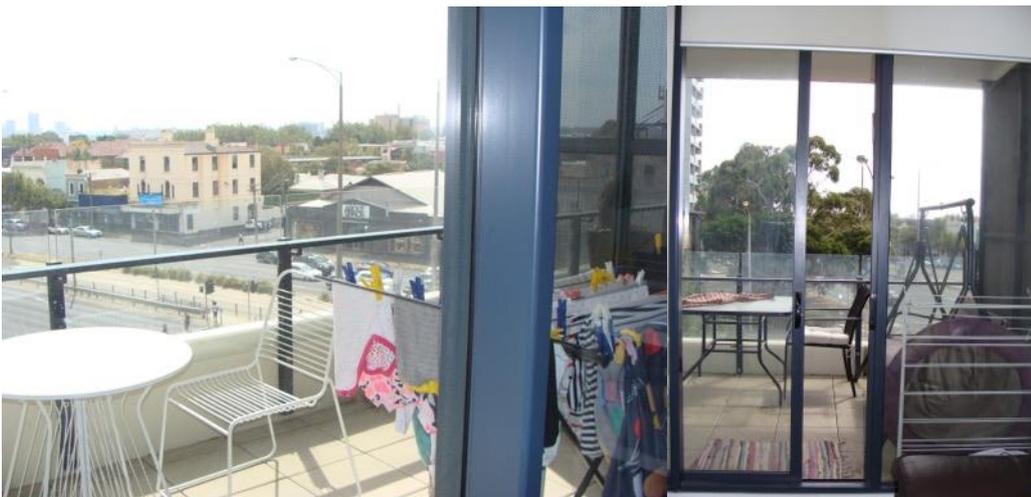


Figure 6 Apartment balconies, Melbourne.

### 3.3. Well-being in apartments

#### Case-study 6 – Considering the impact of social isolation

This case-study draws on the following Project HOME research output:

**Dorignon, L., & Nethercote, M. (2021). Disorientation in the unmaking of high-rise homes. *Transactions of the Institute of British Geographers*, 46(2), 363–377.**

<https://doi.org/10.1111/tran.12427>

Summary: ‘Through the lived experiences of three men, living alone in high-rise towers in Melbourne and London, we extend Bissell and Gorman-Murray’s (2019) disoriented geography framework to advance understandings of the high-rise as home. This framework showcases the role of embodied emotions in the processes of making and unmaking vertical homes and the importance of registering these to fully account for contemporary experiences of home. We foreground how interweaving and evolving sets of sensations shape personal and intimate experiences of apartment dwellers in their everyday lives. We demonstrate how these residents’

practices and responses to verticality may be constitutive of highly disorienting experiences.’ (Dorignon & Nethercote, 2021, p. 374)

Key findings:

- ‘In policy terms, our research points to the importance of the experience of lone male households in high-rise homes. Within our dataset, these three stories emerged as acutely pertinent to understandings of loneliness. In addition to the distinct and tangible practical challenges of making oneself at home in high-rise units, these men experience sometimes overwhelming feelings that have important, yet unrecognised, negative implications for their mental well-being.’ (Dorignon & Nethercote, 2021, p. 374)

*‘Biyen is 47 and has rented his apartment in Melbourne CBD for six years through a social housing organisation. He had waited nine years to be assigned his “own place to live.” Following the death of his flatmate, he was homeless for two years and “desperate” for a room back then. When a place became available, Biyen took it without hesitation. He moved into this new apartment determined to stay “a long time.” [...] He would have liked a pet, but the lack of space stopped him: “it would not be kind.” Plants could not survive either on the overexposed, overheated balcony.’ (Dorignon & Nethercote, 2021, p. 369)*

- ‘While living alone is not always the configuration chosen or imposed on un-partnered individuals in cities (Druta & Ronald, 2020; Maalsen, 2019), the topic of loneliness and living alone in urban apartments should not be overlooked in concerns for other high-rise demographics and their compelling novelty, such as families.’ (Dorignon & Nethercote, 2021, p. 374)

*‘At 64, James owns an apartment in Docklands, Melbourne, on the 30th floor. From the outset, James was eager to talk, as if he finally had a chance to share the whole story. He bought the apartment “off-plan”: two bedrooms, two bathrooms, and a study. [...] Instead, there was a series of unexpected challenges. For instance, “the building breathes.” “You can feel the draughts sometimes, up near the windows,” he says. And the creaking walls. James is trying to figure it all out, to map out the faults behind these idiosyncrasies. Some might say the writing was on the wall when James had the first inspection: “It was appalling. There were so many cracked tiles and the oily microwave, the cupboards had gaps and they were crooked. And it was shocking and so noticeable that I said this is not where I’m going to settle.” The signs were there, he scolds his own oversight: “it just jumped out at me. What have you done”’ (Dorignon & Nethercote, 2021, 370-371)*

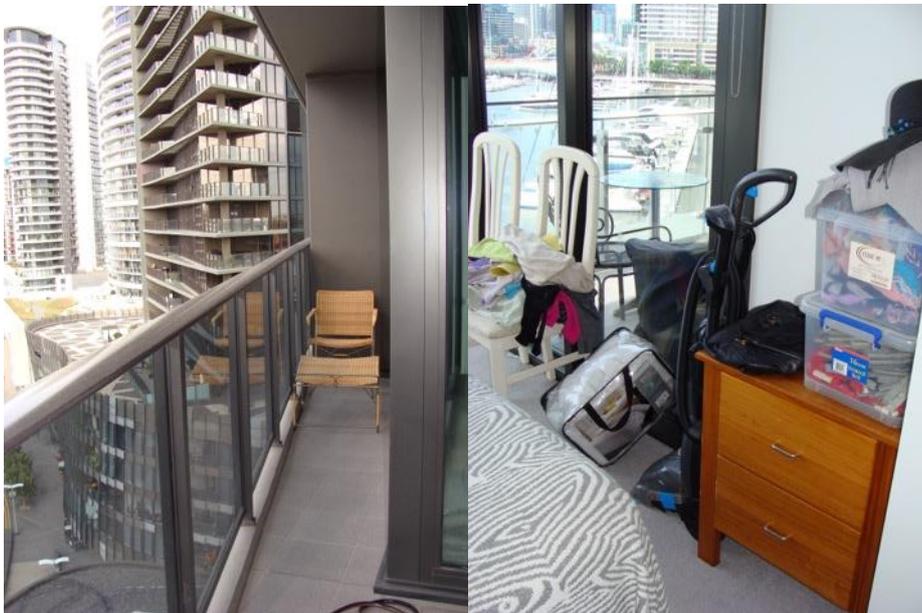


Figure 7 Left: Façade and balcony in Docklands, Melbourne. Right: Storage and appliances in participant’s bedroom in Docklands, Melbourne.

## Case-study 7 – Learning from lockdown in apartments

This case-study draws the following AHURI funded in-depth research project involving apartment dwellers from Project HOME:

**Horne, R., Willand, N., Dorignon, L., & Middha, B. (2020). The lived experience of COVID-19: Housing and household resilience (Final Report 345). Australian Housing and Urban Research Institute Limited. <https://www.ahuri.edu.au/research/final-reports/345>**

Summary: The research project aim was to evaluate complex interrelated impacts of COVID-19 and associated government measures on households with a range of vulnerabilities. In June–July 2020, we reconnected with and interviewed 42 research participants from across Melbourne and regional Victoria, 19 of which had participated in Project HOME in 2017-19. This longitudinal-style study (Horne et al., 2020) supported medium-term evidence of apartments lived experience across a wide range of socio-economic backgrounds.

The study found that pre-existing vulnerabilities such as poor housing quality and location; housing affordability; energy poverty and a range of social, mental and physical health conditions had been exacerbated during the pandemic. Set against this, a range of policy interventions, ranging from financial payments and guidelines around housing costs relief were designed to ease the impacts. Nevertheless, our research revealed significant challenges and responses inside homes, including knock-on effects upon relationships and mental and physical health.

- For some participants in high-rise apartments, services they depended on were closed temporarily or inaccessible, imposing confinement in small spaces with ill-equipped kitchens. The impact of restrictions and not being able to go out to eat also translated into doing more cooking at home, and thus increased reliance on grocery shopping. Some participants regretted the lack of space in apartments and the kitchen or access to better appliances.
- In shared apartments, working from home led to changes in material and social arrangements. These changes aimed to minimise disturbance and to preserve the sanctity of communal spaces.
- In apartments, having an additional room allowed for multifunctionality with positive benefits, such as easier tidying; and for households with small children or teenagers, it gave the ‘opportunity to close one door and just have another space’. Micro-spaces such as balconies were used to perform self-realisation: one participant used her balcony as a refuge to escape the tension emerging from her husband’s work life and dodge conflictual interactions. A connection to the outside world was helped by having a view, even if amenities were minimal.
- COVID-19 exacerbated both visual and acoustic issues. The research highlighted that apartment buildings are prone to create visual and bad acoustic insulation within their homes or between apartments in multi-unit buildings. Nine participants explained that their new sensitivities to noise were because of their longer stays at home.
- The COVID-19 lockdowns have exposed the divide between those living in high-end apartments (equipped with more frequent and thorough cleaning services, communal outdoor spaces, efficient waste management, proximity to green spaces etc.) and those living in buildings of lesser quality (lacking natural light, with poor acoustic and thermal insulation, limited access to common or green spaces etc.).



Figure 8 Apartment dwellers reported on their experiences of the 2020 lockdown through photographs of their everyday routines, joys and frustrations. Photographs and captions by participants.

## 4. Implications for future apartment design standards & policy

Empirical research on the lived experience of apartments is essential in order to inform future policy as it relates to the links between; apartment (building) typologies; social and socio-economic diversity and social cohesion; fair access to urban infrastructures; environmental sustainability, and; affordability, health and well-being.

**Project HOME research outcomes emphasise the need for policy innovation following the COVID-19 crisis to shape apartment dwellings that can be resilient and liveable homes for current and future Victorians.**

### Recommendations:

In the context of political, social and economic demand for resource efficiency, healthy housing and carbon emissions reduction, recommendations for future design guidelines include:

- (1) Integration of improved design guidelines including minimum quality of spaces and services, flexibility and the potential for space conversion. Living in an apartment is likely to be the permanent and long-term form of housing for a growing population. In particular, low-income and social housing households may have fewer opportunities and more constrained choices in moving homes as their life circumstances change. Being able to adapt and future proof their apartments to their changing households needs promises to provide better housing outcomes. This may be achieved through more diverse and flexible spaces, design future-proofing and attention to load-bearing structural elements.
- (2) Higher prescription of the thermal performance of individual units. It is recommended that future design guidelines adopt the star rating requirement of the NCC as the minimum rather than as the average rating. Under the current NCC and BADS, apartment developments have to show an average of 6-star ratings across all apartments, with a minimum of 5 stars for an individual apartment. This allows the poorest/cheapest apartments to be more energy inefficient than national standards, thus exacerbating already existing inequalities.

- (3) To address information asymmetry, all apartment buyers and renters at the point of sale/lease should be provided with accessible and practical information declaration regarding design and environmental quality, to better inform consumers in their housing consumption choices.
- (4) Development of apartment living guides to assist householders in the most efficient and resource-friendly use of their apartment, together with access to shared amenities, and instructions for building managers on cleaning, ventilation and communication with residents.
- (5) Development and implementation of a suite of educational resources for apartment dwellers to improve their understandings of their rights and responsibilities as co-owners and co-residents and of the governance and longer term maintenance of their building.
- (6) We propose three directions where Project HOME empirical evidence and insights may be applied to improve apartment living standards in Victoria:

#### **i. Applying best practice design for liveability in Victoria's Big Build**

With Victoria's Big Build, Victoria has an opportunity to build a legacy of high quality, affordable apartment living by applying best practice knowledge of 'good' apartment design, and evaluating the outcomes. Social and affordable housing has been successfully used in London to build and demonstrate to the market how affordable good quality apartments can be provided. This initiative is an ideal vehicle to showcase housing innovation (such as adaptability and flexibility, energy efficiency, resource efficiency, material selection, retrofit, waste management, social spaces etc.) and through which to promote well-designed, liveable, equitable and resilient/long-lasting apartments, with just social/societal outcomes.

#### **ii. Reconfiguring apartments for liveability and decarbonisation**

Project HOME findings reveal, with hindsight, deficiencies in design for liveability in existing post-millennium apartments. Given that this housing stock is destined to be with us for decades to come, what criteria may be useful to inform the renovation and reconfiguration of existing apartment buildings? A wide range of adjustments are possible, in a wide range of contexts, from simple adjustments to information, rules and management processes, to reconfiguring shared infrastructure and services, to more radical repurposing of spaces in apartment developments to provide for liveability needs. In the latter category, could some apartment buildings be 'socially retrofitted' and what could this mean for the management of these buildings? Also, what options are there to adapt buildings to optimise energy efficiency, recycling, comfort and well-being through retrofit and/or reconfiguration? There is a need to: (a) draw together evidence, options, case studies and evaluations of apartment reconfigurations, and (b) foster dialogue between apartment builders/developers and policymakers around common agendas and best practice in repurposing/retrofitting apartment buildings.

#### **iii. Applying Project Home insights in diverse new apartment developments**

Given the current housing affordability crisis, more and better housing is needed, and there is a need to look beyond current dominant models of speculative development. Regulatory and financial innovation, if designed to avoid poor apartment outcomes and ensure liveability, are promising ways forward. Emerging development models from build to rent to more collaborative ownership models as deliberative developments, Baugruppen and intentional community housing, together with possibilities offered by green and alternative finance, are all potential parts of the solution. There is a need to investigate how these innovations can learn from empirical work on apartment design and liveability such as Project HOME.

We thank the Committee for their time and for providing the opportunity to make this submission to the Parliamentary Inquiry on Apartment Design Standards. Please direct any queries related to this submission to Prof Ralph Horne via email [REDACTED]

Yours sincerely,

**Professor Ralph Horne**

Associate Deputy Vice Chancellor, RMIT University

**Dr Andrew Martel**

Senior Research Fellow, The University of Melbourne

**Dr Louise Dorignon**

Postdoctoral Research Fellow, RMIT University

**Dr Nicola Willand**

Lecturer, RMIT University

**Dr Megan Nethercote**

Senior Research Fellow, RMIT University

## 5. References

- Dorignon, L., & Nethercote, M. (2021). Disorientation in the unmaking of high-rise homes. *Transactions of the Institute of British Geographers*, 46(2), 363–377. <https://doi.org/10.1111/tran.12427>
- Gower, A. (2020). *Evaluating design quality assessment of apartments in policy and practice*. RMIT University.
- Horne, R., Dorignon, L., & Middha, B. (n.d.). *High-rise plastic: Socio-material entanglements in apartments*.
- Horne, R., Willand, N., Dorignon, L., & Middha, B. (2020). *The lived experience of COVID-19: Housing and household resilience* (Australia; Issue 345) [Text]. Australian Housing and Urban Research Institute Limited. <https://www.ahuri.edu.au/research/final-reports/345>
- Marfella, G., & Martel, A. (2019). Design-to-live or Design-to-build? The impact of delegated design responsibility in Melbourne's high-rise residential buildings. In *Structures and Architecture: Bridging the Gap and Crossing Borders*. CRC Press.
- Reijonen, H., Bellman, S., Murphy, J., & Kokkonen, H. (2021). Factors related to recycling plastic packaging in Finland's new waste management scheme. *Waste Management (New York, N. Y.)*, 131, 88–97. <https://doi.org/10.1016/j.wasman.2021.05.034>
- Willand, N., & Nethercote, M. (2020). Smoking in apartment buildings – Spatiality, meanings and understandings. *Health & Place*, 61, 102269. <https://doi.org/10.1016/j.healthplace.2019.102269>