BRIDGING BARRIERS
Study of Refugee Integration in New Zealand Communities

By Gaganpreet Saini
BRIDGING BARRIERS
Study of Refugee Integration in New Zealand Communities

By Gaganpreet Saini

A 120 point thesis submitted to the School of Architecture and Design, Victoria University of Wellington, in partial fulfilment of the requirements for the degree of Masters of Architecture (Prof.)

Victoria University of Wellington:
2017
ACKNOWLEDGEMENTS

I would like to express my gratitude to all the individuals who have continuously supported me through this past year.

Firstly a big thank you to my supervisor, Jacqueline Mcintosh for her expertise, generous guidance, encouragement and more importantly patience.

Also to my family for having the faith in me for the last 6 years at Victoria University and constantly encouraging me to do my best even through the difficult times.

And lastly, a huge thank you to Julia, Chi, Khrunal and his parents and to all my friends for constantly assisting me with their positivity. I would not have made it through Architecture school without you. Thank you all so much.
ABSTRACT

New Zealand is one of the 26 nations of the United Nations High Commissioner for Refugees (UNHCR) who participate in a regular refugee resettlement program (“New Zealand Refugee Quota Programme”). It is also one of the few countries to have a refugee orientation program upon arrival and dedicates a centre especially to host the incoming refugees. The current refugee quota system in New Zealand provides a 6 week orientation and assessment period followed by dispersal into 6 different cities across New Zealand for permanent resettlement.

Refugees develop friendships and a sense of comfort over the 6 weeks program with all the facilities available at the Resettlement centre. The transition from the centre into the independent housing in suburban locations therefore becomes more challenging due to the lack of induction of refugees into their host communities. Refugees are alienated in their new communities with the locals equally as oblivious to the new settlers. As a result, post settlement engagement with the host society becomes difficult for refugees. The community relations between the refugees and host society is neglected with refugees generally connecting with the same ethnic group (ii, Gray); limiting cross-cultural connections.

This research investigates the role of architecture as a facilitator of social interaction between the refugees and local community to create a strong sense of belonging in the host society. The aim is to explore architectural solutions which can ease the process of resettlement for refugees into the different regions around New Zealand. It seeks to develop a design which offers social engagement that can extend into the society and cross-cultural interaction can be encouraged.
CONTENTS

i ACKNOWLEDGEMENT

ii ABSTRACT

001

1 INTRODUCTION
1.1 Background & Problem
1.2 Research Aim and Objective
1.3 Thesis Structure

013

2 LITERATURE REVIEW
2.1.1 Integration
2.1.2 Discussion

2.2 Design Strategies
2.2.1 Sense of belonging
2.2.2 Social Interaction
2.2.3 Summary & Reflection

037

3 PRECEDENT STUDY
3.1.1 Dallas Brooks Community School
3.1.2 CEBRA’s children’s home
3.1.3 Farmers Park Project
3.1.4 Surry Hill Library & Community Centre
3.1.5 Summary & Reflection

3.2.1 Lillyfield Housing Development
3.2.2 Abode at great Kneighton
3.2.3 Beaumont Quarter
3.2.4 Summary & Reflection
4 SITE
4.1 Site Selection
4.2 Site Analysis

5 ANALYSIS & DESIGN GUIDELINES
5.1 Program

6 DESIGN INVESTIGATION
6.1 Design exploration experimentation
6.2 Summary & Reflection

7 DESIGN PROCESS
7.1 Design Phase 1
   Preliminary Design
   Summary & Reflection
7.2 Design Phase 2
   Developed Design
   Summary & Reflection

8 CRITICAL REFLECTION & CONCLUSION
8.1 Future Opportunities

REFERENCES

LIST OF FIGURES
1

INTRODUCTION
1.1 BACKGROUND
Increasing conflict in parts of the world has resulted in more than 65 million people worldwide currently displaced from their homes. This has generated a crises of refugees as mass numbers of people relocate, looking for a better future and desperately seeking resettlement in neighbouring countries. Under the United Nations High Commissioner for Refugees (UNHCR), resettlement is defined as “the selection and transfer of refugees from a State in which they have sought protection to a third State which has agreed to admit them – as refugees – with permanent residence status. This status provides a resettled refugee and his/her family or dependants with access to rights similar to that enjoyed by nationals. Resettlement also carries with it the opportunity to eventually become a naturalized citizen of the resettlement country.” (United Nations High Commissioner for Refugees). Resettlement offers solutions to vulnerable refugees and those who endure months and even years of insecurity in protracted situations when they are unable to return to their homeland.

In order to assist those seeking refuge, the resettlement program established by the UNHCR hopes to provide a durable solution for families and individuals to start their new life in another country.

New Zealand is one of the 26 nations under the UNHCR who take part in a regular refugee resettlement program. This reflects its commitment and obligation to fulfil international humanitarian responsibilities. In response, the New Zealand government has a quota of 750 incoming refugees annually, a number which has not changed since 1987. However due to the recent increase in conflict in parts of the Middle East, the government offered an extra 750 places for Syrian refugees along with an extra 100 over 2016 and a further 500 over the next two financial years 2016/17 and 2017/18 (“New Zealand Refugee Quota Programme”). The selection criteria for the 750 quota places are categorised as family reunification, women at risk, protection cases and small number of medical cases. These are comprised of 6 intakes over a year with approximately 125 people per intake. There is also an alternative pathway to gain entrance into New Zealand as a refugee, however the system focuses on the quota refugees who arrive under the UNHCR program.

Most countries mandated under the UHNCR
Figure 1.1 (Previous page): Collage showing refugees before resettlement

Figure 1.2: Flow chart showing the process of resettlement in New Zealand.
conduct their orientation program prior to departure from their homeland and then integrate the refugees directly into the host communities on arrive into the country. However, New Zealand is one of the few countries to have a centralised system for its orientation program which is provided on arrival. New Zealand is also one of the only countries in the world to dedicate a centre especially for the refugees. The fundamental concept underlining such strategies is to assist the refugees in the integration process in the host country. Yet, there is insufficient evidence in regards to the strategy adapted by New Zealand and whether it is more successful than the methods of resettlement adapted by other countries (42, Gray).

Resettlement can be an intimidating experience as refugees migrate to countries where the language, culture and society are entirely different from their own. The New Zealand refugee quota program system provides a 6 weeks orientation and assessment process. This is conducted at the Mangere Refugee Resettlement Centre where the refugees undergo a physical health and mental health assessment and treatment, settlement planning, employment assessment, education including English learning classes. There are several government and non-government organisations such as Immigration New Zealand, Refugees as Survivors New Zealand, Red Cross, Auckland Public Health Refugee Medical Services and Refugee Services Aotearoa New Zealand who collaboratively with different parts of the program. At the end of the 6 weeks reception program, the refugees are dispersed into 6 different cities across New Zealand which include Auckland, Waikato, Manuwatu, Wellington, Nelson and Dunedin (“New Zealand Refugee Quota Programme”). Refugees are allocated into the different regions based on factors such as availability of housing and services. The refugees themselves have no choice in the resettlement location.

On arrival into New Zealand, quota refugees receive 6 weeks of orientation and assessment at the Mangere Refugee Resettlement Centre.

Following the 6 weeks at the Resettlement Centre, Refugees are dispersed into different regions based on availability of housing and services.
“Refugees got “lost” when they were released into the community after six weeks at the Mangere Refugee Resettlement Centre”

“Refugees have poor resettlement outcome... many still struggle to live independently or reach their full potential..”

“Refugees need to feel as if they belong in their community.”

“..biggest challenge in settling into her new life is the homesickness and isolation due to the language barrier”

“Supported and successful integration for refugees ultimately contributes to connected, healthy communities”
are accommodated in New Zealand in both public and private rental properties. Other support such as Work and Income benefits, school enrolments, opening bank accounts, obtaining IRD numbers are provided by social workers and trained volunteers are provided for the first 12 months.

Although the Resettlement Centre in Mangere is a more cost effective approach for the New Zealand government, it is unable to provide sufficient assistance when refugees move into the different cities for permanently resettle. New Zealand is one very few countries to adapt such a method; holding refugees temporarily at the centre before being dispersing them to resettle. While the scope of this thesis did extend to a full evaluation of the current New Zealand system, published news articles identify flaws in this centralised model and favour the decentralised method of resettlement (Fig.1.2).

As the Mangere centre provides all the facilities in one area, the refugees tend to build a sense of comfort over the 6 weeks while developing a community-like environment. The transition from the Resettlement Centre into the independent housing in the different regions therefore disconnects the refugees from their new friends and the shared experiences in the Mangere Centre. These initial stages of post settlement engagement into the host society is a sensitive time and is generally difficult for the refugees. Despite current strategies, social and cultural isolation and segregation are experienced when settling into the new region(47, Strategic Social Policy Group). Although cultural orientation is provided at the Mangere Centre in Auckland, the final destination cities such as Nelson and Dunedin, have very different cultures and people. Most refugees do not have relations in the regions of resettlement and therefore link themselves with existing ethnic communities (ii, Gray). As a result, community relations between the refugees and host society is reduced, limiting cross cultural connections.

As the refugee crisis becomes a growing discussion in New Zealand, designing for social and cultural interaction between the refugees and host communities becomes increasingly important. By improving the current strategies and in addition with an architectural design in easing the integration process, the initial refugee experience of isolation and segregation can be reduced. A successful solution encouraging formations of social network between the refugee and the host society is required.
1.2 RESEARCH AIMS AND OBJECTIVES
**Question**

How can architectural design assist in successful integration of refugees into host communities to evoke a sense of social inclusion?

**Aim**

The aim of this research is to design an architectural solution which can ease the process of resettlement for the refugees into the different regions around New Zealand. The outcome aims to provide a platform which fosters social engagement and cross cultural interaction between host country and refugees to create a strong sense of belonging in the region of settlement.
1.3 DESIGN PROCESS
INVESTIGATION

IDENTIFY PROBLEM

EXAMINE CURRENT SITUATION

RESEARCH AND ANALYSE

LITERATURE REVIEW

RESETTLEMENT NEEDS

SENSE OF BELONGING

SOCIAL INTERACTION

PRECEDENT STUDY

SITE STUDY

DESIGN GUIDELINES

PROGRAM

DESIGN PHASE

DESIGN PHASE 1

PRELIMINARY DESIGN

DEVELOPED DESIGN

CONCLUSION & REFLECTION

Figure 1.4: Thesis methodology diagram
2

LITERATURE REVIEW
This chapter

Research indicates for successful resettlement to occur, integration is essential for refugees in all aspects of life. By analysing refugee integration approaches implemented in other countries as well as in New Zealand, the model adapted by New Zealand is identified to be less effective in assisting with social barriers between refugees and their host communities. Social interaction and creating a sense of belonging are two fundamental elements determined to help in integration process for refugees.
2.1 INTEGRATION
Defining integration

The term Integration under the European Union, is defined as the settling of a person or people in which they can participate fully in the social, cultural, economical and political life of a society, while retaining their identity (2, Berry). It is defined as a process where a immigrant can become part of the social, institution and cultural fabric of the host communities.

Strategies for integration in other countries

Countries under the UNHCR program have implemented their own models and approaches to integrate refugees into their host societies, in accordance to their social, political and economical contexts. Most countries have a predeparture cultural orientation for refugees and on arrival, resettle them immediately into different communities where they receive all their support and services through the local municipality (28, Gray). The responsibilities for refugees is therefore distributed among the local organisations in the area they resettle in. Integration begins at the local level but the way in which it is managed and the nature and extent of the services offered are greatly influences by each country's administrative structure (43, Gray). This approach is beneficial in the following ways:

- It fosters immediate contact between the resettled refugees and receiving communities
- It reduces the dependency that separate services and programs may engender
- It ensure refugees in the resettlement process have direct access to same quality services that are available for the citizens.

Research states “Countries have recognised that integration is more likely to succeed if resettled refugees are assisted as soon as possible through mainstream system and networks in the receiving society” (31, Gray).

The different approaches that are demonstrated are based on availability of services and programme infrastructure to support the integration process for the refugees (20, Gray). However, the underlining concept adapted by most countries to integrate refugees is the same. Assistance with language tuitions, mental health support and financial independence are key...
Figure 2.1: 5 key refugee integration strategies implemented by New Zealand
goals implemented for refugees to help them settle into their “new life” (32, Gray).

This decentralised system for refugee settlement allows refugees to familiarise themselves in the area they resettle in while involving the local community in the integration process. Different approaches have also been provided for a durable solution for integration of refugees into their communities such as:

- Introducing refugees to the neighbours, including faith-based outreach initiatives.
- Arranging joint community activities which refugees can participate in.
- Sponsoring refugees by providing memberships to social, cultural and sports clubs thus forging relationship around common interest.

These techniques have been found successful in promoting dialogue, build trust and facilitate engagement and positive social outcome (17, Gray).

3. Participation: Refugees actively participate in New Zealand lifestyle.


5. Self-sufficiency: All working-age refugees are in paid work or supported by a family member in paid work. (“Refugee Resettlement Strategy.”)

These strategies aim to provide the best economic and social benefits both ‘for’ and ‘from’ refugees so they can live independently. In order to achieve this, refugees receive support for daily living when they move into the different cities. However, interaction with the community remains minimal as the current integration strategies give little emphasis on refugee and community interaction. The 5 goals identified earlier do not give importance to establishing relationships among refugees and their host community which is crucial for their social wellbeing. Successful settlement is achieved when refugees are participating fully in their new communities.

**Strategies used in New Zealand**

While New Zealand has implemented a centralised system, its goals are similar to those overseas. The 5 key goals for refugee resettlement consist of:

1. Housing: Refugees live in safe, secure, healthy and affordable homes without needing government housing help.

2. Education: Refugees have English language skills that help them participate in education and daily life.
CENTRALISED SYSTEM
(USED BY NEW ZEALAND)

DECENTRALISED SYSTEM
(USED BY MAJORITY OF THE OTHER COUNTRIES UNDER THE UNHCR PROGRAM)

Figure 2.2: Two different systems used for refugee resettlement
Summary

The underlining aim for resettlement is for refugees to become socially and economically self sufficient and live regular lives in the communities they are relocated to. In order to support this, two separate models are implemented (Fig. 2.2). New Zealand employs a centralised system (Mangere Resettlement Centre) however, the decentralised system currently used in New Zealand allows refugees to build social bonds with each other, following which they are relocated into relatively remote areas of the country where integration into the local community is difficult. By resettling refugees directly in the host community, the social tensions between them and the local community is overcome earlier, essentially develop a sense of belonging quicker in the resettlement process.

The thesis proposes a decentralised model for refugees to assist them resettlement into the different cities. The programs and services available at the Mangere Resettlement Centre can be distributed into host in a manner designed to cities create opportunities for both refugees and the community to benefit from the design. Local organisations will be given more tools and room to act in ways appropriate for the location. Shared premises which enable the two groups of users can come together to exchange knowledge and socialise in a nonthreatening way.

By using design techniques, architecture can provide a platform that contributes to the needs of the host community and eases the resettlement experience for refugees. The design environment can promote social interaction and evoke a sense of belonging which refugees struggle with once they shift to independent living in the different regions.
CURRENT SYSTEM FOR REFUGEE RESETTLEMENT IN NEW ZEALAND

Transit from homeland/Refugee camps → 6 weeks Orientation at Auckland Resettlement Centre → Shift to Independent housing

This content is unavailable. Refer to the printed version for access.

Centralized Project
PROPOSED SYSTEM FOR REFUGEE RESETTLEMENT IN NEW ZEALAND

Transit from homeland/ Refugee camps

Interim settlement period refugee community Centre in different parts on New Zealand

Availability of Independent housing in the same region

Proposed Design

Decentralized Project

Figure 2.3: Existing versus proposed model for Refugee Resettlement in New Zealand
Majority of the refugees resettled in the Christchurch region are from Bhutan and the Middle East such as Syria and Afghanistan who come back different background and reasons for displacement.

An average Bhutanese family consists of 4 to 5 member, however large families are the norm among Afghans and can consist of upto 6 to 7 family members. With 2 adults and rest are children.

Most refugees spend months or even years in refugee camps as their temporary settlement. Camp sites consist on clusters of tents, other facilities aiming to meet basic human needs but for only a short time.

Bhutanese refugees generally well educated and have a high level of English language literacy compared to other cohorts of refugees. Most refugees have high hopes for further education once they settle in the country.

Bhutanese and Middle eastern food are rich with traditional flavors. Bhutanese is influenced by Chinese, Tibetan and Indian cultures as where Middle eastern food is

Majority of the population in Bhutan follow Buddhism with a minor number practicing Hinduism. In the middle east however, Islam is practiced by over 90% of people.
Majority of the New Zealand population is made up of European (74.0%) followed by Minor ethnic groups such as Māori 14.9% Asian 11.8% Pacific peoples 7.4%.

An average Christchurch family consist of mother, father and children. The family size ranges from 2 to 4 members. Sole-parenting commonly found in New Zealand.

New Zealand accommodates for a range of housing types such as apartments, town houses, suburban homes and lifestyle block to provide for individuals need. Typical constructed with timber frame.

The education system in New Zealand is divided into 3 levels, primary, intermediate and highschool in which English is a compulsory. Till the age of 16, education is mandatory with encouragement to participate in extra curricular activities

Lamb, Pork and dairy products which are sourced locally have a distinct New Zealand style. Fish and chips and burgers are also a popular choice among New Zealanders.

Christianity is the dominant religion with just under half of the population declaring an affiliation to. While 42 percent of New Zealanders are irreligious.

---

Figure 2.4: Comparison between generic refugees and New Zealand community
2.2 DESIGN STRATEGIES
This chapter
To assist with the integration process, two design themes are established at two different scales. Social interaction which responds to a community scale and creating a sense of belonging at a more intimate house scale.
2.2.1 GUEST AND A HOST
To encourage successful integration of refugees in host countries, positive social interaction between the refugees and host society is essential. Richard Kearney discusses the concept of social integration through his book “Phenomenologies of the strangers”. Kearney explains interaction through the idea of a guest and a host to convey the dynamic between two entities.

“Who can recall who spoke or reached out first? Did I receive the other, or did the other invite me to see, to speak, to engage her in battle or in friendship? Discerning the latent meaning requires phronesis on the part of both guest and host. Each must attend to the situation in which the encounter takes place” (4, Kearney)

In such a case, architecture can mediate the event and provide a stage to develop social connections among the refugees and host community.

Social Connections are a measure of 3 components: Social bridges, Social bonds, social links (12, Narayan). The book Social works and immigration by Kathleen Valtonen states, the ideas of social work approaches focusing on social functioning of individuals and groups through these 3 elements; To build strong relationship and ties with the society through participation, involvement and engagement of individuals is essential (39, Valtonen). “The strategy that seeks to strengthen and enhance the individual’s person-in-environment link” (39, Valtonen). Society itself is known as system of inter-meshing relationship. An individual is able to build a social status by taking part in activities that promote positive interplay.

Among theories of Community Psychology, Mc Millan and Chavis’s are known to be the most influential. In their discussions of the construct of Psychological sense of community, Mc Millan and Chavis provide a formula to summarise ways in which quality interaction can be achieved. The formula states:

High quality interaction= (events with successful closure - ambiguity) x (event valence x shared-ness of the event) + amount of honour given to the members(15, McMillan).

The formula highlights techniques to promote engagement between individuals through various shared activities and positive interplay.
Figure 2.5: Social Interaction objectives

- Positive Interplay
- Different Types of Interplay
- Engagement
- Duration of Interaction
The length of time spent interacting, also directly responds to the quality of the social experience (14, McMillan).

The text “Social integration and Architecture” discusses how architecture can provide social order and integration. It states that architecture as the ability to unite and divide social groups by the construction and use of the structure. “Architecture contributes to integration by defining boundaries and by symbolically reinforcing ideology and social norms” (7, Hegmon). The intended use for the spaces are activated by the occupants and users, therefore the social context plays a vital role in shaping the architecture and structure. In turn, the form of the structural influences the use and the users within it.

By developing a social network which extends into the society, emotional and material support can allow the refugees to adapt to the new areas of settlement and establish a strong sense of place in the host community. The development of social and cultural inclusion within the host society directly affects the wellbeing of the refugees establishing a sense of comfort in the region of resettlement.
2.2.2

HOUSE TO A HOME
A sense of belonging is an ideology extracted as a fundamental concept for ‘successful’ refugee integration. Establishing a strong sense of belonging is essential for refugees to feel at “home” in their host communities to improve their mental health and live a happy and healthy lifestyle (Gray). The concept is discussed in the following literature through the idea of a house to a home. The process in which a house is considered a home relates directly to creating a belonging in space.

Author Jane M, Jacobs contextualises the notion that a house is just a physical space which over time is animated into a home by its users. She states, “home emerges from social processes (process of time) that are always more than the architectural container of the house itself (something in space)” (Cairns). The home experience is therefore built as the familiarity of the space and surroundings develops. Similarly, a host community remains a ‘house’ for the refugees until they are able to familiarise themselves in the host area and with the locals.

The idea of home can also be reconstituted in diverse group of people with a similar homeland or heritage in both an emotional and architectural way. “Sense of home emerges out of various building activities: how we respond to the strangers with whom we come to be proximate with; the way we orient ourselves in unfamiliar places; things we assemble to make the houses we live in feel like home” (Cairns). As this becomes a regular activity, a person is able to develop a feeling of acceptance within a space. It becomes apparent that the relationship between the physical space and its use is activated by its users which translate into an emotional connection over time.

In a similar way, Mc Millan introduces in his article “Sense of community” ways to induce an emotion connection with the space and the people. In his article, she states “the commitment and belief that members have, shared common places, time together, and similar experiences” (Millan) are key aspects in developing an emotion connection with the space and one another. Architecture has the capability to both facilitate for such needs through its program while evoking an emotional response.

In regards to the built environment, it is a combination of spatial, affective and sociological efforts. The importance of social and cultural
Figure 2.6: Sense of belonging objectives
inclusion within the host society is essential for the social wellbeing of the refugees and feeling of acceptance in the region of resettlement. A design environment which is able to evoke a sense of belonging is able to enhance the emotional security of its users. By the individual’s basic understanding of spatial relationships, such ideas promote a design which encourages interactions of members in shared events and the specific attributes of the events may facilitate or inhibit the strength of the community and evoke a sense of belonging in the region of resettlement.
INTEGRATION NEEDS

Figure 2.7: Relationship of objectives to aim of the thesis.
SUMMARY & REFLECTION

By evaluating the integration strategy for refugees in New Zealand, it is evident that refugees experience a lack of social involvement in their host communities. In addition to the current strategies implemented by Immigration, New Zealand is in need for architecture to facilitate Social interaction and Sense of belonging to provide a more success integration outcome for refugees.

Both themes are closely associated and aligned with a set of objective which the proposed design will address through design. The objectives drawn from the themes will act as tools to create a foundation for the design concept and develop a model which demonstrates these elements to provide a research based design. This will address how architecture can facilitate integration of refugees into their host communities to evoke a sense of inclusion.

Social interaction

Positive interplay: Offer opportunities for non-threatening engagement between users.

Types of interplay: Provide a variety of services and activities.

Duration of interaction: Allows for a long period of interaction at different times of the day.

Sense of belonging

Familiarity: Accommodate for cultural practices.

Emotional connection: Has a affect on the user beyond the physical experience.

Acceptance: A place of comfort and security.

In order to develop a sense of belonging and encourage social interaction between refugees and community is essential for an individual’s wellbeing.
This Chapter

The following precedents are divided into two sections. Precedents in section 3.1 are selected for their insight into community based architecture that aims to facilitate a local neighbourhood. Precedents in section 3.2 are residential complex selected based on their design to accommodate for diverse user groups. The precedents are analysed against the themes identified in the literature and their ability to express these ideas through the built environment.
This content is unavailable.
Refer to the printed version for access.
Dallas Brooks Community School
Architect: McBride Charles Ryan
Location: Victoria, Australia

Located in the city’s most financially under-privileged suburb, the school services both as a community centre and as a school, bringing together existing school communities in the area. The building uses multi-coloured brick cladding as a strong gesture to showcase a fun learning environment which is open to diverse group of users. The design consists of a School, kindergarten, Communal teaching spaces, Community kitchen and garden, an adult education centre, and maternal and infant welfare services. The space is shared by both children and the adults in community.
Figure 3.5: Duration of the day in which the school is occupied by children and elder community members.
**Strengths**

- Services both as a school and community hub therefore it is able to accommodate for range of users and age groups.

- The community facilities are used after school hours and for different purposes, activating the building over a longer duration of the day.

- The brick wall patterns reflect traditional dresses from some of the ethnic groups in the community, indicating a dignified response to the local residents.

- The project uses colour to help aid orientation around the campus of the different programs, making it easier for the users to locate different areas.

- The project is a direct response to community needs.

**Weakness**

- Not specifically designed for after school facilities therefore does not accommodate for the exact needs for that use.

**Integration requirements**

**Social Integration**

**Sense of belonging**
CEBRA’s children’s home

Architect: CEBRA
Location: Kerteminde, Denmark
Date: 2014

The children’s centre in rural town on the Danish island is designed for children and teenagers with special needs. The program includes care centre, sports hall, multipurpose space and a ski dome. The main design feature is the fragmented gables to form a cluster of house silhouette. The different areas are divided according to the ages of the children where the young children’s area orientated towards the garden and playground and the space for teenagers faces the street front for easy accessibly. The design is integrated into the surrounding residential area through use of domestic building materials.
Strengths

- The project creates a homely feel for the children with a simple pitched roof design which children can easily associate physical shape of a home.

- By continuing the same material palette which is used in neighbourhood, the design fits within the context.

- The overall structure is broken up into smaller zones and separate house forms to match the scale of the generic house in the neighbourhood. It uses scale as a form on integration into the context.

- Positioning the programs to suit the different age groups and building a strong relationship between the interior and exterior program through the users.

Weakness

- The design is physically integrated into the neighbourhood yet does not allow for shared space to encourage social interaction in with the locals.

Integration requirements

Social Integration

Sense of belonging
Farmers Park Projects
Architect: Hufft Projects
Location: Springfield, United States
Year: 2014

The project is a mixed use development located in the region of Ozarks for the healthy, active, engaged families and businesses. It consists of retail areas include restaurants and shops on the ground floor as well as interactive public spaces, a plaza and community garden and residential apartments above. The project is anchored by a farmers market which attracts thousands of community members and local farmers in the area who use the premises this purposes.
Figure 3.15: Plan arrangement of buildings indicating circulation and main street interaction
**Strengths**

- It encourages pedestrian activity and community interaction by providing shops and retail on the ground level, creating a safe, vibrant and economically viable.

- It provides a shared space for residents, local farmers and the community. Therefore it encourages interactions between different social groups also strengthening community relations.

- The project offers both public and private areas among the residential and commercial spaces.

**Weakness**

- No clear distinction between private and public spaces and therefore residents are not provided with outdoor privacy.

- Both residents and public share the same entrances.
This content is unavailable. 
Refer to the printed version for access.
The building is situated in a community which is characterised by a diversity of age, income and cultural backgrounds, the design consists of a library, community centre and childcare centre. The project brief was developed with close consultation with the local community, responding directly to their needs and values. The design accommodates for different programs that are shared by the whole community in designated area and is made accessible by its convenient location and transparent design strategy.
Figure 3.19: Diagram indicating the different user groups and variety of programs

This content is unavailable. Refer to the printed version for access.
**Strengths**

- Accommodates for range of age groups and users.

- The various programs encourage different types of interaction among the different user groups.

- The use of transparency in the building allows visual accessibility, effectively creating a inviting and welcoming building.

- It uses materials to separate public and private...

**Weakness**

- The building form does not interact with the adjacent public park- not flexible.
Figure 3.20: Commercial area design objectives

- SERVES ALL AGES
- ACCESSIBILITY
- MULTI-USE
- FREQUENCY OF USE
SUMMARY & REFLECTION

The precedent analysis provided insight into considerations and design techniques used to create community based architecture. The findings are essential to establish whether these designs achieve the objectives identified in literature and techniques used to accomplish them. Consequently, recognising what ideas to both implement and avoid in the design process. After evaluating each precedent with the key themes, important traits were also determined to assist with a more successful design. These include:

- A design that appeals to different age groups and culture groups through a variety of programs

- A design that encourages the public to occupy the space and feel welcome- choice of materials (transparency), location, visibility.

- Accommodates for flexible spaces to facilitate for different needs.

- Can be occupied for long periods of the day by providing for uses that can be occupied at different times of the day allowing the site to be active for longer.

All strategies illustrate the importance of a hybrid architecture which directly responds to the needs and values of diverse user groups. This will subsequently build stronger relationships among the participants and make the community more coherent through active involvement a variety of activities.
The highly sustainable social housing development in Sydney, comprises 24 one-bedroom units, 58 two-bedroom units and 6 three-bedroom units from which some are specifically designed for occupants with disabilities. The design consists of units having north or east facing living areas and natural cross ventilation, generous open spaces and courtyard and bright, contemporary colours echo Sydney’s ‘vibrant cities manifesto’.

LILLYFIELD HOUSING DEVELOPMENT
Architect: Gustavo Thiermann
Location: New South Wales, Australia

The highly sustainable social housing development in Sydney, comprises 24 one-bedroom units, 58 two-bedroom units and 6 three-bedroom units from which some are specifically designed for occupants with disabilities. The design consists of units having north or east facing living areas and natural cross ventilation, generous open spaces and courtyard and bright, contemporary colours echo Sydney’s ‘vibrant cities manifesto’.

Strengths
- Use of bold colour to create a vibrant design and identity.

- Accommodates for a secure and private central shared green space among residents for socialising, relaxation and play.

- Facilities for a communal garden to enhance the residents’ sense of community.

Weakness
- The whole development used one design scheme with no variation in form, style or aesthetics.
ABODE AT GREAT KNEIGHTON
Architect: Proctor and Matthews Architects
Location: Cambridge, England

The development of 306 homes ranges from studio apartments to five-bedroom houses. The design consists of terraces of townhouses and apartments followed by rows of mews homes in the middle of the site, and individual houses. A limited palette of materials is used to accentuate transition of spaces, with the dominant materials of brick and perforated aluminium at the entrance gradually replaced by timber as the housing gets less dense. Landscaped pathways were designed between the mews terraces to create ‘green corridors’ as the circulation pathway connecting the different housing clusters.

Strengths

- Accommodate for a wide range of users with variation in housing sizes.
- Uses limited palette of materials to accentuate transition of spaces, creating variety, a sense of identity and a richness of character.
- The development is divided into different smaller clusters creating more intimate shared spaces.
- Series of green connecting lanes run perpendicular to the terraces, creating pleasant shared spaces between the houses and increasing the connectivity between the whole development.

Weakness

- Housing designs do not accommodate for a private outdoor space.

Figure 3.25: Street View of Residential development
Figure 3.26: Circulation pathway within the residential complex
Figure 3.27: Courtyard Area
Figure 3.28: Site plan
The project situated in central Auckland, has been recognised as a benchmark project for medium-density development consisting of 258-units. The design priorities pedestrians with a dense network of pathways and small squares. The complex features series of uniquely designed buildings, each with an independent yet complimentary aesthetic, brought together with walkways and shared open areas.

**BEAUMONT QUARTER**
Architect: Steven Tupu  
Thomas Balsley Associates  
Boffa Miskell Ltd  
Jasmax Ltd  
Ian Moore Architects  
Location: Auckland, New Zealand  
Date: 2006

Strengths
- The various arrangement of the housing clusters create a unique experience in each shared outdoor space.
- Network of walkways connect the different clusters of housing together.

Weakness
- The different design languages between the different clusters create a disconnection between the different spaces.
- Houses facing the street front have no sense of security or privacy.
- Open communal spaces basic grass area have no seating or landscaping.

Figure 3.29: Shared green space
Figure 3.30: Circulation pathway within the residential complex
Figure 3.31: Main Street view of Beaumont Quarter
Figure 3.32: Site plan
Figure 3.33: Residential design objectives

- OPEN SPACES
  (Private & shared)
- PRIVACY & SECURITY
- IDENTITY
- CONNECTIVITY
The residential precedent analysis provided insight into different housing and apartment models to determine techniques used to make the project successful. Fundamental features which were identified in the designs included:

Open shared space- Provide dwellings with usable, accessible and functional outdoor living space for socialising, relaxation and play.

Privacy/Security- Provide privacy for dwellings while enabling passive surveillance of the street where residents can feel safe and secure.

Identity- Demonstrate an urban built character which is innovative and contributes to design intent and reflects understanding of its context.

Connectivity- Introducing network of walkways to develop connections between the different areas of the complex so it is easily accessible.

The following strategies aim to fulfil a community based residential design in which occupants can enjoy their homes and built social relationships with neighbouring residents.
4.1 SITE SELECTION
Figure 4.1: Cities for refugee resettlement with the chosen region for the proposed design
The site selection process was predominantly dependant on the city that could offer the most favourable opportunities for refugee resettlement as well as benefit the local community. Factors such as availability of services, social opportunities, employment opportunities, the make up of the local community and the presence of existing ethnic groups played a vital role in the selection process. Christchurch was identified to be the most appropriate.

Prior to the September 2010 Earthquake, Christchurch was one of the six regions for refugee resettlement after the 6 week orientation period in the Auckland. However, due to the impact on health care and housing services, refugee resettlement in Christchurch was terminated. Christchurch is currently in the process of rebuilding the city and the rebuild strategy aims to encourage population growth within the CBD sector to revitalise the city centre which was lifeless after the earthquake. New Zealand Immigration is also considering reintroducing refugee resettlement in Christchurch in 2017 providing opportunities to revive the existing refugee facilities which were present before the quake (Spink).

Christchurch is also known to host the main healthcare facilities within the south island, providing a large range of medical, health care and social assistance. (“Healthcare and Social Assistance”). The local community have experienced the trauma of the earthquake and therefore are more likely to show more empathy and relate on emotional level to the refugees. However, Christchurch is not very ethnically diverse. Six out of seven people in Christchurch identify as European (“2013 Census QuickStats about Greater Christchurch”). The proposed design will provide a new platform where cross cultural integration can be established among the locals and refugees in Christchurch.
Figure 4.2 (previous page): Chosen site in relationship to the wider context

Figure 4.3: Key Amenities and Leisure places in close proximity to the site

**KEY**

**AMENITIES**

1. Bus interchange
2. Hospital/Medical Centre
3. School
4. Grocery store
5. Place of Worship

**LEISURE**

6. Cafes & Restaurants
7. Retail and shopping
8. Sports/Recreation facility
9. Theatre/Museum
The site itself is a large uninhabited area of land surrounded by residential zone on the west side and commercial on the east. The 220m x 90m property is adjacent to a main road on the north side. The disconnection between the two zones provided an excellent opportunity to strengthen the connection as well revitalise the site which is currently not utilised. Most amenities and leisure activities are within a 10 minutes walk from the site also making it a prime location for the proposed design.

Figure 4.4: East and West street elevations surrounding the site
Figure 4.5: Site view from west end
Figure 4.6: Site view from east end
Figure 4.7: Site view from the main street (Brougham Street)
Figure 4.8: Residential and commercial zone activation indicating when the areas are most active over 3 different times of the day
STRENGTHS

- Green spaces allow for recreation and leisure activities
- Excellent transport system connections to the city centre
  - Main road to the city centre
  - Main traffic access to highway
  - Close approximately to the city centre

WEAKNESS

- Inactive area
- Restricted zoning
OPPORTUNITY

- Stronger relationship between residential and commercial zone
- Revitalize the site
- Encourage residential growth close to the CBD
- Encourage pedestrian access through the site

THREATS

- Earthquake prone
Figure 4.11: Design opportunities and considerations
This site provides favourable conditions that are suitable for the design intent. Through the site analysis, strengths and opportunities were established which will direct the design so it responds to the its context.

Key ideas that should be taken into consideration when designing:

- Encourage pedestrian movement through site as a quicker route from Brougham Street to Columbus Street.

- Design consideration in relation to the current commercial/residential zone.

- Take advantage of the surrounding small businesses and factories to create opportunity for interaction and revitalise the site by designing for leisure spaces that can be used by workers.

- The site is adjacent to the main road. The proposed design should be open and accessible to encourage pedestrian passing by to come use the space.

- The site is to be used a space of transition and rest.
5
ANALYSIS
Housing

A safe and secure place which refugees can call home in the region of resettlement and can familiarize themselves with the area before shifting independently.

Learning Centre

A place where adequate provision for education and training such as language and IT courses for adult can be provided. A shared facility for both refugees and members of the community accommodating for private learning spaces and shared spaces such as a library.

Recreation Centre

The Centre will aim to improve the physical and social wellbeing of refugees, accommodating for sports activities and fitness classes. The space will also cater as a community hall which can be used for other social events.

Food and Retail Space

Such facilities will provide job opportunities for refugees allowing them to be self-sufficient as well as gaining work experience in New Zealand which will assist them in entering the labor market and finding long-term employment.

Participation

Participation will be achieved through all the programs to encourage social relationships among its users. Each program will accommodate for spaces in which individuals can engage in different ways and activities.
The current New Zealand refugee integration strategies have been developed in a decentralised model to determine the program.

Figure 5.1 documents the proposed program for the new Transition Hub, designed to accommodate up to 250-300 refugees at one time (in the residential space). As the quota refugees arrive in 4 in takes over the year, the accommodation will be occupied as existing refugees move out, new arrivals move in.

The chosen programs ensure the design meets the objectives for this thesis. The architectural outcome aims to facilitate a sense of belonging for a wide range of refugees from different backgrounds, ethnicity and culture; improving their sense place in the community. The chosen program aims to prepare refugees for independent resettlement. By providing facilities that cater for both the refugees and members of the community, a positive social exchange can be created.

In addition, the various program proposed reflect the key elements identified through the precedent study to achieve a more successful design outcome.
DESIGN REQUIREMENTS

HOUSING
- Medium density
- Promotes interaction among residents
- Accommodates for both private and communal outdoor areas

RECREATION CENTRE
- Accessible, open and transparency
- Visible from the main street front
- Relationship to the other activity area

LEARNING CENTRE
- Semi transparent
- Relationship to the outdoor space
- Interactive spaces and quiet spaces

FOOD/RETAIL SHOPS
- Activates the street front
- Varies in size

Figure 5.2: Bubble diagram showing relationships between spaces
Figure 5.3: Diagram indicating relationship between public, private and semi public spaces
Large families are the norm among refugees and can consist of up to 5 to 7 family members. With 2 adults and rest are children.

Members of the community consist of elderly and an average of 2 adults and 2 children.

Women at risk: Approximately 75 single refugee women per year varying in age from 18-40 years.
Figure 5.4: Diagram indicating the different user groups and programs occupied by them

Figure 5.5: Duration of time each program is used over a days period
This chapter

The following chapter explores the initial design stages in relation to the design problem through 4 major iterations, examining two different scales. Through conceptual modelling, drawing and diagramming, the aim is to generate multiple iterations through different mediums to investigate the various design options.
The underlining concept for the research is to bridge the gap between the private refugee spaces refugee and the public community building areas. The following models are an abstract representation of 3 stages; disconnection, convergence, interstice. The models investigate transition through stages; a progression of two separate elements coming together, identifying the threshold and the in-between space.

The following models investigate the relationship between elements through various abstracted form and introducing materiality.
Figure 6.3: Abstract models convergence between two mediums

Figure 6.4: Models to match site scale exploring interstitial space
These models are an investigation on interstitial space pursued through model making. Each of these models test how different forms of division can create an “in between” space. By looking at the two separate entities one which represent commercial and the other representing the residential area, the forms explore a central space which can be used to bridge the zones.
The drawings explore different ways in which the site can be divided from commercial and residential areas in relation to the existing zoning. The boundary will act as a thoroughfare, providing a shorter route to Colombo Street from Brougham Street. By encouraging pedestrian movement through the site from the residential to commercial area and vise versa, the area can be revitalised and provide opportunities for engagement for the locals and residents on the site.
In respect to the context, the following diagrams examine different arrangements of public, semi public and private spaces distributed on the site. By exploring various options for program distribution of the site, the aim to strengthen the relationship with the context and provide a smooth transition for the proposed design.

Figure 6.5: Diagrams investigating different ways to divide the residential and commercial zones

Figure 6.6: Illustrations exploring primary circulation

Figure 6.8: Diagrams exploring program distribution
Figure 6.9: Model and drawings investigating progression of a solid form to a permeable form.
To provide a easy transition into the host community, refugees require different stages of exposure in the wider community. Starting with housing being the most private space, gradually shifting towards a publicly accessible space such as the food and retail spaces and recreation centre. The following drawings are testing the progression from an enclosed to a permeable form. Such experiments will help develop the private residential spaces and the more open and accessible commercial spaces and the transition between the two.
Figure 6.10: Diagram indicating how each of the explorations will inform the design phase.
SUMMARY

The experimental phase helped generate multiple design alternatives at two different scales. The iterative process provided a range of options which will be further tested and evaluated to select the appropriate outcome to develop into an architectural solution. The first set of sketches and models explored ways in which private refugee spaces and public community areas can be exploited to bridge the gap between refugees and the community.

The second set of iterations explored opportunities to mix the refugees with the community by using the centre of the site as a thoroughfare to encourage locals to move through the space.

In conjunction, the first two sets of explorations direct the composition as a whole and will guide the masterplan design.

The combination of the third and forth iterations provide more program specific explorations which assisted with program distribution and form exploration in the design phase.

The design exploration & experimentations provide a foundation from which preliminary design can be generated. Each experiment investigated a separate design objective from which composed together will strengthen the final design outcome.
7 DESIGN PROCESS

7.1.1- MASTERPLAN
7.1.2- RESIDENTIAL
7.1.3- LEARNING CENTRE
7.1.4- RECREATION CENTRE
7.2- PRELIMINARY DESIGN OUTCOME
7.3- SUMMARY AND REFLECTION
This chapter

The follow design work is developed through the experimentation in the previous chapter. Due to the mixed nature of the design programme, the chapter is broken into individual programs. While some design phases will focus more on the development of a specific programme, the design has been considered as a whole composition, reworking through iterations explored in the previous chapter. By examining different design experiments and evaluating the various options, the most appropriate concept is selected to refine and develop into an architectural solution, establishing spatial relationships and architectural form.
7.1.1 MASTERPLAN

OPTION 1

OPTION 2

OPTION 3

↓ RELATIONSHIP TO MAIN STREET
→ CIRCULATION
GREEN SPACE
BUILT FORM
ACCESS TO GREENSPACE
The masterplan is essentially developed in relation the thoroughfare through the centre of the site. The iterations are explored in respect to the wider context, connectivity to the site and the potential programme arrangement which are individually developed further through program planning.

- Direct access from north and south end of the site
- Green space open to the street front allowing visibility into the site
- Residential space have privacy from the main street
- Shops alone the two busy streets making it accessible

-Division between residential and commercial zone is more interesting dividing site into 3 blocks
- View from the front of the site is kept open
- Commercial/ residential area opposing each other with green space acting as a mediator
- Responds to site conditions
- Retail and shops face main street and commercial facilities

-Residential area can be a independent block split away from the commercial facilities
- Space dedicated to mixed use building with retail and shops on ground floor facing Learning and recreation centre
- Main circulation does not cut all the way through the site

Figure 7.1: Different options exploring the masterplan layout
7.1.2 RESIDENTIAL

STUDIO APARTMENTS 25m²

3 BEDROOMS 90m²

4 BEDROOMS 110m²

L LOUNGE + DINING
K KITCHEN
BR BEDROOM
BTH BATHROOM
T TOILET
G GARAGE
Figure 7.2: Program relationships within the different housing units

Figure 7.3: Different massing options exploring arrangements of housing clusters
The physical characteristics of the surrounding houses showcase a gable roof as a prominent feature which is further explored in relation to the different housing typology for the design brief.

The iterative models and drawings examine ways in which the gable roof can be adapted in various forms and clusters.

Figure 7.4: Photos of housing in the surrounding area of the site
Figure 7.5: Exploring roof forms from the neighbourhood
Figure 7.6: Testing gable roof forms
Figure 7.7: Models exploring negative spaces within the housing form
Figure 7.8: Models exploring different formation of 3/4 bedroom blocks
Figure 7.9: Drawings testing form in-relation to windows and material
Figure 7.10: Options testing different housing cluster in-relation to walkways and communal areas
OPTION 1

- Mixed use clusters with studio apartments from street front for privacy.
- Connectivity of residential area through walkways.

LONGITUDINAL ELEVATION

OPTION 2

- Site elevated by box in height
- Large communal areas
- Staggered housing plans
- Separate area for single studios

LONGITUDINAL ELEVATION
7.1.3 LEARNING CENTRE

+ Multiple access points
+ All program is visible from the main entrance to the site
+ Public and semi private space connected through circulation

+ Multiple access points
+ Allows space for a central courtyard
- Semi private spaces placed behind library blocked by library area

+ Public spaces on the ground floor and semi private spaces on first floor
+ Open green space facing the main thoroughfare
The spatial planning for the Learning centre and Recreation centre follows the same design scheme which is based on separation of public and semi private spaces connected through circulation pathways.

The form is developed for both of these programs is in-relation to the angles of the thoroughfare(fig.7.13, 7.16).
7.1.4 RECREATION CENTRE

- Option 1
  - Program arranged over two floors
  - Main east-west walkway connects two block together
  - Hall 2 visible from the main street from where as Hall 1 faces learning centre

- Option 2
  - Circulation splits design into 3 clusters
  - Creates a semi private access through the centre
  - Block view into the centre of the site

- Option 3
  - The gymnasiums visible from the east and south street front
  - Multiple entrances into the different areas of the program

+ The gymnasiums visible from the east and south street front
+ Multiple entrances into the different areas of the program
Figure 7.14: Bubble diagram indicating relationships between the different spaces

Figure 7.15: Options for Recreation centre program arrangements

Figure 7.16: Form development for the Recreation centre
OPTION 1
- clear distinction between two programs - connected through green space + circulation
- main east-west circulation
- open up to public space.
- allow landscape open area.

OPTION 2
- space dedicated for parking
- access through front of site.
- recreation centre over shadows learning facility from main street front.
- open space visible to main street front.

OPTION 3
- multiple entrances.
- library + rec centre relationship active - passive spaces.
- relationship between large public space and smaller green areas.
Figure 7.17: Different options for Learning and Recreation centre layout.

Figure 7.18: Developed commercial design in relation to residential area.
PRELIMINARY DESIGN REVIEW
In respect to the existing zoning, the site will provide mediation between the residential and commercial boundaries.

Private and semi-private areas to be at the back of the site with public facilities at the front.

The design will respond to the local conditions with the built form providing street interaction.
Laneways and pedestrian routes to connect the site with the residential neighbor as well as the commercial area.

Open green spaces are divided into two areas. One which serves for the residential purposes, one more for the community and public.

A mixture of apartment, commercial spaces and community facilities are present within the site.

Figure 7.19: Design summary- progress diagrams
MASTERPLAN
GROUND FLOOR

KEY

RESIDENTIAL
① Studio Blocks
② Shared facilities (Laundry, Entertainment Area)
③ 3/4 Bedroom Blocks
④ Semi Private Green space

COMMERCIAL
⑤ Shops/ Retail
⑥ Public Green space
⑦ Outdoor Courts
⑧ Recreation Centre
⑨ Learning Centre
⑩ Parking

Figure 7.20: Masterplan ground floor plan on site
STUDIO APARTMENT
The 3 storey studio block situated at the rear end of the site provide privacy from the main street for the single refugee woman. To promote interaction, 2 studios has access to a shared balcony to encourage interaction between the two occupants. Shared facilities such as laundry, entertainment room, small kitchen and common area are accommodated in a separate building which is shared among all the studio residents.

Figure 7.21: Residential plans and elevation for studio spaces

Figure 7.22: Perspective of the Studio block
RESIDENTIAL

3 BEDROOM

Ground floor

First floor

4 BEDROOM

Ground floor

First floor

Elevation
3/4 Bedroom units have their own private outdoor garden/balcony space as well as common shared courtyards among each cluster where neighbours can meet and relax. The communal offering safe and social enclosed environment and providing privacy among the residents.

The internal spaces offer open plan living together with privacy for bedrooms on the first floor. The housing plans are designed to orientated towards the sun to maximise the natural lighting.

Figure 7.23: Residential plans and elevation for 3 and 4 bedroom houses

Figure 7.24: Perspective of the 3/4 bedroom block
LEARNING CENTRE

KEY
1. Admin/Reception
2. Staff room
3. Classroom
4. Computer room
5. Common room
6. Library
7. Meeting room
8. Toilets
The education centre is a semi private space, used by both refugees and the locals. The semi public facility is situated closer to the back of the site away from the main street front and away from the heavy traffic noise. The program within the Learning centre is separated into two areas: the public library space and the semi private classrooms and staff area.

Figure 7.25: Learning centre plans

Figure 7.26: Learning centre Elevation

Figure 7.27: Exterior perspective of the Learning centre through walkway between library and reception area
RECREATION CENTRE

KEY

1. Admin
2. Reception
3. First Aid room
4. Cafeteria
5. Breakout space
6. Kitchen
7. Gym
8. Main Hall
9. Small Hall
10. Stage
11. Studio
12. Changing rooms
13. Tech rooms
14. Toilet
15. Storage
DESIGN CRITIQUE

Strengths:

- Housing cluster works well with the style
- “Community village like atmosphere”

Considerations:

- Reconsidering housing planning. Flexible spaces?
- “Is the design segregating refugees by having them in one area?”
- Relationship between the design language of the residential and commercial area so the design looks coherent
- Strengthen the relationship between residential and commercial
- “Access from East to West of the site feels like you’re walking through private space”
CRITICAL REFLECTION

This design phase successfully began to address the programme relationships through the development of the masterplan and its relation to the neighbourhood; reflecting on its relationship to the context. The thoroughfare acts as a threshold between the residential and commercial areas, providing multiple entrances to the site and encouraging passersby to use the space. This creates opportunity for the community to encounter the refugees in a non-threatening way. However, the lack of development to the public outdoor spaces does not promote an inviting atmosphere for the community.

The housing forms in relation to the characteristics of the surrounding houses to produce desirable architectural aesthetics which integrate with its context. The spatial planning required development to accommodate for the different needs of refugees.

The following aspects of the design are reevaluated and adequate steps are taken to improve the design in the next design phase:

- Introducing a wide street through the site to allow for a more approachable access for the neighbouring residents from the East to the West of the site.

- Housing that accommodates for locals and refugees: Flexibility in spatial planning to facilitate for both user groups.

- Introducing a medium in which locals and refugees can exchange culture and a Market spaces and community gardens and playgrounds.

- Developing a better relationship between the recreation and learning centre so the two spaces look and function coherently.

- Providing a welcoming environment for locals through visual accessibility and landscaping
7 DEVELOPED DESIGN

7.4.1- MASTERPLAN
7.4.2- INTERSTITIAL SPACE
7.4.3- RESIDENTIAL
7.4.4- LEARNING AND RECREATION CENTRE
7.4.5- LANDSCAPING
7.5 DEVELOPED DESIGN OUTCOME
7.6- SUMMARY AND REFLECTION
This chapter
The following design is developed by reflecting on the feedback given on the preliminary design. By determining the strengths and weakness of the design and further design exploration, appropriate improvements are made to produce a stronger design outcome.
7.2.1 MASTERPLAN

The masterplan was revisited to improve circulation from the east-west ends and as a result a road through Montreal Street and Orbell Street is created. The develop design also reconsidered the threshold between the residential and commercial areas on the site further exploring a unprogrammed central space (fig. 31). The unprogrammed area can be used by the community for leisure and market spaces.
7.2.2 INTERSTITIAL SPACE

OPTION 1

+ Central platform elevated in height becoming the main focus when occupied
- Access to platforms through greenspace

OPTION 2

+ Angles of the path correspond to the direction of the entrance of the north and south end
+ Zig-zag pattern creates a slower and longer path

OPTION 3

+ Creates a dynamic look with platform varying in sizes
- Spaces cannot be used efficiently

Figure 7.31: Revised site plan indicating considerations for developed design phase
Figure 7.32: Options exploring for Interstitial space on the site to bridge residential and commercial areas
Figure 7.33: Different options exploring ways in which interstitial can be occupied.
7.2.3 RESIDENTIAL

South east Asia Houses
Traditional South east Asian houses are a mixture of Tibetan and Chinese architecture with the typical construction material timber, stone, clay, and brick.

SETTLEMENT ORGANIZATION
Due to terrains, the houses are usually built as scattered houses or in clusters.

COURTYARD
House usually has an open or semi-covered courtyard in front of the building. This space is utilized for growing vegetables and other agricultural produce.

ROOF
The wide roof overhead is one of the identifying features of Bhutanese architecture. Traditional Bhutanese roof is a gable roof, which consists of a heavy principle beam known as Gungchhen.

BALCONY
Nimchong (Sunroom) is a type of enclosed balcony either supported on columns or built over the ground floor with cornices.

SPATIAL DESIGN
Family dwellings are often 3 storey, with livestock on the ground floor, storage and living quarters on the second floor, while the third floor houses living quarters and Choesham (Shrine).

ORNAMENTATION
The exterior and interior of Bhutanese houses can be highly decorated. The timber window frames are painted with floral and animal motifs and walls with auspicious symbols.
Middle eastern Houses
Among the earliest influences on the region’s architecture are both Islamic and Buddhist structures the conventional Afghan home is a mud-brick structure.

SETTLEMENT ORGANIZATION
Clustered housing is common in rural houses with individual areas sharing walls allowing closeness its neighboring providing a communal lifestyle among the residents. houses are also surrounded by high walls, sheltering from passers-by for privacy.

COURTYARD
Urban houses are built around courtyards, Extended families/ communities live around a series of connected courtyards, with one entrance to the street.

ROOF
The flat roof gives an opportunity for the family to make dry fruits and dry vegetables, and for the males of this house to sleep in summers.

BALCONY
On the other edges of the courtyard, the different rooms are connected with covered walkways.

SPATIAL DESIGN
The typical house layout consists of a public areas in the center with semi private and private spaces on either side. The houses is divided into woman’s and mens quarters, allowing for privacy from one another.

ORNAMENTATION
An ornamental screen, is a prominent feature of Islamic architecture. As well as decorations and keep spaces cool, the shadows created by a jali weave intricate patterns through rooms and corridors.
The residential design was revisited to accommodate for both refugees and the locals. The new residential area will be used as serviced housing for temporary use which facilitates for all the necessities needed in a home (e.g. furniture and appliances). By allowing both the refugees and locals to occupy the residential area, the two user groups can have ongoing interaction on a daily basis.

The housing plans are also reviewed and considerations are made for cultural adaptations in the developed design phase. Figure 7.34 highlights key housing characteristics from regions in which refugees mostly originate from (south east Asia & Middle east). In respect to these findings, the following elements are considered for housing and residential complex arrangements.

- Separate men and woman communal spaces within the home such as lounge and dining.
- Using screens to provide privacy.
- Kitchen space facing backyard and communal spaces
- Flexible bedroom layout for shared accommodating for different uses.
- Courtyard area utilized for growing plants and vegetables.
Figure 7.34 (previous page): Comparison between key characteristic of south east Asian and middle eastern houses (2 main areas from which refugees originate from).

Figure 7.35: Series of drawings developing the residential area into housing clusters with consideration to circulation and open communal spaces.
PROGRAM ARRANGEMENT

139
The studio and 2 bedroom apartments along the west street front are tested and arranged at different angles to create a dynamic street front. The ground floor is open to the street and will be occupied as shared parking spaces.
The material palette for the residential area reflects the popular material choices such as weatherboards and roof tiles used in construction in the neighbourhood. Timber cladding is chosen as a prominent feature of the residential design due to its natural qualities which are known to have positive affects on users.
The models (fig 7.39) indicate 4 different levels of privacy through a solid to a porous screen. The same form is tested in the design for balcony spaces (fig. 40) in which the screens can slide to block or allow visibility into the space by overlapping and extending.

Figure 7.38: Residential material palette for design scheme
Figure 7.39: Models investigating privacy with the use of screens
Figure 7.40: Different arrangements for sliding screens in balcony areas
To establish the form for the Learning centre and Recreation centre, the two programs are developed in-respect to the 2 main axis on the site. The design explores relationship between the two different programs and ways in which they can physically function as one from the exterior yet carry out individual activities in the interior.
The materials selected for the commercial spaces reflect the material design scheme used for the residential area with the timber cladding as a common material throughout the whole design. Use of glass and concrete in the Learning and Recreation centre reflect the public and semi private nature of the different spaces through the opaque and transparent properties of the materials.

Figure 7.41: Design strategy for Learning and Recreation centre
Figure 7.42: Massing diagrams for Learning and Recreation centre
Figure 7.43: Commercial material palette for design scheme
OPTION 1 - VERTICAL AND HORIZONTAL ELEMENTS

OPTION 2

OPTION 3
Figure 7.44: Options exploring materials on developed form for the Learning and Recreation centre
To create a welcoming public environment, a water feature will be installed onto the front of the site. Water features are generally associated with public spaces and by incorporating water into the site in addition with landscaping, an ideal meeting and relaxation point in the urban fabric will be created for the local residents and wider community.

**OPTION 1**

- Allows direct view through to the centre of the site

**OPTION 2**

- Open green spaces along the sides creating a central focal point

**OPTION 3**
Figure 7.45: Water features in public spaces

Figure 7.46: Different landscaping options facing the main street front
The separation through the center provides a short thoroughfare, connecting the north-south ends of the site.

The site is split into three sections with the central interstitial space used as a multipurpose outdoor area mediating private and public areas on either sides.

A street connecting east-west ends of the site allows circulation from the existing residential zone to the commercial zone. The program placement is in respect to the new street and existing zoning.
The site is connected as a whole though private and public laneways and pedestrian routes varying in sizes to indicate its slow and fast pace use. All circulation paths connect onto the central interstitial space to promote its use.

Private green spaces overlook public green spaces to privatise the residential open areas through height differentiation. Large open space is present along the main street front for visual accessibility into the center of the site.

A mixture of private, semi private and public programs are provided to accommodate for the residents present on the site and the local community members.

Figure 7.47: Developed design summary progress diagrams
Studio Blocks
Shared facilities (Laundry, Entertainment Area)
3/4 Bedroom Blocks
Semi Private Green space
Residential Reception area

Shops/ Retail
Public Green space
Recreation Centre
Learning Centre
Parking
Playground
Leisure/Market area
Water feature

Figure 7.48: Masterplan- Ground floor on site
Situated on the boundary of the residential and commercial zone, the proposes design intent is to encourage social engagement between refugees and the locals through the different programs; aiming to bridge gap between the two user groups as well as the two zones. The design incorporates commercial spaces such as food/Retail spaces, Education centre, Recreation centre and a Residential Complex, designed to enhance the surrounding context and revitalise the area.

The residential and commercial design express opposing architectural intents. The residential design is more enclosed where as the Learning and Recreation centres are more permeable, indicating a privatised housing area versus a more public commercial spaces.

The design provides opportunity for refugees to familiarise themselves with the area before being shifts into independent housing in the region. By providing accommodation on site with the other facilities which are shared between the local residents and refugees, a sense of belonging is induced through its daily use. This will also allow them to build a strong foundation for living in the region.

Figure 7.48: Masterplan- First floor on site
RESIDENTIAL

2 BEDROOM APARTMENT

STUDIO APARTMENT

3 BEDROOM

Ground floor

First floor

Alternative layout

Scale 1:200 @ A4
The serviced housing development offers a range of warm comfortable apartments and terrace houses accommodating refugees and locals. The design provides the residents with efficient living conditions while encourages social and connection through shared community living spaces.

Studio and 2 bedroom apartments along with 3/4 bedroom terrace houses are flexible enough to accommodate up to 8 residents. The studios and 2 bedroom apartments have shared balconies and vertical circulation to promote interaction among the residents on each floor.

The 3 and 4 bedroom units are designed to adapt to the cultural preferences of the occupants by providing pliable spaces within some parts of the housing interior. Partition wall panels can be added in the 3 bedroom units to allow separation between the living and dining, catering for refugees with cultural practices where communal men and woman spaces are separate. The same wall can be removed to create a open plan living space.

The 4 bedroom units provide removable partition walls between bedrooms to create two smaller rooms occupied for different uses (e.g. prayer or studying room) or 1 large room for families with several children and require more space for resting.
Rooftop terrace shared among residents

Cluster 1

Cluster 2

LONGITUDINAL SECTION

3 bedroom units

Studio and 2 bedroom Apartments

CROSS SECTION

4 bedroom units
The residential complex is made up for 4 separate clusters of terrace houses and apartments, brought together through the walkways and shared spaces.

Clusters 1,3,4 are all 4 storey apartments along the west street front and interspersed 3/4 bedroom housing perpendicular to it. However, cluster 2 is made up of shops on the ground floor with 3/4 bedrooms houses on the floor above.

Ground floor of the apartment blocks consist of common carparks for residents in which some spaces are used as shared laundry space and communal living rooms.
All 3/4 bedroom units have their own private outdoor garden/balcony spaces as well as common shared courtyards in each cluster. 4 storey apartments along the street front shelter the communal courtyard areas offering safe enclosed spaces and providing privacy among the residents. Each row of 3/4 bedroom blocks have a roof top terrace space overlooking the commercial area which is also shared among the residents to promote interaction.

Windows and balconies all the apartments and houses have sliding screens which can overlapped to block visibility or can be extended to allow natural light and wind penetrate between the gaps.

By accommodating for private (balconies) semi private shared spaces (courtyards) occupants are given the spaces the interact with neighbours and build and sense of comfort before extending interaction with the wider community.
RESIDENTIAL/SHOPS

Ground floor

First floor

Second floor

Scale 1:200 @ A4
The retail spaces stretch along the residential and commercial areas create a smooth transition from one zone to another along the new street front. Ground floor premises have flexible internal layouts which can be utilised for different retail purposes. The larger floor areas aim to provide spaces for grocery stores and the smaller spaces are targeted towards cafe, dairy and takeaways.

Such facilities provide potential job opportunities for refugees allowing them to be self sufficient as well as gaining work experience in New Zealand, assisting them in entering the labour market and finding long-term employment.

Figure 7.55: Mixed use plans of housing and retail premises
Figure 7.56: Plans of the cluster of food and retails shops
KEY

1. Admin/Reception
2. Staff room
3. Classroom
4. Computer room
5. Common room
6. Library
7. Meeting room
8. Toilets
The Learning centre is a semi private space, used by both the refugees and the locals. The program within the centre provides adequate provision for education and training such as language and IT courses and support for children. The centre aims to work with both groups of users as they share knowledge and skills from one another under the same roof.

The Learning centre is situated in-between the two halls for the Recreation centre, dividing the play areas with a less active program of the Learning centre. The ground floor accommodates public programs such as the library and reception and semi private spaces such as computer rooms and classroom are on the floor above. The permeable design of the learning centre allows multiple access points from the street front and through the centre of the site.
The design of the Learning centre and Recreation centre works as one, distinguished by the different angles and circulation pathways. The ground floor library overlooks onto the green spaces, allowing people passing by to interact with the activity inside and vice versa. The triangle forms correspond to the gable roofs of the residential complex which is directly visible from the Learning centre; creating a visual relationship between the commercial and residential areas. The floor above maximise the use of natural light by having full height glazed wall facing north west.
The recreation centre plans are divided into two sections. A main gymnasium facing the main street front and a smaller hall near the back of the site. The main hall consists of the reception, Basketball court and changing rooms on the ground floor and a gym, cafe and small studios on the floor above. The arrangement of the 2 halls are to maximise the view into the hall from the two street fronts to demonstrate an active use of space, encouraging members of the public to occupy it.

The smaller hall accommodates for a stage and a kitchen so it can be used as a sports hall for badminton and fitness classes and other social events as well as servicing as a community hall.
Transparency around the perimeter of the hall allows the recreation centre to have a strong relationship between the outdoor and indoor active spaces.

The volume of the gymnasium rises through the two levels. Walls that separate these volumes from adjacent spaces are glazed to facilitate visual connection between the various programs within the building. These simultaneous views of multiple activities animating the interior. The life of the building and the energy of the place are palpable to the community within and outside the recreation space.
The variation in materials and design style along the west street front differentiates the two programs and public and semi public spaces. Transparency has become an architectural theme at many levels, creating an inviting and welcoming recreation space that is accessible and open to public view. The mass use of glazing allows visual access through the recreation centre from which the central open space can be seen, reinforcing the public nature of its program.

Figure 7.65: Longitudinal section through the centre of the site showing an elevation of Commercial area

Figure 7.66: Street perspective of the commercial area
The residential and commercial areas on the site are bridged by the central “heart” space to soften the threshold between housing, commercial facilities. The perimeter along the central space is used as a thoroughfare for people commuting from the north-south ends of the site.

The central core encourages meeting between the residential and the wider neighbourhood to support a strong connected community. During the weekdays, the space can be occupied as a outdoor breakout spaces by employees from surrounding businesses; a place to relax and enjoy lunch in a pleasant outdoor environment. The area came be transformed into a market space over the weekend to allow the refugees and locals to come together and exchange knowledge and culture by selling goods.

The community garden is a interactive space to promote engagement between locals and refugees through growing and harvesting fruits and vegetables. The produce gained from the community garden can be sold to locals during weekend market.

Figure 7.67: Perspective through the thoroughfare
Figure 7.68: Perspective through the interstitial space demonstrating how it can be used as a market space
Figure 7.69: Perspective through the community garden
The cross section through the residential complex and small recreation hall illustrates its relationship to the central multipurpose open space. The 3 and 4 bedroom houses can be seen elevated in height to maximise privacy from public areas.

Figure 7.70: Cross section through the commercial and residential area
FRONT ENTRANCE
To promote a welcoming public environment the south end of the site is open to the main street front and provides visual access through the center of the site. Landscaping, water feature and open leisure areas are designed to encourage participation in physical and social play, creating community cohesion and building social capital.

The passive public space is a place for gathering and socialising, increasing positive mental and social health benefits for individuals and the community while enhance the environmental qualities of the neighbourhood and revitalise the area.
DESIGN CRITIQUE

Strengths:

- Good connectivity of the design as a whole through circulation and coherence in the physical design

- Transition between the residential and commercial works well with the central unprogrammed space- social connector between refugees and community.

- Subtle features such as flexible spaces etc. in housing design accommodates for both refugees and locals

- Vibrant space drawing in community into the area
Social Integration

Sense of belonging
CONCLUSION & REFLECTION
Resettlement into a new country can be an intimidating experience for refugees. Although they aim to live a regular lifestyle, the new environment and factors such as social relationships with the community make it a challenge to build a sense of place in the host society. Being shifted into a society where the language and culture are very different from their own, refugees tend to experience social isolation and a sense of segregation from the rest of the community. This thesis has presented the potential role of architecture in assisting the integration process for refugees into the host communities. In response to the lack of social engagement that the refugees experience with the locals when resettling into cities in New Zealand, the thesis has addressed “How can I design a refugee resettlement centre to evoke a sense of social inclusion?”

Initially, the research consisted of evaluating the integration process in other countries and in New Zealand. It also attempted to identify areas that needed improvement and established the different programs for the design brief. The literature review further examined the importance in regards to the refugees sense of belonging, need for social integration and its connection to the built environment as key strategies for assisting with successful integration of refugees. The four case studies provided insights into how the strategies had been implemented in practice and identified strengths and weaknesses of various design schemes.

From this research, a set of design guidelines were developed to create a design brief as a solution to how architecture can assist with integration in the host society and provide a place for social engagement with the local community. The different programs were designed to be used by different age groups and by both the refugees and the community. The multiple programs also allow the site to be activated most hours of the day, revitalising the neighbourhood.

Design phase one; exploration and experimental stage explored a more intuitive process to address underlining concepts. Through modelling and drawing multiple iterations where generated which were further investigated to select the most appropriate design option.

Design phase two- preliminary design developed concepts from the previous chapter and on the masterplan as a whole and further expanding on each program individually.

The final design chapter for this thesis presented the developed design stage, elaborating on the preliminary design and re-evaluating the weaknesses. The final design illustrated a scheme which addresses the research question and objectives of this thesis and identified how architecture can bridge the settlement process for refugees into the host society while reducing the social gap between incoming refugees and community. The objectives of the thesis are addressed as follows:

Social integration: This was achieved through designing to encourage positive interaction while promoting social network between the refugees and locals. The various types and scale of interaction facilitated by the diverse programs allow both groups of users to participate in activities under the same roof. The design scheme employs strategies such as connectivity
with the surroundings to make the design more accessible from all directions. Planning techniques ensured spaces which encourage day to day encounters such as seeing and meeting others through the park and retail areas, allowing the users to interact through design.

**Sense of belonging:** The design creates a sense of belonging through the housing style as it offers communal and private spaces in which the refugees can build connections with the neighbouring residents. By facilitating a diverse range of housing types, the design will appeal to different family types allowing both refugees and locals to collaborate within the one scheme. The multiple activities on the site which are inclusive to different groups of users and programs benefit for both refugees and locals creating a sense of inclusion and acceptance for both groups of users as they share one space and build relationships through it. The housing allows the refugees to build a foundation in the region of resettlement before settling independently.

The thesis provides a practical design solution which negotiates between architecture and integration to create a design which acts as a medium to provides place for belonging and engagement between the two users. Both the design and research guidelines have a general application which can be adapted by other regions which refugees are dispersed to. By gaining a deeper understanding refugees needs and developing a appropriate design solution, this thesis contributes to the body of knowledge that illustrates the importance of architecture and the role it can play in meeting the social needs of refugees.
The initial research was conducted based on evidence published in news articles and online sources. The thesis could be further developed with participation from refugees who are currently in the process of resettling in New Zealand. Discussions with refugees could provide a stronger platform for the thesis as their opinion would directly influence the proposed design; critiquing each design stage to ensure that the final design fulfils their requirements. This process will directly inform the architectural outcome and develop in-respect to the feedback from the main occupant themselves.

The thesis has further design potential by investigating the threshold between the different cultural aspects of the refugees and the local community, expanding the research and design through a cultural perspective.
REFERENCES


LIST OF FIGURES
2 LITERATURE REVIEW

Figure 2.3: Existing versus proposed model for Refugee Resettlement in New Zealand

Figure 2.4: Comparison between generic refugees and New Zealand community

People:


Family:


Living:


Education & Language:

Image 2 Authored owned

Food:


Religion:

3 CASE STUDIES

Figure 3.1: Dallas Brooks Community School Exterior

Figure 3.2: Adult education/maternal and infant area

Figure 3.3: Early Learning centre

Figure 3.4: Ground floor plan

Figure 3.6: Front exterior of CEBRA’s children’s home

Figure 3.7: Back exterior of CEBRA's children’s home

Figure 3.8: Interior View from the “bonus space” (multi purpose)

Figure 3.9: Ground Floor plan

Figure 3.10: Development of building form

Mike Sinclair, Farmers Park, 2015, Arch daily, Web. 20. Apr. 2017,
http://www.archdaily.com/558903/farmers-park-hufft-projects

Figure 3.11: Exterior of apartment building
http://www.archdaily.com/558903/farmers-park-hufft-projects

Figure 3.12: Outdoor Market space
Figure 3.13: Indoor Market space
  Mike Sinclair, Farmers Park, 2015, Arch daily, Web. 20. Apr. 2017,
  http://www.archdaily.com/558903/farmers-park-hufft-projects

Figure 3.14: Groundfloor plan
  Mike Sinclair, Farmers Park, 2015, Arch daily, Web. 20. Apr. 2017,
  http://www.archdaily.com/558903/farmers-park-hufft-projects

Figure 3.16: Back entrance and facade backing onto public park

Figure 3.17: Childcare area
  http://architectureau.com/articles/surry-hills-library-and-1/#img=3

Figure 3.17: Library space

Figure 3.18: Ground floor plan

Figure 3.21: Shared greenspace area surrounded by apartments
  Lillyfield Housing Development, HBO EMTB, Web. 20. Apr. 2017,
  http://www.hboemtb.com/projects/single_project/lillyfield-housing-development

Figure 3.22: Circulation pathway within the residential complex
  Lillyfield Housing Development, HBO EMTB, Web. 20. Apr. 2017,
  http://www.hboemtb.com/projects/single_project/lillyfield-housing-development

Figure 3.23: Entrance into the Lillyfield Development
  Lillyfield Housing Development, HBO EMTB, Web. 20. Apr. 2017,
  http://www.hboemtb.com/projects/single_project/lillyfield-housing-development

Figure 3.24: Ground floor plan
  Lillyfield Housing Development, HBO EMTB, Web. 20. Apr. 2017,
  http://www.hboemtb.com/projects/single_project/lillyfield-housing-development

Figure 3.25: Street View of Residential development
  Courtesy of Proctor and Matthews Architects, Abode at Great Kneighton, Arch daily, Web. 20. Apr. 2017,

Figure 3.26: Circulation pathway within the residential complex
  Courtesy of Proctor and Matthews Architects, Abode at Great Kneighton, Arch daily, Web. 20. Apr. 2017,
Figure 3.27: Courtyard Area
Courtesy of Proctor and Matthews Architects, Abode at Great Kneighton, Arch daily, Web. 20. Apr. 2017,

Figure 3.28: Site plan
Courtesy of Proctor and Matthews Architects, Abode at Great Kneighton, Arch daily, Web. 20. Apr. 2017,

Figure 3.29: Shared green space
https://www.apartmentspecialists.co.nz/listings/5-beaumont-quarter-9-fisher-point-drive-2/

Figure 3.30: Circulation pathway within the residential complex
http://www.kellands.co.nz/property/view/
property-for-sale-auckland-city-freemans-bay-fisher-point-drive-28

Figure 3.31: Main Street view of Beaumont Quarter
http://www.aucklanddesignmanual.co.nz/project-type/buildings-and-sites/housing/
apartments/case-studies/beaumont-quarter

Figure 3.32: Site plan

7.1 DESIGN PHASE 2

Figure 7.34: Comparison between key characteristic of south east Asian and middle eastern houses

Image 1 Settlement Organisation:
http://www.traveladventures.org/continents/asia/rinchengang.html

http://www.stanouse.com/images%20Afghan/In%20KABUL/Life%20in%20Kabul/
pages/500%20Hillside%20Houses.html

Courtyard:
Image 1 Batesjenc, Architecture and Construction Bhutan style, Jenin Bhutan

http://sarahfane.blogspot.co.nz/

Roof:

197
Figure 7.45: Water features in public spaces

http://reseturban.co.nz/work/water-features/

Water in Public Spaces, Pinterest, Web. 20. Apr. 2017,