Analysis and Findings from Mapping the Australian Social and Affordable Housing Network - Queensland and Western Australia

See also:

- **Queensland Social and Affordable Housing Network Maps**
- **Western Australia Social and Affordable Housing Network Maps**

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Acknowledgements

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1 EXECUTIVE SUMMARY

This Sustainable Built Environment National Research Centre (SBEnrc) project, *Mapping the Social and Affordable Housing Network* aims to contribute to improvement in the productivity, effectiveness and efficiency of this network in Australia. Through providing a high level, graphical representation across 13 elements these maps, and associated findings cast light on current complexity, challenges and opportunities.

The maps, findings and supporting materials have been brought together to facilitate a strategic yet pragmatic understanding of of this network. This has been done to help organisations better leverage outcomes for those in need of social and/or more affordable housing.

These maps are a snapshot in time, at July 2019. As such they are intended to provide a base-line overview of this network, to inform current understanding, and future analysis and decision-making. They cannot be comprehensive due to the expansive nature of the network (and limited project resources), but aim to provide a foundation for decision-making. For example, they could help guide a living process to assist organisations identify and engage with partners and stakeholders, to better address the changing nature of the housing need. The intent has been to identify all participants for the three tiers of government and for peak bodies/industry associations, whilst providing examples only for the remaining groups of participants involved in the network. Network maps have been developed for two focal participants, the WA Department of Communities, and the Queensland Department of Housing and Public Works.

Thirteen elements have been identified and used to provide clarity for both the graphical representations and also to help network participants breakdown the complexity to aid decision-making.

1. Policy drivers and players
2. Funding
3. Financing (private, institutional and individual)
4. Procurement and delivery
5. Metrics, indicators and data
6. Labour market dynamics and housing
7. Changing demographics
8. Housing typologies
9. Socio-environmental systems
10. Integrated, shared and disruptive technologies
11. Housing asset management
12. Production supply chain
13. Knowledge, skills and capacity building

The consequent analysis and findings have then been based on: (i) knowledge gathered in the previous SBEnrc social and affordable housing program of research; (ii) desk top research of the network; (iii) a limited review of relevant network mapping literature; (iv) input of expert stakeholders in the workshops held from May-July 2019; (v) feedback on draft maps from research partners; (vi) a limited review of literature relevant to system improvement; (vii) a limited review of housing system literature in Canada, Singapore and the United Kingdom (UK); and (viii) insights and reflections from the research team throughout the process of developing these maps.

The findings and recommendations included in this report are not specific to the two state government housing agencies as the focal participants, but address issues across the whole of the housing network, as identified in the network maps. As such they will be relevant at various levels of government, and/or to various participants across the network. Whilst some findings may be specific to certain groups of organisations, it is recommended that all network participants engage with these findings to help build understanding of the complexity and inter-relationships which exist across the Australian social and affordable housing network. This research offers a unique and important overview of the Australian social and affordable housing network as a whole, rather than one of siloed parts. This provides the opportunity for people and organisations to come together with a united understanding and language, to add value both within and across the network.

The key findings identified in this research are listed below. Accompanying recommendations are provided in Section 5 Research Findings.

Strengths, weaknesses and critical junctions in the network
1) Single issue, stand-alone policy development around housing is not a tenable or effective solution to complex problems across the network.
2) Addressing niche client needs is vital in a person centred environment.
3) The need exists to better leverage investment to produce outcomes across multiple elements.
4) There is currently a lack of a national bi-partisan housing strategy to support the most vulnerable and tenants and homeowners generally.

Opportunities for system improvement
5) Housing as critical social and economic infrastructure.
6) Recognition of alternative policy and economic levers at a national level, beyond demand and supply.
7) Greater national recognition of housing as part of functional urban, economic and social systems, with associated required policy integration.
8) Providing a home not a house.
9) Improving data accessibility and effectiveness of use across the network.
10) Improve understanding of a complex and fragmented network, across both asset and service delivery.
11) Partnerships and alliances across the network are vital to strengthen the system.
12) Address cross disciplinary complexity in building knowledge, skills development and capacity building.

Policy, research and skills development priorities
13) There is a need for national, longitudinal datasets to inform policy development, delivery and to better understand the impact of policy changes.
14) Longevity in policy making needed.
15) Change is slow in this network, yet socio-environmental changes are occurring more rapidly.
16) New ways of working (e.g. co-design) are required in a place-based, person-centred policy environment.

Improving network and community understanding
17) There is a need for better clarity and stronger understanding of the complexities of the housing system in Australia.
18) National peaks exist for industry, government and not-for-profit (NFP) organisations but not for the individual in need of housing.
19) Continue to build the evidence base to support continuing government needs-based investment in housing, along with further building the case for private and NFP investment. Housing needs to be considered as social and economic infrastructure in a similar way to hospitals, schools and roads. This requires asset management budgets and rolling programs of work to enable investment planning to me long term demand based on demographic projections.

Further research in this area is recommended, to build on these baseline maps. Follow-up interviews with expert stakeholders, network participants and those living in social and affordable housing could enable a further more detailed analysis of the network, to further describe, analyse and quantify relationships and interactions.

This document partners with two companion reports - *Queensland Social and Affordable Housing Network Maps* and *Western Australia Social and Affordable Housing Network Maps*.

2   INTRODUCTION

Sustainable Built Environment National Research Centre (SBEnrc) research, *Mapping the Social and Affordable Housing Network[1]* aims to improve the productivity, effectiveness and efficiency of the housing system in Australia.

This current research builds upon findings of previous SBEnrc research projects: *Rethinking Social Housing[2], Valuing Social Housing[3]*, and *Procuring Social and Affordable Housing[4]*. Through provision of a set of network maps the research aims to provide a strategic yet pragmatic understanding of the complexities and associations in the system which can then inform policy development and delivery. The *Rethinking Social Housing* project developed a productivity-based conceptual framework, which addressed the role and benefits of having access to safe and secure housing through the lens of productivity, in terms of an array of benefits including tenant, macro-economic, fiscal and non-economic perspectives.

These high-level maps which focus on public, community and non-market rental housing, aim to identify, understand and describe the various elements of this complex system.

Most people reading this report will have a high level of understanding of the housing system in Australia, and the elements within this system. The network maps developed in this research provide a graphical representation of some of this complexity. Figure 1 is a composite image of four of the thirteen maps developed for Queensland (Qld). Full reports for both Qld and Western Australia (WA) are available at the project website.

Figure 1 – Network mapping composite image

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[1] http://sbenrc.com.au/research-programs/1-61/

[2] http://sbenrc.com.au/research-programs/1-31/

[3] https://sbenrc.com.au/research-programs/1-41/
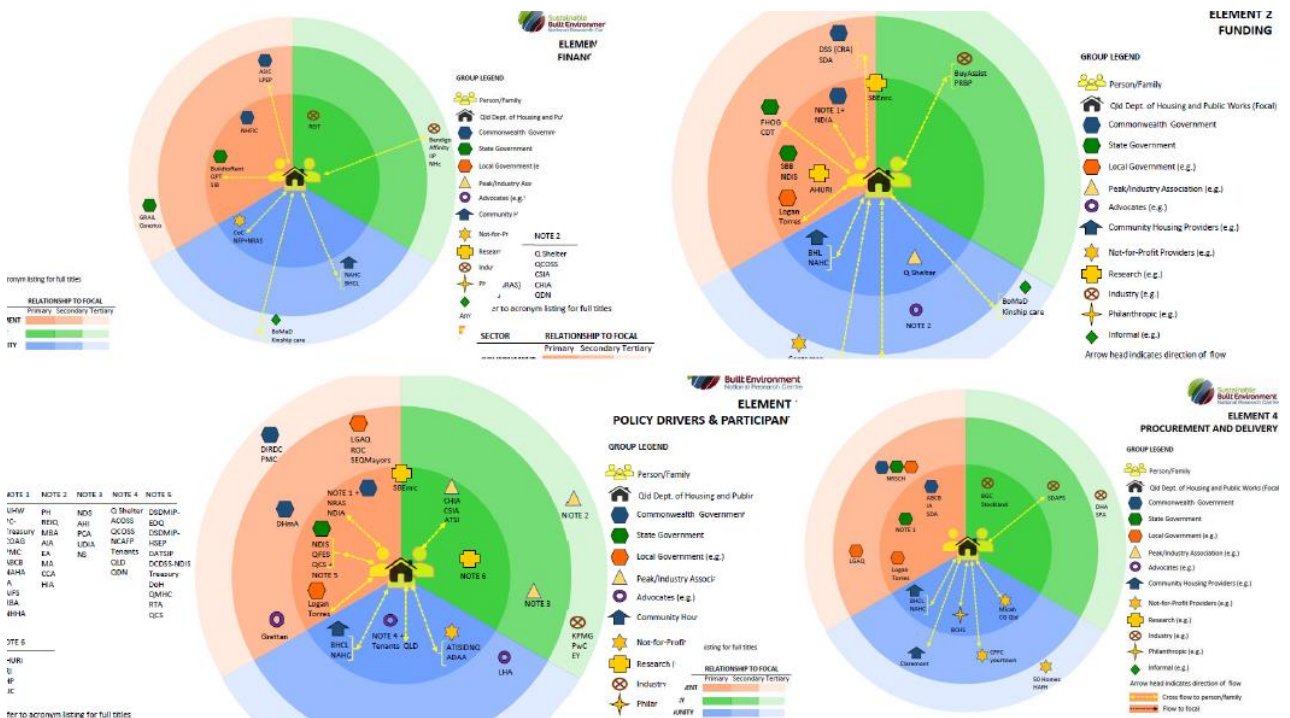
[4] http://sbenrc.com.au/research-programs/1-54/

The Australian Institute of Health and Welfare (AIHW) also provide some timely updates on the extent of housing need (2019):

1. '288,800 clients were assisted by SHS (specialist homeless services) agencies in 2017–18.'
2. ''189,400 households (were) awaiting social housing allocation at 30 June 2017.'
3. '812,900 tenants in 396,100 households were living in the main social housing programs across Australia in 2016–17.'

Other points which provide an overarching context for consideration as you read this report include:

1. '183,965 Australians are benefiting from the (National Disability Insurance Scheme) NDIS, including: 176,197 people [who] have received individualised plans' (National Disability Insurance Agency 2018).
2. It is only recently (i.e. one generation) that Australians have built significant wealth from housing (Herbert, McCue et al. 2013).
3. Increase in disposable income for consumer goods to fill houses. The average size of Australian houses are some of the largest in the world (Commsec 2017).
4. There has been a trend towards the financialisaton and commodification of housing globally with Sydney being the focus of international investment which has contributed to the housing affordability issue nationally. (Farha 2017).
5. This has been occurring alongside the role of housing provision being increasingly relinquished by state and territory governments to the NFP and private sector, and partnerships thereof (Dalton 2009). The shift has been occurring for many decades (Table 1) and is much more complex than a supply and demand equation with links to the labour market, income distribution and demographic changes in our population. This shift from public sector provision is one that is entwined with 'the broader functioning of urban economies and social cohesion', and the need to develop housing policy on a national scale and in a global context (Dalton 2009).

Table 1 - Public housing completions as a percentage of dwelling completions

	Percentage
1945/46	23
1955/56	20
196465	14
1966	8*

* Of total stock of occupied dwellings
Source: Dalton 2009

2.1   Research approach

Critical to this research is the focus on the person and/or the household. This has been central to the SBEnrc social and affordable housing program of research since 2014, when the nine impact domains were developed, which demonstrate the value and impact of having safe and affordable housing on all aspects of a person's life. These impact domains are community and culture, economy, education, employment, environment, health and wellbeing, housing, social engagement and urban amenity

The network maps have then been developed in the context of the lead government housing agency in both Queensland and Western Australia (as the focal participant). Both these agencies are core partners in SBEnrc. This has been done with a focus on combined asset and service provision, in line with housing strategy in both states. This also acknowledges that greater benefit from investment is gained where broader issues of individual and community wellbeing are also considered, as demonstrated in the previous SBEnrc research project *Valuing Social Housing*.

Thirteen elements of the social and affordable housing network, listed below, have been identified to improve map clarity and ensure complex information could be communicated as effectively as possible. Development of these elements was informed by previous SBEnrc research, including the 9 impact domains developed in the *Rethinking Social Housing* research and then in conjunction with industry experts in project-based Working Group discussions from March to August 2018, and Project Steering Group meeting input in October 2018.

1. Policy drivers and players
2. Funding
3. Financing (private, institutional and individual)
4. Procurement and delivery
5. Metrics, indicators and data
6. Labour market dynamics and housing
7. Changing demographics
8. Housing typologies
9. Socio-environmental systems (SES)
10. Integrated, shared and disruptive technologies
11. Housing asset management
12. Production supply chain
13. Knowledge, skills and capacity building

Further to improving map clarity, network participants were collated in 11 groups (Table 2). The intent has however been to aim to identify all participants for the three tiers of government and for peak bodies/industry associations, while providing examples only for the remaining groups of participants involved in the network (as at July 2019).

The intensity of the relationships (i.e. primary, secondary or tertiary) with the focal participant has also been identified on the maps and in the associated reference tables. This has been established through desk-top research, expert panel workshops and research team knowledge. For example, the relationship between the focal participant (i.e. QDHPW) is, for example:

1. Primary - with other government agencies whose policy objectives are intertwined
2. Secondary - with many of the industry organisations who may lobby and inform policy but do not have a direct relationship with the focal participant.
3. Tertiary - with, for example, realestate.com, who provide an important service to home buyers but not with the focal participant.

Table 2 – Group icons and details

⬡	Commonwealth Government	All participants*
⬡	State government	All participants*
⬡	Local government	All participants*
△	Peak body/industry association	All participants
⊙	Advocates	Examples only
⬆	Community housing providers (CHPs)	Examples only
✶	Not-for-profit (NFP) providers	Examples only
✛	Research	Examples only
⊗	Industry	Examples only
✦	Philanthropic	Examples only
◆	Informal	Examples only

Figure 2 highlights the relationship among the nine impact domains, the 11 network participant groups and the 13 network elements.

Figure 2 – Domains, participants, elements and the person
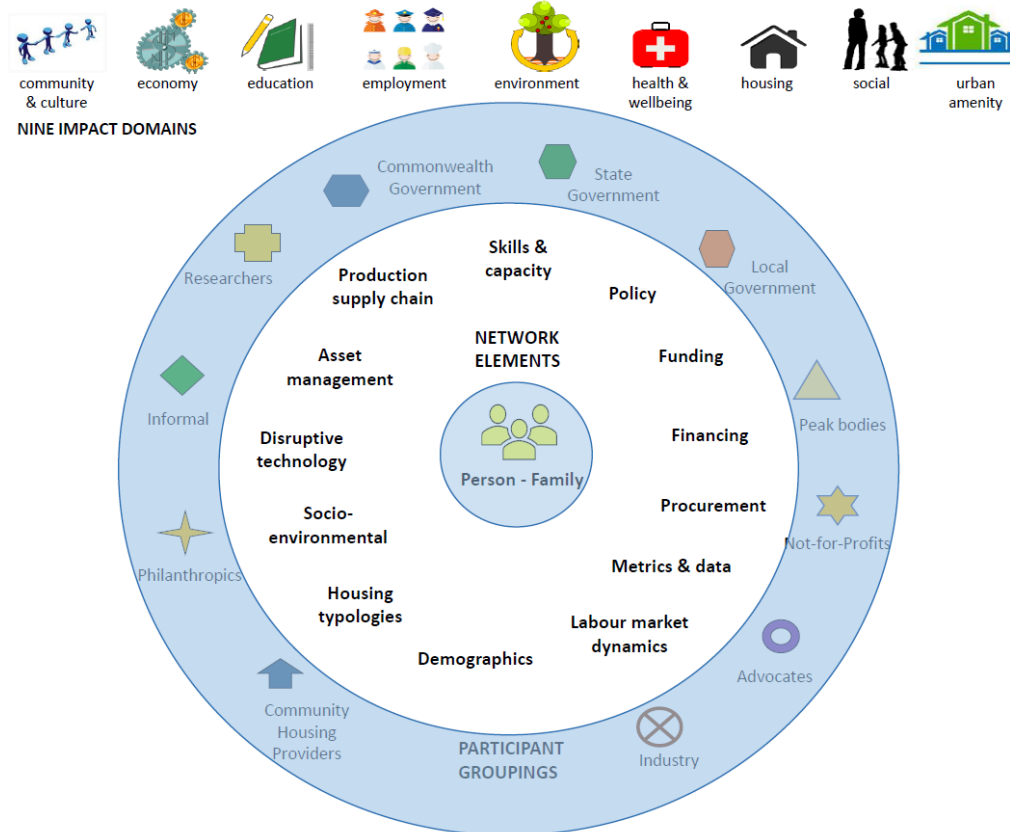
Two sets of 13 network maps have been developed, one for WA and one for Qld. The 2 focal participants (actors), around which the maps were built are: (i) WA Department of Communities (WA Communities); and (ii) QDHPW. Information for these maps has been compiled in reference tables, and was developed through: (i) research team expertise; (ii) desk top research; (iii) expert panel workshops in both Brisbane and Perth between May and July 2019; and (iv) feedback from partners on the draft maps.

It is important to note that such a view of the social and affordable housing system in both WA and Qld has not been undertaken to date. These maps are thus provided as a base from which to build a more detailed understanding of how this complex system functions. Further expert panel workshops and interviews would be required to enable greater understanding which could then inform the development of data rich maps using online network mapping software. The maps cannot be comprehensive due to the expansive nature of the network, but they are intended to provide a starting point for understanding. As such they could become part of a living process for organisations to engage with partners and the broader sector to better understand the changing nature of the network over time, given available funding and resources.

This subsequent analysis, in line with the project objectives identified in the SBEnrc P1.61 Project Schedule and Project Steering Group discussions, aims to identify: (i) identify strengths, weaknesses and critical junctions in the network; (ii) identify opportunities for system improvement for example, in relation to technical, capability, coordination, cultural or other issues; and (iii) make recommendations for policy, research and skills development in the sector.

This analysis has been informed by:

1. Knowledge gathered in the previous SBEnrc social and affordable housing program of research.
2. Desk top research of the network.
3. A limited review of relevant network mapping literature, based on available resources.
4. Input of expert stakeholders in the workshops held from May to July 2019.
5. Feedback on draft maps from research partners.

6. A limited review of literature relevant to system improvement.
7. A limited review of housing system literature in Canada, Singapore and the UK.
8. Insights and reflections from the research team throughout the process of developing these maps.

2.1.1   Clarifications

The following points of clarification are provided:

1. For social housing, QDHPW has a key policy role with on-the-ground delivery through the Department of State Development, Manufacturing Infrastructure and Planning (DSDMIP) and local government arrangements along with national settings such as the National Affordable Housing Agreement (NAHA).
2. For affordable housing, QDHPW plays more of a catalyst role, providing policy and some financial input. The key drivers at a state level are DSDMIP frameworks and national policy settings such as the National Housing Finance and Investment Corporation (NHIFC) and tax incentives.
3. Whether an organisation has been included as a peak body, industry association or an advocacy group has been based on their website details. The distinction is made to assist with the clarity of the maps and is sometimes grey. This does not broadly impact findings.

2.2   Why network mapping

The use of visualisation techniques to help explain complex networks is widely supported as it provides researchers and participants to see a graphical representation of the network being investigated. Hogan et al. (2007) note that illustrating links between participants provides more dependable results, engagement and understanding.

To help establish a process for this mapping, a review of literature focussed around network mapping was undertaken in late 2018. Limited literature was found which directly addresses mapping the social and affordable housing network. Considerable literature was found however in related and allied sectors. Based on this review, a hybrid *Social Network Mapping/Actor Network Theory (SNA/ANT)* approach has been used for this research. This approach enables us to identify the participants within this network in Australia, with an emphasis on the human and organisational actors. It enables a multilevel analysis of interactions and influences among multiple stakeholders within the network, to deliver on the research objectives previously stated. The following steps were thus undertaken:

1. Identify the focal actors i.e. WA Communities, and QDHPW.
2. Confirm the 13 elements for considering the network to facilitate mapping clarity.
3. Identify participants (nodes) and links (e.g. flows of knowledge).
4. Identify activities, connections and interactions among participants (especially with the individual/household).
5. Consolidate information into reference tables.
6. Develop draft maps.
7. Conduct expert panel workshops with key participants, and then draft map content with regards to coverage of participants and map clarity.
8. Finalise the network maps.
9. Analyse the maps to identify synergies, gaps and clashes in line with research objectives in terms of strengths, weaknesses and critical junctions in the network, opportunities for system improvement and policy, research and skills development priorities.

Mapping these networks can shed light on synergies that contribute to improving processes and outcomes, and to the gaps and clashes which impact on delivering effective outcomes. To effectively implement change an understanding of the complexity of the system, both formal and informal, is

required. Ultimately, the effectiveness of the network affects short-term outcomes, and medium and long-term impacts across both the social and financial realms. Benefits of mapping this system, and its many participants, includes:

1. Improved communications and sharing - a visual map can reveal system dynamics and show: key actors; boundaries of the supply chain; interrelationships and functional roles, flow of services, knowledge and information along the chain; linkage points; and gaps or blockages among participants.
2. Improved analysis through - for example, providing a starting point for new participants to the network, or for existing members to identify issues, challenges and areas for improvement.
3. Promotion of higher level collaboration - for example, in helping to overcome barriers to entry, bottlenecks, value sharing and supply-related constraints.

These current research outcomes (i.e. network maps and reference tables) also provide the opportunity for further, more analytical network analysis. On-line network mapping tools are very effective in imagining, and perhaps re-imagining, a process as a complex system containing various stakeholders and relationships. The purpose of such being to analyse stakeholder associated schedule risks and their cause-and-effect relationships. This methodology has been applied in various research areas, including a green building project (Yang and Zou 2014), waste management (Caniato, Vaccari et al. 2014), the construction industry (Zou 2006), information science (Otte and Rousseau 2002), and social science (Borgatti, Mehra et al. 2009).

Examples of how network/system mapping approaches and tools have assisted with improving network outcomes and impacts in allied housing-related sectors are listed below with detail provided in Section 6, Appendix A:

1. Australian building and construction industry – product system map.
2. Hong Kong construction industry - risk network and status centrality map.
3. Canadian housing system.
4. Energy efficiency in Australian housing – SNA.
5. Collaboration for industrialised building settings within the Australian housing supply chain – ANT.

Table 3 provides a summary of the benefits of network mapping in a housing delivery context, based on the examples provided in Appendix A.

Table 3 – Summary of benefits of network mapping in the housing delivery context

Housing Delivery Segment	Benefits
Planning	- Better information flow about customer requirements. - Improve flow of knowledge and resources to make all firms in the delivery supply chain more productive. - Greater coordination of design and assembly.
Construction	- Identifying and managing risks. - Better access to resources. - Provide a broader conceptual view of the building activity - Utilising resources. - Strengthening the weakest link to address bottlenecks in the chain. - Improving specific links between firms to address issues at identified bottlenecks.
Marketing and sales	Creating new or alternative links in the chain, such as promoting local firms to enter global supply chains.

	• Linking to new, additional lead firms.
Occupancy and management	• Uncover sources of conflicts as well as potentials for cooperation
	• Facilitate knowledge exchange and learning processes
	• Develop visions and strategies to achieve common goals.

3   NETWORK ELEMENTS - BACKGROUND

As discussed above, the element-based approach to the maps is intended to build understanding around the breadth of discussions which need to occur. This section: (i) highlights some of the key issues identified in the course of this research; and (ii) provides some additional background for each of the 13 elements. This then informs the findings and recommendation provided in Section 5 of this report. Issues highlighted include those which emerged during map development and refinement (including expert panel comments and discussions), and desk top research throughout the course of this project.

3.1   Element 1 – Policy drivers and players

The following key issues are highlighted for this element:

1. *The network maps reveal the complexity of the system, and can potentially help policy makers better understand the breadth of change which needs to be addressed, beyond supply and demand, and economic value. The complexity also demonstrates the challenges which will be faced in building consensus for a national housing strategy.*
2. *There is a high degree of permeability between state and civil society policy-making as evidenced by the number of non-state/civil society players represented in the network maps.*
3. *Policy diffusion without national leadership, a national strategy, and a national body specifically representing those in housing crisis, tenants, and homeowners, is impeding the way in which a strong bi-partisan national strategic focus can be developed.*
4. *Co-design among the three tiers of government, CHPs and the private sector, and among asset providers, service providers and advocates are considered an important way of providing person centred, place-based solutions.*

The 2019 ANZ Core Logic *Housing Affordability Report* highlights several issues around supply and demand and the economy, including housing affordability, intergenerational inequity, interest rates, access to credit and persistently low income growth remains as ongoing challenges for policy makers (ANZ and Corelogic 2019). Broader issues, as highlighted by Dalton (2009), also need to be considered in the current housing policy environment. These include:

1. There is permeability between state and civil society policy-making, as evidenced by the number of non-state/civil society players represented in the network maps including the many peak bodies and industry associations.
2. Policy diffusion, without national leadership, and without a national association body specifically representing those in housing crisis, tenants, and homeowners, further marginalises broad reaching housing policy development beyond supply and demand scenarios.
3. The rise in popularity of non-for-profit housing and co-operatives 'because costs could be contained by devolving responsibility and encouraging volunteer labour and sweat equity'.
4. Issues of housing and labour market income distribution, demographic changes, urban economies, and social cohesion need consideration.
5. The limited capacity of state agencies to make an impact 'in terms of broader economic policy making in a national and global context'.

Many individuals and organisations across Australia have been calling for a national housing strategy or plan (Community Housing Industry Association (CHIA) 2018, National Shelter 2018). The complexity of the network maps demonstrates the challenges which will be faced in building consensus for such a national strategy. Whilst there is now a Commonwealth Minister and Assistant Minister for Housing, responsibilities for ensuring an effective housing system remains spread across many departments (including Social Services and Human Services and those representing Indigenous Australians). In the

shadow ministry there is again several ministries with responsibilities which impact on housing. This policy diffusion is impeding the way in which a strong bi-partisan national strategic focus can be developed (Dalton 2009; Lawson, Dodson et al. 2019) To compound this, the states and territories have a primary role in the delivery of public housing, and setting the environment for community housing, and affordable rental and private housing, with local government having a primary role in zoning and planning mechanisms (Table 4). A bi-partisan approach to the development of housing policy at a national level, and in many states, has not existed in this country for many decades, with policy changes often linked to political cycles. Much of the impact of housing policy cannot be accounted for in the short term, with impacts not becoming evident for several years, or even inter-generationally. This makes it difficult to track and understand the impact of policy decisions.

Table 4 – Snapshot of housing-related responsibilities by tier of Government

Tier of Government	Current primary responsibilities and powers*	Additional recommended responsibilities and powers
Common-wealth	Tax arrangements Building codes and regulation (Australian Building Codes Board) Funding – e.g. National Housing Finance and Investment Corporation, Commonwealth Rent Assistance Social security payments	Policy leadership – long term housing plan Leadership aboriginal housing Leadership disability housing Expanded/updated codes and regulations to match changing environment Aboriginal housing funding Living wage/rent National data repository to enable social value bank National CHP regulation
State	Taxes and duties Planning and development Public housing supply CHP regulation Private rental regulation Indigenous community housing Social support infrastructure Transport infrastructure	Value capture and inclusionary zoning on all government land Rental security regulations
Local	Zoning Planning mechanisms Urban and community infrastructure	Planning mechanisms to protect affordable housing Encourage diversity of stock Partner with CHPs land supply

* This is not definitive as the situation varies based on partnerships and other arrangements

Further key issues identified in the course of this and previous SBEnrc social and affordable housing research include:

1. The need to prioritise funding across the housing network, due to the contestatory and competitive funding environment which exists between the Commonwealth, and State and Territories, is disadvantaging the most vulnerable in our society, and impacting on the functioning of the broader housing system.
2. Embedding co-design – among (i) the three tiers of government, CHPs and the private sector, and (ii) asset providers, service providers and advocates is needed to support a person centred, place-based approach to housing policy making and provision.
3. Evidence-based policy development and evaluation is needed to be able to promote investment and report return on investment, to both commonwealth and state Treasuries and private/institutional investors.
4. Recognition of the medium to long term (often inter-generational) impact of the lack of secure housing is needed.

5. There is a need for a non-commodified housing system with housing classed as both social and economic infrastructure (Infrastructure Australia 2019, Queensland Department of State Development, Manufacturing, Infrastructure and Planning (QDSDMIP 2019).
6. Clarity in the policy related to housing is especially important for the most vulnerable community members, including people with disability and Indigenous Australians.

The Queensland Council of Social Services (QCOSS) housing policy theory of change is provided as an example of a structured process for addressing these complex and currently intractable problems (Figure 3).

Figure 3 – QCOSS Housing policy Theory of Change
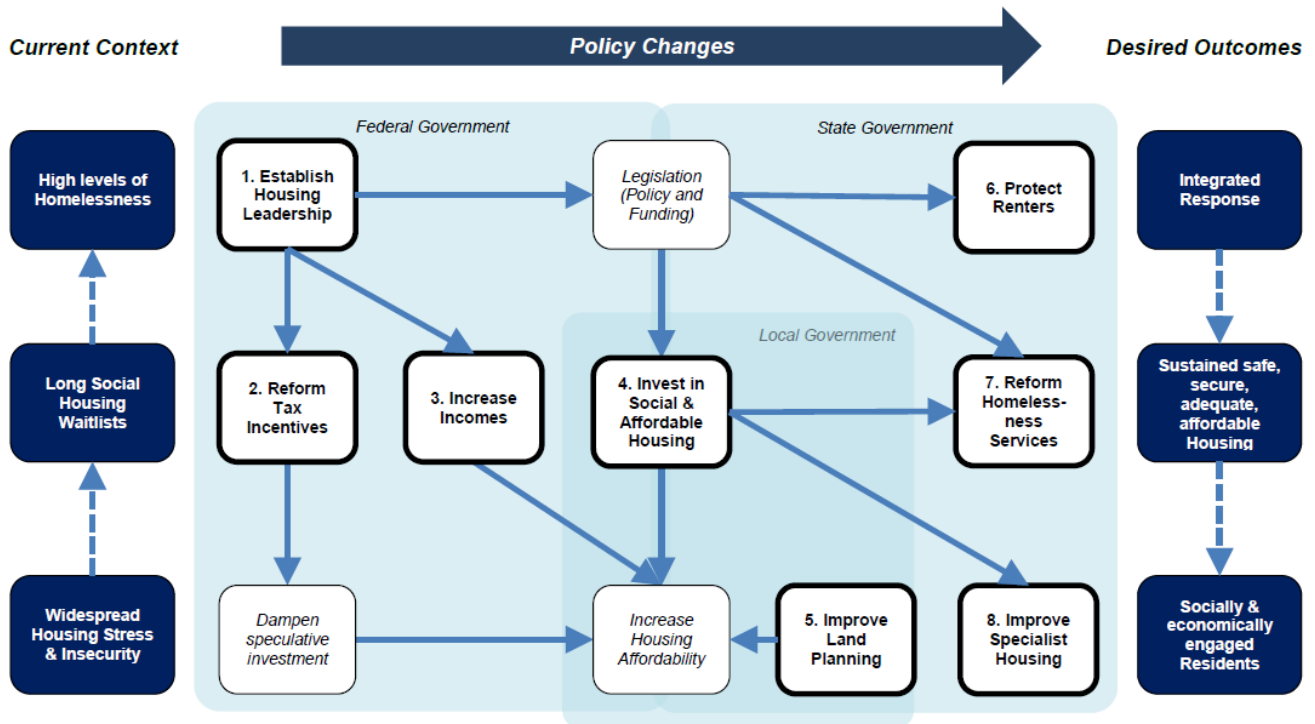
Source: Queensland Council of Social Service 2018a

Recommend further reading relevant to this element includes:

1. Commonwealth of Australia (2017). Remote Housing Review: A review of the National Partnership Agreement on Remote Indigenous Housing and the Remote Housing Strategy (2008-2018). Commonwealth of Australia, Canberra.
2. Habibis, D., R. Phillips and P. Phibbs (2019). Housing policy in remote Indigenous communities: how politics obstructs good policy, Housing Studies, 34:2.
3. Power, E. and K. Mee (2019) "Is this a housing system that cares? That's the question for Australians and their new government." *The Conversation*.
4. Westbury, N. and M. C. Dillon (2019). *Overcoming Indigenous exclusion: very hard, plenty humbug*. Centre for Aboriginal Economic Policy Research, Australian National University: Canberra.

3.2   Element 2 – Funding

The following key issues are highlighted for this element:

1. *The taxation treatment of housing in Australia is an issue highlighted by several network participants.*

2. *Family and kinship support are important in this element.*

It is well understood that government alone cannot cope with the increasing demand for social housing. Hence, it is imperative we look at innovative ways to fund this need with the collaboration of private institutional investors. Governments in Australia can take a proactive role in addressing issues which fall into their jurisdiction regarding long-term policy setting, transparency and risk. Different social and affordable housing projects also require different funding mechanisms, that is, some instruments work best for individual projects, while others perform better on a city, regional or national level.

Several organisations address the tax treatment of housing in Australia and its impact of the housing system and affordability:

1. Reforms of capital gains tax and negative gearing provide benefits to people who already own houses leaving the low/middle income groups in the expensive rental market (National Shelter 2018).
2. CHPs supplied 3.3 percent of Australia's rental housing (CHIA 2018). Thus, eliminating bias in the taxation system towards social and affordable housing development is an important way to attract more CHPs to the sector. Moreover, CHIA NSW note that 'channelling social and affordable housing investment through not-for-profit housing organisations maximises the impact of the taxpayer's investment because CHPs forego the usual developer margin and use taxation concessions to generate 25 to 30 percent additional supply' (CHIA NSW 2018).
3. The 2018 Grattan Institute report on housing affordability discusses tax settings including impacts on how they encourage people to invest in housing, and discourage people from downsizing, increasing demand for well-located houses (Daley and Coates 2018).
4. The 2018 *Housing Policy Review* report from QCOSS discussed this in the context of housing being commodified rather than viewed as a human right (QCOSS 2018).
5. The 2018 Australian Housing and Urban Research Institute (AHURI) report *Pathways to Housing Tax Reform*, proposed a staged set of housing tax reform around: (i) income tax treatment of housing assets; (ii) asset portfolio decisions of Australian households; and (iii) pathways to state housing and land tax reform (Eccleston, Verdouw et al. 2018).

A further issue raised throughout this program of research is the need to provide the person or household with a stable home that does not change depending on the type of assistance they are receiving at a given point in time (See Section 7.1 for a snapshot of Australian Government funding schemes).

Recommend further reading relevant to this element includes:

1. Jayawardana, N. I. and J. Kraatz (2018). *Funding and Financing Approaches*. SBEnrc: Brisbane, Australia.

2. Kraatz, J. and N. I. Jayawardana (2018). *Procuring social and affordable housing*. SBEnrc: Brisbane, Australia.

3.3   Element 3 – Financing (private, institutional and individual)

The following key issues are highlighted for this element:

1. *Risk is considered to be a major component in restricting large-scale investment.*

2. *Reduced economies of scale for providers, a perception of increased credit risk, below market returns on rental yields are all making investment in housing less attractive.*

3. *Long term measures, consistent policy direction, stable regulatory environments and reliable cash flows are all important to investors.*

4. *Several innovative models for attracting funding are available.*

5. *Rental system reform is needed to address trend of people staying in the rental system for longer periods.*

6. *Social housing being considered as an infrastructure class an important step to considering housing as vital economic and social infrastructure.*

There has been debate over the past few years as to how substantial volumes of private finance could be leveraged into this sector. The most widely suggested approaches include: the use of retail investment vehicles; tax relief targeting CHPs; rent-to-buy models; and shared equity models.

Risk is considered to be a major component in restricting large-scale investment and has a significant impact on the various investment hurdle rates, however under the right conditions, risk is an imputed cost/rate which may never be realised. Therefore, if these risks were removed the required investment rate would be substantially reduced, and potentially the costs associated with various housing related activities and their externalities would also be reduced.

Social Ventures Australia (2017) highlight several challenges in attracting private capital: (i) reduced economies of scale for providers; (ii) a perception of increased credit risk from institutional investors limiting access by CHPs to low-cost capital over longer terms; (iii) rental yields which are significantly below market returns making it a less attractive investment; (iv) the need for stable regulatory environments and reliable cash flows; and (v) short term measures and inconsistent policy direction which creates uncertainty.

Providing only demand side subsidies is not sufficient to tackle the widening gap between the demand and supply of funding and finance. This could be addressed to some extent through: a fairer and more secure renting system which does not assume renting is a pathway to home-ownership (National Shelter 2018); commonwealth government participation at all stages in building social and affordable housing, including identifying shortfalls in the existing financing mechanisms; and better accounting for future demographic and technology changes. This requires attention to all 13 elements discussed in this report when making and evaluating strategy, policy and budgets.

Of note also is that social housing is now considered as an asset class by the Queensland Government (QDSDMIP 2019b) and Infrastructure Australia (Infrastructure Australia 2019). This is an important step forward for housing to be considered in the broader context of fulfilling value to the person/household and society.

See Section 7.2 and 7.3 for addition detail of some Australian financing schemes and approaches.

Recommend further reading relevant to this element includes:

1) Jayawardana, N. I. and J. Kraatz (2018). *Funding and Financing Approaches*. SBEnrc: Brisbane, Australia.

2) Kraatz, J. and N. I. Jayawardana (2018). *Procuring social and affordable housing*. SBEnrc: Brisbane, Australia.

3.4 Element 4 – Procurement and delivery

The following key issues are highlighted for this element:

1. *The shift in delivery to that of person-centred and place-based delivery approaches continues, and remains as a significant shift in procurement in recent times.*

2. *Addressing unconscious bias in procurement systems is critical for person centred and place based solutions.*

A place-based approach is defined as 'collaborative, long-term approaches to build thriving communities delivered in a defined geographic location' (Dart 2018, p.1). This approach is now being used by state housing agencies to respond to complex and challenging social issues. The Place-based Evaluation Framework, developed by Dart, includes 'instruction for multi-site PBAs (place-based delivery approaches), evaluation scoping, collective impact, cultural capability, theory of change, key evaluation questions, principles, indicators, measurement, ethical conduct, resourcing, reporting, and a theoretical overview of complexity aware evaluation approaches'. The *conceptual cube* (Figure 4) provides a guide to the interplay of elements when considering place-based solutions.

Figure 4 – Conceptual cube - the interplay of elements in place-based solutions
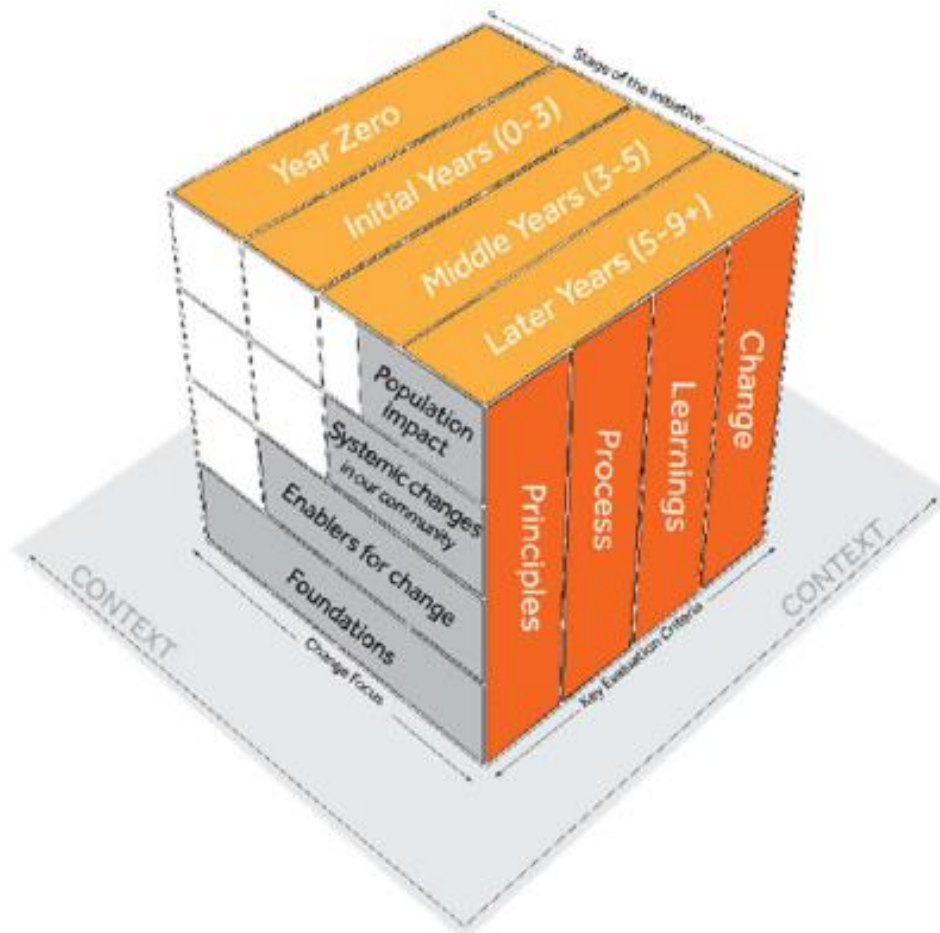
Source: Dart 2018, p.2.

In a person-centred delivery environment, cultural proficiency within and across an organisation is important (Figure 5), requiring 'an organisational culture that actively challenges and addresses unconscious bias towards people from culturally and linguistically diverse (CALD) backgrounds with disability and their communities' (Katrivesis and Robertson 2018, p.1) (Figure 5 – Key elements of

cultural proficiency – good practice model Figure 5). Such an approach is needed to ensure a diverse and inclusive approach to procuring social and affordable housing, throughout the network, and not just limited to those organisations involved specifically in the delivery of housing to specific cohorts.

Figure 5 – Key elements of cultural proficiency – good practice model

Source: Katrivesis and Robertson 2018, p.1.

In a 2012 working paper Martel, Harley et al. 2012 review procurement options used in remote Indigenous communities in both the Northern Territory (NT) and WA through three case studies. The paper proposed the following criteria as a guide to the selection of appropriate procurement methods: (i) the apportionment of risk and responsibilities; (ii) clarity and tangibility i.e. flexibility and ease of variation in dealing with uncertainty; (iii) the importance of timing and timelines; (iv) ensuring cost competitiveness and enabling cost certainty; (v) the ability to incorporate 'non-building or non-housing' outcomes; (vi) ensuring participation in the process and managing expectations; and (vii) addressing design and building integration, buildability and quality issues.

Recommend further reading relevant to this element includes:

1) Kraatz, J. and N. I. Jayawardana (2018). Procuring social and affordable housing. SBEnrc: Brisbane, Australia.

3.5 Element 5 – Metrics, indicators and data

The following key issue is highlighted for this element:

1. *Using data to help determine/demonstrate the long-term social and economic benefits of housing and housing policy is crucial.*

There are many valuable sources for relevant data and its interpretation (including tools) in Australia. Some key examples include:

1. Australian Institute of Health and Welfare (AIHW), Housing Assistance in Australia 2018 - annual document (Australian Institute of Health and Welfare 2018)
2. AIHW Housing Data Dashboard - https://www.housingdata.gov.au/
3. AIHW National Social Housing Survey - https://www.aihw.gov.au/about-our-data/our-data-collections/national-social-housing-survey
4. Australian Bureau of Statistics (ABS) Survey of Disability, Ageing and Carers - https://www.abs.gov.au/ausstats/abs@.nsf/mf/4430.0
5. ABS Housing Occupancy and Costs - https://www.abs.gov.au/ausstats/abs@.nsf/mf/4130.0
6. ABS Socio-Economic Indexes for Areas - https://www.abs.gov.au/websitedbs/censushome.nsf/home/seifa
7. The Household, Income and Labour Dynamics in Australia (HILDA) Survey - an important source of longitudinal data gathered from a household-based panel study - https://melbourneinstitute.unimelb.edu.au/hilda
8. The Australian Social Value Bank is developing an online value calculator tool which uses cost-benefit analysis to help measure social value https://asvb.com.au/asvb-helps-measure-social-impact/calculate-social-value-with-asvb/

Two international examples of how data can be effectively used to address the social and economic benefits of housing include:

1) Wellbeing valuation - key sources internationally include HACT UK - https://www.hact.org.uk/ and the Organisation for Economic Co-operation and Development (OECD) - http://www.oecd.org/statistics/measuring-well-being-and-progress.htm . In the UK, HACT has developed a well-being valuation analysis method which enables community housing associations to measure the impact of their investment in terms of well-being. This method addresses the impact of the broader non-housing benefits of access to safe and secure housing on an average person's well-being, and places a dollar value on these benefits.
2) A Living Standards Framework has recently been developed by New Zealand Treasury. This enables them to determine 'the likely effects of their policy choices on New Zealanders' living standards over time' through an 'intergenerational wellbeing approach' (New Zealand Treasury).

Recommend further reading relevant to this element includes:

1) Kraatz, J. and G. Thomson (2017). *Valuing Social Housing - Final Research Report and Attachment A*. SBEnrc: Brisbane, Australia.

3.6   Element 6 – Labour market dynamics and housing

The following key issues are highlighted for this element:

1. *There is a need to better understand housing impacts relating to underemployment and casual workers; to building a better understanding lived experience in terms of access to housing;*

2. *Continuity of 'home' is needed as people transition from emergency to social housing to better enable engagement with all aspects of life including employment.*

3. *A shift in government spending away from tax and benefit incentives that favor homeownership in favor of tenure-neutral, portable and progressive housing allowances.*

The 2017 Australian Housing and Urban Research Institute (AHURI) report *Housing tenure, mobility and labour market behaviour* examines issues of geographic mobility, reservation wages[5], and job

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[5] The minimum wage that an unemployed individual finds acceptable (AHURI 2017).

search behaviour. (Whelan and Parkinson 2017). A 2019 World Bank report on housing mobility notes that high-productivity jobs are often concentrated in metropolitan areas. With much of household wealth tied up in immovable assets such as land and housing, this can contribute to wealth inequality and homeowners being 'anchored' to a location independent of its prosperity (Inchauste 2019). This report makes the following recommendations to improve labour market dynamics and housing:

1) Create enabling conditions to allow the housing supply to expand - suggested measures include: encouraging new construction or the redevelopment of existing structures by permitting appropriate floor-space ratios, building heights, and density in specific target zones; streamline processes to speed up land-use approval and permitting; improving property rights and the land administration system; and developing governance structures that ensure efficient coordination mechanisms across financing, urban planning, infrastructure development, land-use regulation, building codes, delivery and contracting approaches is critical.

2) Use public finance more strategically – calling on governments to emphasize strategic investment projects of greenfield housing with transportation links to facilitate travel to the centres of economic activity.

3) A shift in government spending away from tax and benefit incentives that favour homeownership in favour of tenure-neutral, portable and progressive housing allowances would improve redistribution and efficiency.

4) Governments could consider providing housing allowances for targeted groups, such as the youth, potentially making benefits conditional on job search responsibilities.

5) Improve monitoring and dissemination of housing data and local-level information – through government providing better information on housing prices, employment, wages, housing policies and regulations, and other indicators would help to inform policy makers.

Recommend further reading relevant to this element includes:

1) Haffner, M. E. A. and K. Hulse (2019). "A Fresh Look at Contemporary Perspectives on Urban Housing Affordability." *International Journal of Urban Sciences.*

2) Mulliner, E., K. Smallbone and V. J. O. Maliene (2013). "An Assessment of Sustainable Housing Affordability Using a Multiple Criteria Decision Making Method." *Science Direct* 41 (2): 270-279.

3.7 Element 7 – Changing demographics

The following key issues are highlighted for this element:

1. *There is a high degree of awareness across the network of the changing demographics of those in need of social and affordable housing. Using this knowledge to develop and deliver innovative policies, assets and services now and into the future is critical.*

2. *Four key changing demographic issues in Australia include: (i) the population is ageing; (ii) household composition is changing; (iii) cities are key growth areas; and (iv) home ownership in Australia is declining.*

The 2018 *SBEnrc Changing Demographics and Typologies* research report highlighted four key demographic changes occurring in Australia (Kraatz, Baro et al. 2018): (i) the population is aging; (ii) household composition is changing; (iii) cities are key growth areas; and (iv) home ownership in Australia is declining. That report noted 'the changes in demographics identified are largely due to: longer life expectancy; migration (including of Indigenous households to urban locations); and growing household diversity (e.g. one person and multigenerational households)'. These general trends are altering the composition of households, and affecting lifestyles and the demand for appropriate

housing. In terms of social and affordable private rental, these trends are affecting the capacity of governments and housing providers to effectively address specific needs.

Recommend further reading relevant to this element includes:

1. Livable Housing Australia (2012). *Livable Housing Design Guidelines*. Livable Housing Australia: Australia.

2. WA Department of Planning Lands and Heritage (WADLH) and WA Planning Commission (WAPC) (2016). *WA Tommorrow Population Report No. 11 - Medium-Term Age-Sex Population Forecasts 2016 to 2031*. WADLH and WAPC: Perth, Australia.

3. Australian Institute of Health and Welfare (2019). P*eople with disability in Australia 2019 - in brief.* AIHW: Canberra, Australia.

3.8   Element 8 – Housing typologies

The following key issues are highlighted for this element:

1. *Peak bodies are represented at all levels. Of note however is the lack of a national peak body representing those who are homeless, tenants and homeowners.*

2. *Many innovative models exist for introducing diversity into the housing system to address niche needs, for example, tiny housing, Housing First, the Nightingale model and the use of vacant infrastructure.*

3. *It is important to link thinking around housing typologies with the changing demographics of the Australian population.*

The SBEnrc C*hanging Demographics and Typologies* report highlighted several key needs in terms of changing housing typologies (Kraatz, Baro et al. 2018):

1. More diverse housing typologies and approaches are needed which: are affordable (reduce up-front costs); are appropriate (respond to current and emerging cohort demographics); ensure affordable living (i.e. energy, water and transport); are resilient (address climate adaptation); and address community connectedness.
2. Indigenous housing for remote and very remote Indigenous communities which addresses environmental, cultural and spiritual needs.
3. Appropriate housing (in the right location) for those with a disability.
4. In urban centres higher density infill, more affordable community and private rental housing and inclusionary zoning targets for both social and affordable housing.
5. Responsive planning systems.

The AIHW publication, *People with a Disability in Australia*, also provides valuable insights in terms of housing typologies (2019). Further to this Power and Mee seek to shift the conversation to one of homes as a place for 'care'. To this end, they note that that 'private rental legislation typically does not require landlords to agree to property modifications to meet the needs of a person with disability or ageing body, even when tenant-funded' (Power and Mee 2019).

Innovative approaches to housing typologies of note include:

1. Tiny housing - a niche solution gaining some support across Australia. Launch Housing's tiny house initiative is providing 57 tiny homes on vacant government land for those experiencing chronic homelessness (Launch Housing 2019). This initiative has recently received additional funding through National Australia Bank commitment of AUD2billion to address homelessness (National Australia Bank 2019).

2. <u>The use of vacant infrastructure</u> - The above example also demonstrates the use of vacant government infrastructure to provide housing (Minister for Consumer Affairs, Gaming and Liquor Regulation 2019).

3. <u>Co-design</u> brings together 'people directly affected by an issue in order to create solutions, alongside others who are trying to address the issue (e.g. professionals, community workers, academics)' (Australian Centre for Social Innovation 2018). Sutton-Long, Aagaard et al. (2015) provide valuable insights into the challenges and opportunities for co-design, following on from workshops conducted with service providers in Australia, for National Disability Services (Figure 6). Some issues include: barriers associated with infrastructure and bureaucracy; uncertainty regarding the NDIS; public perceptions; self-limiting aspirations; and the ability to provide a consistency of service. This is a time-intensive process, but this in itself should not limit thinking on how co-design can be better incorporated into future thinking, policy making and delivery.

Figure 6 – Co-design for community inclusion

Co-design is a divergent and convergent process. It requires exploration into the problem, experimentation into possible solutions and enterprise to action the decision and reflect on it.

Explore		*Experiment*		*Enterprise*	
UNDERSTAND THE PROBLEM	REFRAME THE PROBLEM	EXPLORE POSSIBILITY	MAKE & TEST THE DECISION	TAKE ACTION	REFLECTION
What do you know about the problem? How is it impacting on the people involved? What do you need to learn about it? Go learn it!	What is the real challenge that needs to be addressed? What outcome do you need to achieve for the people involved and/or impacted?	What are the many options for addressing this opportunity? What are the constraints and outcomes the solution needs to address? Use these to evaluate the options.	Create a tangible example of the solution. Test it with the people it will impact to learn about what works and what can be improved about the solution.	Implement and communicate the decision. Who are you communicating to? How do they prefer to be communicated with? What do they need to know? What do you need them to do?	Learn from the decision. What happened? Was it an appropriate solution? What worked? What could have been improved? What next?

Source: Sutton-Long, Aagaard et al. 2015, p.20.

4. <u>The Housing First model</u> - places an immediate priority on providing safe and permanent housing for people experiencing homelessness. Once this is achieved the more complex needs are addressed through the efforts of multidisciplinary teams including support workers with expertise in services like drug and alcohol counselling or mental health treatment (Australian Housing and Urban Research Institute 2018). Mission Australia is an advocate of this approach, acknowledging that 'addressing underlying and inter-related issues such as mental health are far more effective when someone has safe and stable housing as a starting point' (Mission Australia 2019).

5. <u>Higher density development</u> – Newton, Meyer et al. (2017) discuss the current transition from suburban to urban living in Australia including benefits for ecological footprint. The importance of linking this to demographics is needed however, when placed alongside findings of a recent AHURI survey focussed on older Australians highlights: (i) around two thirds of older

Australians want to live in a standalone house; (ii) the next two most popular options are an attached dwelling such as a townhouse or a low rise apartment of three storeys or less; (iii) very few older Australians want to live in a high rise apartment or granny flats; and (iv) 70 percent reported their current housing meets their longer-term housing aspirations (James, Rowley et al. 2019).

6. The Nightingale housing model - provides a system and process for innovative housing provision aimed at addressing affordability, transparency, sustainability, deliberative design and community contribution (Figure 7) (Nightingale Housing 2019). There is a strong element of consultation, requiring time and effort beyond that typically undertaken in current models. Several examples are now completed or in development across Australia to provide affordable housing options.

Figure 7 – The Nightingale housing model
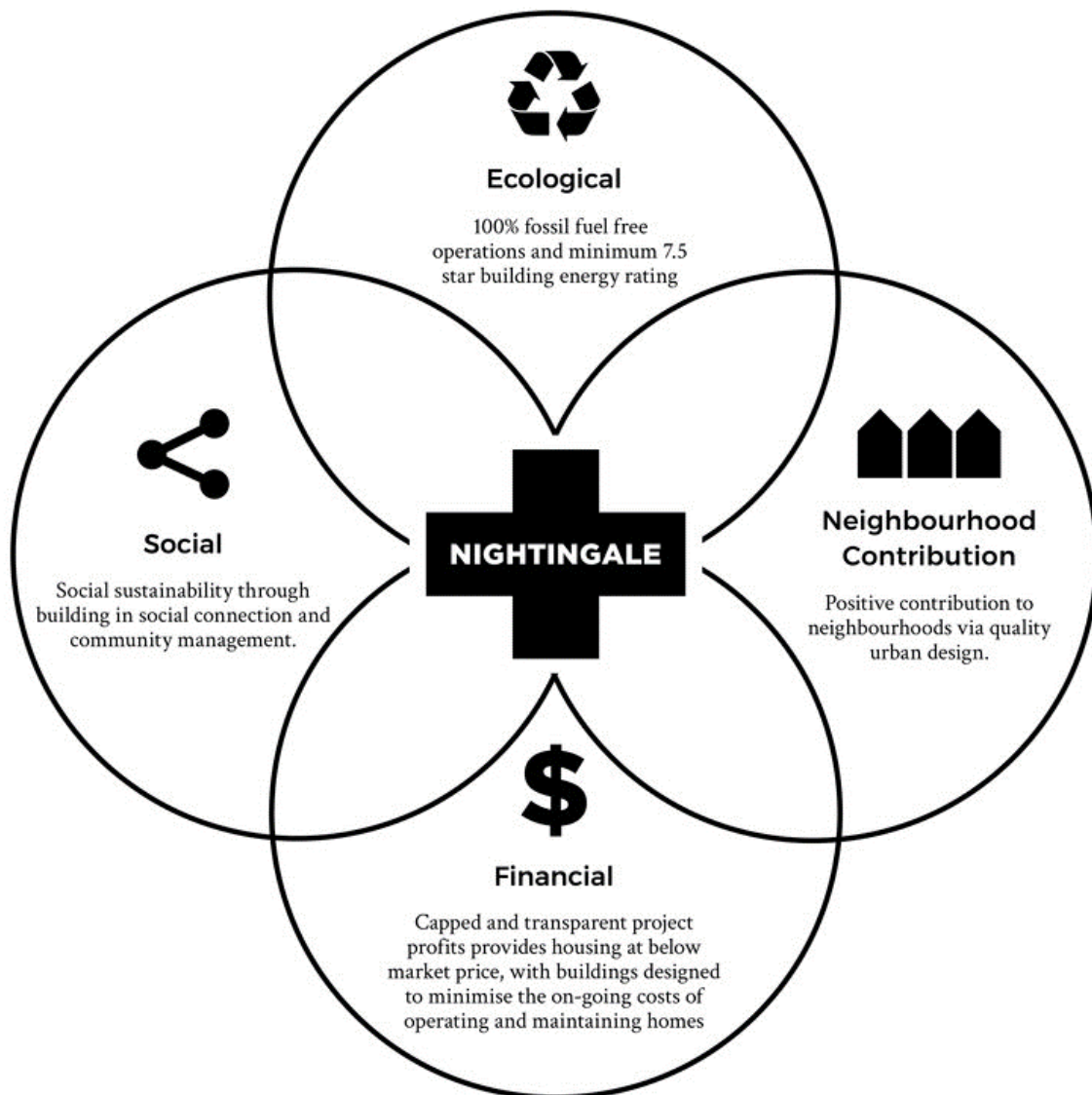
Source: Nightingale Housing 2019

Recommend further reading relevant to this element includes:

1) Council to Homeless Persons (2018). *Housing First - Permanent Supportive Housing Australia – ending chronic homelessness* (http://chp.org.au/wp-content/uploads/2018/06/FINAL-180606-Housing-First-2018-6-June.pdf).

3.9   Element 9 – Socio-environmental systems

The following key issue is highlighted for this element:

1. *The need exists to integrate previously disparate areas of research and policy making to better respond to current needs. Developing 'usable' knowledge, coordinating policy across traditional government, and focussing on long-term place based solutions are all a part of this approach.*

These systems aim to integrate previously disparate areas of research and policy making to better respond to current needs. Developing 'usable' knowledge, coordinating policy across traditional government, and focussing on long-term place-based solutions are all a part of this approach. This approach broadly combines natural resources and the human social system, but can also address governance, political systems, social institutions, human well-being, regulation, cultural resources and the like. (Turner, Esler et al. 2016). Such a systems approach can assist decision makers 'to analyse the complex, nonlinear interdependencies that characterize interactions between biophysical and social arenas' to enable better integration of knowledge in line with provider more broad based solutions (Pulver, Ulibarri et al. 2018, p.22).

The issue of accessible housing is one example where individual wellbeing, and the physical, social and cultural environments intersect in a profound manner. Two recent commitments by the Qld Government reflect such inter-relationships: (i) to construct 50 percent of new public housing dwellings according to the Liveable Housing Design Guidelines gold or platinum-level standards is an important step which has the potential to increase the supply of accessible and adaptable housing in that state (QDSDMIP 2019a); and (ii) including social housing as a part of the *Strategy for Social Infrastructure* (QDSDMIP 2019b).

One example of a contextualised framework to help build understanding is provided in Section 7.4. Recommend further reading relevant to this element includes:

1. Mansfield, L., N. Daykin, C. Meads, A. Tomlinson, K. Gray, J. Lane and C. Victor (2019). *A conceptual review of loneliness across the adult life course (16+ years): Synthesis of qualitative studies*. What Works Centre for Wellbeing: London, UK.

2. What Works Centre for Wellbeing. (2019). "Lonliness Conceptual review."   Retrieved 15 Nov. 2019, from https://whatworkswellbeing.org/product/loneliness-conceptual-review/

3. Powell, A., A. Meltzer, C. Martin, W. Stone, E. Liu, K. Flanagan, K. Muir and S. Tually (2019). The construction of social housing pathways across Australia. Melbourne, Australia.

3.10   Element 10 – Integrated, shared and disruptive technologies

The following key issue is highlighted for this element:

1. *Benefits of the adoption of new and potentially disruptive technologies need to be widespread, extend across cities and into regional areas, and deliver on social equity and justice outcomes.*

Disruptive technologies are defined as 'innovations that displace existing technologies or create new industries and continue to mature and provide efficiencies that are transforming the global economy' (Australian Government Trade and Investment Commission and Australia Unlimited 2017, p.1). Embracing these new and disruptive technologies can provide opportunities for greater engagement and responsiveness if well-managed. They can also disenfranchise segments of society so again need broad policy and delivery actions.

WA Communities highlighted the need to continue to safeguard and consider the interests of all stakeholders. They highlight the need for housing practitioners and policy makers to ensure that

benefits are widespread, extend across cities and into regional areas, and deliver on social equity and justice outcomes (WA Communities 2018).

Following are some examples of the new technologies and their potential application/relevance to the housing network (Australian Government Trade and Investment Commission and Australia Unlimited 2017):

1. Additive manufacturing - the process of joining materials to make objects from 3D model data. This can have potential use in the off-site manufacture of housing

2. Automation - the use of machines and technology to make processes run on their own without input from an operator. These can contribute to more efficient manufacture of building products along with off-site manufacturing of building components or housing.

3. Blockchain – or distributed ledger technology, and 'builds on a consensus of replicated, shared and synchronised digital data across multiple sites, countries or institutions. It allows for the provision of a secure and trustworthy record of transactions between parties that can prove where information has come from and gone to' (p.13). Some of the early identified uses for blockchain in the construction industry include in contract management, supply chain management, and equipment leasing (Wang, Wu et al. 2017). Other potential future application could be in providing more direct, and importantly secure links between those in need of housing and those with available housing.

4. Immersive simulation technologies - includes 3D/4D technologies and virtual and augmented reality to place users in a virtual environment. This technology is now in use in the gaming sector, in virtual worlds, but could be equally used to design and test accessible housing and or precincts prior to construction.

5. Internet of Things (and Industrial Internet of Things) – connects data devices, people and processes to the internet. Digital data can be analysed and used to drive new applications, services and efficiencies. This can be (and is in parts) used for smart water and power systems, e-health solutions, and for personalised contactless payment methods, which can potentially contribute to lower on-going housing bills.

Some examples which highlight the type of disruption that these technologies may incur are Airbnb, city-based digital planning tools, and data sharing tools (Pettit, Liu et al. 2018). Pettit et al. also note the competing trends of data centralisation and distributed technologies, especially in relation to privacy, accessibility and subsequent innovation potentials. One instance of this is the real-time vacancy listing for social housing access (where blockchain technologies may be of use). The authors highlight two examples with the potential to impact policy development through access to fine scale data:

1. AskIzzy – a website facilitating access to housing, meals, healthcare, counselling, legal advice, and addiction treatment advise (Infoxchange 2017).
2. Wattblock - energy efficiency tool for strata title housing.

Issues to be addressed include: skills gaps; lack of policy and regulation with regards to digital planning tools; opportunities for two way flows of information between 'contributors and collators'; software licencing costs and limitations on what software is supported; need for pilots and test beds; need for a more agile policy setting; and the potential for further isolation and disengagement among vulnerable communities (Clark and McIntyre 2015).

Both the Qld and WA governments have digital strategies (Digital1st and Digital WA respectively). The former aims to 'diversify our supplier base, create new testbeds to co-design digital solutions and reduce the burden of doing business with government' (Queensland Department of Innovation 2017). The latter aims to 'inform the development of individual agency business strategies to ensure efforts are aligned across the public sector to deliver the maximum possible benefit to the community' (Western Australia Office of the Government Chief Information Office 2016).

Recommend further reading relevant to this element is:

1. Wright, D. (2017). "How the blockchain will transform housing markets". 13 April 2017. The Conversation.

3.11 Element 11 – Housing asset management

The following key issues are highlighted for this element:

1. *Funding and financing needs to extend to beyond the capital phase of construction to ensure that whole-of-life liveability and maintenance issues are better addressed.*

2. *Issues of natural disaster planning and responsibilities across the public, NFP and private sectors need to be better addressed.*

Asset management is 'a systematic process of planning, acquisition, transfer, re-organisation, improvement and management of physical assets in a cost-effective way' and needs to consider a broad array of issues including social, economic, design, and business issues to ensure effective outcomes (Kenley, Chiazor et al. 2009, p.1).

Several issues emerged in the course of the workshops and analysis phases:

1. Capital cost only funded - Commonwealth funding (e.g. stimulus funding) and bank financing often provides for the capital cost of residential construction only, and does not account for items such as on-going maintenance. For instance, one review was critical of design and governance issues relating to the National Partnership Agreement on Remote Indigenous Housing (NPARIH), finding that, of the items that required fixing in dwelling inspections, only 8 per cent were due to damage by residents, while 19 per cent related to faulty construction and 73 per cent related to routine normal wear (Griew 2019).
2. Liveability – issues of liveability e.g. window treatments and thermal comfort needs, required by those with medical conditions, the aging, or those in extreme climates need to be more adequately and broadly accounted for.
3. Finite asset lifespan - housing needs to be better accounted for as an asset with a finite lifespan, with upgrade and replacement costs considered more broadly.
4. Ageing-in-place needs – with a focus on essential retrofitting for accessibility (bathrooms in particular) which can be costly and require short-term relocation.
5. Safety and security needs – as those arising from family and domestic violence situations may also require housing security upgrades.
6. Natural disasters – issues which arise from this include: (i) the availability of short/medium/long term options in an emergency situation; and (ii) responsibilities regarding insurance with a lack of clarity around head leases in the event of flooding and the like. In terms of the latter, clarification is needed around who has responsibilities for insuring what in the case of a CHP as the government is self-insured. Can smaller CHPs get insurance due to the risk profile?

The inclusion of social housing as an asset class in infrastructure planning is an important step in a more sophisticated approach to asset management. Consideration of housing (not just social housing) in this way should be made.

3.12 Element 12 – Production supply chain

The following key issues are highlighted for this element:

1. *Australian construction supply chain is complex and fragmented and still slow to respond potential efficiencies/innovations, for example in new technologies, off-site manufacture at scale and planning mechanisms.*

2. *There is a lack of a national voice for tenants and housing consumers.*

The Australian construction supply chain is complex and fragmented (Marceau, Manley et al. 1999; Hampson and Kraatz 2011). This has been widely reported over the years and spans:

- Commonwealth, state and local governments in terms of regulations and planning
- Design services (e.g. engineers, architects, building designers)
- Site preparation and landscaping
- Supply services (e.g. water, electricity and sewerage)
- Building materials production and supply including structural building and finishing products

- Fasteners, tools, machinery and equipment for construction
- On-site construction including structural elements (e.g. concrete and roofing), finishing elements (e.g. tiling and carpentry), and installation trades (e.g. electrical and plumbing)
- Off-site construction services (e.g. prefab elements)
- Maintenance services (e.g. waste, fabric maintenance)
- Construction and demolition waste

Fragmentation and the prevalence of micro- and small-scale business in the construction supply chain is widely reported on in the UK and Australia (Harris 2013). Impacts of this include high transaction costs, higher needs for on-site management, and limited opportunities for waste and/or reduce cost'. Harris further highlights the following key areas for improvement:

1. Appropriate procurement arrangements which incentivise and reward supply chain contribution.
2. Greater coordination of design and assembly.
3. Improved change management, focused on reducing the costs of unmanaged change.
4. Efficient, well-coordinated and well-managed on-site operations,
5. Wider adoption of the integration role of supply chain management.

The complexity of the housing production system is also somewhat reflected in the services sector which supports those in social housing, and those at risk of homelessness. It is suggested that similar issues to the above may exist with regards to the percentage of micro and small to medium enterprises, access to training services, uptake of technological innovations and issues around national regulation. This perhaps compounds the degree of difficulty which exists in providing housing to those in need.

Some key issues of note here include:

1. Housing in remote communities – the above issues are further compounded in remote areas. Housing provision in these communities is now highlighted as a high priority in Infrastructure Australia's 2019 audit (Infrastructure Australia 2019). The following highlights some of the asset-related recommendation in the Australian Government's 2017 *Remote Housing Review*:

   a. A recurrent program must be funded to maintain existing houses, preserve functionality and increase the life of housing assets.
   b. Best practice fora should be established to share information across the Commonwealth, jurisdictions, regional governance bodies and service providers.
   c. Regional sample surveys (using the survey and fix methodology of the Fixing Houses for Better Health program) must form a core part of the regional governance and monitoring strategy.
   d. Details about certification of properties (at all stages of building and for life after acceptance and tenanting) should be reported to the governance structure to ensure construction in remote communities is compliant with the appropriate building and certification standards and sub-standard builders are eliminated.

     e.   The regional governance body should work with local employers to plan how to develop the local work force and create more local employment.

     f.   Tenancy education programs should be implemented. Outreach services for tenancy tribunals to improve access in remote communities should be funded.

2. <u>Off-site manufacturing</u> (OSM) – 'is a construction technique in which prefabricated and standardised components/modules are manufactured in a controlled factory environment (either on- or off-site), transported, erected, and assembled into the on-site structure' (Khalfan and Maqsood 2014, p.1). OSM has the potential to improve the efficiency of the construction supply chain supported by technological change and the knowledge economy Barriers to its uptake in Australia includes the large-scale off-site manufacture facilities (and cost of establishing these) and the ongoing traditional approach to house design. One example of potential benefits was seen on the Little Hero residential/commercial development in Russell Street, Melbourne. On this project, the architects Fender Katsalidis, with Hickory Construction, utilised a parallel onsite and offsite construction program, reducing construction time by more than six months (Unitised Building 2016).

3. <u>Lack of national voice for consumers</u> - Reflecting the complex and fragmented nature of the production system, there is a plethora of industry associations and peak bodies, but, as with the lack of a national voice for tenants, there is also a similar lack of a united opportunity for consumer issues to be raised at a national and state level, to inform policy development and delivery outcomes.

Recommend further reading relevant to this element includes:

1) Kraatz, J. A. (2019). "Innovative approaches to building housing system resilience: a focus on the Australian social and affordable housing system." <u>Australian Planner</u>. 55:3-4.

3.13   Element 13 – Knowledge, skills and capacity building

The following key issues are highlighted for this element:

1. *Building skills and capacity is challenging in such as diverse environment*

2. *Understanding and responding to the multi-disciplinary complexity of the system, and the impacts of decisions by those delivering services in a specific aspect or element is not a commonly taught skill.*

3. *In this context, greater support is needed to address challenges and access training and knowledge-building opportunities.*

4. *Government organisations (Commonwealth and state), peak bodies, research organisations, and advocate organisations all play an important role in this element.*

Building skills and capacity is challenging in such as diverse environment, as evidenced by the number of participants identified across the 13 elements. Like the construction supply chain discussed above, the NFP sector is also complex, large and diverse, with around 600,000 organisations contributing AUD\$43billion to Australia's gross domestic product (GDP), and eight percent of employment in 2006-07 (Productivity Commission 2010). The challenge is further increased due to fragmentation, geographical distance and diversity. There is a high level of integration required across government, industry and community sectors to deliver outcomes, and this spans service and asset agencies and providers. The complexity of the housing production supply chain was discussed in the previous element.

There is thus an extensive array of organisations building knowledge and providing skills and capacity building with which to educate and inform those working across this network. These include traditional organisations such as universities, TAFEs, industry associations, peak bodies, advocates, NFPs and

government (regulations, quality standards). Each of these groups is adopting new technologies to increase access to knowledge sharing and skills development. *Learning for Purpose* is an example of this. Learning for Purpose is an independent, non-partisan, national initiative to build the capacity and capability of the Australian NFP sector using organisational science and modern analytics to deliver outcomes(Learning for Purpose). This initiative is a partnership between the Centre for Social Impact (University of Western Australia), Curtin University, Swinburne University, and the University of New South Wales, in collaboration with the public, NFP and private sectors.

All the above organisations are typically also governed by higher level regulations, accreditations and guidelines. One example of this is the COAG Industry and Skills Council. This Council was established in 1991 'to develop and implement high-level policies that help Australian industry to be competitive, create jobs and attract investment' (COAG), with a particular focus on major reforms requiring commonwealth/state collaboration. The Council's remit includes: competitiveness, productivity, labour market pressures, and national development.

Understanding and responding to the multi-disciplinary complexity of the system, and the impacts of decisions by those delivering services in a specific aspect or element is not a commonly taught skill. There are many network participants who potentially need greater support to address challenges and access training and knowledge building opportunities.

4 INTERNATIONAL COMPARISONS

The following insights from Canada and the United Kingdom (UK) are provided for international comparison, as additional input into some of the 13 elements. These countries have been selected due similarities in governance structures and socio/political environments. This section also includes a brief overview of Singapore as an example of a high density, multicultural, tropical city/state. Whilst there are many differences between Singapore and Australia, the nation/state offers some insights which may be of interest to readers.

4.1 Canada

Australia and Canada are similar in many respects. Dreier and Hulchanski (1990) and Hulchanski (2005) note that: almost two-thirds of Canadian households owning their own homes, primarily single-family houses; (ii) during the late 19th and early 20th centuries, both Australia and Canada were confirmed as urban societies; (iii) by 1901, around 37 percent of the populations of both countries lived in urban environments; and housing affordability in Canada becomes an issue in the 1980's.

As in Australia, rising levels of inequality and the financialization of housing are also considered to underpin Canada's housing problems (CMHC 2018). Other similarities between the two countries include definitions of housing stress and elements of the housing continuum. CMHC notes three issues related to lack of supply: (i) lack of affordability of supply; (ii) lack of accessibility/adequacy of supply; and (iii) the wrong mix of supply (CMHC 2018). This is detailed further in *Core Housing Need Model* (CMHC 2003 & 2019), with Canada's government, at all levels, making continuous efforts to assist those not served by the private housing marketplace. CMHC also states the reasons for housing being unaffordable is because housing units lack the energy efficiency features and the features that contribute to inclusive communities (CMHC 2003).

Unlike in Australia, the government of Canada launched its first *National Housing Strategy* in 2018. This is a 10-year, CAD$40-billion plan which aims to give more Canadians a home, recognising that affordable housing is a cornerstone of inclusive communities (CMHC 2018). By providing affordable housing and ensuring inclusive communities, the *National Housing Strategy* aims to strengthen the middle class and grow the economy. This strategy sets ambitious targets to ensure that investments and new programming can deliver results (Government of Canada 2018). It targets a 50 percent reduction in chronic homelessness, and 530,000 households being taken out of housing need. It aims to provide up to 100,000 new housing units and 300,000 repaired or renewed housing units. Reducing discrimination and stigma are also pillars of this human rights-based approach to housing. There is also a recognition of the need for diverse solutions (Table 5).

Table 5 – Supply problems and potential solutions

Lack of supply:	Legislative tools (rental-only zoning; inclusionary zoning) and funding tools (stack funding, municipal-federal) to increase supply; governments as developers to increase construction aligned with goals of affordability, accessibility, mix, safety.
Lack of affordability of supply:	Remove barriers and support non-market housing developers. Support and champion affordable housing applications through the planning process. Use government lands to build affordable units. Scale-up co-operatives and other forms of tenure that provide affordability and security.
Lack of accessibility/ adequacy of supply:	Address landlord discrimination, racism, evictions and other barriers to housing. Retrofit and regenerate existing stock to enhance accessibility/adequacy.
Wrong mix of supply:	Employ a right-sized approach to housing, affordable and in keeping with incomes of residents (increase purpose-built rental, diverse-sized and larger units beyond two-bedrooms, co-operatives, non-profit housing options).

Source: CMHC 2018

1. <u>Element 2 and 3 – Funding and finance</u> - The Canadian *National Housing Strategy* aims to create a new generation of housing in Canada through initiatives such as the *National Housing Co-Investment Fund* and the *Federal Community Housing Initiative* (CMHC 2003). This fund is expected to create up to 60,000 new units of housing and repair up to 240,000 units of existing affordable and community housing. The Fund will consist of nearly CAD$4.7billion in financial contributions and CAD$11.2billion in low interest loans. Further details of this strategy are provided in Section 7.3. Green mortgage programs, administered by CMHC, are also available to provide a way to address the initial cost of energy retrofits (Canadian Energy Efficiency Alliance 2010).

2. <u>Element 5 – Metrics, indicators and data</u> - In response to the need for an improved evidence base, Canada has also recognised the need for better evidence. In 2017, Statistics Canada recieved funding to develop a housing database that integrates social, economic and financial information to produce official housing statistics. This include funding to: develop tools within government; build capacity for greater partnership and housing research; support researchers and research communities; develop a network of housing experts; and solution labs, a "home within a lab" to provide a home-like setting where researchers can create and test new tools to help older people and those with disability to stay at home longer and more safely (Statistics Canada 2018). In addition, the Canadian Housing Statistics Program (CHSP) was developed to to monitor and analyze the Canadian housing market (Statistics Canada 2018).

3. <u>Element 7 – Changing demographics</u> - The composition of Canada's immigrant population has changed dramatically since the 1970s, especially in Toronto, where opportunities in both the labour and housing markets have changed substantially (Murdie 2003). Many recent immigrants who arrive with limited financial resources do not have the same access to capital or the same opportunities in the labour market of the previous round of immigrants from Southern Europe in the 1960s and 1970s (Murdie and Teixiera 2003). Murdie (2003) notes the lack of studies relating to immigrants housing careers and issues of housing affordability. Danso and Grant (2000) also investigated the experiences of African immigrants in Calgary. That study found that low vacancy rates and high rents, accompanied by perceived discrimination in the housing market, have contributed to the difficulties for this group in finding appropriate and affordable housing. The Canadian *National Housing Strategy* also recognises that intersections of identities such as race, sexual orientation, age, and socio-economic status create distinct experiences among women and girls. While Canada's vulnerable populations include subgroups of men and women, many *National Housing Strategy* programs will have a particularly positive impact on women.

4. <u>Element 8 - Housing typologies</u> - The Canadian *National Housing Strategy* aims to adopt a high energy saving and effective resources planning, stating that at least a 25 percent reduction in energy consumption and greenhouse gas emissions over national building and energy codes must be achieved. Further, 20 percent of units must meet accessibility standards and projects must be barrier-free or have full universal design (CMHC 2018). The government of Canada has also launched policy initiatives supporting energy efficiency retrofits in social housing in an effort to create green jobs and provide efficient responses to climate change (Fuller and Gaston 2009). This focuses on energy efficiency and alternative energy initiatives as part of its national *Green Plan* (The Generation Energy Council 2018). *Equilibrium,* which is Canada's official brand of the *Net Zero Energy Healthy Housing Initiative*, was led by the CMHC (National Housing Research Committee 2007). It was aimed at bringing private and public sectors together to develop homes that encompass a broad range of environmental and community-based sustainable design and green infrastructure practices (CMHC 2007). Several provinces have also developed energy plans to address household energy consumption. Ontario's *Long-term Energy Plan: building our clean energy future* sets out a 20-year plan of conservation targets (Government of Ontario 2010). British Columbia's (BC), *The BC Energy Plan: a vision for clean energy leadership* (Government of British Columbia 2007) combines a variety of policy tools to improve energy use including codes and standards as well as communicative outreach. Their *Energy Efficient Buildings Strategy* also sets targets that support the goals of this plan, to

maximize efficiency and minimize environmental impact (BC 2007). The Strategy targets reduction in greenhouse gas emissions by 33 percent from 2007 levels by 2020. New energy efficiency regulations under the *Energy Efficiency Act and Building Code* set reductions of up to 27 percent for new homes (Prebble 2011).

5. Elements 8 and 10 - Housing typologies and integrated, shared and disruptive technologies – The *EQuilibrium Housing* initiative also aims to demonstrate the capacity of the housing industry to reduce the energy load required by a home so that it produces as much, or more, energy that it consumes annually (CMHC 2007). This initiative also addresses the issue of peak electricity demand, and aims for net zero-energy housing.

Recommend further reading relevant to this section includes:

1. Canada Mortgage and Housing Corporation (2018). *National Housing Conference. Canada - 2018 Report.* National Housing Conference 2018, 21-22 November 2018. Ottowa, Canada.
2. Haider, M. and S. Moranis (2019). "Two Policy Moves Killed Residential Rental Construction in Canada, and We're Still Feeling the Effects." 25 April 2019. *Financial Post*.
3. Hulchanski, J. D. (2002). *Housing Policy for Tomorrow's Cities. Discussion paper*. Canadian Policy Research Networks Inc.: Ottawa. Hulchanski, J. D. and M. Shapcott, (Eds.) (2004). *Finding Room: options for a Canadian rental housing strategy.* Centre for Urban and Community Studies, University of Toronto. CUCS Press: Toronto, Canada.
4. Mah, J. (2009). *Can Inclusionary Zoning Help Address the Shortage of Affordable Housing in Toronto?* Canadian Policy Research Networks Incorporated: Ottawa, Canada.
5. McRobert, D., J. Tennent-Riddell and C. Walker (2016). "Ontario's Green Economy and Green Energy Act: Why a Well-intentioned Law is Mired in Controversy and Opposed by Rural Communities." *Renewable Energy Law and Policy Review* 7(91): 91-112.

4.2   United Kingdom

Whilst Australia and the UK share many similarities in terms of governance system, there are significant differences in the housing system. By way of example, not-for-profit (NFP) housing providers in the UK are operating at a much larger scale then in Australia, and are more securely established. In England, housing associations' have a 10 percent share of the national dwelling stock compared to Australia's less than 1 percent. In addition, English housing associations are asset-rich operators, whereas the dominant model in Australia is of NFP management of a state-owned asset. In addition, Australian providers typically manage much smaller portfolios with the average number of tenancies managed by a CHOs is estimated at below 100, whereas in England the average stock size in 2010 was 1800 (Milligan, Hulse et al. 2015).

Similarities do exist however, for example in terms of changes in the housing experience. The UK Council of Mortgage Lenders predicts that by 2020 only a quarter of 30-year-olds will own their own home (

Figure 8). In contrast, more than half the generation currently approaching retirement were homeowners by this time (Council of Mortgage Lenders) .

Figure 8 - Buyer propensities by age groups, per 1,000 adults
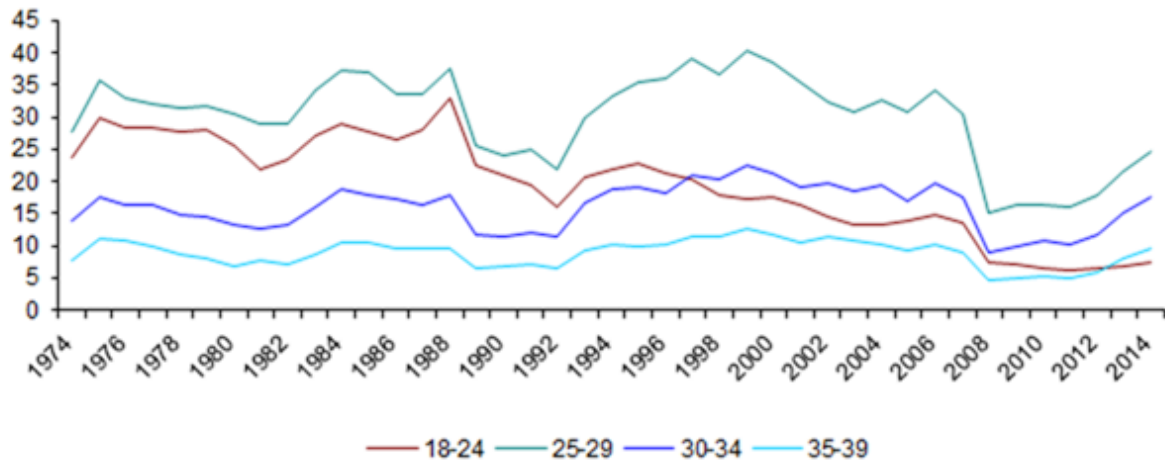
Source: Council of Mortgage Lenders

Sustainability and affordability issues are now often discussed mutually and are recognised as being inter-related. The UK government's affordable housing policy recognises that a sustainable community is an imperative environment for affordable housing. There is also an increasing desire to make construction practices in housing developments more sustainable and reduce their environmental impact (Government of the United Kingdom 2005; Department of Communities and Local Government 2007; Maliene, Howe et al. 2008). In addition, to address the need for more homes in the right location, *Homes England* was established on the 1st January 2018 (replacing the *Homes and Communities Agency*). This is a national government body whose role is to: 'ensure access to better homes in the right places; to intervene in the market to get more homes built where they are needed; to accelerate delivery; to tackle market failure where it occurs and help to shape a more resilient and diverse housing market; to work in collaboration with partners including local authorities, private developers, housing associations, lenders and infrastructure providers; and to respond to local needs' (Homes England 2018).

1. Funding and financing - The UK government *Spending Review* (2010) announced that £4.5billion would be made available to fund new affordable homes over the period of the review (2010-15). This represented a reduction in grant funding from £8.4 billion from the previous period (UK Parliament 2019). Examples of how these funds were to be distributed include: a mortgage rescue scheme for vulnerable homeowners threatened with repossession; bringing empty homes back into use; the introduction of a new affordable rent tenure (previously known as intermediate rent) to enable housing associations to offer tenancies at rents of up to 80 percent of market rent levels within the local area; the reinvestment of additional finance raised into the development of new social housing; and a contribution to the delivery of 150,000 new affordable homes over 2011-15 (subsequently increased to 170,000 new homes). Pittini, Koessi et al. (2017) in their *State of Housing in the EU* report highlighted some relevant facts and issues:
   a. Housing capital investment in England has decreased from an annual grant level of £2.97billion during the *Affordable Housing Programme*[6] (2008/09 to 2010/11) to a budgeted spend of £0.96billion per annum in 2015/16 to 2017/18.
   b. Over the above period 'public spending on housing benefit has increased by more than half a million claimants, predominantly due to a growing number of private renters and households in work unable to afford the cost of living'.

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[6] The Affordable Homes Programme (AHP) is administered by Homes England (Homes England 2019). Providers (including housing associations) are required to bid for grant funding, successful bidders enter into delivery agreements with Homes England. (Homes England 2018).

c. The *Welfare Reform 2015* policy made changes to the housing benefit system which has impacted the level of benefits available to those in supported housing in England.

d. The *Shared Ownership and Affordable Homes Programme (2016 to 2021)* aims to deliver new homes via affordable rent, rent-to-buy and shared ownership approaches.

e. As a result of the *Housing and Planning Act* (2016), standard tenancy agreement for new local authority tenants were changed to fixed-term (2 to 10 years) rather than the previous lifetime terms.

4.3   Singapore

While the Singaporean political, economic and social environment differs from that of Australia, a brief investigation was undertaken of housing in this high-density, multi-cultural, tropical city/state, by way of providing an introduction for the reader (Housing and Development Board 2017). The following provides a brief overview of some key points.

1. Policy drivers and players - popular and political support for public housing in Singapore is considered to be strong and stable. There is high level of public subsidy for housing through the Housing and Development Board (HDB) (Jha 2018). The HDB was set up in 1960 to address the nation's housing issues with a key goal being to promote home ownership in order to build a sense of Singapore as a home country. This involved in a high level of public subsidies to the HDB (in 2017 this was S$1.19 billion). By 2019 home ownership in Singapore was at around 90 percent, the highest in the world (Chen, Jiang et al. 2019). In the same year: the HDB was responsible for about one million apartments; public housing comprised 73 percent of total housing stock in Singapore (including public rental and subsidised ownership); and HDB flats housed more than 80 percent of the resident population (Fan, Li et al. 2019).

2. Funding and financing - Since January 2007, home buyers wanting an HDB loan need a valid HDB Loan Eligibility letter including details of the age, income, and financial commitments. Whilst there is considerable state intervention, individual responsibility is important through the Housing Provident Fund. This is 'a form of forced savings for housing, retirement, health and education, among other things … integrated with the pension system to enhance the efficiency of savings' (Fan, Li et al. 2019).

3. Changing demographics - Since the late 1970s ethnic segregation in housing has been avoided (Di Mauro 2018). Housing estates are designed with mixed-income housing, with access to high-quality public transport and education, and hawker centres where all income classes and ethnicities mix.

4. Housing typologies - In Singapore the constraint of finding available land at a reasonable cost has been minimised (within physical constraints of being an island nation) by the 1967 *Land Acquisition Act* which enabled the government to acquire land at low cost for public use (Jha 2018). By 2016, 90 percent of land was owned by the state (McLaren, Yeo et al. 2016). Due to this, the height and proportion of buildings in relation to one another has been carefully considered. This is enabled by the HDB also have the lead role across the housing system, and facilitated integration through an efficient public transport system in new town developments. Though the average commuting time is 84 minutes in Singapore (82 minutes in Sydney), with 25 percent of the population having commute time exceeding two hours (31 percent in Sydney) (Fan, Li et al. 2019).

5. Housing typologies and integrated, shared and disruptive technology – The HBD oversees the *Centre of Building Research,* which is an incubation hub to develop and test R&D initiatives in the following five key research clusters (Housing and Development Board):

    a. *Energy* – To enhance energy efficiency in towns and reduce the environmental impacts of its operations, research is undertaken addressing passive design strategies, energy-efficient solutions, alternative energy sources, and smart grid solutions.

b. *Urban greenery* – To soften the impact of urban living through innovative greening solutions and bring nature closer to the homes. Key research areas include biophilic towns, green roofs, vertical greening, floating wetlands, and biodiversity studies.

c. *Waste and water* – To enhance resource efficiency through research in water conservation solutions, waste and recyclables management solutions, and storm water management.

d. *Living environment* – To achieve a high-quality sustainable urban living that is inclusive and adaptive to climate change. Key research areas include architectural studies, building acoustics and advanced modelling platforms to simulate sustainability and liveability performance.

e. *Building technology* – To achieve high-quality housing through highly productive and advanced building technologies. Key research areas include advanced prefabrication and construction technology, virtual design and construction, building performance, resource optimisation, maintenance technology, and lift technology.

Recommend further reading relevant to this element includes:

1. Generalova, E. and V. Generalov (2014). "Designing High-Rise Housing: The Sinagpore Experience." *Council of Tall Buildings and Urban Habitat Journal* IV.

2. Phang, S.-Y., and M. Helble. (2016). *Housing Policies in Singapore. ADBI Working Paper 559*. Asian Development Bank Institute: Tokyo.

3. Zhang, R. J. (2017). "A Tale of Two Cities: Comparative Study of Public Housing Policies of Hong Kong and Singapore." *International Immersion Program Papers*. 71.

5 RESEARCH FINDINGS

To reveal opportunities and cast new light on current challenges this research has identified network participants in social and affordable housing networks, in WA and Qld. Due to the complexity of representing this network, the resultant maps[7] are high level, with participants and boundaries identified by the researchers and expert stakeholder teams in workshops held in Brisbane and Perth from May to June 2019. Further, judgements have been made regarding: the nature of relationships (primary, secondary and tertiary); whether organisations are shown as government, industry or community; and to which group a participant is assigned (e.g. may be government funded, but also perform an advocacy role).

The network maps have been developed in the context of the lead government housing agency in both states being the focal participant. This has been done with a focus on person-cantered, place-based, and combined asset and service provision, in line with housing strategies in both states[8]. The focus on the person has been critical to this research. It has been central to the SBEnrc social and affordable housing program of research since 2014, when the nine impact domains were developed. These impact domains demonstrate the impact that having safe and affordable housing has on all aspects of a person's life. This acknowledges that a greater benefit from investment is gained where broader issues of individual and community wellbeing are also considered.

The breadth of participants identified across the 13 elements highlights the complexity of the social and affordable housing network. Participants in the network include all levels of government, industry (businesses, companies, peak bodies and member-based associations), the community sector (CHPs, NFPs and philanthropists), advocates, research providers, and other informal participants (e.g. kinship arrangements and the bank of Mum and Dad).

These findings (

Figure **9**) and detailed recommendations (Table 6) were based on:

1) Knowledge gathered in the previous SBEnrc social and affordable housing program of research from 2014 to this current project.
2) Desk top research of the network and its participants across Austraia, with a particular focus in Qld and WA.
3) A limited review of literature relevant to: (i) network mapping; (ii) system improvement; and (iii) housing systems in Canada, Singapore and the UK.
4) Input of expert stakeholders in the workshops held from May to July 2019.
5) Feedback on draft maps from the expert stakeholders.
6) Reflections and insights of the Project Steering Group.

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[7] See companion reports - *Queensland Social and Affordable Housing Network Maps*, and *WA Social and Affordable Housing Network Maps.*

[8] The former Western Australian Housing Authority is now a part of the WA Department of Communities (WA Communities) with the WA Communities Strategic Plan launched in February 2019. These changes have been occurring at the same time as maps have been being prepared for the network in that State, and as such the maps do not fully reflect the integration of service delivery now occurring in WA. They do however provide an important base line from which further mapping can be undertaken, and have provided a strong basis for the analysis and findings included in this report.

Figure 9 – Summary of key findings

Strengths, weaknesses and critical junctions in the network	Opportunities for system improvement	Policy, research and skills development priorities	Improving network and community understanding
Single issue policy development is not a tenable or effective solution	Housing as critical social and economic infrastructure	Need for national, longitudinal datasets to inform participants across the network	There is a need for better clarity and stronger understanding of the complexities of the housing system in Australia
Addressing niche needs is vital	Recognition of changed policy and economic levers	Longevity in policy making needed	National peaks exist for industry, government and not for profit organisations, but not for the individual in need of housing
Need to better leverage investment to produce outcomes across multiple elements	Recognition of housing as part of functional urban, economic and social systems	Change is slow in the network, yet socio-environmental changes are occurring more rapidly	Build the evidence base to support continuing investment
Lack of a bi-partisan national housing strategy to support the most vulnerable and tenants and home owners generally	Provide a home not a house	New ways of working are required in a place-based, person-centred policy environment	Housing needs to be considered as social and economic infrastructure in a similar way to hospitals, schools and roads
	Improve data accessibility and effectiveness of use		
	Improve understanding of a complex and fragmented network		
	Partnering and alliances are vital		
	Address cross disciplinary complexity in knowledge, skills and capacity building		

Table 6 further details the findings and recommendations which have emerged from this process. These have been considered across: (i) strengths, weaknesses and critical junctions in the network; (ii) opportunities for system improvement; (iii) policy, research and skills development priorities; and (iv) improving network and community understanding of the needs and complexity of the housing network.

These findings and recommendations are not specific to the two state government housing agencies as the focal participants, but address issues across the whole of the housing network, as identified in the network maps. As such the following findings and recommendation will be relavent at various levels of government, and to various participants across the network. Whilst some may be specific, it is recommended that all network participants engage with these findings to help build understanding of the complexitiy and inter-relationship which exist.

Table 6 – Key findings and recommendations

	Findings	Recommendations	Elements
Strengths, weaknesses and critical junctions in the network			
1)	*Single issue, stand-alone policy development around housing is not a tenable or effective solution to complex problems across the network.*	Through network mapping, better understand the links between the 13 elements to inform holistic policy making and service delivery across all levels of government, organisations, agencies and individuals is vital to deliver assets and services which effectively leverage better outcomes for individuals in need of housing. WA Communities move to a multi-function human services agency can help address this. See also item 3) and 6).	All
2)	*Addressing niche client needs is vital in a person centred environment.*	Embedding diversity (including geographic, cultural and social) in policy making and delivery, especially for those living in remote communities, and those living with a disability. The *Queensland Housing Strategy 2017-2027* is one example of how agencies are doing this through aiming to embed the latter building new public housing to national liveable housing design standards.	All
3)	*The need exists to better leverage investment to produce outcomes across multiple elements.*	Use social procurement criteria established in SBEnrc *Procuring Social and Affordable Housing* (Kraatz and Jayawardana 2018) research to better leverage possibly latent potentials, through better understanding opportunities across the 13 elements. See also item 1).	1, 2, 3, 4, 5, 9, 10, 11, 12
4)	*There is currently a lack of a national bi-partisan housing strategy to support the most vulnerable and tenants and homeowners generally.*	Many across the network have been calling for a National Housing Strategy. Much work has been developed by peaks and advocates to date which could readily inform the development of such a strategy. The Canadian example could also inform this. This could be co-designed by government, NFPs and the private sector. See also item 17).	All
Opportunities for system improvement			
5)	*Housing as critical social and economic infrastructure.*	Commonwealth, state and local government agencies, peaks and advocates to work to expand acceptance of housing as infrastructure, rather than commodity and part of a financialised global investment system. For example, the Qld State Government now includes social housing as part of the Social Infrastructure Strategy. Develop policy and delivery mechanisms which align with this classification. See also item 21).	1, 2, 3
6)	*Recognition of alternative policy and economic levers at a national level, beyond demand and supply.*	Using the current network maps as a baseline, government agencies and researchers can continue work to better understand network participant interaction and flows in order to strengthen the housing system through revealing opportunities for innovation and diversity in housing procurement and typologies. See also item 1).	1, 2, 3, 4
7)	*Greater recognition at a national level of housing as part of functional urban, economic and social systems, with associated required policy integration.*	Consider national housing policy in the context of broader socio-environmental (e.g. impacts on health and well-being), economic (e.g. contribution to productivity) and urban systems (e.g. impact of long term demographic changes). Build the appropriate knowledge and databases to	1 2, 3, 4, 5, 6, 7, 8, 9

		support and evaluate this. This requires funding and resources to build knowledge and understand impacts over time. See also item 21).	
8)	*Providing a home not a house.*	Minimise disruption on the individual and/or household transitioning through emergency, crisis and social housing support; also acknowledging in a tangible way that a house is not a home without furnishings and fixtures etc. This needs Commonwealth, state government agencies, CHPs and NFPs to work together to address intersections between funding and services provided.	1, 2 & 3
9)	*Improving data accessibility and effectiveness of use across the network.*	Enable improved access to relevant longitudinal data (not just housing) as, when and where it is required across the network to improve responsiveness. Address confidentiality issues so that longitudinal data is more readily accessible to (i) provide informed evidence supporting medium, long-term and intergenerational need, and (ii) enable innovative solutions to be developed across the network. This needs to be addressed across all participants since government agencies, CHPs, NFPs and research organisations all have access to relevant and useful data. See also item 13).	1, 5, 7, 8, 10, 11, 12
10)	*Improve understanding of a complex and fragmented network, across both asset and service delivery.*	New mechanisms are needed to address inefficiencies in this complex network. Further research required to articulate potentials.	1, 3, 4, 9, 12, 13
11)	*Partnerships and alliances across the network are vital to strengthen the system.*	Government agencies, NFPs, CHPs and the private sector need to come together to address issues, for example, around insurance risk and financing for CHPs.	2, 3, 4, 11, 12
12)	*Address cross disciplinary complexity in building knowledge, skills development and capacity building.*	Traditionally knowledge, skills development and capacity building is provided by many established institutions, peak bodies and industry associations in line with specific skills sets. New mechanisms need to be provided by educational institutions, peak bodies, industry associations and others who provided in-housing training, to develop cross disciplinary, agile systems to build a broader understanding across this network.	1, 13
Policy, research and skills development priorities			
13)	*There is a need for national, longitudinal datasets for use across the network to inform policy development, delivery and to better understand the impact of policy changes.*	Establish national longitudinal datasets through sharing of de-identified data for use across the network. Examples of this exists (e.g. through the Telethon Kids Institute in WA and the HILDA Survey). Data which can help build a social value bank in a similar way to that in the UK would be beneficial. This requires government investment. See also item 9).	1, 5, 7, 9, 10
14)	*Longevity in policy making is needed.*	Acknowledgement of impacts of access to and quality of housing are medium to long term, and at times intergenerational. Policy formation and evaluation needs to be able to work and invest across 5, 10, 15 year time frames and longer. See also items 4) and 17).	1, 7, 9

15)	*Change is slow in this network, yet socio-environmental changes are occurring more rapidly.*	Address slow response rate to innovation. Key systems need to become more responsive, for example, planning mechanisms and processes, uptake of digital technology, off site manufacture and the like. This is an issue across the network requiring the investment of time and resources to implement.	1, 6, 7, 8, 10, 12, 13
16)	*New ways of working (e.g. co-design) are required in a place-based, person-centred policy environment.*	The need for co-design of policy, service and asset delivery was highlighted in workshops. Investment of money and resources in developing this approach needs to be integrated in policy planning and delivery. This can be undertaken as a part of government, NFP or private sector procurement approaches.	1, 4, 7, 8, 9
Improving network and community understanding			
17)	*There is a need for better clarity and stronger understanding of the complexities of the housing system in Australia.*	Establish bi-partisan national strategy and priorities – which accommodate state priorities, capacity, geographical differences and needs. This would require input from all those across the network. Use research such as these baseline maps to communicate the complexity of the system and solutions across those within the system and to the community more broadly. See also items 4), 17) and 18).	1, 4, 5, 9, 12, 13
18)	*National peaks exist for industry, government and NFP organisations but not for the individual in need of housing.*	Develop national peak bodies for those in housing crisis, tenants and homeowners, with access to COAG. The Australian Council of Social Services is one example of such a peak, but which has a much broader representation across the community services sector. This could form a part of a National Housing Strategy. See items 4) and 17).	1, 2, 3, 4, 8, 12
19)	*Continue to build the evidence base to support continuing government needs-based investment in housing, along with further building the case for private and NFP investment.*	Build understanding of the non-housing benefits of housing. Significant research and industry understanding exists in support of this understanding. See items 4), 17), 18) and 19). Appropriate evidence needs to be provided to Commonwealth and state Treasuries to support cross departmental bids. Refer also previous SBEnrc Valuing Social Housing research findings (Kraatz and Thomson 2017).	1, 7, 8, 9, 12, 13
20)	*Housing needs to be considered as social and economic infrastructure in a similar way to hospitals, schools and roads. This requires asset management budgets and rolling programs of work to enable investment planning to meet long term demand based on demographic projections.*	Address housing as infrastructure with whole of life planning including maintenance budgets and end of life plan from inception. Both Infrastructure Australia and the Queensland government have made initial steps in this direction. Refer previous SBEnrc Procuring Social and Affordable Housing research findings (Kraatz and Jayawardana 2018). See also items 5), 7) and 8).	1, 2, 3, 11, 12, 13

Table 7 provides an example of how the outcomes of this research could be used within an organisation, and extended to influence change. For clarity only primary relationships are highlighted.

By way of example, when exploring co-design opportunities within the housing network it is necessary to consider:

   (i)   What are the elements where co-design can impact?
   (ii) Who are the key participants who should be involved?

Table 7 – Using research finding to influence change, for example, mapping co-design opportunities in the housing network

	Comm. Gov.	State Gov.	Local Gov.	Developer	Designers	Service Providers	Peaks	CHPs	Financial Services
Policy[1]	P	P	P						
Land / Infrastructure[2]		P	P	P				P	
Diversity[3]			P	P	P	P		P	
Funding/ Finance[4]	P	P	P	P					P
Asset Cost[5]		P	P	P	P				
Livability[6]	P	P	P	P	P	P		P	
Regulation[7]	P	P					P		
Skills / Capacity[8]	P	P				P	P	P	

Notes: [1] Element 1; [2] Element 1, 4, 8, 10, 11 & 12; [3] Element 7, 8; [4] Element 2, 3; [5] Element 2, 3, 4, 6, 8, 12; [6] Element 8, 9; [7] Element 1, 4, 6, 12, 13; [8] Element 13;

Co-design; P=Primary role

5.1   Concluding remarks

Through expressing the complexity and expansiveness of the social and affordable housing network in Australia, these maps help highlight why single issue, short-term policy and decision-making will struggle to provide effective solutions to Australia's critical social and affordable housing issues. The diffusion of policy creation, and asset and service delivery across the public, not-for-profit and private sectors; a lack of a bipartisan policy making; the commodification of housing; and the continued focus on lean government all further compound the challenges faced by those working in the housing network. Lawson, Dodson et al. (2019) call for 'needs-based capital investment … where decisions on what to invest is not only based on financial return, but also on other factors like the effects on society'. They consider that this 'provides the most cost effective mechanism to influence the scale, location and quality of housing produced'.

This research thus aims to contribute in two key ways. Firstly, through contributing to a greater understanding of the complexity of housing network and required policy responses. And secondly through helping to build a more rigorous evidence base which can bring together both expert knowledge and lived experience via a focus on the 13 elements of the maps. If achieved, this has the potential to help us better understand current and potential risks, and better leverage outcomes and impacts from a limited investment.

A co-design approach to both policy and delivery, as discussed above, can help facilitate investment. This links strongly to the on-going call for housing to be considered as infrastructure rather than commodity, to ensure that not only the capital cost of housing is considered, but also the long term

maintenance, retrofitting and end-of-life considerations. This is especially relevant for the provision of social housing where the benefits are experienced across the nine impact domains developed in early research, and foundation to this on-going program for research.

This need to be expansive in our thinking and policy making aligns with what Dalton has noted as policy permeability (2009). If we are to accept: (i) the diffusion of policy creation and asset and service delivery across the public, NFP and private sectors; (ii) the lack of a bipartisan policy environment; (iii) the commodification of housing; and (iv) the continued strengthening of a user-pays approach to public services, then new paradigms for building effective policy are also needed. This will require greater appreciation and understanding of the complexity of social issues and policy responses, built on a more rigorous quantitative and qualitative evidence base. And this in turn can become the strength of a new permeable system, wherein expert and living knowledge from several elements/arenas can be integrated. This multi-faceted approach has the potential to better leverage outcomes from a limited investment, and better understand potential risks.

This research offers a unique and important overview of the social and affordable housing network as a whole, rather than one of siloed parts. This provides the opportunity for people and organisations to come together with a united understanding and language, to add value both within and across the network. Further research in this area is recommended, to build on these baseline maps. Follow-up one on one interviews with expert stakeholders could enable a further more detailed quantitative analysis of the network using online mapping software to further describe, analyse and quantify relationships and interactions.

6   APPENDIX A – NETWORK MAPPING EXAMPLES

This section provides highlights from an early review of literature. It is provided as background to the mapping approach that was used for this research project. This information is provided to highlight the different ways in which mapping can be used to help explain complex systems. In order to reveal the roles of participants, network mapping places a focus on the flow of design related information between participants. The use of social network analysis tools can then be used to identify important network attributes and facilitate system intervention.

6.1   Canada's housing system

A 1998 report for the Canadian Home Builders Association outlines the various elements of the then housing system in that country (Lampert and Pomeroy). Whilst a formal mapping process was not done, this report describes the Canadian housing system. It primarily provides a review of the public policy environment for Canada's housing system across five components: economic policy; development, building and property transfer process; housing stock management; housing assistance; and research and information collection and dissemination. Table 8 details a typical process of building and maintaining housing across four broad phases.

Table 8 - Public and private roles - planning, construction, marketing and management of housing

| *Planning Phase*	*Construction Phase*	*Marketing/Sales Phase*	*Occupancy/Manage. Phase*
Feasibility analysis Land acquisition Planning Zoning Change Design	Site preparation Construction Financing	Sales and re-sale Financing	Maintenance Management Improvement Additions
Private Sector Roles:			
Developer Landowner Lawyer Architect/engineer Surveyor Soil and environmental testing Market analysis Lending institution Community groups and NGOs Neighbouring landowners	Developer/builder Lending institution Insurance company Subcontractors Trades Unions Material manufacturers, distributors, suppliers Home manufacturer Architect/engineer Lawyer	Developer/builder Real estate broker Lawyer Lending institution Title company Mortgage insurer Advertiser and marketing New home warranty programs Manufactured home retailer	Developer/owner Maintenance firms Property manager Insurance Utilities Lending institutions Trades Unions Architect/engineer Contractors Subcontractors Marketing Material manufacturers. Distributers, suppliers Brokerage
Public sector roles			
Title registration Lending restrictions Utilities (public/private) Environmental regulation Planning board Zoning classification Subdivision regulations Deed restrictions Land use plans Building codes	Building permits Contract law Building inspector Building codes Material standards Utility regulations Banking laws Rules governing trade and Professional associations Insurance laws Transportation laws Labour codes Health/safety codes Liability laws	Recording regulations and fees Contract laws Real estate laws Transfer taxes Banking laws Occupancy limits	Property taxes Income taxes Health/safety codes Insurance laws Utility regulations Building inspector Property standards officers Maintenance inspectors Banking laws Zoning regulations Building code Liability laws Fire code Policy

Source: Lampert and Pomeroy 1998, p.9. (Adapted from CMHC, The Canadian Housing System in the 1990s, Ottawa, 1995)

6.2   Australian building and construction product system map

The 1999 report by researchers from the Australian Expert Group in Industry Studies, *Mapping the Building and Construction Product System* provided insights into the Australian building and construction (B&C) industry (Marceau, Manley et al.). The focus of the research was to identify the key sectors, players, and institutions by exploring the flows of information, innovation and relationships within the system. The authors utilised a cluster analysis approach referred to in the report as 'the systems approach of innovation'. This aimed aims to explain the technical change and innovation involved within processes. The findings identified that: the interaction and knowledge exchanges between organisations, research institutes, universities among others linked via dynamic social processes; dynamic social processes improved with the amount of interaction that occurred between the producers, buyers and regulators within the system. The research had three elements: (i) creating a conceptual network; (ii) providing background on innovation in the B&C industries; and (iii) mapping the system. Marceau, Manley et al. highlighted the importance that both innovation and knowledge brings through the utilisation of the concepts as recognised critical drivers for most OECD countries. They identified three systems of innovation: (i) the national system of innovation (NIS); (ii) the international system of innovation; and (iii) the sectoral innovation system (SIS).

The authors provided a map of the building and construction product system at that time (Figure 10), focussing 'on the linkages and interdependence between actors in a network of production' and recognised the need to better understand this complex system including manufacturing, services and products. This graphical representation which provides a view of the 'chain' of production has its limitations but provides a strong basis for further supply chain analysis and understanding. The map uses a services-product dimension (vertical) and knowledge intensity – value dimension (horizontal). Information relating to how the B&C product system is depicted by dividing it into five primary categories (on-site services, clients services, B&C project firms, building products and supplies, and fasteners, tools machinery and equipment).

**Figure 10 - Australian building and construction industry map**
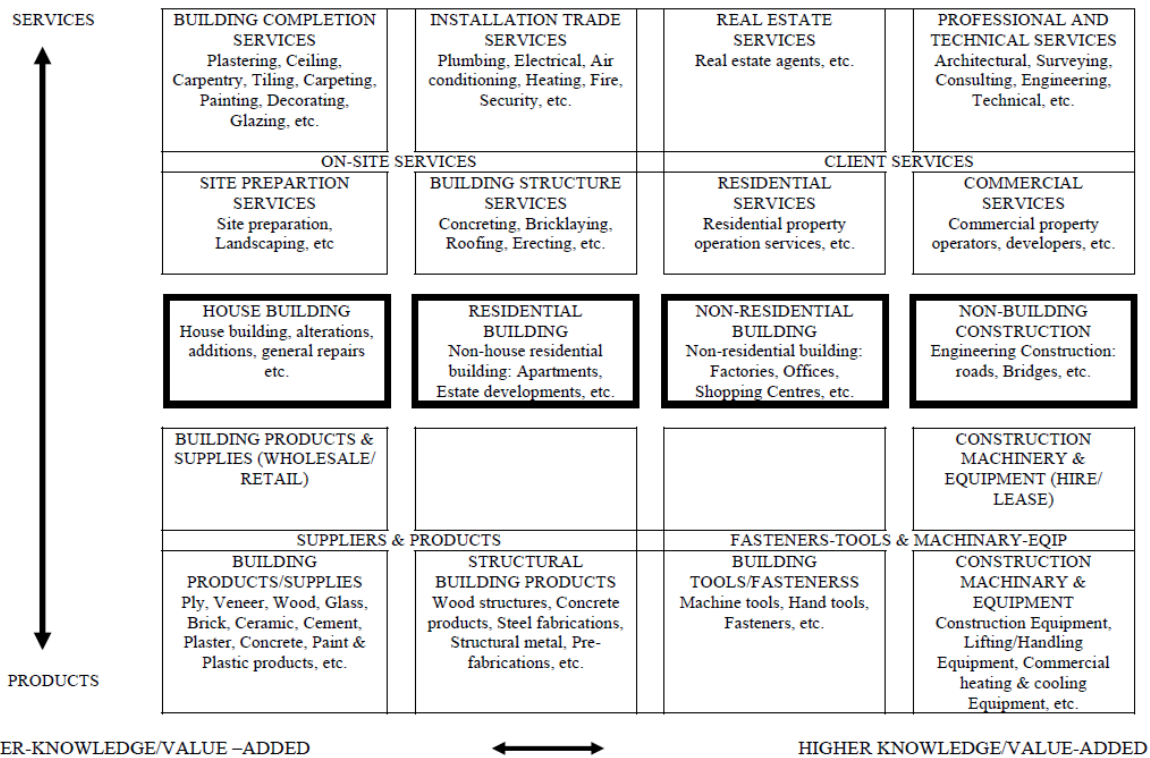
Source: Marceau, Manley et al. 1999, p.36.

## 6.3   Hong Kong construction industry stakeholder challenges

Li, Hong et al. (2016) used a mapping tool to identify five major challenges encountered by stakeholders. These challenges they identified are: (i) adopting highly complex and leading-edge technology; (ii) lack of just-in-time delivery and assembly in compact site area; (iii) communication barriers among stakeholders and managers; (iv) inefficiency in passing the design information to the manufacturers without any ambiguity; and (v) difficulties in the identification and verification of proper precast components. Their findings were built upon: (i) an initial interview process in which stakeholders and risks were identified (and tabulated); (ii) a mapping and analysis process which identified the risk network (with 52 stakeholders and 597 links); to (iii) developing a status centrality map which 'depicts the relative outgoing impact of a stakeholder concern (Figure 11) to (iv) using this analysis to build a framework for understanding risks, challenges and proposed strategies (Figure 12).

Figure 11 – Status centrality map
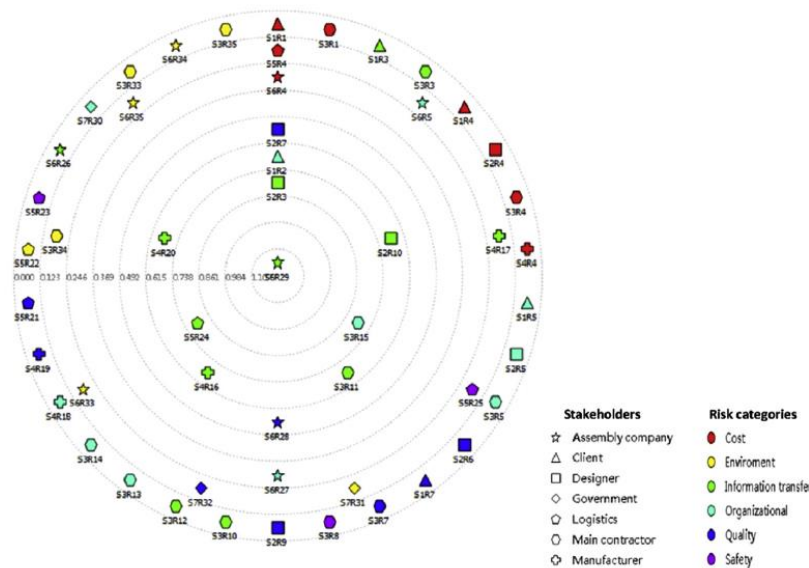
Source: Li, Hong et al. 2016, p.488.

Figure 12 – Framework for understanding risks, challenges, and proposed strategies
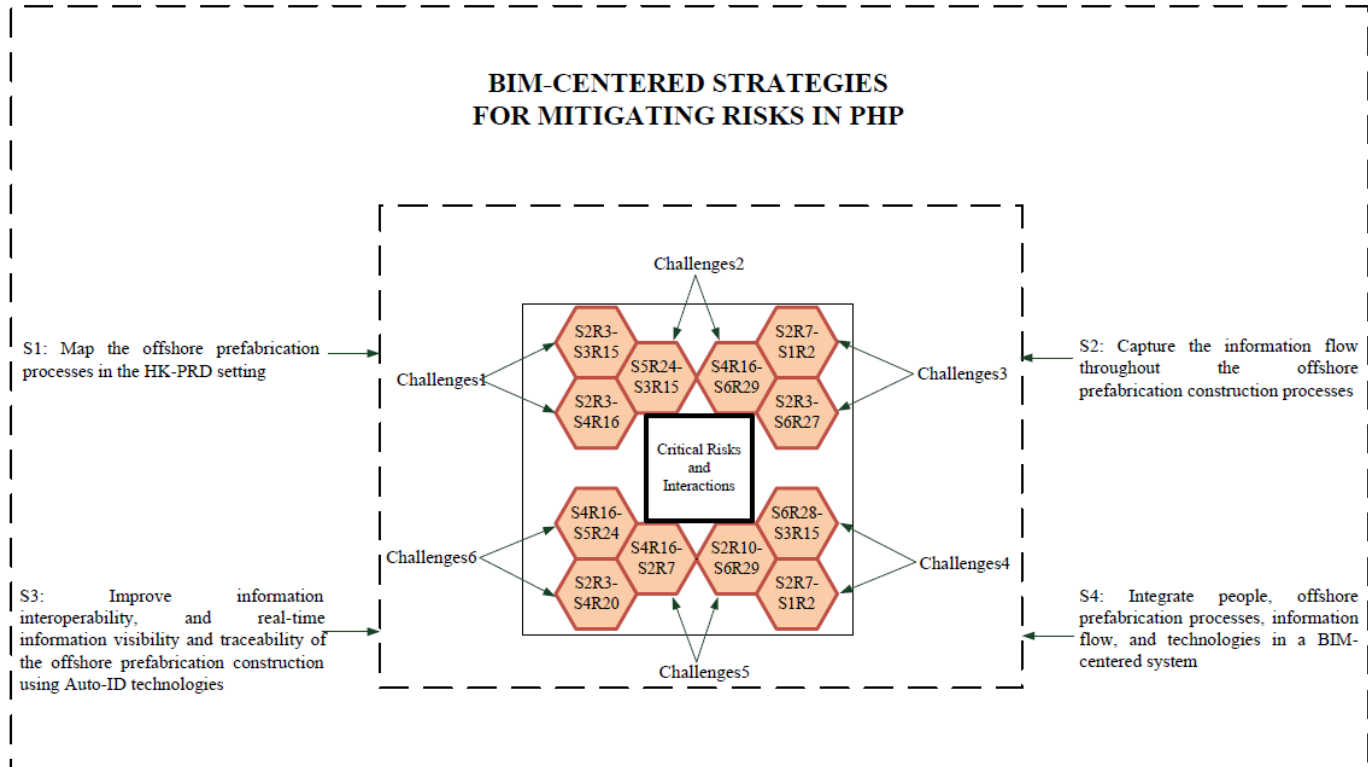

Source: Li, Hong et al. 2016, p.491

6.4 Energy efficiency in Australian housing - Social Network Analysis

Zedan and Miller (2017) reported on the use a social network analysis (SNA) approach to visualise the social networks of the stakeholders of a number of owner-occupied housing case studies in Australia. Their analysis aimed to identify groups with greater connectivity in the stakeholder network of energy efficiency housing and thus with greater potential to influence outcomes and practices which could lead to increased transparency and information sharing (Zedan and Miller 2017). SNA was used to understand stakeholder location in the network and influence. Two questions were considered: (i) 'which stakeholder groups have more connectivity in the stakeholders' network of energy-efficient housing?; and (ii) which practices are more likely to enhance transparency and information sharing that is essential for producing energy-efficient housing?' (p.1). The authors undertook semi-formal interviews about the process, the degree of ease of accessing information, and the main motives/goals, using stakeholder's network templates based on past mapping. This data was then used to generate a stakeholder network for each case study using network analysis and visualization software (Figure 13).

Figure 13 – Case study networks
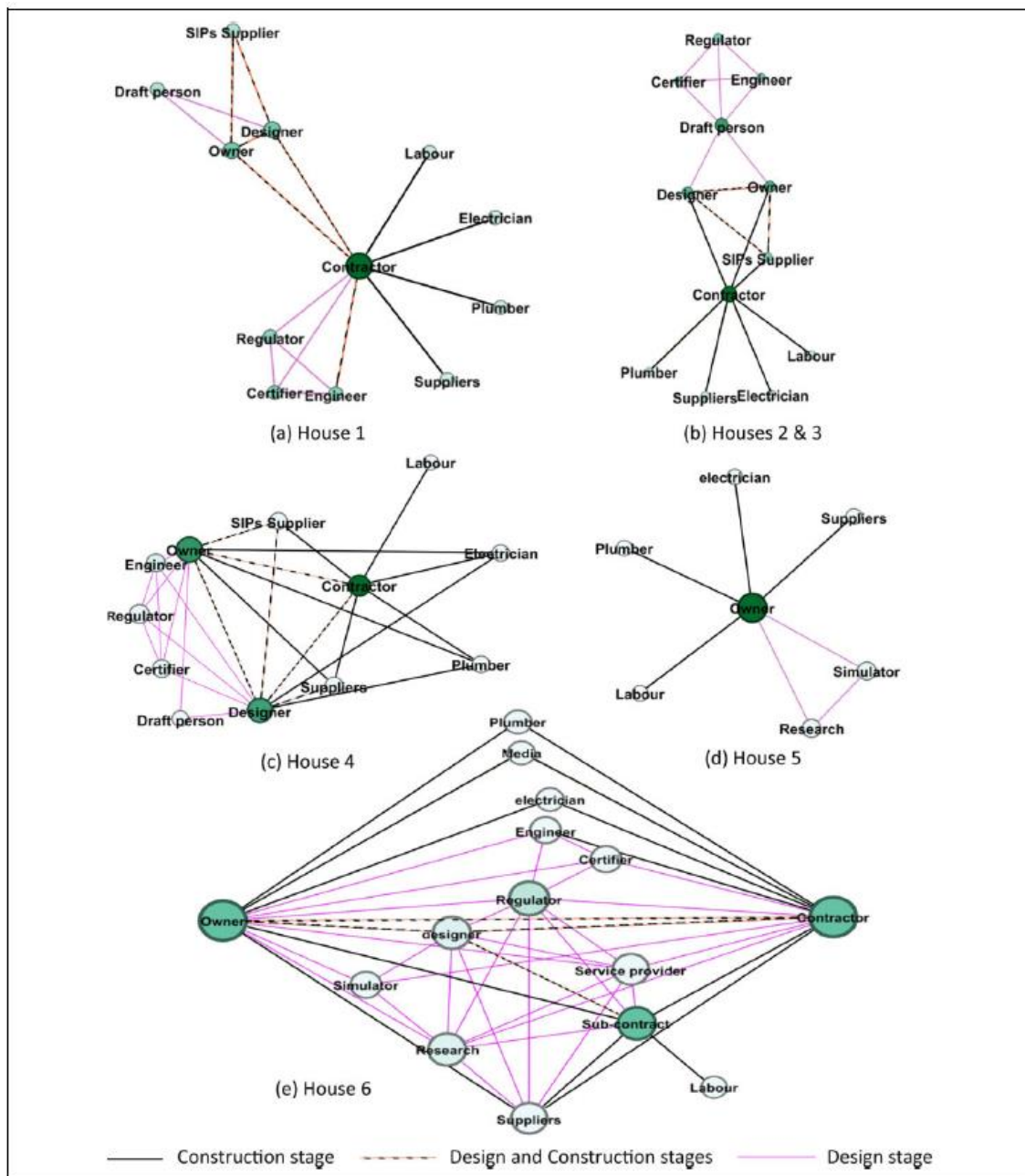
Source: Zedan and Miller 2017, p.5.

6.5   An approach to collaboration in industrialised buildings - Actor Network Theory

London and Pablo (2017) used the Actor-Network theory (ANT) approach to conceptualise the collaboration in construction management for industrialised building (IB) settings. This considered interactional patterns among actors from various networks (London, Pablo et al. 2015). In the context of the Australian housing supply chain. The authors conducted 29 interviews for the five case studies using qualitative data methodologies, to identify barriers and drivers to IB, collaboration, and how collaboration and performance link to one another. They focused on collaboration to identify bottlenecks in the supply chain. The case-studies examined focal organisations that were in different

life stages: two start-up companies; two companies in the growth-stages; and one company that was in the mature phase.

Relevant research themes were then sub-classified, using the ANT concepts of prime movers, problematisation, general symmetry, convergence, stability and multiplicity (Figure 14). The authors then provided insights into findings regarding various settings, and transferred these findings to collaborative networks outside construction.

Figure 14 - Categorization of themes into nine collaborative practices, linked to ANT concepts

- PROBLEMATIZATION/ ACTANTS
- Elements: (1) champion; (2) shared goals; (3) comprehensive pool of skills; (4) openness to change

COLLABORATIVE FOCUS: INDIVIDUAL ACTANTS

COLLABORATIVE FOCUS: RELATIONSHIPS BETWEEN ACTANTS

- CONVERGENCE
- Elements: (5) investment in relationship; (6) shared space; (7) mutual problem solving

COLLABORATIVE FOCUS: STARTING A NEW COLLABORATIVE CYCLE IN A NEW NETWORK

COLLABORATIVE FOCUS: WORK MECHANISMS THAT MAKE RELATIONSHIPS ENDURING

- MULTIPLICITY/ EXPANSION
- Deploying elements 1a new networks

- STABILIZATION
- Elements: (8) coherent, explicit standards; (9) organizing mechanisms

Source: London and Pablo 2017, p. 562.

London and Pablo (2017) found that the utilisation of ANT allowed for the study of the supply chain from a traditional non-linear approach to that of a network-centred collaborative mesh. The practical implications of the study confirm that the utilisation of actor-network theory with industry feedback leads to 'actionable knowledge' that is more applicable for industry stakeholders.

7   APPENDIX B – ADDITIONAL ELEMENT-BASED INFORMATION

This section provides additional background to some of the elements.

7.1   Element 2 - Funding

Some of the key commonwealth government funding avenues mapped include:

1. The National Housing Finance and Investment Corporation (NHFIC) was established in 2018 as a part of the Commonwealth's comprehensive housing package to operate an affordable housing bond aggregator for more private and institutional investment in lower-cost housing and cheaper and longer-term finance to registered CHPs. The NHFIC will administer a AUD$1billion National Housing Infrastructure Facility which will invest in critical infrastructure to unlock new housing supply (National Housing Finance and Investment Corporation 2018). The National Housing Finance and Investment Corporation (NHFIC), bond aggregator loan schemes, and Real Estate Investment Trusts (REITs) are some methods of bridging the funding and financing gap (Cromwell 2018). These instruments require the support of the commonwealth government. Depending on these financing instruments' risk profiles, governments at all levels may need to guarantee the required rate of return on investments and support the investors throughout their investment tenure. For example, in Australia, public private partnership programs, shared equity loans, and/or investment trusts are recommended in small to moderate scale projects. Such arrangements generally transfer project risk from the public sector to a private sector partner in return for an agreed income stream over a period of time, generally related to the life of the asset (Kraatz and Jayawardana 2018). Additionally, in the Australian context:

2. Investments trusts such as REITs are a relatively new area in Australia and can used to enhance supply of affordable and social housing finance with adequate government support by way of tax incentives etc. One example from the United States (US) is the Housing Partnership Equity Trust (HPET), a social-purpose real estate investment trust, sponsored by the Housing Partnership Network. This provides a ready source of long-term, low-cost capital, enabling its non-profit partners to quickly and efficiently acquire apartment buildings that provide quality homes for families, seniors and others with modest incomes.

3. In relation to the equity investment (private sector sale and leaseback) model (NRAS & CHP model), Milligan et al. state that by combining the NRAS refundable tax offset, depreciation allowance and other tax benefits, negative gearing of their investment and projected capital growth has been estimated to yield these investors five to seven percent real returns (based on rental return and capital growth), subject to local market conditions (Milligan, Yates et al. 2013).

4. Not-for-profit (NFP) ownership model using NRAS cash payments - debt financed projects are initiated by leading NFP housing providers.

5. CHP model – with NFP organisations purchasing stock and using annual NRAS cash payments to assist them to service mortgage-backed loan finance raised through commercial banks, typically with a loan to value ratio (LVR) of 40 to 50 percent. At the end of the 10 years, the properties are retained in perpetuity and are held by government. The development model they use also benefits from other tax offsets arising from their charitable status.

6. The National Housing and Homelessness Agreement (NHHA) is an agreement by the Council of Australian Government (COAG) which aims to initiate a whole-of-government approach in tackling the problem of housing affordability. The Australian Government is working with the

states and territories to reform the NAHA and provide ongoing, indexed funding for a new National Housing and Homelessness Agreement (NHHA) from 2018-19. The NAHA is supported by the National Partnership Agreements on: social housing; homelessness; and Indigenous Australians living in remote areas (Council on Federal Financial Relations).

7. The National Disability Insurance Agency (NDIA) supports Australians aged under 65, who have permanent and significant disability with funding for supports and services (National Disability Insurance Agency).

8. Commonwealth Rent Assistance (CRA) is a non-taxable Australian Government supplementary payment added on to the benefit or family payment of people who rent in the private rental market above applicable rent thresholds. It helps income support recipients and low and moderate income families (with children) in the private rental market and in community housing (Australian Government Department of Social Services).

9. The National Rental Affordability Scheme (NRAS), through the Department of Social Services (DSS), was launched in 2008. The NRAS has been a significant catalyst in generating the private finance together with the Australian Government to increase the supply of affordable rental housing in Australia. This is an ongoing funding scheme. The National Affordable Housing Consortium (NAHC) provides one example of an important institutional developments around NRAS (Australian Government Department of Social Security).

7.2   Element 3 - Financing

The NHFIC, bond aggregator loan schemes, and Real Estate Investment Trusts (REITs) are some methods of bridging the funding and financing gap (Cromwell Funds Management2018). These instruments require the support of the Australian Government. Depending on these financing instruments' risk profiles, governments at all levels may need to guarantee the required rate of return on investments and support the investors throughout their investment tenure. For example, in Australia, public private partnership programs, shared equity loans, and/or investment trusts are recommended in small to moderate scale projects. Such arrangements generally transfer project risk from the public sector to a private sector partner in return for an agreed income stream over a period of time, generally related to the life of the asset (Kraatz and Jayawardana 2018). Additionally, in the Australian context:

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2. In relation to the equity investment (private sector sale and leaseback) model (NRAS & CHP model), Milligan et al. state that by combining the NRAS refundable tax offset, depreciation allowance and other tax benefits, negative gearing of their investment and projected capital growth has been estimated to yield these investors five to seven percent real returns (based on rental return and capital growth), subject to local market conditions (Milligan, Yates et al. 2013).

3. In the NFP ownership model using NRAS cash payments, debt financed projects are initiated by leading NFP housing providers.

4. In CHP models, different models exist for CHPs. For example some purchase stock and use annual NRAS cash payments to assist them to service mortgage-backed loan finance raised through commercial banks, typically with a loan-to-value ratio of 40 to 50 percent. At the end of the 10 years, the properties are retained in perpetuity and are held by government. Others have allocated NRAS properties to meet growth targets, under their major agreement with state government housing agencies, and after the NRAS subsidy these are held by the government, though not in perpetuity. The development model they use benefits from other tax offsets arising from their charitable status.

5. Other states have plans to sell off their NRAS stock, possibly as they are not linked with their growth targets or as part of an agreement with the relevant State Housing Authority.

7.3   Elements 2 and 3 - Funding and Financing in Canada

The Canadian *National Housing Strategy* aims to create a new generation of housing in Canada through initiatives such as the *National Housing Co-Investment Fund* and the *Canada Community Housing Initiative* (CMHC 2003). This fund is expected to create up to 60,000 new units of housing and repair up to 240,000 units of existing affordable and community housing. The Fund will consist of nearly $4.7 billion in financial contributions and $11.2 billion in low interest loans. The strategy aims to:

1. Promote diverse inclusive communities and build housing that is sustainable, accessible, mixed-income, and mixed-use.
2. Promotes a human rights-based approach to housing requiring the federal government to maintain a National Housing Strategy that prioritises the housing needs of the most vulnerable.
3. The creation of a new Federal Housing Advocate, through which vulnerable groups, low-income Canadians, and people with lived experience of housing need will have the opportunity to raise systemic issues or barriers they face in accessing adequate housing.
4. Through the National Housing Co-Investment Fund build partnerships to maximise investments, ensure coordination of efforts, and remove barriers to the development process.

The federal government also supports the funding of mortgage lending through its securitization programs: *National Housing Act Mortgage-Backed Securities* and *Canada Mortgage Bonds*. Together, these securitization programs facilitate the supply of reliable funds for mortgage lending in Canada and foster competitiveness within the mortgage industry by allowing smaller lenders across Canada to provide mortgage financing at rates comparable to those offered by large banks.

The CMHC also provides tools and financial assistance to help people in need to create affordable housing without long-term subsidies. These initiatives include (CMHC 2018):

1. Rental Construction Financing - provides low cost loans to encourage the construction of rental housing across Canada, where the need for a supply of rental property is clearly demonstrated. It provides up to CAD$2.5 billion in loans over four years, beginning in 2017.
2. Affordable Rental Innovation Fund - to encourage new funding models and innovative building techniques in the rental housing sector. The CMHC looks for unique ideas that will revolutionize the sector moving forward. In the process, the CAD$200M Fund is expected to help create up to 4,000 new affordable units over five years and will reduce reliance on long-term government subsidies.
3. Mortgage Loan Insurance - the CMHC offers seed funding, rental construction funding and mortgage loan insurance products to support the construction, purchase and refinancing of a wide range of rental properties such as standard rental housing, retirement housing, supportive housing, student housing and single room occupancy.
4. Covered Bond54 Framework - the CMHC administer a legal framework for covered bonds. Federally and provincially regulated financial institutions that meet the requirements of the program are able to issue covered bonds under the framework.

The social finance sector is also worthy of mention here. The CMHC note that this sector, has received support in Canada, in the form of an up to CAD$755 million federal government commitment. Two main types of social finance are in operation in the Province of Quebec: development capital (with socio-economic objectives); and solidarity finance (for collective initiatives and community economic development). Since 1997, social finance in Quebec has been used to support everything from community housing renovations, to new build student co-operative housing (CMHC 2018).

Hulchanski (2005) suggests that lack of new rental construction worsens the problem of affordability in Canada. This decline in new supply, both private and social, has been a critical factor driving the affordable housing crisis. As rental construction has failed to keep up with new household growth and demand, the rental market has become increasingly constrained. Hulchanski (2005) identifies supply measures as: direct support for public/non-profit production; incentives for private rental unit development; creating a level playing field for rental development; reducing development costs; encouraging lower cost forms of development – single-room occupancy, secondary suites; shifting patterns of ownership (facilitating non-profit ownership). Demand measures include: rent supplement; shelter allowance; and reform of welfare shelter benefits.

7.4   Element 9 - Socio-economic systems

Continuing to build a better understanding such inter-relationships, across the various elements, is needed. A contextualised framework (shown below) to build understanding and inform policy reform, investment and the like could assist.

Figure 15 – A framework for integrated SES research projects (Turner, Esler et al. 2016)
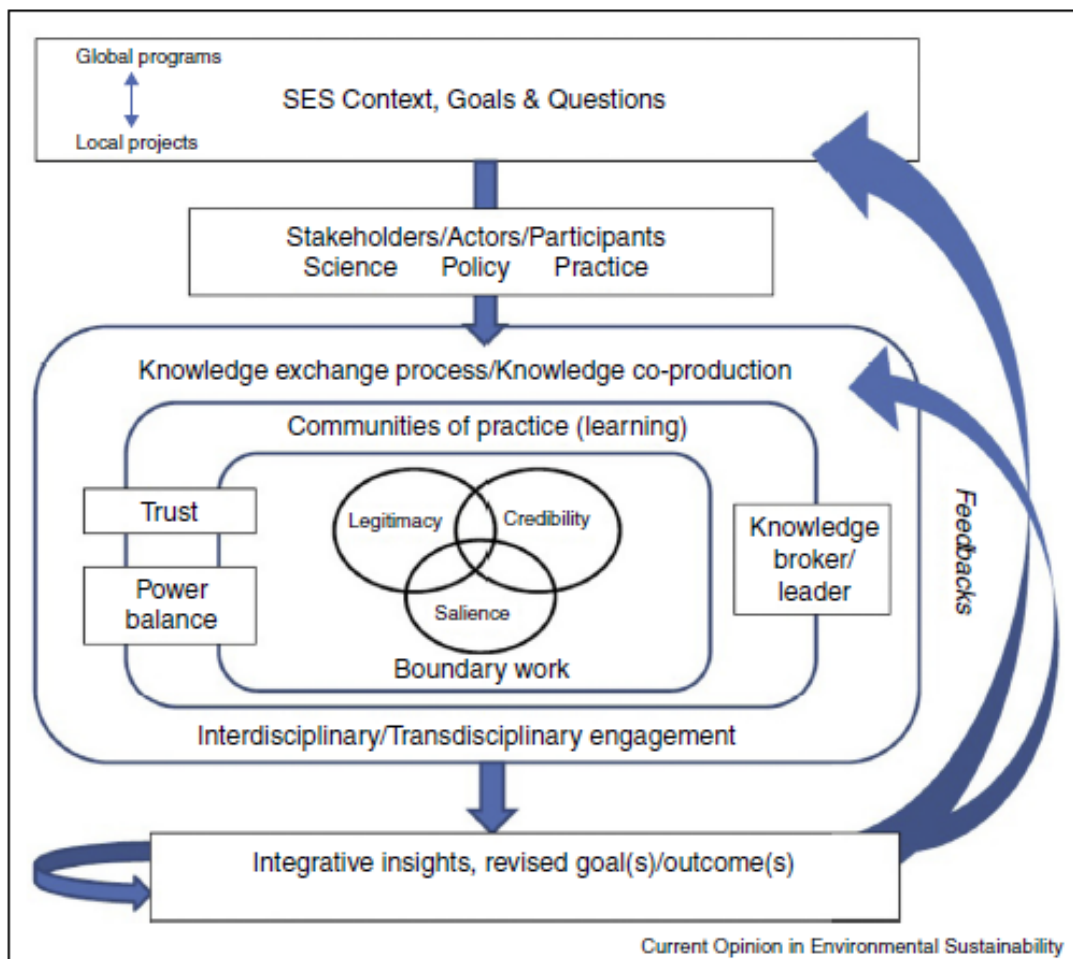
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