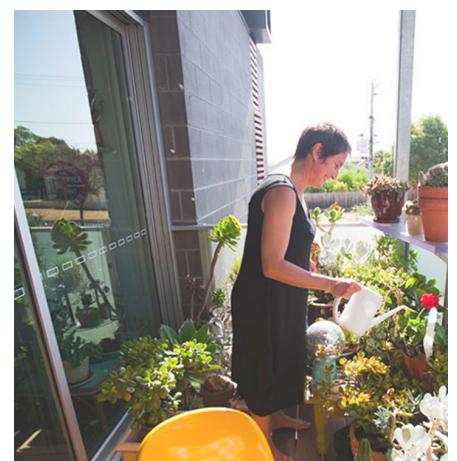




# DELIBERATIVE DEVELOPMENT

Opportunities for Moreland Council





Version 1- 14 May 2018


Version 2- 31 May 2018

*This Paper has been prepared by Echelon Planning with input from Conceptus Property particularly in relation to the development feasibility components of the development process for both traditional and deliberative development, as set out in Chapters 2.4 and 7.2*



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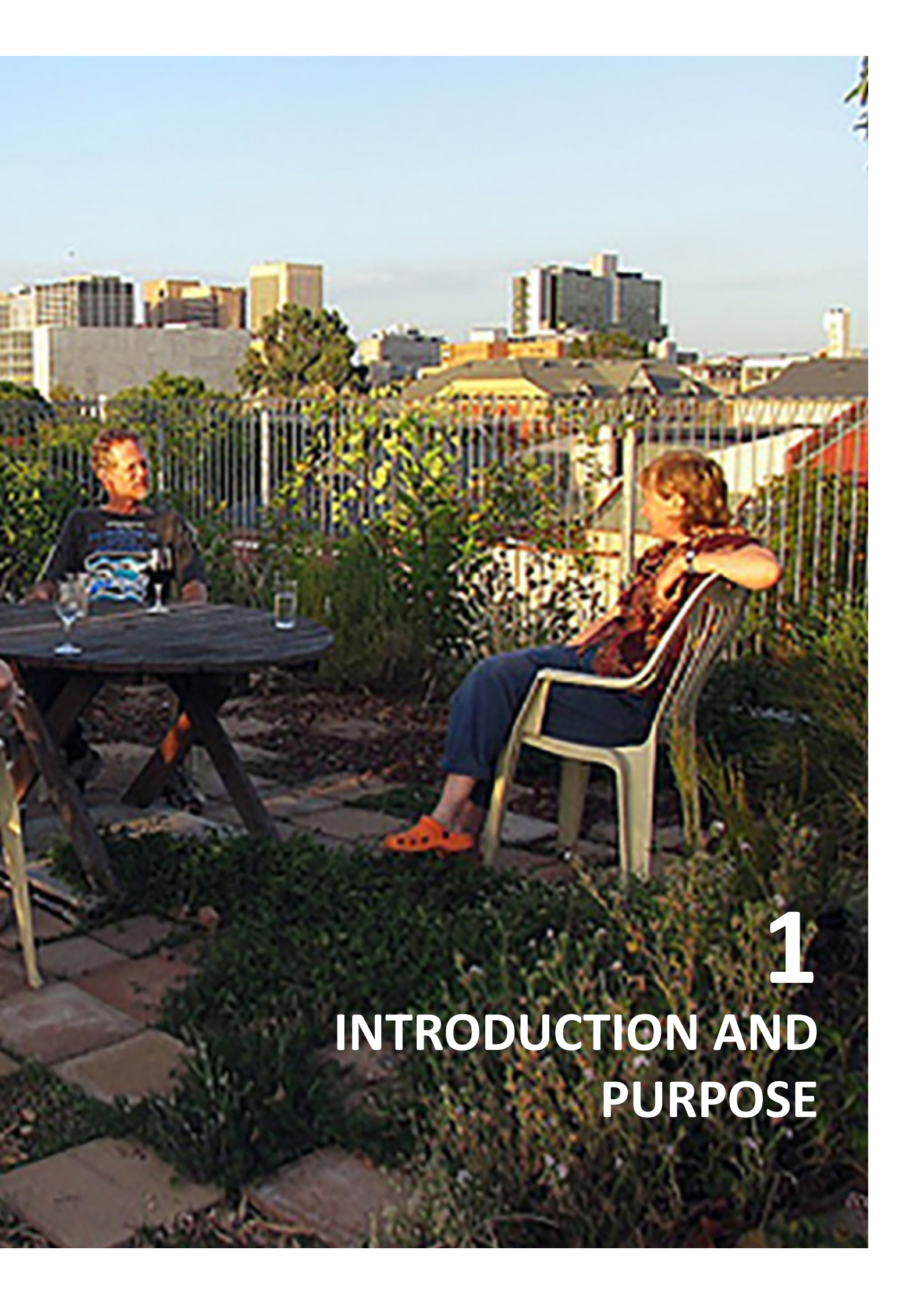
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*"A wonderful aspect of  
co-housing is that you can enjoy  
your privacy and  
individuality, but you can simply  
walk outside to  
enjoy the connections all around  
you"*

- Christie Walk Resident





1

# INTRODUCTION AND PURPOSE

The challenge of meeting housing needs in Melbourne is at an all-time high. Rapid population growth in Australian cities combined with the creation of a global market for housing investment and a dramatic fall in housing affordability has contributed to an inner city apartment market which has become generic and standardised. Within this market, an exploration of different ways to fund and deliver housing is coming to the fore. Deliberative development provides an alternative way to fund, design and deliver housing which is specifically designed for the future purchaser, not an investor market.

This Paper outlines what deliberative development looks like and the role that it can play in delivering quality housing.

Council wants to help ensure that all new development better addresses the various affordability, sustainability, diversity and design quality issues experienced in the municipality.

More specifically, Moreland Council wishes to understand how deliberative development might contribute to the realisation of these outcomes and whether there is a role for Council in actively participating in or facilitating it within the municipality.

With the above in mind, this Research Paper defines the various types of deliberative development models that exist in Australia and overseas, and identifies the following characteristics of each model:

- Who is delivering the model/s
- How the model impacts on housing affordability and design quality when compared against standard development models
- What sort of home-seeker is interested in such models
- The extent to which the home-seeker can influence the development model
- The potential benefits and risks of the models

The Paper includes various examples of deliberative development in Australia and overseas which indicates both the common factors in deliberative development projects as well as the key variables.

The Research Paper outlines the potential opportunities for Council to support the delivery of the deliberative development models.



# 2

## DELIBERATIVE VS TRADITIONAL DEVELOPMENT

*"Deliberative development allows for generosity in multi-residential construction. This is all but precluded in market developments because of the financial system in which they operate."*

Andy Fergus, City of Melbourne

## 2.1 What is deliberative development?

People are beginning to look for different ways that housing can be delivered across our cities. The ever increasing challenge for young people to enter the housing market, limited options for down sizers, and an overall interest for people to actively participate in the design and delivery of their own housing is resulting in a number of different housing models being explored in Australia.

This movement to challenge traditional development has recently been coined 'deliberative development' describing development which is actively led by the intended owner-occupiers. Whilst the term is relatively new, the concept is not. Many home-seekers have sought to play a more active role in the creation of their homes for many decades- notably the environmental movement in 1960's and 1970's saw the establishment of many housing cooperatives, 'sweat-equity' housing projects and other non-traditional housing models. However these models operated outside of the mainstream housing market.

Under this modern deliberative development model, the proponents influence the design of the housing project in contrast to speculative development where purchasers buy a product generally geared to the investment market. These "do it yourself schemes" are known as 'Baugruppen' in Germany, 'autopromotion' in France, 'ground build' in the Netherlands and 'collective custom' in the UK. In Australia, it has recently been termed deliberative development<sup>1</sup>. The literature on these models does not yet include standard terms or definition, partly as a reflection of the tailored approaches that individuals projects take.



Swan's Market Co-housing low-income housing, Oakland

<sup>1</sup> Sharam A., Bryant L., Alves T Making Apartments Affordable, Swinburne University



## 2.2 Potential benefits of deliberative development

There are a range of potential benefits of deliberative development models including:

### ALTERNATIVE FINANCING MODELS AND IMPROVED HOUSING AFFORDABILITY

Reducing costs of the project which is passed onto the purchaser. Removal or reduction of development profit and removal of fees and charges relating to marketing the development. Under this model, dwellings are purchased 'at cost' to improve affordability.

### GREATER INVOLVEMENT OF FUTURE OWNER

Delivering housing rather than investor products to meet the expectation and needs of future occupants. Removes unnecessary spaces and provides the home owner with greater control over the house they will live in. The initial design choices by future owners can also create higher quality internal amenity for occupants.

### ARCHITECTURE OF REDUCTIONISM AND REDUCED CONSTRUCTION COSTS

Removing unnecessary aspects of the build to reduce construction costs. This can range from eliminating second bathrooms within apartments through to removing all car parking.

### SHARED SPACES AND URBAN INTERACTION

Creating well-functioning neighbourhoods and communities with shared communal or public spaces. This fosters a shared responsibility for where people live and creates a sense of community identity.

### HIGH QUALITY ARCHITECTURE

Providing well-presented buildings which positively address streetscape. Buildings are generally contemporary in form and whilst often have a pared back aesthetic, interact with the public realm, creating adaptable floor plates to enable spaces to be used as a work space.

### ENVIRONMENTALLY SUSTAINABLE

Including a range of environmental features to reduce energy consumption and overall operational costs for the homeowner. This ranges from eliminating heating/cooling from buildings through to rain water harvesting and using sustainable building materials.

These potential benefits are reviewed and addressed at Chapter 7.1 having regard to project examples in Australia and overseas and the literature relating to deliberative development models.

## 2.3 How does deliberative development differ from conventional development?

Deliberative development models vary both in terms of how they are financed and how involved the future owners/occupiers are in the design and delivery of the project. To understand and test how deliberative models may deliver benefits in the current housing market, it is necessary to outline the fundamentals of conventional development both in terms of general process and project funding sources.

Figure 01 summarises the general process and key steps for conventional and deliberative development with the most obvious differences being:

- Following acquisition of the land, the deliberative model seeks interest from potential purchasers and input on key design questions.
- Following approval of the scheme, deliberative development models obtain the deposit from interest purchasers or associations rather than undertaking marketing and pre-sales programs.

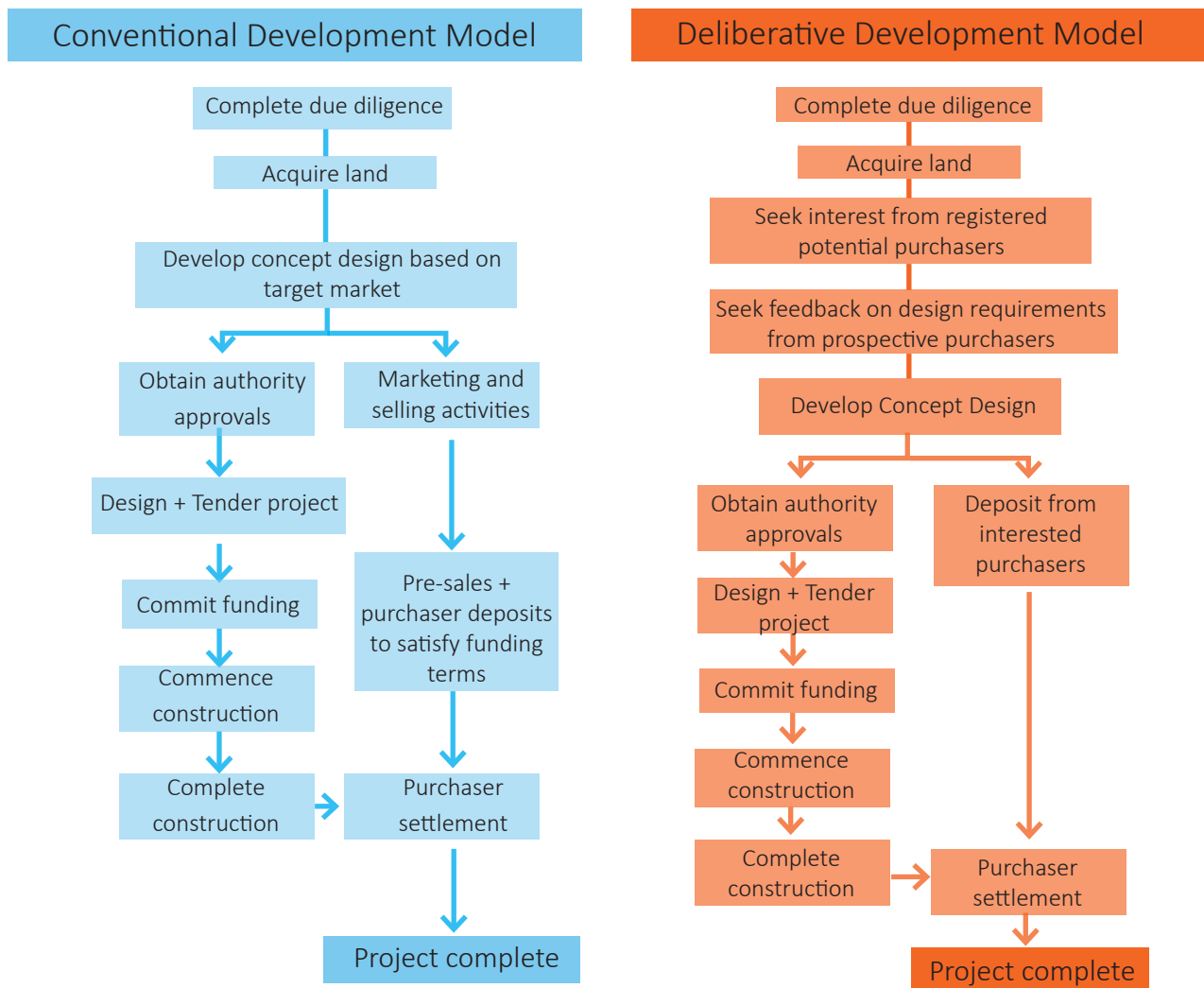


FIG.01 Conventional and deliberative development processes



## 2.4 What are the potential financial differences between conventional and deliberative development?

One of the elements of deliberative development to consider is whether the alternative financing and marketing model has the potential to provide a more cost effective project and therefore more affordable housing.









Figure 02 sets out the financial costs for conventional and deliberative development as percentages of the total project cost for each of the key cost components<sup>1</sup>.

The analysis below demonstrates that deliberative development can achieve a market value saving of 15-20% compared to traditional development<sup>1</sup>. This incorporate an assumption of realising a 10% construction cost saving.

It is important to note that the intended construction cost savings are not always realised, but instead savings in one area might be offset by expenses in other areas relating to building materials and/or environmental features.

The theoretical market value savings of 15-20% is achievable if a premium is realised on the market value of the apartment product.

Further detail in relation to the use of this model as the basis for this analysis is outlined overleaf.

| Development Cost Breakdown         | Conventional Development | Deliberative Development <sup>1</sup> | Change  | Key Point   |
|------------------------------------|--------------------------|---------------------------------------|---|---|
| Land + Acquisition                 | 14%                      | 17%                                   |  | - Cost base remains the same<br>- Market driven land values<br>- Proportionally larger under deliberative model due to lower overall project costs  |
| Consultants                        | 4%                       | 5%                                    |  | - Cost base remains the same<br>- Market driven value for services<br>- Proportionally larger under deliberative model due to lower overall project costs   |
| Authorities and land holding costs | 2%                       | 2%                                    |  | - Cost base remains the same<br>- Set costs formulated/prescribed   |
| Construction                       | 52%                      | 56%                                   |  | - Potentially lower cost base dependant on design specification<br>- Cost reduction not always realised<br>- Market driven tender prices<br>- Proportionally larger under deliberative model due to lower overall project costs |
| Selling costs                      | 5%                       | 0%                                    |  | - Key opportunity to reduce project costs<br>- Removes traditional selling and marketing costs<br>- No selling agents fees as purchasers sourced from database  |
| Finance and interest costs         | 4%                       | 4%                                    |  | - Cost base remains similar   |
| Project contingency                | 3%                       | 3%                                    |  | - Allowances are similar in order to manage development risk  |
| Development profit                 | 17%                      | 13%                                   |  | - Key opportunity to reduce project costs<br>- Potential to reduce further under Baugruppen model   |
|                                    | 100%                     | 100%                                  |   |   |




 No change       Cost Increase       Cost Decrease

FIG.02 Financial costs for conventional and deliberative development

<sup>1</sup> For the purpose of the comparison exercise we have used typical project costs for a conventional apartment development feasibility. This has been compared to a theoretical development feasibility model based on the Nightingale deliberative development model utilised by the Nightingale 1 project in Brunswick.

Much of the analysis of the financial model of the deliberative development and testing of the benefits or risks of deliberative development in this Paper is based on the original development model undertaken by Nightingale housing in its Nightingale projects 1-3 for the following reasons:

- It encompasses most of the factors of deliberative or participatory development including alternative financing models, owner participation, reduced constructions costs and quality outcomes.
- There is adequate information in the public realm in which to test assumptions, particularly in relation to the affordability question.
- Discussions with Nightingale have allowed for a testing number of the elements of the process
- There are built examples within the City of Moreland and the model is being seen in other parts of Australia.

Nightingale housing intend to evolve this model to a Baugruppen model. This is discussed in chapter 6.2.

Figure 03 below identifies that forecast savings are provided through three key cost factors. The remainder of project costs are largely fixed and/or dictated by the market or statutory authorities with little ability for a development to influence a reduction. For the purpose of the exercise the three key areas of project costs that have been modeled are noted in Figure 03.

| Key Project Cost Saving                                | Basis of Saving  |
|--|--|
| Reduction in Construction Costs (Construction)         | Model assumes a 10% saving to the standard construction costs of a conventional development. |
| Removal of Selling and Marketing costs (Selling Costs) | Model assume 100% removal of selling agent, marketing and advertising costs.                 |
| Reduced Development Profit                             | Model assumes that profit is reduced from a 20% margin on project cost to 15%                |

FIG.03 Forecast Savings

Figure 04 shows the relative proportions of where the 'potential' savings are sourced. This is on the basis of the assumptions noted on Figure 03. For example, for every potential dollar saved, 30% is derived from the reduction in selling costs, 35% is attributable to the reduced development profit, etc.

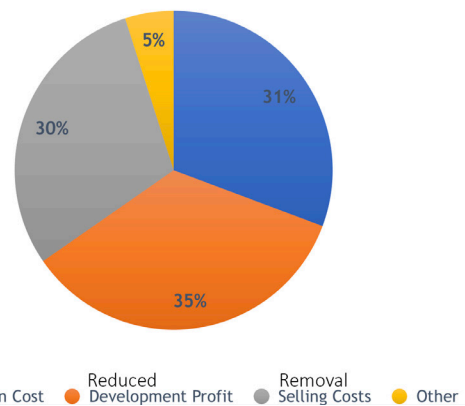


FIG.04 Proportion of Total Savings for Deliberative Development Model

The breakdown of total savings based on an apartment cost of \$520,000 is shown in Figure 05.

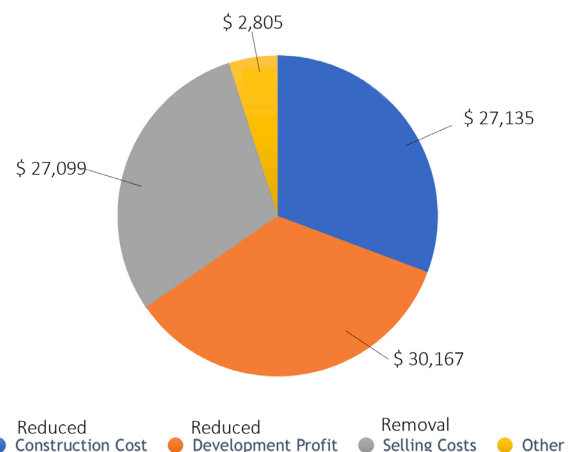
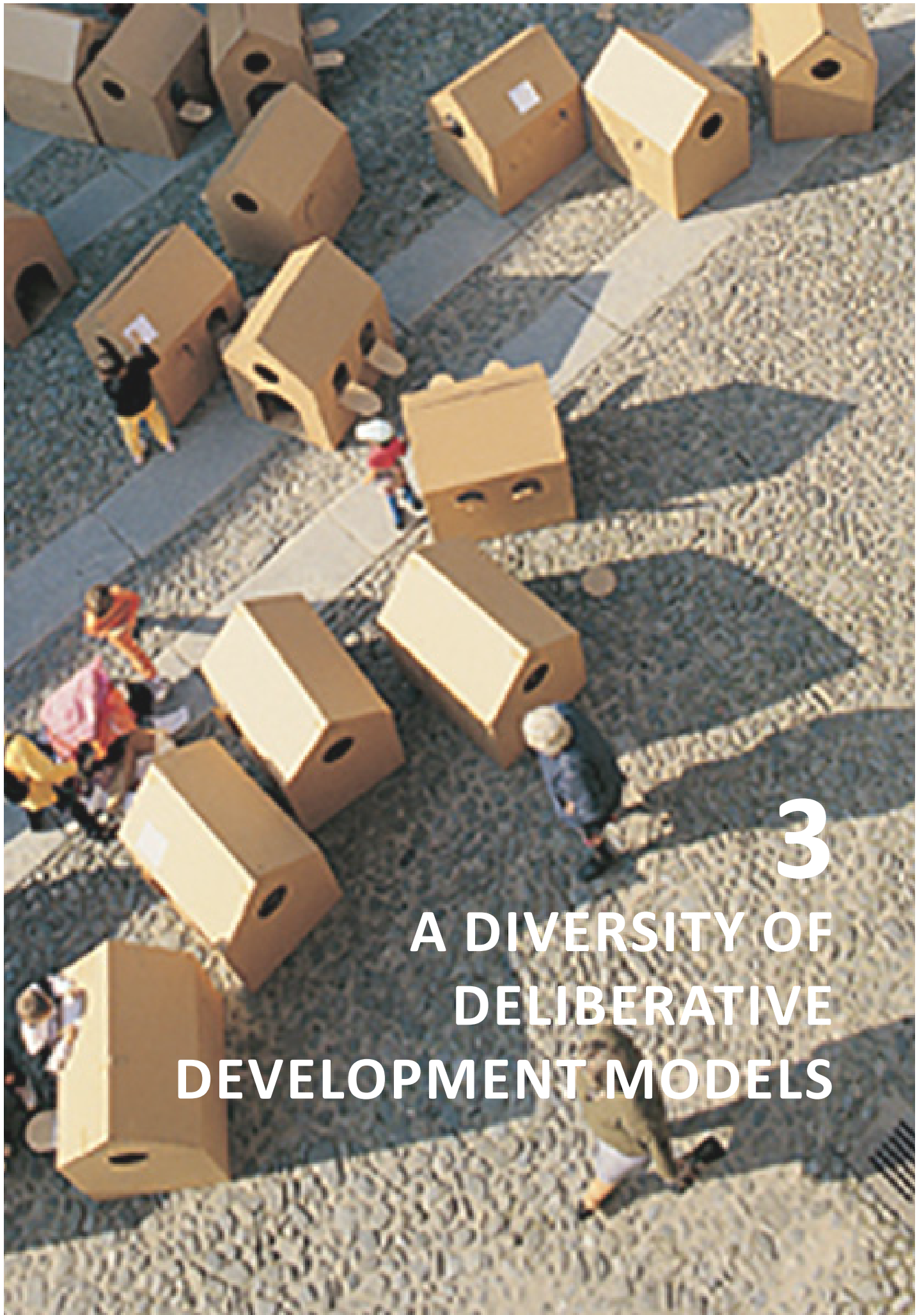


FIG.05 Proportion of Total Savings for Deliberative Development Model





3

A DIVERSITY OF  
DELIBERATIVE  
DEVELOPMENT MODELS

Deliberative development is an umbrella term which refers to a number of alternative housing models. Each model seeks (to varying degrees) to achieve more tailored housing outcomes, participation in the design process for home seekers, a quality architectural design and a reduction of costs for the future owner.

The case studies and built projects referred to in this Paper demonstrate that the models each have a slightly different focus in what they seek to deliver and the market they are delivering to. Some of this comes down to three factors being the level of participation, project features and financing structure.

The following pages outline these three factors based on the following models:

- Participatory development model
- Co-housing model
- Baugruppen model

We note that there is no agreed definition of these models in which to rely on and because projects differ in scale, location and form, they can take on features from more than one model.

There are either built examples or case studies of each of the three models in Australia noting that there are many more examples overseas, particularly in Europe.

This paper also identifies in Appendix 1 other emerging housing delivery models which are currently being explored in Australian cities and which are evident overseas.

## 3.1 Degrees of citizen/purchaser participation

Participation is the precondition for deliberative development projects. It is a challenge to organise a project in a way that ensures real involvement of the future residents on many levels and, at the same time, develops a harmonious architectural concept. The processes are different in every group and need to be adjusted for each specific project.

Figure 06 below shows the general level of participation for the future occupants/owners for the housing models explored in this Paper and identifies where some of the built examples fit on this spectrum. The minimum (zero) participation is the conventional development and the maximum involvement is the co-housing model. The diagram identifies deliberative development as an umbrella term which captures both the Baugruppen and co-housing models and various levels of participatory development.

The project examples in Figure 06 demonstrates the spectrum of participation in deliberative development projects.

Figure 07 overleaf identifies some examples of the type of information that is generally sought from future purchasers whether through online surveys, information sessions and questionnaires. It ranges from specific questions about apartment layout through to the importance of particular environmental features and shared spaces.

This information gathering is critical to achieving a successful deliberative housing project as it allows the project to be designed to meet a specific demand which reduces excess spaces, infrastructure and therefore construction costs.

Successful proponents of deliberative development stress that the extent of information gathering and collective decision making needs be balanced with the overall objectives of the project and the ability to get the project off the ground. Seeking input on too many aspects of the project and allowing collective decision making on detailed matters has potential to stall or halt project delivery.

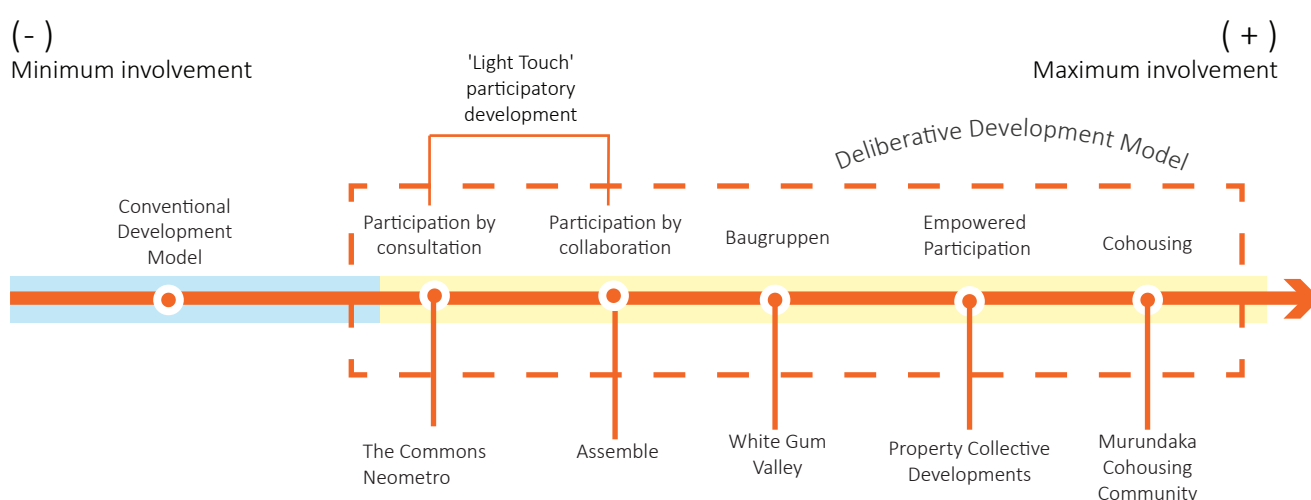


FIG.06 Participation/influence on housing design and decision-making



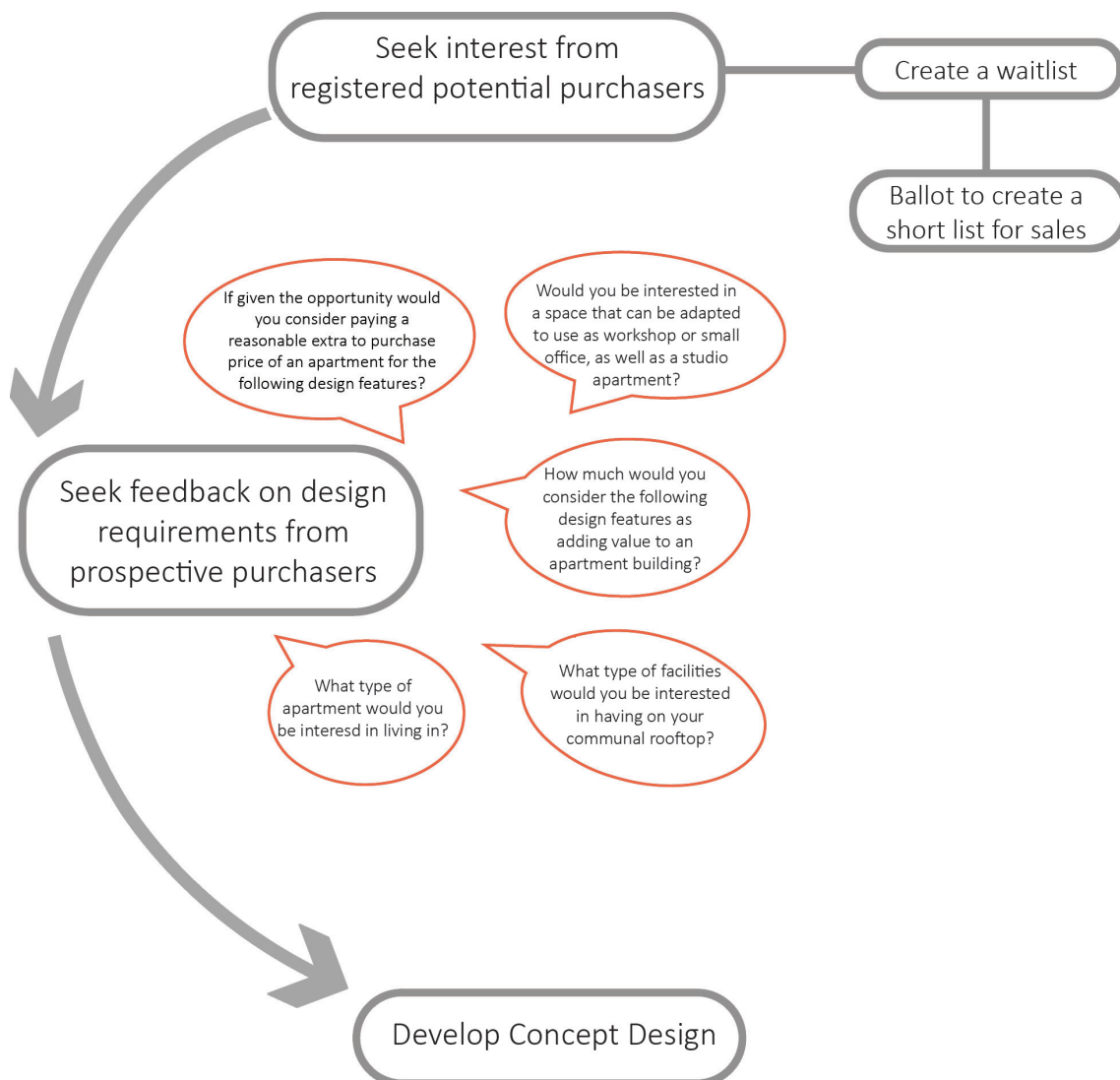


FIG.07 Example of questions to potential future purchasers (taken from multiple built/underway projects)

**1. What type of apartment would you be interested in living in?**

|  | Not interested        | Interested            | Extremely interested  |
|--|-----------------------|-----------------------|-----------------------|
| One bedroom apartment  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Two bedroom apartment  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Three bedroom apartment  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Combining apartments to have more than a three bedroom apartment | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**2. Would you be interested in a space that can be adapted to use as a workshop or small office, as well as a studio apartment?**

- ☐ Not interested
- ☐ I would definitely consider it
- ☐ Very interested

**3. How much would you consider the following design features as adding value to an apartment building?**

|                                | No value added        | Some value added      | Considerable value added |
|--------------------------------|-----------------------|-----------------------|--------------------------|
| Open air corridors             | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>    |
| A dedicated bike entry         | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>    |
| A secure parcel delivery point | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>    |
| A rooftop garden               | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>    |
| Communal workshops             | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>    |

**4. If given the opportunity would you consider paying a reasonable extra to the purchase price of an apartment for the following design features?**

|  | Not at all            | I would consider it   | Absolutely yes        |
|--|-----------------------|-----------------------|-----------------------|
| Small planter boxes on the balcony   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Study desk nook  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Hooks to hang indoor plants  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Hooks to mount bicycles on the wall inside your apartment  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Drop station to leave keys and coats at the door   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| A kill switch to ensure all non essential electrical points are off whilst the apartment is unoccupied | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**5. Would you pay an extra \$30,000 for a second bathroom added as additional floor area within a two bedroom apartment?**

- ☐ No, one bathroom is sufficient for a two bedroom apartment
- ☐ I would pay more to have a powder room in addition to one bathroom in a two bedroom apartment
- ☐ Yes, two bathrooms are necessary for a two bedroom apartment

**6. What kind of cooktop would you prefer in your apartment?**

- ☐ A gas cooktop
- ☐ An induction cooktop

FIG.07 Example of questions to potential future purchasers (taken from multiple built/underway projects)

## 3.2 Elements of deliberative development models

The elements which will be considered in the three deliberative development models and project examples over the following pages are shown in Figure 08 below. Appendix 2 provides more information on the environmental sustainability of the Australian projects.

### • Dwelling Typology / Use

The type of dwellings that the models usually produces ranging from apartments, family homes or more mixed use forms.



Detached  
single-unit housing



Townhouse



Apartments



Mixed Use

### • Environmental Design

The focus for environmental sustainability ranging from water use through to building materials used.



Water Harvesting



Passive Design



Building Materials



Solar Energy

### • Shared Areas

The type of extent of shared uses within the project.



Kitchen Dinning  
Areas



Laundry



Community room



Communal  
Garden



Landscape Areas

### • Affordable Housing Scheme

Whether the project provides a more affordable outcome.



Social Housing Model



Affordable housing\*

### • Parking Scheme

What car parking is provided for future owners.



No parking provision



Shared Parking



Parking provided

FIG.08 Element of Deliberative Development model

\* Affordable housing term used here is to determine whether the housing deliberative development model are more affordable than conventional development



Figure 09 summarises how the key elements are applied across various built examples.

|   | Participatory   | Co-housing   | Baugruppen   |
|---|---|--|--|
| <b>Dwelling Typology &amp; Resident Profile</b> | <p>Could theoretically be undertaken at any scale, but in Melbourne is predominantly multi-level development, with townhouse developments becoming more common.</p> <p>Allows owners varying degrees of personalisation to meet the needs of a range of household types</p> <p>Infants to Seniors (80+)</p> | <p>Co-housing communities tend to include a range of home sizes which accommodate a range of incomes and family sizes.</p> <p>Co-housing neighborhoods offer a model for creating supportive networks responding to changing demographics, increasing number of singles, small families and elders.</p> <p>Infants to Seniors. The Social co-housing attend to the Housing Authority current policy (rent is generally 25% of income).</p> | <p>Multi-unit housing developments with a large range in scale. Predominantly multi-level apartment.</p> <p>Personalised solutions, and spaces that can be adapted to suit changing needs over time, allow people with special needs to find a place in the city.</p> <p>Infants to Seniors</p>            |
| <b>Environmental Sustainability</b>             | <p>The extent of environmental sustainability features varies from project to project, but the inclusion of some features is usually sought by purchasers.</p>  | <p>Shared gardens, recycling and environmentally-friendly buildings to contribute to lower carbon footprints.</p>  | <p>Baugruppen projects are leading the way in environmental sustainability. Users and owners willingly explore new technology, carefully balancing its pros and cons. Berlin examples also attempt to reduce operational costs.</p>  |
| <b>Shared areas</b>                             | <p>The amount of common/shared areas differs across projects, ranging from rooftop gardens only to shared laundries/meeting spaces.</p>   | <p>Outdoor areas, gardens and landscape amenities are shared spaces in the co-housing model. A few examples provide shared laundry, dining, kitchen space and outdoor areas.</p>   | <p>The amount of common/shared areas differs across projects, ranging from rooftop gardens only to shared laundries/ meeting spaces. Berlin examples have at least a shared garden that is often also open to the public. The entire neighborhood profits from the green and surrounding urban spaces.</p> |
| <b>Impacts on affordability</b>                 | <p>Generally at market-rate. Depends on the level of involvement of the owners.</p>   | <p>While most are market-rate homes, many of these communities have successfully integrated affordable housing within their developments.</p>  | <p>The future purchasers influence what to invest in and where money can be best saved, redefining the quality-to-price relationship. Affordability not a huge driver, quality of environment is the bigger focus.</p>   |
| <b>Who is delivering</b>                        | <p>Private developer.</p>   | <p>Individuals or Housing Association</p>  | <p>Not-for-profit organisation/private developers not seeking profit</p>   |
| <b>Extent of participation</b>                  | <p>Developers determine the costs, influenced in varying degrees by feedback sought from potential purchasers (e.g. via surveys).</p>   | <p>A highly participatory process. Residents typically take active roles in visioning, designing, developing, and manifesting their own co-housing community.</p>  | <p>A selected set of questions to potential future purchasers regarding apartment layout, extent of common areas etc.</p>  |
| <b>Car Parking</b>                              | <p>Generally provided but dependent on individual project.</p>  | <p>Limited to no car parking. Many co-housing developments seek to keep cars out of the "village" altogether.</p>  | <p>Generally none or reduced parking.</p>  |

FIG.09 Summary of key elements

### 3.3 The Financial model

How deliberative development projects are funded differs across each of the models and between projects. Deliberative development is a flexible form of development and as such the financial arrangements can be tailored to each individual project. There are also a range of external/additional factors which may influence how a deliberative development project is financed, including:

- Whenever there is any government assistance or subsidy
- Whenever there is a social housing included within the project
- The market conditions
- The target market

Typically for participatory, Baugruppen and co-housing the following financial structure is as follows:

#### CO-HOUSING

Many co-housing projects are privately financed and subsequent resales are done on the open market. Some co-housing groups do make special arrangements to ensure perpetual affordability or their members (Eg: Murundaka project)

There are other projects in Germany which operate under coop associations which form collective ownership models to provide for lower rents for the longer term. The Spreefeld project in Germany is a example of this where an association fee is paid (equivalent of 50% of the per sqm rate for the home) but rents are lower and constant and with potential for lower rents for those less financially able). This ownership and financing model becomes more difficult to achieve as the cost of land continues to rise.

#### PARTICIPATORY

'Light touch' participatory development commences with some elements of the deliberative development model, and then switches to a conventional development model in regards to finance etc (refer to Figure 1). As such the finance structure generally follow the conventional model with marketing and pre-sales undertaken.

#### BAUGRUPPEN

Land is purchased at market value and residents essentially buy into the project, with everyone purchasing his or her unit in the building on spec before it has even been developed. The percentage of upfront funds required by purchasers differs across projects with standard amount being 30% of the assumed cost of development.

Finance is sourced externally and provided to fund the development at a cost to the development.

The bank and project manager structured a package of financing by pooling the individual mortgages for the units of future residents that would fund all the phases of construction.

The purchasers under a Baugruppen model are on title and effectively take any financial risk and returns as would a traditional developer, albeit, these development risks and returns are managed by an external party under a Development Management Agreement with the purchasers.

The type of risks that could arise, that could have an impact on the financial return, are listed in more detail in Section 7.2.

A photograph of a large crowd of people at an outdoor event. Many individuals have their hands raised in the air, suggesting a moment of celebration or participation. In the background, a flag with horizontal stripes of red, yellow, and blue is visible. The scene is brightly lit, likely by natural daylight, and the background is slightly blurred, focusing attention on the raised hands in the foreground.

**4**

# **PARTICIPATORY DEVELOPMENT**



## 4.1 What is 'light touch' Participatory Development

Participatory development forms of housing are being advanced as alternatives to marketed and developed housing.

Participation by consultation or "Light-Touch participatory development" is referred to here as a model which is largely conventional in its financing structure but commences with some participation by the home purchasers.

There are a variety of forms of participatory development as outlined below which can encompass a number of project types. The extent of participation in any project varies, as shown on the spectrum below.

### Financing model

The 'light touch' participatory models utilise a standard financial structure, with the developer purchasing and developing the land, and commencing pre-sales around the time a planning approval is obtained.

- **Passive participation**

Participation is only by being informed about the project and feedback is minimal or non-existent.

- **Participation by consultation**

Extractive process, whereby stakeholders provide answers to questions posed by outside researchers or experts. This consultative process keeps all the decision-making power in the hands of external professionals who are under no obligation to incorporate stakeholders' input.

- **Participation by collaboration**

Groups of primary stakeholders participate in the discussion and analysis of predetermined objectives set by the project. This level of participation does not usually result in dramatic changes to the design but there is involvement in how to best achieve the pre-determined objectives.

- **Empowerment participation**

Primary stakeholders are capable and willing to initiate the process and take part in the analysis. This leads to joint decision making about what should be achieved and how. Dialogue identifies and analyses critical issues, and an exchange of knowledge and experiences leads to solutions<sup>2</sup>.

### PROJECT EXAMPLES

Standard development

Neometro development

The Commons Assemble

Property Collectives

'Light touch' participatory development

<sup>2</sup> Thomas, Paolo (2009). Participatory communication a practical guide. V. 170 World Bank Working Papers



## NIGHTINGALE, THE COMMONS

|                     |   |
|---------------------|---|
| Architect           | Breathe Architecture                                      |
| Partners            | Project Group, The Commons                                |
| Completion date     | 2013-2016   |
| Location            | Florence St. Brunswick<br>Distance from CBD 5km           |
| Typology            | Apartments  |
| Legal Form          | Privately owned   |
| Residential units   | 20 Apartments   |
| Inhabitants profile | Young single professionals and<br>young families (35-40+) |
| Number of Floors    | 5   |
| Lot Size            | 500m <sup>2</sup>   |
| Common Space        | Laundry services, landscaped<br>rooftop                   |



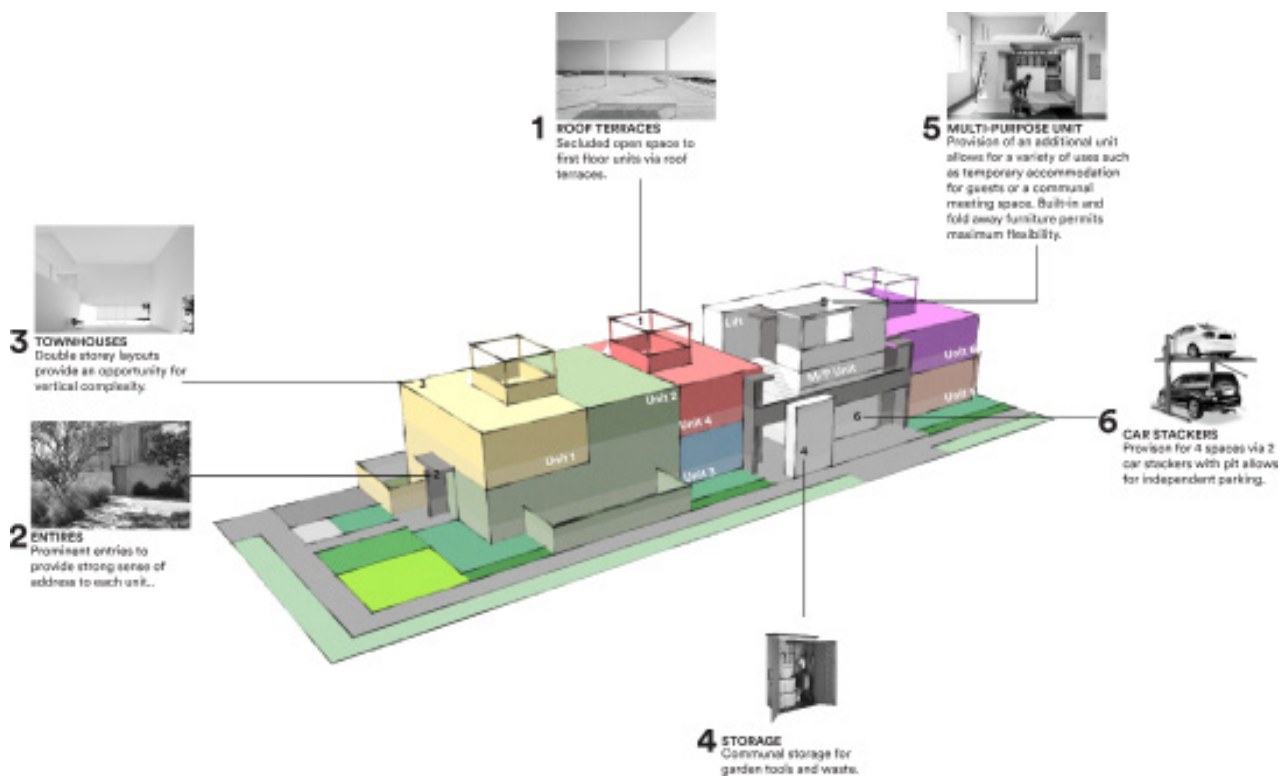
Nightingale was initiated by a group of Melbourne architects who sought to challenge the speculative form of housing development. Their strategy is to introduce shared spaces, maximise yield and attempt to balance the outcomes through strategies to deliver high-quality housing for below what was market rate.

The Nightingale model which started with the Commons project is a good example of participatory development noting:

- It asks specific questions on what is valued by the future owner/occupier and tailors the apartment layout and infrastructure provided to meet these needs.
- It provides shared/communal spaces
- It places focus on environmental outcomes
- It reduces or removes developer profit, marketing fees, from the overall cost of the development.

The strategies to reduce costs was by removing non-essential amenities such as underground parking spaces, additional bathrooms and individual laundry services, as well as bypassing the need for real estate agents, lowered marketing costs, and developer margins capped at 15%. The Nightingale model attempts to tackle affordability and demographic issues by reducing overheads and optimising spatial allocation<sup>3</sup>.

<sup>3</sup> Feagins, Lucy (2018). Nightingale Housing Wants You To Own A Great Apartment. Retrieved from <https://thedesigntfiles.net/2018/02/nightingale-housing-wants-you-to-have-a-nice-apartment/>



## CASE STUDY - PROPERTY COLLECTIVES

**Architect** Pillar and Post

**Partners** Property Collectives

**Completion date** Case Study only

**Location** Lalla St., Kew, Victoria  
Distance from CBD 8km

**Typology** Duplex units/ Apartments

**Legal Form** Privately owned

**Residential units** 6 Apartments

**Inhabitants profile** Multigenerational

**Number of Floors** 2

**Lot Size** 644m<sup>2</sup>

**Common Space** Multi-purpose unit and landscaped rooftop

The case study explores how a group of people at different life stages with different spatial needs and budgets could come together and coexist in a small project. It is a fairly typical property with the most restrictive zoning (Neighbourhood Residential Zone) and provides a scheme that meets planning code compliant apart from the provision of a car parking.

The project aims to provide a significant amount of external and internal communal space that enhances the amenity of all the residents<sup>4</sup>.

If this project was completed and included significant communal areas it could be categorised as a co-housing project.

<sup>4</sup> Pillar + Post (2018). Suburban Middle Ring Case Study. Multi-generational Co-housing Retrieved from <http://www.pillarandpost.com.au/journal/>







## NEOMETRO, 1-7 WILSON AVENUE

**Architect** Fieldwork

**Partners** Neometro

**Completion date** TBC (currently subject to VCAT appeal)

**Location** 1-7 Wilson Avenue, Brunswick

**Typology** Apartments

**Legal Form** Privately owned

**Residential units** 61

**Inhabitants profile** TBC

**Number of Floors** 8

**Lot Size** 1,091m<sup>2</sup>

**Common Space** Rooftop terrace

In the initial stages of the project, Neometro invited interested parties to contribute to the design via a pre-application information session and an on-line survey. They sought feedback on a range of topics including heating and cooling systems, number of bathrooms, the provision of share cars rather than private car spaces, potential communal rooftop facilities, and the inclusion of apartment features such as cycle mount hooks and kill switches to turn off all non-essential electrical points when it is unoccupied. Neometro used this data along with other data obtained from residents in its existing apartment developments to prepare the planning application.

The proposed 8 storey building comprises 61 dwellings, 2 offices and retail premises (shop and cafe) above a basement car park. A reduction in car parking requirement and a waiver of the standard loading bay requirement is being sought. The building will also include a shared rooftop.

The proposal is currently the subject of a VCAT appeal.





## 122 ROSENEATH ST - ASSEMBLE

**Architect** Assemble

**Partners** Wulff Projects, Icon Co

**Completion date** expected early 2018

**Location** Clifton Hill

**Typology** Town Houses and Apartments

**Legal Form** Privately owned

**Residential units** 67

**Inhabitants profile** Young professionals, families and older people

**Number of Floors** -

**Lot Size** 3020m

**Common Space** multi-purpose room, roof terrace, landscaped garden lanes, communal workshop, ground-level retail, parking



The project aim is to deliver a small footprint which fosters a strong sense of community<sup>5</sup>.

Twelve design presentations were held for potential buyers who had registered to attend and could complete a survey regarding design aspects such as car parking demand, communal facilities and interior design features<sup>6</sup>.

Sustainability features of the project include double glazing, naturally ventilated corridors, solar power for communal areas, rain harvesting, an embedded energy network making discounted power available for residents and optional external awnings.

<sup>5</sup> [https://www.theweeklyreview.com.au/domain/sustainable-inner-urban-community-living-122-roseneath-street/pub/melbourne\\_times/](https://www.theweeklyreview.com.au/domain/sustainable-inner-urban-community-living-122-roseneath-street/pub/melbourne_times/)

<sup>6</sup> <https://www.domain.com.au/news/wulff-projects-icon-co-and-assemble-launch-new-development-in-roseneath-street-clifton-hill-20160527-gp3pk7/>

# 5

## CO-HOUSING DEVELOPMENT

*"Co-housing projects plan and  
build in line with demand-a  
prerequisite for successful  
solutions"*

Christian Schoningh, Architect, Berlin



## 5.1 What is co-housing development?

The collaborative housing model was imported to the United States from Denmark in the 1970s. It is an intentional community of private homes clustered around shared space<sup>7</sup>. It seeks to plan for a very specific need to promote sustainability and ensures there isn't redundant/poorly used land or interior spaces within the home.

Each attached or single family home typically has traditional amenities, including a private kitchen with shared spaces typically being a common house (kitchen/dining/lounge), laundry, and recreational areas, walkways and gardens. The size and design of the common house varies across projects depending on the scale of the development, its typology and the resident mix whether that be suburban townhouse or the apartment/complex typology.

### Financing Model

Many co-housing projects are privately financed and subsequent resales are done on the open market. Some co-housing groups do make special arrangements to ensure perpetual affordability for their members (Eg: Murundaka project example<sup>8</sup>).

There are other example projects in Germany which operate under coop associations which form collective ownership models to provide for lower rents for the longer term. The Spreefeld project in Germany is a example of this whereby an association fee is paid (equivalent of 50% of the per sqm rate for the home) but rents are lower and constant (and with potential for lower rents for those less financially able). However, this ownership and financing model becomes more difficult to achieve as the cost of land continues to rise<sup>9</sup>.

Households have independent incomes and private lives, but neighbors collaboratively plan and manage community spaces. Residents come together for meals and other activities in a common house, and make decisions based on consensus.

### CHARACTERISTICS

#### NEIGHBORHOOD DESIGN

Although physical designs vary greatly by region and setting (rural, suburban, urban), co-housing projects are generally well designed but with a focus on internal spaces. Vehicles are typically kept on the perimeter of the community, allowing for an internal open area which is safe for children and utilised as an interactive community space.

#### COMMON FACILITIES

Significant common areas are provided. The "common house" typically refers to a shared space containing cooking/dining facilities and other facilities (laundry, exercise rooms, children's rooms, TV room, etc). This forms the physical context for community meals, meetings, and social activities.

#### SELF-MANAGEMENT

The residents of co-housing take responsibility for designing, managing, protecting, and maintaining all physical and social elements of the community. The common areas are owned by the group and managed by the residents Committees and work groups form to provide for specific community needs, and participation in such meetings is expected of all able members. This is essentially a self-managed body corporate set up.

#### PARTICIPATION & DECISION-MAKING

Decision-making in co-housing communities is democratic, with consensus or partial consensus emerging as the most commonly-used process strategy.

<sup>7</sup> Vestbro, D (2010). Living Together-Cohousing Ideas and Realities Around the world. Retrieved from <http://kollektivhus.se/wp-content/uploads/2017/06/Livingtogetherwebb-1.pdf>

<sup>8</sup> Alexander, A (2015). Access to Financing & Affordable Models of Co-housing. Retrieved from <http://www.cohousing.org/finance-affordable>

<sup>9</sup> Kristien Ring / AA PROJECTS, *Self Made City*, Jovis Verlag, 2014, Berlin

“A lot happens just chatting in the hallway. Checking in with someone about a task or something like moving the couches... then it will turn into a chat about what’s going on in their life.”

- Giselle, Murundaka Resident



## MURUNDAKA CO-HOUSING COMMUNITY

**Architect** Hiedi Lee

**Partners** Common Equity Housing program

**Completion date** 2009-2011

**Location** Heidelberg Heights

Distance from CBD 20km

**Typology** Multi-family residential

**Legal Form** All-rental, social co-operative housing

**Residential units** 20 households

**Inhabitants profile** Infants to seniors, families and individuals

**Number of Floors** 3

**Lot Size** 3,000 m2

**Common Space** Common house, bike shed, playground, workshop, yard, vegetable garden, compost, laundry and meeting room.

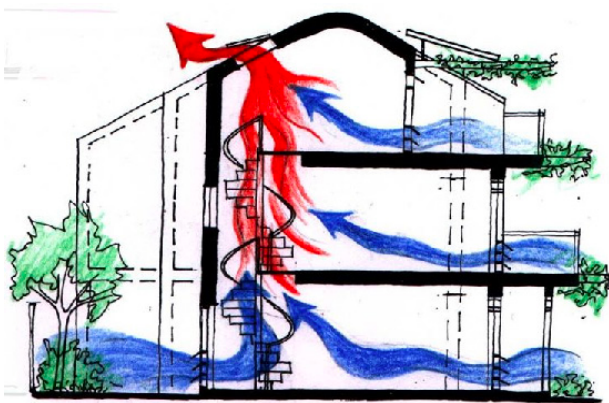
This project delivers smaller-than-average private units clustered around large shared spaces like the common house and garden. Regular meetings are held to make decisions and residents share babysitting and approximately three communally cooked meals each week, usually with produce from the garden and eggs from the 16-strong chicken coop.

Murundaka residents pay rent that is generally capped at 25 per cent of their disposable income. If their income drops, so does their rent. Body Corporate fees cover shared bills and Internet<sup>10</sup>.

To become a member/owner of Murundaka there are eligibility requirements to be met. If the requirements are met then the potential resident can register for expression of interest, attend information sessions and enter the waiting list.

<sup>10</sup> Murundaka Cohousing Community (2011). About. Retrieved from <https://www.murundakacohousing.org.au/>





## CHRISTIE WALK

**Architect** Paul Downton  
**Partners** Urban Ecology Australia Inc  
**Completion date** 1999-2006  
**Location** Adelaide, South Australia  
 Distance from CBD 0km  
**Typology** Multi-family residential  
**Legal Form** Privately owned

**Residential units** 27 homes  
**Inhabitants profile** Infants to Seniors (+80)  
**Number of Floors** 3-storey townhouses  
**Lot Size** 2,000 m2  
**Common Space** Community room,  
 kitchen, dining, meeting room,  
 library, and toilets

The focus of this project was based around energy efficiency, the use of renewables and a high overall ecological performance. It was intended to set the parameters for a project able to demonstrate both the physical and organisational aspects of community and ecological development. The goal was to create a liveable and affordable urban community minimising the environmental impact.

On this basis, Christie Walk integrates capture of stormwater, use of solar electricity and recycled and non-toxic building materials to achieve green design. The architecture design fosters social interaction and a sense of community by providing a layout free from traffic and provides convivial outdoor places to gather informally or to sit quietly alone<sup>11</sup>.

<sup>11</sup> Urban Ecology Australia (2013). A piece of ecocity. Retrieved from <http://www.urbanecology.org.au/eco-cities/christie-walk/>







## LIME TREE SQUARE

**Architect** Feilden Clegg Bradley Studios

**Partners** C&J Clark Properties

**Completion date** 2009

**Location** Street, UK

Distance from CBD 4km

**Typology** Multi-family residential

**Legal Form** Privately owned

**Residential units** 168 housing units

**Inhabitants profile** Young Families

**Number of Floors** 2-storey townhouses

**Lot Size** 3,000 m<sup>2</sup>

**Common Space** -

Lime Tree Square is the first phase of a precinct of 400 homes in the West Country market town of Street. This new neighbourhood offers a high quality housing, offering homeowners a range of private, semi-private and public open spaces that provide an attractive landscaped setting for family life in the 21st century. Focus in providing housing at a scale for family living.

Central to the design is the pedestrian layout and urban drainage system which deals with rainwater, which is conducted through a series of swales, ponds and rills planted with aquatic plants that run beside the walkways<sup>12</sup>.









<sup>12</sup> Feilden Clegg Bradley Studio (2009). Lime Tree Square. Retrieved from <https://fcbstudios.com/work/view/lime-tree-square>









## OTHER AUSTRALIAN EXAMPLES






### THE PADDOCK VILLAGE, CASTLEMAINE

|                           |  |
|---------------------------|--|
| 27 dwellings              | Low density development.   |
| Privately owned dwellings | The Paddock involves a lot of sensible resource sharing, including a community centre with spare bedrooms, laundry and kitchenette, capacious water tanks, sheds and tools and an electric charging station for bikes.   |
|                           |       |

### THE GREEN SWING 'THE SIDING', PERTH

|                           |  |
|---------------------------|--|
| 7 dwellings               | High density development.  |
| Urban infill development  | Located within 5 km of the city center, close to shops and public transport, the design proposes 60% of open space with productive gardens at the back of the homes. The energy needed for heating and cooling is dramatically reduced by passive design.  |
| Privately owned dwellings |  |
| Rent                      |       |

### THE FIRST FREMANTLE HOUSING COLLECTIVE, WA

|                            |   |
|----------------------------|---|
| 14 dwellings               | Low density development.  |
| All-rental, social housing | Part of the Co-operation Housing, a not-for-profit Australian public company.   |
|                            | Residents include single people, couples, children and young people. Residents actively participate in making decisions that affect them, fostering a greater sense of empowerment and ownership of their own homes and community.  |
|                            |      |

# 6 BAUGRUPPEN DEVELOPMENT

*"It's a whole different ball game. Even if one buyer falls out.. .then you have a waiting list; a group of people waiting in the wings to come in"*

-  
Dr Sharam



## 6.1 What is the Baugruppen Model?

Baugruppen – German for ‘building group’ – stands for a long tradition of self-initiated, community-oriented living, and the shared responsibility of building in this model.

There is no ‘typical’ model – every project differs in its financing, social make-up, the wishes and desires of the group, and the project’s resulting architectural and urban qualities. In this model, people get together to finance, purchase, design and construct the buildings that they will eventually live in. The intended future occupants are the developers.

### FINANCING MODEL

Land is purchased at market value and residents essentially buy into the project, with everyone purchasing his or her unit in the building on spec before it had even been developed. The percentage of upfront funds required by purchasers differs across projects with standard amount being 30% of the assumed costs of development.

Under the Baugruppen models, the bank and project manager structure a package of financing by pooling the individual mortgages for the units of future residents that would fund all the phases of construction.

The model originated in Germany. It has delivered over 5000 apartments in Berlin alone and it is now being pursued worldwide<sup>13</sup>.

Many precedent examples based on the Baugruppen model have been developed in markets such as Germany for several years. The results are reported to be that housing is developed at around 75% of the market cost.

## CHARACTERISTICS

### FINANCE MODEL

Group of purchasers come together to collectively fund their own multi-unit housing project.

### ENVIRONMENTAL SUSTAINABILITY

Baugruppen projects are leading the way in environmental sustainability. Users and owners willingly explore new technology, carefully balancing its pros and cons to provide operational efficiency as a whole and individual apartments.

### DWELLING TYPOLOGY

Baugruppen are generally multi-story, multi-family buildings rather than detached or semi-detached housing.

### HIGHER QUALITY DEVELOPMENT

Future residents involved in the development of their own homes will preference quality design and sustainable features, unlike developers who cater primarily to profit-driven investors. This is paired with architecture recommendations that minimise underutilised areas that add to the construction costs.

<sup>13</sup> Eliason, M (2014). Baugruppen: To Form a More Affordable Urbanism. Retrieved from <https://www.theurbanist.org/2014/05/20/baugruppen-to-form-a-more-affordable-urbanism/>

## 6.2 An emerging local approach - Nightingale Baugruppen

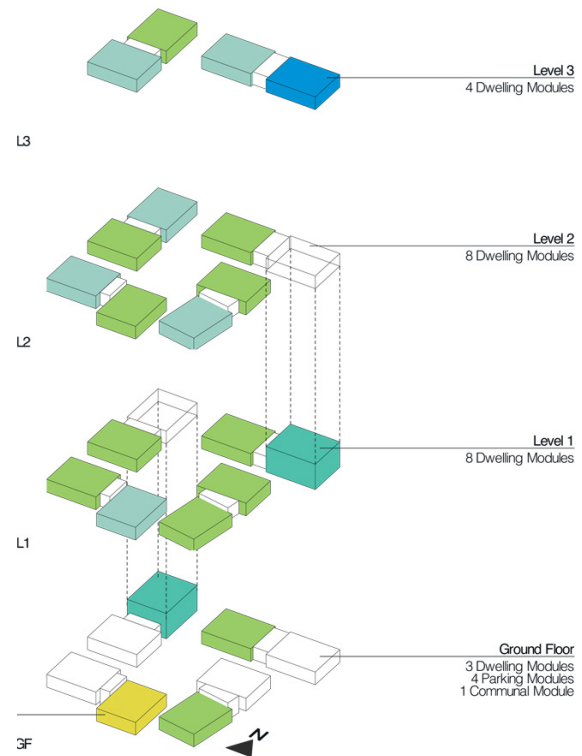
The proposed Nightingale Baugruppen model is a form of deliberative development that aims to deliver a reduction to market value in the range of 25 – 30%. It uses the same principles as the conventional Nightingale model discussed in Chapter 4 with the addition of the following:

- Aggregation of interested buyers to form a development syndicate
- Buyers invest their own funds to acquire land and undertake the development
- Syndicate members (buyers) are noted on title
- Project requires less investment capital as syndicate members invest their own funds

The further saving opportunities presented in this model can be summarised as follows:

- Reduced interest and financing costs associated with less investment capital
- Further reduction (or removal) of development margin
- No GST payable on sales revenue
- No stamp duty payable by syndicate members





## WHITE GUM VALLEY BAUGRUPPEN

|                     |  |
|---------------------|--|
| Architect           | Spaceagency Architects   |
| Partners            | LandCorp and the University of WA  |
| Completion date     | 2018   |
| Location            | Fremantle, WA<br>Distance from CBD 20km  |
| Typology            | Multi-family residential   |
| Legal Form          | Privately owned  |
| Residential units   | 23 Apartments  |
| Inhabitants profile | Infants to Seniors (+80)   |
| Number of Floors    | 4 3-storey multifamily dwellings   |
| Lot Size            | 1,669 m2   |
| Common Space        | Shared garden, an activity and meeting room, guest rooms, laundry facilities and a car-share scheme. |

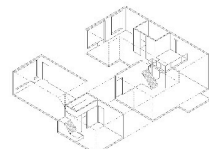
A development in Perth, designed by Spaceagency Architects proposes 'stacked homes' with no common walls for an apartment complex at White Gum Valley, near Fremantle. The architects proposed a series of apartment designs in a range of sizes, from studio to three-bedrooms, which will conform to a vertical grid, allowing them to be stacked in any arrangement to respond to the purchaser interest.

The project draws together a group of people to act as their own developer for a multi-unit housing project. All homes will be climate responsive, using passive solar design and innovative construction materials.

A shared, battery storage ready, solar panel system will generate renewable energy to ensure low operating costs<sup>14</sup>.

<sup>14</sup> Cheng, L.(2016). German cooperative housing model takes root in WA. Retrieved from <http://www.baugruppen.com.au/>





## BAUGRUPPEN ODERBERGER STRASSE 56

|                 |                                 |
|-----------------|---------------------------------|
| Architect       | Bararchitekten                  |
| Partners        | IFB THAL & Huber, Delta-I       |
| Completion date | 2003-2010                       |
| Location        | Berlin                          |
|                 | Distance from CBD 0km           |
| Typology        | Multi-family residential        |
| Legal Form      | 50% rental, 50% Privately owned |

|                     |  |
|---------------------|--|
| Residential units   | 5 Apartments   |
| Inhabitants profile | Young single professionals and young families (35-40+)   |
| Number of Floors    | 7  |
| Lot Size            | 315m2  |
| Common Space        | Landscaped rooftop, guest apartment and public art space |



Oderberger Strasse 56 is conceived as a “container” that can accommodate diversity of use and adapt to changing needs over time with high degree of flexibility in its function.

The design offers a complex building with split levels and a double-storey space in each apartment. The building provides five units of about 120 square meters, which are equally suitable for living and working<sup>15</sup>.

<sup>15</sup> Kleilein, D (2010). Slow architecture. Retrieved from <http://www.bauwelt.de/themen/bauten/Oderberger-Strasse-56-BARarchitekten-Berlin-Slow-architecture-2159360.html>



## 132 ST. GEORGES

**Architect** Property Collectives

**Partners** Dan Demant, Loop 8, Freddi & Co

**Completion date** 2010

**Location** 132 St Georges Rd Northcote  
Distance from CBD 5km

**Typology** Multi-family residential

**Legal Form** Privately owned

**Residential units** 4 Units

**Inhabitants profile** Young single professionals and  
young families (35-40+)

**Number of Floors** 3

**Lot Size** 486 m2

**Common Space** Landscaped rooftop



The project uses a simplified Baugruppen approach to deliver high quality town house product.

The focus of this project is to ensure the architecture takes centre stage on the streetscape rather than dominating the streetscape with extra crossovers and garages. This scale is reinforced with the tactile materiality of the recycled brick that was used to match the front brick fence of the original building on St Georges Rd.

The form of the building is simple and provides strong individual identity whilst being clearly part of a whole<sup>16</sup>.

<sup>16</sup> Property Collectives (2018). 132 ST Georges Rd. Retrieved from <http://propertycollectives.com.au/2014/01/north-cote-joint-venture-property-development/>





## AM URBAN PG HAUS 3-15

|                     |  |
|---------------------|--|
| Architect           | Spaceagency Architects   |
| Partners            | GMBH & CO KG, GBR MHB,   |
| Completion date     | 2008-2012  |
| Location            | Berlin   |
|                     | Distance from CBD 0km  |
| Typology            | Multi-family residential   |
| Legal Form          | Privately owned  |
| Residential units   | 130 units  |
| Inhabitants profile | Infants to Seniors (+80)   |
| Number of Floors    | 2-5-storey multifamily dwellings   |
| Lot Size            | 26 000 m <sup>2</sup>  |
| Common Space        | Shared garden, an activity and meeting room, gallery and a car-share scheme. |



The project is situated in the former hospital of Kreuzberg. The proponents are a private collective of architects, jurists, and residents. Together the collective developed the huge complex "am Urban" into a thriving housing complex.

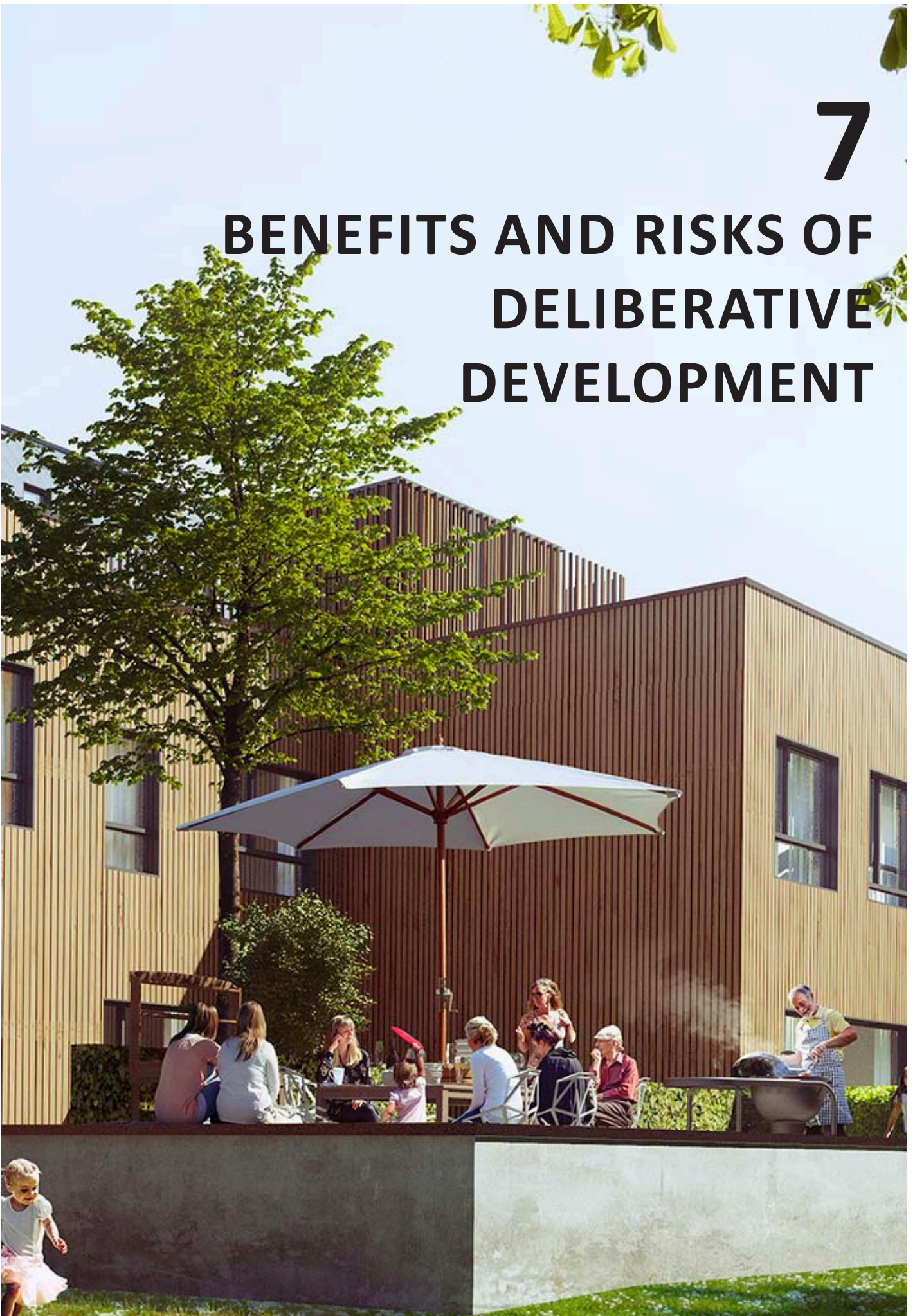
The complex does not only feature houses, it has performance spaces, workspaces, a day care and specially designed elderly homes. This mixed area space results in a complex that features a highly diverse mix of residents<sup>17</sup>.

<sup>17</sup> Cheng, L.(2016). German cooperative housing model takes root in WA. Retrieved from <http://www.baugruppen.com.au/>



7

# BENEFITS AND RISKS OF DELIBERATIVE DEVELOPMENT



## 7.1 The benefits

Moreland Council wishes to understand how deliberative development takes place in the municipality and whether there is a role for Council in actively participating in or facilitating it within the municipality.

Key to this is understanding the benefits of deliberative development both to the individual as well as public benefit. Whilst some of the benefits are more focused on the individual there are a number of benefits which could also be seen as public benefits, in particular relating to the design and environmental sustainability of projects, their ability to provide mix of uses including work spaces for small business/creative enterprises and a greater willingness to partner with local government to deliver shared/public spaces.

Some of these benefits are not exclusive of deliberative development and could be developed under a conventional model.

However, from the project examples in Australia and overseas it is evident that there is greater interest, willingness and ability for deliberative development proponents to pursue other land use and partnership opportunities than there is for conventional development proponents.

The table overleaf provides an assessment of the potential benefits of deliberative development as outlined in chapter 2.2 of this Paper.

|  | Assumed Benefit of DD  | Assessment  | Benefits |
|--|--|---|----------|
| Alternative financing models & affordability | To reduce costs of the project which is passed onto the purchaser. Removal of development profit, removal of fees and charges relating to marketing the development. All of the cost savings passed onto the purchaser. Under this model, dwellings are purchased 'at cost'. | <p>The full realisation of a 15-20% market value savings may or may not be actually achievable. This will be heavily determined by whether or not the potential development cost savings can be fully realised.</p> <p>However, if a market valuation places a premium on the value an apartment due to better design and construction principles, this may enable a market saving of 15-20% to be achieved base on a 'like for like' product. There is no firm market valuation evidence to prove this is the case.</p> <p>In terms of the overall affordability of the apartments, we note that many local examples of deliberative development projects are at a higher price than other similarly sized products in similar locations. This is due in part to:</p> <ul style="list-style-type: none"> <li>• The location of the development and therefore high land cost</li> <li>• High spec building including building materials, fittings and features</li> <li>• The environmental features of the building. (note: anecdotal evidence suggests that theres an operational ongoing cost saving though the removal of heating/ cooling etc however the upfront costs for the building specification are higher than a standard build).</li> </ul> <p>In co-housing projects the long term affordability can also be a challenge dependent on the financing structure. Some projects provide for stable, lower cost rent (including bills) (eg Murundaka project) but this is not uniformly the case. Property cost combined with potentially steep membership costs, can make co-housing less affordable. Additionally, owners may not have complete control over their property should they decide to sell since many communities have right to first buying refusal. Others may discover that they do not use the common facilities yet have no way to avoid paying the associated fees since they are part of the ownership contract.</p> <p>One of the major problems, however, is that new co-housing communities may take more time, money and energy to plan and develop than initially estimated.</p> | —        |
| Greater involvement of future owner          | Deliver housing rather than investor products to meets the expectation and needs of future occupants.  | <p>There is certainly greater involvement from future occupiers of the projects. This participation ranges from registration in the project and updates, specific questionnaires' on apartment layout and communal spaces through to communal decision (eg: co-housing projects). Anecdotaly this is a positive outcome for residents who feel they have had a real input into their homes.</p> <p>The Nightingale model has shown how successful this participation can be in developing housing which suits the incoming population evident by the huge participation in the questionnaires', information sessions etc. (currently circa 5000 people registered as interested parties for a Nightingale home).</p>  | ✓        |

✓ Yes

✗ No

— Marginal/Unclear

FIG.10 Benefits of deliberative development

|   |  |  |          |
|---|--|--|----------|
| <p><b>Architecture of Reductionism and reduced construction costs</b></p> | <p>Removing unnecessary aspects of the build to reduce construction costs. This can range from eliminating second bathrooms within apartments through to removing all car parking.</p> | <p>Although there is potential to reduce construction costs by omitting fixtures, reducing areas (eg: removing second bathroom, not including plastered ceilings, exposing pipe work) and not providing car parking, anecdotal evidence suggests that a net cost reduction is not always achieved. It appears that any cost savings may often be replaced by additional costs that contribute to better and higher quality design elements and enhanced ESD features.</p> <p>We note that design quality of deliberative development projects in Australia are generally very high. As such the cost saving gained by reductionist architecture (especially on internal spaces) can be offset by the higher design quality, choice of materials, additional features etc. As such the value of the apartment may be higher for the same cost as a conventional development.</p>  | <p>—</p> |
| <p><b>Shared spaces + urban interaction</b></p>                           | <p>Creating well- functioning neighbourhoods and communities with shared public spaces. This fosters a shared responsibility for where people live and a sense of identity.</p>        | <p>Analysis of examples undertaken by Echelon as well as in other publications shows how participatory development and the provision of common areas promotes social togetherness. Those projects which provide significant shared spaces which are open to the public can also add greater neighbourhood interaction. Anecdotally, residents living in co-housing projects with a range of communal areas note that daily exchanges create meaningful connections and contribute to a sense of togetherness missing in traditional development<sup>18</sup>.</p> <p>If common areas are limited to roof top gardens or small park areas that are not accessible to the public then the extent to which there are social benefit beyond the project walls is limited. The planned amount of shared space is therefore a good indicator of the potential societal benefit of the project<sup>19</sup>.</p> <p>Providing a mix of uses within the project can also provide benefits to the wider community. There is a growing trend in Europe (as evidenced in the Baugruppen examples) to provide for flexible living and working spaces either within individual apartments, as a communal space or commercial spaces at the ground floor.</p> <p>Deliberative development can play an important role in creating the mixed use spaces within the inner city where there is a demand for small office and creative spaces which are either colocated or close to people's homes. There are a number of examples in Berlin of such developments which integrate living and working spaces to great effect.</p> | <p>✓</p> |

<sup>18</sup> <http://ala-apa.org/newsletter/2006/10/17/the-good-and-the-bad-of-cohousing/>

<sup>19</sup> Kristien Ring / AA PROJECTS, *Self Made City*, Jovis Verlag, 2014, Berlin



|   |   |   |          |
|---|---|---|----------|
| <p><b>High quality architecture &amp; Flexible spaces</b></p> | <p>Well presented buildings which address streetscape. Generally contemporary in firm and whilst often have a pared back aesthetic interact with the public realm. The initial design choices also create quality internal amenity for occupants.</p> | <p>The Australian examples across the three models explored in this Paper demonstrate a quality architecture outcome. This includes the choice of materials, architectural detail and a positive street address. However, the design quality for deliberative development could also be expected of any inner suburban location where high density is expected.</p> <p>The European examples of deliberative development also demonstrate high quality architecture albeit often being a minimalist fashion. In Berlin there are certain criteria in which governments can test the quality and performance of deliberative development projects. This is used to decide whether government assistance (either facilitation or subsidy) is to be provided.</p> <p>The financing structure of deliberative development is more flexible and the floorplates are more adaptable which can provide greater opportunity to redevelop disused, complex sites and older buildings which may not be attractive for traditional investment models. There are multiple examples of this occurring in Berlin.</p> | <p>✓</p> |
| <p><b>Environmentally sustainable</b></p>                     | <p>Features to reduce energy consumption and overall operational costs for the homeowner</p>  | <p>All of the project examples demonstrate attention to environmental sustainability. (construction methods and materials with low environmental impact, energy efficiency, natural light and passive ventilation, reduced car dependency</p>   | <p>✓</p> |

The assessment Figure 10 demonstrates the benefits of deliberative development projects within the Australian property market. Challenging the conventional model enables new ideas to be pursued and may also put pressure on standard development projects to 'lift their game' in relation to environmental sustainability, purchaser participation and providing flexibility in the delivery of housing spaces. Put simply, the projects play an important role in keeping market process intact and in defining the quality that can be built and for what price.

The question of whether deliberative development provides affordable homes is however one which continues to spark debate. Whilst the 'rate of return' does not play a central role in deliberative development like it does with conventional development models, it remains unclear how affordability can be measured in deliberative development projects and what comparable figures can be relied upon. Moreover, given the variability in scale, forms and demographic profile of projects the built form examples differ in their respective 'affordability'.

Of the deliberative development models, co-housing projects seem to offer the most potential for affordability. This may be achieved by forming coop associations to offer stable, long term costs and a potential to reduce rental costs across a longer term. However, this becomes more difficult to achieve as land costs continue to rise.

There is criticism in the literature that the European Baugruppen model is only accessible for "well to do income groups" with many examples in Berlin identifying a reliance on obtaining a low cost bank loans or government subsidy to provide any reduced costs for future purchasers<sup>20</sup>.

In the Baugruppen model, this "unaffordability" issue is two-fold:

- the actual price of apartments
- the requirement for 30% upfront capital

Given the above, there is a need to review the extent of upfront or 'seed' capital that is required to participate in the Baugruppen development. The emerging Nightingale Baugruppen model aims to address this issue by creating a separate Nightingale Fund which would provide for 20% of the upfront capital with the remaining 10% to be financed by the future owners/individuals. This may open up potential for a wider segment of the market to participate in Baugruppen style projects.

From our review of the Baugruppen model, it does not seem to offer greatly more affordable housing options than conventional development, although it typically offers quality developments, better value and many other benefits as set out in Figure 10.

Projects delivered under other form of participatory development model also do not offer greater housing affordability but are likely to provide a higher quality and better tailored to the housing needs of residents.

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<sup>20</sup> Kristien Ring / AA PROJECTS, *Self Made City*, Jovis Verlag, 2014, Berlin

## 7.2 The risks

All development carries a variety of project risks. Figure 12 below sets out the general comparative risks of conventional development versus deliberative development. This is an important consideration for council as if they were to contemplate selling their land to a 3rd party for a deliberative style development then the risks to council, the 3rd party/purchaser and the future home owner would need to be understood. The analysis undertaken by Conceptus identifies that the greatest risk for council lies in the pre-contract execution phase as many of the post contract risks can be managed through the relevant agreements/contracts. However, if during the post contract phase there are project delivery failures which affect the future homeowner then by implication this would also pose a risk to Council (reputational risk rather than financial risk).

The table below identifies the risks of deliberative development relative to conventional development for the key phases of property development.

The type of risks under a deliberative development model on Council land are essentially the same as a conventional development model. The level of transactional risk is highly dependent on Council's Development Requirements on a developer.

The stages of a development can be classified into two distinct parts:

### Pre-Contract Execution

- EOI
- Due Diligence
- Contract Execution

### Post Contract Execution

- Authority Approvals
- Sales
- Financing
- Delivery
- Settlement

| Risk       | Conventional | Deliberative | Comments   |
|------------|--------------|--------------|--|
| Selling    | ↑            | ↓            | Selling risk is a measure of the ability to sell the product to its intended market.                 |
| Authority  | —            | —            | Risk associated with any form of authority approval to enable the development to start and complete. |
| Settlement | ↓            | ↑            | Risk associated with the ability of the purchaser to finalise the contract of sale.                  |
| Delivery   | —            | —            | Delivery risk encompasses design risk, timing risk and construction risk.                            |
| Financing  | ↓            | ↑            | Risk associated with the development entity raising finance to fund the project.                     |

— Equivalent Risk Level



Relatively Higher Risk Level



Relatively Lower Risk Level

FIG.11 Risks of deliberative development model (Nightingale Model)

## 7.2.1 Council and development Pre-Contract phase

The greatest risk for Council arises at the **Pre-Contract Execution** stage when a preferred developer is completing Due Diligence activities. If one or both parties realise that their objectives cannot be achieved, there is a risk of either party withdrawing from the transaction.

Current forms of deliberative development generally set the development requirements at a higher level than normal developers are traditionally accustomed. The Council's development requirements relating to a deliberative development must be well defined within any Development Agreement with a third-party developer- this is no different to a conventional form of development.

Council Development Requirements for Deliberative Developments may be broadly classified as:

- Design Specification
- ESD requirements
- Affordability levels

The level to which these requirements are set will impact the purchase price that a developer can pay for land.

➤ High requirements = lower development return

OR

➤ High requirements = lower purchase price

Existing deliberative development models replace (or lower) some typical development costs and replace them with other development costs that go toward to achievement of better apartments as outlined in previous chapters.

The different (and less common) property economic structure under a deliberative development model presents as a higher risk for Council due the relatively lower level of familiarity amongst the external developer community and understanding of the relative risks and returns.

As a result, a developer withdrawing (pre-contract) would be considered of higher probability under a deliberative development model when compared to a conventional development model.



## 7.2.2 Post-Contract phase

Overall the risk for Council at the **Post Contract-Stage** is considered only marginally higher under a deliberative development model under normal economic conditions, noting:

- There is potentially a higher relative risk for deliberative developments during an economic downturn, due to the residential product being sold to a relatively limited (new) market.
- In the event of a developer failing to deliver to Council's objectives under this model, the potential risk for negative community sentiment could be higher due to a heightened awareness of the net community benefit rationale (i.e affordability, ESD) as the basis of entering into a transaction to sell land.

If contracts with a developer are undertaken and a Baugruppen style development is to be undertaken then there is a different risk profile for the future home owners. This is because the model transfers development risk onto purchasers who become the proponent of the projects. The upfront capital invested by future owners is based on the estimated cost of development and as such if there are circumstances which would alter the cost base this becomes the responsibility of individual purchasers<sup>21</sup>.

Council involvement in a project that transfers risk away from a Developer and onto a Purchaser (under this type of model) carries with it potential for negative community sentiment in the event of an unforeseen development risk arising.

Due to the relative infancy of this development model there may be more difficulty of finding a developer who can meet Council's objectives and therefore higher risk of transaction withdrawal (pre-contract) than under conventional development model. Moreover, the deliberative development model has not been tested across all economic cycles and this presents a higher risk for any developer and Council in the event of adverse conditions. It is therefore important for Council to consider the risks (to both Council and home purchasers) before Council might consider becoming an active agent in this development model.

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<sup>21</sup> Some potential development risk that could alter the forecast base cost include: builder default or bankruptcy, unexpected site conditions (i.e. contamination), building warranty issues, design/engineering risk, contamination liabilities



8

## ROLE OF LOCAL GOVERNMENT

Local government has the opportunity to play a role in facilitating deliberative development within the municipality should there be adequate public benefit in doing so.

The assessment at section 7.1 of this report demonstrates that the Deliberative Development model provides benefits specifically relating to:

*Greater participation by home-seeker* - This results in developments which respond to the needs and wants of the future owners.

*High quality architecture and flexible spaces* - Deliberative development can promote greater opportunities for adaptable spaces such as living/ washing areas which could be used for small business/ start ups.

*Shared spaces* - Deliberative development provides more shared spaces which have positive effect on residents and depending on their design and accessibility could also provide public benefits (ie. open space, flexible work spaces)

*ESD initiatives* - Deliberative developments aim to achieve excellent ESD credentials both to reduce operational costs and costs of living as well as reducing environmental footprint.

Many of the benefits of deliberative development as outlined above are not necessarily exclusive to deliberative development and as such Council could create policy regarding the quality of development in its municipality which can apply to all developments.

Internationally, there is a spectrum of involvement of State and Local Government.

In Berlin, governments actively facilitate deliberative developments which meet set criteria relating to housing affordability, quality design, public space and rental ratio. If criteria are met there are avenues to apply for government subsidy and preferential treatment.

The extent to which Local Government wishes to engage, facilitate or participate in deliberative development comes down to how it values the benefits of the deliberative development model having regard to the inherent risks outlined in chapter 7.2.

The spectrum of possible involvement is discussed in the following pages.

## MINIMUM INVOLVEMENT



### No change

- Deliberative development applications are treated the same as traditional development applications within the planning process.
- Surplus Council land is simply developed or sold under a usual process as allowed under the relevant Local Government and legislation.




### Facilitating permits

Whilst Council typically offers a pre-application review process and are consistently endeavoring to facilitate quality development in the municipality there is opportunity to provide an enhanced service for application which display the features common to deliberative development. This could apply to deliberative development and other applications which display these same outcomes.

Facilitating applications could include a number of measures including:

- An ongoing and open dialogue across Council departments to facilitate high quality outcomes.
- Ensure Council officers understand deliberative development models and how they differ from conventional developments to enable consideration of planning permit applications.





## Advocacy and knowledge sharing

Take up an advocacy role for deliberative style development with the municipality. This could include:

- Running information sessions at Council. These could be to share information about how deliberative models work as well as outline what councils' view is on the models and how they may be treated through the permit application phase.
- Creating a place where people can gather such as a website for people to learn more about deliberative development projects (in Australia, Melbourne and Moreland council) and register interest in any future deliberative development projects within the municipality.

The website could be created to:

- Inform people of the various models, financing alternatives and how purchasers can influence the design of their homes.
- Provide a demonstration project to show what is possible and highlight the differences between conventional and deliberative development.
- Create a location where people interested in deliberative development register interest. This could be available for proponents to tap into whether that is for co-housing, 'light touch' participatory or Baugruppen style developments.
- Hosting events and workshops

## Reserving council land at market price for Baugruppen style development

- Reserve land for deliberative development forms in locations which would enable the overarching aims of deliberative development to be met such as providing shared spaces adaptable live/work spaces, reduced reliance on car use, close to amenities, possibility for higher density/apartment types.
- Put in place a set of pre-requisites prepared by Council which any deliberative development would need to meet, these could range of design excellence and environmental features through to extent of shared/public spaces and affordability.

## Selling council land on favourable term to proponents undertaking Baugruppen style development

- Sell council land at a rate less than market value or with favorable contractual terms (such as deferred payment terms) to those seeking to deliver a deliberative development project. This could be an additional lever combined with the other principles of both the Nightingale and Nightingale Baugruppen deliberative development models. The financial sensitivity of a reduction in land value (based on the standard Nightingale model) is shown in the sensitivity matrix in the next page. It demonstrates the reduction in land value relative to the market value saving on an apartment. The market value savings shown are approximate but are in addition to other potential savings in the standard Nightingale model.

MARKET VALUE SAVING PER APARTMENT

| Land Value Reduction | Market Value Saving |
|----------------------|---------------------|
| 10%                  | 1%                  |
| 20%                  | 3%                  |
| 30%                  | 4%                  |
| 40%                  | 6%                  |
| 50%                  | 7%                  |

- Put in place a set of pre-requisites prepared by Council which any proposed deliberative development would need to meet for Council to consider selling at reduced rates. These criteria may be similar to those outlined above but with a greater emphasis on affordability or other matters.

Under this action, the Council would be responsible for setting the criteria noting above and ensuring it is met both through the contractual/land transfer process as well as through the planning permit application itself. The level of land reduction could be closely tied to how well the proposed project meets the criteria and the level of 'public good' to be achieved.

This action allows the council to have influence the quality of development within the municipality and facilitate participation development processes but without the risk associated with delivery of the project.

This level of government involvement or subsidy has been evidenced in many built examples in Europe. Deliberative development and in particular Baugruppen is relatively new in Australia and there hasn't been any examples cited which specifically adopt this model in Australian cities.



### Developing Council land for Baugruppen style development

- Develop council land for a Baugruppen style development by creating a Baugruppen style finance structure and setting a range of project goals.
- This is a high risk strategy for Council having regard to how the project is financed and the number of proponents/future owners that would be involved, noting:
  - There would likely be negative outcomes and/or publicity if council is a participant in the development model in the event that an adverse development risk arises.
  - The deliberative development model is within its relative early stages in Australia and Council would therefore be an early adopter of this model where there are still many unknowns.
  - The model has not been tested through varying economic cycles

MAXIMUM INVOLVEMENT

## CONCLUSIONS

Deliberative development provides an alternative to the conventional speculative model of development by giving home seekers more say in the size, design and quality of their housing. It utilises alternative financing structures to remove or reduce development profit and deliver higher quality developments.

The three deliberative development models explored in this Paper- participatory, co-housing and Baugruppen - can deliver the following benefits to varying degrees:

- Reduction of the costs of the project which is passed onto the purchaser
- Reduction or removal of development profit. Under this model, dwellings are purchased 'at cost'.
- Delivering housing, rather than investor products, to meets the expectation and needs of future occupants.
- Reduction of construction cost by eliminating unnecessary amenities such as second bathroom and car parking.
- Creating well- functioning neighbourhoods and communities with shared public spaces.
- Interaction with public realm and quality internal amenities
- Features to reduce energy consumption and overall operational costs for the homeowners

The project examples examined for each of these models exhibit positive outcomes that warrant support from government. They demonstrate that at a minimum, deliberative development disrupts the 'business as usual' approach, enabling new ideas to be pursued, advancing a shared space philosophy and ensuring projects are designed to meet the needs of the end users rather than the investor market.

The questions of whether and how local government may become involved in deliberative development requires careful consideration. Whilst there are clearly benefits of the deliberative development approach, there are also heightened risks which need to be taken into account. This Paper identified a series of key risks which would apply to an individual or Council should they seek to development land under a deliberative development model.

The extent to which local government could possibly engage, facilitate or participate in deliberative development is outlined in this Paper. The level of involvement Council decides upon will likely come down to how the public benefits are balanced with the risks of deliberative development relative to the benefits and risks of conventional development. Council has the opportunity to influence the quality of development across the municipality which could apply to deliberative or conventional forms and on either private or publicly owned land.



## APPENDIX 1 - Other Housing Models

There are a range of other housing delivery models which are emerging as a way to meet the housing affordability challenge. These are not intrinsically participatory or deliberative but they do seek to address some of the shortfalls of conventional development. The three models are:

- Shared Equity
- Build to rent
- Co-living

### SHARED EQUITY MODEL

A typical shared equity scheme involves the home-buyer taking out a loan on a proportion of the full cost of the property, while the equity partner provides the rest of the capital. During the loan period the home-buyer can buy more equity in the property (if and when they can afford it) as a stepping stone to 'normal', full ownership. At the time of sale (or refinancing), the partner recoups their equity loan plus a share of capital gains.

Government-backed shared equity arrangements and already operate in Western Australia, South Australia, Tasmania and the ACT, and the Victorian government has recently initiated its own scheme.

Alternative, 'community equity' models operate overseas, where the home-buyer buys a proportion of a property with a subsidy from the equity partner, usually a form of 'not-for-profit' trust or housing association. In this scenario, the equity partner retains a large proportion of ownership and has an ongoing interest in the property. Community Land Trusts (CLTs), which exist in the USA and the UK, are examples of this model. However, these schemes have proven difficult to implement under Australian law.

### BUILD TO RENT DEVELOPMENT

Build to Rent is a development model where the developer builds residential property specifically for long term rental with institutional investment. It is a common form of development in the US and the UK but is not so common in the Australian property market. Discussions with industry members has confirmed that changes to the tax system would need to be made to enable this to be attractive in Australian cities.

This is a model which is being discussed as a real option for housing affordability but where there is little project evidence, especially in Australia. In examples of this model in Europe, land is held by government but the rights to the land are given for a certain period of time, usually for 99 years.

It offers an alternative to land ownership and provides an opportunity to provide longer term housing affordability. When a building is leased the high upfront costs drop away and the total cost of the building can be reduced.

The National Rental Affordability Scheme in Australia was a form of build to rent, but interest in this model has waned since the winding up of this scheme in 2013. The Commonwealth government has announced a bond aggregator agency which will issue government-backed bonds to provide cheap loans to housing associations to build affordable housing. This is expected to create renewed interest in a domestic build to rent model.

### CO-LIVING DEVELOPMENT

Co-living is a setup where a building's bedrooms are private, but nearly all other spaces and facilities are communal. In this arrangement the building operates as modern "dorms for grown-ups". Co-living spaces are particularly popular in large cities where there are high rents and a lack of housing choice. Co living provides flexible, community-driven housing and is attractive to a young, urban, professional and mobile population.

The co-living model continues to move further away from long term commitment with the model evolving from signing a lease to being provided only with a "membership" to provide for a furnished bedroom and common areas. This model whilst not strictly deliberative development is an example of the changing role housing is playing in society and the trend for community driven outcomes.

## APPENDIX 2 - Environmental Sustainability of Australian examples

### THE COMMONS

The features of the project are<sup>21</sup>:

- ventilated cavity built into the wall, draws air through perforated copper panels to flush hot air out of the top
- acoustically insulated wall on the western side shields the building from the rattle of trains
- outer skin is made from corrugated opaque fiberglass with a corrosive-resistant gel coating
- “kill switch” to cut power when leaving home in each apartment
- Shading in summer is provided by climbing wisteria vine on the north side of the building
- Building’ thermal efficiency and ceiling replace air conditioning to keep cool in summer
- 2 gas hydronic boilers provide heating in the apartments
- Recycled brick in the foyer and untouched concrete walls
- Unfinished floorboard in apartments and landings may be ripped up and reused at the end of the building’s life
- No plasterboard ceilings, no tiles in bathroom or kitchen, chromed metal further reduce construction footprint
- 6 shared washing mashing on the rooftop set on a 30’ cycle

### 122 ROSENEATH ST, ASSEMBLE

The project possesses a strong sustainability and community design focus.

Sustainability features of the project include double glazing, naturally ventilated corridors, solar power for communal areas, rain harvesting, an embedded energy network making discounted power available for resident and optional external awnings<sup>22</sup>.

The proposed design consists of three main forms that are oriented in a north-south alignment through the site, separated by two sets of landscaped communal walkways accessed via a series of cascading steps. Additionally these north-south thoroughfares provide solar access and amenity to dwellings resulting in residences with dual aspects<sup>23</sup>.

### MURUNDAKA CO-HOUSING MURUNDAKA

Murundaka community produces 100% of the electricity needs with solar panels.

They planned to remove the gas cooking and hot water boilers and replace them with electric aiming to be fossil fuel free<sup>24</sup>.

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<sup>21</sup> Retrieved from <https://www.sustainablebuildingawards.com.au/news/five-best-of-the-best-sustainability-awards-winners-from-recent-years/>

<sup>22</sup> Retrieved from [https://www.theweeklyreview.com.au/domain/sustainable-inner-urban-community-living-122-roseneath-street/pub/melbourne\\_times/](https://www.theweeklyreview.com.au/domain/sustainable-inner-urban-community-living-122-roseneath-street/pub/melbourne_times/)

<sup>23</sup> Retrieved from <https://www.urban.com.au/development/2015/10/01/in-detail-122-138-roseneath-street-clifton-hill>

<sup>24</sup> Retrieved from <https://www.murundakacohousing.org.au/energyfreedom>

## CHRISTIE WALK

The development features including passive solar design, photovoltaic cells, solar hot water, composting, underground stormwater storage and community spaces (meeting room, laundry, bike shelter, produce garden, roof garden)<sup>25</sup>.

The building of Christie Walk was based on the following Environmental Performance Criteria<sup>26</sup>:

- **Criterion 1. Energy**  
Both in construction and on-going, to be a low energy demand environment and, within that, to maximise the use of renewable/solar-based energy sources and minimise the use of non-renewable energy sources.
- **Criterion 2. Water**  
Both in construction and on-going, to maximise on-site both the retention and usage of storm water, and the retention and recycling of waste water.
- **Criterion 3. Land**  
Adopting programs of ecological restoration and land management practices which may include appropriate organic agricultural production and which maximise achievement of biodiversity of indigenous flora and fauna.
- **Criterion 4. Health**  
Both in construction and on-going, to avoid the use of products or processes which incorporate materials or produce substances or by-products which are known to be damaging to human health
- **Criterion 5. Pollution.**  
Both in construction and on-going, to minimise or prevent the dispersion into the environment, either within or beyond the location of the development, of non-recyclable materials or materials which otherwise have detrimental environmental effects.

## LIME TREE SQUARE

The scheme is built to meet the EcoHomes Excellent standard<sup>27</sup>, which include:

- All homes have at least 75 per cent energy efficient lighting systems and a mechanical ventilation heat recovery system which cools the homes in summer and recovers heat in winter.
- All storm water is collected into a system of ditches, swales, and urban drainage channels, creating a sustainable urban drainage system. A wetland area reduces the risks of flooding by absorbing surface water and this is planted with tall trees and wildflowers to form a meadow habitat and wetland corridor.
- Water consumption and waste is minimised through dual flush cisterns and maximum flow rates on showers.
- The roofs, walls, windows and boundary protection of the homes get an A rating from the Green Guide for Housing.

<sup>25</sup> Retrieved from [https://sustainablehouseday.com/house-profile-view/?house\\_id=11295](https://sustainablehouseday.com/house-profile-view/?house_id=11295)

<sup>26</sup> Retrieved from <http://www.urbanecology.org.au/eco-cities/christie-walk/>

<sup>27</sup> Retrieved from <http://webarchive.nationalarchives.gov.uk/20110107171929/http://www.buildingforlife.org/case-studies/lime-tree-square/environment>

## WHITE GUM VALLEY, FREMANTLE <sup>27</sup>

A key aspect of the project is the climate responsive layout which integrates solar passive design principles to ensure natural light and cross ventilation to each apartment and the use of sustainable materials like 'green' concrete using low carbon furnace slag which provides thermal mass.

The use of smart design and renewable technologies at WGV looks to reduce household bills by \$1,200 per year and aims to achieve a 60-70% mains water use reduction per dwelling compared to the Perth average<sup>28</sup>. Key initiatives to drive this reduction include a community bore irrigation system, integrated stormwater management, rainwater harvesting systems, water efficient fixtures and appliances, real time monitoring and low water use landscaping. Major energy reduction measures include the use of solar power, embedding energy efficiency requirements in the Design Guidelines, and a precinct layout which ensures most homes are north facing to benefit from a solar passive orientation. Innovations such as domestic battery storage technology will be demonstrated and will contribute to savings.

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<sup>27</sup> Retrieved from <http://www.landcorp.com.au/innovation/wgv/initiatives/One-Planet-Living/>

<sup>28</sup> Retrieved from <http://joshbyrne.com.au/wgv-white-gum-valley-launch-3/>





échelon  
planning

CONCEPTUS  
PROPERTY