Back to society

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An explanatory document submitted in partial fulfillment of the requirements for the degree of;
Master of Architecture (professional).
Unitec Institute of Technology, New Zealand 2019

Word count - 17780
Fig 1: Mt Roskill and state houses (Image by author)
Fig-2 Houses in Roskill South (image by author)

Fig-3 Basketball players hooping in Turners Reserve (image by author)

Fig-4 Mount Roskill looking towards the CBD (image author unknown)
Abstract

Homelessness is an international crisis. The last time a global survey was attempted – by the United Nations in 2005 – an estimated 100 million people worldwide were homeless. Moreover, it was estimated that as many as 1.6 billion people lacked adequate housing. In New Zealand, the Ministry of Housing has identified there to be more than 41,000 homeless people in New Zealand and almost half of these (20,296) are in Auckland itself. Homelessness has devastating effects on people and communities. Furthermore, the suburb of Mt Roskill located on the Auckland city fringe, in particular has a significant number of homeless people. Whilst there is a community of homeless people, they are often isolated from society in general. Mt Roskill has around 61,000 residents 49 percent of whom were born overseas. Cultural diversity of the suburb is evident wherever you look. The design of a space that accommodates both the growing homeless population and functions as a meeting and workplace for the community is the primary objective of this research project. It is hoped that this architectural intervention will help integrate both the homeless population and the population of the wider community who are finding it hard to integrate into society, by allowing them to work together via a community garden and soup kitchen.

The investigation is comprised of four phases. The first focuses on establishing best practice through literature review and case studies. Phase two involves design research on the histories and current architectural responses to the problems at hand. The third phase focuses on site survey, selection and analysis. The first three phases establish a brief which provides the framework for the final design phase. The design outcome is a community centre with a soup kitchen. Accommodation for people who are transitionally homeless in Mt Roskill is also provided. The inclusion of a soup kitchen and community centre is intended to work as a catalyst to promote social interaction and operate as a means of reintegration for the homeless members back into society.

Fig-5 Homeless man begging (image author unknown)

Fig-6 Homeless sign (image author unknown)

Fig-7 Homeless man sleeping (image author unknown)
Acknowledgements

Firstly I would like to start by thanking my family for their continual support throughout my journey these past few years. I would also greatly like to thank all my peers that study with me, because of their reassurance and encouragement I was able to perform to the best I could and produce a piece of work that I am proud of.

To my supervisor, Lucia Melchiors, for your guidance, understanding and encouraging words of wisdom throughout the year for which I will be forever grateful.

Also to the Lord Jesus Christ, through him all things are possible.
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Project background

The last time a global survey was attempted – by the United Nations in 2005 – an estimated 100 million people worldwide were homeless. As many as 1.6 billion people lacked adequate housing.¹ New Zealand, with a population of 41,000 homeless, needs more homes immediately. Phil Twyford, the Minister for Housing and Development, says, “Our plan increases public housing by 6,400 homes over the next four years – 1,600 a year. This means that Budget 2018 exceeds our earlier commitment to build at least 1,000 state houses each year.”² In Auckland alone “over the next 30 years, Auckland’s population is expected to increase by up to a million people, which brings both opportunities and challenges. Auckland has to ensure an adequate supply of housing to meet this demand or face growing housing shortages, continued soaring house prices and a fall in home ownership, growing unaffordable rents prices, and increased homelessness”.³

Labour’s KiwiBuild programme will build 100,000 high-quality, affordable homes over 10 years, with 50 percent of them in Auckland, but it is questionable whether this will provide enough homes to house the many waiting for a place to live.⁴

Mount Roskill, over the past 30 years a middle-class white suburb, has now changed into one of Auckland’s, if not New Zealand’s, most diverse suburbs. “Nearly 60 per cent of Mt Roskill residents were born overseas, the highest proportion in New Zealand.”⁵ “The latest Census confirms it is probably the most diverse suburb, a melting pot of races from Africa, the Middle East, India, China, Korea, the Philippines, Samoa, Tonga and beyond. More than 60 languages are spoken here.”⁶ The type of people who live in the suburb vary vastly and are from many different walks of life. It is common for immigrants to have difficulty integrating into a new society, and this is evident in Mt Roskill, with groups of people struggling to integrate with one another and choosing to stay secluded and closed off.

Statistics show that over 50 percent of those born overseas have been in the country for less than 10 years and, along with the fact that over 80 percent of the people spoke a different language, shows evidence of the differences in people and the struggle to integrate into New Zealand society easily. “There is poverty here, social isolation, domestic violence and property crime which locals say stems from the failure of some migrants to obtain jobs.”

The poverty gap is only being stretched further due to increasing house prices, with the average house price in Mt Roskill being over $1million already. Homelessness has always been somewhat of a problem, with most homeless people coming from various ethnic groups. Integration into society, along with housing for the homeless (mainly migrant) population, is a problem in Mt Roskill which should be addressed.

“In 2010/11, people living in the most deprived areas were 2.7 times more likely to be seen by mental health and addiction services than people in the least deprived areas,” meaning that the communities of state homes in Mt Roskill being demolished right now impact greatly on the mental health of those affected. The Eyes of the Skin by Juhanni Pallasama describes the phenomenology of the space, and the feelings that buildings bring out of us. These homeless people need more than just a roof above their heads, rather they need to have a feeling of refuge, safety, and confidence that they can go back to being contributing members of society. “The ultimate meaning of any building is beyond architecture; it directs our consciousness back to the world and towards our own sense of self and being. Significant architecture makes us experience ourselves as complete, embodied and spiritual beings. In fact, this is the great function of all meaningful art.”

Concepts of social inclusion and social cohesion help with the integration of immigrant people. “Social inclusion refers to migrants’ inclusion and full economic, social, cultural and political participation into host communities.” Integrating these people by encouraging immigrant people to talk about and showcase their cultures along with their problems is an effective strategy for integrating the new members of Auckland and Mt Roskill into society. Mount Roskill is classified as a very diverse area but it fails to represent its diversity in a positive way, a way in which everyone can come together to appreciate their cultures and not feel alienated by them. Food is always an appropriate way to help people come together and open up. In the same way the transitionally homeless can be helped by allowing integration into society the same way.

**Footnotes:**


Project outline

This project site is located at 19 May Road, Mt Roskill, Auckland, a central Auckland suburb known for its state housing and large ethnic population. Mt Roskill is the most diverse suburb in New Zealand, with over 50 percent of its inhabitants being from overseas.\(^{11}\) There is an overwhelmingly large number of people who encounter problems integrating into New Zealand culture, and who feel socially isolated from people in the community due to the major cultural shift, their age and language restrictions.

Over the next 10-15 years approximately 10,000 new homes are being built in the Mt Roskill area.\(^{12}\) Many state homes are being demolished in order for more to be built on the land on which they once stood. With the housing shortage already causing a lot of problems in New Zealand, the demolition of these state houses will only result in leaving more people homeless. A housing problem within Auckland and New Zealand already exists, with over 40,000 people being homeless and over half of them being in Auckland itself.

To maximise integration of socially isolated people into New Zealand society, while encouraging the spread of information within the community, a space where this can happen needs to be available. Also, a homeless shelter to cater for the people in the area who are homeless needs to be established on site. Having a community activity present on the site allows both sets of people to come together and use the space, allowing easier integration and interactions between these two sets of people.

\(^{12}\) Home » Mt Roskill, accessed October 1, 2019, https://mtroskilldevelopment.co.nz/
Aims and objectives

This project aims to

- Provide an awareness about the current and historical context of homelessness and community centres around the world and locally. Allowing for the understanding of the methodology behind their design and systems and their influence on humans today.

- Provide a deep understanding of biophilia and biophilic design processes used within architecture and how it in return has an impact on the users of the said built environment.

- Demonstrate methods of biophilic design in architecture and identify how the human nature experience is made better by the use and understanding of biophilic design methodology. With the aspiration to facilitate experiential learning and promote health and well-being in the building environment.

- Designing a homeless shelter, community centre with community garden and soup kitchen facilities incorporated into it in a Mt Roskill setting to help create a space within the community that is different to other community and homeless shelter spaces around the country.

- Successfully integrate into the surrounding context to enhance the visitors and users sense of belonging and feeling of inclusiveness, along with fostering a feeling of peace and comfort within the building space.

Fig-12 View of Mt Roskill mountain (image author unknown)  
Fig-13 Homeless man sleeping on pavement (image by Andy Collins / Daily Mirror)
**Research question**

How can homelessness and social isolation be helped through community architecture in Mt Roskill?
The project at hand is separated into two main design areas. The first is to create a community centre in the chosen site so that people of the community have a space to come and use and integrate with one another. Integrating a soup kitchen and a community garden into the community centre space means that the people have a reason to come and use the space and integrate with one another. Lastly the homeless shelter will be incorporated and built on site. The shelter will focus on the transitionally homeless sector because this is the most common type of homelessness we are faced with. Creating a space so that single people that are transitionally homeless along with families that are also transitionally homeless is necessary so that more people and different groups of people can be catered for. Using nature widely throughout the design will create a green space for the people of the wider community to use also. Creating a green node in the area first then linking that with the wider context of the city and beyond.

The project will focus on the integration of transitional homeless people and ethnically diverse people from Mt Roskill using biophilic design principles and the use of community garden and natural spaces to help both sets of people integrate with one another and the wider community. A community centre and a transitional homeless housing scheme will be developed on the site. This work will show that there is a tangible healing benefit to the inclusion of natural elements in community architecture.
Methods

This project has been separated into three main sections when examined and explored. The first section is to do with the research about the three main topics, being homelessness, community design and biophilia. The second part is to do with biophilia, understanding biophilia and the biophilic building principles when it comes to designing biophilic buildings and understanding how humans respond to the biophilic environment. The second part of the design is research about the site – both in context and in the examination of the physical site also. Understanding how the local area operates and how the site is significant in location. The final part of the design is the design development and process of getting to the final product. A research by design methodology was also used throughout the research process and the design process.

Followed by analyses of local and global precedents on both these topics also. These have both been discussed in full and analysed deeply so that a proper understanding about the problems and methodology regarding designing the buildings can be properly understood.

The necessity of using biophilic design process and the mass benefits that it poses on us as humans. The actual principles themselves and how they can be explored in architecture and how architecture and biophilic design can in return benefit the built environment.

Thirdly the site was examined, but split into two main ideas. One being the context in which it sits, the suburb, the facts and history of the suburb and the reasoning for having the building in that area. The second is to do with the physical site itself, the natural aspects of the site, the history of the site and the importance in location of the site and how one should examine the building and to design accordingly due to the site implications. The programme was established once the site location and state of knowledge became apparent. Considering the state of knowledge at hand the design was then formally initiated. Taking the site into consideration and the programme some ground rules were established. Natural aspects were then explored in an architectural sense to provide the design intent of a biophilic environment within the programme and sites constraints and then drawing on contextual influences – social, historical, cultural, environmental, movement and surroundings. Design ideas were then explored and iterated. Further research was then necessary on biophilic design and the details about designing particular elements within biophilic design. This further research then led to more iterations and considerations until the final design was achieved. Different methods were used in the process such as using diagrams, sketches, modelling (mass, form and spatial).
State of knowledge

Main texts and main precedents.

1) Eyes of the skin – Juhanni Pallasama – In this case particularly the people being affected are both the transitional homeless community and the ethnic population of Mt Roskill. When focusing on the homeless population it is important to not just focus on only the building side of the architecture but also the deeper meaning behind creating spaces, the phenomenology of the space, and the feelings that buildings bring out of us. These particular homeless people need to feel more than just a roof above their heads but rather a feeling of refuge, safety and confidence that they can go back to being contributing members of society. “The ultimate meaning of any building is beyond architecture; it directs our consciousness back to the world and towards our own sense of self and being. Significant architecture makes us experience ourselves as complete embodied and spiritual being. In fact, this is the great function of all meaningful art”. 13

2) Biophilic design – the theory, science, and practise of bringing buildings to life / Stephen R. Kellert, Judith H. Heerwagen, Martin L. Mador

The book being discussed is about understanding biophilic design. It offers a different perspective on how we can design buildings in this time by understanding that there are positives in experiencing natural systems and processes within our buildings and built environments. It shows how there are major benefits to human health, performance and well-being by designing with these principles in mind. It is about trying to create a seamless integration within nature and buildings rather than keeping them separate from one another – these relationships are essential to human existence and should be considered normal rather than something special within the constructed landscapes. 14


Precedents –

1) Auckland city mission redevelopment / Stevens Lawson Architects – The new Auckland city mission building that is getting demolished and a new building put up in its place is a good comparison in terms of programme. It is both a community centre along with a homeless housing shelter in the CBD. It contains 40 apartments, a medical centre, pharmacy, detox units and also a community centre with community activity rooms.15

2) Walumba Elders centre / Iredale Pederson Hook Architects – Warmun Australia – Located in a remote part of Australia it was necessary that they created a building that represented the community well. Is a community centre along with old age home that contains living quarters and eating quarters. Celebration and meeting spaces. Large courtyard space to have ceremonial gatherings and functions. It is also raised on stilts because the area is a flood prone area and the site has encountered the problem before. My site is also located on a flood prone zone, so both the programme and also the physical building methods both relate.16

3) Centre village Canada
Centre Village in Winnipeg Canada was designed for the less privileged members of the community. It utilizes its design to help bring the neighbourhood back to life and encourage involvement within the community. Initially a six house lot, it now comprises of 25 micro dwellings among six three storey blocks. It was designed around two main public spaces, a courtyard and a through-street. The street helps connect two different roads parallel to one another and increases pedestrian and traffic throughout the community allowing for more interactions with the residents and the surrounding community.17


4) Khoo Teck Puat Hospital – Singapore
Khoo Teck Puat hospital – Is a hospital building located in Singapore. It was designed using biophilic design in mind and encompasses these design strategies in order to keep the users of this building happy. There is a central courtyard with the building being shaped in a V shape acting as the main green zone in the hospital grounds. It also shares a view and walkway with a pond located directly next to it. Every level on the building site has been extensively landscaped and laid out so that the patients on each level could be as close to and involved with nature as much as possible, local plant life was incorporated throughout the design and also on the multiple garden roofs on site. It was intended to be a “blue-green” building with the inclusion of the pond and greenery on site continuously winning major design awards within Singapore and beyond.18

5) Ribeirao Preto Residence / Brazil
Located in Ribeirao Preto Brazil this residential building was created for a local family. Situated on a slope, its L shape creates a courtyard on the top level which is supposed to act as the public level where the entertaining is done. The lower level is the intimate sleeping and family rooms. A predominantly concrete and timber building with green spaces all throughout the building. Timber cladding is seen throughout the building as it diffuses light and creates interesting spaces in between the large glazing. Seamlessly connecting the outside space to the inside through the use of materiality biophilic designs were used as the main driver behind this design.19

History

Fig-17 Historical painting of homeless shelter (image author unknown)
History of homelessness

There have been problems around providing adequate housing for humans for a very long time. Early human settlements allowed for everyone to be housed as the homes themselves had to be built by the ones that would inhabit it. Once cities started to be formed and the population density increased within the cities, homelessness became more of a predominant problem. People coming into the cities looking for work but not having enough money to buy a house, being from a poorer class system or different cultural backgrounds, or simply people with alcohol abuse problems were the first people to be ‘homeless’. They were often referred to as ‘vagrants’ which meant “a person who wanders about idly and has no permanent home or employment; vagabond; tramp”.

It is believed that early homelessness however became a common trend and a recognized problem in England after the ‘Peasants’ Revolt’ in 1381 – spurred by severe economic problems many of the people displaced from the rebellion were left homeless.

England tried to introduce housing for the homeless by converting Bridewell Palace, one of many palaces owned by King Henry VIII became a generic for prisons for the punishment of vagrants and fallen women. It was intended that the shelter be used as a temporary living quarters for people while they learnt a skill and could progress onwards with their life. In later years the problem did not get any better and the government dealt with the excess homeless population by sending them either to jail or abroad to colonies they had established in America. Within America the actual term ‘homelessness’ came to fruition after people – both colonial and the native Indian people were left without homes after fighting one another and leaving many families displaced. All this time the homeless were regarded as a problem and people that deserved to be punished for reasons they could not control.

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Homelessness in New Zealand can be traced back all the way to the times of early European settlement. Early homelessness was associated with the exploitation of the Maori people and their land. Maori people all lived in a society which was centred on communal living and no one in that society was homeless. “Homelessness is endemic to experiences of colonialism, not only at the personal, but also at the hapu (subtribe), iwi (tribe), and national level where many Māori have experienced over 150 years of being rendered out of place in their haukainga (ancestral homelands). We consider colonialism and societal developments that have impacted whānau (extended family) economically, culturally, and socially, contributing to high rates of homelessness among Māori.”

“The emptying of rural tribal homelands through the flooding of Māori people to towns and cities, which began in the 1930s, has been described as rapid. Metge (1964) records that, in 1936, about 13 percent of the Māori population lived in urban areas. In 1951 the percentage rose to 23 percent. By 1981, 80 percent of Māori were living in urban regions. Along with the socio-economic marginalization brought upon Māori by continued colonization, such migrations have contributed to the overrepresentation of Māori among homeless populations in urban centres. Although structural intrusions have clearly posed challenges to Māori wellness, it is crucial to note that Māori are not passive in the face of socio-political upheavals. Māori are resilient and adaptive.”

Homelessness in New Zealand is not just defined as people that live on the streets. Although New Zealand may not experience high levels of homelessness on the street comparatively to what one might encounter in other places around the world. There are large amounts of people living in inadequate living situations, inadequate housing and approaching agencies with housing issues. “Absolute [primary] homelessness represents only the tip of the iceberg … there are many thousands more who represent the incipient homeless … the plight of the currently homeless is desperate, but just around the corner is a potentially vast population of ill-housed people, many of whom are little more than one additional domestic crisis away from being on the streets”.


There are three main types of homelessness in New Zealand as defined by ‘The Peoples Project’ – chronically, episodically and transitionally homeless. -Chronically homeless - people are referred to as people who have extended periods of stay – people that have been on the street for more than a year by choice.
-Episodically homeless – these are people who make up 10-15% of the homeless population. These people carry a significant debt burden as a result of poor financial skills and typically rely on a benefit as a primary source of income. Addiction, trauma and debt are the major reasons for people in this category to become homeless.
-The transitionally homeless- make up a staggering 80 per cent of the homeless population. Redundancy, relationship or family breakdowns and health issues are just some of the reasons why people in this group become homeless – if only for a short period of time. Families dominates this group and, for some, this could be their first encounter with social services.27

Homeless shelter design

Throughout history, the vagrants that were considered homeless and unfit to be in society were often imprisoned when they were found to be homeless. By the 1850s, lodging rooms for vagrants located in police stations served as the major shelter system, and most major cities reported increasing number of vagabonds. Once the negative connotations about vagrants changed into those of people needing help more public buildings started to open up as buildings willing to take in homeless people. Mainly churches were the ones open to the homeless often providing them with meals and a place to stay for the night.

In 1974 Kip Tiernan after learning that the homeless women of Boston had no place to go she founded the first homeless shelter for women in the country. She learnt that they also needed free health-care too so she helped fund Boston Healthcare for the homeless programme and also Greater Boston Food Bank. Homeless shelters were only introduced to the public formally in England 1982 in the form of a makeshift shelter in the basement of the First Congregational Church in Stamford. With the growing concern for homelessness in the Stamford area. A warm place to stay compared to the freezing cold outside attracted many homeless people into the church space and this was the first recorded formal ‘homeless shelter’. The first constructed building that was intended to be used as a homeless shelter was the Pacific House built on 597 Pacific Street after the board of directors successfully raised over two million to construct the building.

Community centres have been around for a long time. They did not officially come into society under the title of ‘community centre’ until the early 1900’s but throughout history there have been many public buildings being used as community centres facilitating and fostering community engagement and activity. Early churches were used as community centres that helped in the basing of early social organisations and with the development of adult education.

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2. Lopez,
Community centre design

Social activists in America pushed the ideas of using schools located in the inner-city areas of fast-growing cities as public buildings. These buildings were mainly used and open to the public as a means of educating the older population on general public matters. The rich and upper-class members of society used these facilities initially as a means of progressing their status in society by holding meetings and allowing for social gain.

“While there was significant disquiet amongst politicians and public officials about social and community centers (especially around the extent to which they might develop into an alternative political voice and focus) the idea took off. By 1918-19 there were community centers in 107 cities (the name changed from social to community centers around 1915 and especially after the establishment of the National Community Center Association in 1916). By 1923-24 there were centers in 240 cities and by 1930 New York City alone had nearly 500 centers with a regular attendance of more than four million.”

In England the people had a different view of what community centres. With the churches involvement and usage of their own buildings as stand in community centres the English community had a more holistic view and approach to community centre design and the need for community buildings. The ‘settlement movement’ which was the idea was one expression of the far wider Christian-Socialist conception of co-operation between the classes.

The need for integration between the class system and inclusion of all people of the public to come and learn from one another and grow together was an important idea in the formation and usage of community centre. ‘In all of them great stress was also laid on the social side of the work. The men’s and women’s institutes aimed at a club atmosphere, and student societies and social activities were regarded as essential to the success of the work’.

The community centres were created so that people that were unemployed could work together and organise together for the benefit of their local community. Some of the early works these people were involved in was tending to the community gardens and repairing children’s footwear with it later progressing into handicraft work. Village halls in rural areas also became important as they allowed for adult education, promoting women’s self-organisation: and their major contribution to the war by providing knitting, fruit bottling and rural craft work after the war had ceased.

New Zealand is significant in the way they foster character within the community because of the two different cultural groups coexisting in the same place. Pre-colonisation the Maori people had a model of society that was communal, holistic and held a sacred relationship with the natural world. With the arrivals of the first European settlers in New Zealand they brought with them charitable models of care and support for the poor and vulnerable of the community. Community development practise has been continually influenced by political and social contexts.

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Established in 1920 the City Mission forms an important part of the city's social fabric. Stevens Lawson Architects were commissioned for the redevelopment of their old building. The services this new building will provide are accommodation for 80 tenants on site, 40 of whom will be members selected from the social housing register. A medical centre, pharmacy, assessment rooms and medical and social detox units with 30 beds will also be in the building. The building also acts as a community building and soup kitchen with a functioning kitchen and cafeteria area and community activity rooms for people of the public to use. The courtyard space outside adjacent to the main face of the building looks out onto the St Matthews in the City Church's car parking. Although there is a large Wilson car park just at the back of the site, the front side has potential to be used as a public gathering space. The main entrance of the building is the entry facing the courtyard space. On the ground level of the building interior there are recreation amenities along with the public commercial stores and the staff quarters to manage who comes in and out of the building. The recreational and commercial spaces are right next to one another to encourage the interaction between public and the residents of the building. The layout is scattered with the amenities all throughout the building on the bottom floor and the levels above however follow a rule with the public and circulation spaces in the centre with the housing being on both ends of the building.
• This precedent analysis was used to identify the programme of the precedent and how that programme can fit into the design of this project as they are both very similar in terms of what they are used as. Community centre and homeless accommodation and soup kitchen.

• The mixture of the public and private spaces to encourage the interaction between the people was learnt from this. All the spaces are spread out and arranged in a random (or its made to seem) order in order to foster and encourage the different types of people using the building to actively engage with one another.

• The use of commercial amenities to gain an income. There is a soup kitchen that is free but also can be paid for. There is also commercial stores and office spaces upstairs that can be rented out in order to gain some sort of income.

• The circulation of the space. There are multiple entrances form all sides of the building creating connections to all sides of the street. This building is located on a site with street on all four sides, so the way it interacts with the street front was taken into account. Entrances from the north and south face are for the commercial amenities. Whereas the main entry from the west is the entrance for the resident community and those needing to use the soup kitchen.

• How the site engages with its surrounding buildings? This site does not particularly utilise the surrounding context to its benefit as although there is a large open area outside the main entry the space is used as a carpark for the church opposite. There is potential for the space to be used as outdoor courtyard space.
Centre Village in Winnipeg Canada was designed for the less privileged members of the community. It utilizes design to help bring the neighbourhood back to life and encourage involvement within the community. Initially a six house lot, it now comprises of 25 micro dwellings among six three storey blocks. It was designed around two main public spaces, a courtyard and a through-street. The street helps connect two different roads parallel to one another and increases pedestrian and traffic throughout the community allowing for more interactions with the residents and the surrounding community.

Built for underprivileged families, Centre Village Housing in Winnipeg Canada utilizes design to help revive and revitalize a neighbourhood in dire need of some character and pride for its location by inspiring community interaction. Previously on site there stood six houses but now that has been upgraded to accommodate 25 micro units. Built in modular fashion they span over three storeys in some parts and vary in size from single bedroom to three bedroom units. They also include public amenities such as a grocery store so not only people that live in the residence use the space.

It is also arranged to define two main spaces a through-street and a courtyard space. The courtyard space is a more private space with most of the houses situated around the courtyard to create a more child-friendly and safe space. The through-street connects two streets either side of the site and acts as a connection space encouraging people to use and interact with the space also.  

• Programme was also analysed with this precedent. The incorporation of public amenities and residential.
• There is a through-street that connects both the roads on either side of the site to encourage public use and the interaction between the people of the wider community and the residents.
• The zoning of the site, using the through-street area as a public zone and the court-yard area as a private zone for the use of the residents and children living within these confines.
• Modular housing and the use of courtyard spaces to encourage more human interaction.
• How to encourage through the use of architecture, increased usage by the community members.

Fig-34 Site plan of Centre Village showing access ways and courtyard space (image by author)
Walumba Elders Centre/ WA Australia – Iredale Pedersen Hook Architects

Built for the people of the community of Warmun in Western Australia after a flood destroyed the old Walumba Old Aged Care centre. The architects designed a new building working closely with the elders of the community. It was to be located close to the school and town centre so that they can continue to resume their role as educators and cultural leaders. It serves as the home for the residents and staff who have a range of needs for living, it provides a common dining and commercial kitchen for the residents and a ‘meals-on-wheels’ service, a laundry a common dining and activity area that is used as a central meeting point for the areas of the community, gender specific private activity areas for gender specific cultural activities. There is a common area with a fire pit that allows for the cooking of bush food.

The form of the building responds to the dramatic landscape of Warmun- the two wings of the building create men’s’ and women’s’ spaces while the “beachhead” of the entry and common activity area anchors the building to the land. Staircases and ramps link the main level of the facility to the ground. 34

The layout of the spaces was analysed and how they were separated between the different groups of people using the site. The male, female and staff quarters are all put in different areas.

The circulation of foot traffic around the site, where the entries. There are entries from the front and the back end of site. The parking is located at the back of site and that’s where the staff quarters and admin blocks are. Also how the placement of the admin areas and how they allow a view into all of the building spaces.

Courtyard space being a main area, just as important as the building itself and the use of the courtyard – the courtyard is used as a ceremonial space and teaching space for the elders of the community to pass on knowledge to other members. The building is located on either side of the courtyard closing off the space and creating a sense of safety and security.

Streets run along both edges of the building on the north and south – entries with cars are from both sides of the building and the carpark is in the middle.

Green areas on the outer edges and the courtyard spaces create spaces for people to come and use.

The form of the building roof to follow the mountain scape in the surrounding area. Also referencing the buildings in the site with white roofs and flat spaces.

Flood zone area so it is raised above to ground so it never happens again.
Biophilic design
Biophilia

Biophilia is the inherent human inclination to affiliate with nature and other forms of life. Nature provides the physiological and psychological effects that allow the ability for extended learning and growth, meaning that nature is essential for the growth of people.

Biophilia was coined by the philosopher Erich Fromm in 1964, meaning ‘the passionate love of life and all that is alive’. It was later made famous by American conservationist Edward O Wilson in 1984 who insisted that humans possess an innate need to connect with nature and that their lives are greatly improved with nature involved in it. It is called for especially in urban environments where there is a divide between humans and nature. A new style of design that incorporates the use of nature into the things we create has sprung up in recent years.

“Biophilia has been linked with the human brain and human emotions. The human mind has evolved to recognize and seek out beneficial environments, living organisms, and natural processes that sustain life. Similarly, biophilia potentially enhances development of self, among many other physical and psychological benefits. The biophilia hypothesis stresses that the connection between humans and nature is a biological predisposition through evolution. By this definition, nature is beneficial to humans because of human’s original upbringing in natural (as opposed to manmade) environments. Biophilia explores the connection between humans and their natural environment. This exploration correlates with human ecosystem models, which link human social processes and natural resources within an ecosystem.”


Nature deficit

There have been major causes between nature and us as humans as we are living in this technologically growing world. The lack of natural affinity in our lives contributes to physical, psychological and spiritual problems. All people need nature in their lives or the sensory problems that we as humans are experiencing will only continue to get worse. It is essential to close the gap as much as we can between humans and nature. We all as humans require nature to help us to relax our minds, keep us at peace, learn and help us to evaluate ourselves. For personal growth and ease of mind nature is compulsory.

Green mind theory

The green mind theory shows that nature fosters physical, psychological and spiritual growth and well-being. It tries to link both the body and mind together. Environments shape bodies, brains, minds; minds change body behaviours that shape the external environment.

The brain can be separated into two parts, the top half of the brain, and the bottom half of the brain. The top half of the brain is slower, voluntary, the main driving force behind learning and a driver for rest. The bottom half of the brain is fast, involuntary and impulsive. The presence of nature helps both of the parts of the brain to function more cohesively and induces a state of calm and equilibrium within it. Without natural interactions the bottom half of the brain is used more.  

Throughout history, nature has been a huge

37 6 Pretty, Rogerson, and Barton, “Green Mind Theory.”
influence on design and design techniques. Some examples of this exploration include:

- Greek and Roman columns were created in a Corinthian style to mimic trees that grew up and supported structures. They also incorporated plant life onto the surfaces of their temples and columns.  

- The hanging gardens of Babylon were created by King Nebuchadnezzar for his wife Queen Amytis who deeply missed her homeland which was covered in green hills. It was a tiered pyramid structure that were solely only for ornamental and aesthetic purposes. They were created so people could come and use the gardens and served as a large green node in the city of Babylon.  

- The Vitruvian man is a geometric drawing by Leonardo Da Vinci of a man who’s proportions were determined by natures rules and interconnectedness through geometry.

- The golden ratio is a ratio between two elements that approximately equate to 1:0.618 which creates an aesthetic that is desirable in design. Throughout nature this exact numerical ratio can be seen aesthetically within natural forms, such as sea shells, and in architecture such as the Parthenon.

- The Fibonacci sequence which is a numerical sequence that shows that each number is the sum of the previous two. The golden ratio is closely related to it as beyond the 15th number in the sequence the ratio between the numbers is that of the golden ratio. The sequence can also be seen abundantly throughout nature by observing flower petals and also by examining the human body composition. It represents rhythm and harmony amongst nature.

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Biophilic design can be organised into three main categories – Nature in the space, natural analogues and nature of the space. These three main categories help us to understand and utilize the natural environment when designing buildings that incorporate biophilic design.

Nature in the Space – This is to do with the direct and physical presence of nature in the space. Including plant life, water, animals, breezes, scents and other natural elements. Meaningful and direct connections to nature are what helps to create a strong natural biophilic environment.\(^{42}\)

1- Visual connection with nature – A view towards elements of nature.

2- Non-visual connection to nature – Auditory, haptic, olfactory or gustatory stimuli that create a positive reference to nature.

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3- Non-rhythmic sensory stimuli – ephemeral connections with nature

4- Thermal and airflow variability – Subtle changes in air temperature, airflow across the skin.

5- Presence of water – Enhancing the experience of a place through seeing hearing or touching water

Fig-47 showing non-rhythmic sensory stimuli (image by author)  
Fig-48 showing thermal airflow (image by author)  
Fig-49 showing presence of water (image by author)
6- Dynamic or diffused light – Varying intensities of light and shadow over time to mimic natural processes.

7- Connection with natural systems – Seasonal and temporal changes characteristics of a healthy ecosystem.
Natural analogues

1- Symbolic references to contoured, patterned, textured or numerical arrangement that persist in nature.

2- Material connection with nature — Material and elements from nature that reflect the local ecology or geology of the place.

3- Complexity — sensory information that responds to spatial hierarchies within nature.

Fig-52 showing symbolic references (image by author)

Fig-53 showing material connection (image by author)

Fig-54 showing natural order (image by author)

Nature of the space

Nature of the space – Nature of the space is to do with the spatial configurations in nature. This includes our innate and learned desire to be able to see beyond the immediate surroundings, obscured views, revelatory moments, fear and phobia inducing activities when they include a trusted element of safety.¹⁴

1- Prospect – an unobstructed view over a distance for surveillance.

2- Refuge – A place for withdrawal from environment conditions or the main flow of activity, to create a sense of safety for the user.

3- Mystery – The promise of more information, achieved through partially obscured views or other sensory devices.

Fig-55 showing unobsured views (image by author)

Fig-56 showing refuge (image by author)

Fig-57 Showing mystery in architecture (image by author)

4- Risk/peril. An identifiable threat coupled with a reliable safeguard.

Fig-58 showing risk taking (image by author)
Psychological health and well-being

Our physical comfort, aural, respiratory and day to day lives are greatly encompassed by physiological responses. The benefits of continued connection with nature include relaxation of muscles, as well as lowering blood pressure and a decrease of hormones within the blood stream.

The physiological system needs to be tested regularly, but only enough for the body to remain resilient and adaptive. Physiological responses to environmental stressors can be buffered through design, allowing for the restoration of bodily resources before system damage occurs.45

Architecture has the power to break barriers down and allow for people of all ages, races, cultures and backgrounds to come together and use the space. Biophilic design principles only help within architecture as they create a stronger sense of learning and growth while creating a natural space for all the users to enjoy. It can also act as a green node within the area and cater to the ever changing greening of cityscapes.

Khoo Teck Puat hospital – Is a hospital building located in Singapore. It was designed using biophilic design in mind and encompasses these design strategies in order to keep the users of this building happy.

Following the ex-CEO’s wish that the design of the hospital ‘lowers one’s blood pressure when he enters the grounds’ the hospital helps to do so by the incorporation of nature. It should:

• Help patients forget their pain and improve their rate of recovery by immersing them in a natural healing environment.
• Create an invigorating park-like ambiance for Caregivers and the general public.
• Enhance views and access to nature to create a conducive working environment for staff.

It is shaped in a V design with the central opening area as a central courtyard. In the centre is a pond and open area that people can use. Designed to be forest like, water features with aquatic species and plants that bring in local wildlife. The greenery extended from the courtyard all the way up to the roof of the building creating a sense that the whole building encompassed nature within it.

The pond next to the hospital was later incorporated into the design of the grounds and the landscape. They created a park spaces around the periphery of the pond so people could use it more and it became an addition to the landscape and grounds that the hospital is on. The goal was to create a building that allowed for patients to access natural light, cooling breezes and views without risk of solar gain.

To suit the local climate, indigenous tropical plants were chosen for ease of maintenance. By providing host plants and various habitats within the hospital grounds, the hospital becomes part of the larger ecosystem encompassing various green patches throughout the north of Singapore.

To make the hospital a “biophilic environment”, every available surface had to be maximized for the creation of therapeutic green spaces. Every level on the building site has been extensively landscaped and laid out so that the patients on each level could be as close to and involved with nature as much as possible. There are terraced gardens also on each level that patients and caregivers can fuel their curiosities as they weave through and around each level and all gardens. Private niches and alcoves are allotted throughout the building for recluse and private spaces.
There is a roof garden also on every level, that is run by members of the local neighbourhood. The garden is a source of organic produce for the kitchen within the hospital and also acts as an educational opportunity for the people that visit the hospital.

Recovery was not the only driver in this project as it also serves as a community-oriented space where local community groups and members can attend public lectures, exhibitions and learning programmes organised by the hospital. There are also commercial spaces within the hospital focused on healthy living. Students seeking a place that is both stimulating and calming have been using the space more frequently recently. Khoo Teck Puat Hospital has received many awards and much acclamation for its biophilic design, beauty, self-reported wellbeing, user awareness and proximity to nature. When surveyed many people in the area regarded it not only as a hospital but also as a community hub. 15% of the people using the building come for purely recreational activities and enforces people and patients to interconnect with one another. It has a high number of casual visitors the most of any hospital in Singapore and consistently wins the Ministry of Health’s public awards.47

• The layout of the building and how they have separated each tower into its own space. There is a connection via the circulation routes connecting all the three spaces with one another.
• Incorporates as many biophilic design principles into the design as possible, green roofs, courtyard spaces, a pond on site, local flora and fauna and refuge spaces.
• Creates a green-blue zone with the incorporation of greenery and water in one area.
• Circulation all around the building via the use of corridors and walkways.
• Multi-level greenery and spaces.
• Creates a space where the public from the community can come and also be involved with the building – Khoo Teck Puat uses green garden spaces on the roof so that anyone can come and use the space and feel like they are contributing to the space.
• Also serves as a tranquil node for the people of Singapore so that anyone can come and use the space and improve their mental health.
Ribeirao Preto Brazil / Ribeirao Preto Brazil

Located in Ribeirao Preto Brazil this residential building was created for a local family. It is situated on a sloped site and is two levels. It is L shaped and the bottom level serves as the private area with sleeping quarters and a more intimate movie room. The top level is the public area with the living quarters and kitchen space along with an outdoor courtyard and swimming pool. On the bottom level there is a green backyard space that can be accessed via the stairs going down from the level above or from the sleeping quarters below. Biophilic design principles were used extensively throughout this design. The materiality is a large aspect as it is a predominantly concrete and timber building with green spaces all throughout the building. Timber cladding is seen throughout the building as it diffuses light and creates interesting spaces in between the large glazing. The materiality indoors also keeps contact with nature by using stone, wood and large glazing creating direct connections with the outside landscape. 48

The use of different levels to house different uses for the building. Top is the public side and the bottom is the public.

- Incorporates the outside nature with the inside by the use of the same materials on the inside and the outside of the space.
- Timber cladding is used to create different light interaction and create different atmospheres at different times of the day.
- The building being concrete and hard and cold matched with the greenery all around and throughout the building – creating a large contrast between the two.
- Every room is linked with some sort of greenery space and has access onto the outside – creating a direct link with the outdoors at all times.
- Use of glazing and incorporation of views through the use of glass.
Reflection

It is important to use biophilic design methods in both the community centre and homeless shelter designs. The inbuilt desire to be close to nature and involved with it provides a very important base for the design of these spaces. This natural connection is essential to the health and well-being of the members of the community along with the members of the homeless accommodation, hence nature is essential to the built environment if talking about the betterment of oneself. Biophilic design will provide the necessary principles in order to garner the best response to people’s health and reintegration. Direct experience of nature, indirect experience of nature and the experience of space and place are all required to create the best nature integrated environment. In regards to biophilic design planning, form, movement, materials, structure and environmental systems should all be considered. All aspects of the built environment should be connected to biophilic design and the principles presented to us. This will create a space that both the members of the community and the members living in the temporary homeless shelter will largely benefit from. A nature-oriented approach can educate its occupants about environmental sustainability at the same time contributing to a self-sustainable built form.
The Project

After identifying the problems of the site and the area at hand it is evident to see what needs to be on site. Seeing as the problem of homelessness is evident in Mt Roskill, a need for a homeless shelter and refuge is apparent. As the government of New Zealand has separated homelessness into three main categories the demographic of the homeless population to focus on with this project is transitionally homelessness because that is the largest group of people living in subpar accommodation. This group is the largest and the easiest to aid as they are only homeless for short periods of time. The centre will accommodate for the people of that demographic and the temporary accommodation for these people including aid spaces such as learning/class rooms, computer spaces and library spaces.

A community space is also needed as there are many people in the community that need help with integration and social isolation. There are schools such as May Road Primary and Mt Roskill Primary that lease their spaces out to community groups to use after hours but many of these groups are working around the clock and need a space to use whenever they desire. Creating a space where community groups can come and use and also members of the community can come and interact with the each other is essential for the growth of Mt Roskill.

Interactions and the meeting of people will not happen without a reason to do so. A function or activity that brings people together and allows them to co-operate with one another could. With Mount Roskill’s history of being a farming and agricultural hotspot, a community garden space and soup kitchen would be ideal. Both the users of the shelter and the community have an activity to work together on (cultivating/farming/cooking/teaching) and in turn allows them to become better acquainted with one another.

Programmatic elements provide indications of function and sizes of space for the design and allow for the allocation of building elements on site.

Fig-72 Cross that used to be situated on top of Mt Roskill (image by Greg Bowker)
Programme

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Interactions and the meeting of people will not happen without a reason to do so. A function or activity that brings people together and allows them to co-operate with one another could help this. With Mt Roskill’s history of being a farming and agricultural hotspot, a community garden space and soup kitchen would be ideal. Both the users of the shelter and the community have an activity to work together on (cultivating/farming/cooking/ teaching), which allows them to become better acquainted with one another. Programmatic elements provide indications of function and sizes of space for the design and allow for the allocation of building elements on site.
Site context
Mt Roskill history and context

Fig-74 Map showing Auckland in New Zealand

Fig-75 Map showing Mt Roskill in Auckland
Maori history in the area

Mt Roskill is a very old area and has existed for much longer than we know about or what the records tell us. The mountain’s geographic location meant that Maori settlements were built on it and extensively used by the indigenous Maori. Puketepapa (Mt Roskill) had experienced a period of Maori occupation between 1430 and 1620 by the Ngati-Ma, a branch of the Wai-o-hua, descendants of the Tainui canoe, who settled on the Auckland isthmus. The site was abandoned in 1850.49 This was due to the decision made by the New Zealand government to appoint Auckland as the new location to become the capital of the country after the signing of the Treaty of Waitangi in 1840. The Crown officially bought the area around and including the mountain from the Ngati-Whatua on the 29th of June, 1841, marking an end to the Maori control here and in surrounding areas.50

Mount Roskill early history

Early occupation by European settlers in Mt Roskill saw it become a farming hub. The area was not of significant importance due to the distance from the main areas of development at that time, which were the Waitemata Harbour and city areas. Soldiers were given plots of land after the First World War as reward for serving the country. Many of them turned to strawberry farming in Mt Roskill.51 The wealthy people of the city also saw the empty land in Mt Roskill and took advantage of it by buying up as much as they could for cultivation and farming. Farmers saw the opportunity to use Mt Roskill as a hub for farming due to the proximity to the city centre and established suburbs as Auckland grew in size. It was informally called the “city’s food basket”, producing milk, vegetables, mutton and beef, a little grain, and a great deal of oats and hay on smallholdings.52
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State housing in Mt Roskill

The 1930s exposed the poor living standards of the time in New Zealand and deemed that a third of the houses at the time were unfit to live in. Sometimes even a dozen families would live under one roof. The Great Depression did not affect New Zealand positively with 26,000 families on the list for state housing post the Second World War. “Pressure for residential land overcame the necessity for a close food supply for the city and construction began in Mt Roskill.”55 In 1939 the government started planning developments in Three Kings, Wesley and Waikowhai. The houses were planned and built according to planned garden suburb schemes. Mount Roskill’s state housing were built to a much lower standard to that of conventional worker housing in the central city, with their poor attendant sanitation and health problems. State housing production only stopped in the 1960s when overseas investors slowed down their funding and the government had to rely on private investors to continue the process.56

Pressure for more housing in New Zealand has also caused a problem now, we see over 41,000 homeless people waiting for housing. The demand for housing is there and New Zealand has promised to deliver. In Mt Roskill alone 300 state houses are being demolished in order to make way for 10,000 new homes that are a mix of state houses, KiwiBuild homes and homes sold on the open market.57 The same way in which Mount Roskill was gentrified and turned into a state housing suburb those old statehouses are making way for newer housing and higher densification.

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Mt Roskill is the most diverse area of New Zealand and rightfully so due to its history of immigrant involvement. 25,000 refugees have been allowed to settle within New Zealand since the Second World War fleeing from countries all across the planet. Others have come willingly in hopes to find better employment and better opportunities for their children. In the local school there are over 76 different cultures represented.

Immigrants find Mt Roskill an easy place to settle because up until recently the prices of homes in the area compared to other central suburbs was lower. The plethora of state housing in the area and the proximity from the Mangere Refugee Centre meant that it was easy for immigrants to settle.

However, “Adult migrant works dreams are often thwarted or slow to realise in Mt Roskill and New Zealand. They grapple with language barriers, low incomes, racism and lack of family support and networks for free childcare. They jostle for space – both for housing and social services – with Maori and Pacific Island families who generally receive the government support. Employment remains the biggest hurdle. Many immigrants struggle to find work that matches their qualifications; refugees find a hard time finding employment at all; too many skilled willing workers are found stacking shelves in one of the two Pak ‘N Save supermarkets located just outside the east and west extremities of Mt Roskill. Women step back to give their men a chance to find meaningful work that raises their self-esteem, and in doing so forgo their own aspirations. Others are solo mothers, whose husbands were killed in fighting. Their boys growing up with no male role models.”

Honest representations of culture and diversity is evident everywhere you look in Mt Roskill. From Middle eastern and African food stores, vibrant Indian clothing stores and Chinese food markets Mt Roskill is very brave in owning its multicultural background and puts it on full display for New Zealand to see. It is not hard to see that the people of the suburb are proud of what they do, and where they are from. The problem is to do with a lack of community
Mt Roskill connotations

Mt Roskills history suggests some connotations of the area

Pros –
- Diversity
- Cheap housing
- Close proximity to city centre
- Centrality
- Cultural experiences – Religious, food, cultural art

Cons –
- State housing
- Gangs
- Excess amount of liquor stores
- Low income housing
- Language barriers
- Refugee population
- Low decile schooling
- Homelessness due to gentrification

Fig-82 Howell Cres goons
Site

Fig-83 Map showing Mt Roskill in Auckland (image by author)

Fig-84 Map showing Mt Roskill in central Auckland (image by author)
Site analysis
Site selection

Two sites had been identified as potential spots for the site. They are both in the same vicinity but after some research and investigation one stood out more than the other.
Site selection

Two sites have been identified as potential spots for the site. They are both in the same vicinity but after research and investigation one stood out.

Initially the site of the whole section of land from the back of the lot of Foodstuffs up until the street front was chosen as a potential site. This was because it was firstly, located centrally within the Mt Roskill suburb context and in the middle of the identified homeless zones. Secondly it is located close to state housing developments in Roskill South. Lastly it was chosen due to its proximity Foodstuffs a major food supplier to Auckland supermarkets that have a lot of excess food wastage. The wasted food and potential recycling factors along with the centrality in location were driving factors in the selection of the site.
Option 1 is located at the back end of the site chosen, this site was identified due to its proximity to Foodstuffs. The potential for recycling the food thrown away from the establishment could be recycled and re-used in the soup kitchen. The site is also larger and could accommodate more of the programme identified. The problems with this site are that the people would not be able to see the building from the street and would not approach due to it being hidden.

Option 2 is located further at the front of the site. This site is smaller in scale but the programmes identified can easily fit on the proposed area. It is also easier to see and encourage people to come onto the site with it being located so close to the street front. The surrounding green environment can also be incorporated easily into the building programme especially when trying to create a public green area and creating links with the surrounding park spaces.
Identified are the main hubs for homeless people and beggars to congregate, along with the main hubs where transitionally homeless people park their cars for the night. They are the Three Kings car park and Margaret Griffin Park in Lynfield. Along with Dominion Rd shops, the new Mt Roskill shopping complex and the Wesley Community centre also known as Roskill YouthZone. This site is located centrally within the Mt Roskill Suburb and centrally between these main points meaning that navigation to the site is easy for the users.
Mt Roskill lies in central-west Auckland, with the site being located centrally within Mount Roskill. The area is located at the foot of Mount Roskill mountain to the south-west. The gradient also slopes upwards on both the north east and south ends meaning the site is located at the foot of all three inclines.

Views to the north-east include Mt Roskill, which is located less than 1km away from the site. To the north-west at an elevated level there are views to Mt Albert in the distance. Attached to the west bank of the site there is a strip of green land named Plantation Reserve, and to the south there is another reserve called Turners Reserve that has a basketball court and children’s playground on site.

Plant life on site is abundant, with the site being open and abandoned for quite some time, there is grass cover on the ground with a large tree on the centre of the site. With a few more growing in random spots on the site. Plantation reserve to the west has many trees growing throughout the strip of land. These trees are all different from one another, they vary in size. Some are evergreen and some are deciduous trees. Biophilic principles say that when one can see natural processes happen over time it is beneficial to one’s health. The trees on plantation reserve will remain and be incorporated into the design, on the site however the trees will be removed and replaced with specific chosen local trees.

**Environmental significance**

Fig-91 Trees on site, local and non-local (image by author)
Site conditions

Auckland is not located on a flat piece of land but rather in mountainous terrain. Mount Roskill is one of the large volcanoes that inhabit the city. The area of Mount Roskill itself is located higher up above the other parts of the central city. The actual area of the site however is very flat because of the merge of the mountain and two hills around the site, meaning that the site sits in a valley like area with flat land.

The site is on a flat plane of land it has a gradient of 1m with the back end (furthest end from the street front) being 1m raised above the front of the site. With the site being over 90m in length, the site has a small gradient so that excess flood water can be drained off the site.

Due to its location at the foot of the mountain and the foot of both other smaller hills on either side of the site the site sits in a flood zone and has the potential to have excess water enter but it contains waterways and proper drainage so the site is safe from initial flood threats.

The prevailing south-westerly winds will affect the site because it is open and empty. With shading from the neighbouring residential buildings and industrial buildings on the back of the site, the winds will be not as harsh.
Networking and connectivity

19 May Road is located on May Road, one of the main roads in the Mt Roskill suburb. Parallel to the busy streets of Dominion Rd and Sandringham Rd both these streets act as main routes to the CBD of Auckland city. Bus routes on this street or from the close confines of Dominion Rd allow people to travel anywhere in Auckland because of it being a main arterial route.

May Road is mainly an automobile dominated road with minimal walking routes other than that on the main road. People use the Mount Roskill Mountain walkway to cross over from Dominion Rd to May Road. Pedestrian access is only from the front of the site as it is blocked out at the back end with trees and a fence.

The immediate surroundings are mainly residential housing, with majority of them being state housing developments. Directly opposite the front entrance is a large state housing development in Mt Roskill South. There is a large shopping complex located just 500m at the top of the road, this new development acts as a main shopping hub within Mt Roskill and can be identified as a main location within the suburb. This complex allows for major integration with the site via visitor engagement as it is only a stone’s throw away from the complex.
Circulation and movement

During the morning and the afternoon, the site sees most of its foot traffic on as school children walk on the road in front of it along with people using the bus stops located along the road. The site’s main traffic flow comes from cars and other vehicles as May Rd is a main road in Mt Roskill and acts as an attachment to many predominant Auckland roads i.e. Dominion Rd, Mt Albert Road, Mt Eden Rd.

The site only has one entry onto it, and that is from the street front. This basic entry allows for easy separation of spaces because privacy and circulation is straightforward. The site needs to accommodate both the homeless shelter and the community spaces, with the homeless shelter being more private and the community space being open and public the site can be separated into areas of privacy and public access.

Fig-94 Showing access onto the site from surrounding areas (image by author)
Design

Fig. 95 Courtyard space (image by author)
The context is essential to creating the best potential biophilic environment possible so that the members of the community and members of the homeless accommodation feel safe and comfortable to interact with one another. The context acts as a major supplier for influence and reasoning behind the design aspects. Place, refuge and prospect should be expressed and created through connections with surrounding natural elements. Local ecosystems, mountains, plant life on site and hydro elements are all important drivers in biophilic design. History, cultural and social aspects are also important influences but not all of them have played large roles in the design.

Contextual factors are fundamental to provide a biophilic learning environment. The surrounding context affects the design of space and place within the site. Enhanced perception of place, prospect and refuge can be benefited by the surrounding environment. The surrounding natural aspects such as the mountain, flood zones, fauna and flora on site and views are important drivers in the biophilic aspect of the design.

The flood zone influenced the design by making sure the building is raised on stilts for the soup kitchen, and plinths for the community centre and part of the homeless accommodation. Views towards the mountain are visible from anywhere on site but the abundance of glazing allows for views from all the buildings.

A pergola system that attaches all the buildings to one another is there to create a sense of togetherness. Although the building programme is separated into several different uses the pergola acts as a connection between them all. Referencing the need to connect the community members and the homeless members with one another and also with the wider New Zealand community.

Within the courtyard context, there is local flora and fauna scattered throughout the site. Allowing for a further involvement with biophilia and a deeper sense of connection with nature.
Several factors were considered when garnering initial ideas. Due to the programme of the site needing particular spaces the arrangement could start being developed. There needs to be a communal building and also a residential building on site.

Judging by the shape of the site, and the entry onto the site being directly from the street facing edge the site shape shows that there is a public zone and a more private zone on site at the back end. The transition from public zone in the front to the private zone at the back is a strong starting point. Separating the zoning on site into three main parts – public, semi-public and private is where the initial design thoughts began.

The site is arranged into three main zones. The public zone, the semi-public zone and the private zone. The sites main access point being at the front means the most public zone on site is the street facing edge.

Street front at the front working its way back from the public at the front to the private at the back. Separating the zones vertically and allowing for the forms to be placed in each zone accordingly.

Semi-public on to north and south sides with the public remaining at the front and middle and private at the back end. Having one building that encompasses all three sides and leaving the front open and leading into a courtyard space in the middle.

All the three zones separated into three space zones and programme zones. Arranged around one another to see how they could connect with one another.
All the buildings are separately spaced and placed sporadically around the site with the main middle area being left for public spaces and the smaller spaces in-between the buildings being semi-public space.

Public space in the middle as a courtyard and the other zones situated around the building. With semi-public on either side and the private at the back end of the site.
Through these iterations and analysis on the zoning on site a conclusion can be made on how the zoning should be laid out. The most effective zoning is a simple front to back end zoning method, with the public zone being at the front of the site working its way to the back of the site which becomes the private zone. The reasoning behind this is due to the programmatic functions of the buildings on site. The public zone will contain the spaces that are public focused with the semi-public and private zones catering to the same needs.
Form

The form is derived from the previously discussed zoning on site. Mass models were made so the needs and placement of forms could be determined. The connection between the zones established and the needs of the people taken into account when determining where the spaces be set up.

Fig-98 Space and masses on site (image by author)

Fig-99 Drawings showing layout of masses on site (image by author)
Through the drawings and analyses conclusions can be made about how the form is arranged on site and how the building can be designed to reach its potential of creating a community space that helps combat the problem of social isolation within the community.

The arrangement of the buildings around one central courtyard space or several courtyard spaces is a strong point to consider as it can stretch from the front of the site up until the back of the site where the homeless accommodation is located. The courtyard space in the centre acts as a main meeting point that all the buildings can be situated around and can all lead out onto. Having entries onto the courtyard space form all buildings creates a route for the people to use and thus creating an interaction with one another.

There can also be a connection with Plantation Reserve next to it and an entrance from there onto the site as well. This would create a loop path though the site and around from the street onto the reserve. The buildings can also be used to enforce the path and show how it is laid out.

Buildings can also be used to separate the spaces from one another. The private and public zones can be separated with buildings being closer to one another and then behind it opening up into larger spaces.
Fig. 101 Models made from card to understand the massing on site (image by author)
Through the models further conclusions can be made about the form and the arrangements of spaces. Working with models allows for the forms to be multi levelled and seen form a different view.

The buildings themselves can act as the threshold separating spaces. The buildings on the levels above can act as the threshold separating the public and semi-public spaces. The thresholds can also be in several different places as there are multiple entries onto the site.

The threshold doesn’t even have to be something physical, if the buildings get larger as they go further back towards the semi-public zone, the squeezing of the buildings can also act as a threshold opening up into a larger space once that threshold has been passed through.

The models also help to show the main spaces and where the location of the programme elements should be. Entries and exits and circulation around the site are also apparent when you see the models from a plan view.

Using the threshold to connect the three buildings to one another is a possibility, as this could signify the need to connect the two sets of people with one another and also the sets of people with the wider community.

Using the overhanging of buildings to use as refuge spots and spots that act as personal spots.
Prior research and investigation helps conclude how the programme helps to determine the form and layout. The three zones that are public, semi-public and private are an important starting point because the programme uses are aligned with the zoning.

It is fair to conclude that there will be three buildings, one being the community centre, the other being the soup-kitchen and the last being the homeless accommodation. The form analyses above show that the community centre and soup kitchen, being public spaces are both required to be close to the street front as they act as a welcoming and public space and also keeping the privacy the homeless shelter it deserves.

The community centre is to be located on the south end of the site as it is closest to the foot traffic coming onto the site from the top of the road and from the opposite park. The soup kitchen to be on the north end of the site as it is the less traversed area of the site. Also the length will help it to shield off the buildings on the other side of the building, which is industrial yards and open storage space. The community garden space is more secluded and further back in the semi-public but still attached to the soup kitchen. This is because not everyone that is using the community centre or outside space will need to go into the garden space.

Lastly the homeless shelter is located at the back end of the site which is a private zone with the car parking located at the direct back of the site. This is because the homeless population that is being targeted is the transitionally homeless who often leave their belongings in their vehicles.
Main entrance is located at front of the site facing the street.

Side entry coming from Plantation Reserve on the side, leading onto the courtyard space in middle of site.

Community centre containing the main community centre facilities, contains learning spaces and community activity rooms.

Community garden space at the back of site connecting both homeless shelter and community centre.

Community centre containing the soup kitchen and cafe/auditorium area.

Community garden space at the back of site connecting both homeless shelter and community centre.

Homeless shelter located at the back end of site to keep private space for the residents.

Courtyard space containing the main congregation area.

Plantation reserve

Turner reserve

Main entrance

Side entrance

Community centre

Community garden

Homeless shelter

Fig-104 Iteration 1 lay out and space differentiation (image by author)
Creating as many interaction zones with the (ethnic) people of the community and the residents of the housing shelter is important as they are both trying to help one another integrate back into society. The main interactions zone of the project are:

1. The courtyard space acts as an extension of the park spaces on the south end and the park space located across the road. Creating a new green space in the middle encourages more people to come and use the space and brings in certain people that otherwise would not bother to come that far onto the site. This courtyard space is the main interaction zone between the people as firstly all the buildings will have direct access onto the courtyard and also because that is the space that is in the open and people will not need to go into the building to use the space, so they won’t feel like an intrusion to be there. It is important to create another green node in the area that people can identify as a public building and also a public green space.

2. The community-garden: this space was designed to be in the middle of the site and also in the middle of the soup kitchen and the homeless accommodation. This place is close to both these spaces because both sets of people can feel the need to use that space. The community members can use the garden as a means of meeting other community members and also learning about other cultures. The homeless residents can use the garden as a means of contributing something to the community if they help with some of the work cultivating, picking, packing and moving.

3. The community centre: because of the rooms they contain, they contain class rooms and computer rooms, these rooms can be used by all and everyone needs to use these spaces whether it be for teaching, research or leisure.

4. The soup kitchen: because the meals there are not only for the homeless population but also anyone that wants one. Food is one of the best ways to bring people together and sharing meals with people will allow the fostering of friendships and relationships.
Fig-106 Explaining and showing where the interaction zones will be located (image by author)

The main public space is the courtyard space located in the middle of the site it curves around and attaches to Plantation Reserve on the side.

Community garden space acts as a space that community members use to learn or meet new people and homeless residents can use the space to contribute something towards the building.

Community centre is an interaction zone as rooms in there are for all to use and necessities.

Soup kitchen is a main interaction zone as members of the community and homeless residents can both eat in the space.
This form shows the three main programme aspects. The community centre is the first part of the programme, it is located on the south end of the site nearest to the street front, this is because majority of the foot traffic comes from either Turners Reserve opposite Plantation Reserve or from the top end of May Road nearest the school. It is double levelled on the ground floor there is the main entrance way and class rooms, computer rooms and flexible learning spaces. On the above level there is a large community hall that can cater to any ceremonies or gatherings needed by the community.

Located on the north side of the site is the community garden and soup kitchen space. The soup kitchen is located at the front of the building on the North so it is more inviting to people that are coming right off the street and so that people driving or walking past can easily identify what is going on inside. It is also located at the front so that homeless people can line up outside the front and be able to be given food parcels right from the front window. The building is long and hugs the edge of the north boundary to block the views behind the building which is just open space and industrial yards. Views to the industrial sites behind takes away from creating a good courtyard space in the middle.

At the back of the site is where the homeless accommodation is placed. This is firstly because it is a more private zone and putting it at the back of the site limits the amount of people coming that far onto the site. People that are transitinally homeless usually have belonging in their cars so the driveway on the north side of the site takes you behind the homeless accommodation to the carpark that is specifically for the people of the transitinally homeless shelter. It is three levels, the ground floor contains the carpark, bike parking, admin area for the members of the housing, toilets and storage space. The bottom ground doesn’t contain any accommodation just because people from the wider community are allowed to access the space and the people living there might be uncomfortable with that. The accommodation is separated into two different types of housing. Two bed room units on the second floor and on the third floor are single bed units. None of the units contain kitchen spaces because there is an industrial kitchen attached to the soup kitchen that the people residing can use.
Access and circulation

Initially, the access and circulation are looked at based on the conceptual spatial arrangement. With the site shape and the main access being from the street front the obvious main entry is from the front. Other entrances can also be from both of the sides and when driving down the driveway on the north end access to the homeless housing shelter at the back end of the site.

Separate access for the members of the community into the community centre and soup kitchen and separate access to the homeless shelter is necessary as a more private access is needed for the housing due to private belongings being kept there and for safety measures.

Fig-107 Showing the circulation and access onto site and into buildings (image by author)
Developed iteration of the design shows that the connection between the spaces is shown through the use of the pergola structure that runs from the community centre through into the soup kitchen and garden spaces and finally connects with the homeless accommodation.

The structure emphasises the connection between the spaces to show the need for the connection between the people. The pergola enforces the path throughout the building spaces and directs the movement through the buildings.

The pergola structure also acts as the main biophilic design element in the building as it the largest continual green space amongst the building space. It creates a visual and physical connection with nature throughout the building and impacts the building via biophilia through multiple mediums.

Fig-108 Iteration 2 showing the main programme spaces and pergola structure (image by author)
The courtyard space is a main interaction zone and also acts as a large potential for biophilic design processes to occur. The circulation around the site starts from the main street front and comes through the central courtyard and goes into Plantation Reserve.

- The main pathway will be in the centre of the courtyard showing the path that one should follow. The centre of the path will contain less greenery and mainly will consist of path made from gravel or stone or grass but lightly excavated and an indication of the path one should follow.

- The areas on the periphery of the path are areas for people to sit and observe and will contain higher densities of greenery and larger plants.

- The centre of the whole path can contain a main central meeting space or design feature such as a tree or water feature. Having a main space in the middle that all the buildings lead out onto is important.
Biophilia is the main driver of this project. It should act as a means of enhancing learning, fuelling curiosity, encouraging interactions and creating a safe zone within the community. The design aims to create a community space on the chosen site stemming from the problems of homelessness and social isolation within the community. Showing how the three main aspects of biophilic design, nature of the space, natural analogues and nature in the space are all just as important as each other and how they will be used throughout the design to aid the problems identified is what this project aims to do.

The design utilises as many biophilic design principles as possible. Nature of the space, nature in the space and natural analogues are all accounted for throughout this design.

Other natural elements are taken into account when starting off with the design process. The site lies at the lowest point on the street as the surrounding mountain and slope on both sides put it in a flood prone zone. Although water is redirected off site excess water on site means that aspects of the building should be raised in order for it to be safe from flooding problems. Assessing where the water fills most on site and acknowledging that and designing accordingly is necessary.

This was explored through the placement of biophilic design elements onto the building and then seen how it would respond in the built environment. We know the benefits and what it does to the human behaviour with the table in the previous sections. Finding the most effective place to apply all those biophilic principles and placing them on the site appropriately is important, as the more effectively they are placed the more of an impact they have on the humans using the space.

In this design we can start from the three main biophilic points being, nature of the space, nature in the space and natural analogues.
Nature in the space

Visual connection with nature – A view towards elements of nature.
• Maintaining a direct visual connection with nature at all points is important. In this design firstly, all three buildings have a visual and direct connection to the courtyard space in the middle via glazing or openings that allow you to enter the courtyard space whenever.
• The pergola system that was designed to connect all three spaces to one another has greenery draped all over it, this pergola acts as a green path throughout the buildings and also acts as a visual connection in all three building spaces.

Non-visual connection to nature – Auditory, haptic, olfactory or gustatory stimuli that create a positive reference to nature.
• The pergola system is built with glass in between the gaps, this helps the user to see the rain and hear the rain as it falls on the structure.
• Smells from the soup kitchen also help

Fig-112 Pergola structure showing the natural connections visual and non-visual connection (image by author)
stimulate the olfactory sense.
Non-rhythmic sensory stimuli – ephemeral connections with nature
• Selected trees on site are deciduous meaning that at different times of the year you can see the different states of change these trees are in.

Thermal and airflow variability – Subtle changes in air temperature, airflow across the skin.
• The site lying in an open area means that there is a constant wind flow around the site. The positioning of buildings creating a pathway for the users also creates a pathway for the wind to flow and thus creates airflow variability throughout the year.

Presence of water – Enhancing the experience of a place through seeing hearing or touching water
• In the courtyard space there is water present to allow for a space to sit and reflect.

• As mentioned above the pergola system has glass throughout the system and connects the viewer with rain as it falls above them.
Dynamic or diffused light – Varying intensities of light and shadow over time to mimic natural processes.
• The timber slatted cladding on the building exterior creates different light intensities and lighting patterns. The X shaped roof on the pergola system that is prevalent throughout the design also creates different light intensities and variations throughout the building.

Connection with natural systems – Seasonal and temporal changes characteristics of a healthy ecosystem.
• As discussed prior, trees on site are deciduous meaning that one can observe the changing systems that happen over time within these trees.
• There abundance of plant life on site allows for different local fauna to inhabit the space also, meaning that the users of the site can observe different natural systems occur over time.
Symbolic references to contoured, patterned, textured or numerical arrangement that persist in nature.

- All the buildings edges are curved not necessarily following natural shapes but to create a smoother feel and the curve enforces the direction of the path created by the placement of the buildings.
- The pergola structure system with the greenery draped over it is also a reference to trees in nature and the uniformity and look you find in nature.
- The pergola structure also creates unique patterns with light and visually.

Material connection with nature – Material and elements from nature that reflect the local ecology or geology of the place.

- Green roofs on top of the soup kitchen and green walls on the homeless accommodation allows for material connection with nature.
- Gable walls on the community centre and also the homeless accommodation allows for further material connection with nature.
- The whole pergola structure and the path way is built using timber linking it with natural materiality.
Nature of the space

Prospect – an unobstructed view over a distance for surveillance.
• There are views to Mt Roskill from the courtyard space and also the community centre space, one side of the homeless housing also has views to Mt Roskill, while the other side has views of Mt Albert in the distance.

Refuge – A place for withdrawal from environment conditions or the main flow of activity, to create a sense of safety for the user.
• There are nooks throughout the design where one can go and use as seclusion spaces. On the ground floor of the community centre there is a reading nook that people can use as a quiet spot. There are also sitting spaces that look out onto the courtyard that act as seclusion zones. Each unit in the housing also has a separate roof garden (although there is no access onto it) there are views to the zone which will create some tranquillity.

Mystery – The promise of more information, achieved through partially obscured views or other sensory devices.
• The timber slats create obscured views towards whatever one is looking at.
• The pergola system with greenery draping over it also creates a visual barrier and only allows for partial views through the green openings.
• The courtyard and the pathway the building foot prints create are not straight so the obscured view down the path creates a sense of mystery.

Risk/peril. An identifiable threat coupled with a reliable safeguard.
• The building being raised to create a sense of unease over the edge.
The courtyard space in the middle of the site can contain a central element that acts as the main space identifier of the courtyard.

Ample glazing to optimize the amount of light coming into the building.

Pergola structure connecting all three buildings to one another and acting as the main biophilic design aspect throughout the building.

Green spaces in between the houses to add some greenery visually from inside the accommodation and also looking up from the courtyard.

Walls with greenery growing on the outside to add a vertical green element.

Green roof on top of kitchen and on top of community centre to add greenery on multiple levels.

Pergola structure creates light patterns within the building and creates interesting shadows within.

Fig-119 Diagram showing main biophilic aspects on the design (image by author)
Materiality - selection of systems

Exterior systems

The use of material enhances the direct biophilic experiences, indirect biophilic experiences and greatly makes the experiences of space and place better. Sustainability and the creating the most effective biophilic environments are the driver behind the design so that people can be educated on biophilic healing tendencies and also so that the most effect in the least amount of time can take place within the environment.

Structure – The shell for the three buildings will be constructed from timber frames. On the frames there will be concrete panels that are placed on the outside to give a look of concrete. The choice for using concrete as an aesthetic is to create a sense of stability. The look of the concrete mass gives weight to the building and starting off with concrete on a large green site creates some contrast in the environment.

Another reason to use concrete panels was to show the contrast with the pergola structure that runs around the whole site and connects all the buildings, the contrast between the straight forward concrete panels and the wooden pergola system with the greenery on it creates a visual connection constantly with nature and also by the colour contrast between the two creates an effective aesthetic.

Green wall systems will be incorporated into the design. Both on the exterior façade and interior façade, the use of green wall panels will be a factor. The green wall panels are to create a further connection with the nature around the site and also to give a vertical green element rather than one that is flat and horizontal.

Green roof systems will be incorporated into the design; this is to create a layer of greenery not just on the ground levels but also on the levels above. The green roof and green wall systems are there to firstly help teach the users of the building about local biodiversity, while also improving air quality, adding to thermal comfort and managing storm water on site.

Gabion walls will also be incorporated into the design. The walls will be used on the exterior along the edge of the homeless accommodation and the community centre to add other natural aspects into the design. The walls act as barriers and also visually separates the ground from the rest of the building.

It is important to have a constant connection of both the interior and exterior environment; this means that transparency in the façade is necessary. This will be achieved through glazing. There will be glazing on majority of the walls allowing for constant connection with the outside environment, although excessive glazing means that there will be thermal and solar issues but the green walls, roofs and. Green facades or living walls will be used to combat harsh solar gain, by providing varying levels of density for different light diffusion.
Throughout the interior there will be a selection of different colours, textures and natural materials. These fall under the category of indirect biophilic elements that create an environment where human mood and interactions are improved. The ecological connection with the surroundings are strengthened through the use of these systems and the essence of space and place is rooted deeper within the environment. A focus on materials that are sustainable and easy to source will also be a factor.

The interior context will include green walls and timber walls to allow for added connection with nature. These will allow for added health and acoustic benefits. The floor finishes will be different in different zones, varying from timber to carpet (natural colours). The floor throughout the pergola structure will be timber, this timber aspect will connect all three buildings with one another, symbolising the connection that needs to happen within the community members and the connection humans need to have with nature.

The materiality and engagement with the floor and walls can serve as another tool for learning and further health benefits. The connections with nature internally prove to be beneficial to all that use it.
Further iterations show the zones remain the same. The programme spaces remain the same as earlier iterations too. The internal configurations are explored and the connections each space has with one another and in relation to the courtyard is explored. The entries, exits and circulation pathways are considered taking into mind the biophilic principles discussed earlier.

The layout of the accommodation spaces and the arrangement of spaces within another was investigated. The multi room and single room accommodation are kept separate because of factors such as kids and single room residents wanting to be secluded.

Marking the centre of the courtyard by using an aspect to define the space. Possibly a large tree or water feature could mark the place within the community context and be a catalyst for the creation of a new community hub.
Fig-124 Ground floor plan of developed iteration (image by author)

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Conclusion

This project attempted to see how architecture could provide an adequate response to the problem of transitional homelessness and social isolation within the Mt Roskill suburb. With the use of biophilic design strategies it aims to utilise the inbuilt biophilic desire in humans to drive interactions between people and create an environment that fosters growth in the community.

The literary component of this project was important in creating a link between nature and architectural spaces and understanding the importance in bridging the growing gap between the two. An analyses of biophilic design and biophilia helped understand the hypothesis and elements associated with design.

Direct experience of nature, indirect experience of nature and experience of space and place coupled by factoring them in with the surrounding context provides a firm base to begin the conceptual design. All elements aim to deliver a space that optimises the well-being and comfort amongst its users.

The architectural outcome provides a space for the community that encourages people to congregate such as the courtyard space and the community garden space provides a task that allows for the interactions within the space and encourages the sharing of knowledge and promotes social inclusion. The architecture encourages the users to interact with the natural environments to drive their learning and passing of knowledge through experience. The natural connection through the pergola structure and the constant contact with natural aspects drives the experience one has within this building and facilitates the learning and meeting between people.

Mixing biophilia in with architecture especially homeless shelters and community buildings is not common in New Zealand which shows the importance in environmental design and shows this project is worth further investigation. The following could be aspects of further research and development.

The necessity to educate people about natural processes and how in turn they can help create a sense of comfort and encourage people to feel relaxed enough to interact with one another needs to be thought about again to achieve this. The homeless shelter acts as a temporary solution for people that are transitionally homeless by giving them a space that they can call their own and in turn allow them to behave more freely in society without feeling the weight of not having a home on their minds. The community garden space acts as a programmatic solution to social isolation also by giving people a reason to come into the space and work together with strangers and contribute to the community. The surrounding area on the site is dedicated to greenery and park space, the courtyard in the middle attracts people that aren’t necessarily going to use the buildings but can use the space for leisure. Projects like this show how an appropriate understanding of biophilic design is pivotal to the betterment of society as it stands today. The biophilic environment is important in combating the social isolation problem within the community and also acts as a new hub within the community that anyone can utilise and feel like they are contributing something towards.


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https://zinco-greenroof.com/systems/pitched_green_roof

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https://www.homedit.com/gabion-walls/

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https://rwfloors.com/before-you-buy/top-five-advantages-engineered-flooring/

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Final Drawings
Declaration

Name of candidate: PRATIK SADURU


is submitted in partial fulfillment for the requirements for the Unitec degree of

Principal Supervisor: Lucia C. Melchior
Associate Supervisor/s: Matthew Bradbury

CANDIDATE’S DECLARATION

I confirm that:

- This Thesis/Dissertation/Research Project represents my own work;
- The contribution of supervisors and others to this work was consistent with the Unitec Regulations and Policies.
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Research Ethics Committee Approval Number: ..................................................

Candidate Signature: .......................................................... Date: 10-10-2019

Student number: 1418790.
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ORCID number (Optional): ........................................

Full title of thesis/dissertation/research project ('the work'):

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Practice Pathway: ..Architecture....................

Degree: ..M. Arch..............................

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