ELEMENTAL ARCHITECTURE

Architecture as a Mechanism for Alleviating Mental Health Illness

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Abstract

“As an architect you design for the present, with an awareness of the past, for a future which is essentially unknown.”1

Psychiatric hospitals over the years have been the subject of severe criticism from patients, general public, local government and designers. This debate in recent times has overseen the major transformation of the older institutional hospitals into community-based mental health care. As a result, modern day mental health care facilities have addressed one issue, community-based care, and forgotten about other architectural aspects such as efficiency and a functional interior. In other words, the current community-based mental health units lack the total architecture that connects with patients for the betterment of their health.

Architecture has the power to heal its occupants. People spend a significant amount of their lives indoors; therefore, the importance of architecture as a trigger to physical and psychological wellbeing must become a topic of significant relevance to all designers. Spaces within a hospital must be engaging when needed and comfortable, with abundant of views and natural light.

Architects must generally look at five key areas when designing a hospital or any building for that matter, these include: safety, social connectedness, ease of movement and sensory stimulation. For instance, light has the ability to influence people’s mood, “it helps human body to stimulate the body's production of the neurotransmitter serotonin, which can reduce the symptoms of depression.”2

So often architects and the local governments have neglected the specific needs of mental health patients. The current modern day community-based mental health units are not purpose built with very little investigation into the lives and daily movements of patients and staff members.

This research project will therefore look into ways of adapting a new architectural design that appeals to all human senses. It is of vital importance to first and foremost understand what kind of tasks people perform within a hospital; these needs may include being alone and sometimes being with others. For a mental health unit it is also important to recognise the difference between public, semi-public and private spaces; the separation and the movement from one space to another must be precise. Furthermore, there is the external landscape and how it connects to the indoor space to consider. All these design aspects play a key role in the final outcome of the building and architects must therefore be flexible to experience what they are designing for themselves.


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The Architectural Research Problem/Research Question

How could architecture through its elements change the perception of mental health facility?
The purpose of the project

This research project has been triggered by the intrigue of how architecture can manipulate someone’s own experience. It is proven that environments can affect us, whether by design or by accident. For instance, the penetration of natural light through a building can have a positive impact on the inhabitants, whereas gloomy weather creates a dull environment.

Through some research, I have found that humans react differently to different environments at certain stages of their lives. For example, a healthier person is less affected by bad surroundings but there is a positive impact when they are surrounded by a good environment, such as warm building with an efficient amount of natural light. In comparison to the mentally ill patients where about 65% react negatively to bad environments which can lead directly into symptoms.

The potential for architecture is rich; it can easily embrace sublime aesthetics that create an element of awe in the observer. The element of amazement has been found to reduce “the prevalence and severity of mood disorders. Could sublime architecture even potentially save lives?” 3 There is no doubting the value of a building that hits the right note with a sense of awe among its observers. Each building type has different functions, and it is of vital importance that each of those functions create an optimal mood, desire or sense of coherence, security or meaning.

Methodology/ Research Method

Dividing the research method into different categories will allow for a comprehensive and systematic investigation, so that a fullest possible range of options can be considered Historical, existing, and future successful design precedents will provide the main base for the final solution that meets the criteria on all fronts, from functional, structural to formal.

Proposed research method:

1) Pre-collection and analysis of relevant information in key areas:
   - Modern day architectural techniques
   - Physiology and architecture
   - Materials
   - Sustainable design methods

2) Research by design:

   Creative exploration of possible strategies that are seen as effective in reconciling the multiple agendas of the initial brief. Developing a reasonably broad range of possibilities. Evaluating them with the help of a system of criteria in order to arrive at an optimal resolution. Moving the concept resolution to a developed, and to some degree detailed design, stage. Exploring the presentation strategy – selecting the best means to communicate the project, bearing in mind the nature of the mission and the main achievement of the proposed design.

3) An assessment of the final design based on the original stated purpose and objectives of the research. Conclusion of the project, including self-reflection on the wider significance of the presented design process and outcome.

4) At the end of the project there will be a test on whether the proposed architectural design has in fact assisted significantly in the healing process of the mental patients. There will be a data that evaluates the time that patients have spent in the proposed building until they have completely healed, and whether the architectural features (walls, floor, roof, lighting and the landscape of the site) have had positive influence of curing the patients.

5) Methods of Data Collection and Analysis
   - All the collected data will be sourced from the relevant literature, using a standard mix of hardcopy and on-line sources. Some aspects of the site will be investigated and documented by repeated site visits.
   - The design stage must begin in November 2016, therefore all data need to be collected and filtered before that date. The design stage of the research will use a standard mix of creative and representational techniques such as sketching and modelling. The overall design exploration will be based on developing many concept solutions, stating criteria to evaluate them and establishing the strongest and weakest sources.
   - Any relevant information collected after the commencement of the design stage will be added to the final architectural solution.
Outcomes

The aim of this project is to investigate architectural design strategies that can successfully incorporate architectural elements to enhance the experience of its observers, mainly mentally ill patients.

It has been proven in the past that a person’s mood is greatly affected by their surroundings, especially people that have some sort of mental illness. The proposed research project aims to establish a precedent in the mental health system around New Zealand. The question marks over New Zealand’s mental health facilities have forced changes to legislations associated with the mental health system around New Zealand, and many cases created quick and panicked architectural response that resulted in a very poorly designed hospitals that have not enhanced the conditions of the patients but rather deteriorated their long term mental status.

With thorough investigation into the past and present design of mental institutions, this project will look to create an architectural piece that will enhance the experience and in many cases assist in the treatment of the patients. Architectural does play a key role in the mood of people on a daily bases, be it at work, home or school, so it is an opportunity to create architecture that focuses on the needs of the patients to enhance their stay at a mental hospital.

Architectural aspects, such as natural or man-made materials, spatial arrangements and site context will be thoroughly investigated to achieve the desired outcome.
Evolvement/development of asylums around the world

Asylum architecture was mainly developed in the 19th century when architecture was considered to play an integral part of curing ill people, and doctors believed that the planning of architecture of asylums was one of the most powerful tools for the treatment of insane patients. It was believed that the majority of insanity cases were curable, but only if the patients were taken from their homes and placed in large-scale buildings that were designed for such a purpose.

Nineteenth century philosophers and architects argued that the natural and built environment shaped human behaviour, hence psychiatrists assumed that mental derangement was caused by environmental factors, such as the present tension in the individual's domestic environment, which in turn suggested that a change in the exiting environmental setting might alleviate the pain of the patient.

There was a series of collaborations in the early 19th century between psychiatrists and architects to enhance the new social environment for the insane asylum, which resulted in a series of plans such as the Kirkbride Plan and the Cottage Plan.

The plan ensured certain design features integrated into the design, such as those that the doctors were looking to adapt into the building to ensure the comfort of the patients. These features included the ease of surveillance, short wards for ventilation and clarity of circulation.
Figure 01

Former psychiatric asylum, Whau Lunatic Asylum, Mount Albert.
Origin of deinstitutionalisation in New Zealand

From the earliest planning of the original 19th century lunatic asylums until around 1960, mental health law makers in New Zealand have made many attempts to tackle the issue of institutionalisation. Mental health institutions prioritised fundamental values such as safety, order, neatness, cleanliness, and occupation over lifestyle concerns such as variety, fashion or homeliness. Effective health care for the individual was jeopardised for an efficient care for many.

What is institutionalisation?

The word institutionalisation means to be brought up in an institutionalised life, where order is supreme. To be institutionalised is to be accustomed to one particular environment and therefore deemed unfit for life outside an institution. Negative behavioural and psychological impact of institutionalisation have been acknowledged for many years, it was believed that institutional life in a lunatic asylum destroyed feeling of self-respect of patients. The routine life within a mental institution somehow crippled the intelligence and caused a deep depression. These institutions were known as little more than concentration camps.

Once the patient is being admitted into a hospital, they were relieved of their personal responsibilities for their mental problems. The organised life of an institution took over immediately, all basic needs were provided, along with routine leisure.

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4 W. Brunton, Origin of Deinstitutionalisation in New Zealand, (Australian and New Zealand Society of the History of Medicine, inc, 2003) 75.
Contemporary mental asylums in New Zealand

Over the years the development of mental hospitals has evolved dramatically to enhance the stay of the patients in the facilities. Each iteration of development of mental health treatment throughout the years has presented an understanding of the complexities of mental health; the mental health buildings have been small originally, then large and then small in size again in the new millennium. Currently the treatment of the patients in the mental health services is very much reliant on community based care.

Modern day mental hospital design tends to move away from the large institutional building, with the latest trends in mental health architecture favouring domestic scaled development. A vast majority of mental treatments are currently being offered in domestic scaled residential facilities. This provides for a greater community outreach with an increasing emphasis on patients' personal freedom within limits of the acuity of their illness.

The influence of mental illness in New Zealand

A mental disorder is a serious illness that includes medically diagnosed conditions. The symptoms include hallucinations (a sense of something that does not exist), delusions, highly inappropriate behaviour, sadness, depression, anxiety, and addiction.

Mental illness is very common in New Zealand with approximately 20% of New Zealanders likely to experience some form of mental disorder in any given 12 month period and about 47% of New Zealanders likely to experience a form of mental illness at some point in their lives.

Mental hospitals around New Zealand are generally made up of sub-units of a regular hospital. These wards specialise in the treatment of serious mental disorders, such as depression, schizophrenia, and bipolar disorder. There are very few privately owned mental institutions around New Zealand and apart from the sub-units in the general hospitals, there are many mental health services around New Zealand that can accommodate short stays for mental health patients, but they provide minimal services to assist patients in the long term.

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Former Psychiatric Hospital around New Zealand

19th century asylums
- **Sunnyside Lunatic Asylum**, Addington, 1863
- **Whau Lunatic Asylum**, Mount Albert (currently known as Unitec), 1867-1992
- **Seaview Lunatic Asylum**, Hokitika, 1872-2000
- **Porirua Lunatic Asylum**, Porirua, 1887-2007

20th century asylums (Villa Plan)
- **Tokanui Psychiatric Hospital**, Te Awamutu, 1912-1998
- **Ngawhatu Psychiatric Hospital**, Stoke, 1921-2000
- **Kingseat Psychiatric Hospital**, Karaka, 1929-1995
- **Lake Alice Psychiatric Hospital**, Marton, 1950-1999
- **Seacliff Psychiatric Hospital**, Hawksbury, 1952-1992
## Current and probable end use of former psychiatric hospitals

<table>
<thead>
<tr>
<th>Name</th>
<th>Nearest urban centre/local community</th>
<th>Opened–closed</th>
<th>Retained mental health services</th>
<th>Current major uses</th>
<th>Probable end use (s), by category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carrington/Oakley</td>
<td>Auckland/Mt Albert</td>
<td>1867–1992</td>
<td>Yes</td>
<td>Unitec campus</td>
<td>T and H</td>
</tr>
<tr>
<td>Kingseat</td>
<td>Auckland/Karaka</td>
<td>1929–1995</td>
<td>No</td>
<td>Spookers; occupied as housing; partially derelict</td>
<td>R and C</td>
</tr>
<tr>
<td>Tokanui</td>
<td>Hamilton/Te Awamutu</td>
<td>1912–1998</td>
<td>No</td>
<td>NA</td>
<td>D</td>
</tr>
<tr>
<td>Lake Alice</td>
<td>Wanganui/Marton</td>
<td>1950–1999</td>
<td>No</td>
<td>NA</td>
<td>D</td>
</tr>
<tr>
<td>Porirua</td>
<td>Wellington/Porirua</td>
<td>1887–2007</td>
<td>Yes</td>
<td>Mental health care; museum</td>
<td>H</td>
</tr>
<tr>
<td>Ngawhatu</td>
<td>Nelson/Stoke</td>
<td>1921–2000</td>
<td>No</td>
<td>Housing under construction</td>
<td>R</td>
</tr>
<tr>
<td>Seaview</td>
<td>Hokitika</td>
<td>1872–2000</td>
<td>No</td>
<td>Occupied as housing; some arts and crafts; partially derelict</td>
<td>R and C</td>
</tr>
<tr>
<td>Sunnyside</td>
<td>Christchurch/Addington</td>
<td>1863–1999</td>
<td>Yes</td>
<td>Hillmorton Hospital; Linden Grove</td>
<td>R and H</td>
</tr>
<tr>
<td>Cherry Farm</td>
<td>Dunedin/Hawksbury</td>
<td>1952–1992</td>
<td>No</td>
<td>Occupied as housing; cheese factory; partially derelict</td>
<td>R and C</td>
</tr>
</tbody>
</table>

Figure 03: Current use of former psychiatric hospitals.
Currently known as Unitec Institute of Technology, Whau Lunatic Asylum, was one of the largest mental institutions in New Zealand and first to be built in Auckland. Built in 1865 and opened for operation in 1867, the hospital housed more than 600 patients.

A brick-dominated building, the hospital was very imposing with solid structure that signalled a very inner focus for the patients. Most of these patients were intimidated by these thick walls and rather than being a place of healing, the building had a restraining feeling about it.

The site of the structure was surrounded by farms that provided recreation and fresh vegetables. A large number of patients worked in the garden and on the farm, to not only maintain the property and cultivate produce for consumption, but it was also claimed that these activities helped the healing process of these patients.
Whau Lunatic Asylum, Mount Albert (currently known as Unitec),
1867-1992

Figure 04
Frontal Neo-Classic façade of Whau Lunatic Asylum

Figure 05
Whau Lunatic Asylum
Kingseat Psychiatric Hospital, Karaka, 1929-1995

This was originally a hospital for mental ill or elderly patients, and it was considered to be one of New Zealand’s most foreboding psychiatric hospitals. There are various reports of mistreatment of patients, which lead to its closure in 1999.

The hospital operated from 1932, and it grew rapidly through the 1930s and 1940s to such an extent that by the beginning of 1947, there were over 8000 patients. In 1996, the government decided to sell the hospital and place greater focus on a community-based care for the mentally ill, which lead to its closure in 1999, and then its transformation into the Spookers Haunted Attraction.

Tokanui Psychiatric Hospital, Te Awamutu, 1912-1998

Tokanui hospital opened in 1912 with more than 1200 patients registered in its heyday. The mental institution took a wide range of patients, from acutely psychiatric to depressed, to psychedelic and people with brain damage from accidents. The hospital also took people who perhaps should not have been there, for instance, people who did not have a place to stay. As a result, the hospital was overcrowded with very little individual care for patients who needed the most help, so the focus shifted from a specialised treatment for the mental ill to an accommodation facility for many people.
Farm at Tokanui Hospital.

1912-1998

Figure 06
Ample landscape at Tokanui Hospital
PART II
THE SITE
The SITE

It has been proven to be difficult in the modern day to secure a site for a traditional mental health facility. Because of the stigma associated with mental illness, people seem reluctant nowadays to be located near a commercial-sized mental hospital because of the “evil spirits” associated with it.

The pressure that a mental hospital has on the land has also proven to be an obstacle to designers. The challenge is whether to locate a mental hospital in a dense urban site and connect the patients to the community, or a return to a more rural location, which is more suitable to the architects?

Certainly the designers will have huge impact on determining whether a modernised mental hospital that incorporates technology, functional design, an abundance of natural light, and controlled access to the external environment, is suitable for an urban or rural site?

An ideal site for a mental hospital

An ideal site for this project must consider the below criteria or characteristics to achieve the desired design outcome.

Ideal site characters/principles/criteria for a mental hospital

- **Noise Control**
  - Immediate traffic
  - Slamming doors, clanking latches
  - Staff conversations

- **Visual privacy**

- **Visual delight**

- **Air quality**
  - Need for fresh air, solarium, or roof garden.
  - Avoidance of noxious off-gassing from synthetic materials.

- **Admitting ample natural light where possible**
  - Nonglare lighting in patient room
  - Ability to control intensity of light.
  - Patient room lighting should be full spectrum.

- **Privacy**
  - Ability to control view of the outdoors.
  - Secure place for personal belongings

- **Control over the immediate surroundings (INTERIOR DESIGN)**

- **Outreach (community)**
Noise level/privacy

“When patients stay in hospitals or other healthcare facilities, they have an enhanced awareness of their surroundings. This means that the indoor environment quality is of particular importance for inducing sleep, recovery and wellbeing. Noise pollution is a problem because it can adversely affect all of these elements.”

Most mental health patients have suffered some sort of disturbance in their lives that has led to illness; they have certain requirements that would lead to their healing from that particular disease. Noise does play a vital role in that healing process, and it must be controlled to allow patients the privacy they require.

Through some research in this paper, it was common to see that most mental health facilities were located in rural areas that were somehow isolated from the rest of the population. A peace of mind is therefore a key factor in the healing of the mentally-disabled person.

Site location and certainly the interior design of the project would determine the noise privacy and how much noise is leaking through the building. An urban site would generate much more noise that could hinder the healing process of an individual.

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Visual Privacy

One of the most obvious factors in mental health patients is the lack of confidence they present. This is the self-doubt that has been growing since they were diagnosed with the disease and hence they appear to be embarrassed about how they present to others, and these patients, like most of us, require privacy. Some patients require complete isolation from others, as their state of mind is not in a good place and therefore require complete privacy from everything around them. However, this theory does not apply to all mental health patients; others will prefer a small amount of privacy, but also prefer to integrate with other people and socialise to ease any pressure they faced in their external lives.

From the site’s point of view, the main concern for the views and privacy for the patients comes from whether the site is in a rural or urban area. In a rural area, the privacy levels will increase, as there are not many people around the site and it will have very little impact on the overall design of the windows and the circulation of the building. An urban site on the other hand, might present a tougher challenge for the designers and how they would deal with the privacy requirements of the patients, therefore it seems obvious that the site establishment and the design must cooperate to satisfy the patients.

Visual Delight

*Can nature enhance the mindset of an individual?* Undoubtedly it does, people of all types, religion, and backgrounds have some sort of connection to nature. Nature presents everlasting benefits to our health and mental state; it eases the pressure on the mind even if only for a little while.

The impact of nature would undoubtedly influence mental patients and help alleviate mental fatigue by relaxing and restoring the mind. Green spaces come in different forms, natural and man-made central parks. These are settings for cognitive respite, as they encourage social interaction and de-stressing through exercise or conversations while providing a calm setting.

There is a special connection between the brain and the environment, this relationship is what shapes our life and the way we view our surroundings is controlled by our brain. The brain is a fascinating organ, it is the only organ in human body that substantially goes through maturation after birth. This maturation process is shaped in part by response to stimuli in our surroundings, including both positive and negative conditions. Natural scenes evoke positive emotions, facilitate cognitive functioning, and promote recovery from mental fatigue. The experience of nature can also provide respite for those who experience short-term and chronic mental illness.

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Admitting ample natural light where possible

Natural light has been a vital feature of successful building designs for many centuries. Its benefits are far reaching and it is undoubtedly important for many types of buildings from residential to commercial to health care facilities. The location and design of a healthcare facility has an effect on the people it treats and those who provide care. The belief that the physical healthcare setting has an effect on the health outcomes of patients is not new. Over a century ago Florence Nightingale, English social reformer, statistician, and the founder of modern nursing, suggested that patients would undoubtedly recover faster if they were cared for in a setting that adopted features such as natural light, ventilation and cleanliness.⁹

Exposure to light assists in mood elevation, quite similar to exposure to nature; this natural source is crucial in the design of a mental hospital. The goal of this project is to design a building that incorporates natural resources along with the latest design features and new innovative technology to present a building that assists in the healing of the patients, and light is just about the most important tool available to architects and designers. Site selection and building orientation along with sunlight study is important in determining the overall layout and circulation of the project.

Behaviour of patients have also been found to be affected when presented with natural light, particularly patients with Alzheimer’s disease. Constant flow of light can cause overheating and therefore result in patients becoming agitated and showing disruptive behaviour. Design features such as electrical controlled louvers and micro-slatted windows can break this constant flow of lighting.

Patient’s freedom and their control over their immediate surrounding must be taken into consideration. Having some control over one’s environment has positive health outcomes, as patients more often than not wish for a sense of control and normality. Where possible, enable individual control over the immediate surroundings, for instance, light switches, volume controls, blind adjustments.

Identifying a Site:-

The result of emerging urban design policies and practices has led to a likely change in the form and location of mental health facilities. The courtyard system is the most favoured within the design of a mental hospital, but there is also a move towards higher density type buildings as a result of current urban policies.

Research has shown a link between urban design and the growth in numbers of people diagnosed with diseases such as diabetes, obesity, heart disease, and mental illness and poor city design has contributed in one way or another to the growing health issues. The “Healthy City” movement, as identified by the report issued by the city of Melbourne in conjunction with the Victorian Department of Transport, is gradually gaining momentum in the design of mental health facilities. The report has promoted key urban design principles that would lead to a healthier mental hospital design. These principles include, density, mixed use, connectivity, character, adaptability and public realm.
POSSIBLE SITES

1. Whau Lunatic Asylum, Mount Albert (currently known as Unitec)
2. Middlemore Hospital
3. Rural Site/former mental hospital
4. Conversion of one of the existing community based mental care centres
5. Urban Site
OPTION 1

Whau Lunatic Asylum, Mount Albert

(Currently known as Unitec)

Figure 13
Former psychiatric hospital
LEGEND

1. Architecture and Landscape
3. Student Central
9. Facility Management
23. Human Performance Lab (Sport)
202. Classrooms

Figure 14
Map of current buildings at Unitec.
EXISTING BUILDINGS AT UNITEC

Figure 15
Aerial view of Unitec
Former psychiatric hospital, Whau Lunatic Asylum housed patients for 100 years. It was the biggest in New Zealand and first to be built in Auckland. In 1993, the old building asylum was sold to Carrington Polytechnic, which has turned the old asylum structure into a place of education for thousands of students. Like many other asylums around New Zealand, and indeed around the world, the move towards community-based mental care pushed the government to do away with this mental health facility.

The question, however, remains whether the abandonment of the mental asylum was only because of the move towards community-based care or were there other factors including the site, building or the overcrowding of that area? The most obvious answer was the outcome of the Mason report in 1996, where community-based care was the way forward for mental health institutions. Psychiatric hospitals were viewed as a place of terror for the patients who showed little amount of healing while being placed in such facilities.

The Site/Grounds

A spring on the estate, with a waterfall on Oakley Creek, was ample for domestic and fire prevention purposes. A farm, consisting of nearly 200 acres (81 ha), was attached to the asylum, providing healthy recreation and fresh vegetables. There were approximately 50 milking cows on the estate and a large number of pigs. An unlimited supply of fresh eggs were obtained from the farm’s poultry. Part of the land was turned into an experimental sewage farm.10

Modern day plans have been proposed by the current owner, Unitec, to breathe life into the former Carrington Psychiatric Hospital. In June of 2014, Unitec put 53.5 ha of its land up for development, including the historic Victorian brick building. Some of the ideas for such development were public spaces and medium density housing. The main reason behind these plans were that the existing buildings were not earthquake-proof to modern day standards. Unitec’s plans are to construct modern buildings on the more compact Mount Albert Campus, which would operate more effectively.11

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Benefits

The most obvious advantage of placing or reopening a mental health care facility at the Unitec site is the history of the site. This history brings with it the experience of how mental health care could be run and whether to improve on the previous Carrington Hospital. In other words, the precedent is there for this project to study and make improvements on all levels, such as design, transportation and connection to the community. This precedent could be the pillar of a successful design outcome that would meet today’s standards of a mental health care facility that accommodates all the needs of its patients.

Other advantages of a Unitec site are the plans by Unitec Institute of Technology to sell part of its land to investors to develop the northern end, Building 1 and its surroundings. As mentioned above, Building 1 and the other surrounding buildings are not earthquake proof and hence are seen as unsafe to occupy in the long term, so the decision is either to spend millions of dollars to bring these buildings up to modern day standards or to sell the land for developers for a complete overhaul. Unitec sees the southern end as the way to go for a more compact education centre with modern day facilities for education, workshops, student accommodation and place of employment. This certainly opens up an opportunity for a proposed project that would maximise the use of the 53.5 ha put up for sale by Unitec, to bring in mixed use developments, albeit a reintegration of a mental health care facility.

Possible compromise

The most likely compromise would fall upon the patients who are going to occupy the proposed building. Density will present an unwanted factor that could hinder the healing process of the patients. A large number of people would hear noise and this unwanted noise can create problems not only for the patients but staff as well; it affects the way workers do their job and therefore results in bad service being delivered to patients.

High density areas, such a Unitec, might present another problem for the occupants. A dense area means a lot people either live, study or work in the areas adjacent and surrounding Unitec’s end. This presents multiple challenges, the first being the locals might find having mental ill people in a close by area dangerous and unsafe for young school kids at Gladstone Primary School. Mental patients are still seen in the same light as prisoners by most people; it is a perception that has been in existence for many years (the evil spirits theory).

In comparison to a rural location, an urban site will present a set of problems that will challenge architects to adapt special design features for the proposed project. This project is being evolved around a set of natural and man-made elements that would change the perception of the older mental institutions. For instance, natural light is a key element for this project and the surrounding traffic, namely State Highway 16, and other high rise buildings will challenge the integration of natural light into this project. Other problems an urban site may present is the landscape and whether a man-made landscape is sufficient to provide patients with the natural environment that has been proven before to be an important element in the healing process of a human’s state of mind.
OPTION 2

Rural Site | Kingseat Psychiatric Hospital,
Kingseat Road, Karaka, Auckland 2580,
New Zealand

Figure 16
Aerial view of Former psychiatric hospital, Kingseat.
Kingseat is a former Psychiatric Hospital located in South Auckland. It is a rural site that provided wonderful natural landscape for its occupants. This hospital was another victim of the 1996 Mason Report; a move towards community-based mental health care led to its closure in 1999. The land is currently being used by the Spookers Haunted Attraction and the haunted history of this site provides the perfect backdrop for its current use.

Approximately 45 kilometres away from Auckland’s city centre, the rural site overlooks the surrounding farming area, as well as Auckland Airport and Manukau Harbour. The location of this site is ideal for a mental health hospital that intends to be isolated from the bustling life of a city centre. However, Kingseat Psychiatric Hospital is considered to be one of New Zealand’s most notoriously haunted locations with over one hundred claims of apparitions being reported. In other words, Kingseat is the number one haunted spot in New Zealand. This is obviously not with the type of healing location that people in need should be associated with.

Since the closure of Kingseat, there have been plans put forward by investors to develop the site into something more meaningful to take full advantage of the serene landscape surrounding the site. One of those plans in 2013 was to transform the site into a countryside living estate with 450 homes proposed; however, a debate enraged about the history of this location and some people argued that the location must stay as a reminder of its sad past.\(^\text{12}\)

Figure 17
Surrounding landscape at Kingseat.
Current Development of Kingseat Village

Kingseat site is undoubtedly of natural beauty, overlooking many important sights of Auckland. However, this land has been under investigation by Auckland City Council who want to change the zoning from rural to urban to allow the construction of new housing villages to accommodate the ever-growing population of the Karaka area. The current population is around 600 people, but this number is predicted to rise up to 5000 people. “Around 185 ha has been rezoned Residential, allowing for housing development of varying densities on land mostly in, around and north of the former Kingseat Hospital and including 9 McRobbie Rd.”  

Benefits

People living outside our main cities may be isolated and unsupported while experiencing symptoms of mental illness. They are more likely to struggle to find the right support because there are fewer mental health professionals and long delays can result. This argument provides an opportunity for this project to be placed in a rural site. The advantage of such location is the natural landscape in a rural area. Noise will not be an issue for those who occupy the buildings, so there will be peace of mind at all times. Natural light can be integrated into the building with no high rise surroundings.

Placing a mental health care facility in this location will no doubt encourage people in the approximate areas seek help when needed. The mental health care provided will be completely confidential and no information will be leaked to break the confidence in patients.

Comprise

The most obvious concern for this location is the history of the site. It is a hard to tell people to come back to a location with a violent history, it is very well known to everyone that this location has seen some horrific treatment to patients.

The mind-set of rural residents is quite different to their urban counterparts; the tightness of small communities, where everyone knows each other well is a major factor in encouraging people to come forward. The closeness of these communities can affect patients’ willingness to seek help and engage in treatment. The highly integrated nature of rural communities can also sometimes result in the exclusion of people who are seen as different or who are new to the community.\(^\text{14}\)

\(^{14}\)“Rural Communities” Mental Health Commission of New South Wales

OPTION 3

URBAN SITE

Figure 18
Lively urban location
An urban site provides an opportunity for the proposed project to coexist with the current fabric of Auckland’s landscape. This coexistence allows the project to utilise the existing infrastructure as well as making the most of the existing medical facilities around the city.

An urban location has its down side, for instance, noise, smell and possible lack of natural light penetrating through the building, but it also gives the occupants, staff and patients a chance to feel a sense of belonging to the rest of the society. In the past, large mental institutions were located in isolated rural areas as mental health patients were seen as outcasts and people who possess evil spirits, and therefore were treated much like prisoners. However, medical health care has come a long way in the last twenty years or so; we have seen the move towards community-based care.

**Coexistence** with other types of buildings, such as a university, can provide a number of possibilities for the local medical board and the education provider to join forces and better prepare and educate students on the history of medical health care. Education is a vital tool in our society and it is the best way to change the perception of large institutionalized mental health care facilities of the past. Mental health facilities are a place of care and healing for patients, the environment in such buildings must be peaceful, and that must be the drive for all architects involved in such buildings. We are currently seeing, especially in Australia, a move towards a more comforting healing space for mental health patients, the coexistence with other medical facilities is a move that is designed to provide the best care to patients with 24 hour support provided. There is a clear message sent by the development of these new buildings, that is, not to exclude those who are mentally ill from the rest of the society.
Urban List

Hayman Park
Manukau City

Western Park
Auckland Girls’ Grammar School

Auckland Domain Park
Opposite Auckland Hospital

Thomas Bloodworth Park
New Market
Benefits

Auckland is a world-class city that seeks constant improvement on its infrastructure, landscape, master planning, and so on. We are seeing development in every part of the city. The Unitary Plan, set out by Auckland City Council, is the main driver behind this constant development. These ongoing plans provide an opportunity to propose a new building, possibly the first of its kind in Auckland, to contribute to this ever-lasting growth around the city.

The proposed project aims to change this age-old perception of mental health care, where mental health care is no longer different to a general hospital, and in fact it is an extension of the hospital’s landscape.

All four proposed sites listed in the URBAN LIST are located in developing areas of the city. For instance, Hayman Park has recently seen the completion of a new Manukau Institute of Technology campus along with a new train station that links South Auckland to the rest of the city. Such locations will have massive influence on the design outcomes of the proposed project, and this influence is positive; it is a welcome change from the older mental institutions. The immediate surroundings of the proposed site include places such as the hospital and university. These two buildings can cooperate with the proposed mental health building to form a robust system of education, admittance of patients, and the healing process of these patients. It is a powerful relationship that can drive everyone involved towards better services providing for staff, students, and patients.
Detailed investigation of the selected site will look to explore the site to better understand the fabric of the existing infrastructure of the proposed area. The site is located in the heart of Manukau City, which is undergoing major developments under Auckland’s Unitary Plan. These developments are city wide and they include redevelopment of the transport network in South Auckland, new education facilities to accommodate the ever increasing Manukau population, new accommodation facilities, and other major commercial developments throughout the city.

This constant growth of the city provides an opportunity to develop a building at the heart of the city to serve people that are in desperate need of treatment. The main objective of the proposed project is to connect with the existing facilities and, rather than distract from the existing city fabric, the project will look to connect with its context and add value to the city as a whole. We are witnessing the rise of Manukau City through these developments to rival Auckland City Centre and it is without doubt delivering these processes, as seen in the last few years. Manukau has some major redevelopments that have brought people closer to their needs, for instance education and transportation.

MANUKAU’S CONTEXT

Manukau’s metropolitan centre has a large Westfield shopping centre, a large district court and police station, many council facilities, and commercial and industrial businesses in and around the centre.

Together they employ around 17,000 workers on a daily basis. Two major tertiary institutions, Manukau Institute of Technology (MIT) and Auckland University of Technology (AUT), have opened new campuses here, which will attract about 10,000 students when complete in 2017.

Manukau is Auckland’s main industrial hub, with a metropolitan centre catering to the South Auckland market of almost half a million residents. In 2015, Manukau contributed $16 billion to the economy or about 20 per cent of Auckland’s GDP.\(^\text{15}\)

Site Topography

Hayman Park is located at the heart of Manukau City, and in recent years has seen the rise of a major new development, Manukau Institute of Technology Manukau Campus. This development has altered the topography of the site to accommodate for this new campus. As seen in the picture above, the site sits within a topographical system of gentle ridges, valleys and basins.
HYDROLOGY

Figure 25 _
MANUKAU INSTITUTE OF TECHNOLOGY, MANUKAU CAMPUS

Figure 26  
Frontal façade of AUT Campus, Manukau

Figure 27  
Interior of the campus
The heart of MANUKAU

Figure 28
Manukau’s site plan
1. MIT Manukau Campus
2. Future Development
3. Rail Tranche
4. Heyman Park

MIT MANUKAU + TRANSPORT INTERCHANGE

SITE PLAN
As shown in the site plan by Warren and Mahoney, there are opportunities for future developments next to and around the new MIT campus. The current infrastructure is being developed to further enhance facilities for students and residents of Manukau City. Furthermore, the new Manukau bus station presents a great opportunity for adjacent mixed residential and commercial development that makes the most of the close proximity to major public transport routes.

There are two areas available for future commercial and residential use that have the potential to deliver around 50,000 m² of mixed use space.16

Transport Network

With major transport development planned for Manukau, Manukau City is bound to become the main transport hub for South Auckland. The addition of the MIT campus has further highlighted the need for a world class transport network to serve the public. The new education facility was built over a train station that links MIT to most parts of Auckland.

Travel by bus will be even more convenient after the development of the new bus interchange directly outside the campus in 2017.17

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17 “Transport to our door” Manukau Institute of Technology, accessed on June 25, 2016 http://www.manukau.ac.nz/our-campuses/
Auckland’s strategic transport network 2040

Figure 31

[Map of Auckland's transport network 2040]
CROSS-SECTION OF MANUKAU CAMPUS

Underground Train Station

Figure 32
Figure 33
District plan zones of Manukau City

Existing district plan zones/ Site Context
OPTION 4

Co-existence with General Hospitals

Figure 34
Middlemore Hospital
HOSPITAL LIST |

Middlemore Hospital
MANUKAU CITY

Auckland Hospital
AUCKLAND CITY

Northshore Hospital
NORTHSHORE

Greenlane Hospital
GREENLANE
New Zealand’s largest public hospital, Auckland Hospital was built as timber-framed hospital in 1846, providing four wards of ten beds each. The hospital has seen many developments in recent times to provide modern day facilities for patients.

Building 35, as shown in the figure above, is a dedicated unit for mental health services, known as Te Whetu Tawera. The unit has 58 beds, including 12 intensive care unit beds. The unit is located alongside the Auckland Domain with views of Auckland Harbour.\(^\text{18}\)

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North Shore hospital is one of the major hospitals in the Auckland region, serving about 500,000 people in the northern part of Auckland.

The hospital has a mental health unit at a nearby site, known as Waitemata DHB He Puna Waiora. The unit has a 46-bed mental health facility. The facility has incorporated modern design principles and clinical best practice. With its location adjacent to North Shore Hospital, the mental health unit looks to make use of the hospital’s other departments, namely the emergency department.
Another major hospital in the Auckland region that provides minimal care for mental health patients. The mental health unit within the hospital site, named Cornwell Complex, mainly looks after patients of advanced in age who suffer from some sort of mental health illness.
CHAPTER 5.0
DETAILED INVESTIGATION OF THE SELECTED SITE
MIDDLEMORE HOSPITAL

Location –
100 Hospital Road, 2025, Auckland. Approximately 5km from Manukau CBD.

Existing Infrastructure –
State Highway 1, State Highway 2, Southern railway Link, Middlemore Train Station.

Site Context –
King’s College, Royal Auckland Golf Club and Omana Park.

It is undisputable that designers need to research a subject to provide scientific evidence for their selection of elements, locations and so on, and it is more important than ever to research and test out all possible architectural solutions to find specified architectural design that serves patients and their particular needs.

It is therefore crucial for the design team of any project to empathetically imagine themselves in the roles of the patients, family members and staff; this connection between the designers and a building results in a successful design outcome. Beyond that, success derives from a designer’s ability to conceive a physical structure that is functional, meets the codes and is spiritually uplifting.¹⁹

Research shows that there is a link between the design of health care buildings and outcomes experienced by patients, staff and visitors. There is a recognition that risks and hazards inflicted upon patients arise from problems associated with design of systems of care, rather than the performance of providers. Well-designed health care environments can not only prevent injuries but also provide psychological support to aid the healing process.²⁰

A site within close proximity of general hospital provides an opportunity for designers to create design outcomes that satisfy all involved.


MIDDLEMORE HOSPITAL

Opened: 1947

Figure 43 _
Site map, Middlemore Hospital

Figure 44 _
Interior of Middlemore Hospital
Site Layout & Locality Plan

“Middlemore Hospital campus; a 3000sqm site tightly constrained by vehicular and pedestrian circulation routes and the need to preserve carparking numbers.”

The site is located between Royal Auckland Golf Club and Omana Park. It is situated approximately 5 kilometres from Manukau City Centre. The hospital is under the control of Counties Manukau District Health Board and it provides treatment for over 500,000 people in the Counties Manukau region.

As shown in figure 44 the area around the reserve is characterised by a mixture of areas for public and residential use.

The site is bounded by Hospital Road and Middlemore Hospital train station, located opposite the Hospital. There is plenty of pay and display car parks available for visitors to the hospital as well as some car parks for staff located on the grounds of the hospital. However, “Patients may be dropped off or picked up from outside the Hospital main entrance, which has a small number of free short-term parks reserved for this purpose only.”

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Aerial View of MIDDLEMORE Hospital

Figure 45
Aerial view of Middlemore Hospital
Figure 46
Entrance to the newly built Harley Gray building

Figure 47
Current interior layout

Figure 48
Kids First Building
ATMOSPHERE OF THE EXISTING SITE

Figure 49
Harley Gray Clinical Services Building

Figure 50
Overlooking entire MiddleMore Hospital

Figure 51
Emergency Department
Site Topography

Middlemore Hospital is bound at one end by open landscape provided by Omana Park and Auckland Golf Club, while the western side of the site is dominated by public transport, such as train station and bus stops. These variant functions has altered the topography of the site to accommodate the Hospital. As seen in figure 20, the site is quiet flat with slight slopes towards Omana Park.
Figure 52
SECTION AA
Household name in the southern part of Auckland, Middlemore Hospital plays an integral role in the landscape of Auckland city. Established in 1947, it is the largest hospital in Auckland with around 4,500 staff providing care for more than 91,000 inpatients and over 355,000 outpatients per year.

The hospital provides all kinds of services to patients, including mental health care at Tiaho Mai residential, which can hold up to 52 residents in its wards. The unit provides a range of activities to keep patients busy and help in their recovery, including cooking and alcohol and drug education. There is a 24-hour mental health assessment facility available for people with serious mental concerns; however, patients stay at this health care facility for short time and the goal of this care unit is to allow patients to access other mental health services, so it is fair to say that this unit is a stepping stone to a more established/robust health care facility around Auckland.

However, there are plans in place for a new mental health unit to be built at Middlemore Hospital. The proposed 76-bed unit will replace the existing 52-bed acute mental health facility, Tiaho Mai. It will be a modern, purpose-built facility catering for the needs of the patients, albeit for a short period of time. The majority of Auckland residents will have access to the community-based care but for those in need of acute care, this new care facility will be a substantial improvement on the existing Tiaho Mai facility. The new unit is proposed to open in August of 2018.
FIGURE 57

MIDDLEMORE HOSPITAL EXISTING SITE LAYOUT
Benefits

The biggest advantage for placing the site next to Middlemore Hospital is the co-location with other facilities, especially medical care facilities that could assist in the process of admitting patients and then allowing them to heal completely with the assistance of other professionals around the hospital. Such a move towards co-location with other hospital departments is very predominant in Australia; special mental health units are built around major hospitals. These mental health units accommodate patients who require care for either a short period of time or a long stay. For instance, The Mental Health Centre at Fiona Stanley Hospital in Perth enables mental health patients coming to the Emergency Department to be assessed early and streamed to specialist facilities. This allows for quicker and more effective treatment for mental health patients.23

The infrastructure is in place at this site, particularly the transportation. So this would mean that there is one thing this project won’t need to worry about. Auckland’s rail network connects the hospitals to most parts of Auckland, including the City Centre, south and west of Auckland.

An Auckland University department, South Auckland Clinical Campus, is located within the Middlemore Hospital site. This, of course, allows the opportunity to educate students and the next generation of architects, doctors, nurses and so on about the history of mental health.

Current mental health unit at Middlemore

Building 10, Tiaho Mai, is a residential unit on the grounds of Middlemore Hospital that caters for 50 patients. There are three wards within this unit, they are as follows:-

- **Kuaka** is the intensive care unit with 12 beds.
- **Huia** is a ward of 20 beds.
- **Tui** is a ward of 18 beds.

Tiaho Mai provides care for people from Otahuhu to Mercer, that’s approximately an area of 45 kilometres and a population predicted to be over 500,000.24

With a population over half a million and about 11% of the total New Zealand population, the current mental health care infrastructure cannot cater for the ever-growing population of South Auckland. There are other residential-sized units within Counties Manukau, but there are not enough for the long term needs of patients.

“In 2014/15 an estimated 636,000 adults (17%) around New Zealand had been diagnosed with a mood disorder and/or anxiety disorder at some time in their life.”25 That’s an increase of 1% compared to the surveys completed in 2012/2013, which estimated about 582,000 adults experienced some sort of mental health issues.

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23 Hassell 2014, page 8

You could argue that these residential facilities that house around 50 patients at time do not have the capacity to accommodate the needs of the ever-growing population in south Auckland. These facilities, in a sense, deter patients who are suffering from mental health issues from coming out and seeking health. A larger sized building with focus on providing an individual programme for each patient to go through the healing process. Architecture has a role to play in this healing process, an investigation into past mental institutions and the current residential facilities would provide a clear vision of what is best for patients occupying these mental health units.

**Number of beds in the proposed mental health facility**

A research investigation is being undertaken to determine the suitable number of beds required in the proposed mental health building to replace the old Tiaho Mai unit. It is extremely difficult to determine the number of people who suffer from some sort of mental illness; it is even more difficult to determine how many of those people would be required to stay at a mental health unit at a general hospital. However, in 2012/2013, a New Zealand health survey released some statistics that illustrate an approximate number of people who suffer mentally.

“In New Zealand, an estimated one in three people cope with a mental health condition at any one time – of that number, approximately one in five people in

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New Zealand’s Mental Health Statistics

Mental Health Atlas country profile 2014

**New Zealand**

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<th>Total population (UN estimate)</th>
<th>4,051,445</th>
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<tr>
<td>WHO region</td>
<td>WP9</td>
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<tr>
<td>Income group</td>
<td>High income</td>
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<td>Total health expenditure per person (US$ 2012)</td>
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<td>Stand-alone policy or plan for mental health:</td>
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<td>2012</td>
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<tr>
<td>Implementation status:</td>
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<td>Available and partially implemented</td>
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<tr>
<td>Policy / plan is in line with human rights covenants</td>
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<td>(self-rated 5-point checklist score: 5 = fully in line)</td>
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<td>a. INFORMATION gathered / disseminated by MoH</td>
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<tr>
<td>b. POLICY on adoption developed / published by MoH</td>
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<tr>
<td>c. EARLY INVOlVEMENT in mental health policy and law</td>
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<td>Main source of funds for care of severe mental disorders</td>
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<td>Inpatient / outpatient budget breakdown reported</td>
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<td>Total mental health workers per 100,000 population</td>
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<td>Mental health outpatient facility</td>
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<td>Mental health day treatment facility</td>
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<td>Inpatient care (per 100,000 population)</td>
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<td>Mental hospitals</td>
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<td>The Low Down</td>
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Figure 58: New Zealand mental health statistics
Middlemore’s FABRIC

Figure 59
Middlemore context

Traffic noise - Train, buses and taxis
Quiet area - landscape
**Precedents across Australia vs current mental health unit development in Auckland’s general hospitals.**

There is a move by the various Auckland District Health Boards to upgrade some of its residential-sized mental health units that are located within the site of a general hospital. The main purpose of these developments is to bring in new technology to assist doctors and other hospital staff to provide good services for patients. One good example of these developments is the mental health unit, He Puna Wāiora, at North Shore Hospital. This new purpose-built facility replaces the old mental health unit, Taharoto, which was part of the hospital’s maternity unit in the early days, and then after 30 years since its construction in early 1950s, the unit was closed as a maternity service and opened as mental health unit with very little alternations. Hence, the construction was very much needed to cater specifically mental health patients, albeit with only 46 beds available.

Clearly, the goal of Waitemata District Health Board was to provide quality service for patients, rather than to house as many patients as possible. However, these residential-sized units are not for patients to stay long term but rather for those staying on a short term basis. This is an issue that might lead people who suffer from mental health issues to be discouraged about coming out and seeking help. Add to that the number of patients who could be housed at such location, this is another issue considering that Auckland is growing by the day and therefore, the number of patients increase.

There are similar plans by Counties Manukau District Health Board to replace the existing 52-bed acute mental health facility at Middlemore hospital, Tiaho Mai, with a new 72-bed unit that will have similar design features to those at He Puna Wāiora, at North Shore Hospital.

A similar movement has been taken place across Australia, where mental health facilities are being placed in conjunction with a general hospital. The term coexisting has been used quite often to describe the integration of mental health units into a hospital site. However, the most obvious difference between the design of these facilities in Australia and those in Auckland, is quite frankly the connection of mental health units to other hospital departments. A prime example is at Fiona Stanley Hospital, where the unit is adjacent to the main hospital and it’s Emergency Department, which assists in admitting patients more efficiently.

All in all, a few issues have arisen after research was undertaken on the current mental health landscape around Auckland. Firstly, the residential-sized units are not going to satisfy the ever-growing population around Auckland, especially South Auckland. Secondly, Mental Health Units to other hospital departments is non-existent; these units need to make better use of general hospital facilities to provide efficient care. Lastly, a residential-sized mental health unit does not encourage people to come forward and seek help for their issues, these current facilities around Auckland provide short stay care for patients.

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The Brief has four strategic intents, the building will be:

01 Sustainable

02 Context Friendly

03 Form

04 Function
01 - Sustainable

A purpose-built mental health unit has an opportunity to send a message of sustainability and care, not only for patients but the environment as well.

With the incorporation of sustainable methods, a mental health facility can have a huge impact on the environment. Recently developed buildings, especially in Australia, are becoming aware of sustainable design benefits and are, therefore, spending more time and money incorporating sustainable techniques. Some owners are taking the initiative to become leaders in the sustainable methods that will reduce the operational costs of such buildings.

The objective for any green building design is to achieve a reduction in water consumption, an efficient use of energy, a good waste management plan, and the reduction of the carbon footprint by using recycled and sustainable materials.

Sustainable design is being achieved by breaking the methods into three categories:

A _ Energy
B _ Water
C _ Materials
A) **ENERGY**

Developers are becoming increasingly aware of the opportunities and benefits that sustainable architecture can offer, but whether to implement these methods or not is another story. There are different measures that the developers could investigate and fully analyse prior to the construction of the project. These measures include the selection of materials, the ideal location of the site and the introduction of systems that reduce energy consumption. Other methods of sustainability may include the following:

**Weather responsive facades**
Hospital facades provide an opportunity to integrate many uses of the hospital’s function. The space within the building facade could be a place for people to gather, sleep or work, and hence, proper thermal and acoustic insulation will enable big savings on the heating and cooling costs.

**Natural light**
Building orientation according to site location is of vital importance, as making the best possible use of natural light must be a primary target for a project of this kind. The maximum use of natural light could result in less consumption of artificial energy.

**Evapotranspiration**
Middlemore Hospital is surrounded by the Royal Auckland Golf Club and Omana Park, hence, the hospital is very well served in terms of trees within the site. These trees produce a cooling effect created by the wind; this cooling effect will create a breeze that could make the spaces close to the trees more comfortable in the summer, and in the winter, the trees will protect the building from any prevailing winds.

**Natural cooling**
Simple design techniques, for instance, the introduction of louvres and overhangs, could dramatically improve the indoor conditions as well as prevent external surfaces from overheating. This will lead to less use of artificial cooling systems that consume large amounts of energy.

**Natural ventilation**
Air circulation is of vital importance in any residential building. Occupants’ comfort is crucial in a mental health unit. Cross ventilation is a method that replaces any hot air with fresh air to achieve comfortable temperatures of around 16-18°C. Windows at appropriate locations along with roof skylight windows, will allow warmer air to be replaced with fresher air.

**Solar Panels**
The installation of solar panels on newly developed buildings is becoming very common. This has seen a dramatic reduction in the use of conventional energy sources.

**Photovoltaic Solar Panel**
This type of solar panel has proven to be the most popular with the construction of new structures. When the sun shines on these panels, it produces electricity that is used in the hospital, or even contributes to the power station for public use. This method of power generation requires very little maintenance, and it creates no pollution.
ENERGY
Mirebalais Haiti Hospital

Figure 61
B) **WATER HARVESTING**

One of the main features of sustainable design is the ability of the building to collect rain water and distribute it for use in other parts of the building. A hospital, like most publicly used buildings, requires a considerable amount of water; hence, it is important for the building to harvest water and become as self-sufficient as possible. As seen in figure 50 Fort Belvoir Community Hospital has a large roof that has been used as a catchment area.

**Availability**

During the months of April to November, the average rain days per month in the Auckland region is no less than 15, with the highest average being in the month of July when it goes up 20 days. The average rainfall is 1240mm per year spread over approximately 140 rain days.  

**Rain Water Harvesting**

The collection and use of rain water will greatly ease the pressure on the capital and operational costs of the hospital. Other benefits include reduction in energy and chemical consumption and increased water conservation.

Storm water collection generally consists of three main elements: the roof, catchment area, storage tank and the gutter, which directs the water through the downpipes and into tanks.

**Recycling of grey water**

On top of collection of water from the building roof, recycled water from showers and other clean areas, known as grey water, can be used in the toilets to achieve considerable water savings. Simple greywater systems are considered best for large buildings with approximately 100 occupants.

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WATER HARVESTING
Fort Belvoir Community Hospital, United States.

Figure 62
C) Materials

In recent times, architects, engineers and the local council has been integrating sustainable materials into their designs of new buildings. Technology has played a key role in the development of these green materials, so they are not only good for the environment but also very comfortable to live in for the occupants.

Selecting materials for the construction of the mental health unit can have an impact on the environment. Where possible, recycled and sustainable materials must be given preference to reduce the carbon footprint of the building.

Materials for a modern day mental health structure require thorough investigation to make sure that natural elements can work with these materials to provide the best living environment for patients. For instance, there needs to be a balance between integrating sustainable elements, such as louvers, and providing views overlooking Omana Park.

The following list looks at some sustainable materials that would transform the construction of this project:

Wool Brick
The aim of the developers of this material was to obtain a composite that was sustainable, non-toxic and to promote the use of local materials to give good strength to the bricks. This material consists of mixture of wool and natural polymer found in seaweed. The brick has 37% more strength than traditional bricks and is more resistant to cold weather. Therefore, this type of brick is suitable the cold climate that Auckland experiences during winter.

Solar Tiles
This material goes hand in hand with the sustainability scheme of this project. Unlike all other traditional roof tiles, which always aim to protect the property from all natural elements, this material looks to make best use of the intense sun during summer to ease the pressure on energy demands.

Sustainable Concrete
Concrete is not normally a material that is considered for a sustainable design however in recent times, technology has allowed for the introduction of a more sustainable concrete, which consists of recycled materials, with crushed glass as well as wood chips added into the mixture. These recycled materials dramatically reduce the CO2 emissions normally associated with concrete.

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Paper Insulation
A mixture of recycled newspapers and cardboard, paper insulation is a reliable alternative to the normally unsustainable chemical foams. This product is insect resistant as well as fire-retardant. The installation of this material into a building is even more interesting, it is normally blown, as seen in figure 55 into a wall filling every crack and creating an almost draft-free space.³⁰

Triple Glazed Windows.
We have seen in recent times the introduction of triple glazed windows into houses and commercial-sized buildings around New Zealand. This is a result of the cold climate that hits the country throughout winter. This material may cost slightly more than the more conventional windows but in the long term, it saves on energy consumption. The three layer glazing does an excellent job of preventing the heat from escaping the building and along with fully insulated windows frames, the occupants have more control over the weather, keeping the heat indoors during winter or look for ventilation during summer months.

The introduction of these five materials into the proposed building will significantly help the structure become durable and, more importantly, sustainable in the long run. Technology has allowed for the development of such materials, it is now up to consumers to actively demand these materials for better architecture for everyone involved.

³⁰ Ibid
PATIENT ROOM FINISHES SELECTED WITH EXTRAORDINARY CARE

Figure 69
Interior materials in a typical patient room
02 - Context Friendly

“Master planning starts with an assessment of the ecology of the site and its context; we need to know what is there before we can insert anything new”31

Context is the approximate area or an object that influences the building. Context comes in two forms: physical such as streets, buildings and contours, and non-physical elements such as the weather, culture of the place and council regulations.

Context is a key factor in determining the overall design of the project; it influences the architectural style, materials used and the layout of the site. A thorough study of the site context allows for the continuity of the building and fabric of the approximate area.32

Sustainable design principles are of vital importance to assist in achieving an appropriately high quality hospital development that makes positive contributions to the public environment. A place of healing is easily distinguished from all other forms of buildings due to its shape and size. The unique form and scale of a hospital must, therefore, enhance rather than detract from the urban form of the city. The proposed building should allow for connection to the surrounding area.

There is a relationship between the space in a street and the building that edges it; therefore, a building must be designed to further enhance the quality of the public space and its environment. A hospital street façade must communicate with the public, rather than isolating itself from the city landscape with a façade that is very similar to a spaceship. Street façade is required to recognise the overall context of a street, including the speed of traffic and public movement.

In conclusion, the influence of the site context is undeniable, it determines the occupants, the culture, regulations and the overall style of the building. The success of the building is very much connected to the context. In response to the context of the site, a communication between the building and the people is created in any successful design People normally appreciate the building if the designers appreciate their culture and their aesthetic values.

31 K. Yeang, Ken Yeang Eco Master Planning, (United Kingdom: John Wiley & Sons Ltd, 2009) 16.
Context Friendly
Cooper Square, New York
03 – Form

Architectural form of a building is generally influenced by two key elements: first is the location of the place. As mentioned earlier, culture is vital to connect the people to the proposed building. Respect must be paid to both parties, designers and people, to create greater connection and continuity. The second aspect is the function of the proposed building. In this instance a mental health unit requires certain elements, site orientation, interior design and landscaping to ensure that patients get their privacy when required, and can also connect with other people in the building whenever possible.

Form generally address the style of the building, what size is required and the quality of the design. Form interweaves with other elements of the design, for instance, external and internal materials, their colours, finishes, function, and so on.

Modern day mental health units have adapted a residential style of architecture to their design in response to the older style of mental health institutions that looked more like a prison than a place of healing. The objective nowadays is to connect the patients with the local community. One could argue that the damage that was done to the image of the larger mental health institutions has frantically forced the local governments to move to smaller sized buildings to house mentally ill patients. Whether that was a right move is questionable.

This project will look at certain aspects to determine the overall form of the building. Some of these aspects are the orientation of the building in respect to the sun, the connection to the existing fabric of the site and, indeed, it will take into account the orientation and form of the existing Middlemore Hospital. Other aspects are related more to occupants. The interior design is a key factor as well as patients’ comfort, including their privacy, connection with the external landscape and their interaction with other people.

All in all, a study of the existing infrastructure, such as Middlemore hospital, the existing train station, Royal Auckland Golf Club and nearby Omana Park, will have a key role in the overall form of the proposed mental health unit.
FORM
Mental health ACT, Adult Acute Inpatient Unit, The Canberra Hospital.

Figure 71  
Canberra Hospital
04 – Function

The functional side of the brief addresses the requirements of the project. The first thing that should be looked at is the fact that this is a mental health unit will accommodate patients for long stays. In other words, this is a healing place where a balance between patients’ privacy and interaction with other people needs to be struck to achieve great outcomes for the patients. Some of the other aspects to be considered are: the number of patients to occupy the place, introduction of courtyard to connect the patients with nature.

There would be three levels of functions throughout this project. The first is a place where people from outside meet their family members and where seminars and celebrations of occasions take place. The second level is where patients can connect with nature through courtyards and other landscaping areas. The third and final level is the most private, where patients can rest and spend time on their own as required.

In order to achieve successful design for a mental health facility certain key design principles need to be adopted, including the following:

- Light
- Elimination of environmental stressors
- Safety
- Security
- Observation
- Group interaction
- Access to nature

Building orientation and interior circulation of the spaces determines whether there are environmental stressors throughout the building. Stressors such as noise, glare and air quality must be eliminated to provide the most comfortable environment for patients. Noise is the most common stressor causing lack of sleep for patients. Other stressors include exposure to too much lighting, which would cause the room to overheat and therefore create an uncomfortable indoor environment for people. Wayfinding is another cause of distress. This issue is directly linked to architecture and it must be dealt with during the interior design phase of the project. This project must be patient-centric; the patients must be considered first and foremost for everything that is either considered or introduced to the project.33

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33 Hassell Studio. Future Directions in Design for Mental Health Facilities, 8.
Function
Mental health ACT, Adult Acute Inpatient Unit, The Canberra Hospital.

Figure 72
Social Hub at Canberra Hospital
Programme

There has been a dramatic change in the modern day architectural programme of mental health hospitals. The move towards community-based mental health facilities has eliminated most activities that were associated with the larger mental health institutions, activities such as labour on nearby farms. The move towards residential-sized buildings meant that the focus nowadays is solely on providing care for patients.

Modern day mental health units have features that are increasingly home-like in appearance and feel. Mental health units are single or village-like units, with multiple courtyards bringing in more natural light that connect to the natural environment. Their interior design embodies safe, residential components with improved ventilation and noise control systems.34

The programmes of a mental health unit can be put into two categories: internal and external functions. The internal uses are related to the occupants and the users of the facility, while the external functions are connected to the outside, specifically nature.

Possible programmes include:-

- Office
- Nursing station
- Therapy room
- Residential occupation
- Treatment rooms
- Café
- Educational facilities
- Conference rooms
- Staff room
- Dining areas
- Living areas
- Courtyards

The image and utilisation of the building has such an impact on not only the patients but also on people who admit a loved one to the hospital. If the proposed project has a cheerful and comfortable environment, family members are less apprehensive about admitting their family members to the hospital to seek help.35

The overall programme of the proposed project aims to achieve the following goals:

- Patient and family-centred
- Rehabilitation/recovery-focused
- Evidence-based
- Familiarity
- Visual and physical access to nature to promote healing
- Patient autonomy, respect, and privacy
- Minimize potential physical hazards
- Enhance staff visibility and engagement with patients36


35 J. Malkin, Hospital Interior Architecture: Creating Healing Environments for Special Patient Populations, 270.

PRECEDEENTS Study

Fiona Stanley Hospital, PERTH

Mental Health ACT, Adult Acute Inpatient Unit, Canberra Hospital
Fiona Stanley Hospital, PERTH

Location:
11 Robin Warren Drive, Murdoch,
Western Australia

Building Features

State of the art technology, a corridor that connects the Emergency department to the mental health unit, tele-psychiatry services for rural and remote patients.

A newly built 30-bed mental health unit that provides care for people of different ages and different mental states, including a mother/baby unit and an intensive mental health care unit.

An evidence-based study that included interviews with psychiatric doctors, nurses and family members has taken place to ensure that every feature of the new hospital points towards a more comfortable environment for patients.

“The FSH project team has worked in consultation with reference groups and expert stakeholders, as well as conducted international reviews of existing facilities to ensure every aspect of the unit promotes a more comfortable hotel feel rather than a domestic or institutional setting. The result will be a state-of-the-art building that encourages patient choice by offering access to more communal areas and outdoor places.”37

The unit has a small capacity of beds for patients; however, the design outcome of the project has successfully connected the mental health hospital to other hospital departments to ensure a seamless transition of patients from one department to another. For instance, a patient who is suffering from a mental illness is encouraged to voluntarily admit him or herself to the Emergency Department initially to assess conditions and once the tests are completed, the patient is then transferred to the mental health unit accordingly.

37 “Fiona Stanley Hospital: Project Update” Government of Western Australia, accessed on September 14, 2016

Architectural CO-EXISTING

In common terms, co-existence is a state in which two or more groups are living and respecting each group’s differences. From an architectural point of view, one type of building with specific function would operate in conjunction with other nearby buildings while making use of facilities.

Co-location with a general hospital is a trend that is very much gaining momentum overseas, especially in Australia, where a health care facility is situated with other types of buildings, such as leisure, retail and residential units. However, mental health facilities are nowadays being located within the grounds of a hospital in order to maximise efficiencies of services but also to eliminate the idea of institutionalisation. For instance, Fiona Stanley Hospital in Perth has a mental health unit within the site of the hospital, and the Emergency Department is treated as the hub of the hospital, where patients would come and report their issues then get streamed into a specialised facility to ensure that there is no congestion in the hospital grounds.

It is also of vital of importance that there an investigation into the current buildings at Middlemore Hospital to ensure that the proposed building, rather than being isolated and out of place, connects to other departments of the hospital and makes use of the existing infrastructure. The fabric of the site must also be respected. Currently the grounds at Middlemore Hospital are a typical hospital site with heavy traffic, while further to the back eastern side of the hospital, is where all the surgery rooms and the existing mental health unit are located to provide a quieter and safer location for patients to rest.
FIONA STANLEY HOSPITAL site map

Figure 73
Mental health unit at Fiona Stanley Hospital
Mental Health ACT, Adult Acute Inpatient Unit, Canberra Hospital

Location:
Yamba Drive, Garran 2605, ACT.

“The Adult Mental Health Unit includes a 10-bed high dependency wing and 30 low dependency beds in two wings. It has been designed to allow for possible expansion to a 50-bed facility in the future.”

This is another newly developed mental health unit in the grounds of a general hospital. The aim here is to provide innovative care with the latest technology to assist staff in the healing programme of patients.

The heart of this building is the socialisation spine that connects all occupants as well as psychiatrists and nurses. This central space gives a sense of freedom to interact with other people.

The main driver of this project was spatial quality, where patients are categorised according to their conditions. This provides time and spatial efficiency for doctors. Other key factors of the design were natural light and access to external areas.

As seen in figure 62, bedroom wings are built around external courtyards, (the courtyard of Embrace and the courtyard of Intertwining). To the west of the building, open spaces provide gardens, recreation areas, an amphitheatre and a walking track.

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Mental Health unit at Canberra Hospital

Figure 74
Landscape at Fiona Stanley Hospital
“The internal spaces of the AAIU are composed around a series of courtyards, providing access to natural light and green spaces and unencumbered movement between interior and exterior zones.”

Landscape plays a key role in the overall operation of the mental health unit. The courtyards are named differently as each of those courtyards are assigned to a particular space and a particular set of patients. As seen in figure 63, the site of the entire Canberra Hospital is quite dense with very little landscaping; however, the mental health unit enjoys a large green space. This is partly due to the fact that the natural environment plays a key role in the healing programme of the mental ill.

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40 “Adult Acute Inpatient Unit (AAIU), The Canberra Hospital” Lull Television, accessed on August 12, 2016, http://lull.tv/des/AAIU.htm
Aerial View
Mental Health unit at Canberra Hospital
Mental Health Facility Design

In modern times, general hospitals across New Zealand and Australia are replacing the older residential-sized mental health units with purpose-built facilities that aim to deliver health care more efficiently. The importance of the psychological impact of these buildings on patients is undeniable; the design impacts patients’ beliefs, expectations and more importantly their perception of not only themselves but the staff who care for them.

The impact of mental health on the occupants occurs on different levels. Most importantly for this project is the architectural impact, which includes exterior and interior design. Exterior design is the first point of contact with occupants and portrays an image of what is to be expected inside the building. This includes the exterior grounds, namely courtyards, and the degree of visual and physical access to nature that has been incorporated into the design. Interior design, on the other hand, includes the internal architectural environment of the building, the layout, size and configuration of the space. Other interior features that have less to do with architecture, but nonetheless are required for the comfort of the clients, are furniture, flooring, colour and texture.

The overall objective of the modern day mental health unit is to provide individual care for patients according to their condition at that time. Gone are the days of institutionalised care where the number of people admitted to the hospital was more important than the quality of care being delivered.

Individual Care

“You can’t have health without mental health”41

There is greater focus on a single bedroom configuration with all occupants enjoying high levels of privacy, noise reduction, space and the freedom to communicate with their carers.

Every aspect of the proposed design must be patient-centric as mentioned earlier. The care must be provided efficiency with the intent to deliver the best for the clients. Architecture, through its organisation, delivers an optimum design outcome that gives staff the ability to check the progress of each patient. For instance, a centralised nursing station that overlooks all bedrooms could assist greatly in quickly responding to an urgent matter.

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41 Hassell Studio, Future Directions in Design for Mental Health Facilities, 4.
Influence of architecture on patients

Architecture is a great tool in so many aspects of our daily lives. It has influence on the way we perceive things and we normally make our first impression of a place by visually analysing it.

One of the key drivers of this project is the spatial organisation of the proposed building. Spatial organisation demands discipline from everyone who occupies the place. Specifically, a mentally ill patient who has experienced some sort of trauma would appreciate organisation and discipline in their life.

Vision is the main sense that controls our opinions of things. Pictures through our vision are sent to our brain, where they are processed and an opinion is formed.

“To appreciate the extent we prioritize seeing faces it is critical to understand that the human senses are not equal or they do not carry equal weight in our perceptual apparatus. We have five basic senses: smell, hearing, touch, taste, and vision, and the human brain expressly prioritizes one of them: vision. Our brain works hardest at creating our visual view our surroundings,…..”

Design affects our senses and our way of life, and buildings are there to be viewed, traversed and lived in. The challenge for this project is to create an architectural place that initiates first contact with patients, workers and family members. The building must impress through its simplicity, comfort through its organisation and heal through its connection with nature and its sources.

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42 A. Sussman, J. B. Hollander, Cognitive Architecture: Designing For How We Respond To The Built Environment (New York: Routledge, 2015) 57.
Design Features

The final design of the proposed project will look to incorporate architectural features that will ensure that the building is up to the modern day standards of inpatient mental health facilities:

A) Flexibility:

The design of a mental health unit needs to respond to the ever-changing world we live in, including population, workloads and technology. The number of patients who seek inpatient treatment is unpredictable and with the ever-growing Counties Manukau population, it is therefore vital to design a building that can accommodate future development. Technology continues to develop, and it is evident nowadays that technological equipment is crucial in ensuring that patients receive the best care.

B) Efficiency:

This part of the design development comes back to the spatial organisation that we mentioned earlier. A clear and concise design with simple layout is needed that allows staff to keep an eye on proceedings and ensures that patients receive care when required. The movement of staff throughout the building needs to be efficient. For instance, a centralised nursing station located at the heart of the bedroom layout.

C) Patient needs:

It is important to outline patient needs at the outset of the design development stage. Those needs are then considered for the design and planning of the building accordingly. Some of those patient needs include noise elimination, safety, privacy, lighting, stress-free environment, appropriate ventilation, natural environments through courtyards and other design features such as interaction spaces.

A key architectural objective is to eliminate the institutional reputation of mental health care that has damaged the image of the mental health industry. Proper design and planning should appeal to the spirit and sensibilities of both patients and staff. The environments of these buildings must encourage a healing atmosphere that allows the building itself to be part of the therapeutic process.
DIAGRAMMATIC DESIGN DEVELOPMENT

Figure 76. Typical mental health unit layout
Figure 77
ENTRANCE AREA
Figure 78
SEMI-PUBLIC TO PRIVATE AREA

- Bedrooms & separate day space
- Multi-functional day, dining, quiet and activity spaces
- Open/access space and views
Communal Areas

- Therapy rooms
- Treatment rooms
- Snoezelen/sensory room

Group rooms
MULTI-FUNCTIONAL

- Recreational activities
- Gym
- Open spaces

SEMI-PUBLIC
Possibly shared with carers and visitors

Open/access space and views
Figure 80

STAFF-ONLY AREAS

- Services
  - Kitchens
  - Stores
  - Maintenance

- Staff
  - Change, showers, rest rooms
  - Offices, training, meeting rooms, library
  - General office
  - Reception

- Functions could be on upper level
Figure 81
PROGRAMMES

PROGRAMME ORIENTATION

ENTRANCE

PUBLIC SPACES

COMMUNAL AREAS

PRIVATE SPACES

UNIT SUPPORT AREAS

CLINICAL AREAS

STAFF AREAS

PROGRAMME ON SITE

COMB

CHAIN

CLOVER

DAYLIGHT

GARDEN

VIEWS

PATIENT ENTRANCE/RECEPTION

NURSING AREA

CAFE

OFFICE

INTERVIEW ROOMS

CLINICAL BATHROOMS/TOILETS

SITTING ROOMS

TREATMENT ROOMS

NURSING WORKROOM

THERAPY ROOMS

LIVING ROOM

LAUNDRY

LIVING ROOM

LAUNDRY

CLINICAL BATHROOMS/TOILETS

TREATMENT ROOMS

NURSING WORKROOM

THERAPY ROOMS

TEAM BATHROOMS/TOILETS
CONCEPTUAL DESIGN DEVELOPMENT
INWARD Orientated Layout

Mental health facilities have gone through many changes over the last few years to provide better accommodation for occupants. One very evident feature of modern day mental health facilities is the introduction of the nursing station. This is the focal point of the design and every other space is literally placed according to the position of the nursing station. The idea, as seen in layout 1, is a patient-based design layout; patient bedroom wings are placed on either side of the nursing station so staff can keep an eye on the patients while placed at an appropriate distance.

Infill buildings have an inward focus sometimes compensating for a lack of vibrant surroundings by putting the emphasis on interior amenities. The circulation in this instance becomes a vital part of the overall design of the building. Interior movement must be clear; for instance, the differentiation between public, semi-public and private spaces is vital in creating ideal interior environments for patients where each space has a specific role.

Another benefit of this inward design is to draw attention away from the outside environment, which includes traffic and the constant flow of the train close by.

Inward or Outward

- **Do the surroundings offer amenities, and do the patients want to face those amenities?**

Omana Park at the eastern end of Middlemore Hospital provides an opportunity to connect patients with the outdoor environment via the introduction of courtyards.

- **Is the existing neighbourhood compatible with the new development in use and scale?**

The immediate surroundings of the proposed site are mainly occupied by Middlemore Hospital facilities. The use and scale of these buildings were a major factor in selecting this particular site for the proposed mental health unit.

- **Do the streets provide the right scale for the development?**

An inward-focused layout doesn’t necessarily mean turning your back on the surroundings. When creating inward-looking developments, the focus should be on making an enclave.43

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LAYOUT 1
POSITIONED AROUND NURSING STATION
Layout 2 is even more inward focused than the previous layout. In comparison to layout 1, this second layout has courtyard, which is the focal point of this proposal.

Such a layout resembles a home environment, where each patient’s bedroom is located around the courtyard or an atrium. This particular layout spread over many floors with each level representing a function. For instance, the ground floor would be an area where visitors come and meet their family members, level two would be dedicated to male or female patients only and another level would facilitate patients who suffer from one particular illness. Such a layout would make the design more precise; therefore, the service would be well defined and exclusive to each patient.
LAYOUT 2
BASED AROUND COURTYARD
Factors Affecting Design Outcome

Upon starting the conceptual design of this project, I decided to breakdown the design into a very basic layout, where each and every aspect of the design elements must be taken into account and thoughtfully considered. As seen in layout 3, the design was broken into a very simple circular diagram, a development from the bubble diagram earlier in page 120. This time the location and orientation of the site were the key factors in deciding the orientation of the proposed building.

Key factors that were considered for this layout were:

- Interior circulation
- North point
- Landscape
- Noise
- Public spaces
- Semi-public spaces
- Private spaces

**Interior circulation** is a key part of this project. A clear and concise circulation is crucial to the outcome of this project. Patients who are mentally suffering require peace of mind and comfort in spaces within the building, otherwise a patient struggling to find his or her way is a source frustration, which only worsens a patient’s condition.

**North point** is crucial to the overall layout of the building as bedrooms require a considerable amount of natural light penetrating through them. The location of public, semi-public and private spaces is very much dependant on the north point.

**Landscape** is a key part of a mental health unit design; it provides the opportunity for patients to connect with outdoor spaces.

Along with north point and natural light, **Noise** plays a key role in determining the location of private spaces, where the elimination of noise is vital to the progress of patients’ health.

The idea of defining each space into each category, such as **public, semi-public** and **private** is vital in providing a concise interior layout that is easy for the patients and everyone else involved.
C) DESIGN PROCESS

Interior layout development

FIRST ALTERNATIVE –

The next stage of the design process involves further development of the earlier diagrammatic design. This stage involves deeper investigation into the layout of the mental health unit and how it connects with all elements such as the north point, surrounding landscape, entry into the unit, and separation between public and private spaces.

Figure 76 looks at a typical floor plan layout of a mental health unit, where the entry point and staff-occupied areas are at the centre of the building with two floor wings occupied by patients with a maximum amount of privacy. This layout provides many design possibilities that could be integrated into the proposed building to further enhance patient experience.

The proposed unit could act as a centre for treatment, research and education of both staff and patients. The education aspect of the building is dedicated to psychiatry, where the focus is on the treatment of the whole person in a caring and accepting environment. Spaces included in the design of the hospital include those that aim to further educate people, making them aware of mental health. These places include museums, education centres and research facilities.

The proposed building is approached diagonally not frontally. This orientation provides a varied three dimensional perception of the building’s form and mass. This design feature gives visitors the opportunity to look at and appreciate the building as a whole.

The indoor environment needs to be thoughtfully organised to create a dignified and high quality aesthetic environment. This could be achieved with the addition of wooden furniture, an exposed wood ceiling, varied ceiling heights, carefully designed lighting and varied wall surfaces. Colour must be used as a wayfinding device; for instance, entry walls, nursing stations, staff offices may use an accent colour.
Figure 86
TYPICAL FLOOR LEVEL LAYOUT

TYPICAL FLOOR LEVEL - MENTAL HEALTH UNIT’S BEDROOM WING

- Patient’s Bedroom
- Circulation
- Staff Areas

COURTYARD
Figure 87. Colour influenced nursing station
Figure 88  _ Open ceiling lounge room
ALTERNATIVE LAYOUTS

SECOND ALTERNATIVE – Nursing stations as central hub

As is the trend in most modern day psychiatric facilities, this plan in figure 82 aims to normalise an institutional environment and create a residential setting. The floor plan is designed around the nursing stations, which are the centre of building. There are two clusters that are each assigned to a specific type of patient, for instance, adults and adolescents.

The two nursing stations in this case can be transformed into an atrium space, where people gather and interact with other spaces such as the kitchen, lounge and dining areas that are placed around the nursing stations.

The internal layout of the proposed building is being set up so the occupants can move from one end of the building, which is a public space, to the other end, which is private and mainly occupied by patients.
Figure 89
TYPICAL FLOOR LEVEL LAYOUT

TYPICAL FLOOR LEVEL - MENTAL HEALTH UNIT

- Patient’s Bedroom
- Circulation & Communal Areas
- Staff Areas

Nursing Station

COURTYARD & LANDSCAPE

VIEWS TOWARDS OMAHA PARK
Figure 90. Large dayroom that offers quiet activities and social interaction.
Figure 91_ Quiet Room
This is a more traditional psychiatric floor plan, with three bedroom wings and an indoor courtyard. The plan is very much inward focused with extra care being put into the internal setup of the building.

The four wings have been categorised: closed adult unit, open adult unit, a unit for children and adolescents, and another unit dedicated to administration.

**THIRD ALTERNATIVE – TRADITIONAL**

**Exterior spaces**

Patients usually spend less time in exterior spaces than in an indoor environment; however, external spaces are just as important and they play a key role in the therapeutic treatment of patients. After all, this the only connection between patients and their natural environment.

In recent years since the movement towards community-based mental health care units, we have seen the reintroduction of courtyards into the design of mental health facilities. Other external design features that have been considered in the new mental health design are amphitheatres, walkways, cycling paths, vegetable gardens and sports courts. All these features are being integrated into the design, not only to modernise mental health units but also to keep patients busy and keep their minds occupied with positive thoughts.

Many recently designed mental health facilities focus strongly on the link between patients and nature. This can be achieved through views as well physical interaction through the introductions of spaces such as courtyards and walkways.
Figure 92_ TYPICAL FLOOR LEVEL LAYOUT

TYPICAL FLOOR LEVEL - MENTAL HEALTH UNIT

STAFF AREAS
NURSING STATIONS
CIRCULATION & COMMUNAL AREAS
PATIENT’S BEDROOM

MIDDLEMORE HOSPITAL

OMANA REGIONAL PARK

NORTHPOINT
Figure 93: Central interior Atrium
Open atrium in the middle of the house
Figure 94. Open spaces that include lounge, kitchen and dining
FOURTH ALTERNATIVE

NEW ZEALAND FERN
The idea of New Zealand FERN

Similar to the Opera House Sydney, where the design was mainly influenced nature, or specifically the exterior was influenced by the orange peel. This project however was influenced by the form of a New Zealand fern. This form inspires creativity and more importantly a move away from the traditional mental hospital design.

The Fern, also known as Koru, is an iconic symbol of New Zealand, it represents the birth of a new life,

“The koru is a spiral shape based on the shape of a new unfurling silver fern frond and symbolizing new life, growth, strength and peace.”

This curved design layout was trigged by the idea of breaking away from the traditional mental asylums. One common feature with all those asylums was the invariable design, where repetition of the architectural design extended to activities imposed upon patients.

Straight pathways more often than not result an unpleasant outcomes. They also appear to minimise privacy among patients.

One very prominent design feature within mental asylums was the corridors, long corridors were synonyms with traditional asylums. Hence, this design layout was inspired by creating a design that provoked some sort of pleasant surprise within human’s senses.

The idea of curved internal corridors breaks the pathway into segments, these segments could then be used as different department that represents each type of patients, such as male or female, children and adults.

44 https://en.wikipedia.org/wiki/Koru
Figure 97 _ The FERN
Design exploration of the
New Zealand fern

ALTERNATIVE 4A

Alternative 4A mainly explores design benefits that are associated with a shape of New Zealand fern. This proposed layout creates a coherent design that not only eliminates the long straight corridors but also creates a central focal point that is a hub of activities.

However, this central hub does take away some privacy required by patients during their time at the unit. This central hub design is normally associated with large commercial buildings that encourage people movement at all times, places such as a shopping mall or a court of law.
ALTERNATIVE 4B

Layout 4B further explores the benefits of a corrugated pathway, similar to alternative 4A. A central hub is the heart of the project. But for similar reason to alternative 4A, the design was abandoned.
ALTERNATIVE 4C – SELECTED

The elimination of long corridors

Long and straight corridors have long been associated with the old institutionalised mental hospitals. These hallways have been a place where many violent altercations have taken place involving patients. The straight lines provide no sense of privacy and therefore patients are needlessly encroach on each other’s personal space.

The proposed plan eliminates the need for those corridors and, in turn, breaks the hallway into a more private area. This layout allows for the opportunity to separate the floor plan into four buildings: administration, nursing, activities and dining, and lastly, the treatment centre. Therefore, the curved layout perfectly fits those four buildings, as each department has its own hallway.

“Good wayfinding design promotes healing because being able to understand their environment provides visitors with a sense of control and empowerment, key factors in reducing stress, anxiety, and fear—feelings that undermine the body’s ability to heal.”

By inheriting shorter segmented views to the curved hallway, wayfinding becomes a lot easier for patients and staff members. Colour coding each of the four departments is vital as it allows patients the ease of movement throughout the building. Colour could be used to reinforce behaviour; for instance, a soft, greyed blue could be used for a closed area to reinforce privacy, in opened areas, blue becomes a minor colour and the domain palette is changed to rose and peach.

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PROPOSED BUILDING and its relation the site context

Figure 103  Existing site layout

Figure 104  Response to site context
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FLOOR PLANS –
GROUND FLOOR – Initial hand sketches

NUMBER OF BEDROOMS 30

STAFF SPACES
PATIENT SPACES
NUMBER OF BEDS 44

1st FLOOR

NUMBER OF BEDS 26

2nd FLOOR
INTERNAL LAYOUT
BEDROOMS CONFIGURATION
D) DESIGN DEVELOPMENT

A) ROOM SPACES
ENTRANCE

Inpatient Entrance/Reception
This is the first point of contact for family members and patients; first impressions are formed as soon as the client enters the place. This area must offer a welcome feeling, a warm and bright atmosphere with an easy layout to eliminate any fear people have of the place.

This particular space conveys the overall message of the building, as every room and space has its own personality that makes a statement of what the institution thinks of its occupants. Every detail of the room plays a key role in the overall set up of the unit. Detailing such as style of furnishings, attention to housekeeping, maintenance, lighting, use of colour, and use of the space and whether it is crowded or spacious, are all vital pieces of architecture. Hard architecture such as bars on the windows, concrete block walls and hard-surfaced floors are elements that destroy patients’ self-esteem.

“To learn that the staff of the treatment center holds such low opinion of him is so frightened of his actions. Patients in this case, [are] told by their environment [how] to behave. Once a building has been constructed it ... begins to flash out messages about that patient which are necessarily implicit in the design”46

Waiting area
The waiting area should be visible from the reception desk. Similar to other types of buildings, such as an office building, a medical centre and a government department, visitors would normally come to the reception and ask for permission to meet a family member who is seeking treatment. They are asked to take a seat in the waiting area until the patient is comfortable and ready to meet.

Interview room
This room is designed for an authorised person within the mental health building to meet the patient for the first time and gather information about their illness. Further tests will also be undertaken in the treatment room but getting a better idea of the patient’s condition is crucial in determining the appropriate area to which they are allocated.

Interviews are commonly confidential and require a level of privacy to allow the patient to openly speak about any issue to assist in their progress. Hence, design of this particular space must take into consideration materials and finishes to achieve the required level of privacy.

B) PATIENT AREAS

Figure 121
Typical patient room
Patient room

Architectural:

Floor Finish:
Sheet vinyl, linoleum or rubber flooring.

Base:
Rubber Base

Wall Finish:
Impact Resistant Gypsum Board, painted finish

Ceiling:
Gypsum Board, painted finish

Noise (STC Rating): 40 STC

Doors:
wood with view panel.

Windows:
Window unit shall have integral blinds for sun control located between layers of glazing. Inside layer shall be laminated glass.

Arguably the most important area of the facility, this is a resting place with maximum privacy and access to external spaces. Patient spend majority of their time in the space, it becomes part of their lives for a considerable period of time, it is therefore important to allow the patients the freedom to personalise the place to make it more comfortable.
Typical room features include:

1. Exterior window with integral blinds and laminated glass on interior face.

2. Bathroom door with pressure sensitive alarm at door head, continuous hinge and anti-ligature lever with a magnetic latch.

3. Patient room features such as secured, non-breakable artwork, marker board and area rug are optional features that make the room more homelike without compromising patient safety.

4. Secure trim, headboard and soothing colours contribute to the residential feel of this room.

5. Built-in desk and shelving unit to store patient clothing is both attractive and secure.

En-suite facilities

Architectural:

**Floor Finish:**
2x2 ceramic tiles. Shower pan may be ceramic tile or premanufactured solid surface basin.

**Base:**
Rubber Base

**Wall Finish:**
Epoxy Painted Gypsum Board. Solid Surface panels securely applied in shower areas

**Ceiling:** Gypsum Board with Epoxy Paint

As seen in figure 93, all bedrooms must be equipped with self-accessed bathrooms, comprising of a water closet, shower, and wash-hand basin. This facility is not shared and it is only used for the person whose occupying the patient’s bedroom.
Figure 123
PATIENT BEDROOM LAYOUT

STANDARD ONE-BED PATIENT ROOM WITH SIDEBOARD TOILET

- Door to outswing in case of emergency
- Standard patient bed: 950x2000mm
- Built-in desk
- Shower
STANDARD ONE-BED PATIENT ROOM WITH INBOARD TOILET

BUILT-IN DESK

STANDARD PATIENT BED
990x2000mm

SHOWER

DOOR TO OUTSWING IN CASE OF EMERGENCY
STANDARD ONE-BED PATIENT ROOM WITH SIDEBOARD TOILET
WHEELCHAIR ACCESSIBLE

- Wheelchair accessible toilet
- Standard patient bed 890x2000mm
- Built-in desk
- Shower
- Door to outswing in case of emergency
STANDARD ONE-BED PATIENT ROOM WITH INBOARD TOILET
WHEELCHAIR ACCESSIBLE

Figure 126_
STANDARD TWO-BED PATIENT ROOM WITH SIDEBOARD TOILET

TOILET

STANDARD PATIENT BED
990x2000mm

BUILT-IN DESK

BUILT-IN DESK

STANDARD PATIENT BED
990x2000mm

SHOWER

DOOR TO OUTSWING IN CASE OF EMERGENCY
A) Communal areas
It depends on the occasion but patients socialise with staff in communal areas, or staff spending their lunch time in a courtyard, patients and staff spend a considerable time in communal spaces.

Communal spaces are normally in an open plan enhancing the environment by creating a light and airy space at the heart of the unit,

Sitting area/room
A place of relaxation for patients, this room gives the patients the opportunity to interact with staff members and other patients when possible

Sitting area should also have a connection with outdoor spaces and the external landscape, be it through views through glazed windows or through doors to exterior courtyards.

Fittings and furniture for this room may include:

- Storage for games, books and magazines;
- Coffee tables and semi-easy and easy chairs;
- Entertainment facilities.

Dining area

Floor Finish:
Sheet vinyl, linoleum or rubber flooring

Base:
Rubber Base

Wall Finish:
Gypsum Board

Ceiling:
Acoustic Tile with clips or gypsum board with acoustical plaster

Noise (STC Rating): 40.

Function:
Every inpatient unit must have a dining room to service food for patients. Staff supervision is crucial in ensuring order throughout the room.

To avoid overcrowding, there is going to be a central dining, that’s one dining room for each ward, this of course will eliminate any hustle or any discomfort patients might have.

The type of catering used depends on local decision. Options for serving food include:

• self-service;
• serving at the servery;
• serving at the table;
• a plated meal or tray service.\(^\text{48}\)

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\(^{48}\) Ibid
Figure 129
Dining Room/Training Kitchen
Figure 130
Lounge

LOUNGE

WALL-MOUNTED TELEVISION

COFFEE TABLE

SOFA

DINING TABLES

OPEN BOOKCASE
Day/Quiet room

**Floor Finish:**
Carpet, carpet tiles or resilient flooring

**Base:**
Rubber Base

**Wall Finish:**
Gypsum Board

**Ceiling:**
Acoustical Tile with clips or Gypsum board with Acoustical Plaster

**Function:**
This space acts as the living room for the unit and an alternative to the larger communal spaces. Dayroom is where patients seek a quiet environment.

This room may be used for other uses depending on its location within the building, for instance this room could sometimes be used as a conference room, for de-escalation, meeting or one to one therapy sessions.
Activity area

It is part of the treatment programmes to keep patients’ mind occupied with positive thoughts to help in their treatment process. An activity room with variety of activities such as board games, library with reading stations and so are ideal for patients who would want to keep themselves busy and interact with others.

Classrooms/ Resident Education

Floor Finish:
Sheet vinyl, linoleum or rubber flooring.

Base:
Rubber Base

Wall Finish:
Gypsum Board – Painted

Ceiling:
Acoustic Tile with clips or Gypsum Board with Acoustical Plaster
Figure 132
Classroom/Group room

CLASSROOM / GROUP ROOM

BOOKSHELF

SEMINAR TABLE

PROJECTOR

OVERHEAD PROJECTOR
Figure 133
Social Activities

SOCIAL ACTIVITIES

BOOKCASE SHELF

EASY CHAIR

DINING TABLE

BOOKCASE SHELF

EASY CHAIR

DINING TABLE
Figure 134
Deinstitutionalized Therapeutic Environment
Conclusion

The image of mental health care has long been damaged by the old and institutionalised mental hospitals. History tells us that the care in those days was not patient orientated. There were stories of torture, overcrowding and overworked patients. To this day, local governments around the world are battling to change this perception that has long been associated with the industry. Architecture has the power to change this mindset. It is essentially an obligation for designers to present architectural works that connect people with buildings. Architecture has the ability to heal people through its simplicity, and intrigue through its beauty.

The first part of this explanatory document was an introduction to look at the history of mental health around the world and more specifically, around New Zealand. As mentioned earlier, the history of mental health was not very pleasant in the early 1900s and up until early 1990s when the Mason Report was developed by the government to abolish the institutionalised system and move into community-based mental health care. Those older mental health institutions are now abandoned without any use. New mental health care is now being provided in residential-sized mental health units in the grounds of general hospitals. These units are not purpose built and are not providing sufficient care to patients. We are witnessing a growth in population all around Auckland and these units will not be capable of accommodating the increasing number of people who are seeking health care. It is therefore fair to say that these community-based units are in desperate need of complete redevelopment.

Then we moved onto the second part of this project, which investigated a suitable site for the proposed building. Many sites around Auckland were looked at in depth and many of them had some aspects of appeal, be it their close location to the city centre of Manukau City, the newly developed transport network or their connection with an existing general hospital. Some urban sites were investigated such as Hayman Park, Manukau City. This had many benefits, for instance, its visibility, and its connection with the newly built Manukau Institute of Technology, but at the end the overcrowding in an urban setting was a telling factor in looking for alternative site. Urban settings are not normally associated with mental health care, they dilute the health given to patients through the constant noise coming from the nearby train station and other pedestrians.

Middlemore Hospital was chosen as an ideal site for this project as it enforces the idea of coexistence with other hospital facilities. There is a mental health unit in place at Middlemore but it is not up to the required standards of modern day buildings; therefore, this site presented an ideal opportunity to build a new facility that accommodated the ever-growing population of Manukau.
The third and final part of this document explored the design aspect of this project. It started by exploring some recent mental health precedents around Australia. It was intriguing to see how the newly built facilities are connected with other hospital buildings. This allows for a swifter admission of patients as well as the increased speed of delivering the service to patients. This precedent study was an inspiration to move into the next stage of the final part of the document, conceptual development.

The first part of the concept design was very simple, diagrammatic drawings were investigated to better understand the connection between public, semi-public and private spaces within a mental health unit. Then those diagrams were developed further. The design at this stage became more detailed and critical spaces within the building were explored, for instance, nursing station and courtyards. As shown in the precedent study, spaces such as a courtyard played a key role in the overall design of Canberra’s Mental Health Unit. Essentially, the entire design of that project was based around the courtyards. Therefore, it was crucial for this project to understand the importance of spaces such as nursing stations and whether to design the entire project around them.

Interior design became the focus in the next stage of the project. Interior circulation is a crucial part of the proposed building; a clear and concise layout that promotes easier wayfinding is one design feature required for a successful building. Several layouts were studied to better understand the movement of patients from one part of the building to the other. It became clear that long corridors were associated with the institutional mental hospitals. Those corridors created a prison-like environment, and it was time for designers to look for alternative methods to tackle this issue.

To conclude, this research project, through the investigation carried out on the history of mental health around New Zealand, was beneficial to understand the struggles patients have gone through over the years to get treatment for their illness. Architecture can, therefore, play a key role through its simplicity and connection with its occupants, to ensure that patients have comfortable healing environments during their stay, whether it is long or short term.
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APPENDIX 1 |

Timeline –
Mental health illness in New Zealand
Historic development of lunatic asylum in New Zealand:

Beliefs of the origin of the mental illness

In all eras and cultures people have explained mental health illness in their own way. Mental illness has been explained in terms of supernatural, natural, biological or psychological causes. In pre-colonial times, Māori held a supernatural view and distinguished between the insane, demented, the intellectually disabled, and people who were possessed by spirits.

In contemporary Western society, mental illness is believed to be influenced by a combination of biological, psychological and social factors.

Timeline – Mental health services in New Zealand 1840-2000s

- Lunatic asylums - 1840s to 1900s

In the mid-1840s, mental patients - known as lunatics in those days - were viewed as a danger to public safety. Asylums were not built at that time, so a wooden building (gaol) attached to the jail and served as a home to those patients. The earliest example was in 1844, beside Wellington jail.

There was little healing progress of the patients during their stay in the gaol, but in the 1860s and 1870s, small asylums were built for this purpose, usually on the edge of the main towns to encourage community involvement, including cities such as Dunedin, Christchurch (1863), Auckland (1867), and Nelson (1876). These asylums were aimed at providing better care for the patients with a minimum amount of physical restraints. The asylums were surrounded by farms and gardens, and patients were expected to do daily chores depending on their condition. From 1876 onwards, all mental asylums came under the control of a government department.

- Mental hospital - 1910s to 1930s

In 1903, a new government policy was enforced where all hospitals were designed and built as to what it was known as the “Villa System”. This system was a hospital design based on a group of small detached buildings. The system allowed for easier classification of patients through their age, gender, behaviour and the likelihood of their cure.

In 1911, the Mental Defectives Act was introduced and it allowed people to admit themselves to mental hospitals voluntarily. One of the more notable changes in this period was the replacement of the term “asylum” with “mental hospital”.

Criticism of the previous asylum model lead to the introduction of mental hospitals, which had easier admission procedures, active early treatment and specialist psychiatrists and trained nurses.

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• **Psychiatric hospitals - 1940s to 1960**

From the 1950s onwards, drugs became available and were widely used to treat patients with depression and anxiety. This new treatment saw a notable increase in the number of people voluntarily admitting themselves to hospital. In 1935-39, 24% of the patient admissions were voluntary, it then increased to 47.5% in 1955-59, and then gradually increased to 71.4% by 1964.

This new development transformed the system in which psychiatric hospital operated. Patients' behaviour could now be stabilised, which lead to an early release from the hospitals in most cases.

Despite the growing importance of community centred hospitals, most of the mentally ill people were still treated at large specialised hospitals around the country. In 1969, the 11 psychiatric hospitals around New Zealand represented approximately 43% of public hospitals beds. These mental hospitals were equipped with facilities such as halls, libraries, canteens, chapels and swimming pools.

• **Closing the institutionalised hospitals - 1960s to 1990s**

From 1960, more community focused programmes were encouraged. Psychiatric patients were advised to take part in their care and treatment and large numbers of patients with manageable treatment plans were discharged from hospital. In the 1970s, every mental hospital patient was assessed and 26% of psychiatric specialists and 46% of patients were recommended for accommodation outside the major psychiatric hospitals.

The deinstitutionalisation of all psychiatric hospitals caused problems for patients. By the early 1990s, all major psychiatric hospitals were either abandoned or rebuilt to accommodate more suitable facilities. This gradual closure of mental hospitals revealed that community care caused problems for a large number of patients who did not have family or friends to support them and therefore lived in boarding houses not suitable to their needs.  

• **Community care - 1990s onwards**

1996 was a major date in the history of mental health services in New Zealand. The introduction of the Mason Report in this period brought major changes to the New Zealand system of mental health provision. The results of this report were a new Mental Health Commission, set up in 1996 to advise the government on the needs of people experiencing mental illness, encourage research and advocate for improvements.

In 2009, 30% of referrals to specialist mental health services came from General Practitioners (GPs). People with moderate mental health disorders might not have needed any specialist services, but there were concerns from the GPs that patients might understate their mental problems. In 2010, most specialist mental health services were provided by the district health boards (DHBs), which was quite a contrast from the old mental institutions. Hence, community rather than institutional mental health services became the largest part of the mental health system.

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50 Ibid
APPENDIX 2 |
Principles of planning and design –
Health Building Note 03-01 _ Adult acute mental health unit
3 Principles of planning and design

3.1 Planning an adult acute in-patient unit should ideally centre on designing a service, not just a building.

3.2 Prior to commencing a capital project, project teams should refer to ‘Laying the foundations for better acute mental healthcare’ (DH, 2008) to help them analyse their current acute mental health provision and to plan services that meet the future needs of their local population. The process involves commissioners, service users, carers and acute care staff from an early stage. The strategic approach in the workbook may also help to decide whether new buildings are needed and to ensure best-value investment.

Stakeholder involvement

3.3 The planning of new in-patient mental health services should consider the needs of all relevant stakeholders. These stakeholders and the type of engagement they need may vary according to, for example, the location of the service planned. However, they may include some of the following:
- service users;
- carers, advocates and visitors;
- staff including clinicians and service managers;
- NHS commissioners;
- professional bodies;
- local residents and community groups;
- police and other emergency services;
- other healthcare staff including community, primary and secondary care services;
- local authorities;
- Care Quality Commission (CQC).

3.4 The needs of each group of stakeholders should be identified at an early stage during service planning. These needs inform the development of an overarching communication and engagement strategy for the whole project. Chapter 4 details some of the specific needs these groups have raised. However, a service-specific needs assessment that is sensitive to local stakeholders should also be conducted.

3.5 Those responsible for mental health commissioning through their local commissioning strategy for mental health will plan the provision of a wide range of services to meet the needs of their local population.

3.6 See Chapter 4, ‘Stakeholder needs’.

Clinical and operational involvement

3.7 There is consistent clinical and operational input into the project (from initiation right through to completion), to ensure that the design reflects the philosophy of the treatment programme and is operationally realistic. It is important that different rooms and spaces ‘fit together’ and that the layout is informed by how life on the ward really needs to work so that services are accessible and effective. Trust project leads should not underestimate the amount of time this may require of some key staff and plan “business as usual” staffing levels accordingly, to ensure that any services running in parallel are sustained throughout the project.

Service user involvement

3.8 Service users in existing services, particularly those who may be transferring into the new service building, should have an early and continuing opportunity to contribute to the new service design and participate in the planning process. Every opportunity is taken to actively engage service users and their carers throughout the project. Service users’ perspective should especially be taken into consideration when planning furnishings and colour schemes. The King’s Fund’s ‘Enhancing the Healing Environment’ programme provides several examples of good practice in this area.
Community involvement

3.9 The local community is likely to make an important contribution to service user support and recovery. It is vital that local communities are helped to understand the treatment and care philosophy of the service and that they are given the opportunity to voice their questions or concerns. This is particularly important where an in-patient service is planned on a new geographical site.

3.10 From the very early stages of planning and throughout the process, design planners should build in opportunities to meet with the local community to discuss service proposals, and listen to concerns about risk, privacy, safety and design.

3.11 Services should develop an ongoing strategy for community engagement beyond the completion of the project that keeps channels of communication open and maximises understanding and cooperation.

Service user care and treatment

3.12 The provision of purposeful, therapeutic and safe services for service users is the primary aim of all mental health services. This means ensuring that the service design incorporates a range of internal and external communal spaces, rooms for therapy, arts, music and education for service users in addition to bedrooms, bathrooms, areas for visitors, external spaces and facilities for staff.

3.13 Some of the services that could be part of an acute unit include the following.

Acute day care

3.14 Acute day treatment services provide an alternative to admission for people who are acutely unwell, and are a means of facilitating early discharge and preventing re-admission. (See also ‘Laying the Foundations for better acute mental healthcare’ for more information on this service component.)

3.15 If acute day services are provided as an integral element of an acute unit, careful consideration needs to be given to the types of treatment and therapeutic activities that will be delivered on site, and the accommodation designed appropriately. Interviews and assessments, individual and group therapy sessions are key components of acute day services. The rooms for day sessions, associated staff and other support facilities may be shared with the unit as part of the integrated acute care pathway.

This is done to improve the patient’s journey along the acute care pathway, and not purely for economies of scale.

Psychiatric intensive care

3.16 Trust project leads should consider the need to provide facilities in acute in-patient services for people requiring a period of intensive treatment.

3.17 Psychiatric intensive care (PIC) is an important element of care within the wider system of in-patient services. PIC is for service users experiencing an acute phase of mental illness that requires rapid assessment and stabilisation through active engagement and treatment.

3.18 PIC services are small and highly staffed and provide short periods of intensive treatment before or during a longer period of in-patient care.

3.19 The emphasis is on treatment combined with a range of physical, procedural and relational measures that will help to reduce risk, disturbance and vulnerability.

3.20 The care and treatment needs of service users requiring PICU will not be able to be managed safely in a general ward setting. Service users are likely to:

- display acute behavioural disturbance that seriously compromises the physical and/or psychological wellbeing of themselves and/or others;
- be at notable risk of aggression, suicide and/or serious self-harm;
- be at risk of increased vulnerability because of sexual disinhibition or over-activity in the context of mental disorder.

3.21 See Department of Health guidance on Psychiatric Intensive Care Units.

De-escalation and seclusion facilities

3.22 Trust project leads should consider the need for incorporating a dedicated de-escalation area and separate seclusion facilities within acute service settings for people who may require care and treatment away from the main in-patient area. More information on the design of de-escalation areas and seclusion facilities is provided in the Planning and Design Manual within this topic.
Place of Safety (Section 136)

3.23 Some service users may have been detained by the police under Section 136 of the Mental Health Act and require psychiatric assessment. Every locality is required to have access to a “Place of Safety” facility, which is a suite of rooms located within an acute unit, designed to provide a safe environment for this assessment. The context for Places of Safety is detailed in the Code of Practice Mental Health Act 1983 (revised 2008).

3.24 The Royal College of Psychiatrists also provides a context document for Places of Safety.

Electroconvulsive therapy (ECT) suite

3.25 The provision of electroconvulsive therapy is determined by local policy. If provided, the ECT suite should be designed to meet the standards of the Royal College of Psychiatrists’ Electroconvulsive Therapy Accreditation Service (ECTAS), outlined in The ECT Handbook.

Visiting areas

3.26 The Mental Health Act Code of Practice (1983) covers visiting patients in hospital and refers to particular consideration for child visitors. There may be a dedicated child visiting area, close to the entrance of the unit, where children can visit safely. Separate baby changing facilities can be appropriately located close to this area.

Quality of life

3.27 Service users need spaces where they have privacy and are able to reflect quietly in addition to areas where they can engage with staff, meet visitors, socialise with other service users, participate in leisure activities (watching TV, listening to music, and indoor games, for example) and develop a sense of community. These areas can be well equipped and designed to feel comfortable and relaxed. Designs that have good acoustics (that is, that help reduce the level of noise and echo), minimise the risk of crowding, and have natural light and ventilation are important in helping to create a positive, therapeutic atmosphere.

3.28 Chapter 5 provides a useful checklist of key objectives in the design of an adult acute unit.

Social inclusion and recovery

3.29 The internal and external design of the unit may help service users and staff to feel valued and be an integral part of the community. Trust project leads should consider access to local amenities and how the service and service users will be supported to take part in everyday activities outside the unit. This will be affected by the location of the service, transport links and accessibility of facilities such as shops and leisure centres. Working with local communities when considering appropriate locations increases the opportunities for finding appropriate sites, and helps to build relationships.

3.30 A careful balance is to be achieved between providing dedicated facilities within the unit and accessing mainstream community facilities outside the unit.

Flexibility and value for money

3.31 Significant attention should be given to life-cycle costing, and the fit with the longer-term commissioning and service planning strategy.

3.32 A degree of “future-proofing” should be built into development plans to ensure that services can meet current and anticipated future need. This may include consideration of whether the location, site layout and design are flexible enough to allow for future expansion through modification or extension.

3.33 In the current “more for less” economic environment, healthcare buildings are required to be designed with flexibility and adaptability in mind. This is to help ensure that they can change use over time, if necessary, and remain “future proofed” to deal effectively with inevitable progress in healthcare and change in care pathways and service user groups. Flexibility and value for money can be achieved by ensuring that rooms that are not in constant use, such as interview rooms, are planned and designed to accommodate other uses.

3.34 Bearing in mind the high turnover of service users in acute in-patient services, trust project leads should plan to build robust internal constructions, to ensure value for money over the life-cycle costs of the service (see also ‘Building fabric and materials’ below).

Building fabric and materials

3.35 Careful consideration should be given to the selection and detailing of products and components, to ensure that they are suitably robust and appropriate for a mental healthcare setting. While damage and wear and tear will inevitably
occur, the physical environment in a mental healthcare setting is likely to suffer more frequent damage. Building in more frequent redecoration or refurbishing than in other settings – and more frequent maintenance checks on furniture and fittings – is advisable. Maintaining a high standard in a building indicates to service users that their environment is an important part of the caring process.

3.36 Furnishings should be comfortable, and as domestic in style as possible, while being safe and robust. Furniture should not be easily breakable to avoid its potential use as a weapon, and consideration may be given to the issue of deliberate or accidental fire risks concerning furniture. Any damaged furniture or equipment should be removed from the unit straight away and any damage to the fabric or decoration of the building should be repaired as soon as possible.

3.37 Furnishings should also be capable of being cleaned, maintained and repaired by the trust’s maintenance team, and should require minimum support from external specialists.

Safety

3.38 Providing a safe and therapeutic environment for service users, staff and visitors is integral to the provision of clinical care. It is particularly important to consider the impact that ward size and layout, service user numbers and population mix will have on the therapeutic environment and on safety.

3.39 The environment has a key role in encouraging service users to participate in life on the ward and actively engage with staff and in treatment. Important, the environment also has a part to play in minimising risk and maintaining motivated, confident staff.

3.40 The learning from serious untoward incidents and near misses may be valuable when considering estates design, layout and detailing. Listening to service users who may have experienced care and treatment in acute mental health services is useful feedback, whether this is from local or national surveys, such as those conducted by the Care Quality Commission (CQC).

Keeping people safe

3.41 In patient units need to be safe and therapeutic. This includes the provision of adequate space to prevent overcrowding and allow gender separation. The layout of the ward areas needs to be such that staff have good sight lines and visibility throughout most of the ward. Careful consideration needs to be given to entry to, and exit from, the unit – to ensure that staff have good visibility of the unit entrance. Further information can be found in ‘Strategies to reduce missing patients’.

The prevention of self-harm and suicide

3.42 Spaces where service users may not be continually supervised by staff (for example in bedrooms and toilets) should be designed, constructed and furnished to make self-harm or ligature as difficult as possible. All fixtures and fittings should be anti-ligature.

3.43 Spaces that are expected to be continually supervised by staff (for example communal areas or circulation spaces) should be comfortable and therapeutic. They encourage service users to participate in life on the ward and actively engage with staff, but minimise the risk of self-harm or injury to others.

3.44 The suicide prevention strategy should be guided by the National Suicide Prevention Strategy for England (DH 2002).

Single-sex accommodation

3.45 The NICE Constitution states that every service user has the right to high-quality care that is safe, effective and respects their privacy and dignity. Single-sex accommodation (SSA) is a long-standing commitment across mental health services. Since 2000, all new-build units have been required to incorporate single bedrooms, ideally with en-suite facilities. Refurbishment of existing hospitals has also introduced more single rooms.

Security

3.46 Security plays a positive and supportive role in care and is considered as providing the structure within which clinical priorities can be safely carried out.

3.47 Security is a concept of three interdependent dimensions – relational, procedural and physical security. In any service, the balance between these three dynamics may shift, requiring some adjustment to meet the needs of particular service users or a changing situation. Nevertheless, all three must be in place and one should not substantially
compensate for the absence or ineffectiveness of another.

**Relational security**

3.48 Relational security is the knowledge and understanding that staff have of a patient and of the environment: and the translation of that information into appropriate responses and care.

**Procedural security**

3.49 Procedural security relates to the proper application of a set of procedures, routines and checking.

3.50 Establishing a comprehensive range of effective procedures across the service anchors the application of therapeutic activity to structure and routine. The routine application of procedures ensures that staff are able to quickly and efficiently establish clear boundaries and enables safe practices to be embedded and applied in a consistent way.

**Physical security**

3.51 The physical security requirements for the design of an adult acute unit are determined by the need to minimise the likelihood of unauthorised entry and exit, and the introduction of prohibited items onto the ward. The location of the service and its layout will also help to determine appropriate safety measures.

3.52 Where possible, physical security measures are unobtrusive, and are incorporated into the building fabric sensitively so that the living environment is as therapeutic and unrestrictive as possible. Safety concerns have to be balanced with maintaining the therapeutic focus of the unit.

**Additional measures**

3.53 The location and layout of some acute services may lead trust project leads to consider the need for additional measures to support the overall safety of service users, staff and visitors to the unit. For example, external CCTV may be considered an appropriate tool for areas such as car parks. It may also be considered appropriate to support overall safety. If used, cameras should only be included at ward entry and exit points and should not infringe the privacy and dignity of service users. CCTV systems should not cover bedrooms or toilet and shower areas.

3.54 The use of CCTV does not replace the need for staff to provide appropriate levels of observation and engagement.

3.55 The use of CCTV will need to meet guidelines set out in the CCTV Code of Practice 2008 guidance.

**Infection control**

3.56 A strategy for infection control should be agreed at an early stage in the planning process. This strategy, while minimising the risk of infection, also takes account of the different risks associated with mental health environments.

3.57 In some cases the fitting of carpet, whilst less clinical, may help to create a more therapeutic environment and reduce noise levels. Discussion with the infection control team may be necessary to determine the choice of materials, finishes and surfaces of fixtures and fittings.
## 4 Stakeholder needs

<table>
<thead>
<tr>
<th>Service users</th>
<th>Needs of service users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Privacy &amp; dignity</td>
<td>Service users should have their own en-suite bedroom. They should have control over their lighting (including reading light), natural light (if integral blinds are fitted), ventilation and, where appropriate, heating. A service user should have the ability to lock their bedroom door from both the outside and inside, with the capability for staff to override this to protect their safety.</td>
</tr>
<tr>
<td>Safety</td>
<td>Service users will not be able to engage with the therapeutic purpose of the ward unless they feel safe. This includes the safety of belongings in a lockable space.</td>
</tr>
<tr>
<td>Space</td>
<td>The size, furnishing and quality of spaces and circulation areas will influence how service users engage with and use it. A variety of different spaces should be provided to allow them a choice of environment.</td>
</tr>
<tr>
<td>Disabled accommodation</td>
<td>Appropriate accessible accommodation and facilities should be provided that ensures that the needs of disabled service users are met in a way that promotes inclusivity.</td>
</tr>
<tr>
<td>Space to meet others</td>
<td>Contact with the outside world is an important part of treatment and recovery. Service users need spaces where they are able to meet friends, family, carers and other professional visitors.</td>
</tr>
<tr>
<td>Gender-specific</td>
<td>Accommodation should be planned to be gender-specific and furnished and decorated in such a way that it meets the needs of different genders.</td>
</tr>
<tr>
<td>Access to outside areas</td>
<td>Direct access from internal spaces to outside areas offers service users greater freedom of movement and fresh air. The design provides staff with good sightlines to all entry and exit points.</td>
</tr>
<tr>
<td>Variety of activities</td>
<td>It is essential to provide a wide range of activities for group therapy, social and recreational use. The use of room and outdoor spaces can be maximised by early service user and clinical involvement and the application of a service’s clinical philosophy.</td>
</tr>
<tr>
<td>Healthy lifestyle</td>
<td>Physical healthcare is an essential aspect of care, treatment and mental well-being. The unit design provides opportunities to improve the lifestyles of patients, including access to fresh air and exercise.</td>
</tr>
<tr>
<td>A space for contemplation</td>
<td>The design may provide for a suitable multi-faith room in which service users are able to spend time in worship, meditation or reflection.</td>
</tr>
<tr>
<td>Natural light and ventilation</td>
<td>These are essential attributes of a well-designed unit and the physical and mental well-being of service users.</td>
</tr>
<tr>
<td>Clean, well-maintained building</td>
<td>This conveys a positive message to service users, staff and carers and encourages pride in the ward environment. There may be a zero tolerance policy on damage in general. The ability to maintain a clean, homely service will be dictated by the material used to build and furnish it.</td>
</tr>
<tr>
<td>A domestic environment</td>
<td>Service users describe a preference for an environment that is comfortable, non-threatening and minimises institutional features.</td>
</tr>
<tr>
<td>Avoidance of noise</td>
<td>At initial planning stage, consideration should be given to the location of potentially noisy rooms (such as laundries and de-excitation suites) in relation to quiet accommodation such as bedrooms. Adequate soundproofing should be installed between rooms, and heavy-duty sound-reducing doors are used. Noisy engineering equipment, fans and light fittings should be avoided to promote a therapeutic environment.</td>
</tr>
<tr>
<td>Avoidance of overcrowding</td>
<td>Overcrowding can also create tension on a ward. Activity areas and dining rooms provide adequate space to avoid overcrowding.</td>
</tr>
<tr>
<td>Storage</td>
<td>There should be adequate facility for storing and accessing a reasonable number of patients’ personal possessions.</td>
</tr>
</tbody>
</table>
### Carers and visitors

<table>
<thead>
<tr>
<th>Welcome</th>
<th>It can be daunting to visit an acute unit, especially for the first time. Visitors need to feel welcome and reassured by the surroundings.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Privacy</td>
<td>There should be discrete areas for visiting. Care should be taken to accommodate child visiting as close to the entrance as possible.</td>
</tr>
<tr>
<td>Safety</td>
<td>Visitors need to feel reassured that there is someone on hand if needed.</td>
</tr>
</tbody>
</table>

### Managers

<table>
<thead>
<tr>
<th>Flexibility</th>
<th>Managers need design solutions that build in a degree of flexibility. Where practical, rooms should be designed to allow for different functions or to respond to changing service user populations and needs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low levels of incidents</td>
<td>The design of the environment should give careful consideration to safety and security for service users, for staff and the public.</td>
</tr>
<tr>
<td>Stable staffing levels</td>
<td>A high-quality environment for staff can play an important role in improving staff morale, decreasing sickness absence and improving recruitment and retention. A good design enables staff to be deployed in the right areas, to engage with service users and to maximise the use of resources.</td>
</tr>
</tbody>
</table>

### Staff

<table>
<thead>
<tr>
<th>A pleasant environment</th>
<th>Staff function better in environments that feel safe, calm and spacious. Staff can engage with service users and deliver a better quality of care if they are unconstrained by the design of the unit.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safe working conditions</td>
<td>Better quality of care and staff experience will be enabled by a design, supported by appropriate technology, that reassures staff and facilitates rapid response and assistance when necessary.</td>
</tr>
<tr>
<td>Good layouts</td>
<td>Single-level patient accommodation will enable the safe movement, supervision and management of service users.</td>
</tr>
<tr>
<td>Private areas</td>
<td>Space should be provided for staff to do confidential work and hold meetings. There should also be areas for staff to rest; these should be located away from the main service user areas on the ward.</td>
</tr>
<tr>
<td>Storage</td>
<td>There should be adequate facilities for the secure storage of personal possessions.</td>
</tr>
</tbody>
</table>
# Quality of life checklist

<table>
<thead>
<tr>
<th>Table 2: Quality of life checklist</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What are we trying to create?</strong></td>
<td><strong>What is required?</strong></td>
</tr>
<tr>
<td><strong>Therapeutic Environment</strong></td>
<td>1. Natural daylight is maximised and there are views out to landscape and the sky.</td>
</tr>
<tr>
<td></td>
<td>2. All areas look and smell clean.</td>
</tr>
<tr>
<td></td>
<td>3. Ambient temperatures and ventilation are adequately controlled.</td>
</tr>
<tr>
<td></td>
<td>4. Noise levels are adjusted to meet the needs of the people living/residing here.</td>
</tr>
<tr>
<td></td>
<td>5. There is access to external space that includes a covered area for use during inclement weather.</td>
</tr>
<tr>
<td></td>
<td>6. Social spaces are located to provide views into external areas.</td>
</tr>
<tr>
<td></td>
<td>7. A quiet, low-stimulus area is provided.</td>
</tr>
<tr>
<td></td>
<td>8. Areas that need to be quiet are located as far away as possible from any sources of unavoidable noise.</td>
</tr>
<tr>
<td><strong>Space</strong></td>
<td>1. There is a perception of space, and overcrowding is avoided.</td>
</tr>
<tr>
<td></td>
<td>2. The ward is not accommodated on more than one floor.</td>
</tr>
<tr>
<td></td>
<td>3. Sleeping and day areas are separate.</td>
</tr>
<tr>
<td></td>
<td>4. All bedrooms should be single rooms with en-suite.</td>
</tr>
<tr>
<td></td>
<td>5. There are adequate quiet spaces for service users and staff.</td>
</tr>
<tr>
<td></td>
<td>6. The day rooms are open at night for people who cannot sleep.</td>
</tr>
<tr>
<td></td>
<td>7. Adequate private spaces are provided for interactions.</td>
</tr>
<tr>
<td>Privacy, dignity and safety</td>
<td>1. Bedrooms should be within a gender-specific area.</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>2. Privacy in toilets and bathrooms is ensured.</td>
</tr>
<tr>
<td></td>
<td>3. Sightlines are unimpeded. All exits and entrances are within sight of staff.</td>
</tr>
<tr>
<td></td>
<td>4. There is a designated space for service users to receive visits from children.</td>
</tr>
<tr>
<td></td>
<td>5. There is at least one room for interviewing and meeting with individual service users and carers/relatives, which is furnished with comfortable seating.</td>
</tr>
<tr>
<td></td>
<td>6. Privacy in receiving medication with the opportunity to ask and receive answers to questions regarding medication.</td>
</tr>
<tr>
<td>Security</td>
<td>1. Personal effects area safe and accessible.</td>
</tr>
<tr>
<td></td>
<td>2. Existing alarm systems are appropriate to the needs of the ward/unit.</td>
</tr>
<tr>
<td></td>
<td>3. While ensuring appropriate levels of security, the environment is open and does not unnecessarily restrict service users.</td>
</tr>
<tr>
<td>Activity</td>
<td>1. There are activity areas inside and outside.</td>
</tr>
<tr>
<td></td>
<td>2. The ward has direct access to an outside space for exercise and access to fresh air, which is safe and has seating available for relaxation.</td>
</tr>
<tr>
<td></td>
<td>3. There is a range of programmed activities available for service users throughout the day and at weekends.</td>
</tr>
</tbody>
</table>
## Quality of life checklist

<table>
<thead>
<tr>
<th>Access</th>
<th>1. Areas are accessible for someone using walking aids/wheelchair.</th>
<th>Suitable designs should incorporate full accessibility for service users, staff and visitors using walking aids and/or a wheelchair.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2. The ward is managed to allow optimum and accessible use of available space and rooms.</td>
<td>Many areas should be open-plan to allow for continual access. Where there are rooms for general use, these should be unlocked for the majority of the day.</td>
</tr>
<tr>
<td></td>
<td>3. Reception areas are well planned.</td>
<td>There should be a welcoming reception area, with clear wayfinding that enhances access to the building.</td>
</tr>
<tr>
<td></td>
<td>4. Signage is clear and visible.</td>
<td>Wayfinding. See separate DH guidance on this (link below).</td>
</tr>
</tbody>
</table>

See 'Elimination of mixed-sex hospital accommodation', DH (2005) and 'Wayfinding – effective wayfinding and signage systems guidance for healthcare facilities'.
4.2. Site Design Guidelines

4.2.1. Introduction

Site analysis and planning are influential to the success of a project. At the beginning of the design process, the design team should perform several preliminary analyses that will affect the final design of the facility. Several of the site related factors required for a mental health facility are identified in this section and are to be considered as essential tools for planning. Each project designer should consider the project specifics that include, but are not limited to:

- Site Area
- Site Geometry
- Local Zoning
- Topography
- Regional and Climatic Factors
- Utilities
- Other Site Characteristics

4.2.2. Planning

When planning a new mental health facility on a new site, particularly an inpatient facility, consider first the feasibility of accommodating the facility space program in a single story. A single story inpatient facility, organized in a village-like design concept, allows abundant natural light into patient areas and, for inpatient units, allows direct access to exterior courtyard spaces. These features dictate a large footprint that the site’s size, geometry and topography may not support. Additionally, when a facility goes beyond 120 beds or so, the travel distances within a single story facility become excessive. However, a single story inpatient facility is recommended when at all possible to provide patients with serious mental health needs with a functional and aesthetic environment that provides them with the greatest chance of achieving recovery.

The activities of maintenance personnel, support service providers, emergency crews, and utility workers should be accommodated on site in such a manner that they are as unobtrusive as possible for the patients, visitors, and clinical staff using the facility.

The completed site should include:

- Landscaped Features
- Setbacks and Buffers
- Adequate Parking for Staff and Visitors
- Safe, attractive circulation for pedestrians from the parking areas and public transportation stops
- Access for Emergency Vehicles
- Utility and Service Access
- Covered Entry
- Signage – Wayfinding

Requirements for parking are generated by staff, visitors, service technicians, and deliveries.

The AIA Guidelines for Design and Construction of Health Care Facilities suggest on-site parking count be based on the number of staff likely on site during the day shift with an additional 1.5 parking space per patient bed. The number may be reduced if public transportation is readily available and utilized.

Access to public transportation to/from VA Mental Health Facilities is extremely important for many veteran patients and their families.

4.2.3. Topography

In addition to limiting the size of the facility footprint, topographical influences may effect the orientation of access points to the facility including the primary entrance, patient access, emergency vehicle and service/staff access. Maintaining accessibility for building egress, walkways, roadways and parking areas will also be impacted by the topography of the site. During the planning phase of the project, consider what the impact of the topography of the site will have on both the functional and aesthetic parts of the design.

During the initial survey of the site, a physical review of the site is recommended. Existing natural features such as mature specimen trees, streams, wetlands and rock outcroppings should influence the location of the facility on the site and the landscape design for the project. Ponds, streams, and wetlands on-site should be inaccessible to unsupervised patients.

At-grade site access from the main entry and patient entry to the facility is essential. On-site grading is an important consideration when planning and locating the access points of the facility.

4.2.4. Zoning

Unlike many general aspects of site design such as roadways and parking aisles, zoning is site specific. Preliminary plans should not advance without performing a zoning analysis. In the case of government-owned property, it is important to consider the zoning and adjacencies for compatibility with neighboring buildings. Factors for zoning include:

- Height
4.2.5. Archeological/Historic Features

Early in the design phase, there should be an analysis which determines whether there are any historic or archaeological issues that will impact the development of the site. As with the zoning restrictions, these issues are site specific. The impact of historic related issues includes: finish of the exterior; window types, colors and shapes; roof types and slopes; color of façade; height of facility and location of facility. Federal, state and local jurisdictions and related agencies should be contacted to assure that the guidelines in place are followed.

4.2.6. Roadways

1. Site Access
Site access roadways will be connected directly to main public roadways. The location of curb cuts and aprons should be planned in accordance with local zoning code or AHJ.

2. On-Site Roadways
Width of roads should accommodate traffic in each direction. A path from the site entrance to entry of the facility should be logical and easily identifiable.

Site roadways to and from parking areas should be capable of accommodating two-way traffic. Proper signage and direction arrows may enhance clarity of destinations and paths.

3. Emergency Roadways
Emergency access is required on the grounds of the facility. This access relates to ambulance, fire and rescue, law enforcement and other emergency related vehicles. The width of the roadway for emergency purposes should be maintained and unobstructed at all times.

A loop road or some means of complete site access is generally required in every jurisdiction. Loop road design should accommodate a fire truck, and enable emergency vehicles to access a complete revolution around the facility. At a minimum, access to every part of the site and facility for emergency vehicles must be provided.
4. **Service Road**
The service road may better serve the facility by having a separate access point. Should that not prove feasible due to site restrictions or other reasons, consider a separation of roadways upon entry to the site. Clearly indicate the service road and design it in such a way as to not interfere with general site access or emergency roadways. The service roadway should accommodate truck traffic in two directions unless the roadway system is designed and clearly identified as a one-way traffic pattern.

4.2.7. **Site Signage/Wayfinding**

Locate signage on the site for visitors, patients, staff and service accommodations. Some suggestions for site signage include:

- Directional Traffic (one-way)
- Restrictions
- Parking
- Deliveries
- Patient Entry
- Entrance to Site
- Entrance to Facility

For specific signage criteria, refer to the VA Signage Design Guide, located in the VA Technical Information Library (TIL) found on their website.

4.2.8. **Proximity to Adjoining Facilities**

A new mental health unit may be co-located with an existing Medical Center campus. In this instance, there may be the opportunity to share, upgrade or expand existing site access and roadways, parking and other site features to the mutual benefit of both facilities.

Compatible adjoining or proximate facility site development should be considered and integrated into the site design of the Mental Health facility to:

1.) Maintain or improve existing on-site vehicular movement,
2.) Maintain or improve the existing campus exterior aesthetics by the use of consistent landscaping, way-finding and other site features.
3.) Create appropriate vehicle and pedestrian connectivity between new and existing facilities.
4.) Minimize unnecessary use of resources, site development costs and area of site disruption
4.2.9. Shared Site Features

Location of a new Mental Health facility adjacent to a compatible existing use could allow several possibilities for shared site features and, for example, could impact:
- Siting of facility
- Orientation of entrance
- Location of services
- Access to site
- Availability of utilities

If operationally appropriate, a common service road or a common entrance to the site in general may be possible. Independent access to power, communications, gas, water, and other utilities however is preferable, so the Mental Health Facility can remain on line in the event of outages on the shared campus. Emergency power provisions for the facility should be a part of the planned program due to the needs of the patients and residents.

The advantage of sharing campus amenities include, but are not limited to:
- Access to site
- Use of existing roadways, parking and other infrastructure
- Extension of existing services and utilities
- Access to medical facilities
- Availability of public transportation

Many of these items translate into construction and operational cost savings over the life of the facility.

4.2.10. Utility Access

Site utilities are critical to successful operations. Among the utilities or utility related components requiring site accesses are:
- Electrical service transformers
- Communication services
- Gas lines
- Stormwater management
- Water and sewer utility
- Oil service (if applicable)
- Emergency power (including fuel)
- Power and communications

Wherever possible, dual feeds for some utilities should be provided. The most pronounced of these would be power sources. An attempt should be made to attain a feed to the facility from different substations.
4.2.11. Services

Services areas include:
- Loading docks
- Shipping/receiving areas
- Trash areas
- Vehicular turnaround roadways
- Service ramps

The services for Mental Health facilities are a major component of day-to-day operations. The location of the services are not to conflict with the main entrance to the facility and should be visually screened from the main entrance and patient areas within the facility.

4.2.12. Landscaping

Landscapes provide a major aesthetic benefit to any site or campus. In all but the most urban settings, the landscape provides the first impression of the facility. With regards to Mental Health, landscaping is especially important and is a significant part the overall goal of providing treatment in a therapeutic, residential-like setting. Moreover, visual access to natural elements can promote healing in patients. Existing natural features should be preserved whenever possible and the portion of the site disrupted should be limited to minimal areas outside the building footprint, roadways, parking, walks and utility trenches.

While planning for the landscaping of the site, indigenous vegetation, whether introduced or replaced because of the project, is strongly encouraged to reduce the need for irrigation and pesticides.

4.2.13. Inpatient Exterior Spaces

An essential component to any inpatient mental health facility, MH RRTP and PRRC should be direct, yet secure access to the exterior. Whether courtyard, fenced area or elevated secure screened porch, these contained exterior spaces should; facilitate staff observation, prevent the threat of patient elopement and be designed with hardscape or landscape features that do not support self-harm or assaultive behavior. See Section 3.1.7 for more detailed criteria and illustrations.

4.2.14. Covered Entry

As part of the building and site design, provisions for a covered entrance at the primary access point to the facility and at the ambulance/patient transport access point are recommended. At the primary access point, provide enough roadway width to accommodate a parked vehicle at the entrance while allowing a second vehicle to pass. Height of covered entrance is to be designed to allow clearance
for large emergency vehicles. The ambulance/patient transport covered entry should allow at least one vehicle, including patient loading/unloading to be protected from inclement weather.
APPENDIX 4 | Floor Plans – Typical mental health unit’s floor plan drawings
Unit support spaces

Unit kitchenette/Multipurpose room

**Floor Finish:**
Sheet vinyl, linoleum or rubber flooring.

**Base:** Rubber Base

**Wall Finish:**
Gypsum Board – Painted

This space is available for residents as well as their families and visitors for special occasions. This space may also be used by residents when preparing a snack or a cup of coffee.
Living area

LIVING / KITCHENETTE

T.V CABINET

COFFEE TABLE

DINING TABLE

KITCHEN
Figure 136
Multi-purpose room

MULTI-PURPOSE ROOM / KITCHENETTE

WALL-MOUNTED TELEVISION

EASY CHAIR

COFFEE TABLE

SOFA

DINING TABLE

KITCHEN
Clinical/therapy areas

Treatment room

**Floor Finish:**
Sheet vinyl, linoleum or rubber flooring.

**Base:** Rubber Base

**Wall Finish:**
Gypsum Board – Painted

A treatment room is where equipment are assembled and prepared for clinical procedures. This room will include some highly technical equipment and the latest technology, it will also include lockable storage areas for some medical drugs and other medication.
**Therapy rooms**

**Floor Finish:**
Carpet, Carpet tiles or resilient flooring

**Base:**
Rubber Base

**Wall Finish:**
Gypsum Board (2 layers) with painted finish

The number of therapy rooms required is dictated by the number of patients and also the variety programmes available, for instance there will be a therapy room dedicated for same sex patients, or a special room for patients of a particular mental illness such as dementia.

**Group therapy rooms**

**Floor Finish:**
Carpet, Carpet tiles or resilient flooring

**Base:**
Rubber Base

**Wall Finish:**
Gypsum Board (2 layers) with painted finish

Group therapy room is similar in design to other therapy rooms, this room will be used for educational group sessions and also it can be used for computer sessions. This room must be directly observed from nurse station.
Figure 137
Group room
Sports room/gym

**Floor Finish:**
A wooden or soft vinyl sports floor

**Base:**
Rubber Base

**Wall Finish:**
Gypsum Board

In recent times we have seen the introductions of facilities that's are not usually associated with the traditional mental hospitals. Sports gym is one of those facilities that have been introduced to increase patient activities when residing at a mental health unit.

Staff Areas

**Nursing Station Design and Operations**
**Nurse Workroom.**
**Medication Room**
**Team Room**

**Floor Finish:**
Sheet vinyl, linoleum or rubber flooring to match adjacent corridor floor finish

**Base:**
Rubber Base

**Wall Finish:**
Gypsum Board

Nurse station form the central point of the ground floor design. The station must be open to allow visibility to all patient housing wings. This area is the heart of the internal configuration, it is crucial to design a nursing station that overlooks the entire bedroom wards to provide care to patients as efficiently as possible.
Figure 138
Nursing station
Presentation of the Research Project - 20th/06/2017
ELEMENTAL ARCHITECTURE

 Architects as a Mechanism for Alleviating Mental Health Illness
3. ELEMENTAL ARCHITECTURE
Architecture as a Mechanism for Alleviating Mental Health Illness

Research Project 2019

University of Auckland
196 Freyberg RL, Auckland 1010, New Zealand

Programme: Mental Health Unit

OVERALL DESCRIPTION

It is an attempt to design for a person with no awareness of the past, for a future which is essentially uncertain.

The overall package must be an integrated, wholesome, balanced environment. The programme must allow for flexibility and opportunities for the integration of future needs. The design must be adaptable to changing needs and provide for future expansion, yet ensure the building remains a cohesive unit.

The research project will examine the role of setting in the healing process of patients, the role of the environment in the recovery of mentally ill patients, and the relationship between the physical and mental health of patients. The project will involve an analysis of existing mental health facilities and the design of a new mental health facility that addresses the needs of patients and staff.

THE SITE

The chosen site is a green space that provides a calming environment for patients. The site has good access to natural light and views, which are important for the mental well-being of patients.

EXISTING ARCHITECTURE REVIEW

The existing architecture review includes an analysis of the current layout and design of existing mental health facilities. This will help to identify areas that need improvement and provide insights into the characteristics of successful mental health facilities.

A. PROGRAMME INVESTIGATION

The programme investigation involves an analysis of the current mental health services and a review of the needs of patients. This will help to determine the requirements of the new mental health facility.

PROPOSED MENTAL HEALTH UNIT - THE PROJECT

The proposed mental health unit will be a state-of-the-art facility that provides comprehensive care for mentally ill patients. The design will incorporate advanced technologies and a holistic approach to mental health.

THE NEW TAHO NAI BY COUNTRY MANUKAU

The new Taho Nai by Country Manukau will be a model for future mental health facilities. It will incorporate the latest technologies and provide a healing environment for patients.

MENTAL HEALTH UNITS IN AUSTRALIA

The mental health units in Australia will be reviewed to determine the best practices and designs for mental health facilities.

COLLAPSE OF POSSIBLE SPACES

The collapse of possible spaces will be studied to determine the optimal layout and design of the new mental health facility.

DESIGN REVIEW

The design review will involve an analysis of the proposed design and its impact on patients and staff. This will help to ensure that the design is effective and efficient.

THE WORKSHOP...
Pictures from the Sunroom
Full name of author: Sarkies Dinkha

Full title of thesis/dissertation/research project (‘the work’):
Elemental Architecture: Architecture as a Mechanism for Alleviating Mental Health Illness

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

Degree: Masters of Architecture (Professional)

Year of presentation: 2017

Principal Supervisor: David Chaplin

Associate Supervisor: ..........................................................

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Declaration

Name of candidate: Sarkies Dinkha

This Thesis/Dissertation/Research Project entitled: ELEMENTAL ARCHITECTURE: Architecture as a Mechanism for Alleviating Mental Health Illness is submitted in partial fulfillment for the requirements for the Unitec degree of Master of Architecture (Professional).

Principal Supervisor: David Chaplin
Associate Supervisor/s:

CANDIDATE'S DECLARATION
I confirm that:

- This Thesis/Dissertation/Research Project represents my own work;
- The contribution of supervisors and others to this work was consistent with the Unitec Regulations and Policies.
- Research for this work has been conducted in accordance with the Unitec Research Ethics Committee Policy and Procedures, and has fulfilled any requirements set for this project by the Unitec Research Ethics Committee.

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Date: 26/05/2017

Student number: 1326076