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Genevieve Walshe

I want to share

*Balancing collective and individual needs in New Zealand
urban housing architecture*

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Fig 0.01. *Lipman Street developed design

*“We believe solutions to the housing crisis should be spatially and ideologically bold and follow a movement towards **flexibility** that adds **community connectedness**, **challenges loneliness** and embraces the **sharing economy**.”*

(Glamuzina & Paterson, 2014)

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abstract

In 2016 I visited Sargfabrik cohousing in Vienna and was intrigued and captivated by the rich, diverse and friendly atmosphere within the semi-public spatial and architectural realm, which I thought would never happen in New Zealand. Sargfabrik led me to realise that the common realm of New Zealand urban housing architecture is impoverished. It can, and *should*, be better.

In the 1950s and 1960s, the Kiwi dream was focused on the acquisition of a standalone dwelling; New Zealand prided itself on being an egalitarian, property owning-democracy, supported by innovative housing policies. Today the 'Kiwi dream' is changing as home ownership is no longer a rite of passage for all New Zealanders. Despite rising income inequality and decreasing housing affordability, the contemporary Kiwi dream remains focused on ownership, due to the stability and security associated with this tenure type. If New Zealand is to address the housing equality issue it should investigate the potential of international models of tenure and ownership, such as co-operatives or the Baugruppe (building group) and Baugemeinschaft (building community) models, to allow increased accessibility to stable home occupation and ownership for all New Zealanders through diversity and flexibility of tenure type over time.

Today the contemporary Kiwi dream acknowledges the advantages and benefits of higher density housing models, such as increased security, lack of maintenance, centralised management, ability to 'lock

and leave' allowing travel, and proximity to town centres. A New Zealand collective urban housing model can represent the contemporary Kiwi dream through a balance between collective and individual needs. Solutions to the New Zealand housing crisis must follow a movement towards flexibility, to accommodate demographic change over time and the DIY spirit of New Zealanders, add community connectedness, challenge loneliness and embrace the sharing economy.

This design-led research proposes that the common spatial and architectural realm can facilitate potential formation of community in New Zealand urban housing architecture. It argues that the Sargfabrik cohousing model can be translated and adapted for a New Zealand urban context. The differences in housing context between Vienna and New Zealand, and the architectural implications of these differences for New Zealand urban housing architecture, are extracted from the research. It argues that a new collective urban housing model can achieve the design diversity and flexibility of New Zealand's preferred suburban housing and the rich atmosphere of Sargfabrik's common realm. This occurs through questioning and defining the contemporary Kiwi dream. The ways international flexible tenure and ownership models could work in a New Zealand context are also considered.

00

introduction

INTRODUCTION
RESEARCH METHODOLOGY

introduction

RESEARCH STRUCTURE, AIMS +
OBJECTIVES, METHODOLOGY + KEY
FINDINGS

In 2016 I visited Sargfabrik cohousing in Vienna and was intrigued and captivated by what I saw and experienced. A diverse and thriving community was living together with a significant amount of shared resources and space, within a unified yet diverse semi-public spatial and architectural realm. I thought to myself, “This would never happen in New Zealand”. Yet clearly there was something special about composition and the rich and friendly atmosphere of Sargfabrik’s common realm that was worthy of a closer look. Why wouldn’t this happen in New Zealand, I thought? And how *could* it happen?

Proposition + research question

We have much to learn from collective urban housing projects, like Vienna’s Sargfabrik, which provide greater access to stable home occupation and ownership and adds community connectedness by embracing the sharing economy. The research proposal investigates the question, “*how can New Zealand urban housing architecture facilitate formation of community?*”

Design methodology

Vienna’s Sargfabrik collective urban housing model will be translated for a New Zealand urban context through an iterative design-led research process. The translation methodology is implemented as a means to understand and address the impoverished common realm of New Zealand urban housing architecture, to facilitate potential formation of community. The contemporary Kiwi dream is questioned and defined to address the social and architectural implications of this dream for contemporary New Zealand urban housing architecture.

Site for investigation

The site for investigation is a tight urban site located between Lipman Street and Kent Terrace, in Mount Victoria, Wellington. Although the design explorations will respond to specific site conditions, the aim of this research

is to extract a series of lessons that can be applied to broader New Zealand urban development.

Defining the contemporary Kiwi dream

In the 1950s and 1960s, the Kiwi dream was centred on the acquisition of home ownership of a single-detached dwelling; New Zealand prided itself on being an egalitarian, property-owning democracy, supported by innovative housing policies and the Government's role in subsidising mortgages for purchasing homes (Howden-Chapman, 2015). This era saw rapid urbanisation and suburbanisation in New Zealand due to an increased demand for housing after the end of the Second World War, and the baby boom which followed (Howden-Chapman, 2015). The decline of home ownership began in the early 1990s following the Government's withdrawal from mortgage provision for home ownership, a housing policy that had defined New Zealand's egalitarian society for much of the twentieth century.

The suburban pattern of stand-alone dwellings acquired through home ownership has helped to build a culture of entitlement to this housing pattern, on the basis that any move to higher density housing models might threaten the existing value of stand-alone houses (Howden-Chapman, 2015). Today home ownership is no longer a rite of passage for all New Zealanders, and is instead becoming increasingly limited to higher socio-economic groups. For example, in 2001 61% of people in their late thirties owned their home, but only 50% do today (Eaqub & Eaqub, 2015). Despite rising income inequality and decreasing housing affordability, the contemporary Kiwi dream remains focused on ownership, due to the stability and security associated with this tenure type (Eaqub & Eaqub, 2015).

Medium-density housing across New Zealand cities is on the rise. Currently 25% of all dwelling units in Wellington classified are as MDH, and is expected to increase by about 10% over the next few years (Page, 2016). Collective urban housing is an example of how Wellington can provide for successful medium-density development. Instead of a "one size fits all" development approach, collective initiatives focus on the benefits of a shared economy

and collective resources, while maintaining a balance between collective and individual needs.

*“**Densification** of our city suburbs is **not** an ogre to be feared, to the contrary: If it is designed well, it can offer **extraordinary lifestyle opportunities** and a **solution to housing pressure** in our major cities” (Anderson, 2017).*

International flexible tenure + ownership structures

New Zealand is missing housing provision for the lower-middle income demographic, such as ‘Generation Rent’, who fall outside the requirements for social housing specified by Housing New Zealand (Southcombe, 2016). If New Zealand is to address this equality issue it should investigate the potential of international models of tenure and ownership, such as the Baugruppe (building group), Baugemeinschaft (building community) or co-operative structures, to allow increased accessibility to stable home occupation and ownership for all New Zealanders, through flexibility of tenure type over time (Glamuzina & Paterson, 2014). These flexible models allow people to purchase a dwelling outright, rent-to-buy or, if circumstances change, to revert to renting. The opportunity to gain access to the stability and security of belonging to a community is diversified (Howden-Chapman, 2015). The design-led research investigates how flexible tenure and ownership structures could work for a New Zealand urban context.

A more collective future

This thesis investigation will find that solutions to the New Zealand housing crisis must follow a movement towards flexibility, to accommodate demographic change over time and the DIY spirit of New Zealanders, add community connectedness, challenge loneliness and embrace the sharing economy (Glamuzina & Paterson, 2014). Collective urban housing makes so much sense for young families and sole parents who work full-time and are time-poor, who can share child minding responsibilities. It is also

suitable for empty nesters or down-sizers who desire a greater sense of social connectedness, particularly with children, and support of a community during later life stages (Alter, 2015).

Today New Zealand urban authorities, including the Wellington City Council, favour compact medium-rise developments within inner residential areas, with a vision of urban sustainability and housing intensification near transport nodes (Howden-Chapman, 2015). However, current New Zealand urban housing architecture does not retain the design diversity, individuality and unique architectural character of New Zealand's preferred suburban housing. Instead, this housing typology is consistently seen as "lacking character, drab, monotonous, cramped, leaky, and subject to the complications of bodies corporate" (CityScope, 2011).

This thesis will translate Vienna's Sargfabrik for a New Zealand urban context. It will propose how New Zealand collective urban housing architecture can facilitate formation of community through a balance between individual and collective needs, and an architecturally rich, diverse and friendly atmosphere within the common realm.

This thesis is structured in three design phases followed by a brief concluding chapter to document the key findings and future steps of the research (fig 0.03).

Design phase one, “Translating Sargfabrik for a New Zealand urban context”, explores how Vienna’s Sargfabrik can be translated for a New Zealand urban context. The architectural and social implications for New Zealand urban housing architecture are extracted from the research, regarding the difference in housing context between Vienna and New Zealand.

Design phase two, “Defining the contemporary Kiwi dream”, questions and documents what the contemporary Kiwi dream is today, and the architectural and social implications of this dream for New Zealand urban housing architecture.

Design phase three, “Balancing collective and individual needs”, investigates how New Zealand urban housing architecture can facilitate formation of community through a balance between collective and individual needs.

Fig 0.03. Methodology diagram

disciplinary context

KEY AUTHORS + REFERENCES

International:

A Contemporary Approach to Housing Ourselves and Creating Cohousing: building sustainable communities
by Kathryn McCamant and Charles Durrett

Selfmade City: Stadtgestaltung und Wohnprojekte in Eigeninitiative = Self-initiated urban living and architectural interventions by Kristien Ring

Life Between Buildings by Jan Gehl

How cohousing can make us happier (and live longer)
by Grace Kim

Cohousing Cultures by Michael LaFond

Modelling Vienna: Real Fictions in Social Housing by
Andreas Rumpfhuber and Michael Klein

Together! : the new architecture of the collective edited
by Mateo Kries, Mathias Müller, Daniel Niggli,
Andreas Ruby and Ilka Ruby

National:

Where is our collective imagination? by Dominic
Glamuzina and Aaron Paterson

Home Truths : confronting New Zealand's housing crisis
by Philippa Howden-Chapman

Generation Rent : rethinking New Zealand's priorities
by Shamubeel and Selena Eaquad

*Sustainable Community: Learning from the cohousing
model* by Graham Meltzer

01

site for investigation

MOUNT VICTORIA, WELLINGTON

Fig 1.01. *Site context in relation to District Plan Map and zoning

The site lies on the perimeter of the ‘central area’ (low-city) precinct of the Wellington City Council District Plan, with height restrictions of between 10 and 43.8m. Its location between the central and inner residential zones requires consideration of the existing residential context.

- Inner residential zone (Mount Victoria)
- Central zone (low-city)
- Site for investigation

Fig 1.02. Height restrictions of ‘low city’ central area

Fig 1.03. Height restrictions of inner city residential area

Fig 1.04. (Top) *Kent Terrace commercial context
 Fig 1.05. *Majoribanks Street mixed use context

Fig 1.06. (Top) *Car park site for investigation

Fig 1.07. *Lipman Street residential context

Fig 1.08. *Wellington City Council District Plan zoning map

02

sargfabrik precedent research

SARGFABRIK (1996)
MISS SARGFABRIK (2000)

sargfabrik cohousing model

SARGFABRIK (1996)

MISS SARGFABRIK (2000)

BKK ARCHITECTURE COLLECTIVE

The Sargfabrik (an old coffin factory) was opened in 1996, and today is the largest self-governing housing and cultural project in Austria (Ebner, 2010). Despite the abundance of community housing projects in Vienna, Sargfabrik remains the most well-known and influential because “The Sargfabrik took advantage of a degree of freedom that later ceased to exist” (Kries, Müller, Niggli, Ruby, A., & Ruby, I, 2017).

Vienna’s Sargfabrik is a radical collective housing model in terms of its organisational structure, architectural concept and massing (Kries et al., 2017). Today the non-profit community consists of 112 private units, between both Sargfabrik and Miss Sargfabrik its associated sister project. Communal facilities are open to the public, the cultural centre is known city-wide and frequently used for neighbourhood events, the indoor pool is used as a swimming club, the bar is run by community members, and a seminar room, kindergarten and other common amenities are for the residents themselves and the wider community (Kries et al., 2017).

Fig 2.01. (Opposite) *Sargfabrik main common courtyard

sargfabrik

VIENNA, 1996

BKK-2 ARCHITECTURE COLLECTIVE

4711 M² + 72 UNITS

The scale of Sargfabrik is significantly larger than Miss Sargfabrik, with 72 units compared to 40. Modular units measuring 45m² were designed with a width and height of 4.8m to allow double-height spaces and mezzanine floors, based on Corbusier's Modulor scale (Kries et al., 2017). These dimensions were determined to allow modules to be added together, and subtracted again if necessary.

In the film *Leben in der Sargfabrik* (Living in the Sargfabrik), the flexibility of the modular units is described as the 'divorce model', to accommodate demographic changes in need and circumstance over time. Common access galleries are inhabited as an extension of the private units, decorated with plants and furniture to create a greater sense of privacy and distance (Ebner, 2009). A collective management and administrative committee manages the social diversity and day-to-day running of the Sargfabrik collective (Ebner, 2009).

Fig 2.02. *Sargfabrik's common roof terrace and courtyards

- Public amenities
- Common amenities
- Vertical common circulation (stair + lift)

Fig 2.03. (Top) *Site context of Sargfabrik and Miss Sargfabrik
Fig 2.04. *Sargfabrik ground floor common and public circulation

level one

level two

level three

roof terrace

- Public amenities
- Common amenities
- Vertical common circulation (stair + lift)
- Horizontal common circulation (access galleries)

0 10 20 50

Fig 2.05. *Sargfabrik circulation, common and public amenities

- Horizontal common circulation (access galleries)
- Vertical common circulation (stair + lift)

Fig 2.06. *Diagram of Sargfabrik's circulation

Fig 2.07. *(Opposite) Sargfabrik access gallery

Horizontal common circulation (access galleries)

Fig 2.08. *Sargfabrik modular unit type one

Horizontal common circulation (access galleries)

Fig 2.09. *Sargfabrik modular unit type two

Fig 2.10. Section through Sargfabrik public site access

Fig 2.11. *Inhabitation of Sargfabrik's access galleries

miss sargfabrik

VIENNA, 2000

BKK-3 ARCHITECTURE COLLECTIVE

Miss Sargfabrik, with 40 private units, was developed as a complimentary extension of Sargfabrik that worked in association with it. The Miss had smaller units, and was intended to be more introverted than Sargfabrik, therefore offering fewer communal spaces (Kries et al., 2017). Common amenities were not distributed in ancillary areas of the building plan, but were instead positioned at the centre of the upper residential floors (Ebner, 2009). Communal facilities include a kitchen, dining room, library, and washing room.

The cubic modular system of Sargfabrik was not used. Instead, it utilised an irregular plan and split-levels to facilitate privacy gradients between the common and private realms along the access galleries (Kries et al., 2017).

- Vertical common circulation (stair + lift)
- Horizontal common circulation (access galleries)

Fig 2.12. Common circulation (vertical + horizontal) in Miss

- Common amenities
- Vertical common circulation (stair + lift)
- Horizontal common circulation (access galleries)
- Shared youth house
- Wheelchair friendly units

0 5 10 20

Fig 2.13. Common amenities and circulation in Miss
Fig 2.14. (Opposite) Shared courtyard in Miss

Fig 2.15. *Sectional analysis of Miss

Fig 2.16. Shared courtyard and access galleries in Miss

Fig 2.17. Miss access gallery at corner

Fig 2.18. Relationship of Miss to context

03

translating sargfabrik

DESIGN PHASE ONE

This design phase explores how Vienna's Sargfabrik cohousing model can be translated for a New Zealand urban context, and highlights a difference in housing context between Vienna and New Zealand. The architectural implications of these differences are extracted from the research.

Fig 3.01. *A 'hunch' about how Vienna's Sargfabrik cohousing model could be translated for a New Zealand urban context

why cohousing?

WHY SHOULD WE CARE? WHO AM I
DESIGNING FOR?

Cohousing is one of many alternatives worth considering in response to the housing affordability issue and decline of home ownership in New Zealand today. Architect Jeremy Till says, “We need to be investigating new models for flexible living... Cohousing... [is]... a fantastic model because it means you could share a big dining room or a spare bedroom or equipment... Property developers are obsessed with giving everyone homes with lots of tiny, unusable rooms when what we really *need* is larger, *shared spaces*” (Glamuzina & Paterson, 2014).

Cohousing is not a new concept and is believed to have originated in Northern Europe in the 1970s, due to the influence of Kathryn McCamant and Charles Durrett, who established the term ‘cohousing’ (Meltzer, 2005). A cohousing community consists of smaller private homes that are supplemented by extensive shared facilities.

Cohousing is not a commune, but does require residents to have similar values and a *shared intention* to live collaboratively, and a desire to embrace the sharing economy (fig 3.02) (Glamuzina & Paterson, 2014). What and how much is shared depends on how the financial and maintenance negotiations are established. The tenure structure is often a freehold title, owned by a company set up by residents, where individuals purchase leasehold houses and become

company directors (Glamuzina & Paterson, 2014). The bottom-up approach of cohousing projects results in homes tailored for the specific needs of the collective group, compared to developer-driven models designed for an average user (Southcombe, 2017a).

Cohousing makes so much sense for young families and sole parents, who can share child minding responsibilities, and for empty nesters or down-sizers who desire a greater sense of social connectedness, particularly with children, and support of a community during later life stages (Alter, Lloyd, 2015).

Examples of existing cohousing in New Zealand include the Earthsong Eco-Neighbourhood in West Auckland, the Quaker Settlement in Wanganui and the High Street Cohousing Community currently under construction in Dunedin.

*“Cohousing is a wonderful model for **ownership** that ... makes so much sense for **young people with families**, who can **share child care responsibilities**, and for older boomers **downsizing** and looking down the road a bit”.*

(Lloyd Alter, 2015)

Fig 3.02. *Diagram of what is in common in cohousing collectives

what is cohousing?

WHAT ARE THE CHARACTERISTICS OF COHOUSING COMMUNITIES?

The six common characteristics of cohousing communities were first documented by McCamant and Durrett in the text *Cohousing: A Contemporary Approach to Housing Ourselves*.

1. A participatory planning and development process:

Residents organise and participate in the planning and design process, with all key decisions made by the cohousing group. A participatory approach ensures that common amenities and private dwellings are designed specifically for the needs of the residents.

2. Designs that facilitate community:

The physical design of common courtyards, the common house and private dwellings must encourage a strong sense of community and social connectedness.

3. Common amenities:

Communities must incorporate common areas designed for daily use, to supplement the smaller private dwellings. A centralised common house, with shared meals typically 1-3 times a week, is included in most cohousing projects.

4. Shared self-management:

Residents take full responsibility for the self-management of the community once it is completed and occupied.

5. Non-hierarchical structure:

Decision-making responsibilities are shared by the community's adults.

6. Separate income sources:

The community does not directly generate income for its residents. All residents pay a monthly fee and membership fee to a homeowners' association to cover any shared costs.

community size

ARCHITECTURAL, SOCIAL + FINANCIAL IMPLICATIONS OF COMMUNITY SIZE

There is no ‘perfect’ size for a cohousing community. However, there are different social, architectural and financial implications as a result of community size.

Small cohousing communities (8-15 households):

As a general principle, the smaller the community, the more homogeneous it probably has to be (Kries et al., 2017). A smaller community size ensures less complicated management and organisation structures, as fewer people are involved. However, a larger financial investment per household is often required to cover the cost of common facilities.

Medium cohousing communities (16-25 households):

The medium scale is large enough to have extensive collective facilities, yet small enough to be self-managed. A medium-sized community can better accommodate household diversity. An example is Michael Payne’s Quaker Settlement in Wanganui, with 17 households and 35 residents (Southcombe, 2017b).

Large cohousing communities (26-35 households):

A large community allows greater demographic and household diversity and more extensive common

facilities through economy of scale. The Trudesland and Sun and Wind communities are examples of large communities. The participation of an investor or non-profit organisation is more likely in larger communities (McCamant & Durrett, 2011).

Neighbourhood scale (37 or more households):

Communities of this scale can be more difficult to implement, due to complex finance arrangements and planning approval processes, but allow extensive common facilities and household diversity (McCamant & Durrett, 2011). Hierarchy is necessary at the neighbourhood scale because of the community management of so many. It is not recommended that co-operative groups attempt to build a community of this size without an experienced architect or developer (Glamuzina & Paterson, 2014). Clusters are often used to manage access to common facilities. For example, in Tinggarden in Denmark (79 units) clusters of 12 to 15 units are separated across the site and each share a smaller common house. Big Yard (45 units) and Spreefeld (64 units) are two other ‘neighbourhood’ scale collective communities.

*“We wouldn’t mind a **higher density**, but it would be **difficult** because of the **community management** of so many. It is **possible** with a **manager**, but that would introduce a **hierarchy**... Everyone here has a willingness to **share**”.*

Michael Payne (Southcombe, 2017b)

Social interaction principles

DESIGN PRINCIPLES TO
FACILITATE POTENTIAL
FORMATION OF COMMUNITY

1. A soft edge

Urban designer Jan Gehl coined the term ‘soft edge’ to describe the “comfortable resting areas, placed on the public side of the buildings and with direct connection to them” (Gehl, 2011). Gehl found that when a soft edge was provided in cohousing communities, residents used the area in front of the private houses 68% of the time they spent outdoors, compared to only 12% when there was a hard edge or no semi-private area (McCamant & Durrett, 1988).

The ‘soft edge’, such as an outdoor patio, yard or porch, should provide an easily accessible space to be outside and watch daily community life. A ‘soft edge’ should be between 2.5 and 3.7m in depth (McCamant & Durrett, 1988). If the soft edge depth is too large it can deter the flow between the common and private realm.

2. Hierarchy of spaces

Hierarchy and privacy gradients between spaces, from the most private part of the dwelling to the semi-private areas and common courtyard, helps to support community life by allowing residents to choose how private or public they want to be at any given time (McCamant & Durrett, 1988). The design of the private dwellings should allow direct access to outdoors; the easier it is to step outside, the more the semi-private and common spaces will be used (Gehl, 2011). Locating the spaces we ‘live’ in, the kitchen and dining rooms, adjacent to the soft edge increases opportunities for passive surveillance of the common areas.

3. Clustered site plan

Site plans for low-rise cohousing communities are categorised into four types; grouping along pedestrian streets (Trudesland), grouping around one or two central courtyards, a combination of streets and courtyards (Sun and Wind) and within one building (McCamant & Durrett, 1988). The clustered site plan can better provide the amenities of the standalone homes, providing both privacy and community. Clustered housing can create more useable and larger open shared spaces, suitable for playing fields and playgrounds.

4. Peripheral or subterranean parking

Car parking and access can significantly impact the site plan of cohousing communities. Subterranean or peripheral parking can enhance social interaction within common areas by creating car-free and safe common spaces for children.

5. Centralised activity sites

Activity sites, or common amenities, should be distributed throughout a clustered site plan, to provide opportunities for interaction between all residents and not only between clusters.

6. Smaller private units + extensive common amenities

Smaller private units are supplemented by extensive common facilities, made possible through economy of scale.

soft edges and privacy gradients

*“While cohousing tends to bring people to the front of their homes, maintaining some **privacy** is absolutely critical. A **cohousing site plan** should consider the **varying degrees of privacy**”*

(McCamant & Durrett, 2011)

Fig 3.03. *Social interaction design principles

Fig 3.04. *Revised hunch diagram. Section through access route

Fig 3.05. Initial massing and design explorations

design outcome

DESIGN PHASE ONE

TOTAL PRIVATE DWELLINGS: 40

DWELLINGS PER HECTARE: 143 DPH

NEIGHBOURHOOD COMMUNITY SIZE

The site plan and private dwellings were informed by the six social interaction design principles. A clustered site plan allowed a density of 143 dwellings per hectare, with 40 private dwellings and six dwelling types, therefore positioning it within the ‘neighbourhood’ community scale.

A narrow 4.1m module was implemented based on the analysis of Sargfabrik’s dwellings, with a centralised U-shape stair, and double-height spaces. The split-level housing typology was introduced to create a hierarchy of spaces, from the most private part of the dwelling (bedrooms and bathrooms) to the semi-private terrace and common courtyard. The location of the kitchen and dining area, generally the room families ‘live in’, adjacent to the soft edge increased opportunities for passive surveillance of common areas from within the private realm. Large bi-folding doors facilitated easy indoor-outdoor flow between the private, semi-private and common. Flexible space, suitable for a home office, study or bedroom, was included in the dwelling plans to cater for demographic changes in need over time.

What is shared?

All the units were designed to have both private and semi-private outdoor space, either a yard or balcony, supplemented by two centralised common courtyards. Common amenities, including guest bedrooms and shared laundry facilities, were situated at the centre of the site, an equal distance from all dwellings. Shared underground parking facilities were also incorporated in the scheme. Public amenities, including a café, restaurant, bar, kindergarten, swimming pool, retail spaces and courtyards, were situated adjacent to the Embassy Theatre and along Kent Terrace.

1. Public access
2. Common access
3. Private dwellings
4. Common units + laundry
5. Underground carpark access
6. Common vegetable gardens
7. Common play area
8. Common courtyard
9. Private yards
10. Semi-private 'soft edge'
11. Common swimming pool
12. Public kindergarten
13. Retail spaces
14. Cohousing administration

0 5 10 20 50

Fig 3.06. *Design phase one masterplan

- Public kindergarten + retail
- Public courtyards + site access
- Private dwellings
- Semi-private 'soft edges'
- Private yards
- Common guest units + laundry
- Common courtyards

Fig 3.07. *Public amenities and site access
Fig 3.08. *Common amenities, private dwellings and yards

dwelling type one

115 M2 (3 BEDROOMS + 12 M2
FLEXIBLE SPACE + SPLIT-LEVEL)

ground

level one

level two

level three
roof terrace

Fig 3.09. Dwelling type one plans

1. Entrance
2. Kitchen
3. Dining
4. Living
5. Bedroom
6. Bathroom
7. Flexible space
8. Semi-private 'soft edge'
9. Private outdoor space
10. Laundry
11. Storage

dwelling type two

130 M² (3 BEDROOMS + 25 M²
FLEXIBLE SPACE + SPLIT-LEVEL)

ground

level one

level two

level three
roof terrace

Fig 3.10. Dwelling type two plans

1. Entrance
2. Kitchen
3. Dining
4. Living
5. Bedroom
6. Bathroom
7. Flexible space
8. Semi-private 'soft edge'
9. Private outdoor space
10. Laundry
11. Storage

dwelling type three

130 M2 (3 BEDROOMS + 25 M2
FLEXIBLE SPACE OR 4 BEDROOMS
+ SPLIT-LEVEL)

ground

level one

level two

level three
roof terrace

Fig 3.11. Dwelling type three plans

- 1. Entrance
- 2. Kitchen
- 3. Dining
- 4. Living
- 5. Bedroom
- 6. Bathroom
- 7. Flexible space
- 8. Semi-private 'soft edge'
- 9. Private outdoor space
- 10. Laundry
- 11. Storage

dwelling type four

150 M² (3 BEDROOMS + 12 M²
FLEXIBLE SPACE OR 4 BEDROOMS)

Fig 3.12. Dwelling type four plans

1. Entrance
2. Kitchen
3. Dining
4. Living
5. Bedroom
6. Bathroom
7. Laundry
8. Private balcony
9. Private terrace
10. Common terrace
11. Flexible space
12. Access gallery

0 5 10 20

dwelling type five

55 M2 (1 MEZZANINE BED +
SPLIT-LEVEL)

Fig 3.13. Dwelling type five plans

1. Entrance
2. Kitchen
3. Dining
4. Living
5. Bedroom
6. Bathroom
7. Flexible space
8. Semi-private 'soft edge'
9. Private outdoor space

dwelling type six

ACCESSIBLE 1 BED UNITS
(80 M2 PER UNIT)
3 TOTAL

CARER STUDIO UNITS
(40 M2 PER UNIT)
3 TOTAL

ground

level one

level two

common roof terrace

Fig 3.14. Dwelling type six plans

1. Entrance
2. Kitchen
3. Dining
4. Living
5. Bedroom
6. Bathroom
7. Private outdoor space
8. Access galleries
9. Common stair + lift
10. Common amenities
11. Common roof terrace

0 5 10 20

Fig 3.15. *Section through private dwellings and common courtyard

TRANSLATING SARGFABRIK [46] I WANT TO SHARE

A key design decision was the introduction of the public site access route from Kent Terrace to Lipman Street, in response to the 'open yet private' common spatial and architectural realm experienced at Sargfabrik (fig 3.16).

Fig 3.16. *Section through public site access

Fig 3.17. *Working model of Lipman Street elevation and context

emerging issues

FINDINGS - DIFFERENCE IN HOUSING CONTEXT, COMMUNITY SIZE + HOUSEHOLD DIVERSITY

A difference in housing context and social housing provision between Vienna and New Zealand was a key finding from this research. Despite rising income inequality and decreasing housing affordability, ownership remains the preferred tenure type in New Zealand today (Equb & Equb, 2015). However, renting is the cultural and social norm in Vienna. The even distribution of social housing throughout the city's landscape balances out social and spatial inequalities, resulting in modest changes in rent between the districts (Rumpfhuber & Klein, 2015).

The supply of affordable housing in Vienna is sufficient for a large portion of the population; the city of Vienna owns 27% of the city's housing stock, and indirectly controls another 21% owned by limited-profit developers (Rumpfhuber & Klein, 2015). The ownership by the city of Vienna has resulted in an 'integrated market', where social housing competes with the free market and is not targeted at a specific user group such as the 'poor' (Rumpfhuber and Klein, 2015). The 'integrated market' keeps the quality of social housing relatively high, and the cost relatively low.

Vienna's 'integrated market' is a stark contrast to the 'ambulance at the bottom of a cliff' solution in New Zealand today (Howden-Chapman, 2015). New Zealand's social housing instead focuses on those

identified by Housing New Zealand as being in greatest need, for as long as they have need, and those with low incomes or particular needs and circumstances (Southcombe, 2016). The differences in housing context highlighted the *missing* housing provision for the *lower-middle income* demographic in New Zealand, such as 'Generation Rent', who are unable to access affordable housing (Southcombe, 2016).

The design outcome consisted of six different dwelling types, to accommodate different demographics. However, increased household diversity ultimately results in higher costs. As the design intention is to provide an affordable housing solution for the lower-middle income demographic, future design explorations will include fewer well-designed flexible floor plans (three or four), suitable for all households (McCamant & Durrett, 2011).

reflection

WHAT WORKED? WHAT DIDN'T? AND
WHERE TO NEXT?

The introduction of a 'soft edge', to facilitate transitions between common and private, was the most successful aspect of this research. Further design explorations will further develop the design of a 'soft edge', and its relationship to both the private dwellings and common realm.

Existing medium density housing is an unattractive option due to its "monotonous" qualities, and the lack of individuality and design diversity evident in suburban New Zealand housing (CityScope, 2011). The extent of repetition of the dwelling types across the site, and particularly along the Lipman Street elevation, created similar "monotonous" architectural qualities (fig 3.17). The repetition of the same sized windows, building height and form will be developed in future design explorations in response to this critique.

The relationship between the design outcome and the existing site context was another shortcoming of the design outcome. Elevational and sectional studies will be used to ensure a more sympathetic design response is achieved to the existing residential and commercial contexts.

Design phase two will question and define the contemporary Kiwi dream, to understand the architectural and social implications of this dream for New Zealand urban housing architecture. Further research will investigate how international tenure and ownership models, such as the Baugruppe (building group) and Baugemeinschaft (building community) models could be implemented to allow greater access to home ownership for all New Zealanders.

04

defining the contemporary Kiwī dream

BAUGRUPPE PRECEDENT RESEARCH

This design phase questions and defines the contemporary Kiwi dream, to understand the architectural implications of this dream for New Zealand urban housing architecture.

defining the contemporary Kiwi dream

WHAT IS THE CONTEMPORARY HOUSING + LIFESTYLE DREAM?

The contemporary Kiwi dream is changing as home ownership is no longer a rite of passage for all New Zealanders; for example, in 2001, 61% of people in their late thirties owned their home in 2001, but only 50% do today (Eaqub & Eaqub, 2015). However, ownership remains an integral part of the Kiwi dream today due to the stability and security associated with this tenure type (Eaqub & Eaqub, 2015).

Medium-density housing across New Zealand cities is on the rise. Currently 25% of all dwelling units in Wellington classified are as MDH, and is expected to increase by about 10% over the next few years (Page, 2016). Collective urban housing is an example of how Wellington can provide for both medium-density development and the contemporary Kiwi dream. Instead of a “one size fits all” development approach, collective initiatives focus on the benefits of a shared economy and collective resources, while maintaining a balance between collective and individual needs (Southcombe, 2017a).

*“Densification of our city suburbs is **not** an ogre to be feared, to the contrary: If it is designed well, it can offer **extraordinary lifestyle opportunities** and a **solution to housing pressure** in our major cities” (Anderson, 2017).*

Critique of the fictional Kiwi dream depicted by Mitchell Austin in the text *The Half-Gallon Quarter-Acre Pavlova Paradise* suggests that the contemporary housing and lifestyle dream has changed as people are becoming more time-poor. Mitchell describes the housing and lifestyle dream in the 1970s as,

*“The home is the **focus** of the nation's life... Kiwi homes are so much **bigger, better and more beautiful**... that the occupants **don't want to leave**... It's a **hobby you inhabit**” (Mitchell, 1972).*

A revised Kiwi dream focuses on the benefits of both collective urban housing models and higher density living. These are:

- Access to a shared economy
- Extensive collective resources through economy of scale
- Greater access to home ownership
- Increased security
- Lack of maintenance
- Centralised management
- Ability to ‘lock and leave’ for travel
- Proximity to town centres
- Support of a community.

baugruppe model

INTERNATIONAL FLEXIBLE TENURE
+ OWNERSHIP

In Berlin, the ‘Baugruppe’ (building group) or ‘Baugemeinschaft’ (building community) flexible tenure and ownership model was initiated at the beginning of the 2000s by small groups of like-minded people who formed collectives to self-finance and realise relatively small projects, and to challenge traditional procurement methods (Glamuzina & Paterson, 2014). Since then, Baugruppen projects have accounted for about 10 % of all new buildings in Berlin (Ring, 2013).

The Baugruppen is more urban in character compared to traditional cohousing models, such as the Settlement in Wanganui, New Zealand. It is the result of families coming together to utilise collective ownership in their favour, to stay in the expensive inner city rather than being pushed to the more affordable outer suburbs because that's where they can afford (Glamuzina & Paterson 2014).

Three collectively developed Baugruppen projects in Berlin - Big Yard, E3 and R50 - are analysed to understand how international tenure and ownership models could work in a New Zealand urban context.

*“Co-operatives work within **rural and suburban environments** but it is within **urban environments** that they could have the **most value** as models for how we want our cities to develop as viable **alternatives to suburban sprawl**”*

(Glamuzina & Paterson, 2014)

big yard

BERLIN, 2010

ZANDERROTH ARCHITEKTEN

ARCHITECT-INITIATED PROCESS

Developed through an architect-led process, Big Yard incorporates 45 private dwellings situated around a spatially rich yet compact common courtyard (fig 4.01) (Fergus & Sundermann, 2016). Positioned above the shared underground parking, the central courtyard separates the street-oriented four-storey townhouses from the adjacent six-storey building, incorporating the three-storey garden apartments, double-storey penthouses and a shared roof terrace.

Unlike the participatory process of typical cohousing communities, the architect-led process did not directly engage with future residents (Ring, 2013). Instead, a range of affordable dwelling types were developed and residents were found through an online platform, called CoHousing Berlin (Fergus & Sundermann, 2016).

Ground

Level one

Level two

Level three

Roof terrace

0 5 10 20

Fig 4.01. Big Yard split-level townhouse plans

Fig 4.02. *Big Yard's central shared courtyard

- Common courtyard
- Semi-private 'soft edge'
- Private balcony

Fig 4.03. *Study of Big Yard's split-level townhouse model

ritter strasse 50 (R50)

BERLIN, 2010

HEIDE & VON BECKERATH ARCHITEKTEN

COMMUNITY + ARCHITECT DRIVEN

Unlike Big Yard, the site for Ritterstrasse 50 (R50) was secured through a public competition for a vacant government plot (Fergus & Sundermann, 2016). Rather than an architect-led project, R50 was developed through close collaboration between the community and architects.

The R50 collectively agreed at the initiation of the project that affordability, achieved through standard materials, fittings and fixtures, was central to the project. They also agreed that the individual approach should be in the way the floor plans of the individual dwellings were designed, in response to the needs of the occupants (Fergus & Sundermann, 2016). Cost was minimised through the inclusion of a single lift shaft and staircase, and continuous galvanised steel common access galleries (Ring, 2013).

- Common amenities
- Vertical common circulation (stair + lift)
- Horizontal common circulation (access galleries)

Fig 4.04. *R50 circulation diagram

Fig 4.05. R50 ground floor (common amenities + circulation)

Fig 4.06. *R50 site context

esmarchstrasse 3 (E3)

BERLIN, 2010

KADEN KLINGBEIL ARCHITEKTEN

COMMON STAIR + SHARED SPACES

The Esmarchstrasse 3 (E3) community was founded by a group of like-minded friends, who invited Kaden Klingbeil Architekten to both design the six private dwellings and invest in the ground floor retail space (Fergus & Sundermann, 2016).

Unlike Big Yard, the residents were able to extensively customise the six individual apartments, according to the contractual cost limitations. The building was the first seven-storey apartment building to be constructed using glued lamination timber post-and-beam construction (Ring, 2013). The structure allows maximum interior flexibility by utilising perimeter load-bearing walls. The circulation volume is separated from the main residential volume, allowing a third elevation to be exposed.

- Vertical common circulation (stair + lift)
- Horizontal common circulation (access bridges)

Fig 4.07. E3 common circulation diagram

Fig 4.08. *E3 site context

Fig 4.09. Inhabitation of separate common stair

05

design development + outcome

DESIGN PHASE TWO

EMERGING ISSUES
REFLECTION

The site parameters were revisited and extended for design phase two to address the challenges which emerged during previous design explorations regarding the low height and poor architectural quality of the adjacent buildings along Kent Terrace (fig 5.01).

Fig 5.01. Revised site parameters

Existing site conditions

Maximum district plan
height + density (43.8m)

Low density massing study

Median district plan
height + density (20m)

Contextually modified design response

An iterative process ensured that future design explorations optimised the maximum height restriction of 43.8m under the District Plan, while ensuring a sympathetic response to the existing Lipman Street residential context and inner residential zone (10m maximum height).

- Site boundaries
- Commercial
- Residential
- Kindergarten

Fig 5.02. Massing exploration and District Plan limitations

Fig 5.03. (Top) Winter solstice shading

Fig 5.04. (Centre) Summer solstice shading

Fig 5.05. (Bottom) Combined shading analysis

Sun and shading analysis highlighted the impact of the Embassy Theatre on the site, and indicated the most suitable areas for common courtyards and private dwellings.

Fig 5.06. *Elevational study and reflection of Lipman Street context

Fig 5.07. *Existing Lipman Street elevation overlaid over model

Fig 5.08. *Sketch development informed by elevational studies

Fig 5.09. Existing Lipman Street frontage analysis
 Fig 5.10. Potential front yard configurations

Fig 5.11. (Top) *Design phase two Lipman Street elevation

Fig 5.12. Conceptual sketch of 'big house' concept

common house

DESIGN CONSIDERATIONS TO FACILITATE COMMUNITY

The Latin term ‘communitas’ refers to an intense community spirit exemplified by feelings of social equality, harmony and togetherness (Kim, 2017). In cohousing communities, ‘communitas’ is most effectively achieved when the common house is an integral part of the community (Kim, 2017). The common house can facilitate potential formation of community by allowing increased opportunities for social interaction and the workings of the community (McCamant & Durrett, 2011). A well-designed common house provides the link between private and common.

Five common house design considerations were extracted from literature by Kathryn McCamant and Charles Durrett, Grace Kim and Graham Meltzer.

Location:

The location of the common house affects how often it is used. To support community life the common house must be centrally located so residents often pass by it during daily life (McCamant & Durrett, 1988). Passing the common house on the way home, residents can see if anything is going on, and it becomes part of their daily routine. If the common house is visible and equidistant from all private dwellings, residents are more likely to participate when there is activity.

Common kitchen and dining:

Communal eating, often 2-3 times a week, is very important in establishing ‘communitas’ in cohousing communities (Kim, 2012). The common kitchen and dining spaces should create a warm and engaging atmosphere, and must be large enough to comfortably accommodate all adult residents during community meetings.

Common house children’s play area:

The children’s play area should be positioned within hearing distance of the common dining room, but far enough away to avoid disturbing community meetings and to allow adults to relax after dinner (fig 5.13 & 5.14) (McCamant & Durrett, 2011). An L-shape common house plan can help to separate rooms of different functions, to encourage formation of community.

Common house laundry:

When located in the common house, shared laundry facilities are the third most frequented rooms by residents, after the kitchen and dining (McCamant & Durrett, 2011). Passive surveillance of children’s play areas from the shared laundry can inform the positioning of the laundry within the plan.

Co-work spaces + workshop:

A common workshop eliminates the need for each household to have their own private spaces for tools, craft supplies and machinery. Co-work spaces minimise the need for each household to have their own designated study or home office. Both spaces encourage social interaction through the sharing of skills.

Fig 5.13. Sun and Wind common house plan

Fig 5.14. Trudesland common house plan

design outcome

DESIGN PHASE TWO

TOTAL PRIVATE DWELLINGS: 19

DWELLINGS PER HECTARE: 75 DPH

MEDIUM COMMUNITY SIZE

The inclusion of the common house resulted in a lower dwellings per hectare value than design phase one, with 19 private units, and a 'medium' community size (16-25 units), due to the inclusion of a common house. Five flexible dwelling types were developed, ranging from 50 to 105m², to minimise cost and accommodate a diverse range of lower-middle income households. The architectural strategies of split-levels and a 'soft edge' were again implemented to facilitate privacy gradients between the common, semi-private and private spaces.

What is shared?

The inclusion of a centrally located common house significantly increased what is shared between residents, and opportunities for social interaction. A communal kindergarten, swimming pool and co-work spaces are distributed throughout the clustered site plan (fig 5.15). Public amenities, such as retail spaces, bar, cafe and restaurant, are situated along Kent Terrace.

Kent Terrace

1. Restaurant, cafe, bar
2. Public entrance
3. Retail spaces/offices
4. Rooftop bar
5. Common swimming pool
6. Public courtyard
7. Common kindergarten
8. Cafe + guest rooms
9. Private yard
10. Private dwellings
11. Common roof terrace
12. Common guest rooms
13. Common courtyards
14. Common kids play area
15. Semi-private yards 'soft edges'
16. Common circulation

Fig 5.15. *Design phase two masterplan

0 5 10 20 50

- Public kindergarten + retail
- Public courtyards + site access
- Private dwellings
- Semi-private 'soft edges'
- Private yards
- Common guest units + laundry
- Common courtyards

Fig 5.16. *Public amenities and courtyards

Fig 5.17. *Common amenities, private units and 'soft edges'

A simple common material palette, used in a variety of ways, allows the common house to be individually distinct from the private units, while retaining a sense of aesthetic unity across the site.

Fig 5.18. *View of common house and courtyard

common house

387 M²

7 GUEST BEDROOMS + SHARED
AMENITIES

ground

level one

level two

Fig 5.19. *Common house plans

1. Entrance
2. Kitchen
3. Dining + meeting space
4. Storage
5. Adult sitting room
6. Circulation
7. Lift shaft
8. Children's play room
9. Mezzanine library
10. Guest bathrooms
11. Guest bedrooms
12. Informal lounge
13. Common roof terrace

0 5 10 20

Fig 5.20. *Common house exploded axonometric

1. Common dining
2. Common sitting room
3. Co-work spaces
4. Common swimming pool
5. Common laundry
6. Common car park
7. Common courtyard
8. Semi-private yard
9. Private dwellings
10. Private yard
11. Guest bedrooms
12. Common circulation
13. Kindergarten
14. Kindergarten play area
15. Public courtyard
16. Kent Terrace housing + retail

Fig 5.21. *Section through common house and private units

dwelling type one

105 M² (3 BEDROOMS + 12 M²
FLEXIBLE SPACE OR 4 BEDROOMS)

Fig 5.22. Dwelling type one exploded axonometric

dwelling type two

67 M2 (1 BEDROOM + 15M2
FLEXIBLE SPACE OR 2 BEDROOMS)

Flexible space

Fig 5.23. Dwelling type two exploded axonometric

dwelling three + four

50M2 1 BEDROOM SPLIT-LEVEL
UNIT (GROUND FLOOR)

65M2 2 BEDROOM MEZZANINE UNIT
(UPPER FLOORS)

Fig 5.24. Dwelling types three + four exploded axonometric

dwelling type five

CONFIGURATION ONE

75 M² (1 BEDROOM + 15M²
FLEXIBLE SPACE)

CONFIGURATION TWO

75 M² (2 BEDROOMS)

3 UNITS ARE STACKED WITH
COMMON ROOF TERRACE + COMMON
GUEST BEDROOMS

Configuration one
2 bedrooms

Configuration two
1 bed + flexible space

Fig 5.25. Dwelling type five exploded axonometric

1. Common dining
2. Common sitting room
3. Co-work spaces
4. Common workshop
5. Common underground parking
6. Common courtyard
7. Semi-private yard
8. Private dwellings
9. Private yard
10. Big house
11. Public courtyard

Fig 5.26. Section through shared courtyard and private units

emerging issues

FINDINGS - CONTEMPORARY KIWI DREAM AND FLEXIBLE TENURE + OWNERSHIP

This research found that home ownership remains integral to the contemporary Kiwi dream. An emerging issue from this research was how international models of tenure and ownership, such as the Berlin Baugruppe (building group) model or co-operative structures, can address the missing housing provision for the lower-middle income demographic in New Zealand and the contemporary Kiwi dream. Further research will investigate how collective urban communities, with flexible tenure and ownership structures, could go from a dream to a reality in New Zealand.

Fig 5.27. *View from common house of individually distinct private units around the common courtyard

critical reflection

WHAT WORKED? WHAT DIDN'T? AND
WHERE TO NEXT?

The design phase two outcome was a more collective vision of what the current condition is requesting, with 19 private units, and a 'medium' community size (16-25 units). Future design explorations will aim to propose a higher density 'neighbourhood' scale community (37 or more households), to allow extensive common amenities through economy of scale and increased household diversity. The architectural and social implications of higher density collective urban housing models will be extracted from the research.

The design of the site plan, 'soft edges', common house and private units will be revisited to further facilitate formation of community through a shared semi-public and private realm, that balances collective and individual needs. Elevational studies by iteration will explore the architectural implications of building height, materiality and form, to develop both the Lipman Street and Kent Terrace elevations.

The focus of design phase three will be the flexibility of the private dwellings, to accommodate demographic changes in need over time and the Kiwi DIY spirit. Previous research suggests that New Zealand urban housing architecture must follow a movement towards flexibility and adaptability to accommodate the contemporary Kiwi dream.

The flexibility of the private dwellings will aim to address the difference in design diversity of New Zealand's preferred suburban housing, and the monotonous architectural character of current New Zealand urban housing.

“Flexibility is one of the key attributes of detached housing that would increase the attractiveness of multi-unit dwellings if it can be built into their design.”

(Cityscope, 2011)

06

balancing collective + individual needs

ADAPTABLE HOUSING PRECEDENT RESEARCH

Design phase three will explore how a balance between collective and individual needs can be achieved in New Zealand urban housing architecture through the development of a new common but adaptable housing model.

*“New housing needs to be designed around **public space** ... and be **flexible**.*

*By flexible, I mean that the houses and apartments need to be **individually distinct**, but **designed at a neighbourhood level**, so that tenants are able to stay in the same community, regardless of whether their households **expand or contract**. ”*

(Howden-Chapman, 2015)

rational house

LONDON, 2011

RATIONAL HOUSE LIMITED

ADAPTABLE HOUSING MODEL

The rational house was developed as an archetype by Robert Dalziel and Sheila Qureshi Cortale, following the critical analysis of case studies from nine cities, including Copenhagen, Berlin and Tokyo.

The Rational House, is based on a clear span 4.5m square module doubled in plan, with an adjacent 3m wide circulation module and depth of 9m (fig 6.01) (Dalziel, Cortale & Battle, 2012). The separation of the circulation module from the residential volume and use of a spiral stair allows for internal flexibility and different configurations of living, working and commercial spaces (fig 6.02).

Fig 6.01. (Top) *Dimensions of the Rational House prototype

Fig 6.02. *Rational house circulation analysis

Fig 6.03. *Configurations of Rational House model

oderberger strasse 56

BERLIN, 2008

BARARCHITEKTEN

FLEXIBLE HOUSING MODEL

Completed in 2010, the Baugruppe Oderberger Strasse is a mixed-use building which incorporates commercial, living and working spaces. A modular system, with centralised common circulation and split-level floors, allows for maximum interior flexibility within the inter-locking volumes (fig 6.04) (Ring, 2013). Adjacent units can be joined together or separated to accommodate demographic changes in need over time.

Fig 6.04. (Top) *Upper floor plan and common circulation

Fig 6.05. *Exploded diagram of unit flexibility

solidspace model

LONDON, 2003 - CURRENT
GUS + ROGER ZOGOLOVITCH
SPLIT-LEVELS + ADAPTABILITY

The Solidspace flexible housing model is part of a wider self-build business which utilises split-level construction techniques to allow maximum interior flexibility (Bose, 2014). The split-level configuration and perimeter load-bearing walls were used to create a contemporary living environment, without compromising on quality, space efficiency or style.

Fig 6.06. (Top) Solidspace split-level concept

Fig 6.07. *Potential inhabitation of a typical Solidspace unit

Fig 6.08. Study model of Solidspace single unit

07

design development + outcome

DESIGN PHASE THREE

INTEGRATION OF PRECEDENT
RESEARCH + DESIGN DEVELOPMENT

Sargfabrik
common access galleries
private internal circulation
4.8 x 9.6m module

Big Yard
common access galleries
private internal circulation
4.1 x 12.5m or 9 x 9m module

Miss Sargfabrik
common access galleries
private internal circulation
irregular module

E3
detached stairwell + private bridges
12 x 7m module
single storey units

R50
common access galleries
18 x 9m typical module
single storey units

Comparison of the previously analysed precedent identified a width of between 3.3 to 4.8m and depth of 9 to 12m as the most efficient and appropriate for residential volumes, regarding sunlight access and private internal circulation (fig 7.01). These findings will inform and control the dimensions and common circulation of future design explorations.

Rational House

private or common internal circulation
4.5 x 9m residential module
3 x 8m circulation module

Oderberger Strasse 56

common central circulation
private internal circulation
4.2 x 12.6m module

- Common circulation
- Private circulation

Fig 7.01. *Comparison of key precedent module widths, common and private circulation

housing + design diversity

DIMENSIONS THAT ALLOW FLEXIBILITY OF COMMON STAIR LOCATION

The initial dimensions for the housing model were determined by the existing 8m structural grid implemented in design phase two. The 8m width, reflected horizontally in plan, was initially divided into four units with a width of 5m and 3m (fig 7.02). These dimensions were revised to 4.4m and 3.6m, as 3.6m was identified as the minimum width for a comfortable lounge and private internal circulation (fig 7.03).

Positioning the 4.4m unit at the centre of the plan allowed the common stair to be positioned anywhere along the central axis, without reducing the width of any units to below 3.6m (fig 7.04)

A centralised u-shape stair, with a maximum floor to ceiling height of 2.4m and 900mm wide landings, was identified as the most efficient stair configuration for a narrow house and split-level dwellings (3.6m minimum), to minimise circulation space around the stair (fig 7.05)

Fig 7.02. (Top) Iteration one - 5m and 3m wide units

Fig 7.03. (Centre) Iteration two - 3.6 and 4.4m wide units

Fig 7.04. (Bottom) Iteration three - 4.4m wide units at centre

- Private stair
- Circulation space
- A Kitchen + dining
- B Living
- C Bathroom
- D Bedroom

Fig 7.05. Comparison of different stair configurations in a narrow house

Kitchen + dining + living +
double doors

Kitchen + dining + living +
window seat

Kitchen + dining + L-shape
couch + sliding doors

Master bed + bath + single or
double bedroom

Master bed + bath + home
office / study

Fig 7.06. Configurations of 3.6m minimum dwelling width

- Private stair
- Circulation space
- A Kitchen + dining
- B Living
- C Bathroom
- D Bedroom

Fig 7.07. Analysis of centralised U-shape stair configuration in split-level housing

designing the common stair

FINDINGS ABOUT DESIGN OF THE COMMON STAIR + LANDINGS

- Spiral and longitudinal stairs are *not* suitable for common circulation as they do not allow landings to access all split-level floors. A longitudinal stair also requires a large amount of circulation space (fig 7.08).
- A U-shape common stair has the most efficient circulation space, allows access to all split-level floors and provides the most opportunities for social interaction through an increased number of landings (fig 7.09). The landings should be between 1.2 and 1.5m to encourage people to stop, interact and inhabit the common stair (fig 7.10).

Fig 7.08. (Top) Longitudinal common stair analysis

Fig 7.09. (Centre) U-shape common stair analysis

Fig 7.10. (Bottom) Analysis of u-shape stair landing depth

ODERBERGERSTRASSE
56 CIRC.

- good space efficiency.
- awkward entry.

RATIONAL HOUSE
SPIRAL STAIR.

Fig 7.11. Design exploration of common circulation of precedents

selected module dimensions

configuration one
semi-detached common stair

configuration two
stair aligned with access gallery

configuration three
recessed common stair

configuration four
common stair at rear of plan

- Common vertical circulation (stair)
- Common horizontal circulation (access galleries)
- Private U-shape stair

Fig 7.12. *Potential configurations of the common stair

0.8m minimum width for circulation

1m allows 0.8m circulation space + some planting

1.3m allows 0.8m circulation + planting + furniture

1.3m allows 0.8m circulation + planting + furniture + BBQ

Fig 7.13. Exploration of ideal width for shared access galleries

Fig 7.14. Sketch development of adaptable dwelling plans with recessed common stair

Fig 7.15. Sketch development of adaptable dwelling plans with an external common stair

dwelling type one

100 M2
(20M2 FLEXIBLE SPACE) +
SPLIT-LEVEL

split-level one

split-level two

split-level three
private master bed + study

possible alternative
space planning
mezzanine bed + study

Fig 7.16. *Dwelling type one plans

1. Entrance
2. Kitchen
3. Dining
4. Living
5. Bathroom
6. Bedroom
7. Flexible space
8. Study
9. Storage
10. Private balcony
11. Access gallery
12. Window seat
13. 'Soft edge' semi-private yard
14. Private yard

0 5 10

Fig 7.17. *Dwelling type one kitchen and dining space

Fig 7.18. *Dwelling type one living space

dwelling type two

80 - 85 M2
(26M2 FLEXIBLE SPACE) +
SPLIT-LEVEL

Fig 7.19. *Dwelling type two plans

1. Entrance
2. Kitchen
3. Dining
4. Living
5. Bathroom
6. Bedroom
7. Flexible space
8. Study
9. Storage
10. Private balcony
11. Access gallery
12. Window seat
13. 'Soft edge' semi-private yard
14. Private yard

0 5 10

dwelling type three

50 M²
(16M² MEZZANINE)

Level one
window seat

Possible alternative space
planning - private deck

Level two
mezzanine bed

Level two
mezzanine bed

Fig 7.20. *Dwelling type three plans

1. Entrance
2. Kitchen
3. Dining
4. Living
5. Bathroom
6. Bedroom
7. Flexible space
8. Study
9. Storage
10. Private balcony
11. Access gallery
12. Window seat
13. 'Soft edge' semi-private yard
14. Private yard

0 5 10

dwelling type four

75 M2

(20M2 FLEXIBLE SPACE)

Level one
Second bed + WIR

1. Entrance
2. Kitchen
3. Dining
4. Living
5. Bathroom
6. Bedroom
7. Flexible space
8. Study
9. Storage
10. Private balcony
11. Access gallery
12. Window seat
13. 'Soft edge' semi-private yard
14. Private yard

0 5 10

Fig 7.21. *Dwelling type four plans

- Common courtyard
- Semi-private 'soft edges'
- Private yards

Fig 7.22. Model to illustrate how the unit types can be configured together with an external common stair
Fig 7.23. (Opposite) Part of the Lipman Street elevation

I WANT TO SHARE [117] BALANCING COLLECTIVE + INDIVIDUAL NEEDS

Kent Terrace

1. Public site access
2. Café/bar/restaurant
3. Retail spaces
4. Collective swimming pool
5. Co-work spaces
6. Public courtyard
7. Public market space
8. Private dwellings
9. Semi-private yards
10. Private yard
11. Common house
12. Collective roof terrace
13. Collective vegetable gardens
14. Common courtyard
15. Playing field
16. Children's play area
17. Resident site access
18. Collective BBQ area
19. Sand pit / petanque
20. Native planting
21. Collective orchard
22. Collective herb garden
23. Collective circulation
24. Lipman Street access
25. Collective kindergarten
26. Cohousing administration
27. Big house

0 5 10 20 50

Majoribanks Street

I WANT TO SHARE [119] BALANCING COLLECTIVE + INDIVIDUAL NEEDS

Lipman Street

Fig 7.24. *Developed design site plan

Public amenities, including retail spaces, cafe, restaurant, and bar are positioned adjacent to Kent Terrace, while publicly accessible courtyards are situated along the public site access route from Kent Terrace to Lipman Street.

- Public kindergarten, retail, cafe + rooftop bar
- Public courtyards + site access

Fig 7.25. *Public facilities, site access and courtyards

The 'soft edge', or semi-private yards, are situated around the perimeter of the main common courtyard, to establish transitions from common to private and facilitate community by creating opportunities for social interaction.

- Private dwellings
- Semi-private 'soft edges'
- Private yards

Fig 7.26. *Semi-private 'soft edges', private dwellings and yards

The common house is positioned at the centre of the site, easily accessible from all private dwellings. Co-work spaces are positioned along the publicly accessible route near Kent Terrace. A heated indoor swimming pool is situated adjacent to the Embassy Theatre to maximise the most shaded part of the site, and the community kindergarten is positioned adjacent to the common house.

- Common house and amenities
- Common courtyards

Fig 7.27. *Common house, shared facilities and courtyards

Fig 7.28. (Opposite) *Entering the common courtyard near the common house

I WANT TO SHARE [123] BALANCING COLLECTIVE + INDIVIDUAL

common house

DEVELOPED DESIGN
(310 M²)

Basement floor

1. Common entrance
2. Cohousing admin
3. WC
4. Common laundry
5. Kitchen store
6. Storage
7. Freezer
8. Common workshop
9. Common bike storage
10. Rentable storage space
11. Craft room
12. Accessible access
13. Collective kitchen
14. Dining/meeting space
15. Reading area
16. Guest bedroom
17. Children's play room
18. Collective BBQ area
19. Collective garden
20. Collective courtyard
21. Study / library
22. Yoga / gym room
23. Shared workspace
24. Shared kitchen / living
25. Games room
26. Private guest unit
27. Collective roof terrace

Ground floor

Fig 7.29. *Common house lower floor plans

First floor mezzanine

Second floor + roof terrace

Fig 7.30. *Common house upper floor plans

Fig 7.31. *Meal time in the common house

Fig 7.32. *Children play and neighbours interact in the shared courtyard after dinner

I WANT TO SHARE + I GET + I BALANCING COLLECTIVE + INDIVIDUAL NEEDS

Sargfabrik unit
composition

Highlighting balconies +
introducing materiality

Massing evident in facade
composition

Materiality iteration two

Balconies + extrusions
from facade

Iteration three - Materiality +
building height

Iteration four - Materiality +
building height

Fig 7.33. Sargfabrik formal variation, composition, material and elevational studies

Module width + flexibility

Module width + materiality

Module width, materiality + height

Module width, materiality, height + form

Fig 7.34. *Individuality and commonness elevational studies by iteration

Findings:

- The least sense of individuality is achieved when only the materiality or materiality and building height are varied
- The greatest sense of individuality and design diversity is achieved when materiality, height and form are varied along the elevation
- A simple common material palette, used in a variety of ways, can create a balance between collective and individual needs, allowing both aesthetic unity and individual distinctiveness

Fig 7.35. (Top) Process sketch of Lipman Street elevation

Fig 7.36. Developed sketch of 'big house'

Fig 7.37. (Top) Final Lipman Street section concept
 Fig 7.38. Final Lipman Street elevation concept

The Lipman Street elevation was developed from the design phase two outcome in response to the individuality and commonness elevational studies. The resulting elevation was based on the four flexible dwelling types configured in a variety of ways to create design diversity and a balance between collective and individual needs (fig 7.39).

1. Public + common entrance
2. Common kindergarten
3. Vehicular access to common parking
4. Pedestrian access to common parking
5. The 'Big House'
6. Retail space

Fig 7.39. *Developed design of Lipman Street elevation

Fig 7.40. Kent Terrace elevation development sketches

The Kent Terrace elevation was developed in response to the commercial site context and District Plan restrictions, which allow a maximum building height of 43.8m.

Fig 7.41. *View from Courtenay Place of Kent Terrace facade

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Fig 7.42. (Opposite) *Children play together near the common house, while adults watch from the common house and private dwellings
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08

conclusions

RESEARCH FINDINGS + FUTURE STEPS

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KEY FINDINGS FROM DESIGN-LED RESEARCH + FURTHER STEPS

The final design outcome offers a case study for the translation of international collective urban housing models, to facilitate formation of community in New Zealand urban housing architecture. The design is located in Mount Victoria, Wellington, and is also informed by key international collective urban housing models. It is an exemplar for future New Zealand urban development.

The design-led research outcomes exemplify how well-designed ‘soft edges’ can facilitate formation of community in New Zealand urban housing architecture. The research determined that a ‘soft edge’ is essential to create a hierarchy of transitional spaces from the most private part of the dwelling, to a semi-private front terrace, to common areas, to give residents a range of choices of how much or little they wish to interact with the community at any time. Direct access between the soft edge and private dwellings can increase the use of shared space and support community life through increased opportunities for passive surveillance of common areas.

The final design outcome achieves an architecturally diverse and spatially rich common realm through the implementation of soft edges, flexible split-level dwelling plans and a centralised common house within the clustered housing and courtyards of the site plan. This research concludes that New Zealand collective urban housing architecture can achieve the friendly and architecturally diverse atmospheric conditions first experienced at Sargfabrik, through a rich level of well-designed shared common space. The design diversity of suburban New Zealand housing can also be achieved through flexible interior spaces and dwelling plans

and a common material palette, to allow both aesthetic unity, choice, and individual distinctiveness. Split-level dwellings with a centralised U-shape stair and perimeter load-bearing walls allow maximum internal flexibility and can increase the spatial and architectural qualities of smaller dwellings.

This design-led research outcome also proposes flexible tenure and ownership structures for a New Zealand urban context, as a solution for the missing lower-middle income housing provision. The actual implementation, management and ownership structures generate further questions for future exploration based on successful international models. It is acknowledged that New Zealand local government bodies will need to contribute to develop financing models and planning opportunities under district plans for this alternative vision of a more collective future to become a reality. Ideally, the community would be mixed-tenure, to allow stable home occupation and ownership for all New Zealanders, and be focused primarily on provision for the lower-middle income demographic. The structure of collective initiatives in New Zealand is often a freehold title, or owned by a company set up by the residents, where individuals purchase leasehold houses and subsequently become company directors. A comprehensive understanding of the legal structures and tenure types of collective housing models would be a further investigation of this research.

Further exploration of the flexibility of private dwellings is another opportunity for development. This research would potentially develop a more comprehensive design response to cater for both demographic changes in need over time and the Kiwi DIY spirit. More detail of the structural

systems that facilitate the expansion and contraction of the dwellings over time is an example of potential further design exploration.

The design outcome proposes that the site would become a secure zone after a certain time restricting access to residents, with security boundaries at both the Lipman Street and Kent Terrace entrances. Additional qualitative design issues such as material palette and composition would be investigated further develop the interface between public and common spaces.

Another area for further investigation is the design of the common house and common amenities in relation to community size. The design outcome incorporated 43 private units, with a centralised common house, positioning it within a 'neighbourhood' community size. Further design explorations would consider the division of the community into two clusters, each with a common house, to introduce a hierarchy and facilitate socially sustainable community self-management. This research would allow a comprehensive balance between the community and wider neighbourhood contexts.

The detailed translation of key international collective urban housing projects as a design methodology is innovative research that has fleshed out the relevance and differences of the original precedent for a New Zealand urban context. This methodology is worthy of consideration as a basis for other research investigations.

This case study articulates an alternative vision for a more collective urban future, which is responsive to the contemporary changing lifestyles and today's Kiwi dream. A soft edge and flexible private dwellings can support community life by providing a hierarchy of transitional spaces between the public, common, semi-private and private. New Zealand urban housing architecture can and *should* facilitate formation of community through an architecturally rich and diverse shared semi-public and private realm that balances collective and individual needs.

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Final presentation 15th November, 2017

Genevieve Walsh