ARCHITECTURE



පේ

the Intangibles

HAMISH B MCPHAIL

ARCHITECTURE & the Intangibles



HAMISH B. MCPHAIL

ARCHITECTURE & the Intangibles

HAMISH B. MCPHAIL

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

> VICTORIA UNIVERSITY OF WELLINGTON 2014

ACKNOWLEDGEMENTS

I wish to thank all those, who either knowingly or unknowingly contributed to the completion of this thesis, without you, it would not have been possible

CONTENTS

Abstract —	10
CHAPTER	

PAGE

I. Introduction - A State of Depression	14
II. Defining Depression	18
III. The Facade of the Asylum	26
IV. Materialising the Intangibles	56
V. Design Response - Part I - Site, Concepts & Context	88
- Part II - Developed Design	108
- Part III - Final Design solution	138
VI. Reconceptualisation	160
VII. Final Design	212
VIII. Conclusions & Reflections	268
IX. Table of Images	272
X. Bibliography	288



ABSTRACT

Architecture & the intangibles

'This thesis seeks to help understand the affect of architecture on mental illness: specifically the condition of depression.'

New Zealand has a high rate of mental disorders affecting 1 in 5 people. Current guidelines only outline building typologies and do not question the deeper affect of one's perception of the built environment.

This thesis seeks to help understand the affect of architecture on mental illness: specifically the condition of depression.

In order to comprehend the relationship between architecture/space and its inhabitant, this thesis will firstly investigate how *intangible* elements such as colour, light; form etc. can alter the perception and experience of space. Secondly through case studies, text and drawings the thesis will examine the affect of the *intangibles* on the state of mental illness/depression. The negative aspect of architecture activating depression will be examined. This will assist in understanding how architecture can positively affect occupants of space with depression.

Architecture and its relationship with depression will be examined to conclude whether it is a contributing factor. Architecture as therapy or as a therapeutic agent is proposed to engage aspects of the *intangible*.

fig. 0.01 'Melancholia, an engraving' Albrecht Dürer, Germany Signed and dated AD 1514 Image source: britishmuseum

fig. 0.01 Notes:

"At her feet are the tools that can fashion the material world. Yet she does nothing: lost in thought, she turns away from the light." (British Museum,2014)

Melancholy and depression have many dualities, highlighted in this image is an ancient account of what many consider a modern illness – Depression.

This image links a melancholic state of mind from the 16C to today. This thesis seeks to explore this ageless temperament. Investigation and comprehension of depression will lead to the selection of the site and a specific programme; then develop analysis to draw conclusions creating design considerations for treatment facilities. Furthermore it will translate ideas and theories from the framework into tangible physical identities. In depth critical analysis of existing precedents and understanding historical facilities is a key part of this research, building upon discovered issues. A case study design is aimed at creating architecture as therapy, which better understands the relationship of the '*intangible*' in architecture. This thesis will propose a strategy to develop the specificity of architecture for therapy, to assist in addressing the specific treatment of severe depression in a New Zealand context, with the hope of increasing the success of therapy and rehabilitation.

ABSTRACT



15

CHAPTER I

Introduction

A State of Depression; the New Zealand Context

New Zealand is ranked one of the happiest countries in which to live (MOH, 2011), yet it has some of the highest rates of depression, suicide anxiety and mental disorders in the world.

(MOH, 2002)

It can be argued that depression plays a role in contemporary New Zealand society that cannot be ignored. There is a growing awareness of depression in the country as it impacts on those who suffer from it and those around them. Depression effects all people from all facets of life.

Statistics and effects of depression are frequently published in all major forms of media. Recently advertorial campaigns highlighting the commonality and high rate of those suffering from depression has increased its awareness. Through these avenues it has been destigmatised somewhat within a social context. However not all people who suffer seek help; "... There is significant unmet need for people with mental disorders. Over a twelve months period only 39% of people with a mental disorder had visited health services..." (MOH, 2002)

This thesis suggests that one of the biggest problems within the treatment of depression in New Zealand is the mental health facilities themselves. Current mental health facilities must cater for all types of mental illness. The problem lies in the fact that each mental illness is different. This difference requires specific programme needs and response from the built form. It is suggested that it is not possible to have a 'one fit, fix all' for the treatment of all mental illnesses.

fig. 1.01 'Nursing staff in front of Seacliff Lunatic Asylum'. (c.1890). Dunedin, New Zealand. Image source: Archives NZ Initial research on the 'affect the built form has on depression' in New Zealand, unveils a limited development of the topic. It is the aim of this thesis to create a work that engages with the subject of depression and architecture.

This thesis seeks to answer the question, how can architecture be prescribed in the built form to address the *specific treatment of severe depression*, Major Depressive Disorder [MDD] in the form of a clinical based method?

Research through different '*perspective lenses*' looks to investigate the *affect* of how differing points of perception influence feeling within space. In this research each chapter looks to gain understanding through it's own perceptual lens. Once conclusions are drawn these different lenses are moulded together to create a cohesive and holistic approach to investigate through design, a response to the central design question.

Each chapter has an individual role in this investigation towards a design solution. A brief description of the role of each chapter follows:

Chapter II - Defining Depression. This chapter looks to define the cause, diagnosis and treatment of depression. Using psychology; specfically CBT as link between architecture and depression it seeks to explore the possibility of linking the two and the *affect* of the built environment.

Chapter III – *The Façade of the Asylum* researches into the history of the asylum, the symbolism of its façade and how architecuture was prescribed to treat the mentally ill, are explored in this chapter. Drawings and historical case studies are used as tools of research.

Chapter IV – Materialising the Intangibles explores how intangible elements can alter the perception and experience of space. Through case studies, text and drawings this chapter examines the architectural tools used to create atmosphere.

Chapter V -

- Part I Site, context and intial design response.
- Part II Developed design and fleshing out of initial concepts.
- Part III Design Solution. Plans, sections and elevations show the design solution thus far.

Chapter VI – *Reconceptualisation* seeks to engage in a deeper investigation of the use of the 'intangibles' incorporated in therapy design.

Chapter VII – Final Design. A strategy to develop a design for the specificity of architecture as therapy for the treatment of severe depression is shown.

Chapter VIII - Conclusions & Reflections covers a summary of the research process, resulting design process and final outcome. This chapter also offers a reflection of this design-led research and final product in relation to the initial thesis intention.

In conclusion, New Zealand has a high rate of mental disorders ... "Some experience of a mental disorder is common (20% of the population or 1 in 5 New Zealanders within the past year) and of those having more than one, is also common (37% in any year). The most common combination of disorders is anxiety and mood disorders"... (MOH, 2002).

While the potential role of architecture in exacerbating anxiety or mood disorder is not part of this discussion, this design-led research explores the possible relationship between architecture and depression. It seeks to establish a strategy for the remedic role of architecture in the treatment of depression by offering architectural qualities to support, enrich and nurture a specific clinical based therapy for severe depression.



CHAPTER II

Defining Depression

"That's the thing about depression: A human being can survive almost anything, as long as she sees the end in sight. But depression is so insidious, and it compounds daily, that it's impossible to ever see the end. The fog is like a cage without a key"

Elizabeth Wurtzel, Prozac Nation

In order to create an architecture that can be prescribed to assist in the specific treatment of severe depression (Major Depressive Disorder) it is important for the definition of this architectural thesis to firstly understand its potential inhabitants or occupiers, staff and patients, in their different stages of treatment. Hence the general condition of depression must be firstly understood and its many therapies exposed. The choice of a specific clinical based therapy will dictate the design project programme generally and the required qualities of its architecture more particularly. The following overview will place this designled research within the context of contemporary condition of depression and its various forms of treatments made available in New Zealand.

> fig 2.01 'Screaming Man' Oil paints on canvas 1949 Francis Bacon Image source: 'Francis Bacon, Five Decades', Art Gallery NSW, p.101

Defining Depression

Defining depression is a literary discourse in itself. It includes psychoanalytical, pharmacological, psychiatric and social theories. To begin comprehending the impact of the built environment on people affected by depression, it is important to first distil what the components of depression are, how they are recognized and defined treatment methods.

Depression and Mood Disorders

Major depressive disorder (MDD) is a common mood disorder (disturbance in mood) associated with suicide attempts, interpersonal problems, unemployment, substance abuse and a range of societal and environmental influences. It affects 120 million people worldwide and accounts for two thirds of suicides (American Psychiatric Association, 2000).

Definition & Epidemiology

MDD is defined in the 'American Psychiatric Association Diagnostic Manual' (American Psychiatric Association, 2000, p. 390) as the presence of five or more of the following symptoms over a two week period.

Symptoms:

Depressed mood most of the day, nearly every day.

- Markedly diminished interest or pleasure in almost all activities (anhedonia).

- Significant weight loss / gain or decrease / increase in appetite.

- Insomnia or hypersomnia.
- Psychomotor retardation or agitation
- Fatigue or loss of energy
- Feelings of worthlessness (or excessive or inappropriate guilt).

- Diminished ability to concentrate or make decisions

- Recurrent thoughts of death

A significant noticeable change must be present from previous functioning. Symptoms must persist for most of the day, nearly every day for two weeks. (American Psychiatric Association, 2000, p. 391) Depressed mood or anhedonia must be present with anhedonia only present in five percent of adults (Springer, Rubin & Beevers, 2011). These symptoms must influence / impair social, occupational and interpersonal function of relations. Importantly depressive diagnosis must not be attributed to substance abuse, medication change, medical condition or loss of a loved one. They must not include manic or hyper-manic episodes (American Psychiatric Association, 2000).

Course

Time period for MDD differs between those affected. The course of MDD tends to be relatively prolonged, outlining the need for mental health treatment. A study outlined in '*Treatment of depression in Adolescents and Adults*,' (Springer, Rubin & Beevers, 2011) found recovery 50% of those seeking treatment recovered from MDD within six months, 70% within twelve months, and 81% within twenty-four months. Theses recovery rates show a good response to mental health treatment and outline the potential validity for a treatment facility improving recovery rates further.

Vulnerability

Any person at any age can be affected by MDD, usually stemming from the aforementioned symptoms. However risk for MDD is increased during adolescence (Springer, Rubin & Beevers, 2011). Especially for females whom are twice as likely to experience depression as adolescent males. Studies show that "prevalence for woman occurs at the age of approximately fifteen and persist into adulthood" (Springer, Rubin & Beevers, 2011, p. 3). Treatment at the onset of adolescent depression is shown to decrease the possibility of MDD developing in adult life in both males and females (Springer, Rubin & Beevers, 2011).

Identifying and treating depressive symptoms in both adolescent females and males is the best response to reducing the rate of MDD in adults.

Assessment of Depression

Assessing and diagnosing a person affected by depression is an objective process. There are tools which are used to outline symptoms to define depression, however many of these symptoms are self-diagnosed by the affected person, removing the impartial aspect of assessment. As outlined in the essay '*Eff the Ineffable*;"

"Service users (mental health patients) are obliged to attend meetings and bound by the outcomes... and offer up reliable self-reports of their thoughts, feelings and behaviours. They are required to both "notice" and "report" their own conscious and psychological states. Mental health professionals then decipher ... symptoms and indicators defined by diagnostic criteria. What interests us here is the fundamental paradox involved in the encounter. It is the service user who "knows" his or her body from within ... has primary access to emotions... but this knowledge is discounted since it needs to be deciphered by a mental health professional."

'Eff the Ineffable: Affect, Somatic Management, and Mental Health Service Users' (Brown & Tucker) as cited in Affect Theory Reader (Gregg & Seigworth, 2010, p. 294).

In simpler terms the patient is in control of the information that they wish to convey to the mental health professional. Therefore they have full control over the level of objectivity of the content needed to derive a conclusion of diagnosis.

Tools of Assessment

Questionnaires and diagnostic interviews are current tools used to assess symptoms of depression. There are several different clinical interview diagnostics, created by different bodies. The following is a list, further reading can be found in the appendix. Structured Clinical Interview Diagnostic (SCID) Composite International Diagnostic Interview (CIDI) Mini-International Neuropsychiatric Interview (MINI)

Self-report interviews & interviewer based assessments

Self-report and interviewer based assessments measure the severity of depression. There are several types of these assessments: Hamilton Rating Scale for Depression (HAM-D) Inventory of Depressive Symptomatology (IDS) Beck Depression Inventory-II (BDI-II) Centre for Epidemiologic studies-depression (CESD)

Treatment

Investigation into both the *cause* and *treatment* of depression is needed to understand the correlative nature between cause and effect. This helps to gain better understanding into the influence of the built form and its role in the context of depressive thought patterns.

Patients need not only to be able to understand the cause of their depression, but also the treatment options. Using psychotherapy understanding why they are depressed and how they can address and confront causation may well lead to understanding their depression. Thorough this self-realisation Cognitive Behavioural Therapy may help in the treatment of depression.

Cognition Behavioural Therapy

Brief bistory

A succinct definition of CBT translates the basic ideas of the therapy:

"CBT is a very simple, intuitive, and transparent treatment. It encompasses a family of interventions that share the same basic idea, namely that cognitions profoundly and causally influence emotions and behaviour's and, thereby, contribute to the maintenance of psychiatric problems." (Hofmann, 2011, p. 11)

CBT was developed from Freudian psychoanalysis by A. Beck and A. Ellis through dissatisfaction from the lack of empirical support for Freudian ideas. Beck reported apparent 'spontaneous' streams of negative thoughts within depressed clients which he called cognitions automatic thoughts.

These thoughts are based on core selfbeliefs called '*schemata*' that the person has about their epistemological view point. These schemata determine interpretation [perception] of a specific situation resulting in 'specific automatic thoughts.' (Hofmann, 2011) These specific automatic thoughts contribute to the 'maladaptive' or 'non-conducive adapting,' cognitive assessment of the situation leading to an emotional response. A treatment method of patient identification and evaluation of these thoughts or cognitions was developed by Beck to teach patients to think more rationally, behave more functionally and feel more psychologically content. (Hofmann, 2011)

Contemporary and in-depth definition

The 'Treatment of Depression in Adolescents and Adults', (Springer, Rubin & Beevers, 2011) also explains the basis of cognition behavioural therapy: Cognitive behavioural therapy is a treatment approach for unipolar depressive adults. Psychotherapy based, it addresses mood disorders such as depression, eating disorders, anxiety, personality and substance abuse through a goal orientated, systematic process. Behaviour and cognition therapy are applied through patient cognition and behaviour research. At the core of CBT is the psychological presence of negatively based beliefs, often bias, about themselves and the world around them - their epistemological view point and fore coming future.

Symptoms are identified as inability

to cope with difficult circumstances (helplessness), perception that other people are happier and more inept to deal with situations, (inadequacy) and see no hope in the future, (hopelessness). The theory of CBT suggests the patient's own cyclic negative thoughts are perpetuated by the cognitive process within the mind, in a self-fulfilling paradoxical process that prolongs the depressive cycle of thoughts. CBT therefore proposes that "changing maladaptive thinking leads to change in affect and in behaviour" (Hasset & Gervirtz, 2009).

Cognitive Behavioural Therapy is broken down into six steps:

1. Assessment

2. Reconceptualisation

3. Skills acquisition

4. Skills consolidation and application training

5. Generalisation and maintenance

6. Post-treatment assessment followup

Reconceptualisation is often the longest step in this process as it may take time to change negative cognition patterns (Hasset & Gervirtz, 2009).

CBT also focuses on the patients' actions not just thoughts. Disengagement with usual activities associated with pleasure such as hobbies or social gatherings due to low motivation or anxiety is a common association with depression. This leads to low positive reinforcement, less opportunity for experiencing joy and reduction of personal growth or development. Inactivity combined with negative cognition results in a greater intensity of negative thought and lower selfesteem in which suicide may be seen as the only "answer" (Springer, Rubin & Beevers, 2011).

As aforementioned in the 'brief history' of CBT, therapy is used to raise issues of identification of negative thought and maladaptive cognitions. Springer conveys these ideas in a similar yet simpler way:

"A major aim of CBT is to teach depressed clients the skills of systematically identifying, evaluating and modifying their thinking styles toward the goal of gaining a more objective and manageable view of their of their problems along with constructive ways of addressing them. Session work often emphasises modification of "hot cognitions" - automatic thoughts and images that are associated with change or increase in emotion."

(Springer, Rubin & Beevers, 2011, p. 70)

'Hot cognitions' or as Beck described 'schemata', are the key assets of negative thought pattern change. Identification of these, is the point of inflection of the paradigm change within the patients automatic cognitive process. This is achieved through differing techniques of cognitive therapy such as empowerment of the patient and education in psychological skills of rationality, objective self-monitoring, formulating and testing personal hypotheses, behavioural self-management, problem solving and other skills (Kuyden, Padesky & Dudley, 2009)

Treatment techniques

The first step in CBT treatment is called 'case conceptualisation'. It consists of the clinician investigating the internal and external factors which have led to the patients' depression. The clinician uses tools such as the aforementioned surveys and questionnaires. History of the patient, analysis of their own cognitive style, perception of themselves and view of the world are also gauged via questions and psychoanalysis (Springer, Rubin & Beevers, 2011). The clinician and patient can collectively set goals for therapy and decide on a course of action.

Behavioural experiments, activity monitoring and scheduling, role playing, and rational responding are other techniques used in CBT that help the patient to change negative thought patterns and address depression. "This research proposes that a link between cognitive therapy and architecture can be explored. That the affective lens of architecture has an opportunity to afflict change of thought process – cognition in the context of depression therapy."

Developing relationship between architecture and Cognition Behavioural Therapy.

This design led research has selected Cognition Behaviour Therapy as the main programme driver for the proposed architecture to facilitate, house and nurture.

As previously noted staff and patients, in their different stages of treatment must be considered alongside the specificity of the CBT principles. The choice of the therapy is based on the principle of encouraging change. As previously mentioned the major aim of CBT is to; "teach depressed clients the skill of systematically identifying, modifying and evaluating their thinking styles toward the goal of gaining a more objective and manageable view of their problems, along with constructive ways of addressing them" (Springer, Rubin & Beevers, 2011, p. 70).

This is in fact the application of changing one's perception- the affective lens which then influences the effects of feelings, emotions or reactions.

This research proposes that a link between cognitive therapy and architecture can be explored. That the affective lens of architecture has an opportunity to afflict change of thought process – cognition in the context of depression therapy. The design research will explore possibilities for architecture to engage with the selected therapy at different levels.

The six steps of CBT and detailed therapy processes will generate a general architectural programme while the qualities of space will be developed to reflect and nurture this clinically based therapy's core philosophy with its potential paradigm shifts. Consequently this thesis will propose a strategy to develop the specificity of architecture for therapy, an architecture for Cognition Behaviour Therapy to assist in addressing the specific treatment of severe depression.



CHAPTER IV

The façade of the Asylum

"Behind this vast façade was to lie some of New Zealand's darkest treatment of mental health patients."

This chapter seeks to understand the traditional architecture of the asylum. It will explore how it was used to house and heal those affected by mental illness in the Victorian age. Through two case studies a direct link between the built form and the affect it may have on mental illness is investigated with a focus on of site, layout plans, selected materials, specificity of programme and importantly its related therapies.

The exploration of traditional and past architecture of the asylum cannot be understood without considering the façade. The idea of the 'façade of the asylum' will be questioned beyond physical elements. Perhaps a reflection of the social stigmatisation attached to mental illness at that time, it concealed the various forms of treatment that occurred behind it. The idea that architecture can be prescribed to 'heal' mental conditions will also be considered.

Investigation into the asylum is important for research. It is believed that understanding the historical response to mental illness with the use of architecture may bring forth a knowledge that can then be applied to aid in the design of a contemporary treatment facility for depression.



fig 3.01 (left) & 3.02 (above) 'The Seacliff Lunatic Asylum,' near Dunedin, New Zealand. Front view of administration block. Image source: NZ Archives.



fig 3.03 Interior view of the parlour in the administration block of the Athens Lunatic Asylum', Ohio, USA. Image Source: Ziff, K.

Case Study

An American Context and architecture for "Space light and air to each patient."

Asylum on the hill, history of a healing landscape: The Athens Lunatic Asylum, Ohio, USA.

Construction of the Athens Lunatic Asylum began in 1868 and was completed in 1874. Consisting of a central administration section of four levels and two long stepped back wings of three levels in height, the original structure contained 544 rooms. As Ziff suggests in 'Asylum on the Hill: History of healing a landscape (Ziff, 2012)' the size of the building reflects political, social, architectural and psychiatric perception of the role of the asylum.

"The building measured 853 feet in a direct line, the recesses and projections of its footprint the new asylum was massive, far greater in size than for a hundred miles or more in any direction." (Ziff, 2012, p. 67)



The Architecture itself of the Athens Lunatic Asylum was a High Victorian Italianate style, featuring windowed towers, slate roofing, marble, iron gutters, ornamental cornices and yellow pine for the flooring and structural timber. The interior spaces were clothed in equally exotic materials, "painted with a glowing palette of colours such as a deep vermilion, burnt umber, chrome green, chrome yellow..." (Ziff, 2012)

Such exotic colours and extravagant detailing suggests the consideration of patient welfare superfluous to the needs of satisfying the image of the asylum, to those not admitted.

Plan

Levi Scofield was the architect appointed to design the Athens Lunatic Asylum. It was based on the 'Kirkbride Plan', conceived by Dr Thomas Story Kirkbride; key design features consisted of a central administrative core with wings extending off both sides, stepped back, and designed to capture light and fresh air. Gender and class segregated patients.

Scofield altered the 'Kirkbride Plan' by adding backward wings at the ends

fig 3.04 'Plan of the Athens Lunatic Asylum', Ohio, USA. Image source: Ziff, K.

of the two main building wings. These were used house the most troubled patients which were "noisy, destructive, excited, demented or violent." (Ziff, 2012)

These patients were isolated at the extremities of the building to reduce the impact on the quieter patients and staff, as they inhabited the living quarters in the central part of the building. As the building progressed its gargantuan size started to transpire:

"The main administration building was four stories in height ... an entrance hall sixteen feet wide and fifty five feet long...the amusement hall 66 feet by 42 feet by twenty eight feet in height." (Ziff, 2012, p. 72)

Grand hallways, amusement halls and spaces of such grandeur proportions reflect the characteristics of a large Victorian house, reinforced by the separate male and female wings that reflected the "Victorian authoritarian nature" (Ziff, 2012). In-fact the notion of 'an ordered house' was a key principal of moral treatment at the Athens Lunatic Asylum.

Managing patient behaviour

The main architectural tool used in the management of patient behaviour was the ward system used to reinforce the moral treatment philosophy. Patients were classified and segregated in separate physical spaces and housed together according to behaviour. The aim of classification was to stimulate a positive environment induced by other patients around one another. In this way "... the buildings architecture was an important tool for managing patient behaviour." (Ziff, 2012)

Fresh air and natural light was another important aspect of moral treatment in the asylum. Each of the 544 rooms created by Scofield was designed with at least one or more windows opening to external air.

The superintendent Dr. Richard Gundry was concerned about the image that the Asylum would portray on completion, and wrote:

"The exterior of the building is certainly pleasing to the eye, and conforms to the benevolent purpose to which it is devoted. No gloomy aspect will terrify the patient as he approaches and enters this building, and who ever considers the importance of first impressions made upon a bewildered and fearful suffer, as he enters what will prove him a prison or a home, will not think these are slight matters." (Ziff, 2012, p. 74)

Dr. Gundry had a strong belief that the architecture of the new asylum



fig 3.05.

View of the Athens Lunatic Asylum', Ohio, USA. Image source: Ziff, K. had an influence on the wellbeing and state of mind of the patients. From the above statement and his influence on the outcome of the interior spaces Dr. Gundry, "Was committed to creating an environment as free as possible of patient restraints. He felt that "building strong rooms would encourage their use." (Ziff, 2012)

As a solution, sections of the building were fitted out with "strong rooms" for 'excited patients'. These spaces were specifically designed for detainment not punishment and were made as appealing as possible with fresh air available via a veranda at the end of the corridor "for those who could not walk outside."

Gundry had empathy for the patients, reflected by his attention to detail of the construction of the built environment of the asylum and its resulting affect on those occupying the space.



fig 3.06 Approach to the administration building The Athens Lunatic Asylum, Ohio, USA. Image source: Ziff, K.



fig 3.07 'The Seacliff Lunatic Asylum', Dunedin, New Zealand. Image source: www.teara.govt.nz/

Drawing as a research method

Alongside research into the history of the asylum and its architectural composition - hand drawings, sketches of photos, plans and emotive drawings are used to investigate the asylum on a differing level.

Through drawing and recreating plans and views of the asylum a greater depth of understanding is gained. The cognitive process of physically hand drawing plans allows a rich investiga tion into the layout of spaces and their resulting relationships.

Drawings are also used to investigate emotive responses to site and context. Throughout this, and latter chapters in this thesis, is a synthesis of research in text, images and hand drawings. These are catalogued and annotated to highlight the thinking around them. Some drawings show an evolutionary process.



fig 3.08

'Sketch One of The Seacliff Lunatic Asylum'. Dunedin, New Zealand. Hand drawing, black ink on paper. Image by author.



fig 3.09 'Sketch two of The Seacliff Lunatic Asylum', Dunedin, New Zealand. Hand drawing, black ink on paper Image by author.



fig. 1.01 'Nursing staff in front of Seacliff Lunatic Asylum.' (c.1890). Dunedin, New Zealand. Image source: Archives NZ



fig 3.10 'Original Watercolour Plans', The Seacliff Lunatic Asylum, Dunedin, New Zealand. Image source: Archives New Zealand.

fig 3.11 (p. 35) 'Section of the Seacliff Lunatic Asylum', Dunedin, New Zealand. Image by author.













fig. 3.12 Asylum Sketches' Image by author.


fig. 3.13 'Asylum Plan Layers' Image by author.

concept 1

- A = single room males
- B = single room females
- C = day rooms males
- D = day roms females
- E = male dormitories
- F = female dormitories
- G = entrance
- H = waiting room
- I = office
- J = ball
- K = visiting room
- L = water closet / bathroom
- M = ambulatory
- N = recreation hall & chapel
- O = kitchen
- P = bake bouse
- Q = store
- R = stove
- S = dinning ball
- T = surgery
- U = service corridor
- V = staff accomodation
- W = cellar



B38(3)



fig 3.13 (p.38) 'Ground Floor Plan' Image by author

fig 3.14 (p.39) 'Horrors Within' Multimedia. Investigation into the emotive qualities in the history of the asylum. Image by author

fig 3.15 'Horrors Within 2' Multimedia. Investigation into the emotive qualities in the history of the asylum. Image by author.





fig 3.16 False Facade' Multimedia. Exploring the fragility of the facade and what lies beneath Image by author.

fig 3.17 'Cut-away' Multimedia. Exploring the fragility of the facade and what lies beneath Image by author.



fig 3.18 Method of transorbital lobotomy: notice entry under orbitoclast through eyelid. Image source: http://lobotomy.umwblogs.org/howard-dully/



fig 3.19 Two orbitoclast tools used in the lobotomy process. Image source: http://lobotomy.umwblogs.org/howard-dully/

A New Zealand Case Study:

Seacliff Lunatic Asylum, Dunedin, New Zealand.

Due to an increase in demand for the housing of 'the insane' caused by a population increase due to the Otago gold rush (Archives, 2012), the Seacliff Lunatic Asylum, 30 km from Dunedin, was conceived in 1874. The architect Robert Lawson created a building in the Gothic Revival Style, the largest in New Zealand at the time of completion in 1884. (Bartle, 2005)

Seacliff contained over four and half million bricks complete with turrets on corbels and spires in the Gothic Revival Style. A gabled roof cut the skyline, as did a tower, which stood 50 meters in height said to help observe inmates seeking escape. It was designed for a capacity of 500 patients and 50 staff to live on the premises (Archives, 2012).

Drawing similarities to asylums based in Britain and the US, Seacliff had a central administration core with wings off either side housing separate sexes. Similarly based on the 'Kirkbride Plan', however the wings were not stepped back by the architect - resulting in an immense linear façade spanning the width of the administration block and two wings combined, a vast 225 meters long. (Archives, 2012)

Behind this vast façade was to lie some of New Zealand's darkest treatment of mental health patients.

Treatment: the darkness behind the façade.

Like some of its patients admitted, Seacliff had a seemingly schizophrenic method of treatments. The 'mentally insane' were admitted for a range of conditions varying from depression to mental retardation or any 'frivolous behaviour' considered worthy of admission at the time.

Treatment methods were varied and some callous and cruel. Patients who frequently wet the bed or tried to escape "were beaten" (Frame, 2008) others did not get away so lightly. Doctors at the Seacliff asylum used psychosurgery experimentation techniques of lobotomy on some of the insane. Electroconvulsive (ECT) therapy was also used. (Frame, 2008)



fig. 1.01 'Nursing staff in front of Seacliff Lunatic Asylum.' (c.1890). Dunedin, New Zealand. Image source: Archives NZ



fig 3.20 'Demolition of the main administration building', Seacliff Asylum, 1959. Image source: Archives NZ.



fig 3.21 'Demolition of the main administration building, Seacliff Asylum', 1959. Image source: Archives NZ.

The lighter side of Seacliff: Farm work & Fresh air

The Asylum was designed to function as an operating farm located on 900 acres of productive farmland. Giving ample opportunity for menial labour tasks within the grounds and gardens.

"The farms, fishery, orchards and gardens supplied the kitchens and working in them was a part of patients' therapy" (Archives, 2012)

Dr Truby King a superintendant at Seacliff for 30 years and often prescribed "fresh air, exercise, good nutrition and productive work" as a form of treatment. Patients that were not considered dangerous were also allowed the freedom of fishing, a therapeutic pass time which also doubled as a revenue gatherer for the nearby Karitane fishery, established by non-other than Truby King himself. (Bartle, 2005)

Demolition: Dismantling the façade of the Seacliff Lunatic Asylum

Before the first brick in the vast 'Gothic Revival' façade of the asylum was removed the dismantling and demolition of Seacliff had already begun. The construction of smaller unattached wooden dormitories near the larger asylum by Truby King was the start of the dispatch from the belief in the façade.

Moving away from the model of the grandeur-organized institution behind the façade shows the transition towards belief in a smaller intimate typology of treatment. It also shows a loss of faith in the idea of the façade of the asylum as control.

In 1959 demolition of Seacliff began due to the ongoing unstable geology of the site and general condition of the buildings. (Archives, 2012) Mental health facilities were moved to nearby Cheery Farm Hospital.

With the removal of the bricks that housed some of darkest as well as some of the most innovative techniques of mental health treatment in New Zealand, the idea of the sculpting 'saneness' from the restrictive walls of architecture faded. The façade and its loaded symbolism then gave way to a new type of understanding of the relationship between architecture and the mentally ill through the transgression of humanizing the façade and looking toward the future – transparency of the facade.



fig. 3.22 (top) & 3.23 (left) Asylum Section Perspective' & Asylum Section Perspective Two'. Pencil on drafting film. This series of drawings seeks to investigate the ambiguity of space behind the facade. Iterations of sections fill the voids between the cut sections by layering one upon another. Images by author. Architecture & the intangibles

fig. 3.24 'Transparency Through Transition' Pencil on drafting film. Image by author.



fig. 3.25 (p. 47) 'Transparency Through Transition Two.' Pencil on drafting film. Image by author.





fig. 3.26 'Transparency Sketch' Image by author



step 1 : desaturate image



step 2 : apply halftone filter

fig. 3.27

'Transparency Facade Process' The process shown in image is translation of the facade of the asylum to a permeable fabric. Image by author



step 3 : colourize + increase saturation & hue



step 4 : crop & invert + multiply



step 5 : free transform & layer up

Architecture & the intangibles

fig. 3.28 'Hanging Facade' The use of the permeable fabric as a facade itself is explored in the following sketches. A literal metamorphosis resulting in transparency of the facade. Image by author











fig. 3.29 (top) & 3.30 (below) 'Hanging Facade & Asylum' Placed in the context of the fragmented asylum, these drawings explore the atmosphere created. Images by author

fig. 3.31 (over page) 'Hanging Facade & Asylum On Site' This iteration places the drawings in the context of a site. Image by author.





Conclusion

The previous case studies have been selected to illustrate two very different approaches in the Victorian age. Both case studies describe an evidence of architecture used as a tool to influence the treatment of mental illness. It has been discovered that architecture was already considered as a 'role remedy' in the treatment of mental illness, including depression, through architecture as rehabilitation. However it also presents a facade shedding the reality from behind its curtains. Consequently the effectiveness of the Victorian architecture of asylum to create positive treatment of the mentally unwell is left unclear.

The façade punctuated with the many windows of The Athens Lunatic Asylum expressed the importance of a therapy of light and fresh air. In the meanwhile the façade of the Seacliff Lunatic Asylum served to hide treatments now considered abhorrent. In the latter case one could argue that the architecture of the asylum, along with treatment processes, may have increased the severity of mental illness and in some cases depression.

In summary of these case studies architecture has been both a cure and a cause of mental illness and depression within the asylum.

Relevant to the design of this thesis, are the findings of the drawn investigation into the asylum.

The following key design considerations have been established:

- Transparency of the facade
- Dissolution of the 'ward'
- Day light to every living space
- Relation to the human scale

• Integrated public design to avoid stigmatization

THE FACADE OF THE ASYLUM



CHAPTER V

Materialising the Intangibles

"... The perception of architecture has the opportunity to afflict change of one's thought processes, in the context of therapy."

(page 29)

'Defining Depression' (chapter II) has revealed the importance of 'user perception' in the therapy of depression. This chapter will examine the role of the *intangibles* in defining an architecture of perception specifically designed for Cognitive Behavioural Therapy.

This chapter explores how intangible elements, culminated and diffused, can alter the perception and experience of space. Through case studies, text and drawings this chapter will firstly examine the architectural tools used to create atmosphere – *effect*, and then secondly the resulting atmosphere itself and its impacting perception – *affect*. Thirdly an investigation through drawings will seek to expose and help to ascertain conclusions as to how the intangibles can alter the perception and experience of space.

The intangibles in this process are deliberately developed to become a vehicle for architecture to manifest and explore qualitative values and understand what specific architectural elements are needed to create an atmosphere explicit to therapy.

Furthermore, 'Materialising the Intangibles' is an important part of this research as it develops the idea of site-specificity. Using specific data of site to generate forms that represent a physical manifestation of data and a resulting architecture that is indigenous to the site. This site-specific architecture is then translated to the design of therapy spaces, applied within the CBT programme. Creating an architectural response that is specific to only that selected site.



fig. 4.01 (Left) 'Threshold Atmosphere' Revit & Adobe Photoshop Image by author

fig. 4.02 (above) 'Inside Outside, Acoustic wall treatment' Mercedes Benz Museum, Stuttgart, Germany, 2006 Image source: AD – Architectural Design

Intangible: - "Not perceptible to the touch; not able to be touched or grasped; not having physical presence"

'Websters Universal Dictionary' (Cecil & Partridge, 1968, p.746)

In this research, the intangibles are separated into two categories: those that effect us and those which affect us.

For the purpose of this thesis, specifically for defining in terms of design control, these differentiated intangibles are considered:

- (i) *Effect* categorized intangibles are defined by a physical relationship to the observer: Effect based design controls are physical elements such as temperature, humidity, light exposure, noise, wind and other elements which can be controlled within a space.
- (ii) Affect categorized intangibles are defined by a perceptual [metaphysical] relationship to the observer: Affect based elements are those which affect ones perception of space. Conversely these are attributed to by effective elements, but

affective elements transfer beyond a direct influence of physical state, beyond the space in which they are in control, to a deeper space within the mind-set of the observer – to a metaphysical state. These are intangibles such as shadows, thresholds, envelope, space, atmosphere, boundaries etc.

These different effective and affective elements will be explored in the design process to create differing atmospheric conditions appropriate to the architecture for therapy. As such, it is anticipated that they will be a homogenous synthesis of architecture, user, materials and the resulting atmosphere.

Several case studies of art installations and architecture will be perused to better understand these concepts. These case studies will be further explored through the use of personal drawings, to generate ideas for possible future iterations.

Case Study

The presence of absence: Kengo Kuma

'Kengo Kuma and Associates' produce architecture, which is refined. Refined in materials and form, in details and symbolism. Through this refinement certain 'Lightness' is achieved where simplicity is yearned, not required. Reducing architectural elements back to their fundamental state creates purity which links strongly with the idea of 'the intangibles'. By reducing an element to its true form, finer elements of its nature may be explored:

"For example, a thin thread will move more when the wind blows, but a thick piece of thread will not move. The thinner the thread is more delicate and makes a good sensor."

(Brownell, Blain, 2011, p. 36)

Deeper understanding of delicacy and nuances of the manipulation of material allows for this exploration of affective intangibles. Kuma controls the openings of space to control light entry. Patterns result and a contrast between foreground and background creates ambiguity. It is within this ambiguity of space and light that the perceptual interpretation of the space is apparent. The link between using architectural tools as a control of effective elements, which then create affective elements such as threshold, space and atmosphere are clearly outlined.

Kuma elaborates on the perception of space. Creating spaces which challenge conventional understanding by ambiguity of structure and form:



fig 4.03 'Great Bamboo Wall' Kengo Kuma and Associates, China 2002. Image source: Matter in the Floating World.



fig 4.04 'Sketch of Great Bamboo Wall' Ink on paper Image by author

"I have a deep interest in what is fictional. What I like is when something real is just hovering a little bit. Something real has a little bit of mutability. Reality is only truly perceived in the presence of some unreality."

(Brownell, Blain, 2011, p. 36)

Exploration Through Drawing.

Investigating the intangibles: Shadow, threshold and atmosphere.

The following drawings manifest the ideas put forward by Kengo Kuma and Associates. Experimenting with simple architectural devices to create complex atmospheric outcomes.

Using louvres as the architectural constant and light as the intangible variable, we can see how simple, delicate changes in the architecture can result in large changes within the resulting atmosphere. Shown by the series of drawings on the right. It is the possibility of these outcomes this chapter seeks to investigate.









fig. 4.05 (Right) Louvre Light Study' 3DS Max Image by author



fig. 4.01 'Threshold Atmosphere' Multimedia Image by author Using Kengo Kuma and Associates' Pacific Flora main gate as a precedent, three intangibles: *shadow*, *threshold and atmosphere* are explored through drawing. Selected architectural elements are applied to a façade to investigate atmosphere.

Repetition is used to create atmosphere through the creation of shadows. Ambiguous space between each individual element creates a threshold, which contributes to the atmosphere of the image. Light is dissipated through the vertical repetitive wooden battens creating shadows in flux. The threshold between the ends of the slender battens and the ground is blurred; trees question the transition and inhabitation of the space.

Metaphorically tools of life are existent; water, shelter and food, amplified by the small fawn inhabiting the space. Tension between the living trees and milled timber hanging above creates a metaphoric irony adding to depth in atmosphere.



fig 4.06 'Interior Gulf Stream, Research House for Dominique Gonzalez-Foerster.' Philippe Rahm Architects, Paris, France, 2008 Image source: AD – Architectural Design.

fig 4.07

Interior Gulf Stream, Research House for Dominique Gonzalez-Foerster.' Philippe Rahm Architects, Paris, France, 2008 Image source: AD – Architectural Design.

Case Study

'Meteorological Architecture': Philippe Rahm. Architectural Design Journal

In his article Meteorological Architecture (Rahm, 2009) Rahm discusses an architecture, which is defined not by conventions of physical space but a notion which lays deeper within the user of the space; an architecture defined by invisible meteorological elements and their affect on the metaphysical of the inhibitor. These meteorological elements are defined as tools:

"The tools of architecture must become invisible and light, producing places like free, open landscapes, a new geography, different kinds of meteorology; renewing the idea of form and use between sensation and phenomenon, between the neurological and the meteorological, between the physiological and the atmospheric (Rahm, 2009, p. 41)."

Rahm argues that a new paradigm of architecture can be created with space defined not by form or structure but by the tools of meteorology such as climate interpretation, space, air movement, phenomena of conduction, perspiration, convection as transitory, and fluctuating meteorological conditions. (Rahm, 2009). Metric values are replaced by thermal values and structure by climate. Space is defined by the invisible actions taking place such as breath, perspiration and chemical and thermal reactions within the air - the new envelope and threshold that defines space using intangible elements as the building blocks of architecture.

'Digestible Gulf Stream', Venice Biennial, 2008

An installation by Philippe Rahm using airflow convection currents investigates the potential of architecture defined by the movement of air as an envelope and a threshold where:

"Architecture no longer builds spaces but creates temperatures and atmospheres".

(Editors at Phiadon Press, 2009)

The resulting space is not holistic in terms of envelope or boundary but an ever-changing landscape of heat. Shown in fig. 4.08 (over page)



habitant is able to respond to thermal comfort in the relation to the space inverse to the norm of the space adjusting to inhabitant via A/C etc.

In particular interest to this thesis is the way in which Rahm describes how we control our own thermal comfort.

"We have five ways of cooling down, which act on different scales:

- 1) reducing the air temperature in the room, for example via air conditioning (atmospheric solution);
- 2) drinking (physiological solution);
- 3) taking off clothes (social solution);
- 4) resting (physical solution);
- 5) stimulating a sense of coolness with the mind (neurological solution).

Each of these solutions is architecture. Architecture is a thermodynamic mediation between the macroscopic and the microscopic, between the body and space, between the visible and the invisible, between meteorological and physiological functions (Rahm, 2009)"

Perhaps this reference to cooling the body (fifth and neurological solution) stimulating a sense of coolness in the mind could be considered in this project. An experiential therapy aided by the 'digestible gulf stream' is a valid proposition in CBT. In this concept, the physical experience of temperature change stimulates the user to experience a change in control of the effects of their thoughts and emotions.

Architecture in this context extends further than the traditional realms of space external to the body. Rahm investigates the "atmospheric and gastronomic" linking architecture of the outside world with an internal body experience thorough neurology and physiology. The recognition of the link understanding the neurological solution to an experience of space between the external world of architecture and the internal neurological perception of that same experience.

It is the *effect* and resulting *affect* of the recognition of this link that is of particular interest to this thesis. It provides a doorway for cohesion between the ideas as the perception of space as flux within the mind which in turn undermines the idea that a negative thought pattern is unbreakable – giving footing to the idea that a change in the perception of space can be used to create a change in the perception of a depressive state of mind.

The intangible elements of the architecture as a thermodynamic mediationlinking atmosphere to neurology, affect theory, CBT and atmosphere.

Exploration through drawing

The digestible Gulf Stream installation proposes the idea of defining architecture not by physical representations of space but intangible elements of air flow threshold. A section of the convection currents show the tangible points in space represented by the intangible airflow. An investigation in to this drawing looks to establish an evolution from the idea of intangible space and seeks to represent it as physical body – transforming the intangible to tangible.



fig 4.08 'Interior Gulf Stream, Research House for Dominique Gonzalez-Foerster.' Philippe Rahm Architects, Paris, France, 2008 Image source: AD – Architectural Design.



fig. 4.09 'Outlining 2-D image in 3-D context.' 3DS Max Image by author

1) The first step in this process is to take the section of the convection current and trace it creating a spline – a continuous representation of each point in space at one time. Currently this is 2 dimensional in nature.



fig. 4.10 Extrusion' 3DS Max Image by author

2) Extrude. To form a 3-D space from a 2-D spline the 'extrude modifier' is used to extrapolate the points in space beyond data into form.



fig. 4.11 'Tapering' 3DS Max Image by author

3) The end face of the spline is scaled down to create a tapered profile.



fig. 4.12 'Mesh Smooth' 3DS Max Image by author

> 4) A 'mesh smooth modifier' is applied to wrap the space in relation to its section to form a holistic envelope of space.



fig. 4.13 Duplicate' 3DS Max Image by author

5) A duplicate is produce and scaled down. It is then placed inside the original form as a 'Boolean'. Subtracting one shape from the other creating a space within the form - or a shell like structure.



fig. 4.14 'Shell' 3DS Max Image by author

6) The resulting form in section.

Outcome

The created form is a translation of an intangible landscape in space, resulting in a tangible form, which is created from data used to represent the intangible landscape. Without this specific data this form would have no correlation to the image from which it was created, it would have no relevance to Philippe Rahm's 'The Digestible Gulf Stream'.

Interpretation

The next phase of investigation is interpretation.

Having created one resulting form, its representation in terms of surrounding; space, materials and light combine to investigate the aforementioned outlined *affective* and *effective* intangibles.

Using the form as a constant, the application of differing materials and contexts will allow the investigation of the affective perceptual lens of each drawing to be explored.

The intangibles as architectural tools and devices will be further developed.

MATERIALISING THE INTANGIBLES



fig. 4.15 'Floating Space' Part I of 'Materialising the Intangibles' series Image by author
Part I

'Floating Space'

The use of glass as a transparent material represents the forming of space whilst allowing us to understand the dynamics with-in. Overlaid wire frame geometry displays the relationship between the internal and external structure of the form. Domestic furniture infers habitation and gives scale to the drawing, which investigates the intangible affect of boundary. Threshold and atmosphere are also questioned in the installation of the form in an otherwise empty space.



fig. 4.16 'Floating Glass Section' Part II of 'Materialising the Intangibles' series Image by author

Part II

'Floating Glass Section'

Bisected down the central axis, the form reveals its true internal envelope. Inhabitation is no longer inferred but apparent. A woman is seemingly at once dissolving and condensing in the form.

Lightness of the object in relation to the ground is reinforced by the woman's foot; seemingly holding it afloat. Raw materiality of the glass shows its features of reflection and ability to detain space as a liquid - still in time. Inhabiting of intangible space is now thoroughly questioned.



fig. 4.17 'Chrome Section' Part III of 'Materialising the Intangibles' series Image by author

Part III

'Chrome Section'

Change in material offers a change in the density of atmosphere. The space no longer feels fragile but has a sense of stoic fluidity: stoic in the strength of the thickness of the wall - yet fluid in shape and movement within its parameter. Form and woman are cohesive and the boundaries between the relationship of inhabitation and geometry of form are blurred.



fig. 4.18 'Frame Space' Part IV of 'Materialising the Intangibles' series Image by author

Part IV

'Frame Space'

Shift in scale and inversion of form create the investigation of shadow and atmosphere through the lightness of touch. Mother, child and father add depth to domesticity. Intricate definition of space thoroughly frames the question, what defines form in relation to space? Increase in scale also questions inhabitancy and delicacy of the web-like structure suggests ephemeral-

ity.



fig. 4.19 'Internal Perspective' Part V of 'Materialising the Intangibles' series. Image by author

Part V

'Internal Perspective'

Reflective materiality of the interior explores the infinite principles of space. Again the shift in scale changes the experience of the space to that of a large, 'public' like atmosphere reminiscent of underground subway stations and has a feeling of irreverent movement. The cylindrical nature of the space creates infinite movement within the parameter – reflectivity creates infinite spaces through the world of reflections.



fig. 4.20 'Structure to Skin' Part VI of 'Materializing the Intangibles' series Image by author

Part VI

'Structure to Skin'

Wire frame structure outlines the geometric boundaries of the external, outlining only the quantity of space. Transgression of the qualitative atmosphere is shown from right - left. The space evolves in the image with a skin of architectural qualities draped over a skeletal structure. Effective intangible tools within the skin of the architecture are the organs of the embodied space.



fig. 4.21 'Hanging Space' Part VII of 'Materializing the Intangibles' series Image by author

Part VII

'Hanging Space'

This drawing derived from the internal views of Part V & VI. The form is an evolution and separate entity from the form used in the previous six images. Created from an extrapolation of vectors, points in space, it seeks to occupy space outlining the affective intangibles of exposure, space and threshold – and the resulting pressure within the space.

The narrative within the image sug-

gests a journey toward the source of light. Floating planes test the relationship between the floor and wall, challenging conventional thresholds. As the wall sculpts into a ceiling of encapsulating space with out specific boundaries, physical boundaries are governed by the perception of the relationship between ourselves; and the proximity of the hanging space, which we inhabit.

Conclusion

Through identifying [*effective*] architectural elements and tools in case studies and architectural installations, aspects of the intangibles within space have been uncovered. It then became clear these elements were used to create atmosphere by altering the perception and experience of space. Through drawings, the application of the resulting atmospheric [*affective*] elements was tested. Drawings also investigated the ambiguity between a form and its resulting atmosphere. The resulting images are site-specific representations of investigations into intangible elements in atmosphere.

These intangible elements identified will be translated to the design of therapy spaces and applied within the CBT programme.

Design considerations:

- Use *effective* architectural tools to create atmosphere.
- Explore the idea of site specificity in relation to the creation of form from data
- Explore Rahms' idea of a neurological solution in an architectural context.

MATERIALISING THE INTANGIBLES

88 CHAPTER V - I

Architecture & the intangibles

CHAPTER V

Design Response

Divided into three parts - the design response is a chronological catalogue of drawings created in response to a design challenge, inquiry or exploration.

PART I -

Exploration of site, context and early design concepts and ideas: working in synthesis with research in the text, ideas are to be explored and refined. Conclusions and reflections drawn from each chapter will influence the drawings and their proposed solutions - conversely the drawings will influence the research in the text. This outlines the relationship of design-led research and the duality that coexists between research (text) and design (drawings)

PART II -

Developed design and fleshing out of initial concepts are to be explored in this chapter. Research from case studies and response to the challenges in the text are explored in drawings. Refinement of the design to a stage of resolution in terms of plan, section and elevation will be evident. Application of programme, function and theory will also be made evident.

PART III -

The final design solution looks to apply all of the ideas, information, developments and conclusions derived from the drawings and text into contemporary treatment facility for depression.

Drawings will outline key site, programme and spatial functions. Ideas in the text are to be translated cohesively into the built form. The imagery will reflect the atmospheric conditions created in the constructed spaces.

Incorporating the use of CBT as a programme driver and utilising the application of the '*intangibles*' within the therapy spaces, the final design solution proposes a new type of architecture for the treatment of depression.



PART I

Site, Concepts and Context

fig. 5.01 'Site analysis' 3DS Max & Adobe Illustrator Image by author Architecture & the intangibles

PART I -

Exploration of site, context and early design concepts and ideas.

The first series of drawings for this thesis were created in response to a drawing workshop that investigated the original site. The main aim of the workshop was to:

'Think through design; draw, not write

The resulting drawings forebode imagery, ideas and investigations of space that are evident through out this thesis.

Site One

The site initially chosen for the design was the old Tuberculosis Hospital atop Mt Victoria, Wellington, New Zealand. The site offered good proximity to the current hospital, ease of road access and good vista. Drawings were created to investigate the site further.







fig. 5.02 'T.B Hospital' Ink pen on paper Image by author

fig 5.03 (left) 'Site, T.B Hospital' Ink pen on paper Image by author

fig. 5.04 (right) 'Doorway, T.B Hospital' Ink pen on paper Image by author



fig. 5.05 'T.B Hospital Buildings' Ink pen on paper Image by author



fig. 5.06 'Stairway, T.B Hospital' Ink pen on paper Image by author

Conclusion Site One

The old Tuberculosis Hospital had an atmosphere that was heavily steeped in illness and did not portray the appropriate qualities for hosting a new architecture to treat depression. It was therefore decided to change the site.



fig. 5.07 'Toppled Drawers' Ink pen on paper Image by author In this series of images architectural elements were drawn and then edited to create multiple layers. These drawings seek to investigate the illusion of infinite space; layers blurring the lines of boundary and envelope.





Site Two

Fresh air, open vista and the opportunity to combine work as therapy led to the second site -

Havelock-North, Hawke's Bay, New Zealand.

An early concept for a treatment facility for depression looked at combining living and working within the same site as a programme driver. The therapy would be hands-on work, such as picking grapes or olives in a facility that was incorporated into a winery or olive press.



The fundamental principles of the asylum applied - a place of retreat away from the city, the space in which for many the depressive triggers occur.

Site, aspect, topography and surrounding context were analysed through drawings.

Concept drawings in response to programme were investigated.



fig. 5.09 'National Site Context' Image altered by author Image source: www.googlemaps.com 2012

fig. 5.10 'Regional Site Context' Image altered by author Image source: www.googlemaps.com 2012



alysis fig. 5.01 'Site analysis' 3DS Max & Adobe Illustrator Image by author







fig. 5.11 'Untitled' Ink pen on paper Image by author

fig. 5.12 'Concept Sketch' Ink pen on paper Image by author

fig. 5.13 'Concept Sketch' Ink pen on paper Image by author









fig. 5.15 'Concept Sketch' Ink pen on paper Image by author



fig. 5.16 'Concept Sketch' Ink pen on paper Image by author

DESIGN RESPONSE PART I

Conclusion Site Two

During this stage of conception and site investigation, research into the asylum was also being undertaken. Reflections and conclusions uncovered in Chapter III '*The facade of the Asylum*' discovered that the asylum itself was a failure.

In the context of site in particular, it was decided that removing a person from the environment, that could influence depression, might benefit short term, however on return the opportunity for regression was considered to be a high possibility.

The importance of transparency and exposure of mental illness in society lead to the conclusion that a medical centre removed from an urban context was not a decision in the right direction. Therefore at this stage of initial site investigation, it was decided to select a location within a city.

Site Three - Final site

On returning to the city the site must accommodate the following requirements:

- High urban density
- Road access
- Mix of Public & Private spaces &

Pathways

• Allow integrated public design to

avoid stigmatisation

An empty site that fulfilled the criteria above was identified:

Vivian St, Te Aro, Wellington, New Zealand

This site has close proximity to public spaces such as Glover Park to the north, Victoria University to the southeast, Cuba St and is situated on State Highway Two allowing ease of access for emergency vehicles, staff, patients and visitors etc.

It is located within a high urban density with mixed use commercial, retail and housing surrounding. Public and private pathways are apparent and the ability to integrate within the context to avoid stigmatisation.



main roads & access



fig 5.18 'Site Map' Adobe Illustrator Image by author

site map

fig. 5.17 'Main Roads and Access' Adobe Illustrator Image by author



fig 5.19 'Open Space' Adobe Illustrator Image by author

open space



fig. 5.20 'Shadow Study' Adobe Illustrator 'Image by author





view from Garrett st







106 CHAPTER V - I

Architecture & the intangibles

fig. 5.21 (previous page) 'Site Section and Perspectives' Image and photography by author



Site pa



norama

fig 5.22 'Site Panorama' Photography by author


PART II

Developed Design

fig. 6.01 'Programme driving form' Adobe Photoshop & Illustrator Image by author

PART II -

Concepts and designs from Part I are further developed in this chapter. Responses to challenges in the text are investigated through drawings. The refinement of the design in plan, section and elevation - and the application of programme, function and theory are also aspects navigated in this chapter.

After finalising the site, research into the asylum and the intangibles, a design response considering all of these elements will be developed through drawing.



fig. 6.02 'Concept Sketch' Ink pen on paper Image by author

Entrance, shelter and the 'U' shaped plan are investigated in this drawing. The 'mechanical cog' is a reference to the sketches in chapter III. It represents the idea of patients combining work and living, into therapy.



fig. 6.03 'Entrance perspective sketch' Ink pen on paper 'Image by author



fig. 6.04 'Louis Kahn typology' Ink pen on paper Image by author



fig. 6.05 'Programme Concept Sketch' Ink pen on paper Image by author







fig. 6.07 'Intangibles Section' Exploring incorporating the 'intangibles' within therapy design Ink pen on paper Image by author fig. 6.08 'Atmospheric Garden' Ink pen on paper Image by author



The 'Intangibles' and the Built Form

The 'intangibles' will be employed in the design to create differing atmospheric outcomes of space, heightening one's experience and senses within that space. Dually the design will incorporate all of the functional programmatic requirements of a clinic for the treatment of depression.



fig. 6.09 Intervention of the Intangibles' Exploring incorporating the 'intangibles' within therapy design Ink pen on paper Image by author

Key Accommodation Considerations:

Design considerations for individual accommodation:

- Avoid 'ward' or 'dorm' typology (Avoid use of opposing doors & corridors if possible)
- Accommodate high risk & low risk patients
- Allow space to be easily personalised

Kitchen Considerations:

- Awareness of the possibility of selfharm from use of knives, ovens, hot elements etc. (Perhaps restrict access of these items to lower risk patients.)
- Use of strong materials such as stainless steel, glass, wood & bamboo etc.
- Open plan design
- Exterior views



• Investigate the use of toilet blocks

- vs. shared bathrooms
- House common, shared and private spaces
- Access to outdoor space

Materials need to be:

- Hard wearing
- Easy to clean
- High quality finish
- Examples: plaster, wood, glass, etc.

The form must offer a feeling of freedom, 'security from behind' and a forward outlook.



fig. 6.11 'Interior Kitchen Perspective' Ink pen on paper Image by author

Furniture & fittings mould into the space creating cohesions and promoting autonomy.

Site - Further Analysis

Research at the 'Wellington City Archives' uncovered the site was used as a petrol station and taxi stand over the past 100 years. Old plans were overlaid on top of the site and the position of fuel storage tanks were outlined to be used as voids in the design.







fig. 6.13 'Site History' Ink pen on paper Image by author

> Drawings investigating the past use and possibility of inhabiting the 'old bulk fuel' storage tanks. Concepts suggest a prism like structure representative of a tank in boundary and envelope but the antithesis in terms of exposure and atmosphere. The concept of a pavilion library in a public space explores the idea of incorporating transparency to the public.

Along infinition tellet tenle tendet tendet



fig. 6.14 'Library Concept' Ink pen on paper Image by author

fig. 6.15 'Untitled' Ink pen on paper 'Image by author

Building Typology

Through analysis into sight and programme a building typology diagram has been constructed. It highlights the requirements of public, semi-public and private spaces. A multitude of options are available influencing the layout of the built form.

In this scenario the programme drives form, and at the same time - paradoxically is also driven by form.



I

fig. 6.16 'Typology map' Adobe Illustrator Image by author



- Accommodation
- Ablutions

Private

- Self catering kitchen/s
- Shared space
- Outdoor space

Semi – public

- Counseling space
- Therapy space
- Common space
- In patient assessment rooms
- Temporary patient accommodation
- Staff accommodation

Public:

- Reception
- Surgery/consulting room
- Main Dinning room
- Kitchen
- Laundry
- Visiting room
- Shared public space
- Visitor Ablutions

DEVELOPED DESIGN PART II



fig. 6.17 'Space Allocation' Adobe Illustrator Image by author



fig. 6.18 'Programme Driving Form' Adobe Illustrator Image by author



Case Studies

Analysis is broken down into five main elements of design;

- Location (social context)
- Entrance
- Structure & organisation
- Interaction internal & external
- Safety & materials

Specific analysis of accommodation plan, room size and furnishings is pertinent. Thresholds between internal and external access and the number of patients treated are also important aspects.

Case Study: Salt Psychiatric Hospital, Girona province, Spain, 2003 Architects: Manuel Brullet Tenas, Alfonso de Luna (Brullet i Associats, Albert Pineda Location: The Salt Psychiatric Hospital, Salt, Girona, Spain, lies within an urban context. Internal courtyards allow a threshold between internal and external space and the urban fabric.

Entrance: "A successful example of an entrance, visitors traverse narrow lanes and a small forecourt between the pavilions in order to reach the entrances to the building that opens out into large glazed spaces." (Meuser, 2006, p.24)

The entrance leads directly to reception and links corridors that lead to sleeping areas, dining and group therapy rooms. Behind the reception General Practitioner's rooms are placed to allow direct access to inpatient areas. The waiting room is adjacent to the reception and entrance.



fig. 6.19 'Exterior View of Salt Psychiatric Hospital' Architects: Manuel Brullet Tenas, Alfonso de Luna (Brullet i Associats, Albert Pineda). Girona, Spain, 2003. Image source: www.brulletdeluna. com "Transparency both outside and inside creates trust and helps to alleviate threshold anxiety; the establishment of trust on part of the patients who live in the faculty; the alleviation of feelings of threshold anxiety harboured by patients who must regularly visit the facility for a specific period of time."

(Meuser, 2006, p.25)

Structure and organisation: Bedrooms mainly consist of accommodating two or four patients. Single rooms are provided if needed. All are accessed via a central corridor. The spine of each wing runs along a perpendicular central axis, creating an 'L' shape form in plan. Night, sleeping and day spaces are defined and separated encouraging interaction during the day. Dining facilities and external porches offer outside views and sanctuary but also reinforce security. Living and T.V rooms are located for day inhabitation.

Interaction - internal and external:

External interaction is present as each bedroom has a window and large glazed panes facing the internal courtyard. The outdoor porch on the first floor provides a vista above the area and allows a secure external experience. Pavilions are used to create spaces of linear transition.

Safety and materials: Security is divided into three levels of infirmary with the top floor being separate from the ground with access to an external garden. Security division is governed by degree of illness and age. Hard surfaces such as concrete, glass and stone are used to portray stoicism and authority but proportioned, coloured and rhymed to make it subtle.

"...transparency both outside and inside creates trust and helps to alleviate threshold anxiety; the establishment of trust on part of the patients who live in the faculty; the alleviation of feelings of threshold anxiety harboured by patients who must regularly visit the facility for a specific period of time". (Meuser, 2006, p.25)

The above statement aligns itself alongside the ideas raised in Chapter III - supporting transparency of the facade. It also gives evidence that this not only helps to reduce stigmatisation via integration with the public, but may also be psychologically beneficial for the patients and visitors alike. Alleviating anxiety through an architectural response, in this case using glass, is an exact example of how the built form can influence people with a mental illness and aid in therapy.

fig. 6.20

'Floor Plan, Salt Psychiatric Hospital' Architects: Manuel Brullet Tenas, Alfonso de Luna (Brullet i Associats, Albert Pineda). Girona, Spain, 2003. Image source: www.brulletdeluna. com





1. HABITACIÓ 2. BANY 3. SALETA D'ESTAR 4. SALA D'ESTAR 5. SALETA TV 6. LABOTERÀPIA 7. MENJADOR 8. OFICE 9. SALA DE TREBALL PERSONAL SANITARI 10. HABITACIÓ D'OBSERVACIÓ 11. SALA DE CURES I TRACTAMENT 12. ENFERMERIA 13. BANY ASSISTIT 14. ZONA BRUTA 15. DESPATX POLIVALENT 16. DESPATX METGE 17. DESPATX SUPERVISIÓ 18. LOCUTORI 19. LAVABO DE DIA 20. LAVABO PERSONAL 21. LAVABO VISITES 22. LAVABO MINUSVÁLIDS 23. SALA POLIVALENT 24. CONTROL D'ACCÉS 25. SALA DE NETEJA 26. SALA DE BOMBAS- DIPÓSIT D'EXPANSIÓ 27. INSTAL.LACIONS 28. PLANTA REFRIGERADORA 29. ARMARI MATERIAL A ACCÉS

- B SALA D'ESPERA
- C ACCÉS
- D SORTIDA D'EMERGÈNCIA
- E TERRASSA-PORXO
- F PORXO D'ACCÉS I ESTAR



Summary of Salt Psychiatric Hospital

- Urban location
- Internal courtyards
- External space
- Separate day, night and sleeping spaces
- One, Two and Four person rooms
- Use of pavilions to divide space function
- Dining, Living and T.V space
- Glass, concrete and stone
- 'L' shaped plan structure
- 126-person capacity
- Shared W/C facilities

Room size approx: 5m x 7.5m (4px bedroom) 2.5m x 2.5m bathroom 5m x 3.25m (2px bedroom) 15m x 7.5 dinning



fig. 6.21 'Plan detail' Drawing investigating layout and detail of plan, Salt Psychiatric Hospital. Ink pen on paper Image by author Case Study: Krakenhaus Hedwigshohe Psychiatric Facility, Berlin, Germany, 2002 Huber-Staudt architekten.



Location (social context): The 'Krakenhaus am Urban psychiatric facility' is situated in a high urban density inner city district in Berlin. Responding to the needs of the surrounding social context, consisting of:

"A district with high potential for social conflict and a large proportion of migrants and job seekers, is an example of the inner-city location of a psychiatric facility ... crucial to this neighbourhood."

Entrance: Situated in the grounds of the historical hospital of the 'Krakenhaus am Urban', the new psychiatric facility, complements the existing buildings. The entrance is independent

of these.

Structure & organisation: Consisting of five wards each ward accommodates twenty-five patients. Wards are arranged in regards of severity and classification of psychiatric illness. Patients have individual personal doctors and are involved in a multifaceted range of therapy programs such as group therapy, inter-personal doctor relations and a team of care staff. Keeping patients occupied and encouraging interaction rather than bed rest. The 'double U' plan of the pavilion (shown by fig. 6.24 to the right) houses the care co-ordination centre and the personal service rooms at the centre of the ward. Patient rooms flank





fig. 6.23 'Bedroom' Krakenhaus Hedwigshohe Psychiatric Facility. Huber-Staudt architekten. Berlin, Germany, 2002 Image: New Hospital Buildings in Germany, Volume 2: Specialist Clinics and Medical Departments. the perimeter. Dining and lounge areas are situated in an inner courtyard on each level.

Inpatients spent an average duration of 21 - 28 days at the '*Krakenhaus Psychiatric Facility*.' Mobility of physically healthy patients is encouraged by the planning of architecture itself;

"Architecture can, in planning, assist in reducing the stark divisions between 'sick' and 'healthy' that are often manifested." (Meuser, 2006, p.26)

Interaction - internal & external: Patient rooms have a strong link between interior and exterior spaces. The connection between the outside is strong yet controlled. Each room has a large external window in the outside wall and a large glass wall op-

posite. Bedroom doors open onto a balcony which is outside yet secure. Enclosed in glass, it allows the feeling of freedom whilst sheltering from the weather and ensures personal safety.

Safety & materials: Due to the nature of psychiatric patients having a high risk of self-harm, suicide and/or attempting escape, the architecture must consider these issues in planning. Integrating the counter active measures must be done so unobtrusively and must not reflect an attitude of imprisonment or punishment (Meuser, 2006, p.27).

Design of the wards at the '*Krakenhaus Psychiatric Facility*' allows each one to be locked down separately if required. Patients in the wards are managed as a unit therefore if one or more patients require to be locked down due to illness the



fig. 6.24 'Floor Plan' Krakenhaus Hedwigshohe Psychiatric Facility. Huber-Staudt architekten. Berlin, Germany, 2002 Image: New Hospital Buildings in Germany, Volume 2: Specialist Clinics and Medical Departments. whole ward is secured.

Glass used in the windows must be very secure to withstand escape attempts.

"Laminated glass, as a rule, should be employed in all areas that are accessible to patients (Meuser, 2006, p.27)." Summary of the 'Krakenhaus am Urban Psychiatric Facility:

- High-density urban location
- Separate day and therapy spaces
- One and two and person rooms
- Use of wings to divide space function
- Dining and living space in courtyard
- Glass, wood and plaster
- Double 'U' shaped plan.
- 125 person capacity approx
- Shared W/C facilities

Room size approx:

2.5m x 2.2 m bathroom

5m x 3.5m (2px bedroom)

fig. 6.25 (left) & 6.26 (right) Balcony Perspective' & External View' Krakenhaus Hedwigshohe Psychiatric Facility. Huber-Staudt architekten. Berlin, Germany, 2002

fig. 6.25 Showing external balcony with access to rooms. Encased in glass for security but allows a strong connection with the outside.

fig. 6.26 External view showing large bedroom windows. Plaster and wood external materials.

Image/s source: New Hospital Buildings in Germany, Volume 2: Specialist Clinics and Medical Departments.







"Mentally and physically sick persons [should] be treated equally; mental patients should no longer be stigmatised. This requires that modern facilities for the treatment of mental patients be situated at special select locations. This engenders - as far as central urban locations are concerned - greater acceptance by the general public."

(Meuser, 2006, p.28)

Summary of case study design considerations.

- High density urban location
- Entrance centrally located
- Separate day and night spaces
- Therapy space
- Use of wings and pavilions to divide space
- Security to be integrated; not to portray feeling of punishment or imprisonment.
- Strong connection to outside
- Wood, glass, concrete, stone & plaster materials
- One, Two and Four person rooms
- Shared W/C
- Room size approx 5m x 3.5m
- W/C size 2.5 m x 2.5 m

Final Design Considerations

Conclusions formed in chapters II, III, IV, concepts, developed design and case studies must be focused and synthesised to create outlining key considerations for application within the programme and final design phase.

These key considerations will be evident in plan and communicated through annotations, drawings and renders of the final design.

Summary of Conclusions

Chapter II -Defining Depression:

The six stages of Cognitive Behavioural Therapy will be employed as the main programme driver for therapy.

Chapter III - The Facade of the Asylum:

The following key considerations for design have been established:

- Transparency of the facade
- Dissolution of the 'ward'
- Day light to every living space
- Relation to the human scale
- Integrated public design to avoid stigmatisation

Chapter IV - Materialising the Intangibles:

- Use of '*effective tools*' to create atmosphere
- Site-specific data creating form

Concepts:

- High urban density
- Road access
- Mix of Public & Private spaces & Pathways

Developed Design :

Incorporate programme requirements and the intangibles.

Case Study Design Considerations.

- Separate day and night spaces
- Therapy space
- Use of wings and pavilions to divide space
- Security to be integrated; not to portray feeling of punishment or imprisonment.
- Strong connection to outside
- One and two and person rooms



PART III

Final Design Solution

fig. 7.01 Exterior Iteration Two' Revit & Adobe Photoshop Image by author



Final Design Solution: Floor Plans

Fig 7.02 to the left, is the initial design response to all of the aforementioned design considerations. Using pencil on drafting film the design process is focused and engaging. Each line drawn is a manifestation of thinking - in regard to design considerations. One-line influences the next as spaces are fleshed out and dimensions considered, as are the placement of windows, doors and their resulting pathways.

Digital representation is used to clarify the design further.

Responding to site and programme, the 'L' shape plan has been employed as a base to apply the programme within.

Two large shear walls running through the central axis divide the 'L' shape plan in two - creating a central node and a void which, houses a stair case that is the main public access through the site.

Ground floor is comprised of 'public' spaces outlined in the programme.



fig. 7.02 (top left) 'Initial Ground Floor Plan' Pencil on drafting film Image by author

fig. 7.03 (bottom left) 'Initial Level Three Floor Plan' Pencil on drafting film Image by author

fig. 7.04 Initial Level Four Floor Plan' Pencil on drafting film Image by author



Ground floor plan

Ground floor of the design is focused around inpatient care.

Main entry, reception, and visiting spaces reflect the public programme emphasis. Areas of mental and physical assessment and staff and utility function are also included on this floor for ease of access and practical requirements.

A strong connection with the outdoors is achieved with the use of floor to ceiling glass panels. Doors open into a garden with outside seating for visitors and patients to inhabit during visitation.

The vast use of glass and opening planes, offers unfolding transparency of the facade and its internal function to passersby.

Use of 'effective architectural tools' in the therapy spaces is yet to be developed however areas have been specifically allocated to house these.

Stage one and two of CBT: Assessment and Reconceptualisation, are catered for in the allocation of therapy spaces.

Wings can be isolated for security requirements and day and night functions if necessary.

Light wells with internal gardens on the ground floor create a strong connection with nature in an internal space.

> fig. 7.05 'Ground Floor Plan' Revit Image by author


Level 1 Floor Plan

Accommodation of patients and therapy are the core functions of this floor.

Single and shared rooms have their own toilet, sink and shower.

A common room provides a semi-public space for patients to gather collectively outside of therapy.

Internal voids and out-door gardens create spaces of escape and atmosphere through exposure of natural light and a strong connection with nature in an urban environment.

Cognitive Behavioural Therapy is incorporated into the design of therapy spaces. Areas for skills acquisition, skills consolidation and application training are allocated.

The use of 'effective architectural elements' of repetition are employed above the external garden and used to create 'affective atmospheric conditions' in the external space.

Patient safety is upheld by the ability to secure each room, corridor and resulting wing independently if necessary. Stairwells and elevators ensure the safe exit of each space in case of fire or disaster.

> fig. 7.06 'Level One Floor Plan' Revit Image by author



Level Four Floor Plan

Level Four is designed for 'high risk' patients.

Fully enclosed with rooms parallel to an external courtyard, privacy and safety are paramount in design.

The external courtyard and floor to ceiling frosted glass wall panels allow natural light to filter into the rooms whilst maintaining privacy to the occupant.

Rooms are single to ensure safety. Staff space is allocated at the end of the floor to closely monitor night activity if necessary.

Elevator and access via two stairwells ensures ease of transition through accommodation spaces and safety in the event of fire or disaster. a = single room b = shared room c = therapy space d = visiting space e = basement f = entry g = outdoor space h = light well i = staff space j = utilities









fig 7.10 'Garden Perspective' Revit Image by author





'Effective devices'

Renders show the application of 'effective architectural tools' to create atmosphere, as stated in the design considerations.

These renders however, lack elements of the environmental surrounding context and site.

Atmosphere is greatly defined by the nuances within the environment of the

site - such as shadow, light, weather and surrounding urban pathways.

Atmosphere is created through the manipulation of imagery. Using the computer program Photoshop, environmental effects are applied to create elements of the *'intangible'* within the imagery of the renders.



fig. 7.11 'Exterior Park Perspective' Revit Image by author



fig. 7.12 "Pathway Perspective' Revit & Adobe Photoshop Image by author



fig. 7.13 Exterior Building Perspective' Revit & Adobe Photoshop Image by author



Architecture & the intangibles





Design Iteration Two

The first iteration of the design housed all of the functions and programmatic requirements of the design considerations. Through the development of programme, plan and dimensions, spaces were designed to house specific functions and create inter-space relationships.

Linking building levels, with different functions, created these relationships, via stairways and elevators and the placement of treatment rooms.

The idea of the *'intangibles'* in the design was applied in two ways:

- i) The use voids within the building
- ii). Employing specific design elements and tools that create atmosphere.

As the design progressed it became apparent that the ideals of fitting the requirements of the programme within the plan and site resulted in a building, which was monolithic due to its four levels and large facade.

At this stage of development, the resulting large modernist function based design presented a loss of human scale. It was therefore contrary to the principles of the initial design intentions fitting the programme.

It therefore became apparent that more transparency through the design was needed. As a result, the facade material needed change and the external envelope altered in the stage of design to follow.



fig. 7.15 (far right) 'Detail Iteration Two' Revit Image by author

fig. 7.16 'Untitled Sketch' Ink pen on paper Image by author

fig. 7.17 'Untitled Sketch' Ink pen on paper Image by author





In reflection, this design also contradicted the initial objective - to create transparency of mental illness in society through a literal architectural translation of the transparency or permeability of the facade. It was intended that this would result in the dissolving and blurring of the boundaries of patient treatment within mental health facilities in an urban context.

It was also noted that the idea of the 'intangibles' was being forced upon a plan-based extruded form. The principles of the 'intangibles' and site-specificity were lost. It became clear, that the idea of the function of the floor plan and the rigour of walls, were trying to 'fix' the patient by moulding them into a specific shape.

Interestingly, these were the key principles from the asylum that generations of patients came to despise, for these isolate rather than integrate a patient from the surrounding environment. Large change was needed. The design had to return to the human scale, be responsive to the environment and based upon the 'intangibles' -instead of adding the 'intangibles' as an afterthought.

Start again.



CHAPTER VI

Reconceptualisation

"Therapy spaces using the 'intangibles' as a design driver are to be explored as the fundamental base of therapy design, not an after thought."

'Reconceptualisation' looks to engage in a deeper investigation of the use of the *intangibles* incorporated in therapy design. This chapter seeks to combine the previous knowledge gained in design thus far, with the outcome of this investigation to create a final design solution.

> fig. 8.01 'Tension Pavilion' Ink pen on paper Image by author

Reconceptualisation

Returning to the site and the human scale, ideas of subterranean inhabitation were explored in sketches. The use of pavilion space was also revisited - as it offered a smaller building footprint.

Therapy spaces using the *intangibles* as a design driver were explored as the fundamental base of therapy design, not an after thought.

A strong focus in this stage of design had shifted to 'experiential qualities;' using the built form to stimulate an emotional response. This is an important part of the therapy process, one the *intangibles* previously looked to create, but did not recognise with such awareness.

Elements of the previous design translated well into the new design. Accommodation planning was applied to the new design with adjustments. 'Level Four Floor Plan' was translated as underground accommodation.

The following sketches show the investigative design process, with the focus on a return to the human scale, experiential qualities of space and subterranean integration.



fig. 8.02 'Pavilion Section Sketch' Ink pen on paper Image by author

RECONCEPTUALISATION







fig. 8.04 'Design Section Sketch' Ink pen on paper Image by author

Focus on user experience. Integrating accommodation and therapy spaces with ground planes. Journey through descent and ascent.



fig. 8.05 'Site Sketch' Ink pen & pencil on paper Image by author

Sketch of site, triggered need for return to human scale, understanding of surrounding urban context.





fig. 8.06 (left) 'Untitled' Ink pen on paper Image by author

fig. 8.01 (right)

These two sketches investigate form and manipulation – to induce an emotive response.



fig. 8.07 'Plan & Section Sketch' Ink pen on paper Image by author

Exploring programme and plan in relation to section.

fig. 8.08 Journey Section' Ink pen on paper Image by author

These Two Sketches explores the idea of therapy as a journey. Descending into the ground and ascending, back to civilisation as therapy completes; a metaphor for the healing of the mind.





fig. 8.09 'Therapy Journey' Ink pen on paper Image by author



fig. 8.10 Intangible Therapy' Ink pen on paper Image by author

Sketch investigating creating emotive experience through form.



fig 8.11 'Site Plan' Revit Image by author

Application of programme and accommodation, to scale, on site.



fig. 8.12 'Transcendence' 3DS Max & Adobe Photoshop Image by author

Stimulating emotive response through imagery, exploring the idea of transcendence.



fig. 8.13 'Site Section' Revit Image by author

Section of pavilion, accommodation and subterranean space.

RECONCEPTUALISATION







fig. 8.14 'Wire frame Pavilion' 3DS Max & Adobe Photoshop Image & photography by author



fig. 8.15 'Transcendence' 3DS Max & Adobe Photoshop Image by author



Intangible Data

A return of focus to the *intangibles* specific to the site, led to the measurement of six different intangible elements; each specific to one of the six stages of Cognitive Behavioural Therapy. Outlined by the matrix below and opposite. Each *intangible* element was designated a space in the site.

Data was gathered using the required instruments and the results recorded.

Therapy Space	Intangible
1. Assessment A medium for assessment of the mind. The built form must relate at an introductory level of intervention - conveying the architectural intent.	Air Temp. & Wind Speed
2. Reconceptualisation The architecture must distinctively challenge the notion of perception through traditional associations of space, helping the mind to re-conceptualise.	Humidity
3. Skills Acquisition A space which supports the changing of negative and positive maladaptive thought processes - supportive & challenging to aid the process of skills acquisition	Carbon Dioxide levels

fig. 8.16 (p.176 & 177) 'CBT + Intangible Matrix' Adobe Illustrator Image by author

4. Skills consolidation & application training	Lux Light meter levels
"Where skills are adapted from a fragile state in which they are prone to being disrupted, to a more permanent or solid state (Springer,D. Rubin,A. Beevers,C. , 2011)."	
The architecture must support the idea of fragility & delicacy and transform it to a nature of stoicism; reinforcing the ideas gained or changed within the mind.	
5. Generalisation & Maintenance	Kata thermometer
Solidifying the new ideas gained, repetition of new thought patterns, self-awareness embraced & ascendance into freedom.	
6. Post treatment Assessment Follow Up	Globe thermometer
balance of familiar and differing qualities reinforcing what has been learned and what is to come. Strong link to phase 1 & 5.	



- Point 1 : Humidity - Point 2 : Air Pressure & Wind Speed - Point 3 : CO2 levels	– Point 4 : Kata Thermometer – Point 5 : Globe Thermometer – Point 6 : Light Meter
Point	Point
A	A

В	В
C	C
D	D
E	E

fig. 8.17

Humidity measure			
time (mins)	dry bulb temp	wet bulb temp °C	relative humidity %
0	16	12	63
5	14.5	12	72
10	15	12	70
15	17.5	12.5	58
20	15.5	10.5	55
25	17	12	58
30	16.5	11	55

Air pressure & wind speed			
time (mins)	Air Temp	Wind speed m/s	
0	18.2	2.4	
5	17.8	4.8	
10	17	3.6	
15	18.2	2.2	
20	17.5	4.5	
25	17.4	2	
30	16	6.1	

The Intangibles. Data Measurement Results Cont.

fig. 8.17 (p.178)
'Intangible Data Site Map'
Adobe Illustrator
Image by author

fig. 8.18 (p.179) 'Intangible Data Results' Adobe Illustrator Image by author

CO2 ppm
426
434
414
466
389

Kata thermometer			
time	change in temp		time (S)
15		16	134
30		17.6	108.9
V: air current cm/sec		360	
ta: external air temp		18	
tg: Globe temp		18.5	

mrt ° (C) = tg + 2.42	2V (tg - ta)
-------------------------	---------------

light meter			
Point	lux		
А	1158		
В	633	} 2000 x 100	
С	1430		
D	346		
Е	772	} 5000	

fig. 8.19 'Intangible Data Results' Adobe Illustrator Image by author






fig. 8.20 'Intangible Data Graphs' Microsoft Excel Image by author



fig. 8.21 'CO2 Parabolic Graph' Ink pen on paper Image by author



fig. 8.22 'CO2 Bar Graph' Ink pen on paper Image by author





fig.8.23 'CO2 Graph Sketch' Pencil on graph paper Image by author

fig. 8.24 'Humidity Graph Sketch' Pencil on graph paper Image by author

Results

Graphs were created from the recorded data. These produce a relationship between the data and points on an X, Y & Z axis, or points in space. Similarly to how 3-D architectural programs produce models. Architecture itself could be described as 'points in space'.

These points in space start to define form and dictate envelope, shape, volume etc. The graphs were then used as a starting point to derive form.

An example of this is show by fig. 8.21 'CO₂ Parabolic Graph'. The data is used to inform the hand drawn sketch of a parabolic structure as representation of the CO₂ levels measured on site. Lines within the graphs are interpreted as boundaries and were plotted in the computer program *3DS Max* to produce forms in response to each intangible data measurement.

Development through sketches and computer modelling in *3DS Max* were extensive and mutual in progression. Illustrated by following sketches.

Humidity was the first form to be explored. Similarly to the process of creating the form explained in chapter titled 'Materialising the Intangibles'.

'Humidity' design process

fig. 8.25 'Step One' 3DS Max Image by author





Create a box, which is a uniform representation of points in space.



fig. 8.26 'Step Two' 3DS Max Image by author

Step 2.

Using the 'edit-poly' modifier - vertices, lines, edges and polygons are manipulated by changing their scale, location and rotation. The data gathered on site is used as a design driver for these manipulations. The manipulations are a representation of the humidity data. Lines shown in the graph form the perimeter shape of the manipulated box. Site-specific data has now been transferred from the graph to the 3-D form of the box.



fig. 8.27 'Step Three' 3DS Max Image by author

Step 3. An outer lattice is formed using the 'create' function in the 'edit poly' modifier. This creates an external shape that joins all the vertices where the lines meet.



Step 4. The primary geometry is deleted leaving only a lattice of vectors. All that remains are the points of data and paths between them. This is humidity as a tangible form.



fig. 8.29 'Step Five' 3DS Max Image by author

Step 5. Surface is added via a 'surface' modifier to add an outer shell to the lattice structure

fig. 8.28 'Step Four' 3DS Max Image by author



Step 6. Polygons are increased using the 'optimiser' modifier. This maintains the shape of the form by producing an optimum number of vectors.



Step 7. Edges are selected and using the chamfer tool extruded. The remaining polygons are deleted.



Step 8. Finally a 'mesh smooth' modifier is applied which smooths the joins between all the vectors creating the final form.

fig. 8.30 'Step Six' 3DS Max Image by author

fig. 8.31 'Step Seven' 3DS Max Image by author

fig. 8.32 'Step Eight' 3DS Max Image by author



fig. 8.33 'Humidity Sketch' Ink pen on paper Image by author fig. 8.34 - 8.38 'Untitled' Ink pen of tracing paper Images by author

Development of site & programme through sketches & layering to explore pathways and access.







Development sketches of plan, therapy spaces, public and private pathways and internal access.









fig. 8.40 'Central Space Sketch' Ink pen on paper Image by author

190 CHAPTER VI

Architecture & the intangibles

fig. 8.41 'Humidity One' 3DS Max Image by author

fig. 8.42

'Humidity Two' 3DS Max Image by author





fig. 8.43 'Humidity Interior' 3DS Max Image by author





fig. 8.44 Intangible Perspective' 3DS Max Image by author





floring " enterconnecting " breath the surface .

fig. 8.45 'Untitled' Ink pen on paper Image by author

fig. 8.46 'Untitled' Ink pen on paper Image by author

fig 8.47 'Untitled' Ink pen on paper Image by author



fig. 8.48 'Therapy One & Two' Ink pen on paper Image by author





fig. 8.49 (left) 'Therapy & Accommodation' Ink pen on paper Image by author

fig. 8.50 (right) 'Front Perspective' Ink pen on paper Image by author fig. 8.51 'Untitled' Ink pen on paper Image by author

fig. 8.52 'Untitled' Ink pen on paper Image by author







fig. 8.53 'Internal Therapy Materials' Ink pen on paper Image by author

RECONCEPTUALISATION



fig. 8.54 'Therapy One Internal' 3DS Max & Adobe Photoshop Image by author



fig. 8.55 Intangible Perspective in Context' 3DS Max & Adobe Photoshop Image by author





Form in context

The resulting form is now placed within the context of the site. Exploration of design through sketches and CAD drawings, develop the next stage of design. Ideas and concepts of the now materialised intangible data, are integrated into the programme considering the requirements of the site. Another set of intangible data was investigated in the same manner as humidity - CO₂. Data was graphed and extrapolated into a 3-D form and inserted into the design.

Sketches and CAD drawings illustrate this process.

fig. 8.56 (Previous Page) 'Intangible External Perspective' 3DS Max & Adobe Photoshop Image by author

fig. 8.57 'CO2 Data Form' Ink pen on paper Image by author



fig 8.58 'CO2 Intangible Pavilion Perspective' 3DS Max & Adobe Photoshop Image by author



fig. 8.59 'CO2 Intangible Perspective' 3DS Max Image by author

RECONCEPTUALISATION



fig. 8.60 Intangible Therapy Perspective' 3DS Max Image by author

Design refinement.

Incorporating three '*intangible forms*' derived from data and the pavilion within the site created a unique design language.

The orthogonal form of the pavilion contrasted the differing '*intangible forms*,' which contrasted one another. However it became clear that with at least four different building typologies the overall envelope was too confusing. It was decided that the design should be simplified to two typologies: the *orthogonal pavilion* and the *biomorphic humidity form*.

Each of these forms has an underlying analogy:

Orthogonal pavilion; accommodation and living dwelling, which houses traditional associations of space - a space in which to eat, sleep, live and reflect.

Biomorphic humidity form; therapy space/s which challenges one's preconceived understanding [perception], of the built form and all that is associated with it. Therapy through design is explored using the 'biomorphic humidity form' as a tool - to challenge one's preconceived notion of what they understand architecture to be.

This process hopes to challenge thought patterns of the inhabitant – a critical point in CBT. Therapy spaces then not only house treatment but also stimulate it.

Design development continued.

Having identified two typologies and floor plan investigated in the previous stage, the next phase of design was to create spaces that fulfilled the programme requirements of dwelling and therapy. Investigation through sketches and CAD were used to develop the design to a final stage.

RECONCEPTUALISATION



fig 8.61 'Front Intangible Perspective' 3DS Max Image by author



fig. 8.62 'Therapy Two Intangible Perspective' 3DS Max Image by author



fig. 8.63 'Therapy Space Plan' Ink pen on paper Image by author







fig. 8.65 'Therapy & Dwelling Plan' Ink pen on paper Image by author



fig. 8.66 'Therapy Two Internal View' Ink pen on paper Image by author



fig. 8.67 'Internal Courtyard View' 3DS Max Image by author









fig. 8.68 'Therapy & Dwelling Plan Layers' 3DS Max Image by author

Architecture & the intangibles



fig. 8.69 'Rear View' 3DS Max Image by author



fig. 8.70 'Side View' 3DS Max Image by author



fig. 8.71 'Front Perspective' 3DS Max Image by author









fig. 8.73 'Layers Sketch' Ink pen on paper Image by author





fig. 8.75 Construction Detail Sketch' Ink pen on paper Image by author







fig. 8.77 'Underground Accommodation Plan' Ink pen on paper Image by author



CHAPTER VIII

Final Design

"No problem is solved from the same level of consciousness that created it."

Albert Einstein

The 'Final Design' seeks to manifest the idea that; architecture can change one's perception of themselves by a direct influence of the architectural experience around them.

In this chapter highly resolved floor plans, sections and renders provide the dimension in which to explore this paradigm shift. This final display unveils a strategy to develop a specificity of architecture for therapy and the treatment of severe depression.

> fig. 9.01 Vivian St Approach' 3DS Max & Adobe Photoshop Image by author



Axonometric Layer Diagram

Sited within an area of high urban density, the utilisation of space is important. This is achieved in the final design by the use of inter-linking layers.

Differing topographical layers allow the retention of the human scale as spaces are housed underground, reducing the footprint of the built form above.

Programme requirements and the *in-tangible* therapy spaces are seamlessly integrated within the differing layers, yet contrasting language between therapy and dwelling spaces is evident.

fig. 9.02

215

Axonometric Layer Diagram' 3DS Max & Adobe Illustrator Image by author Architecture & the intangibles






Axonometric Pathway Diagram

Public and private pathways allow access through the site to key destinations within the inner city.

Pathways through the site create exposure of the facility to the public, which aids in de-stigmatisation through desensitisation.

Internal pathways within the dwelling spaces are multi- level and lateral, alluding to routine and normality. Accommodation, dining and visiting areas are based on the ground floor. 'The First Floor' houses the library and additional visiting space. 'The Top Floor' consists of patient and staff accommodation.

Intangible therapy spaces have pathways that are cyclic in nature. Representing the cyclic process of therapy and subsequent thought processes within the mind.

fig. 9.03

219

'Axonometric Pathway Diagram' 3DS Max & Adobe Illustrator Image by author

Facility Admission Process

1. Assessment. The patient arrives and is assessed by doctors and a psychologist in 'Therapy Space One'. A treatment plan is created.

2. The patient is checked in to the appropriate accommodation according to mental condition or personal preference. Outpatient treatment is also available.

3. After the patient is comfortable in their new environment, therapy is continued under the supervision of mental health professionals.



Internal dwelling pathways



Pavilion accommodation

Undergorund dwelling

CONTRACTOR CONTRACTOR

Dwelling Spaces are focused around the central dining core and its amenities such as laundry, gym, staff room & self-catering kitchen.

The design & programme encourages patient participation in daily tasks as their mental health improves.

The laundry and small auxiliary kitchens allow the patient to complete simple tasks such as washing clothes and cooking to help gain independence and confidence.

Separate day and night spaces can be independently secured by the use of wings and pavilions to divide space, enhancing security and the daily interaction of patients.

Therapy 2

Therapy 1 & 6





Therapy spaces have a defined level of architectural intervention in relation to the stage and nature of CBT therapy within.

Therapy treatment is of a cyclic nature – in plan, section and literal sense. Patients complete a cycle of treatment before they are assessed to determine whether they are well enough to leave. As patients progress through the therapy spaces they descend in elevation and rise again toward the end of treatment.

The cyclic nature of therapy is metaphorically representative of the cyclic nature of life; ups and downs and choices made. The idea through treatment is to enable each person to gain skills & tools, which they can use to deal with depression as it arises within their lives. The cyclic nature of treatment reflects the idea of resilience within the challenges of everyday life.

fig. 9.04 (far left) 'Ground Floor Plan' Revit, 3DS Max & Adobe Illustrator Image by author

Left: Detail of 'Therapy spaces'





Entry into the 'Underground Dwelling' is strictly controlled via two access points; through the dining room and off the main courtyard. An emergency exit vacates onto Blair St.

The two entry points can be secured and the dwelling locked down for patient security if necessary.

Designed around a central courtyard, bedrooms have an abundance of natural light with floor to ceiling windows. A shower, toilet and hand basin are located in each room.

Staff accommodation is available in each of the living spaces to monitor nighttime activity.

The central courtyard aims to create an air of freedom and independence whilst maintaining patient safety. This strongly adheres to the design consideration that security is integrated and must not portray the feeling of punishment or imprisonment.

fig. 9.04 Detail of 'Underground Accommodation'





Dining, kitchen, staff room, gym, laundry and toilets are all based on the ground floor.

The dining space acts as a central core to patients. Meals are served across a bench-top and eaten at the dining tables, after which are used to accommodate visitors at set times.

Direct access to the 'Underground accommodation' is via a corridor. The upper-level 'Pavilion Dwelling' is reached via stairs. A lift allows wheelchair access, and ramps through out the facility ensure all areas are accessible.

Toilets for visitors, patients and disabled persons are located on the ground floor.

Staff room design allows privacy but also subtle surveillance of patients via a large window.

Food, waste, and service requirements can be directly accessed via a corridor with external street access.

Food is stored in the larder and chiller in the prep-kitchen, before being prepared in the adjoining main kitchen.

Space is allocated for a gym, opposite the laundry.

A small kitchen is allocated for patients to make morning and afternoon tea for themselves and visitors. 228 CHAPTER VI



Vivian St



'Level One Floor Plan'

Level one outlines the pathways between the therapy spaces and the surrounding context.

Therapy forms are derived using site-

fig. 9.05 (far left) 'Level One Floor Plan' Revit, 3DS Max & Adobe Illustrator Image by author

Left: Detail of 'Therapy Pathways'



-0-

Library

The library located on 'Level One' is key to linking space in the design. The 'Pavilion Dwelling' above is linked to the dining area below via two stairwells at each end of the library.

Reading and visiting spaces are allocated within the library and accessed from the floor below by patients or through the external front entrance by visitors.

> fig. 9.05 Library Plan Detail

232 CHAPTER VI



Vivian St

K e y

- a = entry
- b = reception
- c = assessment room
- $d = male \ toilet$
- e = female toilet
- f = unisex toilet
- g = dinning
- h = kitchen
- i = prep-kitchen
- j = larder
- k = laundry
- l = gym
- m = single accomodation
- $n = double \ accomodation$
- o = staff accomodation
- p = common room
- r = internal courtyard
- s = fire exit / service
- t = therapy space
- u = staff room
- v = visitor space
- w = library
- x = elevator
- y = deck

fig. 9.06 'Level Two Floor Plan' Revit, 3DS Max & Adobe Illustrator Image by author



Pavilion Dwelling

Access to bedrooms is gained via a central stairwell and corridor. This design results in a 'dissolution of the ward,' a key design consideration. Access can be 'locked down' if required.

Each room has a toilet, shower and basin. A wardrobe and desk divides each bed. A large sliding door and floor to ceiling window filters day light into the living space.

Size of the pavilion design is such that it maintains relation to the human scale.

The large communal deck allows for interaction between patients and creates a strong connection to the outdoors. Stairs at one end provide a fire exit.

Slender timber members clad the external envelope of the structure. This enables patients a high level of privacy in a dense urban area.

Timber members are an example of the use of 'effective tools' to create atmosphere. The resulting internal shadows and differencing external perspectives are these atmospheres.

It also ensures patient safety by eliminating the ability to jump from high levels. Integrating security within the design.

Patient bedrooms are shared. A staff bedroom is included to monitor nighttime activity.

fig. 9.06 Pavilion Dwelling Detail' Image by author



Construction Process:

1. Individual Fragments are printed using high strength PTFE plastic. Rubber gasket seals are applied to the male joins.

2. Male - female joins of each fragment are pushed together creating an air & watertight seal.

3. Combined fragments are joined to create components. Components are joined in the same manner.

4. Components are joined together to create the completed structure.

3-D Printing Technology

The proposed method of construction utilises 3-D printing technology to enable construction of the complex forms and shapes. The overall design is broken down into isolated components. The isolated components are then further reduced into fragments, which are individually printed from high strength plastic.

Fragment joins are printed, eliminating the need for fasteners of any kind. As a result of the construction process, materials and joining method, the completed structure can resist forces in both tension and compression.

The benefits of 3-D printing are numerous:

'There is little waste, which is better for the environment, and it can easily "print" curved structures that are difficult and expensive to build by other means.'(http://phys.org/news.)

Right: Images showing 3-D printing producing biomorphic forms similar to that of the final design (of this thesis). The form above is printed using sand and a magnesium binding agent which results in a material which is stronger than stone.





Fig 9.07 & 9.08 Dini 3-D Printer. Image: http://phys.org/news.



Fig 9. Fragmented components Detail of joint. Male - female joint 3D printed H.S PTFE plastic Rubber gasket seals.

Fig 10 Fragmented components Detail of joints. Male - female joint 3D printed H.S PTFE plastic Rubber gasket seals. fig. 9.09 (left) 'Construction Process' 3DS Max, Adobe Photoshop & Illustrator Image by author









fig. 9.10 'Transverse Section' 3DS Max & Adobe Photoshop Image by author













Section Render Drawings

Fig x 'Transverse Section': Outlines the subcutaneous and symbiotic nature of the design. Therapy and living spaces intertwine, encapsulated by earth. The occupants inhabiting the design show pathways and transience between levels and planes.

Fig X 'Underground Dwelling Transverse Section:' Slicing the underground courtyard and dwelling through the centre, patient bedrooms, common space and access points are shown. Frosted glass walls ensure day light to bedrooms. The juxtaposition of the *intangible* therapy design and rectilinear forms of the dwelling spaces' is fully exposed. Nature binds the two typologies together with earth, grass and foliage.

Fig X 'Pavilion & Dining Longitudinal Section.' Contrast between light and dark in this render portrays the symbolism of the secure and stoic nature of the underground form vs. the 'liberating lightness' of the pavilion dwelling above. Highlighted is the permeability and slender beauty of the timber pavilion cladding, creating a light and warming atmosphere. fig. 9.11 (p. 242) 'Underground Dwelling Transverse Section' 3DS Max & Adobe Photoshop Image by author

fig. 9.12 (p.244) 'Pavilion & Dining Longitudinal Section' 3DS Max & Adobe Photoshop Image by author

fig. 9.13 (left) 'Transverse Section Detail' 3DS Max & Adobe Photoshop Image by author

Image showing inhabitation of the pavilion, library & dining spaces and the pathways between them.





fig. 9.14 'Therapy One: Assessment' 3DS Max & Adobe Photoshop Image by author

Assessment is the first step of CBT.

The first space visited on site, 'Therapy One' acts as a medium for assessment of the mind. In response the built form relates at an introductory level of intervention but makes clear the architectural intent.

Standard features of reception within health facilities are apparent- such as; reception desk, waiting area with table, chairs and patient toilets.

The plan responds in the usual manner with patients taken into a private room behind reception for assessment.

In contrast to standard health care design, is the enveloping form encompassing the space. This strongly shows the intent of architecture influencing and aiding in the therapy process.

This space seeks to set the stage for this architectural intervention, whilst not overwhelming first time patients.








fig. 9.15 (previous page) 'Therapy Two: Reconceptualisation' 3DS Max & Adobe Photoshop Image by author

Reconceptualisation' is the second stage of CBT.

In this space "architecture must distinctively challenge the notion of perception through traditional associations of space, helping to reconceptualise the mind." p. 180

The 'rules' of inhabitation are strongly challenged in this image. Structure, envelope and spatial division are synthesised to challenge the traditional conventions of an architectural dwelling.

Floors, walls and ceiling all merge into one another, re-defining previous meaning. Doorways are replaced by voids within the structure. Furniture is not an external object but part of the dwelling itself, pulled up from the floor and out from the adjoining wall.

It is through these challenges of convention that architecture sets the platform to challenge one's own thoughts; enabling the 'reconceptualisation process' to begin.

fig. 9.16 (left) 'Therapy Two: Reconceptualisation, Negative Perception' 3DS Max & Adobe Photoshop Image by author

The antithesis of the previous image, this drawing seeks to explore a negative perception of the space. In doing so it seeks to recognise the duality of the human mind – looking through both negative and positive perceptual lenses.





fig. 9.17 'Therapy Four & Five: Skills Consolidation, Application Training and Generalisation & Maintenance' 3DS Max & Adobe Photoshop Image by author

The aim of this therapy space is to help skills "adapt from a fragile state... to a more permanent or solid state." p. 181

Nestled within the landscape 'biomorphic arms' of the structure embrace the therapy space and occupant within. Shown in fig. 9.18 (over page) a rear concrete wall denotes a sense of stoicism, whilst the glass roof and front wall provide an external outlook.

The architecture in this sense is metaphoric of the freedom and clarity in front of the patient supported by security behind.

This symbolism aims to help the patient solidify new fragile ideas and practice the repetition of new thought patterns. Resulting in raised self-awareness & ascendance into freedom from negative thoughts and the weight of depression.

fig. 9.18 (over page) 'Patient Therapy Perspective' 3DS Max & Adobe Photoshop Image by author







Seemingly 'carved out' beneath the pavilion dwelling, the dining room is accessed internally via a stairwell and corridor from the 'Underground Accommodation' and externally from a pathway off the central courtyard and service lane.

Angled glass panes of the dining facade are an intermediate form between the fluidity of 'Therapy One: Assessment and the orthogonal 'Pavilion Dwelling'. Reflections and the flowing grass covered landscape helps to amalgamate this relationship.

The dining room serves dually as a visiting space. Visitors access via the pathway shown.









fig. 9.20 (previous page) 'Internal Dining Perspective' 3DS Max & Adobe Photoshop Image by author

Dining inhabitants look externally to therapy spaces. An internal stairwell offers access. Descending from above, one enters the dining room centrally ensuring inter-personal engagement upon entry.

Once again a hybrid of fluid and straight forms bridges the two architectural typologies of the design in this space. The rolling ceiling, straight lined stairs and walls along with natural light and foliage, give this space dually an air of transition and reflection - a middle ground between therapy and dwelling.

fig. 9.21 (right) 'Internal Courtyard Perspective' 3DS Max & Adobe Photoshop Image by author

Light filters from above into the courtyard of the 'Underground Dwelling' providing daylight to the bedrooms situated on either side. Highlighting the strong connection between nature, light and occupied spaces in this design, this image seeks to exude the intended 'calmness' created by these relationships.



fig. 9.22 'Internal Library Perspective' 3DS Max & Adobe Photoshop Image by author

The library is space for the patients. A retreat offering shelter, whilst at the same time integrated within the tightly woven urban fabric. It is a platform to look out from, where passersby are observed and the inhabitants secure. Inverting the social constructs of the 'asylum' and de-stigmatising through a literal transparency of the facade.









fig. 9.23 'Internal Pavilion Dwelling Perspective' 3DS Max & Adobe Photoshop Image by author

An internal view of the 'Pavilion Dwelling' bedroom, this image shows the neutral nature of the living space - a space to reflect upon therapy.

External timber members of the pavilion envelope can be seen, the therapy spaces and urban context beyond them.

A large glass sliding door opens to the external deck.

Again a sense of calmness is insinuated - reflective of the design intention of the dwelling spaces throughout this entire design.



CHAPTER VIII

Conclusions & Relections

The initial intention of this research was to understand the possible *affect* of architecture on mental illness: specifically the condition of depression. It was hoped this would assist in understanding how architecture can positively influence the occupants of space whom suffer with depression. This thesis then proposed: a strategy to develop the specificity of architecture for therapy, to assist in addressing the specific treatment of severe depression. It was hoped the knowledge gained by the conclusion of this strategy could be used to increase the success of therapy and rehabilitation of depression in New Zealand.

The research process consisted of combining investigations into the epidemiology of depression, the history of the asylum and *the intangibles* - drawing conclusions from each one. These conclusions were then used to create design considerations for the design process.

Each investigation conducted research through its own *perspective lens*. Conclusions drawn from these different *lenses* were moulded together to create a cohesive approach to explore the central design question - through the process of design.

It was established that Cognitive Behavioural Therapy would be used as the main design driver for programme, alongside the application of *intangible* elements that could alter the perception and experience of space. Transparency of the façade was another fundamental influence in the design process. The design process explored the application of the design considerations within the programme and site. During this process it became apparent at certain stages, upon reflection of conclusions drawn from the research, that the design was not adhering to the design considerations earlier set. In fact at a stage nearing the completion of the initial 'final design', the direction of the design process was stopped. This led to a shift in focus from a programme driven design to one, which investigated the experiential elements of the intangibles as a base for architecture as therapy.

This self-realisation of the design, to identify its maladaptive design path and rectify through reflection, is an analogy of the 'Reconceptualisation' process in CBT. In fact this is the process in which this thesis seeks to highlight: that our perception of space governs how we experience it - and resultantly that architecture can change one's perception of themselves by a direct influence of the architectural experience around them. This is the fundamental idea of how the *affect* of architecture can be used as therapy in the treatment of depression.

Shown by the imagery of the 'Final Design' and preceding 'Reconceptualisation' chapter, the final product is a manifestation of the ideas constructed in earlier research combined with the final outcome of the design process. This final display unveils the strategy of a specifically developed architecture of therapy for the treatment of severe depression.

In conclusion, the question: "how does architecture *affect* those whom suffer from mental illness, specifically depression and is it a contributing factor in causing depression?" has been thoroughly answered by this body of work. There is no doubt that architecture influences how we feel in space – this in turn can lead to a positive or negative perception of our surrounding environment and it is at this point where architecture has the power to heal or harm its occupant through their spatial experience.

It is hoped that this research is fruitful to the discussion about the *affect* of architecture and the built form on depression. It is also hoped that elements of the *intangibles* and resulting strategy of therapeutic architecture identified in this thesis might be considered to help treat depression. Perhaps this work is a platform, from which further investigation into the neurological links between our perception of space and its resulting *affect* within the human mind can be explored. In conclusion, the question: "how does architecture affect those whom suffer from mental illness, specifically depression and is it a contributing factor in causing depression?" has been thoroughly answered by this body of work. There is no doubt that architecture influences how we feel in space – this in turn can lead to a positive or negative perception of our surrounding environment, it is at this point where architecture has the power to heal or harm its occupant through their spatial experience.

CHAPTER IX

List of Figures

fig. 0.01. Dürer, A. (c.1514). *Melancholia, an engraving.* The British Museum. Retrieved from: http://www.britishmuseum.org/explore/highlights/highlight_objects/ pd/a/albrecht_dürer,_melancholia.aspx.

fig. 1.01. Archives New Zealand. (c.1890). Nursing staff in front of Seacliff Lunatic Asylum. Dunedin, New Zealand.

Retrieved from: http://archives.govt.nz/gallery/v/Online+Regional+Exhibitions/Arch ives+New+Zealand+Dunedin+Regional+Office+Gallery/Being+at+Seacliff+Lunatic+A sylum/Buildings+and+Grounds/nurses+on+lawn.jpg.html?g2_imageViewsIndex=1

fig. 2.01. Bacon, F. (1949). Screaming man. Francis Bacon, Five Decades, Bond, A. (2012). Art Gallery NSW. p.101

fig. 3.01. Archives New Zealand. n.d. *The Seacliff Lunatic Asylum*. Dunedin, New Zealand.

Retrieved from: http://archives.govt.nz/gallery/v/Online+Regional+Exhibitions/Arch ives+New+Zealand+Dunedin+Regional+Office+Gallery/Being+at+Seacliff+Lunatic+A sylum/Buildings+and+Grounds/seacliff+no+3.jpg.html

fig. 3.02. Archives New Zealand. n.d. *The Seacliff Lunatic Asylum*. Front view of administration block. Dunedin, New Zealand. Retrieved from: http://www.archives.govt.nz/about/news/2010/07/seacliff-lunaticasylum

fig. 3.03. Ziff, K. (2012). Interior view of the parlour in the administration block of the Athens Lunatic Asylum. Ohio, USA. Asylum on the Hill: History of healing a landscape. Ohio, USA: Ohio University Press.

fig. 3.04. Ziff, K. (2012). Plan of the Athens Lunatic Asylum, Ohio, USA. Asylum on the Hill: History of healing a landscape. Ohio, USA: Ohio University Press.

fig. 3.05. Ziff, K. (2012). View of the Athens Lunatic Asylum, Ohio, USA. Asylum on the Hill: History of healing a landscape. Ohio, USA: Ohio University Press.

fig 3.06. Ziff, K. (2012). Approach to the administration building the Athens Lunatic Asylum, Ohio, USA. Asylum on the Hill: History of healing a landscape. Ohio, USA: Ohio University Press.

fig. 3.07. McKinnon, M. (2012). *Seacliff Lunatic Asylum*. Exterior View. 'Otago places - North of Dunedin', Te Ara - the Encyclopedia of New Zealand. Retrieved from: URL: http://www.TeAra.govt.nz/en/photograph/22751/seacliff-lunatic-asylum

fig. 3.08. Image by author. Sketch one of The Seacliff Lunatic Asylum. Hand drawing, black ink on paper.

fig. 3.09. Image by author. Sketch two of The Seacliff Lunatic Asylum. Hand drawing, black ink on paper.

fig. 3.10. Archives New Zealand. (c.1880). Original Watercolour Plan of The Seacliff Lunatic Asylum. Dunedin, New Zealand.

Retrieved from: http://archives.govt.nz/gallery/v/Online+Regional+Exhibitions/Arc hives+New+Zealand+Dunedin+Regional+Office+Gallery/Being+at+Seacliff+Lunatic +Asylum/Buildings+and+Grounds/Floor+Plans/DADE-D294-2a+-+second+floor.jpg. html?g2_imageViewsIndex=1

fig. 3.11. Image by author. Section of the Seacliff Lunatic Asylum. Pencil on drafting film.

fig. 3.12. Image by author. Asylum Sketches. Ink pen on paper.

fig. 3.13. Image by author. Asylum Plan Layers. Ink pen on paper.

fig 3.14. Image by author. *Horrors Within*. Investigation into the emotive qualities in the history of the asylum. Multimedia.

fig 3.15. Image by author. *Horrors Within 2*. Investigation into the emotive qualities in the history of the asylum. Multimedia.

fig 3.16. Image by author. *False Facade*. Exploring the fragility of the facade and what lies beneath. Multimedia.

fig 3.17. Image by author. Cut-away. Exploring the fragility of the facade and what lies beneath. Multimedia.

fig 3.18. Dully, H. (1997.) Method of transorbital lobotomy. Notice entry of orbitoclast under eyelid.

Retrieved from: http://lobotomy.umwblogs.org/howard-dully/

fig 3.19. Dully, H. (1997.) Orbitoclasts. Retrieved from: http://lobotomy.umwblogs.org/howard-dully/

fig 3.20. Archives New Zealand. (1959). Demolition of the main administration building. Seacliff Asylum.

Retrieved from: http://archives.govt.nz/gallery/v/Online+Regional+Exhibitions/Arch ives+New+Zealand+Dunedin+Regional+Office+Gallery/Being+at+Seacliff+Lunatic+A sylum/Buildings+and+Grounds/Demolition/Seacliff+D266-521h.jpg.html

fig 3.21. Archives New Zealand. (1959). Demolition of the main administration building. Seacliff Asylum.

Retrieved from: http://archives.govt.nz/gallery/v/Online+Regional+Exhibitions/Arch ives+New+Zealand+Dunedin+Regional+Office+Gallery/Being+at+Seacliff+Lunatic+A sylum/Buildings+and+Grounds/Demolition/Seacliff+D266-520c_new+copy.jpg.html

fig. 3.22. Image by author. Asylum Section Perspective. Pencil on drafting film.

fig. 3.23. Image by author. Asylum Section Perspective Two. Pencil on drafting film.

fig. 3.24 Transparency Through Transition. Pencil on drafting film. Image by author.

fig. 3.25. Image by author. Transparency Through Transition Two. Pencil on drafting film.

fig. 3.26. Image by author. Transparency Sketch. Pencil on drafting film.

fig. 3.27. Image by author. Transparency Facade Process. Pencil on drafting film.

fig. 3.28. Image by author. Hanging Facade. Multimedia.

fig. 3.29. Image by author. Hanging Facade & Asylum. Multimedia.

fig. 3.30 Hanging Facade & Asylum 2. Multimedia. Image by author.

fig. 3.31. Image by author. Hanging Facade & Asylum On Site. Multimedia.

fig. 4.01. Image by author. *Threshold Atmosphere*. Exploring the intangibles through drawing. Revit & Adobe Photoshop.

fig. 4.02. Díaz Moreno, García Grinda. (2009). Inside Outside, Acoustic wall treatment. Mercedes Benz Museum, Stuttgart, Germany, 2006. Energy Froms, AD - Architectural Design. p.87.

fig. 4.03. Brownell, Blain. (2009). Great Bamboo Wall. Kengo Kuma and Associates, China, 2002. The Presence of Absence, Matter in the Floating World: A conversation with leading Japanese architects and designers. New York: Princeton Architectural Press. p.37.

fig. 4.04. Image by author. Sketch of Great Bamboo Wall. Ink pen on paper.

fig. 4.05. Image by author. Louvre Light Study. 3DS Max.

fig. 4.06. Rahm, P. (2009). Interior Gulf Stream, Research House for Dominique Gonzalez-Foerster. Philippe Rahm Architects, Paris, France, 2008. Meteorological architecture, AD - Architectural Design, John Wiley & Sons Ltd. p.38.

fig. 4.07. Rahm, P. (2009). Interior Gulf Stream, Research House for Dominique Gonzalez-Foerster. Philippe Rahm Architects, Paris, France, 2008. Meteorological architecture, AD - Architectural Design, John Wiley & Sons Ltd. p.33.

fig. 4.08. Rahm, P. (2009). Interior Gulf Stream, Research House for Dominique Gonzalez-Foerster. Philippe Rahm Architects, Paris, France, 2008. Meteorological architecture, AD - Architectural Design, John Wiley & Sons Ltd. p.37.

fig. 4.09. Image by author. Outlining 2-D image in 3-D context. 3DS Max.

fig. 4.10. Image by author. Extrusion. 3DS Max.

fig. 4.11. Image by author. Tapering. 3DS Max.

fig. 4.12. Image by author. Mesh Smooth. 3DS Max.

fig. 4.13. Image by author. Duplicate. 3DS Max.

fig. 4.14. Image by author. Shell. 3DS Max.

fig 4.15. Image by author. *Floating Space*. Part I of 'Materialising the Intangibles' series.

fig 4.16. Image by author. *Floating Glass Section*. Part II of 'Materialising the Intangibles' series.

fig 4.17. Image by author. *Chrome Section*. Part III of 'Materialising the Intangibles' series.

fig 4.18. Image by author. Frame Space. Part IV of 'Materialising the Intangibles' series.

fig 4.19. Image by author. Internal Space. Part V of 'Materialising the Intangibles' series.

fig 4.20. Image by author. *Structure to Skin*. Part VI of 'Materialising the Intangibles' series.

fig 4.21. Image by author. *Hanging Space*. Part VII of 'Materialising the Intangibles' series.

fig. 5.01. Image by author. Site analysis. 3DS Max & Adobe Illustrator.

fig. 5.02. Image by author. T.B Hospital. Ink pen on paper.

fig. 5.03. Image by author. Site, T.B Hospital. Ink pen on paper.

fig. 5.04. Image by author. Doorway, T.B Hospital. Ink pen on paper.

fig. 5.05. Image by author. T.B Hospital Buildings. Ink pen on paper.

fig. 5.06. Image by author. Stairway, T.B Hospital. Ink pen on paper.

fig. 5.07. Image by author. Toppled Drawers. Ink pen on paper.

fig. 5.08. Image by author. Main Entrance. Ink pen on paper.

fig. 5.09. Google Maps. (2012). National Site Context. Image altered by author. Retrieved from: https://www.google.com/maps/@-38.7957941,176.2410437,8z

fig. 5.10. Google Maps. (2012). Regional Site Context. Image altered by author. Retrieved from: https://www.google.com/maps/@-39.6711469,176.895331,14z

fig. 5.11. Image by author. Untitled. Ink pen on paper.

fig. 5.12. Image by author. Concept Sketch. Ink pen on paper.

fig. 5.13. Image by author. Concept Sketch. Ink pen on paper.

fig. 5.14. Image by author. Concept Sketch. Ink pen on paper.

fig. 5.15. Image by author. Concept Sketch. Ink pen on paper.

fig. 5.16. Image by author. Concept Sketch. Ink pen on paper.

fig. 5.17. Image by author. Main Roads and Access. Adobe Illustrator.

fig. 5.18. Image by author. Site Map. Adobe Illustrator.

fig. 5.19. Image by author. Open Space. Adobe Illustrator.

fig. 5.20. Image by author. Shadow Study. Adobe Illustrator.

fig. 5.21. Image and photography by author. Site Section and Perspectives.

fig. 5.22. Image and photography by author. Site Panorama.

fig. 6.01. Image by author. Programme driving form. Adobe Photoshop & Illustrator.

fig. 6.02. Image by author. Concept Sketch. Ink pen on paper.

fig. 6.03. Image by author. Entrance Perspective Sketch. Ink pen on paper.

fig. 6.04. Image by author. Louis Kahn Typology. Ink pen on paper.

fig. 6.05. Image by author. Programme Concept Sketch. Ink pen on paper.

fig. 6.06. Image by author. Programme Concept Sketch Two. Ink pen on paper.

fig. 6.07. Image by author. *Intangibles Section*. Exploring incorporating the *intangibles* within therapy design. Ink pen on paper.

fig. 6.08. Image by author. Atmospheric Garden. Ink pen on paper.

fig. 6.09. Image by author. *Intervention of the Intangibles*. Exploring incorporating the *intangibles* within therapy design. Ink pen on paper.

fig. 6.10. Image by author. Bedroom Concept. Ink pen on paper.

fig. 6.11. Image by author. Interior Kitchen Perspective. Ink pen on paper.

fig. 6.12. Wellington City Archives. (c.1970's). 166 -180, Vivian street. Te Aro, Wellington.

fig. 6.13. Image by author. Site History. Ink pen on paper.

fig. 6.14. Image by author. Library Concept. Ink pen on paper.

fig. 6.15. Image by author. Untitled. Ink pen on paper.

fig. 6.16. Image by author. Typology map. Adobe Illustrator.

fig. 6.17. Image by author. Space Allocation. Adobe Illustrator.

fig. 6.18. Image by author. Programme Driving Form. Adobe Illustrator.

fig. 6.19. brulletdeluna. n.d. *Exterior View of Salt Psychiatric Hospital*. Architects: Manuel Brullet Tenas, Alfonso de Luna (Brullet i Associats, Albert Pineda), Girona, Spain, 2003.

Retrieved from: http://www.brulletdeluna.com/01_projectes_concursos/01_projectes/01_equipaments_sanitaris/05_transforms_mentals_severs/12.jpg

fig. 6.20. brulletdeluna. n.d. *Floor Plan Salt Psychiatric Hospital*. Architects: Manuel Brullet Tenas, Alfonso de Luna (Brullet i Associats, Albert Pineda), Girona, Spain, 2003.

Retrieved from: http://www.brulletdeluna.com/01_projectes_concursos/01_projectes/01_equipaments_sanitaris/05_transforms_mentals_severs/12.jpg

fig. 6.21. Image by author. *Plan detail*. Drawing investigating layout and detail of plan, Salt Psychiatric Hospital. Ink pen on paper.

fig. 6.22. Meuser, P. (2006). *External View*. Krakenhaus Hedwigshohe Psychiatric Facility. Huber-Staudt architekten. Berlin, Germany, 2002. *New Hospital Buildings in Germany, Volume 2: Specialist Clinics and Medical Departments*. Berlin DOM publishers. p.206.

fig. 6.23. Meuser, P. (2006). Bedroom. Krakenhaus Hedwigshohe Psychiatric Facility. Huber-Staudt architekten. Berlin, Germany, 2002. New Hospital Buildings in Germany, Volume 2: Specialist Clinics and Medical Departments. Berlin DOM publishers. p.207.

fig. 6.24. Meuser, P. (2006). Floor Plan. Krakenhaus Hedwigshohe Psychiatric Facility. Huber-Staudt architekten. Berlin, Germany, 2002. New Hospital Buildings in Germany, Volume 2: Specialist Clinics and Medical Departments. Berlin DOM publishers. p.210.

fig. 6.25. Meuser, P. (2006). *Balcony Perspective*. Krakenhaus Hedwigshohe Psychiatric Facility. Huber-Staudt architekten. Berlin, Germany, 2002. *New Hospital Buildings in Germany, Volume 2: Specialist Clinics and Medical Departments*. Berlin DOM publishers. p.208.

fig. 6.26. Meuser, P. (2006). *External View*. Krakenhaus Hedwigshohe Psychiatric Facility. Huber-Staudt architekten. Berlin, Germany, 2002. *New Hospital Buildings in Germany, Volume 2: Specialist Clinics and Medical Departments*. Berlin DOM publishers. p.208.

- fig. 6.27. Image by author. Detail plan of Krakenahaus. Ink pen on paper.
- fig. 7.01. Image by author. Exterior Iteration Two. Revit & Adobe Photoshop.
- fig. 7.02. Image by author. Initial Ground Floor Plan. Pencil on drafting film.
- fig. 7.03. Image by author. Initial Level Three Floor Plan. Pencil on drafting film.
- fig. 7.04. Image by author. Initial Level Four Floor Plan. Pencil on drafting film.
- fig. 7.05. Image by author. Ground Floor Plan. Revit.
- fig. 7.06. Image by author. Level One Floor Plan. Revit.
- fig. 7.07. Image by author. Level Four Floor Plan. Revit.
- fig. 7.08. Image by author. Transverse Section. Revit.
- fig. 7.09. Image by author. Fountain Perspective. Revit.
- fig. 7.10. Image by author. Garden Perspective. Revit.
- fig. 7.11. Image by author. Exterior Park Perspective. Revit.
- fig. 7.12. Image by author. Pathway Perspective. Revit & Adobe Photoshop.
- fig. 7.13. Image by author. Exterior Building Perspective. Revit & Adobe Photoshop.
- fig. 7.14. Image by author. Vivian St Approach. Revit & Adobe Photoshop.
- fig. 7.15. Image by author. Detail Iteration Two. Revit.
- fig. 7.16. Image by author. Untitled Sketch. Ink pen on paper.
- fig. 7.17. Image by author. Untitled Sketch. Ink pen on paper.
- fig. 8.01. Image by author. Tension Pavilion. Ink pen on paper.

- fig. 8.02. Image by author. Pavilion Section Sketch. Ink pen on paper.
- fig. 8.03. Image by author. Untitled. Ink pen on paper.
- fig. 8.04. Image by author. Design Section Sketch. Ink pen on paper.
- fig. 8.05. Image by author. Site Sketch. Ink pen on paper.
- fig. 8.06. Image by author. Untitled. Ink pen on paper.
- fig. 8.07. Image by author. Plan & Section Sketch. Ink pen on paper.
- fig. 8.08. Image by author. Journey Section. Ink pen on paper.
- fig. 8.09. Image by author. Therapy Journey. Ink pen on paper.
- fig. 8.10. Image by author. Intangible Therapy. Ink pen on paper.
- fig. 8.11. Image by author. Site Plan. Revit.
- fig. 8.12. Image by author. Transcendence. 3DS Max & Adobe Photoshop.
- fig. 8.13. Image by author. Site Section. Revit.
- fig. 8.14. Image by author. Wire frame Pavilion. 3DS Max & Adobe Photoshop.
- fig. 8.15. Image by author. Transcendence. 3DS Max & Adobe Photoshop.
- fig. 8.16. Image by author. CBT + Intangible Matrix. Adobe Illustrator.
- fig. 8.17. Image by author. Intangible Data Site Map. Adobe Illustrator.
- fig. 8.18. Image by author. Intangible Data Results. Adobe Illustrator.
- fig. 8.19. Image by author. Intangible Data Results. Adobe Illustrator.
- fig. 8.20. Image by author. Intangible Data Graphs. Microsoft Excel.

- fig. 8.21. Image by author. CO2 Parabolic Graph. Ink pen on paper.
- fig. 8.22. Image by author. CO2 Bar Graph. Ink pen on paper.
- fig. 8.23. Image by author. CO2 Graph Sketch. Pencil on graph paper.
- fig. 8.24. Image by author. Humidity Graph Sketch. Pencil on graph paper.
- fig. 8.25. Image by author. Step One. 3DS Max.
- fig. 8.26. Image by author. Step Two. 3DS Max.
- fig. 8.27. Image by author. Step Three. 3DS Max.
- fig. 8.28. Image by author. Step Four. 3DS Max.
- fig. 8.29. Image by author. Step Five. 3DS Max.
- fig. 8.30. Image by author. Step Six. 3DS Max.
- fig. 8.31. Image by author. Step Seven. 3DS Max.
- fig. 8.32. Image by author. Step Eight. 3DS Max.
- fig. 8.33. Image by author. Humidity Sketch. Ink pen on paper.
- fig. 8.34. Image by author. *Untitled*. Development of site and programme through sketches figs. 8.34 8.38. Ink pen on tracing paper.
- fig. 8.35. Image by author. Untitled. Ink pen on tracing paper.
- fig. 8.36. Image by author. Untitled. Ink pen on tracing paper.
- fig. 8.37. Image by author. Untitled. Ink pen on tracing paper.
- fig. 8.38. Image by author. Untitled. Ink pen on tracing paper.

- fig. 8.39. Image by author. Exterior Sketch. Ink pen on paper.
- fig. 8.40. Image by author. Central Space Sketch. Ink pen on paper.
- fig. 8.41. Image by author. Humidity One. 3DS Max.
- fig. 8.42. Image by author. Humidity Two. 3DS Max.
- fig. 8.43. Image by author. Humidity Interior. 3DS Max.
- fig. 8.44. Image by author. Intangible Perspective. 3DS Max.
- fig. 8.45. Image by author. Untitled. Ink pen on paper.
- fig. 8.46. Image by author. Untitled. Ink pen on paper.
- fig. 8.47. Image by author. Untitled. Ink pen on paper.
- fig. 8.48. Image by author. Therapy One & Two. Ink pen on paper.
- fig. 8.49. Image by author. Therapy & Accommodation. Ink pen on paper.
- fig. 8.50. Image by author. Front Perspective. Ink pen on paper.
- fig. 8.51. Image by author. Untitled. Ink pen on paper.
- fig. 8.52. Image by author. Untitled. Ink pen on paper.
- fig. 8.53. Image by author. Internal Therapy Materials. Ink pen on paper.
- fig. 8.54. Image by author. Therapy One Internal. 3DS Max & Adobe Photoshop.

fig. 8.55. Image by author. Intangible Perspective in Context. 3DS Max & Adobe Photoshop.

fig. 8.56. Image by author. Intangible External Perspective. 3DS Max & Adobe Photoshop. fig. 8.57. Image by author. CO2 Data Form. Ink pen on paper.

fig. 8.58. Image by author. CO2 Intangible Pavilion Perspective. 3DS Max & Adobe Photoshop.

fig. 8.59. Image by author. CO2 Intangible Perspective. 3DS Max.

fig. 8.60. Image by author. Intangible Therapy Perspective. 3DS Max.

fig. 8.61. Image by author. Front Intangible Perspective. 3DS Max.

fig. 8.62. Image by author. Therapy Two Intangible Perspective. 3DS Max.

fig. 8.63. Image by author. Therapy Space Plan. Ink pen on paper.

fig. 8.64. Image by author. Therapy Space Section. Ink pen on paper.

fig. 8.65. Image by author. Therapy & Dwelling Plan. Ink pen on paper.

fig. 8.66. Image by author. Therapy Two Internal View. Ink pen on paper.

fig. 8.67. Image by author. Internal Courtyard View. 3DS Max.

fig. 8.68. Image by author. Therapy & Dwelling Plan Layer. 3DS Max.

fig. 8.69. Image by author. Rear View. 3DS Max.

fig. 8.70. Image by author. Side View. 3DS Max.

fig. 8.71. Image by author. Front Perspective. 3DS Max.

fig. 8.72. Image by author. Front Entry Sketch. Ink pen on paper.

fig. 8.73. Image by author. Layers Sketch. Ink pen on paper.

fig. 8.74. Image by author. Circulation Sketch. Ink pen on paper.

fig. 8.75. Image by author. Construction Detail Sketch. Ink pen on paper.

fig. 8.76. Image by author. Dining Floor Plan. Ink pen on paper.

fig. 8.77. Image by author. Underground Accommodation Plan. Ink pen on paper.

fig. 9.01. Image by author. Vivian St Approach. 3DS Max & Adobe Photoshop.

fig. 9.02. Image by author. Axonometric Layer Diagram. 3DS Max & Adobe Illustrator.

fig. 9.03. Image by author. Axonometric Pathway Diagram. 3DS Max & Adobe Illustrator.

fig. 9.04. Image by author. Ground Floor Plan. Revit, 3DS Max & Adobe Illustrator.

fig. 9.05. Image by author. Level One Floor Plan. Revit, 3DS Max & Adobe Illustrator.

fig. 9.06. Image by author. Level Two Floor Plan. Revit, 3DS Max & Adobe Illustrator

fig. 9.07. Edwards, L. (2010). *Dini 3-D Printer*. Retrieved from: http://phys.org/news190873132.html

fig. 9.08. Edwards, L. (2010). *Dini 3-D Printer*. Retrieved from: http://phys.org/news190873132.html

fig. 9.09. Image by author. *Construction Process*. 3DS Max & Adobe Photoshop & Illustrator.

fig. 9.10. Image by author. Transverse Section. 3DS Max & Adobe Photoshop.

fig. 9.11. Image by author. Underground Dwelling Transverse Section. 3DS Max & Adobe Photoshop.

fig. 9.12. Image by author. Pavilion & Dining Longitudinal Section. 3DS Max & Adobe Photoshop. fig. 9.13. Image by author. Transverse Section Detail. 3DS Max & Adobe Photoshop.

fig. 9.14. Image by author. Therapy One: Assessment. 3DS Max & Adobe Photoshop.

fig. 9.15. Image by author. Therapy Two: Reconceptualisation. 3DS Max & Adobe Photoshop.

fig. 9.16. Image by author. Therapy Two: Reconceptualisation, Negative Perception. 3DS Max & Adobe Photoshop.

fig. 9.17. Image by author. Therapy Four & Five: Skills Consolidation, Application Training and Generalisation & Maintenance. 3DS Max & Adobe Photoshop.

fig. 9.18. Image by author. Patient Therapy Perspective. 3DS Max & Adobe Photoshop.

fig. 9.19. Image by author. *Dining Entrance Perspective*. 3DS Max & Adobe Photoshop.

fig. 9.20. Image by author. Internal Dining Perspective. 3DS Max & Adobe Photoshop.

fig. 9.21. Image by author. Internal Courtyard Perspective. 3DS Max & Adobe Photoshop.

fig. 9.22. Image by author. Internal Library Perspective. 3DS Max & Adobe Photoshop.

fig. 9.23. Image by author. Internal Pavilion Dwelling Perspective. 3DS Max & Adobe Photoshop.

CHAPTER X

Bibliography

Text References

American Psychiatric Association. (2000). *Diagnostic and Statistical Manual of Men*tal Disorders, Fourth Edition: DSM IV. Washington D.C: American Psychiatric Association.

Beautrais, A. (2004). Suicide Postvention: Support for Families, Whanau and Significant others after a suicide. Christchurch School of Medicine & Health Services. Christchurch : Christchurch School of Medicine & Health Services.

Beck, A. (1996). Beck Depression Inventory: Manual. Psychological corporation.

Bond, A. (2012). Francis Bacon Five Decades. Sydney: Art Gallery of New South Wales.

Brebner, J. (1982). Environmental psychology in building design. Essex: Applied Science.

Brownell, Blain. (2011). Matter in the Floating World: A conversation with leading Japanese architects and designers. New York: Princeton Architectural Press.

Cecil, H., & Partridge, E. (1968). Webster Universal Dictionary - Unabridged International Addition. Leeds: Routledge & Kegan Paul LTD.

Cook, P. (2012). Asylum of the Sensate. Wellington : VUW.

Editors at Phiadon Press. (2009). 10 X 10 3: Volume 3 of 10x10. 100 architects 10 Critics. London; New York: Phiadon Press.

Finger, S. (2001). Origins of Neuroscience: A History of Explorations into Brain Function. Oxford: Oxford University Press.

Foucault, M. (1964). Madness and Civilization: A History of Insanity in the Age of Reason. New York: Random House.

Fox, E. (2008). Emotion Science: Cognitive and neuro-scientific approaches to understanding human emotions. London: Palgrave Macmillan.
Frame, J. (2008). An Angel at my Table. Melbourne: Random House.

Geuze, S. (2010). The place of psychiatric rehabilitation in New Zealand communities. Wellington: VUW.

Greenberg, S. (2002). *Emotion Focused Therapy*. Washington : American Psychological Association.

Gregg, M., & Seigworth, G. (2010). The Affect Theory Reader. Duke, USA: Duke University Press.

Hasset, A., & Gervirtz, R. (2009). Non-pharmacologic treatment for fibromyalgia: patient education, cognitive-behavioural therapy, relaxation techniques, and complementary and alternative medicine. Rheum Dis Clin North Am. May 2009; 35(2): 393-407.

Hedlung, V. (1979). The Hamilton Scale for Rating Depression. Journal of operational psychiatry.

Hofmann, S. (2011). An Introduction to Modern CBT: Psychological solutions to mental health problems. Oxford: Wiley - Blackwell.

Holm, L. (2010). Brunelleschi, Lacan, Le Corbusier: Architecture, space and the construction of subjectivity. New York: Routledge.

Kuller, R. (1976). Architectural Psychology: Proceedings of the Lund Conference. Sweden: Studentlitter ab.

Jacobson, N., Martell, C., Dimidijan, S. (2001). Depression in context: Strategies for guided action. New York: W.W Norton.

Knight, K., Ruddock, D. (2008). Advanced Research Methods in the Built Environment. Singapore: Wiley-Blackwell.

Kuyden, W., Padesky, C., Dudley, R. (2009). Collaborative case conceptualization: working effectively with clients in cognitive-behavioural therapy. New York: Guilford Press. Lewinsohn, P. (1975). The behavioural study and treatment of depression (Vol. 1). New York: Academic.

Levy-Leboyer, C. (1982). Psychology and Environment. Los Angeles: Sage.

Liddicoat, S. (2010). Architecture as Therapy Bloodletting: Beauty Spills forth from the Wound. Wellington: Victoria University.

Meuser, P., Schirmer, C. (2006). New Hospital Buildings in Germany, Volume 2: Specialist Clinics and Medical Departments. Berlin: DOM publishers.

Miller, R., Earl, S., Todd Robertson, J. (2012). Hospital and Health care Facility Design, Third Edition. New York: W.W Norton and Company.

Ministry of Health. (2002). Criteria for the Design and Refurbishment of Psychiatric Acute and Intensive Care Facilities. Wellington: Ministry of Health.

Rahm, P. (2009). Meteorological architecture. AD - Architectural Design, 79 (03), 30-41.

Springer, A., Rubin, D., Beevers, C. (2011). Treatment of Depression in Adolescents and Adults. Hoboken, New Jersey: John Wiley & sons.

Ziff, K. (2012). Asylum on the Hill: History of healing a landscape. Ohio, USA: Ohio University Press.

Electronic references

Archives, New Zealand. (2005). http://archives.govt.nz.

Retrieved 05 01, 2012, from: http://archives.govt.nz/gallery/v/Online%20Regional%20 Exhibitions/Archives%20New%20Zealand%20Dunedin%20Regional%20Office%20Gallery/ Being%20at%20Seacliff%20Lunatic%20Asylum/Administration

Arquitectes, Brullett-De Luna. (2003). Brullett-De Luna Arquitectes - Psychiatric hospital in Salt.

Retrieved July 25, 2012, from: http://www.brulletdeluna.com/index.php/projects/healthcare-buildings/212-psychiatric-hospital-in-salt.html

Bartle, R. (2005, February 05). Give Me The Impossible – the story of Truby King and the Plunket Movement.

Retrieved May 10, 2012, from Puke Ariki: http://www.pukeariki.com/Learning-Research/ Taranaki-Research-Centre/Taranaki-Stories/Taranaki-Story/id/614/title/give-me-the-impossible-the-story-of-truby-king-and-the-plunket-movement

Google. (2012). Google Maps. Retrieved June 15, 2012, from Google Maps://www.google.com/maps/@-38.7957941,176.2410437,8z

McKinnon, M. (2012, 01 01). Otago places - North of Dunedin', Te Ara - the Encyclopedia of New Zealand. Retrieved 05 25, 2012, from Te Ara - the Encyclopedia of New Zealand: http://www. TeAra.govt.nz/en/photograph/22751/seacliff-lunatic-asylum

MOH. (2002). Ministry of Health. Retrieved October 11, 2011, from: www.moh.govt.nz/moh.nsf/0/.../\$File/suicideratesinnewzealand.doc

MOH. (2011, December 08). Ministry of Health Mental Health Data and Stats. Retrieved March 05, 2012, from: http://www.health.govt.nz/nz-health-statistics/healthstatistics-and-data-sets/mental-health-data-and-stats

Moore, K. (n.d). Howard Dully – Declining Years Retrieved June 06, 2012, from: The American Lobotomy UMW Blog by Kasey Moore : http://lobotomy.umwblogs.org/howard-dully/