

**Submission  
No 17**

## **INQUIRY INTO APARTMENT DESIGN STANDARDS**

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## 1. INTRODUCTION

While design regulations are often loudly criticised to stifle designer flexibility, produce 'cookie-cutter' or formulaic design and threaten innovation that could potentially lead to improvements in the living quality, my PhD research in fact finds the opposite to be the case. In the absence of planning guidance, the tendency is that the industry builds its own certainty through design standardisation. This safeguard, however, comes at the cost of innovation. Using design forms that had already been tested and permitted in the planning approval process, the industry pieces together a standardisation that is guaranteed to pass, and they are reluctant to stray far from this certainty. The innovation in design is, in this case, limited to and by these precedents. With insufficient regulation, any design choices made were at the prioritisation of yield rather than apartment living quality.

From this research, this submission makes the following recommendations:

- Improvements are required in the suite of regulations themselves (please see my [PhD section on minimum apartment size](#) for example) but this should also occur in conjunction with;
- Emphasis placed in the regulations on the underlying principles that inform the approach outlined in the regulations, with exemplar case studies that demonstrate these principles
- Stronger requirements for architect involvement in large scale projects and design review panels in early project stages.
- Further emphasis should also be publicly placed on exemplar and innovative design results that have been achieved under regulations and the improvements this innovation made to the living quality experienced by the resident to better demonstrate the value of regulations and design to developers.

This document outlines in further detail the research findings from testing and evaluating Better Apartments Design Standards (BADs) and the London Supplementary Housing Guide (LSHG) on a series of apartment buildings in Melbourne and London. It highlights the relationship between regulations, living quality and design innovation in practice and makes recommendations on how the important partnership between design and regulations can be strengthened to facilitate an improvement in living quality for Melbourne's apartments.

## 2. RESEARCH METHODS

My PhD evaluated the efficacy of Better Apartments Design Standards (BADs) and the London Supplementary Housing Guide (LSHG) to improving living quality in apartments. This investigation involved applying both design quality assessment tools to 18 apartments constructed in Melbourne and London before the regulation was introduced. A visual content analysis was used to observe where the apartment plans failed to comply indicating what impact each regulation would have in improving design quality. Applying each tool to the apartments in the opposite city to compare how design quality can be differently defined, measured, weighted and the impact on living quality. This testing was complemented by 21 interviews with architects, policy makers and developers on the opportunities and challenges introduced in practice by BADs as well as an international review of 24 design regulations across 12 cities. For further information on this section on design standardisation (5.4), a review of international regulations or detailed investigations into room size versus minimum apartment size requirements (5.2) and daylight (5.3), please visit the [research repository](#).

### 3. STANDARDISED DESIGN PRACTICE THAT OCCUR WITH INSUFFICIENT REGULATIONS

#### STANDARDISED DESIGN PRACTICE ACROSS MELBOURNE'S DEVELOPMENT INDUSTRY AND THE IMPACT ON LIVING QUALITY ACHIEVED IN APARTMENTS

Industry standardisation can be seen in the room arrangement of Melbourne's apartments that were built prior to the introduction of the BADS regulation. Despite the flexibility of design response enabled by the discretionary standard *Guidelines for Higher Density Residential Development* (GHDRD), 9 of the 11 buildings studied utilised a 'snorkle' or 'inboard' bedroom design form. This is where bedrooms are internally located within the floor plate and stacked behind the living dining and kitchen room with either no or little access to the external façade.

- Under the discretionary GHDRD regulations, designers have the greatest design flexibility
- 9/11 buildings adopted the standardized forms of snorkel or inboard bedrooms
- These designs negatively affect the resident health and environmental sustainability provided by the apartment
- This form significantly increased yield compared to other space configurations in London apartments.



**Figure 1:** Apartment with 'inboard' bedroom to left and apartment with 'snorkel' bedroom to the right.

Snorkel Design form	Statistics	Implications
Average space used	4-5m <sup>2</sup> area	
Portion of internal Gross floor area in apartment	6-8%	High proportion of space in small apartments
Average width	900mm	Too narrow to functionally use for furniture
Reduces light and ventilation access in bedroom		Resident health implications from damp and poor air flow
High reliance on mechanical lighting and heating		Low environmentally sustainable and increases energy vulnerability of the resident.

**Table 1:** Spatial statistics and implications from the snorkel design form

	Melbourne	London
Width – 1 bed apartment	3-4.5m	6-7.4m
Depth – 1 bed apartment	7.9-9m	7-7.5m
Yield ave. along 30m façade perimeter	7-8 apartments	4 apartments
Width – 2 bed apartments	6.2-7.2m	9-10.5m
Depth – 2 bed apartments	9-12m	7-7.5m
Yield ave. along 30m façade perimeter	4-5 apartments	3 apartments

**Table 2:** Widths and depth ranges in buildings in Melbourne and London.

The period of discretionary guidance in Melbourne was described as a ‘void’ of guidance for planning permission, rather than a driver of design flexibility by an architect interviewed (Participant 1). They acknowledged the standardisation that was present in the Melbourne industry prior to the introduction of BADS and concluded that the standardisation was an attempt to establish planning permission certainty in light of this void:

*...there was very little guidance around what you should do and then really what then happened in place of that was VCAT [Victorian Civil and Administration Tribunal] case law and precedent so again you have something filling the void and so rules of thumb emerged which were well understood by the industry (Architect, Participant 1).*

## THE PERVASIVE NATURE OF DESIGN STANDARDISATION UNDER LIMITED REGULATION CONDITIONS AND PRIORITISATION OF YEILD

The ubiquity of this standardisation can be further seen in the lack of site-specific design in the Melbourne set of buildings during this period of discretionary guidance. The ability to respond to site specific conditions is noted as an important way in which designers create a more meaningful and responsive design. In the buildings studied;

- 6 site types and conditions were present
- 10/11 buildings adopted the same, singular overall building form with snorkel or inboard bedrooms internally.

Site shape and conditions	No. of site type in study set	No. of site-specific design instances
Square sites	1	0
Thin rectangular site	1	0
Triangle sites	2	0
Corner site	4	1
3 sides street fronting	1	0
Battle axe site	2	0

**Table 3:** Site conditions and design response patterns in Melbourne buildings studied

The one exception:

- a rectangular, corner site as seen in 3 of the other buildings.
- The design split the site into six separate buildings around a central courtyard
- This provided a sheltered communal outdoor area and increased building separation levels for residents
- There were no snorkel or inboard bedrooms, with improved living design quality in each of these apartments.
- However site yield over all was reduced at 10 apartments per 1500m<sup>2</sup>, compared to 13 apartments per 1500m<sup>2</sup> seen in the other standardized building forms.



**Figure 2:** 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.

One instance of innovation on the standardisation occurred in the buildings researched but this innovation prioritised yield at the cost of living quality in the building. For this building,

- The site proportions were wider than typical
- Potential existed to split into multiple buildings and capture improved living quality from this design form but a singular building footprint was again used
- To stretch the apartment across the wider distance, the snorkel standardization was used for living rooms not bedrooms in this instance
- Width of apartment decreased to 5.2m total apartment width for a 2 bedroom apartment compared to 6.2-7.2m seen in others using the standardization
- Yield was further increased on the standardization to 6 apartments per 30m façade as opposed to 4-5 2-bedroom apartments.
- Light, ventilation, circulation and functional layout were negatively impacted in the living room as well as bedrooms.



**Figure 3:** Innovation with in the Melbourne apartment market of a snorkel bedroom and snorkel living room in order to reduce the depth of the apartment on the right.

On the whole, this demonstrates the pervasive nature of design standardisation that occurred in a period of minimal design regulation and the consequent yield maximisation that consequently occurred at the cost of the living quality provided in the apartment.

## 4. RECOMMENDATIONS

This research has shown that improved living quality is reliant on a relationship between regulation and design in practice.

While freedom of expression for designers can lead to good design results in some instances, it is important to be aware that designers are fundamentally answerable to developers. As a result, good policy encourages developers to value design and thus acts as a surrogate for consumer interests in design quality for future occupants.

- Regulation overrides the need for standardised designs formed out of developer uncertainty and by doing so, provides a space in development for designers to innovate and respond in the best way possible to the conditions of the project.
- Instead of developers leading form decisions based on yield parameters, regulations place living quality at the forefront and with the aforementioned design autonomy, designers are encouraged to innovate and interpret these conditions in new and productive ways.
- As a result, regulation and design are part of a relationship together that improves living quality in apartments and stimulates design innovation.

The upcoming, mandated inclusion of the [Livable Housing Design Guidelines \(LHDG\) silver standards in the National Construction Code \(NCC\) 2022](#) presents a potentially pivotal opportunity to shape industry practices and approaches to living quality and designs. It will force a rethink of design approaches, and yield feasibility across Australia and provides an important lever for improving apartment living quality if capitalised upon by the work stemming from this parliamentary inquiry. We therefore recommend that the parliamentary inquiry strengthens conditions that support design alongside increasing regulations. Improvements are required in the suite of regulations themselves (please see my [PhD section on minimum apartment size](#) for example) but this should also occur in conjunction with;

- Emphasis placed in the regulations on the underlying principles that inform the approach outlined in the regulations, with exemplar case studies that demonstrate these principles
- Stronger requirements for architect involvement in large scale projects and design review panels in early project stages.
- Further emphasis should also be publicly placed on exemplar and innovative design results that have been achieved under regulations and the improvements this innovation made to the living quality experienced by the resident to better demonstrate the value of regulations and design to developers.