Precinct Regeneration of Dispersed Public Housing in Middle Suburbs

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Abstract: This paper explores the redevelopment potential of ageing and underutilised public housing properties in the middle suburbs of major Australian cities. State governments lack strategies for the renewal of this housing in the current fiscally constrained environment. Responding to this need, this paper presents a design research project that proposes a coordinated, precinct-based regeneration strategy that involves the redevelopment of clusters of public housing lots that are in close proximity to each other. It demonstrates how such a precinct-scaled approach can produce a greater diversity of housing types that achieve higher yields as well as better quality urban amenity and infrastructure. This is in contrast to the inefficient, piecemeal infill housing development currently prevalent in middle suburban areas.

The paper describes the results of developing and testing this design research proposal. A mapping survey of the Victorian Government’s public housing portfolio found that around 25% of assets form precinct scale clusters of renewable stock in well-serviced middle suburbs. Integrative redevelopment strategies were formulated for selected localised clusters, including customised arrangements of density, uses, parking and dwelling types. At the same time, targeted public realm enhancements were developed to encourage existing community assets to ‘work harder’. These strategies were trialled and developed through innovative design-led community engagements, and then formalised into detailed design scenarios that enabled the testing of short and long-term viability relative to ‘status quo’ development models. The results of this analysis indicate how the quantity and distribution of public housing stock presents a timely opportunity for broader regeneration of ageing middle suburbs – recognised as vital to achieving sustainable metropolitan housing growth and diversity within equitable and liveable cities. Finally, this paper examines the role for community housing organisations in leveraging public investment in regeneration while preserving affordability in key areas.
The challenge: strategic stewardship of public housing assets in the middle suburbs

A large proportion of Australia’s public housing stock was constructed in the 50-year period following World War II. Much of this stock has passed its operational life and now needs immediate replacement or significant refurbishment (Groenhart & Burke 2014). The dated dwelling types no longer cater for contemporary tenant needs and, without considerable capital works, the gap between public housing supply and future demand will continue to grow. In a context of declining rental income, increased management costs and reduced public investment in the direct provision of housing, Australian governments are pursuing strategies for asset divestment, stock transfer and investment leveraging to fund renewal (Pawson et al 2013; Commonwealth of Australia 2014).

Government asset management plans focus on the efficacy of a property's use and the financial returns obtained through the disposal of surplus or underperforming assets. The location, size and value of inner urban public housing estates warrant asset renewal in these terms. Large-scale, high-density redevelopment increases the number of social dwellings in high amenity and well-serviced areas and is supported by an economic model that attracts partnerships with private industry. However, a substantial amount of the public housing portfolio is comprised by smaller residential properties in the middle suburbs of Australia’s major cities, which lack an equivalent model for cost-effective, equitable renewal. The nature of middle suburban landholdings is disaggregated, forming loose site-clusters at different scales, as result of past policies for stock acquisition, construction and disposal. Much of this ‘residual’ stock is dilapidated low-density detached housing that is failing to meet current housing demand and carries considerable risk for State Housing Authorities (SHA). In lieu of a renewal strategy with demonstrative public or economic benefits, SHAs may be tempted to sell-off these ‘idle’ sites as a way of expediently dealing with the liability they represent.

Simultaneously, metropolitan plans and strategic development policies are seeking to intensify established suburbs to increase sustainable housing provisions and improve urban efficiencies. Infill housing is expected to form between 50-70% of new supply in each state and territory (NHSC 2010). Implementing such policies in middle suburban contexts has proven especially difficult and, to date, infill targets have not been met (Fehring 2013). Two major barriers to infill development are: local opposition to intensive urban change; and, a lack of consolidated sites of sufficient value for higher-density development to be viable. Meanwhile, the piecemeal and limited gains of ‘business as usual’ infill – that is, lot-by-lot dual occupancies – continue to miss the strategic opportunities inherent in these areas.

The portfolio of public housing is a significant government asset that could be used in the strategic regeneration of established suburbs, but it does not feature in current metropolitan plans. One possible reason for this is that the distribution of stock mimics the pattern of piecemeal market infill and, as such, is assumed to offer similarly limited development gains. But in fact these underperforming assets have much greater potential. The quantum of sites in need of renewal currently under single-ownership provides a window of opportunity for ‘wholesale’ and integrative redevelopment. When appropriate clusters of public housing assets are approached as a coordinated precinct, their site dispersal becomes an advantage, not a limitation. Compared with one large consolidated site, dispersed precincts encompass a greater surface area, or field of influence, for regeneration initiatives. This expanded field is contingent on precinct sites having an apposite level of ‘nearness’ to one another (a common characteristic of the ‘residual’ public housing portfolio). Conversely, if the dispersion of sites is too great, the ‘field of influence’ offered by coordinated redevelopment becomes diluted (Figure 2), symptomatic of piecemeal infill redevelopment delivered on a lot-by-lot basis.

To realise the full value of public housing assets in the middle suburbs and achieve the broadest range of public benefits, innovative and place-specific precinct redevelopment models are required. However, such opportunities will only arise with a strategic and holistic ‘stewardship’ of the imminent renewal, transfer or sale of underperforming public housing assets. If government divestments occur in a piecemeal manner, and business-as-usual infill ensues, the opportunity cost would be substantial. The advantage of single-ownership could be lost and, with it, the capacity to instigate strategic urban regeneration in challenging middle suburban contexts.
Figure 1: Business-as-usual residential infill

Repeated infill model delivered under the NBESP on a variety of public housing sites—two 2-bedroom, single level units replacing an existing, aged single dwelling on a standard block. Murray et al (2013).

Figure 2: ‘Field of influence’ of precinct types

<table>
<thead>
<tr>
<th>Type</th>
<th>Number of sites</th>
<th>Total site area</th>
<th>Av. dist. to all other sites</th>
<th>Area of ‘influence’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single consolidated</td>
<td>12</td>
<td>8,320 m²</td>
<td>17 m</td>
<td>78,000 m²</td>
</tr>
<tr>
<td>Site clusters</td>
<td>12</td>
<td>7,747 m²</td>
<td>124 m</td>
<td>179,000 m²</td>
</tr>
<tr>
<td>Highly dispersed</td>
<td>12</td>
<td>8,034 m²</td>
<td>452 m</td>
<td>70,000 m²</td>
</tr>
</tbody>
</table>

A design-led opportunity: precinct-scaled redevelopment of public housing clusters

This paper presents three speculative precinct designs that were developed and tested on ‘real’ public housing sites in two of Melbourne’s middle suburbs. The design research demonstrates the collective value of dispersed public housing assets for delivering a diversity of affordable housing outcomes and
implementing place-specific urban renewal strategies. The integrative design approach can cohere and restructure a range urban, community and environmental priorities across site, precinct and neighbourhood scales. By operating across a field of disaggregated lots, the coordinated precinct model can target pressure points in a neighbourhood and tailor design responses to localised areas of need or take advantage of place-specific attributes. The diversity and distribution of built forms and public realm interventions makes the precinct model inherently flexible. It leaves gaps open for future opportunities—not expending future capital—allowing for adjustments and adaptations over time. It provides the groundwork required for ongoing regeneration of the physical and social fabric, supporting long-term, and genuinely sustainable urban transitioning.

This aims to provide spatial design evidence that specifically supports the formation of policies for effective and equitable management of dispersed public housing assets for strategic renewal of middle suburban locations. The paper discusses relevant challenges encountered at various stages of the design-led investigation, from identifying appropriate sites within the public housing portfolio for precinct-scaled redevelopment, to the spatial constraints imposed on higher density development in residential contexts, through to the communication of innovative design ideas to local community members. The project uses Melbourne as site for investigation but the processes and findings have broad relevance for comparative contexts in other states and territories.

**Design research method**

The place-specific and projective nature of design research enabled this project to explore what types of redevelopment outcomes are possible on disaggregated sites when approached as a coordinated precinct and examine how the precinct model performs in relation to ‘real-world’ development issues and site constraints. Design research is defined as ‘the processes and outcomes of inquiries and investigations in which architects use the creation of projects, or broader contributions towards design thinking as the central constituent in a process, which also involves the more generalised research activities of thinking, writing, testing, verifying, debating, disseminating, performing, validating and so on’ (Fraser 2013). The creative and speculative mode of working is geared towards identifying the potentialities of a given condition or scenario. It is through the resolution of these speculations that the applied research method identifies new inputs, strategies or mechanisms for achieving high quality and effective development outcomes that are responsive to place-specific needs and delivery processes. The projective mode of working provides valuable insights for a given problem that are less likely to be revealed through more traditional, constraint-driven or reflective research practices.

This design research project has involved the development a multi-criteria framework that combines extant data sets with projective design measures to identify suitable clusters of public housing assets for precinct redevelopment. Three prospective precinct designs were generated in response to recurring conditions within the existing public housing portfolio and the particular qualities and spatial opportunities that exist in typical middle suburban residential contexts. The research shows how a design-led, place-specific and precinct-scaled approach can overcome typical barriers to infill redevelopment, offering a new vehicle for community engagement, long-term strategic planning and attracting stakeholders/partners with a long-term interest in the quality and performance of new housing, as well as broader urban and social outcomes.

**Survey of Melbourne’s public housing portfolio**

Victoria’s public housing portfolio was worth $17.8 billion as of July 2012 (Victorian Auditor-General 2012). There are over 23 500 public housing assets in metropolitan Melbourne and more than half of these are located in the middle regions of the city. Seventy-five per cent of DHS housing in metropolitan Melbourne was built in the 45 years following 1950. Around 60 per cent of DHS properties in Melbourne’s middle suburbs are single houses on a lot. The low density ageing stock represents underutilised land in relatively high amenity areas that could be strategically ‘re-purposed’ to achieve more effective housing outcomes while also renewing Melbourne’s ageing middle suburbs.

A detailed survey of the public housing register1 in metropolitan Melbourne was carried out to identify the scope for precinct-scaled redevelopment of disaggregated assets within the asset portfolio. An assessment framework was developed to allow multiple criteria to be considered simultaneously, incorporating qualitative and quantitative concerns across a number of scales. Not all criteria were viewed as absolute requirements, but rather served as a series of indicators that could influence the design priorities of a specific precinct, as well as revealing recurring patterns and needs across the portfolio. This was particularly important in relation to the Urban Context criteria (below), as DHS properties generally do not rank highly across all these indices and they are factors that may change

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1 Data provided by the Victorian Government Department of Human Services (DHS, 2012).
over time, especially with strategic influence. For example, precinct potential was not uniformly associated with high levels of public transport access (in fact most DHS sites do not have good access). However, if other fundamentals are in place, a coordinated regeneration strategy may be able to improve links to transport networks. The full assessment criteria were:

- **Existing physical condition and spatial distribution** of public housing assets including the location and age of housing stock, type of buildings, land area, patterns of clustering and levels of allotment consolidation.

- **Urban context**: Proximity of services and amenity (activity centres, education, health, open space and recreation); distribution of housing relative to a range of social and urban indices including Socio-economic Indexes for Areas (SEIFA), Public Transport Access Level (PTAL), Effective Job Density (EFJ), Median House Prices (MHP).

- **Precinct redevelopment capacity** relating to the quality and diversity of housing that could be delivered by precinct redevelopment and issues specific to public housing delivery, such as decanting, tenure mix and ongoing services/management.

Figure 3: Spatial distribution of all DHS Properties in metropolitan Melbourne

The multi-criteria framework highlights the need to embed design and spatial quality measures in the processes used to determine the efficacy of asset renewal. It shows how extant data sets (e.g. age of allotments) and projective design measures (e.g. defining the ‘nearness’ of sites based on expected design outcomes) might be considered together to refine and prioritise precinct selections. The design-led approach to this survey revealed a replicable precinct scale within the DHS portfolio and identified recurring precinct types across Melbourne’s middle suburbs where broader urban benefits could also be leveraged. For example, clusters of DHS properties are commonly found near failing local strip-shops, at underutilised park edges and ageing community facilities. These neighbourhood attributes can be used to help diversify housing supply and the precinct-scaled renewal of public assets can respond to place-specific needs and neighbourhood qualities.
**Scale and nature of site clustering**

There are significant variations in the distribution of DHS properties across neighbourhoods. Some middle suburbs contain intact estates with large consolidated land areas surrounded by a dispersion of typical residential lots. Others areas comprised fragmented concentrations or ‘islands’ of around 20 properties. But the most prevalent cluster-pattern was characterised by pockets of smaller allotment consolidations (2-5 lot assemblies) grouped into loose clusters of up to 20 sites. The precinct model benefits from an amount of site contiguity, which supports a diversity of housing types and urban environments. The ‘nearness’ of properties is important to encourage the development of walkable neighbourhoods. However, an amount of site dispersion is also beneficial to encourage social/tenancy mixes across a neighbourhood and to provide regenerative benefits to a larger urban area.

For the purposes of this research, clustering was defined as the presence of four or more lots within a 200-metre radius. 6672 DHS properties dated 1990 or older met the clustering definition. Clusters of 12-lots were selected for precinct design tests, representing a replicable scale of assemblage within the DHS portfolio with a ‘critical mass’ necessary for effective precinct outcomes. These clusters are large enough to offer wide-reaching benefits for the broader neighbourhood. Yet, they are small enough to be perceived and understood as discrete redevelopment projects, the function of which is clear and the proposed extent of urban change is ‘contained’. This is an important consideration for successful community engagement and facilitating cooperative partnerships. In addition, the lessons learned from this scale of investigation can be applied to larger precinct assemblies and neighbourhood contexts.

**Place-specific precinct design models**

Operating across clustered allotments enables conventional development provisions to be reconsidered. Simple but well-executed design and place-making strategies impacted, not just on the dwelling, but also the neighbourhood and beyond. The diversity of dwellings, building types, open spaces, parking, and mixed uses can be coordinated to achieve higher-density and better quality urban outcomes. The surrounding physical context has a significant impact on the arrangement and type of buildings that can be delivered. The research was based around three recurring scenarios identified in the public housing survey: Park edges, Green streets and Local shops. The design research has identified a number of design strategies that could be translated to other middle suburban locations.
**Built form diversity and localised density**

The scale of operation and dispersion of sites allows for non-uniform, flexible siting of higher density buildings. By increasing densities in localised areas, other parts of a neighbourhood can undergo less intensive transformations. This not only encourages higher levels of dwelling diversity, but is also an important attribute in terms of engaging with existing residents. The design scenarios developed in this study delivered 2–4 times the number of dwellings over 12 lots when compared to business-as-usual dual occupancy outcomes. Higher density buildings use share circulation and common spaces to augment compact dwelling options, support positive social/private tenure mixes and mitigate negative impacts of higher density living. For example, the arrangement and treatment of access ways and dwelling entries can reduce noise and increase privacy. Clever distribution of smaller shared spaces that are purpose-designed provides useful amenity and meeting places for residents with shared interests. Careful planning of internal dwelling spaces provides substantial flexibility and liveability benefits. Examples include adequate size and configuration of rooms that readily allow for visitors or carers; ensuring bathroom access is not from a bedroom.

**Open spaces**

Open space amenity and the concept of ‘green, leafy suburbs’ are highly valued, but existing parks and gardens are currently underutilised and could ‘work harder’ for suburban dwellers. Open spaces are usually very generous in size but their quality, accessibility and useability are often compromised. The precinct designs enhanced existing open space amenity by opening up ‘dead end’ pocket parks and transforming them into high quality and inhabitable ‘through-ways’ for the neighbourhood. By increasing access and connectivity in this way, parks and gardens not only act as destinations but can provide incidental meeting places for residents. Treatment of edge conditions between public open, streets and residences improves the quality of all three urban elements and provides indirect impacts such increased passive surveillance. Similarly, the distribution of smaller but better programmed open spaces throughout a neighbourhood helps to activate and diversify the public realm, which can be further enhanced by co-locating complimentary facilities and services.

**Neighbourhood street networks and connectivity**

The existing street network is another public asset that is highly underutilised. Developing and maintaining road spaces and footpaths represents a considerable infrastructure cost for state and local governments and, at present, vehicle users are the only beneficiaries. The car-dominance of suburban streets inhibits their use as open space and impedes pedestrian and bicycle movement. The hierarchy of street networks, the scale of residential blocks and the lack of pedestrian/bicycle ‘cut throughs’ all encumber the potential connectivity within a neighbourhood. The precinct designs have augmented the existing network with a new layer of connector-lanes through the redeveloped sites and well as upgraded existing streetscapes by providing new spaces, uses, building interfaces and furniture that offer moments for stopping, encourage diverse types of activation and insert some breaks in the ‘relentless’ suburban fabric.
Figure 5: Park edge precinct

This proposal enhances the interface between the existing neighbourhood and the large public reserve. Generous landscaped ‘street’ connections are provided between the rows of new housing, increasing access to existing pedestrian and bicycle networks in the public reserve. There are important structural enhancements that could contribute to reduced car-dependency, as the reserve connects to other public transport services and mixed-use and employment areas. Localised clusters of vehicle parking are proposed to adapt to other uses over time. Potential district-wide servicing, which could be installed linearly along the park edge. For example, a bio-swale system could capture stormwater from the precinct and re-used to maintain the recreational oval in the park. Infrastructure could also incorporate other properties in the surrounding neighbourhood.

- No. allotments: 12
- Site area: 9100m² (nets)
  - 2380 m², (public realm)
  - 11420m² (total)
- No. dwellings: 1.5BR x 20, 4BR x 10
  - 26R x 49, 5BR x 2
  - 98R x 6 TOTAL 89
- No. carparks: 96 (1.07 per dwelling)

No upgrades included:
- Childcare centre
- Parking deck and recreation
- Park + aged care interface
- Streetscape + open spaces

No upgrades by others:
- Upgrades to parkland
- District-wide servicing

Figure 6: Back of House

Before (left) and after (right).

Student proposal for higher-density, low-rise housing at park edge, building forms about the rear boundary of allotments, enabling greater densities to be achieved, as well as providing opportunities to activate the currently blind edge of the reserve. This porosity and activity would improve security and passive surveillance in these areas (a key concern voiced by workshop participants). The new ‘park frontages’ have the potential to accommodate a range of small community facilities or commercial programs related to recreational park uses and the existing sports club (e.g. bike or equipment hire).

Images: Lara Fannuzo
Figure 7: Green streets precinct

Typical low-density residential contexts are highly constrained environments for redevelopment. The proximity of neighbouring properties and the potential impact of development prevent the possibility of large-scale, high-density dwelling forms, particularly on single allotments. This is the condition of the majority of DHS land holdings in Melbourne’s middle suburbs. The Green Streets precinct confronts this difficult context by exploiting the impact of density increases, public realm upgrades and the social benefits that can be delivered on a cluster of predominantly single-residential lots. It tests the limits of individual sites while also investigating the potential of their aggregation.

No. allotments: 12
Site area: 7747m² (lots)
3845m² (public realm)
11532m² (total)
No. dwellings: Assisted x 12
2BR x 34
1BR x 4
3BR x 6
1.5BR x 9
4BR x 3
TOTAL 95
No. carparks: 56 (1.4 per dwelling)
Public realm upgrades included: Community centre
Health care and assisted living
Street upgrades
Public realm upgrades by others: Private lots acquired
Private lots opt into street network

Figure 8: A new ‘green belt’

Various micro interventions were proposed, ranging from planting vegetables on the nature strip, to traffic calming, expanded verges, and reclaiming the space of the street as community sports courts.

Images: Radoslaw Burzak
Better utilisation of community assets

Melbourne’s middle suburbs have substantial community assets but, like the surrounding housing stock, are often physically run-down and lack relevance to current socio-cultural patterns and needs. For instance, facilities common in the 1940/50s, such as tennis and bowling clubs, may need to be rethought as multi-purpose centres and adapted to suit a broader range of ages and cultural backgrounds. Contemporary community centres, youth facilities, sports clubs and the like, tend to be singular in purpose and intermittently ‘open’ for public use. If they could be modified or altered to accommodate multiple activities or programs, existing community assets could ‘work harder’ for more people, making the whole suburb a better place to live in while simultaneously increasing its capacity to support higher population densities. By building on, rather than replacing or repositioning, these existing community nodes, a type of cultural regeneration could transpire, contributing to the development of a shared history and ‘sense of place’ in a neighbourhood. These can then be supplemented with targeted amenity and infrastructure upgrades tailored to local needs and aspirations. These facilities also require upgrading to physically re-link them to a changed urban context. This type of reintegration could occur at both a spatial and utility level, where physical utilisation of community assets is maximised and new functions are integrated.
connections and interfaces are improved, as well as potentially implementing district-wide servicing (such as energy generation or water re-use) networked with residential zones for dual operational benefits.

**Housing Affordability**

From a design perspective, one way of increasing affordability is to increase the diversity of housing types. Affordable apartments are a way forward in this regard. If precincts are well designed, smaller dwellings can offer a high-quality of life: small private spaces (financially in-reach for more people) are augmented by appealing, shared spaces in the public realm. In this way, the high prices typically associated with high amenity living are borne by the neighbourhood, not the individual. That is to say, affordability and quality can simultaneously be achieved if the dwelling is considered in its locality, rather than looking at the dwelling in isolation. This logically extends to the notion of affordable living (as opposed to affordable housing). Well-designed housing and urban environments can reduce the operational costs for individuals and households. In addition to cost-neutral strategies, such as optimal passive design, sustainable infrastructure and active technologies are also more feasible at this scale of redevelopment, offering further efficiency and potential reductions in operating costs. Integrated precinct design provides a fuller complement of amenity and services within a walkable neighbourhood. Coupled with better connections to public transport and bicycle networks, everyday travel costs can be significantly reduced. Increased access to a range of education and employment opportunities (within or outside the precinct) also contributes to the long-term advantages available to residents.

**A design-led process overcome typical market barriers to infill redevelopment**

The design research was developed and tested in consultation with community, local authorities, community housing associations and industry stakeholders. Each group brought a different perspective to the project and, ultimately, each expressed a different motivation for their interest in the precinct model. Insights gained through these engagements revealed how a design-led, place-specific and consultative process can positively affect current market barriers to higher density and better quality infill redevelopment.

**Community engagement**

This project used *design*—design thinking and design processes—as a vehicle for challenging preconceived attitudes to infill redevelopment and petitioning a positive, forward-looking dialogue with the residents in the two neighbourhoods being investigated. Rather than presenting redevelopment options ‘fait accompli’, or asking ‘what people want’ from scratch, student proposals were offered as preliminary design ideas that responded to place-specific observations. The forums didn’t seek to gain community support per se. They were structured as shared explorations that aimed to uncover local knowledge and aspirations about each neighbourhood. From this cooperative starting point, the engagements were able to challenge expectations and provoke new thinking about future possibilities. Residents responded with frank and astute contributions that focused on how to improve an area, as opposed to just preserving it. Three factors engendered a more meaningful community exchange:

1. Design-led and early engagement around concrete propositions but with scope for future alteration.
2. Focus on place-specific issues.
3. Multi-scaler examination encouraging both individual and collective consideration of urban aspirations, benefits and trade-offs.

The consultations revealed that residents are far less resistant to urban change than one might expect. In fact, redevelopment is welcomed if it contributes to local community building, improvements to public amenity and basic services. Typical sticking points, such as overshadowing, overlooking and parking were considered important, but local residents were open to how these issues could be resolved through careful design and siting. Once these concerns had been addressed, increased density and height were no longer seen as negative attributes, and larger developments were mostly deemed acceptable if they contributed to physical neighbourhood upgrades or responded to specific community needs.
The key message is that higher-density development needs to ‘give something back’ to be successful. Provisions such as local shops/services and bookable community meeting rooms were seen as highly desirable by-products of higher intensity development—with an understanding that their viability increases with higher population numbers. Another example explored how necessary elements in higher-density building models, such as mechanical lifting, might in fact provide dual benefits for surrounding residents. Vertical circulation for multi-storey development could also enable safe and convenient neighbourhood connections for an ageing demographic. While the proposition was specific to this context, it explores challenges that are broadly relevant for future urban transformations.

Planning regulations and envelope controls
A relaxation of particular planning controls would provide more flexibility in medium-density development and enable greater diversity, better quality design outcomes, as well as higher yields. In the proposed design scenarios these relaxations included:

- **Reduction in front and rear setbacks (where there is no impact on adjacent amenity).** The blanket prescription of setbacks under current planning schemes does not take into account site-specific opportunities and limitations, or other variables such as topography. In reality, the particularities of site have a large impact on the lived experience of privacy or access to sunlight. The precinct approach allows for more site-specific customisation of setbacks to make the most of local opportunities while responding to neighbouring built form. The current front street setback requirements in particular have a substantial effect on the ability to use residential land efficiently and to provide both liveable dwellings and engaging social streetscapes. This inefficiency is amplified when combined with typical requirements for on-site vehicle circulation and access. In the two study areas and in most middle suburbs of Melbourne the streets are wide, generous and well planted, making the additional requirement for large front garden setbacks somewhat redundant. (The current front setback requirement under the general planning scheme is merely the average of what happens to be built on either side, rather than any scientific or considered approach to actual amenity or street capacity.)

- **Pooling of car parking (with a maximum 50-metre distance from car space to dwelling).** Attaching parking to the development rather than the dwelling is common and accepted practice for high-quality, higher-density developments. However, this is generally not the case for lower-density dwellings in the middle suburbs due to their one-off nature and scale. Current planning controls have set requirements for on-site parking provisions per dwelling. When repeated on a lot-by-lot basis, a significant amount of a land is consumed by vehicle servicing which places huge restrictions on the built form outcomes that are possible. It should be noted that parking does not only include the car space; access driveways and turning circles needed for multi-unit developments can consume more than 25 per cent of a site (Bertram et al. 2011). When multiplied across a neighbourhood, the physical impact is pronounced; the regulatory requirement for which seems contradictory to contemporary moves towards reduced car-dependency. Collectivised car parking within a precinct presents significant efficiencies for redevelopment and helps to prioritise pedestrian and bicycle movements in a neighbourhood. There may be an issue with people’s perception of security with pooled parking, or that it reduces resident convenience, but these issues can be overcome with good design, such as appropriate scales and locations for parking areas within a precinct and simple public realm treatments (well-lit, visible pathways from parking to surrounding buildings).
Long-term planning instruments
Long-term development frameworks at a neighbourhood level would enable community visions to be aligned with broader urban and housing policies and increase developer-certainty while ensuring equitable and sustainable outcomes are achieved in the long-term. Such an instrument would also enable state-level economic and social policies for social housing to be integrated with regional and sub-regional imperatives. That is, a framework that considers both the spatial distribution and design typologies of appropriate dwellings within place-specific contexts. Strategic planning at a neighbourhood level maximises overlapping interests for stakeholders within and outside a prospective precinct. By understanding the full gamut of benefits available, new opportunities for creative cost/risk sharing may ensue, facilitating more viable and sustainable change in these contexts.

Design research findings relevant for pending asset renewal, transfers or sale
Role of housing associations
Development partnerships are needed to ensure that currently underperforming suburbs do not become unaffordable through their gentrification. Delivery and management mechanisms will be required to achieve long-term affordability. Community housing organisations, which have a long-term interest in the success, quality and sustainability of the living environments they provide, can be an important ‘custodian’ in this regard. Without a long-term partnership of this nature, there is a danger that the inevitable gentrification of established suburbs—coupled with the short-term interests in its profitability—will significantly reduce affordable housing supply in well-located areas of the city.

A recent case-study review of the Nation Building Economic Stimulus Plan – Social Housing Initiative (SHI) (Murray et al 2013) demonstrated how public investment can be successfully leveraged for additional social housing supply by building capacity in the not-for-profit housing sector. SHI developments led by housing associations resulted in better quality outcomes and enabled public investments to be supplemented with other sources of land and finance. The Ashwood Chadstone Gateway Project (Victorian Government 2013) provides an example of how leveraging arrangements can occur outside a Commonwealth funding program and illustrates how multiple government-owned sites can be effectively developed for a diversity of dwelling outcomes. These projects provide strong precedents for an effective and strategic program of precinct-scaled redevelopment on dispersed public housing sites in middle suburban locations. Precinct strategies could further build capacity in the NFP sector by exploring spatial and operational advantages, such as suitable decanting and relocation strategies or localised tenant/property management.

Leveraging investment through design innovation
The precinct models demonstrate how good quality design can impact, not just on the dwelling, but also on the neighbourhood and beyond. In many instances cost-neutral design strategies, such as appropriate treatment of pedestrian connections and built form interfaces, can encourage a range of flow-on benefits. This might include community-led spaces or services, or attracting new local business and institutional investment through more active streetscapes and better access. Cost effective public realm upgrades would significantly improve the quality, value and use of existing community capital in established suburbs. In partnership with municipal authorities, precinct redevelopment has the potential to coordinate and adapt what is already there to play a stronger role within the neighbourhood. Integrated precincts can also help support the ongoing upkeep and operation of community assets (in contrast to greenfield development where new community facilities have to be built from scratch, or are often not available). A strategic ‘pipeline’ of precinct-scaled redevelopment on public housing land also offers an economy of scale that could drive a range of technological innovations, including new construction technologies, revolutionary industry practices or sustainable infrastructure systems. District-wide services networks could incorporate both residential and non-residential properties, within and outside the precinct. This in turn could attract cooperative finance opportunities or become part of the long-term urban transition plan.

Government leadership: laying the groundwork
The quantity and distribution of underperforming public housing assets in established suburbs presents a significant opportunity to increase the diversity and supply of good-quality affordable housing in relatively well located areas of the city. The redevelopment of dispersed public housing assets is an opportunity for innovation and market leadership for infill housing design and delivery. Precinct redevelopment could effect real and positive urban change by providing the groundwork for these contexts to transition to high-quality, sustainable urban environments and has potential to test and grow ‘latent’ housing sub-markets for the private sector. The demonstration of new and feasible
infill models would work towards shifting the current industry culture of risk-averse ‘rubber-stamped’ development. Precinct redevelopment of dispersed public housing stock could catalyse urban uplifts (physical, social and financial) and cultural change necessary to transition to more sustainable neighbourhoods in the long-term. This is contingent on achieving good quality design outcomes at dwelling and neighbourhood levels.

Cross-subsidising development in low and high value suburbs
With strong strategic foresight, there is scope to cross-subsidise development in high and low value suburbs within the portfolio of DHS landholdings. By capturing the value uplift generated by initial development investments, project financing could potentially be recycled through a strategic program of asset renewal, introducing new possibilities for instigating creative partnerships, investment and procurement. This project has examined the benefits of 12-lot precinct clusters, however other scales and types of development opportunities exist within the existing public housing portfolio. Building on the design-led assessment framework and design propositions outlined above, it would be possible to expand the examination of existing public housing assets to identify a range of replicable precinct development models. This would further strengthen the breadth and applicability of a potential ‘development pipeline’ on government owned housing land. There is also huge scope to incorporate multiple land sources (i.e. owned by different departments or levels of government). Conversely, not all public housing assets are appropriate for precinct development. Further examination of the portfolio could assist in determining optimal strategies for asset renewal, sale or transfer.

Conclusion
The physical and operational benefits of precinct redevelopment are not possible to achieve on a lot-by-lot basis. As such, the portfolio of public housing has much greater value as a collective than as individual assets. Future policies for housing renewal, transfer or sale must capture this long-term value of the collective portfolio, not just piecemeal sites. The key risk identified by this research is that governments will opportunistically sell off these dispersed properties as a way of expediently dealing with the liability of underperforming assets. This project has indicated that a class of assets held for one purpose (public housing) and becoming a liability due to the need for renewal might, when considered strategically and from a whole-of-government policy perspective, be used to deliver a range of objectives beyond their original use, while also continuing to provide social housing. Strategic asset management across portfolios, coupled with design-led planning, has the potential to help governments meet a range of complex urban policy needs more efficiently while extracting greatest value from assets already held.

Next steps
The design research has demonstrated the potential of an integrated precinct approach and indicated how coordinated redevelopment public housing clusters could attract interest from multiple stakeholders. A pilot project could be used as a vehicle for further development, enabling governments to provide market leadership and demonstrate the long-term value of innovative infill development approaches. To this end, undertaking a more detailed feasibility study would be required. This would involve detailed design, development and testing of precinct scenarios to determine feasible yields, construction types and potential staging strategies while optimising dwelling diversity, tenancy mixes and considering decanting logistics. Through the formation of real development partnerships, the study could determine creative finance and procurement arrangements and new opportunities for land contributions (e.g. Local Government or Housing Associations). More accurate forecasting of construction costs, dwelling sales, rental streams and housing management would be required to determine the development risk and feasibility over a long-term timeframe.
References

DHS (2012) Metropolitan Melbourne public housing assets, geo-spatial data supplied by Victorian Government, Department of Human Services (DHS),


