

Design innovations delivered under the Nation Building Economic Stimulus Plan—Social Housing Initiative

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ACRONYMS

ABS	Australian Bureau of Statistics
AHURI	Australian Housing and Urban Research Institute Limited
BAU	Business-as-usual
CHO	Community Housing Organisation
DHHS	Department of Health and Human Services (Tasmania)
DHS	Department of Human Services (Victoria)
DPCD	Department of Planning and Community Development (Victoria)
Eol	Expressions of Interest
FaHCSIA	Department of Families, Housing, Community Services and Indigenous Affairs (Australian Government)
Greyfields	Under-utilised land parcels in middle suburban locations where residential building stock is failing (physically, technologically and environmentally) and energy, water and communications infrastructure is in need of upgrade (Newton 2010).
HIU	Housing Innovation Unit (agency within DHSS, Tasmania)
LLDD	Landlord type (ABS Census Classification)
NBD	Nation Building Division (DHS, Victoria)
NBESP	Nation Building Economic Stimulus Plan
NAHA	National Affordable Housing Agreement
NatHERS	Nationwide House Energy Rating Scheme
NFP	Not-for-Profit
NRAS	National Rental Affordability Scheme
PMO	Housing NSW Project Management Office
PTAL	Public Transport Access Level
RFO	Requests for Offer
ROI	Registration of Interest
SEIFA	Socio-Economic Indexes for Areas
SHI	Nation Building Economic Stimulus Plan—Social Housing Initiative
SHA	State Housing Authority
SME	Small and Medium Enterprises
ULOA	Urban Land Development Authority (Queensland)

EXECUTIVE SUMMARY

This Positioning Paper is the outcome of Stage 1 of a three-stage research project: *Processes for developing affordable and sustainable medium-density housing models for greyfield precincts*, which is funded by AHURI over a two-year period 2012–14.

The questions to be addressed in the three stages of the research project are:

Stage 1: What are the lessons learned from the delivery of the Nation Building—Economic Stimulus Plan (NBESP) Social Housing Initiative?

Stage 2: Where are the opportunities for land assemblage of dispersed public housing land in the middle suburbs?

Stage 3: How can public housing land in greyfield precincts be developed to increase the provision of affordable housing and enhance the overall performance and contribution of these greyfield locations in terms of density, sustainability and community engagement?

This Positioning Paper serves two distinct purposes:

1. It provides analysis from an architectural, urban-design and urban policy perspective of the housing outcomes produced and procurement processes used in the Social Housing Initiative (SHI).
2. It provides case study material and identifies key design, locational, procurement and policy issues that will be addressed in the second and third stages of this research project, relevant to future greyfields redevelopment.

The aim of this Positioning Paper is not to review comprehensively every project delivered under the SHI, but to unearth a selection of innovative design and procurement outcomes from the program and to determine the factors that influenced these outcomes and allowed them to occur. It has involved a mixed methods research approach comprising architectural and urban design analysis, design case study research, geo-spatial and statistical analysis, desktop research, tenant surveys, industry interviews and research workshop.

Research findings

The SHI successfully achieved substantial social housing increases within the ambitious time frames set by the program. More than 19 500 net new dwellings were delivered nationally by June 2012, representing a nominal increase of 5.5 per cent in overall social housing stock.¹ The conditions of the SHI both enabled and limited innovative outcomes. On an individual project level, the processes and timing imposed by the program enabled creative flexibility in the housing delivered because there was less opportunity for development resistance. However, timing and program constraints combined with existing structural issues, such as a lack of longer-term strategic plans for social housing, also limited the efficacy of the program overall; from this perspective, the SHI might be considered a lost opportunity.

This research has identified a number of projects that achieved considerable enhancements in the quality, performance and delivery of housing under the SHI. While these innovations were evidently possible under the program, they are not representative of the overall rollout. More often than not business-as-usual models were employed in lieu of more appropriate design alternatives that respond to contemporary urban contexts and housing needs.

¹ Calculation based on 2006 national statistics for public and community housing dwellings from Atkinson and Jacobs (2008).

The key innovations and issues revealed by this research include:

1. Methods of procurement

Delivery by different sectors

The extent to which the private, public and not-for-profit (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* at all whereas in Victoria, Tasmania and Queensland, community housing organisations (CHOs) delivered 52 per cent, 44 per cent and 34 per cent of dwellings respectively.

Where the procurement approach was more mixed, a greater diversity of development outcomes were observed.

Growth of the community housing sector

The SHI contributed to growth of the NFP housing sector in all states and territories—as per Federal Government objectives for the SHI. 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.

Planning approval processes

Planning processes put in place for the SHI (which bypassed conventional local council-based assessment and residents’ rights to objection) significantly reduced project delivery times. For the NFP housing sector this was of great assistance as it reduced 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 proportion of SHI projects demonstrated innovation in the procurement of social housing that provided a range of benefits, such as tenancy mix, mixed funding arrangements, resident cooperatives and sourcing of well-located land, as well as 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

Key procurement factors affecting design outcomes included:

- 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 prior knowledge or experience with social housing.
- The SHI funding cap of \$300 000 per dwelling and the ability to source external development contributions (land or financial).

2. Urban location

Geo-spatial analysis undertaken on SHI developments completed in the Melbourne metropolitan area provided a reading of the program’s performance through broader urban and social lenses. In Melbourne, more than 70 per cent 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 per cent of projects occurred in areas with moderate-high public transport access. However, these developments contained almost half (47.8%)

of the total *dwelling*s 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.

The SHI cost cap of \$300 000 per dwelling was perhaps the most influential factor on housing location outcomes. Where the SHI funding allocation absorbed 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 could access external land and finance contributions, tended to be better located projects generating higher dwelling yields. The NFP housing sector delivered 53 per cent of all SHI dwellings in Victoria.

3. *Design*

A series of *design innovations* have been identified in this paper. However, certain tensions have also arisen between these design objectives and liveability objectives or tenant expectations.

Parking

Consolidating car parks in one area of a site and reducing parking numbers facilitates better open space treatments and more pedestrian environments. Tenants did not provide negative feedback regarding the consolidation or location of car parks, but the *number* of car parks was considered insufficient. Further research is required to explore future design opportunities involving car-sharing, dual-purpose car parks or offsite car parks.

Common spaces

Though seemingly generous in size, large consolidated common spaces were often inappropriately located and/or underused due to noise, safety and overlooking issues, especially in larger developments. More successful projects provided a series of smaller shared spaces, dedicated use and carefully designed/sited to encourage more 'natural' interactions by occupants with shared interests.

Privacy

Well designed, higher density developments can maintain high levels of privacy without reducing amenity or quality of spaces. Simple strategies for visual separation of spaces make fundamental differences to tenant enjoyment. These might include entry screens, landscaping/planting and considerate location of common circulation paths, windows and doors.

Noise

Noise is a particular concern in larger scale projects requiring both acoustic and spatial design solutions. Careful zoning of incongruent tenant groups and their activities can help mitigate noise within a development (e.g. children's play spaces and older persons' private dwelling spaces). Good quality design can facilitate quiet dwelling outcomes while providing alternative opportunities for tenant interaction.

Tenant mix/social diversity

A diversity of household types within a single development can provide significant community benefits, but must be considered in relation to the scale and context of a project. Diversity of household types can also be considered at the level of the street/neighbourhood. Similarly, providing a mix of social and private tenancies within a project can be very positive, but often impacts on tenancy management and social

cohesion. Projects that have successfully achieved this have tended to be larger scale developments with various levels of separation, including controlled vertical circulation solutions and tenancy separation by floor level.

Efficient planning

Efficient, intelligent planning and design is integral to the quality and performance of housing outcomes. Small design moves make significant differences. Frugal internal planning that maximised flexible uses of spaces and ensured good access to light and ventilation increased liveability while keeping construction costs down.

Further work

By examining the physical qualities of what was built under the SHI, as well as the impact of the program as a whole, this paper has identified lessons for enhancing future affordable housing development and its potential role in transforming broader social and urban contexts within our cities. The following points identify further work that would be of value for the housing and urban development industry and associated policy contexts.

Broadly speaking, there are three scales of consideration:

→ *Strategic development*

Potential role of public housing within metropolitan planning strategies.

Strategic plan for social housing addressing contemporary demands, locational preferences, advantage/disadvantage, appropriate design typologies and density distributions.

→ *Precinct and community building*

Tenancy mixes and social mixes considered at the scale of the building/site and at the scale of the street/neighbourhood. Design of precincts and shared spaces that enhance the physical urban environment, build strong communities, facilitate participation and enhance opportunities for both social tenants and the broader community.

→ *Dwelling quality*

Housing solutions that change lives, rather than simply increasing housing supply.

High quality designs that respond to contemporary social and demographic make-ups through sustainable, flexible and viable housing typologies.

Design research to be undertaken by this project

Further design research is required to address key challenges associated with social housing redevelopment. In higher density infill contexts, apparently simple issues, such as parking provisions, privacy and shared spaces, require sophisticated and nuanced solutions. We intend to address the key design areas identified in this paper during Stages 2 and 3 of this research project.

Potential also exists for coordinated, strategic redevelopment of public housing assets. Building on the first stage of research into the SHI, this project will examine precinct-scaled design strategies that could potentially enhance development outcomes and provide efficiencies in the procurement and delivery of new housing.

Research by others

Additional research areas that would be of value include:

→ *Spatial design and distribution of SHI projects nationally*

Geo-spatial analysis of the SHI at a national level to better understand the differences and nuances between jurisdictions and learn lessons for future social housing policy and delivery.

→ *Procurement and delivery models leading to innovative built outcomes*

Detailed spatial and statistical analysis that can relate procurement and delivery models to the quality and performance of housing design achieved under the SHI, based on design innovations identified in this paper.

→ *Strategic planning for social and affordable housing*

Revisiting social and affordable housing strategies with a view to developing a spatial framework for future development would be beneficial for most states and territories in Australia.

→ *Parallel research on the SHI*

This work has been undertaken through an architectural and urban design *lens* focusing on the design strategies and development conditions required for innovative housing outcomes in physical and spatial design terms. A parallel review of the SHI undertaken by KPMG (2012) focuses on the economic benefits delivered by the stimulus program and the impact it had on the social housing system, supply, tenant groups and the building and construction industries. Further research that incorporates information from the two studies would be a valuable undertaking. Detailed examination of the national data set of SHI development locations, dwelling types and tenancy mixes against the leveraging and procurement opportunities offered by the KPMG report, as well as the framework for assessing innovative design and social outcomes (at dwelling and urban scales) outlined by this research could potentially lead to a range of enhanced strategies for future affordable housing delivery.

1 INTRODUCTION

This Positioning Paper is the outcome of Stage 1 of a three-stage research project Processes for developing affordable and sustainable medium-density housing models for greyfield precincts, which is funded by AHURI over a two-year period 2012–14.

The overarching aim of the larger research project is to investigate the potential strategic role of government agency-owned housing land with ageing building stock in need of redevelopment for targeted and transformative regeneration of the middle suburbs or *greyfields* of Australian cities. Greyfields are under-utilised land parcels in middle suburban locations where residential building stock is failing (physically, technologically and environmentally) and energy, water and communications infrastructure is in need of upgrade (Newton et al. 2011). The three stages of this project are:

Stage 1: What are the lessons learned from the delivery of the NBESP Social Housing Initiative?

The NBESP injected over five billion dollars into the Social Housing Initiative, and created the conditions for a flurry of affordable housing delivery by government housing agencies, the NFP housing sector, and the private sector. For reasons of expediency, projects delivered under the SHI were released from conventional planning/development processes. Stage 1 (this paper) undertakes case-study research into a selection of these NBESP projects that achieved a high level of design quality and offer potential lessons that could be replicated, or highlight key issues to be addressed in the future redevelopment of greyfields in middle suburbs.

Stage 2: Where are the opportunities for land assemblage of dispersed public housing land in the middle suburbs?

Due to sell-offs over the years, many public housing land holdings are scattered around suburbs, making them difficult to redevelop in a systematic way. They are characterised by low density building forms on sizeable allotments, often in poor repair with low environmental performance. The age and type of housing is often unsuitable for contemporary household profiles and needs. Stage 2 will survey where these public land holdings are in Melbourne and examine their location relative to transport, employment opportunity and other key metropolitan indices; their distribution and their potential for greyfield precinct redevelopment.

Stage 3: How can public housing land in greyfield precincts be developed to increase the provision of affordable housing and enhance the overall performance and contribution of these greyfield locations in terms of density, sustainability and community engagement?

The third stage will involve developing and testing two to three scenarios in which particular groups of public housing sites are selected to demonstrate how they can be redeveloped by integrating built form with urban, landscape, social and technological/service networks. This will include testing design propositions that include sketch design of buildings and urban design, cost estimates of planning and construction processes that incorporate time allowances for community engagement and land assembly, as well as a life-cycle-assessment of the proposed environmental and community benefits. Community engagement will take place via design charrettes that will enable communities to be involved in solving design and planning issues.

1.1 Overview

The Social Housing Initiative was delivered from 2009–12 as part of the broader Nation Building—Economic Stimulus Plan introduced by the Federal Government to combat the local economic effects of the Global Financial Crisis of 2008. The limited timeframe along

with the particular processes and ambitions of the Social Housing Initiative provide both a valuable *closed* data set for analysis, and a series of real outcomes that are able to be assessed on architectural and urban design terms—in terms of the physical qualities of what was built, and the potential impact of this scale and type of new development on the broader transformation and densification of the cities and suburbs in which it takes place.

The aim of this Positioning Paper is not to review comprehensively every project delivered under the SHI, but to unearth a selection of innovative design and procurement outcomes from the program and to determine the factors that influenced these outcomes and allowed them to occur.

1.2 Policy relevance

The findings and conclusions drawn in this paper have relevance to the future delivery and design of social and affordable housing, and to urban policy more generally in relation to strategic planning for future housing delivery, development of design briefs for future housing developments, and to current and future metropolitan strategies for urban renewal involving the densification and consolidation of our existing cities.

1.3 Methodology

The *lens* of this enquiry is design quality, focused on physical aspects of the built environment. The project is concerned with issues affecting the livability and functionality of internal and external spaces; the quality of natural light, ventilation, aspect and outlook of internal, external and shared spaces. It is also concerned with urban issues such as overall building form and morphology, the efficient use of land, relationships to and engagement with the surrounding context, pedestrian connections established, landscape design, planting and open space distribution—and the combined impact of all of these factors on the private and public realm environments of the subject sites.

The research process for Stage 1 has included the following steps:

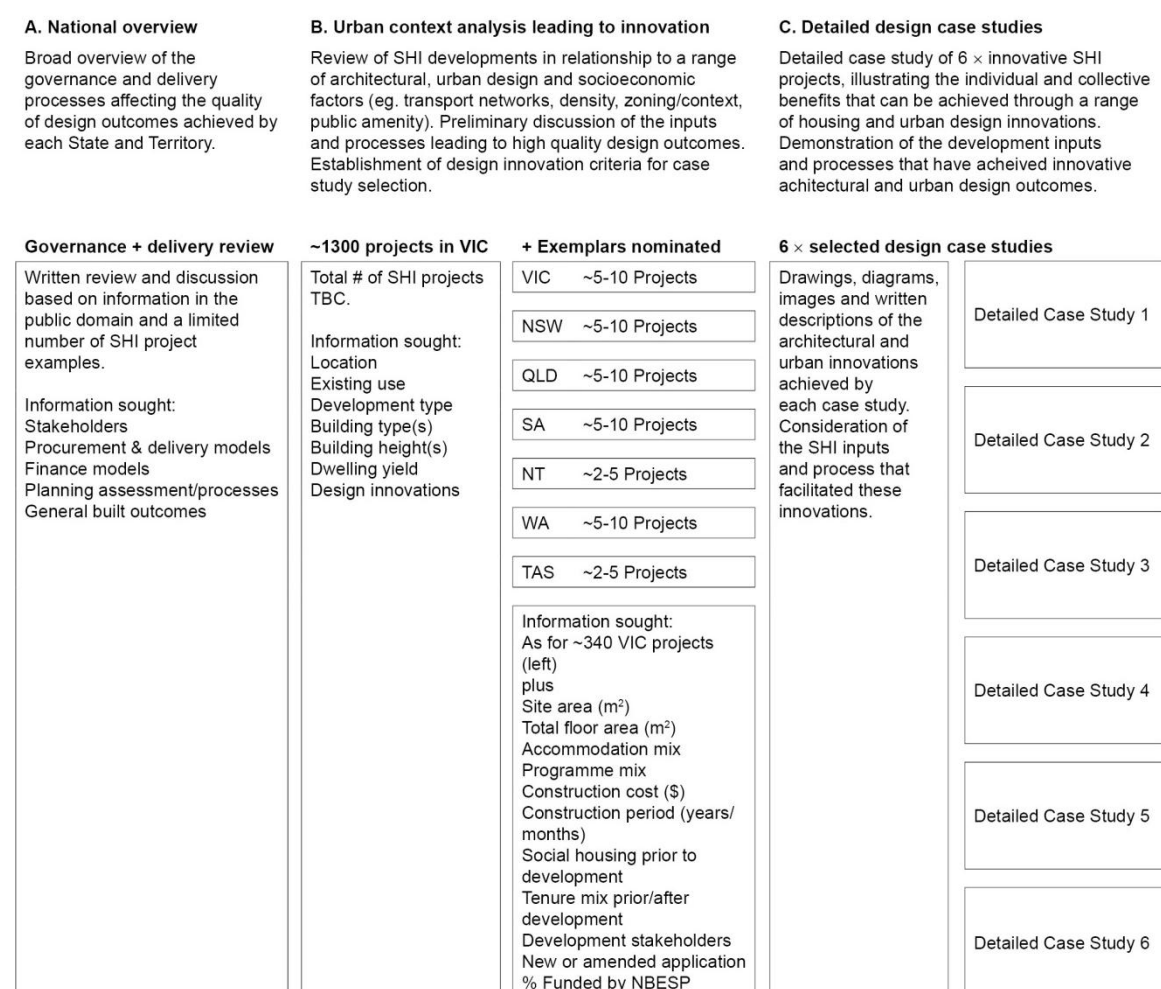
- A national overview of the SHI delivery in each state, including the overall number of projects delivered, and where possible locations of those projects, number and type of dwellings in each project, yield and density increase.
- An analysis of the method of delivery and administration of the SHI in each state and territory based on an extensive desktop review of available material, noting as far as possible the differences in approach and method adopted by each jurisdiction and the effects that these different approaches had on the types of projects delivered. Where available, interviews with government agencies and key housing associations² involved in delivering the program supported this.
- Geo-spatial analysis of the locations of all projects delivered in the Melbourne Metropolitan area and plotting against key livability indices and other urban policy objectives. More complete and detailed information on SHI projects was available for

² Relevant government agencies in all states and territories were contacted to confirm basic information regarding their SHI procurement plans. Where there were significant and unique elements to procurement processes, these were investigated further through interviews and requests for internal documents. A number of CHOs and architects also provided details regarding their experience in SHI-funded projects. PowerHousing Australia (a peak body of the not-for-profit housing sector) assisted the research by sending out a call for EoIs from CHOs to participate in the research through putting forward details of their most innovative SHI projects. Not all agencies were able to be contacted and not all responded to the EoI or phone calls and requests for information. Nevertheless a great deal of information was obtained through the organisations, firms and agencies that did respond.

Victoria than other states and there is hence a natural focus for locational and statistical information in relation to Melbourne.³

- Analysis of architectural and urban design attributes for a 'short list' of projects nominated by industry and government and/or identified by the research team to be of strategic interest in relation to the overarching research project objectives. Through this process a matrix of key design innovation attributes (or selection criteria) was established, and six innovative projects identified that substantially exceeded 'business-as-usual' outcomes across different building typologies and urban locations.
- Site visits, detailed architectural and urban design review, and interviews with architects, delivery managers and operators for each of the selected case-study projects. Preparation of analytical drawings and diagrams identifying the key design strategies employed and design innovations achieved.
- Testing of the design research findings through: 1) tenant surveys with residents of the selected case study projects; and 2) an industry workshop with representatives from government housing agencies, housing associations, builders, architects and project managers involved in the SHI program.

Figure 1: Stage 1 research methodology



³ For a variety of reasons related to political sensitivity and/or confidentiality, a full national database of SHI projects was not available to the research team. As a result, an adjustment was made to the original scope of the project, which was approved by AHURI.

2 NATIONAL REVIEW OF THE SOCIAL HOUSING INITIATIVE

The Social Housing Initiative (SHI) was inaugurated as a component of the Federal Government's Nation Building—Economic Stimulus Plan (NBESP), announced on 3 February 2009. The primary purpose of the NBESP was to mitigate impacts from the Global Financial Crisis and bolster Australia's economy. Federal Parliament was given 48 hours to consider the \$42 billion plan (*The Age* 2009).

The SHI constituted 13 per cent of the total funding program. Of this, \$5.6 billion in funding would deliver more than 19 300 new social dwellings and carry out repairs to around 80 000 existing social housing dwellings (FaHCSIA 2012a). The SHI represented the largest one-time investment in social housing by any government in Australia's history.

2.1 Components of the SHI

The Social Housing Initiative comprised two elements: the first, new construction, and the second, repairs and maintenance.

2.1.1 *Element 1—New construction*

New dwelling constructions were delivered in two stages.

Stage 1 focused on building projects (from both public and community sectors) that were already in the development pipeline and could be brought forward. Between 2009 and 2010, \$692 million was allocated for the construction of 2800 new dwellings.

Stage 2 of the SHI was a larger scale program that focused on the development of new social housing projects. \$4546 billion was allocated to the construction of more than 16 500 dwellings between 2009 and 2012 (FaHCSIA 2012b).

2.1.2 *Element 2—Repairs and maintenance*

Funding of \$400 million was allocated to the repair and maintenance of approximately 80 000 existing social housing dwellings.

This section focuses on Element 1—new construction of the SHI. It outlines the key objectives and requirements of the program and examines the different processes used to deliver developments in each jurisdiction. It aims to identify the inputs and conditions required for innovative housing outcomes and focuses on key aspects of SHI project procurement, including funding arrangements, land assembly, programming and timing, brief development, roles, responsibilities and partnerships between development stakeholders and various governance arrangements used to administer the program.

2.2 Objectives of the SHI

The SHI had two key objectives. First and foremost it was a means of stimulating economic activity and jobs in the building and construction industry (COAG 2009b, FaHCSIA 2009). Flow-on effects were also intended for material suppliers and other sectors. Second, the SHI was to increase 'access to affordable, safe and sustainable housing that contributes to social and economic participation' in line with the National Affordable Housing Agreement (NAHA) (COAG 2009a). The Federal Government intended for the SHI to enhance opportunities for homeless people or those at risk to gain secure, long-term accommodation and targeted 'a 50 per cent reduction in the waiting time for people with high housing needs on public housing lists and a reduction in the number of low-income households paying more than half their income in rent' (FaHCSIA 2009, p.3).

Stage 2 of the SHI carried further specific objectives (FaHCSIA 2009) to:

→ *Develop the not-for-profit (NFP) housing sector*

To maximise the leveraging of Commonwealth funding for additional social housing stock, the SHI was intended to increase the capacity of the NFP housing sector by enabling them to borrow against their assets and expand their operations.

→ *Promote mixed communities*

SHI developments were to support the establishment of mixed communities that promote social and economic opportunities for tenants (additional information could be sought from individual state authorities regarding large scale development in each jurisdiction).

→ *Target high needs tenants*

SHI funding prioritised projects for the homeless or those at risk of homelessness. Other target groups included older persons, persons with a disability, indigenous persons, women and children escaping domestic violence and low-income families.

→ *Provide opportunities for Small and Medium Enterprises (SMEs)*

Projects funded under the Initiative were to provide opportunities specifically to SMEs.

→ *Deliver long-term reform in the social housing sector*

SHI funding was contingent on state and territory support for social housing reforms (COAG 2009b). These included:

1. Integration of public and community housing waiting lists.
2. Better social and economic participation for social housing tenants by locating housing closer to transport, services and employment opportunities.
3. Reducing concentrations of disadvantage through appropriate redevelopment to create mixed communities that improve social inclusion.
4. Introduction of a national regulatory and registration system for not-for-profit housing providers to enhance the sector's capacity to operate across jurisdictions.
5. Introduction of contestability in the allocation of funds to cultivate diversity in the NFP housing sector by encouraging a range of new providers that can cater for a broader variety of client types.
6. Leveraging of government capital investment to enhance the provision of social housing.

2.3 Rules and requirements

SHI Guidelines issued by the Federal Government (FaHCSIA 2009) specified the requirements for funding eligibility, including:

→ *New construction requirement*

To stimulate activity in the building and construction industry, only new developments would be funded by the SHI. This included projects that had obtained planning approvals but purchase of existing housing from the private market was prohibited.

→ *Speed requirement*

Strenuous timelines were imposed for project completions to ensure the stimulus plan had immediate effects in the building and construction industry. A review of the SHI roll-out in New South Wales found that 'most projects were planned and designed in two to three months, the median time for planning approval was 32 days, and the median time

from approval to completion is about 330 days' (Shepherd & Abelson 2010, p.104). To meet these fast-tracked timelines, traditional social housing delivery processes were modified in all jurisdictions.

Table 1: Timeline for SHI completion

Activity	Stage 1	Stage 2
Effective start (signing of National Partnership Agreement)	5 Feb 2009	
States and territories lodge proposals for funding	15 March 2009	30 June 2009
Commonwealth issues approval for proposals	1 April 2009	30 Aug 2009
75% of all dwellings completed (Stages 1 & 2 combined)	not prescribed	31 Dec 2010
All projects completed	30 June 2010	30 June 2012
<i>Total</i>	<i>17 months</i>	<i>22 months</i>

→ *Dwelling yield and cost per dwelling target*

The SHI initially aimed to construct 20 000 new social housing dwellings for \$5.988 billion; equating to an average dwelling cost of around \$300 000. This average was stipulated in the SHI Guidelines, with a note that 'some higher cost housing in remote locations may be possible while still meeting an average cost of \$300 000 in the state or territory' (FaHCSIA 2009, p.8).

There was no restriction placed on external contributions (e.g. land) or alternative funding sources which, in effect, enabled housing to be delivered at a higher cost. Importantly, this enabled many projects to be carried out on land already owned by state housing authorities (SHA) or on land provided by not-for-profit CHOs.

→ *Net increase in number of social housing dwellings requirement*

Where a proposal involved a major redevelopment of existing social housing, it was necessary that it result in a net increase in dwelling yields.

→ *Leverage additional building activity*

If a project could demonstrate that SHI funding would lead to additional building activity beyond that directly financed by the program, it may have been prioritised by the Commonwealth. For example, if purchasing a proportion of dwellings in a stalled development allowed the larger project to proceed, making that purchase with SHI funds could be expedited.

→ *Proximity to services requirement*

To ensure improved social and economic opportunities for tenants, all housing was to be located in close proximity to services and amenities relevant for the proposed target group. Specific amenities and services, and maximum distances to these were not specified.

→ *Transfer to Not-For-Profit Housing Sector*

To accelerate the expansion of the NFP housing sector, states and territories were encouraged to transfer ownership of dwellings funded under the SHI (Stage 2) to growth providers. No specific numbers were stipulated by the Federal Government; the proportion of housing stock to be owned and managed by the NFP sector was negotiated with each jurisdiction.

2.3.1 *Building design and performance*

All developments funded by the SHI (Stage 2) were to incorporate the following.

- Universal Design and Accessibility including requirements for accessible bathrooms with grab rails, accessible kitchen benches and appliances, minimum door and hall clearances, appropriate door hardware and light switches. Twenty per cent of dwellings were to meet the Australian Standard for Adaptable Housing AS4299–1995, Class C.
- Environmental standards
 - Water capture and reuse for laundry and toilet flushing.
 - Min. 6-star energy rating for individual dwellings, or
 - 5-star energy rating + solar hot water + efficient fittings/fixtures + sealed openings.
- Sound proofing
 - To meet state and local government regulations.

2.3.2 *Additional requirements set by jurisdictions*

Beyond the criteria set forth by the Commonwealth, each jurisdiction was able, and frequently did, set out a variety of additional criteria for the type of housing stock they sought through the SHI. Often this related to dwelling size (number of bedrooms) to ensure supply matched demand and contemporary tenant needs. Some jurisdictions issued detailed design briefs for each of the dwelling types they were seeking to procure. Housing type (detached, semi-detached, apartments) and scale also featured as a common criteria, as well as preferences for flat topography and regular shaped allotments. Housing designed to 'blend into the surrounding community' was often specified in briefing documents.

In Victoria, CHOs seeking funding were required to adopt a development model of 25 per cent debt and equity contribution (McGauran 2012).⁴

The Queensland Government also required that not-for-profit CHOs submitting projects for funding contribute '... land, cash and/or infrastructure charges, either directly or indirectly through partnerships such as with local government, that results in additional social housing' (Department of Communities, Child Safety and Disability Services (nd), p.3).

2.3.3 *Stage 2 competitive procurement process*

All jurisdictions were required to undertake a competitive process to select social housing projects for funding in Stage 2. This requirement was intended to ensure that development proposals were cost effective and to provide opportunities for existing not-for-profit housing providers, builders, developers and other interested stakeholders to be involved, eliciting 'proposals for funding which [included] public, community and other new or innovative social housing models' (FaHCSIA 2009, p.13).

2.3.4 *Funding allocation*

Formal funding agreements between the Federal Government and state and territory governments were developed on a per capita basis. The total funding pool available at the start of the Initiative was revised down by \$750 million, such that the final funding pool was \$5238 billion. This reduction occurred for the following reasons (Australian Government 2009, pp.52–53):

⁴ Also indicated by correspondence with Property Portfolio, Department of Human Services, Victoria, and a number of CHOs.

- Generous land contributions by state and territory governments and leveraging by community housing organisations kept the average cost of the new homes below the original estimate of \$300 000.
- In several states the NFP sector leveraged additional dwellings using capital from the social housing program.
- Higher than expected private sector demand (due to a combination of low interest rates and the Government's first home owner's boost) led to the private sale of a number of projects initially earmarked for social housing.
- The repairs and maintenance program resulted in a significantly higher number of public and community housing dwellings being repaired than originally anticipated.

The final funding allocation deviated slightly from the original per capita proportionality (Table 2).

Table 2: SHI funding by jurisdiction

Jurisdiction	Final funding: Stages 1 and 2
South Australia	\$404,263,000
Queensland	\$1,085,472,000
Tasmania	\$125,480,000
Victoria	\$1,166,757,000
New South Wales	\$1,763,647,000
Northern Territory	\$55,574,000
Western Australia	\$549,727,000
Australian Capital Territory	\$87,080,000
<i>Total</i>	<i>\$5,238,000,000</i>

Source: FaHCSIA (2012b)

2.3.5 Planning processes

Planning approvals

Most jurisdictions modified conventional planning processes to meet the demands of the SHI. In the three states that delivered 75 per cent of the total SHI dwelling yield (Queensland, New South Wales and Victoria), local government authorities were largely not responsible for approvals. In Queensland, where public housing was already approved outside local government processes under the *Sustainable Planning Act*, performance-based assessments (opposed to prescriptive assessments) were adopted for the SHI.⁵ In Victoria, and for the most part in New South Wales, the role of local authorities was replaced by state government agencies in development approval processes and the opportunity for development objections was also removed. For instance, in Victoria proponents could submit projects to the Department of Planning and Community Development (DPCD) to be assessed under 'streamlined planning provisions' (DPCD 2009). A requirement of the streamlining process was that proposals had received pre-certification from a qualified town planning consultant to confirm compliance with local and state planning policies and the relevant Municipal Strategic Statement. The Minister for Planning would then become the *Responsible Authority* for the social housing project, which was then exempted from conventional formal notice and appeal processes. Projects were assessed by a state level

⁵ Indicated by correspondence with the Department of Housing and Public Works (Queensland).

working group, with final approval coming from the Planning Minister. The average processing time from lodgement to permit approval was four weeks, including a two-week Council consultation process (Jewell 2011). To avoid misuse of the SHI development approval process, DPCD indicated that projects seeking to be fast tracked would 'be expected to include a substantial component of social housing as part of the overall dwelling mix (e.g. 50% or more)' (DPCD 2009, p.6).

Strategic planning

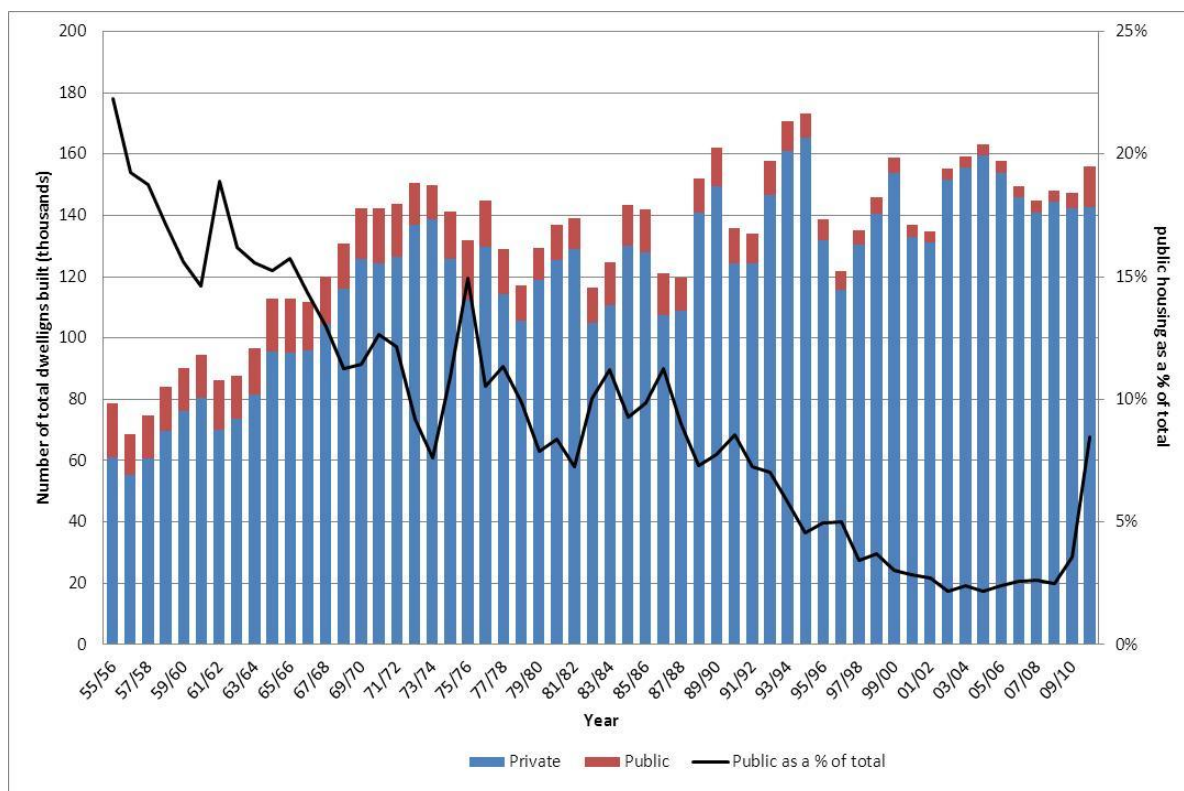
Strategic plans guiding the implementation of the SHI were largely reliant on existing state and local government policies for urban growth and housing development. The proficiency of existing strategies varied considerably from state to state. For example, a recent review in Victoria found that the public housing situation was critical; there was a lack of strategic foresight and the current operation model was unsustainable (Victorian Auditor-General's Office 2012). Forty-two per cent of public housing stock is over 30 years old and 14 per cent is nearing obsolescence with a severe mismatch in the type of housing being supplied and contemporary tenant needs.

By contrast, Queensland instigated a strategic plan (prior to the NAHA of 2009) to streamline and integrate social housing and housing service providers into *One Social Housing System* (Queensland Department of Housing 2006), aiming to provide better links between social and private housing markets, greater cohesion between the different types of social housing offered and broadening the range of housing assistance options. More recent progressions include the establishment of *Housing Area Networks* and innovation units to strengthen the delivery of appropriate social housing in the state (Queensland Department of Housing 2008).

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 (refer Section 2.6). When assessed as a discrete sample, the SHI exceeds current targets for new infill housing supply (53% of new housing delivered through infill redevelopment; DPCD 2008). However, it is difficult to ascertain how 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, particularly at regional or subregional scales.

It is important to recognise that strategic planning for the SHI was influenced by historical, and ongoing, issues within the social housing sector. Prior to the SHI, federal investment in new housing construction had reached an all-time low (NHSC 2012, Figure 2) and the direction of the sector as whole remains uncertain. The breadth and complexity of these issues have been well documented by other researchers (Troy 2012; Jacobs et al. 2010; Gurrán et al. 2008; Burke et al. 2005) and will not be addressed in this paper, other than to say that this ambiguous political and economic context constrained the potential innovations possible under the SHI.

Figure 2: Dwelling completions in private and public sectors (per annum)



Source: National Housing Supply Council (2012) and Troy (2012)

2.4 Delivery of the SHI

Stage 1 of the SHI provided funding for projects already in the development pipeline; the Federal Government did not set any procurement requirements for this phase of the program. Therefore, this section largely relates to Stage 2 procurement processes.

While the SHI Guidelines indicated that the competitive process to select projects for Stage 2 could provide opportunities for both private market and the not-for-profit sector to put forward construction proposals, the involvement of both sectors was not explicitly stipulated. Furthermore, the requirement to undertake a competitive process was not intended to prescribe that all procurement must take place through a single tendering process. It was 'possible for jurisdictions to run a range of processes that deliver value for money as well as competition, and to create maximum flexibility and responsiveness to markets' (FaHCSIA 2009, p.16).

In effect, state and territory governments were able to tailor procurement methods to meet their respective needs and could employ several different procurement processes in parallel. While procurement plans were submitted to the Federal Government for approval, state authorities were responsible for formulating procurement frameworks and prioritising developments for Federal Government funding approval. So long as proposals submitted to the Federal Government met the key SHI Guideline requirements they would be eligible for funding. As a result, a range of procurement procedures were implemented in each jurisdiction.

In broad terms, the various procurement strategies can be categorised into two streams:

1. *State as financier*

This procurement pathway involved the government funding of projects delivered by non-government proponents—namely private enterprise or the NFP housing sector. Each phase of the development was managed by the proponent, including land assembly/acquisition, brief development and the procurement of design and construction services. (Tenancy management was arranged separately for private sector developments.)

Such projects were typically sourced by governments through public Requests for Offer (RFO) or Registrations of Interest (ROI). These were open to the private market, and depending on the jurisdiction, invited responses from the NFP housing sector as well. In some instances separate tenders were called by sector, for example, Queensland's *Application for Capital Grant Funding* was exclusively for CHOs. In New South Wales, the private market was expected to carry out developments, following which hand overs to CHOs would take place. CHO representatives were involved in the tender assessment and thus the process was not designed for their participation as proponents.⁶ In addition, some states and territories proactively sought out development opportunities to finance by scouring the markets, bank liquidation sales, contacts with real estate agents or submissions from project owners.⁷

It is important to note here that most proposals from the private sector involved the purchase of land, which had to be factored into the SHI funding allocation. The NFP housing sector, on the other hand, often put forward their own holdings or sourced land contributions from a third party.

2. *State-led development*

The second procurement pathway involved the internal management of social housing developments by state government authorities. In this case, government agencies were responsible for land assembly/acquisition, brief development and the procurement of design and construction services. This was either carried out by existing housing authorities or by dedicated government taskforces formed to implement the SHI. Projects delivered in this manner were typically built on land already in government ownership, and usually they were existing SHA properties. Some governments called for offers to purchase land from private vendors; our preliminary review of SHI developments nationally indicated that this comprised a very minor component of the overall roll-out.

2.4.1 *Procurement variances between jurisdictions*

The extent to which each jurisdiction pursued the above procurement pathways is variable (Table 3). Factors influencing procurement choices include:

- Suitability of existing land and building stock owned by SHAs.
- Cost competitiveness of private enterprise (e.g. trade-off between cost savings achieved through development efficiencies and cost imposts associated with private land acquisitions).
- The scale and capability of CHOs in the jurisdiction.
- Specific market conditions, namely property values and construction costs associated with different industry practices in each jurisdiction.
- Cost differences associated with development types (e.g. greenfield vs. infill).

⁶ Indicated by correspondence with the NSW Nation Building Project Management Office.

⁷ Indicated by correspondence with Property Portfolio, Department of Human Services Victoria.

The following table demonstrates the dwelling yields achieved by each state/territory with the respective government agency acting as financier or development manager.

Table 3: Dwelling yields achieved by different procurement processes

Jurisdiction	Total dwelling yield	State as financier				State-led developments	
		Private sector		NFP sector			
	(N)	(N)	%	(N)	%	(N)	%
SA	1,470	591	40%	0	0%	879	60%
QLD	4,035	2,016	50%	1360	34%	659	16%
TAS	530	125	24%	231	44%	174	33%
VIC	4,639	659	14%	2422	52%	1558	34%
NSW	6,330	1,566	25%	0	0%	4764	75%
NT	208	45	22%	40	19%	123	59%
WA*	~2,085						
ACT*	~357						
TOTAL *	~19,666						

Source: NSW data from Shepherd and Abelson 2010, information for other jurisdictions provided by respective governments departments

* At the time of writing, information had not yet been received

New South Wales and South Australia delivered most SHI dwellings via state-led procurement processes, with very little involvement from the NFP housing sector during the course of the development.⁸ In New South Wales, only 6 per cent of RFPs tendered by private enterprise were accepted by Housing NSW (Shepherd & Abelson 2010), largely because private land purchase was simply unviable within the \$300 000 dwelling cap of the SHI. These private market developments yielded 1566 dwellings (91 developments) representing 25 per cent of all dwellings delivered in New South Wales. The remaining 75 per cent of dwellings were completed on land already owned by Housing NSW. As Shepherd & Abelson (2010) point out, this was in effect a de facto state subsidy of the SHI, and was the only viable way to meet the Federal Government's targets. Additionally, South Australia and Western Australia employed a build-and-sell approach which, in effect, generated a secondary stimulus for the SHAs, able to reinvest the sales proceeds into new developments (KPMG 2012). Further research is required to determine how many dwellings were delivered in this manner and the additional growth it will provide.

By contrast, governments in Queensland, Victoria and Tasmania employed both kinds of procurement pathways and the NFP community housing sector played a more significant role in the delivery of SHI housing stock. The Queensland Government, for example, through its *Applications for Capital Grant Funding* program, ran a special selection process independent from private market tenders to source proposals directly from CHOs.

2.4.2 Growth of the not-for-profit housing sector

The aspiration to build capacity in the NFP housing sector under the SHI was primarily an economic function: a means of leveraging public expenditure for additional social housing provision. The Federal Government's directives in this regard only went as far as

⁸ In New South Wales, community housing organisations were involved in design reviews of new housing, but there was no guarantee that organisations would ultimately end up with the housing it reviewed. A hand-over briefing was also instigated approximately six weeks prior to the completion of construction works. Upon transfer of the dwelling stock, CHOs were responsible for managing defects rectification with builders.

encouraging significant transfers of housing stock from state governments to the NFP community housing sector; it did not nominate the amount or type of stock to be transferred, nor did it explicate a measure of additional leveraging that was required. As such, it can be said that each jurisdiction met the Federal Government's objective.⁹ In New South Wales for instance, \$1.7 billion worth of SHI housing (the majority of the delivery in that state) was transferred (NSW NBJP Taskforce 2011; Housing NSW 2012a), and in Victoria, 52 per cent of SHI dwellings built are presently owned by CHOs and more will be transferred in the near future. The point of difference is that this 52 per cent of stock was actually delivered by Victorian CHOs themselves.

While the SHI proved a successful vehicle for asset transfers, the program also presented the opportunity to further the NFP community housing sector's involvement in the development and delivery of social housing (Productivity Commission 2010; Milligan et al. 2009). As the Productivity Commission observes, the NFP housing sector is seen as providing positive competition to the monopolistic provision of social housing by SHAs, offering greater transparency and accountability, as well as greater benefits to tenants and communities. The sector is also in a position to drive an increase in private investment in affordable housing. To this end, the extent to which the community housing sector developed dwellings themselves under the SHI, or attained stock as a *fait accompli* through asset transfers subsequent to its design and construction, warrants brief attention.

The level of expertise and the services offered by CHOs is variable. That the quantity and proportion of housing delivered by the NFP community housing sector was highest in Victoria (Table 3) is not surprising given seven of the 11 leading community housing developers are located there. A longstanding strategic approach to growing a strong, independent and innovative affordable housing sector in Victoria has given rise to a number of CHOs being well placed to act as housing developers and to drive growth in social housing. The NFP housing sector is less development capable in other jurisdictions (Milligan et al. 2009). Indeed, one CHO in New South Wales commented that the procurement strategy adopted for the SHI was well advised as it meant the sector did not need to gear up its professional development capacity. On the other hand, it was also recognised that the dwelling stock received was not necessarily of a type or in a location they would have pursued under different circumstances. Moreover, CHOs in both New South Wales and South Australia expressed that they would have preferred a more substantial involvement in design and development processes (KPMG 2012).

Funding CHOs to procure and deliver social housing developments would likely result in designs that better suit their needs. It is unlikely, however, that all CHOs would have been capable of managing the procurement and delivery of social housing developments under the conditions of SHI. This capability is difficult to build up and sustain, especially when government funding is spasmodic. As one Victorian CHO points out, 'the ad hoc nature of this capital funding to date has prevented Housing Associations from being able to plan ahead and to create permanent development capacity—much of the capacity acquired through Nation Building has been lost. A guaranteed program of ongoing capital funding ... is essential in creating the environment for sustained growth' (Port Phillip 2012, pp.16–17).

The initiative has highlighted future opportunities for increasing capacity in the NFP housing sector by broadening development expertise within the industry, and further indicated that this needs to occur through a consistent, long-term approach to be effective.

⁹ Through the leveraging of SHI dwellings, the NFP sector is predicted to grow by 1201 dwellings in NSW, 623 in Victoria, and 448 in Western Australia (KPMG 2012).

2.5 Procurement innovations

The most notable influence on the delivery of SHI developments was the organisation leading the procurement processes. The following outlines key aspects of government-led, NFP-led and private-led developments under the SHI.

2.5.1 Government-led procurement

Two key innovations have emerged from the review of government-led SHI developments. First and most notable is the development efficiencies achieved in New South Wales in terms of time and quantity of projects delivered. Second, the potential exists to strategically coordinate the design and redevelopment of several public housing assets in the one area to enhance the quality and performance of architectural and urban design outcomes.

Redevelopment of existing social housing stock in New South Wales

The overwhelming majority of SHI dwellings delivered in New South Wales were procured by the SHA (75%, Table 3) and each involved the redevelopment of existing public housing stock. By way of comparison, approximately 34 per cent of dwellings built in Victoria were on existing SHA properties. In Western Australia, Tasmania and Queensland, no SHI projects occurred as redevelopments of public housing stock.¹⁰

Housing NSW implemented a novel procurement chain that generated considerable cost and time efficiencies for their developments. They purely focused on infill redevelopment: replacing old, low-density public housing on one or more contiguous allotments with newer, higher density dwelling models. The existing properties were typically post-WWII detached dwellings, often riddled with asbestos and easily identifiable as public housing.¹¹ Redevelopment sites were typically located within former public housing estates and had subsequently become isolated through sporadic sale of neighbouring properties over time (e.g. Fairfield, Narwee, Kingswood, Beverly Hills and Ryde).

Figure 3: Example of redevelopment in Clemton Park, New South Wales



Right=before, left=after. Four detached single-storey dwellings replaced by 14 dwellings across two double-storey blocks and two single-storey cottages (Housing NSW 2012b). It was typical for double-storey buildings to be sited at the front of the block and single-storey buildings at the rear.

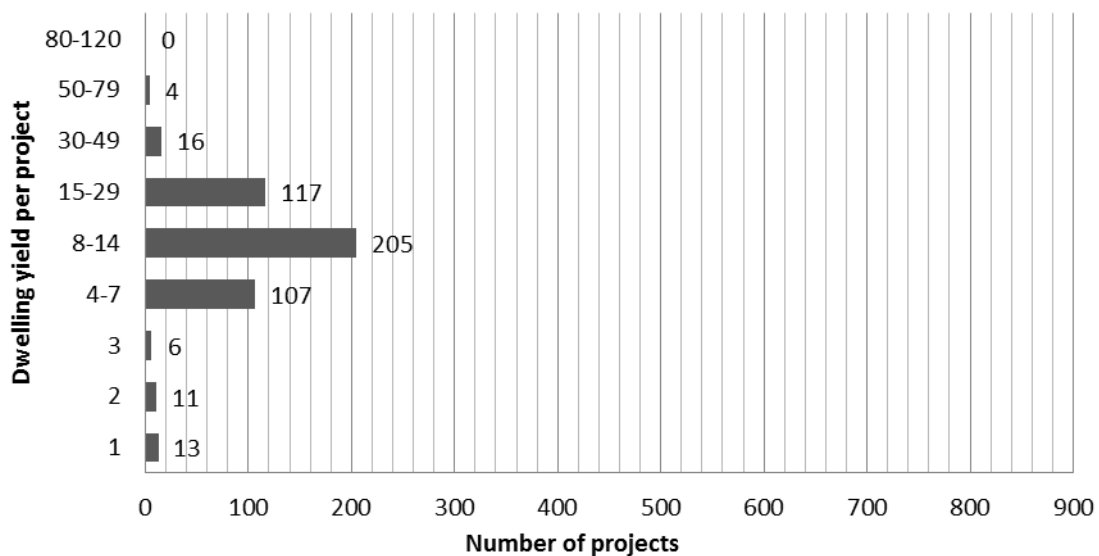
Source: ©2012 GeoEye, Sinclair Knight Merz (left), Nearmap.com (right)

¹⁰ Indicated by correspondence with Department of Housing (WA), Housing Innovations Unit (DHHS Tasmania), and Department of Housing and Public Works (Queensland).

¹¹ Indicated by correspondence with the NSW Nation Building Project Management Office.

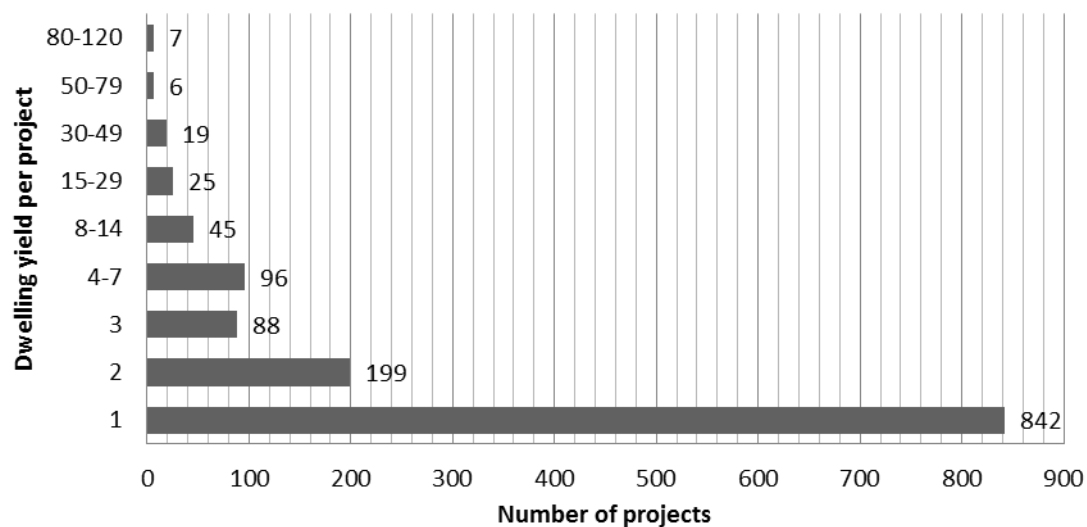
The infill redevelopment program in New South Wales was administered by a government taskforce formed especially for the NBESP. The SHI Project Management Office (PMO) liaised with Housing NSW to identify strategic housing needs and appropriate public housing assets for redevelopment. Site assessments and yield studies were streamlined through Resitech, Housing NSW's internal project delivery agency. Packages of projects were then delegated to one of nine project management firms, who procured design and construction services. With few exceptions, the redevelopments adhered to consistent low-rise infill housing models prepared for the program, which typically provided two to three times the existing dwelling yield and could be delivered by small and medium-scale builders. The effectiveness of the program can be demonstrated by comparing the significant number of mid-scaled projects completed in New South Wales (Figure 4) to that completed in Victoria (Figure 5).

Figure 4: Number of SHI projects completed in New South Wales by dwelling yield



Source: Housing NSW (2009), Housing NSW (2010). This data is compiled from two sources and represents 93.7 per cent of the number of dwellings reported to have been built

Figure 5: Number of SHI projects completed in Victoria by dwelling number



Source: Information provided by Department of Human Services, Victoria

Proximity of state-led infill redevelopments

The organisational structures put in place to deliver the SHI enabled Housing NSW to exploit the close proximity of redevelopment sites by pooling development services (surveying, design, construction, and administration) around project clusters (Figure 6). Similar project distributions can be observed in Victoria, where several redevelopments were also completed in former public housing estates (Figure 7). However, it appears that procurement efficiencies were not taken up in Victoria to the extent that they were in New South Wales.

The limitations associated with this procurement approach include:

- Concentrations of SHI projects in areas with low property values due to the reliance on existing public housing locations.
- Homogenous social housing stock is easily identifiable.¹²
- Lack of tenancy mix.
- Resident resistance to social housing developments and the process by which they were introduced (Hawkins 2010).
- Lack of design input from tenancy managers.

State-led flagship projects

Several projects (see Appendix 1.1) demonstrate how innovative project outcomes could be achieved when SHAs approached developments with strategic foresight. The *UNO* apartment development in South Australia, *The Nicholson* apartments in Victoria and the *Living Space* development at Cockburn Central in Western Australia all achieved a significant degree of tenancy mix—incorporating private market housing with various types of social housing. *Lochiel Park Affordable Apartments* in South Australia was funded by the SHI and achieved impressive environmental credentials. In the case of the *Woodville West Urban Renewal Project* in South Australia, SHI funding was used as a catalyst to kick-off a large-scale redevelopment of an existing broad acre public housing estate into a mixed tenure, mixed density neighbourhood.

¹² Indicated by correspondence with the NSW Nation Building Project Management Office.

Figure 6: SHI redevelopment projects in Fairfield, New South Wales



This represents the greatest concentration of projects in one area. Housing NSW (2009), Housing NSW (2010).
Image: Nearmap.com

Figure 7: SHI redevelopment projects in Reservoir, Victoria

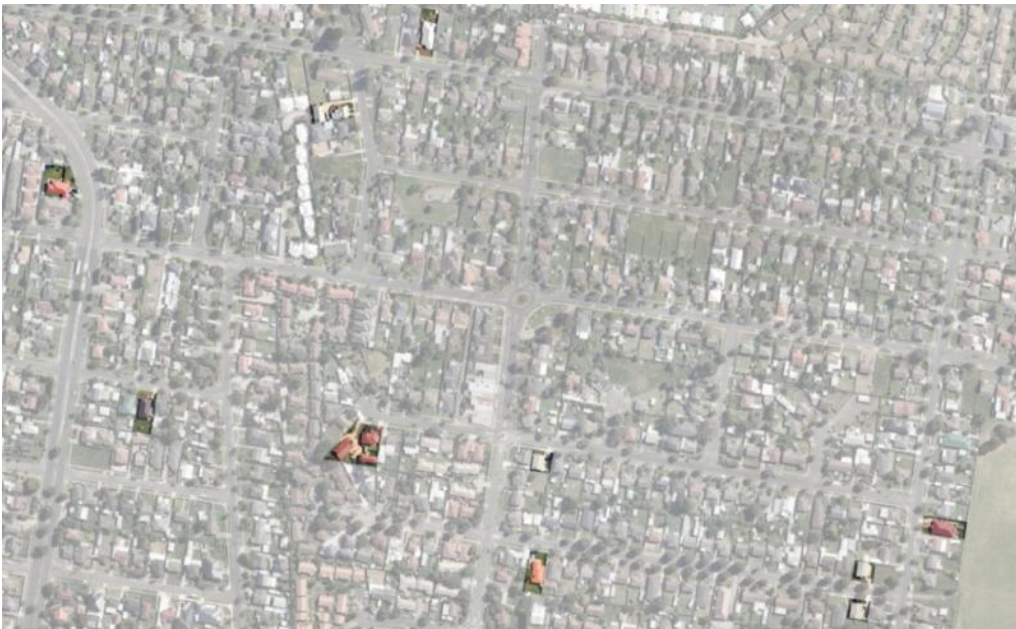


Image: Nearmap.com

Private sector-led procurement

In isolated cases, the Federal Government used SHI funding to secure the financial viability of stalled private development projects (See Appendix 1.2). This enabled social housing to be included among private accommodation. A notable example of this is the *Stella Apartment* project in Western Australia. Located within the newly emerging TOD Cockburn Central, 78 units were purchased by Housing WA within the larger private market development which will ultimately deliver 900 private dwellings.

The multi-storey senior's residential building at 61 Smart St, Fairfield, New South Wales is one of the few private market proposals to be successfully selected in that state's procurement process. It will include a commercial medical facility at ground level to serve tenants in the building (though to date this has not been realised).

NFP-led procurement

In states where the NFP housing sector procured housing developments under the SHI (most notably in Queensland and Victoria), significant innovations were achieved when compared to traditional social housing delivery (See Appendix 1.3). A key innovation of the NFP sector was mixed tenure development, which appears to have been uncommon in projects funded through the SHI more broadly. At the start of the Initiative, Milligan et al. (2009, p.4) reported that several of the larger, more experienced NFP housing providers in Australia were starting to venture into mixed tenure, mixed use development projects, with good results. This shift was furthered by the SHI, with several projects including mixes of supported, low and moderate income tenures on a single site.

The ability of CHOs to attain private finance has been critical in this. The inclusion of private market dwellings facilitated the cross subsidisation of lower-income tenancies; as in the case of Housing Choices Australia's *The Mariner* and BHC's *Aris*, which both include dwellings for private purchase on their uppermost levels. In some instances, CHOs drew on the NRAS (National Rental Affordability Scheme¹³) subsidies and private investment as well as SHI funding to successfully finance mixed tenure developments and effectively increase the leveraging of federal funding.

CHOs were also able to enter into partnerships with local governments and philanthropic groups to secure contributions in addition to the SHI. Local council partners provided land and/or development concessions, such as reduced local government fees and increased density.¹⁴ Typically, contributions from local governments would be in exchange for something else, such as ownership of a portion of the completed housing (as in the case of BHC's Richmond in Brisbane—discussed in detail later in case study 6) or the provision of community facilities (as in the case of Housing Choices Australia's Drill Hall in Melbourne). Philanthropic partners also contributed combinations of land and cash which enabled higher quality housing outcomes to be achieved. The sophisticated architectural and urban outcome at Manifold Heights in Victoria is one such example, where The Alexander Miller Memorial Trust contributed the land component.

In Queensland, over a third of the program was delivered by community housing providers through capital grants, using approximately \$50 million of contributions including land, cash, borrowings, and pro-bono services. This assisted in reducing the average per unit cost across the program.¹⁵ Developments led by the NFP housing sector also appear to have

¹³ NRAS is an Australian Government initiative introduced in 2008. It provides investors with an incentive to finance the construction of new housing provided it is rented to eligible low and moderate income households at a rate that is at least 20 per cent below the prevailing market rate (FaHCSIA 2012c).

¹⁴ Indicated by correspondence with Department of Housing and Public Works (Queensland), and from observations of a number of projects in Queensland and Victoria.

¹⁵ Indicated by correspondence with Department of Housing and Public Works (Queensland).

delivered projects in better locations. CHOs carried out approximately half of the SHI dwelling yield in Victoria, the majority of which were well located and show observable improvements in access to public transport when compared to housing delivered by the SHA and private market (refer Tables 11 and 12).

CHOs operating as housing developers were able to tailor building designs to suit the needs of their tenant groups and their tenancy management regimes. CEHL's cooperative style housing development, Murundaka (see case study 4), provides perhaps the most vivid example of this, where significant shared facilities serve mutually supportive social arrangements. Housing Choices Australia remarked that the SHI offered them a unique opportunity to provide a higher than usual quantum of disability support housing, which is more costly due to rental returns being lower. This reinforced observations (Milligan et al. 2009) that the NFP housing sector is well placed to deliver purpose designed housing appropriate for particular target groups, particularly when compared to low cost private market provision.

2.6 Location of SHI—Melbourne metropolitan case study

Geo-spatial analysis was undertaken on all SHI projects delivered in the metropolitan Melbourne area and plotted against some of the key SHI objectives. The analysis is based on a complete list of Victorian SHI projects provided by the Department of Human Services (DHS). Some variances exist between areas of analysis below due to inconsistent coverage of the indexes/measures used (as noted). A small number of projects could not be mapped due to new project addresses not yet existing in current geo-spatial databases. It is also important to make a clear distinction between numbers of *dwelling*s versus numbers of *project*s delivered under the SHI in the reading of this analysis. For example, although single detached housing represented more than 70 per cent of projects completed in Victoria, they yielded less than 20 per cent of the total dwelling supply.

2.6.1 Increasing the supply of social housing

Initial analysis of SHI data revealed that 70 per cent of all dwellings were supplied by infill redevelopments in established urban areas. However, this only represented 33 per cent of projects completed (Table 4). Further examination revealed a contrasting pattern of development types delivered in inner, middle and outer Melbourne. In order to adequately assess these differences, three table views are provided (in Tables 5, 6 and 7) showing the number of projects completed and the total dwellings supplied by different scales of development (based on yield) in each location. The housing yield in the outer (greenfield) projects was very low—mimicking the private sector and avoiding the opportunity for increasing innovative medium-density housing typologies. Dwelling yield was higher in the more established areas (see Sections 4.2 and 4.3) where a substantial proportion of dwellings were generated by a relatively small number of projects with yields in the range 10–99 dwellings.

Table 4: Distribution of SHI projects in the Melbourne metropolitan area

Development type	Location	SHI projects		SHI dwellings	
		(N)	%	(N)	%
Greenfield	Outer	472	66%	876	30%
Infill	Middle	222	31%	1405	48%
	Inner	22	3%	645	22%
Total	All Metro	716	100%	2,926	100%

Source: Information provided by DHS, Victoria

Table 5: Dwelling yield in outer suburbs

Yield	Projects		Constructed dwellings	
	(N)	%	(N)	%
1	396	84%	396	45%
2–4	45	10%	125	14%
5–9	22	5%	141	16%
10–19	5	1%	64	7%
20–49	3	1%	66	8%
50–99	1	0%	84	10%
100+	0	0%	0	0%
Totals	472	100%	876	100%

Source: Information provided by DHS Victoria

Table 6: Dwelling yield in middle suburbs

Yield	Projects		Constructed dwellings	
	(N)	%	(N)	%
1	118	53%	118	8%
2–4	61	27%	151	11%
5–9	16	7%	107	8%
10–19	9	4%	111	8%
20–49	12	5%	424	30%
50–99	5	2%	380	27%
100+	1	0%	114	8%
Totals	222	100%	1,405	100%

Source: Information provided by DHS Victoria

Table 7: Dwelling yield in inner suburbs

Yield	Projects		Constructed dwellings	
	(N)	%	(N)	%
1	0	0%	0	0%
2–4	2	9%	5	1%
5–9	3	14%	21	3%
10–19	6	27%	86	13%
20–49	7	32%	249	39%
50–99	4	18%	284	44%
100+	0	0%	0	0%
Totals	22	100%	645	100%

Source: Information provided by DHS Victoria

Table 8: Total metropolitan dwelling yield for SHI program

Yield	Projects		Constructed dwellings	
	(N)	%	(N)	%
1	514	72%	514	18%
2–4	108	15%	281	10%
5–9	41	6%	269	9%
10–19	20	3%	261	9%
20–49	22	3%	739	25%
50–99	10	1%	748	26%
100+	1	0%	114	4%
Totals	716	100%	2,926	100%

Source: Information provided by DHS Victoria

2.6.2 Promoting mixed communities, reducing concentrations of disadvantage

Social housing development patterns can impact heavily on the geographical concentration of disadvantage, or potential polarisation of communities based on social status (Hunter & Gregory 1995; Pawson et al. 2012). An analysis of existing social housing in Melbourne reveals areas of high concentration, with 60 postcodes (out of 665) being the location of the majority of all dwellings. The distribution of SHI projects has been overlayed on this postcode map (Figure 8 below), where it is apparent that the initiative largely continues this trend.

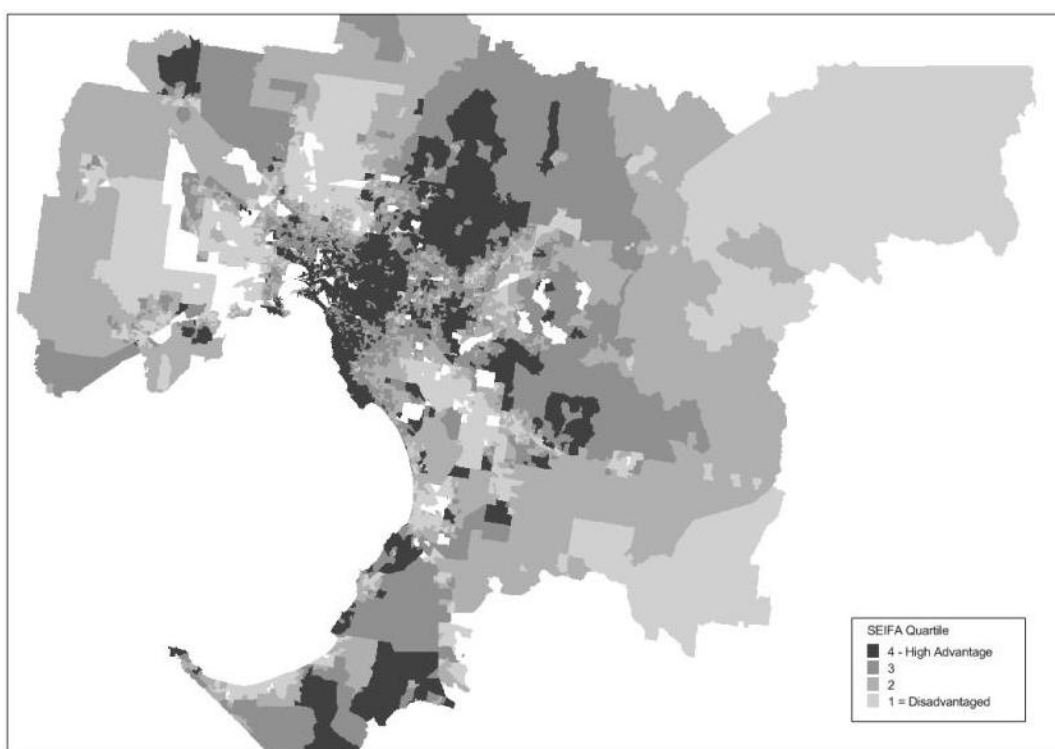
Figure 8: Existing areas of social housing (by postcode) and SHI project locations



Source: ABS table builder, Dwelling Characteristics, LLDD and geocoded SHI data

The location of SHI projects were also mapped against the SEIFA index of Relative Socio-economic Disadvantage and Advantage in Melbourne (Figure 9, ABS 2008).

Figure 9: SEIFA (advantage/disadvantage) quartiles for metropolitan Melbourne



Source: ABS 2039.0

Table 9 below shows the distribution of SHI projects and dwellings relative to SEIFA disadvantage/advantage. The normal distribution of all dwellings across metropolitan Melbourne is also provided for comparison. Almost two-thirds of SHI dwellings were constructed in areas of below average socio-economic advantage, resulting in a continued focus on social housing in areas of relative poverty.

Table 9: Distribution of SHI across SEIFA classifications

SEIFA quartile	SHI projects		SHI dwellings		All Melbourne dwellings	
	(N)	%	(N)	%	(N)	%
4 (High socio-economic advantage)	16	2.2%	523	18.2%	331,893	21%
3	74	10.4%	NA	17.6%	395,214	25%
2	253	35.5%	794	27.6%	448,437	28%
1 (Low socio-economic advantage)	370	51.9%	1,056	36.7%	432,120	27%
Total	713	100.0%	2,879	100.0%	1,607,664	100%

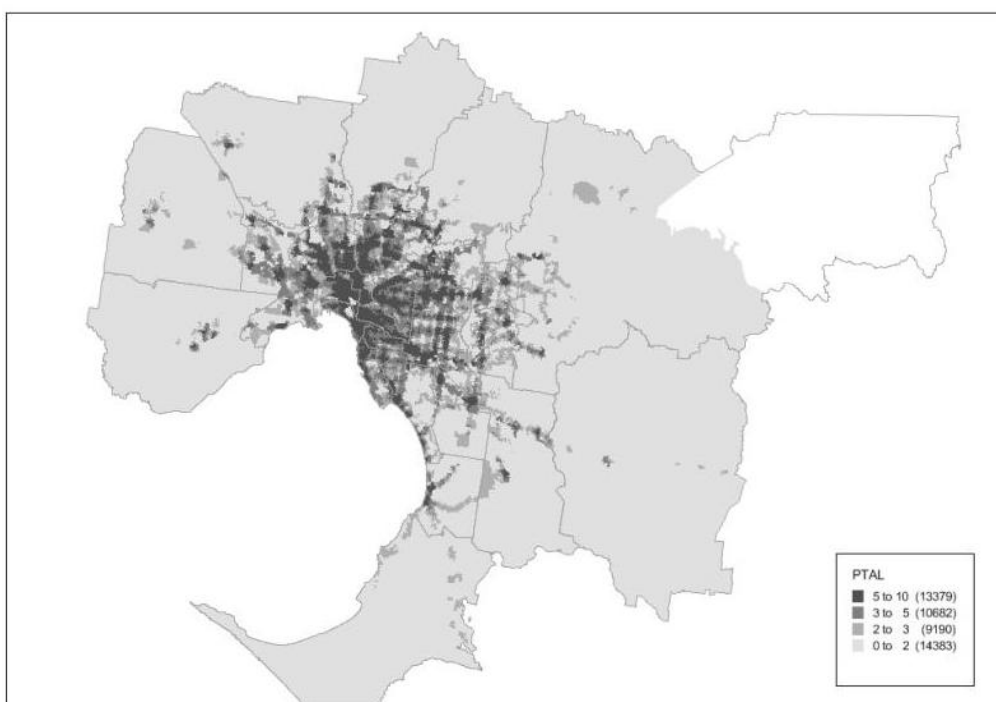
Note: dwelling totals differ here to SHI dwelling supply, PTAL and Activity Centre analysis due to inconsistent coverage of the various indexes/measures.

2.6.3 Proximity to relevant services

Public transport access represents a significant neighbourhood amenity and can be measured by PTAL (Public Transport Access Level), a public transport metric that quantifies the level of access that the occupants of a dwelling have to train, tram and bus services, not only in terms of distance, but also in relation to the frequency of services. Figure 10 below is a representation of public transport accessibility across metropolitan Melbourne, as used by

the Victorian Department of Transport. The legend indicates the PTAL level from 0–10 (with 10 being the best access to public transport) for each mesh-block in Melbourne.

Figure 10: Public Transport Access Level (PTAL) for metropolitan Melbourne



Source: Victorian Department of Transport

Results of the analysis of SHI projects (individual developments on a lot or series of amalgamated lots) and dwelling constructions (the number of dwellings constructed in a project) across PTAL areas for metropolitan Melbourne are set out in Table 10 below. The distinction between projects and dwellings has been provided to show the difference in distribution between the redevelopments and the number of dwellings that each project achieved. Dwelling numbers, as covered by PTAL categories for all of Melbourne, have been included for comparative purposes.

Table 10: PTAL and SHI activity, Melbourne

PTAL	Projects		Dwellings		All Melbourne dwellings	
	(N)	%	(N)	%	(N)	%
9–10 (High public transport access)	15	2.1%	523	17.7%	46,538	3%
6–8	52	7.2%	890	30.1%	196,746	12%
3–5	168	23.4%	594	20.1%	479,106	29%
0–2 (Low public transport access)	484	67.3%	948	32.1%	909,903	56%
Totals	1,476	100%	2,955	100%	1,632,293	100%

Note: Dwelling totals differ here to SHI dwelling supply, SEIFA and Activity Centre analysis due to inconsistent coverage of the various indexes/measures.

This data analysis reveals that over 70 per cent of SHI projects and 52 per cent of new dwellings were constructed in areas that had limited access to public transport, and are

essentially car dependent.¹⁶ However, while less than 10 per cent of projects occurred in areas of moderate to high access, these large developments produced almost half of new SHI dwellings, indicating intensity of dwelling redevelopment in more accessible locations.

Proximity of SHI projects (including Geelong) to their closest Activity Centre was assessed in terms of linear distance; the results are outlined in Table 11 below. As with PTAL, the normative distribution of all dwellings in metropolitan Melbourne has been provided for comparison. In this case, due to Geelong being an Activity Centre, dwellings in Geelong have also been included, resulting in a higher total for dwellings than in other tables.

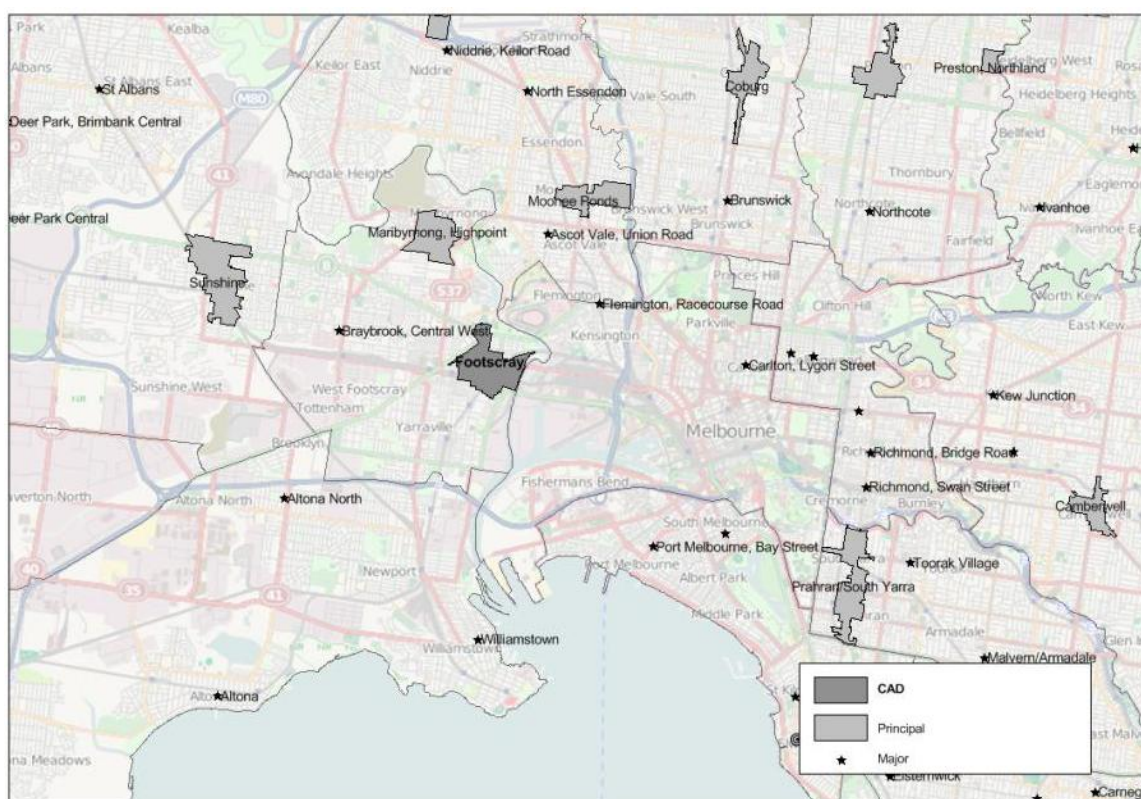
Table 11: Distance of SHI projects from all activity centres and boundaries

	SHI projects		SHI dwellings		All Melbourne + Geelong dwellings	
Linear distance	(N)	%	(N)	%	(N)	%
less than 500m	67	8.30%	614	18.70%	273,930	12.6%
500m to > 1km	166	20.50%	833	25.40%	446,796	20.5%
1km to > 2km	335	41.50%	820	25.00%	797,871	36.6%
2km to > 5km	169	20.90%	784	23.90%	516,828	23.7%
5km to > 10km	56	6.90%	200	6.10%	86,078	4.0%
10km plus	15	1.90%	25	0.80%	57,020	2.6%
Totals	808	100%	3,276	100%	2,178,523	100%

Note: Dwelling totals differ here to SHI dwelling supply, PTAL and SEIFA analysis due to inconsistent coverage of the various indexes/measures.

¹⁶ Other research indicates that, on average, public transport was available 0.5km away from any given SHI dwelling delivered nationally (KPMG 2012). It appears this analysis is based on the linear distance to the nearest transport route alone, which does not adequately reflect the level of mobility afforded to residents by different public transport services. For example, a distinction should be made between a highly serviced area with multiple transport routes and modes (train, tram and bus) arriving at high frequency, and a more isolated area with a single bus service that departs once or twice a day. The PTAL index used for this research captures the total number of services available within a walkable distance, walking time to these, the speed (or utility) of the different modes available, and the respective frequency and reliability of the services.

Figure 11: Activity centres, central west metropolitan area

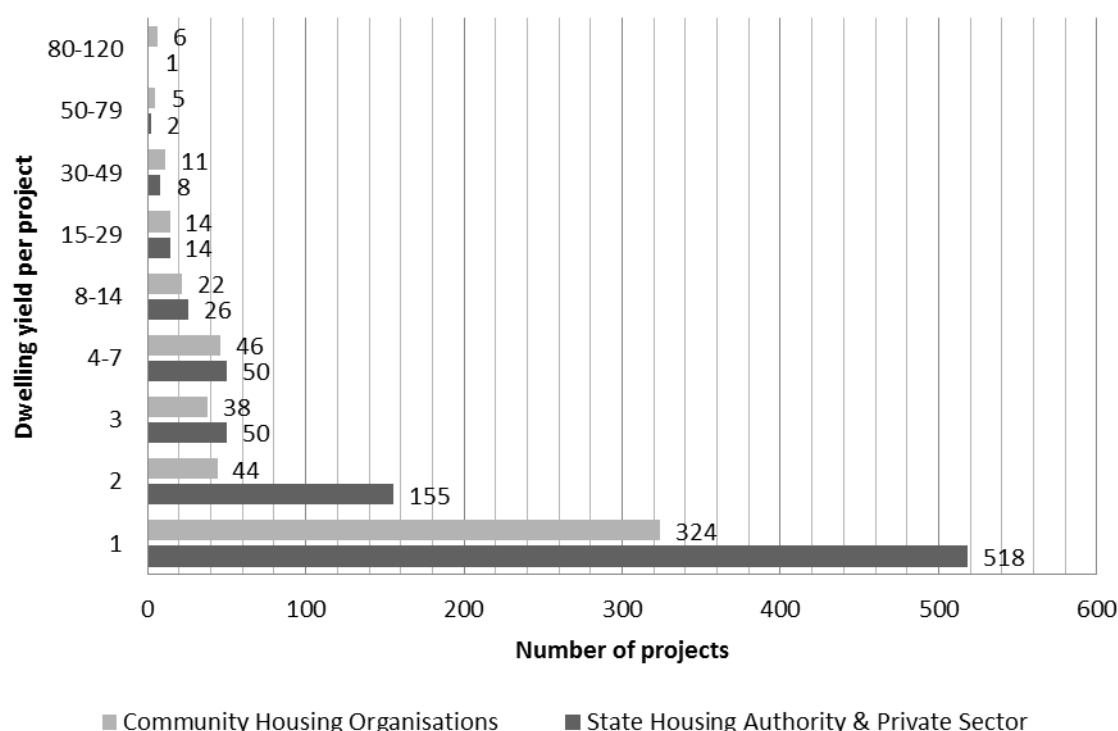


With linear distance regularly having a potential multiplier of an additional third in relation to walkable distance, the 500 metres (between 650 and 800 metres walking distance) mark is considered to be typical of average walking distances, with the 1 kilometre mark being the limit of typical walking patterns. As such, it is a conservative estimate that over 60 per cent (more realistically over 80%) of dwellings constructed in the SHI scheme are beyond walking distance to Activity Centres. They have not constituted a major stimulus to state government policies in this respect.

2.6.4 Growth of the NFP housing sector

The national review of the SHI revealed that more than 50 per cent of dwellings were delivered by the NFP housing sector in Victoria. Upon closer examination of developments led by CHOs, compared to those led by the SHA and private sectors, a difference in the scale of projects pursued and their location can be observed. For example, CHOs developed 10 projects comprising more than 50 dwellings compared with three projects of the same scale, which were developed by the SHA (Figure 12). Preliminary observations from our national review of the program indicate that CHO projects were likely to have been medium to high-rise high density projects in well serviced urban areas. That CHOs can absorb the cost impost associated with these building types also points to their leveraging capability as a valuable advantage in the context of the SHI.

Figure 12: Number and scale of SHI developments delivered by different sectors



Source: Information provided by the Department of Human Services, Victoria. Separating project data for SHA and private sector-led developments was not possible to present due to insufficient data. The private sector was responsible for 30 per cent of the dwellings shown in SHA and private sector category

The location of SHI dwellings delivered by CHOs and the public and public sector were separately analysed against SEIFA and PTAL indexes (Tables 12 and 13). The SEIFA analysis reveals that CHO-led developments significantly outperformed public and private delivery, with 44 per cent of their dwellings being in the upper SEIFA quartiles, as opposed to 25 per cent. Similarly, the CHO dwellings were better placed for public transport access, with 60 per cent occurring in the upper quartiles, as opposed to 31 per cent for SHA and private enterprise.

Land contributed to CHOs by development partners was often well located;¹⁷ and its value was additional to the nominal cost cap on dwellings imposed by the SHI. The Victorian SHA had to work with its existing land holdings or purchase new land for development within the program's dwelling cap; private sector projects also typically involved land purchases. This may be one reason for CHOs outperforming the SHA in the locational analysis above. Additional factors, such as CHO policies for selecting sites in proximity to amenity and services, or potential SHA policies for promoting regional growth, may have also influenced these outcomes.

¹⁷ Indicated by correspondence with Department of Housing and Public Works (Queensland), and from observation of several projects in Queensland and Victoria.

Table 12: SEIFA analysis of government and NFP constructed dwellings

SEIFA quartile	Public & Private sector dwellings	NFP sector dwellings
	%	%
4 (High Socio-economic advantage)	17%	19%
3	8%	25%
2	31%	25%
1 (Low Socio-economic advantage)	43%	32%
Totals	100%	100%

Source: Geo-spatial analysis of information provided by DHS. Separating project locations for SHA and private sector-led developments was not possible due to insufficient data. The private sector was responsible for 30 per cent of the dwellings shown in the public and private sector category in Table 12 above and in Table 13 below.

Table 13: PTAL analysis of government and NFP constructed dwellings

PTAL	Public & private sector dwellings	NFP sector dwellings
	%	%
9–10 (High Public Transport Access)	17%	18%
6–8	14%	42%
3–5	26%	16%
0–2 (Low public transport access)	43%	24%
Totals	100%	100%

Source: See Table 12 above

2.6.5 Summary

Overall, it seems that the SHI program as implemented in Melbourne has not significantly addressed the issue of public transport access for its residents. Nor has it actively attempted to reinforce state policies of positioning more dwellings closer to activity centres. However, net housing increases, particularly closer to the CBD and more intensive medium-density clusters, have been increased, although opportunities appear to have been missed in mirroring this in the outer suburbs. It can be generally said that the distribution of SHI developments has continued concentrations of disadvantage in metropolitan Melbourne, but more detailed analysis suggests that NFP-led developments have started to shift this trend.

3 DESIGN INNOVATIONS DELIVERED UNDER THE SOCIAL HOUSING INITIATIVE

3.1 Overview

The national review of the SHI revealed key development inputs and processes that led to a range of innovative housing outcomes in each jurisdiction. The geo-spatial analysis completed for the Melbourne metropolitan context demonstrated how the distribution of SHI projects performed against the program's objectives for accessible and equitable higher density housing outcomes. Drawing on the outcomes from these two processes, as well as specific requests for information about SHI developments (refer Section 3.2 below), 17 innovative case studies were shortlisted for further examination at the scale of the site and detailed building design (Figure 15).

The case studies are not intended to be a *best-of* ranking or a representative sample of SHI projects. Rather, they are a collection of exemplary development outcomes that offer valuable lessons for future affordable housing delivery. In the context of affordable housing and the SHI, high impact projects employed clever, cost-effective design strategies that delivered considerable improvements at an individual or collective level. The shortlisted projects were used to develop *innovative design criteria* that would inform the detailed analysis of six SHI case studies. The purpose of the design case study analysis is two-fold: one is to reveal effective design strategies for enhancing the quality and performance of housing outcomes and the other is to examine how the conditions of the SHI may have facilitated innovation beyond that possible within conventional delivery processes.

Section 3.6, *Testing the Case Study Research*, outlines responses from the tenant surveys undertaken for each case study, as well as the feedback received during a workshop with leading government, industry and academic stakeholders involved in the SHI. These two processes provide insights into the value of innovative design for affordable housing delivery.

3.2 Case study selection process

A national register of projects completed under the SHI was not available for this research. To ensure that the identification of innovative developments for design case studies research followed robust selection processes, several parallel investigations were undertaken:

- Extensive desktop research by the research team to collate projects of strategic interest to the overarching project objectives.
- Inventory of all SHI projects completed in Victoria, comprising addresses, social housing dwelling yields and ownership information.
- Call for nominations of innovative projects by industry and government stakeholders involved in the SHI, including an advertised request for information through a PowerHousing Australia newsletter and on the PowerHousing Australia website and recommendations specifically requested from state housing authorities.
- Drawings, images and project information sourced from architects and housing providers involved in the SHI.
- Preparation of analytical drawings and diagrams identifying the key design strategies employed and design innovations achieved.
- Site visits, interviews with architects, delivery managers and housing operators for each of the selected case-study projects.

- Prioritisation of case studies relevant for greyfield redevelopment in the middle suburbs; following preliminary examinations, high-rise towers (above eight storeys) were subsequently precluded from detailed case study analysis which focused on mid-range housing models.

3.3 Business-as-usual housing outcomes

Design innovation and quality is not greatly valued in Australia's general housing market. More often than not, design is viewed as a luxury item and an additional cost burden by the building and development industry. As a result, design professionals play a very limited role in mainstream housing provision (Burke 2009), which has led to a range of missed opportunities and shortfalls in the housing delivered. Two of these are particularly apposite—the acute lack of housing diversity and inappropriate dwelling types for contemporary social and environmental contexts.

Overall, the housing delivered under the SHI continued with the *business-as-usual* standard industry practice. For example, in Victoria 80 per cent 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. There are 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. While the complexities and demands of the SHI are recognised, continuing business-as-usual design approaches under a program of this magnitude also presents a lost opportunity for enhancing the quality and performance of affordable housing in Australia.

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; Newton et al. 2011). A 'pattern book' of housing products provides limited housing diversity and differentiations are generally provided through surface treatments only (e.g. façade materials, internal finishes). To maximise profit margins, dwellings typically have very large floor areas but are constructed to minimum performance standards (e.g. energy ratings) at the expense of the end-user, who wears 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 impact in the capital construction cost (Murray et al. 2011). As well, the houses are unsustainable in the broader urban context, where low density housing results in ongoing urban sprawl with all of the well documented problems associated with this, such as lack of infrastructure and loss of bio-diversity (Trubka et al. 2008; Dodson & Sipe 2008; Dowling 2010). 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 (Figure 13).

Figure 13: Business-as-usual housing delivered under the SHI in Victoria

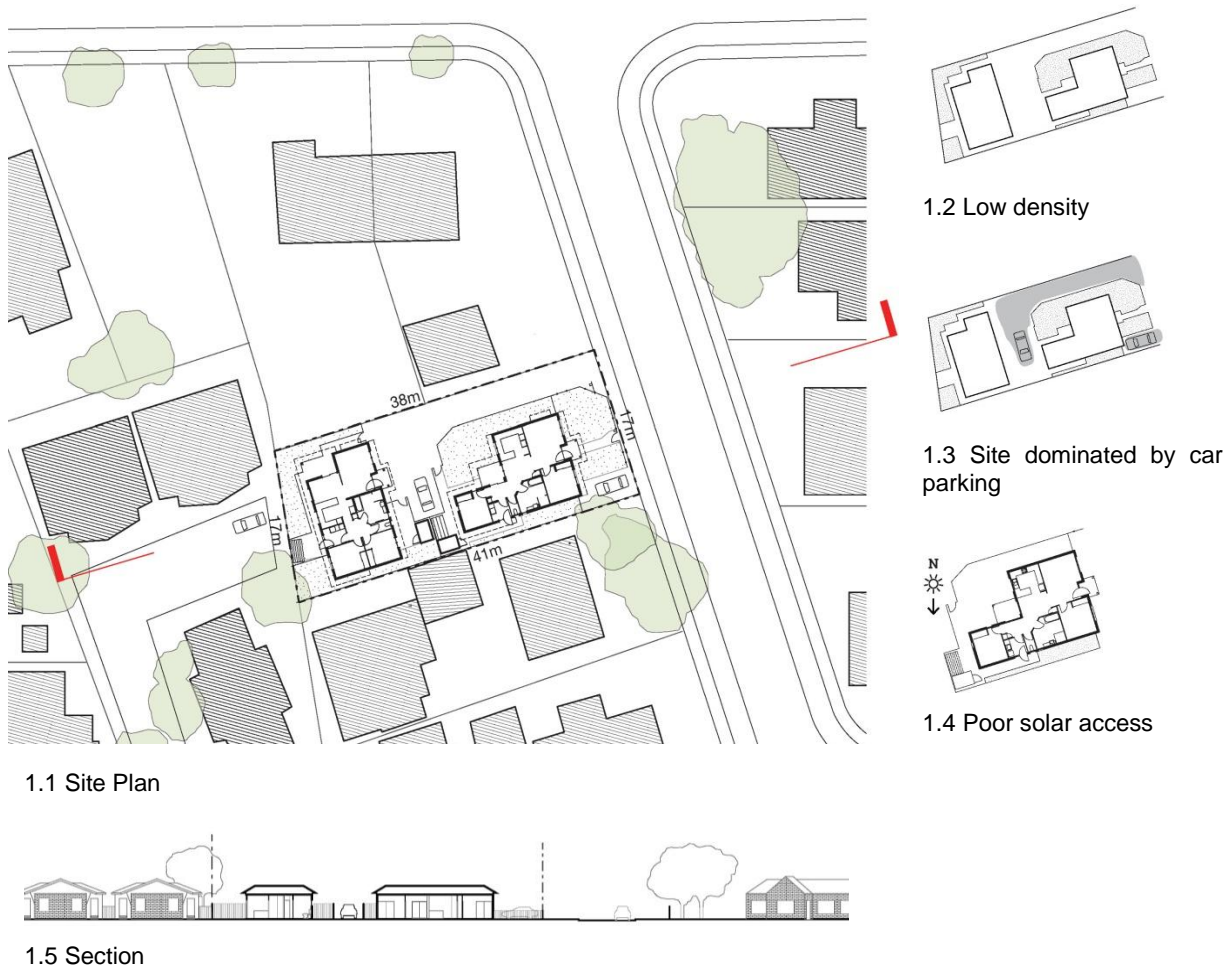


Figure 14: Business-as-usual typical street view



Figures 13 and 14 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.

3.4 Identifying design innovations delivered under the SHI

Compared to the bulk of *business-as-usual* housing models described above, the SHI case studies examined by this research 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. Drawing on the outcomes from the national SHI review, geo-spatial analysis of SHI projects in the Melbourne metropolitan area and nomination of innovative developments by industry and government stakeholders, 17 innovative case studies were shortlisted for further examination at the scale of the site and detailed building design.

Using the business-as-usual housing model as a benchmark, several strategies for enhancing the quality, diversity and density of housing were observed and mapped within three broad categories: (1) urban/location; (2) design; (3) tenancy mix/program mix (Figure 15). This cataloguing process enabled the comparative analysis of shortlisted projects, revealing a range of opportunities for design innovation, as well as the different strategies employed by each project that provided considerable improvements at an individual or collective level (highlighted in yellow).

It is important to note that project innovations are often not directly comparable. What constitutes an innovative outcome can vary with the scale, location and type of development and will often involve both quantitative and qualitative measures. For example, appropriate dwelling densities in an activity centre may not be the same for a redevelopment in a residential context and the design considerations in each case would vary significantly. Through architectural and urban design analysis undertaken on each of the shortlisted projects it became clear that the case studies selected for detailed examination should reflect a project's location/urban context as well as the built-form typology and spatial design strategies. The cataloguing process also distilled a list of key innovative design criteria for enhancing housing outcomes in a range of urban contexts.

3.4.1 Design innovation criteria

- *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.

Figure 15: Case study short list—development of innovation criteria

Shortlisted Projects	1. Urban/ location			2. Design	
	Access to amenity	Strategic urban role	Location	Solar Access	Context responsive/ engagement
 Warragul	**	• Replaces existing stock	•	*** All units living of courtyard areas North facing	*** Adjacent park integrated into design
 Bowen Hills	***	** Rezoned inner city	*** Close to CBD	• Lim North facing living areas	** Overlooks park
 Moonah	***	** left-over "island site" in middle of block	** Social housing in inner suburb of Hobart	*** All units living areas are North facing	• Relatively self contained.
 Manifold Heights	***	** Landscape 'gives back' to street	•	** ¾ units living area access to Northern light	** Scale sensitive to context, retains 'capping on street
 Hampton East	**	• Replaces existing stock	** Social homes in area with rising property values	*** All units living areas North facing	** Scale sens. to context, missed opp with park
 Cockburn Central	**	** Helps establish new TOD on rail corridor	** Social housing in new private dev. prec.	** Most units have some access to direct sun	*** Piazza design creates link through block
 Fortitude Valley	***	** Transition of existing housing to towers	*** Social housing near CBD, access to services	** All (6) common living areas North facing	• City park adjacent to site ignored
 Lochiel Park	**	** Helps complete model "green village developmnt"	• Social housing in new priv dev. prec.	*** All units living areas North facing	• little opportunity given density
 Coburg	***	** Transition from light industrial to high dens res	*** Social homes in area with high property values	• Limited units have North facing living areas	** Discreet car entrance, street retail
 B'meadows	***	*** Introducing app. residential into business area	** Excellent location for key workers to commute	** ¾ units living area access to Northern light	** Internal c'yard protected from busy roads
 Sadleir	**	• Replaces existing HNSW stock	•	*** All units living area North facing	• lower at rear. little opportunity given site type
 Moorabbin	***	*** Introducing app. residential into business area	*** Key workers in area with rising property values	** Over ½ units living areas North facing	** Retains public carpark for Tr. station Town Hall
 Woodville	**	*** large scale regen. of public housing estate	TBC	N/A	N/A
 Murundaka	**	•	•	*** All units living area North facing	• Not addressed bar rescode
 Adelaide	***	•	*** Social housing in CBD	• Limited % of units have North facing living areas	• podium (with retail) addresses city street
 Altona	**	• Replaces existing aged care facility	•	** Over ½ units living areas North facing	** sens. to context, park fenced off
 Beverly Hills	**	• Replaces existing HNSW stock	•	*** All units living area North facing	• higher mass only at street to minimise impact
 Business as usual	Varies poor-good	• Replaces existing stock		Varies poor-good	• Not addressed bar rescode

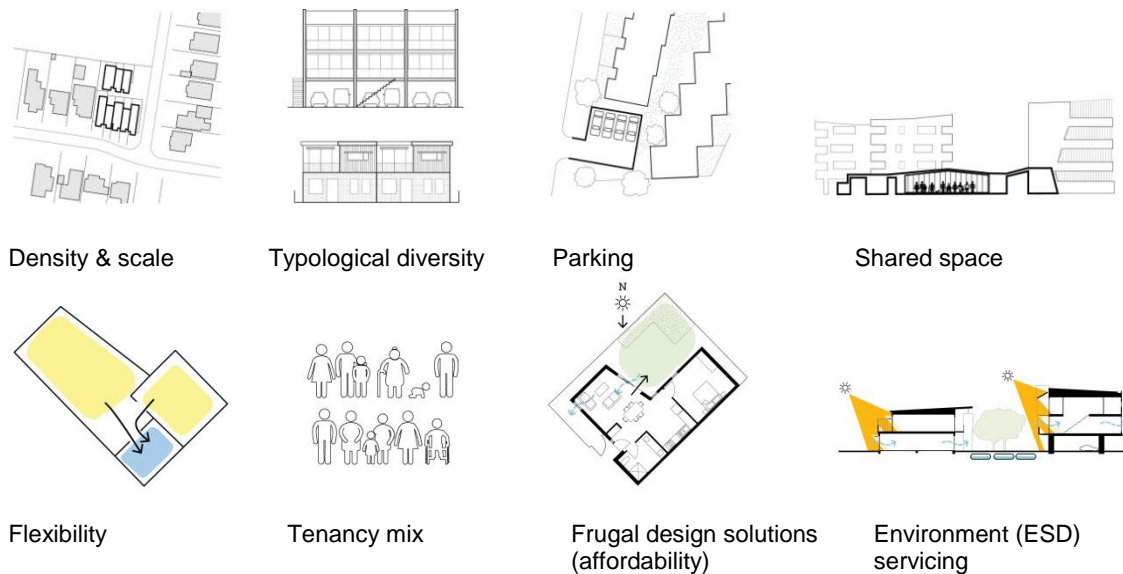
Design (continued)					3. Tenancy Mix	
Carparking solutions	Shared space/ dual use	Diversity - Dw. types, target groups	Building const. articulation, treatment	Private open space	Tenancy Mix	Programme Mix
*** Clustered c'park trees site for ped. & l'scaping	** Minimal good qty - landscaped, not residual	*** Mix apts & t'houses, different h'holds	*** Inexpens. const. app. screenings, mat	*** All units have North facing courtyards	• 100% social	• None
** b'ment parking, side entry	*** variety very well executed	*** Mix apts & t'houses, different h'holds	** Better than B.A.U.	*** Generous, multi use	*** social, NRAS, +market	*** setup for future flexibility
** Under apt parking	*** variety (p' ground, vege patches)	*** Apt + Houses Seniors+ others	*** eff. arch exp. approp. screening	** all N facing balc/ c'yard not very private	• 100% social	• None
No c'parking onsite- disp	*** landscaped, paths throughout	** Mix heritage & new units, semi submerged	** Exp. const. but good outcome	** Mix of porches & small courtyards	• 100% social	• None
*** Clustered c'park trees site	•	**	**	*** All units have North facing courtyards	• 100% social	• None
** basement parking (frees ground)	*** Public piazza with cafe, gym, offices	** Range of apt types.	** attempt to formally enrich pubdomain	• reasonable balconies/ c'yards	*** social, NRAS, +market	***
** Tandem parks limited - disp	*** Common areas every level, l'scaped atriums	** Youth specific accomm, serv & support	• Fairly typical concrete prefab tower	** Generous private balconies though south facing	• 100% social	*** Offices and services over lower 3 levels
** clustered directly off street	• little opportunity given density	** Apartments + Townhouses	** Attempt to give coherent arch. expression	*** well sized N facing balc or courtyard	• 100% social	• None
** 'Hidden' carpark slightly better B.A.U.	** Central shared, landscaped courtyard	• All units very similar, small & only 1 or 2 bed	** Prefab const. craned in, average result	• balconies, not very private, few North facing	*** Mix Private, NRAS & social	*** Diff size retail tenancies at ground
** Consolidated carpark, rear access only	*** Lge l'scaped cyard & comm room	*** Mix bldg types for different user groups	*** App. screening, reas. design	*** Generous balc, most north facing	• 100% social	** Community room for tenants
** limits provision but has long driveway	** two modest size yards	** villas and townhouses (on just 2 lots)	** Attempt to give coherent arch. expression	*** well sized N facing balc or courtyard	• 100% social	• None
*** Combination of public & private carparking	• South facing shared courtyard, faces blank walls	• All units very similar, small & only 1 or 2 bed	** Better than B.A.U.	• Small balconies, few North facing	• 100% social	*** Public carpark at ground
N/A	N/A	*** Mix bldg types for different user groups	TBC	TBC	*** social, NRAS, +market	***
** Large clustered carpark	** Large shared yard, c'park pot. for dual use	*** Mix apt. & comm bldgs diff user groups	• Little screening, Av design	** Small yards & balconies, all North facing	*** Mix private & social	** Shared facilities, accomm for tenants visitors
** car stackers	• sml gch areas in corridors on all levels	*** good bed mix. youth + gen. social	• some attempt to give coherent arch expression	** Lge balcs, some apt have 2. few N facing	*** social, NRAS, +market	*** retail on ground, supp. youth accom. facility
** limited - dispensations	** ped friendly, l'scaped c'yard	• All older people	*** Cons. design, low cost const.	** Mix yards & balc, some N facing	• 100% social	• None
*** Lim - disp. consolidated	• none except access path	• all 1 bed units	• competent but unremarkable	*** N facing yards and balcony	• 100% social	• None
Concrete car park, drives dominate site	Shared space dominated by car/concrete	•	•	•	• 100% social	N/A

Performs well

Selected Case Studies

Note: This catalogue of shortlisted case studies was used to develop a list of innovation criteria. Case studies selected for detailed examination are highlighted in pink. They demonstrate the best combination of innovation criteria across all categories and represent a range of scales, typologies and urban locations.

Figure 16: Design innovation criteria



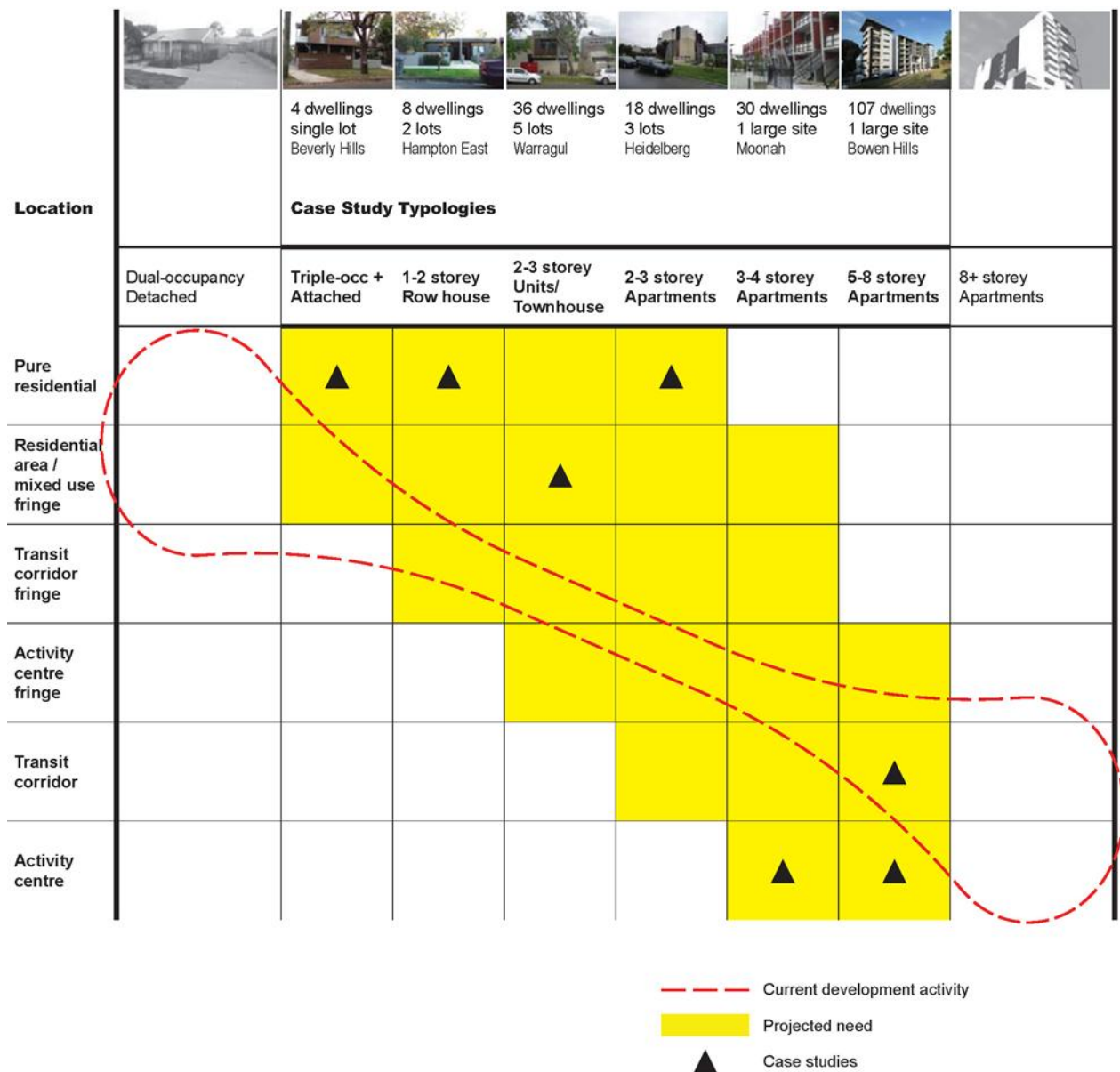
It should be noted that the universal design and 6-star energy rating required by the SHI applied to all housing developments undertaken in Stage 2 of the program and 96 per cent of all projects delivered met these standards (KPMG 2012). As such, these design attributes have not been included as innovative 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.

3.5 Detailed case studies

The six case studies selected for detailed examination represent a range of building scales, typologies and locations that provide valuable lessons for increasing the diversity and quality of future affordable housing in middle suburban greyfield locations. The below matrix (Figure 17) demonstrates the type and location of conventional housing provided by the private sector and the areas where good quality housing alternatives are needed (indicated by yellow shading). Small builders harnessing efficiencies within the cottage building industry provide detached and semi-detached houses in suburban residential areas. These construction efficiencies are typically not possible in mid-rise housing solutions in these areas of our cities. At the other end of the scale, large commercial operators geared for high rise development can provide high density housing but find this uneconomical below a certain scale or outside inner city areas where land values are lower (Phillips 2009; Newton et al. 2011). As a result, mid-range multi-unit housing (up to eight storeys) is not being provided in any great quantity or at *affordable* prices.

Increasing the quality and frequency of mid-range housing provision in middle suburban greyfields is the overarching research interest for this project and has guided the selection of our case studies. As such, business-as-usual detached/dual occupancies and high rise apartment models (above eight storeys) were not considered for detailed examination. Each case study occupies one of the 'yellow zones' in the matrix, where exemplary housing alternatives are most needed. The collection of six case studies is distributed across the ranges of both building typology/scale and urban location which form the two axes of the diagram. They demonstrate, within this range, the best combination of innovation criteria developed by this research and offer a range of strategies for viable, cost effective, good quality design alternatives.

Figure 17: Case study matrix



Note: This matrix arranges housing typologies against a range of urban locations/contexts. The six case studies selected for detailed examination occupy the 'yellow zones' of this matrix, and are distributed across the ranges of both building typology/scale and urban location (forming the two axes of the diagram). They demonstrate, within this range, the best combination of innovation criteria and offer viable, cost effective, good quality design alternatives for higher density housing in middle suburban greyfield locations.

Table 14: Case studies comparative data

	Case study 1 Beverly Hills	Case study 2 Hampton East	Case study 3 Warragul		Case study 4 Heidelberg Heights	Case study 5 Moonah	Case study 6 Bowen Hills
Typology	4 occupancy dwelling	Row houses	Courtyard	Row houses	Clustered apartments around common facilities	Row houses and apartments	Apartment building
Proponent	Housing NSW	DHS	DHS	DHS	Common Equity Housing Limited	DHHS	Brisbane Housing Company
Architect	lahznimmo architects	Shaw Architecture	GHD	GHD	Daryl Pelchen	Xsquared Architects	Mode Design
Tenancy mgmt.	St George Community Housing	DHS	DHS	DHS	Earth CERC	Housing Choices Tasmania	BHC
Target group	Seniors	Older persons(55+)	Singles, couples and families	Older persons (55+)	Low-income tenants with a shared interest in co-housing and living sustainably	Singles, couples and families	Low-income earners
No. of lots assembled	1	1 (double block)	1 (triple block)	1 (double block)	3	1 (large site)	1 (large site)
Previous use	Single storey fibre commission house	Double-storey concrete commission flats	Double-storey commission flats	Single-storey concrete commission flats	3 detached houses	Former TAFE site—large sheds and warehouses	Vacant site in former light industrial/ commercial area close to CBD
Site area m²	571	1,220	2,334	1,604	2,950	4,580	2,920
Previous no. of dwellings	1	4	16	8	3	0	0
Current no. of dwellings	4–4 x 1 bed	8–4 x 1 bed 4 x 2 bed	24–8 x 1 bed 16 x 2 bed	12 x 1 bed	18–6 x 1 bed 6 x 2 bed 4 x 3 bed 2 x 4 bed	30–8 x 1 bed 22 x 2 bed	107–32 x studio 44 x 1 bed 29 x 2 bed 2 x 3 bed

	Case study 1 Beverly Hills	Case study 2 Hampton East	Case study 3 Warragul		Case study 4 Heidelberg Heights	Case study 5 Moonah	Case study 6 Bowen Hills
Dwellings/ hectare	70	65	103	75	61	65	367
No. of beds	70	12	40	12	38	52	140
Beds/hectare	70	98	171	75	129	114	479
No. of onsite car parks	1	4	9	4	14	30	79
Other programs	None	None	None	None	Cooperative shared facility	None	None—infrastructure in place for future
Tenure mix	100% social	100% social	100% social	100% social	100% low income	100% social	37% social, 28% NRAS, 35% private
Total Cost	~\$800,000 (excl. land)	~\$1.33 million (excl. land)	~\$6.5 million (excl. land)	~\$3.2 million (excl. land)	~\$8.2 million (incl. land)	~\$7.8 million (excl. land)	~\$31.2 million (land cost waived in exchange for six finished units)

3.5.1 Case study 1: *Four-occupancy single lot development, Beverly Hills, New South Wales*

Figure 18: View of development from street



Four-occupancy single lot development, Beverly Hills, New South Wales—SHA-led delivery

Delivered through a design-bid-build method, this project was a product of New South Wales' public housing redevelopment program that was centrally administered by the Nation Building Project Management Office within Housing NSW (refer Section 2.5). The private firm, Citta Property Group, was appointed as project manager for this and two other projects on the same street. Citta effectively combined the three sites and handled them as a single project, streamlining all professional services as well as construction. The sites were already owned by Housing NSW. All other project costs were covered by SHI funding.

As with all the redevelopment projects, Resitech (Housing NSW's in-house construction management agency) carried out preliminary yield studies to establish development yield and mix. The brief was also determined by Housing NSW design standards (as well as the SHI Guidelines). On the basis of previous commercial work, Citta engaged lahznimmo architects for limited (design and document only) services. Although Citta managed the project, Resitech were responsible for reviewing the architect's work. It happened that lahznimmo architects had prior experience designing public housing for Housing NSW and were familiar with their expectations; hence the architect had already developed effective ways to resolve certain architectural issues common to this type of housing stock. Planning assessment and approval was carried out by Housing NSW. Six weeks prior to practical completion, St George Community Housing was invited to attend a defects inspection and suggest last-minute minor changes. Upon completion, ownership and management responsibility of all three housing developments (along with several other SHI projects in the area) were legally transferred to St George.

Table 15: Project data—Case study 1

Year	2010
Proponent/developer	Housing NSW (Nation Building PMO)
Architect	lahznimmo architects
Builder	Charisma Developments Pty Ltd
Council	Hurstville City Council
Tenancy management	St George Community Housing
Target group	Seniors
No. lots assembled	1 (former Housing NSW detached dwelling)
Site area	571m ²
Site coverage	38%
No. dwellings	4
Dwellings per hectare	70
No. bedrooms	4
Bedrooms per hectare	70
No. onsite car parks	1
Typology	Individual entry units
Other programs	None
Tenure mix	100% social
Total cost	-\$800,000 (excluding land costs)

Overview

This is a redevelopment of a single lot (previously occupied by one small, single-storey fibro cottage) to yield 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 higher (medium) density housing into such an area that is very effective through maximising amenity and minimising impact on existing neighbours and streetscape.

Using a repeating 'L' shape plan arrangement, 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. 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), 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 19: Street view before development



Single-storey, detached Housing NSW dwelling

Figure 20: Street view after development



Double and single-storey units

Figure 21: Aerial view before development



Note the scale of the dwelling compared with the size of the land

Figure 22: Aerial view after development



Note the increased density. The project was one of a group of similar SHI projects in the same street. (example shown dotted).

Figure 23: Beverley Hills drawings

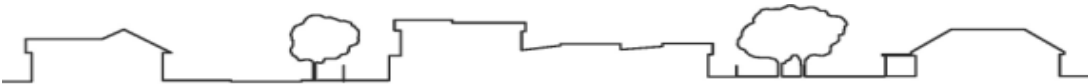


Section 1:700



Site Plan 1:700

Figure 24: Scale/form



The new development delivers a scale of building that is sensitive to the existing context while achieving four times the dwelling density of the house it replaced. As the development was built up towards the street, the building drops down to one storey towards the rear of the block, responding to the conditions of surrounding properties and avoiding issues such as overlooking and overshadowing.

Figure 25: Public realm



The front garden and setbacks 'fit in' with the street

The height/bulk of the building towards the front of the block is counteracted by setbacks that are similar/sensitive to the existing neighbourhood, allowing space for a garden to address the suburban street and improve the public realm.

Figure 26: Size versus costs

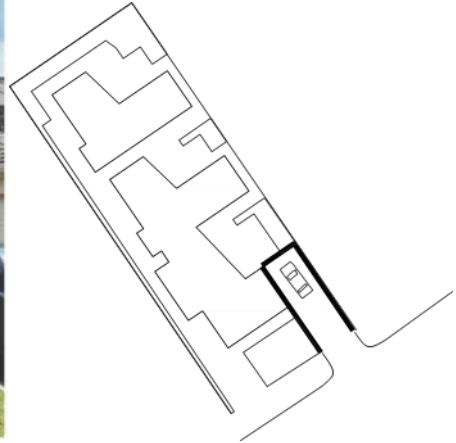


Private open space and shared pathway



Efficient internal layouts maximise small spaces while still providing excellent access to natural light and ventilation. The compact size of the units reduces initial building costs as well as ongoing running costs for tenants. All ground floor units have north-facing living areas that open onto generous, private courtyards with provisions for planting. The first floor unit is also north-facing and extends onto a good sized balcony.

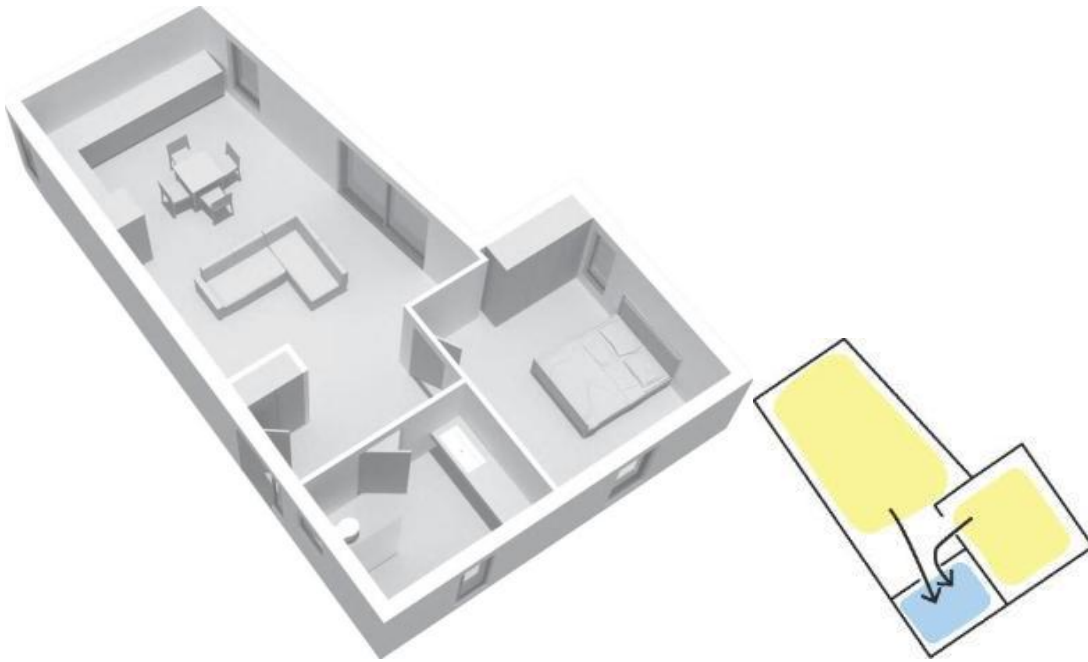
Figure 27: Car parking



Discreet, single carport

By limiting car access into the site, such as driveways, and restricting the number of car parks, the site is freed for more generous, private open space and increased density.

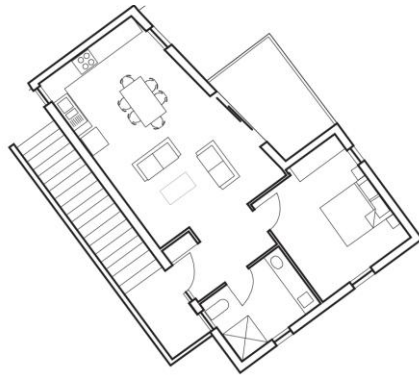
Figure 28: Guests/second bedroom



Typical unit layout

The internal configuration of each unit maximises liveability, for example visitors/guests can access the bathroom without walking through the bedroom allowing tenants to maintain some privacy.

Figure 29: Floor plans



Typical first floor unit 1:250



Typical ground units 1:250

3.5.2 Case study 2: Row houses, Hampton east, Victoria

Figure 30: View of units from street



Row Houses, Hampton, Victoria—State Housing Authority-led delivery

Using a design-bid-build method, this project was delivered by the Nation Building Division (NBD) set up within the DHS to manage development of SHI-funded projects on public housing properties in Victoria. As the site was already owned by the DHS, the land component did not need to be purchased. All other project costs were covered by SHI funding.

The development yield and mix was determined with input from the DHS Cheltenham Regional Office. Shaw Architecture was engaged by the NBD for services including yield feasibility testing, design, planning submission, documentation, and a limited quality observation role during building construction—the role of contract administration was performed by the NBD.

The SHI's streamlined planning provisions meant the project was assessed by a state government inter-department working group with approval being granted by the Minister for Planning. The property continues to be owned and managed by the DHS.

Table 16: Project data—Case study 2

Year	2010
Proponent/developer	Department of Human Services (Victoria)
Architect	Shaw Architecture
Builder	D. J. Rice
Council	Bayside City Council
Tenancy management	Department of Human Services (Victoria)
Target group	Older persons (55+)
No. lots assembled	2—formerly 4 x Office of Housing apartments
Site area	1220m ²
Site coverage	45%
No. dwellings	8
Dwellings per hectare	65
No. bedrooms	12
Bedrooms per hectare	98
No. onsite car parks	4
Typology	Row houses
Other programs	None
Tenure mix	100% social housing
Total cost	-\$1.3 million (excluding land costs)

Overview

This redevelopment is on a double-lot site on a corner, previously occupied by a free-standing, 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. 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.

The clustering of 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. Access to the three back units is economically provided by a small shared path. The pathway also separates the two rows and allows additional entry to rear yards of street-facing units. This pathway and the parking lot are the only shared areas, with the emphasis placed on private open space instead. The row housing type and arrangement gives all units north-oriented living areas, outlook and cross ventilation.

Figure 31: Street view before development



Double-storey concrete flats owned by the Office of Housing

Figure 32: Street view after development



Single-storey row houses

Figure 33: Aerial view before development



The bulk of the land is shared, open space. Image: Nearmap

Figure 34: Aerial view after development



Shared space is minimised and each row house has its own private rear yard. Image: Nearmap

Figure 35: Hampton East drawings



Figure 36: Scale/Density

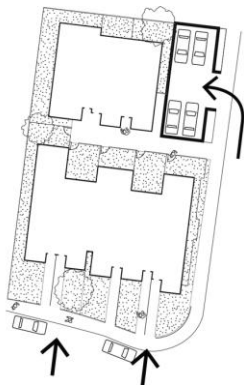


The new development delivers a scale of building that is sensitive to the existing context whilst still achieving a high density. It doubles the amount of dwellings previously on site in the original two-storey Office of Housing Commission flats.

Figure 37: Car parking and public realm interface



Entry to units from street (top) and car park from street (bottom)



The consolidated car park with side/rear entry frees the *main* street address for private gardens and unit entries, improving the public realm. It also frees the rest of the site for additional units and private open space. Importantly the site configuration and car park location minimise walking distances from vehicles to dwellings as all units can be accessed from the central, common pathway.

Figure 38: Amenity/efficiency



Typical private courtyard (top) and interface between development and adjacent park (bottom)

Efficient internal layouts maximise small spaces, while still providing good access to natural light and ventilation. All units have north-facing living areas that extend out to shaded, private courtyards with small garden beds for planting. The development is located adjacent to a large, established park with playground and sporting facilities.

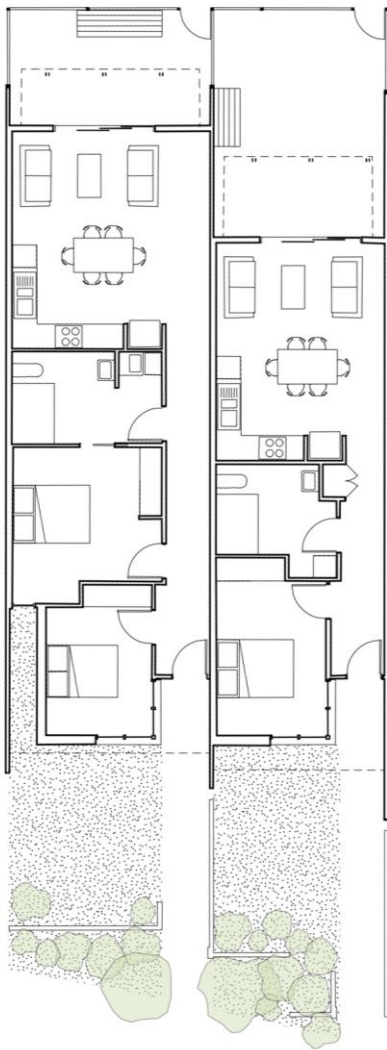
Figure 39: Shared spaces and access



Shared path providing entry to rear units and courtyards

Shared spaces have been deliberately limited to a central access path, allowing for more generous private open spaces for individual units. This common space, which is well landscaped and lit, provides access to all units and ensures it will be passively surveyed. It also provides an informal space for residents to meet one another.

Figure 40: Typical floor plans



Typical one and two-bedroom units 1:200

3.5.3 Case study 3: Courtyard and row houses, Warragul, Victoria

Figure 41: View of courtyard houses from street



Courtyard and row houses, Warragul, Victoria—State Housing Authority-led delivery

Using a design-bid-build method, this project was delivered by the Nation Building Division (NBD) set up within the DHS to manage development of SHI-funded projects on public housing properties in Victoria. As the site was already owned by the DHS, the land component did not need to be purchased. All other project costs were covered by SHI funding.

The brief, including development yield and mix, was set by the NBD. GHD was engaged by the NBD for design and construction documentation services, and to provide advice where necessary during construction. The role of contract administration was performed by the NBD.

The SHI's streamlined planning provisions meant the project was assessed by a state government inter-department working group with approval being granted by the Minister for Planning. The property continues to be owned and managed by the DHS.

Table 17: Project data—Case study 3

	Courtyard houses	Row houses
Year	2010-11	2010-11
Proponent/developer	DHS	DHS
Architect	GHD	GHD
Builder	Macalister	Macalister
Council	Baw Baw Shire Council	Baw Baw Shire Council
Tenancy management	DHS (Morwell)	DHS (Morwell)
Target group	Singles and families	Older persons (55+)
No. lots assembled	1 (triple block)	1 (double block)
Site area	2335m ²	1605m ²
Site coverage	42.5%	42%
No. dwellings	24	12
Dwellings per hectare	103	75
No. bedrooms	40	12
Bedrooms per hectare	137	75
No. onsite car parks	9	4
Typology	Courtyard houses	Row houses
Other programs	None	None
Tenure mix	100% social housing	100% social housing
Total cost	-\$6.5 million (excl. land)	-\$3.2 million (excl. land)

Overview

Located on the fringe of the town centre, the project involves redevelopment of two large sites on either side of a street. Both sites were previously occupied by DHS single-storey and double-storey walk-up concrete flats. 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. 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 and street frontage.

Figure 42: Street view before development



Former Office of Housing units

Figure 43: Street view after development



Single-storey row houses

Figure 44: Aerial view before development



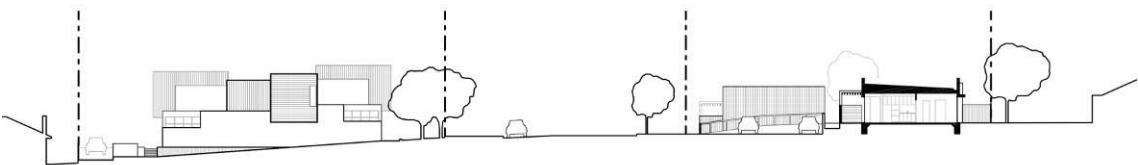
A series of Office of Housing single and double-storey flats.

Figure 45: Aerial view after development



Courtyard houses on the west side of the street, row houses to the east, adjacent to the park.

Figure 46: Warragul Drawings

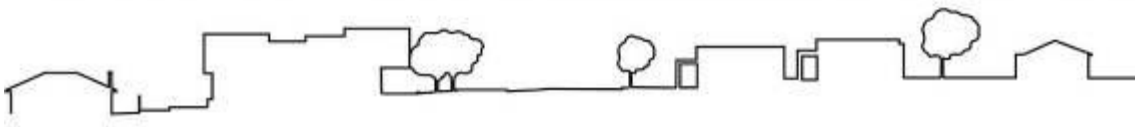


Section 1:700



Site Plan 1:700

Figure 47: Scale/density



Different formal arrangements of courtyard houses

This project achieves a very high density for the area while retaining a scale that is sensitive to the context. This has been achieved in part by working with the existing slope of the site, as well as taking advantage of reduced setbacks emulating the existing shop adjacent to the courtyard houses. A careful arrangement of buildings has avoided any overlooking or overshadowing issues to neighbouring properties while still achieving a very high level of liveability for residents.

Figure 48: Context engagement – park



Common space between row houses with view through to park

Omitting a fence along the northern boundary of the project allows the central common space to integrate with the park, providing residents with the sense of extended grounds, and providing the park with passive surveillance. A park bench has been located at the threshold of the two, giving tenants (who often live alone) a place to meet and socialise. This has become a weekly occurrence in this development.

Figure 49: Context engagement—street



Courtyard house setback matches neighbouring shop setback

Setbacks of courtyard housing reflect and respond to the existing corner shop; reinforcing a sense of public street address at the top of the hill, opposite the public park.

Figure 50: Privacy



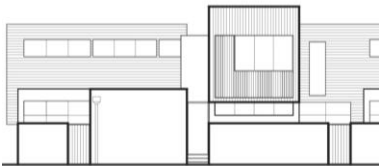
Entries into row house units

Staggering the units across the site and careful screening ensures privacy for tenants without reducing their amenity. It also clearly demarcates the transition from public to private space, enabling tenants to make the space 'their own'.

Figure 51: Typological diversity



Example of a double-storey courtyard house with private courtyard



A diversity of dwelling types including single and double-storey units have been provided in this project to cater for a range of different household types, including families, singles, couples and the elderly.

Figure 52: Car parking and public realm interface



Courtyard houses from street

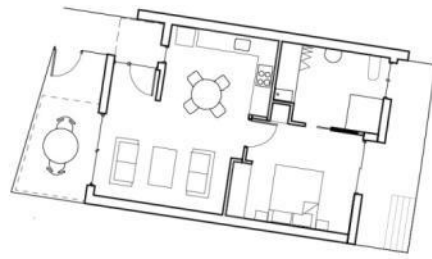


Row houses from street



Consolidated car parks in both developments free the remainder of the sites for private open space and increased densities. In addition, and particularly in the case of the courtyard houses, locating the car park to the rear of the property allows dwellings and gardens to face the street, improving the public realm.

Figure 53: Typical floor plans



Row houses Typical unit 1:250



Courtyard houses Typical units—first floor 1:250



Courtyard houses Typical units—ground floor 1:250

3.5.4 Case study 4: Co-housing, Heidelberg Heights, Victoria

Figure 54: View of development from street



Co-housing, Heidelberg Heights, Victoria—Community Housing Organisation-led delivery

Using a design-bid-build method, this project was delivered by Common Equity Housing Ltd (CEHL), a not-for-profit housing association specialising in providing resources and support to volunteer rental housing cooperatives across Victoria. The project first began before the SHI, when the group 'Earth CERC', who are a Common Equity Rental Co-op, were approached by the owner of one of the three houses previously on the site with the idea of starting a new housing cooperative. Earth CERC formulated the initial project proposal—including a preliminary development yield and mix, environmental initiatives, and the co-housing principles involving certain shared facilities and mutually supportive social arrangements. The proposal was then brought to CEHL, who henceforth had the lead role in advancing the project, purchasing all three properties with its own capital, engaging the architect for limited (design and documentation only) services and reviewing their design work.

An application for a planning permit was lodged with the local council, but after the SHI was announced publicly, CEHL submitted the project for Commonwealth funding and was successful. The SHI's streamlined planning provisions allowed the application to be withdrawn from local council and instead be assessed by a state government inter-department working group with approval being granted by the Minister for Planning. Earth CERC now lease the housing from CEHL, and are chiefly responsible for its management. This includes interviewing prospective tenants, who are selected on the basis of shared aspirations for environmental sustainability and cooperative living.

Table 18: Project data—Case study 4

Year	2010–11
Proponent/developer	CEHL
Architect	Daryl Pelchen
Builder	Momentum Builders
Council	Banyule City Council
Tenancy management	Earth CERC
Target group	Low-income tenants with a shared interest in co-housing and sustainable living
No. lots assembled	3 (formerly three detached houses)
Site area	2950m ²
Site coverage	-35%
No. dwellings	18
Dwellings per hectare	61
No. bedrooms	38
Bedrooms per hectare	129
No. onsite car parks	16
Typology	Clustered apartments around common facilities
Other programs	Cooperative shared facility
Tenure mix	100% low-income housing
Total cost	-\$8.2 million (includes cost of land)

Overview

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. 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, 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 north-east corner and connects to a public park through a back gate. Local residents not actually living on the property are able to take up a membership that grants usage of some of the facilities and involvement in the community's activities.

Figure 55: Street view before development



Three detached houses

Figure 56: Street view after development



Three-storey apartment buildings clustered around a central communal building

Figure 57: Aerial view before development



Three houses spread over separate blocks with large yards

Figure 58: Aerial view after development

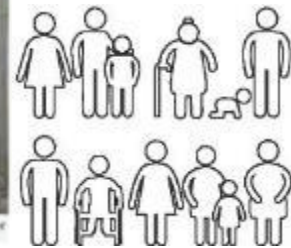


Apartment buildings clustered around a central communal building and shared yard

Figure 59: Heidelberg Heights drawings



Figure 60: Diversity/Community



Murundaka residents out the front of the development

Murundaka exists on the principles of co-housing that encourages resident interaction and participation aided by extensive shared facilities. This project brings together a range of household types including singles, couples, families and older people all on a low income. They share an interest in living sustainably and becoming engaged with a small community.

Figure 61: Block consolidation



Back gate (dashed red line) that opens yard to park



Shared backyard, apartment building in background

Murundaka was made possible through the acquisition of three adjacent blocks with separate houses that were consolidated into one, achieving six times the dwelling density and pooling together resources such as car parks and backyards to provide ample shared amenity. The project connects to the park at the rear of the property through two large gates that provide access, and is looking at acquiring and expanding into adjacent properties and creating new urban links.

Figure 62: Car parking/dual use



View of shared car park from the street

A consolidated car park frees the remainder of the site for other programs including extensive communal space. The permeable, gravel treatment to the car park allows its use to be flexible, for example, the existing garden could be extended into this space depending on residents future requirements.

Figure 63: Shared space



Shared outdoor, undercover area (top) Interior view of communal area (bottom)



Two apartment buildings are arranged around a large double-height communal building that contains a shared kitchen, dining and lounge areas, as well as a spare room and facilities for overnight guests. The Murundaka community has also invited residents from the area who live outside the development to engage and participate in some of their activities, creating and strengthening local community ties.

Figure 64: Common spaces



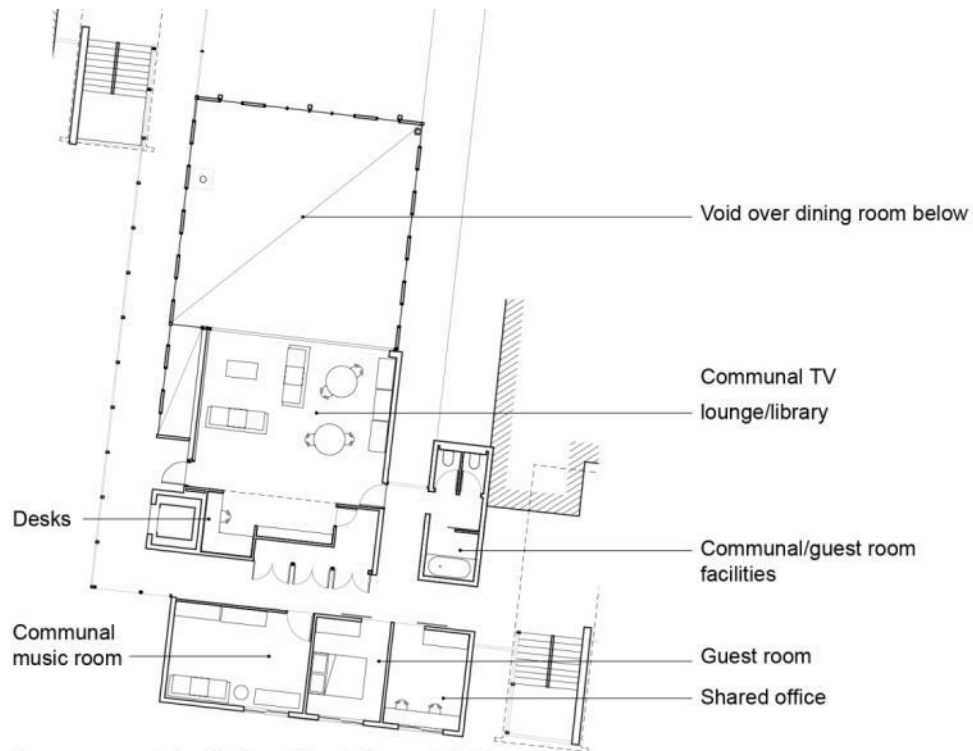
Open-air circulation spaces



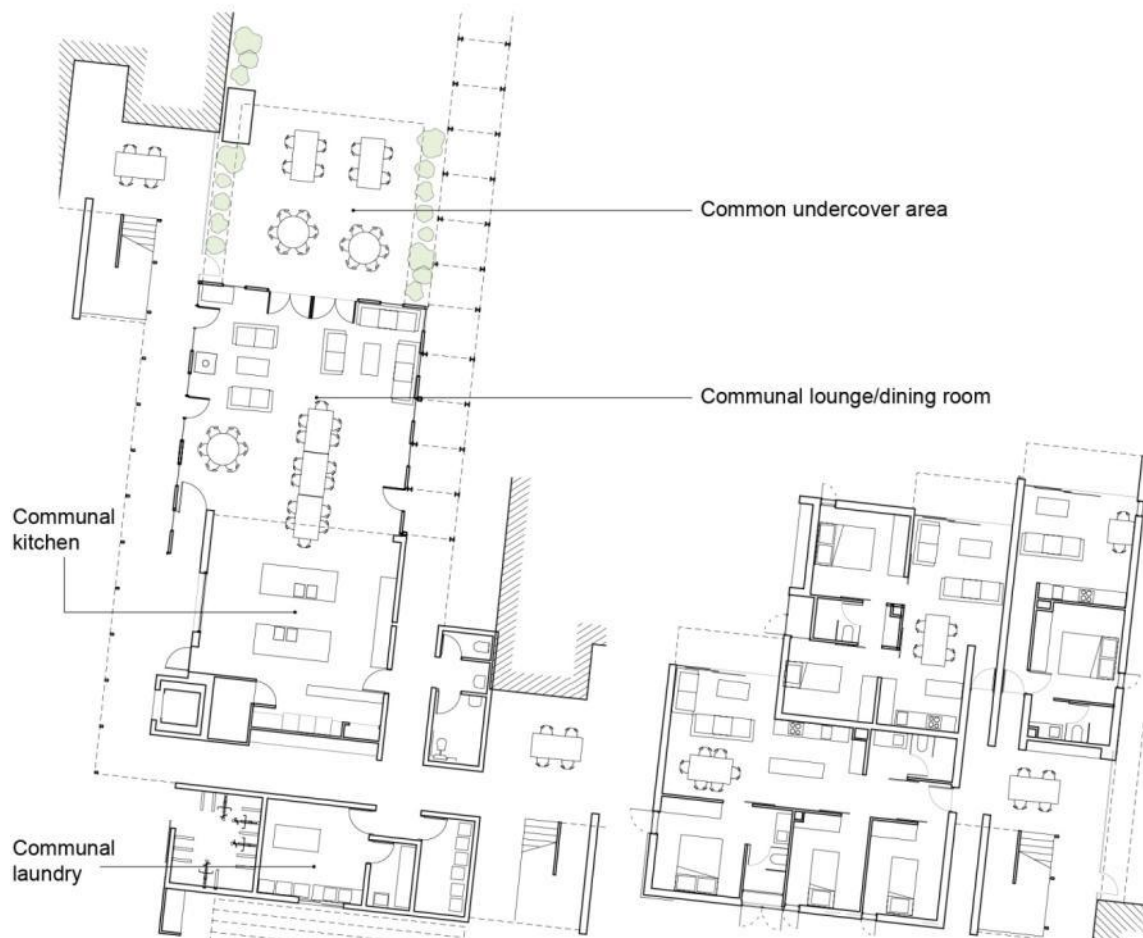
Circulation spaces double as meeting and play areas

Generously sized landings with good outlook, located at the entries of apartments (maximum three entries) create an opportunity for the residents to meet, even place furniture and enjoy meals together, encouraging interaction between neighbours.

Figure 65: Typical floor plans



Communal building First floor 1:300



Communal building Ground floor 1:300

Apartment building Typical plans 1:300

3.5.5 Case study 5: Row houses and apartments, Moonah Tasmania

Figure 66: View of apartment building (left) and rowhouses (right) from the development entry



Row houses and apartments, Moonah, Tasmania—State Housing Authority-led delivery

Using a design-bid-build method, this project was procured by the Housing Innovations Unit (HIU), an agency within the Department of Health and Human Services (DHHS) Tasmania that administered the SHI. The site (previously occupied by a TAFE facility) had been purchased by the DHHS prior to the SHI's announcement and hence the Commonwealth SHI funding did not need to go towards land costs. The project budget was also topped-up by a state government contribution in addition to the SHI funding.

Xsquared Architects and the engineering consultancy SEMF, part of an existing joint venture arrangement that provided a range of professional services to the DHHS, were engaged by the HIU to deliver this project. The HIU determined the basic brief including dwelling yield and mix, and reviewed the architect's design work. The architects were given additional scope in shaping the project within the project budget, putting forward the building type and form, and setting the target of gaining a 5-star Green Star multi-unit residential rating (which was ultimately achieved). The traditional lump sum construction tender was managed by the joint venture, and contract administration was shared between SEMF and Xsquared Architects, with Xsquared Architects taking primary responsibility for architectural and site-related matters.

The property is now managed by the not-for-profit housing provider Housing Choices Tasmania and continues to be owned by the DHHS.

Table 19: Project data—Case study 5

Year	2010–11
Proponent/developer	Department of Health and Human Services (Tasmania)
Architect	Xsquared Architects
Builder	Hutchinson Builders
Council	Glenorchy City Council
Tenancy management	Housing Choices Tasmania
Target group	Families, singles, elderly
No. lots assembled	1 (large former TAFE site)
Site area	-4580m ²
Site coverage	-33%
No. dwellings	30
Dwellings per hectare	65
No. bedrooms	52
Bedrooms per hectare	114
No. onsite car parks	30
Typology	Row houses and apartments facing common area
Other programs	None
Tenure mix	100% social housing
Total cost	-\$7.3 million (excluding land costs)

Overview

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. The project is chiefly of interest in the way it identifies and exploits this interstitial space in the urban fabric of a greyfield suburb. (Although Moonah is only 10 minutes' drive from downtown Hobart, its characteristics of density and age are similar to middle suburbs in Melbourne and Sydney.) It demonstrates a strategic opportunity to introduce medium density housing at this threshold area between activity centre/shopping strip and existing low-rise residential areas.

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 northern blocks have apartments on ground level while the southern block is elevated to allow parking below and receive more sunlight. A shared open space with a playground and garden plots provides a spatial buffer between the two rows.

Figure 67: Overhead view before development



A long internal street leads to TAFE buildings in activity centre

Figure 68: Street view after development



A long driveway leads to development located in the centre of the block.

Figure 69: Aerial view before development



A cluster of industrial-sized sheds owned and used by the Hopkins St TAFE Centre.

Figure 70: Aerial view after development



Sheds replaced with medium density residential buildings

Figure 71: Moonah drawings

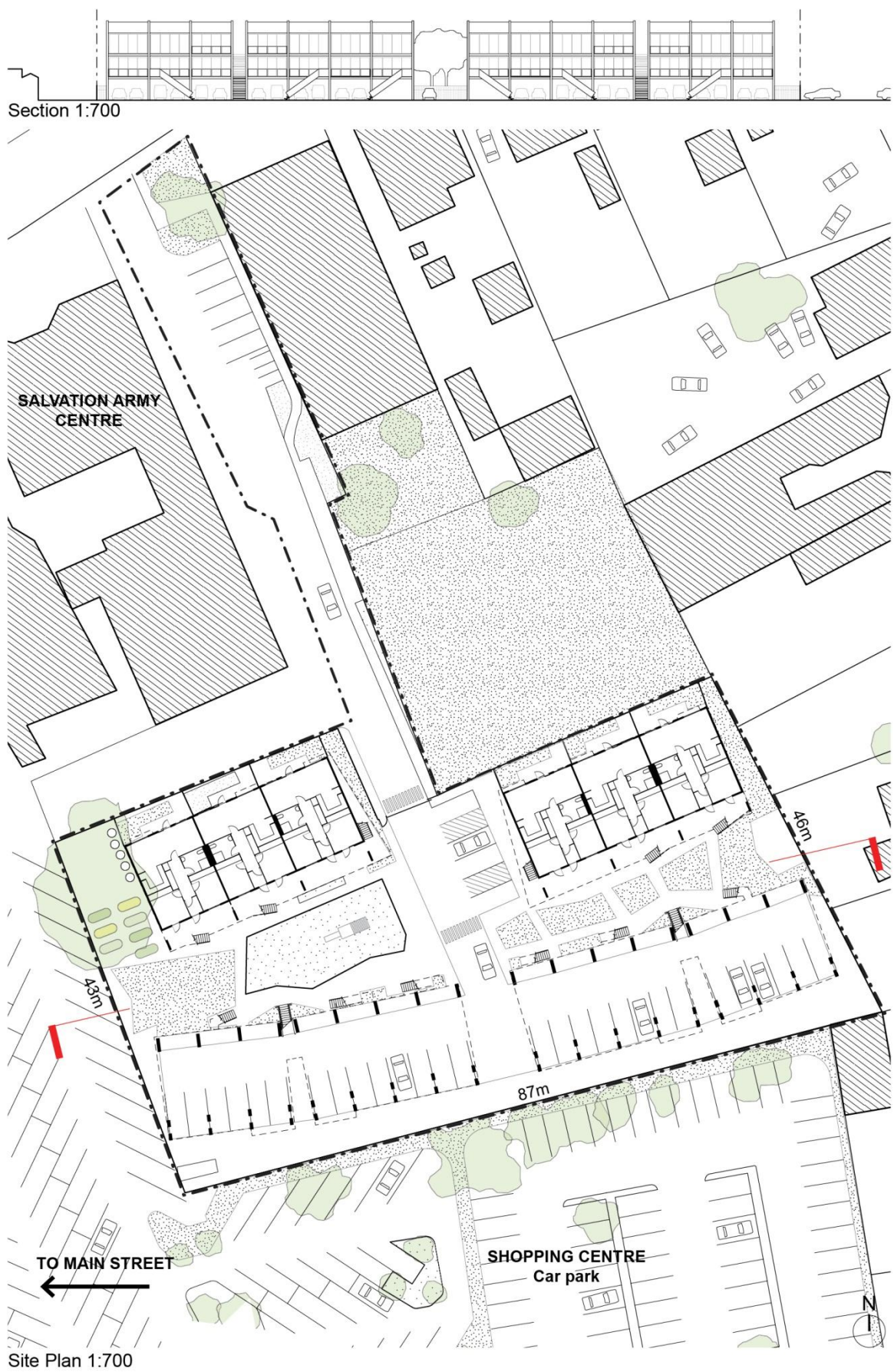


Figure 72: Neighbouring commercial and light industrial buildings (top) and view of development from adjacent public car park (bottom)



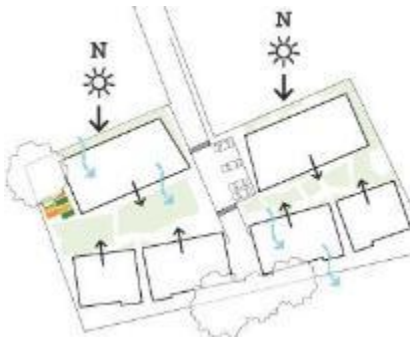
Strategic urban infill

This project introduces medium density housing into the centre of the Moonah activity centre. Located just behind the main street, adjacent to a large public car park, the development provides residents with excellent access to transport and services, as well as introducing passive surveillance to the car park and surrounding light industrial/commercial area.

Figure 73: Amenity/affordability

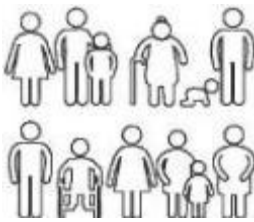


Shared, landscaped courtyard (top) and shared playground and bicycle storage sheds (bottom)



Efficient internal layouts maximise small spaces, while still providing good access to natural light and ventilation. 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. All units overlook the shared, landscaped courtyard and have access to the children's playground and shared vegetable garden plots.

Figure 74: Tenancy mix



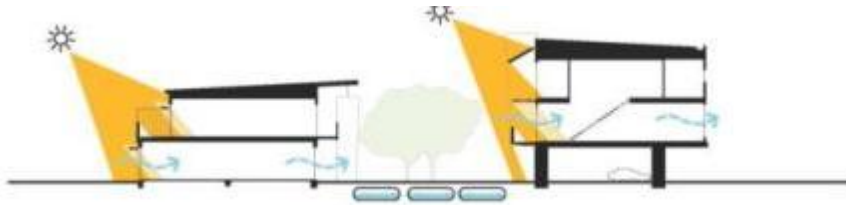
Apartment building (left) and row houses (right)

A range of dwellings, including double-storey townhouses and accessible apartments, cater for a diversity of tenants with a range of abilities, including singles, couples, families and older persons.

Figure 75: Ecologically sustainable design

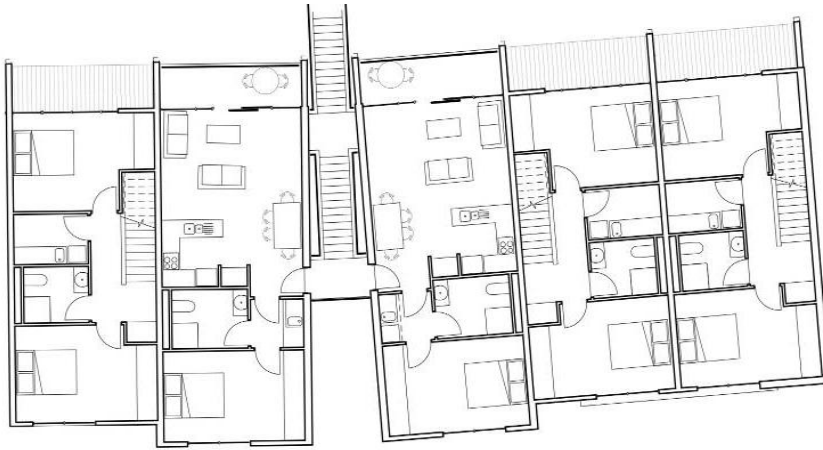


Underground water tanks sit under shared, central courtyard

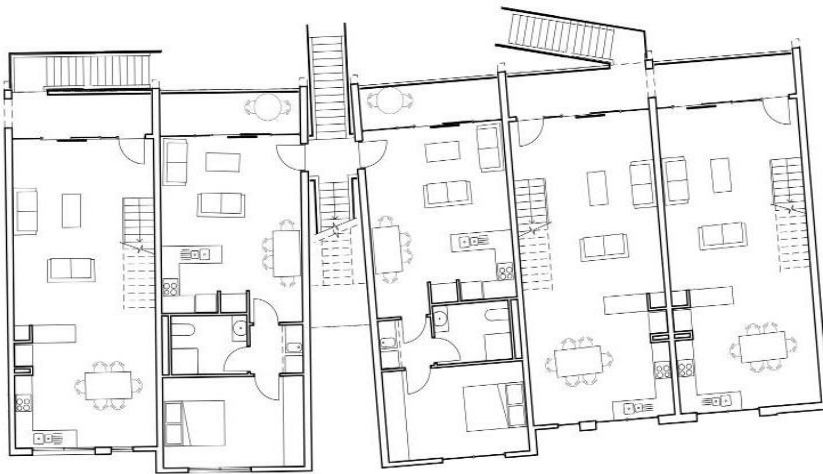


The development was consciously designed to reduce its environmental impact and utility costs for low-income tenants, with all units achieving FirstRate energy star ratings above seven, and the development as a whole gaining a 5-star Green Star Multi-Unit Residential Design Rating. Features include concrete slabs for passive solar heating and cooling, large underground rainwater tanks, cross ventilation to all dwellings and shading devices to control sunlight.

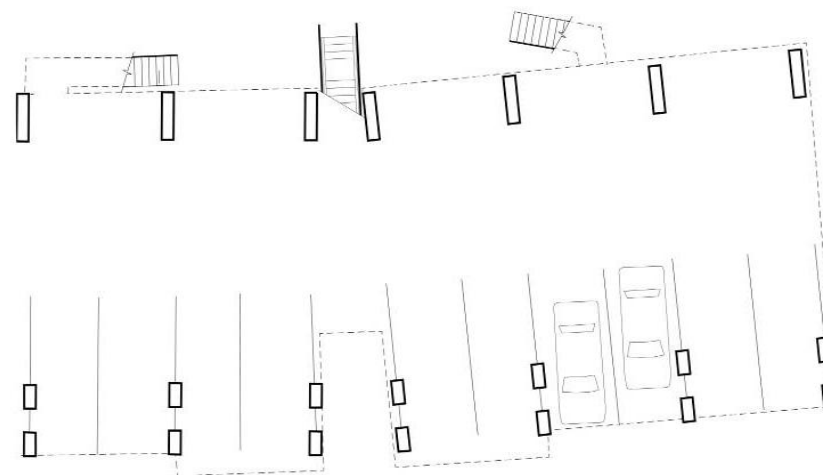
Figure 76: Townhouse floor plans



Typical townhouse and apartment building Second floor 1:250

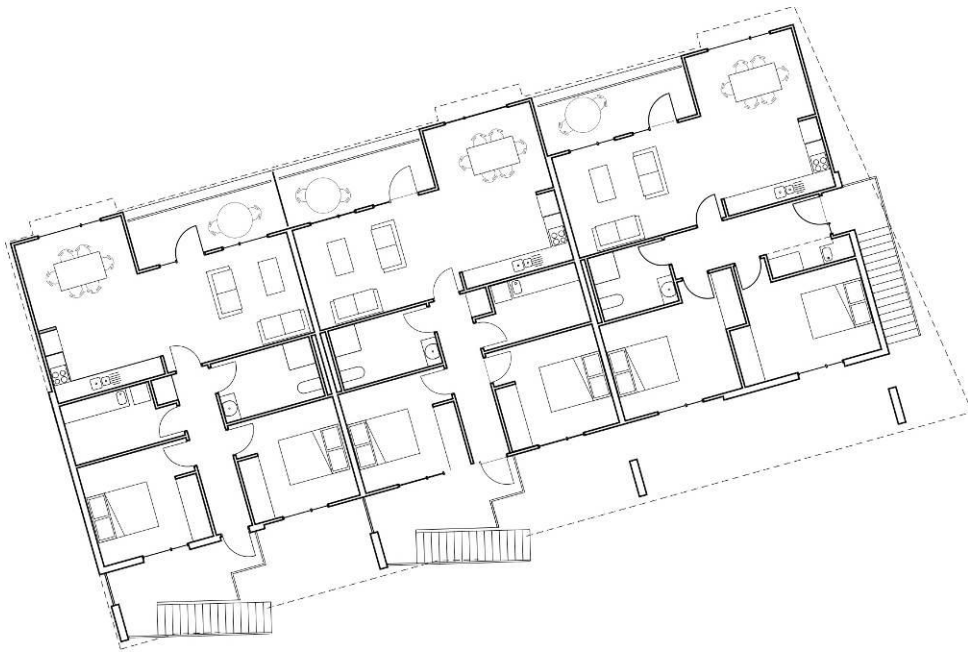


Typical townhouse and apartment building First floor 1:250



Typical townhouse and apartment building Ground floor 1:250

Figure 77: Apartment floor plans



Typical apartment building First floor 1:250



Typical apartment building Ground floor 1:250

3.5.6 Case study 6: Richmond, Bowen Hills, Queensland

Figure 78: View of development from street



Apartment building, Bowen Hills, Queensland—Community Housing Organisation-led delivery

Using a design-bid-build method, the 'Richmond' project was delivered by BHC (formerly Brisbane Housing Company), a not-for-profit housing provider specialising in the development of mixed tenure projects. The site was acquired from Brisbane City Council under a land swap arrangement in exchange for six completed apartments (used to meet council's own social housing needs). Commonwealth SHI funding of \$8.99m was secured through the Queensland Department of Communities' 'Application for Capital Grant Funding' program (a competitive process specifically targeting the community housing sector). Remaining project costs of \$22.21 million were funded through BHC debt and equity.

The project brief including development yield and mix was determined by BHC, with dwelling specifications conforming to both SHI Guidelines and the Queensland Department of Public Works briefs. BHC engaged and acted as client to the architect. Features such as the shared vegetable gardens, communal recreational areas, and ground floor office (planned for later conversion into a cafe) all required close communication and development between the client and architect to ensure their long-term viability. BHC arranged for the construction tender and acted as contract administrator during construction.

BHC is responsible for both the sale of the private market and NRAS apartments, as well as ownership and management of the community housing component.

Table 20: Project data—Case study 6

Year	2010–11
Proponent/developer	Brisbane Housing Company
Architect	Mode design
Builder	Northbuild
Council	Brisbane City Council
Tenancy management	BHC
Target group	Singles, couples without children and small families
No. lots assembled	1 (large—vacant site)
Site area	2920m ²
Site coverage	-69%
No. dwellings	107
Dwellings per hectare	367
No. bedrooms	140
Bedrooms per hectare	479
No. onsite car parks	79
Typology	Apartment building
Other programs	Not current, but design allows for future program including coffee shop, childcare and offices
Tenure mix	37% social, 28% NRAS, 35% private
Total cost	-\$31.2 million (excluding land costs)

Overview

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 (ULOA) 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.

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. Careful screening has been provided throughout the development to ensure residents privacy, and the size of the building is offset by the adjacent park. 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. These common spaces are open air in response to the sub-tropical climate, and assist with ventilating the rest of the building. Current zoning laws prohibit any program beside residential, but with the expectation that these will change as the area is developed; the building has incorporated several flexible spaces that will be able to accommodate a small shop and childcare or offices in the future.

Figure 79: Street view before development



Vacant site located in light industrial/commercial area close to the CBD

Figure 80: Street view after development



Existing mature tree retained to enhance development

Figure 81: Aerial view before development



Large vacant plot located just off a main road, with close proximity to the CBD

Figure 82: Aerial view after development



Large apartment building with similar sized development to the east and a new park to the south

Figure 83: Bowen Hills drawings



Figure 84: Typical floor plans



Communal areas Floor Plan, Level 4 1:500

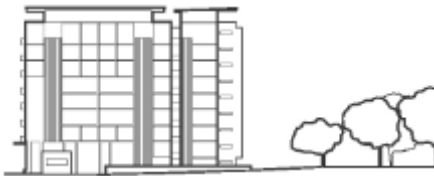


Communal areas Floor Plan, Level 3 1:500

Figure 85: Scale/context



Interface between the apartment building and the park

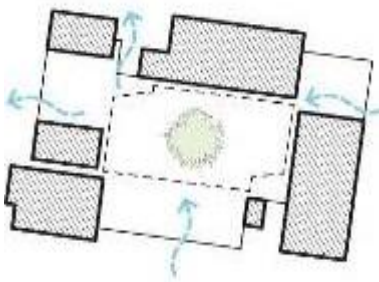


The large scale of the building is offset by the adjacent park.

Figure 86: Amenity



Open air circulation and communal areas



The open central courtyard of the building with its openings and outdoor corridors, allows light and air to permeate and circulate through the building. This provides additional comfort for tenants in a sub-tropical environment.

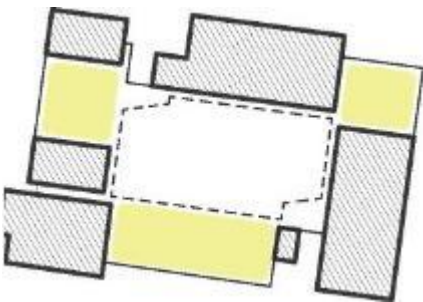
Figure 87: Common spaces



Open air common space overlooking landscaped gardens



Secure communal gardens

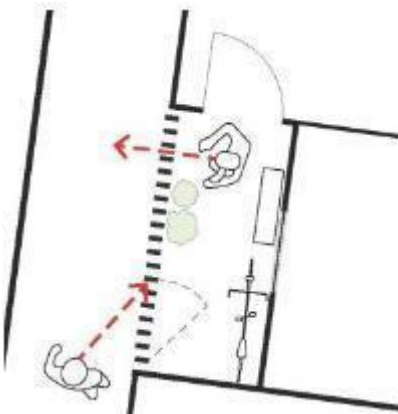


A variety of carefully designed and curated common spaces have been incorporated over different levels. Vegetable garden plots with a secure entrance, encouraging community engagement through a shared interest. The double-height barbeque area overlooking the adjacent park can be used for children's birthday parties and other large gatherings, and is positioned to provide a degree of privacy with acoustic and visual separation from the units. A lounge area with couches and dining tables overlooks a large tree retained to provide shade and visual amenity.

Figure 88: Privacy/amenity

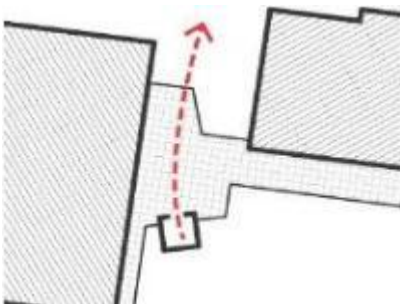


Screened, open air foyers at apartment entries



Securely screened foyers located at the entry of all apartments are designed to provide residents with privacy from passers-by but allow them to see visitors clearly when answering the door. In addition, they give residents a secure storage space and the opportunity to safely leave windows and entry doors open to cross-ventilate their apartments.

Figure 89: Public circulation spaces overlook cityscape



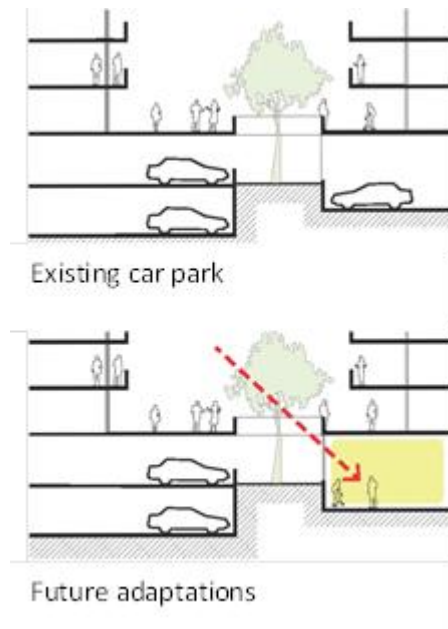
Visual amenity

Open and generous lift landings make expansive views accessible for all residents.

Figure 90: Future flexibility

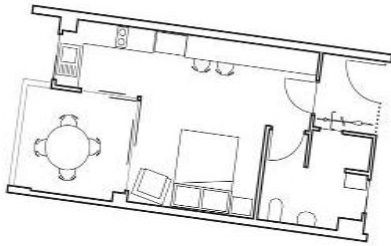


View from existing car park (left) and overhead view of car park void (right)

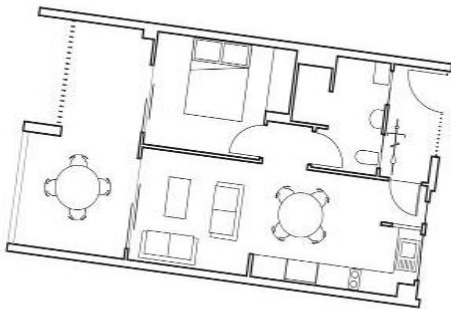


The car park has been designed so that it can be adapted to accommodate other uses such as commercial activities/offices, or a childcare centre in the future. In addition, the current sales office at the entry can be converted into a small corner shop as the area becomes denser and planning laws adapt accordingly.

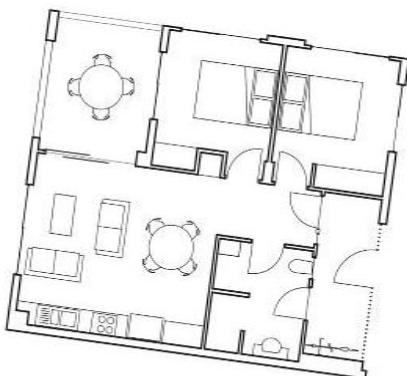
Figure 91: Typical apartment plans



Typical studio apartment 1:200



Typical one-bedroom apartment 1:200



Typical two-bedroom apartment 1:200

3.6 Testing the case study research

Having analysed the case study projects for their design and procurement innovation, we tested our preliminary findings by talking to residents of these projects and to the industry stakeholders involved in their delivery. Through this process, key issues identified through the national review of the SHI and case study design research process were confirmed and extended. These issues are summarised here and have informed our conclusions.

3.6.1 Tenant surveys

Tenant surveys were undertaken for each of the case studies¹⁸ and were designed to be used in tandem with feedback from the industry workshop. The aim of the surveys was to gain resident opinions and perspectives about their dwelling, site and neighbourhood, as well as to gauge the significance of the design innovations for each case study (as defined by the research team) and identify further research areas relevant for the design phase of this project (Stage 3).

Ethics protocols relating to the involvement of social housing tenants in this research led to the use of written surveys and posted responses. The survey was distributed to residents of the selected SHI projects between 24 October and 6 November 2012. In total, 96 questionnaires were distributed with a response rate of 22 per cent (21 respondents). The surveys required both qualitative and binary responses from tenants, enabling more detailed findings to be extrapolated from the process. Due to the low number of responses, any quantitative analysis of individual projects would be ineffectual. However, themes could be drawn between the developments. The following outlines key findings from this process and a full examination of the responses received is provided in Appendix 2.

Table 21: Tenant satisfaction regarding specific design elements

	Good	Poor	Unanswered
Entry into and movement around the building	81.0%	9.5%	9.5%
Common open spaces	76.2%	23.8%	0.0%
Parking	33.3%	66.7%	0.0%
Shared public spaces	66.7%	23.8%	9.5%
Spaces for children	33.3%	57.1%	9.5%
Spaces for older people	71.4%	23.8%	4.8%
Storage	66.7%	33.3%	0.0%
Noise	57.1%	42.9%	0.0%
Privacy	71.4%	23.8%	4.8%
Natural light and ventilation	81.0%	14.3%	4.8%
Building design that suits the area	85.7%	14.3%	0.0%

Source: Collated results from 21 respondents

Survey findings

The tenant responses to the case study projects were overwhelmingly favourable. The majority of respondents were positive about their locale, with the low number of negative comments generally referring to a lack of public transport or adverse reactions to living in areas of high social and business activity. Comments about the design of projects were also

¹⁸ Tenant surveys were not undertaken for the project at Bowen Hills, Queensland. This sixth case study is additional to the project scope and was included in the research after the tenant surveys had been distributed.

generally positive, with the majority of respondents favouring the compactness, newness, functionality, internal space, private outdoor space and accessibility of their accommodation. Negative comments were typically in relation to parking, noise, internal design elements and space for children. As the design, context and tenant groups for each project varied greatly there was also a high level of variance between resident responses. The surveys indicate that the innovative aspects of the SHI design case studies, as noted by the research team, were equally considered successful by residents, with the following observations noted.

→ Locational preferences

Developments located in close proximity to activity centres and public open space amenity solicited overwhelmingly positive comments from the majority of residents. Commonalities and variances between projects and tenant groups provide further insight into locational preferences. Beverly Hills, Hampton and Heidelberg Heights were all located in residential suburban contexts. The two former projects accommodated an over-55 tenant group who found the 'quiet' suburbs pleasing and access to parks, amenity, activities and services particularly favourable. By contrast, Heidelberg Heights accommodated a mix of household types, who were less content in a suburban context noting a lack of public transport and a desire to be closer to the city. The co-housing model was, however, applauded for being instrumental in unlocking community capacity and localised social capital, with a strong sense of belonging and connection within the development itself. Two respondents at Moonah viewed living in an activity centre negatively. These responses were under-representative of the overall tenant attitude, but it illustrates that highly accessible housing is not necessarily desirable for everyone.

→ Parking

The *number* of parking spaces was a recurring issue in most of the case study projects. However, the proximity of car parks to dwellings was not (all projects collected parking in one area on the site). This highlights future potential for consolidated parking strategies located remotely to individual dwellings. More research is required to determine suitable car parking allocations per dwelling.

→ Higher densities, privacy and noise

Expectedly, the larger-scale projects received less favourable responses around noise, privacy and spatial proximities. However, levels of satisfaction varied with tenant mixes, proximity of uses and shared spaces. For example, Moonah provided a centralised common area which accommodated shared facilities, such as a playground, and from which all units were accessed. Negative noise and privacy impacts related to incongruent tenant groups or uses, such as children's play spaces and stair circulation close to private dwellings or young families residing next to older tenants. Warragul also comprised a mix of tenants, however, like-households appeared grouped within the development. Limited amounts of common space and shared circulation were provided within the development, supported by an adjacent public park. Comments around noise and privacy tended to relate more to the compact nature of dwellings and their operation, rather than disturbances from different tenants or activities. Finally, at Heidelberg Heights, the co-housing model is contingent on the shared use and responsibility of extensive common areas and open spaces. All tenants are 'briefed' about the approach to shared amenity prior to moving into the community and can choose the extent to which they participate. Very positive comments were received around having a private dwelling as well as sharing a large 'common house'.

→ Dwelling operation and provisions

Responses to the design of individual dwellings in the case study projects were overwhelmingly positive, with many residents commenting on the layout, newness and ease of maintaining/cleaning their homes. The energy-saving features of the dwellings were highly valued; in instances where solar hot water or photovoltaic energy generation

was not provided, several tenants suggested that these additional efficiencies would be welcomed. The amount of storage and bench space was seen as inadequate for a minority of respondents.

→ Compact, flexible dwelling design

Of particular interest is the range of dwelling requirements and preferences for different tenant groups. These differences highlight the need for a diversity of well-designed housing types with flexible internal spaces that can adapt to changing tenant circumstances or accommodate different household make-ups over the lifetime of the dwelling. For instance, elder tenant groups valued the compact nature of dwellings and the relationship of internal spaces to private gardens/courtyards. The 'open plan' arrangement of living and kitchen areas was viewed as a benefit for receiving guests. Whereas households comprising children found the compact units more uncomfortable and suggested changes such as the separation of kitchen/lounge and relocating bedroom doors so they do not come off living spaces. Interestingly, where the size of and spatial arrangements of dwelling were a concern, so too was the light, ventilation or aspect afforded to the resident, one resident particularly noting disappointment with windows/open spaces directly facing service areas and a blank fence/wall. Considerate design of openings and private open space can 'open up' a dwelling by allowing natural light and ventilation to penetrate the home, or enable visual extensions beyond the dwelling envelope. Ensuring appropriate dwelling orientation and carefully locating and sizing windows/doors/private open spaces can make a significant difference to the quality of internal spaces.

→ Site and dwelling egress

Three important observations regarding access to site and dwellings in the case study projects arose. One tenant residing in a ground-level unit with a courtyard/garden noted that the lack of a rear gate meant that trades people and their equipment had to be brought through the unit to undertake maintenance/repairs. This is particularly important in relation to elder tenants, who are likely to receive more assistance with the caretaking of their properties. Concern was also expressed regarding stair access to first-storey apartments and security/safety for young children. Finally, site security measures should provide appropriate levels of protection from unwanted trespassers while also enabling residents to easily grant access for invited guests or known visitors. This was an issue at Moonah, where the active urban context required security fences and locked gates, but communication and/or access control from apartments to the entry point was not possible.

3.6.2 *Industry workshop*

A one-day workshop was held in November 2012, involving 15 participants, representing state and local governments, the development industry, the design professions and the NFP community housing sector. All of the participants had had direct involvement with the SHI in varying capacities, ranging from architects to government SHI program managers. A good spread of experience was represented in the group.

The aim of the workshop was to get these key experts to examine the SHI innovations that had been identified through the case study research and to test these findings against the collective experiences of those that were present at the workshop. As well, input was requested as to how these innovations could be replicated in the next two stages of the research.

The workshop focused on three key areas: first, the SHI innovations identified in the case studies (which is of interest in this paper); second, the key issues for adopting these innovations into a precinct-scale approach (which is of interest for Stage 2 of this research project); and third, the implementation of key findings into Greyfield Precinct Redevelopment on Public Housing Land (which is of interest in Stage 3 of this research).

The issues and recommendations raised through the workshop discussion were recorded in real-time through the collective development and agreement of the group's 'mind-map' for each topic (see Appendix 3). The mind-maps were digitally projected throughout the panel discussions and were adjusted and refined through immediate feedback from workshop participants. This following section presents a brief summary of the workshop discussion on the SHI innovations in the case studies.

SHI innovations

The conditions of the SHI both enabled and limited innovative outcomes. The processes put in place to meet the program's timing enabled creative flexibility in housing outcomes 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. These innovations were the optimisation of good quality design solutions and site-specific opportunities.

Timing and program constraints combined with existing structural issues, such as a lack of strategic planning for social housing, also limited potential development outcomes delivered under the SHI. Project locations were opportunistic rather than measured selections. Tenancy mixes and housing typologies were limited by the procurement models prescribed by various jurisdictions and authorities administering the program.

While this research has identified a number of projects that achieved considerable enhancements in the quality, performance and delivery of housing under the SHI, these are not representative of the overall rollout. More often than not, business-as-usual models were employed in lieu of design alternatives that would be more appropriate for contemporary urban contexts and housing needs.

The following points reflect on the significance of the innovations revealed by this case study research and briefly refer to how they were achieved and the challenges involved.

→ *Design innovations made possible by the SHI*

Density, car parking, setbacks/height/mass. Much of this was due to the expedient methods adopted by the SHI, including a relaxation of planning requirements.

→ *Development locations*

Each of the case studies is well located but this was not the case for many of the projects completed under the SHI, which reflects the typical poor location of public land. Increasing density in strategic locations is desirable rather than continuing locational disadvantage by increasing density in inappropriate locations.

→ *Typological diversity*

Location/context has informed building forms and types. Density and scale need to be strategically approached for better outcomes.

→ *Shared spaces, community facilities and amenity*

Appropriate scales and distribution in development are purposeful and programmed in some of the case studies. This shows that social housing developments can address a lack of public amenity.

→ *Tenancy mix*

The SHI was a welfare housing model and there was limited mixed tenancy. Tenancy mixes are possible in larger developments but, at smaller project scales, tenancy mix can be considered at the level of the street, block or precinct.

→ *Community resistance: Community engagement*

Resistance to increased density, parking is often vitriolic around social housing—stigmatisation and perceived fears of social residents. Engagement with surrounding residents, businesses and community organisations benefit the project outcomes. Post-occupancy evaluations that include surrounding resident responses to development outcomes and impacts would be valuable.

→ *Need for a 'champion'*

Innovative development outcomes were invariably driven by a project champion. This might have been 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.

→ *Development finance and leveraging*

There are good examples of how mixed funding has enhanced project outcomes. Financial institutions see social housing as a risk. Housing Associations are income-based with no other subsidies received to cover operational costs. Government funds are relied upon for capital costs as 75 per cent of projects are funded through federal and state governments.

This discussion of the Social Housing Initiative revealed several lessons that can be taken forward into subsequent stages of this research. Broadly speaking, there are three scales of consideration.

→ *Strategic development*

Potential role of public housing within metropolitan planning strategies

Location, advantage/disadvantage, density distributions

→ *Precinct and community building*

Tenancy mixes

Shared spaces, building community

→ *Dwelling quality*

Housing solutions that change lives

Appropriate housing designs to meet needs of contemporary social and demographic needs. Quality and flexibility of dwelling provisions.

4 RESEARCH FINDINGS

The SHI successfully achieved dwelling targets within the time frames imposed by the program. More than 19 500 net new dwellings were delivered nationally by June 2012, representing a nominal increase of 5.5 per cent in overall social housing stock.¹⁹ The scheme also succeeded in its primary objective—stimulating the economy during the Global Financial Crisis and generating jobs with a one-off capital injection of over \$5 billion. For instance, during the peak construction period, over 10 000 full-time equivalent jobs were created in New South Wales alone (Shepherd & Abelson 2010, p.xiii).

This research has found that the conditions of the SHI both enabled and limited innovative outcomes. There was less opportunity for development resistance under the program's processes and timing which enabled greater creative flexibility and higher levels of design innovation. However, potential development outcomes were also limited under the SHI due to the combined challenges of short time-frames, program constraints and the lack of strategic planning for social housing. Sites were often identified opportunistically rather than selectively, and housing typologies and tenancy mixes were limited by the procurement models used to administer the program.

This research has identified a number of projects that achieved considerable enhancements in the quality, performance and delivery of housing under the SHI. While these innovations were evidently possible under the program, they are not representative of the overall rollout. More often than not, business-as-usual models were employed in lieu of design alternatives that were more appropriate for contemporary urban contexts and housing needs. The following points discuss the significance of key innovations revealed by this research, outlining how they were achieved and the challenges involved.

4.1 Methods of procurement

4.1.1 *Delivery by different sectors*

There was significant variation between states and territories in regard to whether their SHI-funded housing was delivered by the SHA, private enterprise or the community housing sector. This was due in part to the circumstances within jurisdictions (for instance, the degree to which their community housing sector was development capable), but was also the result of the strategies adopted by the jurisdiction's procurement plans. The fact that New South Wales did not fund its community housing sector to act as housing 'developers' at all cannot be seen as inevitable, given the alternative outcomes in Victoria, Tasmania and Queensland, where CHOs delivered 52 per cent, 44 per cent and 34 per cent of dwellings respectively.

Where the procurement approach was more mixed, a greater diversity of development outcomes were observed.

4.1.2 *Growth of the community housing sector*

It is clear that the SHI will contribute to growth of the community housing sector in all states and territories—as per the Commonwealth's objective. This will occur through significant transfers of completed housing stock from the state to the not-for-profit sector. In jurisdictions where the sector was given a role as 'developers', it further contributed to stepping up the sector's development capacity, although it has not been possible for all CHOs to retain this capacity.

¹⁹ Calculation based on 2006 national statistics for public and community housing dwellings from Atkinson & Jacobs (2008).

4.1.3 *Planning approval processes*

The special planning approval processes put in place for the SHI (which bypassed conventional local council-based assessment and resident's rights to objection) significantly reduced project delivery times. For the NFP community housing sector this was of great assistance as it reduced holding costs as well as costs associated with professional services necessary to negotiate planning frameworks and overcome disputes. It also meant that some projects, which may have been locally controversial for reasons of social housing use in a previously homogenous area, were able to achieve individual site density and unusual building typology and parking.

4.1.4 *Innovation in procurement models*

The Federal Government intended that the SHI would '... support the provision of social housing through new or innovative models', in particular involving '... partnerships between community housing providers, developers, investors and other organisations' (FaHCSIA 2009, p.8). Though a small proportion of the total SHI delivery, a number of projects demonstrated innovation in the procurement of social housing, involving features such as tenancy mix, mixed funding arrangements including philanthropic contributions and leveraged private finance, resident cooperatives, sourcing of well-located land, and acting as a catalyst to larger scale urban renewal. Procurement innovations occurred to a limited extent in 'flagship' state led projects, but more frequently in projects led by the community housing sector. As the SHI Guidelines encouraged, there were several instances of CHOs financing parts of projects with SHI funding and seeking NRAS subsidies for other parts to produce mixed tenure developments and effectively increase the leveraging of federal funding. Prior to the SHI, examples of all of these procurement innovations could be found in social housing delivery (excluding the last naturally), however, the SHI enabled them to happen at a much more significant scale not previously seen.

4.1.5 *Impact of procurement on design*

The case studies, as well as broader anecdotal evidence, indicate that design quality and innovation were not exclusive to just one of the overarching procurement channels. Both SHA and CHO-led projects appear to provide opportunity for this. More significant factors affecting design seem to be:

1. The scale of the project, with smaller projects having a more limited scope for design.
2. The business model of the delivering entity, and whether this holds design quality as a strong aspiration.
3. The skill of the architect.
4. Whether the land component of a project needed to be funded within the SHI funding allocation—as private enterprise delivery of necessity involved the purchase of land within SHI funding allocation, this appears for the most part to have left room only for developers and builders who provide the most basic standard of market housing, typically in suburban fringe locations.

4.2 **Urban location**

One of the key selection criteria for project funding under the SHI was the appropriateness of urban locations. All new housing developments were intended to be delivered '*close to relevant services ... [including] transport, schools, shops, health services and employment opportunities ... to ensure improved social and economic opportunities for tenants*'. Furthermore, the Federal Government was concerned with, '*reducing concentrations of disadvantage through appropriate redevelopment to create mixed communities that improve social inclusion*' (FaHCSIA 2009, pp.5,26).

In Melbourne, more than 70 per cent 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 per cent of projects were within a walkable distance to public transport, 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. On the whole, the initiative's performance in regard to urban location had mixed outcomes, with 55.8 per cent of the housing further than 1km from an activity centre, 52.2 per cent with only fair to very limited access to public transport, and almost two-thirds in areas of above average socio-economic disadvantage.

Probably the most significant influence on project typologies and location decisions was the notional price cap of \$300 000 per dwelling (though more expensive projects were theoretically possible, they would have to be offset by savings elsewhere in the jurisdiction's roll-out). Where land was not already in the SHA's possession or secured by a CHO in another way, the land would need to be purchased within the \$300 000 allocation; consequently, these SHI developments tended to be confined to areas of low land value that were often underserved. The low density housing models delivered on suburban peripheries mirror current market trends in these areas. This may reflect the limited economic viability for developers to build high density projects on inexpensive land, or because social housing providers are conscious of 'fitting in' with the norm and avoiding tensions with existing residents, or a combination of both.

Secondly, land already in public possession was often within ageing housing commission estates with existing disadvantage. As pointed out by Shepherd and Abelson (2010, p.50), in the case of New South Wales *'To get an adequate spread of units and meet the construction targets required use of existing government owned sites at NSW cost'*. This, and the necessity to pay for land in projects delivered by private enterprise, likely explains the superior performance of the community housing sector in terms of locational outcomes. In Victoria, 44 per cent of their housing was located in areas with above average SEIFA ranking (compared to 25% in SHA and private enterprise delivery) and 60 per cent in areas with above average PTAL ranking (compared to 31%).

4.3 Design

A series of 'design innovations' have been identified in this paper, but certain conflicts or tensions have also arisen between these design objectives and liveability objectives or tenant expectations.

4.3.1 Parking

Probably the most contentious of the identified design innovations is the treatment of the car park. Consolidating all units' individual car parks into a single lot and reducing the numbers of spaces has proven to be an effective design strategy that frees the remainder of the site for other programs, such as additional good quality private open space, and creates a more pleasant environment. In the case of Beverly Hills, providing a single car park on site has enabled a higher dwelling yield compared with typical market models for this class of site. The increased density has been achieved without reduced amenity or liveability, and it could be argued that these qualities have in fact increased. Careful siting of the car park ensures reasonable distances from the vehicle to the entry of the home, as seen in Figure 92 below. Driveways and car parks located at individual tenancies tend to dominate business-as-usual models, as can be seen in Figure 93 below, rendering a lot of the site as 'unusable' for much else and creating an unpleasant environment. They also offer very little extra amenity or convenience to the tenant than the consolidated car park.

Tenants did not provide negative feedback regarding the consolidation or location of car parks, but the *number* of car parks was considered insufficient. Research indicates that social housing developments have less demand for car parking than the regulated

standards set for private market housing developments (NSW Government 2010; City of Port Phillip 2009), particularly in well-serviced or inner-city locations. However, insufficient parking was a recurring issue across all projects according to the feedback received, a frustration concurred by Wiesel et al. (2012) in their examination of affordable housing design. Further work is required to produce a better solution for tenants that retain the benefits of the consolidated car park; for instance, solutions including car-sharing, dual-purpose car parks, or even offsite car parks are worth investigating.

Figure 92: SHI development



Eight dwellings—1220m²

A shared, central path provides good access from the consolidated car park to all dwellings. Source: Nearmap.com

Figure 93: Business-as-usual housing model



Four dwellings—1200m²

Individual driveways and car parks dominate the site, leaving little for private open space. Source: Nearmap.com

4.3.2 Common spaces

Another recurrent issue observed was a lack of, or ‘inappropriate’ common spaces. The SHI criteria specified an increase in density when redeveloping existing social housing, making carefully considered, well-designed public spaces particularly important, especially for

households with children. Though seemingly generous in size, large consolidated common spaces were often inappropriately located and/or underused due to noise, safety and overlooking issues, especially in larger developments. In some cases, tenants reported feeling self-conscious when using the shared space, and designated play areas for children sited close to neighbouring tenants' bedrooms caused friction on site. Though common spaces benefit greatly from passive surveillance, it is important to find a balance in the design to ensure that there is some acoustic and visual separation so that users do not feel as though they are being observed or their privacy disturbed.

More successful projects provided a series of smaller shared spaces appropriately located in relation to dwellings and circulation corridors. Each shared areas had a dedicated use and were intimately designed to encourage more 'natural' interactions by occupants with shared interests. The dispersion of smaller spaces throughout a development also gave tenants a range of options for collecting with other residents, or not, and enabled greater design control of noise and overlooking. A mix of open-air and internal spaces has been recognised by other case study research as an important provision to enable a range of activities to take place and strengthen relations between residents (Wiesel et al. 2012).

Figure 94: Open air theatre, Bowen Hills



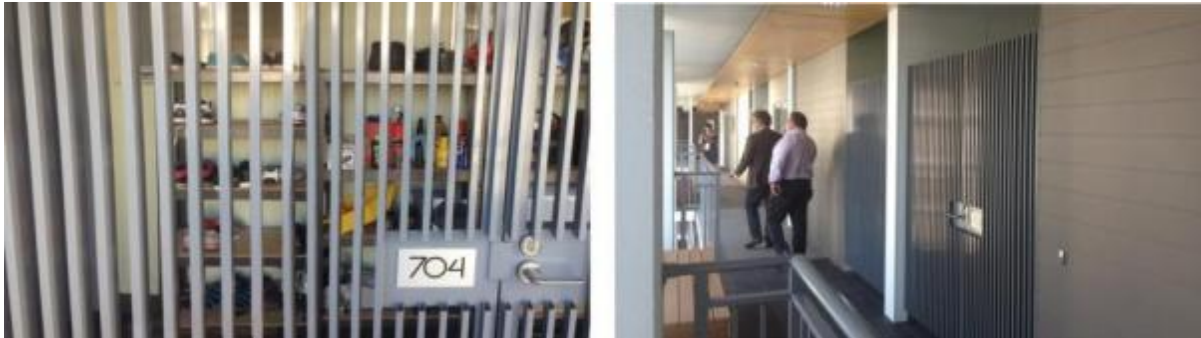
Figure 95: Children's play area and common kitchen on separate levels, Bowen Hills



4.3.3 Privacy

Another important consideration when dealing with higher density developments is ensuring occupants' privacy and quiet enjoyment of their dwelling. While it is good to promote a sense of community and facilitate at least some interaction on site, in order to avoid tensions between neighbours it is vital that tenants feel as though they have control over their private spaces. Simple separations of space, such as the entry screens in the Bowen Hills apartment building (Figure 96) make fundamental differences to tenants' privacy without reducing any amenity, arguably increasing it in this case.

Figure 96: Privacy screens at dwelling entry



Screens at apartment entries provide tenants with privacy from corridor traffic, but allow them to clearly see visitors when answering the door. They also provide a secure space for additional storage and allow tenants to leave their windows and front door open to cross-ventilate their apartment.

Entry alcoves for individual tenancies provide a threshold between public and private space. They promote a sense of ownership for tenants, allowing them to make the space their own (see Figure 97).

Figure 97: Entry alcoves



Pot plants placed at the entry suggest a sense of pride and ownership of the dwelling. It is very clear in this example where public space finishes and private begins.

4.3.4 *Noise*

Tenant surveys indicated that noise was a concern in larger scale projects. Housing managers and industry stakeholders suggested that this feedback can sometimes relate to tenants who are not used to living in higher density situations rather than inadequate design and acoustic treatments. Tenants did recommend that different 'groups' of tenants and their activities should be clustered together, with a preference for families with children and children's play spaces to be located away from older or single person's units.

4.3.5 *Tenant mix/social diversity*

A diversity of household types within a single development can provide significant community benefits but must be considered in relation to the scale and context of a project. Beverly Hills and Hampton East were 100 per cent 'older person' developments, and were by far the most satisfied tenants. It is important to note, however, that both of these projects were small developments delivered in a suburban residential context. Diversity of household types was achieved at the level of the street/neighbourhood. Similarly, providing a mix of social and private tenancies within a project can be very positive, but can have an impact on tenancy management and social cohesion. Projects that have successfully achieved this have tended to be larger scale developments with various levels of separation, including controlled vertical circulation solutions and tenancy separation by floor level.

4.3.6 *Efficient planning*

It was observed both on site and through tenant feedback forms that efficient and intelligent planning and design played a strong part in tenant satisfaction. Small moves such as providing outside access to yards, so trades and garden supplies don't have to come through the house as demonstrated in Beverly Hills, make significant differences. This was an issue raised by at least two tenants in Warragul who did not have a gate into their yard. Efficient and frugal internal planning that maximised small areas and ensured good access to light and ventilation increased liveability while keeping construction costs down. Small but significant design decisions, for instance, ensuring bathroom access was not solely through bedrooms, also made a difference to liveability. Details such as these make it easier for guests to visit and allow for more flexible use of the dwelling.

5 CONCLUSION

The magnitude of the Social Housing Initiative and the timeframes within which it was completed has generated a 'closed' set of real housing outcomes that are able to be assessed from architectural and urban design perspectives. By examining the physical qualities of what was built, as well as the impact of the program as a whole, this paper has identified lessons for enhancing future affordable housing development and its potential role in transforming broader social and urban contexts within our cities.

Broadly speaking, there are three scales of consideration that subsequent stages of this research should address.

→ *Strategic development*

Potential role of public housing within metropolitan planning strategies.

Strategic plan for social housing addressing contemporary demands, locational preferences, advantage/disadvantage, appropriate design typologies and density distributions.

→ *Precinct and community building*

Tenancy mixes and social mixes considered at the scale of building/site and at the scale of the street/neighbourhood. Design of precincts and shared spaces that enhance physical urban environment, build strong communities, facilitate participation and enhance opportunities for both social tenants and the broader community.

→ *Dwelling quality*

Housing solutions that change lives, rather than simply increasing housing supply.

High quality designs that respond to contemporary social and demographic make-ups through sustainable, flexible and viable housing typologies.

5.1 Further work

5.1.1 *Design research to be undertaken by this project*

Further design research is required to address key challenges associated with social housing redevelopment. In higher density infill contexts, apparently simple issues, such as parking provisions, privacy and shared spaces require sophisticated and nuanced solutions. We intend to address the key design areas identified in this paper during Stages 2 and 3 of this research project.

Potential also exists for coordinated, strategic redevelopment of public housing assets. Building on the first stage of research into the SHI, this project will examine precinct-scaled design strategies that could potentially enhance development outcomes and provide efficiencies in the procurement and delivery of new housing.

5.1.2 *Research by others*

Spatial design and distribution of SHI projects nationally

The research undertaken in Victoria has provided insights into the distribution of SHI projects in relation to broader metropolitan and strategic development aspirations. This examination could be expanded to include more detailed information about building typologies, spatial quality and housing diversity. It would be valuable to review the national SHI roll-out to the same level of resolution to better understand any nuances between jurisdictions and learn lessons for future social housing delivery.

Procurement and delivery models leading to innovative built outcomes

Drawing on the innovations outlined in this paper, it may be possible to provide spatial and statistical analysis that relates procurement and delivery models to the quality of housing design and performance achieved under the SHI. For example, the timing and level of involvement of Community Housing organisations varied greatly. Similarly, different land assembly processes were employed by various authorities and stakeholders involved in the SHI. Understanding what impact these differences may have had on development outcomes would be important knowledge for future strategic planning and policy development for social housing and urban redevelopment.

Strategic planning for social housing

There is a need to enhance strategic planning for social housing at the regional and sub-regional 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. Some of these issues have been raised in a recent study of Victorian public housing, (Victorian Auditor-General 2012) where a new strategic plan is pending. 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 outcomes in all jurisdictions.

Parallel research on the SHI

This work has been undertaken through an architectural and urban design 'lens' focusing on the design strategies and development conditions required for innovative housing outcomes in physical and spatial design terms. A parallel review of the SHI undertaken by KPMG (2012) focuses on the economic benefits delivered by the stimulus program and the impact it had on the social housing system, supply, tenant groups and the building and construction industries. Due to timing and the sensitivity of the material being reviewed, the two studies were not able to inform each other as the research was undertaken. For the most part, the various focuses of the respective studies provide complimentary information. However, it is noted that differences in the definition of design quality and innovation, as well as the methods for measuring appropriate project locations and access to transport, have led to divergent readings regarding the development outcomes achieved by the program.

Where possible, this report has provided reference to the KPMG study, which became available during the peer review process for this publication. It has become evident that further research incorporating the two studies would be a valuable undertaking. Detailed examination of the national data set of SHI development locations, dwelling types and tenancy mixes against the leveraging and procurement opportunities offered by the KPMG report, as well as the framework for assessing innovative design and social outcomes (at dwelling and urban scales) outlined by this research could potentially lead to a range of enhanced strategies for future affordable housing delivery.

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APPENDICES

Appendix 1: Other relevant projects

1.1: Relevant State Housing Authority-led projects



UNO apartment development, 102 Waymouth Street Adelaide, SA

An initiative of the Government of South Australia in partnership with connect urban projects, UNO is a 17-level tower in downtown Adelaide. Combining funding from the SHI, NRAS, and the SA Affordable Homes Program, its mixed tenure model includes public housing, affordable rental (NRAS), affordable purchase, and private market purchase (entry level to premium). In addition, the podium contains a separate 30-bed youth service facility for homeless youth (Lawson 2012, Government of South Australia a)



'The Nicholson', Coburg, Victoria

Delivered by Victorian land authority places Victoria (previously VicUrban) in partnership with HomeGround Services (a registered housing provider) The Nicholson includes 58 community housing apartments, 31 affordable rental apartments, and 110 private market purchase as well as commercial tenancies. It was constructed using Unitised Building's UB system, where each apartment module is manufactured offsite (DesignInc 2012, HomeGround Services nd).



'Living Space', Cockburn Central, Western Australia

Delivered by the Western Australia Department of Housing (DoH) through a design and construct tender (won by Probuild), the project forms part of the Cockburn Central TOD, located next to the train station and close to a shopping mall. It includes a mix of private dwellings, shared equity (purchaser owns 70%, DoH retain 30% in equity) and social housing, as well as six commercial units. (DoH 2011, Probuild nd).



Lochiel Park affordable apartments, South Australia

Delivered by Housing SA, this project formed a part of the larger Lochiel Park precinct—a state government-led 'Model Green Village' development at Campbelltown aimed at the private market. Each residence achieves at least 7.5 stars when assessed against AccuRate, making use of an innovative natural ventilation system developed by the architect (Greenway Architects nd, Government of South Australia b).



Woodville West urban renewal project, SA

Led by Housing SA, this is an ongoing, large scale urban renewal of an area approximately 13 hectares in size that previously represented the state's highest concentration of social housing. The 184 houses on this site (most of which were built in the 1940s and are owned by Housing SA) will be replaced by 425 new dwellings in medium and higher density housing types. The tenure model will include social housing (15%), affordable rent or home ownership (33%) and open market sales (53%). (DFCSI nd)

1.2: Relevant private sector projects



Stella apartments, Wentworth Parade, Success, Western Australia

This project began with private developer Goodland Properties' submission to the DoH's Stage 2 EoI. Following negotiations, the DoH used SHI funding to purchase 78 units (for rental and affordable sale) within the larger private development to be sold by developer. (DoH nd, and correspondence with Department of Housing WA).



61–63 Smart Street, Fairfield, New South Wales

Housing NSW purchased the site as a land and building package from a private developer through its SHI Request for Tenders process. The developer's construction plans included ground floor commercial space, which Housing NSW modified to accommodate on-site aged care services and a social enterprise (although at November 2012 the ground floor was yet to be occupied) (Housing NSW 2011, and correspondence with the NSW Nation Building Project Management Office).

1.3 Relevant CHO-led developments



Alexander Miller Memorial Homes, Manifold Heights, Victoria

Delivered by NFP Housing Association Wintringham Housing, this project benefited from a land contribution by the Alexander Miller Memorial Trust, enabling a sophisticated architectural and urban design outcome that integrated new housing through excavation and extension of existing heritage cottages, preserving their outlook and visibility from the street.



Aris, Newstead, Queensland

Delivered by the NFP affordable housing provider BHC (formerly Brisbane Housing Company), this project involves a mix of tenures including social housing, NRAS for purchase, and private market for purchase. (BHC nd).



The Mariner, Docklands, Victoria

Delivered by the NFP housing provider, Housing Choices Australia (HCA), the project includes 85 units owned and managed by HCA, and 28 units sold to private market (positioned on the top-most floors). The land was purchased from MAB Corporation, in accordance with land authority requirements that affordable housing be delivered within their development parcel at Docklands. HCA itself contributed 25 per cent to the project's funding (conforming to OoH leveraging requirements) (HCA nda, and correspondence with HCA).



Drill Hall, Melbourne, Victoria

Delivered by the NFP housing provider, Housing Choices Australia (HCA), the project includes 59 units owned and managed by HCA. The site (occupied by an existing heritage building) was purchased at peppercorn cost from the City of Melbourne, in an arrangement that granted HCA air-rights above the existing structure to construct the housing. In exchange, HCA carried out a \$2.6m refurbishment of the existing building for use as a multi-purpose community facility, leasing it back to the council for 99 years. In addition to SHI funding, the project was financed through a \$2m contribution from the Sidney Myer Centenary Fund (philanthropy) and a 25 per cent contribution from HCA itself (conforming to OoH leveraging requirements) (HCA ndb, and correspondence with HCA).

Appendix 2: Tenant survey

1. What are the good features about the neighbourhood you live in?

2. What don't you like about the neighbourhood you live in?

3. What do you like about your dwelling?

4. What could be improved about your dwelling?

5. How well have the following been designed in your building complex?	Good	Poor
Entry into and movement around the buildings	<input type="checkbox"/>	<input type="checkbox"/>
Common open spaces—gardens or courtyards	<input type="checkbox"/>	<input type="checkbox"/>
Parking	<input type="checkbox"/>	<input type="checkbox"/>
Shared spaces—places to meet and talk with other residents	<input type="checkbox"/>	<input type="checkbox"/>
Spaces for children	<input type="checkbox"/>	<input type="checkbox"/>
Spaces for older people	<input type="checkbox"/>	<input type="checkbox"/>
Storage	<input type="checkbox"/>	<input type="checkbox"/>
Noise	<input type="checkbox"/>	<input type="checkbox"/>
Privacy	<input type="checkbox"/>	<input type="checkbox"/>
Natural light and ventilation	<input type="checkbox"/>	<input type="checkbox"/>
Building designs that suit the area	<input type="checkbox"/>	<input type="checkbox"/>

6. What other advice could you give to improve future housing projects? (Please turn over if you need more room.)

Optional information:

What age-range are you in?

☐ <20
 ☐ 20–34
 ☐ 35–49
 ☐ 50–64
 ☐ >65

What kind of household are you living in?

Family

Couple with children ☐
 Couple without children ☐
 One-parent family ☐
 Other ☐

Non-family

Lone-person ☐
 Group ☐

Does your household own a car?

☐ Yes
 ☐ No

Survey analysis

Questions 1,2,3,4 and 6 were qualitative, asking residents for their positive and negative reactions to both the area where they lived as well as the standard of their dwelling. Question 6 asked residents to provide recommendations to future projects. The qualitative and open-ended nature of the questions required that responses be categorised, some of which can be seen below. It should also be noted that, as respondents could openly comment on a variety of topics, the supplied percentages are indicative of the rate at which respondents' highlighted concern with particular features, which were not mutually

exclusive, resulting in totals not adding to 100 per cent. Question 5, however, was a purely binary selection, the results of which can be seen in the table in the analysis section below. Age distribution was mainly in the 35–49 age bracket (38%) with 24 per cent being between 20–34 and 19 per cent in both the 50–64 and 65+ categories. There were 25 per cent of tenants who had children, 25 per cent were in relationships or sharing accommodation without children, and 50 per cent lived alone. Sixty-six per cent of respondents owned a car.

Collective responses

Only one of the 21 respondents viewed their area as purely negative. The majority of positive replies were in regard to the proximity of amenities, services and public transport (65%), with the sense of community (40%) and the quietness of the area/proximity to parkland (35%) being the next most favourable attributes. Thirty-five per cent of respondents did not supply any criticism of their locale. Those that did were primarily concerned about the cleanliness, surrounding social demographic and inappropriate setting (within an activity centre) of the project (28%), bad neighbours (21%), poor public transport/amenities (21%) and drug and alcohol use (14%).

Positive responses related to the overall design and spatial configuration of the dwellings, access to natural light and generous room/house sizes (62%), followed by the newness/cleanliness of the dwelling and appliances (57%), quality of private open space (38%), energy/water saving initiatives and reduced cost of living (29%), and window openings and natural light (19%). Negative responses primarily related to specific operational/construction issues such as the speed of the hot water service, acoustic separation (between dwellings and from wet areas within dwellings) and internal temperature control and ventilation (48%), followed by compact dwelling sizes, internal spatial arrangements and lack of rear access (33%), and inadequate storage, bench space or inappropriate location/type of fixtures (19%). In developments where solar hot water or solar energy was not installed, a demand for such services was noted (19%).

Future recommendations included better privacy and noise control/insulation (45%), better design and more space (24%), additional parking (15%), larger outdoor areas (15%) and more attention paid to elderly and young resident's needs, such as play areas, segregation and safety (25%).

The results from questions 5 were as follows, illustrating that parking, spaces for children, noise and storage space were the most underperforming areas in terms of design.

Table A1: Binary tenant survey analysis

	Good	Poor	Unanswered
Entry into and movement around the building	81.0%	9.5%	9.5%
Common open spaces	76.2%	23.8%	0.0%
Parking	33.3%	66.7%	0.0%
Shared public spaces	66.7%	23.8%	9.5%
Spaces for children	33.3%	57.1%	9.5%
Spaces for older people	71.4%	23.8%	4.8%
Storage	66.7%	33.3%	0.0%
Noise	57.1%	42.9%	0.0%
Privacy	71.4%	23.8%	4.8%
Natural light and ventilation	81.0%	14.3%	4.8%
Building design that suits the area	85.7%	14.3%	0.0%

Individual project breakdowns

Due to the low number of responses any quantitative analysis of individual projects would be ineffectual. However, themes were noted between the developments, which are as follows.

Beverly Hills

The area was considered quiet and pleasant; dwellings were seen as clean and compact, with not enough parking and minor hot water issues being the only problems of note.

Notable quotes:

'It's large for one person, it's private 10/10, I have a private garden and I have a car port.'

'[It is] clean, compact, tidy, [with] good design and location.'

Hampton East

The area was seen as friendly and in close proximity to parks. Dwellings were very positively regraded with the exception of minor issues relating to parking, spaces for children and storage.

Notable quotes:

'[I like] everything! ... the units are well set out and generally accessible, easy to maintain and clean.'

'[I like the] space, light, storage, [it's] well laid out, good oven, solar water, good heater, large enough backyard, [and it is] secure.'

Warragul

This area was also considered quiet, with good access to amenities, services and public transport. The design of the dwellings was generally considered positively, with the exception of needing more internal space, noise controls and additional car parking.

Notable quotes:

'I like the design. It's easy to keep clean, I like the balconies ... [but there is] not enough bench space, constant noise from the bathroom, too narrow parking and [it is] too warm in summer.'

'There's not enough parking ... I have to park on the street.'

'I like the big windows ... the kitchen is big ... the modern bathroom ... and [the] nice big bedroom [but] there are 12 units and only four park spaces.'

'... there is no back gate for tradesmen to bring ladders or equipment ... everything has to come through the unit.'

'... when I do a full load of washing it does not fit on my washing line because it's so small!'

Heidelberg Heights

Positive responses were in regard to the co-housing model, sense of community and proximity to parkland; detractors were mainly concerned about the distance to the city centre and the suburban context of the site. The key design issues with dwellings were the overuse of metal, lack of light, lack of space for children and, most significantly, the lack of community consultation in the design. As with other developments, parking, storage and noise were key concerns.

Notable quotes:

'[I like] having my own flat and sharing a big common house, North facing window opening onto a balcony ... the affordable rent, the security of tenure and everything works!'

'Residents should be able to influence the building and grounds design.'

'Many more windows are needed for light and ventilation [and] windows should not have wooden slats on them, which cut out light and serve no purpose. Windows should open wide.'

'Mains and meter cupboards are on large landings which can't be used for storage or seating areas due to having to keep clear access to cupboards available.'

'Acoustic insulation from one flat to another is good, but not from one level to another.'

Moonah

Proximity to amenities was considered the primary benefit of the area; disadvantages cited of the project were few but these related to undesirable traits of the activity centre context, such as the frequency of alcohol, drugs or rubbish in the area. As with the previous projects key areas of concern were parking, noise insulation and lack of children's space. Other issues included the density of dwellings, lack of privacy and colocation of different tenant groups (aged/young families), though these came from a minority of tenants.

Notable quotes:

'Compared to regular government housing it is a privilege to live here and I feel very lucky.'

'[I like] the location, affordability, energy efficiency, being allowed to keep a cat, the friendliness of the administrative staff and the private balcony.'

'It's so easy to keep our unit clean.'

'It's good, so modern.'

'For two people, it is large. The sitting is large and good for visitors. Kitchen is good and functional.'

'Put older people together. Parents with kids should be separated from older people.'

'I'd like more privacy and less noise.'

'This is overcrowded high-density public housing in an industrial zone.'

Appendix 3: Industry workshop

Workshop details

Date: 9 November 2012

Time: 1pm–5pm

Venue: Monash Conference Centre, Melbourne

Workshop contributors

Government

Fiona Williams	Acting Director, Property Portfolio Branch, Dept. Human Services, VIC
Nicola Klempfner	Manager Stakeholder Relations, Dept. Human Services, VIC
Craig Gillette	Urban Design Unit, Dept. Planning & Community Development, VIC

Community Housing

Paul Ryan	Asset Manager, Yarra Community Housing, VIC
Dave Allen	Project Officer, Common Equity Housing Limited, VIC
Alex Naughton-Smith	Co-Op Development Coordinator, Common Equity Housing Limited, VIC

Architects

Edward Lynch	Senior Principal, GHD, VIC
Andrew Nimmo	Director, Lahznimmo Architects, NSW
Peter Scott	Director, Xsquared Architects Pty Ltd, TAS

Development/Construction

Ben Finemore	Development Manager, Lend Lease, VIC
Paula McCarthy	Ducon Construction, VIC

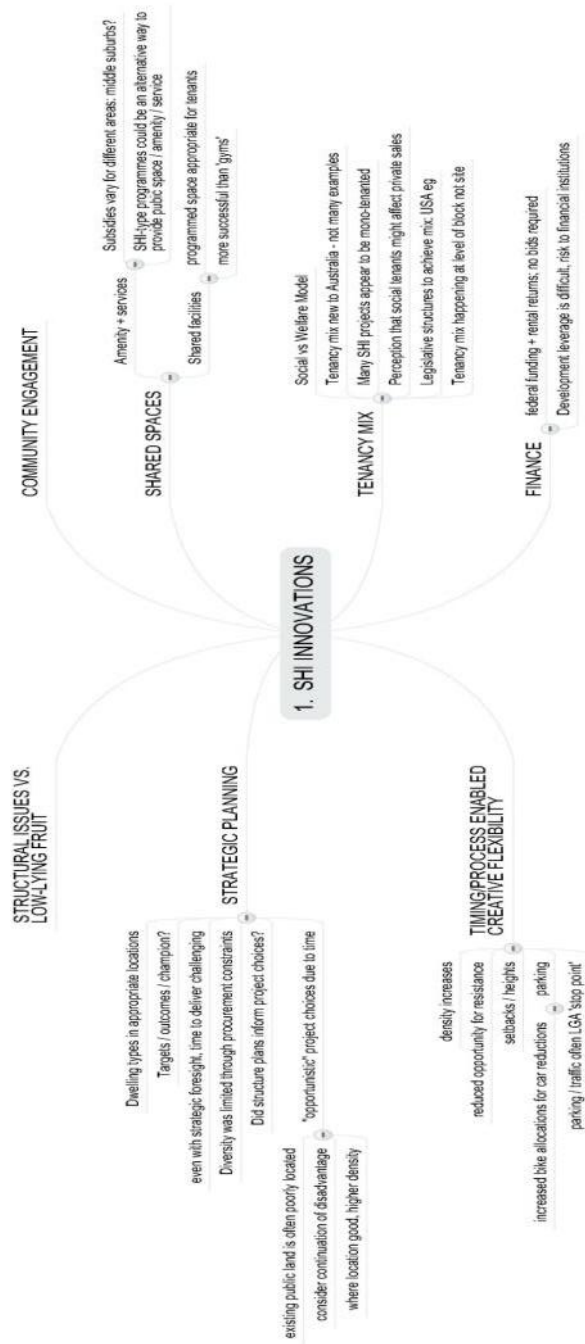
Urban Planning/Economics

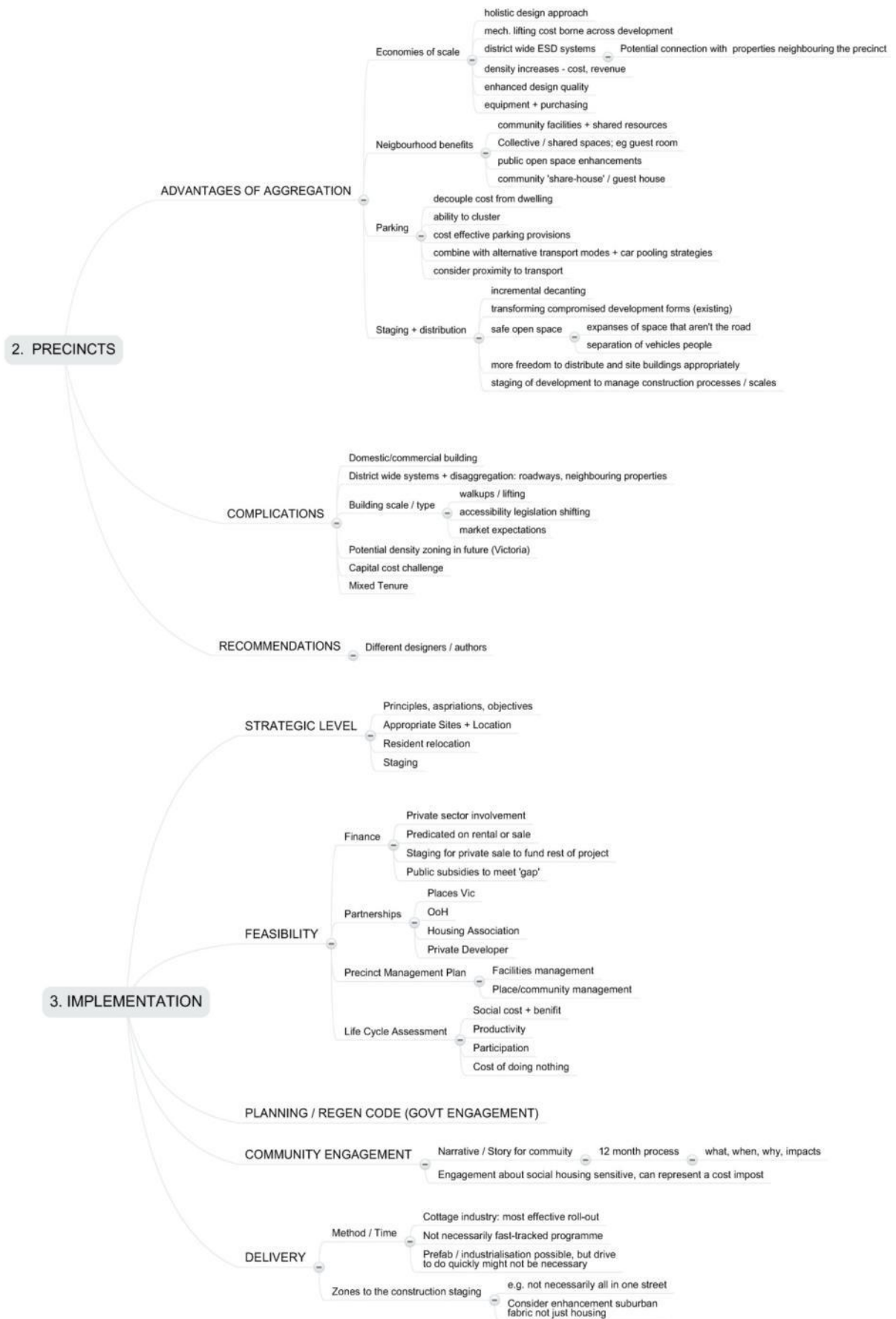
Alison Holloway	Melbourne Practice Leader, SGS Economics + Planning, VIC
Prof. Peter Phibbs	Coordinator Academic Programs Urban Research Centre, University of Western Sydney, NSW

Workshop agenda

Time	Description	By
1.00pm	Introduction Workshop format and purpose Research aims and scope Defining Greyfields, precincts and middle suburbs	Shane Murray
1.15pm	What? Innovations delivered under the Nation Building Economic Stimulus Plan— Social Housing Initiative Base case/business-as-usual projects Six project case studies Specific innovations achieved	Nigel Bertram
1.45pm	Facilitated discussion: Case study innovations	Shane Murray
2.30pm	Break	
3.00pm	Where? Study of Social Housing Initiative in Victoria Patterns, trends and formations Location of projects relative to different indices Potential urban regeneration on public housing land	Steve Glackin
3.10pm	Facilitated discussion: Replicating design innovations in precinct locations	Shane Murray
3.45pm	How? and Who? Implementing Greyfield precincts on public housing land Relevant observations from the Social Housing Initiative Need for collective development of implementation strategies	Shane Murray
3.55pm	Facilitated discussion: Implementation pathway	Shane Murray
4.25pm	Next steps	Shane Murray
4.30pm	Drinks & further discussion	

The issues and recommendations raised through the workshop discussion were recorded in real-time through the collective development and agreement of the group's 'mind-map'. The mind-maps were digitally projected throughout the panel discussions and were adjusted and refined through immediate feedback from workshop participants (refer overleaf).





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