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Contact	Cindy Axisa
Address	PO Box 29, Nerang QLD 4211
Telephone	+61 7 5502 2068
Fax	+61 7 5527 3298
Email:	conference@urbandesignaustralia.com.au

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Selecting quality ingredients for the urban consolidation recipe: user design of medium-density housing

Jasmine S. Palmer

Centre for Housing, Urban and Regional Planning, The University of Adelaide, Australia

ABSTRACT

In the promotion of urban consolidation recent and current metropolitan plans for Australia's capital cities call for universal increases in the provision of medium-density housing as an essential ingredient for a more sustainable urban future. When metropolitan plans call for medium-density housing little guidance is provided beyond suggested heights and densities. While minimum standards for quality and design are either enforced or suggested in a range of jurisdictions, planning documents arguably need to provide more attention to the variety of medium-density housing types possible and how they impact consolidation outcomes. Given this lack of specificity in metropolitan plans, who decides what to build? How is the design brief determined? Is there an alternative?

Keywords: medium-density housing, design, metropolitan plan, development risk, Australia

INTRODUCTION

To successfully prepare good food one requires quality ingredients and a plan for how to put them together. So too does a good city, activity centre, node or neighbourhood. When a cake or biscuit recipe calls for flour it deliberately specifies the grain, texture and degree of refinement required to achieve the desired outcome. When ordering a cooked breakfast on a lazy Sunday morning wait staff will undoubtedly enquire as to what cooking method you prefer for your eggs. Without this information clarifying both the practical effectiveness of ingredients and consumers personal preferences it is highly unlikely the plated outcome will make best use of the ingredients/resources at hand or meet the needs/desires of the intended consumer. In contrast, the typical recipe for urban consolidation seldom provides guidance to the qualities of ingredients or their method of production (see text box).

Typical Urban Consolidation Recipe:

1. Mix together all 'grounded' ingredients: medium -density housing, quality public spaces, retail spaces, offices, and community and health services.
2. Shake well and distribute liberally adjacent to public transport corridors, interchanges and stations.
3. Ensure the mix is mounded highest at its centre and tapers gradually to the edges.
4. Cook continuously (avoiding stirring) until a resilient, sustainable and cohesive community develops with a unique local identity.
5. Cool on cooling rack and enjoy your new TOD/Activity Centre/ Livable Neighbourhood with lashings of locally produced cream and lemonade.

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Whilst all recent and current Australian Metropolitan Plans place emphasis on the increased provision of higher-density housing in existing urban areas over the coming decades, they generally fail to suggest desirable qualities beyond the measures of maximum height and number of dwelling units per hectare. Depending on one's previous residential experiences higher-density housing may conjure images of exploitative workers tenements of the Industrial Revolution, opulent apartment hotels of early 20th Century New York, Le Corbusier's communally minded Unité d'Habitation buildings, the 3-5 storey walk-up buildings which define the active urban streets of many thriving European cities, or the social failures of now demolished public housing tower projects in the US and UK over the past 50 years. This brief list of typologies is by no means an inclusive higher-density housing history, yet even these few examples demonstrate a diversity of design processes, built outcomes, social amenities and tenures. Hence, when The 30-Year Plan for Greater Adelaide (as just one example of an Australian Metropolitan Plan) calls for "a new urban form"ⁱ featuring a "mixture of dwelling types, with an emphasis on medium-density dwellings"ⁱⁱ to meet the challenges and opportunities of our common urban future how is the type of flour selected and who decides how the future occupants would like their eggs? This paper reviews existing literature and current Australian medium-density housing (MDH) provision systems to respond to these questions. It then introduces some alternative methods which re-combine the MDH ingredients to enhance the consolidation recipe.

THE CURRENT INGREDIENTS– EXISTING MDH PROVISION

As a nation dominated by owner-occupied dwellings, Australians are relatively familiar with the provision processes for low-density free-standing dwellings. Created primarily through contract based construction, rather than speculative construction more common in the UK and US, low-density housing provision in Australia allows the owner-occupier to engage with site selection, dwelling design and fitting specifications. The contracting owner becomes responsible for financial risks associated with the project and, in the case of owner-occupiers, place initial importance on use value. The resultant dwellings frequently feature a high level of similarity with contemporary neighbours but nonetheless allow households to express their individuality as they 'wrap'ⁱⁱⁱ their lifestyle around the dwelling over time. Through this process owners are actively engaged with three of the four sub-systems of housing provision described by Burke and Hulse^{iv}, namely the *production, exchange and consumption sub-systems*. See Figures 1 and 2.

In contrast, current MDH provision is a more complicated process with less transparency from the perspective of the dwelling owner or occupier. The craft-based construction systems of low-density housing is replaced by more commercial/industrialised^v construction

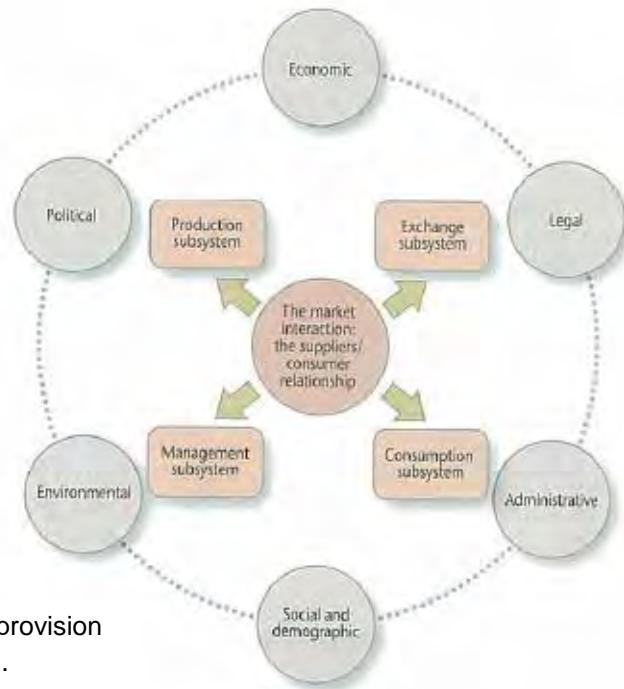


Figure 1: Sub-systems of Australian housing provision as described by Burke and Hulse (2012, p.36).

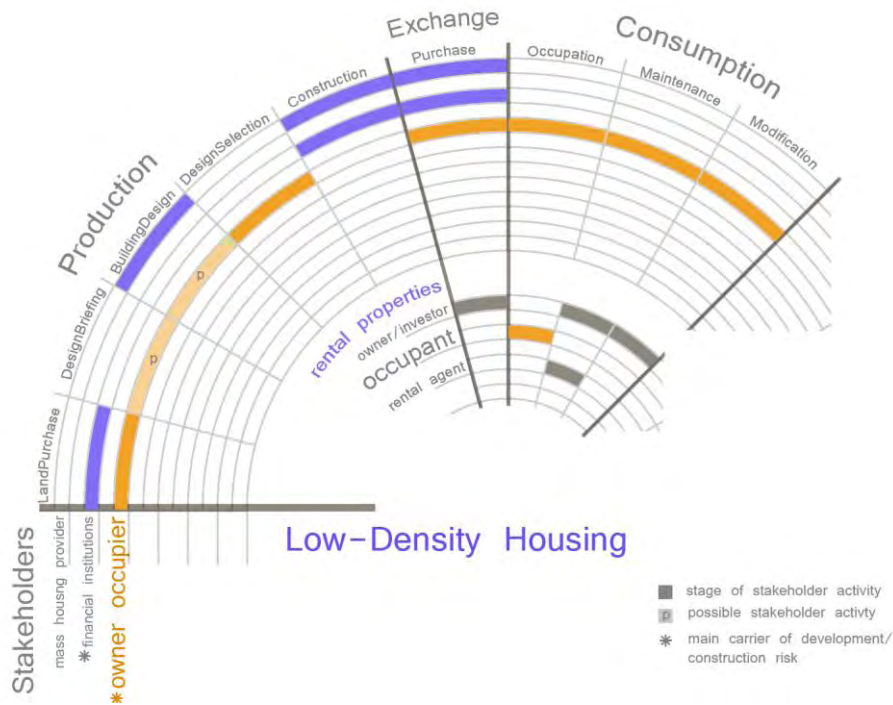


Figure 2: Stages of involvement of primary stakeholders in LOW-DENSITY 'Contract Based' Housing Provision (Post greenfield land development)

systems and the contract-based (demand led) provision replaced by speculative investment (supply led) provision. Hence, MDH owners and occupants are not able to engage with housing production decisions and are invited to participate in the *exchange* and *consumption* subsystems only (see Figure 3).

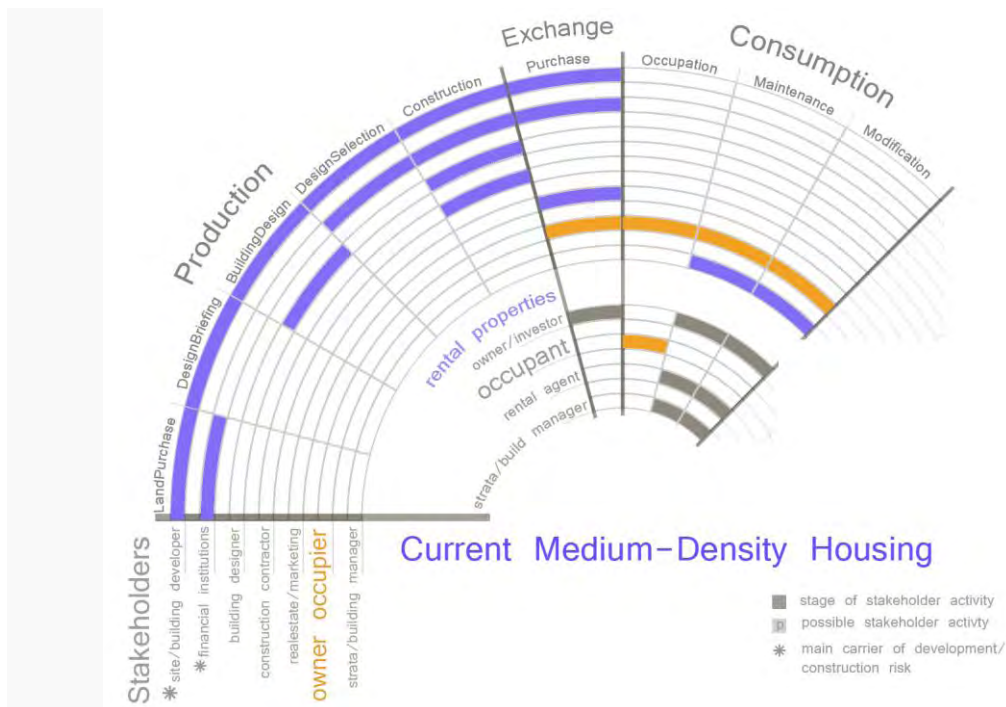


Figure 3: Stages of involvement of primary stakeholders in exiting MEDIUM-DENSITY Housing Provision

The term 'Medium Density Housing' unfortunately does not benefit from a consistent definition across jurisdictions, nor is density information identified in Australian Bureau of Statistics housing data. The Planning Strategy for Metropolitan Adelaide defines MDH by net density only (35-70 dwelling units per hectare du/h).^{vi} For the purposes of this project this definition is ineffective as the measure of du/h alone does not provide sufficient information as to housing outcomes. This project is also interested in housing attributes beyond density such as ownership and title types, provision methods, development size, location etc. The medium density housing (MDH) relevant to this research project is that which is (1) located in areas of our cities designated for urban consolidation, (2) in strata or community titled buildings of 4-60 dwellings, (3) three storey or higher and (4) with a land use of 75-150square metres per dwelling (net density of 65-130 du/h). In the existing provision system, housing of this type is typically constructed by small to medium scale speculative developers via the process shown in Figure 3.

The absence of owners and occupiers from the MDH *production sub-system* leaves control of dwelling design in the hands of developers and financiers whose primary objective is to maximise development profits. Given the direct relationship between project size and risk (planning, project and market risk^{vii}) this means fundamental decisions about housing design, amenity, typology and usability are made via a risk adverse lens privileging

market/exchange value over use value. Hence profit and risk can be seen to have greater influence on MDH than the preferences of the occupant households. It is estimated that 70 percent of new medium and high density dwellings are purchased by investors rather than occupiers^{viii}. This further exaggerates the role of MDH as a product of exchange, promoting the construction of smaller dwellings able to provide ideal rental returns.^{ix}

Perceptions of risk and risk avoidance by developers and financial institutions lead to repetition of proven designs and discourage innovation or deviations from the norm^x. Risk avoidance therefore limits the ability of MDH to evolve over time and meet the desires and needs of our urban future. Whilst MDH provision continues to repeat past models it will inevitably reinforce the existing MDH experience, which statistically includes:

- low owner-occupation rates of around 30% compared to 77% in low-density housing^{xi}
- high rates of occupant relocation compromising community networks^{xii}
- perception of MDH as a stepping stone toward the attainment of ‘the great Australian dream’ rather than as housing equally able to accommodate that dream^{xiii}

This existing MDH experience falls short of the intentions of the Metropolitan Plans in relation to the desirable qualities of MDH environments for Transit Oriented Developments (TODS), Activity Centres, Transit Corridors etc. Past studies^{xiv} have demonstrated significant segments of the populations of Melbourne, Sydney and Adelaide seek to participate in urban consolidation as owner-occupiers but do not view the existing MDH product as meeting their needs due to its investment driven design and lack of flexibility.^{xv} More than adequate skills exist within the design and construction industries to address the needs of individual households in MDH environments, including the design of flexible spaces which enable the familiar ‘wrapping’ of one’s life style about the home. However, the ability to implement such a demand-led process is limited by the *management sub-system* described by Burke and Hulse as “housing and housing related policy at all levels of government”.^{xvi} So, whilst we can design it, design cannot solve these challenges alone.^{xvii} If MDH environments sought by Metropolitan Plans are to be achieved a greater diversity of MDH provision methods need to be enabled through modifications to the *management sub-system*; modifications which encourage user input in design, prioritise use value, increase dwelling mix and promote design innovation.

INTERNATIONAL RECIPE TRENDS: ENABLING USER INPUT IN DESIGN

International examples of non-speculative MDH development provide insights about user-input into MDH design. One well established example is the Baugruppen (or Baugemeinschaft) movement in Germany. Baugruppen (building groups) are formed by a group of households who work together to design and realise their own dwellings.^{xviii} They

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are often based around common interest groups such as retirees, families, gardeners, eco-living enthusiasts etc. Over the decades since the instigation of Baugruppen building groups various jurisdictions across Germany have proactively created administrative structures to support occupier-designed group projects^{xix} and financial institutions have developed products to support multi-household private developments^{xx}. Numerous architectural and building firms have also specialised in providing services to Baugruppen and many groups have produced innovative buildings which would likely have been perceived as risky by conventional developers and financiers. Each Baugruppen project expresses a degree of individuality and whether the group chooses to construct entirely privatised spaces or co-housing environments they all aim to meet the known needs of the known inhabitants, rather than the generic desires of an unknown household. As development risk is relocated to the owners costs are reduced, market risk is reduced from the perspective of the financiers, and marketing costs are eliminated. Baugruppen projects are typically delivered at a financial saving of approximately 25% in comparison to an equivalent market product,^{xxi} effectively lowering the threshold for participation in home ownership.

As a city with many potential sites for urban infill Berlin has one of the highest rates of Baugruppen constructions, which are spread across the city on individual sites. Perhaps the most well-known examples of larger Baugruppen development occurred in Tübingen and Vauban commencing in the 1990's, where individual building groups realised the large scale urban development of entire neighbourhoods over time. As each building group constructed their individual projects, governed by overarching municipal masterplans, the neighbourhoods evolved. City governments supported the process by facilitating group formation and provided appropriately long settlement periods on land options, enabling groups to finalise their internal processes before final commitment to land purchase.

The success of an alternative MDH provision system is inevitably related to the housing *management sub-system* within which it exists. In this case the *management sub-system* has adapted over time to support a housing movement which grew from bottom-up urban concerns in the 1970's^{xxii} and has evolved into a successful system of collaboration between individuals and industry to ensure desirable housing outcomes.

Similar governmental support is currently on offer to Collective Custom build projects in the United Kingdom. The UK housing market has a long history of speculative provision across a range of densities, with large-scale development companies dominating the industry. At the same time as Australian Metropolitan Plans are promoting a decrease in user involvement in housing design by encouraging an increase in speculative development, the UK Department for Communities and Local Government is introducing programs to move

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away from speculative construction. The aim is to reconfigure the *management sub-system* to increase rates of 'custom build' housing^{xxiii} in the interests of increased dwelling diversity and affordability. In 2011 a short-term finance fund of 30 million pounds was announced to support group custom build schemes by covering costs such as land acquisition, site preparation, construction and professional fees. The fund is solely for multi-unit group projects "with the objective of bringing forward sufficient numbers of successful schemes to demonstrate to commercial funders that the lending model is a viable and sustainable business which can be taken forward by industry."^{xxiv} In addition government owned sites are being actively identified and released exclusively for custom build development.^{xxv} One such urban consolidation site is MiddleHaven, where collective custom build groups are currently being invited to become 'pioneers' and catalyse the redevelopment of an underutilised urban precinct currently viewed as economically unviable for mainstream development. With a masterplan in place, there are many similarities between the process proposed here and that undertaken in Tübingen and Vauban.

Reflecting upon a history of speculative housing production Architect and Strategic Designer Alistair Parvin suggests it:

led to a tendency for the design of houses to prioritise supply-side economy and short-term asset value over long term sustainability or actual use value. Housebuilders were operating on a build-to-sell basis in a market where almost anything sold: often to buyers who themselves were more interested in properties as capital investments rather than as places to live.....In reality what we were constructing were not dwellings, but monopoly houses: financial assets made into thin replicas of human dwellings.^{xxvi}

Australian scholars^{xxvii} agree that when a small number of development firms operate in a market a loss of diversity of housing types and tenure types occurs together with reduced affordability. Current UK policies aim to reconfigure the *management sub-system* to facilitate self-provided housing, "making it easier for ordinary people to produce things for themselves."^{xxviii} These top-down policies enable opportunities for bottom-up innovation, supporting a 'prosumer'^{xxix} revolution across both low and medium-densities.

Both the UK and German models (one in infancy and the other well matured) eliminate the developer and relocate risk to the owner, keeping financial costs down for participants at the same time as returning the primary value of housing to that of *use*. Both also lower the economic threshold for participation through risk and profit cost reduction, enabling home ownership for households who would be excluded from the equivalent market product.

Alternative procurement models without pro-active government support also exist. They are most common in places of volatile or insecure financial markets. In these markets they enable groups to assume risk on projects where developers are unwilling. These

procurement models are forced to exist within the confines of a developer based management system and in recent years minor legal changes to mainstream development systems in both Argentina and Israel have had the unintended consequence of reducing the ability of alternative provision to occur and hence reducing user input in design. Proactive support from government authorities and non-government actors in the housing management sub-system is essential for both the launch and the on-going viability of alternative procurement methods.

ALTERNATIVE INGREDIENTS ARE POSSIBLE: USER DESIGN IN AUSTRALIA

A small number of innovative examples of MDH provision are being pursued in Australia by individuals and groups seeking to navigate an alternative housing pathway to that offered by the existing system and enable owner-occupier input in design. Four examples have been investigated through document reviews and interviews with instigating parties.^{xxx} Each of these projects has been instigated by individuals and professionals frustrated by the existing MDH provision methods and the restrictions it places on future residents. Whilst no one example purposes to provide a universal solution for all, collectively they illustrate that options do exist for user input in design and development in Australian MHD. Four examples, both built and in progress, are described in Table 1 with an emphasis on how they differ from existing MDH provision, the degree of design input enabled, and the relocation of risk. Each of these examples varies the extent and location of risk in the development process, which offers the potential for significant financial savings. Importantly, they eliminate the greatest risk – that of not knowing who will be the building occupants. Each example takes a different approach to occupant engagement in provision and requires different levels of individual time commitment ranging from relatively minor in examples 1 and 2 to a high level of personal investment in examples 3 and 4.

Figures 4-7 show how the four examples differ from existing MDH provision in relation to primary stakeholders' involvement in the *sub-systems of production, exchange and consumption*. Comparing these to Figures 2 and 3 it can be seen that owner involvement in design is increased in all cases and becomes similar to that of traditional low-density housing provision. Additionally, examples 3 and 4 extend the role of both 'developer' and 'owner' over the life time of the project as the former is constituted of the later. This is in contrast to the typical system (repeated in examples 1 and 2) in which the developer and builder's relationship with the project is terminated at the completion of construction and arguably encourages lower quality outcomes due to lack of ongoing investment.

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Table 1: A comparison of Australian alternative MDH provision projects under investigation

Example 1. 'On-Line dating service' Commenced 2013. Groups being formed.	
Differences	Combines crowd sourcing and smart marketing in on-line platform to form groups of likeminded households. Groups formed are paired with an architect and developer to realise the project.
Extent of design input by owners	Moderate. Interested parties indicate personal preferences via on-line platform. The group formed meets with designers 3 times during design development. Some personal choices in finishes. The instigator's intention is to avoid excessive input or 'design by committee' due to possible time delays resulting
Risk & Cost	Risk to financial institutions and developers reduced as purchasers are pre-committed, effectively representing adequate pre-sales for financial approval for development. This should represent a saving through reduced marketing and financing costs. Additional costs incurred to utilise the service.
Instigators Motivation	Experienced Architect seeking a means of enabling innovation in the medium-high density housing market by side stepping the restrictive developer driven brief.
Example 2. 'Mediation and Design' Commenced 2013. Early project stages.	
Differences	A client group is formed through registration of interest prior to site selection. Client group formulates project brief. Design team acts as 'mediator' between the client group and the financing developers.
Extent of design input	Moderate. Client group formulates project brief. Designers provide a range of options or possibilities within the budget. Group selects common options. Individual selection of interior finishes.
Risk & Cost	The usual developer model of finance is not significantly altered. The risk normally associated with atypical design is avoided through pre-sales. Use of independent project manager proposed to limit construction risks. Marketing costs removed.
Instigators Motivation	Young architects and property specialists seeking more collaborative living environments. Focus on 'good design', small living spaces and the inclusion of shared facilities.
Example 3. 'Collective Development' Initial Project completed 2013. ^{xxxxi}	
Differences	A group of individuals form a company which purchases land and acts as a private developer. At completion of project the company is dissolved and individual dwellings sold to members.
Design input	Highest level of design input into brief, site design, building and individual interiors.
Risk & Cost	Company, composed of the individual members, takes 100% risk. Owners personally realise the profit usually paid to developer. No marketing costs. No stamp duty tax payable. Resultant property values in the initial project greatly exceeded costs, realising a significant profit (or saving) for members.
Instigators Motivation	25-35 yr old professional individuals and relatives previously known to each other. The intent was to build properties for rent as part of personal property portfolios. Unexpectedly, all units were occupied by owners after completion of construction.
Example 4. 'Cohousing collective partnered with community housing provider.' In design.	
Differences	Group formed well in advance of site selection. Community Housing Provider (CHP) acts as developer, accessing finance through existin portfolio. Rental community housing combined on site with owner-occupied residences. Cohousing members contribute an equal share of land purchase expenses at time of purchase. At completion individual units sold to group members except those retained by CHP.
Design input	High, including group design of shared external facilities and gardening spaces.
Risk & Cost	CHP provides access to cheaper finance. Developer and marketing costs avoided.
Instigators Motivation	A group of mid aged professionals seeking an alternative to the developer designed model of city living, including collaborative use of space and gardens.

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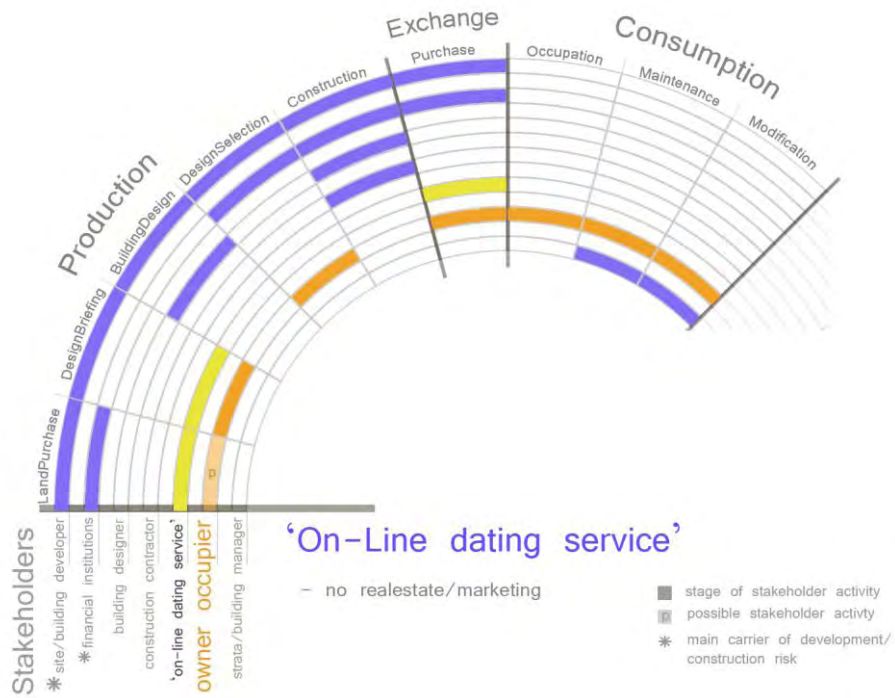


Figure 4: Stages of involvement of primary stakeholders in Example 1: ‘On-line Dating Service’

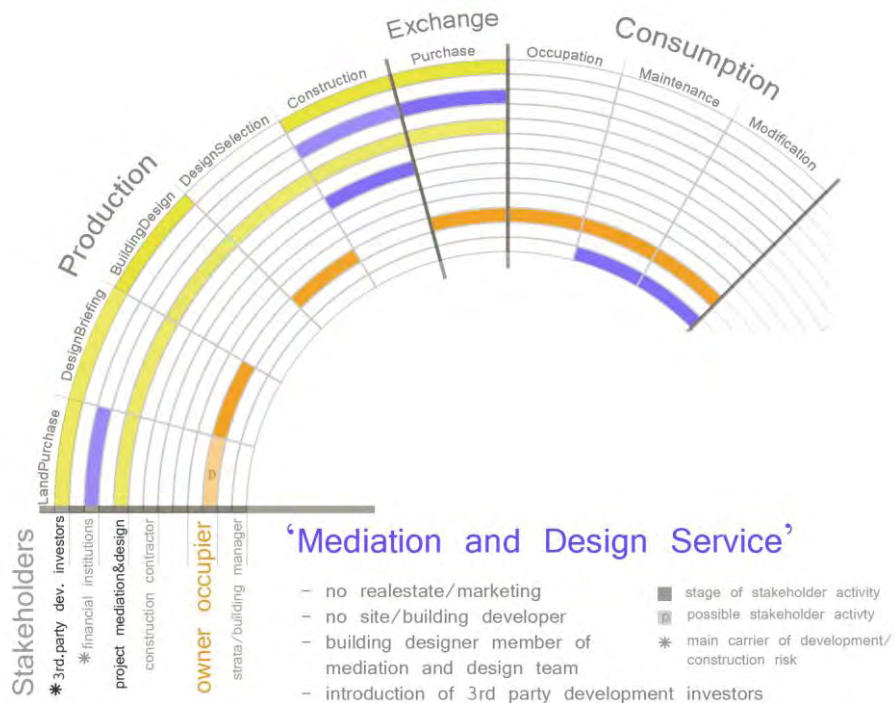


Figure 5: Stages of involvement of primary stakeholders in Example 2: ‘Mediation and Design Service’

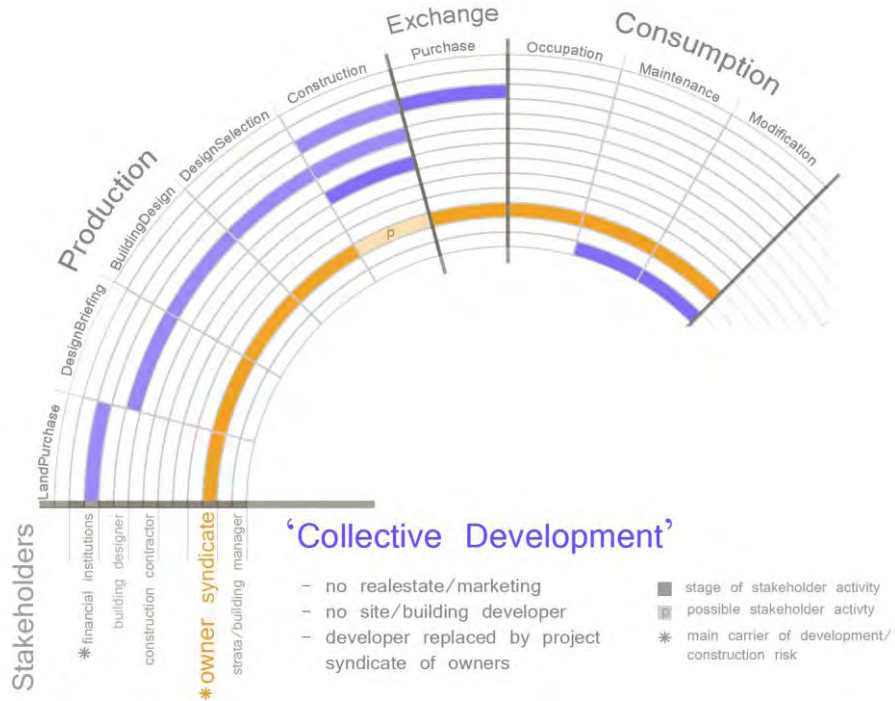


Figure 6: Stages of involvement of primary stakeholders in Example 3: 'Collective Development'

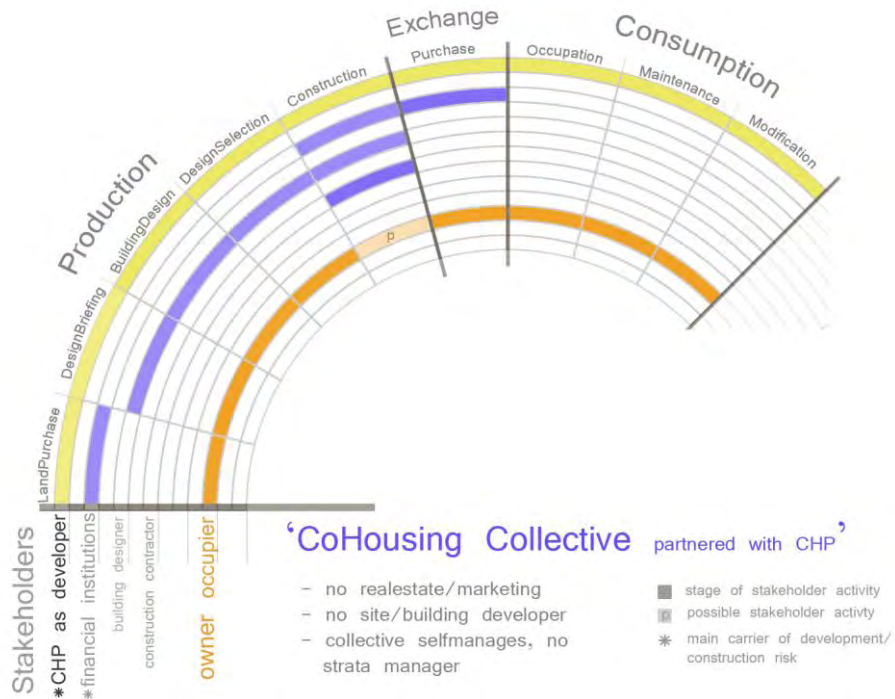


Figure 7: Stages of involvement of primary stakeholders in Example 4: 'CoHousing Collective partnered with Community Housing Provider'

One attribute these four examples have in common is that they exist within the established *management sub-system* (policy, planning, financial, institutional and contractual systems of development). They seek alternative outcomes within boundaries which have evolved to meet the needs of the existing developer led system of MDH provision. Each project has been required to negotiate challenges created by existent boundaries, including contractual restrictions and the lack of suitable financial products.^{xxxii} These projects are pushing the existing system boundaries and over time will provide guidance both for similar future projects and for an understanding of how the *management sub-system* might evolve to facilitate ongoing MDH innovation in urban consolidation.

COOKING METHODS – STIR THE POT

As a prospective MDH owner-occupier of an urban consolidation project in an Australian city it is likely that a banker and a developer will decide how I like my eggs cooked – and they will do so assuming I am the purchaser of the eggs but not the end consumer. International examples and recent Australian projects show us this does not need to be the case. The one-size-fits-all result of risk adverse design decisions is not appropriate for the diverse range of households attracted to living in the vibrant urban consolidation areas promised by Metropolitan Plans. If MDH is to become an accepted alternative to the free-standing Australian dream for a portion of the population, as required to effectively increase urban density and sustainability over time, a degree of disruption of the existing *management sub-system* is required to enable a more innovative approach, including increased owner input in design. Reflecting on decades of experience in UK housing development and policy Nabeel Hamdi observes:

In the old days, when it came to expanding supply – whether of goods, services, utilities or housing – and doing it equitably and effectively, we thought it best to centralize decision making and production so that resources could be concentrated and focused where need was greatest Big was beautiful, small was difficult and not very efficient..... The fewer people and organizations involved, the easier and quicker it would all be. We now know the truth is somewhere between large organizations and small ones, centralized and decentralized..”^{xxxiii}

Current Australian housing provision systems are arguably entrenched in Hamdi’s ‘old days’, continuing to support the centralisation of provision of urban consolidation projects. The use of Precinct Plans under the 30 Year plan for Greater Adelaide, for example, encourages large scale precinct redevelopment by developers, fast tracking planning applications for the *big* and promoting repetition of existing MDH provision without making equivalent pathways of opportunity for the *small* and the innovative. Without a disruption to this system MDH options remain limited and metropolitan plans continue to prop-up the existing developer and investor led system of MDH provision with its less than desirable outcomes.

CONCLUSION: *SMALL* ENHANCES THE URBAN CONSOLIDATION RECIPE

Whilst the *big* is essential to focus on long term urban progress and maintain large scale strategies, a suitable disruption to the existing *management sub-system* would be to encourage effective layering of the *big* and the *small*; promoting the development of small sites by alternative provision methods (such as those group projects described above) within the larger context of precinct wide consolidation plans. Designating a portion of MDH in each consolidation area to be designed and constructed outside of the existing provision system will increase housing options and reduce the excessive financialisation of the city currently occurring in areas of consolidation.^{xxxiv} This will provide alternative MDH ingredients to the consolidation recipe, ingredients with greater variation in grain, texture and degree of refinement. The new MDH ingredients produced with owner input in design can provide greater variety than possible within the existing *big* profit-driven approach. Variety in design amenity, material realization, social fabric, tenure and urban texture assist in achieving “opportunities for denser, healthier and more liveable urban projects through greater infill opportunities and renewal of existing suburbs.”^{xxxv} Such user-designed MDH projects are arguably higher quality ingredients for urban consolidation than existing MDH as they are able to make best use of the resources at hand to meet the needs/desires of the intended consumer into the future.

ⁱ Government of South Australia Department of Planning and Local Government (2010). The 30-Year Plan for Greater Adelaide: A volume of the South Australian Planning Strategy. Adelaide, p. 53.

ⁱⁱ *ibid*, p.46

ⁱⁱⁱ Burke and Hulse describe Australian low-density housing as providing a “wrap-around housing tenure’ because it is the form of tenure that enables households to add on, or wrap around it, the aspirational lifestyle that individualistic Australians value.” “Unless you own the dwelling and have the external space, you cannot wrap these things around the dwelling.” Burke, T. and K. Hulse (2010). "The Institutional Structure of Housing and the Sub-prime Crisis: An Australian Case Study." *Housing Studies* 25(6): 821-838.

^{iv} Burke and Hulse describe the Australian housing system as comprised of four subsystems: Production, Exchange, Consumption and Management, all of which are influenced by economic, legal, political, environmental, administrative, and social and demographic factors. Burke, T. (2012). The Australian residential housing market: institutions and actors. *Australia's unintended cities*. R. Tomlinson. Collingwood, CSIRO: 35-49.

^v Discussing housing provision in developing countries Turner outlines the negative impact of industrialised scale construction which alienates the user from both production and effective maintenance. Turner, J. F. C. (1976). *Housing by people : towards autonomy in building environments*. London: Marion Boyars.

^{vi} The Planning Strategy for Metropolitan Adelaide defines MDH by net density only (35-70 dwelling units per hectare du/h), correlating it approximately to construction of 4-10 stories. The Government of SA ‘Understanding Residential Densities Handbook (updated October 2011 to reflect changes in the planning strategy) however, provides examples of ‘medium density housing’ within the defined density range varying from single storey semi-detached dwellings to two storey town houses. Three storey town houses are included in the handbook as examples of high density housing (not medium) together with single storey row cottages and high rise apartments as they all have densities over 70 du/h. The exclusive use of density is not effective to define housing types.

^{vii} Parvin, A., D. Saxby, C. Cerulli and T. Schneider (2011). A right to build. *The next mass-housing industry*. Sheffield, University of Sheffield School of Architecture.

^{viii} Keck, S. (2013). The Value of Good Design. *Charter Insight*, July 2013, Melbourne.

^{ix} Charter Keck Cramer (2013), *Charter Insight* October 2013, Melbourne.

City of Melbourne (2013). *Understanding the Social Outcomes of Housing*, SGS Economics and Planning and AHURI, Melbourne.

Property Council of Australia (2012) *Making the Numbers Stack Up. A Study into Major Residential Urban Renewal In Melbourne*, Charter Keck Cramer, Melbourne.

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^x City of Melbourne (2014) op.cit. p.30.

^{xi} Troy, P. N. (2012). Accommodating Australians : Commonwealth government involvement in housing. Annandale, N.S.W., Annandale, N.S.W. : Federation Press.

^{xii} only 13% of people in rental housing likely to reside at the same address as they did five years prior compared to 71% of owner-occupiers. Australian Bureau of Statistics. (2010). Australian Social Trends December 2010: Moving house.

^{xiii} Fischer and Ayturk (2011) op cit. p.6, 20,101

^{xiv} Kelly, J.-F., B. Weidmann and M. Walsh. (2011). "The Housing We'd Choose."

Fischer, H. and D. G. Ayturk (2011). Residential Density (Liveable Communities) Market Perceptions. Adelaide, Adelaide Thinkers in Residence program.

^{xv} Fischer and Ayturk (2011) op cit. p.18-21

^{xvi} Burke (2010) op cit, p.36.

^{xvii} Gleeson, B., J. Dodson and M. Spiller (2012). Governance, metropolitan planning and city-building: the case for reform. Australia's Unintended Cities: The Impact of Housing on Urban Development. R. Tomlinson. Melbourne, CSIRO Publishing: 117-134.

^{xviii} Baugruppen can be constituted in a variety of ways and offer residents numerous forms of tenure. For detailed discussion of the various ownership types possible see Ring, K. (2013). Self Made City. Berlin, jovis.

The baugruppen of interest to this project are those which are primarily constituted of households seeking to construct and own property for personal occupation (owner occupiers).

^{xix} See Planning policies for Vauban, Freiberg and Tuebingen which actively encourage building groups.

^{xx} See discussion of the role of financial institutions in supporting Building Groups in Ring (2013) op.cit.

^{xxi} Alee Denham (2012) How Freiburg Ended up with Utopian Green Districts in Planning Observer. Available on line at <http://www.planningobserver.com/index.php/how-freiburg-ended-up-with-utopian-green-districts-more/> Accessed 29 July 2013.

^{xxii} Chan, W. y.-p. (2010). The Phenomenon of Building Group (Baugruppe) in Berlin M.Arch, Anhalt University of Applied Sciences. p.19

^{xxiii} "Custom build housing is where a builder is contracted by a home owner to create a 'custom built' home or where a private individual builds their home as a DIY 'self build' project. This form of housing can include single detached homes on small plots in rural areas, larger scale sites with hundreds of homes, community self build projects, blocks of apartments commissioned by a group of people in an urban area"

<https://www.gov.uk/government/policies/increasing-the-number-of-available-homes/supporting-pages/self-builders> accessed 18 July 2013

^{xxiv} <https://www.homesandcommunities.co.uk/ourwork/custom-build>

^{xxv} Department of Communities and Local Government 16 May 2014

<https://www.gov.uk/government/policies/increasing-the-number-of-available-homes/supporting-pages/self-builders>. Accessed 20 June 2014

^{xxvi} Parvin et al (2011) op cit. p.15.

^{xxvii} Charter Keck Cramer (2012), Birrell et al (2012), Burke and Hulse (2010)

^{xxviii} Parvin et al (2011) op cit, p.8.

^{xxix} The term 'prosumer' was coined by Futurist Alvin Toffler in his 1970 book *Future Shock* and further expanded in his 1980 book *The Third Wave*. Toffler's described the "proactive consumer" as individuals or groups who actively engage in the improvement of goods and services to alter both the good/service provided and the role of the consumer. The term 'prosumer' is also used to describe the "producing consumer" who produces goods for personal consumption, redefining the market separation between producers and consumers.

^{xxx} The four examples of alternative housing provision introduced here will be the subject of more detailed interviews with primary stakeholders as part of research to be undertaken as part of PhD studies by the author. The overview of cases presented here represent a preliminary scoping study for comparison.

^{xxxi} Examples 3 and 4 require a high level of active involvement by prospective owners. This level of engagement directly reflects the degree of design input and cost savings realized. It is also notable that in examples where high levels of design input are achieved the group has benefitted from access to relevant personal capabilities, with professional members such as architects, planners and property consultants working in the interests of the project. If such processes for owner input in design are to be main-streamed it is not realistic for all owner groups to have access to such expertise and implementation programs would be needed to support participation.

^{xxxiii} Hamdi, N. (2004) Small Change: About the art of practice and the limits of planning in cities Routledge.p.139

^{xxxiv} Theurillat et al. (2014) discuss the layers of market systems experienced as real estate markets evolve over time. Financialisation of the city refers to the highest level of exploitation of urban rents through the development of 'Major Multi-Purpose complexes' such as sites of urban consolidation. Financialisation of the city places emphasis on market value over use value. Theurillat, T., P. Rerat and O. Crevoisier (2014). "The real estate markets : Players, institutions and territories." Urban Studies. published on line 28 May 2014

^{xxxv} Department of Planning, Transport and Infrastructure South Australia (2014) Policy Paper Planning Reform- a driver of economic growth. dpti.sa.gov.au/planning/planning_reform_paper_feb_2014