



“Using a **therapeutic architecture** to re-conceptualize the design of **mental health care facilities**, for the **youth**, within the city of Durban.”

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ABSTRACT

The mental health care phenomenon in South Africa, with particular reference to children and adolescents in underprivileged communities, lacks priority, insight, facilities and resources. Children and adolescents experience physical, emotional and societal changes and challenges which can make them highly susceptible for the development of a mental illnesses. If not addressed at an early age, these matters can persist into adulthood and result in a variety of negative coping-mechanisms which can in turn create a very undesirable urban environment, evident within the Durban Central business district area (CBD), South Africa.

In response to the most predominant issue at hand, the following research sets out to explore a de-institutionalised approach, as an alternative response to the architectural design of existing mental health facilities for children and adolescents, especially for those that cannot afford or gain access to proper mental health treatment, within the Durban CBD precinct. To discover how it can be improved through the development of a mixed-use housing facility that would engage with its surrounding community, as opposed to an isolated institutionalized facility.

The primary objective being to demonstrate that a healing and therapeutic environment can be achieved within an urban setting and that by promoting healing within one's familiar surroundings may prevent the possibility of relapsing.

Thus, the following research, qualitative in nature, will be used to retrieve open-ended information in attempt to assemble both primary and secondary data supported by the overlapping principles of a therapeutic architecture and age-sensitive healing design in aims to create a healing induced environment within one of Durban's most unhealthy urban settings, to achieve a better long-term approach to mental health recovery.

DECLARATION

This dissertation is submitted for the degree of Masters in Architecture in the Faculty of Humanities,
Development and Social Science, University of KwaZulu-Natal, Durban, South Africa.

All information extracted throughout the research has been cited, referenced and acknowledged.

I declare that this dissertation, titled: “Using a therapeutic architecture to re-conceptualize the
design of mental health care facilities, for the youth, within the city of Durban”

is a product of my own work and has been written exclusively by me, Sapna Mahabir,
under the supervision of Lawrence B. Ogunsanya.

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Sapna Mahabir

21st November 2019

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I am forever grateful.

DEDICATION

This dissertation is dedicated to all those who are, have and/or know someone that suffers with some form of mental or mood disorder. To all those whom cannot afford or gain access to proper mental health treatment and haven't been given their rightful opportunity to heal. To all those who are socially ostracised because of their mental illness.

This topic should not be taken lightly, and awareness should be raised. Mental health should have the same priority that physical health does.

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PART ONE | DISSERTATION RESEARCH

CHAPTER ONE | RESEARCH BACKGROUND AND METHODOLOGY

1.1 INTRODUCTION

“Those who suffer from mental illness are stronger than you think. We must fight to go work, care for our families, be there for our friends, and act ‘normal’ while battling unimaginable pain.”

– Anonymous

The above statement justifies just how much society does not fully comprehend the effects of mental illness. Many demean it through the belief that its just a state of mind that one can simply 'get over'. However, this is not the case. Mental health should have the same priority that physical health does. Especially evident in developing countries, the topic of mental health lacks priority, insight, facilities and resources. With the world changing, there are more societal pressures and therefore a higher susceptibility for mental health to deteriorate due to stress and anxiety, especially among children and adolescents. Hence, it is important to break the stigma that surrounds mental illnesses and raise awareness on the gravity and seriousness of mental health among the youth - thus justifying the need to discover an alternative response to the architectural design of mental health care facilities and how it can be improved through the development of a community-based housing facility that encompasses the principles of a therapeutic architecture, within an urban setting, as a better long term approach to mental health care.

1.1.1 Background

According to the World Health Organization (WHO 2010), an estimated 450 million people worldwide live with some form of mental disability. In South Africa, more than 17 million people suffer with some form of mood disorder and according to clinical child and adolescent psychiatrist, Paruk et.al (2016), approximately 20% are children and adolescents. Statistics are high among the youth whose ages range from 10 to 18, thus being the most significant developmental stages of a human. Children and adolescents experience physical, emotional and societal changes and challenges which make them highly susceptible and predisposed to the development of a mental illness. If these issues are not addressed at an early age, these matters could persist into adulthood interfering with the overall mental development of the individual, which could compromise their educational goals and the potential to live a productive life (WHO 2010). According to the South African depression and anxiety group (SADAG, 2018), statistics are high for mental disorders among young individuals, especially evident in the underprivileged communities. This is due to stigmatization and inaccessibility to treatment, which results in a variety of negative 'coping-mechanisms' such as; resorting to crime, substance abuse and homelessness that in turn creates a very undesirable and unhealthy urban setting. Based on observation and news reports (eNCA

2018), it is also found that there is also a huge lack of public psychiatric facilities in South Africa, and the facilities that do exist are poorly designed and only provide a small percentage of their spaces for the youth or none at all. According to Professor M. Farkas (2016) at Boston university, United States of America (USA), society worldwide has tried to find a 'de-institutionalized' solution towards this phenomenon, through the development of community-based housing programs for underprivileged individuals who suffer from a mental illness. His research illustrates that the outcome of the housing programs, integrated with the surrounding community, has proven to be successful and also has a variety of long term mental health recovery benefits. Notwithstanding the above, there continues to be a huge lack and dire need for such facilities to focus predominantly on the most vulnerable population, namely the youth.

1.1.2 Motivation

The motivation for this study is based on the gross apparent lack of priority, insight and facilities that focus purely on child and adolescent mental health care, especially for those that cannot afford or gain access to proper mental health treatment. Unmanaged mental health results in a variety of long-term negative coping-mechanisms which in turn can create a very undesirable urban environment. Hence it is vital to investigate an alternative response to the architectural design of mental health care facilities for children and adolescents and how it can be improved through the development of a mixed-use housing facility that would engage with its surrounding community, as opposed to an isolated institutionalized facility. The primary objective being to demonstrate that a healing and therapeutic environment can be achieved within an urban setting and is a better long-term approach to mental health care.

1.2 DEFINITION OF THE PROBLEM, AIMS AND OBJECTIVES

The study is based within the Durban central business district (CBD) area, KwaZulu-Natal, South Africa.

1.2.1 Definition of the problem

The most predominant issue at hand is the lack of mental health care treatment for the underprivileged youth population in the Durban CBD area. In Durban, the existing private psychiatric facilities are unaffordable to majority of the population. The existing public psychiatric facilities lack sufficient maintenance, are poorly designed, isolating and only provide a small section of their spaces for the youth, (eNCA news reports, 2018). According to the South African national youth risk behaviour surveys and studies (2018), mental health statistics are high in the youth population as they experience intense physical, social and emotional developments which make them highly susceptible for the development of mental illnesses. If untreated, this results in “a number of key risk behaviours” that could persist and worsen in adulthood with the consequence of unemployment and homelessness, which is highly evident within the Durban CBD.

1.2.2 Aims

The primary aim of the research is to explore a de-institutionalised approach as an alternative response to the current architectural design of existing mental health facilities in Durban, South Africa, for children and adolescents. To discover how it can be improved through a community-based housing facility that encompasses principles of a therapeutic architecture, to create a healing induced environment within one of Durban's most unhealthy urban settings, with the ultimate objective to achieve a better long-term approach to mental health recovery.

1.2.3 Objectives

The primary objective of this study is to analyse the architectural factors behind the existing public and private psychiatric facilities in Durban and how the current design make the users feel within the space. To then determine how much of these spaces cater for children and adolescents and the repercussions of those that are living untreated. Thereafter, to explore the success of community-based housing mental healthcare developments as potential models to find out what principles or themes inform a healing induced environment, when designing for such a sensitive age group, within Durban's harsh urban setting. Subsequently, to explore the realm of a therapeutic architecture and the potential effect that it may have on the healing process of the individuals, in order to achieve a long-term approach to mental health recovery. As well as exploring architectural initiatives that attempt to raise awareness and remove the stigma attached to mental health through creating a building that does not appear to be a mental institute, but rather one that fits in with its surroundings and serves the community.

1.3 SETTING OUT THE SCOPE

1.3.1 Delimitation of the research problem

A study done in October 2018, by the Department of Psychiatry and Mental Health at the University of Cape Town, South Africa, suggests that low-income and informal settlements have a high percentage of untreated mentally challenged patients due to the lack of priority, awareness and access to treatment. SADAG (2018) states that "less than 16% of sufferers receive treatment for mental illnesses". The sad reality is that there is a lack of public health care facilities in South Africa, and the ones that do exist are poorly designed and only provide a small proportion of their spaces for children and adolescents. The architecture of the current psychiatric facilities are highly institutionalized, making the recovery process difficult within a hospital-like atmosphere as opposed to a healing induced environment that enhances the well-being of the patient. Therefore, the primary intention of the research is to investigate an alternative response to the architectural design of mental health care facilities and how it can be improved through the development of a community-based housing facility for the youth, located within an urban setting. The study will be limited within the constraints of Durban, South Africa. The intention is not to solely use architecture as the ultimate

response to heal those with mental illness, but also explore how design can influence or manipulate human emotion with a positive outcome to that can promote or assist in the healing process. The intention is also not to redesign existing psychiatric facilities, but to rather provide an alternative solution to the issue of mental health recovery for the youth population. Essentially exploring mental health recovery through an approach that is not institutionalized and does not isolate individuals from the urban setting or environment in which they are familiar with. To promote healing within an architecture that is therapeutic in its design, within familiar surroundings, whilst also learning coping-mechanisms and basic life skills to prevent the possibility of relapsing.

1.3.2 Definition of terms

- **Youth:** (*noun*) Ages ranging from 10-18, the period between childhood and adult age.
- **Mental health:** A state of well-being in which an individual can cope with the stresses of life, work productively, is able to make a contribution to the economy and does not do any harm to themselves or others.
- **Mental illness/ Mood disorder:** A range of mental health conditions that affect ones mood, thinking and behavior such as; depression, anxiety, schizophrenia, eating disorders.
- **Psychiatric facility:** (also known as mental hospitals/ mental health units/ asylums) Hospitals or wards that specialize in helping those with mental illnesses/ mood disorders.
- **De-institutionalized:** (*verb*) The shift from an institutionalized facility to a community-based facility.
- **Urban setting:** This refers to towns, cities and suburbs that are developed, meaning there is a density of people and structures. (commercial buildings, roads, bridges, and railways).
- **Therapeutic architecture:** A design approach that promotes the connection between the users of the space and natural elements by incorporating spatial elements that interacts with its users physiologically and psychologically, with the intention to assist in the healing process.
- **Healing spaces:** A psychological approach to spatial design that has the potential to influence or manipulate human emotion with the desired outcome to achieve spaces that can assist in the healing process of the individual.

1.3.3 Stating the assumptions

In South Africa, there is a gap in the knowledge and success of community-based housing interventions for those that suffer with mental illnesses. Based on the lack of public health care and psychiatric facilities for children and adolescents, it can be assumed that mental health is not seen as a major priority among the youth in Durban, South Africa. Another assumption is that the existing facilities in KwaZulu-Natal do not consider therapeutic environments or holistic treatment methods when treating those who suffer from a mental illness, instead patients are confined within an

institution or hospital and treated with varying drugs, which does not fully address the core issue of the individual, thus resulting in the patient spending the rest of their lives in the hospital and are highly susceptible to a mental relapse and resorting to old habits once returned to familiar surroundings.

1.3.4 Hypothesis

It can be hypothesized that a therapeutic environment can be achieved within the harsh urban boundaries of the Durban inner city, and that by transitioning from institutionalized psychiatric facilities to de-institutionalized community-based housing facilities may be a better long term approach to mental health care. Therefore, by creating a space that serves the community as well as it's patients, it may not only prevent mental relapse by teaching patients coping-mechanisms within an environment they are familiar with, but also has the potential to promote social interaction between patients and the community, as well as raise awareness and remove the stigma attached to mental health disorders.

1.3.5 Key Questions

- **How** can the principles of therapeutic architecture inform the design of a mental health facility?
- **What** spatial qualities facilitate healing?
- **How** can architecture create a healing/therapeutic environment for the youth?
- **What** is community-based housing and how can it be used for mental health recovery?
- **How** can architecture/ spatial design create a therapeutic environment, within an urban setting?

1.4 CONCEPTUAL AND THEORETICAL FRAMEWORK

The theoretical and conceptual framework has been selected to coherently outline the key aspects in exploring an alternative response to the architectural design of mental health care facilities, for the youth, within the inner city of Durban. This section will be explored at a more in depth scale in Chapter two, with the intention to examine various perspectives on the theories of Biophilia and Phenomenology that underpin the key concept of a therapeutic architecture. Essentially to discover ways to achieve a therapeutic architecture, with the inclusion of an age-sensitive healing design concept for children and adolescents, within an urban context to strengthen and empower the individual and community.

1.5 RESEARCH METHODS AND MATERIALS

1.5.1 Introduction

The following research study will be qualitative in nature. This research approach will be used to retrieve open-ended information in attempt to assemble both primary and secondary information. The secondary research involves an extensive literature review of existing published and unpublished literature that possesses relevance to the topic of exploring a therapeutic architecture to re-conceptualize the design of mental health care facilities, for the youth, within the city of Durban. The primary research will involve drafting an objective and critical summary research data from first hand observations, interviews and case studies. The specific research method type will be the case study research design approach as it is best suited to the research problem based on the fact that it involves collecting, analysing and integrating research data, to ultimately provide a more complete and comprehensive understanding to find the best possible solution of the research problem at hand.

1.5.2 Research design

The design of the research will be in the form of a case study research design. This approach has the ability to provide a legitimate argument behind the result of the research by providing evidence of the issue to be studied, thus being the suited research design approach for the nature of the research problem. The research data will be primarily sourced from documentation, archival records, interviews, direct observations and participant observation. The case study method is appropriate to seek contextual understanding as well as past researcher and professional input. The advantage of this method of research is that it will provide detailed information on the best approach in re-conceptualizing the design of mental health care facilities for children and adolescents.

1.5.3 Primary Data Collection

The research instruments used to collect primary data will be done through first hand observations & investigations at existing psychiatric facilities;

- **Case studies:** Akeso Clinic, Umhlanga, Durban (Private psychiatric facility) and Town Hill Psychiatric Hospital, Pietermaritzburg (Public psychiatric ward).
- **Interviews:** Staff members, facility managers, medical professionals and interns.

1.5.4 Secondary Data Collection

Secondary research materials: Books, internet, reports, journals, articles, collection of information and statistical data that has been used in the past from studies done by other researchers that will contribute towards a resolution of the research problem.

This research will include the following;

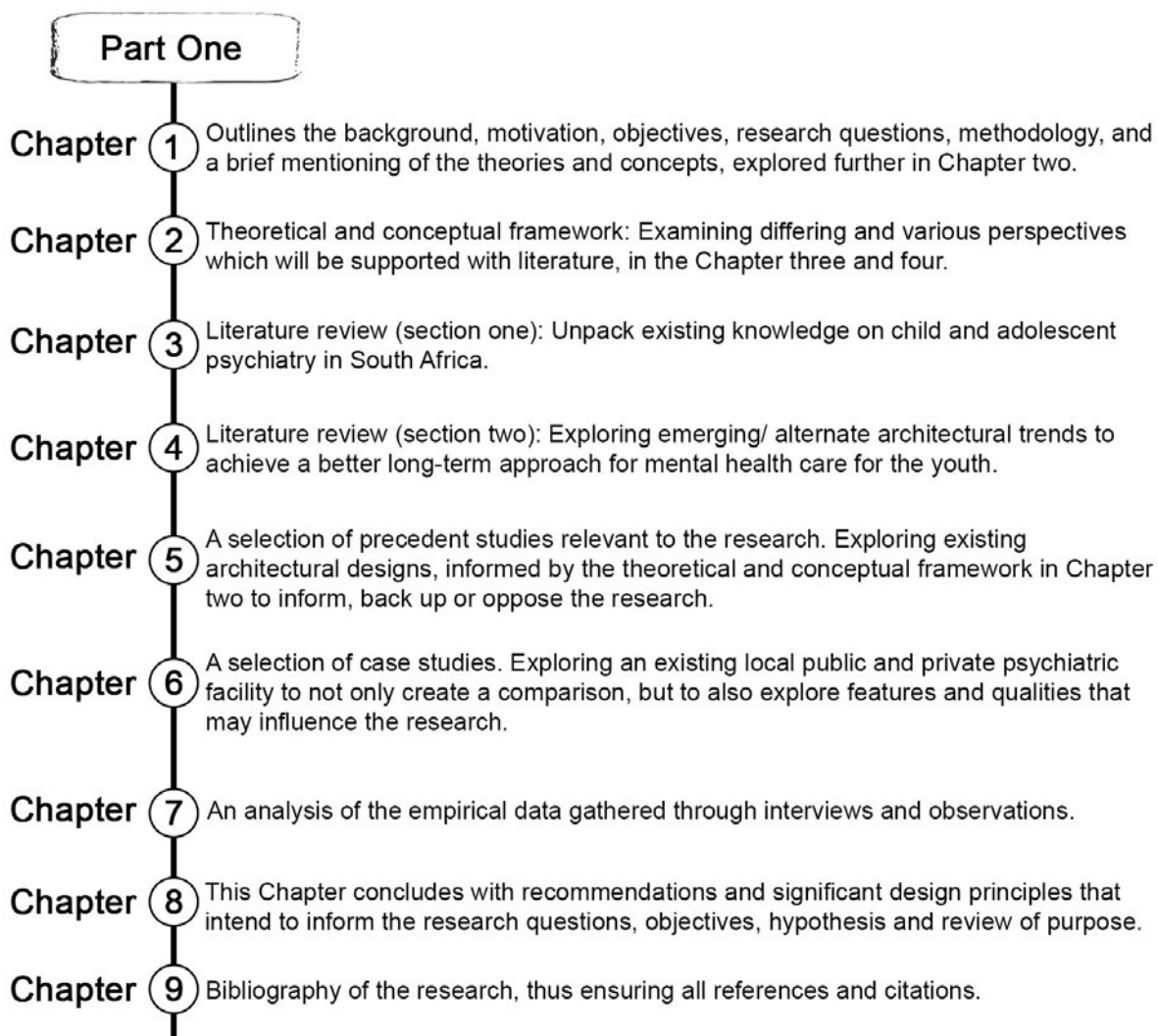
- **Literature review:** Analysing existing literature on concepts and theories in relation to the research topic, with the intention to investigate the best approach to the research problem.

- **Precedent Studies:** Investigating how other structures of a similar typology have been designed and used, within an international context. These will be analysed and will provide an understanding of how these spaces work.

1.6 CONCLUSION

Chapter one outlined a brief background around the issue of the mental health care phenomenon in Durban, South Africa, with particular reference to children and adolescents in underprivileged communities. Chapter one further instated the motivation towards investigating an alternate approach in the design of mental healthcare facilities, for the youth, through a community-based housing development within the city of Durban. It is for this reason that the research has considered a therapeutic architecture as the primary catalyst to prove that a healing induced environment can be created within a harsh urban setting and is a better long term approach to mental health care.

1.7 THESIS STRUCTURE



CHAPTER TWO | THEORETICAL & CONCEPTUAL FRAMEWORK

2.1 INTRODUCTION

The objective of the following chapter is to critically analyse perspectives on evidence based theories that examine the concept of a therapeutic architecture and age-sensitive healing design with the intention to re-conceptualize the design of child and adolescent mental health care facilities. The following theoretical and conceptual framework has been selected to coherently outline the application of distinct architectural and spatial planning considerations to inform the development of a community integrated, healing induced environment within a harsh urban setting, to achieve a better approach to mental health recovery for children and adolescents. The research will explore therapeutic architecture as the key concept, understood through The Theory of Biophilia and Phenomenology to ensure the link to architecture and the built environment. Subsequently, the concept of an age-sensitive healing design will be investigated through spatial design concepts and planning guidelines that link the psychological well-being of children and adolescents to the built environment. Thereafter, the research will facilitate design ideologies towards creating a healing induced environment within the inner city of Durban, to assist in mental health recovery for children and adolescents.

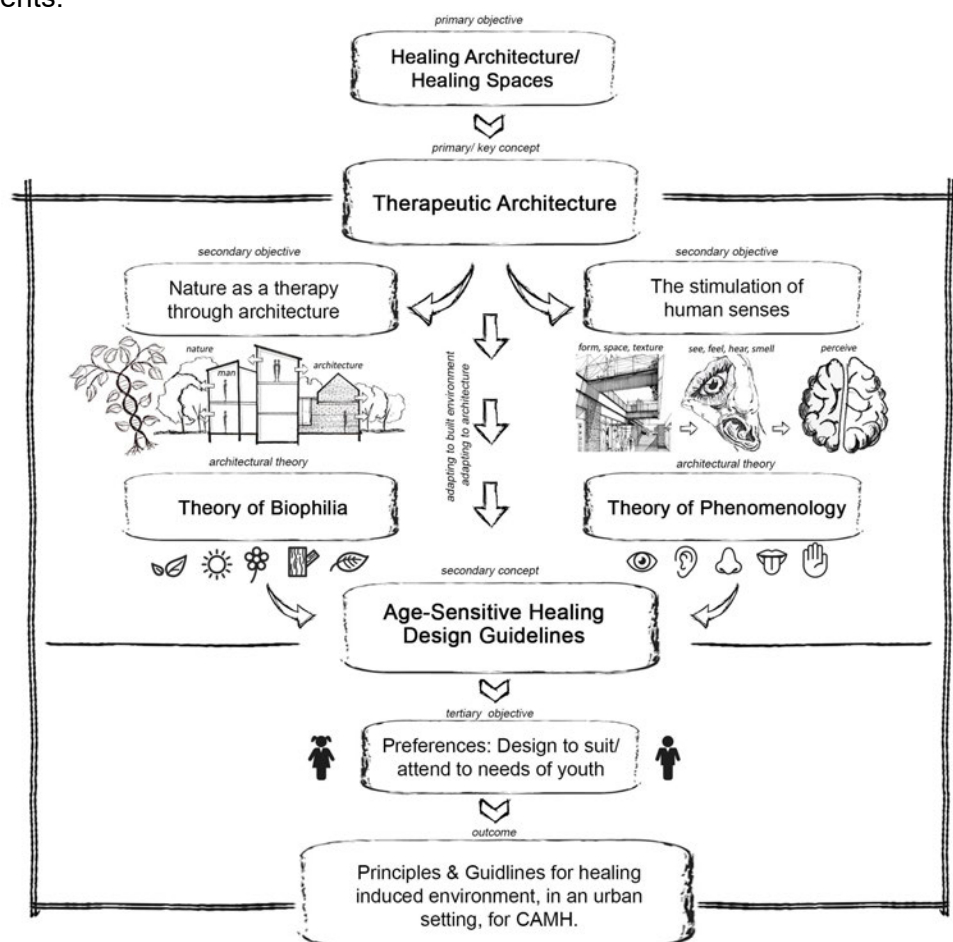


Figure 1: Diagram illustrating the unpacking of the theoretical and conceptual framework:

Towards using a therapeutic architecture to re-conceptualize the design of mental health care facilities, for the youth, within the city of Durban. 2019, By Author.

2.2 THERAPEUTIC ARCHITECTURE

In the late 19th century, the exploration of healing spaces was initiated by Dr. Thomas Kirkbride, who developed the philosophy that mentally ill patients are affected by their immediate environment. He believed that the design of asylums, with the inclusion of natural surroundings, had the potential to assist in the recovery process of the patient. Since then, the concept of healing spaces through a therapeutic architecture has been explored for centuries. Architect and medical planner, Dr. E. Chrysikou (2014) describes a therapeutic architecture as a “*people-centered, evidence-based discipline*” that intends “*to identify and support ways of incorporating into design those spatial elements that interact with people’s physiology and psychology.*” The primary aim of a therapeutic architecture is to relate to those that occupy the space, which has been proven to be highly beneficial during the recovery process to those who suffer with mental disorders. Morgenthaler (2015), argues that the reason why this concept should be adapted in the field of architecture, in the design of mental health facilities, is because the architecture itself does not claim to have the ability to heal people, but rather the “*architectural manipulation of structures and space can allow for other environmental factors such as sound, colour, views, smell and light all of which contribute to a therapeutic environment to be prominent for healing purpose.*”

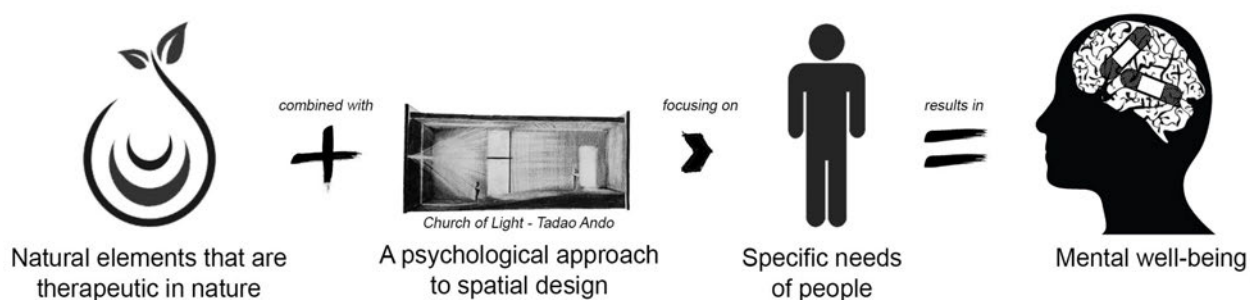


Figure 2: Diagram illustrating main principles of a therapeutic architecture and how it effects mental health and well-being. 2019, By Author.

The intention is to adapt the role of a therapeutic architecture through a community-based housing intervention for mentally ill children and adolescents, to essentially create an evidence based literature on the fact that a healing environment can be achieved within a harsh urban setting. In order to achieve this it is significant to explore the evidence based theoretical underpinning that makes up the concept of a therapeutic architecture such as;

2.2.1 The Theory of Biophilia: Nature as a therapy through architecture

In 1991, science experiments conducted by German Architect, Ulrich Franzen revealed that the 'power of the window' within a hospital setting assisted in the patients recovery because of the visual connection to the natural environment and exposure to natural daylight and ventilation. His concept of 'framing of views', allowing patients to visually engage with their natural surroundings, resulted in a moment of self-awareness and healing. Ulrich's research proved that nature, as a therapy through architecture, has the ability to assist in the healing process of the patients as

natural elements can induce healing and have a positive impact on stress levels as well as physical and emotional well-being. In 1993, Edward O. Wilson and Kellert, Stephen R. defined this as 'Biophilic architectural design.' The theory of Biophilia suggests that "humans, like any other species, have been shaped by the forces of evolution" which explains the instinctive connection between humans and nature and the desire to connect with the natural world, (Grinde et al. 2009).

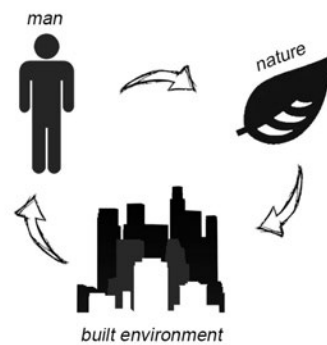


Figure 3: Diagram portraying the 3 primary elements of Biophilic design: The relationship between man, nature and the built environment. 2019, By Author.

Grinde et al. (2009) questioned the impact of the depletion of natural elements on the human mind and concluded that as the brain matures, the "maturation takes place in response to environmental stimuli", indicating that the potential reason for mental disorders is when the "environmental stimuli" is then missing. Grinde et al. (2009) suggests that based on our evolutionary being, stress has been a strategy to help cope with threatening situations which negatively impacts the well-being of the individual. Therefore, the theory of Biophilia suggests that nature or a therapeutic architecture has potential psychological benefits and the restoration of mental health. By "adding elements of nature to living spaces can presumably induce positively valued changes in cognition and emotion, which again may impact on stress level, health and well-being." Grinde et al. (2009). In more recent studies, Kellert, S. and Calabrese, E. (2015) explain that the theory of Biophilia has proven to have health, environmental and socio-economic benefits when adopted in the field of architecture through the following;

Direct experience of nature

The direct experience of nature is essentially tangible contact with natural features that include; natural vegetation, lighting, ventilation and other passive design strategies which has been proven to reduce stress and increase physical health, performance and productivity. Another significant aspect is the inclusion of natural landscapes which can be achieved through the development of self-sustaining eco-systems into the built environment. The element of water is also known to be very therapeutic as it creates a multi-sensory experience for the user through movement, sounds, touch and sight, essentially stimulating the human senses which has the power to eliminate stress, increase health and assist in the process of recovery.

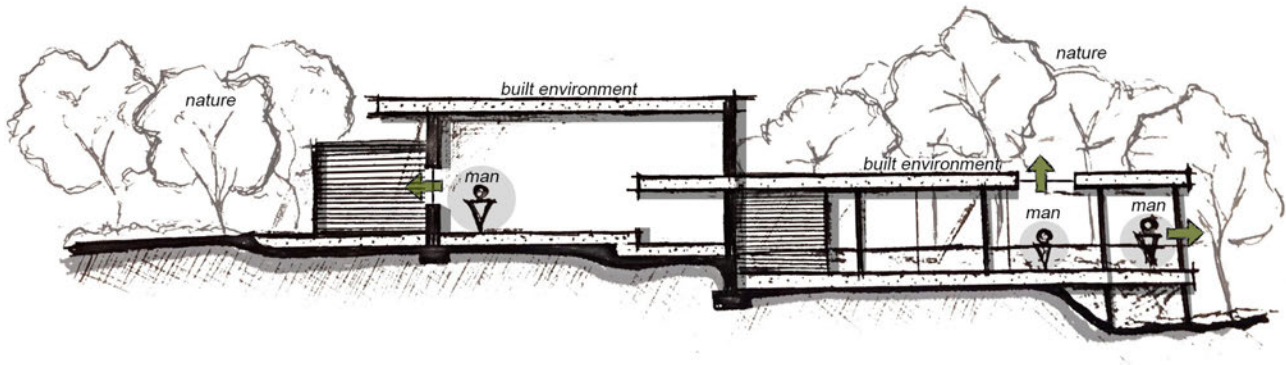


Figure 4: The sketch portrays the direct experience and relationship between nature, man and architecture.

Indirect experience of nature

On the other hand, an indirect experience of nature refers to elements included in the architecture and design of a building that aims to depict a sense of connection with nature. This can be done through images, murals and paintings that represent the essence of nature. It can also be achieved through the use of natural colours and materials that age and evolve with time creating an immediate connection between the texture and the individual, which has been proven to be mentally stimulating. Other significant design features, if unable to attain naturally, are the simulations of natural light and air which can be achieved through innovative ways of using interior lighting and mechanical ventilation to mimic natural features as well as depicting nature in the structural design of the building.

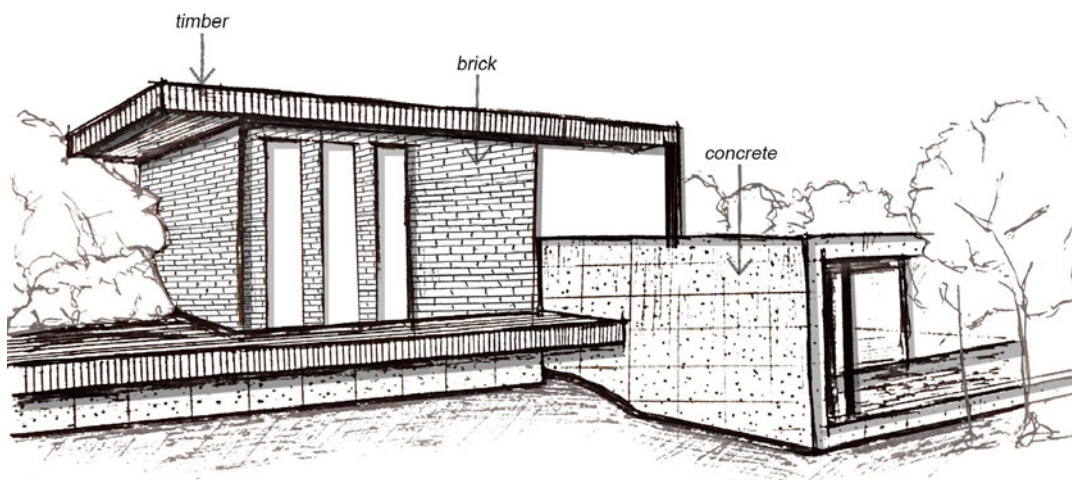


Figure 5: The sketch portrays the indirect experience of nature, in this case, through the use of materiality that ages with time and the use of nature inspired structural design elements (timber ceiling panels and columns).

2019, By Author.

2.2.2 The Theory of Phenomenology: Stimulation of the human senses

“Architecture, more fully than other art forms, engages the immediacy of our sensory perception”
- Steven Holl, (2006).

The theory of phenomenology promotes the integration of sensory perception as a function of architectural built form. By integrating this into architecture, which is primarily designed to serve the needs of people, this therefore creates a relationship between human senses and the building through light, shadow, material and spatial design, with the intended outcome to generate emotion, meaning and perception of the place, which proves to have a positive effect on mental health. The following section intends to explore how architecture can manipulate or influence a unique experience of the phenomena of space, light and form to optimize the healing process of mental health recovery within an urban setting. Subsequently investigating how the stimulation of all five human senses is achieved through the application of phenomenological theories in architecture and spatial design.

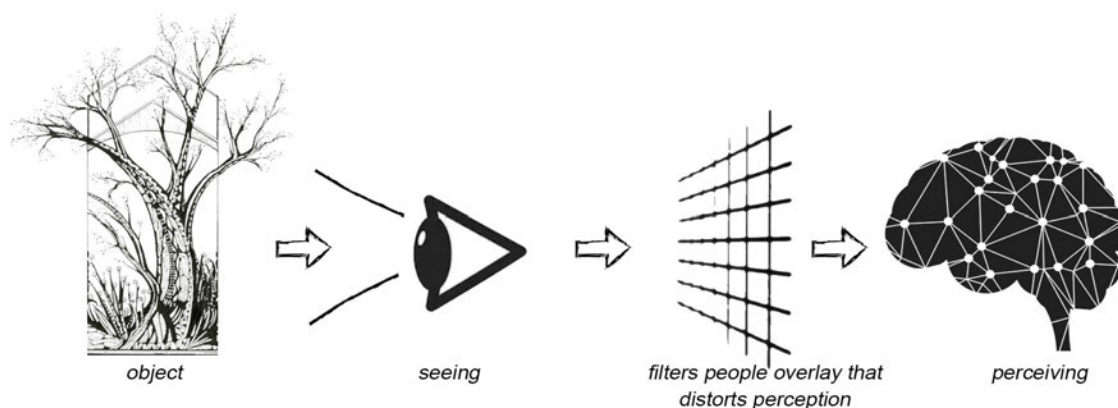


Figure 6: Diagram illustrating the experience of space through the visual sense. 2019, By Author.

Sight:

18th century architecture was primarily trained, practised and critiqued purely based on the visual sense, placing importance on the aesthetics of architecture. According to Aristotle (384 B.C-322 B.C) the visual sense dominated over the other senses. However, towards the end of the 18th century, French architect, Maurice Merleau-Ponty (1964), began to speculate the idea that architecture can in fact evoke other senses through physical elements, which emphasized the significance of light, shadow, surfaces and smells. “The eye collaborates with all the other senses. What the eye sees, the other senses confirm”, (J. Gibson, 1966). Although J. Gibson (1966) supported the belief that the visual sense was most dominant, he also believed in the positive psychological effects that can be achieved if all the human senses were stimulated by architecture. Steven Holl (2006) argued that architecture should not be dependent on the appearance of the

structure or building, but should rather engage with all human senses as perception is an “instinctive response to sensations, through body and mind, in which we interpret and project meaning into an environment. Our senses are the tools with which we perceive, interpret and embody a space”. Juhani Palasmaa (2005) further supports the integration of all senses in architecture as he believes that “all the senses, including vision, are extensions of the tactile sense; the senses are specializations of skin tissue and all sensory experiences are modes of touching and thus related to tactility. Our contact with the world takes place at the boundary line of the self, through specialized parts of our enveloping membrane”, (Palasmaa, 2005). He argues that the absence of a sensory experience of all human senses, excluding the visual sense, has indefinitely contributed to impoverished environments

Sound:

According to J. Gibson (1966) the sense of hearing is considered to be omni-directional, providing a three-dimensional atmosphere, meaning that it receives transmitted signals from all directions, as opposed to the focused condition of the visual sense. Architects can achieve a certain acoustical quality through the design of the space, use of particular materials as well as the structural character of the building. The use of sound, or the lack thereof, has the potential to generate a specific atmosphere that subconsciously motivates the user of the space to conceptualize what that space means to them based on experience and emotion, thereafter instilling a perception of the space.

Touch:

“Memorable architecture involves an embodied experience, which is determined by the reach and grasp of our hand, the touch of our fingers, the feeling of heat and cold on our skin, the sound of our footsteps, the stance we have taken and the position of our eye. As we enter a space, we grasp the space through our senses and we measure and explore it with our bodies and movements”, (Steven Holl, 2006). In support of the above statement, J. Gibson (1966) believes that the Haptic system ie. Sense of touch, is one of the most predominant senses as it initiates a physical connection to the space. He defines it as an “unconscious vision, providing three-dimensional information to objects.” According to Palasmaa (2000), the sense of touch is considered to be one of the most primal and natural experiences in architecture. He argues that all senses are purely extensions of touch as “skin is the oldest and the most sensitive out of all our organs.” To achieve this architecturally, it is significant to include tactile materiality, surfaces and textures to essentially provoke haptic sensations, allowing the material to 'tell a story' especially when the surface or texture begins ageing.

Taste & smell:

“The most persistent memory of any space is often its odour as it has the power to capture and preserve the memory of any space.” J. Gibson (1966) explains that emotions can be attached and stimulated by different or powerful scents, meaning that when an individual endures a significant experience within a specific space that has a particular smell, this therefore creates a distinct memory and perception of that space. For example, the expression “it smells like a hospital” is common because most people are aware of the smell associated with hospitals. In this instance, hospital architecture is typically perceived negatively, possibly because of the lack of openings and windows and lack of integration between the interior and exterior natural spaces. Therefore, the disinfectant used in hospitals becomes an overbearing smell, creating a typically negative memory and perception of the space. Which is why J. Gibson (1966) considers it crucial to apply these sensory details in architecture to heighten the user's overall experience especially within a mental health treatment setting. With regards to taste, both smell and taste generally function in conjunction with one another, however the sense of smell is known to amplify the sense of taste.

2.3 AGE SENSITIVE HEALING DESIGN

The following section investigates the significance of spatial design that is sensitive to specific age groups, particularly children and adolescents from age 10 - 18, with the intention to induce a healing environment that encompasses principles of a therapeutic architecture. Eun Young Kim's (2011) architectural dissertation explores a healing health care design for adolescent patients, explaining the significance of an age-appropriate sensitive healing design for the youth as children, adolescents and adults have a variety of differing environmental preferences for healthcare. Adolescents, for example, experience dramatic physical and emotional changes as their sensitivity and susceptibility for the development of a mental illnesses is increased due to the acceleration of their cognitive development and “experience different emotional and psychological perceptions of pain and anxiety” to that of an adult. Therefore, it is crucial to be sensitive to the needs of each child and/or adolescent and understand the true “physical and psychological state and needs in child and adolescent healthcare design” to assist in the process of recovery.

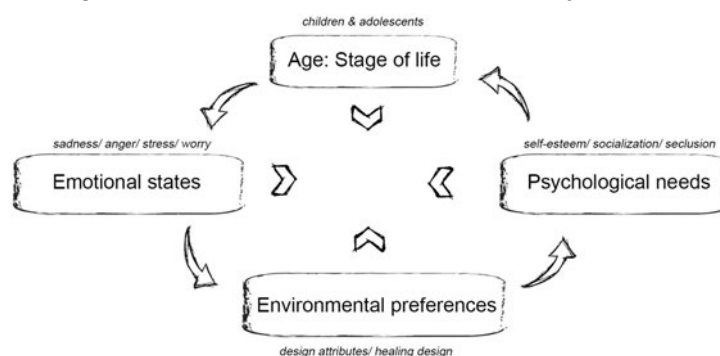


Figure 7: Diagram illustrating the significant aspects when dealing with child and adolescent mental health.
2019, By Author.

2.3.1 Children and adolescents design preferences

Eun Young Kim's (2011) research conveys that the implementation of an “age-sensitive design” and a “psychologically supportive elements” in the design of healthcare facilities, has the potential to reduce stress and “promote the patient’s healing experience and well-being”. She goes on to explain how the psychology of spaces and environmental psychology are achieved in the design and architecture through the following principles and guidelines;

Concept	Design criteria	Potential Healing Effects
Autonomy & Sense of control	Noise control Control lighting & temperature Control visual privacy & odor Control TV Personalization: display area Easy& clear wayfinding Personal workstation	Restoration Comfort - physical & psychological Privacy control – visual & acoustical Identity - self-esteem Physical well-being
Positive intervention	Visual distraction, water sound music, art display TV, Virtual reality	Reduction of perceived pain Reduction of perceived stress Psychological well-being
Attention restoration & Biophilia	Connection to the nature: Window: Natural view & light Water feature & sound Effortless attention Healing garden, Greenery Walking trail: mild activity Atrium Physical activity Neutral color scheme Color: orange > green	Restoration Physical well-being Psychological well-being
Favorite places & Self- identity	Quite alone place Outdoor recreation area Landscape Personalization: self-expression	Psychological well-being Restoration Reduction of perceived stress Sense of identity Seclusion
Social support & Sense of belonging	Family room Game area Physical activity room Comfortable waiting room Library	Sense of connection/ community Communication Socialization

Figure 8: Table outlining the healing design concepts and criteria for child and adolescent patients.
2011, By Eun Young Kim.

Autonomy & sense of control

The concepts states that although a person is dependent on others within the facility, “the sense of autonomy” provides a sense of control over their environment, which is especially effective under stressful situations. It's about creating a “restorative environment that promotes the healing process by offering an opportunity for control over the place due to the opportunity of its sense of control and self- identity.” This sense of control allows the individual to find a space personal to them, a place to relax, a space in which they are in control of their own privacy, room temperature, room personalization, lighting levels and television, this will allow for a sense of control which in turn will create a sense of ownership and belonging to the space, assisting in the recovery process (Sherman, 2005). These spaces provide points of symbols and familiarity in its design approach which evoke a sense of calmness. Components such as; noise, privacy, natural light and temperature control can become sensitive obstacles during the healing process. These components should be taken into consideration when designing the spaces in mental healthcare facilities to assist in the healing process of the patients by enhancing human comfort.

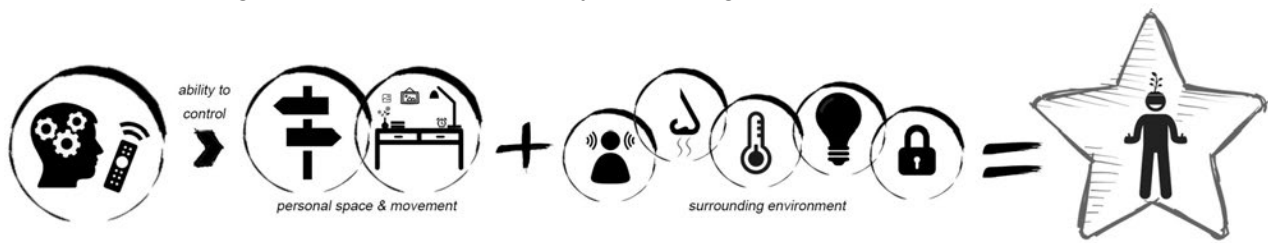


Figure 9: Diagram illustrating ways in which the autonomy concept can be applied within healing spaces.

2020, By Author.

Positive intervention

Studies prove that this approach has the ability to reduce psychological stresses by establishing a “distraction” through environmental or natural elements such as; water, sounds and sceneries of nature. By stimulating the sensory perception of the individual, this “distraction” assists in the recovery process and overtime teaches the individual to cope with stress.

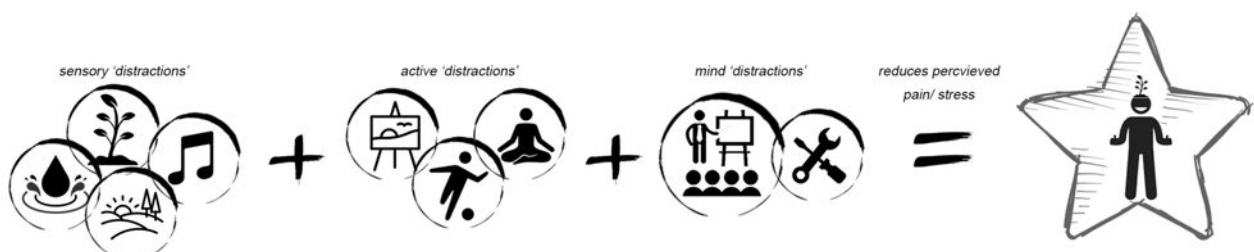


Figure 10: Diagram illustrating various positive 'distractions' that assist in the recovery process of the patient.

2020, By Author.

Attention restoration and Biophilia

This refers to the application of natural elements and characteristics into mental healthcare design with the intention to create a “positive human-nature relationship.” (Kahn,1997; Kaplan, 1995; Wilson, 1984). The physical connection between a patient and outdoor spaces are extremely vital in the recovery process. Owens (1988) found that although different personalities and age groups have different place preferences regarding their developmental stages, the common factor remains that an outdoor space is preferred in these types of facilities, whether it be a space for activities or relaxation. Simple things like a visual or physical connection between the individual and nature, natural lighting, ventilation and sound has the potential healing effects of restoring ones physical and psychological well-being. The application of this principle is through the theory of Biophilia as discussed in the previous section, suggests that nature combined with the built environment has potential psychological benefits and the restoration of mental health.

Favourite places & Self - identity

The concept of favourite places is related to the preference of a space that subconsciously affects the psychological well-being and health of those who occupy it, (Korpela & Hartig, 1996). This concept establishes a restorative environment that has the ability to promote healing by offering the opportunity for control over the place which will therefore “build a person’s place-identity and self-esteem that works as the foundation of healing”, (Korpela & Hartig, 1996). Because children and adolescents are at the developmental stage of building self-identify and self-esteem, the psychological effect of a favourite place provides them with a restoration from stress. For the youth, these become places to 'retreat' to in stressful situations to seek a sense of calmness which maintains the psychic balance of pain and pleasure in healthcare settings.

Social support & Sense of belonging

Social interaction is a vital aspect of growing children and adolescents, therefore taking into consideration the individual's unique societal and psychological demands should be the starting point in mental healthcare design. Designing flexible and multi-purpose spaces such as games and physically activity areas have positive healing effects and allow the individuals to gain a sense of connection and community. Another significant aspect of this concept is the integration of the surrounding community as this can assist in the healing process and ensure a better long term approach to mental healthcare.

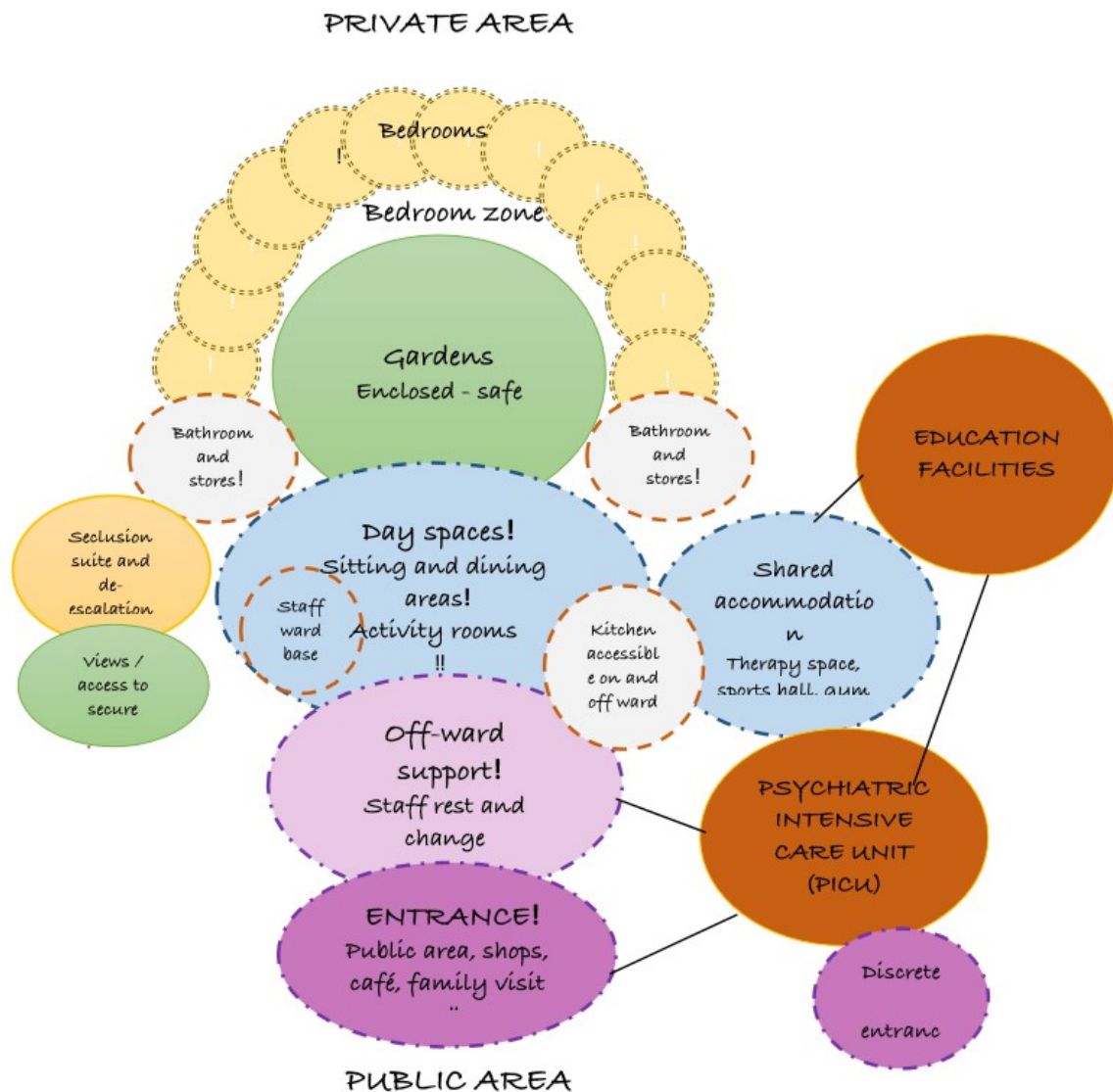


Figure 11: Health Building Note 03-02: Facilities for child and adolescent mental health services (CAMHS). 2017, By Department of Health, London.

Colour preference

It has been discovered that both architecture and colour have the ability to visually provoke and elevate positive or negative emotions, (Dalke, H, 2004) as emotions are essentially triggered through mental perceptions of colours by associating specific colours with a personal event or belief. Studies by Coad & Coad (2008) were conducted to determine the most 'liked' or calming colour or theme to children and adolescents. It was found that younger children mostly preferred a single colour scheme with different shades of green, orange and yellow. Whereas majority of adolescents preferred more abstract design themes, but with the same colour palette. The

phenomenon of colour psychology is proven to encourage patients' psychological well-being, especially during a recovery process.



Figure 12 (left): Colour wheel of emotional psychology. 2019, by Dr. Robert Plutchik “Wheel of emotions”

Figure 13 (right): Image demonstrating the use of colour psychology and play of light. 2011, Rehabilitation Centre Groot Klimmendaal by Koen van Velsen.

2.3.2 The “Simulation of real life” concept

The “Simulation of real life” concept also known as “Design for Domesticity” as mentioned by Dr. E. Chrysikou (2014), has been one of the major theoretical concepts in the planning and design of mental health facilities since mid-1990s. The concept intended to shift the paradigm of institutionalized mental health to de-institutionalized mental health facilities by relocating and re-conceptualizing the treatment centres towards a more residential and community-based approach. The metaphor of an environment with home-like references according to user preference, not only aimed to create a comfortable environment for the patient, but also to create a sense of freedom, safety and clarity for the individual, (E. Chrysikou, 2014).

In support of the above, J. Basson (2014) based his architectural dissertation research on rethinking rehabilitative facilities with the intention to de-institutionalize existing rehabilitation facilities and explore the 'simulation of a real life' concept into one of the most unhealthy urban settings in the Western Cape, South Africa, to essentially create an evidence based literature on the fact that a healing environment can be created within any context. He discusses domestic or home-like like design in the sense of incorporating familiar elements into the facility as well as a “therapeutic architecture through a spatial design that encourages the healing and well-being of the user, within a harsh urban environment”, (J. Basson, 2014). Basson (2014) refers to the Worcester Psychiatric Hospital, where the architects successfully programmed the building around the concept of real life simulation by which a home-like atmosphere is intentionally created with the house-concept to generate a familiar environment for retreat, reflection and sense of control within the facility. Basson (2014) further explains how the concept is translated architecturally and physically, by the facility incorporating familiarised elements like; the house, neighborhood and downtown to replicate the variety of environments in our everyday lives which allows the individuals to progress through the

stages within the facility, empowering and strengthening them in preparation to re integrate back into society.

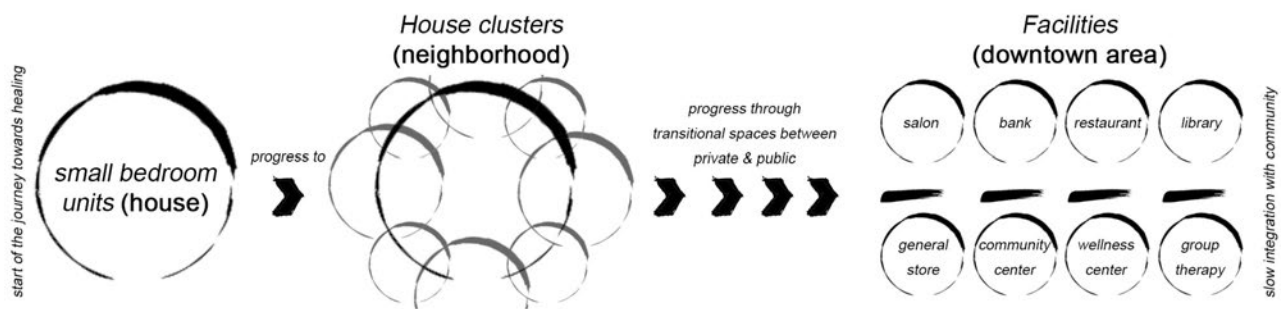


Figure 14: Diagram illustrating the “Simulation of real life” concept. 2019, By Author.

2.4 CONCLUDING REMARKS & DESIGN CONSIDERATIONS

Chapter two has instated the theoretical and conceptual framework for this research in order to re-conceptualize the design of mental health care facilities, for the youth, within the city of Durban through the concept of a therapeutic architecture and age-sensitive healing design.

It has been discovered that the concept of a therapeutic architecture can be created within any setting, provided that the architectural design relates to those that occupy the space, either through the inclusion of natural surroundings or the architectural manipulation of structure and space through sound, colour, views, smell and light to influence the user towards the process of healing in mental health care. This is further elaborated through the theory of Biophilia and Phenomenology by which underpins the key concept of a therapeutic architecture in this research. The theory of Biophila proves that creating a visual or physical connection between man, nature and the built environment not only allows individuals to engage with their natural surroundings, it also results in a sense of calmness and has the ability to induce positive emotional changes, having an indirect impact on stress levels and emotional well-being, therefore assisting in the healing process as humans have an instinctive desire to connect with nature. In addition, the built environment applies the theory of Phenomenology in architecture and spatial design through the manipulation of space, material, light and shadow with the intention to create a relationship between the human senses; sight, sound, touch, taste and smell, and the building to generate emotion, meaning and perception of the place, which proves to have a positive effect on mental health.

Furthermore, the investigation found that the integration of the concept of an age-sensitive design is crucial when dealing with a sensitive matter and age group within a sensitive context. The concept of an age-sensitive design is achieved through the application of specific architectural and psychologically supportive spatial design elements that are sensitive to the psychological state and needs of the children and adolescents. Specific spatial design guidelines and considerations, discuss the planning of such facilities through the inclusion of nature, flexible and multi-purpose spaces, places that allow a sense of control and much more, as mentioned in the framework

above. The common factor that remains throughout is the inclusion of environmental or natural elements, achieving a visual or physical connection between man, nature and the built environment through natural lighting, ventilation and sound.

It can be concluded that by implementing the concept of a therapeutic architecture in conjunction with the concept of an age-sensitive healing design through the application of both concept's design guidelines and considerations, it will link the psychological well-being of children and adolescents to the built environment, creating a healing induced environment within a harsh urban context to promote mental health recovery.

CHAPTER THREE | PSYCHIATRY IN SOUTH AFRICA

3.1 INTRODUCTION

In South Africa, mental healthcare initiatives are significantly required but, as a developing country, South Africa lacks many of the necessary resources and policies needed to execute an effective mental health strategy (Ministry of Health South Africa & World Health Organization 2007). The following chapter will provide a broad understanding on the necessary background, information and context with regards to factors that played a significant role in the origin and historical development of mental health in South Africa. The literature will subsequently critically analyse, question and unpack existing knowledge on child and adolescent psychiatry in South Africa, with the intention to find emerging and alternate architectural trends, explored in section two of the literature review, to achieve a better long-term approach for mental healthcare. To essentially explore architecture's ability to create a healing induced environment, within an urban setting for children and adolescents, through the inspiration of a therapeutic architecture and age-sensitive healing design strategies, as explored in the previous chapter.

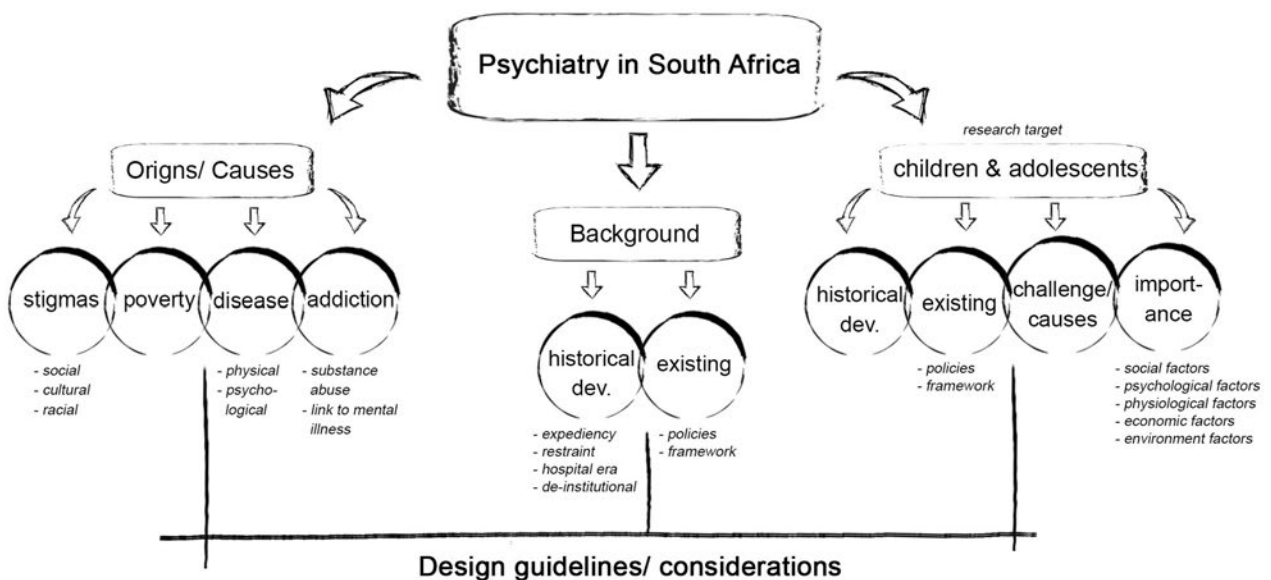


Figure 15: Diagram illustrating the unpacking of South African psychiatry. 2019, By Author.

3.2 ORIGINS OF MENTAL HEALTH ISSUES IN SOUTH AFRICA

3.2.1 Introduction

There are a variety of contributing factors leading to the occurrence of mental health issues in South Africa, which will be explored through an architectural lens in the following section, to discover the roles played by the built environment;

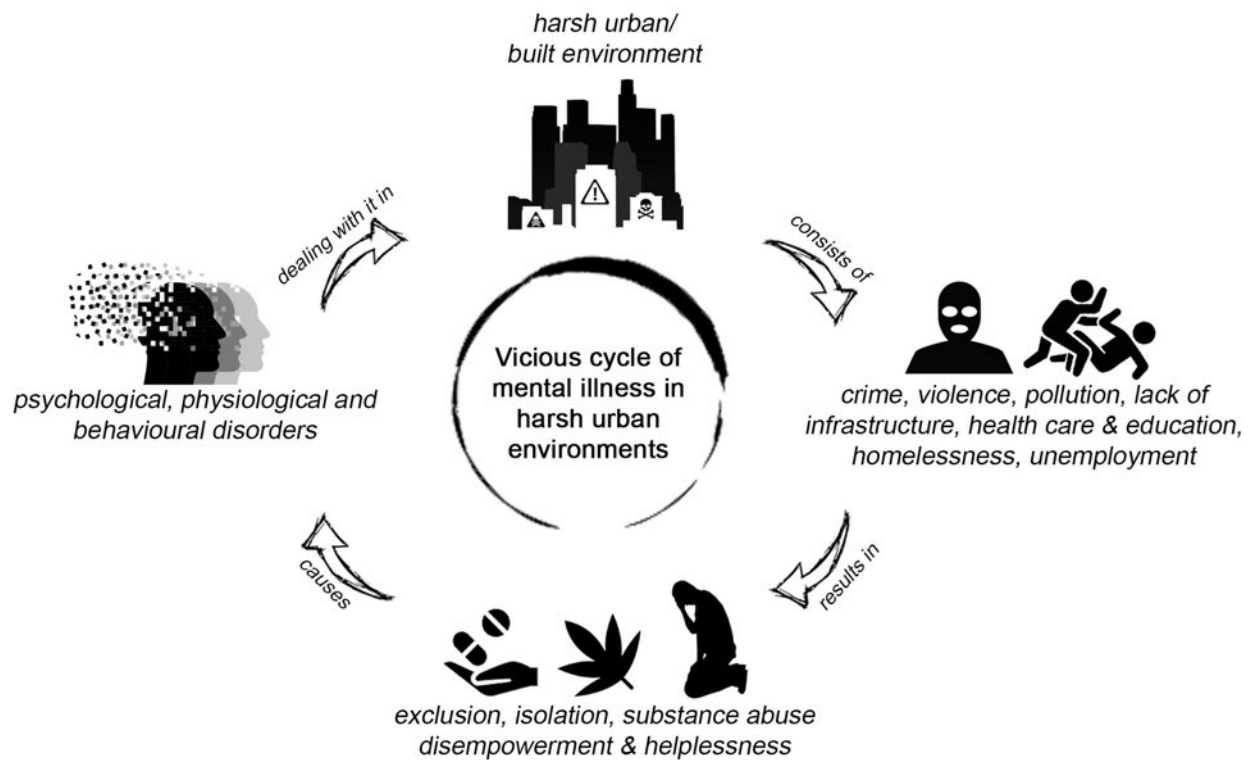


Figure 16: Diagram illustrating the origin and prevalence of mental health issues and how it interconnects with one another and links to the built environment. 2019, By Author.

3.2.2 Stigmas & social ostracism

Racial, cultural and social stigmas can manipulate the perception on mental illnesses, especially evident among black communities in South Africa. So much so that it is suspected that the statistics in the following section may be an underestimation due to stigmatization and inaccessibility to treatment.

Racial stigmas

Studies by professor B. Mehler (1983) reveal that after World War II, in America, a new eugenics (medical model) was derived to establish a new scientific explanation behind mental disorders in relation to race. “Racism is considered inseparable from the roots of psychiatry”, B. Mehler (1983). In the 1930s, scientific conclusions were made to prove an intellectual inferiority of the African race, which would justify exploitation, oppression and racism. Benjamin Rush, known as the father of modern psychiatry, developed the term 'negritude' as a name of a disease that only African people have inherited - “a disease which caused them to be inferior”. This is the reason it became crucial that whites and blacks were segregated so that whites did not 'inherit this disease'. It became the argument to continue with slavery, and even once slavery was abolished, psychiatric racism was intensified and spread to South Africa. In South Africa, with apartheid in place as well as having a psychiatric justification for racism, psychiatrists established mental hospitals throughout the country, that were nothing more than salve labour camps, (L. Vitus, 2013). Therefore, the past application of

Apartheid policies have definitely established further challenges for mental health care in the built environment.

Cultural stigmas

In South Africa, especially evident in African cultures, face a vast array of cultural stigmas on the issue of mental illnesses, (Health24, 2017). A. Okasha (2002) from the World Psychiatric Association suggests that among the native population many hold on to the traditional belief that mental illness results from a demonic possession. This therefore results in many individuals fearing social ostracism and feel they have no choice but to keep their mental illness secret as opposed to seeking medical and psychological attention. A study conducted by BMC Psychiatry, Egbe et al. (2014) elaborates on the traditional explanatory models of mental illnesses which indicates that within the African culture, a mental illness is believed to be conceived due to witchcraft, therefore those who are mentally ill are discriminated as “bewitched”. Based on cultural belief, many seek help from African traditional healers to receive what is known as the African traditional medicine, as opposed to medical attention. According to Kale, R (1995), African Traditional Medicine still plays a large role in African society. In more recent studies, Du Plessis et.al (2017) a clinical psychologist, states that “Many people never go for treatment because of the fear of judgment and the stigmas clinging to mental illness, especially if these stigmas are bound to cultural beliefs and religion,” This lack of understanding with regards to how culture influences mental health often becomes a critical barrier to treatment.

Social stigmas

Egbe et al. (2014) suggests that stigmas are not only a by-product of cultural and traditional beliefs, but are also a compound of ignorance, lack of knowledge, prejudice and behaviours that are considered 'abnormal'. Those who suffer from a mental disorder also have to cope with the social, psychological and economic implications that come with the stigma, which can result in individuals suffering further with “low self-esteem, marginalization from society, social isolation, social anxiety, poor social skills, difficulties in securing employment, housing difficulties as well as poor social support, all of which are important for integration into the society.” Egbe et al. (2014). Society's misconceived notions on the concept and effects of a mental illness lead to stereotypes that those who suffer with a mental illness are “violent, dangerous, dependent, unstable and unfit to work” Egbe et al. (2014). Stigmas are then known to worsen the state of health of mentally ill individuals and impede their capacity to lead and recover a normal life.

Stigmas in health care facilities

The architectural design of existing psychiatric facilities in South Africa embody copious amounts of spatial deficiencies, which not only creates further challenges for the patients, but also strengthens the issue of stigmatization. In recent events, A. France-Presse (2017) discovered that 94 mentally ill patients had died when they were transferred from a hospital to an unlicensed health facility, which

is a common occurrence in South Africa due to lack of funding and resources. Existing psychiatric facilities are essentially designed with the intention to lock 'mad' people away in a controlled and confined space as opposed to a space that is designed to suit the needs of the mentally ill. Unlicensed health facilities are also considered to be spatially similar to that of concentration camps that are small, confined and isolating spaces, no outdoor interaction and a lack of natural lighting and ventilation. It is more representative of a jail-like environment than a healing induced environment. Because of the stigma against mental illnesses, even within health care facilities, the patients are treated like prisoners and are extremely misunderstood and neglected. Death from pneumonia, diarrhoea, starvation and dehydration is a frequent occurrence as patients are not provided with sufficient food, water and care, (A. France-Presse, 2017). It was also found that psychiatric patients had died from jumping out of windows because of sexual abuse which was made possible due to inadequate security at the facilities, (T. Molelekwa, 2017). In existing mental health facilities, not only are the health providers completely under-qualified to treat mentally ill patients, but the lack of knowledge and insight of mental illnesses may contribute to the occurrence of a further stigmatization within the facilities by the health care providers, which has a considerably negative impact on the patient's recovery process.

3.2.3 Poverty

At least one in three South Africans are susceptible for the development of a mental illness which costs the economy millions in terms of lost productivity, and in some cases, lead people down a road to poverty resulting in a vicious cycle of poverty and mental illness, E. Sohn (NPR, 2016). SADAG (2018) provides evidence for the link between poverty and mental illness through statistical data from low-income and informal settlements in South Africa that suggests that 17% of the youth suffer from a mental disability. But, the question arises - can poverty be the leading cause of mental illnesses in South Africa? This topic is highly debatable as a mental illness can never caused by just one thing. Poverty, accompanied with genetics, traumatic experiences or substance abuse can in fact be the contributing factors to the development of a mental illness. Others argue that the increasing levels of depression are higher in poorer countries which proves that poverty itself can lead to a mental illness due to copious amounts of stress among those who face economic tension, E. Sohn (NPR, 2016). Within poverty stricken areas, the built environment also plays a crucial role in the susceptibility of mental illnesses based on the lack of infrastructure, accessibility to health care and education as well as the exposure to more stressful circumstances such as; crime, violence, homelessness, unemployment and social deprivation. "Poverty is also associated with exclusion, isolation, feelings of disempowerment, helplessness and hopelessness, which can lead to chronic insecurity and social mistrust, affecting people's mental well-being.", SADAG (2018).

3.2.4 Substance abuse

In South Africa, another dominating factor regarding the prevalence of mental illnesses is substance abuse, A. Okasha (2002). "Substance abuse poses a challenge to society because of its effects on the psychosocial functioning, productivity and general health of the affected individuals", Saban et al. (2014).

The link between the built environment, substance abuse and mental illness

Although the prevalence of mental disorders can arise due to genetics, another significant factor is the role in which the built environment plays in the lives of people. The abuse of drugs is most common within harsh urban or poverty stricken areas based on the lack of education and the consistent stress of crime, violence, unemployment and social ostracism which all leads to individual finding cheap and easy ways to escape reality as a way of dealing with reality through the abuse of substances. Saban et al. (2014) analyses the correlation between substance abuse and mental disorders and found that substance abuse can in fact be the primary cause of a mental illness. In other cases, substance abuse can worsen a mental illness. When an individual has an existing mental illness such as; depression, bipolar disorder or anxiety and has a substance abuse problem, it is referred to as a co-occurring disorder or dual diagnosis, the resulting problems are often more complex, Saban et al. (2014). Saban et al. (2014) research concluded that significant associations were found between substance use and mood and anxiety disorders, obtaining a high prevalence of substance use in young adults, with a particularly strong relationship between cannabis use and mental disorder.

3.2.5 Diseases

The issues discussed that pertain to the prevalence of mental health issues in South Africa are all interlinked with one another and most definitely arise due to what is lacking within the built environment. For instance, spatial design that neglects the needs, comfort and most importantly the safety of people creates unsafe spaces that can lead to sexual abuse contributing to the excessive number of diseases in South Africa, which is considered to be a significant contributor to the prevalence of mental illness. South African college of applied psychology, SACAP (2018) reveals statistics from poverty stricken and rural areas where an estimated 40% of individuals living with HIV also developed a mental illness. Diseases such as cerebral malaria possess the ability to deteriorate ones mental capacity as well as having a direct physiological effect on the individual. Statistics prove that "the prevalence of mental illness among those suffering from HIV is 43.7% compared to the 16.5% observed among the general population. This data indicates that disease delivers equal emotional damage as it does physiological harm.", (South African Journal of Psychology, 2008).

3.3 HISTORICAL DEVELOPMENT OF PSYCHIATRY IN SOUTH AFRICA

3.3.1 Introduction

In South Africa, the historical development of psychiatry stretches back to the year 1652 during the Europeans first settlement in the Cape of Good Hope. Gillis et. al (2012) explains the development in three phases; the period of expediency and restraint, the psychiatric hospital era and lastly, the period of modern psychiatry as well as exploring the implications of apartheid and how that ties in to the historical development of psychiatry within the context of South Africa. The following section will trace the major historical developments of psychiatry in South Africa over the past 5 centuries.

3.3.2 Period of expediency and restraint

According to Gillis et. Al (2012), the period of expediency and restraint occurred during the early stages by the Dutch East India Company, whom were the first to make efforts in an attempt to deal with the issue of mental illness among early settlers, sailors and soldiers at the Cape. The initial solution was to contain the mentally disturbed within a primitive like structure. Then, in 1699, it was decided that a hospital-like structure was to be built adjacent to the Company Gardens – but, this 'hospital' was viewed as a space to enclose the mentally ill with the intention of “locking up the mad”. The treatment methods used were considered inhumane, matching a similar model in London in the 18th century, one of the world's first psychiatric institutions. It was essentially a warehouse where patients were referred to as “inmates” and confined to cages, closets, chained to walls and the asylum charged admission fees for the public to view them states Dr. L. Coleman (1984).



Figure 17: Paintings portraying how patients were socially alienated in Bedlam Insane Asylum, London.
18th Century painting by Fransico Goya (left) and William Hogarth (right).

In 1772, another hospital-like structure was constructed in South Africa near the Company Gardens. Although there were provisions made for the mentally ill, the structure soon became overcrowded which resulted in a transfer of the excess mentally ill patients to the Slave Lodge. The end of the 18th century marks the period when the actualization on the concept of 'mental illness as a disease' came about. Then in 1808, the term 'psychiatry' was derived by a French physician – but still, causes and treatment was unknown. In 1818, the British colonial government established the Somerset Hospital, which consisted of a small space for the mentally ill. Although not much, this

gave people an immense amount of hope as this was the only facility at the time within the Cape Colony. During this time, psychiatric diagnosis were considered abnormal or bizarre, thus stereotyping mentally disturbed individuals as 'lunatics', 'insane' or 'possessed by demons'. The Somerset Hospital became completely overpopulated in 1836 which lead to the transfer of the mentally ill patients to Robben Island, previously a convict station, which continued to be the main source of treatment in the Cape. Gillis et. Al (2012) reports that "living conditions in the early years were dreadful as seen in figure 17; 'buildings were decrelit, overcrowded and verminous', patients lived in squalor and management was unfeeling. 'It was quite usual to find them kept in dark insanitary cells, filthy, covered in festering sores and chained to iron rings'." The situation began to improve in the mid 1860s, when Dr J.C Minto declared that mechanical restraint was to be restricted unless the initial attempt of seclusion had failed. Dr J.C Minto also revamped living conditions for the mentally ill patients.

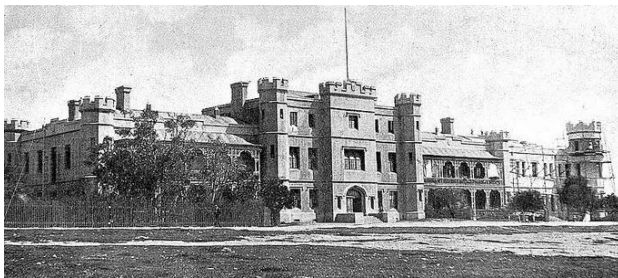


Figure 18 (left): Image of Somerset Hospital in 1818, Cape Town, South Africa.

Source: <https://www.ancestors.co.za/somerset-hospital/>

Figure 19 (right): Image portraying where mentally ill were transferred to and treated in 1836, Robben Island.

Source: <https://www.worldheritagesite.org/list/Robben+Island>

3.3.3 Psychiatric hospital era

Early 19th century marks a time when psychiatrists in England made the discovery that mental illnesses were potentially derived from a biological mutation, which therefore started a new medical model in psychiatric treatment methods that was considered to be tortuous with the belief that traumatizing patients would reduce symptoms of manic episodes, (Dr. L. Coleman, 1984).

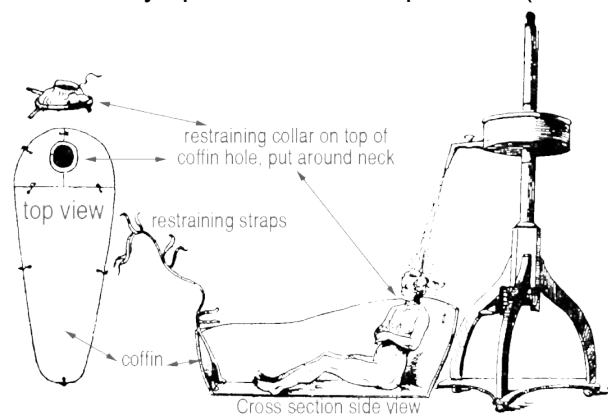


Figure 20: Diagram portraying "The Douche" (water torture). 1828 by Alexander Morison.

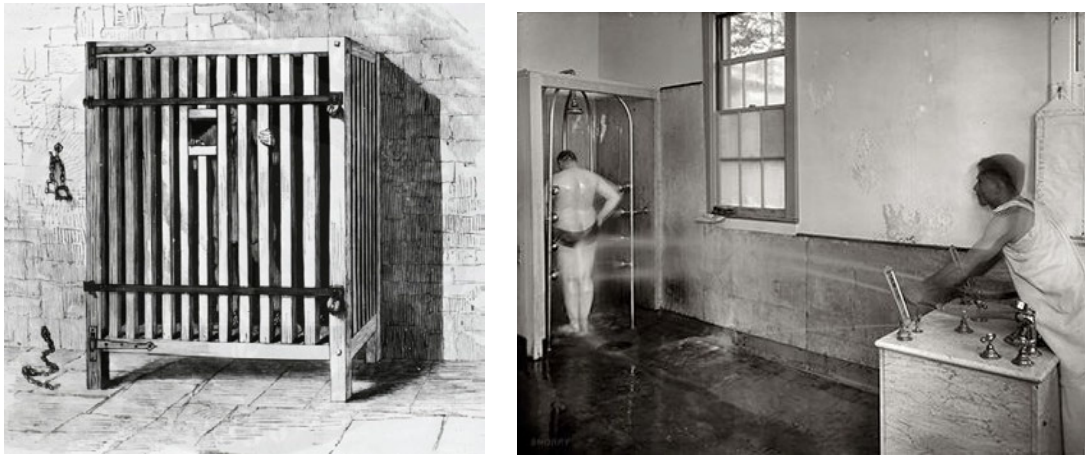


Figure 21: Images portraying inhumane treatment methods: (left): Confining psychiatric patients to small cages.

Source: <https://www.cvltnation.com/horrifying-psychiatric-treatments-from-the-age-of-reason/> and (right): Hydrotherapy treatment where the psychiatric patients are sprayed with intense temperatures of either hot or cold water to traumatize and humiliate the patient. Source: <https://www.cvltnation.com/horrifying-psychiatric-treatments-from-the-age-of-reason/>

Towards the end of the 19th century, South Africa was under British control, when the situation began to evolve as it was evident that temporary lock-up and restraint arrangements were not an adequate solution. Instead, South Africa decided to implement British and American models of psychiatric institutions, meaning that mental asylums were to be placed within a place of sanctuary so that patients are exposed to nature and fresh air to assist in the recovery process, (Gillis et al., 2012). Towards end of the 19th century, hospitals developed based on British and American architectural space planning models from 1876's Fort England Hospital in Grahamstown, to 1992s Rehabilitation Centre in Cape Town. Until 1910, psychiatric facilities were governed by "Lunacy Laws" and regulations dealing with the mentally ill. Then finally in 1916, the Mental Disorders Act and legislation came to light, which meant that mentally ill patients could receive better medical attention. However, overcrowding was still a significant issue.

3.3.4 Modern psychiatry: Drug & therapeutic advancements

The transition from the 19th into the 20th century was the period of experimentation to find drugs or therapeutic techniques that could potentially treat mental illnesses, (Gillis et al., 2012).

Electroconvulsive therapy, also known as electroshock therapy, was introduced in the 1930s as a psychiatric treatment method in which seizures are electrically induced in patients to provide relief from mental disorders, (Rudorfer, MV, Henry, ME, Sackeim, HA 2003). By the early 1960s, these treatment and therapeutic methods were discontinued based on the limited results. From the mid-20th century, modern psychiatry became an era which offered outpatient clinics, social and community services, occupational therapy and rehabilitation, (Gillis et al. 2012). Because of the new drug and therapeutic advancements, psychiatry started to lose some of the stigmatization attached to it. In 1955, as experimentation continued and advanced, professionals began to gain a better understanding of the brain's biochemical and physiological processes which points out the most

significant phase in the history of psychiatry - the development of psychotropic drugs. The drugs assisted with the control of psychotic, depressive, violent and disruptive episodes which made it manageable for hospital staff. As mental health became more recognised, it was preferred to use the term 'psychiatric' as opposed to 'mental'. The development of numerous facilities, community-based treatments, social groups/ clubs and rehabilitation centres also began to arise. In South Africa, because of the effective drug and therapeutic advancements, it promoted the legislation that psychiatry was to be accepted as a major medical discipline.

3.3.5 Post- Apartheid: De-institutionalisation & Primary health care (PHC)

The Mental Health and Poverty Research Programme (2009) studies reveal that when South Africa was under the apartheid regime, mental health care put primary focus on institutionalised care and psycho-pharmacological methods, with little emphasis on therapeutic approaches. As a developing country, South Africa lacked resources, therefore it was cost effective to isolate mentally unstable individuals as opposed to investing in expensive treatment. But in 1994, when South Africa shifted to a democratic political dispensation, the government made an attempt to de-institutionalize mental health care by introducing the Primary Health Care (PHC), (Mental Health and Poverty Research Programme, 2009). The PHC was a World Health Organisation (WHO) concept, first introduced in 1980, with the intention to promote community participation and the use of preventive, curative and rehabilitative services as an integral part of the South Africa's health system to assist in the country's socio-economic development, (Online report: Primary health care in South Africa, 1983). In conjunction with the concept of PHC and the recent democratic human rights agenda, the intention was for South Africa to also embark on the journey of decentralization as framed within the first post-apartheid policy guidelines for mental health as stated in the Department of Health (1997). The decentralization and integration process was based on de-institutionalizing hospital-like facilities, putting primary focus on the PHC model, making psycho-pharmacological drugs, previously limited to psychiatric institutions, available to PHC facilities. The issue remains that South Africa lacks professionals, particularly registered psychiatrists. This therefore leaves the PHC facilities severely understaffed which either results in professionals referring mentally ill patients to institutions or overlooking the mentally ill patient if their illness is not seen as crucial, (The Mental Health and Poverty Research Programme, 2009). "Given the historical and ongoing trauma experienced by the vast majority of South Africa's population who remain poor and marginalized, there is a dire need to increase access to appropriate mental health services. Appropriate and accessible mental health services have the potential to break the cycle of poverty and mental and physical ill-health", states Patel et al. (2008).

3.4 CHILD AND ADOLESCENT PSYCHIATRY IN SOUTH AFRICA

3.4.1 Introduction

The South African college of applied psychology, SACAP (2018), describes the current state of child and adolescent mental health in South Africa as “shocking”. Although mental health issues in youth development can pose a major threat to public as well as the future development of the individual, child and adolescent psychiatry is still not given enough priority in South Africa. The following section will first unpack existing knowledge on the historical development, existing legislations and policy framework for child and adolescent mental health in South Africa. Subsequently exploring the significance of child and adolescent psychiatry to understand the mental disorders faced by the youth population in South Africa, in order to gain a deeper understanding of the challenges that contribute to the prevalence of child and adolescent mental health in order to create an architectural design that is suitable.

3.4.2 Historical development & current policy framework for CAMH in South Africa

South Africa has been recognised as one of the developing countries to make efforts in the National Health Policy Guidelines to improve child and adolescent mental health (CAMH), (S. Mokitimi et al. 2018). CAMH policies were developed during the Apartheid era in 1977, with the intention to detect symptoms at its early stages within schools and communities. Subsequently, to implement the PHC model, as discussed previously, to raise awareness and ability to identify CAMH disorders.



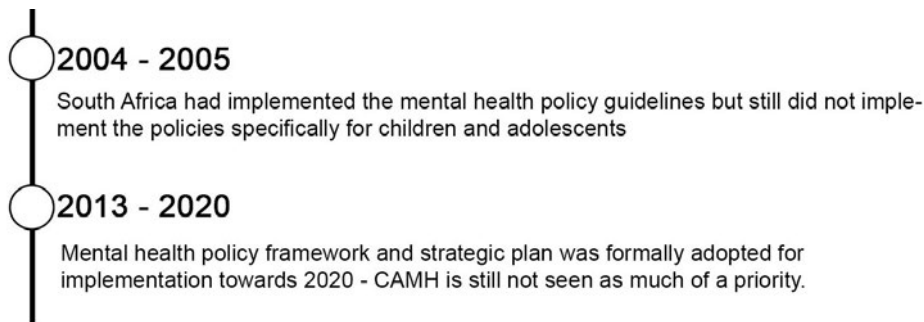


Figure 22: Timeline of historical development, current legislation & policy framework for CAMH in South Africa. 2019, By Author.

3.4.3 The importance of child and adolescent mental health (CAMH)

According to SADAG (2018), the most catastrophic province in South Africa for teen suicide, substance abuse and domestic violence is KwaZulu-Natal. 24% of adolescents in Durban, between the ages 13 to 17 experience feelings of depression, hopelessness, sadness and a further 21% had attempted suicide at least once, (IOL news report online, 2018). If untreated, it results in a variety of key risk behaviours that become 'coping-mechanisms' that persist and worsen into adulthood, thus challenging educational attainments and the potential to live a productive life (WHO 2010). Whereas, appropriate management and treatment of childhood behavioural problems may decrease the risk of developing a full-blown disorder later in life, J. Elia (2017). In order to make child and adolescent mental health (CAMH) a priority in South Africa, it is important to gain a deeper understanding on the mental disorders faced by the youth as explained by J. Elia (2017) in the following section;

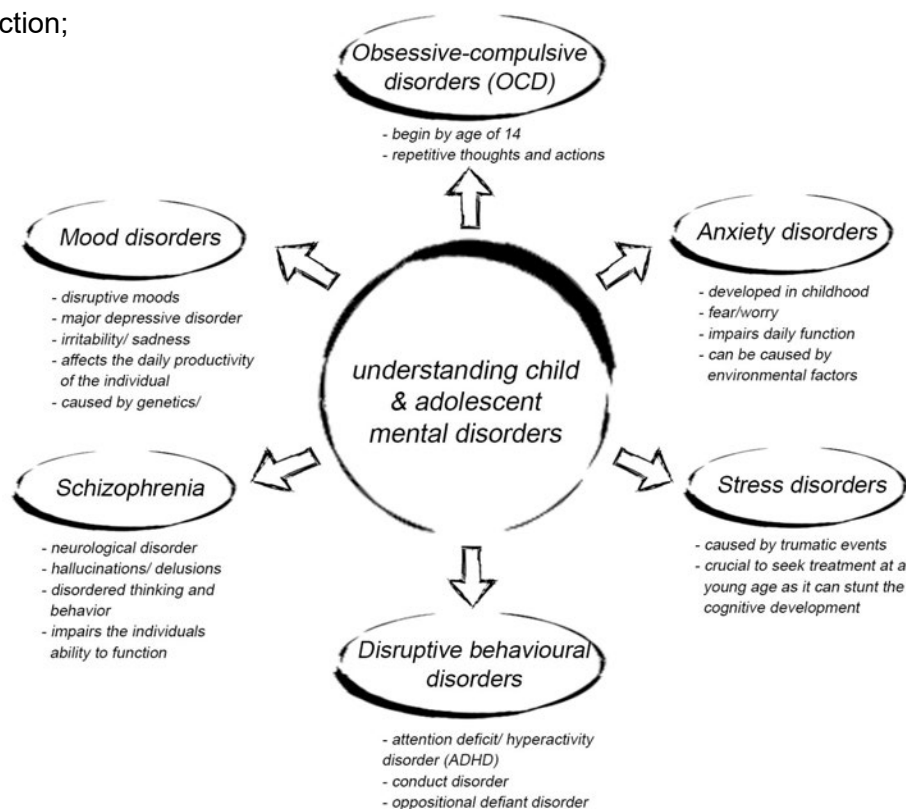


Figure 23: Diagram defining the different mental disorders faced by children and adolescents. 2019, By Author.

3.4.5 Challenges contributing to the prevalence of CAMH disorders

In South Africa, the rate of mental health disorders appear to be higher than other low and middle income countries, (Patel et al., 2008) and are not provided with sufficient “coping skills or support structures to handle the kind of problems that they have to deal with every day,” (SADAG, 2018).

Social, psychological & physiological factors:

Social implications like having the support of family, friends and the community is essential in the mental health development of children and adolescents. According to studies conducted by the World Federation for Mental Health (2018), the connection between young individuals and families or communities has proven to be extremely crucial as they are considered to be a soft place to fall, a network of unconditional love and support. Children and adolescents who lack this type of support and are isolated and more susceptible to the development of a mental illness. Another disruptive matter is stigmatization, which has the potential for the individual to delay or avoid treatment, (Molloy, 2018). Studies conducted at Cornell University (2017), also report that children who grew up in poverty were exposed to aggressive behaviours such as bullying and experienced other traumatic events which made them feel powerless, therefore resulting in a variety of stress-related disorders. Furthermore, because domestic and/or sexual abuse is considered a frequent act in South Africa, this therefore increases the risk of HIV and other diseases, which supplements the prevalence of mental disorders. Not only does the HIV infection have a negative psychological effect, it can also harm the physiological function of the individual, (Rao, Sagar, Kabra, and Lodha, 2007). As mentioned previously, the topic on child and adolescent substance abuse is a huge concern within the South African context as the abuse of substances at a young age, can result in a stunted cognitive development.

Environmental factors

Urban environments such as; cities, towns, townships and suburbs are defined as built-up areas with characteristics of economic activity and other land uses, (Stats SA, 2016). According to studies by Srivastava (2009), urbanization has the ability to negatively affect mental health due to external stressors that include; inadequate infrastructure, overcrowding, violence and environmental factors such as pollution. Those that are considered underprivileged within an urban environment experience psychological and environmental adversities that heighten their vulnerability to mental health issues. Among the youth population, it is essential for the individual's development to occur within a calming and peaceful environment, but urban environments are far from calm, instead urban settings pose more challenges than those in rural environments such as; crime, high-density living and more expenses. Therefore, according to Galea, Uddin and Koenen (2011), children and adolescents who are raised within urban areas may be more susceptible to a mental illness as opposed to those raised within rural settings.

Economic factors: A lack of resources

South Africa is considered as a lower middle income group country which therefore lacks the financial, educational and human resources in order to implement CAMH. According to A. Dawes et al. (2012), the government should budget towards mental health promotion in all locations through coordinated and integrated health services near homes, schools and youth clubs that consist of; educational attainments, social care and youth justice agencies. However, unfortunately the standards developed for CAMH in 2003 have not yet been implemented based on the lack of financial priority on child and adolescent mental health services, therefore South Africa's child and adolescent existing psychiatric institutions are highly understaffed, or staffed with those that are not qualified, compromising the quality of services to the patient, (A. Dawes et al. 2012). With regards to the lack of educational resources, the World Federation for Mental Health (2018) suggests that poor education is also considered to be a primary contributor to the prevalence of child and adolescent mental illness as it can have life-long destructive effects on the individual, and is a pure example of the root of poverty. Despite South Africa's basic right to education, many children and adolescents who are categorized as 'mentally or physically disabled' are excluded. This issue is evident as statistics by World Federation for Mental Health (2018) reveal that in 2015, over half a million of young people with mental illnesses, intellectual and physical disabilities were excluded from schools because school staff and teachers are unfamiliar with how to accommodate them. For children and adolescents, the frustration of living with a mental, learning or physical disability is exhausting enough, and not being given the opportunities to learn properly only makes their situation more difficult, (World Federation for Mental Health, 2018). Compounding the lack of educational resources and their existing challenges, this has a greater negative affect on the mental health of the young individual. Regardless of South Africa's democratic transition and the new laws and policies regarding mental health, not much has improved for the youth population's educational systems, (World Federation for Mental Health, 2018)

3.5 CONCLUSION

Chapter three has provided a broad understanding on the necessary background, information and context regarding the topic of psychiatry within South Africa, with focus on the origins, causes and historical development of mental health issues, with particular reference to child and adolescent psychiatry in South Africa.

Therefore, regardless of the advancements in psychiatry since the 1650s, it can be concluded that the current state of child and adolescent mental health in South Africa is still considered to be extremely inadequate. South Africa lacks sufficient psychiatric and/or mental health facilities, which among many other factors has contributed to the prevalence of mental illness. The research has therefore provided the required information to essentially inform the approach of the next chapter, which will discuss alternate architectural and design trends in child and adolescent psychiatry to achieve a better long-term approach to mental health care.

CHAPTER FOUR | RE-CONCEPTUALIZING PSYCHIATRY IN SOUTH AFRICA

4.1 INTRODUCTION

Internationally, psychiatric and mental health policies are progressing considerably with fresh models being implemented to find alternate solutions in the response to the issue of mental illness among children and adolescents. The intention of the following chapter is to discover emerging and alternative trends to re-conceptualize the design of mental health facilities for children and adolescents. To essentially explore international models, that can adapt within a South African context, in conjunction with the theoretical and conceptual framework, explored in chapter two.

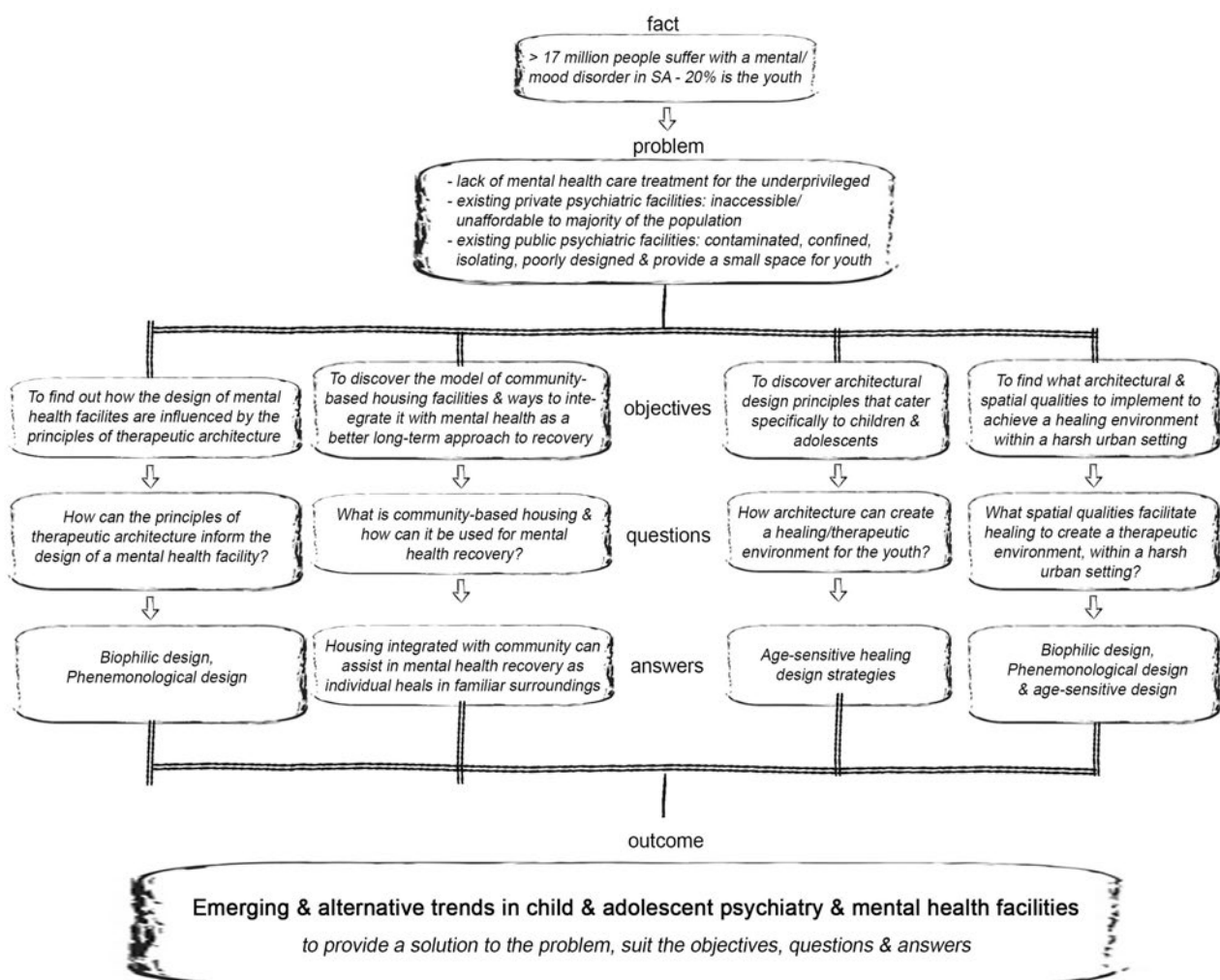


Figure 24: Diagram illustrating that the problem requires a solution that will link to the given objectives, giving rise to the research questions, that will be answered through knowledge gained from previous chapters to essentially find alternative and emerging solutions in child and adolescent psychiatry/ mental health facilities. 2019, By Author.

4.2 EMERGING & ALTERNATIVE TRENDS IN CHILD AND ADOLESCENT PSYCHIATRY

4.2.1 Introduction

The following section intends to explore international models which aim to de-institutionalize mental health facilities, for children and adolescents through community-based housing treatments, with the intention to create a better long-term approach to mental health recovery. To essentially critically analyse differing viewpoints on the topic of emerging and alternative trends in child and adolescent psychiatry as well as investigating evidence-based research on architectural trends that obtain the ability to create a healing induced environment within an urban setting through the inspiration of a therapeutic architecture and an age-sensitive healing design.

4.2.2 De-institutionalizing mental healthcare facilities

Internationally, the shift from institutionalised to de-institutionalised community mental health services began in the late 1990s, when issues regarding mental healthcare became more apparent, (Ministry of Health and Long-Term Care, 2016). The movement entailed removing patients out of psychiatric facilities to a less isolated community-based mental health treatment with the assumption that community integration may lead to more fulfilling lives. The 20th century marks the period when psychiatric institutions began to suffer from overcrowding, which caused issues among funding resulting in poor living conditions and allegations of abuse, death and ill-treatment, (Fakhourya, W; Priebe, S, 2007). Therefore, according to S. Duane (2003) the primary objective for de-institutionalisation was to reduce the overcrowding issue in institutions by releasing patients to community-based services as well as reforming psychiatric care to reduce patients feelings of dependency, hopelessness and other behaviours that make the adjustment to life out of care difficult. Various theoretical perspectives and models were put into practice which lead to the realization that community-based housing and supportive services for people with mental health issues was a much more efficient approach, (Ministry of Health and Long-Term Care, 2016).

4.2.3 Community- based mental health (CMH) services

Community mental health services are essentially treatments centres that are not based within a institutionalised setting. It is considered most efficient when mental health is in conjunction with primary health care services, provided the workers have the required qualifications. It makes the accessibility easier to mental health services and allows for an active participation of the community and family, assisting in the healing process of the mentally ill child or adolescent, (WHO, 2003). Internationally, this approach has proven to provide an opportunity for those who suffer with severe mental disorders to continue living within their familiar surroundings during their recovery process, thus promoting community integration and the reduction of stigmatization, (WHO, 2003). But, as a developing country, South Africa lacks the availability of skilled personnel and sufficient funding for mental health services. Research by the World Health Organisation (2003) identifies various

different types of community mental health services, but in light of the research objective and target population, the intention is to combine two primary methods being; a therapeutic inspired residential service for children and adolescents in conjunction with community-based services. This type of community-based mental health services entails housing in combination with various 24-hour social and clinical support services. It is essentially “the combination of a safe and stable home with the offer of additional supports that enable a person to stay in their home, live independently, and/ or achieve recovery”, Ministry of Health and Long-Term Care (2016). The reason this type of approach has been successful is based on the fact that the architectural intention of the housing model aims to remove the stigmatization of a 'mental institute' and rather be seen as a building that fits in with its urban setting, serving a purpose to its community, allowing patients to gradually integrate back into their surrounding and familiar community to ensure a successful long-term approach to mental health recovery. Studies conducted by Ministry of Health and Long-Term Care (2016) suggest that “with the right housing and supports, people recovering from mental illness gain a renewed sense of dignity and hope, and can reintegrate into the community more successfully” as opposed to an institution that would isolate them.

4.2.4 Different perspectives on community- based mental health services

However, the topic of community-based mental health services is still highly debated. Critics like L. Eisenberg (2010) argue that the de-institutionalisation of mental health services was mostly progress in the right direction, whilst acknowledging the few downfalls that left patients homeless. Whereas, E. Fuller Torrey (2008) defends the development and significance of psychiatric institutions, concluding that de-institutionalisation was a move in the wrong direction and Fakhoury and Priebe (2007) argue that it was “an unsuccessful move in the right direction”. L. Eisenberg (2010) supports the community-based approach to mental health care as he believes that by placing mentally ill individuals within their surrounding and familiar community, it allows families to play a role in the recovery process of the individual as opposed to those placed within an institutionalised facility - which is a highly crucial factor among children and adolescents. However, E. Fuller Torrey (2008) argues that majority of mentally ill individuals are resistant to such help within communities based on the nature of their illness, need for privacy and the embarrassment they incur from stigmatization. Similarly, Fakhoury and Priebe (2007) argue that community services are often uncoordinated and unable to meet the complex needs of the patient. They believe that community-based services have the potential to isolate the mentally ill and “instead of creating a 'community psychiatry', reforms established a 'psychiatric community'”, (Fakhoury and Priebe, 2007). On the contrary, L. Eisenberg (2010) argues that when mentally ill individuals are placed within a institutionalised facility, they tend to refuse and reject treatment as they don't believe they belong there. But, if a mentally ill individual is placed within a familiar environment, integrated with

the community, surrounded by various support systems, they may feel less attached to the stigma of a mental illness and therefore have a higher rate of a successful long-term recovery.

4.3 COMPARING TREATMENT LOCATIONS: THERAPEUTIC ENVIRONMENTS

4.3.1 Introduction

Emerging and alternate trends in child and adolescent psychiatry gear towards the de-institutionalization of mental health care facilities through community and primary health care models, meaning that these types of facilities and services are undoubtedly located within community-based environments that are either based in rural, isolated and natural settings. However, studies have revealed that there is a potential risk in isolating an individual from their familiar surroundings during the recovery process, as it can contribute to further challenges once the individual is returned to their familiar environment. A solution to this phenomenon may be to achieve the therapeutic effects of an isolated and natural environment within an urban setting, the familiar environment of the individual and community.

4.3.2 Isolated/ natural setting

For decades, when searching for the most conventional location for an environment that would best suit what a treatment centre entails, the search has generally been directed towards isolated or natural settings. Past and present models of treatment centres that aim to induce a healing environment, insist on the process of isolation of the user from society, with the intention of replacing the negative distractions perceived with an urban or city lifestyle with the more desirable effects of a rural one, which supposedly assists in the healing process, (Ulrich, R, 1991). The primary objective of such spaces is to use the appreciation of nature as a way to assist in the recovery process of individuals. Studies conducted by psychiatrist, E. Deans (2016) reveal that the increased level of urbanization is definitely associated with the prevalence of mental illnesses, especially among children and adolescents, as the majority of those who grew up in rural or isolated natural settings were at a healthier mental state. E. Deans (2016) explains how the exposure to greenery and nature has the potential to reduce stress because “we exist in a world and environment where our brains are working overtime and we think and roll over ideas and worry, exposure to nature seems to get us out of our heads, with likely positive longitudinal benefits.” “Society has begun to favour nature as a result of our association with nature as a restorative experience, while we associate our everyday urban settings with traffic, frustration, congestion, stress, crime, and pollution, which result in our psychological desire to escape it”, (Ruga, W, 1989). However, it has been discovered that isolating an individual from their familiar surroundings and environment can contribute to further challenges regarding the recovery process as once the individual is returned to their familiar environments, faced with their former stressors, it is inevitable that the individual will experience a mental setback from their recovery. But, human nature requires the need to escape the busy urbanized setting of cities as human's naturally crave opportunities to

mentally and psychologically restore and relax within natural environments. Therefore, an opportunity arises to take on the challenge of achieving the therapeutic effects of an isolated and natural environment within an urban setting.

4.3.2 Urban/ city setting

Regardless of the fact that the most common setting for a mental health facility is best suited within an isolated or natural environment, it is significant to remember that once the individual returns to their familiar environment, post-treatment, they are at a higher susceptibility of a mental relapse as explained in the previous section. With that in mind, it is suggested that a community-based mental health facility for children and adolescents, that encompasses the therapeutic effects of an isolated/ natural environment within a socio-economic depressed community, may ensure the permanency of mental health recovery. By conceptualizing a nurturing inner city environment through a community-based mental health facility, it will not only assist in the mental health recovery of the individuals and help them integrate back into society with the correct coping-mechanisms, but also serve a purpose to the community, allowing for community interaction and therefore promoting a social environment which will empower and strengthen the individual and community. This is especially significant for the development of children and adolescents as the recovery process will occur within familiar environments, ensuring the ability to manage mental illnesses. This will also assist in making mental health a more familiarised issue, which would have the potential to reduce the stigma, thus making it more of a priority and overtime assist in the progression towards the regeneration of a harsh urban environment.

4.4 CONCLUDING REMARKS & DESIGN CONSIDERATIONS

Chapter four, section two of the literature review, has provided a broad understanding on the necessary background and information regarding alternate architectural and design trends in child and adolescent psychiatry. The analysis has provided different perspectives for the alternative design options. However, the following will conclude with the chosen direction that will inform the final outcome of the research.

The research gears towards the model of a de-institutionalized, community-based housing mental health facility as “the most suitable environment for child and adolescent mental health services is based within a community setting as it enables young individuals to maintain local links and relationships with family and friends and grow in an environment that is safe, secure and familiar, according to the Department of health (2017). Thus, the goal moving forward is to adapt this model within a South African context and achieve the therapeutic effects of a natural environment within an urban setting. To generate a therapeutic inspired architecture and an age-sensitive healing design to remove the stigmatization of a 'mental institute' and rather be seen as a building that fits in with its urban landscape, serving a purpose to its community, allowing patients to gradually integrate back into their community, ensuring a successful long-term approach to mental health recovery.

CHAPTER FIVE | PRECEDENT STUDIES

5.1 INTRODUCTION

The following chapter will examine two precedent studies that deal with buildings informed by specific architectural and spatial characteristics that generate a healing induced environment. The building examples will be critically unpacked through the theoretical and conceptual lens mentioned in Chapter two as well as the review of literature, and subsequently respond to the research questions established in Chapter one. The first study explores an existing hospital that is known to be the “definition of biophilic design” which aims to achieve the optimal healing environment for health care. Whereas the second study investigates community-based mental health facilities that encompass principles of a therapeutic architecture in conjunction with age-sensitive healing design principles. However, all studies investigate the implementation of a therapeutic architecture, which aims to achieve a healing induced environment within an urban setting, that also focuses on community integrative principles with the intention to empower the individual and surrounding community, proving that is a better long term approach to mental health care.

5.2 KHOO TECK PUAT HOSPITAL

Location: Yishun Central, Singapore

Architects/ designers: CPG consultants

Date of completion: 2010

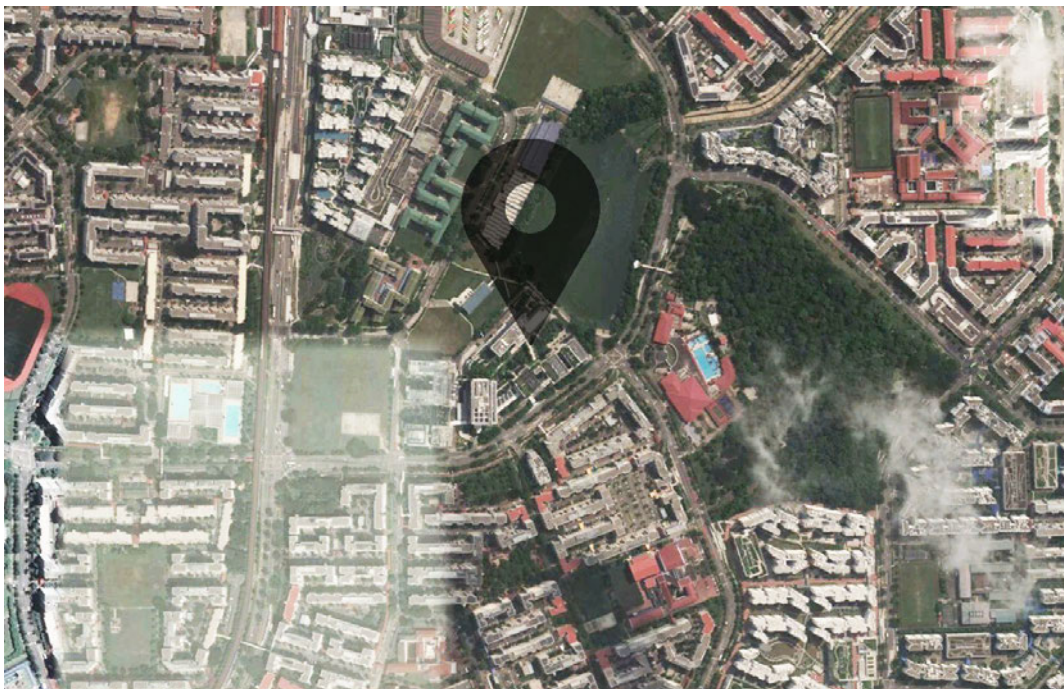


Figure 25: Site plan of the Khoo Teck Paut Hospital in Singapore. 2010, By Author. Source: Google Earth

5.2.1 Introduction

The Khoo Teck Puat Hospital is known to be the “definition of biophilic design.” The facility consists of 590 beds and is a general and acute-based care hospital that combines medical expertise with personalised care. The hospital is located within a dense urban setting, making it difficult to achieve the optimal healing environment. However, the architect's successfully achieved a therapeutic environment through biophilic and phenomenological design attributes. The architect's primary intention was to design a hospital that could be considered a 'hassle-free' experience for users through the use of way finding tools and at the same time, a natural healing environment that would improve the rate of patient recovery as well as create a more conducive and pleasant working environment for staff. The architect's designed it to not only be a place of healing and recovery, but a space that promotes community integration through public lectures, exhibitions and educational programs. The architectural design of the facility also aimed to create a radically different setting that challenged the stereotypical view of hospital-like environments. Thus, the justification for this study then stems from the way in which the architects have applied the themes and principles of a therapeutic architecture through biophilic and phenomenological design principles, in order to generate a healing induced environment within an urban setting, proving that this is a better architectural approach for the well-being of people within health care facilities.

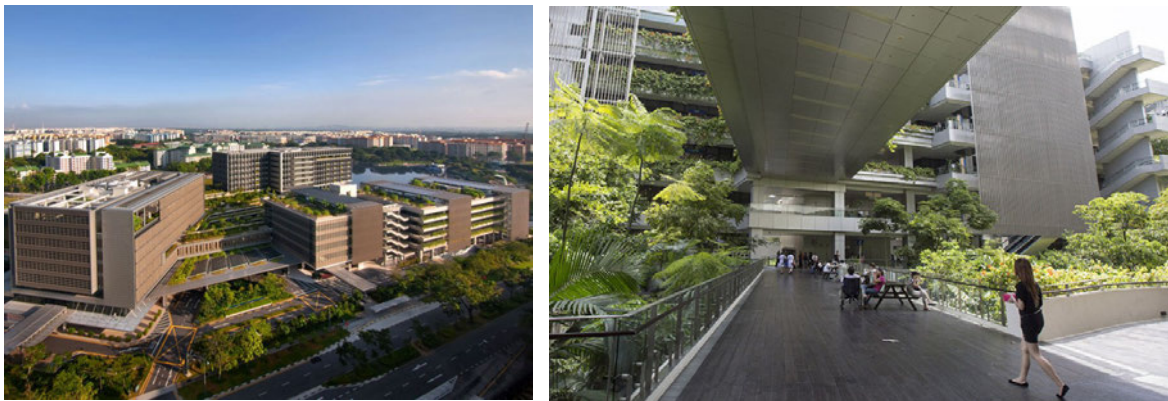


Figure 26 (left) : Image of the Khoo Teck Puat hospital, portraying the building's integration into an urban setting.

Figure 27 (right) : Image of the main entrance. 2010, By Khoo Teck Puat Hospital, Living-Future.org.

5.2.2 Therapeutic architecture

The architect's key intention was to re-conceptualize the hospital experience through generating an environment that promotes healing and recovery through the application of sustainable concepts and the idea that “nature would nurture”, whilst being located within a dense urban setting. As mentioned previously, the essence of a therapeutic architecture is to design in accordance to those that occupy the space. Thus, in order to achieve this, the architect's have designed three building blocks overlooking a central courtyard in order to optimize natural day light and ventilation. The hospital is not just therapeutic in nature, it also obtains significant eco-friendly aspects reducing the need for airconditioning, thus reducing energy costs by means of proper design attributes that allow

for controlled and sufficient natural day light and ventilation. These elements will be further analysed in the following section through the theoretical underpinning that makes up the concept of a therapeutic architecture;

Biophilic architecture

The architect's primary intention was to explore the way in which Biophilic design principles can be used as a design concept for a hospital. According to the architect's, the hospital was designed to be 'forest-like' in the sense that it would be representative of a structure completely enmeshed in greenery that consists of additional natural elements like water features with aquatic species, and plants that attract birds and butterflies. In order to obtain an architecture that thrivingly incorporates the principles of green and Biophilic design, the architect's allowed the location's space, climate, ecology and context to determine the building design and layout through 'drawing in' the existing adjacent pond and greenery of the park, into the heart of the hospital with the intended outcome to make the hospital, pond and park an integrated entity. To obtain optimal natural lighting and ventilation, without solar glare or rain entry with the inclusion of calming views, the architect's developed a V-shaped configuration of blocks, delineating a central court. The layout of the 'V' orientates to open towards the north, allowing in natural light and cool breezes that skim over the adjacent stormwater pond.

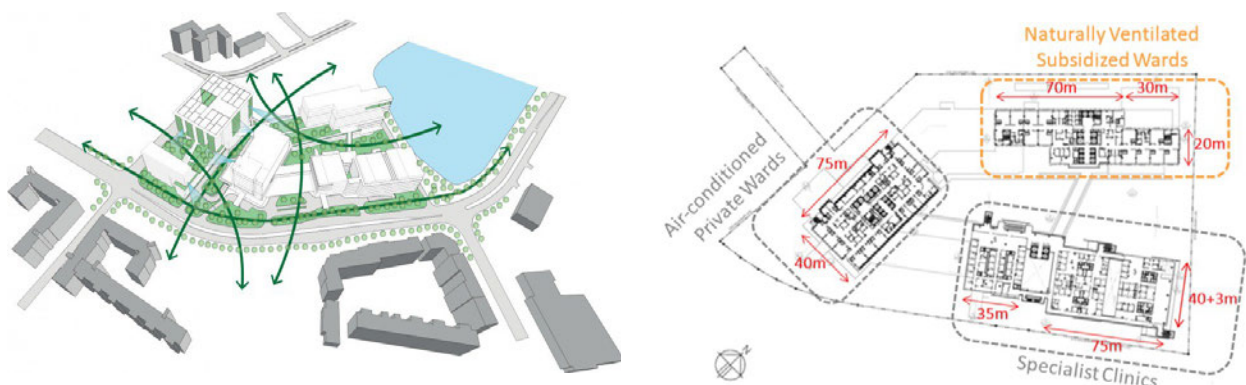


Figure 28 (left) : Diagrammatic representation illustrating how the building 'draws in' the existing pond and park into the heart of the hospital. 2010, By Khoo Teck Puat Hospital, Living-Future.org.

Figure 29 (right) : Floor plan diagram portraying the aspect ratio of each building block. 2012, By CPG Consultants from Tan Shao Yen's dissertation.

The architect's insisted on catering for the visual and physical interaction between nature and the interior spaces throughout the entire hospital, to promote the healing experience. Thus, natural vegetation extended from the courtyard to the upper levels of the buildings to ensure that not only does the building represent being entangled within a garden, but also to ensure that patients and staff are always within close proximity to a calming and therapeutic environment



Figure 30: Images portraying the building's sense of 'forest-like' design as it has the inclusion of greenery on every level.
2010, By Khoo Teck Puat Hospital, Living-Future.org.

Subsequently, the hospital obtains significant eco-friendly and sustainable elements, thus making the building a part of the larger ecosystem throughout the north of Singapore. These aspects include; using the existing adjacent pond for irrigation purposes, roof solar panels, aluminium "Wing walls" along the building walls to block out direct sunlight and channel prevailing winds thus reducing the need for airconditioning and therefore reducing energy costs. The most significant eco-friendly attribute is the integration of roof gardens and community urban farming that consists of a diversity of plants, fruits and vegetables. This not only caters for a consistent direct experience with nature, it also promotes an engaging and educational experience, and produce for the hospital kitchen.

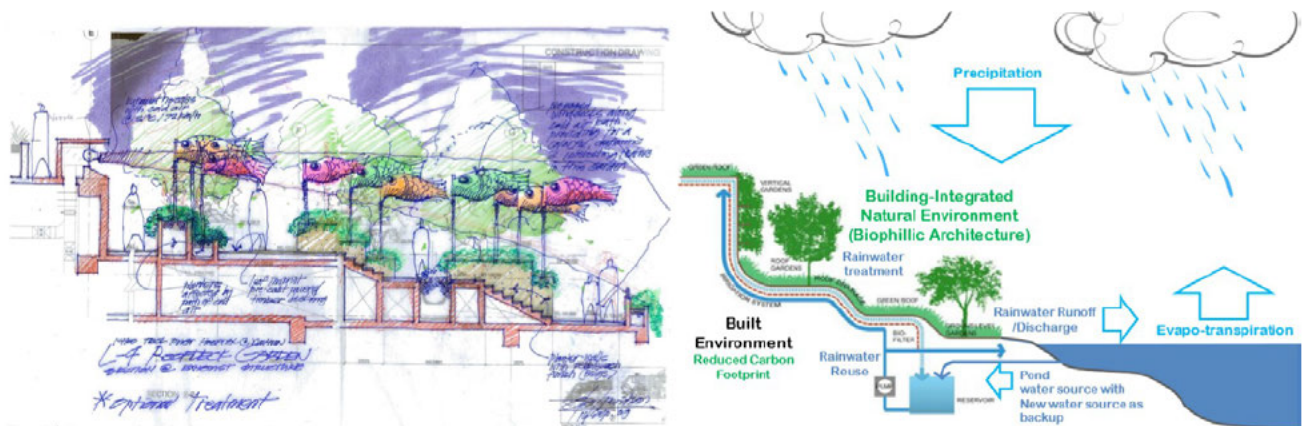


Figure 31 (left) : Section illustrating the landscaped roof terrace as social space, while providing good shading and insulation to the spaces below.

Figure 32 (right) : Diagram of the building's irrigation system, thus making the building a part of the larger ecosystem.
2012, By CPG Consultants from Tan Shao Yen's dissertation.

Phenomenology

According to the architect's, the primary objective was to “create a healing environment through gardens to engage the senses of sight, sound, scent and touch for patients, visitors and staff.”

Therefore, the design of the building intentionally moved away from what is known to be a typical expression of a hospital, to something more natural thus the creation of 'a building within a forest.'

Based on the spatial design of the hospital, the visual sense removes the perception attached to the use of artificial lighting and lack of visual and physical connection to nature seen in general hospital architecture. Whereas, the layout of Khoo Teck Huat hospital allows consistent visual access to natural lighting and ventilation as well as an abundance of greenery, water and a diversity of birds and butterflies, thus provoking a positive emotional response that inevitably assists in the healing process. Additionally, the inclusion of greenery and water also influences the scent of the space. One of the major sensory elements incorporated into the hospital was to introduce scented plants with the intention to remove the typically negative memory of the smells of a hospital-like environment, especially alongside the patients rooms.



Figure 33 (left) : Sections and elevation portraying the inclusion of a louvred façade to maximize natural ventilation and daylight as well as the inclusion of scented plants alongside the patient bedsides, on every floor.

Figure 34 (right) : 3 Dimensional view of the louvred façade. 2012, By CPG Consultants from Tan Shao Yen's dissertation.

With regards to the acoustical quality of the building, the architect's used the spatial design of courtyards and natural vegetation to act as noise buffers from the surrounding urban environment to achieve a certain level of peace and quiet within the facility. One of the major elements was also the use of the sound of falling water, in order to achieve the optimal healing and serene environment.



Figure 35 (left) : Images from the patient units, portraying the inclusion of visual access to the scented plants.

Figure 36 (right) : Image portraying the integration of water into the hospital. 2010, By Khoo Teck Puat Hospital, Living-Future.org.

5.3 PARKWOOD INSTITUTE: MENTAL HEALTH CARE BUILDING

Location: Ontario, London, Canada

Architects/ designers: Parkin Architects

Date of completion: 2014

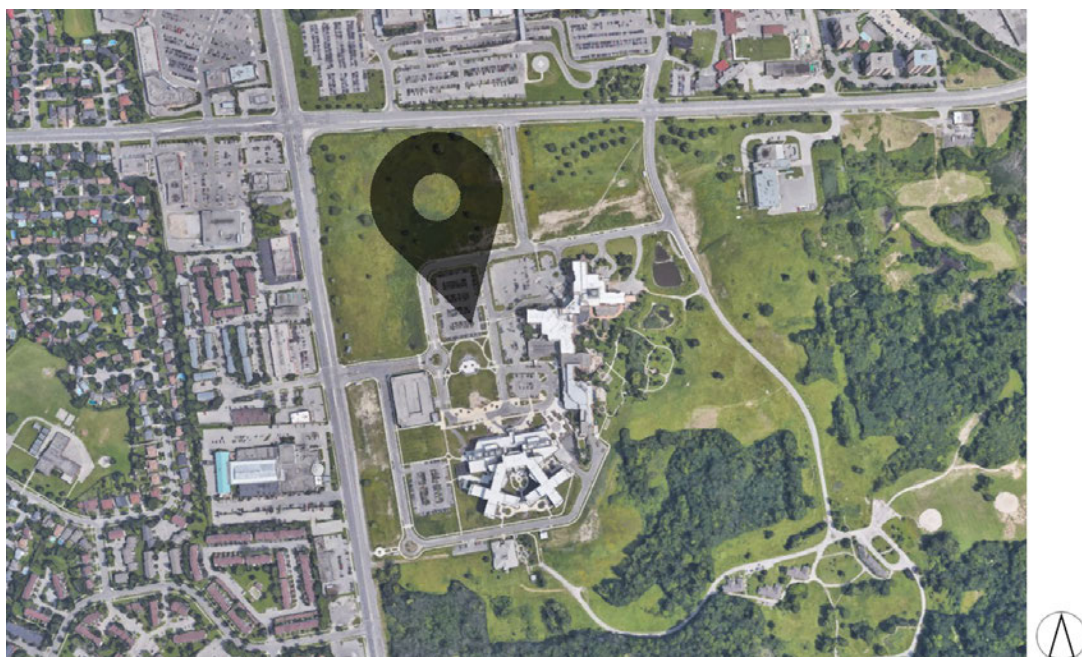


Figure 37 : Site plan of the mental health care building at the Parkwood Institute.

2014, By Author. Source: Google Earth

5.3.1 Introduction

The Mental health care building at Parkwood Institute was an addition to the St. Joseph's Hospital in attempt to incorporate two health care facilities in one location, with the intention to erase the lines between physical and mental health and focus on the body, mind and spirit of each individual. The facilities are located within close proximity to both residential and urban areas, making it easily accessibility to the surrounding community of Ontario.



Figure 38 : Image of Parkwood Institute: Both physical and mental health facilities in one location.

2014, Source: <https://www.sjhc.london.on.ca/our-stories/parkwood-institute-mental-health-care-building>

The facility is dedicated to the treatment and recovery of adolescents, adults and elders who suffer from severe and persistent mental illness as well as assist them with the correct skills that prepare them for societal re-integration. The architecture of the new Mental Health Care Building was designed with the intention to remove the stigmatization of a institutionalised facility, making those who occupy the facility feel more at ease. Parkin architects designed the building spaces to support a new model of mental health recovery model that implements a variety of healing environments within close proximity to the patient's homes and communities, to promote individual growth and skill development through privacy, education, skill building and social interaction. The architect's designed the facility in such a manner that the patient's recovery entails a progression through spaces layered in a distinct configuration that is conceptually representative of "The House", "The Neighbourhood" and "The Downtown" with the intention to assist and prepare the patient for community integration. Thus, the justification for this study then arises from the building's objective of rethinking the design of mental health care facilities through the implementation of a home-like environment, an age-sensitive spatial design concept, known to be a highly effective among the healing and mental health recovery for children and adolescents. Another reason for this study is to analyse the way in which the architects have applied the themes and principles of a therapeutic architecture to achieve a healing environment within patient's familiarised surroundings, which has been proven to a better long term approach to mental health care regardless of age.

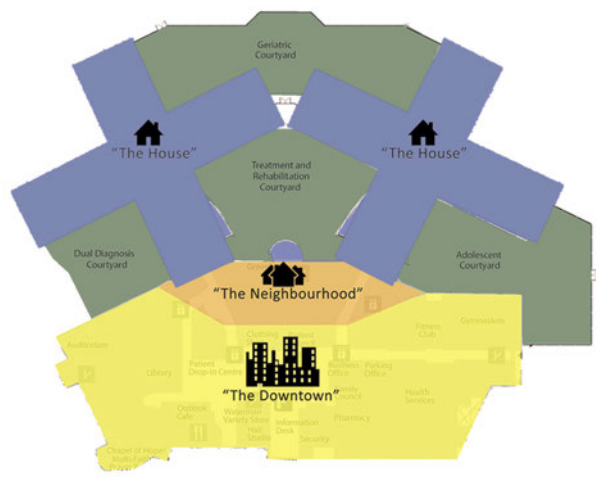
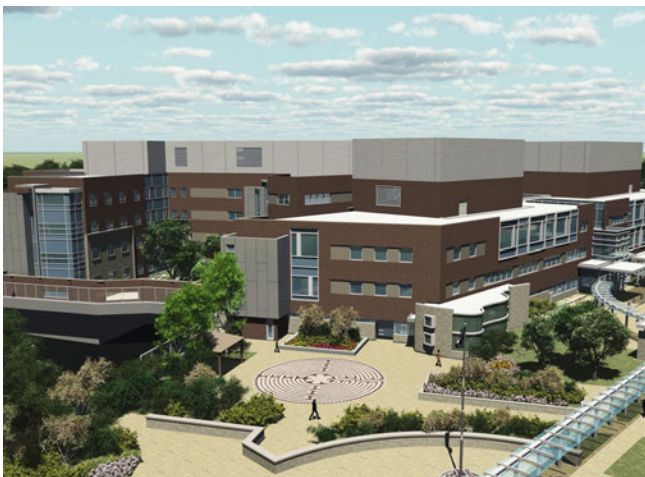


Figure 39 (left) : Image portraying the entrance to the facility. 2014, By Parkin architects limited.

Figure 40 (right) : Diagram portrays the age-sensitive spatial design concept of a home-like environment. 2014, By Parkwood Institute Mental Health Care Building Patient and Family Handbook, edited by Author.

5.3.2 Therapeutic architecture

As mentioned in Chapter two, it is extremely significant to incorporate the principles of a therapeutic architecture when designing spaces to promote healing through supportive spatial elements that interact with the patient's needs. Based on the context and the existing hospital on site, the architect's attacked the challenge and site constraints through the design of a five storey building with 156 individual patient bedrooms and 42789 square meters of therapeutic space. The building incorporates a variety of light wells, allowing natural light to filter through all areas of the building as well as the inclusion therapeutic courtyard spaces to achieve optimal natural daylighting, ventilation and integration with nature. The architectural design has taken the composition of locally sourced and recycled materials, minimizing the ecological footprint and achieving a more contextually related architecture, thus feeding in to the concept of a home-like atmosphere. With regards to the spatial design, the architect's also successfully designed spaces that are sensitive to the needs of a young individual's psychology and physiology, which is the essence of a therapeutic architecture.

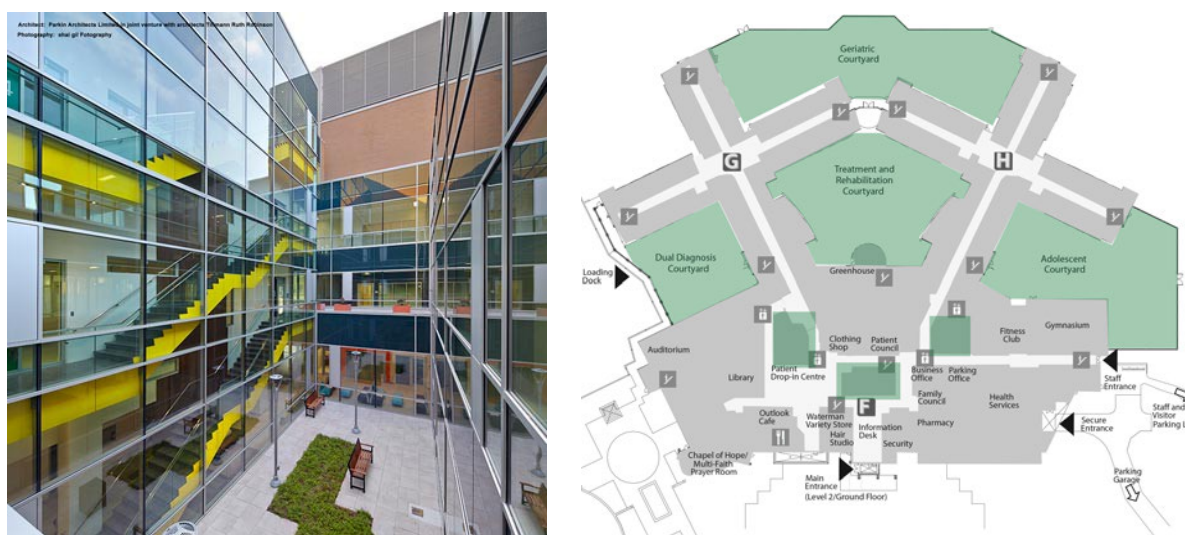


Figure 41 : Image and diagram illustrating the inclusion of the therapeutic courtyard spaces.

2014, By Parkin architects, edited by Author.

These design attributes will be discussed in more detail in the following section through the theoretical underpinning that makes up the concept of a therapeutic architecture;

Biophilic architecture

Parkin architects have successfully incorporated Biophilic architectural design principles with the intention to use nature as a catalyst for therapy and healing. The architect's achieved through a variety of light wells opening up to three courtyard spaces in the center of “The Downtown” building, allowing natural light to filter through all areas of the building as well as the inclusion of three major

therapeutic courtyard spaces, orientated appropriately, as seen in the images, in order to achieve optimal natural daylighting and ventilation, which has been proven to reduce stress and promote mental health. The architect's catered and designed for the visual interaction between human and nature through the inclusion of fully glazed facades and large openings that face the inner courtyard spaces as well as constructing a direct experience of nature which allows the patients, employees and members of the community to interact within a space that fosters a controlled level of interaction, privacy and security. The architect's have also successfully incorporated an indirect experience of nature within the interior spaces through the use of earthy and natural materials, textures as well as colours that provoke a sense of calmness.

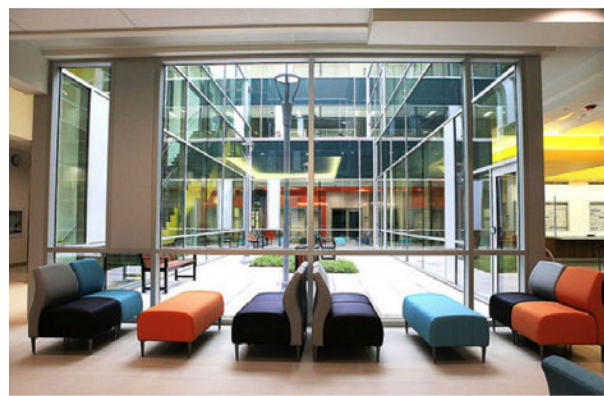
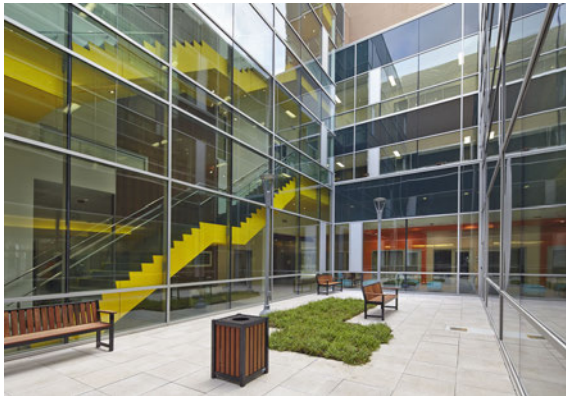


Figure 42 (left) : Image illustrating the inclusion of the therapeutic courtyard space. 2014, By Parkin architects.

Figure 43 (right) : Image portraying the visual connection between the interior and exterior.

2014, By Parkin architects.

The architect's also intended to minimize the ecological footprint of the Parkwood Mental health care building through passive and sustainable design strategies. Thus, by achieving a completely eco-friendly piece of architecture, the architect's used materials that are locally sourced and/or made using recycled components. The building also conserves water, energy and other resources through low-flow faucets toilets and motion sensor lighting as well as a regulated air ventilation system to maintain a consistent and healthy indoor environment for the users. However, ultimately the layout of the facility is what maximizes the amount of natural light and ventilation that enters the interior spaces.

Phenomenology

As seen in the left image below, apart from the inclusion of greenery and landscaping, the building appear institutionalised/ hospital-like based on window sizes, scale, form and structure. However the architect's have attempted to reinforce elements of phenomenological design to promote a sensory experience within the interior spaces of the facility, to assist in the healing and mental health well-being of those who occupy the spaces.



Figure 44 : Exterior images of the Mental Health Care Building at Parkwood Institute. 2014, By Studio Shaigil.

With regards to the visual sense, within the interior spaces, the architect's achieved a phenomenological design through the materiality, textures, colours, as well as an appropriate layout and orientation to ensure optimal natural lighting and ventilation from the central courtyard spaces. As seen in the images below, the large openings that open up to the central courtyard spaces filter the interior spaces with an abundance of natural lighting which allows for the manipulation of light and shadow on the surfaces as well as a visual connection with the exterior natural environment. The well landscaped and naturally vegetated courtyard spaces also assist in removing the notion of an institutionalised facility through the lack of hospital-like smells and rather earthy, natural smells, therefore creating a positive perception of the space.



Figure 45 : Images portraying the inclusion of the larger therapeutic courtyard spaces. 2014, By Parkin architects.

The architects also intended to design a space that captures the essence of a town square or city environment in “The Downtown” area which conceptually represents a community. There is a strong use of earthy, neutral colours and colours that provoke a sense of interest, joy and love as well as the inclusion of timber to soften the space and create a serene indoor environment, provoking the user's sense of sight and touch.



Figure 46 (left) : Image portraying the use of colour and materiality to provoke the user experience.

Figure 47 (right) : Image illustrating the essence of “The Downtown” environment. 2014, By Parkin architects

However, for the more private and living spaces within the facility, the architects intended to construct spaces that had all the elements of a familiarised and homely environment through the integration of timber cladding to provokes the user's sense of sight and touch as well as neutral, earthy colours and colours that appeal and assist in the healing process.



Figure 48 (left) : Image illustrating the transition space within “The Neighbourhood” area.

Figure 49 (right) : Image of the patient bedroom. 2014, By Parkin architects

5.3.3 Age-sensitive design

When planning spaces that are designed to heal individuals who are at critical developmental stages in life and are dealing with some form of mental health disorder, it is significant to create sensitive spaces that the individual can relate to and feel comfortable within.

Children and adolescents design preferences

The Mental health care building was designed based on the 'Simulation of real life' concept, explored further in the next section, to allow patients a sense of control over the environment and gradually promote social interaction through the integration of private bedrooms with en-suite

bathrooms, in order for them to find a space that is personal to them where they can relax and develop a sense of ownership. To further allow a sense of control, the architect's have designed and provided smaller social spaces within “The House” area so that the patients are not forced into larger socially interactive groups, instead this gives them freedom of choice to progress into more medium sized social spaces, as seen in the right image below. As the journey progresses, patients are then able to transition to more public spaces referred to as “The Downtown”, allowing the patients to socially interact with others and those from the surrounding community, thus allowing the individuals to gain a sense of connection and community, assisting in the healing process and further preparation for societal re-integration.

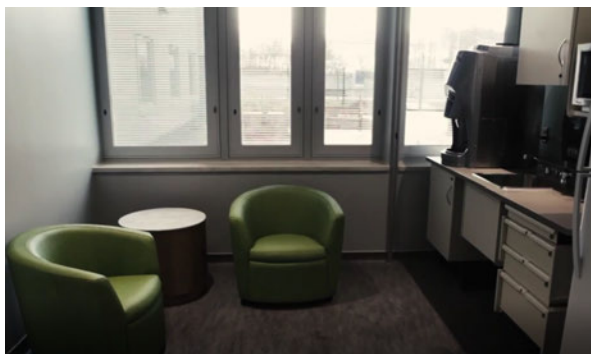


Figure 50 (left) : Image illustrating the smaller social spaces within “The House” area. 2014, Source: YouTube



Figure 51 (right) : Image illustrating the communal dining space. 2014, By Parkin architects

Furthermore, as discussed previously, another significant design attribute to consider when dealing with mentally ill individuals, is the inclusion of natural vegetation, daylight and ventilation in order to achieve attention restoration and relaxation to establish a positive “distraction” which assists in the process of mental health recovery. This has been achieved through the integration of the four major courtyard spaces which allow for a physical connection between a patient and outdoor spaces. Research states that although children, adolescents and adults may have differing preferences with regards to a place of healing, the common factor remains that an outdoor space is preferred in these types of facilities, whether it be a space for activities or relaxation. In addition, the facility has incorporated the use of colour psychology. The phenomenon of colour psychology is proven to encourage patients' psychological well-being, especially during a recovery process as specific colours have the ability to visually provoke positive or negative emotions. The design incorporates earthy/ neutral colours, textures and materials to evoke a sense of calmness and encourage psychological well-being. As seen in the images below, the architect's also incorporate different colours throughout the building to be used as a way finding tool to identity different wings of the building, allowing patients, staff and visitors a better sense of direction and space. These warm, inviting and lively palette of colours are then split into different shades, thus defining each section of the building in a fun and inviting way.



Figure 52 : Images illustrating the colour palette within the facility. 2014, Source: YouTube

The 'Simulation of real life' concept

Parkin architects developed the 'Simulation of a real life' concept in the facility by incorporating familiarised elements, as discussed in Chapter two, with the intention to replicate everyday environments and experiences, allowing the individuals to progress through healing stages and prepare them for societal re-integration. The essence of this concept is also to focus the different areas in the building on privacy, education, skill building and encourage social interaction and a sense of community all with the intention to assist and prepare the patient for community integration. The building was designed in such a manner that the patient's recovery entails a progression through spaces layered in a distinct configuration that is conceptually representative of the following;

“The House”

Essentially a home-like environment that can support the patients in their private and personal living spaces. This section consists of the inpatient units, where each patient has the privacy of their own bedroom and en-suite bathroom, and each corridor has smaller social spaces, communal kitchenettes, lounges and relaxation rooms. Each of the inpatient units have access to the therapeutic courtyards as well as an enclosed courtyard allowing them to integrate with nature within a more private and protected environment.



Figure 53 : “The House” plans. 2014, Source: Youtube video: St. Joseph's Health Care London (2014). Part IV: The House - Virtual Tour of the Parkwood Institute Mental Health Care Building, edited by Author.

The major social space is located at the core of the unit which represents the living room of a house with comfortable seating, lots of natural lighting and views down into therapeutic courtyard spaces. As seen in the left image below, the care station is also based within this social space and is situated/ designed in such a way that it is cantered out into the middle, giving the staff good visibility into each corridor and the central living space thus ensuring safety and security in a very subtle manner.

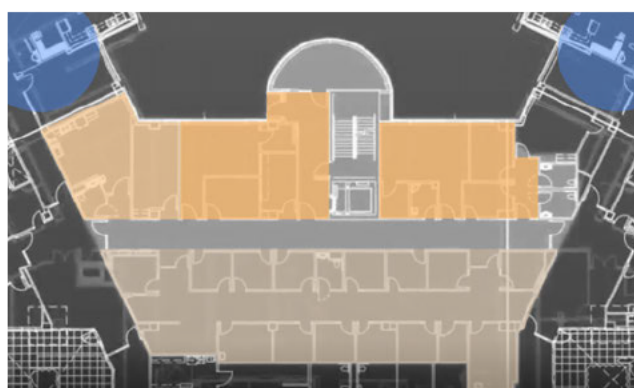


Figure 54 (left) : Image illustrating the 'living room' with the care station.

Figure 55 (right) : Image illustrating naturally lit up corridor through the glass door looking into the courtyard through the communal dining space. 2014, Source: YouTube.

The architects also attempted to avoid the use of long artificially lit up corridors as seen in institutionalised facilities, and rather introduce a lot of natural lighting into the corridors. Which is why one of the larger social spaces, the dining room, consists of full glazing looking out into the courtyard space, thus allowing an abundance of natural light to filter through the the dining room and into the corridors.

“The Neighbourhood”



'The Neighbourhood'

- ◻ 'apartments'
- ◻ social spaces
- ◻ therapy, education facilities

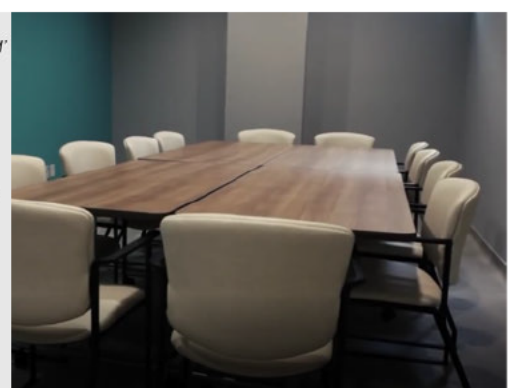


Figure 56 (left) : “The Neighbourhood” plan, edited by Author.

Figure 57 (right) : Image portraying the group rooms in “The Neighbourhood”. Source: Youtube video: St. Joseph's Health Care London (2014). Part III: The Neighbourhood - Virtual Tour of the Parkwood Institute Mental Health Care Building.

Located between the inpatient units and “The Downtown”, “The Neighbourhood” essentially connects the two house units and is seen as symbolic for the transition back into the community. This unit places primary focus on spaces that support group facilities and therapy, education and skill building. As seen in the images below, one of the most significant elements in this unit is the

clinical model of a 'simulated apartment' approach, designed for those leaving an inpatient unit and considering community living. Thus, the 'simulated apartment' approach will then allow the patients to experience apartment/ community living within a safer and more controlled environment and learn the appropriate skills in order to be successful once integrated back into society.

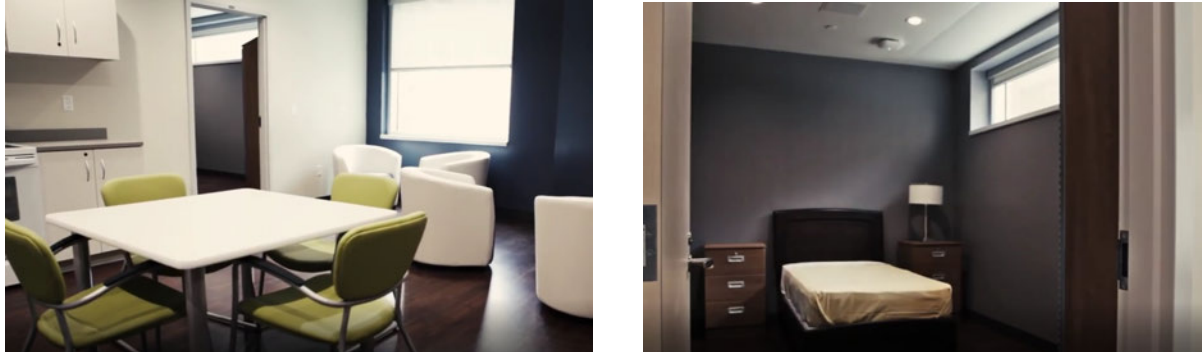


Figure 58 : Images portraying the 'simulated apartment'. Source: Youtube video: St. Joseph's Health Care London (2014).
Part III: The Neighbourhood - Virtual Tour of the Parkwood Institute Mental Health Care Building.

“The Downtown”

The essence of “The Downtown” is to give people a sense of community and break the barriers between public and patients, allowing social interaction to happen in a very natural way. As seen in the images below, the architect's intended to create a conceptual representation of a Town square by surrounding the central spaces with public facilities such as; stores, cafes, a library, pharmacy and private counseling rooms, essentially for patients to model the activities by which they will have to experience once back into the community. The implementation of the courtyard spaces also allow for a clear visual link through the building to the outside, giving the space a city atmosphere. “The Downtown” also incorporates mentally and physically stimulating activities through an auditorium that is utilized for educational facilities and community awareness talks as well as a gym and fitness facility.



Figure 59 : Image portraying the essence of “The Downtown” space. Source: Youtube video: St. Joseph's Health Care London (2014). Part II: The Downtown -- Virtual Tour of the Parkwood Institute Mental Health Care Building.



Figure 60 : "The Downtown" plan. Source: Youtube video: St. Joseph's Health Care London (2014). Part II: The Downtown -- Virtual Tour of the Parkwood Institute Mental Health Care Building, , edited by Author.

5.4 CONCLUSION

According to the first study, it can be assumed that it is possible to achieve a hospital-like facility that generates the optimal healing environment whilst being located within a dense urban setting, provided that the building design encompasses principles of a therapeutic architecture through biophilic and phenomenological design attributes. Thus, by challenging the architectural stereotypical view of hospital-like environments and allowing the location's space, climate, ecology and context to drive the building design, the study concludes that this approach improves the rate of patient recovery and overall user well-being. Subsequently, the second study speculates the great potential in creating a healing induced environment for children and adolescents, within any setting, provided that the spatial design is in accordance with principles of a therapeutic architecture in conjunction with age-sensitive healing design principles. Both studies conclude that by creating a de-institutionalised community-based facility, that is not only seen as a place of healing, but also a place of transition that allows the youth to progress within the facility in preparation to re integrate back into society as well as a facility that serves it's community is a better long term approach to mental health care.

Aligned with the theoretical framework, review of literature and in response to the research questions, it can be concluded that all studies provide the research with the understanding of a therapeutic architecture that has the ability to facilitate a healing induced environment within an urban setting, that also focuses on community integrative principles with the intention to empower the individual and surrounding community, proving that it is a better long term approach to health care.

CHAPTER SIX | CASE STUDIES

6.1 INTRODUCTION

The following chapter will examine and compare two case studies that are informed by the South African building standards with regards to psychiatric facilities in KwaZulu-Natal. The two local building's will be critically unpacked through the research questions established in Chapter one and the theoretical and conceptual framework as mentioned in Chapter two. The intention of the following analysis is to investigate the implementation, or lack thereof, a therapeutic architecture and age-sensitive healing design in both the public and private psychiatric facility, with primary focus on the child and adolescent wards. To question and compare the architectural designs between both facilities and discover the spatial and architectural differences or similarities. Then, subsequently explore ways to achieve a more reputable solution towards child and adolescent mental health care facilities by means of a therapeutic architecture and age-sensitive healing design.

6.2 AKESO: PRIVATE PSYCHIATRIC FACILITY

Location: Umhlanga, KwaZulu-Natal, South Africa

Architects/ designers: KMH Architects

Date of completion: 2015



Figure 61 : Site plan of the Akeso clinic, Umhlanga, Durban, South Africa.

2019, By Author.

6.2.1 Introduction

The Akeso clinic is a private psychiatric facility that offers specialist inpatient treatment for a range of psychiatric illnesses and behavioural disorders, with the primary intention to “*provide a safe and comfortable environment where patients can recover and regain their sense of security and self*”

The facility is located within a fairly quiet suburban area in Umhlanga, KwaZulu-Natal. The clinic offers 76 beds, is staffed by a multi-disciplinary team of medical professionals and assists in the psychiatric care through three specialised units; general psychiatry, dual diagnosis and child and adolescent psychiatry, catering for the individual as well as integrated family treatment methods. The primary objective of Akeso is to ultimately help patients and their loved ones to not only heal and recover, but to also understand their psychological setbacks, thus educating them on how to manage their mental illness once out of the facility. Thus, the justification for this study is to analyse a private psychiatric facility, with primary focus on children and adolescents, within KwaZulu-Natal, South Africa to essentially discover the building's architectural intentions and spatial design qualities and the impact it may have on the patient, staff members and surrounding community. Another reason for this study is to explore to what extent has the architecture incorporated the principles of a therapeutic architecture and age-sensitive healing into the design of the facility, thus investigating what works and what doesn't to ultimately assist in the exploration of achieving a more reputable solution towards child and adolescent mental health care facilities. The following is based on primary observations within the facility, with primary focus on the children and adolescents unit;

6.2.2 Therapeutic architecture

A concept previously explored in Chapter two, a therapeutic architecture is a design with the inclusion of natural surroundings as well as spaces that directly relate to those that occupy the space, which has the potential to assist in the recovery process of those who suffer with mental health issues. Although Akeso is more representative of an institutionalised/ hospital-like facility and therefore lacks primary focus on nature as a therapy, there has still been some attempt to include principles of a therapeutic architecture in the spatial design, structural quality as well as the building orientation and materiality of the facility, with the intention to cater for the specialised needs of the patients and assist in the healing process. These elements will be further analysed in the following section through the theoretical underpinning that makes up the concept of a therapeutic architecture;

Biophilic architecture

KMH architects implemented the theme of nature as a therapy through Biophilic architectural design principles by incorporating elements that achieved a direct experience of nature within the facility. The architect's did this through the integration of a central courtyard space orientated towards north to allow natural lighting to filter through the space and into the patient's central dining area. This also then caters for a visual connection to the natural environment as well as exposure to natural ventilation. However, the enclosed central courtyard space is the building's only source for patients to experience a visual and physical interaction between nature and the interior spaces and is

predominantly utilized by adult patients, and only accessible to the children and adolescents at certain times.

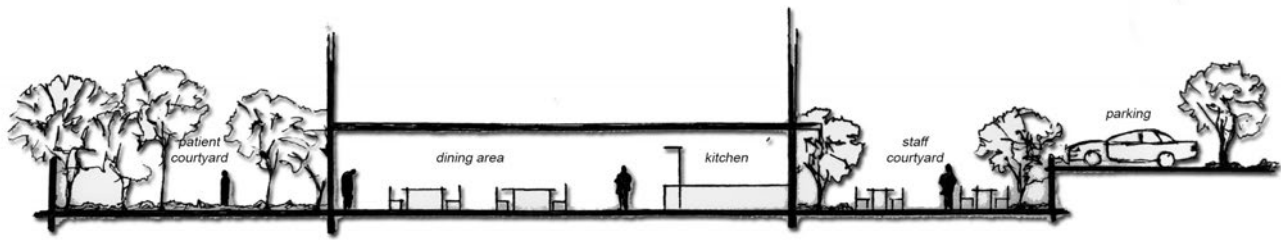


Figure 62 : Cross section sketch illustrating the direct experience of nature between the courtyard and the facility.

2019, By Author.

On the other hand, with regards to the layout and interior planing of the building, there is a lack of natural daylight and ventilation into the interior living and recreational spaces. However, the architect's attempted to solve this through the use of artificial lighting, ventilation and indoor air control, in an attempt to mimic natural features of the outside world within a controlled and supervised environment, to allow for an indirect experience of nature within the building. As seen in the images below, the interior spaces also consist of images, objects and/ or paintings that are representative of nature as well as the use of natural, earthy colours to depict a sense of connection with nature.

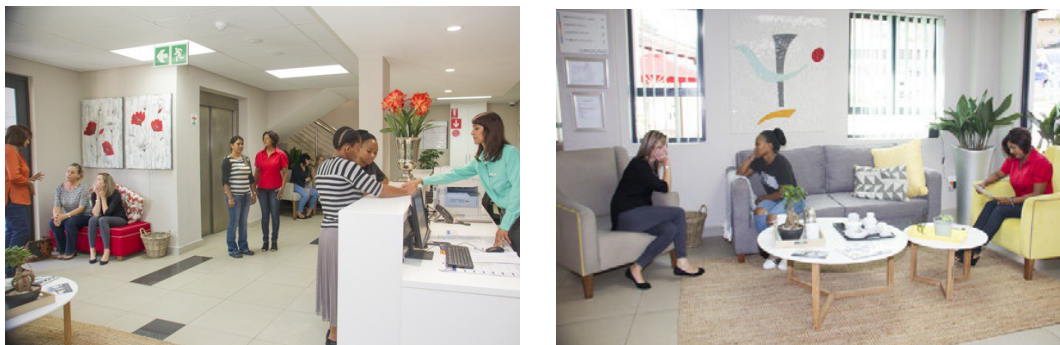


Figure 63 : Images of the entrance: Portraying the indirect experience of nature.

2019, From Akeso Website: <https://www.akeso.co.za/clinic/Akeso-Umhlanga>

Phenomenology

Although Akeso utilizes a lot of artificial lighting and ventilation, thus lacking in the natural daylight and ventilation aspect, there is still some attempt to create a relationship between human senses and the building through material, textures and spatial design, with the intended outcome to generate emotion, meaning and perception of the place. For instance, with regards to the visual sense, the facility's spatial design consists of long, artificially lit up corridors that give it a very institutionalised/ hospital-like feel, which can be considered negative in the attempt of creating a positive sensory experience, but positive when dealing with chronic mental illnesses due to the need for security and supervision.

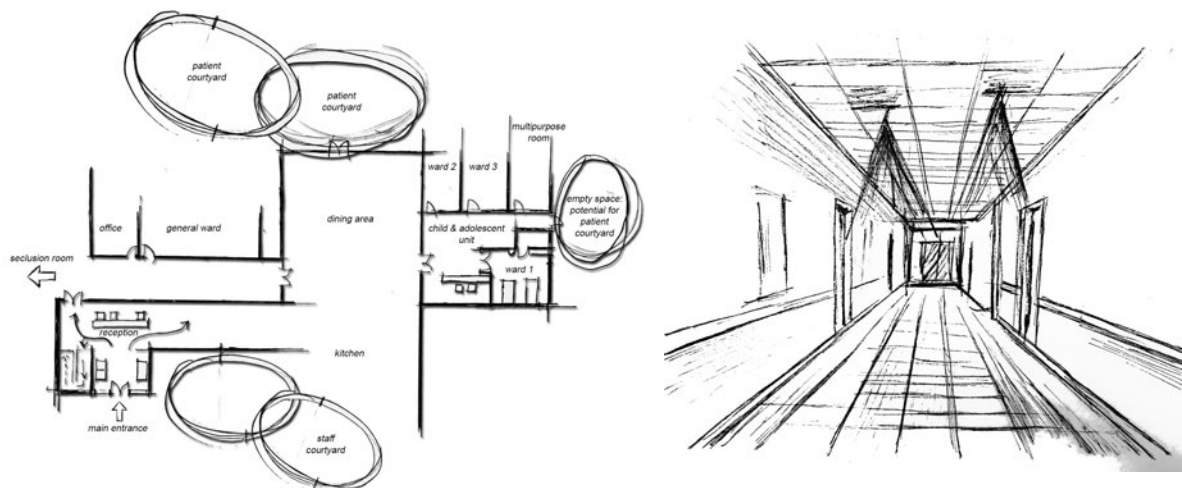


Figure 64 (left) : Quick sketch of the floor plan/ spatial layout.

Figure 65 (right) : Quick sketch of the artificially lit up long corridors within Akeso, Umhlanga. 2019, By Author.

The facility also successfully incorporates natural, earthy colours as well as homely textures which therefore gives it a more therapeutic and calming feel. With regards to the acoustical quality, the facility is considerably quiet thus generating a peaceful atmosphere that subconsciously motivate the patients to conceptualize what the space means to them, thereafter instilling a perception of the space, and assisting in mental health recovery.



Figure 66: Interior images of Akeso, Umhlanga, illustrating the use of natural, earthy colours as well as the integration of elements that create a homely feel. 2019, From Akeso Website: <https://www.akeso.co.za/clinic/Akeso-Umhlanga>



Figure 67 : Exterior images of Akeso, Umhlanga, illustrating the use of natural, earthy colours and textures. 2019, Images taken by Author during site visit.

However, “The most persistent memory of any space is often its odour as it has the power to capture and preserve the memory of any space.” (J. Gibson, 1966). In this case, because Akeso is primarily representative of a hospital-like facility, the aroma of the space is considerably similar to a hospital, which is a commonly known smell but tends to have a negative perception to majority of people. Hospital architecture is typically perceived negatively due to the lack of openings and integration between the interior and exterior natural spaces.

6.2.3 Age-sensitive design

Akeso, Umhlanga caters for children and adolescents ranging from ages 12 to 18 that suffer with some form of psychiatric disorder, substance abuse as well as mild personality difficulties. The child and adolescent treatment programme is considered to be therapeutic and holistic in nature as it focuses on treating the individual within the context of their various environments as well as including family, school, friends and the community into the healing process.

Children and adolescents design preferences

Based on observation, the architects have taken into consideration the planning and need for sensitive spaces when designing to heal young individuals. For instance, when designing for children and adolescents, research states that to reduce stress within a facility it is advisable to allow the individual a sense of autonomy and control over their own environment within the facility. However, because the facility primarily deals with acute based psychiatric issues, the child and adolescent unit is fairly small and only caters for 12 patients at a time, with the intention to generate a more controlled and supervised environment to avoid the young inhabitants from harming themselves or others. However, the child and adolescent unit does allow them to have a sense of control over their environment, to a certain extent, by allowing the patients to be in control of room temperature, room personalization and lighting levels which in turn creates a sense of ownership to the space. On the other hand, with regards to developing a visual and/ or physical connection between nature and the patient to act as a positive “distraction” by stimulating the sensory perception of the individual, Akeso attempted this through the central courtyard, as discussed above. However, the courtyard is predominantly utilized by the adults. Thus, according to the Manager of Akeso, Umhlanga, there are future plans to generate a separate and more private outdoor space for the young inhabitants, which will allow the development of a human-nature relationship, create a sense of belonging and assist in the healing process. As seen in the image below, the unit also only provides one flexible, multi-purpose space dedicated for social interaction, games as well as group therapy. Majority of the activity spaces such as the arts and crafts room and gymnasium are situated in the adult units, and is only accessible to the young individuals at certain times under strict supervision.

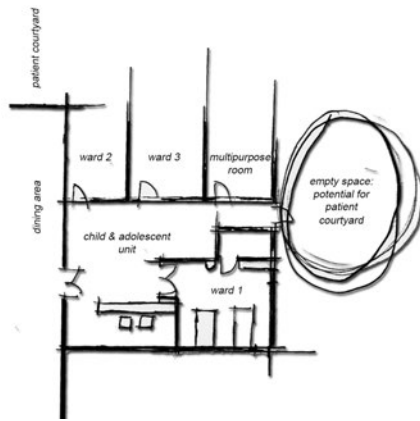


Figure 68 (left) : Quick sketch of the floor plan/ spatial layout of the child and adolescent unit. 2019, by Author.

Figure 69 (right) : Interior image of child and adolescent unit: Multi-purpose room. 2019, From Akeso Website:

<https://www.akeso.co.za/clinic/Akeso-Umhlanga>

Because the child and adolescent unit is fairly small and requires intense supervision, there is a lack of large openings/ windows thus creating the need for artificial lighting and ventilation. Which is why the unit attempts to use light, earthy and natural colours to evoke a sense of peace, which is known to be especially calming to children and adolescents from the age of 12.

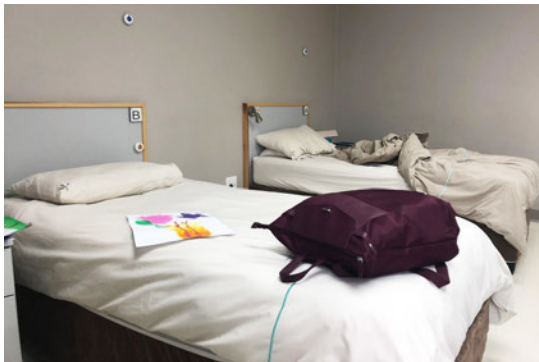


Figure 70 (left) : Interior image of child and adolescent unit illustrating the use of natural, earthy colours and textures.

Figure 71 (right) : Interior image of child and adolescent unit illustrating the need for artificial lighting due to small windows. 2019, Images taken by Author during site visit.

The 'Simulation of real life' concept

The architecture and spatial design of the child and adolescent unit in Akeso, Umhlanga is more hospital-like/ institutionalised and does not focus on a home-like or domestic design. According to one of the nurses in the unit, incorporating familiar elements into the facility may be harmful to the recovery process as it could trigger bad memories/ experiences and perceptions of the space, because the young individuals generally come from a broken home environment. Thus, the facility has no intention of creating a 'home away from home'

6.3 TOWN HILL: PUBLIC PSYCHIATRIC FACILITY

Location: Pietermaritzburg, South Africa

Architects/ designers: KZN Department of Health

Date of completion: 1904

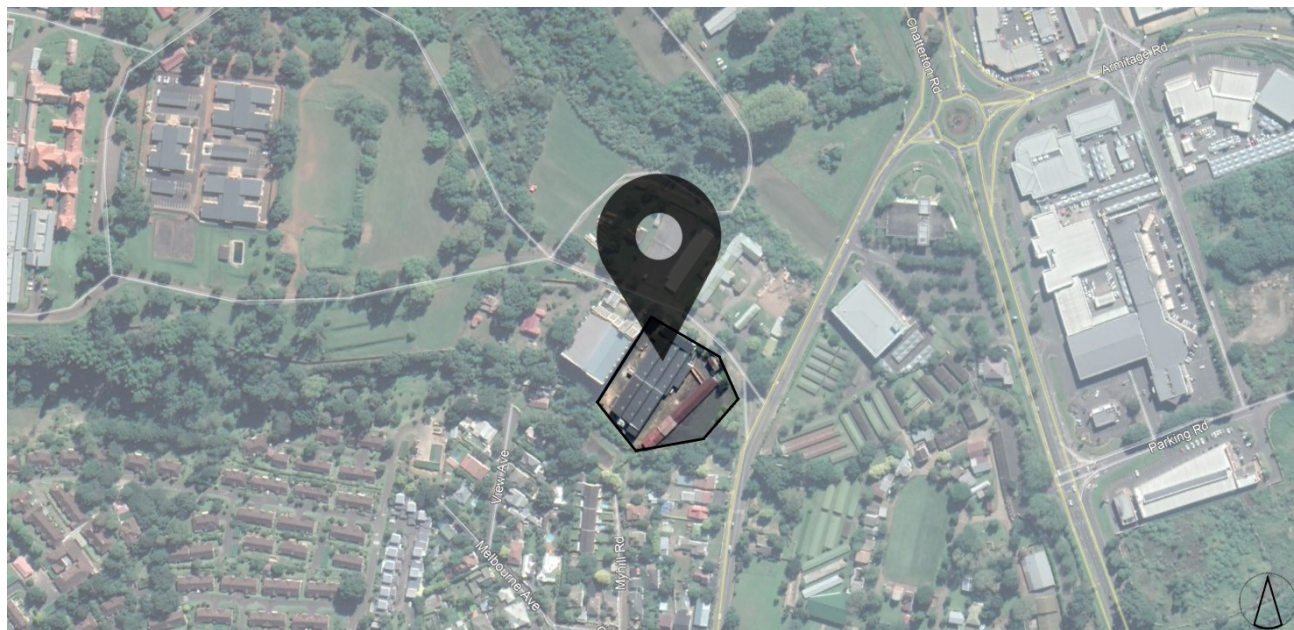


Figure 72 : Site plan of the Town Hill psychiatric hospital, Pietermaritzburg, South Africa.

2019, By Author.

6.3.1 Introduction

The Town Hill hospital is a public psychiatric facility that offers clinical and psychiatric services that range from; child and adolescent psychiatry, psychology, occupational therapy, social work and infection control as well as tertiary services such as; dual diagnosis, psycho-geriatric, neuro-psychiatry, HIV and community liaison and outreach. The vision for Town Hill psychiatric hospital is to essentially *“provide the highest quality services which are co-ordinated, equitable accessible, sustainable and based on Primary health care and people centered approaches”* The facility is located on a site that endures a rich cultural history. It was originally built in 1904, as South Africa's first custom-built lunatic asylum. In 1999, it then became Town Hill psychiatric hospital and houses nearly four hundred psychiatric patients. The facility is hidden behind an abundance of trees and a concrete-paling fence, thus making it quite a secluded and quiet space. The justification for this study is to analyse a public psychiatric facility, with primary focus on children and adolescents to essentially discover the building's architectural intentions and spatial design qualities and the impact it may have on the patient, staff members and surrounding community. Another reason for this study is to explore to what extent has the architecture incorporated the principles of a therapeutic architecture and age-sensitive healing into the design of the facility, thus investigating what works and what doesn't to ultimately assist in the exploration of achieving a more reputable solution towards child and adolescent mental health care facilities. The following is based on primary observations within the facility, with primary focus on the children and adolescents unit;



Figure 73 (left) : 1904, Town Hill hospital main building - now used as the administration department.

Figure 74 (right) : 1910, Town Hill hospital additions to building. Images found at: <http://sanationalsociety.co.za/pmb-town-hill-mental-hospital/>

6.3.2 Therapeutic architecture

The site of Town Hill psychiatric hospital is set within a serene and quiet environment, that can be considered to be therapeutic in nature as the facility is concealed behind a great amount of natural vegetation and trees. There has been some attempt to incorporate a therapeutic architecture in the structural quality, building orientation and materiality. However, although the facility may appear to be therapeutic from the exterior, the interior spatial design fails to incorporate the principles of a therapeutic architecture. The interior spaces are considered to be cold, isolating, secluded and thus more representative of an institutionalised or prison-like facility. Town Hill psychiatric hospital will be further analysed in the following section through the theoretical underpinning that makes up the concept of a therapeutic architecture;

Biophilic architecture

Based on first hand observations within the child and adolescent unit at the Town Hill psychiatric facility, it is highly evident that the layout and spatial planning of the unit lacks the inclusion of Biophilic architectural design principles. It is possible that this is the case because the building was developed years ago, thus not being apart of new mental health architectural advancements. The exterior of the unit appears as though there has been some thought behind using nature as a therapy through architecture due to the naturally vegetated central courtyard space that is passed through as one enters the child and adolescent ward. This space can be considered to be therapeutic for the patients or even the staff members. However, based on security reasons it is inaccessible to the patients, and is not utilized by the staff members as there is no outdoor furniture, as seen in the image below. Exposed masonry walls, as the exterior building material of the unit, is considered to be a natural material that ages and evolves with time creating an immediate

connection between the texture and the individual, which has been proven to be mentally stimulating.



Figure 75 (left) : Image of entrance to the child and adolescent unit, portraying the inclusion of natural greenery around the unit. Image taken by Author.

Figure 76 (right) : Courtyard space to go through before entering the unit, portraying the inclusion of natural vegetation on the right edge of the courtyard and lack of outdoor furniture. 2019, Image taken by Author.

With regards to the layout and interior planing of the building, the unit is not properly ventilated and does not receive a sufficient amount of natural daylight. The unit uses very small openings, and does not cater for a visual or physical connection with nature. The existing windows are extremely small and barred, understandable for security, but it is too prison-like and isolating creating a cold and dark atmosphere within the spaces. The only essence of nature incorporated here would be the use of natural and earthy colours for the interior walls. Further into the unit, near the living area, is another courtyard space that receives a healthy amount of natural lighting and is accessible to the children and adolescent's. However, they do not use it because there is no outdoor furniture or any sense of activity that invites the patients to restore and relax within the space.

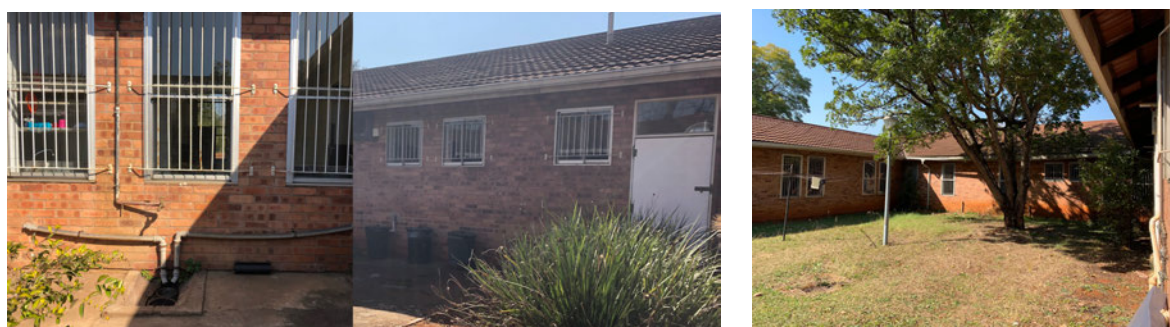


Figure 77 (left) : Image of existing windows that are extremely small and barred, creating a prison-like atmosphere. Image taken by Author.

Figure 78 (right) : Image of the Courtyard space near the living area that is not used. 2019, Image taken by Author.

Phenomenology

As explored in Chapter two, the theory of phenomenology focuses on creating a relationship between the human senses and the building through light, shadow, material and spatial design, with the intended outcome to generate a positive perception of the space, which assists in the mental health recovery process. However, the child and adolescent unit at Town Hill psychiatric hospital lacks the inclusion of such elements, thus lacking the promotion of a positive sensory experience. For instance, with regards to the visual sense, the facility's spatial design consists of long dark corridors that give the space an isolating and cold atmosphere. This not only creates a highly institutionalised/ hospital-like or even prison-like feel, which is considered negative during the healing process, but there is also a huge lack of openings and/or windows, thus no sign of natural lighting into the spaces. However, it could be argued that the unit has included natural, earthy colours, giving it a more therapeutic feel.



Figure 79 (left) : Quick sketch of the long dark corridors in the child and adolescent unit. 2019, By Author.

Figure 80 (right) : Quick sketch of the small barred window as the only source of natural lighting into the living space. 2019, By Author.

Because the unit is located within a quiet location, this automatically creates a peaceful environment for the children and adolescents, which motivates the patients to conceptualize what the space means to them, thereafter instilling a positive and healing perception of the space which assists in the mental health recovery process. Furthermore, with regards to aroma of the space, based on the spatial design of the child and adolescent unit being more representative of an institutionalised facility, the smells are similar to that of a hospital-like environment, which is known to be perceived negatively, as mentioned in the previous case study.

6.3.3 Age-sensitive design

The child and adolescent unit at Town Hill's psychiatric hospital caters for young individuals ranging from ages 12 to 18 that suffer with primarily acute-based psychiatric and psychological disorders.

Children and adolescents design preferences

The child and adolescent unit primarily deals with acute based psychiatric issues, thus the need to generate a more controlled and supervised environment, which is done through the use of surveillance cameras in each of the rooms. However, there has been little but some attempt in planning according to the sensitive needs of children and adolescents. For instance, the child and adolescent unit does allow them to have a sense of control over their environment, to a certain extent, by allowing the patients to be in control of the living space with regards to use of the television as well as personalizing the space with their hand drawings and artworks. Therefore, the living area becomes a place for them to relax in which they are in control of their own privacy, thus creating a sense of ownership, assisting in the recovery process. Knowing that social interaction is a vital aspect of growing children and adolescents, the unit unfortunately only provides one flexible, multi-purpose space dedicated for social interaction, being the living room space. There is no inclusion of spaces that allow for physically activities, essential in the healing process.

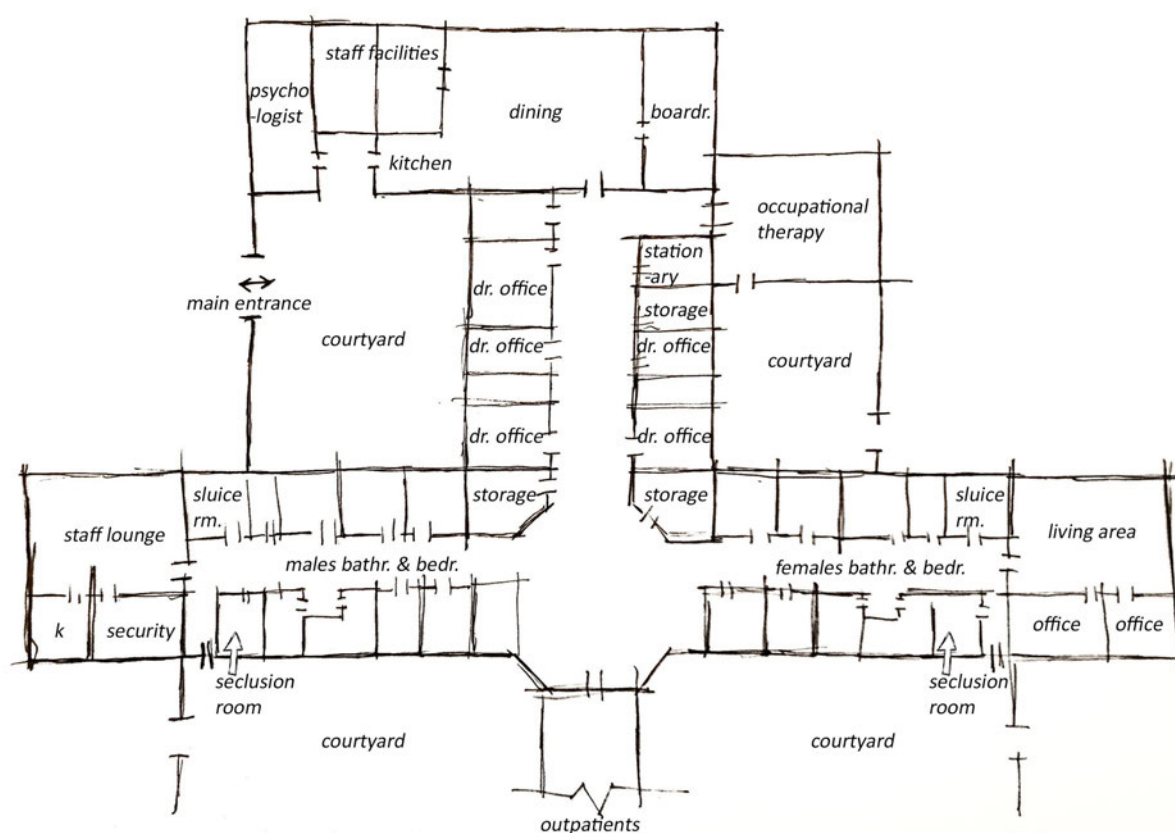


Figure 81 (left) : Quick sketch of the floor plan/ spatial layout of the child and adolescent unit. 2019, By Author.

On the other hand, with regards to promoting psychological benefits that come from a positive human-nature relationship within the facility, the child and adolescent unit does consist of an accessible and well orientated courtyard space that does not get used based on the lack of outdoor furniture. Subsequently, the need for intense security, especially within the bedrooms, resulted in the use of small openings/ windows that are barred, thus reducing the access of natural daylighting, ventilation and visual interaction with the natural surroundings, as seen in the image below. There has also been some attempt to use pictures and murals that have some relation to children as well as the inclusion of colour psychology through the use of light, earthy and natural colours to evoke a sense of peace, which is known to be especially calming to children and adolescents from the age of 12 as well as the colour orange, which is known to stimulate attentiveness and interest

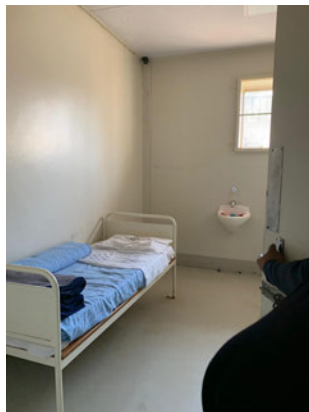


Figure 82 (left) : Small, isolating bedrooms that lack natural daylight and ventilation. 2019, Images taken by Author.

Figure 83 (right) : Interior image of child and adolescent unit illustrating the inclusion of colour psychology as well as pictures that relate to children. 2019, Images taken by Author during site visit.

The 'Simulation of real life' concept

The architecture and spatial design of the child and adolescent unit at the Town Hill psychiatric hospital has no evidence of the implementation of this concept as there is no focus on achieving a home-like or domestic design.

6.4 CONCLUSION

Based on first hand observations, aligned with the theoretical framework, review of literature and in response to the research questions, both studies provide the research with the understanding and comparison between private and public psychiatric facilities in KwaZulu-Natal.

Akeso, being a private psychiatric facility does not lack resources and obtains qualified specialists and staff members that provide the patient and their families with specialised treatment, education and skills to manage with mental illness once out of the facility. Thus, revealing that the program within the facility is of great success with regards to support of the patient's behavioural, social,

mental health issues and the preparation for societal re integration. Whereas Town Hill, a public psychiatric facility does lack resources, qualified specialists and staff members due to the lack of funding.

With regards to the architecture and spatial design of the child and adolescent unit at Akeso, the architect's successfully developed a safe and comfortable healing environment through minimal therapeutic strategies in the architecture. However, the interior design still remains institutional/hospital-like based on the use of artificial lighting and ventilation as opposed to designing for optimal natural lighting and ventilation. Whereas the architecture, infrastructure and overall environment of the child and adolescent unit at Town Hill is considerably poorly designed, isolating and more representative of a prison-like setting due to the cold and dark atmosphere within the spaces due to small barred windows and lack of inclusion of natural daylight and ventilation.

This therefore strengthens the need to explore ways to achieve a more reputable solution towards child and adolescent mental health care facilities that encompass principles of a therapeutic architecture and age-sensitive healing design.

CHAPTER SEVEN | DATA PRESENTATION AND ANALYSIS

7.1 INTRODUCTION

The following chapter gives forth primary data that has been investigated and gathered from first hand experiences, interviews and observations. The interviews and observations have been carried out through two case studies, as explored in the previous chapter. Additional interviews were directed at professionals from the greater Durban area, to gain further insight and perspectives on psychiatric facilities within Durban, with particular focus on children and adolescents. The interviews and observations have been influenced by the theoretical and conceptual framework established in Chapter two, which were generated through the research questions instated in Chapter one. Thus, ensuring a clear and concise link towards the problem statement and aim within this dissertation. The primary intention for the following chapter is to analyze and discuss the primary data gathered and unpack the implementation, or lack thereof, a therapeutic architecture and age-sensitive healing design in psychiatric facilities, within the Durban precinct, to essentially inform how to achieve a more reputable solution towards child and adolescent mental health care facilities.

7.2 ANALYSIS OF EMPIRICAL FINDINGS

The analysis of empirical findings is based on primary data obtained from fifteen interviewees directed at six medical professionals; psychiatrists, psychologists and general practitioners as well as four medical interns, four staff members (registered nurses) and one facility manager that are aware or involved with child and adolescent mental health care. All fifteen participant's input in relation to the study is highly relevant in terms of gaining a further understanding of child and adolescent psychiatry in KwaZulu-Natal. Thus, the interview schedule (Appendix A) has been organized in a way that the interviewees are evaluated and understood through a theoretical and conceptual architectural lens, allowing the research to further understand design ideologies towards creating a healing induced environment within the inner city of Durban, to assist in mental health recovery for children and adolescents.

7.2.1 Macro analysis: General overview

Question one: What is your take on the current state of psychiatric facilities (private and public) in Durban, with particular reference to children and adolescents?

Fifteen out of the fifteen participants responded that there is a huge discrepancy between both public and private psychiatric facilities in KwaZulu-Natal in terms of what is available. The primary response was that in KwaZulu-Natal, not only is there is a huge lack of specialised facilities and programmes that cater specifically for child and adolescent mental health, there is also a huge lack of availability of resources and adequately trained clinical psychologists and psychiatrists. However, five out of the fifteen participants specifically mention the Town Hill psychiatric hospital in

Pietermaritzburg as one of the “better equipped” public facilities in KwaZulu-Natal for children and adolescents. Although public psychiatric facilities in Durban are extremely “shocking”, Town Hill is able to accommodate mentally ill patients at a larger scale in comparison to other hospital facilities which cater for mental health on a much smaller scale. But, all respondents strongly believe that a lot needs to be attended to when it comes to child and adolescent mental health facilities especially considering the issue of drug abuse among the youth population, which stunts psychological development.

Question two: Would you agree that majority of the existing psychiatric facilities, in Durban, are failing? State a reason for your answer. If yes, what aspects do you think can be improved upon?

Thirteen out of the fifteen participants responded yes, to an extent. With regards to the private psychiatric facilities, it appears to be working fine but still faces the issue of lack of resources with regards to space and a shortage of beds. Five out of the fifteen participants mention that private psychiatric facilities are somewhat slightly better, but in comparison to those at a national scale, there is room for a lot more improvement. However, all participants ultimately responded yes, the majority of existing psychiatric facilities in Durban are failing, with regards to public facilities as they are severely under-resourced in the sense that there is not enough space to accommodate the mentally ill, lack of beds, a shortage of staff and/or under-qualified and poorly trained staff. With regards to the architecture, there is a huge lack of infrastructure and the existing buildings are extremely derelict/ are in a state of disrepair, lack or use old medical equipment. One out of the fifteen participants responded with “we are trying our best regarding the lack of resources in the country.” However, fourteen out of the fifteen participants presume that the public health system can do much more for mental health in terms of improving the architecture, infrastructure and resources, which will not only motivate therapists whilst working in a better environment, it will also assist in the patients recovery process.

Question three: What are the existing challenges faced by the workers and/or patients in facilities? Based on the challenges, what other spaces/activities could be useful for the workers and/or patients healing process?

Majority of the participants responded that the existing challenges faced by workers in psychiatric facilities is the huge lack of resources and infrastructure, thus resulting in inadequate spaces to work in, especially when dealing with a large population of patients. Another significant challenge is that majority of the hired staff are not properly trained/ experienced to deal with mentally ill children and adolescents. Two out of four registered nurses at psychiatric facilities responded that one of the primary challenges is also with regards to their safety in the case of an outburst from an aggressive patient. Therefore, two of the medical professionals suggested that the inclusion of better resources

and infrastructure would generate a better working environment, which the workers will then end up taking more pride in their work.

A participant mentioned that one of the existing challenges faced by the patients in psychiatric facilities is that children and adolescents are not kept separate from the adults, thus creating a high risk for alternative issues to arise. Four out of the four registered nurses responded that patients, especially children and adolescents, tend to feel isolated within a confined space and become bored very easily. Thus, based on these challenges, six out of the six medical professionals responded that the spaces and/or activities that could be useful for the patient's healing process can be done through incorporating physical and sporting activities, something that keeps their mind consistently active and their body's healthy as well as educational facilities to stimulate their brain and psychological development.

7.2.2 Therapeutic architecture: Biophilia and phenomenology

Question four: In your experience, would you say that a therapeutic environment can assist in the healing process of the patients? (Example; incorporating psychology in the design of the spaces using natural elements; trees, plants, water and materials, textures, lighting, etc. to achieve a sensory architecture)

Fifteen out of the fifteen participants confidently answered “yes” and “definitely”.

Question five: As per the previous question, do you feel that this would be a highly beneficial approach when dealing with children and adolescents? And, why?

Fifteen out of the fifteen participants confidently answered “yes” again. All participants strongly believed that a therapeutic environment has the potential to assist in the child and adolescent's healing process as majority of the patients come from harsh environments, thus walking into a serene, natural setting with natural vegetation, lighting and ventilation will automatically calm the patient down. The respondents also mentioned that this would especially benefit children and adolescents as they are at such critical and sensitive developmental stages in their lives.

Question six: As opposed to existing institutionalized psychiatric facilities, what is your opinion on a therapeutic inspired, community-based housing youth treatment program, located within the inner city of Durban?

Fifteen out of the fifteen participants responded that a therapeutic inspired, de-institutionalized and community-based housing treatment facility is something that South Africa should aspire towards. The participants responded that this could be a highly effective approach when dealing with children and adolescents as healing within one's familiar surroundings and the process of a slow integration

back into the community could be a better long-term approach to mental health care. However, six out of the six medical professionals argue that the need for an inpatient and institutionalised facility is deemed necessary, especially in acute cases as the children and adolescents would require intense medical and psychological treatment from adequately trained staff, whilst being under strict supervision. The medical professionals suggested that a de-institutionalized and community-based housing treatment facility is ideal for a patient who requires regular to sub-acute care or those who have completed inpatient treatment and requires outpatient treatment.

7.2.3 Age-sensitive design: The 'Simulation of real life' concept

Question seven: Would you agree that healing within one's familiar surroundings may be a better long-term approach to mental healthcare? And, why?

Thirteen out of the fifteen participants responded that healing within one's familiar surroundings is a better long-term approach to mental health care because it provides a holistic approach to the mental health care model that assists in the social, psychological and physiological aspects of the child and/ or adolescent. It was also said that being treated within familiar surroundings and the community could be a much more sustainable approach especially when dealing with long term mental health conditions. Two out of the fifteen participants responded that it could also have a negative impact on the healing process as familiarised surroundings could act as a trigger and not allow the individual to even begin their healing process.

Question eight: What do you think would be an ideal site for the proposed youth housing program/ facility, what facilities do you feel should surround/ support it?

Majority of the participants responded that an ideal site for this intervention should be based within a community in need, with facilities such as; social and health care services (clinics), schools, hospitals as well as recreational facilities such as; sports activities and parks to surround and support the housing program, with the intention to “normalize” their experience/ journey towards mental healing.

7.2.4 Age-sensitive design: Children and adolescents design preferences

Question nine: Compared to a psychiatric facility for adults, are there any specific services and other spatial requirements that should be provided when designing a space purely for children and adolescents?

Fifteen out of the fifteen participants responded that the child and adolescent units need to be much smaller based on the need for supervision, security and control in comparison to that of adults. It is also significant to separate the genders as well as separate the children and adolescents from the

adults. The participants also responded that children and adolescents need spaces that provoke mental stimulation through colours, textures, natural lighting as well as paintings, drawings and artwork that relates/ appeals to them.

Question ten: I am mildly aware that there are 5 levels of care in psychiatric facilities. When dealing with children and adolescents, what is the advised level of care to do in the scenario of a community-based housing program within in the inner city?

Fifteen out of the fifteen participants responded that the advised level of care to do within a community-based housing program based within the inner city should be at a primary care level, not those that require critical, acute care. It should be those who come out of an inpatient facility and into an outpatient facility as the last level of the care process for relapse prevention, psychological rehabilitation and community integration or those who require regular to sub-acute care.

7.3 CONCLUSION

The interviews conducted revealed that all participants agree that the majority of the existing psychiatric facilities in Durban, with particular reference to the youth are to an extent, failing. Based on the interviewees first hand observation and professional experience with child and adolescent mental health, private psychiatric facilities are considered to be slightly better resourced than public facilities. It has been discovered that state psychiatric facilities lack availability of resources and adequately trained professionals. With regards to the architecture, there is a huge lack of infrastructure and the existing buildings are derelict, thus participants believe that improving the architecture, infrastructure and resources will motivate therapists and assist in the patients recovery process.

Similar to the research instated in the literature review of exploring alternative trends to re-conceptualize the design of mental health facilities for children and adolescents, the following will conclude with the interviewees opinions and perspectives on de-institutionalizing mental healthcare facilities through community- based services located within an urban setting, all in conjunction with the theories and concepts of a therapeutic architecture and an age-sensitive design;

All participant's of the study reveal that a therapeutic inspired, de-institutionalized community-based housing facility can be an effective approach when dealing with children and adolescents provided that it should only be available to patients who have completed inpatient treatment and thus require outpatient treatment for relapse prevention, psychological rehabilitation and community integration.

Eighty percent of the participant's agree that healing within familiar surroundings is a better long-term approach to mental health care as it has potential to ultimately strengthen and empower communities.

With regards to age-sensitive spatial design requirements, it has been discovered that it is imperative for children and adolescents to be housed separately with regards to gender as well as being in smaller units, based on the need for supervision and security in comparison to that of adults. All participants also reveal that it is significant to include spaces that provoke mental stimulation through colours, textures, natural lighting as well as paintings, drawings and artwork that appeals and has some relation to the child and/or adolescent.

The information gathered, discussed and synthesized within this chapter will therefore inform the conclusions and recommendations chapter that is to follow, where an overall conclusion shall be presented.

CHAPTER EIGHT | CONCLUSIONS AND RECOMMENDATIONS

8.1 INTRODUCTION

The study set out to explore ways in which a therapeutic architecture can provide an alternate response and re-conceptualize the design of mental health facilities, for the youth, within the city of Durban. The purpose of the following chapter is to first re-examine the research aims, objectives, assumptions and hypotheses instated in Chapter one, subsequently answering the research questions confirming if these have been addressed and achieved throughout the research. Thereafter, concluding the dissertation with the discovered/ appropriate recommendations, strategies and design principles that are considered to be ideal when designing a community-based housing mental health facility, for children and adolescents, within the inner city of Durban.

8.1.1 Review of research aim, objectives, assumptions & hypotheses

Where the primary **aim** of the dissertation is;

- To explore a de-institutionalised approach as an alternative response to the architectural design of existing mental health facilities in Durban, South Africa, for children and adolescents. To discover how it can be improved through a community-based housing facility that encompasses principles of a therapeutic architecture, to create a healing induced environment within one of Durban's most unhealthy urban settings, which aims to achieve a better long-term approach to mental health recovery.

To ensure that the above can be addressed and achieved, the aim was then broken down into the following **objectives**;

- To analyse the architectural factors behind the existing psychiatric facilities in Durban.
- To explore community-based housing mental healthcare developments as potential models to find what architectural principles or themes inform a healing induced environment, when designing for a sensitive age group.
- To discover if a therapeutic environment can be achieved within a harsh urban setting and if healing within one's familiar surroundings is a better long-term approach to mental health recovery.
- To discover architectural initiatives that attempt to raise awareness and remove the stigma attached to mental health through creating a building that removes the notion of a mental institute.

Based on observation and knowledge, prior to the research, it was **assumed** that;

- In South Africa, there is a gap in the knowledge and success of community-based housing interventions for those that suffer with mental illnesses.

- Mental health is not seen as a major priority, especially among the youth.
- Existing facilities do not consider therapeutic environments or holistic treatment methods when treating those who suffer from a mental illness, instead patients are confined within an institution/ hospital and treated with varying drugs, which either results in the patient spending the rest of their lives in the hospital or highly susceptible to a mental relapse once returned home.

Thus, based on the above assumptions, it was **hypothesized** that;

- The transition from institutionalized psychiatric facilities to de-institutionalized community-based housing facilities is an approach that can be adapted within a South African context, and may be a better approach to mental health care.
- A therapeutic environment can be achieved within any setting, particularly the harsh urban boundaries of the Durban inner city, where mental health care should be prioritized.
- Learning coping-mechanisms and healing within familiar surroundings may lead to long-term mental health recovery.
- Preparing and integrating patients back into the surrounding community may break the barrier between those considered 'normal' and 'abnormal', raise awareness, educate and remove the stigma attached to mental health disorders.

8.2 CONCLUDING REMARKS

The following section will address all research questions to discover if the aims and objectives have been achieved, as well as confirm or disprove of the assumptions and hypotheses.

8.2.1 Addressing and answering the research questions

The following will answer the research questions based on secondary data extracted from the literature review and precedent studies, thereafter supported by primary data collected from case studies and interviews, all of which will be analysed through the theoretical and conceptual lens uncovered within the research.

The research has used the concept of a therapeutic architecture as the primary catalyst in achieving the optimal healing environment in the design of mental health facilities. Therefore, in addressing the research question; ***How can the principles of a therapeutic architecture inform the design of a mental health facility?*** - Evidence-based literature suggests that the principles of a therapeutic architecture can assist in the healing process of mental health recovery by creating an architecture that relates to those who occupy the space through supportive spatial elements that interact with the patient's physiological and psychological requirements, Dr. E. Chrysikou (2014). Which can be achieved through the “architectural manipulation of structures and space” which can allow for the inclusion of natural elements and other “environmental factors such as sound, colour,

views, smell and light all of which contribute to a therapeutic environment” that will remove the negative perception associated with mental institutions, thus stimulating a positive sensory experience by which will assist in the healing process, Morgenthaler (2015). In support of the secondary data, primary observations at existing psychiatric facilities in KwaZulu-Natal, as well as the interviews conducted, provide the research with the discovery that the inclusion of therapeutic architectural principles has the ability to positively inform the design of mental health facilities, with regards to achieving the optimal healing environment for its patients as well as creating a more pleasant working environment for its therapists and staff members.

Explored further in the next research question; ***What spatial qualities facilitate healing?*** - This is essentially the implementation of a therapeutic architecture through specific spatial and structural design elements extracted from the theory of Biophilia and Phenomenology. Biophilia suggests that creating a direct link between man, nature and the built environment can assist in the healing process of the patients as natural elements can induce healing and have a positive impact on physical and emotional well-being, (U. Franzen, 1991). It is adopted in the spatial design through a direct experience of nature; natural vegetation, lighting, ventilation, elements of water and other passive design strategies as well as an indirect experience of nature; materials, textures and structural qualities that depict the essence of nature, (Kellert, S. and Calabrese, E, 2015). In addition, the theory of Phenomenology, applied through the manipulation of space, colour, material, textures, light and shadow in architecture and spatial design can create an “instinctive response to sensations, through body and mind, in which we interpret and project meaning into an environment,” Steven Holl (2006), which in this case is considered significant based on the negative perception and stigma attached to mental health facilities. For instance, the Mental health care building at the Parkwood Institute has been informed by spatial qualities that facilitate healing through appropriately orientated therapeutic courtyards, light wells and large openings that achieve optimal natural daylighting, ventilation and integration with nature, proven to assist in the healing and mental health recovery process. Similarly to the Parkwood Institute and in complete contrast to the public facility investigated as part of the research, the private facility reveals that there has been some attempt to also design spaces that promote healing through the inclusion of a central courtyard space, orientated towards north, to allow natural lighting and ventilation to filter through the interior spaces, achieving a visual and physical connection to nature as well as achieving an indirect experience with nature through the use of natural and earthy colours, homely materials and textures.

However, the research gears towards achieving a therapeutic architecture and spatial design for primarily children and adolescents. Which leads to the next research question; ***How can architecture create a healing/therapeutic environment for the youth?*** - In continuation of the previous answer, studies by Eun Young Kim’s (2011) reveal additional architectural and spatial

design qualities that facilitate healing with particular reference to the youth, through the concept of an age-sensitive design. An age-sensitive design is achieved through the application of specific architectural and psychologically supportive spatial design elements that are sensitive to the psychological state and needs of the children and adolescents. For instance, planning of spaces that allow for a sense of control over the environment, a positive “distraction” through environmental or natural elements, the creation of a “positive human-nature relationship” to achieve a restorative environment, the use of colour psychology as well as spaces that promote social integration and support. Another important element of architecture that can create a therapeutic environment for children and adolescents is design of an environment with home-like references, not only aimed to create a comfortable environment for the patient, but also to create a sense of freedom, safety and clarity for the individual, (E. Chrysikou, 2014). In support of the secondary data, based on the interviews conducted, it has been discovered that all participants of the study suggest a therapeutic architecture can create a healing environment for the youth as majority of the patients come from harsh environments, thus walking into a serene, natural setting with natural vegetation, lighting and ventilation will automatically calm the patient down. The participants also suggested spaces that provoke mental stimulation through colours, textures, natural lighting as well as paintings, drawings and artwork that relates and appeals to the children and adolescents.

With all the above in mind, it is significant to remember that the research gears towards the model of a de-institutionalised, therapeutic inspired, community-based housing mental health facility. Therefore, in addressing the research question; ***What is community-based housing and how can it be used for mental health recovery?*** - The research has instated that community-based housing is typically known as a mixed-use residential facility that engages with and serves its surrounding community. International studies reveal that the shift from institutionalized psychiatric facilities to de-institutionalized community-based mental health facilities offered individuals the chance to heal within their familiar surroundings, integrate with the community and allow families and communities to play a role in the treatment process, proving to have a beneficial approach in long-term mental health recovery, L. Eisenberg's (2010) as “people recovering from a mental illness gain a renewed sense of dignity and hope, and can reintegrate into the community more successfully” as opposed to an isolated institution which makes societal re-integration more difficult, Ministry of Health and Long-Term Care (2016). However, the concept of using community-based housing for mental health recovery has not yet been introduced within South Africa. Majority of the interviewed participants reveal that a de-institutionalized community-based housing mental health facility is something that South Africa should aspire towards, as healing within one's familiar surroundings and the process of community integration is beneficial to the recovery process. However, the medical professionals that were interviewed, argued that the need for an institutionalised facility is deemed necessary for acute inpatient care. Instead, it was suggested that

a community-based housing mental health facility is ideal for a patient who requires regular to sub-acute care or those who require outpatient treatment.

Lastly, the research intended to discover how to create a healing induced environment within one of Durban's most unhealthy urban settings. Thus addressing the last research question; ***How can architecture/ spatial design create a therapeutic environment, within an urban setting?*** Evidence based literature suggests that architecture/ spatial design has the ability to create a healing environment, within any context, provided that the architecture is informed by therapeutic principles and domestic in the spatial design to enhance human comfort and well-being, Dr. E. Chrysikou (2014). For instance, the Khoo Teck Paut hospital is a pure representation of the optimal healing environment within a dense urban setting. The architect's successfully achieved a therapeutic environment through biophilic and phenomenological spatial qualities designed to facilitate healing. The hospital was designed to be enmeshed in nature through a central courtyard that allows in natural lighting and ventilation, thus removing the visual perception attached to general hospital architecture. The inclusion of greenery and water also influences the scent of the space. One of the major sensory elements incorporated into the hospital was to introduce scented plants with the intention to remove the typically negative memory of the smells of a hospital-like environment, especially alongside the patients rooms. With regards to the acoustical quality of the building, the architect's used the spatial design of courtyards and natural vegetation to act as noise buffers from the surrounding urban environment to achieve a certain level of peace and quiet within the facility. One of the major elements was also the use of the sound of falling water, in order to achieve the optimal healing and serene environment. The hospital was not only designed to be a place of healing and recovery for patients, but also a space that caters for the integration of the surrounding community, with the intention to uplift and over time regenerate the surrounding urban landscape. In support of the literature, based on the interviews conducted, it has been discovered that the majority of the participants of the study believe that incorporating psychology in the design of the spaces can achieve a therapeutic environment within an urban setting through natural elements; lighting, ventilation, trees, plants, water as well as certain materials and textures. Most importantly the control of sound, especially in an urban setting, by creating noise buffers to cater for a quiet, peaceful and serene environment.

8.2.2 Addressing and achieving the aims and objectives

In light of the previous section, it can be concluded that the overall aim and objectives for this research have been achieved through the addressing and answering the research questions based on primary and secondary data unveiled within the research.

8.2.3 Addressing the hypothesis and assumptions

In response to the assumptions and hypotheses made prior to the research, it can be concluded that all assumptions and hypotheses instated are supported based on primary and secondary data unpacked within the research.

8.3 RECOMMENDATIONS AND DESIGN PRINCIPLES

The following recommendations will present practical suggestions, further elaborated in the second part of the research, that influence the principles of architectural design derived from the research questions, theoretical and conceptual framework, as well as the primary and secondary data unpacked within this research, all of which are considered to be ideal when designing a therapeutic inspired, community-based housing mental health facility, for children and adolescents, within the inner city of Durban.

8.3.1 Layout and spatial planning: Age-sensitive healing design

- **The 'simulation of real life' concept** through a building that is programmed around the creation of a home-like atmosphere to generate a familiar environment that replicate basic daily activities with the intention to 'normalize' the healing experience as opposed to being within a psychiatric institution. Therefore making the societal and community re-integration process easier.
- **Security, privacy and accessibility** through a clear separation of private and public spaces; catering for different age groups on varying floors to allow for a sense of privacy and relaxation; shorter and naturally lit up corridors to cater for better supervision and enclosing balcony spaces with screens to cater for safety; interaction with nature and optimal natural lighting and ventilation.
- **Sense of control over environment** by allowing the patient personal space and control over privacy, noise, smell, lighting and temperature.
- **Positive intervention** through the use of natural vegetation, courtyard spaces, roof gardens, planter boxes and water features to establish a positive "distraction".
- **Attention restoration** through the inclusion of nature, natural lighting, ventilation and sound within a controlled and enclosed courtyard space to ensure privacy and safety.

- **Social spaces** that are flexible and have dual purposes, especially useful near the patient's units in order to promote the individuals to participate in activities within a more private setting which will therefore allow them to gain a sense of connection and community.
- **Community integration** through spaces that allow for community and family participation.

8.3.2 Form and space: Therapeutic architecture

- **Achieving the optimal level of natural lighting and ventilation** through the inclusion of courtyards, light wells, large openings, glazing and screens that are orientated to open up towards the north as well as building heights that scale down towards the south thus allowing north lighting to filter each of the spaces and units, creating a comfortable and pleasant environment for the users.
- **Nature as a therapy through architecture** by maintaining a consistent relationship between man, nature and the built environment through the inclusion of courtyards and greenery as well as the inclusion of other natural elements such as water.
- **Stimulation of human senses** by creating an architecture through material, texture, light, shadow and many other aspects that have the ability to manipulate all of the human senses in order to remove the negative connotation attached to mental health architecture.
- **Materials and textures** that create a relationship between the human senses and the building to generate a positive and new emotion, meaning and memory of the space in attempt to redefine the perception attached to mental health facilities.
- **Colours** to represent each of the healing phases. Each colour to be chosen based on meaning and relevance to the space.

PART TWO | DESIGN REPORT

CHAPTER NINE | PROJECT DESCRIPTION

9.1 INTRODUCTION

The following chapter presents the project description for a community-based housing facility that uses a therapeutic architecture as the primary catalyst towards an alternative approach in the design of mental health facilities, for children and adolescents, within one of Durban's most unhealthy urban settings, to achieve a better long-term approach to mental health recovery.

9.2 PROJECT DESCRIPTION

9.2.1 Who?

In support of the research instated in part one of the dissertation, the architectural response targets the underprivileged youth population, specifically ages ranging from 10-18, that are located in and around the Durban CBD area. Furthermore, the design aims to create an ideal location for community integration and interface by activating the street edges through facilities that serve the surrounding community, with the intention of community upliftment, and over time contribute to the regeneration of an unhealthy urban environment.

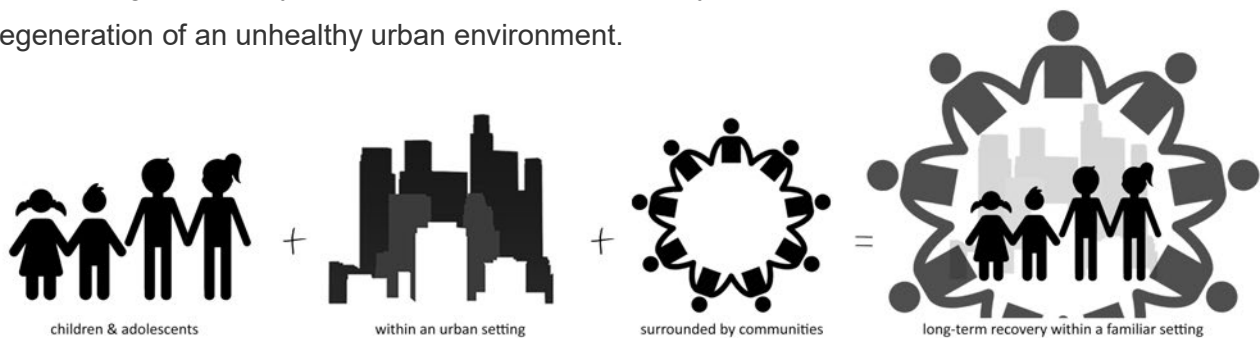


Figure 84 : Diagrammatic illustration of who the research targets towards. 2019, by Author.

9.2.2 Why?

Evidence-based research suggests that the prevalence of mental illnesses are high among the youth population due to their intense physical, social and emotional developments. If untreated, it could persist and worsen in adulthood with the consequence of unemployment and homelessness, (South African national youth risk behaviour surveys and studies, 2018).



Figure 85 : Diagrammatic illustration of the consequences of living with an untreated mental health disorder, signifying why it is important to treat. 2019, by Author.

With the above in mind, it has also been discovered that the existing private psychiatric facilities, in Durban, are unaffordable to majority of the population, whereas the existing public psychiatric

facilities lack sufficient maintenance, are poorly designed, isolating and only provide a small section of their spaces for the youth, (eNCA news reports, 2018). Thus, suggesting the lack of knowledge and access to such facilities for children and adolescents, it can be assumed that mental health is not seen as a major priority among the youth in Durban, South Africa. It can also be assumed that the existing psychiatric facilities in KwaZulu-Natal do not consider therapeutic environments or holistic treatment methods when treating those who suffer from a mental illness, instead patients are confined within an institution or hospital and treated with varying drugs, which does not fully address the core issue of the individual, thus resulting in the patient spending the rest of their lives in the hospital and are highly susceptible to a mental relapse and resorting to old habits once returned to familiar surroundings. Therefore, the architectural response aims at creating a community-based mental health facility within an urban setting. To explore mental health recovery through an approach that is not institutionalized and does not isolate individuals from the urban setting or environment in which they are familiar with. To promote healing within an architecture that is therapeutic in its design, within familiar surroundings, near the support of families and communities within a controlled, supervised and secure space that allows for growth, progression and transition, whilst also learning coping-mechanisms and basic life skills to prevent the possibility of relapsing.

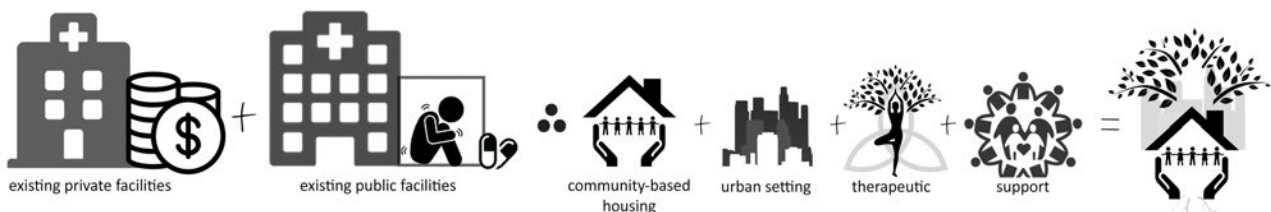


Figure 86 : Diagrammatic representation of existing psychiatric treatment versus an alternative and more therapeutic approach to mental health treatment. 2019, by Author.

9.2.3 How?

The design utilizes the concept of a therapeutic architecture in conjunction with age-sensitive spatial design principles, all with the intention to create an architecture that removes the notion of a mental/psychiatric institution. To ultimately achieve the therapeutic effects of a natural healing environment within an urban setting through a facility that will not only serve the community, but also provide the youth with the correct coping-mechanisms and skill set within their familiar environment, to ensure a long-term recovery.

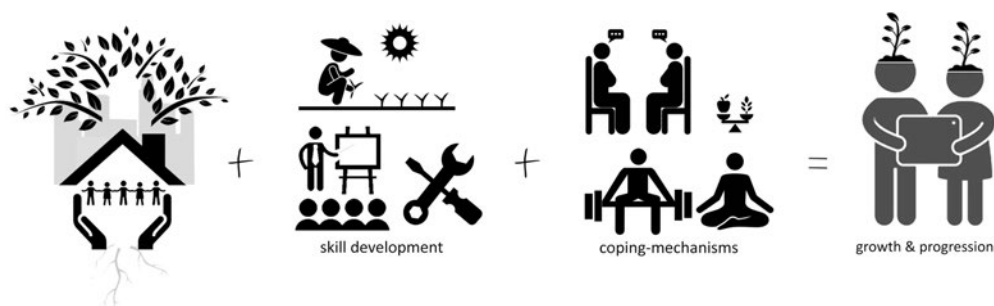


Figure 87 : Diagram illustrating how the facility could incorporate the concept of a therapeutic architecture and age-sensitive healing strategies in the design of the facility. 2019, by Author.

9.3 PROJECT BRIEF

It was required of the architect to design and conceive a de-institutionalised approach, as an alternative response to the architectural design of existing mental health facilities, within the Durban CBD precinct for children and adolescents, ranging from ages 10 -18, whom cannot afford or gain access to proper mental health treatment. Thus, in alignment with the theoretical and conceptual framework explored earlier, the built form must allow for the following to occur;

9.3.1 Accommodation schedule

“The House”	Area:
Ground Floor	
Drop – Off Zone	80m2
Reception/ Entrance/ Foyer	55m2
Core/ Circulation	350m2
Ablutions	30m2
Storage/ Services	90m2
Visitation rooms/ Multi-purpose spaces	200m2
Indoor Gym	250m2
Recreational facilities for patients	200m2
Assessment & admission area	200m2
Arts & crafts workshops	300m2
Transition space	80m2
First Floor	
Core/ Circulation	500m2
Ablutions	55m2
Storage/ Services	30m2
Private therapy spaces/ Meditation rooms	120m2
Family relationship development spaces	150m2
Urban farming	160m2
Social spaces	100m2
Indoor Gym	120m2
Library/ Computer Lan	180m2
Transition space	50m2
Second Floor: Family units	
Inpatient units	70m2
Family therapy room/ Multi-purpose space	40m2
Social spaces	120m2
Meditation spaces	100m2
Core/ Circulation	150m2
Third/ Fourth Floor: Adolescent units	
Inpatient units	35m2

Staff unit	35m2
Seclusion rooms	25m2
Social spaces	150m2
Meditation spaces	60m2
Core/ Circulation	120m2
“The Neighborhood”	
Ground Floor	
Outpatient entrance/ Reception	50m2
Core/ Circulation	300m2
Office space	30m2
Retail	150m2
Facility/ Staff cafe	120m2
Communal lounge area	100m2
Ablutions	30m2
Storage/ Services	50m2
First Floor	
Core/ Circulation	300m2
Consultation rooms/ Specialist rooms	150m2
Lecture rooms	150m2
Group therapy/ meditation spaces	160m2
Staff facilities	100m2
Ablutions	30m2
“The Downtown”	
Restaurants/ Cafes	400m2
Retail	260m2
Convenience store	120m2
Health & beauty salon	90m2
Multi-purpose community hall	350m2
Public clinic	80m2
Public pharmacy	80m2
Ablutions	35m2
Storage/ Services	120m2

Figure 88: Table illustrating the necessary spaces as well as the area required for each space. 2019, By Author.

CHAPTER TEN | SITE SELECTION

10.1 SITE SELECTION CRITERIA

How can architecture create a healing/ therapeutic environment within a harsh urban setting?

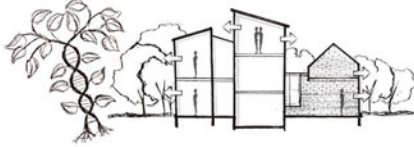
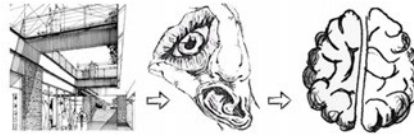


Theories & concepts	Description	Site criteria
Therapeutic architecture		
<p><i>The Theory of Biophilia:</i> <i>Nature as a therapy through architecture</i></p>  <p><i>The Theory of Phenomenology:</i> <i>Stimulation of the human senses</i></p> 	<p>A central space that can assist underprivileged young individuals that are in dire need of mental health treatment, but at the same time a space that harnesses qualities that allow for community integrative strategies, to ensure long-term recovery, raise awareness, change the perception attached to psychiatric architecture and give back to the community.</p>	<ul style="list-style-type: none"> • To be centrally located • To be located within a harsh urban environment • To be located near underprivileged communities • Well orientated • Lots of greenery • Near to a body of water • Views
Age-sensitive healing design		
<p><i>Children and adolescents design preferences:</i></p>  <p><i>The “Simulation of real life” concept:</i></p> 	<p>A space that portrays a clear indication of the lack of mental health treatment for predominantly children and adolescents as well as a space large enough to adapt and transform the 'simulation of real life' concept into built form.</p>	<ul style="list-style-type: none"> • Easily accessible • Central location/ near public transport routes • An underprivileged community with a lack/ no access to mental health care treatment • Evident signs of 'troubled' children and adolescents • Near to public hospitals • Near to schools • Near to physical activities/ sports • Large site area

Figure 89: Table illustrating the site selection criteria utilized within this research to establish how architecture can create a therapeutic environment within a harsh urban setting. 2019, By Author.

10.2 SELECTED SITE AND DISCUSSION

This study is located within the Province of KwaZulu-Natal, South Africa. The city of Durban is known to be the third most populous urban area in South Africa with an estimated population of 3.44 million. Durban is most celebrated for being one of the busiest ports in Southern Africa and the second largest port in Africa. It is also seen as a major tourist destination due to the city's ideal subtropical climate.



Figure 90 : Macro locality maps of the selected study area. 2019, online source and edited by Author.

The selected site within this research will be subjected to the boundaries of Durban, KwaZulu-Natal, stretching from Margret Mcadi Avenue and the M4 bridge, to Marget mncadi and bay of Natal. The site complies with all relevant selection criteria instated earlier.



Figure 91 : Meso locality map of the selected study area. 2019, online source and edited by Author.

10.3 SITE ANALYSIS AND PHYSICAL FEATURES

Site Location: The site is located in Albert Park, between Diakonia and Margret Mcadi Avenue, within the Durban CBD. The site is currently zoned as “Public open space” of ERF 10787 with an area of 35 000sqm. The study area consists of the Durban inner city and is notoriously known for its various social ills and huge lack of accessibility to mental health care facilities, especially for the youth population as they are seen either begging, doing drugs, committing crimes or wandering around aimlessly. Based within the boundaries of the chosen site, there is an existing basketball court and other sporting facilities that are occasionally utilized as informal social gathering spaces for the surrounding community.

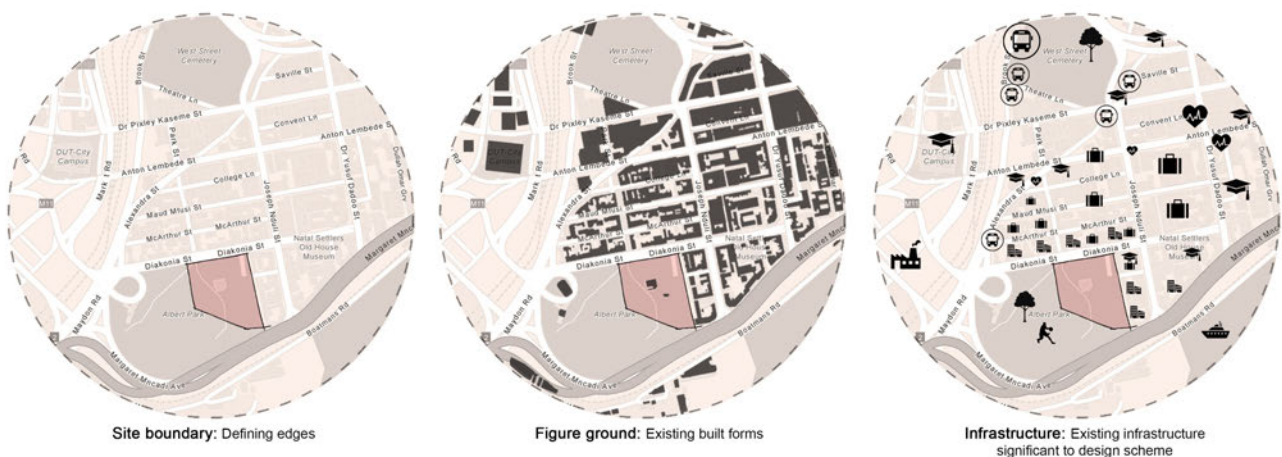


Figure 92 : Diagrams illustrating forms of analysis upon the selected study area as well as the chosen site. 2019, online source and edited by Author.

Infrastructure: As seen in the figure above, the functions of the buildings within the study area are primarily of residential, commercial, educational and retail. Psychiatric services and care, based within the boundaries of the study area are Addington Hospital psychiatric units as well as Durdoc Hospital which serves as a clinic for psychiatric services for the community, however the community is still in dire need for mental health facilities that focus purely on the youth. Albert park is central to a number of schools, colleges and universities that is in great need of the awareness that the building’s programme. The site is also centrally located to major transport routes and benefits from views of the harbour on the south and sugar terminals on the west.

Building services: The existing municipal and storm water lines run beneath the main road, adjacent to the site.

Accessibility: The site is accessible by various forms of public transport such as; rail, bus, taxi and private vehicles based on the centrality of it's location that is within close proximity to the Durban Berea station and multiple taxi rank routes. The site is accessible via Diakonia and Margret Mcadi Avenue, where there is a dense foot traffic of pedestrians as well as vehicular movement.

Noise and pollution: Due to the high volume of vehicular traffic along Margaret Mncadi Avenue as well as the activity within the harbour, the site experiences a considerable amount of high noise levels throughout the day. The issue of pollution must also be taken into consideration as sewerage discharge, among other pollutants, filter into Albert park and the rest of the inner city from the Durban harbour.

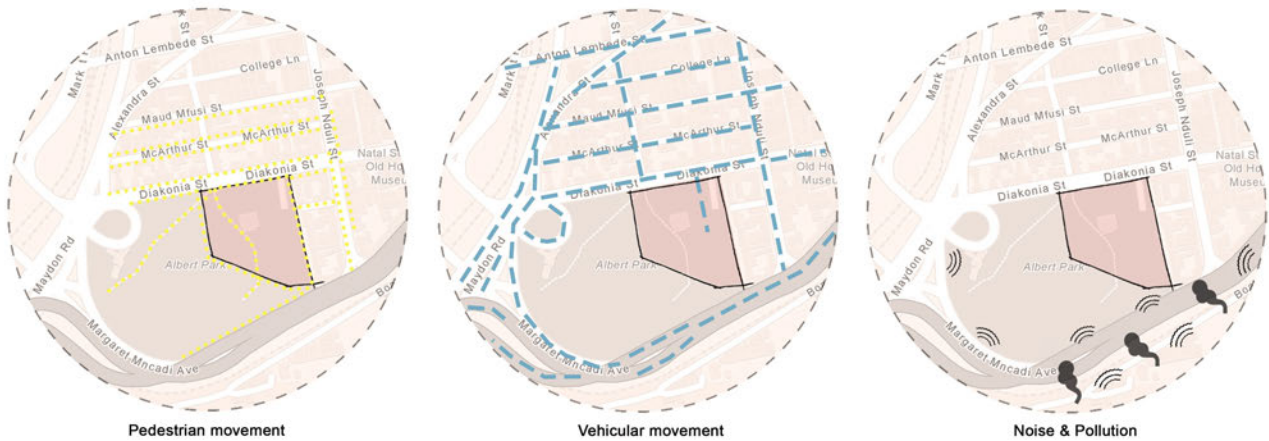


Figure 93 : Diagrams illustrating forms of analysis upon the selected site. 2019, online source and edited by Author.

Orientation: Albert park is well orientated. The site is filtered with lots of natural lighting from the north as well as natural shading from an abundance of trees and building's that surround the park. With regards to the direction and movement of wind and rain, the site experiences pleasant cool north easterly winds that flow through the streets and alleyways from the Durban harbour. However, the site does experience occasional harsh south westerly winds.

Topography: The site is flat, and consists of large amounts of natural vegetation.

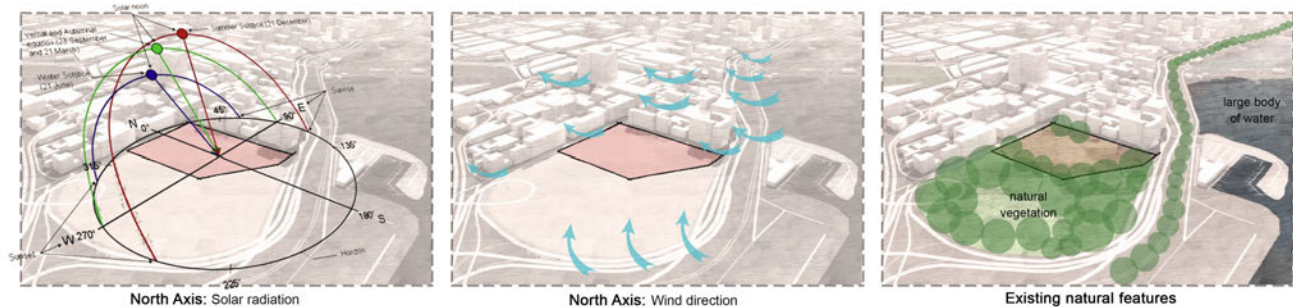


Figure 94 : Diagrams illustrating forms of analysis upon the selected site. 2019, online source and edited by Author.

CHAPTER ELEVEN | DESIGN DEVELOPMENT

11.1 Introduction

The goal moving forward is to adapt this model within a South African context and achieve the therapeutic effects of a natural environment within a socio-economic depressed community located in one of Durban's most unhealthy urban settings. By re-conceptualizing a nurturing inner city environment through a community-based mental health facility, it may ensure the permanency of recovery by equipping the youth with the correct coping-mechanisms and skill set within their familiar environment as well as assisting and preparing them through process of societal re-integration. This approach will also allow families and communities to participate and support in the treatment process which is especially crucial for children and adolescents. Therefore, based on the research unpacked within the first part of the study, the following will stipulate what is considered to be ideal when designing a therapeutic inspired, community-based housing mental health facility, for children and adolescents, within the inner city of Durban.

11.2 Building programme

The most suitable building programme for a therapeutic inspired, community-based mental health facility for children and adolescents for ages ranging from 10 to 18 years old, is one that encapsulates all principles of an age-sensitive healing design through the 'simulation of real life' concept which encompasses child and adolescent environmental preferences. This approach entails programming the building around the creation of a home-like atmosphere to generate a familiar environment that replicate basic daily activities with the intention to 'normalize' the healing experience as opposed to being within a psychiatric institution. Therefore making the societal and community re-integration process easier. The concept is translated architecturally through familiarised elements that become the three phases of recovery;

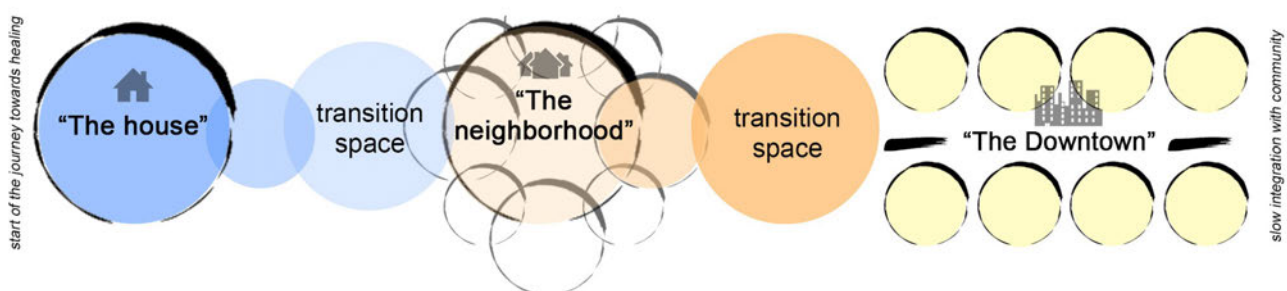


Figure 95 : Diagram portraying the proposed building programme through the 'simulation of real life' concept, as well as the carefully chosen colours that represent each healing phase. 2019, by Author.

“The House”

The private and controlled section of the facility, where the journey towards healing would begin. It is more representative of a home-like environment that supports the patients in their private and

personal living spaces. This is where the patients would first be admitted, assessed and decided upon what level of care is required and thereafter developing a suitable treatment programme. It will also consist of the mentally and physically stimulating facilities and activities that teach patients the appropriate skills and coping mechanisms, all of which open up to an enclosed and private therapeutic courtyard space. "The house" also provides the inpatient units, which will consist of family units for children aged 10 to 12 and adolescent units for those aged 13 to 18. In the adolescent unit it is imperative to cater for privacy and a sense of ownership and control over their environment, hence the unit housing two per room. To further allow a sense of control, the corridors of the inpatient units will be broken up by smaller social spaces, communal kitchenettes, lounges and relaxation rooms with the intention to not only promote social interaction, but also allow natural light to filter the spaces. Once the psychiatric professionals believe that the patients are ready for the next phase of healing, they then slowly transition into the next phase known as;

"The Neighborhood"

The next step of the programme is the transition into a semi-public space that places primary focus on support group facilities and therapy, education and skill building to further prepare individuals for community re-integration. NB - becomes rep of a mini downtown that's more private than the actual downtown space - but less controlled than the house space - hence creating slow transition. This space focuses on support group facilities and therapy as well as creating a kind of community within the facility amongst the patients through things like Education and skill building . It also has an outpatient facility

"The Downtown"

"The Downtown" is conceptually representative of a community and is the final phase of the healing process. This space will consist of basic public facilities such as clothing stores, supermarkets, gathering spaces and community centres all of which will serve the surrounding community and address the lack of insight and education on the issue of mental health. The public space will also allow patients to model the basic daily responsibilities and activities within a secure environment, allowing a slow and safe integration back into the surrounding community.

11.3 Layout and spatial planning

The facility is designed to promote mental health recovery for a sensitive age group, whilst being located within an unhealthy urban setting. Therefore, the following layout and spatial planning principles are crucial;

Healing phases

Located within a harsh urban environment, it was imperative to first determine which of the site edges were considered to be public, semi-public and private based on pedestrian foot traffic, vehicular movement and the nature of facilities that surround the site. Based on that analysis, it was decided to align the built form along the more private edge and thereafter placing each of the transitional healing phases of the building program. As seen in the figure below, the process towards healing would begin in a more private space in which they will slowly integrate towards the more public spaces to integrate with the community.

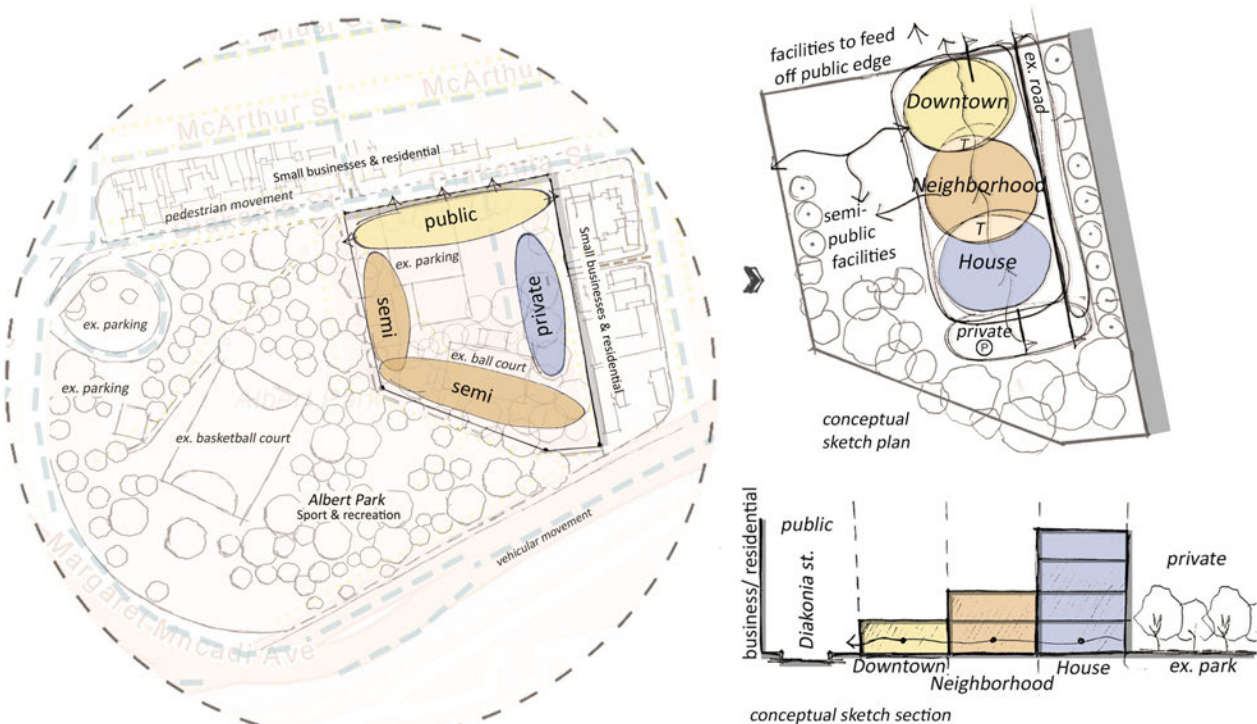


Figure 96 : Conceptual plans and sections portraying how each of the healing phases of the building programme will be translated into built form on the site. 2019, by Author.

Entrance and accessibility

Through observation and research, it has been found that in existing psychiatric facilities, the patient, visitor, specialists and staff members all enter through the same space. This can become uncomfortable for the patient, and sometimes unsafe. Therefore, another significant aspect to consider was creating separate private and public entrances, parking and waiting areas to create a safer and more comfortable environment for the patient, as well as allowing them a sense of control over their environment.

Privacy and security: Courtyard spaces

To ensure that the children and adolescents are allowed to retreat among nature/ outdoor spaces whilst being within a safe and supervised environment, it was decided to create enclosed courtyard spaces. These spaces will cater for privacy, attention restoration, positive 'distraction' as well as a

consistent interaction with nature, thus creating a more pleasant healing environment for the patients. The courtyards will be orientated to open up towards the north, allowing natural light and ventilation to filter through each courtyard into the spaces.



Figure 97 : Conceptual plans and sections illustrating how security, privacy and accessibility is achieved in the design. 2019, by Author

Orientation

In aims to achieve the optimal level of natural lighting and ventilation throughout the facility, the corridors are to be broken up social spaces, thus allowing natural light and ventilation into the spaces as well as consistent visual access to nature. Other strategies include the use of courtyards, light wells, large openings, glazing and screens that are orientated to open up towards the north. Building heights will also scale down towards the south thus allowing north lighting to filter each of the spaces and units, creating a comfortable and pleasant environment for the users.

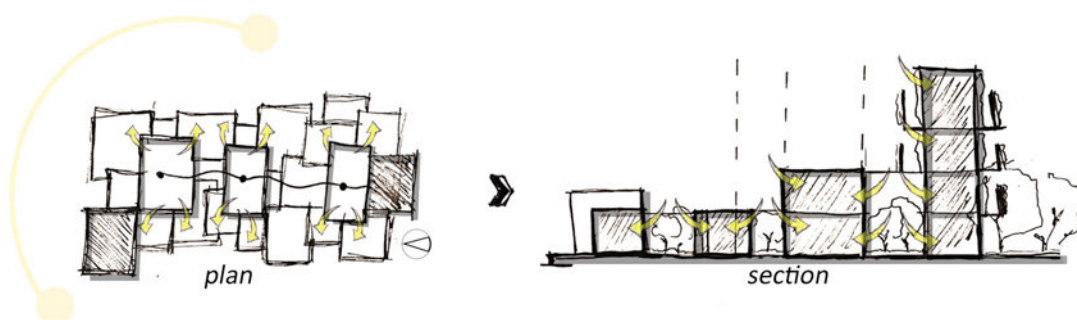


Figure 98 : Conceptual plan and section illustrating how the building intends to achieve the optimal level of natural lighting and ventilation through the correct spatial planning strategies and orientation. 2019, by Author.

Further Security, safety & circulation

The research instated within part one of the study confirmed that inadequate security and spaces such as dark corners, long corridors and small, confined spaces in psychiatric facilities, especially when dealing with children and adolescents, allow for a variety of negative and unsafe actions to occur. With that in mind, it is crucial to cater for;

- Stay in staff members to supervise.
- Different age groups to be accommodated for on varying floors.
- Corridors to be broken up by smaller social spaces thus allowing more natural light in and better supervision.
- Built in furniture, so patients cannot be a harm to themselves or others.
- Enclosing balcony spaces with screens to cater for safety, interaction with nature and natural lighting and ventilation.

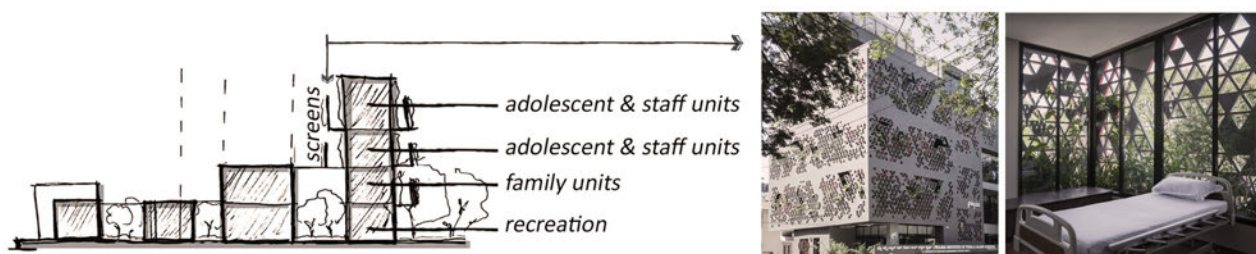


Figure 99 : Conceptual section illustrating different age groups on different floors as well as the inclusion of green screens to enclose balcony spaces. 2019, by Author.

Sense of control over environment

When designing to suit the needs of children and adolescents, personal space and control over privacy, noise, smell, lighting and temperature is extremely crucial to the healing process. As seen in the conceptual sketch plan below, the family unit which caters for children ages ranging 10 – 12 years, allows a sense of control and privacy per unit. It allows the child their own bedroom and personal space in which they have control. On the other hand, the adolescent unit will cater for two sharing per room which allows them the privacy of their own en-suite bathroom, personal workstations as well as the ability to personalise their rooms which will allow them to create their own identity within the space, thus developing a sense of ownership.

Social spaces

Another imperative factor when designing for a sensitive age group is the creation of flexible and multi-purpose spaces that are subject to constant change. This will be achieved through the use of folding doors along the corridors in the inpatient units, therefore making the passageways larger and able to serve dual purposes. By breaking down the corridors with smaller social spaces and physically and mentally stimulating activities, it will promote social interaction within naturally lit and

ventilated spaces, allowing the individuals to gain a sense of connection and community, thus enhancing the healing process.

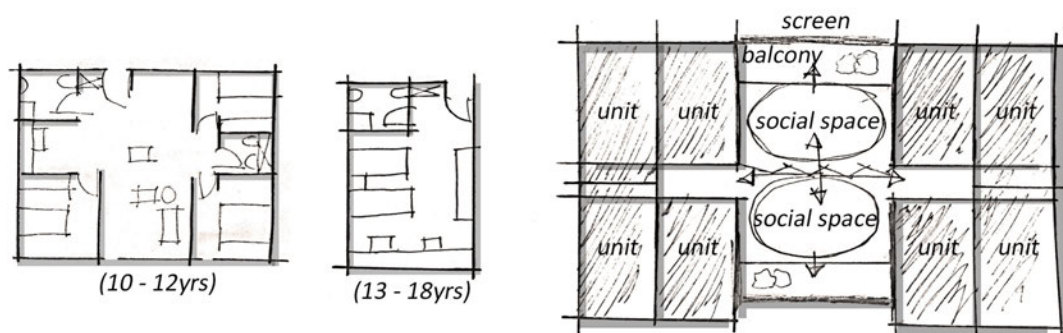


Figure 100 (left) : Conceptual plan of the family unit and adolescent unit, to portray how each unit applies the concept of allowing each patient a sense of control over their environment.

Figure 101 (right) : Conceptual inpatient floor plan illustrating the application of flexible and multi-purpose spaces as well as breaking up the corridors with smaller social spaces.

Positive intervention and attention restoration

The use of natural vegetation, courtyard spaces, roof gardens, planter boxes and water features to establish a positive “distraction”. Restoring attention through the inclusion of nature, natural lighting, ventilation and sound.

11.4 Form and space

The form of the facility will be determined by the therapeutic, biophilic and phenomenological design principles, instated within the research, allowing the architecture to be informed by the location's space, climate, ecology and context in order to generate the optimal healing environment within a harsh urban setting. The intention is re-conceptualize the design of mental health architecture by exuding the essence of a home, removing the notion of an institutionalised facility, to generate a form and space that is considered welcoming, safe and comfortable for children and adolescents through;

Nature as a therapy through architecture

- Maintaining a consistent relationship between man, nature and the built environment through the inclusion of courtyards and greenery that extrudes from the courtyard spaces to the upper storeys of the facility, thus creating the illusion of a structure entangled in greenery as well as ensuring that the patients, visitors, staff and therapists are always within a therapeutic environment.

- Achieving the optimal level of natural lighting and ventilation through the inclusion of courtyards, light wells, large openings, glazing and screens.

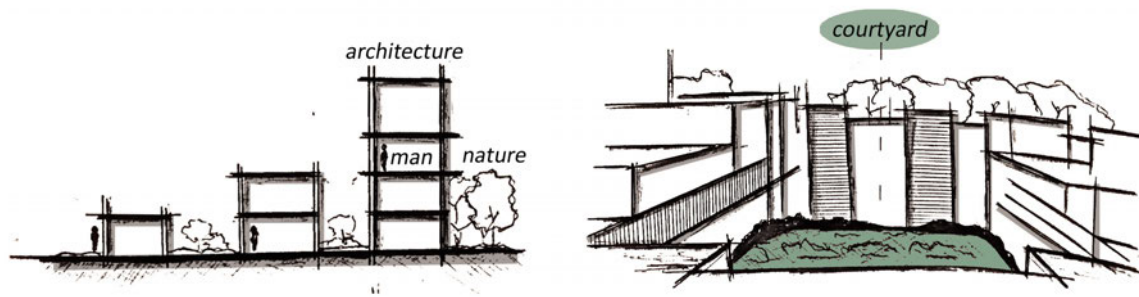


Figure 102 : Conceptual section and sketch illustrating the use of courtyard spaces in order to maintain a consistent relationship between man, nature and the built environment as well as achieve the optimal level of natural lighting and ventilation. 2019, by Author.

- Inclusion of other natural elements such as water.
- Eco-friendly and sustainable strategies through the reduction of energy costs, roof solar panels, sun shading devices, locally sourced materials, screens, roof gardens and community urban farming that could potentially resource the facility as well as an engaging and educational experience.

Stimulation of human senses

- Visual: Removing the notion of an institutionalised facility by exuding the essence of a more homely and nature inspired architecture through the consistent visual and physical access to nature as well as through the choice of materials and textures.
- Sound: Spatial design of courtyards and natural vegetation to act as noise buffers from the surrounding urban environment to achieve a certain level of peace and quiet within the facility as well as the inclusion of the sound of falling water, in order to achieve the optimal healing and serene environment.



Figure 103 : Conceptual sketches illustrating design attributes that have the ability to stimulate visual and auditory senses. 2019, by Author.

- Touch: Through the choice of tactile materiality and textures that age and evolve with time in order to generate a connection between the texture and the individual.

- Smell: Inclusion of scented plants throughout the building to remove the typically negative perception attached to institutions/ hospital architecture.

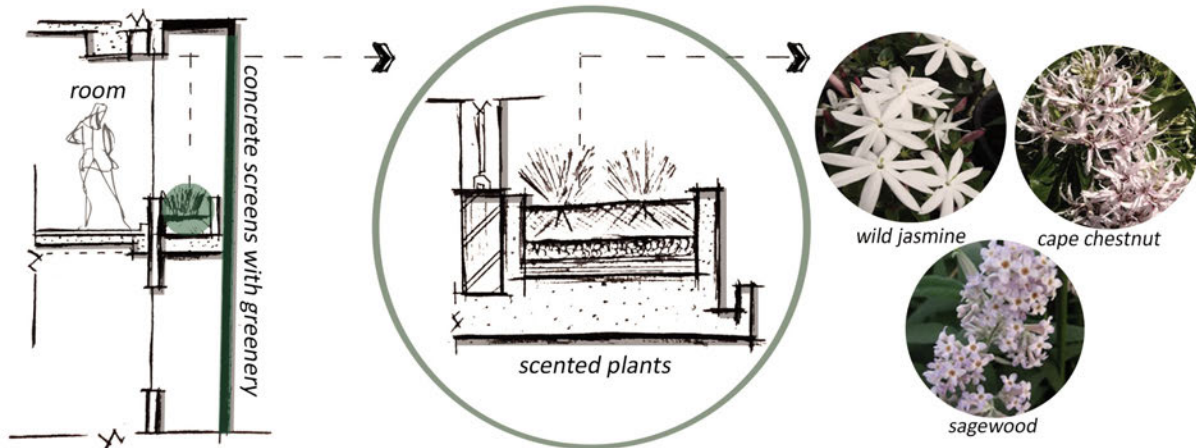


Figure 104 : Conceptual sections and images illustrating the use of scented plants alongside patient units, in order to remove the typically negative odour attached to hospital architecture. 2019, by Author.

11.5 Materials and textures

The architectural design of the facility intends to create a relationship between the human senses and the building through the use of tactile materiality and textures, with the intention to generate a positive and new emotion, meaning and memory of the space in attempt to redefine the perception attached to mental health facilities. Therefore, the primary building material of choice is brick, as it is considered a homely material and tends to age and evolve with time, thus creating an immediate connection between the texture and the individual, which has been proven to be mentally stimulating. The secondary building material of choice is timber, to soften the spaces and generate a more homely atmosphere, in order to make the patient's feel safer and more comfortable within the spaces.



Figure 105 : Diagram illustrating the choices of materiality and textures for the design. 2019, by Author.

11.6 Colours

As mentioned previously, the facility is programmed around three healing phases; “The House”, “The Neighborhood” and “The Downtown”. Each space represents a different phase in the healing process and is therefore defined with a specific colour. Each colour has been chosen based on meaning and relevance to the space and has been split into different shades, thus defining each section with the intention to use the colours as a way finding tool around the facility. “The House” will be shades of green, which provoke feelings of 'trust and acceptance' which is representative of the first phase of mental healing. The second phase, “The Neighborhood”, will be shades of orange to create feelings of 'interest and optimism', representative of progression. Lastly, “The Downtown” will be shades of yellow, which indicate 'joy, love and serenity', thus representing the success of the treatment, the end goal.

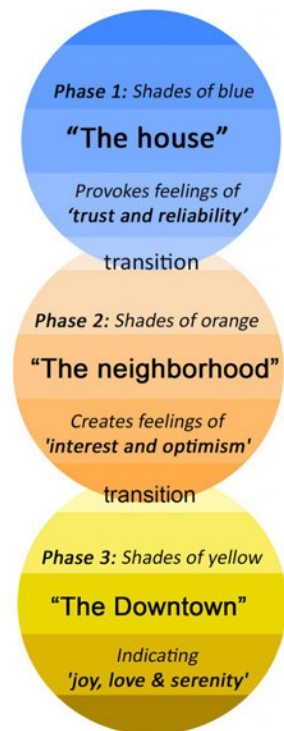


Figure 106 : Diagram portraying the colour by which each phase is represented as well as the meaning of each colour .
2019, by Author.

CHAPTER TWELVE | FINAL DESIGN

USING A THERAPEUTIC ARCHITECTURE TO RE-CONCEPTUALIZE THE DESIGN OF MENTAL HEALTH CARE FACILITIES, FOR THE YOUTH, WITHIN THE CITY OF DURBAN

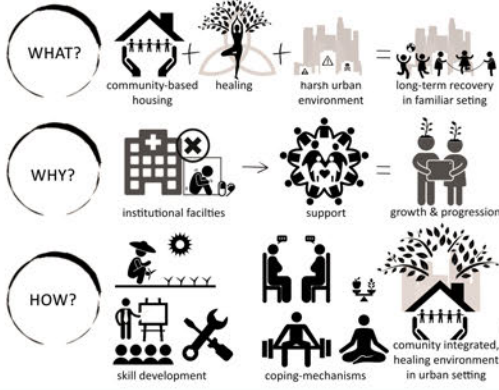
LACK OF PRIORITY, INSIGHT & FACILITIES

that focus on mental health care treatment for the underprivileged youth population in the Durban CBD area.

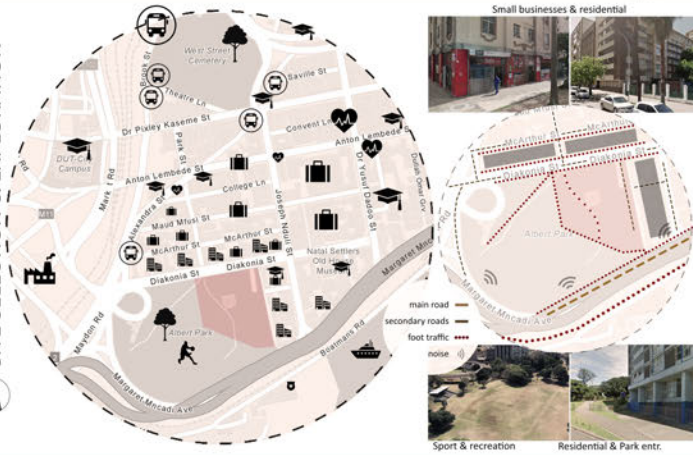
+ 17 million suffer with mental/ mood disorder

! +/- 20% of that are children and adolescents (10 - 18 years old)

Especially in harsh urban environments
psychological, physiological and behavioural disorders

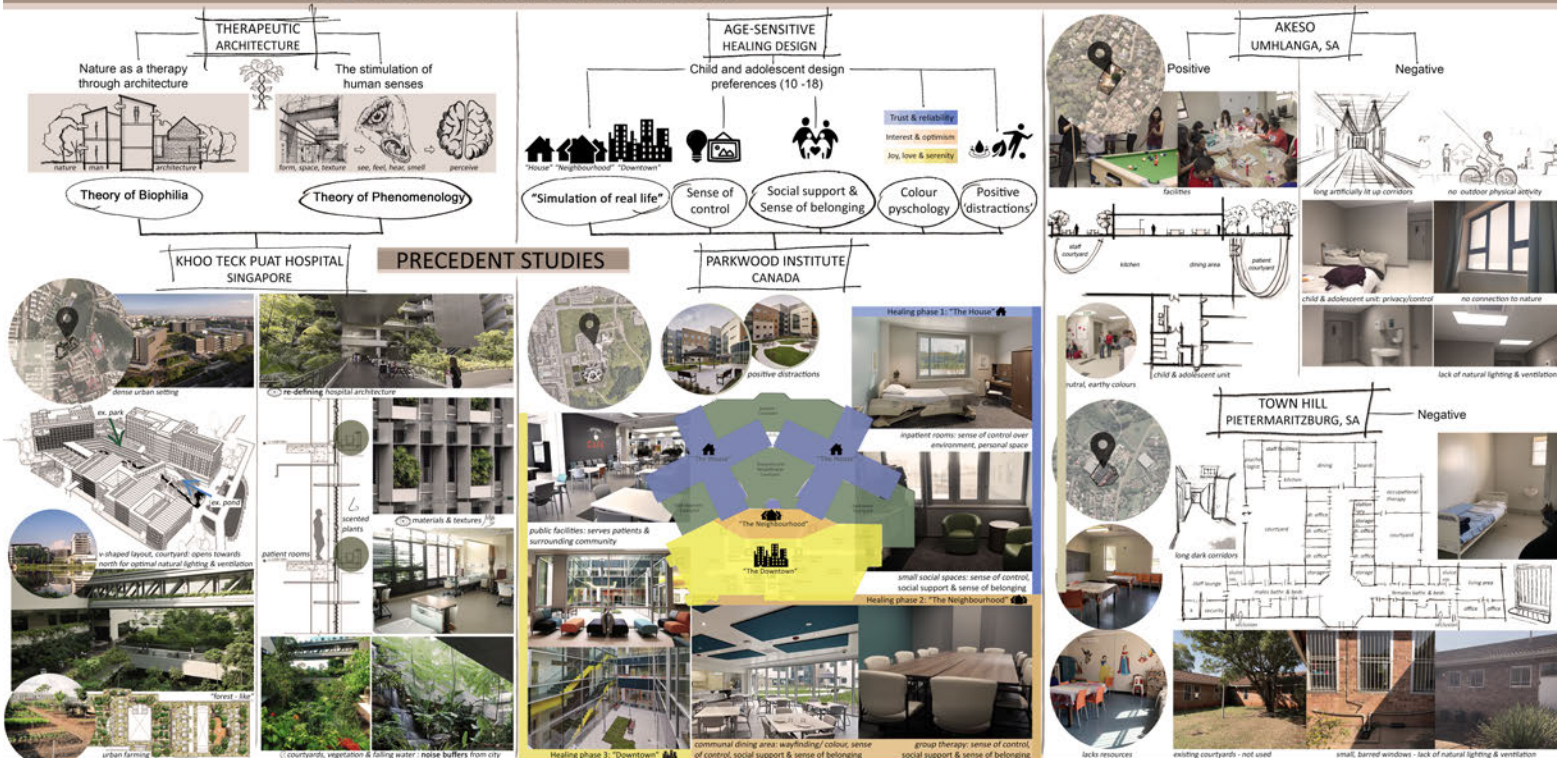


SITE SELECTION & EXPLORATION



THEORETICAL & CONCEPTUAL FRAMEWORK

CASE STUDIES



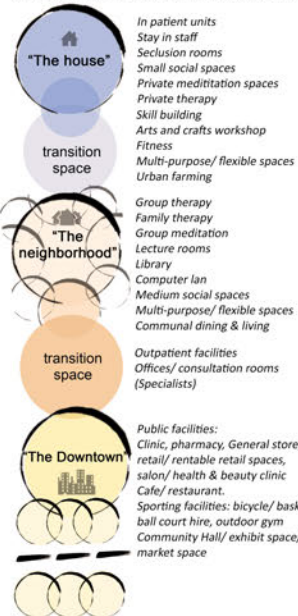
DESIGN DRIVERS & DEVELOPMENT

1. BUILDING PROGRAMME:

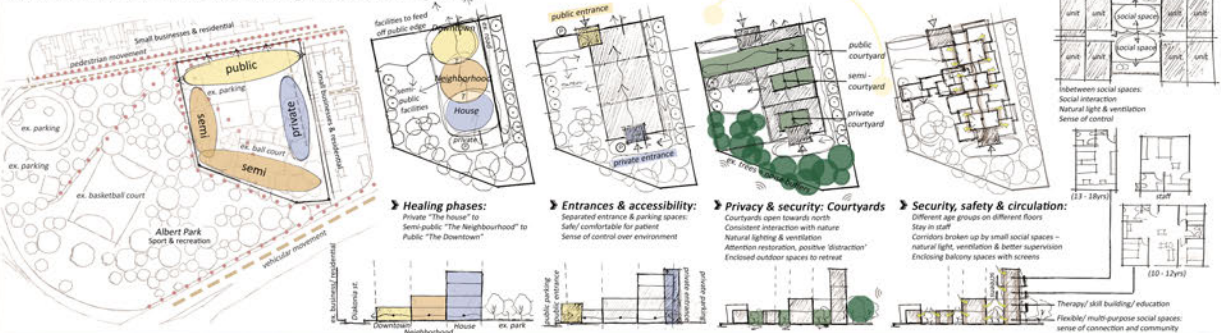
De-institutionalisation:

'Simulation of real life' concept

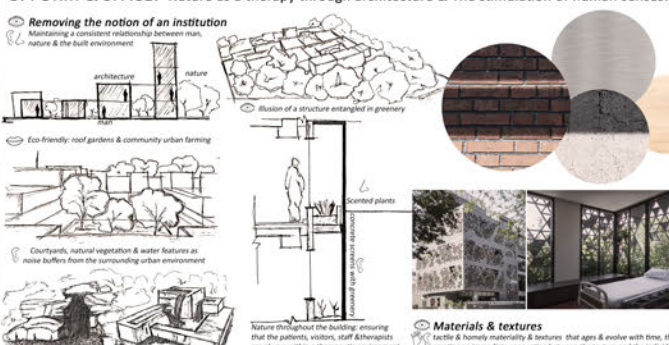
Home-like atmosphere by incorporating familiar aspects to replicate activities we experience in our everyday lives.



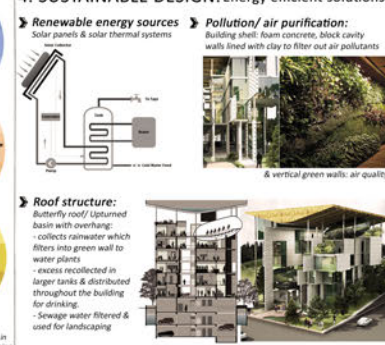
2. LAYOUT & SPATIAL PLANNING: Age - sensitive healing design:



3. FORM & SPACE: Nature as a therapy through architecture & The stimulation of human senses:



4. SUSTAINABLE DESIGN: Energy efficient solutions:



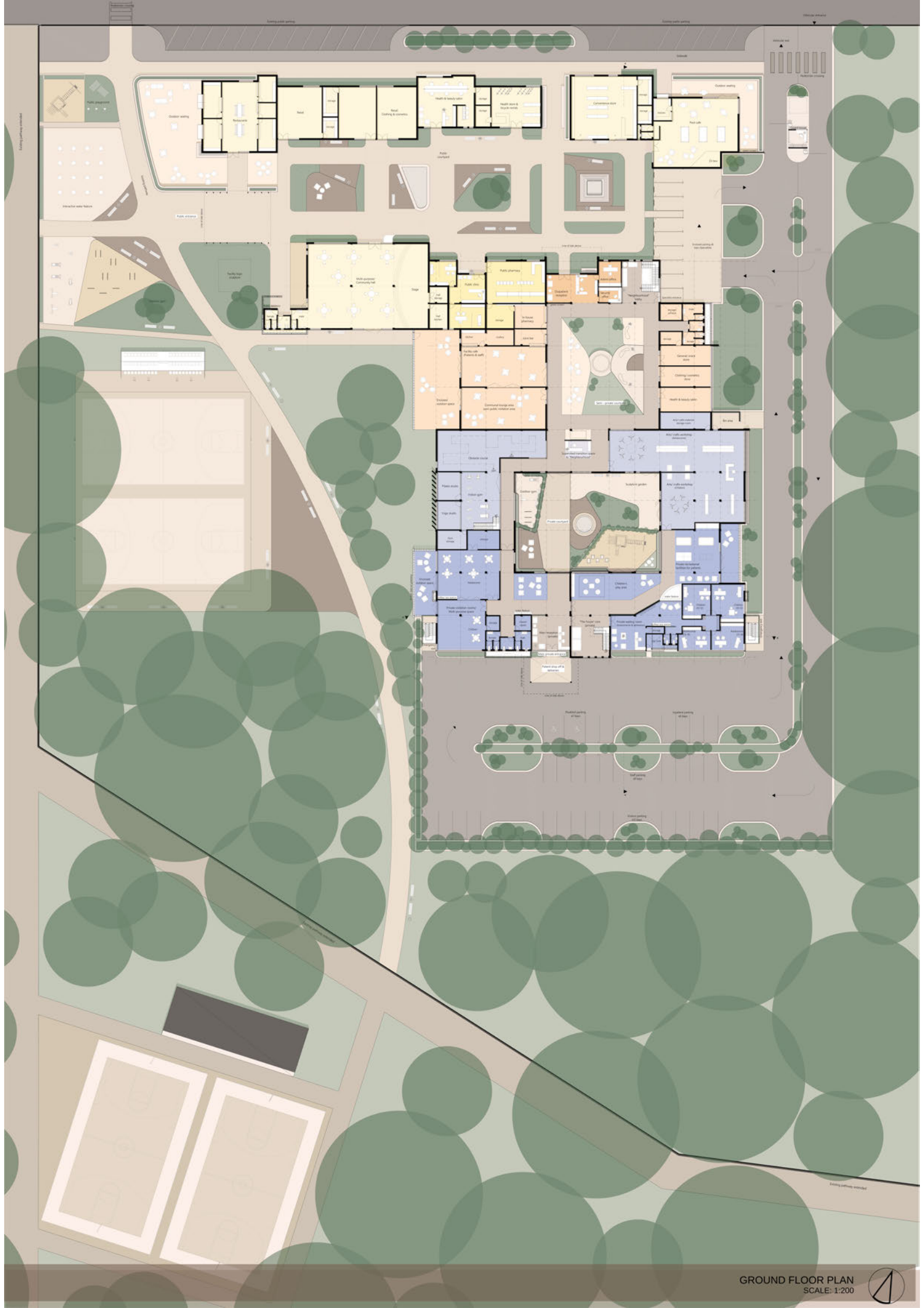


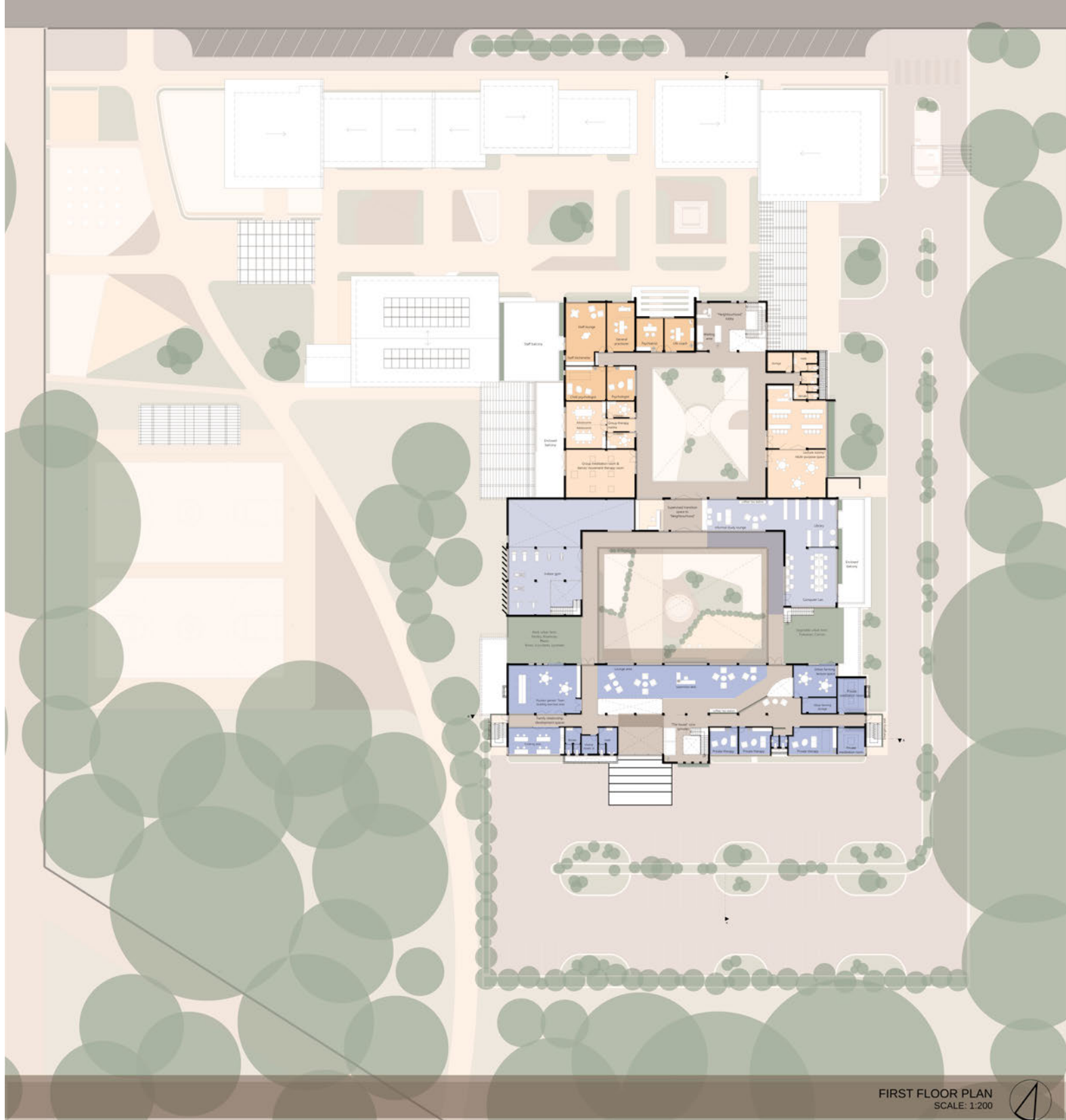
LOCALITY SITE PLAN
SCALE: 1:5000



SITE PLAN
SCALE: 1:750







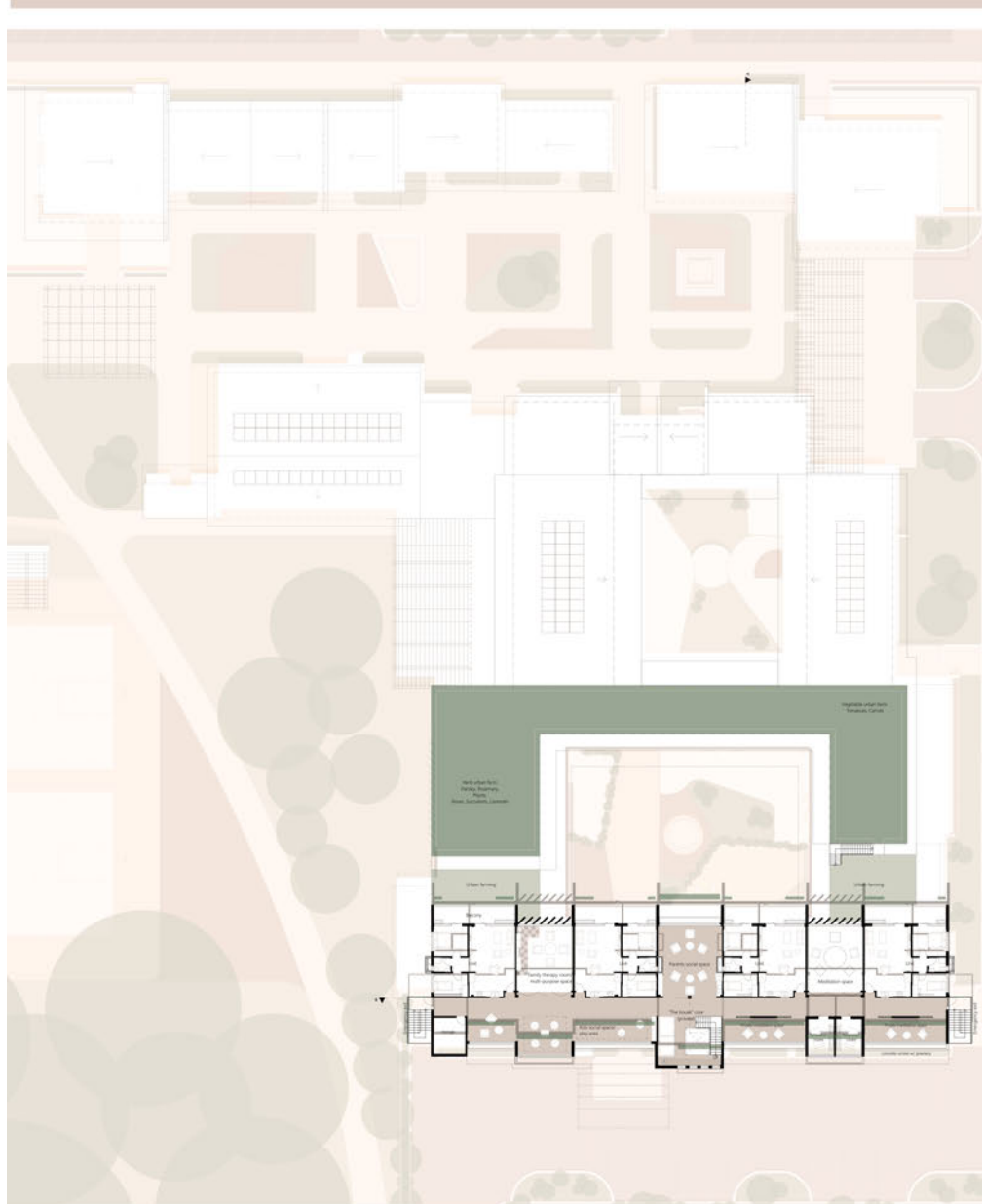
FIRST FLOOR PLAN
SCALE: 1:200



Individual therapy space



Group therapy space



SECOND FLOOR PLAN: FAMILY UNITS
SCALE: 1:200



Family therapy space



Group meditation space



Private meditation space



FAMILY UNIT
(CHILDREN AGES 10 - 12)



THIRD & FOURTH FLOOR PLAN: ADOLESCENT UNITS
SCALE: 1:200



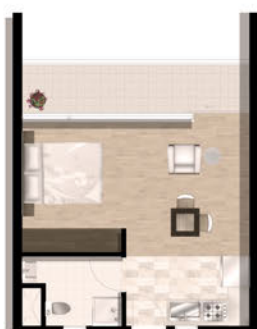
FIFTH FLOOR PLAN: ROOF GARDEN
SCALE: 1:200



Central social space on each floor



ADOLESCENT UNIT
(AGES 13 - 18)



STAY-IN STAFF UNIT



SECLUSION ROOM



Typical adolescent unit



Private entrance & parking for patients, visitors & staff members



Public courtyard



Public entrance



Private courtyard



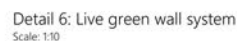
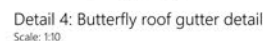
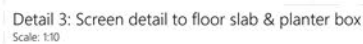
Urban farming



Healing phase 2: "The Neighbourhood" 🏡



Healing phase 3: "Downtown" 🏙️



	Master of architecture ARCH808 HC Dissertation: Architectural Design Technical Resolution		
Building typology	Community-based mental health facility for children and adolescents		
Site	Albert Park		
Scale as shown	Drawing: Section A Section A1	Section B Details	
Date: 14/10/2018	DWG No: SG 2020	3000	
Drawn by: S. Mahabadi			
Checked by:			

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13.2 APPENDICES

13.2.1 Appendix A: Gatekeeper letters



UNIVERSITY OF
KWAZULU-NATAL
INYUVESI
YAKWAZULU-NATALI

DATE: 24th April 2019

To whom it may concern at **Akeso, Umhlanga, Durban**

Sapna Mahabir, a student in the Master of Architecture program at the University of KwaZulu-Natal, formally requests permission to preview Akeso, Umhlanga as one of the case studies in her dissertational research. She would like to use the data collected on the architectural design of existing mental health care facilities and if/ how it can be improved through the development of a mixed-use housing facility that would engage with its surrounding community. She would like to use this data for her Masters dissertation entitled: "Using a therapeutic architecture to re-conceptualize the design of mental health care facilities, for the youth, within the city of Durban." The dissertation will acknowledge the Akeso psychiatric hospital in Umhlanga and the dissertation will be shared if requested.

Thank you

This project is supervised by Lawrence B. Ogunsanya at the School of Development Studies, Howard College, University of KwaZulu-Natal. Should you have any questions, contact details are as follows:

Student:

Name: Sapna Mahabir

Cell: 076 749 6599

Email: sap.mahabir@gmail.com

Supervisor:

Name: Lawrence B. Ogunsanya

Cell: 071 427 2693

Email: ogunsanya@ukzn.ac.za

Granted permission to use Akeso, Umhlanga as a case study for an architecture related dissertation research by:

Name: BRENDA GOVENDER

Signature: [REDACTED]

Date: 26 April 2019

akeso 
UMHLANGA

16 Chestnut Crescent
PRESTONDALE, UMHLANGA
TEL 0870980451

School of Development Studies, Architectural Department
Howard College
University of KwaZulu Natal



health

Department:
Health
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ETHICS AND RESEARCH
COMMITTEE

16 May 2019

Ms Sapna Mahabir
School of Development Studies, Architectural Department
Howard Collage Campus
University of KwaZulu Natal

Project Title: *"Using a therapeutic architecture to re-conceptualize the design of mental health care facilities, for the youth, within the city of Durban."*

The Health Ethics and Research Committee: Town Hill Hospital has considered the application form **Ms. S Mahabir** regarding the above research to be conducted at Town Hill Hospital.

Ethical clearance has not yet been applied for as Ms. Mahabir has informed us that she requires site permission prior to applying for ethical clearance.

The Health Ethics and Research Committee has no objection to this research being conducted at Town Hill Hospital and is of the belief that it will be beneficially inform future planning of mental health services within the province.

As such site permission can be provisionally granted subject to Ms. Mahabir **obtaining ethical clearance from a registered academic ethic committee and KZN Department of Health Ethics Approval.**

In order for full site permission ("gate keeper") to be granted, please supply us with ethical board reference numbers and responses. This need to be obtained prior to starting any data collection on site.

Regards

Dr Janine Brooks

Chairperson: Town Hill Hospital Health Ethics and Research Committee

Head Clinical Unit: Psychiatry: Town Hill Hospital

13.2.2 Appendix B: Ethical clearance



27 November 2019

Miss Sapna Mahabir (213502635)
School of Built Environment & Development Studies
Howard College Campus

Dear Miss Mahabir,

Protocol reference number: HSSREC/00000305/2019

Project title: Using a therapeutic architecture to re-conceptualize the design of mental health care facilities, for the youth, within the city of Durban

Approval Notification – Expedited Application

This letter serves to notify you that your application received on 01 July 2019 in connection with the above, was reviewed by the Humanities and Social Sciences Research Ethics Committee (HSSREC) and the protocol has been granted **FULL APPROVAL**

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

This approval is valid for one year from 27 November 2019.

To ensure uninterrupted approval of this study beyond the approval expiry date, a progress report must be submitted to the Research Office on the appropriate form 2 - 3 months before the expiry date. A close-out report to be submitted when study is finished.

Yours sincerely,



Professor Urmilla Bob
University Dean of Research

/ms

Humanities & Social Sciences Research Ethics Committee
Dr Rosemary Sibanda (Chair)
UKZN Research Ethics Office Westville Campus, Govan Mbeki Building
Postal Address: Private Bag X54001, Durban 4000
Website: <http://research.ukzn.ac.za/Research-Ethics/>

Founding Campuses: ■ Edgewood ■ Howard College ■ Medical School ■ Pietermaritzburg ■ Westville

INSPIRING GREATNESS

13.2.3 Appendix C: Consent form

RESEARCH ETHICS: DECLARATION OF CONSENT FORM

“Using a therapeutic architecture to re-conceptualize the design of mental health facilities, for the youth, within the city of Durban.”

Researcher: Sapna Mahabir

Purpose of the Study: The purpose of this research is to find an alternate response to the architectural design of existing mental health care facilities and how it can be improved through the development of a mixed-use housing facility that would engage with its surrounding community. The intention is to prove that a healing environment can be achieved within an urban setting and is a better long-term approach to mental health care.

Procedure: I am asking you to participate in an interview session. The session will be up to 30 – 45mins minutes (maximum) in length. You will be asked general questions based on the state of existing psychiatric facilities, in Durban and how it can be improved upon, with primary focus on children and adolescents. The questions are based on your opinion, knowledge and experience, to gain further insight and perspectives for the research.

Confidentiality: Any information derived from your participation in the study will be kept confidential by the researcher. There will be no identifying information given during the interview. The audio taped sessions will be stored anonymously and confidentially. Only anonymous quotes will be presented on my report.

Ethics Approval: This project was approved by the School Research Ethics Board of the University of KwaZulu-Natal. If you have any questions or concerns about your rights or treatment as a research participant, you may contact the Chair of the Research Ethics Board: Dr Rosemary Sibanda, 031 260 1479, sibanda@ukzn.ac.za.



Please Initial
Box

- | | |
|---|--------------------------|
| 1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions. | <input type="checkbox"/> |
| 2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason. | <input type="checkbox"/> |
| 2. I agree to take part in the above study. | <input type="checkbox"/> |
| 3. I agree to the interview consultation being audio recorded | <input type="checkbox"/> |

_____ Name of Participant	_____ Date	_____ Signature
_____ Name of Researcher	_____ Date	_____ Signature

HSSREC Research Office Details

Humanities & Social Sciences Research Ethics Administration
Research Office, Westville Campus
Govan Mbeki Building
Private Bag X 54001
Durban
4000
KwaZulu-Natal, South Africa
Tel: 27 31 2604557
Fax: 27 31 2604609
Email: HSSREC@ukzn.ac.za

Student Details

Sapna Mahabir
School of the Built Environment and Development Studies
University of KwaZulu-Natal, Howard Campus, Durban
Email: sap.mahabir@gmail.com
Cell: 076 749 6599

Supervisor/s Details

Lawrence B. Ogunsanya
School of the Built Environment and Development Studies
University of KwaZulu-Natal, Howard Campus, Durban
Email: ogunsanya@ukzn.ac.za
Tel: 071 427 2693

13.2.4 Appendix D: Research interview questions



The following interview is directed at medical interns and professionals (psychiatrists, psychologists and general practitioners) as well as staff members including; nurses and facility managers that are aware or involved with the issue of psychiatric facilities that focus on the mental health care regarding children and adolescents.

Respondent Details: _____ Years of experience: _____

Position held: _____ Facility associated with: _____

Questions:

1. What is your take on the current state of psychiatric facilities (private and public) in Durban, with particular reference to children and adolescents?

2. Would you agree that majority of the existing psychiatric facilities, in Durban, are failing? State a reason for your answer. If yes, what aspects do you think can be improved upon?

3. What are the existing challenges faced by workers and patients? Based on the challenges, what other spaces/activities could be useful for workers and the patients healing process?

4. In your experience, would you say that a therapeutic environment can assist in the healing process of the patients? (Example; incorporating psychology in the design of the spaces using natural elements; trees, plants, water and materials, textures, lighting, etc. to achieve a sensory architecture)

5. As per the previous question, do you feel that this would be a highly beneficial approach when dealing with children and adolescents? And, why?

6. As opposed to existing institutionalized psychiatric facilities, what is your opinion on a therapeutic inspired, community-based housing youth treatment program, located within the inner city of Durban?

7. Would you agree that healing within one's familiar surroundings may be a better long-term approach to mental healthcare? And, why?

8. What do you think would be an ideal site for the proposed youth housing program/ facility, what do you feel should surround it?

9. Compared to a psychiatric facility for adults, are there any specific wards, services and other spatial requirements that should be provided when designing a space purely for children and adolescents?

10. I am mildly aware that there are 5 levels of care in psychiatric facilities. When dealing with children and adolescents, what is the advised level of care to do in the scenario of a community-based housing program within in the inner city?
