WHENUA ORA:

LAND HEALING

WHENUA ORA: LAND HEALING

Designing Architecture that Incorporates Nature and
Mātauranga Māori

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ABSTRACT

In 2006, 86% of New Zealanders lived in urban centres, a number that is expected to have risen (“Urban and rural migration”). Urban lifestyles have been linked to increased risk of obesity, stress, cardiovascular diseases and cancers among other things (Murray). As this percentage continues to rise, New Zealand faces the challenge of creating urban environments that do not adversely affect mental and physical wellbeing. It can be argued that one factor leading to this loss of wellbeing in urban centres is the disconnection to nature and the healing effects that nature provides.

In New Zealand, Māori have developed a strong relationship with the land. The understanding that nature benefits health is deeply embedded within their culture. This research attempts to address the role of architecture in facilitating urban health and wellbeing issues through the incorporation of Mātauranga Māori (Māori knowledge) of healing and nature. The integration of Mātauranga Māori into this thesis comes from the recognition that our wellbeing can be greatly affected by our relationship with nature and that Māori culture best embodies this in a New Zealand context. Currently, Māori knowledge is underrepresented in New Zealand’s predominantly western mainstream culture. This research is significant as it explores the role of architecture in facilitating a connection with nature in a bicultural urban environment, an area that is currently underexplored. Incorporating these values into design generates the potential to increase Māori representation in the designed environment as well as expand the architectural knowledge of designing for wellbeing.

The chosen site, Birdwood Reserve is an underutilised bush reserve in the suburb of Karori, Wellington. Birdwood Reserve is situated in the nation’s capital, adjacent to Zealandia, an eco-sanctuary that is frequented by tourists. It is a steep valley with access to dense bush and the disturbed Kaiwharawhara stream. Flanked on two sides by environmentally active communities, it offers the potential for community involvement in the healing of the landscape, helping restore the reserve while healing itself.

The intentions of this thesis are addressed through the design of a bicultural wellbeing centre. Through the process of this design, the role of Māori culture in New Zealand architecture will be analysed, as well as the potential to reconnect people to nature through design. The final design will explore how to embody the developed framework of bicultural values relevant to architectural design for wellbeing.

ACKNOWLEDGEMENTS

This thesis is dedicated to my dad who passed away before this research was finished.
Thank you for always being there to guide me through my architectural studies.

Thank you to my mum for being strong enough to send me back to Wellington to finish my studies and to my family for their support.

To my friends and Kevin, thank you for the love that you have given me recently and thank you to my classmates for the supportive friendships solidified through these last five years of study.

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1

INTRODUCTION

Problem Statement
Aims and Objectives
Method
Scope
Structure

*Fig. 1.1. Pie chart showing New Zealand's population distribution, 2006

PROBLEM STATEMENT

New Zealand is becoming increasingly urbanised, with 86% of New Zealanders already living in urban environments (“Urban and rural migration”). Urban environments do not currently serve our health and wellbeing well. The lack of planned design; abundance of pollution and minimal natural influence all contribute to an inadequate human environment. Many studies have shown the links between urban living and increased risk of obesity, stress, cardiovascular diseases and cancers (Murray). Furthermore, it’s not only humans that suffer from urbanisation but New Zealand’s natural landscape suffers as well.

In New Zealand, we are lucky to have a small population and relatively small cities. Our cities are not without nature, but it is often adulterated and lacking proper care. Reserves and parks set aside to preserve the natural landscape are littered with rubbish, and pests multiply uncontrollably. As our cities grow, designers need to be conscious of how we incorporate nature and our effects on it.

Māori have a deep connection to the New Zealand landscape. Caring for the health of the land is intrinsic to their values and beliefs and they have long been advocating on behalf of the land. Māori maintain that there is a strong relationship between the health of the land and the health of the people.

Within their knowledge and practices could lie the guidance needed for designers of New Zealand cities to improve the balance between nature and urban living. However, due to the dominance of Western culture in New Zealand, much of this beneficial knowledge remains unrecognised.

This leads to the underlying question of this research:

**How can Māori understanding of
health and nature influence
architecture for wellbeing?**

Fig. 1.2. Two way relationship between humans and the environment, according to Māori culture.

AIMS AND OBJECTIVES

The aims and objectives of this research relate to the three main issues outlined in the problem statement. Specifically, these are: the issue of human wellbeing, environmental wellbeing and the imbalance of Māori representation in our bicultural country.

Aims:

- 1 To enable inhabitants to engage with nature while living in urban environments.
- 2 To engage Mātauranga Māori (Māori knowledge) of wellbeing and nature with the designed environment.
- 3 To promote a care for the New Zealand environment using architecture as a catalyst.

Objectives:

- 1 To critically explore architectural methods of engaging inhabitants with nature.
- 2 To critically examine the possible role of Māori culture in New Zealand architecture.
- 3 To critically explore the role of architecture in caring for the environment

METHOD

Literature Review:

Traditionally, Mātauranga Māori has been passed on orally. This had made finding written sources relative to this research more difficult than other topics. Due to this, part of this research has been participating in talks and workshops and engaging with Māori in order to begin to understand Mātauranga Māori. Research regarding the architectural and scientific realms was easier to locate physically and as such was studied progressively throughout the year.

Precedent Analysis:

In order to gain a better understanding of Māori principles and how they relate to architecture three contemporary buildings commissioned by Māori were chosen. They were then analysed for the qualities that make them different from other New Zealand architecture. This clearly defined what principles are important to Māori when incorporated into a building and what should be considered in the following designs.

Programme Analysis:

The program of this building was iteratively built upon throughout the extent of the research. The final outcome was a combination of programme derived from site analysis, knowledgeable Māori healers and personal research.

Site Analysis:

An in-depth site analysis was included as part of this project after initial research highlighted this as an important process to this research. This process was intended to form a connection with the site rather than just gathering quantitative information.

Preliminary Design:

Two design iterations were designed before the final building, each for one of the three reviews. The first was a simple exploration of what had been established so far in terms of program and site analysis. It was mostly abandoned. However, the second iteration was built upon to produce the final building. All designs were tested in the context of the site as the research argues the importance of the consideration of the unique qualities of a site. Critical reflection of the designs was on-going relative to the design objectives.

Fig. 1.3. Method diagram

SCOPE

The research and resulting designs are speculative. They aim to provoke viewer's thoughts on current cultural and natural imbalances in contemporary New Zealand architecture. The designs are attempting to show what could be and the research to encourage a greater participation in cultural and natural design. In this sense, the financial details of this project are not included in the scope of the research.

The design testing is limited to one programme and one site. However, the ideas behind the research could have been reflected in a variety of programmes of different scale, suitable to the context of many available sites throughout New Zealand.

It should be noted that some of the cultural knowledge included in the programme of the designs is the property of Māori. The use of their practices in the programme is speculative. Were something to be built with similar intentions to this research, it should be done so with full inclusion of the local Iwi.

STRUCTURE

This portfolio follows the chronological order of the yearlong research, which is shown in the methodology diagram. The literature review was conducted first following the research proposition in order to gain an understanding of Mātauranga Māori and to obtain a set of criteria that the final design should adhere to. The establishment and analysis of precedents, programme, and site came after in order to be able to make decisions based on the criteria developed previously.

Toitū te marae a Tāne-Mahuta
Toitū te marae a Tangaroa
Toitū te Tangata

If the land is well,
and the sea is well,
the people will thrive.

Whakataukī
Māori Proverb

2

LITERATURE REVIEW

Introduction

Bill McKay

Juhani Pallasmaa

Shinrin-Yoku

Te Whare Tapa Wha

Rongoa Maori Workshop

Performance Criteria

BILL
McKAY

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1

JUHANI
PALLASMAA

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2

SHINRIN-
YOKU

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3

Fig. 2.1.- 2.3

INTRODUCTION

This research asks how Mātauranga Māori can influence Architecture for wellbeing. As a New Zealand European, my understanding of Mātauranga Māori was not sufficient to support this project and so an overview of the topic was required. This chapter begins with Bill McKay, for his insight into Māori architecture. He explains how Māori view buildings and how in order to understand Māori architecture western architects need to alter their perspective. His interpretation of a haptic experience of native architecture led naturally to Juhani Pallasmaa for his writings on haptic architecture. Pallasmaa's writings have been useful in understanding the theory of designing a space that is more than a visual experience. When designing for wellbeing a certain level of factual information should be involved in order to justify the design decisions. The Japanese practice of Shinrin-Yoku (forest bathing) has provided a platform from which to locate scientific studies that relate to the relationship between humans and nature.

As previously mentioned, Mātauranga Māori is traditionally passed on orally, and some of the most important research has been attending events and communicating with people personally. The findings of this research have also been included in this chapter.

BILL MCKAY

DEVELOPING A LENS TO VIEW MĀORI ARCHITECTURE

In his paper, 'Māori Architecture: Transforming Western Notions of Architecture', Bill McKay begins with a critique of the western perception of Māori architecture. He states, "Indigenous architecture has something to teach the West..." (1). He feels that this view differs from the previous norms of westerners critiquing and interpreting Māori architecture. Historically, these interpretations have attempted to construct an idea of what Māori architecture is through a western lens (McKay 3). McKay argues that this is wrong and Māori architecture should be interpreted not through architectural form and decoration but through the context, and the motivating ideas and beliefs of the builders (10).

One example is the western interpretation of the Wharenui (Māori meeting house). McKay explains that to Māori, "the house is often metaphorically a body, the personification of an ancestor, with the ridge beam and rafters often seen as spine and ribs for instance" (4). As a body, when entering the house Māori often acknowledge it in the same way that one would greet a human (McKay 8). The carvings, painting and weavings are essential to conveying the message of the house and ancestors and should not be seen as embellishments or merely 'interior decoration' (McKay 6). In light of the way they view the Wharenui, McKay then claims that Māori experience buildings in a more haptic way than westerners do (7). Westerners see buildings as objects in space whereas Māori view them as a connection to their ancestors and time (McKay 7).

This text was important to this research as it provided multiple lenses with which to view the design outcomes. Those lenses are:

- To see architecture less an object in space but an entity, an experience.
- To view design and its decorations through its ideas and intentions

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Fig. 2.4. Front Facade of a marae, showing the head and outstretched arms

JUHANI PALLASMAA

ARCHITECTURE FOR THE SENSES

Pallasmaa argues that contemporary architecture favours vision over the other senses. In our fast paced society architecture has favoured sight “for the purpose of immediate persuasion” (1). He states that as humans our experiences are multi-sensory and therefore architecture should reflect a more holistic approach to sensory design. Visual architecture is instant but haptic architecture promotes slowness and intimacy (Pallasmaa 2).

Through Modernism and its quest for sleek, timeless design, form has taken precedence over matter (Pallasmaa 2). However, it is through matter that Pallasmaa claims that haptic architecture can be found.

“Materials and surfaces have a language of their own. Stone speaks of its distant geological origins, its durability and inherent symbolism or permanence; brick makes one think of earth and fire, gravity and the ageless traditions of construction... Wood speaks of its two existences and time scales; its first life as a growing tree and the second a human artefact made by the caring hand of a carpenter or cabinetmaker. These are all materials and surfaces that speak pleasurably of time.” (Pallasmaa 3)

In this piece, Pallasmaa explains the meanings that a material can subconsciously evoke. These materials, through touch and vision can engage the user with the history of the piece and enhance a feeling of intimacy in a project. This concept is found in the way Māori experience carvings on the wall of a Wharenuī, they are connected to the carver of that piece and the land that the tree grew from.

Materials with history can capture time like those carvings. Pallasmaa theorises that the predominance of vision places architecture in the present and in order to design experiences that span time one must design with hapticity in mind (Pallasmaa 2).

Pallasmaa refers to architecture that favours form and vision as ‘strong architecture’. However, he asks for a ‘fragile architecture’ where “materiality and fragile form evoke a sense of humility and duration” (5). Strong architecture is too conscious of its image and power but fragile architecture, by blending with its context, is inviting to people and provides a backdrop for human activities (Pallasmaa 8).

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Fig. 2.5. Māori carving tells additional stories of the carver and the wood it was crafted from.

“Materials and surfaces have a language of their own. Stone speaks of its distant geological origins, its durability and inherent symbolism or permanence; brick makes one think of earth and fire, gravity and the ageless traditions of construction...Wood speaks of its two existences and time scales; its first life as a growing tree and the second a human artefact made by the caring hand of a carpenter or cabinetmaker. These are all materials and surfaces that speak pleasurably of time.”

SHINRIN-YOKU

FOREST THERAPY

Shinrin-Yoku is the Japanese practice of forest bathing that was developed in the 1980's. The practice is government funded and over the years has fostered multiple studies that confirm the health benefits of daily interactions with nature. The term Shinrin-Yoku means 'taking in the forest atmosphere'. It encourages people to spend relaxed time within a forest in order to harness the healing benefits of nature ("Shinrin-Yoku").

While stress levels of our population are escalating, studies have found that spending time in forests can reduce stress in humans. Compared with urban environments, participants who spent relaxed time in forest settings had slower heart rates, lower blood pressure and lower cortisol concentrations. Cortisol, known as the stress hormone, can be a signal that the body's stress response is being triggered (Miyazaki et al).

Forests have also been found to improve immunity of humans through the emission of Phytoncides. Plants emit Phytoncides in order to protect themselves from insects and germs. However, in humans, these compounds promote Natural Killer cells that boost the immune system (Qing).

In other studies, participants who have spent time in forests over urban environments have been found to have lower blood sugar levels, improved concentration and report less depression and hostility. From this research it can be concluded that forests are 'therapeutic environments'.

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Fig. 2.6.- 2.8. Collage of images reflecting relaxed time spent in nature

TE WHARE TAPA WHĀ

THE FOUR PILLARS OF HEALTH

In New Zealand, the dominant model of healthcare is the biomedical model. The biomedical model focuses on biological factors of illness. It is experienced through the process of becoming ill and then being diagnosed by a doctor who subsequently prescribes treatment. However, there is growing interest in New Zealand for preventative healthcare. Preventative healthcare is a more holistic approach and involves focusing on everyday wellbeing in order to prevent illnesses occurring. Traditionally, Māori regard healthcare in a similar manner.

Te Whare Tapa Whā is a Māori healthcare model summarised by Dr Mason Durie in the 1970's. It is a method of explaining how Māori view healthcare. In Māori culture, a person's health is dependant on the balance of four pillars; their spiritual, physical, social and mental health. Should a person become unwell, it is likely that one of these pillars is impaired, resulting in an imbalance and poor health. In the diagram shown, the land is in the centre of the pillars because as the whakataukī, proverb, in the introduction explained, our health also depends on the health of our environment ("Māori health model").

*Fig. 2.9. Diagram of the balance of Te Whare Tapa Whā and its dependence on the land

Fig. 2.10. Rob McGowan cutting a Koru while teaching the workshop

RONGOĀ MĀORI WORKSHOP

In early 2017, Rob McGowan held a workshop to teach Rongoā Māori. McGowan is one of the leading authorities of Rongoā Māori and over the last 20 years has aimed to restore it through his personal research and teaching. This particular workshop was held in a bush reserve just south of Tauranga. The workshop was intended as an introduction to understanding the underlying concepts of Rongoā Māori. Participants spent two days exploring the bush with McGowan who not only taught the identification of plants but the tikanga (customs) relating to the collection and practice of Rongoā.

This workshop alongside one of his books, 'Rongoā Māori: A Practical Guide to Maori Medicine', highlighted a number of important concepts within Māori knowledge of health and wellbeing.

McGowan underlines the need for a two-way relationship of healing with the land, in his words "The first patient is the land itself" (McGowan). Rongoā Māori relies on the land to heal the people, and if its health suffers then its ability to heal is compromised (McGowan).

He iterates that spending time in the bush is the only way to learn the practice. Identification takes time and there is a great responsibility in getting it right. Responsibility also lies in caring for the land. A deep level of understanding of the bush and its health can only come from time spent experiencing the bush and observing.

McGowan also states that healing is restoring mana (status). Rongoā is not purely physical or based on herbal remedies. It comes from a connection with the land, ones identity and their self worth. A connection between two people, the healer and the patient needs to be facilitated in order to begin the process of healing (McGowan).

REFLECT BOTH MĀORI AND
NEW ZEALAND EUROPEANS

ENGAGE THE BODY'S SENSES

ENGAGE WITH THE ENVIRONMENT

PERFORMANCE CRITERIA

From this research, I was able to conclude three general performance criteria that a healing centre should fulfil:

REFLECT BOTH MĀORI AND NEW ZEALAND EUROPEANS

As according to McKay, Māori architecture has something to teach the west. The design should be less an object in space and more an entity, an experience. It should be viewed through its ideas and intentions, and a place where cultures can engage with each other.

ENGAGE THE BODY'S SENSES

In order to have a more wholesome and haptic experience of architecture, all of the senses, not just sight, should be employed. Pallasmaa suggests that materiality is one method to achieve this.

ENGAGE WITH THE ENVIRONMENT

In order to access all of the benefits to wellbeing that time spent in forests provides. Additionally, to learn about the forest and how to care for its health.

3

PRECEDENT ANALYSIS

Introduction

Te Kura Whare

Te Wharehou O Waikaremoana

Nga Purapura

Conclusion

INTRODUCTION

For this research, three contemporary buildings commissioned by Māori were analysed for the qualities that made them different from other New Zealand architecture. This exercise was done to achieve a greater understanding of what makes Māori architecture distinctive in this age. All of the buildings chosen were completed within the last 5 years. The buildings were researched and then, using some background knowledge of important concepts within Mātauranga Māori, the principal qualities of each were listed. Some qualities may have been included in the design of these precedent buildings but were not publicised and were therefore not included.

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1

TE KURA
WHARE

TE
WHAREHOU
O
WAIKARE-
MOANA

2

NGĀ
PURAPURA

3

Fig. 3.1. - 3.3. Images of precedents

TE KURA WHARE

Fig. 3.4. Interior of Te Kura Whare

Location: Te Urewera
Architect: Jasmax
Completion: 2014
Client: Ngāi Tūhoe
Programme: Community Hub

Fig. 3.5. Notable design techniques used in Te Kura Whare

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Fig. 3.6. Formal entrance to Te Kura Whare

When completed in 2014, Te Kura Whare became New Zealand's first certified living building, achieved by adhering to strict sustainable building practices (Rothwell). The community centre was commissioned by iwi, Ngāi Tūhoe as a meeting place for its extensive community. The key concept of sustainable design reflects the Iwi's values through the strong connection that they have with the land and their role as caretakers to the environment (Rothwell). Innovative design alongside locally sourced labour and materials helps to solidify Te Kura Whare as a building that gives back to the land and community (Rothwell). Meaning is given to the design through features such as the strong timber arch that references the culturally significant time when the sun reaches the highest point in the sky.

As Te Kura Whare was designed by both Māori and non-Māori, alongside Tūhoe iwi, it can be said that the final outcome is bicultural in certain aspects (Rothwell). However, whether it truly feels welcoming to New Zealanders of European descent is dependant on the engagement of the building's programme as a community centre. While the building does not explicitly engage occupants with nature, the use of local materials in their most natural form does incorporate nature well. Similarly, the building does not intend to engage the senses but does so through the use of the natural materials that allow occupants to touch the surfaces and breathe the air at ease within the building.

TE WHAREHOU O WAIKAREMOANA

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Fig. 3.7. Interior of Te Wharehou o Waikaremoana

Location: Lake Waikaremoana, Te Urewera

Architect: Tennent + Brown Architects

Completion: 2017

Client: Ngāi Tūhoe

Programme: Visitor Centre

Symbology/
Story Telling

Passive
Design

Innovative
Building Practices

Sustainable
Materials and
Design

Locally
Sourced
Labour and
Materials

Fig. 3.8. Notable design techniques used in Te Wharehou o Waikaremoana

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Fig. 3.9. Exterior view of Te Wharehou o Waikaremoana

Te Wharehou O Waikaremoana is a centre to cater for visitors to Lake Waikaremoana and the Great Walk as well as serve as an administration space for the local iwi, Ngāi Tūhoe. The concept was initiated by Ngāi Tūhoe and supported by the Department of Conservation. It is New Zealand's second building to be certified to the Living Building Challenge. Complying with the Living Building Challenge required an innovative approach to sustainability as well as thorough research into non-toxic building materials and neutral construction systems. Prefabrication was used to minimise time and cost on site and using locally sourced materials and labour was a preferred principle. The visual design reflects the physical forms of the surrounding natural elements ("Te Wharehou O Waikaremoana").

Similar to Te Kura Whare, Waikaremoana engages its occupants with nature passively through its adherence to the Living Building Challenge. An example is the use of passive design. Methods such as natural ventilation alongside the utilisation of sunlight benefits users as they experience pure sources of nature over its mechanical counterparts. Another passive method of engaging with the environment that this building fulfils is through the use of surrounding context to inform the design of the exterior form of the building.

As a Visitor Centre, Waikaremoana is separated programmatically from this research due to it not being intended to specifically serve Māori or unify the two cultures.

NGĀ PURAPURA

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3

Fig. 3.10. Interior of the 'seed'

Location: Otaki, Kāpiti Coast
Architect: Tennent + Brown Architects
Completion: 2012
Client: Te Wānanga O Raukawa
Programme: Health and Wellbeing Centre

Symbology/
Story Telling

Community
Focus

Health and
Wellbeing Focus

Passive
Design

Fig. 3.11. Notable design techniques used in Ngā Purapura

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Fig. 3.12. Exterior view of Ngā Purapura

Ngā Purapura is the most recent development on the campus of Te Wānanga o Raukawa. It is a combination of programs that aim to benefit the health of students in a holistic manner. The centre houses space for learning, physical exercise, nutrition, and social interaction. These activities are in compliance with Te Whare Tapa Whā (the four sides of the house), a holistic Maori view on health and wellbeing. This model inspired the four corners of the folded roof of the building. A central pod in the foyer space is representative of the seed of Rangiātea, which is part of the proverb of the school. Ngā Purapura was curated with input from the community that it now gives back to. Māori protocols and rituals were of high importance in the design process (“Ngā Purapura”).

Of the three precedents analysed, Ngā Purapura is most closely related to this research through its programme as a wellbeing centre. The consideration of ‘Te Whare Tapa Whā’ in the composition of the programme is a concept that could benefit the analysis of programme in this design research. The holistic combination of spaces to benefit the community as thoroughly as possible is commendable. The use of the healthcare model to also inform the form of the building continues the holistic approach to this centre.

CONCLUSION

The resultant list can be described as qualities that are important to contemporary Māori New Zealand architecture. When compared, it can be seen that there is a crossover of qualities between buildings. They all shared a focus on storytelling through design, something deeply ingrained in Māori culture. Two of the three worked insistently on creating architecture that did the least amount of harm to the environment as possible, cultivating innovative building practices along the way. Only one of the buildings, Ngā Purapura, had a prominent focus on health and wellbeing through its programme. This highlights the relevance of designing a bi-cultural wellbeing centre through this research. From this analysis, it can be ascertained that when designing a building with Māori values, it should care for the community, care for the environment, and it should tell a story within the design.

Fig. 3.13. Notable qualities of design of the three precedents compared to each other

4

SITE ANALYSIS

Establishment
Assessment
Site History
Zealandia
Atmosphere
The Spaces Between

*Fig. 4.1. Map of reserves around Wellington city

ESTABLISHMENT

The chosen site is Birdwood Reserve. Birdwood Reserve is a bush reserve on the edge of the suburb of Karori in Wellington, New Zealand. It lies on the northern edge of Zealandsia, a fully fenced eco-sanctuary aiming to re-establish New Zealand's natural habitat.

As the capital city, Wellington should be leading the way in both wellbeing and bicultural practice. It has a high population of people living in urban environments, which are the main population addressed in this research. There's also a low representation of Māori values in the architectural environment.

As a city, Wellington offers easy visual and physical access to a variety of nature. However, the environment itself is not in the best health and the increasing population of the city risks further

detriment to it.

Around Wellington, there are a number of Bush Reserves. Birdwood Reserve was chosen for this research as it's close to the central city and is currently in a poor state of health. The proximity to Zealandsia provides the potential for interaction but also allows the site to be removed from the commercial aspect of Zealandsia.

*Fig. 4.2. Existing plan of Birdwood Reserve

ASSESSMENT

Birdwood Reserve is a steep valley system with regenerative bush covering almost the entirety of the site. Through the middle of the valley runs the Kaiwharawhara Stream, which is not often more than a foot deep. The bush is threatened by non-native species and the ground is littered with industrial and domestic waste. There is currently a walking track passing through the site, yet much of it remains inaccessible.

The chosen site for building is at the southern end of Birdwood Reserve. It is presently a car park for Zealandia workers, which consists of an over-grown and uneven concrete surface. Leftover on the site is a large concrete water tank and a small pump house. The site is cleared of the concrete, tank and pump house for the design explorations.

This site was chosen above any other area of the reserve as it is the area that is currently most affected by human intervention. At this point in time, it is not a pleasant space to be and requires change in order to make it so. Choosing other areas of the site to build on would have required disturbance of the bush.

Fig. 4.3. Sketch analysis of existing site, Birdwood Reserve

*Fig. 4.4. Existing plan of chosen building site

*Fig. 4.5. Plan of chosen building site pre-design

*Fig. 4.6. North-south section of existing building site and Birdwood Reserve

*Fig. 4.7. East-west section of existing site and Birdwood Reserve

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Fig. 4.8. St John's Pool, 1933

SITE HISTORY

Pre-colonisation, the site was a hunting ground for Māori. The abundance of birds in the area made for profitable hunting. Today, the bird population is slowly returning to the site thanks to the efforts of Zealandia.

In the process of colonising Wellington, the Kaiwharawhara stream was dammed in order to supply the growing city with water. The native bush was felled and the site cleared for farming. The city quickly grew beyond the water supply capability of the Kaiwharawhara stream but the stream was never returned to its original flow. During this time, Kaiwharawhara stream was the focus of Wellington's gold mining boom. Men ravaged the site in search of the metal but the attempts were unprofitable. Gaping remnants of the tunnels are found in Zealandia as well as in the reserve.

In the early 1930's St John's pool was erected in the centre of the reserve to allow school children a place to learn swim. The pool remains at the site to this day but has since fallen into disrepair and is now unusable ("Karori Before the fence").

Fig. 4.9. St John's Pool ruins, 2017

Fig. 4.10. St John's Pool in use

Fig. 4.11. South facing view of Birdwood Reserve, 1901

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Fig. 4.12. Map of gold mining areas. Golden Crown being over Birdwood Reserve

*Fig. 4.13. Zealandia in relation to Birdwood Reserve, which is outlined in black

ZEALANDIA

Zealandia is a fully fenced eco-sanctuary that aims to restore Wellington's ecosystems within a 500-year time-frame. They are currently 20 years in and have already rid the fenced area of predators and are in the process of restoring the original animal population alongside the native vegetation. The sanctuary has a small team of staff and as many as 500 volunteers. It funds itself through donations and by marketing itself as a tourist attraction for visitors to experience New Zealand's wildlife ("The Sanctuary"). The adjacency of the chosen site to Zealandia provides both positive and negative effects. On the positive side, the native planting and wildlife rehabilitation of Zealandia has favourably influenced the surrounding areas, including Birdwood Reserve. However, the commercial aspects of Zealandia as well as the large number of tourists visiting have the potential to harm the non-commercial nature of a bi-cultural wellbeing centre.

Fig. 4.15. Industrial debris left in Kaiwharawhara Stream

Fig. 4.16. Kaiwharawhara Stream

ATMOSPHERE

Forming a connection with the site was an integral part of this research after discovering the importance of the relationship between humans and the land within Māori values. The aim was to understand the unique qualities of the site in order to design a sympathetic architecture. This was done to achieve one of the set performance criteria to engage with the environment. The designs should embody the Mauri (life-force) of the reserve in order to fully connect people with the site. Multiple days were spent quietly studying the bush and exploring the full length of the stream. During this time, basic photographs were taken of the site, as well as sketches and modelled abstractions of the bush.

Another one of the methods of processing the qualities of the site was to make collages. In the

collages, images taken of the site were analysed for their colours and patterns. The images inspired both form and material choices, which are included in the collages.

It is common for designers to acknowledge the importance of understanding the unique qualities of each site. However, this research argues that it is especially important when designing with Māori values in mind. New Zealand bush varies through regions, as do the ecosystems from site to site. To Māori, the land is part of their identity. They endeavour to understand the unique history and ecosystems of a place to better understand themselves and how they fit into the life cycle.

Overall, one of the special aspects of New Zealand bush, including that of the chosen site, is the predominance of evergreen trees. The dark and monochromatic colouring encourages the occupant to focus on other details such as the shapes, textures, and the contrast in light.

*Fig. 4.17. - 4.19. Collages analysing the site

CONTRAST

DAPPLED LIGHT

*Fig. 4.20-4.21. Collages analysing the site

DEPTH

*Fig. 4.22.-4.23. Collages analysing the site

THE SPACES BETWEEN

These models were part of the process of analysing the site.

They were originally made with the intention of embodying the relationship between Papatūānuku and Ranginui, mother earth and the sky father. In Maori tradition, the two were separated in order to allow light and space for the inhabitants of the earth. As a result, the bare body of Papatūānuku was covered by forest. As the site is forest, it is essentially the space between Papatūānuku and Ranginui.

The models were intended to show the tension between the earth and the sky. However, the resultant feeling was centred more in the atmosphere of the bush, the seemingly solid canopy, and resulting open void beneath. It highlighted that when one is in the bush it is the spaces in-between that create the atmosphere, whether it is the space between the trees or the space between the canopy and the ground. The phrase can also allude to the relationship between two entities, an idea employed in multiple ways throughout this research.

Fig. 4.24. -4.26. Photographs of models analysing the forest

5

PROGRAMME ANALYSIS

Establishment
Rongoa Maori
Programme Qualities
Programme Structure

RONGOĀ IN BIRDWOOD

Kawakawa
Pepper Tree
(*Macropiper excelsum*)

< 6 metres
Externally used for cuts, wounds, bruises and rheumatism, toothache, nettle stings and eczema.
Leaves chewed for stomach pains and indigestion. Stimulates appetite.
Internally used as blood purifier. Useful for urinary disorders

Koromiko
Hebe
(*Veronica Stricta*)

<3 metres
Young shoots and flowering tops used via poultices to heal abscesses, tumours, excess bleeding after childbirth.
Internal remedy for diarrhoea or dysentery

Mahoe
(*Melicytus Ramiflorus*)

<10 metres
Inner bark used as bandage for burns.
Boiled leaves used for scabies by bathing patients.

Rangiora
Bushmans Friend
(*Brachyglottis Repanda*)

<7 metres
Gum chewed for foul breathe.
Leaves contain alkaloid poison with some antiseptic qualities.
Leaves used to bandage wounds.

Karamu
(*Coprosma Robusta*)

<7 metres
Leaves made into tea and taken as a tonic to stabilise blood sugar levels.

Poroporo
(*Solanum Laciniatum*)

<4 metres
Leaf used to heal itching
Poultice used for sores, chronic eczema or psoriasis.
Internally used as contraceptive.

Mamaku
Black Tree Fern
(*Cyathea Medullaris*)

<20 metres
Poultices used for external inflammatory condition, chaffing or burns.
Holds highest form of collagen.
Soothes digestive tract, relieves constipation.

Kumarhou
Gumdiggers Soap
(*Pomaderris Kumeraho*)

<4 metres
Leaves used for tea to relieve lung and chest complaints.
Boiled leaves used to bathe sores and wounds and to relieve arthritis and rheumatism.

Makomako
(*Aristelia Serrata*)

<10 metres
Leaves and bark used to treat burn: as a poultice or wash.
Can be used internally for rheumatism or as a hot bath, also for arthritis.

*Fig. 5.1. Healing plants found in Birdwood Reserve, and their uses

ESTABLISHMENT

The basis for the programme of this design research is Rongoā Māori. Rongoā embodies Māori healthcare and promotes a holistic view of wellbeing. It connects those who practice it with the land. Although it is best practiced by an expert, there are many levels to Rongoā and it has the potential to be taught to beginners at a surface level. As a practice, it can appeal to anyone who lives in New Zealand as well as to Māori who want to re-establish connections to their own culture. For New Zealand Europeans, it is an enjoyable way to begin to understand the complexities of Māori culture and to develop an appreciation for Mātauranga Māori.

As Rongoā can be practiced in a variety of spaces, the programme was refined to become a place of healing waters. This stems from the history of bathing on the site due to the Kaiwharawhara stream flowing through the centre. The intersection of the Wellington Fault Line makes the water more beneficial for healing, as there are likely to be more minerals dissolved in it. The act of bathing is likely to attract New Zealand Europeans and also reflects a Maori history of bathing in New Zealand.

RONGOĀ MĀORI

Rongoā Māori is the traditional Māori practice of medicine. It combines herbal, physical and spiritual healing. One of the major aspects of Rongoā is the use of native plants for herbal remedies. The required parts of the plants are harvested and processed into teas, poultices, balms and other forms of treatment. They are then applied by the patient or by a healer through methods such as massage, bathing, and steaming.

Rongoā draws upon the combination of nature and the spirit of the person being treated. It aims to heal the person's pain or illness through rebalancing the four pillars of their health, Te Whare Tapa Whā.

Healers are called Tohunga and they are responsible for practicing Rongoā. Their knowledge is passed on orally through generations of healers. For a Tohunga, there is an immense responsibility for the knowledge that they possess. As the strength and toxicity of plants vary so greatly, they have to be absolutely certain of the plant that they are administering to the patient. This responsibility is one of the reasons that the quantity of information regarding Rongoā Māori has declined over the years. Kaumātua, elders, have been hesitant to pass on information in fear that it might be misused.

When practicing Rongoā, there is also a responsibility for the plants used and forest that they come from. A picker should never take more than required and any leftover matter should be returned to the source to break down naturally. An experienced Tohunga will be adept at identifying plants, where and when they grow, and the role they play within an ecosystem. Therefore, a practitioner of Rongoā should understand the need to care for the environment and form a kaitiakitanga (guardianship) relationship over the land (McGowan).

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*Fig. 5.2. Healing native balm being applied

PROGRAMME QUALITIES

During the Rongoā Māori Workshop in Tauranga, the opportunity arose to discuss this research with an experienced Tohunga, Donna Kerridge. Kerridge was kind enough to provide a list of spaces that she as a Tohunga would deem necessary for a place of Rongoā. This list formed the basis of the programme of this research and was developed throughout the design process. Alongside the list of spaces required, Kerridge noted a set of qualities that a place of Rongoā should possess.

MULTI-PURPOSE FACILITIES

Spaces should have the ability to be used for more than one programmatic purpose.

SPACE SHOULD DEMAND INTEGRITY

The architecture should inform the occupants that this is a special space and that they should conduct themselves accordingly.

MATĀURANGA IN THE WALLS

In Māori culture, carvings are a visual translation of knowledge. A space for Rongoā should not have carvings on the walls, as it is a place for healing and not learning.

HEALING SPACE SHOULD STAY WARM BETWEEN HEALERS

This means that the healing spaces should have an intangible warmth to them, either through the use of design techniques or the frequency of their use.

MULTI-PURPOSE
FACILITIES

SPACE SHOULD
DEMAND INTEGRITY

MĀTAURANGA
IN THE WALLS

HEALING SPACE
SHOULD STAY
WARM BETWEEN
HEALERS

PROGRAMME STRUCTURE

Through the design process, the decision was made to assemble the programme into four separate entities.

The first space is a dispensary. The dispensary is a drop-by place. It is to pick up pre-made goods, have a cup of native tea and to learn and discuss methods of Rongoā.

The next is Plant Preparation. In this area, all of the spaces that are required to process plants for Rongoā are combined alongside some supporting utility spaces.

In the personal preparation area, there are all of the spaces required to physically ready yourself for the healing process.

Finally, you come to the healing zone. This houses all the spaces specifically for healing, both public and private.

These groups are ordered from the most public to the most private.

01 Public

02 Rongoā Preparation

*Fig. 5.4. Diagram of programme relationships

03

Personal Preparation

Changing Rooms

Storage Lockers

Showers

Toilets

04

Healing

6

PRELIMINARY DESIGN

Introduction

Design Review One

Design Review One Reflection

Design Phase Two

Design Review Two

Design Review Two Reflection

Design Phase Three

“True architectural style does not come from a conscious effort to create a particular look. It results obliquely - even accidentally - out of a holistic process”

Matthew Frederick (82)

INTRODUCTION

The design process of this research is through three iterations of designs in context. Each design was finalised for one of the three reviews held throughout the research year. The first two designs tested ideas that were then translated into the third and final design. This chapter shows the first two designs, their process, and the process leading to the final design.

1 DESIGN REVIEW ONE

The first concept was presented early on in the design research process. The design is a quick collation of ideas gathered from the initial research.

The programme is purely a list of spaces that Donna Kerridge had provided. At this stage, it was divided into two buildings. One was for healing and the other was a supporting space with amenities to allow patients and their families to stay the night.

Within the two buildings, each programme was given its own building, although they were all housed underneath one roof. This was done so that occupants felt closer to nature and were physically only one door away from the outside. The communal space was surrounded by the other spaces for protection and to create a sense of gathering

around this important space. While the outside spaces were constructed of rammed earth and timber, the interior communal space was clad in a translucent white screen. This was to allow visual access from the healing centre and to open the communal space to nature. All materials were intended to be of a natural origin.

Visually, the design attempted to imitate the trees in the bush. The solidity of the trunk was reflected in the earth walls that then transitioned to lighter, more complex structure that represented branches.

The encompassing roof originated from the models made to reflect the site earlier in the research process.

*Fig. 6.1. Conceptual plan of first design

*Fig. 6.2. Conceptual east-west section of first design

*Fig. 6.3. Render of front facade of first design

1

REFLECTION

In review of this design, it was decided that it had too many flaws to continue building upon for the next phase. However, it was important to test the initial ideas in order to be able to decide which elements to keep, and which to discard.

One of the main reasons that it was necessary to restart for the following design phase was that this design did not consider site context to the level that it should have. The design was to scale however, when placed onto the site would have required too much alteration to the land. When designing for rongoā it would be wrong to cause an excessive amount of disruption to the site.

After reviewing the design, it was realised that the programme required refinement. The programme in this design considered the spaces required to practice rongoā. However, more consideration could have been put into how the programme could be tailored to the site as well as how it could invite both cultures and promote interaction between the two. It was decided to not continue to include overnight

facilities in the design as the sleeping hall, kitchen, and bathroom programmatically was too similar to a marae. The design of which would require too much consideration to be included in this research alongside a wellbeing centre.

The large encompassing roof generated issues of whether it allowed enough light into the buildings and the spaces between them.

The natural materials connected the building to the land, but could be improved to be more visually sympathetic to the site.

PHASE

2

WATER: AWA

To begin the second phase of design, water was explored as a concept. It was chosen as a connection between the site and the practice of rongoā. In Māori culture, water can be considered the blood of Papatūānuku, and the streams and rivers her veins. This collage highlights some of the ideas explored relating to water and its meaning within rituals and healing processes. Water plays an important role in rongoā Māori healing. This collage marks the start of this design process incorporating water more into the programme and using Māori beliefs to drive the design.

Fig. 6.4. Collage exploring the meaning of water to humans

PROGRAMME STRUCTURE

In order to make sense of the order and layout of the programme it was decided to order the programme into a journey. The journey would begin in the east and follow through to the west and back again. This was inspired by the way that many Marae face east. In much of Māori culture, the east represents the present and the future and so it is in that space that one should enter the Marae. As this healing centre was to be a spiritual space, it felt necessary to incorporate this belief.

The programme was then structured from east to west in order of the processes of rongoā Māori. The first section includes all the spaces necessary to prepare the plants. The second includes programme required to prepare the user. The final space is the space is for healing.

*Fig. 6.5. Diagram showing the unfluence of the sun and its meanings to direction

Fig. 6.6. Sketch of layout of programme relative to the sun

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Fig. 6.7. Pounamu, greenstone

TE TATAU POUNAMU

It was decided that a Tatau Pounamu would best separate the three zones. Te Tatau Pounamu translates to ‘a greenstone door’. It symbolises enduring peace and unity. Passing through a Tatau Pounamu communicates that this is a sacred space and should be entered with peaceful intentions.

While those not of Māori culture may not understand the significance of the pounamu, the concept of passing through a threshold is of universal understanding, even if it is subconscious for many. Different shapes of openings were explored, but it was decided that a circle best embodied the existing idea of unity.

Fig. 6.8. Sketch tests of thresholds for the tatau pounamu

PROGRAMME LAYOUT

Below are some iterative sketches testing ideas on how to mix circulation with the concept of the comunal public space being surrounded by the private programmes.

On the opposite page are some sketches that deal with public versus private space and integrating both with nature. They showed methods of partially segregating space that could be incorporated into the final design. They inspired the ideas of framing the view and using screens in the design.

Fig. 6.9. Layout test sketches

Fig. 6.10. Assorted sketches testing methods of defining interior and exterior

2 DESIGN REVIEW TWO

The following drawings were presented as part of the final design for review two. The building has been split into two buildings, the dispensary and the healing centre.

The plan shows the three groups of spaces that the programme within the healing centre had been separated into. From east to west, users journey through the entry space, the plant preparation, and the personal preparation spaces before coming to the healing space. Between each space is a green stone wall, which represents the tatau pounamu that users must pass through. Between the pounamu walls each programme is a separate building in order to maximise the integration of nature into the site.

In the healing space, the smaller buildings encompass the communal healing area, which is the first space that users meet when entering that section.

The dispensary is connected to the Zealandia car parks and overlooks the healing centre. The dispensary also contains the staff area and an elevator down the to east entry of the healing centre. As well as the elevator, users can access the entry space from the north via a walkway through Birdwood Reserve. The walkway has been planned but not shown in this stage of the design.

*Fig. 6.11. Plan of design two

*Fig. 6.12. Render of entry of design two

*Fig. 6.13. Interior render of private bath in design two

*Fig. 6.14. Render of the natural temperature pool of design two

*Fig. 6.15. North-south section of design two preparation space

*Fig. 6.16. North-south section of design two healing space

*Fig. 6.17. East- west section through design two

*Fig. 6.18. Interior render of the communal space of design two

REFLECTION

2

In review of this design, it was decided that it should be kept, but built upon and refined in the next design phase. The design was formally reviewed by three critics and by Ra Smith. Smith was guiding students at the university in Māori design at the time, based in the Wairarapa, he is a very knowledgeable advisor in Māori culture. Each contributed their judgements of the design, which influenced the ensuing design changes.

The grouping and segregation of the programme in the healing centre was kept, as well as the tatau pounamu. However, the forms and layouts of the buildings within each group needed refinement in order to better convey the site context and intentions of the

centre.

Ra Smith appreciated the segregation of the spaces as to many Māori it is important to keep cooking and cleaning separate in the planning of buildings. In a sacred place like a place of healing this concept is especially significant. He was also able to further explain the beliefs behind the sun and its potential significance in design planning. Designing the eastern entry to the healing centre was not the easiest design move as the natural entry would be through the east, where the walkway passed the building platform. However, Ra Smith explained that the journey of entering east to west and then west to east to exit made sense for a place of healing. Jour-

neying west to east to exit the healing centre represents healing and new beginnings as the users is moving to the place of the sunrise. To exit towards the west, the place of the sunset, would represent endings and the past. Exiting the centre in the same way that one entered is important within many spiritual practices and so it was kept for the next process. Issues with the design that were introduced from the critics were that the entry space was too small and that there is the potential that it would become overrun with tourists due to its location next to Zealandia.

PHASE

3

MARAE ĀTEA

The marae ātea is the courtyard in front of the wharenui. It is a place to welcome visitors and to resolve issues before entering the wharenui, meeting house.

The sketch here shows the layout of a marae. This layout was considered when designing the healing centre. It was considered that the reserve in front of the centre and the eastern entry space would act as the marae ātea to the healing centre, a place to prepare oneself for the healing and to resolve any personal conflicts before entering the realm of peace.

The marae model was chosen as it is one of the few areas in Māori culture with such significance in the planning that is still relevant today.

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Fig. 6.19. Sketch of marae layout

SITE MASSING

A series of site massing was undertaken to begin the final design process. This was done in order to post-justify the chosen scale of the building.

The first image shows the visibility of certain heights of the building from the Zealandia car park. This was used to determine at what heights the building could be hidden from the view of visitors to Zealandia. The first column of images show the visibility without trees and the second column shows the visibility with the trees.

The 12 images show an axonometric view of the site from the northeast. Different masses were tested on the site as possible building platforms

that follow the slope of the site. They tested the possibility of having a larger structure that provided easier access to the reserve.

The sections complemented the massing study. They explored the possibilities of access and site integration into the massing.

After these studies, it was decided that the building should be kept on one ground level, with the dispensary above, overlooking the site.

*Fig. 6.20. Tests of available space for healing centre

*Fig. 6.21. Tests of building heights for healing centre

*Fig. 6.22. Sectional tests of spatial arrangement of healing centre

North Access

South Access

North Access

South Access

*Fig. 6.23. Access test diagrams of building platform for healing space

SITE ACCESS

Different ways of accessing the building site were explored for two different platforms, for users coming from the reserve (north) or Zealandia (south).

As it added meaning to the design to enter from the east, it can be seen that the best platform for this was the one that didn't block the pre-existing road.

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Fig. 6.25. Sketch of healing space layout concept

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Fig. 6.26. Thai temple layout

LAYOUT PRECEDENTS

Both the Therme Vals and Thai temples helped to inform and justify the layout of the healing space. These overseas models were analysed as there are no Māori precedents of spiritual healing spaces. As the healing space is a mix of communal and private programmes that are all separate structures, the smaller, private structures have been arranged around the larger communal space in order to create a sense of gathering. This is similar to the method of laying out Thai temples. As seen in the picture, the larger space is open to the smaller buildings, which protect it and focus in on it.

The Therme Vals provided inspiration to the layout of the healing centre through its use of positive space. The smaller rooms of the Therme Vals are placed within the larger central space, creating larger open areas and smaller hallways between them. This plan provided an example of integrating indoors with the outdoors, which is an intention of this design research. By balancing the interior and exterior spaces the Therme Vals integrates the two and places no preference on either. Balancing interior and exterior spaces in this design research would further engage the occupants with the site.

Fig. 6.27. Sketch tests of layout of healing centre

LAYOUT PROCESS

It was decided to continue designing the layout with the successive journey from east to west. However, in this phase of design, the current sloping road is maintained, connecting Zealandia to the reserve, the stream, and creating an access way to the east of the centre.

INCORPORATING NATURE

In order to engage the occupants with the surrounding environment it was necessary to integrate nature within the design. Below are some sketches testing possible methods of balancing the interior with the exterior and maximising the amount of bush in the building layout.

Making indoor spaces outdoors. - bringing outdoors in.

Incorporating Bush into / throughout the building layout.

Fig. 6.28. Sketch tests of incorporating nature

FORM DEVELOPMENT

When designing the form of the individual buildings, Yannick Joye's article, "Architectural Lessons from Environmental Psychology: The Case of Biophilic Architecture" provided inspiration. The article speaks of the psychological effects our surroundings have on us, and the benefits of natural elements. It argues that natural settings can be mimicked in our built environments in order to harness these beneficial effects (306). Of the wide variety of natural landscapes inhabited by humans, it is said that we are most comfortable in those that are similar to a savannah. These open, low-risk environments, which often contain a calm water feature and sometimes a small fire, were claimed to be restorative (Yannick 309). Yannick states architectural strategies of mimicking this landscape "include creating wide and open spaces; making variations in the architectural topography; integrating clusters of real or symbolic trees (e.g., columns); and integrating a water feature (e.g., a fountain) or even a small fire." (311)

Prospect and refuge was also mentioned as a method of creating a safe environment for occupants (Yannick 306).

A description of Frank Lloyd Wright's house in Taliesin provides further insight into restorative architecture:

Deep overhanging eaves, alcoves and recesses, the withdrawal of the house in the dense foliage, and the cave-like masses of stone anchoring the house to the hill all convey that this is a haven within which one can withdraw secure. Extensive bands of window and the balcony reaching out over the falling landscape, moreover, indicate that the advantages of generous prospect are likely to be available within. (Yannick 311)

These sketches attempted to create a cave-like form, with thick, natural walls. They sit upon the hill and look out over the valley with punctured expanses of glass. These forms are spaced apart on the hill in order to generate open spaces between them, like the savannah. The skylight at the top of the peak allows additional sunlight into the buildings when trees surround them.

While, the New Zealand landscape is not similar to the savannah, the design layout can integrate features similar to it (like those named in the Taliesin house) in order to access the relaxing atmosphere. The bush and stream surrounding the site reflects prosperity and will further subconsciously relax the occupants.

spaces between
as important as
the buildings.

Testing overhang vs flush.

skin = bark?

Fig. 6.29. Sketch tests of form

DISPENSARY

The dispensary was kept separate from the centre, on the same level as the Zealandia car park. Its height provided it with views over the rest of the centre and down the valley. This initiated the concept of it being a guardian, Kaitiaki, over the healing spaces and the reserve.

Visually, it was intended that it would crouch on the edge of the cliff where it would survey the site. The materials would fade from heavy, grounded materials to more weightless materials, like glass, as it extends over the valley.

The sketches in plan were to test the angle of the view and the shape of the plan. It was decided to divide the span of the building into three angled sections. The first, western section, which overlooked the healing centre the most, was chosen to house the staff area as it seemed most appropriate that they would have the best views over the centre. The other two sections, whose views focused more on the valley, were chosen as the public space.

Fig. 6.30. Test sketch plans of dispensary floor plan shape

Protecting
watching
crouching | over landscape

Fig. 6.31. Sketch sections of dispensary

*Fig. 6.32. Collage elevations of material tests on form

*Fig. 6.33. Collage elevation of chosen materials

MATERIAL CHOICE

Once the form was developed, the exterior materiality needed to be chosen. These collages were a method used to quickly test the materials on the form. The materiality of the final building needed to reflect the site and allow users to create a tranquil, healing environment.

A palette of black steel, concrete, rammed earth and dark stained woods were tested against a background of concrete, water and bush.

A structure consisting entirely of rammed earth was chosen for the final building. The minimal, dark material palette was an attempt to harmonise with the atmosphere of the bush and also to bring focus to the non-visual senses. The single material choice for the exterior of the smaller buildings made

each building a homogenous entity. It furthered the idea that these buildings were of the earth and individual cavernous forms. The use of thick rammed-earth walls benefited this cause.

Transparent layers, such as steel mesh, were chosen to add complexity to the centre and a finer scale, partially filtering light and vision, like leaves on a tree.

EXTERIOR WALL

After testing the north elevation, it was decided that the series of smaller buildings would appear better as one larger form. A wall around the outside physically guards the smaller structures of the healing centre as well as collating them into one, more powerful, entity. A transparent wall adds complexity by showing the buildings behind, allowing light through, and allowing occupants of the buildings to continue to have views of the valley. This was to be the permeable skin of the design.

Fig. 6.34. Conceptual elevations of individual forms with and without translucent wall

SKIN

What would the body
of papatränders look
like?

Skin - possibility
of blocking bush
out of healing
space.

Secret garden
Bush in protection
+ privacy.

Feeling of
containment/
interiority

Black fence.
Black roof

light wooden

Black mesh.

skin (permeable)

organs.

Angled exterior

parametric
interior

interior of body/
Womb-like experience

exterior
thin/
permeable.

rectilinear
exterior

organic
interior

Enclosed smaller
forms protected
by outer skin.

Black perforated
Metal.

warmer, wood
textural material

Fig. 6.35. Sketch tests of form layout within barrier

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*Fig. 6.36. Concept image of water

This wall concept was chosen for the final building. The image shown on the left inspired the concept of fluid water for the shape of the wall. Similar contours of the water in the image were traced into Rhino, extruded and converted into a warped surface with depth. This surface was then divided into sections to create louvres. Multiple iterations of different warped surfaces, with louvres cut at different depths were tested. The final chosen wall was the one that reflected the concept image the most when in context.

*Fig. 6.37. Wall process images

7

FINAL DESIGN

Introduction
The Walkway
The Dispensary
Waioira
Conclusion

INTRODUCTION

The final design incorporates Māori knowledge of health and the land through the programme as well as in the design of the building. Principles important to Mātauranga Māori have driven the decisions made in the process of this design. This has resulted in a design that attempts to build a relationship between people and the land in order to benefit the health of the two.

The design proposal is composed of two elements. The first being the walkway through Birdwood reserve, and the second being the healing centre at the southern end of the reserve. They have been designed to work together, however, either can be used sufficiently without the other.

Within the healing centre there are two distinct spaces, the dispensary and the 'Waiora' healing space. The dispensary fulfils utilitarian requirements, which allows the Waiora building to be a more spiritual space. Again, both can be used independently from the other but have been designed to complement each other.

THE WALKWAY

Included in the final design is a walkway that connects the northern end of Birdwood Reserve to the southern end and the site of the building. The pathway spirals down from a Zealandia car park into the depths of the valley bush to meet the Kaiwharawhara stream. Users follow the stream through the reserve to the building. Along the way, they have the opportunity to explore the site and collect plants for their Rongoā. This new pathway connects with the existing, but it provides access to more of the steep site. By journeying through the reserve, it is hoped that the users will connect with the bush site and form a kaitiakitanga, guardianship, over the site. The time spent in the bush can also give users time to centre themselves before their healing and encourages them to spend time in the bush in order to benefit their health.

This walkway is intended as part of the experience of visiting the healing centre. However, it is not compulsory. If someone is not able or willing to walk through the reserve, then they can access the healing centre from the south.

*Fig. 7.2. Proposed site plan of Birdwood Reserve and healing centre

*Fig. 7.3. Render of north facade of healing centre

WAIORA

Once you reach the end of the walkway, you come to the healing centre. The centre is called Waioara, which means both 'health' and 'healing water' in te Reo Māori.

THE DISPENSARY

KAITIAKI

The other entry to the healing centre is via the dispensary at the southern end of the reserve.

The solid back wall of the dispensary faces the main Zealandia car park, but the rest of the building overlooks the healing centre with views extending down the valley. It is the Kaitiaki, the guardian of the healing space and the reserve. At the entry, it is inconspicuous, a charcoal rammed earth wall with a wooden door.

The dispensary is a drop by place, somewhere to have a cup of healing native tea and to discuss rongoā and the health of the reserve. The staff room is also housed to the west of the dispensary, with quick access to the healing centre on the east.

When users pass through the gateway to the healing centre, there is a selection of plants to identify and learn from along the way. The heavy wall acts as a protection to the sacred space within.

*Fig. 7.4. Plan of dispensary

*Fig. 7.5. Render of dispensary entry from Zealandia

WAIORA

PAPATŪĀNUKU

In the final stage of designing this building, Papatūānuku, mother earth was considered. If the land is her body and the water is her blood then this building in which we bathe in water should embody her.

The building forms are made of reinforced rammed earth, each one separate like organs. A skin, the permeable fence, protects them. The circular communal space is the heart of the building, it is the final space in the journey and the most protected.

*Fig. 7.6. Axonometric view of entire healing centre

*Fig. 7.7. Entry to Waiora, healing centre

ENTRY

As this building is a body, when one enters it they must face it as a greeting. Users then move down further into the building as they move through each space. The wall, designed from the concept of rippled water, visually opens when viewed from front on.

Users move through this entry and into the subsequent spaces by following the same pathway. They move west as they enter and retrace their steps by moving east to exit. Exiting through the east symbolises moving towards the future and new beginnings in Māori culture and is fitting for a healing centre. Retracing your steps is synonymous with many spiritual practices, like yoga, where poses are always released in the exact opposite manner they were entered.

*Fig. 7.8. Plan of Waiora, healing centre

1. ENTRY

2. PLANT PREPARATION

- 2.a Tohunga Kitchen
- 2.b Communal Kitchen
- 2.c Storage Space
- 2.d Laundry

3. PERSONAL PREPARATION

- 3.a Changing Room
- 3.b Toilets/Showers

4. HEALING SPACE

- 4.a Communal Baths
- 4.b Waiting Room
- 4.c Massage Rooms
- 4.d Private Baths
- 4.e Communal Space
- 4.f Natural Pool
- 4.g Saunas

*Fig. 7.9. East- west section of Waiora, healing centre

*Fig. 7.10. Chosen material palette for final design

1

Entry

2

Plant
Prepa-
ration

3

Rongoā
Prepa-
ration

4

Healing
Space

*Fig. 7.11. North-south sections of each space through the journey of the building

*Fig. 7.12. Render of walkway through plant preparation space, showing tatau pounamu gateway

PLANT PREPARATION

Once passing through the wall, the first space the users enter is for the preparation of the plants. Rongoā is best prepared by the person being healed, so it is here that users can process the plants that they have collected themselves with guidance from a Tohunga. If a patient is unable to process their own remedy, then there is a private space for Tohunga to process plants on their behalf.

*Fig. 7.13. Interior render of changing room

PERSONAL PREPARATION

The following space is where users prepare themselves for healing. It consists of changing spaces, storage, showers and toilets.

HEALING SPACE

The final space is the healing space. By now users have passed through two tatau pounamu.

The healing space consists of heated communal baths, steam rooms, massage rooms, private baths and a natural temperature pool. All of which surround the circular communal space.

*Fig. 7.14. Render of courtyard of healing space, showing the communal space

PUBLIC AND PRIVATE

Within the healing space, there is a mix of public and private spaces in order to satisfy both cultural preferences. The communal spaces are there to share contact with other people while appreciating nature and its healing properties. Sharing a space with someone can promote 'skinship' and connection to those around you.

The private spaces, such as the massage rooms, are for healing one on one with a Tohunga.

*Fig. 7.15. Interior render of a heated communal bath

COMMUNAL SPACE

For many Māori, healing involves their whānau and friends. For these occasions there is the communal space. The communal space is a large wooden and steel pavilion with access to natural water for water-based healing rituals. When the communal space isn't being used for these occasions, it can be used for contemplation, teaching, bathing or music. The space is visually open to the courtyard and is hugged by a section of the old water tank, which protects it from the outside.

*Fig. 7.16. Exploded axonometric of the communal healing space

Daily Use

Healing with friends and family

Healing with water

Teaching

*Fig. 7.17. Axonometric of adapted communal space to show various uses

**REFLECT MĀORI AND NEW
ZEALAND EUROPEANS**

**ENGAGE THE
BODY'S SENSES**

**ENGAGE WITH THE
ENVIRONMENT**

*Fig. 7.18. Performance criteria

CONCLUSION

This design proposal attempted to address each of the performance criteria through multiple methods of process and design. Below is a summary of the methods used to address each criteria.

REFLECT MĀORI AND NEW ZEALAND EUROPEANS

- Communal spaces for interaction and skinship.
- Mix of communal and private spaces to satisfy both cultures' healing processes.
- Use of Māori story telling in the design. For example, the tatau pounamu and the embodiment of papatuanuku.

ENGAGE THE BODY'S SENSES

- Minimalistic, textural material palette to take emphasis off sight.
- Dark monochromatic material usage to fit with existing atmosphere of the site and to bring focus to the surrounding nature.
- Programme of gathering, processing, bathing and healing to physically engage the body.
- Use of materials of natural origin. Materials have history as well as natural smells and textures.

ENGAGE WITH THE ENVIRONMENT

- Opening up the reserve and stream through a walkway allows engagement with areas not previously accessible.
- Visual analysis of the site in order to pick complementary material palette.
- Acknowledging the history of the site in the design through the water tank wall.
- Encouraging kaitiakitanga, guardianship over the site in the two-way process of healing the land and healing yourself.

Critique of this design from the reviewing process is that the design of the healing centre did not engage the body to the extent that a healing centre should have. It was suggested that further exploration of designing for human scale, sensory engagement and biophilic principles could have been carried out.

It was also said that further resolution of the structure and construction of the building would have been beneficial to the design. These details could have emphasised the conceptual intention of the building as a body of the earth.

8

CONCLUSION

Conclusion

CONCLUSION

The increasing population of New Zealand is driving the need for higher density urban areas. Unfortunately, with the increase in urban density comes a decrease in the health and wellbeing of the inhabitants. Similarly, these urban areas are generally not sympathetic to the natural landscapes, whose health consequently suffers as well. With thoughtful design, a harmony between nature and urban living can be found. Mātauranga Māori embodies the ideology that a strong relationship between humans and their land can maximise the health of both. However, this knowledge is underrepresented within New Zealand's predominantly Western architectural realm.

This research addresses the question of: How can Māori understanding of health and nature influence architecture for wellbeing?

The literature review found that Māori architecture is not necessarily a set of physical or visual characteristics but an ideology or a set of principles to design to. These design principles that are prominent in Māori design are not unfamiliar to the architectural discipline. However, it is the holistic combination of the principles that fulfil the aims and make a design Māori. These principles were found in the precedent analysis of three contemporary buildings commissioned by Māori. Through this process the importance of environmentally friendly design techniques was also discovered. The value placed on the environmentally friendly design benefits the health of the land and the occupants of the building. This research considers the importance of environmentally friendly design in this topic through the designs, but does not incorporate it to the level that it should be if this was to ever be built. If this research were to be furthered, environmentally friendly design methods specific to the site and programme of this design would be a beneficial and relevant avenue to take.

Additionally, when designing for the health of the people and the land using Māori principles a deeper understanding of the site was required.

The site analysis of this research attempted to achieve this through a thorough study of the visual aspects of the site, its important elements and its history. This information was then used to determine the programme as well as the look and feel of the building. These methods of in depth analysis were useful when deciding on materials and the overall feeling of the building. Such analysis would be recommended for any design that aims to integrate with its site, or is of Māori design.

A complete picture of Mātauranga Māori was not easy to obtain from reading literature and as such this research required a lot of experience-based learning. As mentioned previously, a number of lectures, workshops, and marae visits were completed throughout the year as part of this. It was important to engage with people and speak face to face in order to learn this information. A person of Māori culture may have had better insight into designing for Rongoā Māori but being from another culture somewhat enabled me to think more critically of what I learnt.

A lot of the design process was carried out through sketch tests. The first design was quick and did not adequately consider the site, but initiated useful concepts to use in future designs. The second design phase began to consider the site topography and incorporate Māori ideas and beliefs.

The use of Māori myths as concepts aided the design process of the centre. Their use gave reason to the design decisions, and connected the building to the land and its history. While they may not be understood by occupants who do not identify with Māori culture, they have the potential to welcome those who do, and to create an architecture unique to New Zealand.

The final design attempted to fulfil the performance criteria through multiple methods. Although the design attempts to engage the body's senses through the use of materiality and colour it does not sufficiently consider engaging the body through form. This would be rectified if this design were to be furthered. The final design focuses on conveying the concepts and ideas that it represents, and as such does not include much detailed design. De-

*Fig. 8.1. Conceptual image of building form

tails like the interior design and the construction would have supplemented the conveyance of the concepts. The amount of consideration taken in valuing Māori concepts in the design, and integrating the design with the site, within the given timeframe, meant that those details were not as well refined as they could have been.

Overall, the methodology of this research did not deviate far from the standard methodology of most architectural research. Differences were through the gathering of the Māori knowledge, the relevance of the site analysis and the slightly differing intent of the precedent analysis. In hindsight, it's felt that this method was satisfactory as it provided all the necessary information to complete this research.

Outside of this research, a holistic use of Māori design principles for the wellbeing of the land and the people can be applied to any scale or type of architecture within New Zealand. However, designers should always be working alongside local Iwi and should be careful to respect their rights to the knowledge of their culture and the processes within it. This research was not obliged to be conducted entirely under Māori authority, as it was purely speculative. However, certain design decisions were consulted with Māori throughout

the process in order to gain validation. Coming from a non-Māori background, I did not feel that I could solely make those decisions. Working alongside these authorities only benefitted this research as it brought in new perspectives, something that would not have happened if just a single person undertook this research. Working entirely under Māori authority would have been advantageous to the research process, and would be recommended for future research if willing leadership could be found. This may be potentially difficult to find unless a final product could be agreed upon, something that could give back to Māori.

This research intended to integrate humans with their natural environment in order to benefit the health of both. This intention was carried out through the design of a wellbeing centre in a bush reserve. These constraints were specifically chosen to fulfil the intent, although many other sites and programmes could have been chosen. Architecture is not necessarily needed to practice these beliefs, but it can help. Buildings that aid the connection between humans and nature could be designed at any scale, on varying budgets around New Zealand.

9

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