Housing Design Innovations Delivered Under the National Social Housing Initiative

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Abstract:
The Social Housing Initiative (SHI) formed part of the federal government’s response to the Global Financial Crisis and represented the largest one-time investment in social housing by any government in Australia’s history. This paper examines the built results of the SHI, with the analysis focused on housing design and procurement outcomes.

Public housing redevelopment is an opportunity for innovation and market leadership in affordable housing design and delivery. While the SHI’s primary objective was to provide jobs in the construction industry at a time of potential economic crisis, this paper reveals that good quality innovative housing outcomes were achieved. However these were more a chance by-product of the process rather than a strategic intention. The vast majority of projects delivered in Melbourne, for instance, were ‘business as usual’ 2-for-1 dual occupancy developments. Given the magnitude of the SHI building program, this outcome can be considered a lost opportunity and an underutilisation of public investment (financial and land).

This paper provides a survey of individual developments that did show innovation, illustrating through spatial analysis how quality housing and urban outcomes can be achieved within constrained social housing scenarios. The design innovations were often simple but well executed strategies, focusing on efficiency of internal apartment/unit planning, arrangement of tenancy mix/social diversity, interfaces of private dwellings with common areas and public spaces, parking arrangements, design of common areas, and addressing privacy and noise through landscaping and careful planning.

The paper also describes the critical role that procurement methods play, particularly creative/nonstandard approaches to partnerships and financing, in delivering innovative design outcomes. Factors leading to innovation included the involvement of Community Housing Organisations who could access alternative land and funding sources, offer design and delivery expertise and facilitate mixed tenancy outcomes, alongside the relaxation of selected planning controls, and project alignment with existing urban renewal strategies.
Introduction

The Social Housing Initiative (SHI) was delivered from 2009–12, as part of the Nation Building Economic Stimulus Plan (NBESP) to combat the local economic effects of the 2008 Global Financial Crisis. It represents the largest single investment in social housing by any government in Australia’s history (Pilibersek 2009). The main objectives of the SHI were to bolster jobs and productivity in the construction industry, develop the not-for-profit (NFP) housing sector and provide long-term accommodation for the homeless and those at risk (FaHCSIA 2009; Commonwealth of Australia 2014). The programme did not aim to achieve specific spatial design outcomes, nevertheless it provides a sizeable ‘sample’ of projects from which architectural and urban design lessons can be learned for future affordable housing provision.

Under the SHI, approximately 19,700 dwellings were delivered within 3 ½ years (Commonwealth of Australia 2014; KPMG 2014). To meet the ambitious timeframe, SHI projects were exempted from conventional planning processes, enabling State Housing Authorities (SHAs) to fast-track development approvals and delivery (Legacy 2013). The nature of these legislative changes, and the efficacy of the SHI overall, have been reviewed in relation to economic performance, community rights/response, local planning processes, public housing asset transfers and broader social housing strategies (KPMG 2012; Legacy et al 2013; Ruming 2013; Jacobs et al 2013; Pawson et al 2013; Groenhart & Burke 2014; Milligan et al 2009; Troy 2012). This paper extends this body of research to examine the spatial and physical outcomes of the SHI through a design quality lens.

Demonstrating design innovation

Public housing redevelopment is an opportunity for innovation and market leadership in affordable housing design and delivery. The SHI did achieve some quality, innovative projects but these outcomes tended to rely on individual ‘champions’, rather than result from strategic policy. In fact, in Victoria, the vast majority of SHI projects continued business-as-usual market standards, which fail to deliver the imperatives of diverse, sustainable and productive cities (Newton et al 2011). For a programme of this magnitude, the lack of design innovation can be considered a lost opportunity.

The type, location and design quality of social housing influences how effectively public and community sector providers can support tenants’ needs (Australian Institute of Health and Welfare 2010) and impacts on the flexibility and utilisation of dwelling stock over time (COAG 2008). As well, affordable housing design and delivery contributes to broader social and urban aspirations. For example, the form and distribution of housing, its access to urban amenity and public transport services have been linked to social disadvantage, mobility, community participation, access to job-markets, inactivity-related health issues and vulnerability to mortgage stress (Cheshire et al. 2014; Hulse et al. 2011; Dodson & Sipe 2008; Trubka et al. 2010). In each of these studies, the type and location of affordable dwellings are recognised components of sustainable and equitable outcomes, however the evidence is often expressed in quantitative or statistical formats. Very little spatial design evidence exists in Australia’s affordable housing literature.

This paper sought to assemble a collection of exemplary SHI developments that offer demonstrable lessons for future affordable/social housing delivery and inform the ongoing management of public housing assets. Demonstration projects play an important role in enhancing the built environment by providing real-world data and design evidence (Femenías 2004, Macmillan 2003). Design ‘artifacts’ can be used to present a tangible and visible concept when the definition or conditions around that concept are uncertain (Murray 2013; Femenías 2004), which is the case for affordable housing supply in Australia (Commonwealth of Australia 2014). As well, spatial design research can offer important insights into context-specific issues that can be obscured in numerical expressions or imprecise in qualitative terms (Lowe 2015; Murray 2013).

In the context of affordable housing and the SHI, high impact projects that employed clever, cost-effective design strategies and delivered considerable improvements at an individual or collective level were of interest to this paper. Design innovations were often simple but well executed strategies, for example, efficient internal apartment/unit planning, arrangements of tenancy mix for social diversity, interfaces of private dwellings with well-designed common areas and public spaces, collective parking arrangements, and addressing privacy and noise through landscaping and careful planning.

Research aims and methodology

This paper aims to identify key design, locational and procurement issues from the SHI relevant for future supply of affordable housing, with a particular focus on low- and mid-rise housing types applicable to suburban infill redevelopment. It examines six innovative designs to draw out their
lessons and determine the factors that allowed them to occur. The authors summarise findings from a national review of SHI projects funded by the Australian Housing and Urban Research Institute (AHURI) (Murray et al 2013) and discuss the design innovations identified in relation to contemporary urban aspirations for diverse, sustainable and affordable infill housing. The national design review involved a mixed methods research approach comprising architectural and urban design analysis, design case study research, desktop research, tenant surveys, stakeholder interviews and an industry workshop. This encompassed:

- Analysis of architectural and urban design attributes of a broad range of SHI projects nominated by industry and government stakeholders as innovative outcomes, and/or identified by the research team to be of strategic interest for the research. Through this wide-ranging review, a development benchmark was identified that represented the overwhelming majority of business-as-usual (BAU) housing outcomes. A matrix of key design innovations (or selection criteria) was established against which six innovative projects were selected for detailed investigation. Each selected project differed in building type and urban locations and substantially exceeded ‘business-as-usual’ outcomes.
- Site visits, detailed architectural and urban design reviews, and interviews with stakeholders including architects, delivery managers and operators for each of the selected case-study projects. Preparation of analytical drawings and diagrams identified and ‘unpicked’ the key design strategies employed and design innovations achieved.
- The testing of the design research findings through tenant surveys with residents of the selected case study projects and an industry/stakeholder workshop with representatives from government housing agencies, housing associations, builders, architects and project managers involved in the SHI program.

The first section of the paper provides a brief summary of the critical role that procurement methods – particularly creative/non-standard approaches to partnerships and financing – played in delivering improved housing outcomes in different jurisdictions. For example, community housing organisations (CHOs) were able to access alternative land and funding sources, offer design and delivery expertise and facilitate mixed tenancy outcomes. The capacity of CHOSS to augment the housing and urban outcomes that were otherwise possible under the constraints of the SHI is a significant consideration for on-going management of public housing assets.

The second section presents relevant findings from a geo-spatial survey of SHI projects delivered in greater Melbourne. A national register of SHI projects was not available for this study. Victoria is used as a basis for discussion about the urban and social impacts of SHI dwelling types and distributions and the need to increase the cogency of housing supply and broader strategic urban policies. Given that the SHI’s primary objective was to provide jobs in the construction industry at a time of economic crisis, it is not surprising that many of its projects were ‘business as usual’ 2-for-1 dual occupancy developments. The third section of the paper outlines the shortcomings of the BAU project benchmark.

The bulk of the paper is dedicated to a detailed examination of the six case studies and explores the spatial design issues affecting the liveability and functionality of internal, external and shared dwelling spaces. As well, the case studies reflect on broader urban issues such as the efficient use of land, engagement with the surrounding context, pedestrian and public transport connections, landscape design and open space distribution—and the combined impact of all of these factors on private and public realm environments.

**Procurement impacts**

A national review of SHI procurement processes provided a broader context for the study of housing design, and informed the identification of innovations and their cause. Key findings included:

- **Delivery by different sectors:** The extent to which the private, public and NFP sectors led the procurement of SHI developments differed from state to state. For example, New South Wales did not fund the NFP housing sector to act as housing developers, whereas in Victoria, Tasmania and Queensland CHOSS delivered 52%, 44%and 34% of dwellings respectively. Where the procurement approach was more mixed in terms of housing development instigators, a greater diversity of development outcomes were observed. In Victoria and Queensland particularly, more high-density, mixed tenure and mixed-use developments were completed by the NFP sector in well-located areas.
- **Growth of the community housing sector:** The SHI contributed to growth of the NFP housing sector in all states and territories. This mainly occurred through significant transfers of completed
housing stock from the state to the NFP sector. In jurisdictions where the sector was given a role as ‘developers’ it further contributed to stepping up the sector’s development capacity.

- ** Expedited planning approval processes:** Fast-tracked planning processes were put in place for the SHI that by-passed conventional local council-based assessment and residents’ rights to objection. This significantly reduced project delivery times by reducing development holding costs and avoided costs associated with development disputes. Some relaxations were also observed in regulated densities, parking provisions and building height/setbacks.

- **Innovation in procurement models:** A small number of projects used innovative procurement models such as, tenancy mix, mixed funding arrangements, resident cooperatives, sourcing well-located land and using SHI developments as a catalyst for larger scale urban renewal. Procurement innovations were most frequent in projects led by the NFP sector, and to a lesser extent in flagship state-led projects.

- **Impact of procurement on design:** Procurement factors that affected design outcomes included such factors as the scale of the project, with smaller projects having a more limited scope for design; the degree to which design quality was a stated value of the organisation procuring the development; the skill of the architect and the extent of their experience with social housing; and the SHI funding cap of $300 000 per dwelling and the ability to source external development contributions (land or financial).

**Project locations**
Geo-spatial analysis was undertaken on SHI developments completed in the Melbourne metropolitan area (the scope of the research only allowed this focus on one capital city).

In Melbourne, more than 70% of projects (52% of dwellings) were constructed in areas with limited access to public transport, where high levels of car dependency would be likely. Only 10% of projects occurred in areas with moderate to high public transport access. However, these developments contained almost half (47.8%) of the total dwellings provided by the SHI, indicating an appropriate preference for higher-density developments in accessible locations. There were 55.8 per cent of dwellings that were more than 1 kilometre from an activity centre and almost two-thirds in areas of above average socio-economic disadvantage. (Please note that project refers to individual developments that may contain a number of dwellings).

The SHI cost cap of $300 000 per dwelling was perhaps the most influential factor on housing location outcomes. Where the SHI funding was allocated for both land and development costs, projects tended to be located in areas of lower property value on the suburban periphery, and delivered conventional low-density housing outcomes constructed to minimum standards. Developments completed on land already in public possession were often within ageing housing commission estates with existing disadvantage. NFP-led developments, which accessed external land and financial contributions, tended to be better-located projects, generating higher dwelling yields. (The NFP housing sector delivered 53% of all SHI dwellings in Victoria.)

More research is required to understand how existing urban development policies guided the SHI. For example, initial analysis of SHI data in Metropolitan Melbourne revealed that 70 per cent of all dwellings were supplied by infill redevelopments in established urban areas. When assessed as a discrete sample, the SHI meets current targets for new infill housing supply. However, it is difficult to ascertain how the type and quality of housing delivered responded to the existing physical contexts within specific regions and their particular housing needs. Most plans relating to the program tended to remain at a high state level, encompassing a vast range of objectives and aspirations. Spatial strategies for design and delivery of SHI dwellings were not readily available. There is a need to enhance strategic planning for social housing at the regional and subregional level; that is, a strategic framework that considers the spatial distribution and design typologies of appropriate social housing within urban precincts or districts rather than just considering urban, economic and social policies that operate at a state level. Revisiting social housing strategies with a view to developing a spatial design framework for future development would enable more nuanced responses to specific contexts and contribute to enhanced housing and broader urban outcomes.

**Business–as-usual housing: benchmark for innovation**
Much of the housing delivered under the SHI continued with business-as-usual standard industry practice. For example, in Victoria 80% of SHI projects (yielding 30% of Victorian dwellings) were one or two dwellings on a typical residential allotment; that is, conventional detached houses that dominate greenfields or dual occupancy infill developments that are prevalent in the middle ring suburbs of Australia’s cities (Figure 1 and Figure 2). There were a number of reasons for this business-as-usual
approach, such as the strict time and cost pressures required by the SHI, land assembly constraints, and the aspiration for social housing to be unidentifiable within its context.

Figure 1: Site plan and diagrams - business-as-usual housing delivered under the SHI in Victoria

Figure 2: Business-as-usual typical street view - SHI delivered dual-occupancy in Victoria

Figure 1 and Figure 2 above show a repeated model over a variety of sites—two 2–bedroom, single level units replacing an existing, aged Office of Housing dwelling on a standard block. Both units have a car space adjacent to the entry and a long Sealed driveway, which runs parallel to the side boundary. Orientation varies and is dependent on the site.

Business-as-usual housing models are predominately driven by cost. They employ very economical construction methods geared towards optimising efficiencies within the cottage building industry (Phillips 2009; Goodman et al 2010). A ‘pattern book’ of housing products provides limited housing diversity with differentiations provided through surface treatments such as façades and finishes. To maximise profit margins, dwellings typically have very large floor areas but are constructed to minimum performance standards (eg energy ratings) at the expense of the end-user, who carries the price of the subsequently high operational costs. More compact dwellings that demonstrate better spatial design and clever material use can significantly reduce the energy needed for operation with very little impost on the capital construction cost (Murray et al. 2011).
As well, the internal planning of these dwellings is often very rigid, restricting the types of households that can be accommodated and the adaptation of spaces to changing resident needs. Standardised approaches to the siting of buildings, parking and open space also limit passive design opportunities, such as solar access and natural shading, which can produce unpleasant external environments. Dual occupancies, in particular, are dominated by concrete driveways and offer minimal private open space and soft landscaping. The combined effect of several infill redevelopments of this type represents a significant loss of green amenity for the surrounding neighbourhood. Such houses are unsustainable in the broader urban context, where low density housing results in ongoing urban sprawl, with all of the well-documented problems, such as lack of infrastructure (Trubka et al. 2008; Dodson & Sipe 2008; Dowling 2010).

Detailed Case Studies
Six innovative SHI projects were selected from the national review for further examination at the scale of the site and detailed building design. Using the business-as-usual housing model as a benchmark (above), projects were selected on the basis of criteria falling into three broad categories: (1) urban/location; (2) design; (3) tenancy mix/program mix. Design innovation criteria were developed through a dual approach of reviewing nominated projects against established criteria from housing design literature (Murray et al. 2008, 2007; Schneider and Till 2007; CABE 2006), and new criteria observed in exemplary projects. This enabled the criteria to be responsive and specific to the context of affordable housing provision and the SHI.

Criteria for assessing design innovations
Key innovative design criteria arrived at through this process of distillation were1:

- **Density and scale**: Building forms that are sensitive to the existing context while increasing densities and maintaining open space amenity.
- **Typological diversity**: Higher density housing models that provide diversity in a particular neighbourhood or precinct.
- **Parking**: Intelligent design strategies that ameliorate the impact of vehicle access and parking, enhancing individual and collective amenity for residents and surrounding community.
- **Shared space**: High quality, safe, and effective shared spaces, facilities or mix of programs that improve liveability for residents and/or surrounding community.
- **Flexibility**: Designs that allow for dual/multiple uses and changing resident needs.
- **Tenancy mix/use mix**: Incorporation of different housing tenancies and/or different household groups encouraging a healthy social mix and a more inclusive community.
- **Frugal design solutions (affordability)**: Efficient layouts and intelligent design solutions that maximise small spaces and increase amenity, while keeping costs down.
- **Environments, servicing**: Environmental impact consciously kept to a minimum, also reducing operational costs for low-income tenants.

Compared to the business-as-usual housing models, the SHI case studies demonstrate innovative design solutions; they resulted in intensified housing outcomes, while contributing positively to the living environments of residents as well as to the broader suburban fabric. The purpose of the design case study analysis was two-fold: one is to reveal effective design strategies for enhancing the quality and performance of housing outcomes (that is, how exactly were the innovative criteria met), and the other is to examine how the conditions of the SHI may have facilitated innovation beyond that possible within conventional delivery processes. The selected case studies are distributed across a range of both building typology/scale and urban locations. They demonstrate the best combination of innovation criteria developed by this research and offer a range of strategies for viable, cost effective, good quality design alternatives.

**Case study 1: Four-occupancy single lot development, Beverly Hills, New South Wales**
The redevelopment of a single lot (previously occupied by one small, single-storey fibro cottage) to yields 4 x one-bedroom units for seniors. The context is a traditional older suburb with mostly detached and some semi-detached one and two-storey houses. The project presents a model for infilling medium density housing into such an area that is very effective through maximising amenity and minimising impact on existing neighbours and streetscape.

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1 It should be noted that the universal design and 6-star energy rating required by the SHI applied to all housing developments undertaken in Stage 2 of the program and 96 per cent of all projects delivered met these standards (KPMG 2012). As such, these design attributes have not been included as innovative criteria that can identify exemplary case study projects for the purposes of this research. However, it is recognised that these performance requirements represent a significant enhancement for conventional social housing outcomes and implementing this step-change was a considerable achievement for a program of this magnitude.
Using a repeating ‘L’ shape plan arrangement (Figure 4), the design provides all units with good solar access, cross ventilation and well-sized private courtyards, while minimising overlooking between units and neighbours. Although the massing extends far back in its site (relative to neighbours), only the front section is two storeys so overlooking and overshadowing of neighbours is avoided (Figure 5). Parking provision is limited to one space at the front of the site, limiting driveways and allowing more space for the units and their private courtyards. All units have private entries from a planted walkway running down the south western side (the only communal space, Figure 3), and all yards have external access (so it is not necessary to carry gardening paraphernalia through the unit). Internal spaces are well sized and planned to maximise liveability, enabling, for instance, a guest to stay on a fold-out sofa in the lounge and access the bathroom without going through the bedroom proper. This is the product both of Housing NSW’s space standards and careful planning work by the architect.

This project was one of three very similar single lot redevelopments on the same street designed by the same architect and built at the same time. The architect made modest adjustments to the facade treatment of each project to differentiate them, while still benefitting from economies of shared construction systems and materials.

![Figure 3: Street view (left), lower unit courtyard & upper unit balcony (middle), access path (right)](image)

![Figure 4: Unit floor plan](image)

![Figure 5: Site section (top) and plan (bottom)](image)
Case study 2: Row houses, Hampton east, Victoria

This redevelopment is on a double-lot site on a corner, previously occupied by a freestanding, two-storey block of walk-up apartments. The new development consists of eight dwellings (4 x two-bedroom + 4 x one-bedroom) and these are arranged as two rows of single-storey row houses (Figure 8). The site arrangement allows for a high-density yield with good amenity, while remaining at a scale that is compatible with its low-rise middle suburban context (Figure 3).

The clustered parking in a small lot directly off the street at the corner of the site minimises the driveway area and is a key component of the site arrangement (Figure 6). A small, shared path economically provides access to the three back units. The pathway also separates the two rows and allows additional entry to rear yards of street-facing units (Figure 7). This pathway and the parking lot are the only shared areas, with the emphasis placed on private open space instead. The row housing arrangement gives all units north-oriented living areas, outlook and cross ventilation (Figure 9).

Figure 6: View of units from street showing sensitive low scale integration with context

Figure 7: Consolidated car park (right) and shared central pathway (left)

Figure 8: Site section (top) and plan (bottom)

Figure 9: 1 bedroom unit floor plan
Case study 3: Courtyard and row houses, Warragul, Victoria

Located on the fringe of the town centre, the project involves redevelopment of two large sites on either side of a street (Figure 11 and Figure 10). DHS single-storey and double-storey walk-up concrete flats previously occupied both sites. The new housing uses a double-storey courtyard type on the west side, and a single-storey row house type on the east side that directly abuts a public park. The housing designs provide good amenity and relatively high density at a scale sensitive to context. Together the two sites offer a range of dwelling types intended for a variety of user groups.

A key innovation is that the site arrangements on both lots engage positively with their immediate context. The row houses are separated by a shared laneway that flows directly onto the public park beyond, without a fence (Figure 12). Separate entries to the second (rear) row of units is staggered along the laneway, increase privacy and individuation (Figure 13). The courtyard houses at the northern end continues the adjacent shop’s street setback, allowing more space at the back for car parking, and appropriately increasing the urban street presence of this block opposite the park. The deeper setback of the southern courtyard houses allows existing mature trees to be preserved on the street front. On both sites parking is consolidated to free site area for private open space and increased densities. Locating the car park to the rear of the property also allows dwellings and gardens to face the street, improving the public realm.
Case study 4: Co-housing, Heidelberg Heights, Victoria
This project involved the redevelopment of three contiguous lots, previously occupied by traditional detached suburban houses. Developed by the NFP housing association CEHL and based on co-housing principles, the project includes 18 private apartments clustered around shared facilities and grounds (Figure 14 and Figure 16). Tenants are required to have an interest/be willing to participate in co-housing and to share an ethos of environmental sustainability and communal living.

A large, double-height communal dining hall acts as the hub of the complex (Figure 15), and residents also benefit from rights to a shared library, guest room and music room. Parking is consolidated in a single lot for 12 vehicles directly off the street, minimising driveways and allowing space for a large shared back yard which includes a vegetable garden, patio area and children's playground. The yard occupies the northeast corner and connects to a public park through a back gate. Generously sized landings with good outlook, located at the entries of apartments (maximum three entries, Figure 17) create an opportunity for the residents to meet, even place furniture and enjoy meals together, encouraging interaction between neighbours.

Figure 14: Three-storey apartment buildings clustered around a central communal building
Figure 15: Interior view of communal area
Figure 16: Site section (top) and plan (bottom)
Figure 17: Shared landing / entry
Case study 5: Row houses and apartments, Moonah Tasmania

The project redevelops a small parcel of industrial land (previously occupied by old TAFE training sheds) in the middle of a large block without a real street frontage. It is wedged between a shopping strip on one side and detached suburban housing on the other that is transitioning to light industrial and commercial properties as residents migrate out of the area (Figure 18). The project is chiefly of interest in the way it identifies and exploits this interstitial space in the urban fabric of a greyfield suburb, demonstrating a strategic opportunity to introduce medium density housing at this threshold area between activity centre/shopping strip and existing low-rise residential areas (Figure 19).

It also presents a robust design solution to the site and brief, with a combination of one and two-bedroom walk-up apartments arranged in two rows to provide good solar access and cross-ventilation. The southern block is elevated to allow parking below and receive more sunlight (Figure 20). All units have north-facing living and open space areas; townhouses and first floor apartments extend onto small private balconies, and the ground floor apartments onto small private yards. A shared open space with a playground and garden plots provides a spatial buffer between the two rows (Figure 21).
**Case study 6: Richmond, Bowen Hills, Queensland**

Richmond is a new apartment building constructed on a large vacant block in a rapidly changing suburb on the fringe of Brisbane's CBD. Located within the Urban Land Development Authority's (ULDA) urban renewal precinct, the project is currently surrounded by a mix of older light commercial and industrial activity along with more recent, high-density residential developments and neighbourhood parks (Figure 22).

The adjacent park offsets the size of the building. The apartments are positioned around a well-landscaped, open courtyard ensuring that all units can be cross ventilated and have good access to natural light as well as pleasant outlooks (Figure 23 and Figure 25). The development features a series of carefully designed and located common spaces that promote some interaction between occupants at their discretion, as well as providing them with larger spaces that higher density living often does not offer. Along with shared circulation, these common spaces are open air in response to the sub-tropical climate, and assist with ventilating the rest of the building (Figure 24). Securely screened foyers located at the entry of all apartments enable residents to leave windows and entry doors open to cross-ventilate their apartments, while providing privacy from passers-by and a secure storage space (Figure 26).

Figure 22 Existing mature tree retained to enhance development

Figure 23: Section (top) and Site Plan (bottom)

Figure 24: Open air circulation and communal areas
Conclusion
This paper demonstrates that the demanding rollout of the SHI both limited and enabled innovative housing and urban outcomes.

On the plus side, the processes put in place to meet the program’s timing enabled creative flexibility in housing outcomes, partly because there was less opportunity for resistance. This meant that innovative design approaches that increased the quality, diversity and density of dwellings could be pursued without risk of contestation and time delays that conventional developments are open to. A number of high impact projects were able to employ clever, cost-effective design strategies that delivered considerable improvements at an individual or collective level: density, collective car parking, setbacks, height and mass were treated well. However, the expedient delivery also meant that the program relied on tried and true methods, with business-as-usual dominating the outcomes.

Location was found to be a critical issue – the case studies presented here were well located, but this was not the case for many of the projects, which reflects the poor location of much public land provided for social housing. Likewise, density and scale need to be strategically approached for better outcomes: appropriate scales and distribution in some of the case studies were purposeful and programmed demonstrating that social housing developments can address public amenity.

Overall, the SHI was a welfare housing model offering limited mixed tenancy. However, while some tenancy mixes were found in larger developments, smaller project scales lacked this – future developments could consider this issue at the level of the street, block or precinct. The need for a 'champion' was identified – this might be an astute development manager who ensured that business-as-usual outcomes were exceeded, a housing association with firm project aspirations to drive the project, an architect maintaining high quality design and performance principles through the development phases, or a housing cooperative/tenant body that successfully paired the design with ongoing occupation and end-user needs. Business-as-usual projects typically lacked this kind of 'extraordinary' input.

To conclude, the overall lack of strategic intention for the SHI did result in business-as-usual models in lieu of alternative designs that could better respond to contemporary urban contexts and housing needs. While the complexities and demands of the SHI are recognised, continuing business-as-usual design approaches under a program of this magnitude represents a lost opportunity for enhancing the quality and performance of affordable and social housing in Australia. Increasing density in strategic locations is desirable rather than continuing locational disadvantage by increasing density in inappropriate locations. More research into the ways in which strategic and innovative procurement and innovative design methods could impact positively on housing delivery is needed.
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