COLOURS OF RECOVERY

Healing the mind through a journey of community connections and architectural spaces

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Figure 1: ‘Koru’ tied together symbolise new life, growth, strength and peace, of both an individual and their community.
ABSTRACT

"Mental health is a state of well-being in which an individual realises his or her own abilities, can cope with the normal stressors of life, can work productively and is able to contribute to his or her community. In this positive sense, mental health is fundamental for collective as well as individual well-being," according to the World Health Organisation.¹

In the 2012/13 New Zealand Health Survey, one in six New Zealand adults had been diagnosed with a common mental disorder at some time in their lives. Mental disorders as a group are the third leading cause of health loss in New Zealand. Depression and anxiety are the most common disorders with Maori being over represented in the mental health system.²

Mental illness not only has an enormous impact on sufferers but is also a great economic cost to society. The annual cost of treating mental illness in New Zealand is $17 billion.³

As architects and designers we are here to serve our community by undertaking the task of providing spaces that will contribute to the well-being of all and the healing of the significant minority of mentally ill amongst us.

The latest trends in behavioural health architecture come from not only academic and clinical research, but from built projects, outcomes, collaboration with clients and user groups. The latest developments tend to be on a domestic scale, providing access to nature, plenty of fresh air and light, and where possible, maximising the community-based model of care. The amount of research that specifically addresses behavioural health is still small.

In this paper, I examine the current research available in the form of academic and clinical research and completed built projects. Based on this research I have then formulated principles of design which I have followed to successfully create Community Residential Units (live-in staff), integrated with a Community-Based Acute Behavioural Treatment Unit (24-hour care) and Wellness Centre.

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AKNOWLEDGEMENTS

No work is ever the making of a single person. I would therefore like to thank everyone who made it possible for me to put this document together. Firstly, I would like to acknowledge my brother Alistair whose ‘journey of recovery’ continues to teach me the importance of family, community and communication. He inspired me to take on this project, which in turn has taught me a lot about myself. In addition, I would like to thank my supervisor Kerry Francis for his support and guidance throughout this process. Last, but by no means least, my husband Nico and sons Jake and Daniel for their love and support.
GLOSSARY

Maori terms

<table>
<thead>
<tr>
<th>Term</th>
<th>Meaning</th>
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</thead>
<tbody>
<tr>
<td>Ahi kaa</td>
<td>term used to describe the people who keep the marae alive.</td>
</tr>
<tr>
<td>Awaa</td>
<td>rivers.</td>
</tr>
<tr>
<td>Awhinatia</td>
<td>help.</td>
</tr>
<tr>
<td>Hapu</td>
<td>tribe consisting of several whanau sharing descendants from a common ancestor.</td>
</tr>
<tr>
<td>Iwi</td>
<td>a Maori community of people.</td>
</tr>
<tr>
<td>Ancestral kainga</td>
<td>ancestral living sites.</td>
</tr>
<tr>
<td>Kaupapa</td>
<td>a set of values, principles and plans which people have agreed on as a foundation for their actions.</td>
</tr>
<tr>
<td>Mahinga ka</td>
<td>food gathering areas.</td>
</tr>
<tr>
<td>Mai</td>
<td>the light that comes from the moon and the stars shines here.</td>
</tr>
<tr>
<td>Mana</td>
<td>authority, power.</td>
</tr>
<tr>
<td>Maunga</td>
<td>mountains.</td>
</tr>
<tr>
<td>Mauri tu</td>
<td>stand up for the life force (protect nature).</td>
</tr>
<tr>
<td>Papakainga</td>
<td>settlements.</td>
</tr>
<tr>
<td>Puna</td>
<td>springs.</td>
</tr>
<tr>
<td>Urupa</td>
<td>burial ground.</td>
</tr>
<tr>
<td>Rohe</td>
<td>territory/boundaries of tribal groups.</td>
</tr>
<tr>
<td>Taiao</td>
<td>natural world.</td>
</tr>
<tr>
<td>Tangata whenua</td>
<td>person seeking health and well-being who experiences or has experienced mental illness or addiction and who uses, or has used, a mental health and addiction service.</td>
</tr>
<tr>
<td>Te Maunu-a-Tu</td>
<td>'The War Gods Lure.'</td>
</tr>
<tr>
<td>Tohua</td>
<td>sign, mark, symbol.</td>
</tr>
<tr>
<td>Tohunga</td>
<td>Person of expert knowledge of Maori spirituality.</td>
</tr>
<tr>
<td>Tukutuku Panels</td>
<td>Maori wall panel designs which record stories about their iwi.</td>
</tr>
<tr>
<td>Wahi tapu</td>
<td>sacred sites.</td>
</tr>
<tr>
<td>Waka</td>
<td>canoe.</td>
</tr>
<tr>
<td>Whakapapa</td>
<td>lineage, descent.</td>
</tr>
</tbody>
</table>

Meaning of Maori names in area of interest

<table>
<thead>
<tr>
<th>Name</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matawai</td>
<td>fountainhead – a spring that is the source of a river.</td>
</tr>
<tr>
<td>Nga Mokaiti</td>
<td>the low rating.</td>
</tr>
<tr>
<td>Pukekohe</td>
<td>hill of the Kohekohe.</td>
</tr>
<tr>
<td>Pokorua</td>
<td>hollow / sunken area.</td>
</tr>
<tr>
<td>Te Puni</td>
<td>the block.</td>
</tr>
<tr>
<td>Te Rapu</td>
<td>the patch.</td>
</tr>
<tr>
<td>Te Roto</td>
<td>the lot.</td>
</tr>
<tr>
<td>Tirikohua</td>
<td>bit/share of outline.</td>
</tr>
<tr>
<td>Tutaenui</td>
<td>yellow-eyed mullet.</td>
</tr>
<tr>
<td>Tuakau</td>
<td>sterile land, wasteland.</td>
</tr>
<tr>
<td>Whatapaka</td>
<td>place of elevated earth</td>
</tr>
</tbody>
</table>

Maori Health terms

Ha a koro ma, a kui ma  
breathe of life from ancestors.

Hinengaro  
the mind.

Mana ake  
unique identity of individuals and Family.

Mauri  
life force in people and objects.

Mauriora  
cultural identity.

Taha hinengaro  
mental health.

Taha tianu  
physical health.

Taha wairua  
spiritual health.

Taha whanau  
family health.

Te oranga  
participation in society.

Te whanau  
the family.

Toiora  
healthy lifestyles.

Waiora  
total well-being for the individual and family.

Wairuatanga  
spirituality.

Whanaungatanga  
extended family.

Whatumanawa  
the open healthy expression of emotion.

Medical / Mental Health terms

CMDHB  
Counties Manukau District Health Board

CMMHC  
Counties Manukau Mental Health Community

SAD  
Seasonal Affective Disorder

Defining features of a Mental Health Residential Facility:

a permanent living arrangement for mental health consumers, regardless of exacerbation of symptoms, with an emphasis on social integration of mental health consumers with non-disabled community members within normalised setting.5

Residential Services

The part of the organisation that includes overnight accommodation and may include associated support services as a component of its service provision.

Recovery

The ability to live well in the presence or absence of one’s mental illness.

PREFACE

My working background is in health, I worked as a nurse and nurse manager for many years prior to commencing my architectural degree in 2010. During my nursing career, I witnessed the problems of delivering and receiving care in buildings not designed for today’s technology, or the type and level of required care. On a personal level, I have a family member who lives with mental illness. Our journey as a family has inspired me to want to design spaces that will support not only people in crisis, but also those that care for them. Many people have been involved in supporting my brother on his journey of ‘recovery’ to become and remain a functioning member of his community.

First-hand experience with a family member suffering chronic mental health issues is a life-changing experience for all those involved. Dealing with someone in crisis can be a very lonely journey for all concerned. For our family, the initial connection at time of crisis was with the Papakura Community Mental Health team. Just one phone call made me feel there was hope. Unfortunately, there were no available resources for intervention in the home. The only way to receive help was by ‘sectioning’ or if a person volunteered to go to a 24-hour care mental health institution, in our case Kingseat Mental Hospital. There was no ‘in between’ where my brother could have walked in off the street to discuss his fears before it got to the point off committal; an environment in which the disease could have been arrested earlier, a place where assessment and treatment options made him feel safe and not trapped, more like a home than a hospital.

Following the phone call, a community psychiatric worker visited our home and persuaded my brother to voluntarily enter Kingseat for assessment. Our family were unable to visit him for nearly six weeks. He was alone with the other patients and staff in a place the staff agreed was inadequate. The security was so poor patients were not allowed outside, they were confined to their villa for weeks on end. His time at Kingseat sadly was frightening for my brother and he pleaded with me to let him out, it was horrible. As well as dealing with his mental illness his experience was one of helplessness, abandonment and fear as was mine. The villa he stayed in felt like a two-storey cell. The staff wandered around in tired uniforms carrying bunches of keys which rattled as they walked. The windows were barred, paint was peeling off the walls, the furniture and fittings decaying. When I was finally allowed to visit, there was nowhere to talk privately apart from the nurses’ office. The combination of Kingseat (with the stigma of being called ‘the nut house’), being away from his family, where he lived, and the fact that the building was old and falling apart just added to the negativity of the experience.

The next step was Richmond House, Mt. Albert, a privately funded halfway accommodation and rehabilitation unit owned by the Richmond Fellowship. What a breath of fresh air to find a beautifully restored two-storey 1930s villa set back off the road, with private sleeping quarters at the rear for the staff. No one would know it was a rehabilitation house for those on the journey of ‘recovery.’ The only problem for us was that it was in Auckland; there wasn’t and still isn’t any organisation or facility like it in the Franklin District where my brother had lived. Alistair’s days were full of activities designed to help him understand and accept his illness and learning how to deal with the disease. He was shown strategies for healing and to help him to lead as productive and happy life as possible, and a lot more. Friendships developed, and he began to form a new and supportive community around him. As his illness stabilised and his confidence grew he moved to a house with others within walking distance of Richmond house so that he could still be involved in all the therapeutic activities available at Richmond Court. Alistair has now been well for nearly 15 years and lives independently.

We are not alone on our journey as a family through mental illness. I hope by merging my working knowledge, personal experience and research I will design architecture that can support wellness, early intervention and positive recovery programmes for our communities.
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1.0 INTRODUCTION

Figure 2: Watercolour analysis of Kingseat Hospital architecture, painted by Louise Piret
1.1 PROJECT BACKGROUND

My interest in our environment and the effect both natural and man-made space has on people, and the exploration of how spaces can be conducive to the healing process, is at the heart of my study. To develop this project, I chose a Community Based Acute Behavioural Treatment Unit (24-hour care) and Community Residential Units (live-in staff) integrated with a Wellness Centre as my building typologies. These buildings are theoretically located in central Pukekohe, Franklin District, South Auckland, New Zealand. The main goal of this project is to construct space/s that can be shared with the community while facilitating the healing of the body, mind and soul of those who are mentally recuperating.

To accomplish this, I began by collating my personal observations of the numerous architectural spaces I worked in as a health-care provider and manager, and my observations of these spaces as a family support person of a family member on the journey to mental health recovery. I used these observations as a template for comparison against literature research. At the beginning of the project I was still negatively biased about the experience of Kingseat and looked for ways to put myself back on a neutral plane. I researched how architects Will Alsop, Pete Bosley and Le Corbusier used art, and in particular watercolour, in their work. I concluded the answer for me was in painting the memories of the architectural spaces I experienced in watercolour. This helped me detach Kingseat Hospital from the traumatic, emotional experience I associated with it and see its collateral beauty.
Figure 3: Watercolour impression of the Pukekohe Railway Station and surrounds, painted by Louise Piret

Figure 4: Google maps aerial view of central retail area and train station, Site location for initial concept.
**Initial design concept**

Motivated by my brother’s experience, I was initially focused solely on creating stand-alone mental health Community Residential Units (live-in Staff) to meet the needs of those in the community who are ready to leave the acute setting but need extra support before returning home or transferring to independent housing. I planned to build it in Pukekohe, due to the lack of such programmes in this region, on a site adjacent to the Pukekohe railway and its station because of its connection to Middlemore hospital and Tiaho Mai (its Mental Health Unit). I wanted to challenge the negative association railways have with suicide and saw an opportunity to revitalise a very tired part of Pukekohe. Early design ideas incorporated redirecting vehicular traffic from the bottom of the main street and creating a town square over the railway. The Mental Health housing was to sit above retail space to enliven the street adjacent to the railway and its station.

**Change of approach**

I changed the focus of my project when I discovered documented information about an experiment carried out in Social Medicine in the 1920s in London. It is called the “Peckham Experiment,” carried out in a building specifically designed and built around and over a swimming pool to facilitate the principles of the experiment. Its focus was on studying wellness and optimising the health of its participants (refer Appendix). The idea of providing architecture that supports such an ideal made me think it was a wonderful way to bring the community together if a Wellness Centre was included in the building programme which followed similar social principles. Hence the birth of the idea of integrating a Wellness Centre with a Community Based Acute Behavioural Treatment Unit (24-hour care) adjacent to Community Residential Units (live-in staff). All users would share the complex and its spaces. The question of how to address the circulation and security while still allowing freedom of movement and making the facility feel welcoming and safe to all became a key issue and my challenge. Finding a swimming pool was the easy part.
Figure 5: ‘Hope Fear’

According to the World Health Organisation, by “2030 depression will be the number one cause of disability outranking ischemic heart disease and diabetes.” Hassel 2014

Document structure

This document therefore constitutes my second programme concept for design. I have learnt that to heal the mind, you must heal the whole person and their family. This design attempts to help dispel prejudice and bring balance to the lives of its users. In many ways, it constitutes three separate but intrinsically connected projects: the first is Community Residential Units (live-in Staff) aimed at being a stepping stone on the road to independence; the second a short stay Community Based Acute Behavioural Treatment Unit (24-hour care:) and thirdly a functioning business, the Wellness Centre, where integration with the community can take place depending on the stage of recovery of the affected person.
Aspiration
As an architect and artist, I want to design spaces that touch the soul. I intend to form meaningful spaces by combining the freedom of watercolour painting with the structure architecture brings and in doing so create more than just a community mental health and wellness facility. The underpinning motive that drives me is the desire to produce “artitecture” that ‘moves the heart’ every day it is encountered.

Personal Aim
I want this research/design to be an inspiration to future development of mental health facilities, to integrate with, rather than isolate from, the community by enabling the public to enjoy the facility at a street level while supporting the mentally ill. My aim is to create spaces that have a sense of playfulness and hope, rather than sadness and apprehension as is so often the case.

1.2. AIMS & OBJECTIVES

Societal Aim
To create architecture that is inspired by the people it is intended for and instil the idea of ‘community’ as a healing environment. I hope the facility will fulfill a meaningful purpose and support the premise that spaces designed for healing contribute to both a person’s and the community’s well-being.

Commercial Aim
To provide spaces that are able to be utilised to generate income for the facility thus reducing the financial burden on the community at large.

Design Objectives
- To respond strategically to urban issues, such as contextual relationships, position in the broader public space and planning in relation to the environment.
- Design a medium-scale urban insertion that is informed by, and responds sympathetically to, its suburban community context and site constraints.

Conceptual underpinnings
- That the integration of a mental health facility into the urban framework is both sustainable and positive for the well-being of the recipient and the community at large.
- Theory that purposely designed architectural spaces can enable healing.
- Theory that space and its edges are meaningful to us.
- Theory that the golden ratio applied to purposely designed architectural spaces enhances the healing qualities of those spaces.
The research in this paper examines:

- Current health design knowledge and practice in New Zealand (NZ)
- My subjective conclusions of how architecture can facilitate healing.
- Behavioural health history in New Zealand.
- Community mental health services – the New Zealand Experience.
- Facts and stats about mental health disorders in New Zealand.
- The built environment and mental health.
- Community Integration and supportive housing.
- The importance of land to Maori.
- The significance of open space to Maori.
- Te Aranga 7 Maori design principles (Kaupapa)
- the current mental health model of ‘stepped care’ used in New Zealand for residential and acute treatment facilities.
- the three ‘Maori models of health’ outlined by the Ministry of Health.
- Current research based practiced design principles for a healing environment.
- What creates awe in architecture and how is it importance to mental well-being.
- History of Pukekohe, its community and surrounds
- History of the Tangata Whenua of the area
- Significant landscape to Maori
- Pukekohe amenities, infrastructure and climate
- Vernacular architecture of the area
- Urban settlement patterns
Research question

How can the architectural design of a Community Mental Health facility support holistic healing and integration of the mentally ill into the community?
Current health design knowledge and practice in NZ

Increased knowledge and treatment over the years has led to a better understanding of those suffering mental illness. Buildings have gone from small community-based facilities to large institutions then small again. The surrounding grounds have varied from nothing to immense.

Treatment

The “recovery” approach to mental illness is supported by the Ministry of Health. It requires mental health services to empower consumers, assure their rights, get the best outcomes, increase their control over their mental health and well-being, and enable them to fully participate in society. This approach is best suited to community-based care rather than institutional. It is about supporting people to remain in the community and working towards righting the discrimination against people with mental illness which happens within the service and the larger community. 8 7

Building Design

There are no longer large institutional buildings being built in New Zealand, now that there is such a strong focus on ‘recovery’ in the community. The vast majority of mental health treatments are being offered in domestic-scale residential facilities. Currently these are still on hospital sites, with clinicians working closely with non-government organisations to help the user on their journey of recovery.

Urban and Site Design

‘Te Aranga Maori Design Principles’ were adopted in 2013 -14 as best practice guidelines for designers and developers. They are an important aspect now, especially so when designing for the recovery of the mentally ill as in all health-related issues Maori are over represented in mental health. 8

Much research has been done that shows the link between urban design and aspects of poor physical and mental health. 9 There is a growing movement in New Zealand within the health and design industries to promote key urban design principles which embrace Maori World view and Cultural Landscape. 10

The courtyard has been successfully used for centuries to offer private, secure sheltered outdoor space for the user and is increasingly being used in supported living environments as we move towards higher density urban developments in our towns and cities.

According to several researchers and the World Health Organisation(WHO), good health is determined by several factors, many linked to the quality, accessibility and sustainability of our physical environment. 11

The housing crisis in Auckland has created rapid growth in the peripheral areas and towns such as Pukekohe, which has grown immensely over the past decade, and a call for a change in zoning that allows for denser housing in the city and outer urban areas. 12
Inferior quality housing design, location and construction, whether high or low density, can increase psychological stress. Crowding, noise, poor indoor air and light quality are known contributors. There is growing evidence that shows people with access to quality green space, fresh water and ocean views are healthier. Being outside in these spaces, using or viewing them can encourage mental well-being and relieve stress, overcome isolation, improve socialisation and help with physical ailments.

This study addresses accommodation for the mentally ill on an urban site in a community setting. It embraces the current practice of community-based building design on a domestic scale and the ‘recovery’ approach of inclusion in the community along with the ‘Te Aranga Maori principles’ of design, the use of courtyards and connection to quality outdoor environment.

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My subjective conclusions of the how architecture can facilitate healing

Drawn from my experiences as both a ‘health care professional’ and ‘support person’ to a family member going through the mental health system

Safety of all
Every space needs to be easily accessible, with no dark corners and places people can hide or get lost. It must have no blind corners where staff or client can be cornered. All spaces, external and or internal, need to be safe and secure for all residents, staff, visitors and the public. There needs to be secure indoor and outdoor spaces for acute residents, so they can enjoy nature. There should be no security bars on the windows. There is a need for creative alternatives, residents are not prisoners.

Areas need to be made secure discreetly using modern technology, so staff are not wandering around with bunches of keys like prison officers. A fingerprint or eye match system for all staff and residents, which are programmed for individual accesses or swipe cards, are options.

Stress reduction
The users need to be able to choose when, where and with whom they socialise. Dining together is a wonderful way to socialise and for staff to see how residents are interacting. Staff need to be accessible at all times to residents/users.

Residents don’t want to feel trapped, but they do want to feel safe, protected and secure.

Clear wayfinding
Everyone appreciates clear identification of areas/zones and what they are i.e. public/private. Clear spatial cues from entering and exiting the site through to circulating the most intimate (e.g. bedrooms) of spaces is essential. There needs to be a fluidity in the way residents, staff, public and visitors move around and interact. Giving each group a sense of belonging to place this enables people to participate and contribute.

Domestic feel
Spaces should be designed to take a few knocks and bumps and have a relaxed welcoming atmosphere. Spaces that have a domestic feel to them are less intimidating.

Bedrooms
Bedrooms need to be warm, dry, bright, light and airy with opening windows and an outlook/view to the outside world including nature. A door to the outside and a seating area by their room gives residents a chance to enjoy the outside on nice days and interact if they choose to, all within a secure area/courtyard. They need to be homely and welcoming not clinical. Rooms need to be available in a variety of sizes to accommodate differing needs and preferences.

Privacy
Bedrooms that are east facing, quiet and have their own ensuite are optimal in ward areas. Users need their privacy for resting and ablutions.

Flexible spaces
Spaces must be accessible, and able to facilitate individualised care specific to each resident’s demographic and needs. The architecture needs to express the internal journey of the user from approach, entering, transitions through to exiting. Spaces need to accommodate fluctuations in a resident’s circumstances i.e. if they need to be isolated or have family stay.
Visual Cues
Everyone needs to see and feel that the place is a sanctuary as well as a stepping stone to full independence, not somewhere to hide or be hidden. It should be a springboard to a healthier independence, not somewhere one enters and senses entrapment. The building needs to reflect ‘hope,’ a sense this is temporary, not forever. Predicted length of stay has an influence on what spaces a facility provides.

Contemplative spaces
Peaceful, quiet areas to contemplate with a view to nature which are constructed of natural materials and a neutral colour palate.

Staff needs
Staff need their own space to take time out, a space which is uplifting, light and welcoming with a view to nature and the ability to enjoy the outside, yet still be on hand if needed. Minimising the distances between spaces for staff time management and efficiency is essential. Staff enjoy the ease of open wards and shared rooms but it isn’t equally enjoyed by residents. Creating ways of keeping the user safe and maintaining visually, audibly, tactically observation while providing space for opportunities of privacy, socialisation and contemplation is important.

Acoustic control
If a user wants to listen to music, radio, TV etc. they can do so without disturbing others.

Light
Where possible full spectrum natural light is ideal, sunny spaces which all can comfortably enjoy or that can be made secluded if necessary.

Technology/Structure
Structures and spaces should support today’s and future technology designed to enhance and support the recovery process for residents. Buildings’ fabric and spaces need to be resilient to damage, be well ventilated, naturally where possible.

Early diagnostic spaces
There needs to be a welcoming place people can walk into off the street without an appointment to discuss their fears before it gets to the point of committal. For example, a person could see a GP and then be ushered through for assessment and treatment options in an environment that feels safe and nurturing. Mental health professionals, GPs and allied health services should be together or in very close physical proximity.

Accessibility of services
It is imperative to have services close to public transport and integrated into the community with good parking in/adjacent to the facility for user, staff, family and friends.

Further research
Research is needed to determine the mental health programmes that are run and what spaces they need to carry them out, then look at what the community currently offers before designing more spaces e.g. sports and recreation facilities, art classes within walking distance.
2.0. RESEARCH
2.1 LITERATURE STUDY

A brief history of behavioural health in New Zealand

Early Beliefs

In western European civilisation mental ill health was historically considered a manifestation of evil spirits and people tried to rid their loved ones of it with prayer, magic or physical intervention. If this failed, they were cast out and punished. In the fifth Century BC, Hippocrates put forward the notion that exercise and tranquillity would benefit the mentally ill; this was abandoned in the Dark Ages when witchcraft and incarnation became the norm.

In all eras and cultures people have believed mental illness to be the result of supernatural, natural, biological or emotional causes.

Before colonisation Maori held a supernatural view and recognised the difference between the unsound of mind (pōrangi, pōrewarewa, haurangi, pōtēhē), demented (wairangi, karearea), intellectually impaired (karakiraki, pororirori) and those possessed by spirits (apa, mate kikokiko).

Figure 6: Treatment in Europe in the Middle Ages was left to the clergy to dispel demons in often physically cruel ways. Image from http://www.ancient-origins.net/news-mysterious-phenomena-unexplained-phenomena/ancient-practice-exorcism-rise-again-00121


17 Te Ara, Story of Mental Health Services, accessed 15 April 2017
Lunatic asylums, 1840s to 1900s

In 1844, the earliest form of home for "lunatics" was a wooden building attached to the Wellington Jail. A similar facility was opened in Auckland the same year. They received no treatment apart from being watched and prevented from harming themselves; the only alternative was the overcrowded wards of the public hospital. In the 1860s and 1870s, small purpose-built asylums were set up around the country, usually on the edge of towns to encourage community involvement. Treatment was "moral management"—routines of physical work, exercise, church services and dances with staff, who were expected to provide models of behavior. In 1876 all mental health institutions came under government control. They increased in size and were built in more remote areas, surrounded by their own farms and gardens. Residents were expected to help inside and outside, as they were able. By the late 19th Century, asylums held all kinds of people of varying ages, including children, in the same areas. The emphasis was on long-term care and custody.¹⁸

¹⁸ Te Ara, Story of Mental Health Services, accessed 15 April 2017
Mental hospitals, 1910s to 1930s

The Mental Defectives Act 1911 allowed people to admit themselves voluntarily which helped reduce the stigma of mental institutions. The name was changed from asylum to mental hospital in a bid to gain the therapeutic status of public hospitals. A lot of people found the large institutions so foreboding they refused to enter them, so smaller reception buildings were introduced on the edge of the grounds. In 1903, the “villa system” hospital design was introduced. Instead of a large single building a group of small, detached buildings were built making it easier to classify people by age, gender, behavior, likelihood of recovery and, to some extent, social class. Typically, the villas housed 40 to 50 patients in several dormitories, and single rooms, and included a dining room, kitchen, lounge and offices.

At the end of WWI service men suffering shell shock were expected to be treated with dignity and compassion and were encouraged to talk about their circumstances. This early form of psychotherapy was so successful it was later applied to other patients. In 1916 the first halfway house was opened in Hamner Springs to treat veterans suffering from ‘nervous breakdowns’. At the same time doctors were becoming increasingly interested in psychiatry, resulting in the establishment of observation wards in public hospitals and outpatient clinics. From the late 1930s new treatments for severe mental illness began to be introduced, some successful and others not. 19

19 Ibid
Psychiatric hospitals. 1940s to 1960s

From the 1950s new drugs became available and were widely used in treating patients along with psychotherapy. This, coupled with the introduction of free treatment in state hospitals in 1939, meant people became more willing to admit themselves. By 1964, 71% were by voluntary admission. People would book themselves in and “take a vacation” when in crisis.

In the 1969 Mental Health Act, the importance of community care and hostels was recognised. Despite this, most people were still being treated in large institutions. A growing gap was forming between short and long-term patients. Long-term patients who had lost links with the outside world were cared for in separate areas of the hospitals.20

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20 Te Ara, story of Mental Health Services, accessed 15 April 2017
Closing the hospitals and deinstitutionalisation, 1960s – 1990s

From the 1960s psychiatric patients were encouraged to take responsibility for their own care and treatment and the community at large was becoming more tolerant of the mentally ill. In 1963 plans for more psychiatric hospitals stopped and no extra beds were provided from 1973. In the 1970s, community-based treatment became the norm with most people with mental illness receiving support from non-government organisations. These organisations, such as the Richmond Fellowship offered alternatives to hospital care and have contributed in changing the negative public attitude. By the early 1990s almost all psychiatric hospitals were closed, or more suitable facilities were constructed to help those who did not cope well in the community. More attention was paid to the needs of Maori who were, and still are, over represented in mental health statistics.²¹

²¹ Ibid

Figure 16: Peter Humphreys Hamilton Christian night shelter manager sitting on one of the night shelter beds claims more people with mental health problems are asking for help from the Hamilton Christian night shelter. waikato-times/news/9596379/Hamilton-night-shelter-struggles-to-house-homeless, accessed 12 March 2017.
Community care, 1990s onwards

The 1995-96 Mason Report, an inquiry into the Mental Health services in NZ, led to the setting up of the Mental Health Commission in 1996 to advise the government on the needs of the mentally ill, encourage research and advocate for improvements. By 2010 district health boards were providing the majority of specialist mental health services. All were required to meet national guidelines and protocols. From the early 2000s community, rather than institutional, mental health services became the largest provider of care with 30% being non-government funded. They provided telephone crisis services, drop-in centres, consumer-run, self-help groups, family and community support and a variety of residential services. Privately owned and run services are rare in NZ. To respond effectively to Maori mental health issues, health providers have aimed to involve Maori. In 2006, the Mason Clinic was opened in the old Carrington hospital grounds (now Unitec), designed like a Maori village including a meeting house, dining hall, accommodation area and courtyard, with traditional symbols of healing and cleansing.22

22 Te Ara, story of Mental Health Services, accessed 15 April 2017
Conclusions

Expected value for my project drawn from my research into the historical treatment and housing of our mentally ill in New Zealand

Provide spaces

- which are sensitive to an individual’s cultural beliefs.
- for telephone crisis services and drop-in centre that are consumer-run, self-help groups, family and community support and a variety of residential services.
- for exercise and contemplation.
- for a community vegetable garden.
- which encourage integration of the community within, not isolation/separation, and interaction with the community at large.
- that pay attention to the needs of Maori; consider a plan of a Maori village as a guide to layout of facility.

Provide a facility

- which includes GP services.
- with an emphasis on short-term acute care and which focuses on the family as much as the individual.
- with multiple entrances to suit the state of mind of the individual on admission.
- that reduces the ‘stigma’ of mental illness, i.e. is welcoming, allows freedom of movement, not prison-like.
- with an intimate reception area i.e. warm, friendly, welcoming.
- With ground level indoor/outdoor flow at same level as floor, using patios and decks that wrap around the building and create outdoor spaces/rooms.
- that has access to a swimming pool, preferably able to be heated so it can be used all year round.

Select a site

- within walking distance to community amenities.
- set in a surrounding environment that reflects the internal spaces from private to public.

Architectural elements

- which provide multiple views to nature.
- to be of domestic scale, homelike, less institutional.
- One to two storeys, no higher. Bedrooms to be upstairs, communal areas downstairs.
- of natural materials i.e. brick, timber, earth.
- a facade that is easy to read and interactive, one which portrays the activity that lies behind it.
- roof pitch i.e. a flat roof gives a modern, fresh look. However, a pitched roof can elude to a wharenui.
- provide curtain walls of glazing in communal, general circulation areas.
Figure 20: symbol for the New Zealand Mental Health Foundation is a combination of the koru, which for Maori symbolises growth and regeneration, and the comb which traditionally was worn to keep a male’s hair in a top knot and represented their mana, their prestige. twitter.com/mentalhealthnz, accessed 2 Feb 2017
Community mental health services – the New Zealand experience

The closure of old psychiatric hospitals and the development of community-based treatment facilities has forced New Zealand mental health services to undergo significant changes over the past 40 years. Even though New Zealand society is more tolerant and accepting than ever before, mental health services have highlighted the need to reduce stigma and eliminate discrimination in New Zealand even further.

Rapid changes in our society, such as the emphasis on individual values and self-sufficiency, the disintegration of families, the loss of structure and well-defined roles, an increase in migration and a mobile workforce, has made isolation and displacement common in the community in which we live.

New Zealand has a high rate of youth suicide, yet there are very few specialist mental health services aimed specifically at young people. The future priority will be developing regional specialist youth services based on a community model with provision of day-based services and access to inpatient beds.

Maori and Pacific people tend to access mental health services at a later stage of illness and with more severe symptoms resulting in a higher prevalence of mental disorder for this demographic.

Users with chronic disabling conditions and elevated level of needs are frequently admitted to the acute inpatient units, thus blocking acute admissions due to the ongoing shortage of rehabilitation facilities that provide long-stay accommodation and support.

There is a growing need to expand and develop specialised services for eating disorders, personality disorders, people who have suffered trauma and people with disabilities.

Better liaison with primary health organisations and better information sharing and integration between existing services is beginning to be addressed. 23

Conclusions

Expected Value for my project

- Produce a design that encourages social interaction with the goal to reduce stigma and eliminate discrimination in the community. Include elements in design which welcome Maori and Pacific people.
- Base design around a programme that includes the whole ‘family’ to help young people and address the growing displacement and isolation in our community today.
- Provide long-stay rehabilitation accommodation and support for patients and families with chronic disabling conditions and elevated level of needs.

Challenge

- To create architecture which supports mental health services that are easily accessible, well integrated, sustainable and flexible and that promote hope and a sense of belonging and meaning.

Facts and stats about mental health disorders in New Zealand

Nationwide

In New Zealand 16% of all adults are diagnosed with a common mental disorder at some time in their lives, 20% of which are women and 13% men. Of the women, 23.8% are 35 – 45 age group and of the men 15.5% are in the 45 – 55 age group. Anxiety and depressive disorders are the second leading cause of health loss for New Zealanders. For women, anxiety and depressive disorders are the leading mental disorder. According to the 2013 Disability Survey, Māori are significantly more likely to experience psychological/psychiatric disability than non-Māori. Those people diagnosed with a mental disorder have a higher chance of suffering from several chronic physical conditions, and it is not uncommon for them to be diagnosed with two mental disorders.

Counties Manukau Mental Health Catchment Areas (CMMHC), overall population 35,180

In the catchment area there is a higher prevalence of care for Māori and Pacific people with mental health disorders compared with other ethnicities in relation to mental health services. However, for elderly people contact is higher for European and other ethnicities.

A greater number of females (59%) receive care for mental health disorders. Of those females 60% identified with eating disorders, depression/anxiety and bipolar disorder. Of the males nearly 70% identified with substance abuse and childhood onset disorders.

People from low socio-economic areas along with those receiving treatment for psychotic disorders tend to have more contact with mental health services than those who are less deprived and are receiving care.

A large proportion of the catchment area who receive care for depression and anxiety are European (72%) with Māori at 10.3% and other ethnicities 6.2%.
Awhinatia Mental Health Catchment

Mental health population 20,930 / Franklin 15,410

Awhinatia mental health catchment area has the highest recorded proportion of people with mental health disorders living across residential areas. A range of factors contribute, but mainly those living in this area identified as either European or Maori.

Most people receiving care for mental health disorders in this area do so through their GP. This proportion is higher amongst European, ethnic groups other than Maori or Pacific and the elderly, especially those receiving treatment for depression/anxiety. A smaller number go directly through the mental health services at Awhinatia community mental health day facility based in Papakura. Younger Maori living in more socio-economically deprived areas are more likely to be seen by this mental health service than by a GP.

Maori have a seemingly higher prevalence of mental health conditions, twice that of any other ethnic groups, mainly due to lack of early intervention and or failing to access services through Maori specific services.

On a positive note, there is growing evidence that ‘mindfulness’ can produce life changes such as reducing stress and anxiety and improve the ability to manage difficult life events.

Taking part in courses boosts peoples’ confidence in their ability to learn, to use their skills, and to speak – with whanau, friends and work colleagues – as well as improving their participation levels in solving problems, helping others, and taking control of their lives. People’s wellbeing increases with even small increases in activity level.

Conclusions

Expected value for my project

- Incorporate GP services to capture the those receiving treatment for depression/anxiety.
- Providing architectural spaces that the whole community feels safe and comfortable to utilise and enjoy. Where youth can connect with whanau and their wider community and participate in group activities.
- Provide a programme which promotes early intervention, and spaces which embrace people joining as a family. Helping the whole family potentially contributes to combating and decreasing the effect of adverse experiences during childhood.
- Embrace the Maori landscape and provide a ‘place to stand.’
- Provide places/spaces for contemplation.

The built environment and mental health

The built environment has direct and indirect effects on mental health. Direct effects:

Include environmental characteristics such as housing, crowding, noise, indoor air quality, and light. There is a direct link with the built environment to helplessness when there is exposure to overcrowding, malodorous pollutants, acute noise and chronic exposure to community noise.

Housing: To make the built environment conducive to healing evidence shows there needs to be increased opportunities for socialisation in the form of lobbies, lounges and other small group spaces. Research shows that single level accommodation is preferable as families on floors above ground level i.e. living in high-rise buildings tend to have more mental health problems. Quality housing which includes aspects of structural quality, maintenance and upkeep, amenities and absence of physical hazards is positively associated with mental health. Studies show that when people move into better housing their mental state improves.

Overcrowding: It is well documented that overcrowding and sharing a room with another user initially may not be a problem. However long term it is associated with elevated psychological distress, therefore where possible each user should have their own bedroom. Several adverse effects have been associated with road traffic noise\textsuperscript{25} from those living by a busy road. The most commonly documented is sleep disturbances and raised heart rate which exacerbates depression, so it is optimal that housing be in a quiet neighbourhood.\textsuperscript{26}

Indoor air quality: This can be affected by the toxic chemical properties in building materials themselves. These include malodorous pollutants and behavioural toxins e.g. lead which is related to behavioural conduct disorders, solvents with anxiety and depression, and pesticides with fear, panic and sleep disturbance. Therefore, not only is careful selection of eco-friendly building materials important but also selection of site.

Light: Levels of light, particularly the amount of daylight, has been shown to have a direct correlation with Seasonal Affective Disorder (SAD), depression that occurs due to insufficient exposure to daylight. People recover more quickly in sunny rooms which highlights the importance of providing naturally well-lit spaces.

\textsuperscript{25} Aslak Fyhri, ScienceDirect ‘Noise, sleep and poor health: Modelling the relationship between road traffic noise and cardiovascular problems’ Science of the total environment, Vol. 408, Issue 21, 1 Oct. 2010 pg. 4935 - 4942

\textsuperscript{26} Ford Daniel, MD, ‘Epidemiological study of sleep disturbances and Psychiatric Disorders – An opportunity for Prevention’, Article 15 Sept. 1989, accessed 5 May 2017
Indirect effects:

The built environment can indirectly impact our mental health by altering the psychosocial processes causing known mental health consequences around personal control, social support, and restoration.

Personal Control: Uncontrollable social interaction affects personal control. For example, college dormitories with long corridor designs and high-rise, interior-quality housing has been shown to manifest in occupants as ‘multiple incidences of helplessness’ in comparison to those living in suite arrangements or low-level quality housing. Providing a range of social interaction spaces, private intimate spaces, small group areas and large public spaces is associated with greater perceived control and comfort. Also, the size, location and permeability of interior rooms influences the amount of social control a resident has. There is a feeling of mastery associated with living in a good neighbourhood.

Social Support: The opportunity for social interaction is greater when entrances are close or face each other or are directly connected to major pedestrian paths or meeting areas. Positive social interaction is promoted both inside and outside a building by creating successful focal points such as neutral territory, visual prospect (being able to see what is in the next space before committing to it) and including activity generators such as food and games in the spaces, also furniture arrangement.

Restoration: Exposure to natural elements such as trees, water, and natural landscapes have been directly linked to recovery from cognitive fatigue and stress. Views of nature and landscape paintings, as well as indoor plants, are all associated with increased positive affect and comfort. Recovery has been proven to be accelerated by window views of nature and bedroom views of natural landscapes. Residents who have access to nature are seen to be less impulsive and concentrate better. Housing residents living next to natural outdoor areas claim they feel more connected and safer in their environment than those who live in areas without access to nature. Views of architectural features such as fountains, fireplaces, aquariums, landscape paintings, facilitating a house cat and providing contemplative spaces where an individual can get away and be alone help buffer some of the harmful effects of residential crowding. Individuals already facing psychosocial stressors are more psychologically vulnerable to suboptimal environmental conditions.  

Conclusions

Expected value for my project

- Select eco-friendly site and materials to decrease risk of contaminating air quality.
- Provide
  - single-level quality accommodation in a good quiet neighbourhood.
  - entrances facing or in proximity to each other that connect directly to major pedestrian paths and meeting areas.
  - naturally well-lit spaces.
  - a wide range of social interaction spaces from private, intimate spaces to large public spaces.
  - lobbies, lounges and other small group spaces to increase opportunity for socialisation.
  - individuals with their own bedroom.
  - space for a house cat and contemplation.
  - access to natural elements i.e. trees, water, natural landscapes.
  - views of architectural features i.e. fountain, fireplaces, aquariums, landscape paintings.
  - successful focal points, neutral territory, visual prospective, activity generators to promote social interaction.

Community integration and supportive housing

There is a general consensus and assumption that when people with psychiatric disabilities are given the appropriate support and services suited to their individual mental health needs they can participate as members of the community. Research has shown that for such persons to integrate into the community when living in supportive independent housing, the housing environment must have certain characteristics. These include: accessibility of community resources, public transport, retail stores, recreational facilities, supportiveness of community, safety of neighbourhood and normalisation of housing setting. The housing where these resources were present showed a higher level of integration.

It has been found that communities with moderate levels of social cohesion and social disorganisation had residents with a greater level of integration. The most supportive communities are either “liberal non-traditional” or “conservative working class.” However, the association between normalisation of housing and community integration is unclear.

Wellness in mind, body and spirit starts with a strong community and sense of belonging. An ideal design which embraces community within the facility providing daily living-skills training, a healthy staff-resident relationship (active support), and where residents are encouraged to understand their personal problems (personal expression). An emphasis on residents’ learning social and work skills (practical orientation) as well providing spaces which encourage integration with the broader community is associated with a higher level of resident activity in the community.

Personal factors also have bearing on integration factors including sociodemographic attributes (e.g. age, race/ethnicity, gender, and socio-economic status), clinical characteristics, physical health status, level of functioning, chronicity and severity of psychiatric symptoms, consumer’s housing preference, length of stay and living arrangements (such as living alone or with a spouse, partner, or children).


31 Raeburn House, www.raeburnhouse.org.nz
Conclusions

Expected value for my project

Provide

- housing which is accessible to community resources, public transport, retail stores, recreational facilities, is in a ‘supportive’ safe neighbourhood and community.
- housing in a ‘liberal non-traditional’ or conservative working class’ setting.
- design which embraces community ‘within’ the facility and spaces which encourage integration with the broader community.

Challenge

- carefully consider what the socio-demographic is I will be catering for.
The importance of land to Maori

Some iwi believe that they sprung from the land and did not arrive from across the sea. To Maori, the world is a vast interconnected family; people are the children of the sky and earth and are cousins to all living things. They believe nature teaches us about life, that to be successful in all things in life you must trust in your ancestors which includes the entire natural world. True tangata whenua can speak with authority about the world they inhabit – animals, plants, weather patterns and the natural rhythm of life. They are in touch with their surroundings. Therefore, when Maori are asked about their identity they refer to their mountain, river and esteemed ancestor before themselves.

Significance of open space to Maori

Urban spaces have a special cultural significance to tangata whenua, providing a sense of place and belonging intimately connected to concepts of tūrangawaewae (a place to stand). Natural landscapes, vegetation and waterways in urban areas can provide Māori with access to mahinga kai (traditional food sources), and protection of wahi tapu (sacred sites). Māori interests are to maintain and restore the mauri (life force/essence) of the whenua (land), water and air."

Figure 26: Nga Hau e Wha Marae O Pukekohe, accessed 02 February 2017 from pukekohemarae.wordpress.com

Figure 27: Nga Hau e Wha Marae O Pukekohe and its people, accessed 02 February 2017 from pukekohemarae.wordpress.com
Te Aranga 7 Maori design principles (Kaupapa)

Cultural identity is intrinsic with the ways in which tangata whenua interact with their landscapes and the multiple ways in which they value them.

Mana
relationship with iwi connected to the area needs to be established so they can participate in the design and development process, a precursor to the next 6 kaupapa.

Whakapapa
naming places, spaces, buildings after ancestors helps revive mana.

Tohu
Acknowledging wider significant land marks in the area such as Wahi tapu, Maunga, awa, puna, mahinga kai, ancestral kainga.

Taiao
find opportunities to bring natural landscape elements back into urban settings and provide areas for mahinga kai.

Mauri tu
focus on preserving, protecting and improving the natural environment and its resources.

Mahi toi
using the names and local tohu to develop creative responses to iwi narrative into architecture, landscape, interior and urban design.

Ahikaa
find opportunities where iwi/hapu can be involved and have control, including customary, cultural and commercial dimensions.32

Conclusions

Expected value for my project
Apply the Te Aranga 7 Maori Design Principles to:

Public open space
• the surroundings of the facility need to be developed in collaboration with tangata whenua. It will involve development of the natural landscape, keeping existing native trees of significance and providing a community vegetable garden.

Site
• maintain the integrity of the land and reflect the cultural histories in the urban environment this “allows for a visible and living tangata whenua urban presence”, thus restoring ‘a sense of place’ for tangata whenua.

Facility
• the use of architectural elements and symbols of cultural significance which reflect the cultural history of the tangata whenua of the area.
• The use of internal references e.g. naming the wards with significant local Maori names, using tukutuku panelling, and the use of the koru.

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Understanding the current mental health model of ‘stepped care’ used in New Zealand for residential and treatment facilities

This model embraces the philosophies of ‘recovery’ outlined by the Mental Health Foundation and the ‘3 Maori Models of Health’ outlined by the Ministry of Health which are implemented in community mental health facilities in New Zealand.

What is stepped care?
Where emphasis is on early intervention, services intervene in the least intrusive way from self-care right across the primary, non-profit organisations and DHB continuum. The stepped-care model enables people to rapidly receive the level of care that is appropriate to their need.

The steps are:
- Community Based Acute Behavioural Treatment Unit (24-hour care)
- Community Residential Units (live-in staff)
- Supervised Housing (daily visit)
- Live in own home (remote care)

What is ‘recovery’ in mental health?
There is no single definition in mental health. It does not always refer to complete recovery, it is about staying in control of your life despite experiencing a mental health problem. The focus is on support and building resilience.

What supports recovery?
‘Hope’ is the key to ‘recovery.’ It includes optimism and sustainable belief in oneself, a willingness to persevere through uncertainty and setback. Research has found that crucial factors on the journey of recovery include:

- a secure base – the right lining environment (architecture)
- personal growth
- supportive relationships
- empowerment and inclusion
- coping strategies
- a reason to get up in the morning
- satisfying work
- developing one’s own culture and spiritual perspective
What are the three ‘Maori Models of Health’ outlined by the Ministry of Health

**Te Whare** the four cornerstone stones of Maori Health being Taha Tīnau (physical health), Taha Wairua (spiritual health), Taha Whanau (family Health) and Taha Hinengaro (mental health). For many modern Maori there needs to a holistic approach to healing. All corners must be addressed.

**Te Wheke** the concept of the octopus defines family health and represents the link between the mind, spirit, and human connection with whanau. The head is the family and each tentacle represent aspects of health. Whanau are an integral part of the ‘recovery’ process.

**Te Pae Mahutonga** the southern cross constellation. The four central stars represent the four main tasks of health promotion.

![Image of three symbols: Te Whare, Te Wheke, and Te Pae Mahutonga](image_url)

Figure 28: Three ‘Maori models of Health’ symbols. Left to right: Te Whare, Te Wheke and Te Pae Mahutonga , accessed 14 Feb 2017, health.govt.nz/our-work/populations/maori-health/maori-health-models/maori-health-models-te-whare-tapa-wha

**Conclusions**

**Expected value for my project:**

- include GP services in facility.
- provide both acute and residential facilities.
- provide architecture that enables the users to feel safe and secure.
- for the ‘Maori models of health’ to work the mental health programme and facility must enable users to be visited by tangata whenua of the area and allow them to be either taken to a local wharenui or a whare on site, a place of healing and sanctuary for Maori within the facility, to help them reconnect with their ancestors.
- provision of places which support inclusion of whanau in sustainable recovery from mental illness, and the combination of Maori cultural concepts with Western clinical models of mental health care.
- integrate with a Wellness Centre. There are strong links between recovery and social inclusion. Growing evidence shows that recovery for the mentally ill is escalated when they regain their place in the community by being involved in mainstream activities and opportunities along with everyone. The Wellness Centre would provide such opportunities.

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**Te taha wairua or spiritual wellbeing has been described as incorporating “the experience of mutually rewarding encounters between people, a sense of communion with the environment, and access to heritage and cultural integrity.”**

[33] Proctor Nicholas & assoc., ‘Mental Health – a person Centred approach, Chapter 4 pg. 85 Maori Mental Health’, 2014
[34] Capital & Coast District Health Board, Te Whare Marie Service’s’ 2017, accessed 29 April 2017

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Current research-based practice design principles for a healing environment

Light

Light plays a role in reducing fear and anxiety. Bright light, either natural or artificial, can help in the treatment of mental disorders including depression, anxiety, panic disorders, phobias, post trauma distress orders and length of time in seasonal affective disorder. It plays an important role in controlling heart rate, circadian rhythms37, sleep/wake cycles, mood 38 and other bodily processes.39 Research suggests that bright morning light reduces depressive symptoms40 41 and having bedrooms, which enjoy morning light contributes to a person’s wellbeing.

Elimination of environmental stressors

Noise:

Has been identified as a major cause of sleep deprivation which leads to poor concentration, depressed mood, increased respiratory and heart rates, and increased stress levels.42 This is particularly relevant in shared bedrooms where noise is generated by other patients and staff. There are pros and cons to the use of single and shared rooms with surveillance and social advantages to be considered. Whatever the configuration minimising of noise within the facility is important.43

Glare:

Though natural light has been proven to be beneficial, too much light can lead to discomfort from overheating and or glare.

Indoor air quality:

Research shows that indoor air quality is not equivalent to outdoor ambient. Good ventilation and construction material selection is important, as chemical properties of some building materials can be toxic.44

Wayfinding:

Effective way finding elements are very important for both visitor and resident and decrease the need to stop staff and ask directions, making the experience less stressful for all.45 46

Environmental

Safety: Physical safety issues of staff, visitors, residents and the community are addressed through anti-ligature design, anti – slip surfaces, universal access, ergonomics and compliance to all relevant standards in building construction.

Security: This is fundamental so that staff, other residents, visitors and members of the public feel safe while allowing residents freedom of movement within the bounds of their illness. It is important to provide a range of acuity design options, such as isolation rooms and differing bedroom layouts to cater for fluctuation in observation needs. This allows the clinician to consider what is best for the individual resident depending on the stage they are at on their journey to recovery.47 48

39 Liz Lockhart, ‘Light plays a role in reducing fear, anxiety and depression’, accessed 15 April 2017
43 Architecture + Design Scotland, ‘Personal Space: Interior design approach to bedrooms in mental health developments’ accessed 15 April 2017
45 M Foltz, Thesis “Design systems for wayfinding”, accessed 15 April 2017
46 Ulrich, R., Quan, X. Zimring, C., Joseph, A., Choudhary, R., 2004 The role of the Physical Environment in the Hospital of the 21st Century: A Once - In- a - Lifetime Opportunity, Centre for Health Systems and Design, College of Architecture, Texas A&M University, and College of Architecture, Georgia Institute of Technology, Website, accessed March 2017
Observation
Observation/surveillance is a key element of safety and security for staff, other residents, visitors and members of the public. Providing courtyards, internal windows, wide corridors, with intervals of spaces for congregation, and single loaded corridors with clear views to outside spaces allow staff to passively observe activities in every part of the facility.

Avoidance of visual disturbance
Providing a calm environment with minimal clutter and plenty of space free of technological distractions allows the resident space to relax and reflect. This can be achieved using art depicting nature, colour and light, and furniture selection.

Colours
Has been shown to have a psychological effect on our mood, blue being the most calming of colours. Brighter colours are less arousing than dark colours. Using colour coding for way finding instead of signs is less institutional.

Group interaction
The importance of social interaction for mental health patients is well documented though it varies depending on the type of illness and demographic of the person. There are three types of interaction namely with other residents, staff and visitors. Culture plays a large part in how someone will behave in a mental health facility. As Maori are over represented in mental health, providing spaces that embrace their cultural requirements will go towards encouraging family and friends to be part of the healing programme. Providing a variety of bedroom sizes can help accommodate visitors and give individual privacy. Social interaction can improve with the provision of spaces internally and externally. The autonomy of the individual to choose to interact or not is important in the healing process.

Access to nature
There is significant research that supports a mental health facility having strong links to nature through view and physical interaction. It creates positive psychological and physiological changes, which are demonstrated in lowering of blood pressure and heart rate.

The courtyard model in mental health facilities is not new. It provides a space for all who work, live or visit to connect with nature, interact or contemplate as they choose. Research confirms the benefits.

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54 Ibid
Conclusions

Expected value for my project

- have bedrooms which enjoy morning light.
- minimise the transference of noise within the facility and have a mix of single and shared rooms.
- design to ensure adequate protection from glare.
- use eco-friendly construction materials and good natural ventilation.
- incorporate effective wayfinding elements in the design e.g. colour coding, selection of materials: type, texture, manmade, natural and construction techniques.
- use anti-ligature design, anti-slip surfaces, universal access, ergonomics and compliance to building/engineering standards.
- uses brighter, lighter colours.

Provide

- a range of acuity design options e.g. isolation rooms, different bedroom layouts.
- large bedrooms and internal and external spaces to accommodate visitors. Spaces that embrace cultural requirements of Maori and encourage family and friends to participate in ‘recovery.’
- spaces free of technology, Display realistic art depicting nature.
- spaces for contemplation.
- courtyards, internal windows, wide corridors with intervals of space for congregation, single loaded corridors and clear views to outside spaces.
- access to nature through views and physical interaction e.g. courtyards.
What creates awe in architecture and how is it importance to mental well being

What creates awe in architecture

Architectural scale, balance, colour and geometry are all contributing elements that come together to evoke a sense of awe in the viewer, giving them a moment of surprise, inspiration or a place to contemplate.55

An architect who created awe and inspires me is Le Corbusier. He arranged his design philosophy on systems of harmony and proportion. Le Corbusier believed the mathematical order of the universe to be integrally bound to the golden ratio and the Fibonacci series.

"rhythms apparent to the eye and clear in their relations with one another. And these rhythms are at the very root of human activities. They resound in man by an organic inevitability, the same fine inevitability which causes the tracing out of the golden section by children, old men, savages and the learned."56

How awe is importance to mental well-being?

Awe has been shown to reduce the prevalence and severity of mood disorder. The psychological effects of architecture are difficult to prove, but this doesn’t reduce the importance of constructed spaces that create a sense of awe.57

Conclusions

Expected value for my project

- Adopt a design philosophy based on harmony and proportions utilising the golden ratio and the Fibonacci series with the intent of constructed spaces that create a sense of awe.

Architectural Principals of Health Design

The aim is to create a facility supporting mental health services that is easily accessible, well integrated, sustainable and flexible and promotes hope, a sense of belonging and meaning.

**Principles**

- **think of the user first** i.e. the patient, staff and visitor. Produce a design based around the model of care best suited for the population it is being designed for.
- **embrace current research-based health design principles** practiced today for a healing environment, supported by my own observations and research.
- **Embrace the 7 Te Aranga Maori Design Principals** as a guide to creating spaces welcoming to Maori and Pacific population.
- **Sustainability** design solutions that increase quality of life today without sacrificing tomorrow.
- **harmony and proportions** produce a design based on the philosophy of harmony and proportions utilising the golden ratio and the Fibonacci series with the intent of constructing spaces that create a sense of peace and ultimately a sense of awe.
- **Architectural Rhythm** “A unifying movement characterised by a patterned repetition or alteration of formal elements or motifs in the same or a modified form.”

**Achieved by**

**Designing for a programme**

- that focuses on wellness in mind, body and spirit
- where the entire complex focuses around a philosophy of ‘holistic wellbeing’ and involves the ‘family’ as much as the individual.
- where the emphasis is on short-term care by providing both acute and residential facilities as well as rehabilitation long-stay accommodation to support patients and families with chronic disabling conditions and elevated levels of need.
- that promotes early intervention and provides spaces to help young people overcome their growing displacement and isolation in our community.
- which allows tangata whenua of the area to take Maori users to local wharenui to help them reconnect with their ancestors and provide a whare ‘a place of healing and sanctuary’ for Maori within the facility.\(^{59}\)
- that combines the Maori cultural concepts with Western clinical models of mental health care.\(^{46,1}\)

**Selecting a site**

- that is free of contaminants.
- in a ‘liberal non-traditional’ or conservative working class setting.
- which is accessible to community resources, public transport, retail stores, recreational facilities and is in a ‘supportive’ safe neighbourhood and community.

**Providing a facility that**

- maintains the integrity of the land and reflects cultural histories in the urban environment and “allows for a visible and living tangata whenua urban presence”, thus restoring ‘a sense of place’ for tangata whenua, by using architectural elements and symbols of cultural significance.
- allows for the development of the surrounding grounds in collaboration with tangata whenua, keeping existing native trees of significance and providing a community vegetable garden.
- uses eco-friendly natural construction materials i.e. straw bale, brick, timber and earth to decrease risk of contaminating air quality.
- is integrated with a Wellness Centre and incorporates a GP service.

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58 Author Gharpedia.com, Importance of Rhythm in Architecture, accessed 12 Feb, 2018

59 Proctor Nicholas & assoc., ‘Mental Health – a person Centred approach, Chapter 4 pg. 85 Maori Mental Health’ 2014
60 Capital & Coast District Health Board, Te Whare Marie Service’s’ 2017, accessed 29 April 2017
• provides spaces for a telephone crisis service and drop-in centre, self-help groups, family and community support and a variety of residential services that are consumer-run.
• has access to a swimming pool, preferably able to be heated so it can be used all year round.
• is less institutional of domestic scale, homelike.
• To be no more than 1 – 2 storeys, preferably a single-level quality accommodation situated in a good quiet neighbourhood. If 2 – storeys, bedrooms are to be upstairs, communal areas downstairs.
• has a facade that is easy to read (one which portrays the activity that lies behind it) and is interactive.
• has multiple entrances to suit the state of mind of the individual on admission and has spaces that are welcoming, allowing freedom of movement for the individual within the bounds of their illness.
• has residential entrances facing or in proximity to each other that connect directly to major pedestrian paths and meeting areas.
• has access to nature through view and physical interaction e.g. courtyards, internal windows, wide corridors with intervals of space for congregation, single loaded corridors and clear views to outside spaces and access to natural elements i.e. trees, water, natural landscapes.
• has views of architectural features i.e. fountains, fireplaces, aquariums, landscape paintings.
• incorporates effective wayfinding elements in the design e.g. colour coding, selection of materials i.e. types, texture, manmade, natural and construction techniques of those materials.
• uses Internal references e.g. naming the wards with significant local Maori names, using tukutuku paneling, and the use of the koru.
• has intimate reception areas i.e. warm, friendly, welcoming.
• has a range of acuity design options e.g. isolation rooms, differing bedroom layouts.
• allows indoor/outdoor flow at the same level as the floor, using patios and decks that wrap around the building to create outdoor spaces/rooms.
• ensures adequate protection from glare.
• utilises good natural ventilation.
• uses anti-ligature design, anti-slip surfaces, universal access, ergonomics and compliance to building/engineering standards.
• uses brighter, lighter colours
• allows individuals to have a choice from a mix of single and shared rooms that enjoy the morning light, and which are acoustically sound proof to minimise the transference of noise within the facility.
• which are sensitive to an individual’s cultural beliefs. Which welcome Maori and Pacific people and provide a wide range of internal and external spaces to accommodate visitors. These should embrace cultural requirements and encourage family and friends to participate in 'recovery.'
• where youth can connect with whanau and their wider community and participate in group activities.
• which embrace the Maori landscape and providing a ‘place to stand.’
• where the whole community feels safe and comfortable to utilise and enjoy.
• which embraces community within the facility and spaces which encourage integration with the broader community.
• such as lobbies, lounges and other small group spaces to increase opportunity for socialisation.
• for contemplation.
• for exercise.
• that are naturally well-lit.
• for a house cat.
• successful focal points, neutral territory, visual perspective, activity generators to promote social interaction.
• that enables the users to feel safe and secure.
• free of technology; and display art depicting nature.

Providing spaces
2.2 FIELD RESEARCH

Pukekohe is a fast-growing satellite town of Auckland.

The following chapter gives historical context to the Pukekohe community and the tangata whenua of the area. Local vernacular architecture, climate, amenities and infrastructure are examined. The general site area and its selection in the Counties Manukau Awhinatia mental health catchment area is discussed.

Conclusions are drawn to help deal with the complexities of designing and establishing a Community Based Acute Behavioural Treatment Unit (24-hour care) and a Community Residential Units (live in Staff) integrated with a Wellness Centre in Pukekohe.
2.2.1. Brief History of Pukekohe, its community and surrounds

Pukekohe means ‘hill of the Kohekohe tree.’ Kohekohe is New Zealand’s native mahogany, and although it is not grown for commercial purposes it holds historical importance. Pukekohe is 52 km south of Auckland, in the heart of the Franklin district and Counties Manukau Mental Health Area ‘Awhinatia.’

Stats today

Pukekohe has an urban density of 330/km2, with a population of 29,800 (June 2016.) and growing. The Auckland Unitary Plan has identified Pukekohe as a priority satellite town for 50,000 people providing 9000 new jobs in the next 30 years. The population is mainly of European descent (72.8%), with significant Maori (13%), Pacific (4%) East Asian (6%), and a notable number of South Africans and Dutch descendants. Most residents own their own home with 28% renting. The younger population groups in Franklin District have a higher proportion of Maori, Pacific and Asian peoples than the population aged 65 years and over (where two thirds of the population are NZ European/other groups). 23% of the population is aged 14 or under (123,400 in 2016). With a high birth rate compared to many other areas this contributes to a relatively high demand on the maternity, child and youth health services.

Economy

The contemporary appearance of Pukekohe has been influenced by the early settlers dairy farming, market gardening, horse breeding and training. The town still services a fertile farming (dairy, sheep, cattle) and horticultural area. Pukekohe Hill is well known for its potato crops and world renowned for its long keeper onions. The area’s well drained volcanic soil supplies one-third of New Zealand’s fresh vegetables.

War/Early European Settlers

European settler ships came to New Zealand during the 1860s from Scotland, Ireland, the Cape of Good Hope, and South Africa. The settlers populated the confiscated lands of the South Auckland and Waikato Maori after the Waikato war. This provoked skirmishes by the local Maori in 1863 at or near the fortified churches at Mauku and Pukekohe East, but they were unsuccessful.

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42 Franklin Local Board Profile 2013 Census
43 Auckland City Council, “Pukekohe Area plan”, accessed 14 May 2017
44 Auckland Council “Franklin Local Board census profile 2013” PDF, last modified 2013
Immigrants

In the 1920s the success of pioneering Chinese (arrived early 1900s) and Indian (arrived 1918) growers evoked ethnic tension and racism amongst the early European settlers. Pukekohe became the home of the reactionary White New Zealand League (1926) which quickly became a national movement. There remained in Pukekohe an elevated level of ethnic tension and overt racism until the late 1950s. Indians were excluded from barbers, private bars, and balcony seats in cinemas, and could not join the local growers’ association, which resulted in them forming their own organisations.  

Maori

Maori experienced the same exclusionary treatment through the 1950s and 1960s as the Chinese and Indians; having once been the owners and cultivators of the land, local Maori now worked for others on the market gardens. Many lived and worked alongside the Chinese and Indian market gardeners. Maori also gained an income from seasonal white-baiting on the Waikato River and by working at the Southdown Meatworks, Penrose. It is little wonder that the Black Power gang gained a strong following amongst the town’s Maori youth in the 1970s and 1980s. Working extensively with the Black Power members, the people of Nga Hau e Wha Marae O Pukekohe and their various community organisations helped restore peace in the township.  

Roads, Rail and Racing

The roads of early Pukekohe were nothing more than muddy tracks and early settler buildings in the district were equally basic. The settlers lived in tents or two and three roomed shacks complete with earthen floors, nikau thatched roofs and canvas covered windows.

In 1874 the first railway came through the district; the original station was designed by architect Sir George Troup (died 1941) and built in 1913 at the eastern end of King Street. The building was later moved south west to make way for the proposed new walking bridge, which refocused the town centre on King Street, and less on the railway station. In 1920 James Roulston founded the Franklin Racing Club on Buckland Road, now called the Counties Racing Club. It is home to premier motor sports, including the NZ V8 series and horse racing events which are major tourist attractions for the area. Pukekohe boasts the Eco light Stadium, home to the Steller’s Rugby team and other famous people.

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67 Auckland City Council, ‘RUB South Cultural Heritage Overview Report’, 16 August 2013, accessed 22 April 2017
69 Timespanner, ‘Pukekohe Train Station’, 10 November 2010, accessed 22 April 2017

Figure 39: Pukekohe Confiscation Blocks, derived from Confiscation and Purchase map pg. 20 of the RUB South Cultural Heritage Overview Report, https://hearings.aupihp.govt.nz/, accessed 04 Feb 2017.
Maori occupation dates back centuries. Pre-colonisation, the tribal area was called the rohe of Tamaoho also known as Te Akitai and Ngati Pou. Ngati Tamaoho/Te Akitai had a major interest in what became the Pukekohe west block. The Ngati Pou were nearer the Waikato River (south) and Ngati Te Ata was to the west of both. All three hapu can trace their whakapapa back to the Tainui waka.71

In ancient days the pa of the Ngati Tamaoho Tribe, Te Maunu-a-Tu, stood on the western end of the Paerata Ridge. Two other pa sites associated with settlements and cultivations were at the mouth of Slippery Creek Drury. The landscape of the area (Pukeohe, Karaka and Opeheke Parishes) was one of wetlands, creeks and bush, a rich resource to the tangata whenua. North of the Pukekohe area is the Manukau Harbour and to the south the Waikato River. Throughout the rohe were papakainga, urupa and large areas of cultivation. Foot tracks skirted the swamps and travel was easy across the Manukau Harbour with portages that provided access to both the Tamaki and Waikato Rivers. The tangata whenua living near Pukekohe were the barons of the land until the mid 19th Century. This was achieved by adding European crops, fruit and livestock rearing to their established fresh/salt water fishing and flax industries. They were able to supply themselves and incoming colonists with food which had a major effect on their economy, trading patterns and lifestyle.

In 1842, the Pukekohe block (large strip of fertile land running from the Manukau to the Waikato) was sold to the Crown by iwi who were not the primary owners. The Tamaoho (true owners) did not want to sell, despite attempt by the then government to pay them off; they did not want to be parted from their ancestral land. This has never been fully resolved. The government made blanket purchases (with promises of Maori Reserves) of most of Franklin to avoid lengthy negotiations over ownership and sale so roads could go ahead, and European settlers could move in.

During the 1840s and 1850s the Maori League was formed, and a Maori King was appointed from the Waikato, as it was considered the place with the most natural resources to feed visitors. The League comprised of the chiefs of all iwi across Aotearoa (New Zealand) who refused to sell one more acre of land. War broke out in July 1863. Those who pleaded allegiance to the crown were promised they would be able to keep their land. The rest of the land was confiscated. Systematic destruction of property along the shorelines was carried out by soldiers, all waka destroyed; only one was spared, ‘Te Toki-a-Tapiri’ (cable of carrying 100,) and sits in the Auckland Museum today. Maori were alienated from their lands and sought shelter on reserves such as Whatapaka, continuing their agricultural traditions which saw them through the depression. Their descendants live there to this day. In 1995, a formal apology for unjust confiscation and a settlement was made with the Crown.74

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71 Memorandum on Land Purchased from Ngatiteata in 1842, Turton’s Epitome - An epitome of official documents relative to Native Affairs and land purchases in the North Island of New Zealand, p C284
72 Ibid
73 Ibid
74 Auckland City Council, ‘RUB South Cultural Heritage Overview Report’, 16 August 2013, accessed 22 April 2017
2.2.2. General area study

Significant landscape to Maori

The history of racism and discrimination in and around Pukekohe in the past meant exploration of significant Maori landmarks were important to recognize and acknowledge.

Pukekohe amenities

Pukekohe has most, if not all the amenities offered in the city, all within walking distance of each other. The health services located in Pukekohe are as follows:

5. GP practices and 23 GPs
1. Hospital Aged Care and Maternity, Cancer Support, Community Support
6. Specialists eye, women’s health, plastic surgeon’s clinics
7. Pharmacies
4+. Dental clinics
6. Community support services
6. Social services
0. Mental Health & Addiction Services
5. Rest homes

Infrastructure

The town has a municipal sewage, waste water and water system and rubbish collection including recycle collection.
Pukekohe is connected to the southern motorway via arterial roads to the north connecting at Drury and to the east connecting at Bombay. The main trunkline runs through the centre of town and there is a full commuter service to the city by train or bus during the working week but limited at the weekends.

Figure 40: Important landmarks to Maori derived from the RUB South Cultural Heritage Overview Report, https://hearings.aupihp.govt.nz/
The Auckland region has a subtropical climate. Almost any planting can be grown, providing the plants are located for optimal sun, shelter, drainage and irrigation. Summers are generally warm and humid, whereas winters are quite mild, frosts are infrequent. Rainfall is typically plentiful all year round, dry spells occurring during the summer months. Occasionally there are extreme events which cause wind damage and flooding. The mean monthly/annual wind speeds range between 8 -10 (km/hr) with the monthly rainfall ranging from 64 -150 mm and is generally heaviest in the winter months. The mean air temperature ranges between 14 - 16 degrees C. Sunshine and solar radiation is about 2000 hours of bright sunshine a year. There have been two recorded earthquake reports since 1840, both just north of Pukekohe.

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76 Chappell, P., ‘The Climate and weather of Auckland ‘accessed 22 April 2017
77 Auckland City Council, ‘Franklin Local Board Hazard Report’, accessed 3 May 2017
78 Ibid
Vernacular architecture of the area

Figure 43: Examples of residential architecture in Pukekohe, photos taken by Louise Pirret, March 2017

Housing

The vernacular housing architecture of the region is mostly single-story brick-and-tile or painted timber weatherboard housing on the flat areas. Split-level mostly brick-and-tile dwellings are found on the sloping areas. The most recent builds tend to be single level brick-and-tile with internal garage, built by developers on mass. There are still 1920 – 30s bungalows and villas to be found scattered around the town centre.

Figure 44: Examples of residential architecture in Pukekohe, photo taken by Louise Pirret, March 2017

Public Building

Figure 45: The Old Plunket rooms in Pukekohe, opened in 1958, later became the Arts Centre, photo taken by myself, March 2017.
Racial discrimination has had its effect on the housing settlement patterns in and around Pukekohe. Maori tend to live around the historic ‘Reservation’ at the northern end of Pukekohe, Europeans are spread out all over Pukekohe, the Indians and Chinese tend to live around the market garden on the south and west fringes of Pukekohe. However, this is changing with the influx of new generation Pukekohe settlers who are coming from Auckland in the hope of a more affordable lifestyle. They are a mix of new immigrants from China and Europe as well as New Zealanders. The Maori settlement in Pukekohe north is being squeezed smaller and smaller as land and housing is being brought up by developers and landlords.

Most of the retail is in the centre of town. Commercial areas are focused around and along the railway and Manukau Road, the main arterial route to Tuakau.
Figure 47: Land Use Diagram of built area extracted from Google Earth maps, accessed 02 Feb 2017

Figure 48: Green areas of Pukekohe extracted from Google Earth maps, accessed 02 Nov. 2016
Observations

Pukekohe’s Commercial development is linear running north/south to the west of the main truck line and along Manukau Road, with retail at the centre adjacent to the railway station. Retail is rapidly spreading along Manukau Road with mixed use and residential development spreading outwardly in all directions from this linear growth.

From an aerial perspective there appears to be a broken ring of green surrounding the original Pukekohe settlement of the 1800s. This settlement is rapidly changing as density increases; villas and bungalows are being replaced with town houses and flats. New subdivisions are popping up on the outskirts to the north and east, thus steadily expanding and changing the demographic of Pukekohe’s population.

A central public transportation hub is a recent development, comprising of the original railway station east of the track and a new bus station adjacent to it on the west of the tracks.
Conclusions

**Expected Value to my project as a whole:**

**Colour of materials:** rich earthy tones with reference to the volcanic soil of the area.

**Naming:** Name spaces surrounding the facility, parts of the buildings and spaces within the building drawing from historical references i.e. ancestral tribes from the Tainui waka, the only surviving waka ‘Te Toki-a-Tapiri,’ as well as ‘local pas, mountains, rivers, harbours and reservations.

**Structures:** the structures need to be designed so that they are free from flooding and dampness with good cross ventilation.

**Landscaping:** natural looking planting to consist of wetland plants, creeks and bush.

**Sustainability and Infrastructure:** provide spaces for storage of rubbish for collection. Recycle and reduce waste water where possible, collect and store along with rainwater for use in gardens, flushing toilets, etc. Provide space for worm farms and composting of food waste.

**Circulation:** provide safe walk/cycle links to community amenities that are well lit to be within 10-minute walking radius from community amenities.

**Techtonics:** creating structural connections by drawing from how onions are tied together, and onion boxes are constructed and slotted together.

**Garaging:** under, attached, detached, carports, off-road parking can all be considered.

**Expected Value to the 24-hour Community Based Acute Behavioural Treatment Unit:**

**Form:** refer to old Plunket rooms – modernist 1950s design, simple geometry, single level. Reference to packing sheds and split-level housing.

**Construction materials:**

Facade: single lite ribbon windows, rhythm to the layout of the windows, depict activity inside i.e. smaller for the offices and larger for the communal areas.

Walls: Brick and concrete.

**Construction technique:**

Roof: minimal pitch with pelmet.

Entrance: Public entrance at the front, simple, able to see what is inside, welcoming, well lit, at street low planting to indicate path and direction to entrance. Logo and name discreetly yet clearly visible along top of main part of building entrance.

**Expected Value to the Community Residential Units (live-in staff):**

**Form:** the kohekohe tree sprouts new life from its trunk which inspires an organic form connected to a more formal design combined with reference to 1800s nikau thatched roofs, canvas-covered windows and tents.

**Construction materials:**

Walls: use local volcanic soil to form rammed-earth walls with timber framing combined with painted weatherboards, brick and concrete.

**Floors:** earthen floors, references to the traditional whare.

**Construction technique:**

Roof: pitched corrugated colour steel. The climate requires a roof that provides shelter from the elements i.e. appropriate overhangs, protected entrances/exits.

Windows: Multi-lite, awning, casement, fixed picture, box.

Entrances: sheltered, simple, facing neighbour or street.

**Expected Value to the Chapel:**

**Construction materials and technique:**

Reference to the Mauku and Pukekohe East churches, i.e. steep pitch of roof, tower.
Figure 49: Water colour by Louise Piret of architectural elements from Pukekohe history depicting the area and the layers of ownership. Acknowledging the Maori history of land ownership and loss, representing the healing of old wounds, the forgiving and coming together of a community with a racially fractured past for a common cause - the future proofing of our youth.
2.2.3 Site selection

I considered four sites in Pukekohe and have outlined the ‘pros’ and ‘cons’ of each sites.

Note: The common denominator for not selecting sites one to three was that they did not have a swimming pool.

Figure 50: Sites considered for project, base map from google maps, accessed 12 March 2017
**Site 1**

Adjacent to transport Hub (rail and bus)

Pros:
- Connection with city/ Auckland and Middlemore hospitals, allowing ease of transport for facility users, workers and visitors. A destination as well as a transition and a place to leave and return.
- Opportunity to reintroduce the station as part of a functioning community, a place to meet, share experiences, with diverse uses in and around it. A crossroads where all collide. A welcoming gate to all who pass through, visit or stay.
- Use an otherwise underutilised unattractive space in the centre of town.
- Opportunity to remove the bottle neck caused by having a single access into and around the village.
- Opportunity to beautify Pukekohe, make it more user and pedestrian friendly.
- Walking distance to all community facilities.

Cons:
- Access and views to nature limited.
- No swimming pool.
- Not a quiet area (cars, train, buses.)

**Site 2**

Abutting Totara Park Reserve

Pros:
- Views and access to nature.
- Less likely to have objection from residents as not many direct neighbours.
- Opportunity to showcase building as clearly visible from road approaching Pukekohe from the east.
- Reasonably large flat sites for all programs.
- Quiet area.

Cons:
- On the outskirts of the community, not centrally located. This can be a pro as well, but wanting to integrate not separate from community.
- It is on the outskirts of the community, not centrally located. This can be a pro as well, but I am wanting to integrate not separate from community.

**Site 3**

Pukekohe Maternity and Aged Care Hospital Grounds

Pros:
- On the edge of residential area.
- View and direct access to nature.
- Elevated flat site, plenty of room for all programmes.
- Quiet area.

Cons:
- Because it would adjacent or connected to the current hospital there would be a visual association connecting them.
**Site 4**

*Queen Street Jubilee Pool/Collie Road site.*

**Pros:**

- in central Pukekohe and adjacent to the proposed facility.
- within 5 minutes walking distance to the local dairy and Pak n’ Save, Pukekohe High School and Intermediate school.
- five minutes’ drive / half an hour walk to Hill Primary, Pukekohe North, Valley Primary and Nga Hau e Wha Marae.
- ten minutes’ walk to the train station and bus hub, library, main shopping Centre and churches
- north facing site in close to proximity to each other.
- in a quiet neighborhood set back off main road, overlooking Bledisloe Park sports fields and netball courts. The park has an established grove of mature native kohekohe trees running through the middle of it.
- able to view across the sports field and trees to high school and Mount William in the distance(east), intermediate grounds (north) Pukekohe Hill and low-density housing (south and west).
- it is an elevated site in the middle of an urban community.

**Cons:**

- Bledisloe Park does flood from time to time; however, the Jubilee site is elevated enough not to be affected.\(^{79}\)

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\(^{79}\) Auckland City Council, *‘Franklin Local Board Hazard Report’*, accessed 3 May 2017

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**Pros for Wellness Centre on the site:**

- within walking distance, (1.6 km radius). Need this radius to have a big enough pool of populous to run the centre, a minimum of approximately 2,000 families.
- Wherever potential members come from, it is safe to get to the centre by foot, especially for children.
- 60% of Pukekohe’s population are varied types of families with children of varied types settled within this radius. They include those working in every sort of skilled work, independent tradesmen, employers of labour, various grades of government employees, municipal officers, clerical workers, professionals, unskilled workers and artisans. The income level varies from $10,000 to $50,000 plus.\(^{80}\) A cultural mix of European, Maori, Polynesian, Indian and Asian. Thus, representing a good cross section of the area.
- the site would be clearly visible to the populace during construction so will catch the attention of those it will be intending to serve. When functioning, its visibility will attract attention and hopefully draw others in.

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\(^{80}\) Stat Govt. NZ., *‘2013 Census Pukekohe West’*, accessed 22 April 2017
**Importance of the site:**

- The Jubilee Pool was built and used by the Franklin Community in the early 60s. This is when owning a car was out of reach for most residents of Franklin. Access to places for swimming such as rivers, lakes and beaches were limited. It was decided that a full-sized swimming pool complex would be built in the centre of Pukekohe, to give access to walking traffic from all around Pukekohe. In 1962, a fundraising Spring Carnival was organised and the Franklin residents raised enough money for the complete construction of the complex. Five committees – Central, Maori, Business, Social and Sports raised this money within 6 weeks, an amazing effort considering the racial division at that time. Work was completed in 1964 and the pool is still open to this day, but it needs attention. At this stage, it is earmarked as a future youth hub.

- The Jubilee Pool offers an opportunity to reintroduce the pool as part of a functioning community, a place to meet and enjoy and create diverse uses in and around it by upcycling an otherwise underutilised and tired facility in the centre of Pukekohe.

- Beautify Pukekohe by making the open spaces directly abutting the facility more user and pedestrian friendly.

- Develop spaces around the edge of the facility to encourage integration with the community. The pool is a great social leveller and attracts children who then draw their families along.

- Offer holistic wellness and healing benefits of swimming and being by water, with access and a view to nature.

**The Collie Road Site:**

- Is flat and surrounded by trees, nestled between Bledisloe Park sports grounds to the north and residential building to the south. The area could be filled with community gardens, walkways, sheltered seating and picnic areas.

- Offers the opportunity to revitalise the positive connection with the whole community it once had through a communal swimming pool.

- Has an established low density, middle-class suburban housing area along its southern border and the Bledisloe Park on the east, north and west boundaries.

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Features which all help to protect the site from south westerlies are the rise in contour from the north to south end of the site, the established trees and the residential housing which borders the south-west and southern boundaries. Abutting the northern boundary of the site are the Pukekohe netball club courts which are predominantly used at the weekends. Most of the audible noise will come from the courts when in use. Bledisloe Park is used in the evenings for training and on weekends for soccer in the winter, and cricket in the summer. There is a skateboard park immediately in front of the pool area which is used mostly after school and weekends. The pool itself is used only in the summer by the community.

Figure 5.1: Diagram of pedestrian circulation around site, wind flow and noise
10-minute walking radius from selected site

Figure 52: Diagram indicating a 10-minute walking radius from the site, base map from google maps
Figure 53: Cross section of jubilee pool site, Pukekohe
Conclusions

Expected value to my project

Cultural
- architecturally acknowledge the cultural mix of European, Maori, Polynesian, Indian and Asian population in the community.

Advertising
- the site will be clearly visible to the populace during construction therefore will catch the attention of those it will be intending to serve. When functioning, its visibility will attract attention and hopefully draw people in.

Community
- opportunity to be built by and used by the people for the people.
- The skateboard park directly in front of the pool is earmarked for further development this year, creating further opportunity for social interaction.
- the pool is a great social leveller and attracts children who then draw in their families.
- reintroducing the pool as part of a functioning community, a place to meet, share, experience, provide diverse uses in and around it.
- a communal swimming pool offers the opportunity to revitalise the positive connection with the whole community it once had.

Circulation
- place new buildings to incorporate current circulation routes through and around Bledisloe Park and Jubilee Pool.

Noise
- spaces designed for rest and contemplation that are near the netball courts need to be protected from the potential noise of netballers and the bright lighting of the courts in the evenings.

Siting of building
- needs to follow the contour of the land.

Reuse/recycle
- existing buildings reuse/ recycle materials where possible. Incorporate in plan. Obtain plans of existing buildings and pool from Council.
2.3 PRECEDENT STUDY

Space and understanding the way it affects us can be studied in three ways: recording, analysing and drawing conclusions firstly from my own subjective experiences; secondly through reading the observations and conclusions of others; thirdly by studying buildings of a similar typology. I have used these methods to understand space in both the natural and built environment and to define spatial qualities that will evoke a range of emotions conducive to a healing environment for the recovering mentally ill.
Figure 54: Drawing from the book: Le Corbusier, 'The Art of Architecture'

Figure 55: Will Alsop 'Cultural Fog' www.e-architect.co.uk/toronto/toronto-will-alsop-exhibition, accessed 14 Nov. 2016.

Figure 56: Pete Bosley; "untitled," architecturenow.co.nz/articles/summer-series-3-grand-tour-drawings, accessed 14 Nov. 2016.
2.3.1 Summary of analysis of selected architect/artist precedents methodology

Le Corbusier

Le Corbusier would draw to explore the contrast between large spaces and individual compartmentalised spaces, classical architecture, geometric form and the use of landscape as an architectural tool. He spent his mornings painting and drawing, always with a playful overtone before heading to his architectural office in the afternoon.\[82\]

Pete Bossley

Pete Bossley finds drawing a wonderful way to understand places and people on an intimate level. Drawing helps him explore space and capture atmosphere much quicker than on a computer. He draws to express an idea which he will develop through architecture, nothing to do with the archetype. A drawn idea generates an architectural form and then takes off in all sorts of ways. Pete uses abstract drawing to express what it is like to be inside a space while life goes on around. He enjoys the immediacy of a quick sketch; if he labours over them, they become overworked and lose their energy and spirit. Pete likes to draw with pencil, felt pens and watercolour and more lately on his iPad.

Will Alsop

Will Alsop uses painting to clear his mind, to think freely and create an uncontaminated design approach. One of his reasons for painting is that he is not really in control of what he is doing, and that interests him greatly. He will start anywhere in the design process. For him there does not need to be a series of logical thoughts as in architecture when working towards a designed building. He sees the act of painting, along with working closely with the client and local community, as an integral part of urban design and architecture.\[83\]

Common threads

- All have a social conscience and draw/paint as part of everyday life. They make use of bright colours and unusual avant-garde forms derived from strong geometry that express dramatic individuality. As a result, they have all produced controversial modernist buildings. Alsop and Bossley were strongly influenced by Le Corbusier. Alsop and Le Corbusier were greatly influenced by their art teachers at an early age. Bossley and Le Corbusier both travelled around Europe and drew and discovered:
  - the contrast between large collective and individual compartmentalised spaces.
  - classical proportion and geometric form.

Methodology inspired by Le Corbusier, Will Alsop and Pete Bossley

Sketch/draw/paint every day to help clear the mind so as to have an uncontaminated design approach and understand:

- the differences between large and collective spaces and individual compartmentalised spaces
- classical proportions i.e. human proportion, the golden rectangle
- geometric forms
- landscape as an architectural tool
- the secrets of form
- movement - thru, vertical oblique, horizontal round and round
- space, size, shape, light, dark
- atmosphere
- connections – internal, external, natural and manmade.

Use drawing/painting to draw out my philosophy of architecture

- meaningful playful design for people

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\[82\] F. Choay, ‘Le Corbusier’ updated 17 August 2016, accessed 16 April 2017

\[83\] Justine Harvey, ‘Summer Series Grand Tour Drawings’ Architecture Now, 1 February 2016, accessed 16 April 2017
Figure 57: View from SH1 towards the Coromandel Ranges and the Pinnacles, Coromandel, NZ

Figure 58: Serenity

Figure 59: Belonging

Figure 60: Diversity

Figure 61: Sound

Figure 62: Smell

Figure 63: Touch
2.3.2 Analysis of natural spaces

Landscape

The outlook: On my journey to understand space I thought about those spaces that lift my spirit. The Pinnacles in the Coromandel ranges and the views to and from them were the initial images that came to mind. I asked myself why does climbing the Pinnacles, standing on top and viewing them from a distance evoke so many positive sensory delights? Approximately half an hour from Thames I stopped and took a photo of the Coromandel Ranges which I then later painted. The following are the conclusions of my drawn analysis of space and their meaning.

Serenity: Such an overwhelming sense of scale only mountains can provide. Nothing seems out of place. Everything fusing together harmoniously into the distance giving a sense of peace.

Belonging: When looking at the whole landscape I can see that everything fits together like a jigsaw puzzle, nothing seems out of place. It is the same with people; we are part of nature’s landscape. Whatever shape, size or colour we all belong. A sense of belonging is a human need, like the need for food and shelter. Feeling that you belong is important in terms of seeing value in life and coping with intensely painful emotions.

Diversity: All the assorted colours, shapes and forms that fill this landscape create a diverse environment, one that the eye can rest upon, finding something new and interesting each time, making the scene very calming for the mind.

Senses: Besides sight we have other senses which contribute to our perception being: hearing, smell, touch and taste. For this analysis I have not included taste as I take my journey to the top of the Pinnacles.

- **Sound**: When in the ranges, our voices reverberate if we call out, our voices feel part of something bigger, giving a sense of exhilaration. The sound of nature rustling and occasionally singing all contribute to enrich the experience.
- **Smell**: I notice subtle transitions as we climb, the smells change as the vegetation, soil and animal life changes.
- **Touch**: I feel the air on my skin change, the dampness of the vegetation as it brushes my legs, the terrain under foot as it become rocky and steep towards the top. These changes add to the complete sensory experience.
During the summer, we spend most of the school holidays at our Bach on the Coromandel which looks out over the Firth of Thames. Many an hour has been spent on the porch gazing out over the ocean or down on the beach swimming.

“We are beginning to learn that our brains are hardwired to react positively to water and that being near it can calm and connect us, increase innovation and insight, and even heal what’s broken...... the health and neurological benefits of exercise by water are very real.” ...” Wallace J. Nichols 84

“We came from the water; our bodies are largely water; and water plays a fundamental role in our psychology. We need constant access to water, all around us; and we cannot have it without reverence for water in all its forms. But everywhere in cities water is out of reach.” Alexander, Christopher 85


Water and space

Water has always been a subject of fascination for mankind. Considering that water makes up 60% of the human body, it's no surprise that we are so connected to this ever-changing element.

**Interaction:** The ocean offers a variety of benefits: full interaction by being immersed in it, as a playground for boat lovers, surfers, swimmers and divers. Its shores offer places to fish, play, walk, run and get wet, or just contemplate.

**Refreshing:** The sea itself and the breeze that comes off it anytime of the year is refreshing. According to psychological research, minerals in the ocean breeze reduce stress; negatively charged ions in the ocean air breaks down free radicals, improving alertness and focus; salt in the water preserves tryptamine, serotonin and melatonin levels in the brain, which help in reducing depression or improving our overall feeling of wellness.86

**Transparency:** When transparent, the ocean is a like a liquid veil which we can look through and forget about our worries and delight in what lies within.

**Sound:** Research has shown that the sound of waves alters our brainwave patterns, producing a state of relaxation. The constant sound of the ocean crashing onto the shore varies in volume and frequency; the constant rise and fall of the wave creates a soothing effect.87

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Conclusions

Expected Value to my project

General design

- Sketch/draw/paint every day to help clear the mind so as to have an uncontaminated design approach and understand the impact and complexities of space.
- Formulate a philosophy of architecture that is based around meaningful, playful design for people.
- The journey through the spaces in the design to lift the spirit.
- Everything must fit together, fusing together harmoniously giving a sense of peace.
- Everything fits together like a jigsaw puzzle, giving a sense of belonging
- assorted colours, shapes and forms that create a diverse environment, one that the eye can rest upon, finding something new and interesting each time. Nothing is out of place making the scene very calming for the mind.
- Control of voices, in some areas important that if we call out, our voices feel part of something bigger giving a sense of exhilaration. The ability to hear nature rustling and occasionally singing all contribute to enrich the experience.

Choice of materials and aperture positioning allows for subtle smells to filter through to help identify where you are and the purpose of the space.

Ability to feel the air on your skin change, the change in humidity and temperature as one transitions spaces, the change in texture and levels under foot all adding to the complete sensory experience.

Play ocean sounds in contemplation areas. The sounds of waves alter the brain’s wave patterns, producing a state of relaxation and creating a soothing effect.

Provide visual images of the ocean.

Provide ability to see through to next space transparency is like a liquid veil which we can look through and forget about our worries and delight in what lies within.

Weiness Centre

- A pool offers a variety of benefits, full interaction by being immersed in it, as a playground to get wet, or just contemplate.
- Salinized pool as salt in the water preserves tryptamine, serotonin and melatonin levels in the brain, which help in reducing depression and improving our overall feeling of wellness.


2.3.3 Analysis of built environment

2.3.3.1 Courtyards

In ancient traditional courtyard houses the courtyard is the heart of the dwelling; privacy from the outside world is their key quality. The courtyard facilitates outdoor activity and looks inward to the spaces that surround it. A central courtyard is a room without a roof, providing lighting and circulation. In the summer an outdoor room; in the winter the house looks inward for shelter and protection.90

New Zealand’s Auckland region, has a sub-tropical climate. A courtyard that is wide and open enough to allow sunlight to penetrate the house through large internal windows while still retaining privacy from the outside world and provide shelter from the cold south westerly winds in the winter, would be beneficial. In the summer a courtyard that is small enough to protect the user from the intensity of the sun and humidity by offering cross ventilation and shade, is ideal. It will facilitate outdoor living, where plants and water features offer cooling through evaporation.91

90 The Urban Courtyard Housing form as a response to human needs, culture and environment” http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.633.6268&rep=rep1&type=pdf, accessed 14 Feb 2017
Figure 69: Courtyards from The Urban Courtyard Housing form as a response to human needs, culture and environment’ http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.633.6268&rep=rep1&type=pdf, accessed 14 Feb 2017
In the traditional courtyard, the patio is always at the centre of the house. However, there are several archetypes which architects have evolved over the centuries that are used today.

**Forecourts**: used as an outdoor entrance lobby, partially covered, a transition area from road to house which can be used for household activities.

**Patio**: the traditional core of the house

**Patios as a transitional element**: the courtyard mediates with the surrounding landscape, no longer central but to the side, splitting the wall and creating a moderating opening to the landscape, a transitional space. It becomes an outdoor room and a slice of nature, quite often an ‘L’ shaped plan.

**Binuclear principle**: divides the house in two blocks with a patio in between dividing the living and sleeping with an entrance that links the two blocks, ‘H’ shaped plans are common, having a connecting bridge/entrance thus forming semi patios on either side. A further development has the courtyard bound on three sides and the fourth open to the landscape.

**Multi patio System**: the principle of separating functions and insulating lobbies, separating each room with a private outdoor space, each patio relates to one indoor function, creating a long narrow house.

**Patios as a prism of light**: a courtyard no larger than 6 by 7 m open or covered with transparent walls can act as a light prism, around which the house operates. This is feasible if the courtyard is not needed for environmental regulation i.e. ventilation.

**Courtyard system**: the house no longer surrounds the patio but the patio surrounds the house creating indoor outdoor flow.
Institutional courtyards

Because of the importance of privacy and security for the vulnerable user of mental health facilities, I have done a brief analysis of courtyards in two acute mental health facilities in New Zealand and three homes, one in New Zealand two from countries with similar climatic conditions.

Mason Clinic

Regional Forensic Psychiatric Services, which includes a secure acute, semi acute and rehabilitation 7-unit facility with hostel on Unitec grounds, Pt. Chevalier, Auckland:

Occupants: 87 total beds, a mix of male and female

Courtyard area: 3,594 m²

Total courtyard: m²/person: 41.31 m²

Types of courtyards

1. Forecourt
2. Patio
3. ‘L’ shaped Transitional element
4. Binuclear Principle
5. Light prism

Figure 70: Aerial view of Mason Clinic, Unitec Campus, Mt Albert, Auckland, base map from Auckland GIS Viewer, accessed Nov 2016
Courtyards

There are four layers, all with controlled access for inpatients, staff and visitors. The first layer comprises 5 large courtyards for socialising and exercise. They range in vulnerability to the outside world from almost surrounded by buildings to having at least half of the enclosure in 6-metre-high wire mesh fencing, allowing a view through to nature outside its bounds. These mesh walls have entry/exit doors allowing controlled movement within and from outside courtyards around the facility. Presumably discreet exits and entries can be made this way if necessary. Each courtyard has at least 2 entry points from a building. All have a full-sized sealed court for ball games and paved/grassed, sheltered seating areas for relaxation or conversation. About 50/50 sealed and grassed areas, some plantings (probably native).

The second layer comprises four smaller courtyards within the hexagon-shaped buildings. Two courtyards are mainly grassed with plantings with two or three sheltered seating arrangements and no exercise courts. Two thirds of their boundary have 6-metre-high wire mesh fencing, with one entry point off the building. Possibly there are vegetable gardens in these courtyards. The third of these smaller courtyards is almost completely enclosed by the building fabric of the relatively new Kaupapa Unit, which is landscaped about 70/30 in paving to native planting with a rubbing stone as a focal point. There appears to be only one area with seating; shelter is provided from the building’s eaves. The fourth courtyard is also nearly completely enclosed by the building fabric, being mostly paved with seating and plantings inside its perimeter.

The third layer is smaller again, of the four courtyards, two are completely enclosed by the building fabric and one has some fencing. They appear to be devoid of any furniture; one is grassed, two are paved. The fourth is like a natural native wilderness of planting. All have one or two entry points.

The fourth and final layer has very small courtyards. I can find six altogether, two for each main building. They are very simple spaces able to seat one or two people and are attached to the exterior of the buildings. A fenced 25 m swimming pool is available.
Figure 72: Tiaho Mai – Middlemore Hospital Mental Health In-patient Unit, Otahuhu, Auckland, base map from Auckland GIS viewer, accessed Nov 2016

24-hour rehabilitation and treatment service mental health unit in the grounds of Middlemore Hospital, Otahuhu, Auckland

Occupancy: there is a total of 50 beds spread over three wards: 12 acute and 38 non-acute beds, a mix of male and female residents.

Courtyard area: 2,647.54 m²
Total courtyard: m²/person: 52.95 m²
Staff courtyard: m² 43.97 m²
Types of courtyards:
1. ‘L’ shape Transitional element
2. Binuclear Principle
3. Light prism
Courtyards

Note: Tiaho Mai is currently being upgraded to provide more flexible spaces to cope with the variety in health needs and conditions. Bedrooms with ensuites and additional private courtyard provide where the user can relax and spend private time with family and friends.

Current Courtyards:

There are six layers, all with restricted access for inpatients, staff and visitors. The first layer comprises of two large courtyards (1) for socialising and exercise. At least half of the enclosure has in 6-metre-high wire mesh fencing, allowing a view through to nature outside its bounds. These mesh walls have entry/exit doors allowing controlled movement within and from outside courtyards around the facility. Presumably discreet exits and entries can be made this way if necessary. Each courtyard has three to four points of entry from the building. The courtyards are grassed, with some paving to sheltered seating areas for relaxation or conversation. There are no exercise courts, about 90/10 grassed and sealed areas, minimal plantings (probably native).

The second layer comprises two smaller courtyards (2) with no sheltered seating arrangements and are mainly grassed with plantings and with two thirds of the boundary in 6-metre-high wire mesh fencing. There is one entry point off the building. It is landscaped about 80/20 in paving to grassed area and shelter is provided by the building’s eaves.

The third layer are smaller again, comprising two courtyards (3) partially enclosed by the building fabric with the rest of the enclosure fenced, abutting the public car park. One courtyard doubles as a secure drive-in entry for ‘sectioned admissions. It is mostly paved with some landscaping. The second courtyard has a landscaped grassed area with seating and few plantings. Both courtyards appear to have one entry point each from the building.

The fourth layer has two even smaller courtyard spaces (4). One appears to be for staff as it is just off the staff entrance and is fenced on three of the four sides. The other is just off admissions, so could be for those being admitted and their ‘family. Both are paved and simply landscaped with one seating area in the open.

The fifth layer is very intimate. There are five courtyards (5) altogether, one for each of the east wing wards, very simple spaces to sit for one or two people. Two are attached to the exterior of the buildings and three abut the large courtyards.

The sixth and final layer involves the light prisms (6) which sit over the main circulation areas and nursing station, to give natural light to deep areas in the building.
La Maison Bordeaux

8 Chemins des Plateau, Fluoric, Bordeaux, France

Occupants: five in the main house and two – four in the guest block

Built floor Area: 941.8m²
Courtyard area: 327.4 m²
Built m²/person: 188.3 m² house, 27.4 m² - 54.7m² guest
Total courtyard m²/person: 46.8 m

Types of courtyards
1. Forecourt
2. Patio
3. Binuclear Principle
4. Light prism

Figure 74: Plan of La Maison a Bordeaux
Figure 75: above 3 images - La Maison a Bordeaux, Courtyard photos from Sarah Syme Project, accessed 12 May 2017sarahsyme.com/Maison-Bordeaux-dossier/

Courtyard

Set into the landscape the courtyard separates the main house from the guest block, and acts as a forecourt providing circulation for vehicles, wheelchair and foot traffic. It is rectangular with access and views to the outside from all sides. The courtyard has no planting or seating, because if you are in a wheelchair you don’t need seating. There is just concrete paving and grass. It provides a separation of visitors from residents. The courtyard provides a blank canvas, a flexible space which could be used for a social gathering, meeting space, ball games etc. The porosity of the sides of the courtyard encourages one to venture out or in, yet it remains a private space protecting its occupants. It is a transition space between the outside world and the inside of a family home.

Figure 76: Courtyards of La Maison Bordeaux
Hooper House, I

Baltimore Maryland USA, built 1958 - Architect Marcel Breuer

This is a ‘binocular courtyard’ house where the living and sleeping areas are separated into two blocks with the courtyard in-between them, connected only by the entrance and its lobby.

Occupants: 6 - 8

Built Floor Area: 452.12 m²
Courtyard area: 229.2 m²
Built m²/person: 56.5 m² - 75.35 m²
Total courtyard m²/person: 28.65 m² – 38.2 m²

Types of courtyards

5. Forecourt
6. Patio
7. Binuclear Principle
8. Light prism
The house is made up of two blocks joined by and made one by the masonry walls which enclose them.

A room without a roof bounded and protected from the outside world by thick stone walls, the courtyard is the central focus of the home. The courtyard has an intimate, serene feel about it, a place in which to sit and relax and gaze out of or into from the outside. The courtyard is a transitional element, 'the in between' the outside world and inside the house. It is decentralised; the views to nature through a large opening and threshold in the masonry wall invite you out. When looking in, a peaceful inviting garden invites you to step in.

The use of stone to create the walls gives it a solid grounded feel, a sense of permanency and being protected from the outside world.

The change in ground levels accentuates the transitions between outside and in. The presence of water is calming and cooling, adding to the journey of transitions from inside to out, and back over the small foot bridge. It accentuates the shift from public to private, enclosed to exposed.
Wilkinson’s Castle


Occupants: 5 - 7 people

Built floor area: 93.64 m²

Courtyard area: 104.04 m², 40.96 m² patio

Built m²/person: 188.3 m² house, 27.4 m² - 54.7 m² guest

Total courtyard m²/person: 14.8 m² - 20.8 m²

Types of courtyards:

1. Patio

Figure 80: Plan view of Wilkinson castle
The thickness of the building plan between the courtyard and the outside world makes the courtyard feel safe and impenetrable, a haven of tranquillity in opposition to the blustering weather of the exposed west coast cliff face. The house protects the inner space against the elements, especially the winds. The courtyard became an “enchanted island of peace and security, privacy and beauty.” - Chapman – Taylor

Because it is so sheltered the rain only falls straight down therefore not wetting the timber cloister floors. There is always a shady and sunny part to sit and contemplate. All rooms have a view of the courtyard and open onto it. The courtyard is the internal circulation of the house, the inside out creating “a spiritual quality” - Chapman – Taylor of being one with nature. This is introduced through the plan; it lifts the spirits of those that dwell there. 

Conclusions

Expected value to my project

General:
Courtyards that are large enough to allow sunlight to penetrate the house through large internal windows while still retaining privacy from the outside world and provide shelter from the cold south westerly winds in the winter, would be beneficial in the climate at this Pukekohe site.

Institutional courtyards:
The inclusion of outdoor courtyards which facilitate a variety of activities from group exercise areas to intimate contemplative spaces is important to alleviate stress from crowding and gives the user choice. Providing exercise areas allows for exercise and social interaction; covered seating areas for conversation with other users/visitors. The inclusion of a swimming pool is important, with the well documented benefits of swimming in cool and salt water, as is toiling in the soil. It is therefore important to include vegetable gardens for therapeutic as well as occupational therapy. A range of landscape environments from formal to rambling, exotic to native, provide places for all tastes. Secure boundaries are important for the safety of all. Staff and users have a choice as to which outdoor environment best suits the more vulnerable individual at any given time.

Having fencing that is durable and resilient yet able to be viewed through or over and out and beyond the enclosure to nature and whatever activities are going on around the edges of the facility is important to elevate the feeling of imprisonment and isolation. Having areas that are flexible, able to double as a courtyard and sectioned admissions yard, thus maximising the outdoor space available is also important. Providing an outdoor, private time-out courtyard for staff to allow them to destress away from the clinical setting is another consideration that should help to enrich my project.

Residential courtyards:
Provision of sheltered shared space for all to use with views to the outside world and vice versa as well as grassed/ paved areas with seating in the open and under a cloister allows the user to destress away from the clinical setting. A courtyard can be used as a means of separating living from sleeping areas, a transitional space between public, communal and private, making it a room without a roof. The thickness of plan gives a sense of safety/protection, thick masonry walls add to this sense as they are strong and resilient. The change in ground level and presence of water and bridges, accentuates the transition from one space to another, making it an occasion. The courtyard needs to add a spiritual element of enchantment by plantings that stimulate all the senses.

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93 Hsiao M. ‘6 amazing health benefits of cold water swimming’ accessed 12 May 2017
94 Darnten J, Michigan State University, ‘What are the physical and mental benefits of gardening?’, updated 19 May 2014, accessed 15 May 2017
2.3.3.2 Etheral Precidents

Spaces created through the poetic imagination which are light and airy producing beauty that is extremely delicate or refined\(^{95}\)

\(^{95}\) Etheral, www.wordnik.com/words/ethereal, accessed 14 Feb 2018
Figure 8: (left) Outside “… we approach, we see, our interest is roused, we stop, we appreciate, we turn around, we discover. We receive a series of sensory shocks, one after the other, varying in emotion: the jeu comes to play. We walk, we turn, we never stop moving or turning towards things. Note the tools we use to perceive architecture … the architectural sensations we experience stem from hundreds of different perceptions. It is the ‘promenade’ the movements we make that act as the motor for architectural events.” (Le Corbusier, 1975)

Figure 8: (left) Images of facades from http://architecturalmoleskine.blogspot.co.nz/2012/06/le-corbusier-chapel-of-notre-dame-du_30.html

Figure 85: (right) Poetic Journey “Inside: we walk around, we look at things while walking around and the forms take on meaning; they expand, they combine with one another” (Le Corbusier, 1936). Images from architecturalmoleskine.blogspot.co.nz/2012/06/le-corbusier-chapel-of-notre-dame-du_30.html
Site: The site connects well with nature, is elevated and has a view of surroundings, the chapel itself has a sense of being of the site.

Plan: embraces the Modular (a visual bridge between two incompatible scales, the imperial and the metric system. It is based on the height of a man with his arm raised.)

Facades: are interactive, each façade responds to the wind direction it faces and serves a purpose. The soft curves and corners of the facades are welcoming, and the chapel has two entries, a private small discreet entry and a main entrance.

Circulation: there is clear circulation differentiation between public (horizontal) and restricted circulation (vertical). All public circulation is defined by open large spaces and clearly defined generous thresholds. The restricted vertical circulation is defined by narrow thresholds, steps and spaces.

Atmosphere: ethereal and uplifting, the interior of the chapel feels like the weight of life can be lifted from your shoulders on entering the space.

Furnishings: simple, uncluttered and easy to navigate.

Lighting: mostly natural, each wall has different apertures which respond to the direction they face, the time of day and season.

Texture: the textured concrete walls give a handmade, craftsman appearance and domestic feel.

Color: obliquely cut openings in the thick wall are fitted with a variety of shaped and sized window frames filled with panes of primary coloured glass through which solar light shines casting a colourful hue. These fan to the inside enabling the coloured light to gently fade inside. The internal walls are of earthy off-white tones.

Structure: domestic scale timber framing based on angular columns with infill space created between the inner and outer membranes up to 2.72m thick filled with concrete rubble from the site (remains of the previous chapel).

Floors: gently slope from the entrance down towards the altar.

Roof: The sacredness of the internal space is emphasised by the illusion of the roof floating above the walls as it reaches for the sky. Constructed in a series of supporting trusses arranged in a north/south direction which rest on concrete angular pillars. The clerestory windows situated between the walls and the roof create this illusion and let in most of the interior natural light. The roof is shaped so that the rainwater rains to one point, forming a waterfall which pours into a fountain at the base of the west facade.

Contemplative spaces: additional private spaces which are dimly lit.

Visit the Le Corbusier Chapel in Ronchamp, France, by Henk Bekker, March 1, 2016 (Updated on June 22, 2016)


97 http://www.independent.co.uk/news/science/dim-lighting-helps-people-make-better-decisions-scientists-claim-9153010.html

98 Visit the Le Corbusier Chapel in Ronchamp, France, by Henk Bekker, March 1, 2016 (Updated on June 22, 2016)
Private and public areas:

Circulation:

Circulation: focused towards the courtyard, from the main entrance in a continual descent down a ramp consisting of a rhythmically glazed long concrete corridor. Using changes in levels and size of thresholds, the circulation plan separates private from public areas.

Walls:

Walls: The use of one of Le Corbusier's five key elements, the pilotis allows the public to wander around the building at ground level without disturbing the private activities of the interior. These load-bearing columns (pilotis) line the inside walls and open the façade to long ribbon windows. The use of floor-to-ceiling glazing in public areas allows one to see what lies in the space ahead.

Walls:

Walls: The use of one of Le Corbusier’s five key elements, the pilotis allows the public to wander around the building at ground level without disturbing the private activities of the interior. These load-bearing columns (pilotis) line the inside walls and open the façade to long ribbon windows. The use of floor-to-ceiling glazing in public areas allows one to see what lies in the space ahead.

Environment:

Walls:

Walls: The use of one of Le Corbusier’s five key elements, the pilotis allows the public to wander around the building at ground level without disturbing the private activities of the interior. These load-bearing columns (pilotis) line the inside walls and open the façade to long ribbon windows. The use of floor-to-ceiling glazing in public areas allows one to see what lies in the space ahead.
Analysis of Convent Sainte – Marie de la Tourette


Built as a chapel and to be a self-contained world for a community of silent monks where they would reside and learn.

Light: The use of natural light affects the mood of a space.

Relationship: In both plan and site selection there is a contrasting relationship between the old guest house of the Dominicans which is nestled into the hillside further down the road and La Tourette which is perched on a steeply sloping bank with powerful views.

Vertical elements: The beautiful pans de verre ondulatories, the vertical windows of the main façade and cloister allow light to dance through and provide an uplifting atmosphere. Its mullions (ondulatoires) are unevenly spaced according to the musical composition of Le Corbusier’s project manager.

Form: Le Corbusier’s use of the Golden Rule for modular proportions and its relationship to balance in design.
Conclusions

Expected Value to my project

General:
Site: the site must have a connection with nature, and a view of surroundings. The facilities need to have a sense of belonging to the site.

Facades: need to be interactive, each façade responding to the wind direction it is facing and serving a purpose. Provision of more than one entry/exit ranging from private, small discreet entries to a main entrance.

Circulation: clear circulation differentiation between public and restricted circulation. All public circulation is to be defined by open large spaces and clearly defined generous thresholds. The restricted circulation is defined by narrow thresholds, changes in floor levels and spaces. Circulation is focused towards the courtyards with the circulation plan separating private from public areas using changes in levels and size of thresholds.

Furnishings: are simple, uncluttered and easy to navigate.

Light and lighting: use of natural light to affect the mood of a space, each wall has different apertures which respond to the direction they face, the time of day and season.

Texture: the use of textured concrete, or earth plasters walls gives a handcrafted, domestic appearance and feel.

Contemplative spaces: additional small private spaces which can be dimly lit.

Walls: use of one of Le Corbusier’s five key elements; the pilotis allows the public to wander around the building at ground level without disturbing the private activities of the interior. The use of floor-to-ceiling glazing in public areas allows one to see what is in the space ahead.

Relationship: the amalgamated old swimming pool buildings and the new Wellness Centre, nestled into the hillside, have a contrasting relationship with the new Acute Unit which is perched on the sloping bank with views over Bledisloe Park. How they connect in plan is important.

Vertical elements: The beautiful pans de verre ondulatoires, the vertical windows of the main façade and cloister with its mullions (ondulatoires) unevenly spaced according to the musical composition of Le Corbusier’s project manager inspire me to compose the vertical elements and mullions of a curtain window plan to a positive Maori musical score sheet.

Form & proportions: Le Corbusier’s use of the Golden rectangle for modular proportions and its relationship to balance seems a logical parallel with the now belief of innovative medical professionals. They are realising the immense benefits that can come from applying the Golden Ratio to issues of human well-being and health.99

Structure: domestic-scale timber framing

Chapel:

Colour: Solar light shines through panes of coloured glass set in a combination of window frames in obliquely cut openings in the wall fanning to the inside, enabling the coloured light to gently fade inside. The internal walls are off white and of earthy tones.

Floors: follow the slopes from the entrance down towards the altar.

Roof: The roof reaches for the sky seeming to float, which emphasises the sacredness of the space. The clerestory windows situated between the walls and the roof let in most of the interior natural light. The roof is shaped so that the rainwater drains to one point, forming a waterfall which pours into a fountain at the base of a wall.100


100 Visit the Le Corbusier Chapel in Ronchamp, France, by Henk Bekker, March 1, 2016 (Updated on June 22, 2016) www.european-traveler.com/france/visit-le-corbusier-chapel-ronchamp-france/
2.3.3.3. Building typologies

Building typology refers to the study and documentation of a set of buildings which have similarities in their type of function or form. There are two ways of looking at the term “building typology”. The first is a functional typology that categorizes buildings into groups by the similarity of their use. The second is a typology that groups buildings according to their forms. I have chosen to examine the first, ‘functional typology’ of a Psychiatric Hospital and a Wellness Centre from which I have drawn value for my project.

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Building Typology, en.wikipedia.org/wiki/Building_typology
Spatial systems: The building is designed for the study of human biology and general visibility. Continuity of flow is a necessity for the observer who requires 'sight' for their field of observation – the family. The building is designed to be furnished with people and their actions.

Structural systems: The basic structure of the building consists of three slabs of continuous reinforced concrete surrounding a central swimming pool, cantilevered over and supported by cruciform columns arranged in parallel series one above the other. The whole building is planned on a grid of 18sqft (1.672m²). The whole weight of the building is distributed from the roof to the foundations in a continuous and unified way. There is no need for solid load-bearing walls, so unimpeded circulation is immediately possible, and sunlight can penetrate the surrounding glass walls, while keeping out the wind and rain.

Walls and vertical elements: The walls are almost entirely of glass, with the centre of the building being the concrete pool. With ample natural lighting and slim crucifix columns it is not oppressive.

Floor: Resilience was required in both the gymnasium and theatre floors.

Courtyard: The courtyard sits partly under the building. This enclosed section gives shelter from the natural elements making it usable even in winter by providing radiant heat panels which directly warm the children who play there.

Consulting rooms: from the consulting rooms the member has the same view as the doctor of the pool. They can observe the life rhythms of the centre thus gain an understanding of why the building is so designed.

All Levels: When standing around the internal perimeter of any floor they are on members and staff can view into all other floor, the pool and surrounds.

Front Façade: a series of bow windows, which can fold back in the summer, creating a row of balconies one above the other, with climbing creepers, designed to be colourful, and to catch the afternoon sun.

Furniture: Considered part of the architecture

Pioneer Centre

Architect: Engineer Sir Owen Williams (1890 – 1969), Forbisher Place, London SE15 2EE, United Kingdom, Built 1935

Occupants: designed for 2,000 (7,500 individual) family members

Built floor area: 5,351.2151m²

Built m²/person: .71m²

Pool: 10.7 m wide x 23 m long

Context: Set back 30.48 m from the pavement of a quiet street, only a short distance from a busy main thoroughfare in South London.

Circulation systems: No rooms have locked doors except in the general members’ areas. No locked doors mean that a member can venture anywhere, no embarrassing thresholds, no exclusive groups no hierarchies.
I chose this hospital building because it is designed for smaller, more intimate treatment and built on a residential rather than institutional scale. It draws on the local landscape for inspiration and it won the interior design award for creating therapeutic spaces that enhance health, well-being, and quality of life of residents, staff and visitors and providing innovative ways of respecting privacy, dignity and reducing stress. 

Circulation & security: Vermont hospital has won awards for Mental Health architectural design that reconciles the operational requirements for security and supervision with the need for a civilised and humane environment that supports therapeutic intervention.

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Expected value for my project

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Vermont Psychiatric Care Hospital
350 Fisher Parade, Waterbury, Vermont, USA, by Architecture +, Troy, New York, principal Frank Pitts,
newly-built, domestic scale mental health facility and overall winner of international ‘health design’ awards.

Public and private: private bedrooms with ensuites.

Contemplative spaces: a sensory space for individual focused therapy for respite from communal therapy, allowing user to remain off unit.

Units: each inpatient unit is themed on some iconic aspect of nature with a coordinating colour and season. Flexible recovery and nursing areas with on-unit quiet and comfort rooms; living and dining rooms are off the bedroom wings.

Visiting: flexible spaces for visiting are provided.

Occupational spaces: library, fitness room, art room, green house.

Natural ventilation: all bedrooms, recovery spaces and offices have operable windows, secure specific to needs of the space and its occupants.

Occupants: 25 beds
Built floor area: 8,348 m²
Courtyard area: 4,898 m²
Built m²/person: 333.92 m²
Total courtyard, m²/person: 195.92 m²

Chapel: flexible space, doubles as a courtroom and a large family visiting area.

Courtyards: the two courtyards are large enough to act as a ‘town green’ for the facility’s whole community of users and staff as well as outdoor activities.
**Conclusions**

**Expected Value to my project**

Courtyards: able to be used by all users.

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**General:**

*Furniture:* considered part of the architecture

Ceiling: a relatively low ceiling (approx. 2.7m) to give a cozy effect with ample natural lighting and slim crucifix columns so as not to be oppressive.

**Chapel:**

*Internal Space:* flexible as in able to be used for other activities.

**Acute Unit:**

*Wards:* Provide flexible recovery and nursing areas, give each area a theme.

*Bedrooms:* provide individual bedrooms with ensuites.

*Natural ventilation:* all bedrooms, recovery spaces and offices have operable windows, secure specific to needs of the space and its occupants.

*Contemplation spaces:* provide private sensory spaces.

*Visiting areas:* flexible spaces for visiting are provided.

*Occupational Spaces:* library, fitness room, art room, green house

**Wellness Centre:**

*Spatial Systems:* unimpeded circulation is important, and the ability for sunlight to penetrate while keeping out the wind and rain.

*Walls and vertical elements:* The walls are to be almost entirely of glass; with the centre of the building being the concrete pool.

*Floor:* Resilience is required in both the Gymnasium and theatre floors.

*Consulting rooms:* from the consulting rooms the member has the same view as the doctor of the pool. They can observe the life rhythms of the centre thus gain an understanding of why the building is so designed.

*All Levels:* When standing around the internal perimeter of any floor they are on members and staff can view into all other floor, the pool and surrounds.

*East façade:* a series of windows, which can fold back in the summer, creating a row of balconies, with climbing creepers designed to be colourful, and to catch the morning sun.

*Occupants:* designed for 2,000 (7,500 individual) family member’s

*Context:* set back from the pavement a short distance from the busy main thoroughfare of Queen Street in Pukekohe.

*Circulation systems:* no rooms have locked doors except in the general members’ ablution areas. No locked doors mean that a member can venture anywhere, no embarrassing thresholds, no exclusive groups no hierarchies.
I began the design process by selecting a site suitable for both residential and acute settings. This was based on my literature research into the needs of current community western and Maori mental health therapeutic models and design. The overwhelming theme that comes through is “recovery” a holistic journey taken by the individual with their ‘family’. I have incorporated a Wellness Centre which I envisage running a programme that integrates and embraces the involvement of the tangata whenua of the area with the mental health acute and residential programmes. The aim to integration our mentally ill back into their communities, help decrease stigma and encourage early intervention by providing spaces that facilitate this.
3.1 MASTER PLANNING

To follow through on the Step model of care I envisage satellite housing within the broader Pukekohe community for independent users who can live independently but still have the support and access within walking distance of the main complex. My hope is that this project will be an inspiration for future integration of our mentally ill within their community and the community at large.

Figure 105: Diagram showing a 10-minute walking radius with the main complex in the centre and possible satellite independent housing within, base map from Google maps, accessed Nov 2017
This project proposes a Community Based Acute Behavioural Treatment Unit (24-hour care) and Residential Units (live-in staff) integrated with a Wellness Centre. Their aims and objectives are fused together to create an holistic and co-dependent scheme. I therefore began an inclusive programme selection, incorporating the required and desired functions for all users of the facilities based on information from my research.

3.1.1 Program selection

First, I considered the relationship between the larger elements:

- the site.
- the urban setting.
- the mental health community and the ‘families’ it will serve.
- the greater community it will serve and integrate with.

Then I created a programme list to ensure that all necessary components of each of the above elements would be considered from onset of the design process. This programme list draws from my own experience in the health and wellness industries and research of precedents.
<table>
<thead>
<tr>
<th>Residential housing</th>
<th>Acute setting</th>
<th>Wellness Centre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private areas</td>
<td>Private areas</td>
<td>Cultural Spaces</td>
</tr>
<tr>
<td>Bed rooms: single/double</td>
<td>Bedrooms with ensuites, variety of sizes</td>
<td>Traditional healing</td>
</tr>
<tr>
<td>Bathrooms</td>
<td>Contemplative spaces internal and external</td>
<td>Meditation</td>
</tr>
<tr>
<td>Contemplative spaces</td>
<td>Private outdoor spaces</td>
<td>Ceremonial - Chapel</td>
</tr>
<tr>
<td>Private outdoor spaces</td>
<td></td>
<td>Waiting areas</td>
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<tr>
<td>Private entrance</td>
<td>Clinical Spaces</td>
<td></td>
</tr>
<tr>
<td>Clinical Staff</td>
<td>Nurses’ station</td>
<td>Garbage/ waste holding room</td>
</tr>
<tr>
<td>Staff office and quarters</td>
<td>Medication cupboard/room</td>
<td>Storage</td>
</tr>
<tr>
<td>Computer/medical records area</td>
<td>Mechanical and electrical</td>
<td>Theatre with control room and storage</td>
</tr>
<tr>
<td>Therapeutic areas</td>
<td>Small and large meeting rooms</td>
<td>IT server/telephone room</td>
</tr>
<tr>
<td>Occupational therapy space</td>
<td>Conference room</td>
<td>Gymnasium</td>
</tr>
<tr>
<td>Computer room</td>
<td>Secure private entrance/interview</td>
<td>Grounds and maintenance</td>
</tr>
<tr>
<td>Whanau room</td>
<td>Psychologists’ office</td>
<td>Administrative support</td>
</tr>
<tr>
<td>Library/reading room</td>
<td>Social workers’ office</td>
<td>Reception with intake interview areas</td>
</tr>
<tr>
<td>Common Areas</td>
<td>Psychiatrists’ office</td>
<td>General waiting areas including child area</td>
</tr>
<tr>
<td>Dining</td>
<td>Restroom and shower</td>
<td>Scooter/stroller parking</td>
</tr>
<tr>
<td>Kitchen / pantry</td>
<td>Occupational therapy spaces</td>
<td>Public washrooms</td>
</tr>
<tr>
<td>Lounge: active &amp; quiet areas</td>
<td>Main entrance and lobby</td>
<td></td>
</tr>
<tr>
<td>Storage</td>
<td>Common Areas</td>
<td>Place for Maori rubbing stone and hand washing</td>
</tr>
<tr>
<td>Laundry</td>
<td>Dinning</td>
<td>Reception area</td>
</tr>
<tr>
<td>Courtyards/open space</td>
<td>Kitchenette</td>
<td>Events coordinator</td>
</tr>
<tr>
<td>Vege/herb/therapeutic gardens</td>
<td>Lounge</td>
<td>Computer manager</td>
</tr>
<tr>
<td>Visitors’ toilet</td>
<td>Courtyard with garden and shelters</td>
<td>Storage for multi-purpose</td>
</tr>
<tr>
<td>Reception and waiting area</td>
<td>Vege/herb /therapeutic gardens</td>
<td>Refreshment station</td>
</tr>
<tr>
<td>Parking</td>
<td>Rubbish and recycling</td>
<td>Restroom and shower</td>
</tr>
<tr>
<td>Rubbish &amp; recycling</td>
<td>Parking</td>
<td>Computer/ copier/ printer room</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Small conference room</td>
</tr>
</tbody>
</table>
3.1.2 Major differences

This programme differs from those of existing Community Based Acute Behavioural Treatment Units (24-hour care), in that it is incorporated both functionally and physically with a Wellness Centre built around a swimming pool and adjacent Residential Units (live-in staff). The emphasis is on ‘family,’ not just the individual and their journey, whether it be improving wellness or mental ‘recovery’ through shared spaces and integration.

By offering a variety of bedroom sizes and whanau accommodation the possibility of healing as a family is real. The complex therefore creates an opportunity for improving the social health of the community and helps break the trend of isolation and dysfunctional families and the community at large. Having medical and allied health practitioners at the Wellness Centre means that not only the users of the mental health facilities are cared for but all members.

The idea of sharing facilities and infrastructure creates jobs for the community and maximises use of space thus reducing the carbon footprint. Visitors of acute and residential users can enjoy the facility with them and hopefully this may encourage them to join and participate in the wellness programme. The cafeteria doubles as a provider of meals for the acute ward and a hangout area for residents, members and guests.

The facility provides a wonderful opportunity for social medicine to learn more about the community by observing and monitoring all members and users.

An events coordinator will be needed to coordinate maximal usage of space and flow for events to decrease stress.

3.1.3 Priority grouping

Arriving at 90 elements of programme, I questioned if the programme scope was too excessive. I decided to arrange the programme elements into three sub-groups, with circulation being the connecting element. This did not alter the programme list but it did enable me to make the decision to focus on the residential and acute requirements in more detail and the connecting circulation between the three groups. The Wellness Centre incorporates the structural elements of the existing Filter house and Changing rooms into the plan and is developed enough to inform circulation.
3.1.4 Relationship grouping

Irrespective of exact sizing and site location, the optimal relationship within each grouping was explored referencing existing programmes of precedents analysed in this paper.

Figure 10: Circulation and threshold diagram

Circulation & Security - the connecting elements

This relates to the entire complex not only the acute and residential areas, from entries to exits and all transitions in between. Programme elements such as parking, main entrance, reception and assessment areas come together to act as a funnel between the external entity – the community and the three internal entities and their elements that make up the complex.

Although the goal is to have a welcoming and inviting community complex, this funneling is necessary and beneficial to keep track of who and what enters and leaves the complex. This is critical for the acute unit which has its own secondary funnel off the main entrance and through a more discreet alternative entrance if required.
Housing grouping

Taking precedent from the arrangement and nature of modern community acute psychiatric care units, shared residential facilities and homes, the housing splits into two groupings, exploring the gradient between public and private for both.

For the acute experience a user enters through a layered transitional grouping from unsecure to secure with restricted movement to a series of small or large communal spaces. Depending on whether the admission is with whanau or alone, transitions are made progressively to smaller, more private spaces with freedom of movement according to vulnerability.

The residential experience is entered through a large communal open space that transitions into smaller, more private entities, with restricted movement for the visitor and freedom of movement for the resident.

When entering the Wellness Centre from the outside there are two separate transitions, one for assessment where by the user enters through transitional layers from large communal to smaller more intimate spaces, and the other for direct entry to the facility where the user has freedom of movement within the bounds of the Wellness Centre.

The desire to allow freedom of movement for all within the limit of their vulnerability is paramount, therefore careful planning of security and circulation based on precedent was essential. This is pivotal to connecting the complex, allowing it to function by providing a sense of safety/security and freedom of movement for the user.
Integration grouping

In contrast, the integration grouping consists of many activities that may be shared between the Wellness Centre, Community Based Acute Behavioural Treatment Unit (24-hour care), Community Residential Units (live-in staff), Supervised housing (daily visit) and live-in own home (remote care). The many distinct functions of the Wellness Centre need to be grouped so that external users have ease of access without transitioning through either acute or residential settings. The Community Based Acute Behavioural Treatment Unit (24-hour care) and Community Residential Units (live-in staff), need their own discreet transitional areas to the Wellness Centre and each other.

Knowledge grouping

Programme elements such as administration and clinical staff need somewhere private to process and record knowledge away from residents and members, while still being as close as possible to activities taking place. Easily accessible transitional spaces need to be provided. The Wellness Centre is the heart of the scheme’s circulation, with all access being filtered according to which group the user belongs at any given time.

Infrastructure grouping

This is a mixture of different streams of services, flowing between the varied aspects of the three groupings and the community. Water from the roof is stored in tanks for clean use and topping up swimming pool. Black water waste goes to the sewers, grey water is recycled for watering gardens. Space needs to be provided for collection, storage and disposal of recycling and compost material for gardens. Use of solar collection system for heating the pool.

Figure 110: Accommodation templates
3.1.5 Proximity/interaction

Understanding the internal relationships of the individual groupings and their daily functions was a useful starting point and important reference before looking at how the total proposed project interrelates. Circulation is the architectural link.

3.1.6 Sizing calculations

To form an architectural plan, appropriate spatial requirements were investigated. To understand what the optimum number of residents would be best accommodated in both acute and residential areas I turned to statistical information from government, mental health organisations and local data to see the need deficit for the area of Franklin District and more specifically Pukekohe. Research on least stressful settings and most curative environments, and requirements and sizes for the ‘recovering’ mentally ill was useful in the collation of their individual plans, with transitions and horizontal and vertical circulation connecting them.

As a starting point I collected the plans and spatial data of precedents of the three elements and used them as templates for each. Stemming from personal observation and research on how all facilities work separately, I began to piece together each grouping, starting with the Community Residential Units (live-in staff), Community Based Acute Behavioural Treatment Unit (24-hour care) then the Wellness Centre.
3.1.7 Balance: Quality vs Quantity

The plans of the precedents were a useful tool for grouping individual programme items together, aiding the design of the operations such as the admission and processing of acute admissions. By first calculating the number of beds to be available in both areas and the numerous sizes required I could then go on to build up the support spaces needed for the areas to function and facilitate ‘recovery’ within the bounds of the ‘step’ programme, philosophy of social medicine and Maori world view.

3.1.8 The Golden Ratio

When analysing La Tourette by Le Corbusier I was struck by his use of the Golden Ratio and Fibonacci numbers to create a well-balanced build. The relationship with health and the Golden Ratio made it a logical marriage with the koru symbol used by the Mental Health foundation as tools in the development of spatial planning. I used the Golden Ratio to create a plan from macro to micro in photoshop.
3.1.9 The Golden Ratio master planning

Essentially the coming together of research thus far, the diagrams created a starting point to progress the architectural design, resulting in a variation and fusion of elements taken from the plans of precedents I have studied in this paper. The overall layout conforms to the objectives set out in the introduction to this paper. The Community Residential Units (live-in staff), and related private and communal spaces are placed abutting the residential housing area of a quiet cul-de-sac. Set among established planting next to a green area it is just two minutes walk to the Wellness Centre and Community Based Acute Behavioural Treatment Unit (24-hour care).

This placement will hopefully encourage connection with the greater community while offering a nurturing community within. Rather than being hidden, the acute facility, though functionally separate, integrates architecturally with the Wellness Centre, visually blurring the physical lines between the two, referencing the desire to destigmatise mental illness. Wellness and recovery are celebrated, though because of the everchanging vulnerability of the Community Based Acute Behavioural Treatment Unit (24-hour care) user the operations of this unit are kept protected, private and secure.

The main entrance is the major filter and distributor to the three elements, with the Wellness Centre as the heart, the circulatory pump. The spine is the connecting bridge between residential and the main building, the security transitions are the valves. The bedroom spaces are the skin orientated east to west to catch the therapeutic morning light.

Adaptability

The scheme could be adapted to suit a variety of potential sites.

Figure 114: A diagrammatical layout of the major spatial components using sketch up and the Golden Ratio diagram template in photoshop.
3.2. FRAMEWORK

The following chapter is an investigation of construction, materials and space with the goal of creating spaces that will facilitate ‘recovery’ and ‘wellness’ within the complex. The focus is on the Community Based Acute Behavioural Treatment Unit (24-hour care) and Community Residential Units (live-in staff) settings and circulation system. The methodology is informed by the sum of the literature, field and precedent research into mental health treatment and accommodation facilities, Maori world view and design principles of the Pukekohe area, space and its meanings.

Thus, the framework is an exploration of universality. It is an attempt in a fun and playful way to break down the stigma barriers associated with mental health by providing spaces that facilitate freedom of choice, opportunities to join in or regress whatever stage of recovery or wellness an individual or family unit are at.
3.2.1 Spatial exploration

As a progression from focusing mainly on ‘plan’ I begun to explore individual spaces to get a sense of what the experience might be like for the user. Following the journey from public to private I have sketched potential transition spaces and collaged in references to precedents and local context, creating new concepts of space. In this way, I give my research a very tangible contribution to the design process. This process allowed a greater understanding of what could be taken from local context and precedents. By translating plan into individual spaces, it created a starting point for further development.

Figure 115: Main entrance impression
Figure 116: Plan of main Entrance (1)
Figure 117: Reception for self-admit 'acute and threshold to assessment and admission

Figure 118: Reception for self-admit 'acute and threshold to assessment and admission (2)

Figure 119: Shared courtyard acute setting

Figure 120: Plan of courtyard coming of acute bedrooms (3)
Figure 121: Contemplative space off to the side of the circulation walkway

Figure 122: Plan of Walkway and contemplative space (4)

Figure 123: Occupational therapy communal space, Residential facility

Figure 124: Plan of Occupation therapy communal space (5)
Figure 125: Bedroom in acute unit

Figure 126: Plan of a bedroom in acute unit (6)

Figure 127: One of two Entrance to Residential facility

Figure 128: Plan of Entrance to Residential facility (7)
Circulation collage

To understand the circulation I came back to the bigger picture to get a sense of how it would spatially work together. I selected pieces of landscape and architectural plans from my research and collaged them onto an aerial plan of the site, using the Golden Ratio as a spatial template. I found this plan very useful to refer to when engrossed in the more micro planning.

Figure 129: Planning collage for Community Based Acute Behavioural Treatment Unit (24-hour care), connecting over bridge and Community Residential Units (live-in staff) with reference to spatial exploration sketches
3.2.2 Structure

While carrying out literature research and analyses of space and typology of my chosen precedents, the importance of following the theme of holistic healing through the design to construction and its materials was evident. To be as sustainable and eco-friendly as possible was in keeping with Maori world view. The recycling and reuse of any construction or materials on site, such as the existing concrete toilet block and filter house, could be incorporated as part of the Wellness Centre. To ensure the effectiveness of the building envelopes, all building enclosure systems will include a solid structure, a drainage plane, an air barrier, a thermal barrier and moisture control, and may include a vapor barrier. My initial assessment of the construction methods best suited to the spatial needs of the project were as follows:

**Wellness Centre**: The Wellness Centre partially surrounds the central swimming pool, designed for 2,000 families to use the facility which they share with the Community Based Acute Behavioural Treatment Unit (24-hour care and Community Residential Units (live-in staff)).

**Structural Systems**:
I have based the construction principle for this part of the complex on that of the Pioneer Centre, Forbisher Place, London SE15 2EE, United Kingdom, because it allows for flexibility in spatial infill and circulation and maximises exposure to natural light. The basic structure of the building consists of slabs of continuous reinforced concrete partially surrounding the central swimming pool. The slabs cantilever over and are supported one above the other by cruciform columns arranged in parallel series. The whole building is planned on a grid 1.67m2, with the whole weight of the building being distributed from the roof to the foundations in a continuous and unified way. This eliminates the need for solid, load-bearing walls. The foundations consist of a mix of concrete slab and pilotis as the site is sloping.

**Walls and vertical elements**:
Load-bearing slim crucifix columns that line the inside walls and open the north-east façade with a series of floor-to-ceiling glazed walls that can be opened in the summer onto sheltered balconies. Acoustic sound-proofed internal walls.

**Ceiling**:
I envisage a standard ceiling height of 2.667 m to give a cosy effect, with the exception of the theatre which would occupy the Filter house plus floor below.

**Floor**:
Resilience in both the gymnasium and theatre floors. The use of recycled rubber tyres is an option.

**Sky bridge**:
Structural systems: set on pilotis (still exploring the option of steel or concrete) to give a sense of playfulness and freedom of movement around them and underneath the overbridge.

Walls and vertical elements: mix of a series of floor-to-ceiling glazed walls (some coloured) that can be opened in the summer and precast concrete and timber panels strategically placed for privacy.

**Flooring**: precast concrete

**Ceiling**: mix of precast concrete and timber, standard ceiling height of 2.667 m with some variation at thresholds and contemplation areas
Community Based Acute Behavioural Treatment Unit (24-hour care):

The Structural Systems: are part of the Wellness Centre.

Floor: recycled timber and concrete slab

Vertical elements: slim crucifix columns with timber framing infill and acoustic insulation. Operable secure windows in exterior and interior walls. The façade consists of thick exterior red brick walls with some blue Bombay stone and rough textured concrete plaster.

Ceiling: A standard ceiling height of 2.667 m with some variation in the circulation and living spaces.

Community Residential Units (live-in staff):

Structural systems: post-and-beam timber framing with load-bearing walls, and timber lintel beams to provide opportunity for large openings and thresholds in communal spaces and clerestory ventilation. Thick exterior brick and straw bale walls with some blue Bombay Stone and timber cladding. The foundations are a mix of concrete slab and piles.

Floor: recycled timber and concrete slab

Vertical elements: timber framing infill and acoustic insulation, operable secure windows in exterior and interior walls.

Ceiling: standard ceiling height of 2.667 m with some variation in the circulation and living spaces.
3.2.5 Enclosure systems:

The physical components of the envelopes include the foundation, roof, walls, doors, windows, ceiling, and their related barriers and insulation.

Water and water vapour: will be controlled by using a combination of perfect barriers, drained screens, and mass / storage systems.

Air control: to ensure indoor air quality, control energy consumption, avoid condensation and to provide comfort. Control of air flow through the enclosure air barrier system or through components of the building envelope itself, as well as into and out of the interior space.

Thermal envelope: is part of a building envelope but may be in a different location such as in a ceiling.

Acute Unit: The unit, designed for 9 acute admissions sits atop the Wellness Centre partially surrounding the central swimming pool.

3.2.6 Roof:

The roof needs to provide shelter and a source of energy to be used by all the facilities. A roofing design that provides the best vantage for capturing the sun’s energy and rain water for collection and storage in tanks and to be used for the swimming pool and gardens was preferable.

Wellness Centre and Community Based Acute Behavioural Treatment Unit (24-hour care): the roof design is a combination of pitched photovoltaic tiling and flat grass roof for exercise areas with a surrounding parapet.

Community Residential Units (live in staff): the residential roofing is 17degree pitch with partial photovoltaic cladding. I explored recycled plastic and sand tiles which require only two simple machines to produce them. On the surface they appear to be cheap and easy to make and create employment.104

Chapel: the elevation and separation of the roof from the walls allowing for clerestory and the sense of light weight ethereal experience.

Sky bridge: this physical connecting element has a green roof, so that it does not contribute to run off and makes it the extending finger of the earth, reaching up to the top of the hill.

3.2.7. Circulation systems

Wellness Centre: within the Centre there is freedom of movement throughout. No locked doors except for private consultations.

Community Based Acute Behavioural Treatment Unit (24-hour care): the unit is regulated by a series of controlled transitions to enter and exit the wards. Once inside the unit’s users have freedom of movement within the limits of their condition.

Community Residential Units (live-in staff): the unit has freedom of movement for its residents and staff with secure transitions for visitors. They have the same freedom of movement of the Wellness Centre as non-resident members.

Walking bridge: the connecting over bridge is exclusively for residents and staff, accessed through secure transitions.

4.0 CONCLUSION
Outcomes

This project aims to use architectural design to help the mentally ill regain their place in the community. Rapid changes in our society, such as the emphasis on individual values and self-sufficiency, the disintegration of families, the loss of structure and well-defined roles, an increase in migration and a mobile workforce, has made isolation and displacement common in the community that we live in today. The challenge is in creating architecture that promotes hope, a sense of belonging and meaning to support mental health services that are easily accessible, well integrated, sustainable and flexible.

Obviously, architecture cannot solve these problems in our society. What architecture can do is effect small changes in a particular place, in the hope that even a few people will take notice of the holistic benefits the integration of a Community Based Acute Behavioural Treatment Unit (24-hour care) and Community Residential Units (live-in staff) with a Wellness Centre into the urban framework can make.

Pukekohe and surrounds has a steadily growing population and economy. However, the context has changed dramatically over the years, especially for Maori. Since the arrival of the European settlers the tangata whenua of the area went from the barons of the land in the mid 19 Century supplying themselves and incoming colonists with food which had a massive effect on their economy, trading patterns and lifestyle (until disputes over land ownership and possession created a crisis that still has not been resolved) to now. The majority suffer from the disintegration of whanau, the loss of structure and well-defined roles, isolation and displacement. It is no wonder they are over represented in the Mental Health sector. It is also not surprising that the Black Power gang gained a strong following amongst the town’s Maori youth in the 1970s and 1980s. Thanks to the people of Nga Hau e Wha Marae O Pukekohe and their various community organisations peace was restored in the township.105

Pukekohe and its surrounding community currently offers very little for mental health clients and their families. The establishment of a Community Based Acute Behavioural Treatment Unit (24-hour care) and Community Residential Units (live-in staff,) with a Wellness Centre that integrates into the urban framework, is both sustainable and positive for the wellbeing of the recipients and the community at large. It can create for individuals and their families a place to not only pursue their journey of ‘recovery’, but also an opportunity to enhance their wellbeing both as individuals and collectively. Architecture has the capacity to extend the focus of care of the mentally ill individual to include consideration of healing the whole person and their family beyond ‘recovery’ to the enhancement of wellbeing. Architecture and the quality of space have gone hand in hand for millennia. By combining the freedom of watercolour painting with the structure architecture brings, I hope to have created more than a community mental health facility.

To provide architectural design of a Community Mental Health Facility which supports holistic healing and integration of the mentally ill into the community. As an architect it is important to familiarise myself with and embrace the philosophies of ‘recovery’ outlined by the Mental Health Foundation and the ‘3 Maori Models of Health’ outlined by the Ministry of Health. All of which are implemented in community mental health facilities in New Zealand. The facility needs to provide a programme which embraces people joining as a family. Enabling the whole family to be healed, thus potentially contributing towards combating and decreasing the effect of adverse experiences during childhood.

105 Auckland City Council, ‘RUB South Cultural Heritage Overview Report’, 16 August 2013, accessed 22 April 2017
I found by merging my working knowledge, personal experience and research into the effect both natural and man-made space has on people, and the exploration of how spaces can be conducive to the healing process, I was able to form sound principles for design that included current evidence-based Design Principles for a Healing Environment. They gave me a solid platform on which to base my design. In the hope of creating awe and to enhance the healing qualities of purposely designed architectural spaces, I applied the ‘golden ratio’ to my design.

I chose a site in a quiet neighbourhood in one of the most supportive communities, that of “conservative working class” people. The site provides opportunity for restoration by exposure to natural elements such as trees, water, and natural landscape.

I provide spaces that are shared by the community at large in the form of interactive meaningful edges and landscaping the surrounds, to encourage community use, from vegetable gardens to a skateboard park. I have embraced community within the facility by providing spaces which encourage integration with the broader community, therefore, providing opportunities for the mentally ill to have personal control and to regain their place in the community by being involved in mainstream activities and opportunities of social inclusion.

Selection of eco-friendly building materials and provision of naturally well-lit spaces and natural ventilation.

Address the circulation and security while still allowing freedom of movement and making the facility feel welcoming and safe to all while providing choice of spaces for the user throughout the complex.

To produce a design that encourages social interaction with the goal to reduce stigma and eliminate discrimination in the community, an architect needs to provide architectural spaces that the whole community feels safe and comfortable to utilise and enjoy; where youth can connect with whanau and their wider community.

This can be achieved by developing public open space surrounding the complex in collaboration with tangata whenua. It will involve development of natural landscape vegetation, keeping all existing native trees and providing a community vegetable garden as part of the landscaping. Maintain the integrity of the site and seeing cultural histories reflected in the urban environment that “allow for a visible and living tangata whenua urban presence”, thus restoring a sense of place for tangata whenua. The use of several elements and symbols of cultural significance in the landscaping and architecture to reflect the cultural history of the tangata whenua of the area. Internal references such as naming the wards with significant local Maori names, using tukutuku panelling and the use of the koru, Embrace the Maori landscape and provide a ‘place to stand’

As a result, I hope to have designed architecture that can support wellness, early intervention and positive recovery programmes for our communities.
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6.0. APPENDICES
6.1. Final Drawings

This section shows my final examination drawings.
COLOURS OF RECOVERY

Healing the mind through a journey of community connections and architectural spaces

Louise Pires      ID: 1369329

Important landmarks to Maori

Golden Ratio and the symbol for the Mental Health Foundation (mental health recovery)

Counties Manukau District Health Catchment Areas

Diagram/Map of the Maori landscape of the tangata whenua of the area

Integration Diagram

Circulation Diagram
Diagrams showing the use of my original watercolour concept combined with the golden ratio to formulate plan.
Community based Acute Behavioural Treatment Unit (24 hour care) Inside Marae, alternative entrance to Acute Ward
Community based Acute Behavioural Treatment Unit (24 hour care) Courtyard
Entry to Community based Acute Behavioural Treatment Unit (24 hour Care) Assessment Admission
Entering Central Courtyard of Community Residential Unit via Walking Bridge
Entering Central Courtyard of Community Residential Unit via Street entrance
Quiet space for reading, computer use in Community Residential Unit
Entrance to a Residential Unit
6.2. SUPPLEMENTARY INFORMATION

This following chapter has supplementary information for the research document
Social Medicine

Social medicine is the practice of medicine concerned with health and disease as a function of group living. It is interested in the health of people in relation to their behaviour in social groups and as such is concerned with the care of individuals as a member of a family and of other significant groups in their daily life. It is also concerned with the health of these groups as such and with that of the whole community as a community.  

Objective of a Neighbourhood Health Centre is to stimulate family and community interest and educate towards improving health, preventing disease and seeking suitable care when ill.  

Guiding Principles upon which the experiment was based at the Pioneer Health Centre

- the family not the individual is regarded as the functional and biological unit therefore memberships were only accepted from families not individuals.
- Leisure activities could provide both material for fundamental medical research and at the same time help to develop new skills and develop the whole personality. They proved to revitalise members
- That parents should be free from disease before the child was conceived and planned

The practice of health differs fundamentally from the practice of medicine

- The centre created an environment which allowed members of all ages to meet the opposite sex
- Members are drawn from a wide variety of social and occupational groups
- Examinations revealed how wide the gap was between health and freedom of disease
- To create centres around the country would require the training of many biologists, bio–chemists, medical practitioners, sociologists and social workers in the techniques of the Pioneer Centre
- Establishment of a central institution, which could serve both as a model centre and as a training school  

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Ibid

Full name of author: Louise Thrale Preet

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

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Associate Supervisor: Christoph Schnoor

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