APPLYING STAFF EXPERIENCES AND EXPECTATIONS OF AN OPTIMUM ENVIRONMENT FOR PSYCHIATRIC CARE TOWARD A HOLISTIC DESIGN OF AN INPATIENT PSYCHIATRIC FACILITY IN KZN.

By

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Dissertation Document : Masters of Architecture 2016

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COLLEGE OF HUMANITIES

DECLARATION - PLAGIARISM

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- Provision of access and willingness to participate in the field research of chosen case study locations:

  - King Dinuzulu Hospital Complex, Sherwood, and;

  - Town Hill Psychiatric Hospital, Pietermaritzburg

DEDICATION

This dissertation is dedicated to my family, especially my mother and father, who have provided their continual support and encouragement throughout the course of my Architectural Bachelors and Masters degree. Without them, I wouldn't be where I am, and who I am, today.

ABSTRACT

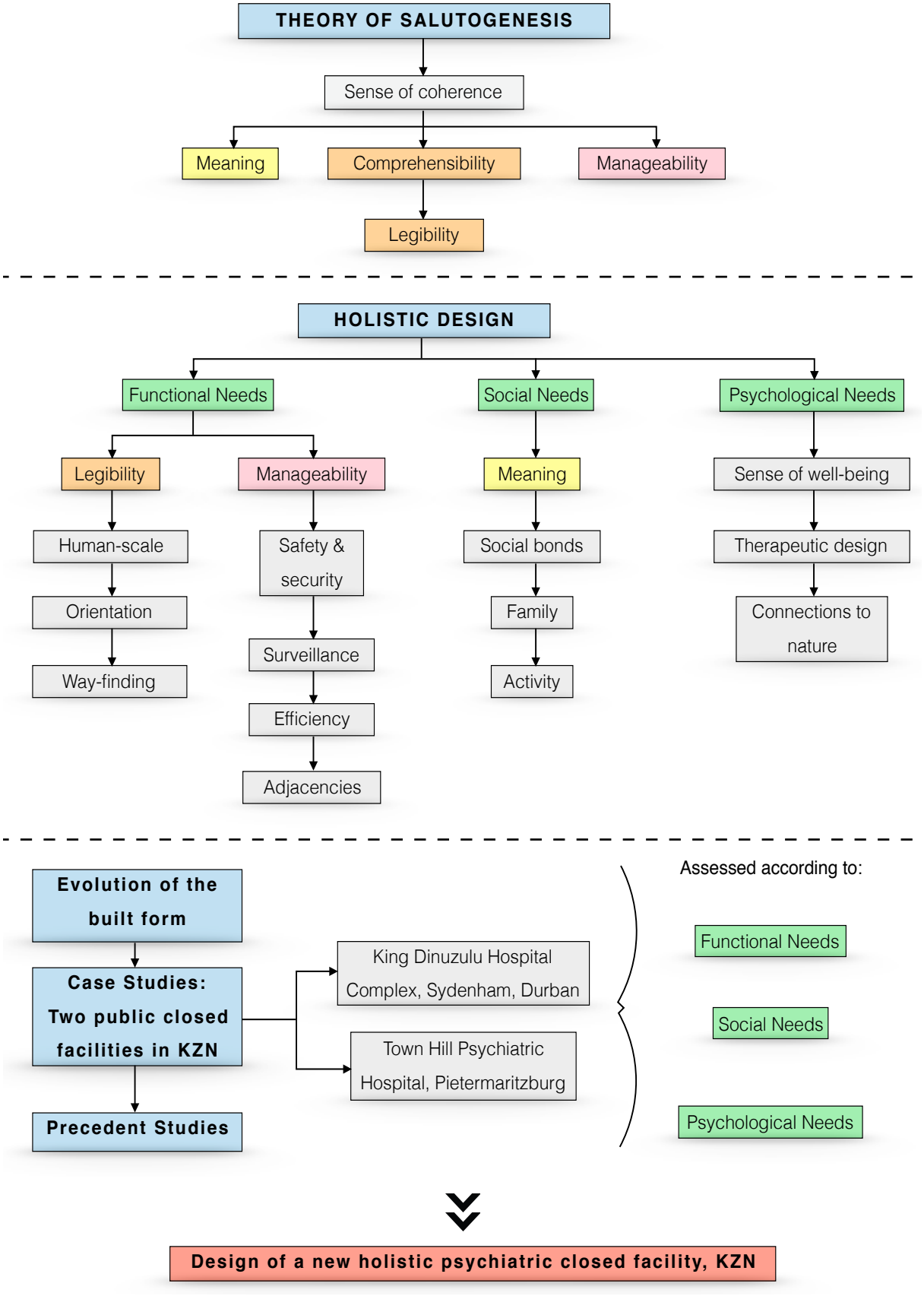
This research paper consists of three key time lines within the evolution of the inpatient psychiatric facilities: the past (local and international), the present (within Kwa-Zulu Natal), and a move toward an improved design model for KwaZulu Natal which considers therapeutic milieu and the end-user needs. This approach seeks to provide valuable insight toward the development of the built form, and how it has impacted the quality of life of the healthcare users who are detained within these facilities, and those who provide their care and treatment.

Throughout history, and still evident today in South Africa, the predominant style of psychiatric institutions, is the asylum style of architecture. The historical asylum model, used the built form as a measure to control, detain and confine the mentally ill who were believed to be deviant individuals who, as Markus (1993:95) describes, brought "*chaos into the social order of normal society*". During the 17th and 18th centuries, various architectural models were established, based on different beliefs and ideas of how to treat and house the mentally ill. Based on these differing ideas, the design of psychiatric institutions "*occupies an unstable space between prison and hospital*" (Markus (1993:130).

Towards the 21st century, there has been growing trends toward community based care and therapeutic environments however inpatient facilities within KwaZulu Natal still resemble highly institutional-like environments, which are not conducive to the care and recovery of patients, and the working environment of the staff. The primary research therefore focuses on creating an optimum environment for therapeutic care and patient rehabilitation, based on an understanding of care-giver experiences and expectations of inpatient psychiatric facilities.

Based on the theory of salutogenesis and therapeutic environment theory, core themes including one's functional, social, and psychological needs, have been used to assess the evolution of the built form, and how this can be used to inform future architectural design of Psychiatric Inpatient facilities for acutely mentally ill adult male and female patients.

MIND MAP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DEFINITION OF TERMS

ACUTE INPATIENT PSYCHIATRIC CARE	"Acute inpatient mental health treatment represents the most intensive level of psychiatric care. Multidisciplinary assessments and multimodal interventions are provided in a 24-hour secure and protected, medically staffed and psychiatrically supervised treatment environment. Twenty-four hour skilled psychiatric nursing care, daily medical care, and a structured treatment milieu are required. Typically, the individual poses a significant danger to self or others, or displays severe psychosocial dysfunction. Special treatment may include physical and mechanical restraint, seclusion, and a locked unit. Active family/ significant other involvement is important." (ValueOptions. 2006).
ACUTE MENTAL ILLNESS	"Acute mental illness is characterised by significant and distressing symptoms of a mental illness requiring immediate treatment. This may be the person's first experience of mental illness, a repeat episode or the worsening of symptoms of an often continuing mental illness. The onset is sudden or rapid and the symptoms usually respond to treatment" (SJHC. 2015).
CLINICAL ENVIRONMENT	"Can be described as an environment which is very efficient and without feeling. Also understood as a cold and detached environment." (Oxford Dictionaries. 2016). The term is commonly applied to Hospital settings.
END-USER	The person who uses the facility or end-product. The end-user of a psychiatric facility include staff, patients, visitors and students.
INSTITUTIONALISATION	"Institutions, like that of the asylum, deliberately want to control and manage their inmates such that they conform and do not cause problems. De-institutionalisation seeks to move away from large institutional hospitals, into smaller community settings." (ChangingMinds. 2002)

LUNATIC	Derived from the latin term "*Luna"*, which means moon. A mentally ill person was originally referred to as a lunatic during the earlier centuries due to the belief that changes of the moon caused intermittent insanity. Today, patients are more commonly referred to as Mentally Ill or Psychiatric Patients. (Oxford Dictionaries. 2016) or as mental health care users (MHCU) in the South African Mental Health Care Act 17 of 2002.
MENTAL ILLNESS	"A mental illness is a condition that affects a person's thinking, feeling or mood. Such conditions may affect someone's ability to relate to others and function each day. Recovery, including meaningful roles in social life, school and work, is possible, especially when the patient starts treatment early and they play a strong role in their own recovery process" (NAMI. 2016).
MULTI-DISCIPLINARY TEAM	"A multidisciplinary team is a group of health care workers who are members of different disciplines, each providing specific services to the patient. The team members independently treat various issues a patient may have, focusing on the issues in which they specialise" (HSE. 2016). A mental health MDT may include an occupational therapist, doctor, psychiatrist, social worker , clinical psychologist and nurse.
PSYCHO-SOCIAL REHABILITATION	"A process that faciletates the opportunity for individuals - who are impaired, disabled or handicaped by a mental disorder - to reach their optimal level of independent functioning in the community. It implies both improving individuals' competencies and introducing environmental changes in order to create a life of the best quality possible for people who have experienced a mental disorder, or who have an impairment of their mental capacity which produces a certain level of disability. PSR aims to provide the optimal level of functioning of individuals and societies… and how to live successfully in the community." (WHO Genena, date unknown).

SALUTOGENESIS	"Salutogenesis, the origin of health, is a stress resource orientated concept, which focuses on resources, maintains and improves the movement towards health. It gives the answer why people despite stressful situations and hardships stay well. It is the opposite of the pathogenic concept where the focus is on the obstacles and deficits." (Center on Salutogenesis. Date Unknown). The term is essentially an approach that focuses on factors that support health, as opposed to factors that cause disease.
THERAPEUTIC ENVIRONMENT/ MILIEU	"A psycho-socially supportive therapeutic environment, supports clinical excellence in the treatment of the physical body, supports the psycho-social needs of the patient, family, and staff, and produces measurable positive effects on patients' clinical outcomes and staff effectiveness" (WBDG, 2010).
GENERALIZED RESISTENCE RESOUCRES	A key factor of the salutogenic theory. "Generalised resistance resources, such as social support and experience, make a movement towards health possible. The GRRs provide a person with sets of meaningful and coherent life experiences thanks to the resources at the person's disposal" (Center on Salutogenesis. Date Unknown).
SENSE OF COHERENCE	Second key factor of the salutogenic theory. "The ability to comprehend the whole of a stressful situation and the capacity to use the resources available is called a sense of coherence (SOC). SOC reflects a person's view of life and capacity to respond to stressful situations. It is a global orientation to view the life as structured, manageable, and meaningful. It is a personal way of thinking, being, and acting, with an inner trust, which leads people to identify, benefit, use, and re-use the resources at their disposal. Three elements - comprehensibility, manageability, and meaningfulness, forms the SOC" (Center on Salutogenesis. Date Unknown).

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PART ONE

CHAPTER 1.0 INTRODUCTION

1.1 RESEARCH BACKGROUND

1.1.1 Introduction

Previous South African mental health legislation in the late 20th century, such as that of the Mental Healthcare Act. No 18 of 1973 (MHCA 1973), focused on the control and confinement of the mentally ill and custodial care. The prioritisation of the welfare and safety of the communities was "placed over the rights of the individual" (Burns, 2008:46-49). Patients with acute mental disorders who entered the health care system prior to the 2000's experienced a form of traumatisation, where the structure of the system "disempowered, alienated, and stigmatised the mentally ill" (Burns, 2008:46-49).

In 2002, South Africa passed new mental health legislation (Mental Health Care Act 17 of 2002), in order to reform mental healthcare and protect the rights of those with mental illness. Despite this Act being passed, the success of it has been undermined due to an infrastructure crisis. "*KZN has reported to have 25% of the acute mental health beds required to comply with the national norms*" and with little consideration to the infrastructure, "*hospitals have been left to manage potentially dangerous patients in sub-optimum clinical environments*" (Ramlall, 2012:409). South Africa still experiences barriers to the funding and development of mental health care services, which have resulted in "*psychiatric hospitals remaining outdated, inpatient facilities falling into disrepair, often unfit for human use; as well as a huge shortfall of experienced mental health care professionals*" (Burns, 2010:662). Psychiatric inpatient facilities within South Africa, have essentially resulted in buildings which still resemble characteristics from the previous custodial orientation of institutional asylums.

One of the objectives of The Mental Health Care Act No 17 of 2002, is to "*regulate mental health care so that the best possible treatment and rehabilitation is made available to its citizens*" (MHCA No 17 of 2002, 2008). However, no blueprint exists as to what constitutes the best possible treatment and rehabilitation environment. The NDOH has compiled guidelines for psychiatric units and hospitals, such as that of the Infrastructure Unit Support System (IUSS), but details of the greater therapeutic milieu have yet to be defined.

Through an analysis of the successes and failures of the evolution of the built form of psychiatric facilities from its European and American origins, case study research of the two existing Psychiatric Closed Units within KwaZulu Natal, and precedent study, this research looks toward achieving a design of an inpatient psychiatric environment that is responsive to

the end user needs. The primary research will therefore be based on staff and patient care-givers experiences and expectations of what constitutes an ideal, therapeutic environment for the care and rehabilitation of psychiatric inpatients.

Throughout this dissertation, the concept of salutogenesis will be adopted in order to access the built form of past and present inpatient fFacilities, and guidance toward future design.

1.1.2 Motivation / Justification of the Study

Current Psychiatric Facilities for Acute Patients still resemble elements of the historical asylum and are not conducive to the care and recovery of patients, who are detained within these facilities. Often, psychiatric facilities place security and safety at the highest priority, which result in cold, hard architectural environments that can lead toward a poorer quality of life of the patient, and work environment of the staff. The resultant built form of the psychiatric facility provides little therapeutic quality necessary for a healing environment, which can increase the stressful nature of these facilities. There is a need to readdress healthcare environments, particularly that of psychiatric facilities, toward a salutogenic approach, which encourages healing through a combination of patient rehabilitation and the design of the built environment.

However, psychiatric Facilities are still required to be designed to meet both clinical and safety requirements of patients and staff. The needs and experience of staff and patients, are therefore important in informing the design of inpatient psychiatric care facilities. Due to the limitations of research within psychiatric environments, there is a distinct gap in the literature and qualitative research studies based on the end-user needs. In view of the unique needs and challenges posed by psychiatric inpatient care, it is particularly important to survey the staff of psychiatric institutions for their opinions and experiences of what constitutes an ideal environment for the care and treatment of patients, and how the built environment can be improved to create a balance between the need for security and safety, and a better quality of life.

1.2 DEFINITION OF THE PROBLEM, AIMS AND OBJECTIVES

1.2.1 Definition of the Problem

The built environment of current inpatient facilities for acute patients within KwaZulu Natal, still resemble characteristics of the earlier asylum, which drew criticism for the nature of the environment where mentally ill patients received care. As pointed out by Burns (2010), the current facilities are outdated, falling into disrepair from lack of maintenance, and are not ideal for the delivery of patient care and rehabilitation.

There is a need for the current design model for acute psychiatric facilities within KwaZulu Natal to be assessed based on the built environment and how these facilities can hinder or promote care for patients, and how the working environment can be improved for the staff. For this research problem, we will focus on the specific needs of the staff, and how their experiences and expectations of the physical environment, can provide an understanding toward a therapeutic design of a psychiatric facility, which creates a balance between its functional requirements, as well as the social and psychological well-being of both patient and staff.

1.2.2 Aim

The purpose of this qualitative study, is to understand staff experiences and expectations of the physical environment of Psychiatric Hospitals, within existing psychiatric hospital closed units in KwaZulu Natal. A salutogenic approach will be adopted toward a therapeutic environment that will focus on the functional, social and psychological needs of patients and staff.

1.2.3 Objectives

The following objectives are determined based on the aims of this research, and how research and case studies will be able to inform an improved design model and consider the needs of the staff in a closed psychiatric facility for acute patients.

- ***To analyse the history and evolution of the built form of psychiatric hospitals, both internationally and locally within KwaZulu Natal.***

  Developing an understanding of the evolution of psychiatric hospitals will help inform the researcher, and enable the researcher to design a new psychiatric hospital based on the successes and failures resulting from the design of existing and past buildings. An understanding of earlier psychiatric building typologies from European and American origins will help to assess past architectural influences upon current psychiatric hospitals within KwaZulu Natal.

- ***To analyse and critique the two existing psychiatric closed facilities within KwaZulu Natal, through case study research.***

  In order to propose a new model of a Psychiatric Hospital, it is imperative to understand what principles have informed the design of the existing psychiatric closed facilities within KwaZulu Natal, as well as the nature of the design in terms of their therapeutic qualities.

- ***To understand the nurses' and doctors' of the two psychiatric facilities in KZN regarding their experiences and expectations of the built environment.***

  By surveying the nurses and doctors through interviews, the researcher will gain an understanding of their daily experiences of working within a psychiatric facility. Their experiences and expectations will also enable the researcher to gain an understanding of how the built environment currently serves both patients and staff, how it can be improved to respond to the needs of staff, and the staff's understanding of the best possible environment for the care of psychiatric patients.

- ***To establish design principles for a new psychiatric facility by integrating the feedback of the staff with research findings of existing typologies and salutogenic environments that would inform a new design model that is responsive to the staff experiences and expectations.***

  Through the literature review of the evolution of the built form, field research and analysis, and precedent study of therapeutic environments, design guidelines have been established that will inform a new design of an inpatient psychiatric facility that is responsive to the end-user needs.

1.3 SETTING OUT THE SCOPE

1.3.1 Delimitation of the Research Problem

The targeted area for research is to consider the end user experience within psychiatric facilities based on the staff, and their opinion on the best possible environment for patients and their rehabilitation. The end-user of a psychiatric environment includes staff, patient, student and visitors, however, for the analysis purpose of this research, only staff has been selected to participate due to the challenges and limitations of interviewing acutely mentally-ill patients. The effects of psychotropic medication or the severe mental illnesses may limit the patients' ability to understand instructions, engage in a focused interview and/or give informed consent. In order to provide a holistic understanding of a psychiatric facility that includes patient needs, further research should be undertaken that targets the patient. This research could be achieved through observation methods, whereby patients are observed, in a discreet and unobtrusive manner, as they move about their daily routines and how the physical environment impacts their behaviour within the psychiatric environment.

In order to understand the psychiatric environment, this dissertation will review the literature on past and existing psychiatric facilities, as well as precedent studies that achieve a therapeutic environment.

1.3.2 Stating the Assumptions

This dissertation assumes that the design of the physical environment for current psychiatric closed hospitals within KwaZulu Natal prioritise the functional requirements such as medical treatment, security and safety, and therefore do not adequately consider the social and psychological needs of the patients and staff. This dissertation assumes that if the current issues of the physical environment are addressed according to the staff's experiences and expectations, it will increase staff satisfaction and improve the quality of life and care of both staff and patients.

1.3.4 Key Questions

1.3.4.1 Main Question

How can an understanding of staff experiences and expectations of the physical environment, inform an improved design of a Psychiatric Closed Facility for the care of Acute Patients?

1.3.4.2 Secondary Questions

- How can an understanding of the evolution of the psychiatric Hospital inform design models of today?

- What is the current design model for Psychiatric Closed Facilities?

- What are the doctors and nurses experience of the current psychiatric hospital environment?

- How can the design principles established through an analysis of the literature review, field research of the two public existing closed units and precedent study inform a new design model that is responsive to the experiences and expectations of the staff and well-being of the patients'?

1.4 THEORETICAL & CONCEPTUAL FRAMEWORK

1.4.1 Theory of Salutogenesis

The theoretical framework for this dissertation will look toward the salutogenic model. Salutogenesis is a theory derived from the work of Aaron Antonovsky, whereby one focuses on positive factors which can promote health and a person's sense of wellbeing, as opposed to focusing purely on the treatment of illnesses. A salutogenic environment is one which reinforces these positive factors, with specific design choices which create a healing environment, for example connections to nature, natural lighting and ventilation and allowing for patient and staff privacy as much as can be achieved in a psychiatric environment. The salutogenic model can be applied to psychiatric healthcare design, as it can help to enhance and promote the end-users' sense of well-being and perceived quality of life. It can be applied to the architectural context to inform design decisions when designing for a client base, that is sensitive to stress, such as psychiatric patients and their care-givers. It provides a practical method for making design decisions when there is limited evidence available, and provides a useful framework for improving health outcomes and end-user satisfaction. Studies confirm that there is a strong relationship between perceptual dysfunction and psychiatric illness, and also between the patient and his environment (Golembiewsky. 2010).

This dissertation study will look toward factors of the built form of psychiatric facilities, which contribute toward a less stressful, therapeutic environment, for patient and staff, which allows one to have an increased sense of mental health, well-being, satisfaction and a better quality of life.

The evolution of the psychiatric hospital, with a particular focus on the spatial organisation between staff and patient areas, and its relationship to the user experience, will be examined through the lens of salutogenesis. The conceptual framework of this paper will then be divided according to the evolution of the psychiatric hospital, namely: a historical look at the development of the built form of the psychiatric hospital; the psychiatric hospital within the local context of KwaZulu Natal; and lastly, a development toward a solutogenic model which serves to improve the clinical environment and hence the quality of life and happiness of the end-user.

1.4.2 Therapeutic Environment Theory

Therapeutic environment theory stems from research which focuses on the psycho-social effects of the environment on the end-user; how the environment can affect one's immune system due to stress related influences; and how one's brain perceives the environment (Smith. et al. 2010). Various factors should be designed for in order to achieve a therapeutic environment as suggested by Ulrich (2012); these include the reduction of noise pollution within the building, maximising the use of natural daylighting and ventilation where possible, building aesthetics and art work of natural environments, maximising views of the external environment, and access to external spaces. Further therapeutic design factors as suggested by Papoulias et al (2014), include preserving a sense of privacy and dignity, and maintaining safety and stability.

A therapeutic design of a hospital aims to create a less stressful environment through design factors in order to promote the healing of patients, and the well-being of the staff. A therapeutic design of a psychiatric inpatient facility should consider a holistic approach, which meets the functional requirements of the health care environment, and the social and psychological needs of the end user, including both patient and staff.

The conceptual framework of this dissertation will use the design criteria of a therapeutic design, based on the functional, social and psychological needs of the end user. These criteria will then be used to analyse the evolution of inpatient mental health care facilities, the thematic analysis of the case study interviews, and the guide for an improved design of an inpatient psychiatric facility.

1.5 RESEARCH METHODS AND MATERIALS

1.5.1 Research Methods

The data collected for this research study will be based on an empirical study and qualitative research methods. The dimension of this qualitative research study will be of analytical and descriptive methods, including historical research, literature reviews, interviews and case studies. The research approach consists of primary source information and secondary source information.

1.5.1.1 Primary Sources

The primary research data was collected by the author of this dissertation. Conclusions were formed through an analysis of the collected data, in order to delineate the problem statement. The data was analysed with a focus of creating a salutogenic environment for a Psychiatric Closed design. The research methods that will be used to accumulate primary source information, will be based on semi-structured interviews and case studies of two existing Psychiatric Closed Units within KwaZulu Natal.

Study Population

Semi-structured interviews will be conducted in person at the relevant psychiatric hospital of the case study. The interviews will focus on the psychiatric multi-disciplinary team at each of the case study locations, which include the psychiatric doctors, psychiatrists, occupational therapists, social worker and nurses. The participants are required to have a minimum of two years' work experience within the field of psychiatry, as they have a professional understanding of the physical environment and how the physical environment can hinder psychiatric care and satisfaction of its users. They will also be able to provide an understanding of how the physical environment can be improved and made conducive to optimum psychiatric care and well-being of both patient and staff. Refer to appendix A for the interview schedule.

Case studies

Within KwaZulu Natal, there are only two main public sector Psychiatric Hospitals for post 72-hour observation patients, which forms the targeted area of research within this dissertation:

- Psychiatric Closed Unit, King Dinuzulu Hospital Complex, Sydenham, KwaZulu Natal and;
- Psychiatric Closed Unit, Town Hill Psychiatric Hospital, Pietermaritzburg.

Sampling

A minimum of five staff members, at each of the case study locations were randomly selected based on their availability and agreeability to participate in the study. Qualitative interviews were scheduled at the Town Hill Psychiatric Hospital and the King Dinuzulu Hospital with the intention of gaining a holistic understanding of the experiences and expectations of a psychiatric facility across all fields of the multi disciplinary team (MDT). The MDT included interviews with doctors, ward operational managers, occupational therapists, psychologists and psychiatrists.

The data obtained was analysed according to themes, which have been identified through the research of salutogenic environments, and one's functional, social and psychological needs. These themes have been identified based on the literature review of the closed study area, and which can be related back to architectural design principles.

Precedent studies

The precedent studies, in Chapter 5 of this dissertation, look toward examples of psychiatric inpatient facilities, which have achieved a salutogenic vision and a therapeutic environment. The precedent study includes the Glenside Health Campus in Australia, designed by a specialist in the field of Mental Healthcare Design, MAAP, with a locally based firm, Swanbury Penglase Architects. The Glenside Health Campus has been selected as a precedent study due to the manner in which it addresses its' sites context, and its acknowledgment of its adjacent heritage buildings. The Glenside Health Campus also provides a study of a psychiatric facility that has achieved a therapeutic environment.

The second precedent study under analysis includes the Dandenong Mental Health Facility in Melbourne, designed by Bates Swart. The Dandenong Mental Health Facility has been selected as it provides a modern precedent that has managed to achieve a domestic and home-like character in it's scale and aesthetic, as opposed to institutional which supports a therapeutic environment.

The third precedent study looks at an acute psychiatric facility which has achieved its functional requirements whilst maintaining a strong connection to nature important for a therapeutic environment. The acute mental health care unit at the City Hospital in Belfast includes an analysis of the spatial layout of the acute mental health care facility, according to its functioning, adjacencies of zones including; patient staff and visitor areas which is imperative in a design of an acute inpatient facility.

In conjunction with the literature research and primary research, the precedent studies will form a guide to a new acute psychiatric inpatient facility within KwaZulu Natal, based on a therapeutic environment.

1.5.1.2 Secondary Sources

Secondary source information will be obtained by looking at various forms of media by different authors. The author will develop an argument for the problem statement by examining key areas, including the evolution of the psychiatric hospital, current psychiatric Hospitals within KwaZulu Natal, and lastly, international precedent studies where therapeutic design principles have been implemented. The key areas will be examined according to the theoretical framework of salutogenic environments, in order to gain an understanding of the impact the built form can have on a person's experience and sense of well-being.

1.5.2 Research Materials

All research material that is used will be referenced to its original authors, and will include various sources of media, including books, journal articles, academic papers and the World Wide Web. The raw data gathered from primary sources of information will include case studies and interviews. The interviewees will be questioned according to key themes that support a holistic design, such as functional, social and psychological needs, which will be considered within this dissertation. The research materials gathered are in the form of hard copies and digital copies, which include images, photographs, and sketches.

1.6 CONCLUSION

In conclusion to chapter 1, the author has established the research problem, aims and objectives of this dissertation. The following chapter will have a more detailed look at the theoretical and conceptual framework which will be used to analyze and critique the literature review of the evolution of the built form of psychiatric institutions, the two case studies within KwaZulu Natal, and precedent studies, further in this dissertation.

CHAPTER 2.0 THEORETICAL & CONCEPTUAL FRAMEWORK

2.1 INTRODUCTION

This chapter will look toward the theoretical framework, which will be adapted toward an improved design of a closed psychiatric ward. Firstly, an understanding of the theory of salutogenesis will be provided and how this model can be applied to psychiatric health care environments to meet the functional, social and psychological needs of both patients and staff.

Therapeutic environment theory will look toward how therapeutic design factors can contribute toward a less stressful and therapeutic environment for both staff and patients'.

2.2 SALUTOGENESIS AND ITS APPLICATION TO MENTAL HEALTHCARE ENVIRONMENTS

2.2.1 Definition and Core Concepts

Through history, hospital environments have been dominated by pathogenic approaches to treating patients, which focused on problems and the causes of disease. Pathogenic approaches have been shown to be inadequate in promoting the health and well-being of patients, as they have a tendency to ignore the social and psychological needs of the patient. Pathogenic approaches therefore create a high dependency on health and welfare services and professional resources, and tend to disempower the patient (Heimburg, 2010).

The salutogenic theory, developed by Professor Aaron Antonovsky in 1979, offers a different approach to healthcare, and looks towards exploring the origins of health, and on particular factors that promote human health, as opposed to focusing purely on the elimination of disease through chemical usage (Heimburg, 2010 and Billings et al, 2009). Within Hospital environments, the salutogenic approach can be used to meet, not only the functional requirements of a hospital, but the social and psychological needs of the end-users' in order to increase the health and well-being of both patients and staff.

According to Billings et al. (2009), salutogenesis is promoted by two core concepts: Generalised Resistant Resources (GRRs) and A Sense of Coherence (SOC).

The first core concept is the GRRs which are either biological, material or psychosocial factors. These factors make it easier for a person to understand and structure their life.

Typical GRRs that can relate in particular to the discipline of psychiatry, are social support and experience. It can be understood that if these resources are made available to people within their immediate surroundings, they will have an increased chance of being able to deal with the challenges of life, particularly in stressful situations. (Billings et al, 2009). Social support can be encouraged through adequate provision of space in architectural settings such as group therapy rooms where a patient feels heard and supported, visitor areas for family visitation, as well as design considerations that provide opportunities for social exchange. Literature reveals that the provision of "*every day public spaces creates opportunities for people to connect through casual encounters, and is a significant resource for well-being and a sense of well-being*" (Cattel et al, 2008:544–561 cited in Steemers, 2016). Within the secure and private patient setting, this can be achieved through provision of an external secure garden / courtyard where the patient can interact with other patients' and staff or through activity driven spaces, where they can play foot ball games.

As per the literature, the generalised resistance resources, such as social support within institutional environments, can help a person combat psychosocial stressors such as the stress experienced through their circumstance, and being admitted to a confined and restricted environment where they have little control over their interactions with others and their daily routines. Particularly, within psychiatric inpatient facilities, patients who are confined within restricted areas may not always have the ability to retreat to quieter spaces if they feel overwhelmed in group settings. Allowing a patient to have a sense of control over their amount of interaction with others, would help a patient to increase their coping mechanisms within a confined environment. A psychiatric inpatient facility should allow for various spaces which allow for group interactions, such as internal and external activity areas or group therapy rooms, and smaller spaces if a patient wishes to retreat to areas of less activity, such as smaller seating zones (Fig. 2.2). Within controlled patient environments, patients' usually have access to a day lounge and an external day courtyard that are required to have easy surveillance, due to the risk of harm with acutely mentally ill patients'.

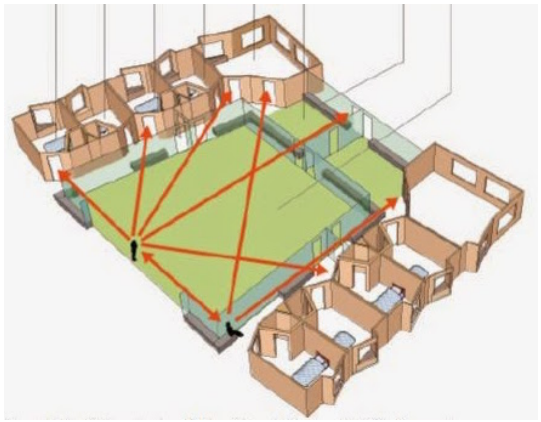
Large external courtyard, for patient activity.

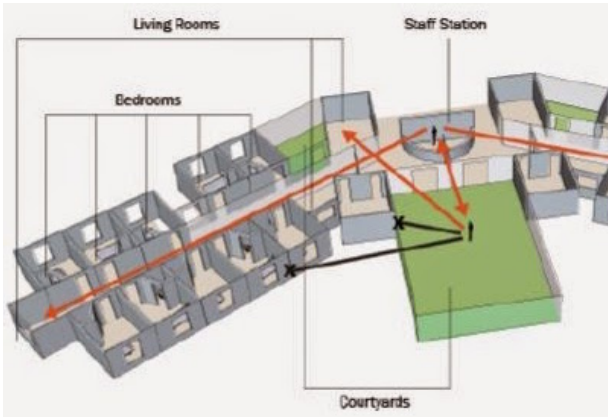
Fig. 2.1. Engelberth Construction, 2012.

Small, robust seating zones.

Fig. 2.2. Richard Murphy Architects, 2014.

Fig. 2.3 and 2.4 is a representation of how staff can achieve surveillance of the patient day courtyard without being too imposing. Surveillance is achieved by a high staff presence as they move about their daily duties and strategic seating positions, as opposed to a nurses' station placed in a central and overpowering position where patients' feel continually watched and monitored. According to the analysis of the two diagrams, the patient entered design "*shifts and disperses the locus of control, thereby empowering the client and deescalating oppositional behaviour*" (Watkinson, 2014).





Patient centred vs staff centred design. Fig. 2.3. & 2.4. Wakinson, 2014.

Like that of patients, staff can also be negatively impacted by psychosocial stressors if they are continually fronted by patient interaction and patient zones. The design of a psychiatric environment should allow for staff rest areas, away from patient zones, where they can go for relaxation. There are "*recognised benefits for staff and caregivers in terms of satisfaction, effectiveness, and staff retention, from environmental factors which include; 'off-stage' areas for respite, proximity to other staff, and decentralised observation areas*" (Smith et al, 2010). The staff rest area's should however, be in close proximity to patient zones in case of emergency.

The second core concept, as described by Antonovsky (1979 and 1987) is a Sense of Coherence. This refers to a positive way of looking at life and consists of three types of life experiences: Comprehensibility (one's ability to understand their environment they are in, such as a human scale and orientation), Manageability (including safety and security, surveillance and efficiency), and Meaningfulness (one's ability to extract meaning through social bonds, family and activity).

2.2.1.1 Comprehensibility

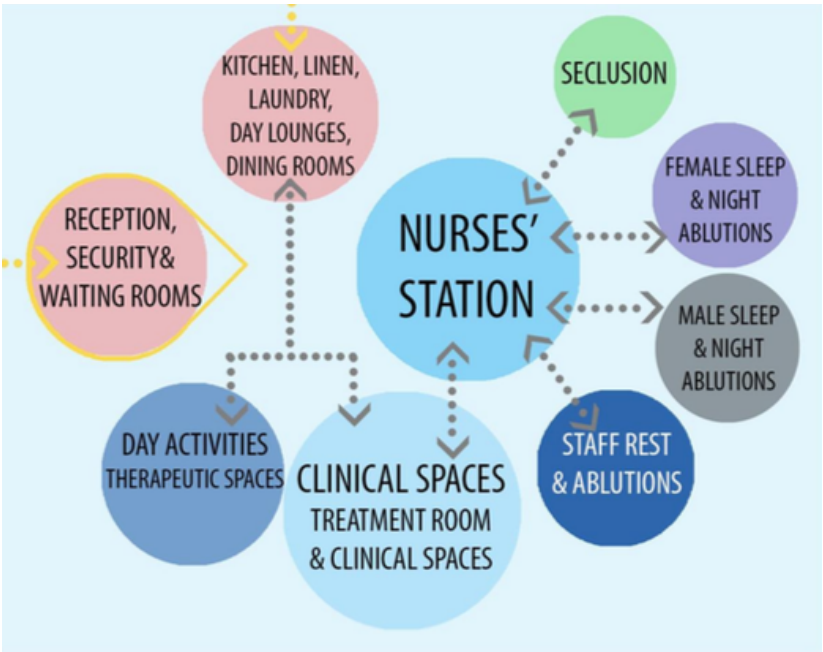
Golembiewski (2012), describes comprehensibility as an individual's ability to be able to understand the situation he/she is in. Within the architectural context of the psychiatric facility, comprehensibility translates to the legibility of the built form and how one can interpret the space they are in. Legibility of the physical environment enables a patient to know where they are, and how they can negotiate the facility and their daily routines. Spatial clarity between different functions of the psychiatric facility therefore facilitates movement around the facility, and allows one to have a clear understanding of patient, staff and visitor areas, orientation and way-finding. Spatial clarity also allows for a more efficient environment for the staff's treatment, care and management of patients. Architectural design considerations, which increase one's comprehensibility of the physical environment should include human-scaled design of the psychiatric facility and its spaces. A human-scaled environment avoids large/open spaces and long corridors and can increase the comfort of both patients and staff. Long corridors can create an inefficient environment for the staff in the care of patients, and make surveillance of patient areas more difficult. Large spaces can also be intimidating and overwhelming for the psychiatric patient, who can be confused and disorientated.

Within a psychiatric environment, comprehensibility can also be achieved through the establishment of social support structures, which encourage the interaction between patient and staff in treatment settings. The design of the psychiatric facility should therefore allow for both group and private therapy areas, for patient and staff interaction.

2.2.1.2 Manageability

Billings et al. (2009) describe manageability as the resourcefulness of a person to be able to meet their personal needs. As per Golembiewski (2012), patient manageability can be achieved through provisions for their health, security and comfort. According to the UK department of Health (2013), mental health care users will have difficulty in engaging with the therapeutic purpose of the ward if they do not feel safe within their environment. An important consideration for the design of psychiatric facilities is the safety of staff. The UK Department of Health (2013) recognises that safe working conditions for the staff results in better quality of care and staff experience. Manageability, which encompasses factors of the physical environment, are the functional needs of the psychiatric facility. Functional needs include the spatial configuration of the building, adjacencies of different zones, and the security and safety of patients and staff. Careful design considerations should be explored according to the relationship between staff, patient and support areas. The adjacencies of these zones could both positively or negatively affect the daily experiences of the staff and the patients. The spatial configuration, should allow for the efficiency of circulation and security, however should acknowledge the patient and staff experience within these spaces.

According to the IUSS N and S task group A:05 (2014), the ideal functional flow of day and night spaces are as indicated in the following diagram.



Functional flow diagram. Fig. 2.5. IUSS N and S task group A:05, 2014.

2.2.1.3 Meaningfulness

Billings et al. (2009) describe meaningfulness as one's ability to be able to find life meaningful and where one can extract meaning out of the environment one is in. Golembiewski (2013) refers to the importance of meaning, when an individual feels that his/ her manageability and comprehensibility has been lost:

> *"with meaningfulness, one can face the most dire of circumstances - starvation, pain, illness and the worst demonstrations of human antipathy - and still feel confident that, in the long run, things will work out for the best. In psychotherapy, it is only when meaning is established that there is release, resolution and recovery, thus it is reasonable to assert that the fostering of meaning is the single most important role of the mental health facility."* (Golembiewski, 2013).

Golembiewski (2010) states that meaning is most often found in social environments, however mental health patients are often socially isolated, as they are removed from their communities and normal relations. It is therefore important that mental health facilities encourage social bonds and designs for facilities that allow for meeting spaces for family and friends, which can encourage a patient's social and psychological wellness (Golembiewskyi, 2010:111). Golembiewski refers to Ulrich and Parsons (1990) who found that health benefits that result from access to a natural landscape occurs because meaning is found in nature. Bachelard (1958, 1964) states that meaning is "*fostered through environmental richness, order and aesthetic considerations*" (cited in Golembiewski, 2010:112). The identified architectural principles, including views and access to the outside, aesthetics and a therapeutic environment are able to encourage a sense of meaning for the patient, which may help to reduce their levels of stress. Views and access to the outside, and therapeutic environments can also help to create a less stressful working environment for the staff, and improved quality of patient care (Smith et al, 2010). The design and spatial configuration of the architectural environment can be used to encourage social interaction, such as circulation zones and lounges which allow for opportunities for social exchange and meeting. The design of psychiatric environments needs to consider the different zones for patient interaction; patient to patient interactions, patient interaction with staff; patient interaction with visitors, and staff interaction areas. Staff social and rest areas can also form areas of respite, to remove themselves and recover from the stressful nature of working within an inpatient psychiatric facility.

The following diagram represents the interrelation of one's life experiences and coping mechanisms in Antonovsky's salutogenic model. If one lacks meaning, manageability and comprehension within one's life, they will have less capability of dealing with their life experiences if placed in stressful situations. This will subsequently have a negative impact on staff and patients sense of well-being and life satisfaction within a psychiatric facility.

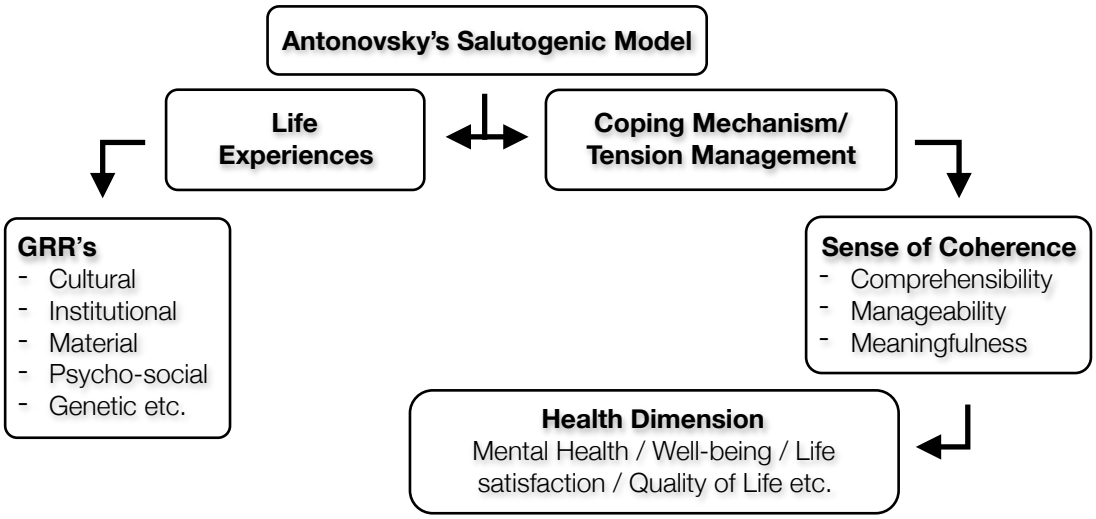


Fig. 2.6. Adapted diagram of Antonovsky's (1987) Salutogenic Model (Riedel J. Wiesmann U. Hannich H. 2011)

2.2.2 A Salutogenic Approach to Mental Healthcare

Studies which have used the salutogenic framework, have revealed that two main themes which affect professionals is work-related stresses and conflict within the work environment (Billings et al, 2009). Work related stresses can result from the psycho-social work environment in the Generalised Resistance Factors category. According to Tuvesson et al. (2011), the psychosocial work environment involves the staff's working conditions, including organisational and work characteristics, whereas the ward atmosphere contributes toward the milieu where the patients are cared for. Tuveson et al. (2011) states that the psychosocial work environment is important for the mental health and well-being of the staff who work within a psychiatric environment. A poor working environment has been linked to poor job satisfaction of the staff, staff burnout, psychological distress and the increased likely hood of mistakes (Tuveson et al, 2011). Studies have revealed that working conditions of a psychiatric environment can be closely related to the quality of patient care. In order to develop a psychiatric facility with an effective treatment setting, the working environment should satisfy the needs of the staff (Tuveson et al, 2011). A systematic review conducted has concluded that the salutogenic model encourages a person to have a good sense of well-being and quality of life, and provides one with the capacity and resources to deal with the stressors and conflicts in life, particularly those within the psychiatric environment (Billings et al, 2009 and; Riedel et al, 2011).

2.3 THERAPEUTIC ENVIRONMENTS

2.3.1 Therapeutic Environment Theory

Therapeutic Environment Theory has evolved from the fields of "*environmental psychology, which can be defined as the psycho-social effects of the environment; psychoneuroimmunology, which is defined as the effects of the environment on the immune system, and lastly; neuroscience which is how the brain perceives its environment*" (Smith et al, 2010). A therapeutic milieu is an important factor in designing for a mental healthcare facility, as it helps to create a less stressful environment. Smith et al (2010) recognise that patients within a healthcare facility can experience fearfulness, uncertainty about their health and safety, and often feel isolated from normal social relationships (Smith et al, 2010). The physical environment can contribute toward the stressful nature of a hospital environment and increased stress levels can suppress a person's immune system and dampen their emotional and spiritual resources, which can impede recovery and healing

(Smith et al, 2010). Key factors have been identified that, if applied to mental healthcare designs, can not only contribute toward patient satisfaction and outcome, but also provide potential benefits for staff and patient care-givers' satisfaction, effectiveness and staff retention (Smith et al, 2010). As identified under the theory of salutogenesis, and reinforced by the application of a therapeutic environment, the benefits staff receive from environmental factors, such as noise reduction, access to daylight, appropriate lighting, and "off stage" areas for relaxation, may impact on the quality of care that patients receive (Smith et al, 2010).

Modern trends of healthcare design, particularly that of psychiatric and general in-patient facilities, have moved toward creating environments which maximise well-being. Due to this, there is a large body of literature which emphasises the contribution of the physical environment to treatment outcomes. A systematic review undertaken by Papoulias et al (2014), has referred to the works of Roger Ulrich, who has argued that well-lit spaces, views of nature and naturalistic art, have measurable effects on stress reduction, which contributes toward improved patient outcomes. The review further states that in order for a psychiatric facility to be therapeutic, facilities must be designed to "*preserve a sense of privacy and dignity, be well apportioned and maintained, and contribute towards a sense of stability and safety*" (Papoulis et al. 2014:171). A sense of stability can help a patient to feel secure, and is often achieved through instilling a certain level of structure within a psychiatric facility. Patients' can often feel insecure, therefore the physical environment and their daily routines should have a level of predictability. Due to the high surveillance levels of an acute psychiatric facility, the organisational character and spatial arrangement of the facility play an important role in maintaining a sense of privacy for both patient and staff. Safety and security is an imperative design consideration within a psychiatric facility as it helps to prevent patient injury, and improves the comfort of staff if they feel safe within patient areas. The following extract from the UK Department of Health recognises the importance of the physical environment in psychiatric hospital settings, and its impact on the service users.

> *"The environment provided by acute mental health services is a crucial element in the delivery of positive therapeutic outcomes for service users, their safety and the safety of staff and the wider community…. When they feel positive and safe with common values, not only do [patients] recover more quickly, but staff are more content, suffer less sickness and are likely to stay for longer. This means healthier, happier and more experienced staff and better continuity of service for [patients]." - (UK DoH, 2013)*

Ulrich discusses how a supportive healthcare design, such as that of the therapeutic environment, begins by reducing or eliminating environmental factors that can cause stress (such as noise), and can direct negative impacts on patient and staff outcomes (Ulrich, 2012). Further to this, Ulrich suggests that a supportive design should emphasise "*the inclusion of characteristics and opportunities in the environment that can calm patients, reduce stress, and strengthen coping resources and healthful processes*" (Ulrich, 1991, 1999, 2000a cited in Ulrich 2012:54).

These factors include the design which allows for views of external, natural environments and access to the outdoors; naturalistic artwork, which promotes calmness amongst patient and staff, and the maximisation of natural daylight and ventilation (Ulrich, 2012). As supported by the UK Department of Health (2013) and the Centre for Health Design (Mardelle et al, 2013), external areas and views play an important role in encouraging social engagement and support a patient's well-being and recovery, and also help to reduce the stress levels of the staff. In creating therapeutic environments, the UK Department of Health (2013) suggests that mental health facilities should be pleasant and comfortable and should feel safe.

According to Avellone et al (2015) home-like features, achieved through elements such as material choice and furniture, can create a positive experience and restore a sense of dignity. An environment that preserves a sense of dignity, allows the patient to have a sense of choice and control in their environment, whilst keeping them safe and comfortable (Avellone et al, 2015). Psychiatric facilities should therefore avoid sterile settings, like that of institutional-like settings and should encourage normal and home-like settings as far as be achieved. Within a psychiatric environment for acutely mentally ill patients', design considerations, fittings and furniture installation must ensure that they cannot cause harm to the patient or be used as a weapon against others.

The UK Department of Health (2013) and the Centre for Health Design (Mardelle et al, 2013) discuss design strategies to implement a therapeutic environment. A therapeutic environment should pay particular attention to scale of the building, and avoid the feeling of cramped spaces. Spaces of varying sizes for social interaction should be provided, where the smaller spaces allow for one on one interactions, and larger spaces for group activities. Therapeutic environments should pay careful attention to colour and texture, and minimise noise, in order to encourage a sense of calmness.

2.4 THERAPEUTIC DESIGN

2.4.1 Introduction

A therapeutic design is defined as a space which is created by psychiatrists and architects, in collaboration, to promote mental health in mentally ill individuals (Ulcay, Date Unknown). The therapeutic environment consists of the patient and his belongings, the staff of the establishment, and the physical environment created by the architects and nature (Ulcay et al, Date unknown). Within a psychiatric hospital, the needs of patient and staff are very specific, therefore careful consideration needs to accompany the design of the physical environment. As per Maslow Murray's hierarchy of needs, it is an essential part of life for one's basic, physiological and functional needs (shelter, food, water, safety and security) to be met, before one can satisfy their higher psychological needs (belongingness, social bonds and self esteem) and reach a level of self-actualisation (where one feels one has reached their full potential) (Maslow, 1943 cited in Mcleod, 2007).

Although this theory is open to criticism, it can be used to understand the design ethos of hospital environments. Traditionally, hospital environments have emphasised the functional needs for the delivery of healthcare, which has resulted in the end user's social and psychological needs not being met. Ulrich describes hospital designs that prioritise functional needs, over the user needs, as buildings that are "*psychologically hard and unsupportive and, which work against the well-being of the patient and the staff*" (Ulrich, 1991 cited in EAEA11, 2013:234). In order to achieve a successful design of a therapeutic psychiatric environment it is essential for the design of the facility to meet not only the functional requirements for healthcare delivery, but the patient and staff psychological and social needs as well.

The Center of Health Design (2013) and the UK Department of Health (2013), have identified key principles that the design of psychiatric hospitals should consider, in order to meet the needs of patient and staff. For this dissertation, the key principles that will be focused on are based on functional, social and psychological needs in order to achieve a design of a psychiatric facility which will improve the quality of life and experience of both patient and staff.

2.4.2 Functional Needs

These needs include the basic functional requirements of the psychiatric facility as well as the requirements of the staff for the delivery and efficiency of patient care. Functional needs of the built environment include:

- Spatial configuration and adjacencies of the different zones, such as the:

- Relationship between public and private areas (Public zones such as visitor areas, should have clear separation to the private patient zones in order to preserve patient privacy, as well as safety of both patient and visitor).

- Relationship between staff and patient areas (Staff zones, such as the nurses' station, should be placed in close proximity to patient zones in order to allow for efficiency of patient care and for easier surveillance. The seclusion room, a requirement of the MHCA no 17 of 2002, should also be placed in close proximity to the nurses' station to allow for close observation and accessibility in case of emergency).

- Safety and security of the environment, patient and staff.

2.4.3 Psychological Needs

As discussed by Isikpinar, 1964 (cited in Ulcay, Date Unknown), psychological needs can be achieved through the design of a therapeutic environment. This can be achieved through the use of the building form, colour and texture. The following therapeutic design criteria will be used to assess the quality of the built environment of existing and past psychiatric facilities:

- Connection of patient and staff areas to outside spaces and activity areas
- Connection to nature and surrounding communities through the maximisation of views within patient and staff areas
- Privacy and dignity of patient and staff
- Noise reduction of the facility, through careful planning configuration of the built form and material choices
- Maximisation of natural light and ventilation
- Building aesthetics which include material choice, colours and textures

2.4.4 Sociological Needs

As cited in Ulcay (Date Unknown), Bakeret al (1959) state that a psychiatric environment "should be to re-train the patients within a therapeutic community to meet the normal stresses of an ordinary community." The psychiatric environment should therefore be designed as a community like setting and avoid large institutional, stressful environments. According to the salutogenic theory, the encouragement of the formation of social bonds is an important factor in a patient's ability to establish a sense of meaning. This is also an important factor in the work environment of the staff, as it creates a less stressful environment. As highlighted in the salutogenic theory, the architectural environment can be used to encourage interaction of patients, patients and their visitors and patient and staff. Physical features of the built form to encourage social exchange and interaction can include:

- Group areas of varying sizes
- Careful consideration to circulation spaces, which can provide opportunities for social exchange
- Social interaction through the provision of activity areas, which also helps to prevent patient boredom and what is considered to be bad behaviour.

2.5 CONCLUSION

Through an understanding of the theory of salutogenesis and therapeutic environment theory, one can appreciate the importance the of the physical environment in the health and wellbeing of both staff and patient's psychiatric settings. In order to achieve a salutogenic environment as a whole, one must understand that one is designing for both patient and staff, therefore the effect of the built environment must be considered for all end-users. The conceptual framework has therefore been based on the end user needs of both patient and staff, in order to achieve a therapeutic environment.

The literature obtained on the evolution of the psychiatric hospital will be analysed according to an understanding of a therapeutic environment, and the identified factors of the functional, psychological and social needs of achieving a successful psychiatric environment. These principles will be used to assess the development of the built form and the resultant patient and staff experience through the historical development of psychiatric care.

CHAPTER 3.0 LITERATURE REVIEW

3.1 EVOLUTION OF PSYCHIATRIC HOSPITALS

3.1.1 Introduction

Prior to the 20th Century, psychiatric treatment was met with experimentation, force and brutality, due to a misunderstanding of mental illness and its methods of treatment. As referenced by Markus (1993:95), Foucalt (1977) referred to a phrase for a "phenomenon of European dimension" in 1656, where a system was created, where those "who could introduce chaos into the social order," could be collected and confined. One such category of these individuals were the mentally ill. Once they were confined, and under the control of those in power, regimes could be implemented, which were thought to heal, reform or punish (Markus, 1993). The literature review of this chapter will look toward the development of the built form of psychiatric institutions, originally known as the Lunatic Asylum, from the 17th Century to the 20th Century, and which was influenced by a changing understanding of mental illness through the periods.

The architectural form of the Asylum adopted various plan configurations, namely:

- The corridor Plan;
- Radial Plan;
- Echelon Plan, and;
- the Colony Plan.

The literature review will look toward examples of these plan types over the centuries, and how the configuration impacted on the experience of the patient and that of the staff. The asylum examples will further be analysed according to the conceptual framework of therapeutic designs, in order to assess the experience of the patient and staff within the confines of these buildings, according to their functional, social and psychological needs.

Figure 3.1 indicates a brief outline of the development of psychiatric care and the built form typology used over time, which will be further discussed within this chapter.

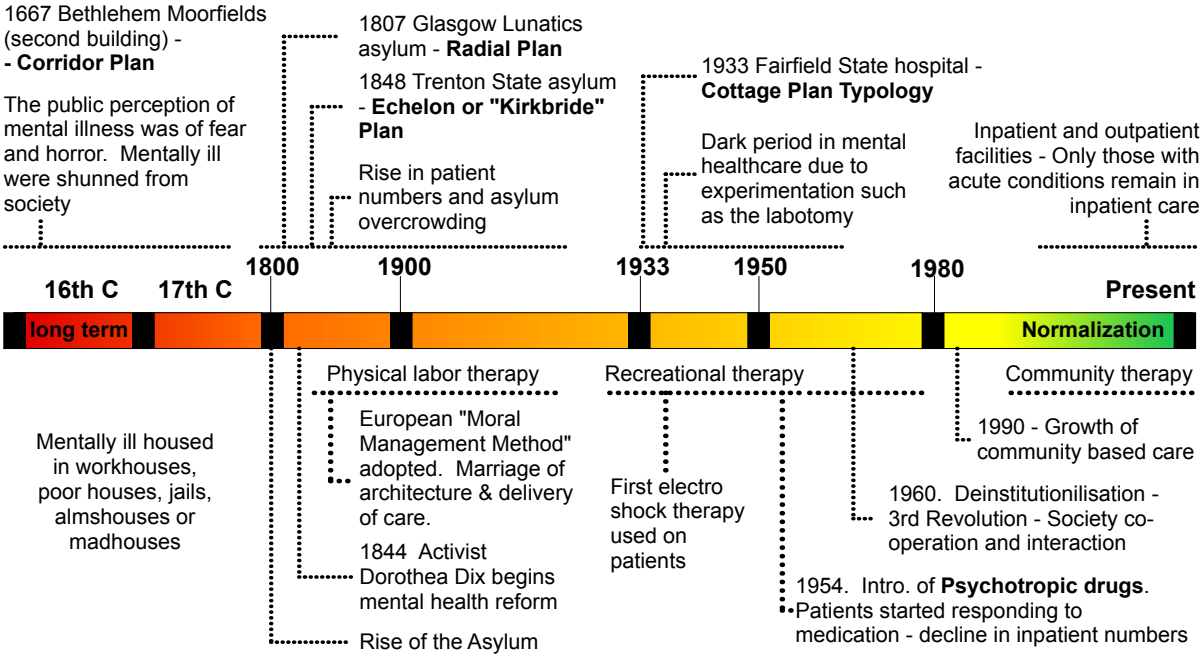


Figure 3.1. Adapted diagram of Treece. et al, April 2011. Author's own, 2016.

3.2 17th & 18th CENTURY

3.2.1 Introduction

It was during the early history of Europe and America that the asylum rose. Families and communities were responsible for the care of those who were considered to be of an "outsider group" during the 17th and 18th centuries. The outsider groups included the mentally insane, vagrants, criminals and physically handicapped. Many cultures viewed mental illness as a form of demonic possession and were a threat to the greater communities (Shimmon, 2011). Institutions were created within the communities, in order for these individuals to be handled collectively (NLM, 2006). In severe cases, those who could not be managed by their families or communities, would be admitted to Almshouses or Jails. The asylums that were created related more to that of prisons than places of treatment, and were poorly maintained, filthy and received little to no light. Due to the nature in which these patients were viewed, "*like animals rather than human beings*", they were controlled by means of chains, manacles and shackles (Treece et al, 2011:1). Until the mid-19th century, mentally ill patients were commonly referred to as lunatics and considered to be untreatable. The mentally ill were therefore both physically and visually locked away from society.

3.2.2 The Corridor Plan

Bethlehem Hospital

An example of the linear corridor plan was the second building of the Bethlehem hospital built in Moorfields, London in 1667 and designed by architect Robert Hooke. Bethlehem later became know as "Bedlam", which means the "uproar of all confusion" (Asylum Projects, 2015). Bethlehem was the only specialised hospital where lunatics could be institutionalised, until the 17th Century. Bethlehem was known as a Madhouse, and received criticism for its inhumane treatment of patients (Shimmon, 2011). The following quotation is indicative of how patients were viewed and treated at the Bethlehem Hospital.

> *"…..the early treatment of the miserable creatures committed to its brutal rulers, appears to have been characterised by utter indifference to the feelings and comforts of the patients, and a studied aggravation of their miseries.… these miseries were made the materials for actual profit to the hospital;….. being annually collected by exhibiting the poor maniacs, chiefly naked, and uniformly chained to the walls of their dungeons, and by exciting them to the most violent manifestations of their maladies" (Pictorial Handbook of London, 1854, cited in Jackson, 2006:2).*

Within the confines of the hospital, patients remained chained and isolated, and in unsanitary conditions. The external facade of the Bethlehem hospital, was designed to be ornate and stately in order to deceive the public into ignoring what was happening within the confines of the building (Rudd, Date Unknown). The request for the design of Bethlehem was to be a grand architectural statement, and little concern was shown for the patients' quality of life and exercise, or any other therapeutic purpose (Rudd, Date Unknown).

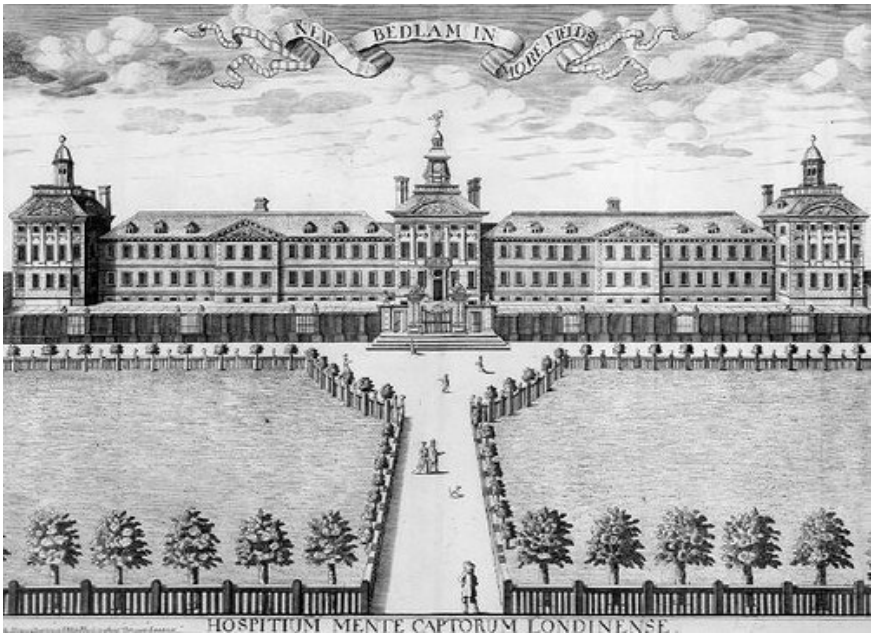


Fig. 3.2. Bethlehem Hospital. Gale. et al. September, 2010.

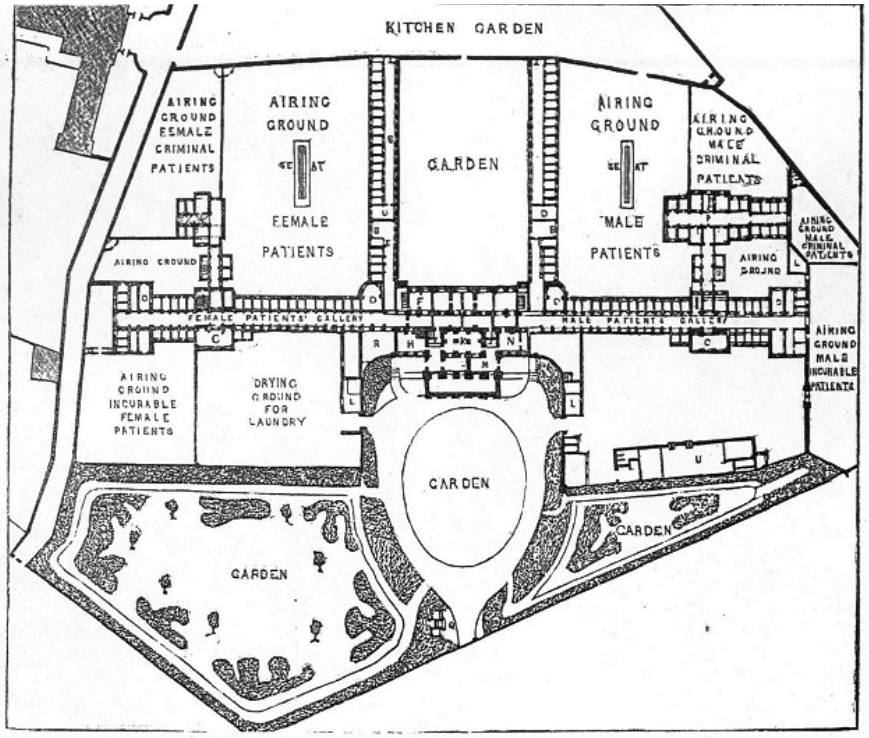
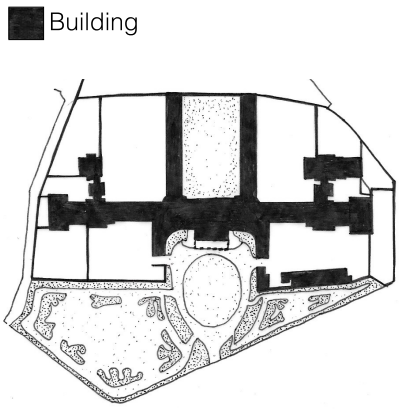
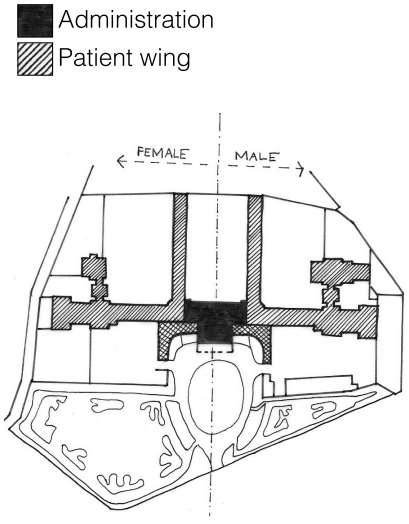


Fig. 3.3. Bethlehem Hospital. Jackson, 2014.



Public Gardens vs Patient "Airing" Grounds.

Fig 3.4. Adapted diagram of Victorian London, 2006. Author's Own, 2016.



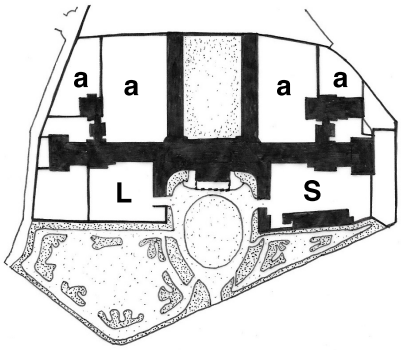
Corridor Plan - Central Admin Block separating Male & Female Wings.

Fig 3.5. Adapted diagram of Victorian London, 2006. Author's Own, 2016.

When analysing the plan *(Fig. 3.3 & Fig. 3.4)*, one can immediately identify the distinct differentiation between the public and private areas of the site of Bethlehem. As previously stated, Bethlehem was designed to create a grand appearance to the public eye, in order for the palatial quality of the building to "*attract the patronage and admiration of the elite*" (Rudd, Date Unknown). The importance of the building, therefore, lay in its external aesthetics and its visual impact on its surroundings rather than for the treatment and healing of the "lunatics". The palatial front facade and entrance lay in stark contrast to that of the private areas where the "lunatics" were hidden from view. The rear facade of Bethlehem, which faces the patient courtyards, speaks a different architectural language; it is unadorned and has an "architectural silence" as compared to the "classical antiquity" of the northern facade with its portico entrance (Arnold, 2013). As seen on the plan, Bethlehem sat within an ornate landscaped front lawn for the view of the public eye and could only be used by the public and families of those who were kept within the building (Rudd, Date Unknown). The importance of the public is also reinforced when one compares the size of the ornate garden for the public on the front edge of the site, as opposed to the smaller external "airing" grounds of the patients.

The corridor plan of Bethlehem *(Fig. 3.3)*, was based on achieving the functional requirements of the asylum, with the aim of containing and confining the mentally ill. As described by the Time Chamber (2007), the configuration of the corridor plan was designed so that the administration block sat centrally within the site, with the ward corridors flanking it on either side *(Fig. 3.5)*. This design of the plan accommodated for 120 patients

a - Patient 'airing grounds"
L - Landry Courtyard
S - Service Yard
Building



Corridor Plan - Patient wings define patient "airing" grounds.

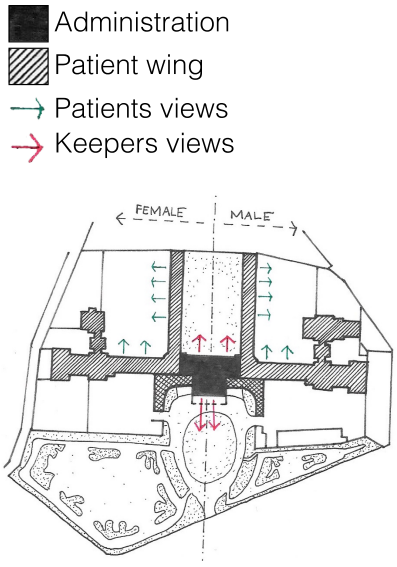
Fig 3.6. Adapted diagram of Victorian London, 2006. Author's Own, 2016.

and allowed for easy separation of male and female patients within the building, as the nurses block served as a division. The nurses' therefore had access to both male and female wards on either side. Note that in the plan *(Fig. 3.3)*, the patient cells are divided into different categories, such as the female wing with cells off the main corridor to the central administration block; the "incurable" patient wing, which is perpendicular to the main corridor and defines the female patient "airing" grounds; and lastly, the female criminal wing at the end of the main corridor. This layout is mirrored along the central axis of the administration block to form the male side of the building, with the same patient categorisation as the female wing. The male and female patient criminal wings, which detain the more violent and noisier of the patients, are conveniently placed at the furtherest point from the central administration block, in order to be of the least disturbance to the keepers located within the central area of the building. Each of these patient wings define external "airing" grounds for the different categories of patients *(Fig. 3.6)* (Markus, 1993). The external exercise yards for the patients not only reduce the dignity of the patient, through the term "airing" grounds, but are ironically smaller spaces than that of the drying ground for the laundry (L in Fig. 3.6). The service area (S in Fig. 3.6) for the drying of laundry is also situated in the most prominent position, and in the most public part of the site. What is evident in the planning of the corridor plan, is the prioritisation of control and security within the building. The central administration block forms the point of controlled circulation, as well as the entry and exit point of the building. The corridors, which extended from the central keepers block, were designed in order to allow for the ease of communication and access to wards throughout the asylum (Time Chamber, 2007). The

central location also allows for the constant surveillance of the patient ward areas and patient day galleries.

Psychological Needs

Within the architectural context, physical elements of the building are used to create a therapeutic environment, which relate to the psychological needs of patients. It is clear that the design of Bethlehem does not meet the principles of a therapeutic and healing environment through the unkept, filthy conditions of the patient areas, fear of the patients instilled by their keepers and building design aspects that do not meet the needs of the patients. The therapeutic environment looks toward the connection to the external environment through views and access to external spaces as connection to nature creates a less stressful environment for patient and staff and provides positive distractions. Within Bethlehem, the patient cells are located toward the south side of the main corridor therefore receive views of an unarticulated quadrangle defined within the high walls of the two storey building *(Fig. 3.7)*. The views, therefore provide no relief from the barbaric treatments the patients receive and no positive distraction from the endless hours spent in confinement inside Bethlehem. The patient cells are located toward the south as the intention was for them to be hidden from the north side view of the building in an attempt to hide the "repulsion from public" (Arnold, 2013). Unlike that of the patient areas, the central administration block and service areas are placed with an orientation of views facing toward the ornate landscaped garden on the public side of the building, therefore serving to meet the needs of the keepers and the eye of the public. The physical orientation of the building and its spaces also play an important role in the comfort of the patient and staff.



Corridor Plan - Patient restricted views of unarticulated courtyard as opposed to the Keepers lavish views of gardens.

Fig 3.7. Adapted diagram of Victorian London, 2006. Author's Own, 2016.

The patient day galleries are located within the corridor of each of the male and female sections on the north side, rather than the warmer and sunnier south side of the building. Patients' therefore experience little warmth during their time spent in the day galleries and it was understood at the time that cool temperatures and even light had a sedative effect on the patients, therefore the small high level windows of the patients' cells had an absence of glazing (Richardson, 2016). This was a deliberate omission to allow for the ventilation of the bad smells that emanated from patient cells, due to their unhygienic conditions (Richardson, 2016).

Social Needs:

Within psychiatric facilities a patient can experience a lack of meaning and a sense of purpose in their life, which can be exacerbated once placed in the confines of an establishment against their own will and removed from their normal communities. With the barbaric treatment of the mentally ill in the earlier asylums, this can further destroy their purpose for life and their will for recovery. Social bonds, activities and interaction should be encouraged within psychiatric facilities, in order for the patient to try and establish a sense of meaning. These social bonds and interactions can be encouraged through the design of the building, which can provide opportunities for exchange. Relationships and forms of exchange that can occur within a psychiatric environment occur between patient interaction, patient interaction with staff, and patient interaction with visitors if they receive the opportunity. In the case of Bethlehem, the interaction with staff that the patients received took place within an environment of fear. In 1795, new management at the Bethlehem hospital believed that a cure for madness could be effected by imposing its will on the patients through fear and intimidation, and the use of cold baths and rotation swings (Guts and Gore, 2016). Little to no patient staff interaction occurred of a positive and encouraging nature, due to the treatment regimes and beliefs of the keepers. Patient areas of interaction could only occur within the day galleries of the corridor and the airing grounds of the patient quadrangles. The separate quadrangles further emphasised the isolation and separateness of patients (Markus, 1993). Both social and psychological needs of the "lunatics" within Bethlehem were completely disregarded, and focused purely on the social needs of the public. The ornate public facade of Bethlehem was constructed as a "fund-raising rhetoric" used to attract elite members of society for their admiration and patronage (Trainor, 2010:25). According to Trainor (2010), patients' were often used as a source of amusement, when paying members of society could come and view the antics of the insane patients' within their cells.

3.3 19th CENTURY

3.3.1 Introduction

With the turn of the 19th Century, the Europeans adopted a new method of treating mentally ill patients, which was known as “Moral Management”, invented by William Tuke in York and Philippe Pinel in Paris (Leupo, 2013 and; Markus, 1993). Treece et al (2011) define the moral management movement as a focus on the social welfare and the individual rights of the patients. Patients were no longer viewed as wild animals who had lost all reason, and were now believed to be able to be cured (Treece. et al, 2011). This approach was also based on the idea that the environment played an important role in the treatment of patients, which resulted in shackles, chains and cement cells being replaced with beds and a more domestic feel to the environment (Leupo, 2013). In order to prevent patients from becoming unruly due to the lack of restraints, asylums introduced programmes and recreational activities in order to occupy patients’ time and keep them busy (Leupo, 2013). The “Moral Treatment” replaced physical restraint and isolation with social pressure, which came from “interactions between patients, patients and staff, self-esteem, orderly work, sound diet, limited freedom, a salutary feeling of fear, gentle persuasion and religious emotion” (Markus, 1993:133). Markus (1993) further refers to Pinel, who suggested that architects and doctors design and create environments that are tailored to the specific requirements of patients which allow for melancholics to have access to cultivated gardens and maniacs, who require quiet and shady places, be placed on the periphery of buildings (Markus, 1993). Maniacs were often placed further away from the centre of the asylum in order for them to create the least amount of disturbance, and it was thought that quiet spaces would help to calm them.

The corridor plan remained the predominant building form and was primarily used until 1890. A common feature of these plans was the positioning of cells and day rooms off wide galleries (Markus, 1993). Between 1812 and 1844 thirteen large county asylums were opened within England; different typologies were explored and created, one of which was the radial forms (Markus, 1993). The radial form was influenced by Jeremy Benthams panopticon, and was designed with the intention of creating the highest level of surveillance with the least staff available. This form however, proved to be unsuccessful due to its inhumane environment with only one example being built, Glasgow Lunatics asylum.

3.3.2 Radial Plan

Glasgow Lunatics Asylum

An example of the radial plan asylum was William Stark's Glasgow lunatics asylum, which was designed in 1807 (refer Fig. 3.9). The Glasgow Lunatic asylum (also known as the City Poorhouse) was designed to accommodate 1500 beds, and was one of the largest pauper institutions in Britain (Higginbotham, 2016). The radial plan was designed with long patient wings, which radiated outward from a central point (Time Chamber, 2007). The plan of the Glascow Lunatics asylum was influenced by the 18th Century social theorist, Jeremy Bentham, who came up with the design for the "Panopticon" prison (Asylum Projects, 2013). The design was to allow for the minimum number of staff, and the maximum observation of patients (Simpson & Brown, 2009). Within the 17th and 18th century asylums, patients were all viewed as incurable if they were admitted for longer than a one year period. Patients were not treated as individuals, and were not separated by the type of mental illness they experienced. The radial plan was designed to overcome the issues of inadequate separation of class and surveillance. The resultant plan was an "equal armed Greek cross" with the staff circulation staircase placed in the centre, which was surrounded by the keeper's and patients' day rooms (Markus, 1993).

"Glasgow, 286 Parliamentary Road, Lunatic Asylum, Caption: View of the City Poor House, Glasgow. Ca. 1880's"

Fig. 3.8. Glasgow Lunatics Asylum.

Asylum Projects, 2013.

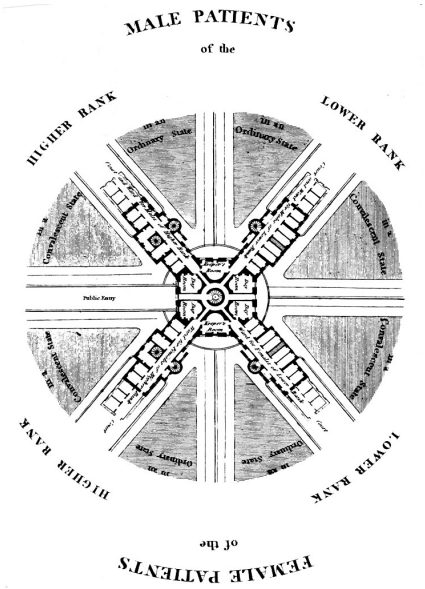
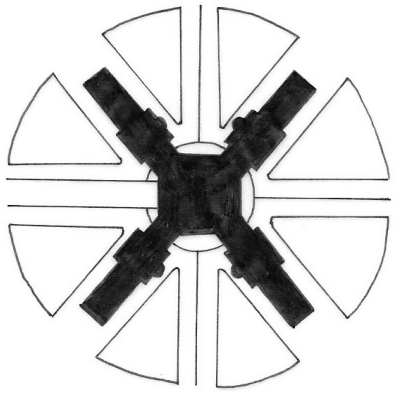


Fig. 3.9. Glasgow Lunatics Asylum.

Thompson et al, 1975.

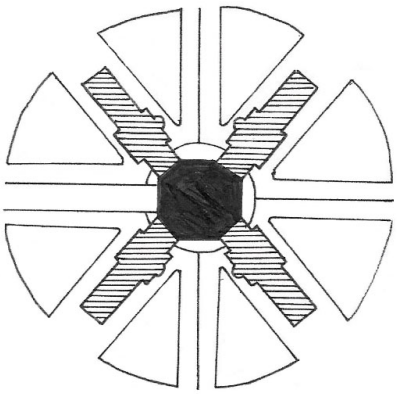
Building
Patient courtyards



Radial Plan - No Clear public facade & Entrance.

Fig 3.10. Adapted diagram of Glasgow Lunatics Asylum.
Thompson, J. Goldin, G, 1975.
Author's Own, 2016.

Administration
Patient wing
Patient courtyards



Central Admin and surveillance space & the flanked patient cell wings.

Fig 3.11. Adapted diagram of Glasgow Lunatics Asylum.
Thompson, J. Goldin, G, 1975.
Author's Own, 2016.

Unlike that of the 18th Century Bethlehem asylum, the radial plan *(Fig. 3.9 & 3.10)* sits in complete isolation to its surrounding context, with no grand approach and prioritisation of a palatial aesthetic for the view of the public eye. What is evident in the architectural design is the concern of achieving control over the circulation and confinement of the lunatics in a prison-like environment. The Tudor Gothic style of the Glasgow asylum was built in Gartnavel Scotland on an open parkland, which is nearby the village Gartloch. The asylum was therefore located away from the village as the intention was to remove the insane from society. With the radial plan, there was an attempt by the architect to create an environment that allowed for the free movement of patients to external courtyards, unlike that of the 17th and 18th Century courtyard layout. The plan was designed so that patients of each class could move about freely and without control within their wing of the building. Each class of patient would then have direct and free access to their own outdoor, enclosed courtyard (Markus, 1993). In Bethlehem, class was defined by one's social rank in society, with the higher rank being those of elite status such as the nobility, and the lower rank, such as the commoners. The functional requirements of security and surveillance, however, were still the driving idea behind the plan form, which was built to accommodate 600 patients' at the time. Markus (1993) refers to Stark (1807) where the plan was designed in such a way that the eight patient courtyards, galleries and dayroom would be under constant view and surveillance of the keepers *(Fig 3.11)*. This design attempt however, had a negative impact on the quality of the environment created and the experience of the patient and staff.

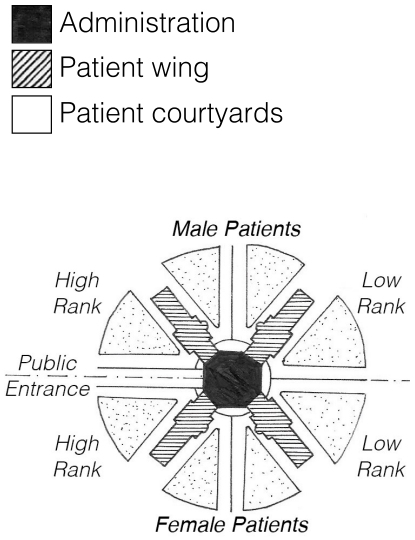
This radial plan drew criticism due to the uncomfortable environment of the central Keepers area, as they were constantly surrounded by patients and had no respite from the constant supervision that is enforced through the design of the building. As cited in Markus (1993), Tuke comments on Stark's design;

> *"…in providing for the easy inspection of patients, the comfort of their overseers deserves consideration. Indeed if comfortable consideration is not made for the principle officers, we may naturally expect that persons of respectable habits will not undertake the places; and that those who do, will often absent themselves from their disagreeable posts"*
> *(Tuke 1819:18 cited in Markus, 1993:137).*

Through the failed attempt at the new asylum form, it became evident to the designers that the design of the building should consider the needs and the daily experience of the staff. The comment by Tuke, draws on the importance of the built environment, which should be designed to accommodate the comforts of staff, whilst providing the required surveillance and therapeutic environment of patients.

Due to the configuration of the plan form, the style was considered to be inhumane as the airing courts of the patient exercise areas received limited natural light, and poor air circulation. The airing courts also received criticism for the resultant limited space of the wedge that was formed between the patient radial wings (Time Chamber, 2007).

Although the patients were able to access these courtyards at their will during the day, the views that were accessible from the patient cells were limited as they were directed toward the small space of the airing grounds and the adjacent ward wing. The radial plan also resulted in a poor orientation for each of the patient ward wings, resulting in poor lighting and ventilation within the cells. The central staff administration area, keepers' rooms and patient day areas also received a lack of natural lighting and ventilation, resulting in an environment with no therapeutic quality. Poor living conditions became a recurring subject of concern with the Glasgow Lunatic Asylum and became known for its list of deficiencies, such as inadequate separation of sick and abled-bodied patients, poor sanitary conditions, such as badly located and inadequate separation of water closets, the use of water closets as sculleries and pantries, and inadequate bathing facilities for the sheer number of patients (Higginbotham, 2016).



Radial Plan -

Patient Segregation

Fig 3.12. Adapted diagram of Glasgow Lunatics Asylum.

Thompson, J. Goldin, G, 1975.

Author's Own, 2016.

Markus (1993:21) discusses the social relationships as meaning, with a particular reference to the spatial arrangement of the Glasgow Lunatic asylum (cited in Bean, 2001:104). Markus refers to the spatial relationship of the building form and how it is established based on a classification system of gender, social class, and mental state. The first division is based on gender separation of the male and female wards, with the male housed on the left wing of the asylum, and the female on the right. What is evident in *Fig. 3.9 & 3.12*, is the further separation of gender by their social class. The higher the rank of the patient, the closer they would be housed to the front of their wing toward the central space of the building. Categorisation of gender and social class was then further segregated by the patients' mental condition, such as the Frantic, the Incurable, the Convalescent and those in ordinary state. Bean (2001) concluded that the spatial configuration of the gender, class and mental condition, was the overall driving force behind the architecture and interior arrangement of the Glasgow asylum.

3.3.3 Echelon Plan

The influence of the European “Moral Management” surfaced within America when there was a rising need for placement of mentally ill patients due to servicemen who suffered psychological trauma during the Civil War. The number of asylums constructed within America increased, which adopted the “Kirkbride plan” designed by Dr Thomas Kirkbride (Leupo, 2013 and; Treece. et al, 2011). The Kirkbride plan adopted the planning principles of Britain's Echelon plan, which was primarily used in the 1880’s within Britain, however earlier examples were seen in America in 1848. Design principles of the echelon plan saw the arrangement of wards, offices and services off a large corridor, which took on the form of a shallow “v” or a zig zag shape, in an attempt to introduce more light and ventilation to the large corridors (Time Chamber, 2007).

The “Kirkbride plan” followed the ideas of the Moral Management movement, where the built form of the asylum and their surroundings were a significant component of Dr Thomas Kirkbride’s concept of treatment (Treece. et al, 2011). The building was understood to be an “active participant” in the patient’s recovery (McElroy. et al. 2001). The built form of the Kirkbride building was designed to “promote a healthy environment” (McElroy. et al, 2001), in order to improve the quality of life and care of the patients. Kirkbride buildings often became “large, imposing, Victorian-era institutions, between 3-5 stories tall” (Asylum Projects, 2012).

Trenton State Lunatic Asylum

The first Kirkbride plan to be established was in 1848, and became known as Trenton State Lunatic Asylum in New Jersey (Fig. 14) founded by the mental health advocate Dorothea Dix (The line Up, 2016). The Kirkbride plan was designed to promote the privacy of patients and a welcoming, natural lit environment (The line Up, 2016). Along with the changing ideas of mental health treatment in the late 19th Century, the hospital’s medical director started to incorporate occupational therapy into the treatment programs, and they ceased to use the mechanical restraints previously used to control and subdue the insane (The line Up, 2016). The fall of the asylum became attributed to the medical director Dr Henry Cotton, due to his barbaric surgery methods for the cure of mental disorders (The line Up, 2016).

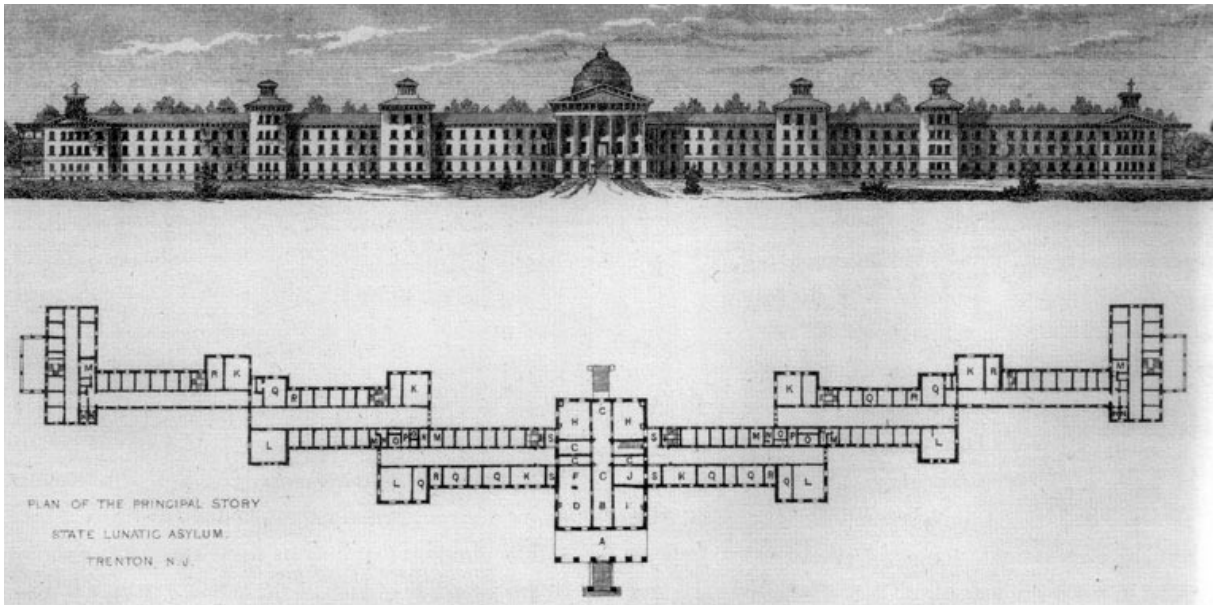
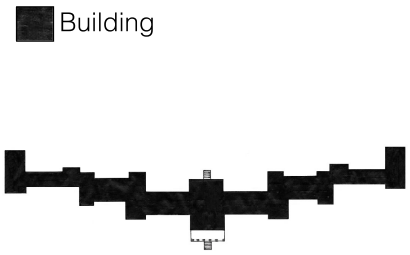


Fig. 3.13. Trenton Lunatic Asylum. Asylum Projects, 2012.

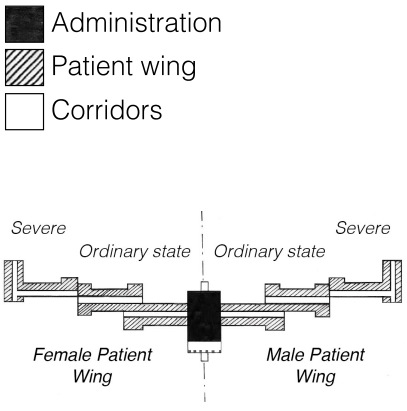
Fig. 3.14 Trenton Lunatic Asylum. Asylum Projects, 2015.



Echelon “Kirkbride” Plan - Form

Fig 3.15. Adapted diagram of Trenton Lunatic Asylum. Asylum Projects, 2012. Author’s Own, 2016.

As per the literature, Leupo (2013), discusses the architectural design of the Asylum. The building was designed with a linear plan, which consisted of two staggered wings of tiered wards on either side of a central administration building *(Fig. 3.15)*, which formed the point of controlled entrance and exit (Treece. et al, 2011). As identified by Asylum projects (2012), attached to the rear of the administration block, the Kirkbride plan often incorporated chapels, libraries, and service areas such as the kitchen. This was understood to be the most convenient position for these zones, as the males and females were separated in each of the wings on either side of this central gallery (Asylum Projects, 2012). The gallery, became a social space which was shared by patients and staff (Markus, 1993).

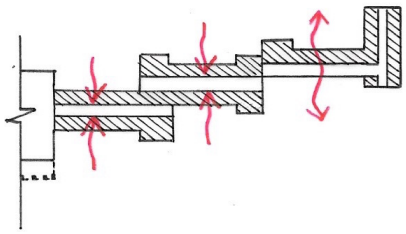


Echelon “Kirkbride” Plan - Patient segregation

Fig 3.16. Adapted diagram of Trenton Lunatic Asylum. Asylum Projects, 2012. Author’s Own, 2016.

A hierarchal system of the linear plan was established, which allowed for the segregation of the sexes and patient arrangement according to their illness and behaviour *(Fig.3.16)* (Treece et al, 2011). Similar to that of the previously discusses typologies, the most disturbed or noisier patients would be located toward the end of each wing, whereas the least disturbed, quiet and more rational patients located closest to the central administration (Leupo, 2013). This arrangement was intended to make patients’ experience more comfortable as they were isolated from other patients’ with illnesses antagonistic to their own (Innovation Incubator, 2011). The segregated plan, with shorter corridors also allowed for easier control and surveillance of the patients, and more efficient care of the patients by the staff. The linear plan, also allowed for the possibility for easier expansion of the hospital, where additional wards could

Patient wing
Corridors
Air flow



Narrow floor plate of plate - Attempt to improve natural light and ventilation of Asylums

Fig 3.17. Adapted diagram of Trenton Lunatic Asylum. Asylum Projects, 2012. Author's Own, 2016.

be built on to the ends of the existing building (Asylum Projects, 2012).

Psychological Needs

As one can see in *(Fig. 3.13 & 3.17)*, the building was designed to have a narrow floor plan for cross-ventilation and well lit wards in order to improve the comfort of the patients and promote patient privacy. Although there has been a move toward addressing the comfort of the environment, the building still incorporated double loaded corridors of patient cells, therefore reducing the amount of natural light and ventilation possible. The staggered plan of the wards also allowed for shorter corridors, which received light at the end thereby attempting to avoid the long, narrow and dark corridors as previously evidenced in the earlier asylums like that of Bedlam. The design of the plan also allowed for increased external views of patient wards, unlike that of the radial plan institution.

The Kirkbride Plan used within the Trenton State asylum was built on extensively manicured grounds, which included farmland (Asylum Projects, 2012). These farmlands and extensive grounds were used for the labour of patients, which was incorporated as part of the therapeutic treatment ideas of the Moral Management Period.

Social Needs

Many asylums built within this period were developed in community like settings, set in extensive farmlands where patient physical labor was encouraged. Patients' were therefore now able to take part in both indoor, outdoor and recreational activities (Leupo, 2013). Patient labour was the driving point for the Kirkbride

Plan, which allowed the system to exist (Treece. et al, 2011). Those who controlled the establishments found that patient physical labour, provided means for funding of the institutions. The patients were therefore exploited, where labour was considered part of their treatment, and received no pay for their efforts.

By the late 1800's, there was an extensive increase in the numbers of newly built asylums. Institutionalisation remained the ideal model of care for the mentally ill in the 19th Century. The following quote is indicative of how society and the public viewed the asylum within this point in time. It was a place where the mentally ill could go to recover and be at ease, and not be a burden to their families and society.

> *"These new structures were the birth of the Kirkbride model, a marriage of architecture and the delivery of care. These buildings were well crafted. They were intended to be compassionate places, a retreat from the 'vice' of the city where the afflicted could be at ease. Chores and physical labor were virtuous. They were believed to offer purpose, a distraction for idle hands…" (Treece. et al, 2011:5).*

The explosion of the asylum population in the mid 1900's was at its worst in the history of psychiatric care (Leupo, 2013). Due to the improved ideals of psychiatric care of the Moral Management period, the Kirkbride facilities became desirable to the homeless, who became "patients" of the asylum for shelter and food. Families also started to admit their elderly relatives to the asylums because they did not have the resources and time to deal with them appropriately. Asylums which had adopted the Kirkbride Plan also became neglected due to their massive structure, which was difficult and to expensive to maintain. These large state asylums were underfunded and understaffed (Treece et al, 2011 and; Unite for Sight, 2000). Due to the number of patients being admitted to the existing facilities, overcrowding became a problem and led to a decline in the care of mentally ill patients. In order to control the vast numbers of mentally ill patients, staff and doctors reverted to the old procedures and medical treatments, including restraints and the introduction of electro-shock therapy and barbaric surgical methods (Leupo, 2013). Treatment of the mentally ill became influenced by science and experimentation, with the lobotomy being introduced in 1930 (Leupo, 2013).

A breakthrough came in 1953 when psychotropic medication was developed. This antipsychotic drug led to a significant decline in the asylum populations, as the length of patients' stay within mental institutions was drastically reduced (Leupo, 2013). The

breakthrough in mental health care treatment also led to the gradual decline and discontinuation of less humane treatments and medical procedures (Leupo, 2013).

3.4 20th CENTURY

3.4.1 Introduction

The Kirkbride plan remained the dominant form of the asylum in the 19th century and allowed for the housing of all patients and administration into one large building. However, it became problematic as it did not have the proper facilities to cater for the noisy and more violent patients. Architects started to develop the Colony Plan (also known as the Cottage Plan) which replaced the larger institutional type asylums with smaller individual buildings that enabled the grouping of different types of patients (Treece. et al, 2011). The Colony Plan became the predominant style of asylum design throughout the 20th century in both America and Europe (Asylum Projects, Oct 2015).

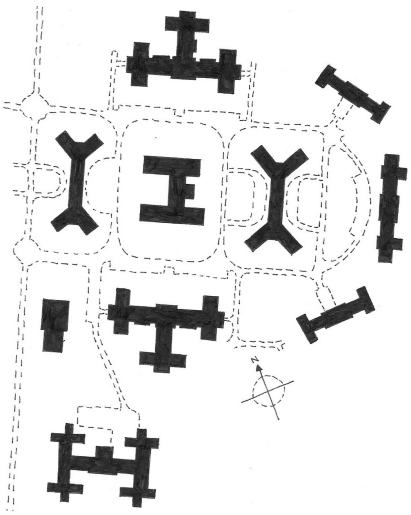
3.4.2 The Early Cottage Plan

Fairfield State Hospital

The early Cottage Plan still made use of certain elements from the 19th century Kirkbride plan, such as the ornate appearances of the building and patient treatment methods (Asylum Projects, Oct 2015). A feature that also carried through from the Kirkbride model, was that the environment played a significant component in the recovery of patients. The early Cottage plan buildings remained small with a maximum of two storeys and was situated within a well-manicured lawn. The Fairfield State Hospital aesthetic was designed according to the colonial revival architectural style, which featured symmetry in the building forms, with the use of neo-classical elements to break up the monotony of the buildings. The facades and external building appearance used elements such as “pediments, columns, palladian windows, medallions and mouldings with an emphasis on a strong entrance and cornices” (Fairfield State Hospital, Date Unknown).

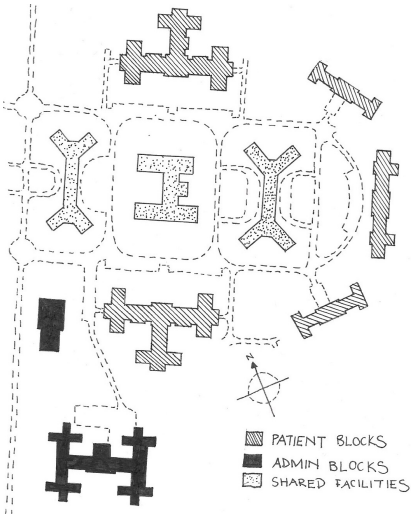
Fig. 3.18. Fairfield State Hospital. Asylum Projects, March 2010.

Fig. 3.19. Fairfield State Hospital. Abandoned Asylum, 2015.



Cottage Plan Layout - Fair Field State Hospital

Fig 3.20. Adapted diagram of Field Field State Hospital. Ancestory.com, date unknown. Author's Own, 2016.



Cottage Plan Layout - Individual Buildings for different services

Fig 3.21. Adapted diagram of Field Field State Hospital. Ancestory.com, date unknown. Author's Own, 2016.

As discussed by Asylum Projects (Oct 2015), the early Cottage Plan such as that of the Fairfield State hospital, usually consisted of an arrangement of individual buildings *(Fig 3.20)* with the administration block at the front of the campus, and communal buildings such as the kitchen, chapel, and gymnasium placed in the centre of the site. As per the *Fig. 3.21*, the patient buildings would then be located toward the outside of the site and encircle the central shared facilities.

A feature of the cottage plan design incorporated the use of a tunnel system located below ground in order to connect the individual buildings together to allow for the movement of patient and staff, with protection from the elements (Asylum Projects, Oct 2015). As further mentioned by the Asylum Projects (Oct 2015), the cottage plan layout placed the most violent patients closest to the front of the patient buildings, as opposed to all previous asylums that placed them at the furtherest point in order to avoid disturbance. This idea is indicative of a shift of thought on mental health facility design and its practicalities of patient care and treatment by the staff.

The Cottage Plan layout, reveals another strategy of asylum design, based on the control and management of patients. This plan layout however, shows a move toward improving the environment for its users, rather than large institutional buildings that tried to combine all types of patients, staff and services into one facility. This plan arrangement serves to improve the living conditions for patients through the grouping of similar patient types, which allows for easier management of patients by the staff.

Psychological Needs

The location of the Fairfield State hospital, situated within the country hills in Newtown, was described to be “pleasantly isolated” (Fairfield State Hospital, Date Unknown). It was understood at the time that the peacefulness achieved through being in the countryside, with isolation away from the business of the towns would allow for a therapeutic and healing atmosphere for the patients. The extract below reveals the thought of those who ran the hospital during the period of the 20th Century.

> *Here we hope that the pure air and sunshine and the cheerful outlook on nature so abundantly available on this beautiful hillside, combined with modern equipment and skilful treatment, may make it possible to restore to mental health many who have been groping in the fogs of despondency or hallucinations, and that at least some of the gloom and suffering may be driven from the mind of the incurable." - Eddy (Fairfield State Hospital, Date Unknown).*

Fairfield State hospital showed a move toward therapeutic environments for the care of patients, however, the hospital was still plagued with a tumultuous history due overcrowding of patients. When the hospital opened in 1933, two patient ward building blocks were built and admitted 500 patients. By 1950 additional ward blocks had been built with a patient consensus of 2692. The high patient admission rate, and overcrowding led to a nursing department that was plagued by a large turnover and shortage of personnel, which contributed to poor quality of care of the patients (Asylum Projects, 2016).

The design of the plan (Fig. 22) allowed for therapeutic activities, which included a sewing room, for female patients, a gymnasium and recreational activities which could occur in the central area of the site (Fairfield State Hospital, Date Unknown).

Social Needs

The Fairfield State hospital attempted to address the social needs of the patients who were admitted to the hospital while with increasing the social interaction between patients, and patients and staff. In 1947, the hospital introduced an annual field day for sport and activities and they encouraged everyone at the hospital to attend, whether it be through participation or spectating (Fairfield State Hospital, Date Unknown). These activities took place on the open grounds around the hospital, and were used to help increase the morale of both patients and staff. Patients' were no longer confined within their cells for endless hours, as occurred in the earlier asylums.

In 1970, the hospital implemented a "unit system", where there was a team approach amongst the staff members for the planning and administering of treatment programs. Staff members of the different ward blocks and other disciplines started to work together in order to improve the quality of care for patients so that they could be rehabilitated and reintroduced back into their communities (Abandoned Asylums, 2015).

Due to deinstitutionalization, Fairfield State hospital closed in 1995 as there was no longer a need for large institution environments. From the mid-20th century, psychiatric treatment began to move away from the "Moral Management" concept, and there was an emphasis on protecting mental patients human rights' (Leupo, 2013). Subsequently, there was a move toward deinstitutionalisation in America in the 1950's, where outpatient facilities and community based care was established (Leupo, 2013). Inpatient care became limited to those who were a high risk of danger to themselves or the communities they lived in.

The deinstitutionalisation was also supported through the implementation of restrictive criteria for the admission of mental patients, which significantly reduced the number of inpatient care and overcrowding (Treece. et al, 2011). New laws also prevented mentally ill patients from working without pay as happened in the late 19th Century (Leupo, 2013).

3.5 CONCLUSION

Based on the theoretical framework and historical review of institutional designs, it is evident that psychiatric care of the mentally ill during the 17th and 18th centuries, did not look toward the promotion of health and the therapeutic care of patients. Due to misconceptions about the illness, patients were shunned and hidden away from society. The priority of the asylum during this period was to portray an image to the public eye. The idea of security and safety was purely to protect the families and communities from the lunatics, therefore patients were locked and chained in dark cells. The insane were prisoners and kept in unsanitary conditions in madhouses or jails and chained within basements of hospitals.

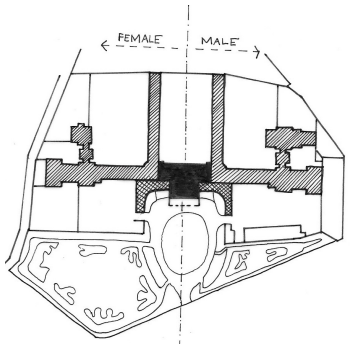
The “Moral Management” treatment method of the 19th century model of psychiatric care leant towards the use of the built environment as an active part of the treatment of the mentally ill. Even though there was an attempt to improve the conditions of the asylum where the mentally ill were held, Markus (1993) refers to the writings of Jean Genet (1967), where the “moral regime” used external controls such as that of the built form, to incite internal reformation of the patients. Jean Genet (1967) further refers to the control system which is created through the total institution, and how the function and spatial structure of the built form was used to distribute power between those who managed the system, and the patient. This is specifically evident in the Radial plan, which places administration and those of power in the centre of the asylum, with a continuous and watchful eye over the patient whether in their ward or in their external courtyards. The distribution of power is also evident in the corridor plan, which places administration in a dominant and central position to that of the patient zones. Institutionalisation dominated the 19th century, however due to the issues of overcrowding, poor maintenance and lack of funding by the state, these ideas began to fail. These issues led to the decline in the quality of patient care, and the return to less humane treatment methods by their care-givers.

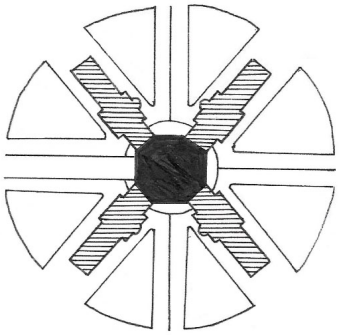
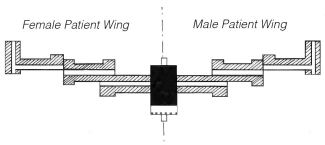
The introduction of psychotropic medicine in the mid-20th century, saw a shift toward deinstitutionalisation, shorter lengths of stay for inpatient care, and a rise in community based care and interaction. Only those with acute conditions, who could not cope in normal society, would remain in inpatient treatment. Clinicians and designers, began to understand that mental healthcare facilities must provide a “supportive and responsive atmosphere, which shelters, comforts and contributes towards the healing process” of mental health patients and emphasized that “spaces should resemble a dignified repose in which

patients, their families, clinicians, therapists and staff can all contribute to a healing process", which is within a safe and secure environment (Treece. et al, 2011).

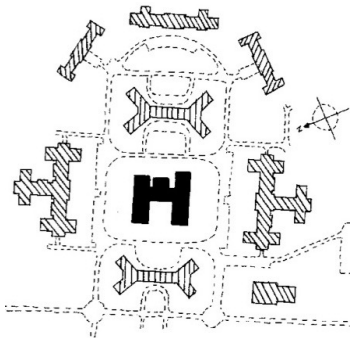
A summation, seen in table number 1, reveals the development of thought during the specific time period through the experimentation and evolution of the built form.

Table 1: Summary of built forms over time

PLAN TYPE	SUMMARY
17th & 18th C - Corridor Plan 	**Cons:** • Administration and staff areas placed on the central axis, and form the focal point of the design. Staff are placed in a dominant position of power over the patients. • Central administration used as a central point that separates male and female patients'. • Patients' viewed as lunatics who were untreatable. • Front "public" facade is ornate, whilst the patient hidden areas, are unarticulated. • Elaborate landscaped front lawn for the use and attraction of public patronage. • Patients', the vice of the community, are placed in detention in order to be removed from society. Focus is on public welfare.

19th C - Radial Plan 	**Cons:** • Administration and staff areas placed at the centre of the radial plan, and form the focal point of the design. Staff are placed in a dominant position of power over the patients. • The building is designed for maximum control and surveillance over patients, who are separated according to gender, social class and degree of illness. • The design of patient courtyards are inhumane, lack light, ventilation and views. • It became evident in the radial plan, that the built form has an impact on the staff needs and experience, which can result in poor quality of care of patients. The radial plan was rejected due to the discomfort of staff being located in the centre.
19th C - Echelon Plan "Kirkbride" 	**Cons:** • Administration and staff areas placed at the centre of the plan, and form the focal point of the design. Staff are placed in a dominant position of power over the patients. • Central administration once again used as a central point that separates male and female patients, with the more severe patients placed at the furtherest point on each wing. Reinforces patient isolation however, it allows for less disturbance from the noisier patients' to others (Keepers and the calmer patients'). **Pro's:** • Patients' were now believed to be treatable. A move toward the built environment being seen as an active participant in the rehabilitation of patients. • Shorter corridors, more light introduced and cross ventilation. • External gardens seen as a benefit to patient rehabilitation.

20th C - Cottage Plan	**Pro's:** • Buildings started to move away from the large institutional style of architecture, into smaller community like settings. • Separate building forms used to separate patients by gender and severity of illness. Allowed for easier management of patients. • 20th Century introduction of psychotropic medication led to the push toward de-institutionalisation and more humane environments. • Therapeutic environments started being encouraged, for patient well-being. **Cons:** • Due to rapid increase of patient admissions, buildings once again began to grow and became large institutional buildings.



Reviewing the evolution of the asylum has provided valuable insight toward the necessity of creating psychiatric facility design of today, that is deinstitutionalised and incorporates a humanistic approach, such as:

Home-like psychiatric environments and community-based care.

Throughout the evolution of the built form, institutional settings was the predominant form of the psychiatric institution. Institutional environments, with barbaric treatment methods have contributed toward the fear and stigma attached to psychiatric care that remains today. Psychiatric inpatient units should therefor be designed to avoid the institutional character, which can be achieved through smaller human-scale buildings and with a therapeutic design approach.

Ensuring inequalities of power distribution between patient and staff are avoided.

Evident throughout the evolution of the asylum, are the inequalities of power between patient and staff which has been reinforced through use of the built form. The focal point of all the designs have been placed on the central administration axis, with the patient occupying a subservient position which flank the staff zones. Psychiatric facility design of today should encourage designs which do not place greater importance on staff zones. Patient centred

care encourages decentralisation of staff zones, and recognises and designs for the needs of all its users, including both patient and staff.

Physical layout.

The corridor plan should be avoided in psychiatric facility design as corridors which are lengthy, and dark due to the double loading of wards on either side, create an institutional environment which is dull, depressing and allows for limited natural light and cross ventilation. The design of psychiatric facilities should minimise the use of corridors which can be achieved through courtyard architecture, whereby circulation points have visual and physical access to external spaces which both provides a therapeutic character and breaks the monotony of institutional corridors. The cottage plan layout provides an opportunity to be developed according to a “village” or community-like setting, where individual buildings provide care suited to individual patients’ severity of illness (such as the actually mentally ill to those with a mild condition) and gender. This can help to avoid mixing of patient’s with illnesses antagonistic to their own which can be detrimental to their healing process.

CHAPTER 4.0 CASE STUDIES: FIELD RESEARCH & ANALYSIS

4.1. PUBLIC SECTOR PSYCHIATRIC HOSPITALS WITHIN KZN

4.2. TOWN HILL PSYCHIATRIC HOSPITAL, PIETERMARITZBURG

4.2.1. History and Architectural Influence

Architect: Original Architect unknown. Hospital alterations by L & R Architects.
Location: Town Hill Psychiatric Hospital, Hysslop Road, Pietermaritzburg
Constructed: 1875

Town Hill Psychiatric Hospital, previously known as the Natal Government asylum, was the first mental institution to be built in Southern Africa, after the establishment of the Natal Custody of Lunatics Act of 1868, which called for the detention of those deemed to be of "unsound mind" (Parle, 2007 cited in Natalia 38, 2008: 91-93). Built in 1875 during the 19th Century Colonial period, the design of the asylum inherited the grand architectural style of the Victorian-era mental institutions, and is today listed as one of KwaZulu Natal's historical monuments (Ellis, 2011). Like that of the 19th century asylum in Europe, where patients were segregated by gender, social class and their degree of illness, the Natal Government asylum under colonial rule, saw the segregation of patient wards by gender and race, which separated the Indian, African and European patients (Parle, 2007 cited in Natalia 38, 2008: 91-93). By the late 1880's, the asylum started to suffer from overcrowding with a total of 115 patients, which resulted in the provision of poor food and unsanitary living conditions (Parle, 2007 cited in Natalia 38, 2008: 91-93).

The key figure that influenced the treatment ideas during 1882 to 1914, was the physician superintendent, Dr James Hyslop (Unknown, 2008). Hyslop adopted a humanistic approach to mental health care treatment, and was influenced by the 19th century European "Moral Therapy", which placed therapeutic value on creating an as natural and home-like setting as possible for its patients (Unknown, 2008). Even though the wards were segregated by race, patients were encouraged to participate in common recreation activities, and work in the asylums gardens, fields, laundry and farm for therapeutic purposes (Unknown, 2008). The architectural setting therefore resembles that of the 19th century European asylum, with the two asylum buildings placed in a vast landscaped setting.

Fig. 4.1. Town Hill Hospital - Administration Block. Author's Own, 2016.

Site Plan

Town Hill Psychiatric hospital today (Fig. 4.2), has retained the original two buildings of the colonial asylums, one of which has been repurposed and used for the main administration block. A series of individual buildings have since been constructed for the patient wards, however these sit in stark contrast to the colonial style of architecture of the original buildings. Town Hill psychiatric hospital "has an atmosphere of an English Country Estate that lies in a condition of mild decaying colonial splendour" (Ellis, 2011:716). Due to the overcrowding of patients over the years, neglect of the buildings due to lack of funding, and understaffing, the individual patient unit facilities continue to deteriorate, and remain inadequate for the staff's wellbeing and delivery of care to the patients. The patient ward facilities can also be closely compared to that of a prison-like environment, lacking in therapeutic character for the healing and wellbeing of patients.

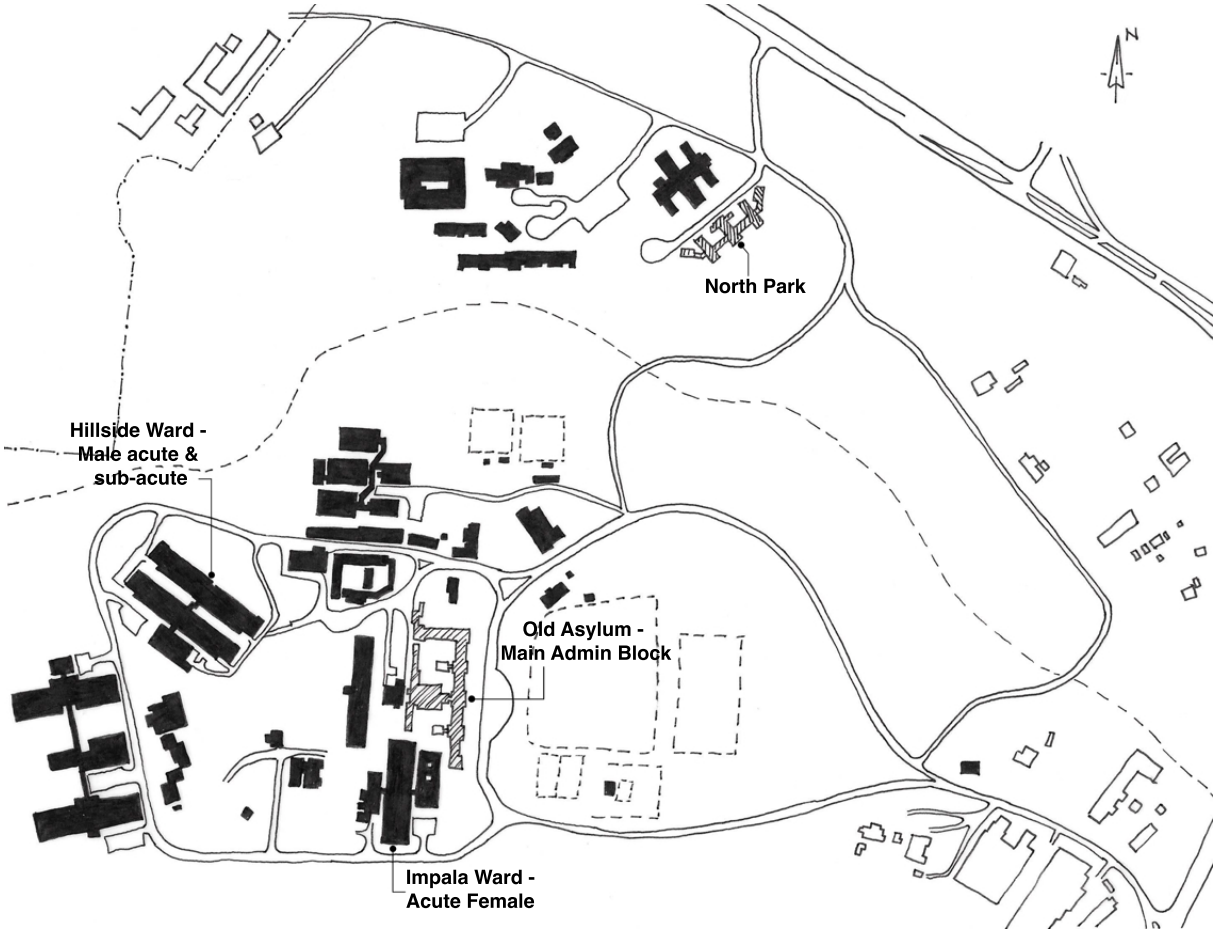


Fig. 4.2. Town Hill Hospital Site Plan. Adapted diagram of L & R Architects, 2013. Author's Own, 2016.

The asylum building (Fig. 4.2) now used for the main administration block, resembles the 18th and 19th Century Corridor Plan, which allowed for a central administration and circulation zone for easier control, surveillance and segregation of the sexes. This building has however been repurposed to suit the requirements of administration and is no longer used to house patients. The second asylum building that has been retained at Town Hill hospital, is the North Park building, which was previously used as the hospital's superintendents home when the facility was first constructed. This building also reveals its influence from the 18th and 19th Century Corridor plan. All of the ward buildings built subsequently have an element of the corridor plan, however are dispersed about the site similar to that of the Cottage plan layout (fig. 3.20).

Town Hill Psychiatric hospital today consists of the main administration block; acute male and sub-acute male ward (Hillside wards), female acute ward (Impala ward), sub-acute female wards, pre-release wards, and specialist facilities for adolescent, neuropsychiatry and geriatric care, refer Fig. 4.2.

Patients' with acute mental illness are admitted to the acute, closed psychiatric wards for medium to long term stay. Once the patient has recovered sufficiently, according to staff assessment, the patients' then move to a step-down ward, such as the sub-acute ward. Prior to being released and reintegrated back into society, patients' are usually moved to an outpatient ward within the Town Hill hospital. During this process, rehabilitative therapies, such as occupational therapy, are implemented in order to provide the patient with the necessary skills to cope in the outside world. The acute wards are referred to as a closed ward, as they are unable to leave the facility unless accompanied by staff.

This case study will focus on a joint discussion, including an analysis of the built form and interviews based on staff experiences within the male and female acute wards, due to the similarities of the issues that both wards experience.

Fig. 4.3. Town Hill Hospital - North Park. Author's Own, 2016.

4.2.2 Acute Wards - Impala and Hillside C

4.2.2.1 Functional Needs

Fig. 4.4. Acute Male - Hillside Ward C - Entrance. Author's Own, 2016.

Fig. 4.5. Acute Female - Impala Ward Author's Own, 2016.

What is strikingly evident when one views the external character of both female patient (Impala) and male patient (Hillside) ward blocks, is the uninviting, closed off and dull appearance as compared to that of the Victorian aesthetic of the two original asylum buildings which are palatial in design. Research reveals that the building was designed for the custodial purpose (patient lodging) of detention of the mentally ill, rather than for the need of creating a therapeutic and healing environment to promote care, recovery and well-being of the patient and staff, which was a common trait of 19th Century asylums. The staff at Town Hill psychiatric hospital today have adopted the psychosocial rehabilitation ideals (PSR), which look toward therapeutic care and rehabilitation of its mentally ill patients; however, they are faced with the restrictions and limitations of the design of the existing facilities.

4.2.2.1.1 Design of the Built Form

Structure

Both acute wards for the male and female patients' are designed as a single storey, mono-pitched building, consisting of a brick and mortar construction, with little consideration paid to the design of its form. The plan is arranged in a rectangular block formation, with double loaded corridors in the patient ward wing. The plan configuration has resulted in a building which is completely internally orientated, and where one has little connection or engagement with the outside world.

The Hillside Ward consists of four ward blocks that are joined to form one building. Two ward blocks for acute males and two ward blocks for sub-acute males. All blocks are identical in design and planning configuration, which presents a problem. As a patient heals and moves out of the Acute Unit to the step-down facility of the sub-acute unit, Block D & E, there is no sense of change or progression, which can negatively impact the patients' and their sense of recovery. Even though they are healing, they are still placed in the same jail-like setting. Both the Impala and Hillside ward blocks are arranged in a rectangular formation, with double loaded corridors. The planning configuration has resulted in a building that is completely internally orientated, and where one has little connection or engagement to the outside world. The analysis of photo documentation, on-site evaluation and interviews with the MDT of Impala Ward reveal the inadequacies of the functionality and spatial adjacencies of staff patient and visitor areas.

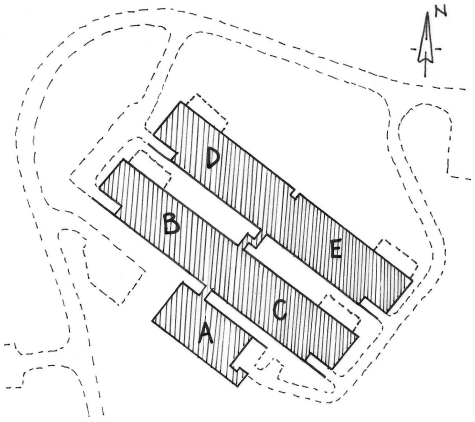


Fig. 4.6. Acute Male - Hillside Wards B,C,D & E
Adapted diagram of L & R Architects, 2013.
Author's own, 2016.

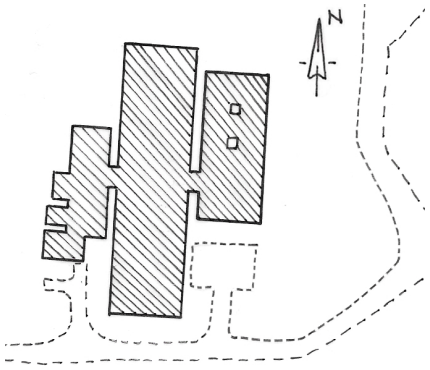


Fig. 4.7. Acute Female - Impala Wards
Adapted diagram of L & R Architects, 2013.
Author's own, 2016.

4.2.2.1.2 Spatial Considerations

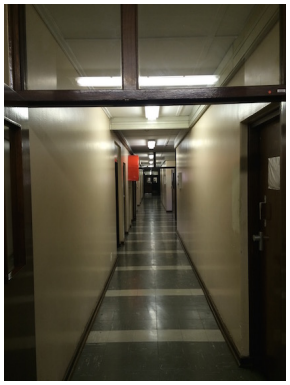


Fig. 4.8. Hillside Ward C - Internal circulation. Author's Own, 2016.

Fig.4.9. Impala Ward. - Internal circulation. Author's Own, 2016.

Fig.4.10. Impala Ward. - Corridor jail-like windows. Author's Own, 2016.

With the salutogenic model, comprehensibility can help patients to negotiate their ward environment, which can contribute toward a less stressful and less confusing environment for them. Things that may help patients' comprehensibility can be achieved, particularly in circulation spaces, through clear way-finding and a simple building typology (Golembiewski, 2012). Using colour, views and furniture, can also assist in patients' orientation, thus facilitating easier negotiation around the facility. The design and treatment of circulation spaces can also affect one's psychological needs, depending on the quality of the space (institutional or therapeutic). In both the Hillside and Impala wards, one can see the long, narrow and dark corridors, where both staff and patient circulate. The sterile, institutional quality is glaringly evident in the design of the ward and treatment of these circulation spaces through its lack of aesthetic appeal, uninspiring material choices, lack of windows for natural lighting and any provision for views of the external environment. The opportunity to connect to the therapeutic quality of the natural views of the site is lost through the design of the buildings. The internalised orientation of Hillside and Impala ward is evident in the imagery of the circulation corridors, and can be closely compared to the institutional design of the European, Bethlehem asylums corridor plan layout. As one circulates within the building, one has no concept of their orientation in relation to the external environment. Patient Wards are placed on the external edges of each side of the plan, with the service areas, such as the sluice room, treatment room, staff and patient toilets, all located in the centre. The circulation corridors also do not encourage social interaction and provide little opportunity for user interaction, other than the task of the staff escorting patients to and from their wards during their daily routines.

Staff Areas

Fig 4.11. Impala Ward
Nurses' Duty Station. Author's Own, 2016.

Fig 4.12. Impala Ward.
Doctors Room. Author's Own, 2016.

As cited in SAMJ (2010), Smith et al. (2008) state that "The characteristics of the physical environment in which MHCU's receive care affect their outcomes and satisfaction, safety, staff satisfaction, staff efficiency and organisational outcomes." The physical environment can have a negative impact on the staff well-being, satisfaction of their daily work within the stressful nature of a psychiatric ward and their overall sense of morale. If staff are unhappy and dissatisfied with their working environment, it can lead to difficulties in the retention of staff members, inexperienced staff, and poor quality of care of the patients' (Department of Health UK, 2013). A successful design of a psychiatric facility should design for the wellbeing of all users in order to ensure the best quality of care for its patients.

An important component of a psychiatric ward design, is the location of the nurses' station which can contribute toward staff efficiency and ease of patient surveillance. What can be noted from the central administration zones of the earlier european and american asylums, although experiencing inequalities of power distribution between staff and patient, they had an element of structure to achieve surveillance of the patients'. Both the Impala and Hillside wards have a lack of structure between patient and staff zones, with problems being experienced in the location of the nurses' duty stations. As expressed by the ward Sister, "*The duty room is situated by the entrance to the Impala ward and it is far removed from the patient areas; one cannot hear the patients' and the staff cannot observe"*. According to interviews, the duty room should be centrally located to the patient ward and patient day areas, which would allow for better surveillance of patient areas and allow for more efficiency of care delivery. Staff would also be able to reach patients' quickly in case of an

emergency. In the female ward, the duty station is located away from the patient day areas where the patients spend the majority of their time, which results in the lack of surveillance and which can compromise with the security and safety of the patients.

According to the interviewees, the purpose of the nurses' duty station is for the nurses' administration and nurses reporting of patient information only. However, due to the limited provision of doctors consultation rooms, the nurses' station in both acute male and female wards are used for multi-purpose functions including; nurses' administration, patient consultation if the doctors room is occupied, and a staff meeting area for handover of shifts. The duty station is also often used by the social workers and for the doctors if they need to use the telephone. According to the interviewee, "*what has resulted is an area which can be noisy, disruptive to nurse administration, and restrictive due to its small size and number of occupants.*" (June, 2016).

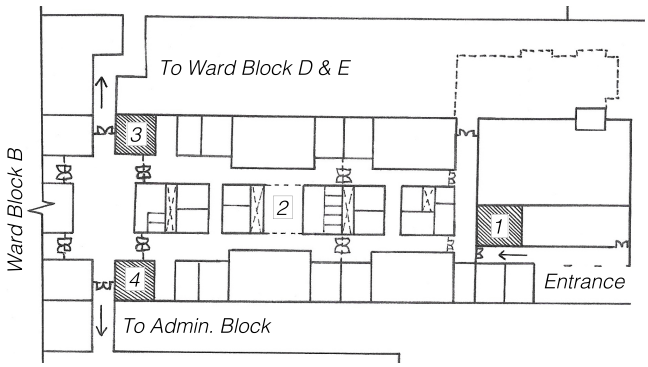


Fig. 4.13. Hillside Ward C - Staff Area's. Adapted diagram L & R Architects, 2013. Author's Own, 2016.

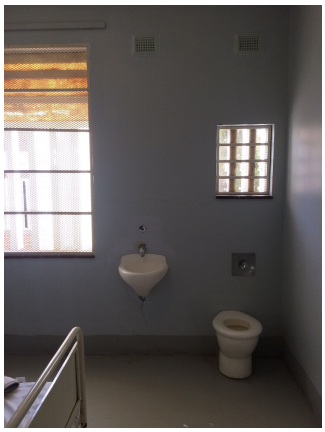
Fig. 4.14. Hillside Ward C - Area (2). Author's Own, 2016.

As indicated in plan (Fig. 4.13), one can see the limited provision of space evident in the Hillside ward which includes only one nurses' duty station, one operational managers office and one doctors consultation room.

Currently, due to the lack of space provision for doctors' consultation rooms, occupational therapy, group and individual patient therapy, and visitor areas, the ward has resorted to using the foyer (2) which is situated in the circulation passage of the patient area (Fig. 4.14). This space is currently used as a multi-purpose space for student training, a visitors area, occupational therapy space, social worker sessions with patients, and doctors consultations with patients. The interviewee stated that this is problematic as this space is "*inadequate as it provides no privacy, and is disruptive*".

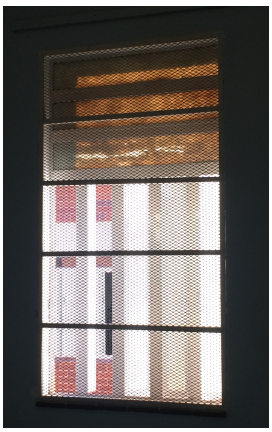
A further interview revealed that doctors feel that the use of non-private areas for patient consultation presents an ethical dilemma and can negatively impact staff satisfaction of their care provision, as "*it is not confidential, the space is disruptive and not professional"*. The interviewee further stated that patients may feel uncomfortable, and may not disclose information due to the lack of privacy, and they may also feel like there is a lack of respect for their needs. The lack of suitable space for patient consultation can negatively impact patient care and treatment. Interviewees felt that a minimum of three consulting rooms should be provided in order to cater for the needs of the multi-disciplinary team of staff.

Patient Areas



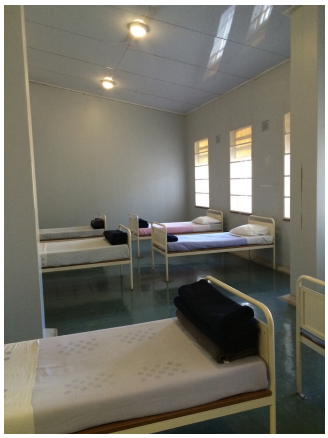
Seclusion Room.

Fig. 4.15. Author's Own, 2016.



Caged Windows.

Fig. 4.16. Author's Own, 2016.



Dormitory Style Ward.

Fig. 4.17. Author's Own, 2016.

Impala Ward provides for the accommodation of a 22 Bed Ward for the female patients, which include the seclusion rooms, 7 bedded dormitory style wards and single bed wards.

Psychiatric inpatient facilities require the provision of a seclusion room (Fig. 4.15) in the event a patient requires isolation due to a psychotic episode or if they have an infectious disease (MHCA, 2002). Patients' in seclusion rooms require close and frequent observation by the staff as they are deemed to be at high risk for harm. The seclusion room however, attempts to calm patients through the provision of a low stimulus environment and without fixtures that could be potentially dangerous. However, the stark environment can increase their fears and sense of isolation and infringement of their rights. "*Involuntary detention processes draw much criticism and human resource and infrastructure constraints at institutions threaten to violate the very rights that the MHCA seeks to uphold. Users perceive that their rights are infringed upon during acute episodes of illness with methods of containment often seen as punitive rather than therapeutic*" (Ramlall, 2002:407). The

salutogenic vision looks toward the promotion of healing and recovery through forms of positive distraction, such as natural views, thus trying to avoid the necessity for restriction and confinement. The salutogenic vision promotes a home-like environment, with as close to a normal functioning community as can be achieved.

The dormitory style wards possess the qualities of a stark, cold and institution-like environment. The large wards are designed in such a manner as to increase cost-efficiency of the building through the accommodation of more patients, and the ability to allow for observation in a single area; this however can be detrimental to patient experience and comfort. The dormitory style ward is often preferred by staff as it allows for easier observation of patients' in one location. The interviews also reveal that patients seems to prefer dormitory wards as opposed to single bed wards as patients often experience fear and anxiety when removed from their communities and placed in an unfamiliar environment. The dormitory allows for patients to be placed with others, which encourages interaction and the patients are not isolated from others, which can increase their fears and anxiety. Dormitory wards however, do provide restrictions to patient privacy and control. If a patients' preference is a single bed ward, being forced to occupy a dormitory ward can negatively contribute toward a poor sense of well-being and satisfaction. The interviewee stated that a "*variation of ward sizes should be provided. A dormitory style with four beds, as well as single bed wards for those who require isolation, or those who would prefer to be on their own. The allocated bed should be in a ward of the patient's preference, which provides them the option of choice*" (June, 2016).

Within the Hillside ward patient observation within the wards are achieved through means of an observation room located between the dormitories, as indicated in plan (Fig. 4.18). The observation room, also used as a staff tea room, is to view the patients' during the night without disrupting the patients'. This room however, could contribute to patients' sense of paranoia, of continually being watched which could negatively impact the wellbeing and comfort of the patient.

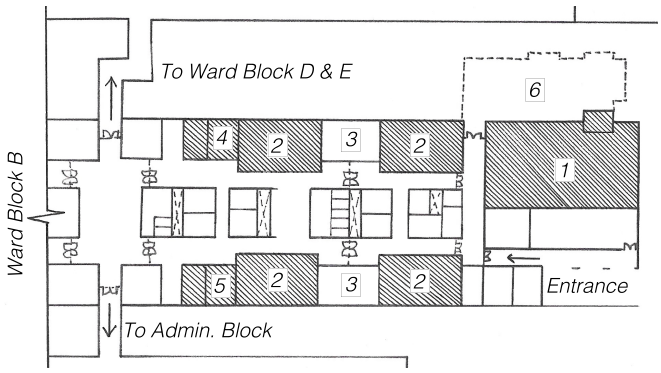


Fig. 4.18. Acute Male - Hillside Ward C - Patient Area's.
Adapted diagram of L & R Architects, 2013.
Author's Own, 2016.

Fig. 4.19. Acute Male - Hillside Ward C Patient Day Room.
Author's Own, 2016.

Within both the Hillside wards and the Impala ward, patients' spend the majority of their time either within their ward, within the patient day room (Fig. 4.19) or the small fenced outdoor area (6 in Fig. 4.18). Interviewees report that acute patients' are often kept confined within the day room due to their risk of absconding as the outdoor area is inadequate and patients' can climb over the fence.

The patient day room, such as the Hillside patient day room (1) in Fig. 4.18, is used as a space for patient day areas, patient dining, occupational therapy and exercise, and group therapy sessions. This multi-use of the space, similarly evident in Impala ward, is indicative of the limited provision of space within the Hillside ward and its custodial orientation of the design, which is inadequate for therapeutic care.

The limitation of patient areas have also resulted in the mixing of the different patient categories, such that highly depressed patients are in close interaction with aggressive patients.

Interviewee: *"the mixing of patients in confined and restrictive spaces, can have a negative impact on the patients. The more aggressive and disruptive patients can unsettle the calmer patients, and can contribute toward the build up of frustrations and incidences such as fighting…. the only way to separate the disruptive patients, is to place them in seclusion as the facility does not have any other means or areas of separating patients if they are unsettled*" (June 2016).

Visitor Areas

Fig. 4.20. Reception. Author's Own, 2016.

Fig. 4.21. Visitors Lounge. Author's Own. 2016.

The Visitor Areas provided within Impala Ward offer little variation to the institutional quality of the patient and staff areas. The design of the building does not encourage the visitation of patient family members due to the inadequate provision of visitor spaces, which reinforces the complete disregard of the patient social needs. The Visitors Lounge (Fig. 4.21) is located in an open area off the reception area, and therefore provides no privacy for patient interaction with their family members. As discussed with the ward Sister, the visitors' area is uncomfortable and inadequate due to its openness and small small size.

The design of the Impala ward and the character of its spaces is similar to that of the Hillside wards, which has been discussed in further detail and supported with interview data gathered from the research sample.

4.2.2.2 Social Needs

Fig. 4.22. Hillside Ward C
Observation Room / Staff Tea Room.
Author's Own, 2016.

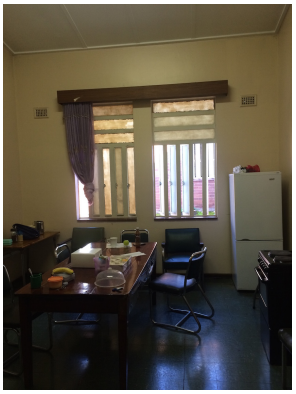


Fig. 4.23. Impala Ward
Staff Tea Room.
Author's Own, 2016.

A second component which is important for the well-being and satisfaction of the staff, is the provision of adequate staff rest areas. One can get a glimpse of the inadequate and poor quality of the staff rest area in Hillside (Fig. 4.22) and Impala ward (Fig. 4.23) which has contributed toward staff dissatisfaction. The rooms provided are small, dark, and inappropriately located: the interviewees report that staff cannot rest in a room which is noisy due its position in the middle of the patient ward zone. The window of the staff rest area also overlooks the back of a patient ward, therefore offering no respite from the close proximity to patients and related disruptions. The location of the staff rest area also provides no access to external spaces for relaxation or connection to nature. The limited provision of staff space has contributed toward staff frustrations and unhappiness.

Interviewee: *"the space is disruptive and they (staff) cannot relax. If the staff want to have a break, they have to leave the ward and go out of the facility*". The interviewee further stated that *"there is currently a high rate of staff absenteeism. The only way staff can have a break is if they do not go in to work"* (June 2016).

It is a collective understanding from the research sample that staff tiredness, as a result of long twelve hour shifts with a lack of respite, can negatively impact the delivery of care to patients, as their energy can be low and frustrations are high, and they therefore cannot deliver the optimum or most effective care to patients. The wards are understaffed, and with the high number of patients, the staff often do not take breaks during their lengthy shifts, as they would have to leave the ward entirely if they would like to gain access to external space, which is problematic. The shortage of staff contributes toward staff frustrations, and

both mental and physical exhaustion as they experience difficulties in dealing with the number of patients as compared to the number of staff.

> Interviewee: *"staff frustrations are high, and most often, they come to work because they have to as they understand patient care is important however, not because they want to or are happy in the environment they are in. Access to external space would provide a positive impact on the staff, as they would be able to rest, be away from noise and would help to improve the staffs satisfaction of their working environment."* (June. 2016).

Data from the interviews with the staff revealed that they would ideally like to have a staff tea room inside the ward area, however located away from patient zones, which would allow them to have a decent break and time-out from their duties. The space should be designed to incorporate a therapeutic nature that allows for calmness and preferably have access to the outside with benches in a garden area where they can relax.

Patient / Visitor Interaction

According to research data, Town Hill Psychiatric hospital practices psychosocial rehabilitation of the patients', therefore staff of the multi disciplinary team try to encourage the patients' family involvement in the rehabilitation process. A reoccurring issue that has developed has resulted from a weak link between the patients' rehabilitation programme and when they are released back into their communities. If the patient does not have a strong support base within the community they often cannot cope and end up being readmitted back to the hospital. Family involvement is therefore an important aspect in patient rehabilitation. Currently, in both the Hillside and Impala wards, there is a lack of space in the buildings to accommodate for patient and visitor interaction and meetings. The current facilities are inadequate and do not encourage family visitation due to the lack of space allocation. The Hillside ward C currently makes use of the open foyer within the circulation corridor (Area 2 Fig. 4.13), for family and patient visitors. This open foyer, is unsuitable due to its location in close proximity to patient wards and the seclusion room.

Due to the hospital being referral based, patients' are often from communities far away from the facility. This may create inaccessibility to family members if they have no place to stay when visiting. If patients' receive no visitation from their families, it may increase their feelings of detachment from their communities, therefore making it difficult for patients' to reintegrate back into their community. It is therefore important that the design of the facility

allows for space that creates a welcoming environment for the visitor, as well as space for family and patient interaction in a suitable location and of a therapeutic and comfortable nature. As stated by the Interviewee, the staff like to participate in therapy sessions with the patient and their family in order to help rebuild and facilitate patient and family relationships. An interviewee suggested that Town Hill should possibly allow for family to stay over if they come from far off areas.

Patient Interaction and Activity

Currently in the Hillside Wards, patient interaction occurs through staff and patient interaction, patient interaction with other patients and patient interaction with visitors if they receive.

Within a ward with acutely mentally ill patients', it is important that the patients' have a certain level of structure during their daily routines. The following description reveals the structure of the staff and patient daily routine:

The daily routine of patients include their morning showers, which are supervised by the staff as the patients' often need assistance; the administering of patient medication by the staff; an exercise session which occurs within the patient day room and led by the staff; breakfast in the patient day room, which is then followed by the doctors' ward rounds and the patient therapy sessions. Doctors' sessions with patients' include one-on-one interactions in order to assess the patients' and their progress. Patient activity time also occurs in the morning, which is staff dependent and done within nursing groups. Within the acute wards, occupational therapy sessions only occur once per week. The less severe patients in the sub-acute and pre-release wards receive occupational therapy on a more regular basis.

At midday from 12pm to 2-30pm, patients who would like to rest are escorted back to their wards where they are able to sleep, and the ward doors are locked. Those who do not want to rest, remain enclosed in the patient day-room, watching television. During the patient rest period, half of the staff take their tea break, and the other half of the staff remain on duty for patient observation. Due to the limitation of staff numbers, patients' often remain locked within the patient day room, due to the risk of absconding from the small external, fenced garden area.

The afternoon includes patient medication by the staff; nurse report writing, where nurses sit with the patients' and write detailed reports on the patients progress'; and dinner which is served to the patients in the patient day room at 5pm; thereafter the staff begin their hand over to the night staff.

What is evident in this daily routine is the lack of variation of space which the patients' use during the day as they are either locked within their ward or locked within the patient day room, where most of their activities occur.

It is essential to understand the necessity of patient activity when designing a psychiatric facility, as it plays a large role in patient rehabilitation and the prevention of patient boredom, the design should therefore accommodate areas for such activities. Patient activities include diversion activities and occupational therapy.

Patient diversion activity include incorporation of the arts, such as "music, drawing and dance, and according to the salutogenic theory, these are all activities that promote a sense of meaning" (Golembiewski, 2012:78). These activities often occur within the patient day room and courtyard.

Occupational therapy (OT) is facilitated by the occupational therapist at the hospital and includes activities with patients, such as life skills (cooking); recreational/leisure activities (football games); health education; craft activities (knitting or beadwork); and social skills development, through interaction with others. Occupational therapy is an essential part of the patients psycho-social rehabilitation as it helps to provide patients with the necessary skills to use when they leave the ward.

Currently, occupational therapy for the acute patients' is initiated within the closed units due to the risk of patients' absconding if taken out of the ward, and the difficulties of moving patients due to the shortage of staff. Due to the lack of space within these wards, OT activities are limited and restricted to the spaces available, such as the patient day room and the small external fenced garden.

Interviewee: *"the restrictive space that is currently used in the ward is frustrating for the staff. The spaces that are used are not adaptable for the different occupational therapy activities. There is no private space for individual therapy, therefore staff have to beg, borrow and steal*

space for them to carry out their sessions with patients. The small cramped spaces of the ward can be anxiety provoking for the patients" (June 2016).

The staff suggested that inpatient program, such as the therapy sessions, should not be restricted within the ward. A separate occupational facility should be encouraged, as it allows the patients to leave the ward environment, whilst accompanied by the staff. Leaving the ward environment is therapeutic in itself as patients are able to engage in normal activity, and are not continuously locked within the jail-like setting of the ward.

4.2.2.3 Psychological Needs

Light and Ventilation

Fig. 4.27. Acute Male - Hillside Ward C - Patient Dorm. Author's Own, 2016.

Fig. 4.28. Acute Male - Hillside Ward C - Staff Areas. Author's Own, 2016.

As previously seen in the plan (Fig 4.6), the Hillside ward is predominantly north-east facing. Due to the rectangular block formation of the four wards, block D and E would receive the most possibility for natural day lighting. However, due to the plan configuration of the double loaded corridors and closed off wards on the north-east side, natural daylight does not penetrate through the building. Ward blocks B and C are located behind ward block D and E, therefore they are sheltered and receive limited natural daylight. Like that of the Impala Ward, the internal environmental quality has resulted in a predominately cold and dark building, which creates an uncomfortable environment for the patients' and staff, that is predominantly dark and cold throughout the day. Accompanied with the poor natural day lighting, the windows installed in the facility only allow for small vertical opening window sashes in order to prevent a patient from absconding. Due to the lack of curtaining installed, the glazing of these windows are painted, which both obstructs views to the outside, and according to the staff, "*creates a dull and depressing environment. The poor lighting creates a morbid atmosphere, which is not conducive to a therapeutic environment*"

(June 2016). This treatment of the windows is seen throughout the ward buildings of the hospital. The caged-like character of the windows, with their steel mesh reinforcement also enhances the jail-like and institutional nature of the building, which contains its inmates rather than patients. The ward buildings currently rely on artificial lighting.

According to the interview data gathered, an open window policy is instilled at the hospital as natural ventilation is very important. Natural ventilation is important for health regulations and infection control, as well as to try encourage a therapeutic quality of providing fresh air for patient and staff. Due to the ward design, *"no cross ventilation is achieved, therefore the natural ventilation is not adequate. Buildings are often cold in winter, and hot in the summer" (June 2016).*

Views of Nature

Access to nature and can assist in creating a supportive healthcare environment, which can reduce stress levels and improve outcomes (Ulrich, 2012:54).

In the case of the Hillside and Impala wards, the window design of the ward facilities preclude views of nature. The windows often look over the back of other buildings, therefore face a brick wall as opposed to the beautiful gardens of the Town Hill Hospital. Due to the design being internally orientated, external views are not encouraged, or achieved as evident in Fig. 4.27 & 4.28. Interview data reveals that the narrow windows provide no sense of the outside, and can make one feel like they are cooped inside a little box. There is no distraction from the stress of the working environment,=.

> Interviewee: *"views of nature are important, as it would be more therapeutic. Views would help enable the environment to feel more open and not so closed in and restrictive"* (June 2016).

Views of nature and the external natural environment would provide a welcome and positive contribution to the design of a psychiatric inpatient facility, to the benefit of both patient and staff. Views of nature also serve as a positive distraction, and should be encourage from patient wards and staff area's. Positive distractions, such as natural views, as a set of environmental-social conditions, which have the capacity to improve mood and encourage restoration from stress (Ulrich, 2012:55).

Connections to the Outside

Currently, both Impala and Hillside wards do not provide adequate connections to outside space for the patients'. Patient access to external spaces is currently highly restrictive. They have access to a small fenced off garden located off the patient day room, which is inadequate for patient exercise, number of patients, and lack natural views that face onto the back of other buildings. The ward Sister, believes that provision of therapeutic and adequate external space can have a positive contribution to patient experience.

Interviewee: *"the sub-acute and settled patients should have access to a shared communal garden, or a vegetable garden which they can look after in order to provide a sense of normality in their daily routines. A sensory garden, which allows for smell, touch and taste is also beneficial to patients. The acute-patients should have access to a safe and secure external garden of a suitable size, which provides them fresh-air, sunlight and a sense of freedom, and doesn't appear clinical and institutional"* (June 2016).

Aesthetics

Research indicates that aesthetics, such as introduction of murals that depict natural environments, can have positive influences in a ward setting as it serves as a positive distraction and can help to reduce stress (Ulrich, 2012). This idea is supported by Mardelle et al (2013), where environments that support recovery include access to natural light and the outdoors, comfortable yet robust furniture, as well as artwork of nature. The overall design of both Impala and Hillside wards provide an environment that lacks therapeutic quality, which is important for meeting ones psychological needs and improving one's sense of well-being. A reoccurring theme in the interview data, is the institutional, jail-like character of the ward environments which are cold, hard and uninspiring as opposed to bright, cheerful and therapeutic.

Interviewee: *"first impressions are important. If the ward is designed to be therapeutic and resembles a place of healing and care, it can give a patient a sense of hope, and can provide them a sense of encouragement. If the ward is jail-like* (in its design and aesthetic)*, it can have a negative impact on those who use the facility"* (June 2016).

4.3 KING DINUZULU HOSPITAL COMPLEX, DURBAN

4.3.1. History and Architectural Influence

Architect: Original Architect unknown. Additions and alterations by Osmond Lange Architects & Planners Pty (Ltd)
Location: Sydenham, Durban
Constructed: Psychiatric Closed Unit Constructed in 2001

Literature regarding the history and establishment of King George V Hospital is limited by the KwaZulu Natal Department of Health. As per the KZN DoH (2001), King George the V Hospital was previously known as the King George V Jubilee Hospital, which was officially opened in 1939, for the treatment and accommodation of 139 tuberculosis (TB) patients. As a result of the rapid growth of the TB epidemic, the hospital required an expansion.

After the end of the World War II in 1945, the Springfield Military hospital, situated adjacent King George V Jubilee hospital, was evacuated by the military and by 1956 had been taken over as an extension. The two hospitals were combined, with a total bed count of 1291, and became known as King George V hospital. The wards of the old Springfield Military hospital were equipped and opened for services. At this time, psychiatric services, amongst others, were added to the scope of services the hospital provided (KZN DoH. 2001).

The Hospital at the time was named after the British, King George V, therefore revealing its colonial influence at the time of the hospital establishment. In 2014, The name of the Hospital was changed once more to King Dinuzulu Hospital Complex.

Site Plan

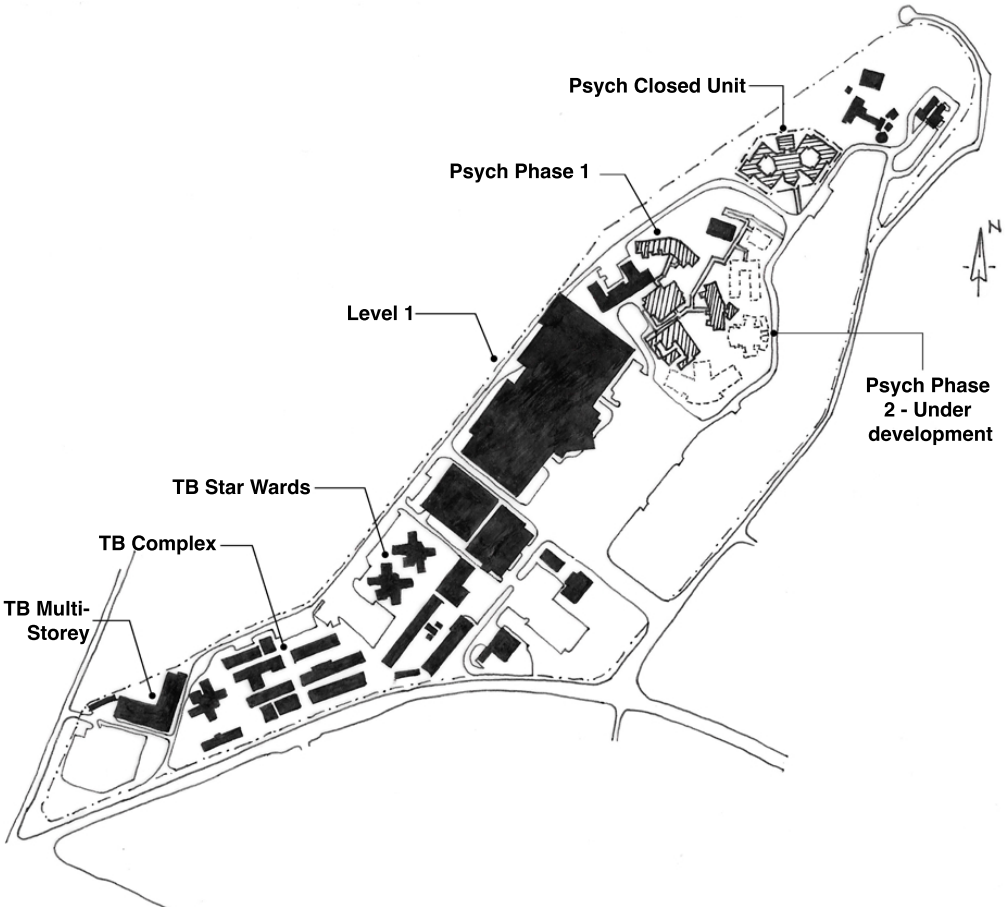


Fig. 4.29. KDHC Site Plan.

Adapted Diagram from Osmond Lange Architects and Planners. Author's Own, 2016.

The hospital complex, now consists of Level 1 district health services, TB facilities, oral and dental, family planning, orthopaedic spinal and thoracic surgery and psychiatric facilities. The psychiatric facilities, as indicated on the site plan (Fig 4.29), first only consisted of the psychiatry phase 1 psychiatric buildings. The psychiatric phase 1 buildings are reminiscent of the institutional era of the broad arrow interpretation of the Echelon plan of the 1880's in Europe. Typically, a set of pavilion blocks which housed the patients, are interconnected off short corridors (The Time Chamber, 2007). Patient types are also separated according to the severity of their mental illness within different ward blocks, as well as by gender. Psychiatric phase 1 now houses sub-acute patients. In 2001, the psychiatric closed facility for acute patients was built, which forms the basis of this case study. Although constructed in the 21st Century, the design of the psychiatric closed unit still resembles that of an institutional and prison-like environment, and reveals elements of the radial plan such as the Glasgow Lunatics asylum, due to the central administration and the diagonal wings which flank either side. The psychiatric closed unit in its location, is disconnected from the rest of the hospital complex which reinforces patient isolation from the community.

4.3.2. Psychiatric Closed Unit

4.3.2.1 Functional Needs

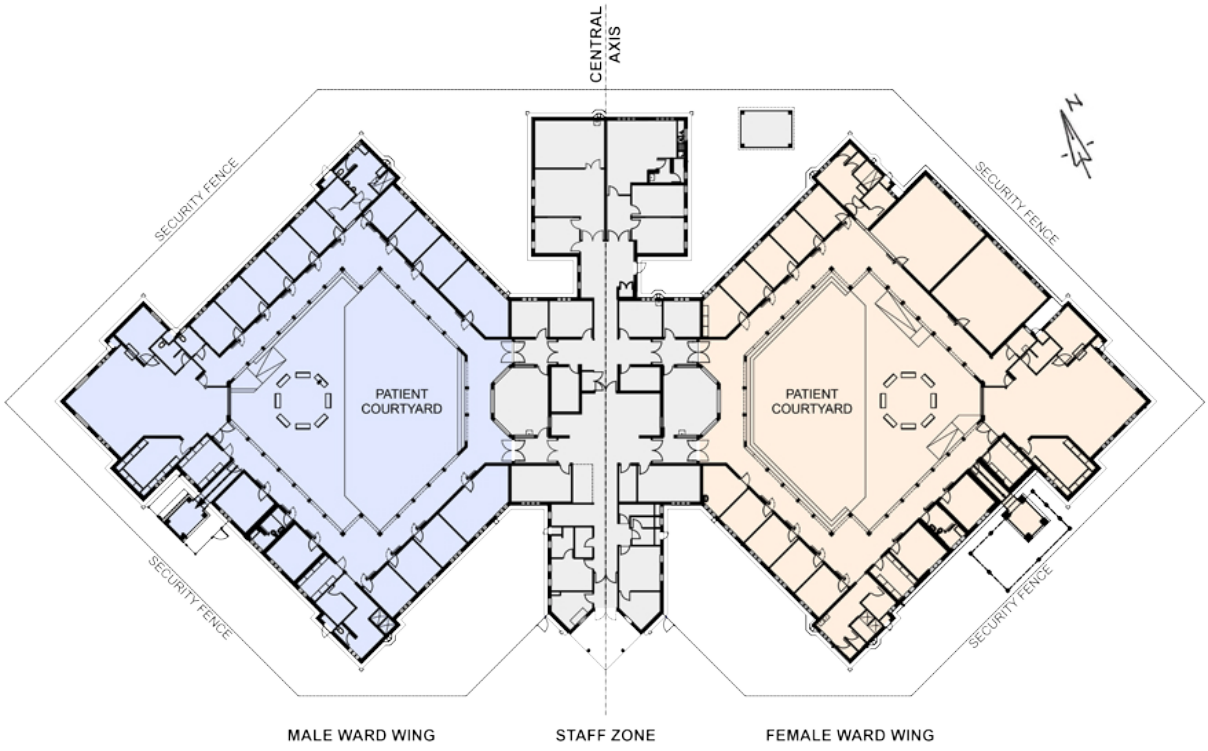


Fig. 4.30. KDHC Psych Closed Unit.

Adapted Diagram from Osmond Lange Architects and Planners. Author's Own, 2016.

4.3.2.1.1 Design of the Built Form

The design of the psychiatric closed unit is arranged around a central axis as seen in Fig 4.30, which forms the controlled entry and exit point as well as all staff areas and administration. Flanking this central axis on either side, is the male ward wing on the left, and the female ward wing on the right side. Each wing of the patient wards are designed in a triangular formation, which contains the patient day courtyard.

Structure

Like that of Town Hill hospital, the structure of the psychiatric closed unit at KDHC is constructed out of a standard brick and mortar construction, with a mono-pitched roof. The high end of the roof faces the patient courtyard in order to prevent a patient from absconding, and when viewed from the internal side, all one can see is a high, unadorned brick parapet wall. This unarticulated and confined courtyard space forms the daily life of a patient during their stay within this building.

4.3.2.1.2 Spatial Considerations

Staff Areas

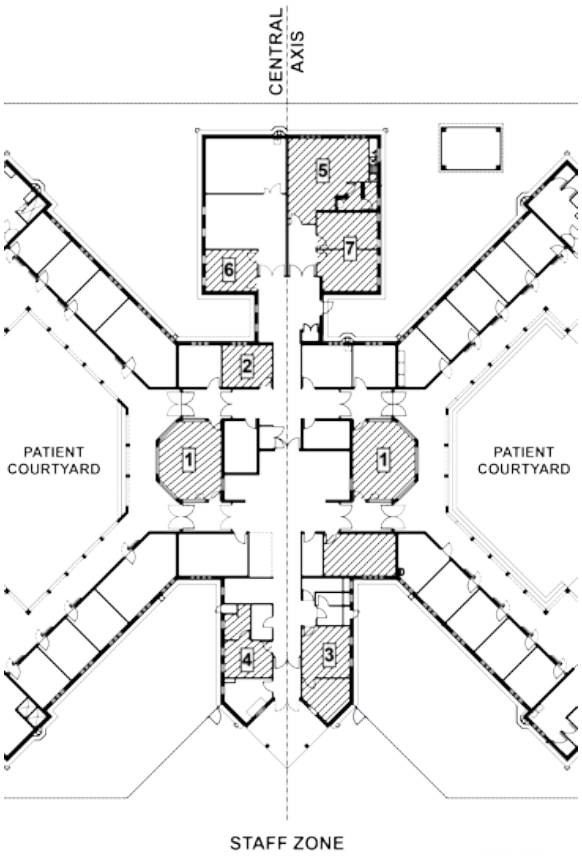


Fig. 4.31. KDHC Closed Unit - Staff Area's. Adapted Diagram from Osmond Lange Architects and Planners. Author's Own, 2016.

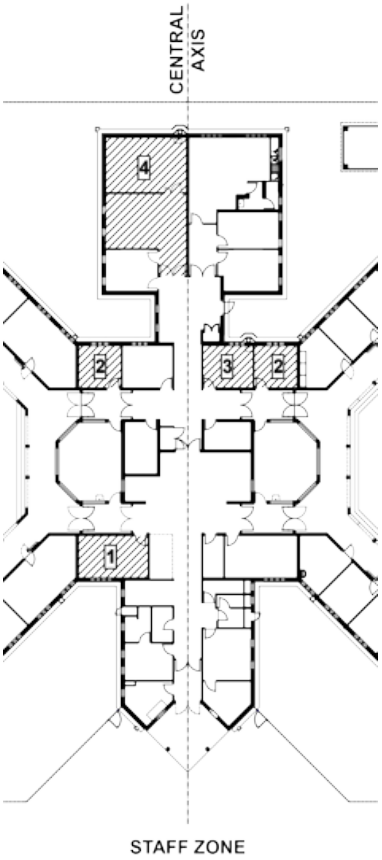


Fig. 4.32. KDHC Closed Unit - Patient Treatment Area's. Adapted Diagram from Osmond Lange Architects and Planners. Author's Own, 2016

What was noted in the psychiatric closed unit, as compared to the psychiatric phase 1 of KDHC and even wards of the Town Hill hospital, is that there are more staff allocated spaces within the building, as indicated in Fig 4.31. As per the interview data collected, the staff in the psychiatric closed Unit also appear to be more satisfied with their working environment as compared to the psychiatric phase 1 wards, where there are fewer staff designated areas. The nurses' station area (1) in Fig. 4.31, is currently used for patient assessment, administration related duties and reporting, storage of patient files, as well as for the treatment of patient for their daily medication. The nurses' station is also located in a central position and has full view of the patients in the day courtyard. What can be noted with the positioning and layout of the Nurses Station and staff zone, in comparison to the patient zones, is the aspect of hierarchies of staff versus the patient. High surveillance is achieved, however the staff are placed in a position of power as they have a known and watchful eye over the patients throughout the day.

Fig. 4.33. PCU - Nurses Station. Author's Own, 2016.

Fig. 4.33. Nurses Station. Author's Own, 2016.

Fig. 4.34. Nurses Station Window Guards. Authors' Own, 2016.

The separation of staff and patient is noted in discussions with an interviewee as he states, "*the position of the nurses' station provides for easy observation and surveillance of patients, however is limited in terms of its interaction with patients….*". The nurses' station is enclosed behind windows and a steel security mesh, which reinforces the separation and the jail-like character of the ward. The steel window guard portrays a feeling of staff protection, and a barrier to keep the patients out, and the staff in. The interviewee feels that, "*the comfort, in terms of the staff safety inside the nurses' duty room, is very good…*". As per the salutogenic theory, manageability such as ones security and comfort (Golembiewski, 2012), is very important and can result in better staff experience (UK DoH, 2013). However in the design of this particular building, one gets a sense that the security and comfort of the staff, is placed above the comfort of the patients. One may feel like one is an inmate within a prison, as opposed to a patient in a therapeutic place of rehabilitation.

Unlike that of the Town Hill hospital, the psychiatric closed unit provides more designated space for staff offices and staff room facilities (area 3 in Fig. 4.31), which can positively contribute toward staff satisfaction and easier management of the facility. The Sister's office area (2) in Fig. 4.31, is placed in close proximity to the duty station, therefore allows for easier and more efficient communication between the operational manager and nurses' on duty. Area (6) in Fig. 4.31, provides a space for an offices that is shared by the Sister and anaesthetist doctor for the electroconvulsive therapy (ECT) room, and area (7), a shared office space for the psychiatric doctor, which overlooks the observation room. The facility also provides for an overnight doctors' room (area 4 in Fig 4.31).

Over and above the office spaces, a doctor's examination room, area (1) in Fig. 4.32 and a designated counselling room, area (3) in Fig. 4.32, has been designed for within this facility, which provide private spaces for consultation.

Patient Areas

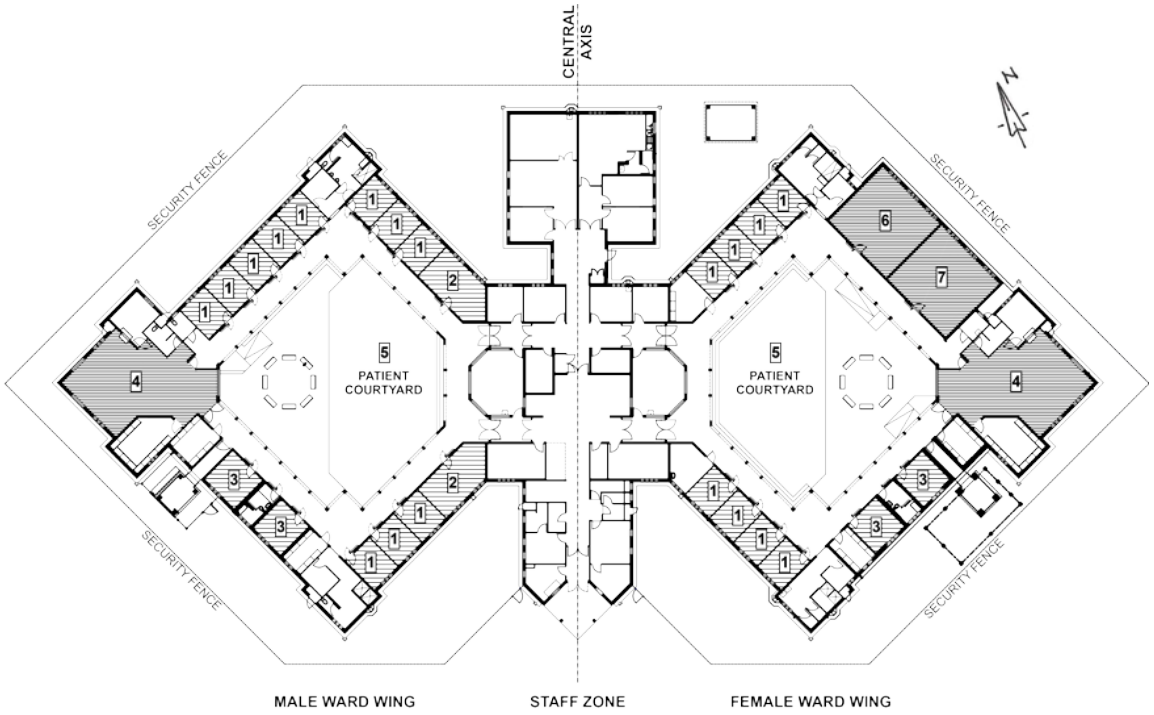


Fig. 4.35. Adapted Diagram from Osmond Lange Architects and Planners. Author's Own, 2016.

Within the psychiatric closed unit, patient wards are predominantly single bedded areas (1) in Fig 4.35, and two 3 bedded dormitories, area (2). The singled bedded ward in the psychiatric closed unit appears to be preferred, however, like that of the Town Hill hospital, interview data reveals that a variation of ward sizes should be provided. Interview B, said that "*dormitory style wards are easier to monitor, and also encourage socialisation…*". Interviewee B, further mentioned that "*the option of single bed wards should be designed, as the difficult patients can then be separated from the calmer patients…*". This helps to prevent disruptions, which can unsettle patients. Similar to Town Hill hospital, single bed wards can provide the advantage of patients' privacy, where they have their own space; however being placed on their own may increase some patients anxiety and fearfulness of being in isolation in a strange location. Ward size variation should be designed to suit individual patient needs.

Fig. 4.36. PCU - Courtyard. Author's Own, 2016.

Fig. 4.37. A PCU - Day Room. Author's Own, 2016.

Fig. 4.38. PCU - Day Room. Author's Own, 2016.

In the psychiatric closed unit, the patients spend their day either within the courtyard, area (5), or within the patient day room, (area 4, Fig 4.35) and have little to no access beyond the confines of the patient zones. The patient day room is used as the patient dining room, as well as for patient activity. The interviewee feels that the limited space available for patient access could have a negative impact on patient experience and satisfaction.

Interviewee: "*the patients often feel frustrated because it is a stressful environment… Patients have no access to the outside other than the courtyard…*".

Noted within the psychiatric closed unit at KDHC, the patients have a larger external courtyard, even though it is enclosed. Patients also have freer access between the enclosed courtyard and the patient day room, than that experienced at Town Hill hospital, who experience a more confined and restricted space. The confined and restricted space, as evident through interview data can lead to the aggravation and unsettling of patients.

At the psychiatric closed unit at KDHC however, the interviewee reported, "*the seclusion room is rarely used. It is only used as a last measure, in order to protect staff or other patients' if needed, and to calm the patient down…*". It is therefore noted that the larger patient areas and higher levels of patient autonomy during their daily routines can lead to an improved patient experience and reduce the restrictive nursing care measures.

4.3.2.2 Social Needs

Staff: Staff Rest Areas

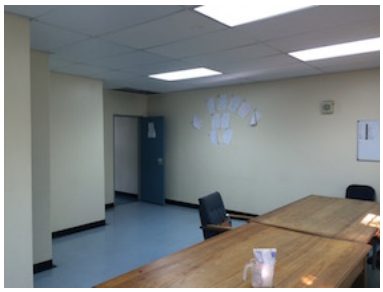


Fig. 4.39. & 4.40 PCU - Nurses Tea Room. Author's Own, 2016.

Fig. 4.41. PCU - External Bench at Entrance. Author's Own, 2016.

The psychiatric closed unit at KDHC provides a separate designated room for a staff tea room (area 5, Fig. 4.31) which is used and appreciated by the staff. The tea room however, is not designed according to a therapeutic nature, as can be seen in the clinical nature of Fig 4.39 & 4.40.

An interviewee commented on the design of the staff rest room and staff areas: "E*verything is enclosed. This can have a negative impact on the staff experience because it is a jail type environment. Access to external space or garden from the Staff Tea Room would help to improve the staff happiness and wellbeing…*"

Similar feelings of exhaustion are experienced at King Dinuzulu Hospital, as what is experienced at Town Hill, due to long hour shifts, shortage of staff and inadequate rest areas. Interview data reveals that there is a high rate of absenteeism as staff frustrations are high. The staff feel that due to their frustrations, it can have a negative impact on their delivery of patient care. It is therefore important to address the needs of the staff and to improve the staff morale.

Patient / Visitor Interaction

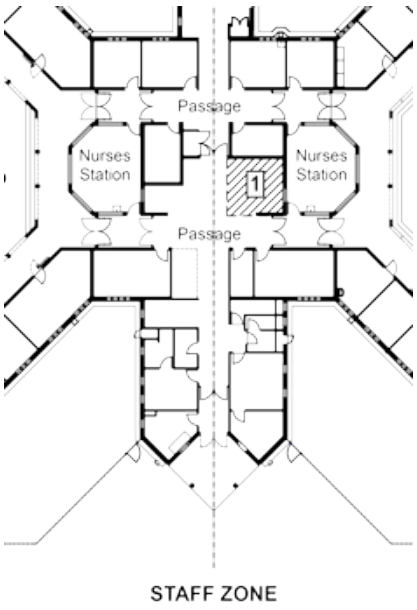


Fig. 4.42. PCU - Visitors Area. Author's Own, 2016.

The only space allocated for patient visitors at the psychiatric closed unit, is an open area (1) within the central staff zone of the building, indicated on plan in Fig 4.42.

According to an interviewee, the visitors area provided for, *"is inadequate, and lacks privacy for patient and family interaction.*" The interviewee further acknowledges that it is important to encourage family interaction as it helps to create meaning and purpose for the patient, as well as support during their healing and recovery process. If they do not have that interaction, "*they become strangers to their families…*".

Patient Interaction and Activity:

The interview data reveals that there is constant interaction between staff and patient throughout the day at the psychiatric closed unit, which occurs in the patient courtyard and day room. An interviewee stated that Patients like to get involved*. "They often help with the ward routines and help with making their beds if they are able to. It helps them to feel important and that they have a sense of control over their space…*" The interviewee refers to this close interaction, and that it helps to establish trust between between staff and patient.

Within the psychiatric closed ward, it is evident that the confined and closed-in space of the patient day area can have a negative impact on the patients'. An interviewee refers to the patients who are constantly confined in one large area, "*there is no time where patients are separated from each other.. this is problematic as patients of different mental diagnoses are mixed together. Depressed patients are placed with aggressive patients, which is conflicting and can upset patients…*" A further interviewee reiterates that patients can be traumatised by seeing other psychotic patients, which can be exacerbated when placed in confined spaces. This is a common issue as also highlighted in Town Hill hospital, and suggest the provision of large open spaces to avoid patient feelings of confinement.

Similar to that of Town Hill, the staff at the King Dinuzulu hospital psychiatric closed unit acknowledge the importance of engaging the patient in diversion activities as well as occupational therapy. The interviewee feels that occupational therapy helps to calm the patients and would like to see more accessible occupational therapy areas integrated into the patients' programme. Occupational therapy within the closed ward is currently limited due to the patients' being restricted to the ward.

4.3.2.3 Psychological Needs

Light and Ventilation

According to an interviewee, the light within the psychiatric closed unit is sufficient, however it currently relies on artificial lighting in both the central staff zone and within the patient wards. The central staff zone, especially the central passage, do not receive any natural daylighting, and the windows provided within the staff tea room are small and placed above eye level.

Within the patient wards, despite the fact that the wards are single loaded onto an open covered walkway on the internal side of the courtyard, they do not receive adequate lighting due to the small windows installed and rely on artificial lighting. The high usage of artificial lighting not only increases energy consumption, but contributes toward the clinical and institutional atmosphere.

According to interview data, natural ventilation is extremely important, due to health reasons and infection control. A psychiatric building should not rely on artificial ventilation. Adequate natural ventilation is important as heat can exaggerate aggression in patients, and can also contribute toward staff tiredness. Throughout both case study areas, it is commonly agreed that natural lighting and ventilation is imperative and can contribute toward a therapeutic environment.

Views of Nature

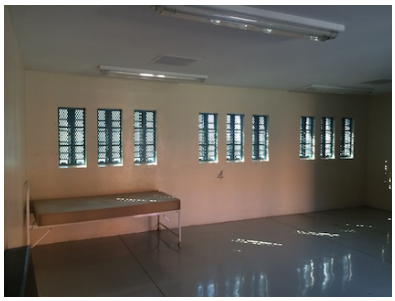
Currently in the psychiatric closed unit, upon site inspection and supported by an interviewee, there are currently no external views accessible. Like that of Town Hill hospital, the design of the building is internally orientated, and provides no connection to the outside world which is a reoccurring issue in psychiatric facilities in KwaZulu Natal.

Connections to the Outside

Similarly experienced by the Town Hill hospital, King Dinuzulu Hospital psychiatric closed unit experience very limited access to outside spaces, which reinforce the internalised and jail like character of the ward. Patients only have access to the courtyard, which is completely disconnected from the external environment, therefore reinforcing a sense of isolation. The staff feel that providing external spaces that are accessible to staff for their rest periods can improve their experience, which is supported through interviews with the staff who feel that being enclosed inside the ward contributes toward a depressing environment. The data reveals from both Town Hill and King Dinuzulu hospital, that the positive effects of accessible external space is not only beneficial to the staff but can have a positive contribution to patient experience of the building and could have positive effects on their healing process.

Aesthetics

Reiterated within King Dinuzuu Hospital, aesthetics can contribute toward the institutional nature of the psychiatric closed unit. It was noted that use of neutral colours, textures, a well maintained facility and items such as the furniture and linen can improve the aesthetic quality of the ward and contribute toward a therapeutic and homely environment. Improving the aesthetics of the ward and maintaining the facility can contribute toward a welcoming environment as opposed to a stark and clinical environment that is currently evident in the building (Fig. 4.43 & 4.45). An interviewee comments: "*I do not see how patients can recover in a jail-like environment. The ward environment is depressing and can be destructive to both staff and patient well-being.*" (June, 2016).

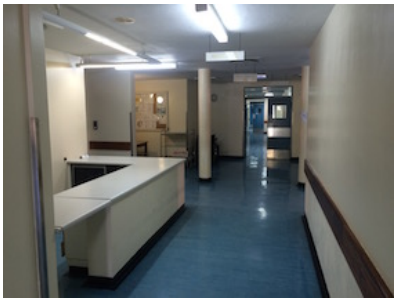


PCU - 3 Bed Dorm

Fig. 4.43. Author's Own, 2016.

PCU - Jail-like Windows

Fig. 4.44. Author's Own, 2016.



PCU - Staff Central Zone

Fig. 4.45. Author's Own, 2016.

4.4 CONCLUSION

In summary, it is clear that the two public psychiatric facilities surveyed are not conducive to optimum patient care and rehabilitation. The Town Hill psychiatric hospital is designed based on custodial care influenced by the European model of the 19th Century, therefore poses high restrictions and limitations to the psychosocial rehabilitation of its patients'. The King Dinuzulu Hospital psychiatric closed unit, although built in recent times, is representative of a highly prison-like and institutional environment. The interviews with staff and patient care-givers reveal that the highly institutional environments have negatively impacted the well-being and happiness of its users, efficiency of care delivery, and safety and security measures which are either inadequate for patient surveillance. The design of acute psychiatric facilities should encourage a home-like character with a therapeutic milieu, whilst still maintaining the functional requirements of safety and security in a manner that is not detrimental to patient dignity, privacy and control. A recurring statement that was noted, was that the staff should be consulted in the design of psychiatric inpatient facilities, in order to create an environment that is responsive to the end-user needs, and to improve the satisfaction and wellbeing of those who work within and use the facilities.

Common themes generated through the data gathered from the field research, analysis and interviews of the two public psychiatric closed units, have helped inform the guiding design principles in Chapter 6: Conclusions and Recommendations.

CHAPTER 5.0 PRECEDENT STUDIES

5.1 INTRODUCTION

Within this chapter, international precedent studies will be analysed and critiqued which will help to inform a design response of a salutogenic or therapeutic character. Three precedent studies have been selected, the Glenside Campus Redevelopment, which tried to achieve an architecture of a domestic and humanised scale in a village-type setting, as opposed to a large institutional facility. The second precedent study is briefly analysed according to its domestic character based on its materiality and transparency that allows it to connect to nature and external spaces. The third precedent study looks toward an acute psychiatric facility and how it achieved its functional needs of clear distinction between the public and private realms of the entire development (macro-scale), as well as between staff and patient zones within a micro-scale level. The third precedent study also represents an architecture that avoids an institutional design through avoidance of lengthy corridors, as one experiences the building through circulation around gardens therefore reinforcing ones connection to nature.

5.2 GLENSIDE CAMPUS REDEVELOPMENT

Architect: Specialist firm, MAAP in collaboration with a local firm in Australia Swanbury Penglase Architects.

Location: Glenside, Adelaide, Australia

Constructed: 2012

Introduction

In respect to the critique of the historical evolution discussed within this dissertation, and the proposed site (Town Hill Hospital) for the new psychiatric facility proposal: the Glenside Health Campus has been selected as a precedent study due to the manner in which it addresses its' sites context, adjacent communities as well as its acknowledgment of its heritage buildings. The Glenside Health Campus also provides a study of a psychiatric facility that has achieved a therapeutic environment with connections to nature. This design of this facility has received recognition, for its "salutogenic vision" (Swanbury Penglase. 2013).

As quoted by Weatherill, the new Glenside Health Campus provides a *"transition from an outdated asylum style of care to a modern, flexible environment which provides mental health consumers and staff with a space to promote healing and recovery"* (MAAP, 2015).

Fig. 5.1. MAAP, 2015.

Project Brief

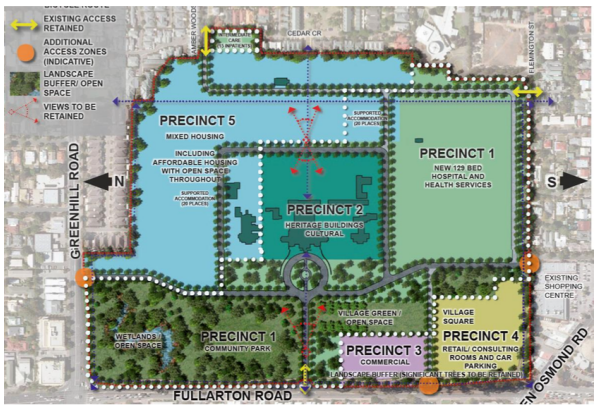


Fig. 5.2. MAAP, 2015.

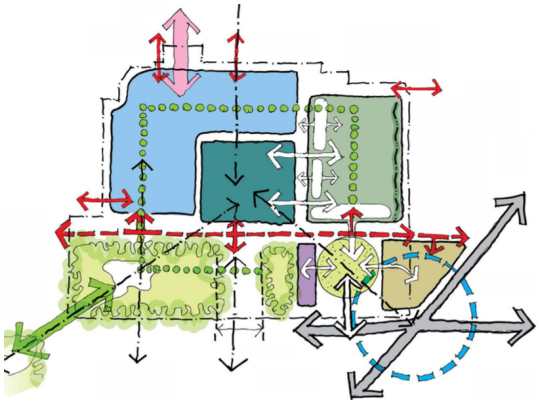


Fig. 5.3. MAAP, 2015.

The project encompasses the masterplan and design of the Glenside Health Campus. As per the Fig. 5.2, the entire site has been divided into various precincts, which respect the urban characteristic of the site location and existing buildings.

The precincts include:
Precinct 1 for the new 129 bed psychiatric inpatient unit; precinct 2, the existing heritage site where the old asylum is located and sits centrally within the campus; precinct 3, zoned for commercial; precinct 4, zoned for retail, and; precinct 5, support accommodation for the campus.

The concept of the design of the Glenside Campus was to integrate with its wider community, thus encouraging destigmatisation, which has remained through the history of mental health care (Swanbury Penglase, Date Unknown). The masterplan therefore included a village green, with the intention of creating a relationship between the mental health care precinct, the adjoining retail and, commercial precincts through a shared public space (Fig. 5.2). While the design of the master plan has established links to adjacent precincts, the landscaped village green can act as a barrier which separates them, thereby weakening it sense of integration into its greater context. The natural vegetation and trees which are preserved on the site (Fig. 5.3) within the village green, provide views which are important for a healing environment.

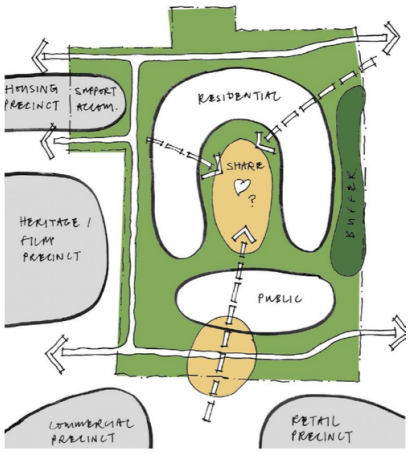


Fig. 5.4. Conceptual diagram of Precinct 1. MAAP, 2015.

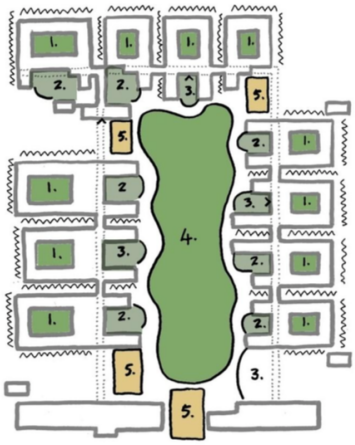


Fig. 5.5. Conceptual development of Precinct 1 MAAP, 2015.

Functional Needs:

The new inpatient facility at the Glenside Health Campus was required to provide:

Inpatient Services, such as:	Support Services, including:
Drug and Alcohol	- Shared Activity Space
Peri-natal	- Facilities Management
Acute	- Training/Education
Rehabilitation	- Offices/Administration

The spatial arrangement of the plan was designed to achieve clear designation between staff, patient and visitor areas, which is evident through the treatment of the flow from public to private space. The most public space is the shared garden (4) between the inpatient units and the connection to the public green between the commercial and retail zone (5). The building arrangement allows for a permeable site, where visitors and staff can circulate through the shared external public space. The three individual inpatient units each have their own entrance, rather than a large building with a single entry point previously seen in the earlier European and American asylums. With the design of the three individual buildings being dispersed over the site however; way-finding to each facility can be confusing to the visitor when placed in a large park setting, or for the staff when accessing the other buildings. An advantage of the U shape plan, each unit has a “front” and a “back” which creates a clear transition from public to private zones within each building. Clear separation of public and private patient zones within a psychiatric facility is important due to reason of patient privacy, as well as safety and security.

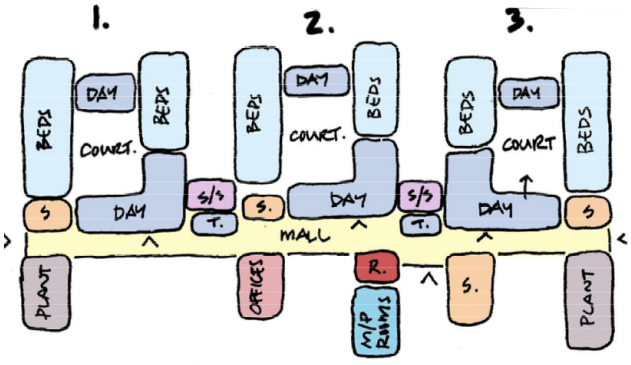


Fig. 5.6. MAAP, 2015.

Fig. 5.7. MAAP, 2015.

What is strongly avoided in the design of this facility, is an institutional like character. The cluster formation of the building relates to the community-like setting and avoids the feeling of isolation which is created through large building typologies. What is created are individual buildings of a domestic building scale which is dispersed over the site, as opposed to one large hospital institution. However, due to the structured repetition of the buildings over the site, an institutional-like character is still present. According to the IUSS guidelines, a recognised policy within KwaZulu Natal, the design of a psychiatric facility with smaller building units "can be grouped into "villages", according to the different levels of care and security requirements." (IUSS, 2014:19). The manner in which these "villages' are achieved can contribute toward the overall feel of the facility, whether institutional or domestic in nature.

The staff and office support area's become the interface between the public shared garden and access point to the inpatient facilities. These facilities sit perpendicular to the linear corridor, which allows the maximisation of views from the circulation point to the external public garden. The transparency of materials also allows for the maximisation of views along the corridor.

The inpatient wards are designed in such a way to create a therapeutic environment with spatial variety, and where the inpatient wards are arranged in a "pod" formation that define patient activity areas and secure private gardens (MAAP, 2015 & Swanbury Penglase, 2013).

A nurses' station is then allocated for each "pod" of patient wards for observation of patient areas and security. The location of the nurses stations allows for observation of patients, however are not placed in a dominant and central position, therefore preserving a patients

sense of privacy. The decentralised nurses station also avoids placing the nurses' in a dominant position, thus avoiding inequalities between patient and staff distribution.
The patient wards and day area define a central private court, for patients' access to the outdoors in a safe and secure environment. The day area then maximises views from the external court on the one side, and external community and natural vegetation on the other side.

Evident in Fig. 5.6, the patient bathrooms and service support areas are located along the central corridor and between the patients "pod" areas. This allows for easier management of the bathrooms with patient access and for easier maintenance for the staff.

Social Needs

Staff Areas

Fig. 5.8. MAAP, 2015.

The staff day room *(Fig. 5.8)* is located off the linear corridor and is open and transparent, which allows for the observation and surveillance of patients. Although this space has benefits, such as providing a pause point along the circulation path which can create opportunities for social interaction and engagement, the openness and transparency for a rest area can create lack of privacy and little chance for rest.

Patient Interaction and Activity

What cannot be seen in the planing configuration, are visitor area's. Visitor areas are an important component, which should be incorporated as it helps to create a meaningful environment for the patient if they feel supported by their family and they are able to maintain family bonds. The visitor area's should allow for more private interactions for patients with family members, in order for them to feel comfortable. The visitors lounge should however, be in a location that can be observed by the staff, as the two public hospitals surveyed have a practical threat of visitors who smuggle medication, drugs or other items to patients that could be used to cause harm. The design of each unit includes group therapy rooms of varying sizes for patient therapy of different group sizes, which can be beneficial to treating patient according to their illness and comfortability. Some patients may feel more comfortable in smaller group settings than larger group settings, therefore therapy sessions can be adjusted according to the patient needs. Patient interaction can also occur in the secure day courtyard, defined by the ward pods, as well as the patient day room.

Psychological Needs

Light and Ventilation

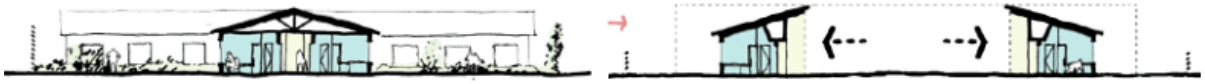


Fig. 5.9. Comparative Section. MAAP, 2015.

Fig 5.9 shows the difference between a facility which places wards on both sides of the corridor, and internalised circulation, as opposed to a facility with a single loaded corridor. The single loaded design of the Glenside facility maximises the use of natural ventilation, with its narrow floor plan and courtyard design. Each of the ward pods have maximum light penetration and cross ventilation to enhance the health and well-being of patient, and contributes toward the therapeutic character of the building. The design of the facility also makes use of passive solar warming for energy efficiency.

Views and connection to nature

Fig. 5.10. MAAP, 2015.

Fig. 5.11. Patient Courtyard. MAAP, 2015.

With the wards placed on the outermost edge of the single loaded corridor, views to the external environment are maximised. The patients therefore have a view both toward external environment, as well as to the secure landscaped day courtyard in the centre of the pods (Fig. 5.11).

The design of a village green preserves the views of the existing trees on the site, and adjacent Adelaide Parklands. The central public "shared" garden that is created, provides an opportunity for group gatherings in a natural setting, outdoor events as well as spaces for quiet contemplation and "park bench therapy" (Swanbury Penglase, 2013).

Aesthetics

Fig. 5.12 MAAP, 2015.

Fig. 5.13 MAAP, 2015.

Fig. 5.14 MAAP, 2015.

As seen in Fig. 5.12. the design of the facility is set in a park-like setting and has a domestic, human scale quality. The entrance is not intimidating to the patient, visitor or staff member like that of large institutional environments, therefore encourages a sense of positivity as one enters the building.

Although a private facility, the aesthetics of the corridors, such as the colour, and material choice contribute toward the therapeutic atmosphere of the building (Fig. 5.13), which could help to inform the quality of the space in a new design for a public psychiatric unit in KwaZulu Natal. As encouraged by the IUSS guidelines (2014), slip resistant and hard wearing floor finishes should be encouraged in patient ward areas, such as epoxy, and choice of wall finishes to allow for frequent washing and cleaning, therefore suggest epoxy painted walls in the wards.

Fig. 5.14 reveals the use of non institutional-like hospital furniture, therefore the patients' have access to comfortable spaces in a home-like environment.

5.3 DANDENONG MENTAL HEALTH FACILITY, MELBOURNE

Introduction

Architect:

Bates Smart, Whitefield McQueen and Irwin Alsop.

Completion:

Stage 1 - September 2011

Location:

135 David St, Dandenong VIC 3175, Australia

Fig. 5.15. Architecture AU, 2011.

The Dandenong Mental Health Facility provides a modern precedent that has managed to achieve a domestic character in it's scale and aesthetic, as opposed to institutional. The Jury of the National Architecture Awards (2014) describes the design brief and its exploration of ways that the conventional, institutional mental health accommodation could be reinvented to create a place that enhanced treatment and patient healing. The aim of the design was to create an environment that would be comforting and therapeutic, as well as welcoming to the patients, staff and visitors. Through the design, the architect aimed to de-stigmatise mental health architecture. (Architecture Australia, 2014).

Functional Needs

The facility has been designed to include pavilions of secure single room clusters around open courtyards. Each cluster also includes its own access to dayroom's, therapy and support area's. Each bed unit has an ensuite toilet to help promote a patients sense of privacy and control. According to the case study at the King Dinuzulu Hospital Complex toilets are not provided within patient wards, therefore the patient is required to attract the attention of the nurse in order to be escorted to the toilets during the evenings when they are locked within their ward. This has been done for reasons of patient safety due to risk of harm; however can be detrimental to a patients sense of control. At the Town Hill hospital staff sentiments of a toilet facility within wards differ, and an ensuite toilet has been included in all dormitories. The staff feel that is imperative that patients' have access to a toilet.

The courtyard design was intended to create a calm, safe and therapeutic environment, which allows for supervision and observation without unnecessary intervention.

Social Needs

The design of the facility incorporated outdoor and activity area's in order to encourage social interaction. Evident in Fig. 5.16 and 5.17, one can see how the design of corridors has also been used as a space to encourage social interactions by means of seated alcoves, when one moves through the building. One can also see the texture through the extensive use of ironbark, which adds warmth and humanises the internal character of the ward.

Fig. 5.16. Bennetts, 2014.

Fig. 5.17. Napier, 2015.

Psychological Needs

This precedent study has particularly been chosen as it addresses ones psychological needs of promoting well-being and aims to lift the spirits of the patients. The design incorporates a strong link to nature and secure external spaces both visually and physically throughout the design through the use of large windows, thereby maximising views, natural light and ventilation. The use of extensive windows are innovative in the design, however; this is unconventional in acute psychiatric facilities, particularly within the KwaZulu Natal context and policies such as the IUSS, due to the risk of patient harm and absconding.

Fig. 5.18. Napier, 2015.

Fig. 5.19. Gollings, 2014.

5.4 ACUTE MENTAL HEALTH FACILITY, CITY HOSPITAL, BELFAST

Architect: RPP Architects, Richard Murphy Architects, Devereux Architects and AECOM
Client: Belfast NHS trust
Completion: Under construction - expected completion 2016
Location: Belfast City Hospital, Belfast, UK

Introduction

This precedent includes an analysis of the spatial layout of the acute mental health care facility, according to its functioning, adjacencies of zones including; patient staff and visitor areas. The facility shows a clear progression of the public, to semi-public to private patient zones which is imperative in a design of an acute inpatient facility.

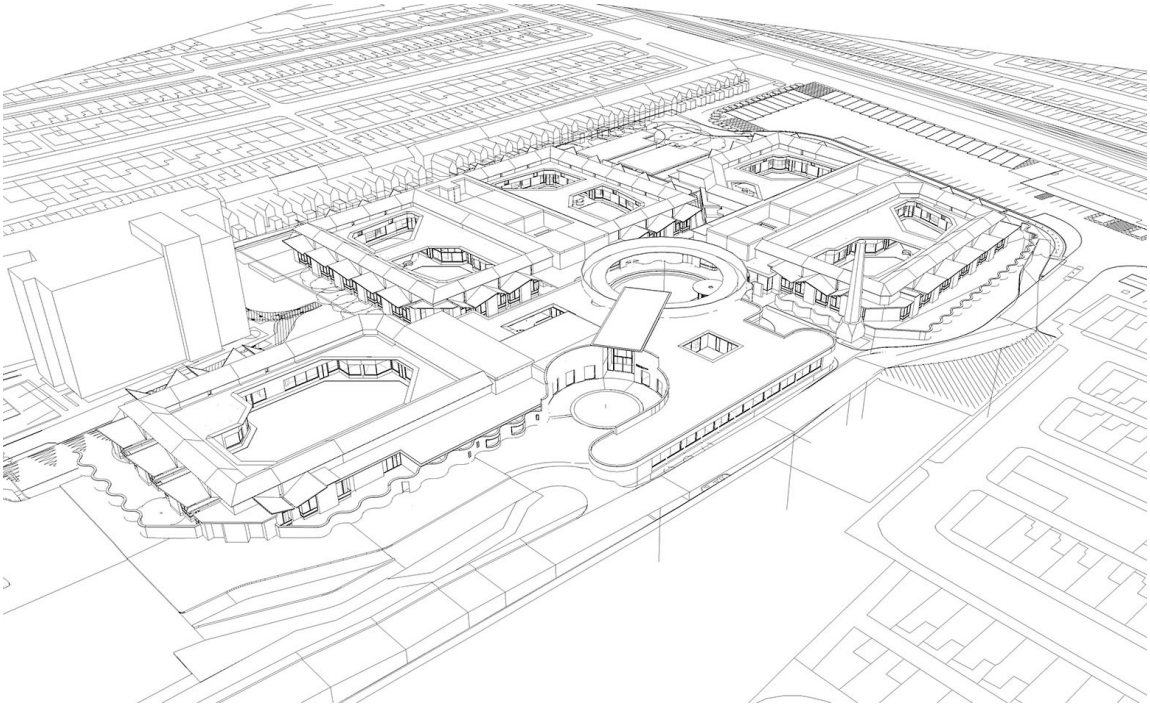


Fig. 5.20. RPP Architects, 2015.

The architects were appointed to design an 80-bed acute mental health care facility at the City Hospital in Belfast. As described by Sturgeon (2016), the aim of the design was to create a positive space for healing, and where patients' experience normalisation.

Functional Needs

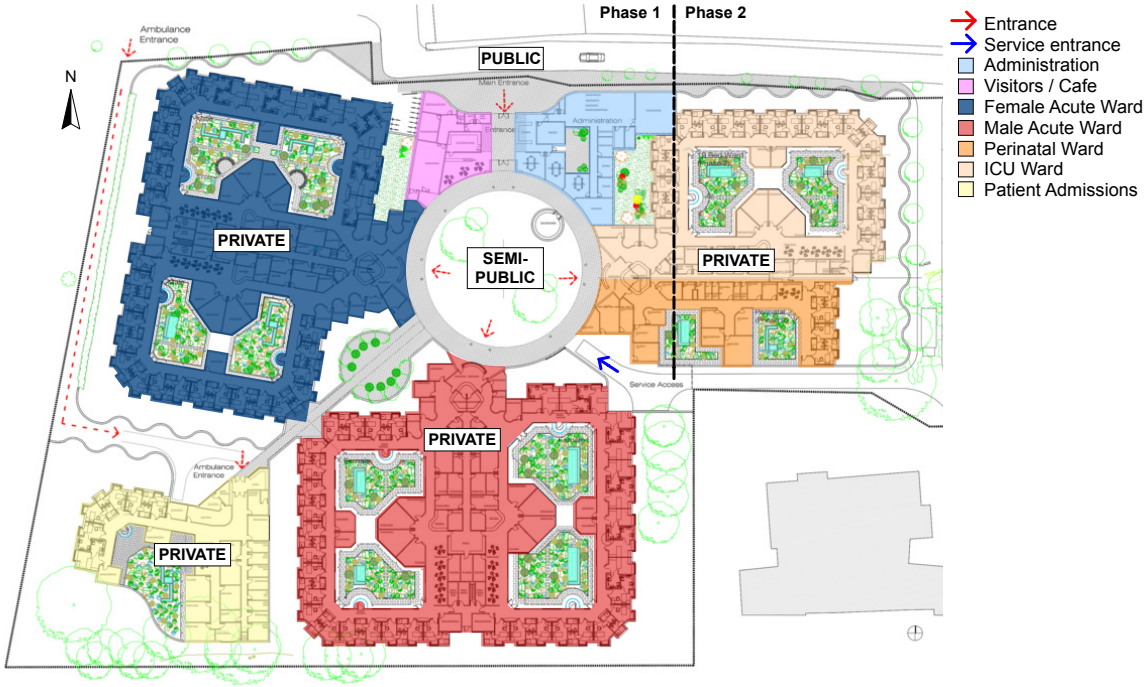


Fig. 5.21. Adapted Concept Plan - Richard Murphy Architects. Author's own, 2016.

The architects recognised that garden features were core to the healing process, therefore courtyard design became the core concept. The architects envisioned the users of the facility; including patient, staff and visitor to experience the building as a journey between gardens, as opposed to long and dull corridors (a common experience within institutional environments). (Sturgeon, 2016). The master plan of the building therefore revolves around a progression of space from public to private zones. The concept plan of the design incorporates a transition from a public, main entrance on the north side of the site, into a semi-public zone which serves as the heart of the facility, and which connects all the private ward zones through means of a covered walkway that envelopes a landscaped garden with planting and seating for visitor and staff use. At the main entrance, the design has incorporated a main administration zone that is shared for all units, as well as a cafe for use of staff and visitor alike.

The transition form the semi-public courtyard into each private ward zone is met by one security controlled entry point. The wards provided include one cluster of 40 bed acute females, one cluster of a 40-bed male acute ward, a private admission unit which allows for a discreet access point, located on the south-west corner of the site, for distressed patients. Phase 2 of the design allows for future expansion of a perinatal ward, and a patients' intensive care unit.

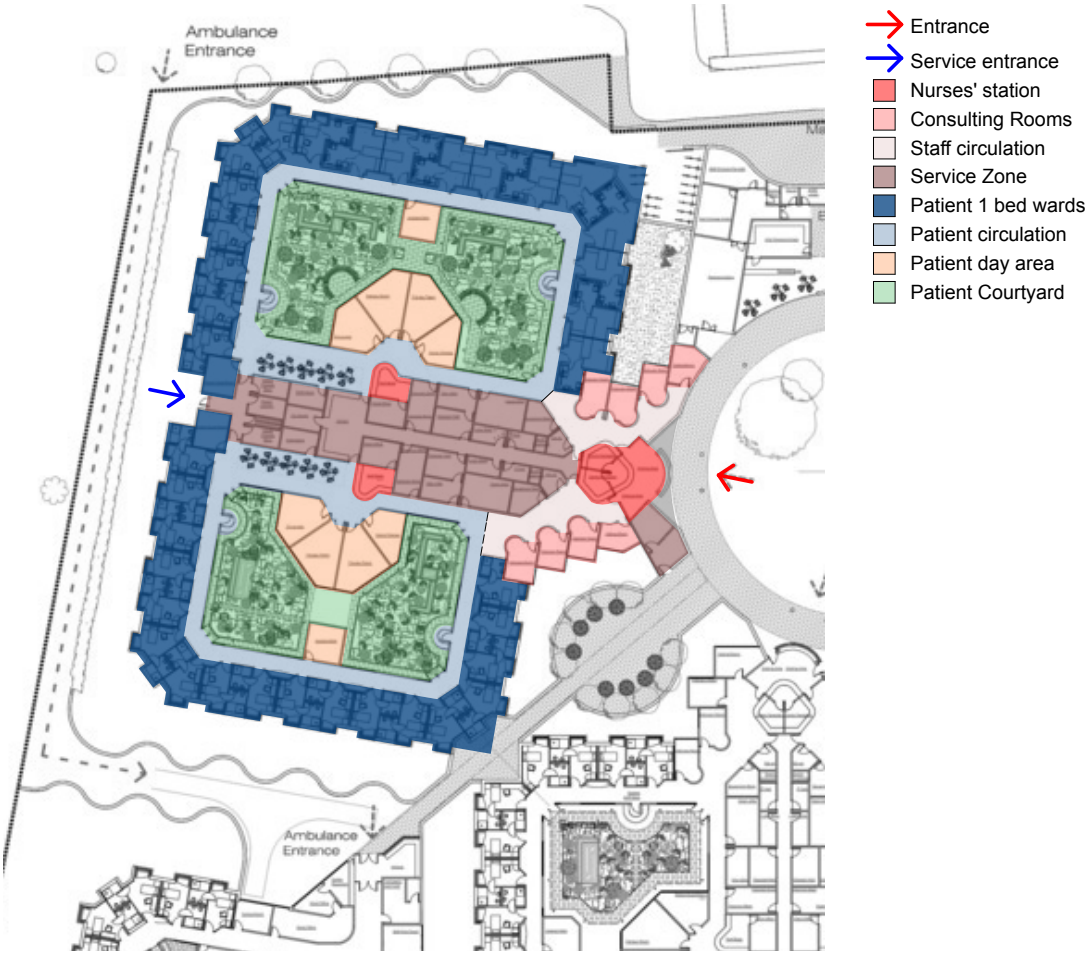


Fig. 5.22. Adapted Concept Plan - Richard Murphy Architects. Author's own, 2016.

The design of the ward pod allows for a shared service core which is accessible from the entrance and security controlled zone. This is beneficial, as it creates a clear designation between patient and staff zones, and allows service staff to circulate behind the scenes without being seen by patients'. Doctors consultation rooms are then accessible to both the patient ward zone and the circulation from within the service core. A nurses' station is provided per 20-bed cluster, and centrally located within each ward, however not in a predominant and overpowering position where patients' can feel continually watched, and staff continually monitored. The nurses' station however, achieves visual abilities of the patient day area as well as the patient courtyard where the patients spend the majority of their time. The patient ward wing is single loaded, which is ideal for achieving maximum natural ventilation through cross-ventilation, as well as maximum natural lighting capability. The single loaded corridor also allows for patients' continuous views to external spaces, which is important for a therapeutic environment; the internal secure garden courtyard, and external views from each ward unit.

Psychological Needs

All internal garden courtyards within patient ward clusters, are highly visible from inside through the construction of fully glazed walls of the circulation corridor which avoids the use of dark, cold corridors that are institutional. The architect also incorporates water features which has a calming and therapeutic effect, within courtyard spaces in order to bring sound and movement to each garden. Each bedroom unit overlooks a private garden, through the incorporation of a window seat, that both provides a positive distraction for the patient, as well as an opportunity for "*patients quiet moments of rest and relaxation*" (Sturgeon, 2016). Designing for a window seat is beneficial in that it provides patients' seating within their ward, without having to install furniture that could be a potential risk for danger or harm to the patient. Allowing for comforts, such as seating, within ward creates a homely atmosphere, that is more a bedroom than an inpatient cell (as previously seen through research of asylums and case studies).

Social Needs

Patients' social needs are addressed through the use of external space within the private ward courtyard. The gardens include open lawns, seating zones and outdoor therapy spaces, which encourage social interaction between patients' and allows for external activity space that is safe and secure. Patients' could also have access to the semi-private courtyard (Fig. 5.21) for therapy sessions and family visitation, who are accompanied by staff. The staff social needs are considered through inclusion of external courtyard space (the semi-public courtyard), as well as the provision of a cafe. Previously noted, staff at the respective case studies do not have space to relax, have lunch, or socialise with other staff members during their rest periods, due to the lack of suitable space provision. Inclusion of a cafe would help to address staff needs and satisfaction.

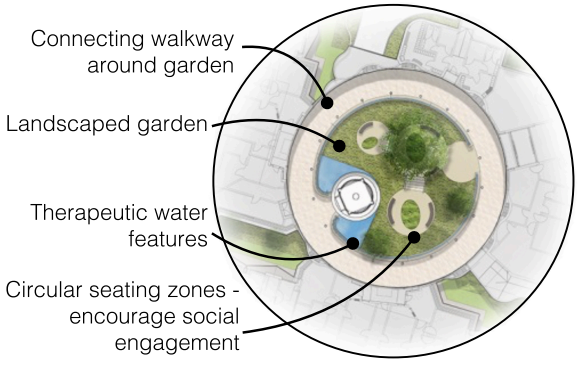


Fig. 5.23. Semi-public Courtyard
Adapted Plan Richard Murphy Architects.
Author's own, 2016.

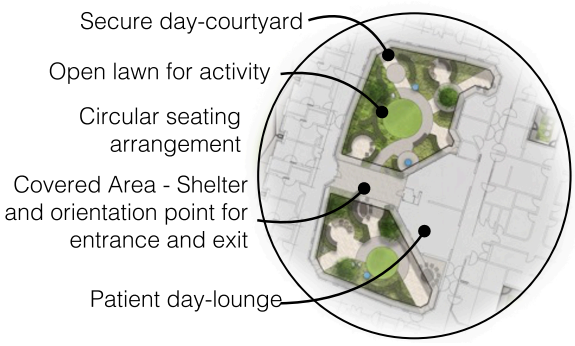


Fig. 5.24. Patient Courtyard
Adapted Plan Richard Murphy Architects.
Author's own, 2016.

5.1 CONCLUSION

In conclusion to the precedent study analysis, key rationales can be learnt which can inform a design response of a salutogenic or therapeutic character, and which considers the functional needs of an acute psychiatric facility.

Macro level - Village design (cottage plan)

The village setting can be compared to the 20th Century cottage plan layout, however, as seen in the setting of the Glenside Campus Redevelopment, individual ward buildings are arranged around a park-like setting as opposed to a centralised administration block. The park like setting reinforces ones connection to nature, and a domestic character in scale.

Micro Level - Courtyard design

All three precedent studies encourage courtyard design, as it introduces nature into the building and provides both a therapeutic character as well as allows for the maximisation of natural light and ventilation through a single loaded corridor. The courtyard design provides safe and secure external spaces, with minimised risk of patient absconding, and where courtyards are defined by the architecture as opposed to fences (a symbol of incarceration and being caged-in). A courtyard can also act as a connector. A connector of space within the facility, a connector of buildings within the village setting, as well as a connector of people (a social space in a natural setting or between the different ward zones).

Aesthetics

Materiality plays an important role in creating a home-like and de-institutionalised character of the ward design. Use of colour, as seen in the Glenside campus, or use of material and texture of wood in the Dandenong mental health facility, are indicative of an architecture that is warm, comfortable and homely, as opposed to the stark, cold and hard environment of institutional designs.

Functionality

The clear organisation of the staff and patient zones within the mental health facility, Belfast, provides a good example of how one can achieve an environment that is responsive to the staff requirements for efficiency of care delivery as well as surveillance ability that is not obtrusive to the patient. Nurses stations are local to ward zones, however not placed in a predominant focal point. Clear organisation of ward functions also allows for an environment that is easier to manage, security and safety of all users.

CHAPTER 6.0 CONCLUSION AND RECOMMENDATIONS

6.1. Introduction

The research carried out in the literature review, case studies and qualitative research attempted to address the objectives of this dissertation, which was established based on the identified research problem:

The built environment of current psychiatric facilities for acute, post 72-hour observation patients within KwaZulu Natal, still resemble characteristics of the earlier asylum, which drew criticism for the nature of the environment where mentally ill patients received care. The current facilities are outdated, falling into disrepair from lack of maintenance, and are not ideal for the delivery of patient care and rehabilitation (Burns, 2010).

There is a need for the current design model for acute psychiatric facilities within KwaZulu Natal to be assessed based on the built environment and how these facilities can hinder or promote care for patients, and how the working environment can be improved for the staff for their well-being and optimum delivery of care.

The purpose of this dissertation, was therefore to understand staff experiences and expectations of the physical environment of psychiatric hospitals, in order to create an optimum environment for both staff and patient well-being and service delivery. The conceptual framework was established based on the ideas of the salutogenic theory and therapeutic therapeutic environment theory, which assist in promoting health and well-being through design interventions that create a less stressful environment, such as connections to nature, natural light and ventilation, a place of safety and healing, as opposed to being reliant on chemical treatment alone while preserving a clinically safe environment for staff, patients and visitors who are involuntarily detained legally by virtue of their state of disorganisation and or danger to self or others (pathogenic). These theories were categorised into core themes (functional, social and psychological needs) in order to assess the built environment of past and existing facilities, and their impact on the end-user experience and how their successes and failures can be used to influence future design.

6.2. Conclusion

In Conclusion to the dissertation research, the main aims and objectives have assisted in providing valuable insight into the design, evolution and user experience of the built form of Psychiatric Facilities, and their influences upon current psychiatric closed facilities within KwaZulu Natal.

Through the literature research, it was evident that the institutional style of psychiatric facilities, previously referred to as asylums, dominated the style of the built form along with its inhumane treatment methods of its "lunatic" inmates, contributed toward the prevailing stigma and prison-like style of architecture that is still present today. The historical and case study research of Town Hill hospital, established in the 1930's and influenced by colonial architects at the time, still reflect the custodial orientation, which was built purely for the lodging of patients, and is not conducive to the therapeutic and psycho-social rehabilitation ideas of the Hospital today. What has resulted is the Staff team having to "make do" and adapt to the best of their ability for the care of patients, in the facilities they have available. Although the psychiatric closed unit of King Dinuzulu Hospital has been built during a recent period, the facility still resembles a highly institutional and prison-like environment. Evident in both of the case studies, the facilities used are restrictive to the best possible delivery of care that the staff can provide to its patients. The institutional and non-therapeutic character, as well as poorly maintained facilities, poor planning and lack of adequate provision of internal and external space, has contributed toward a stressful, and dull environment that has negatively impacted staff satisfaction, and both staff and patient well-being. The facilities have also noted high staff absenteeism, due to a lack of personnel and stressful working conditions, can negatively impact care of patients and patient experience. Designing for a therapeutic, supportive environment/purpose can promote significant advantages within a healthcare environment. A therapeutic environment can "help to reduce stress and anxiety for patients; improve patient satisfaction; benefit staff, through reducing workplace stress, improved staff satisfaction, possibility of reduced staff turnover" (Ulrich. 2012:56).

The successes and failures learnt through the evolution of the built form of the asylum, to the staff interviews and analysis of the chosen case studies of current psychiatric facilities in KZN, have helped inform recommendations for future design of psychiatric inpatient facilities that is responsive to the staff expectations of the environment, and the best possible care and rehabilitation of its patients'.

6.3. Recommendations and Guiding Design Principles

Through literature research of historical asylums, case study analysis and interview data from the two public sector psychiatric closed units in KwaZulu Natal, and international precedent study of therapeutic environments from private sector facilities, the following recommendations have been noted:

Functional Needs

- Safety and security

Achieving an environment which is safe and secure for both patient and staff is an integral component of an acute psychiatric facility design. Safety and security can be enhanced through careful design considerations, such as clear distinction between staff, patient and visitor zones, placement of nurses station and secure outdoor courtyards which minimise risk of absconding; maximum surveillance of patient zones; as well as installations of fittings and fixtures that are vandal resistant and that cannot be used as a weapon or a source of self-harm. Surveillance through high staff presence should be encouraged, as opposed to being reliant on sight-lines from nurses station alone, which can be achieved through strategic seating positions and high visibility between staff circulation areas and patient zones. In Fig. 6.1. one can see the nurses' station creates a focal point within the ward zone, where all views are directed away from nurses' station or towards (oppositional). This is unfavourable as the patients' feel continuously observed, and staff monitored. Fig. 6.2. places the nurses' station in a central location ideal for surveillance purposes, however does not form a dominant focal point.

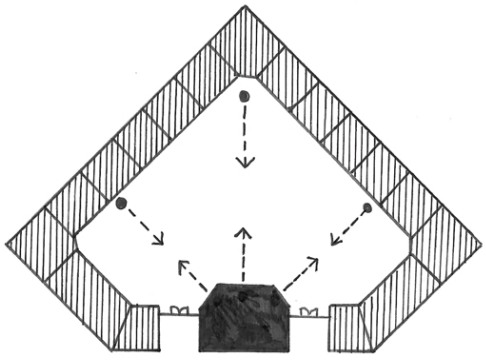


Fig. 6.1. Nurses' station - Focal Point Evident at King Dinuzulu Hospital. Author's own, 2016.

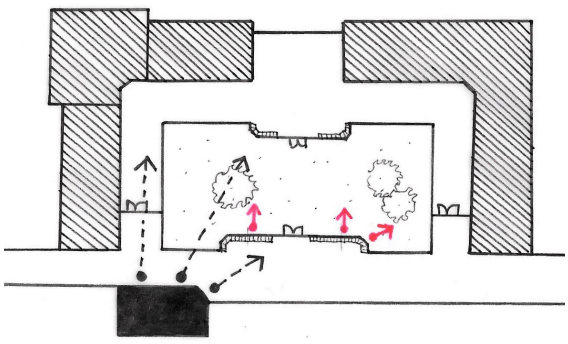


Fig. 6.2. Nurses' station - Central point but not a focal point. Author's own, 2016.

- De-institutionalisation / Home-like environments

The design of the facility should avoid an institutional design and atmosphere, which can be achieved through human-scaled design (Fig. 6.3 - smaller ward buildings in a village-type setting), and a therapeutic environment (refer psychological needs). The design should also avoid inefficient and lengthy corridors which are cold and dark, evident in case study research (Fig. 6.4). Dark corridors can be avoided through courtyard design and single loaded corridors, which allows for light penetration. The design of pause points (seating areas) can also be used to break lengthy corridors and can act as points for social gathering.

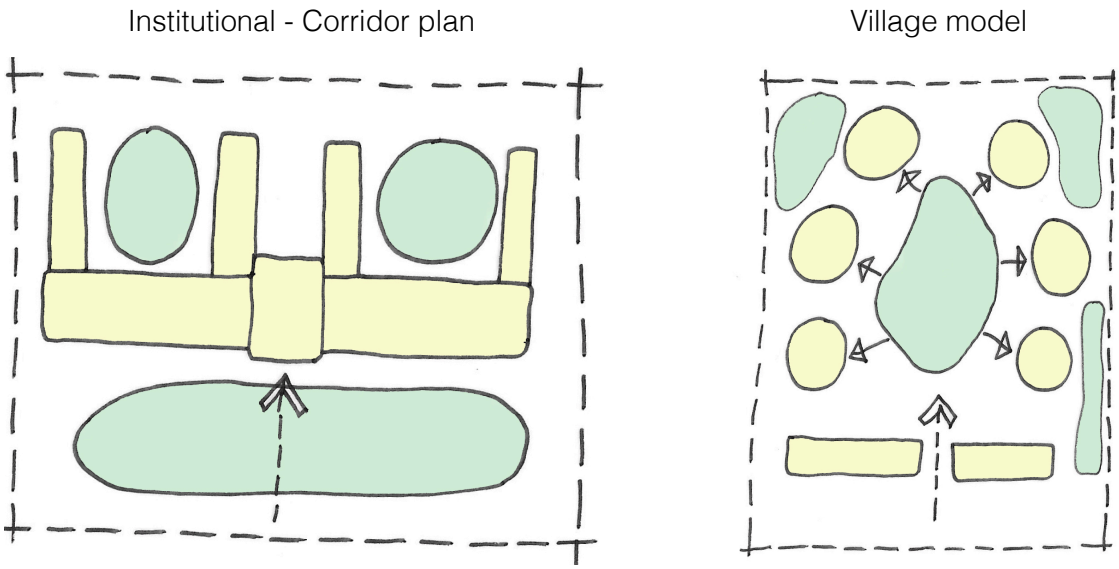


Fig. 6.3. Adapted diagram Swanbury Penglase, 2013. Corridor plan vs village model. Author's own, 2016.

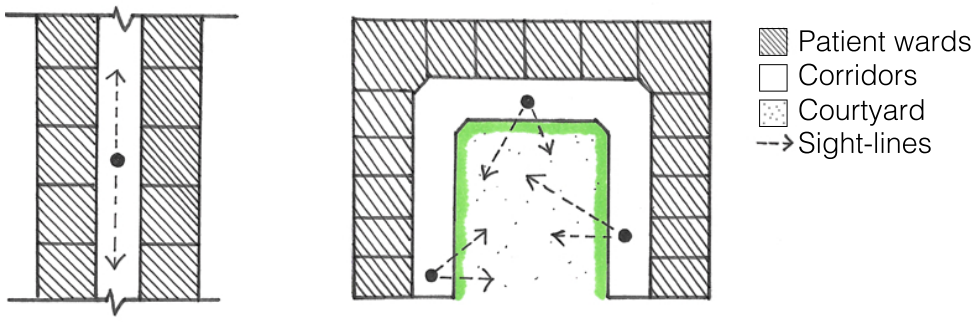


Fig. 6.4. Corridor plan vs courtyard plan. Author's own, 2016.

- Consultation rooms

Consulting rooms, treatments rooms, therapy rooms and doctors' rooms are to have adequate spaces and sound insulation to prevent loud and confidential conversation from travelling to others areas. Rooms that are small in size pose a risk to staff safety due to being confined in a restrictive space if the patient is aggressive.

- Patient Wards

All patient bed areas are to be located on the ground floor so that patients can have direct access to a secure outdoor area. As supported by the IUSS N and S task group A: 05 (2014), stairs can be problematic with medicated patients, therefore are to be avoided in patient zones. Patient Wards to allow for various bed numbers, for example single bed and two-bedded wards, allowing a patient to be placed in a ward according to their individual needs. Limiting bed numbers per ward to two patients' can help to preserve a patients' sense of privacy and control, as opposed to large six-bedded dormitories. Patient wards should also be designed to be home-like as opposed to a patient cell or hospital room which is institutional. Current wards generally have bolted down beds only and no area for seating which enhances the hard / cold environment. Provision of built-in window seats (Fig. 6.5) provide patients choice within their rooms for rest and relaxation which do not pose a risk for harm. Glazing would require to be security and tamper proof, such as that of the "Safe vent window". Patient wards should also include an ensuite toilet, as encouraged in the IUSS N and S task group A:05 (2014).

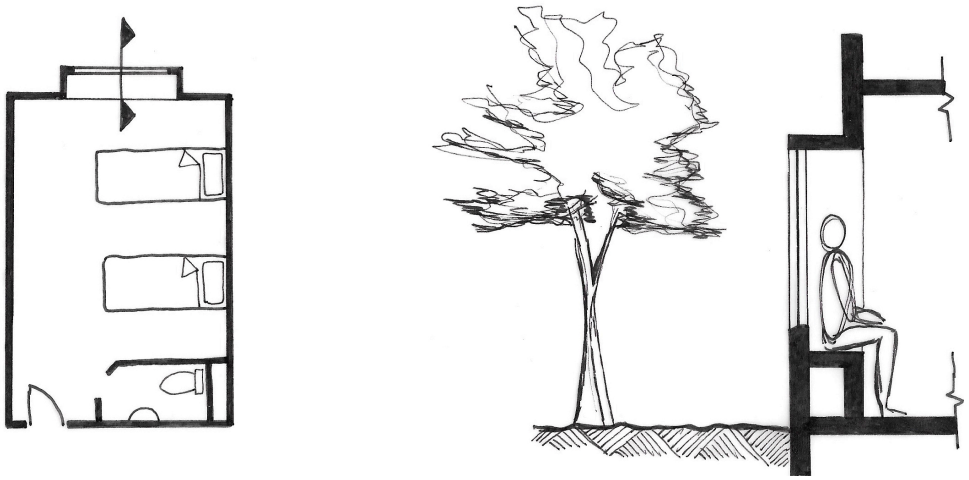


Fig. 6.5. Two-bedded ward and window seat. Author's own, 2016.

Not to scale.

- Patient Courtyards

There is a need in psychiatric hospitals, to provide large open spaces during the day which do not make a patient feel confined and restricted. Access to outside space for activity and fresh air is important for a patients healing process. External spaces should be created in the form of secure landscaped courtyards, which can be easily observed by the staff. According to the IUSS guidelines, careful choice of landscaping, trees and shrubbery should be considered that is low maintenance and will not over time become a safety or security risk (IUSS N and S task group A:05, 2014:18).

Patient courtyards should be an integral component to the design of the facility, as opposed to a added on courtyard enclosed by a fence (Evident in Town Hill Psychiatric Hospital). Fences both create a feeling of being caged in, as well as provides a security risk for patient absconding. As seen in Fig. 6.6, the patient courtyard is defined by the architecture and variation of space is created through landscaping, tall trees, and strategic placement of seating areas for gathering.

Fig. 6.6. Gold Coast University Hospital, Mental health Unit, Melbourne. Photograph by Christopher Frederick Jones. Hassel, 2014.

Social Needs

- Inclusion of family / visitor areas

It is important to reinforce social bonds between patient and family, as they often experience broken ties. Patients are often admitted by family members against their will and can create a sense of resentment and anger. Family involvement is important for patient rehabilitation and reintegration of patient back into their community with a strong support base. The design of the psychiatric facility should therefore provide a space for patient and visitor interaction. This space should be located in close proximity to staff observation for both safety and security, as well as the risk of visitors smuggling drugs, medication or other items to the patient; a problem currently experienced in the acute wards within KwaZulu Natal.

- Opportunities for social exchange

Strategic design of corridors, such as pause points and seating can encourage social interaction (Fig. 6.7). This can be achievable in staff and public zones. Circular seating layouts within patient day rooms and day courtyard can encourage interaction between patients', whereas seating placed in a line avoids socialisation (Fig. 6.8).

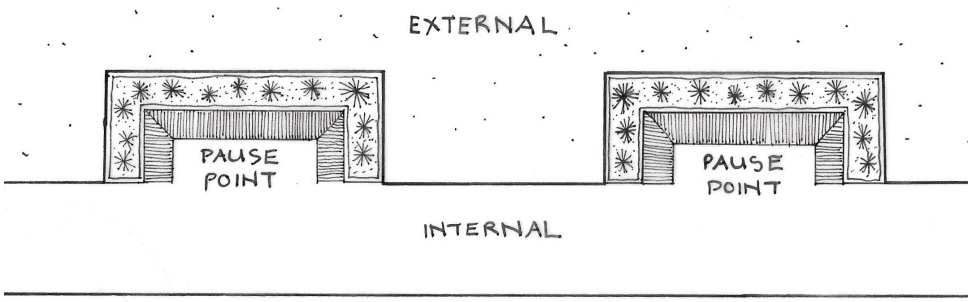


Fig. 6.7. Pause points. Author's own, 2016.

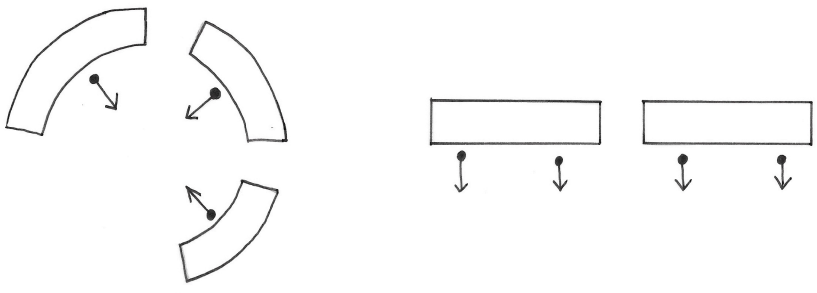


Fig. 6.8. Seating arrangements. Author's own, 2016.

- Staff rest areas

The design should include suitable staff rest areas with direct access to external gardens, which can offer a sense of respite during their shifts. Staff rest areas to be located away from patient zones as to avoid disturbances and noise, however must still be easily accessible in case of emergency. Allowing staff the opportunity to have time out can help them to be more satisfied and more enthusiastic during their shifts, and can therefore have positive effects on patient care.

- Patient activity

Through diversion activity, such as song and dance, and rehabilitation activities such as occupational therapy. The design of the facility should incorporate group therapy rooms, external areas where patients' can exercise in a secure environment, as well as internal activity space such as the patient day room.

Fig. 6.9. The Canberra Hospital - Mental Health. IQON, 2016.

Psychological Needs

- Therapeutic design

Therapeutic design can be achieved through aesthetics, natural light and ventilation, noise reduction and connections to nature.

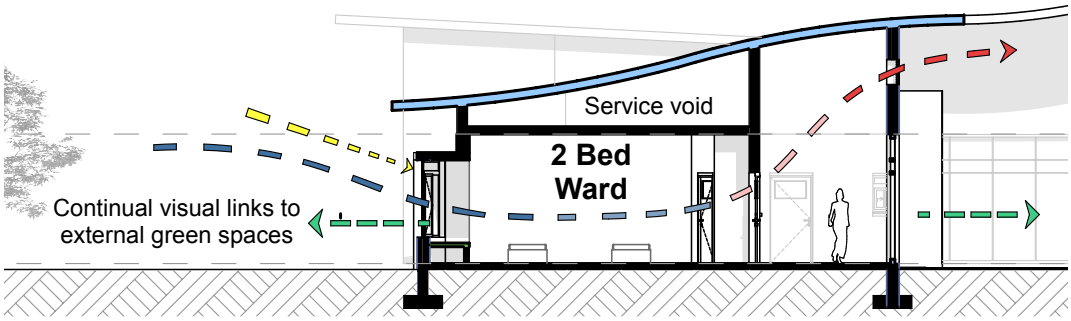


Fig. 6.10. Single loaded corridors - cross-ventilation & maximisation of natural light. Author's own, 2016.

- Maximisation of natural light and ventilation

Natural light contributes toward a bright and therapeutic environment as opposed to dull and depressing which is evident in institutional facilities. Natural lighting also provides the benefit of lower energy consumption.

Natural ventilation should be maximised for infection control and a therapeutic milieu. This is supported by the IUSS guidelines, which states that "air-conditioning in general ward areas should be discouraged" (IUSS N and S task group A:05, 2014:26). Air-management however; must be used in clinical; areas such as medicine stores, as well as the patient seclusion rooms. Maximisation of natural lighting and ventilation can be achieved through single loaded corridors, which allow for light penetration and cross ventilation (Fig. 6.10).

Within in the context of KwaZulu Natal, large areas of glazing and windows can only be achievable in area's of high staff presence, staff and visitor zones, and should have tamper proof glazing such as polycarbonate. Windows within the patient zones, should consider the risk of patient absconding, and smuggling of drugs and other items from

outside visitors. According to the IUSS window opening sections should be shielded with a 'see-through vandal-resistant mesh that is able to withstand abusive user behaviour" (IUSS N and S task group A:05, 2014:20).

- Positive distractions

Positive distractions are important as it helps to avoid a patient dwelling on their circumstance and thoughts of ideation. Positive distraction can be achieved through the following:

- Nature: The design should incorporate a strong link, both visually and physically, between the external and internal environment. This can be achieved through transparency where the facility can allow, and courtyard architecture (Fig. 6.10).

- Aesthetics: Through application of non-institutional colours, textures, furniture and murals of natural settings.

Fig. 6.11. Visual links to external spaces. Sell, J, 2013.

Fig. 6.12. Therapy Lounges - non-institutional furniture. DoH UK, 2013.

Whilst it is important to create a humane, and salutogenic environment, it is important that the design of the psychiatric closed facility for acutely mentally ill patients' preserves safety and security. The design of the psychiatric closed facility is required to find a balance of functional, social and psychological needs which does not jeopardise the staff, patients' and visitors safety. The recommendations as set out above, will be used to inform a holistic design proposal for an acute psychiatric inpatient facility within the public sector of KwaZulu Natal.

PART TWO

CHAPTER 7.0 DESIGN REPORT

7.1 PROJECT DESCRIPTION

7.1.1 Design Primer

KEY THEORIES :

- Theory of Salutogenesis
- Therapeutic Design Theory

WHO :

- STAFF
- Optimum environment for delivery of patient care and rehabilitation
- Efficiency, organisation and well-being.
- PATIENT - High risk, Adult Patients.
- VISITOR - Patient family and friends.

WHY :

- Institutional and Prison-like environments;
- Design supports custodial care;
- Not conducive to optimum patient care and rehabilitation;
- Poor Quality of Life and Patient and Staff wellbeing.

HOW :

- Need to shift perceptions of a place that one wants to escape, place of fear, stigma and angst, to a place of safety, healing and rehabilitation.

- To be achieved through a therapeutic and home-like environment.

➡ Positive Distractions to prevent boredom and poor behaviour, through activity and connections to nature.

➡ By encouraging meaningful relationships, thereby reducing a patients sense of disconnection and broken family ties.

➡ An environment that reinforces well-being and happiness of its users.

7.1.2 The Client

health

Department:
Health
PROVINCE OF KWAZULU-NATAL

Department of Health, KwaZulu Natal (DoH KZN).

7.1.3 The Clients Statement

The DoH (KZN), have conducted an analysis of the existing Town Hill Psychiatric Hospital in Pietermaritzburg, and have noted the following issues currently being experienced:

- The Town Hill hospital was constructed in 1975 and was designed according to the European model of the asylum (The corridor Plan) and adopted the "moral management" treatment ideas. The main asylum building was therefore located within a vast natural green setting as it was thought that nature had a positive effect on patient rehabilitation. Individual ward buildings were subsequently constructed around the main asylum building in a cottage plan fashion. These individual ward buildings were designed in a manner that supported custodial care, which provided lodging for patients and which does not place any importance on rehabilitation.

- Current rehabilitation practices adopted by the staff at Town Hill hospital incorporate psych-social rehabilitation, which place a high priority on holistic rehabilitation of patients from their rehabilitation programme to re-integration back into society. Due to the custodial design of the buildings that are still used today, the ward environment is highly restrictive and provides limitations to the optimum care and rehabilitation of their patients.

- The current ward buildings are outdated, poorly maintained and experience under-staffed conditions.

- The ward buildings are internally orientated in design and do not engage with the external context and natural green-setting of where they are located. The resultant buildings are dark, dull and depressing, have limited windows for views and natural

lighting, as well as poor natural ventilation. The wards do not provide an ideal environment for healing and therapeutic care.

- The existing wards provide limited space for the staff care and treatment of patients, inadequate therapy areas that are suitable for therapy sessions with the multi-disciplinary staff team. The wards have poor surveillance ability for safety and security due to the planning configuration and location of nurses stations.

- Inadequate external garden space for patients that are secure and which minimise the risk of patient absconding.

- Difficulties in carrying out the best possible care to patients due to the existing environment, under-staffed wards, as well as inadequate space provision for staff rest during their 12-hour shifts, have resulted in low staff morale, staff tiredness, poor staff satisfaction and high absenteeism.

7.1.4 The Clients Brief

The DoH (KZN) have implemented a new contract in order to address the above listed issues being experienced at Town Hill hospital. The design should include a new 40-bed male acute unit, a new 40-bed female acute unit, a shared administration block and cafe, and a occupational therapy facility which is shared between the male and female wards. Due to the existing closed wards being removed from the current facility and moved to the new on-site location, a master plan proposal is required which addresses the function of the existing ward, and improvement of the complex in its entirety.

The new shared administration block and cafe should include the following listed criteria:

- A minimum of two stories, thereby addressing the scale of the existing main administration block of Town Hill hospital which is located adjacent the western edge of the site.
- A main entrance, reception and waiting area for visitors and students.
- Accommodation for seminars and teaching spaces as Town Hill hospital is a teaching hospital for students within the field.
- Shared administration offices for the acute male and female ward

- Office location for members of the multi-disciplinary team. A minimum of 5 doctors offices should be provided.
- A cafe with provision of a servery as well as indoor and outdoor seating area.
- An overnight doctors facility to be located on the first floor of the building.

The new psychiatric closed wards should include the following listed criteria:

- A new psychiatric facility for acute male and acute female in-patients. Individual ward units which allow for gender separation are required for male and female patients, which is inline with the IUSS N and S task group A:05 recommendations.
- The design of the facility is to allow for the accommodation of 40 female acute patients beds, and 40 male acute patients beds.
- Both psychiatric wards to be of a single storey design. Multiple stories can be provide difficulties to patients who are highly medicated, and can be a source of potential danger or harm.
- Each ward to incorporate a therapeutic design, with the maximisation of natural light and ventilation. Nature is important for a therapeutic setting, and a less stressful environment for patient healing and staff satisfaction. Both visual and physical access to the gardens of Town Hill hospital is to therefore be incorporated in the design.
- Patients should have direct and easy access to secure external courtyards in order to enhance a therapeutic and healing environment.
- The design should encourage courtyard architecture that allows for visual connections to nature, in order to create a bright and cheerful environment. The design should therefore avoid lengthy and inefficient corridors, which can also be problematic for the staff surveillance of patients.
- Each ward is to provide space for patient family and visitors, as it is important to encourage family participation in the patients rehabilitation programme.
- Each ward is to ensure the location of the nurses station allows for the maximisation of surveillance of patient areas, however should respect patients need for privacy as can possibly be achieved within a high risk ward.
- Each ward is to ensure clear separation of patient, staff and visitor zones in order to maintain safety and security of all users, and safe operation for staff members.
- Each ward to provide designated areas for patient therapy, consultation and treatment areas which respect patient confidentiality, privacy and dignity.

The new occupational therapy facility should include the following listed criteria:

- An occupational therapy facility that is specific to the needs of acute patients, such as space for suitable crafts; song and dance; therapy and patient assessment rooms of various sizes; and a small basketball court.
- The incorporation of a sensory garden that can allow for a patient to experience elements of sound, taste, touch, sight and smell, which can add meaning toward the patients rehabilitation process.

Additional notes:

- The driving concept of the design should be approached with a solutogenic vision, where the architecture plays a pivotal role in the healing and rehabilitation of its patients and which focuses on the end user experience.

- Due to the high risk nature of acute patients (Table 2), the challenge of the design is to create a salutogenic environment, that addresses the psychological and social needs of the end-user, however still maintains the functional requirements of security and safety required within an acute ward.

Table 2: Ward Category as outlined by IUSS N and S task group A:05, 2014:16

Type of ward	**Level of security**	**Intervention**
Voluntary care, treatment and rehabilitation.	Low	Patient submits voluntarily for care, treatment and rehabilitation
Acute Unit	**High**	**A unit to admit assisted and involuntary patients for emergency care and 72-hour assessment. Referral based.**
Sub-acute (Step-down)	Medium to low	For further care, treatment and rehabilitation in the psychiatric unit
Outpatient	Low	For further care, treatment and rehabilitation in the psychiatric unit

7.1.5 Schedule of Accommodation

SCHEDULE OF ACCOMMODATION : "FRONT OF HOUSE"		
ROOM	**QUANTITY**	**SIZE sq.**
GROUND FLOOR:		
ADMINISTRATION OFFICES:		
Reception	1	22sqm
Store Room	1	9sqm
Reception Lobby and waiting	1	147sqm
Administration Office	3	Min 12sqm
Administration Open Plan Office - Shared	3	Min 30sqm
MEETING ROOMS:		
Seminar Room	1	Min 60sqm
Meeting Room	2	Min 40sqm
Waiting area	1	Min 60sqm
CAFE (Staff and Visitors):		
Cafe 20 tables	1	Min 100sqm
Servery	1	Min 20sqm
Kitchen	1	70sqm
Kitchen Stores	2	Min 8sqm
TOILET FACILITY:		
Male Toilet: WC x 1; P.WC x1; urinal x 3; WHB x 3	1	Min 20sqm
Female Toilet: WC x 3; P.WC x1; WHB x 3	1	Min 20sqm
Visitors Parking		
Doctors Parking		
Emergency Drop-Off Zone		
FIRST FLOOR:		
OFFICES:		
Doctors Offices	6	Min 12sqm

SCHEDULE OF ACCOMMODATION : “FRONT OF HOUSE”		
Meeting Room	1	Min 30sqm
Staff Tea Room / Lounge	1	Min 36sqm
OVERNIGHT DOCTORS ROOM:		
Open plan bedroom, with lounge, kitchenette and ensuite bathroom	1	Min 36sqm
TOILET FACILITY:		
Male Toilet: WC x 2; urinal x 3; WHB x 3	1	Min 20sqm
Female Toilet: WC x 3; WHB x 3	1	Min 20sqm
Sub-Total:		Min 964 sqm
Circulation at 15%		Min 144,6 sqm
Total:		**Min 1108,6 sqm**

SCHEDULE OF ACCOMMODATION (CLOSED WARD - FEMALE: 2 x 20 BED CLUSTERS)		
ROOM	**QUANTITY**	**SIZE sq.**
SHARED ENTRANCE		
Front desk / Security and visitors waiting area	1	166sqm
Male Toilet: WC x 1; urinal x 2; whb x 2; P.WC x 1	1	15sqm
Female Toilet: WC x 2; P.WC x 1; whb x 2	1	15sqm
Sub-total Entrance	1	196sqm
ACCOMMODATION SCHEDULE PER WARD CLUSTER OF 20 BEDS		
VISITORS AREA'S		
Patient / Visitor Lounge	1	56sqm
Patient / Visitor courtyard	1	56sqm
STAFF AREA'S		
Staff Rest Room / Tea Room	1	Min. 60sqm
Staff Ablution and lockers 1 x Male	1	Min 14sqm
Staff Ablution and lockers 1 x female	1	Min 14sqm
SUPPORT AREA'S		
Doctors Consulting Room	1	Min 28sqm
Psychologists Office	1	Min 28sqm
Treatment Room	1	Min 28sqm
NURSES STATION		
Nurses Station	1	Min. 36sqm
Store Room	1	Min 6sqm
PATIENT AREA'S		
20 Bed Ward:		
Seclusion Rooms	1	12sqm
Single Bed Ward with ensuite toilet	3	Min 10sqm / bed
2 Bed Wards with ensuite toilet	8	22sqm (min 10sqm / bed)

SCHEDULE OF ACCOMMODATION (CLOSED WARD - FEMALE: 2 x 20 BED CLUSTERS)		
PATIENT SUPPORT AREA'S		
Patient Showers: 2 x whb's; 2 x shrs	1	Min 18sqm
Patient Toilets: 2 x wc's; 2 x whb's	2	Min 11sqm
Group Therapy Room	1	Min 28sqm
Lounge / Dining Room	1	Min 100sqm
Secure External Courtyard, with shade provision	1	Min 100sqm
GENERAL SUPPORT AREA'S		
Sluice Room	1	Min 8sqm
Cleaners Room	1	Min 10sqm
Equipment Room	1	Min 10sqm
Linen Room	1	Min 10sqm
Patient Kit Room	1	Min 10sqm
Ward Kitchen	1	Min 20sqm
Kitchen Store Room	1	Min 10sqm
Sterile Store	1	Min 8sqm
Medicine Store	1	Min 8sqm
Sub-total per 20 bed cluster	2	906
Sub-Total 40-bed Ward and shared entrance:		Min 2008 sqm
Circulation at 15%		Min 301,20 sqm
Total:		**Min 2309,20 sqm**
Total Male and Female Closed Ward	**2**	**Min 4618,4 sqm**

SCHEDULE OF ACCOMMODATION (OCCUPATIONAL THERAPY)		
ROOM	**QUANTITY**	**SIZE sq.**
OFFICES		
Occupational Therapists Office	1	Min 12sqm
Archive Room	1	Min 8sqm
Toilet facility: 1 x wc ; 1 x whb	1	Min 8sqm
THERAPY SPACES		
Large multi purpose room - divisible into 3 x group rooms	1	Min 140sqm
Group Room	1	Min 50sqm
Patient Assessment Room	1	Min 50sqm
STORE ROOMS		
Store Room	2	Min 12sqm
EXTERNAL SPACES		
Small Basket ball Court	1	250 sqm
Sensory Garden	1	
SUPPORT AREA'S		
Male Toilet: WC x 1; 1 x P.WC; urinal x 1; whb x 3	1	Min 15sqm
Female Toilet: WC x 3; 1 x P.WC; whb x 3	1	Min 15sqm
Cleaners Room	1	Min 8sqm
Sub-Total:		Min 580 sqm
Circulation at 10%		Min 58 sqm
Total:		**Min 638 sqm**

TOTAL AREAS	
Administration Block and Cafe	Min 1108,6 sqm
Female Ward	Min 2309,20 sqm
Male Ward	Min 2309,20 sqm
Occupational Therapy Block	Min 638 sqm
Total:	**Min 6365 sqm**

7.2 SITE SELECTION

7.2.1 Introduction

Currently within KwaZulu Natal, there are only two public sector psychiatric closed facilities available for the treatment and rehabilitation of acutely mentally ill patients':
Psychiatric closed unit, King Dinuzulu Hospital Complex, Sydenham Durban, and
Town Hill Psychiatric Hospital, Pietermaritzburg.

Both of these facilities, analysed through case study research, provide sub-optimum facilities for the best possible care and rehabilitation for its patients' and working conditions for the staff. Both of these sites provide opportunities for a new psychiatric closed facility that is end-user responsive and incorporates a therapeutic milieu. The selected site should therefore allow for an exploration of the theories and concepts that have been set out in this dissertation, based on Salutogenic and Therapeutic Design, which can not only improve and add value to the existing hospital environment, but help to improve the level of care and rehabilitation that is delivered to its psychiatric patients'.

Both of these sites will be analysed according to site selection criteria in order to decipher the most suitable site for the new design proposal.

7.2.2 Site Selection Criteria

The site criteria must adhere to the following criteria:

Criteria 1:

- Must be located on an existing Primary Care Hospital, or in close proximity that is easily accessible.
- **Reason:** Patients being admitted to Psychiatric Facilities for post 72-hour facilities require referrals from primary care hospitals and doctors. Primary care facilities should also be easily accessible in case of patient emergencies and resuscitation if required.

Criteria 2:

- Need for a new Psychiatric Facility.
- **Reason:**
    - Shortage of capacity: According to the number of admitted patients and overcrowding at existing facilities.
    - State of existing facility: According to case study analysis

Criteria 3:

- Therapeutic Qualities of the site.
- **Reason:** A Salutogenic or therapeutic design requires a facility which promotes ones sense of well-being and satisfaction. The site should therefore:
    - External views of nature;
    - Accessible external spaces/gardens;
    - Nature of setting, quiet / peaceful or busy / noisy;
    - North orientation for the maximisation of natural daylight

Criteria 4:

- Accessibility to public transport routes:
- **Reason:** Patients admitted are often located from communities which are located far away. Easily accessible transport would encourage and make visitation from family members easier. Family participation and support in patient rehabilitation is imperative.

7.2.3 Site Selection

7.2.3.1 Site Option One : King Dinuzulu Hospital Complex, Durban

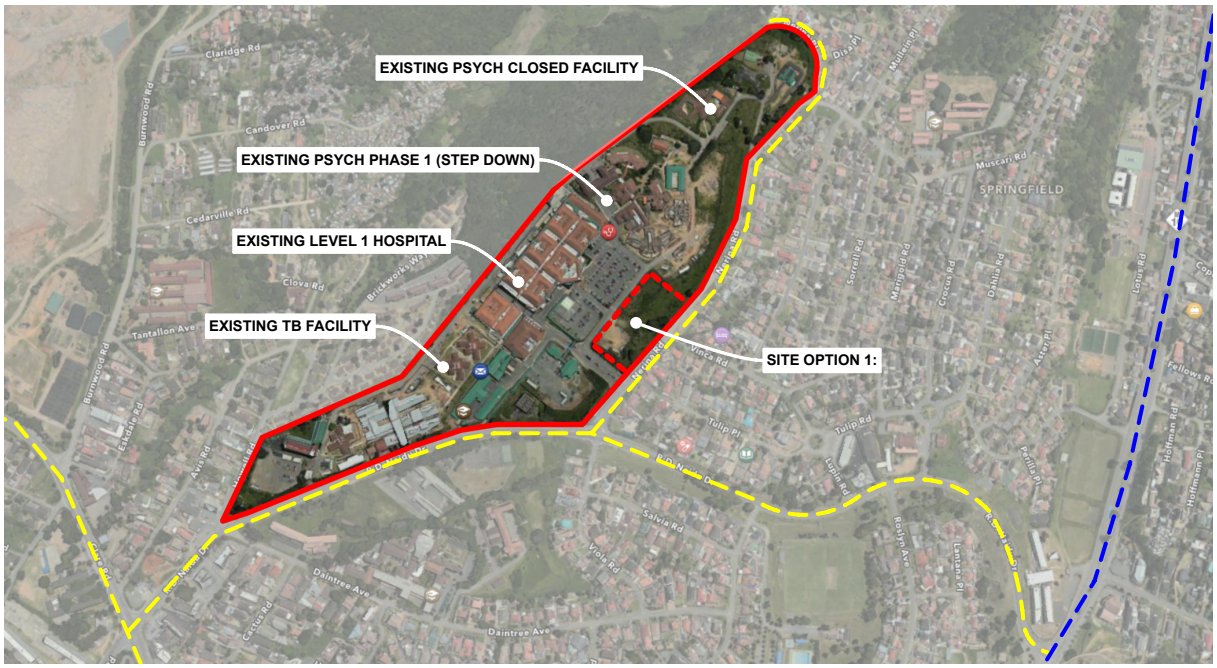


Fig. 7.1. Site Locality Map - King Dinuzulu Hospital Complex, Sydenham, Durban

SITE SELECTION CRITERIA: SITE OPTION 1		
CRITERIA		**RATING OUT OF 10**
Proximity to primary health care		10
Need for a new psychiatric closed unit		
	Shortage of Capacity	10
	Current state of existing facility	6
Therapeutic Qualities of site:		
	Views of Nature	5
	Access to nature / outside spaces	5
	Nature of setting (**Quiet and peaceful?**)	7
	Orientation	5
Access to public transport routes		10
TOTAL		**58 / 80**

Table 4: Site Selection Criteria - Site Option 1

Comments based on selection criteria:

Criteria 1:

- The psychiatric Closed Unit, located within King Dinuzulu Hospital Complex, which includes Level 1 district health services, TB facilities, oral and dental, family planning, orthopaedic spinal and thoracic surgery and psychiatric facilities. The psychiatric closed unit is therefore highly accessible to other healthcare facilities if required, as well as for the patients who are referred for post 72-hour observation psychiatric services.

Criteria 2:

- According to Ramlall (2012), there is currently a provision of only 25% of the acute mental health beds required according to the national norms. This means that there is a 75% shortage of acute bed provision nationally.
- The existing psychiatric closed unit recently received additions and alterations, therefore the building is of an acceptable standard. The design of the environment however, is highly institutional and prison-like according to case study research and interview data.

Criteria 3:

- The demarcated site area within the King Dinuzulu hospital locality map, provides little to no views of nature, or of a natural environment. The site is situated adjacent to a car park area (NW of the site), and overlooks a built up residential area towards the east of the site.
- Access to external spaces/ gardens is limited however can be created within the design of the site and new facility. The site however, has little therapeutic quality.
- The current character of the indicated site is of a busy nature, due to the high vehicular movement on the internal road leading to the adjacent car park, as well as the external road which runs passed the edge of the site on the boundary of King Dinuzulu Hospital. Vehicular movement can provide high traffic noise which can disturb a therapeutic environment.
- The orientation of the site is poor as it is predominantly north-west / south-east facing. Ideal orientation for a therapeutic and healing environment would be towards north in order to maximise natural lighting.

Criteria 4:

- Highly accessible to public transport routes. Taxi network moves passed the King Dinuzulu hospital.

7.2.3.2 Site Option Two : Town Hill Psychiatric Hospital, Pietermaritzburg

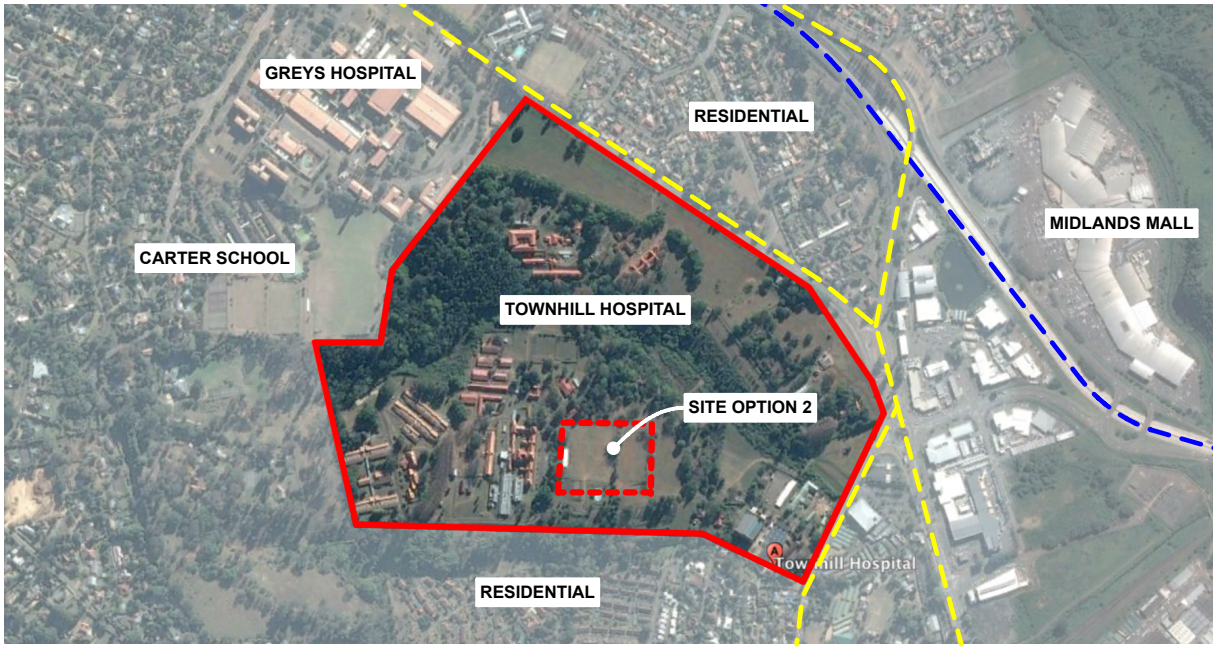


Fig. 7.2. Site Locality Map - Town Hill Psychiatric Hospital, Pietermaritzburg

SITE SELECTION CRITERIA: SITE OPTION 2		
CRITERIA		**RATING OUT OF 10**
Proximity to primary health care		8
Need for a new psychiatric closed unit		
	Shortage of Capacity	10
	Current state of existing facility	4
Therapeutic Qualities of site:		
	Views of Nature	10
	Access to nature / outside spaces	10
	Nature of setting (**Quiet and peaceful?**)	10
	Orientation	10
Access to public transport routes		10
TOTAL		**72 / 80**

Table 5: Site Selection Criteria - Site Option 2

Comments based on selection criteria:

Criteria 1:

- Town Hill Psychiatric Hospital sits in close proximity to Greys Hospital, a district level 1 health service facility, which sits on the north-west boundary of Town Hill. Current access to Greys hospital is achieved through external road networks, however there is an opportunity to create a direct, security controlled link within the internal road networks.

Criteria 2:

- As previously stated, there is a shortage of acute bed provision nationally, indicating a requirement for more bed provision.
- The state of the existing male and female psychiatric closed units within Town Hill hospital is poorly maintained with high deterioration. The facilities are in dire need of repair and maintenance or new facilities for improved care if patients and user satisfaction.

Criteria 3:

- Town Hill hospital, set in a vast green-setting of natural trees. Toward the north of the site (demarcated on the Town Hill locality map) provides views of trees and a natural landscape. Toward the south-east, the site provides views of both trees, and an elevated view over Pietermaritzburg.
- The large, green-fields site provides an opportunity to create a design which engages with its external natural context, through courtyard design.
- The site provides a therapeutic atmosphere, in a quiet and peaceful setting, which can contribute to the healing nature of a therapeutic architectural design.
- The orientation of the site allows for a predominantly north facing building, which is ideal for a therapeutic environment.

Criteria 4:

- Town Hill hospital is highly accessible as it sits in close proximity to the N3 highway and public transport networks.

7.2.4 Conclusion

SITE SELECTION	
SITE	**TOTAL RATING OUT OF 80**
King Dinuzulu Hospital Complex, Durban	58
Town Hill Psychiatric Hospital, Pietermaritzburg	**72**

Based on the site criteria rating and analysis, the chosen site for the proposed new psychiatric closed unit facility will be located at the Town Hill Psychiatric Hospital. The Town Hill Psychiatric Hospital offers an opportunity for a new design which engages with its external context in a natural and therapeutic-setting and which can contribute toward the salutogenic vision (a building which contributes toward or promotes the healing process of patient rehabilitation).

7.3 SITUATION ANALYSIS

7.3.1 Geographic positioning

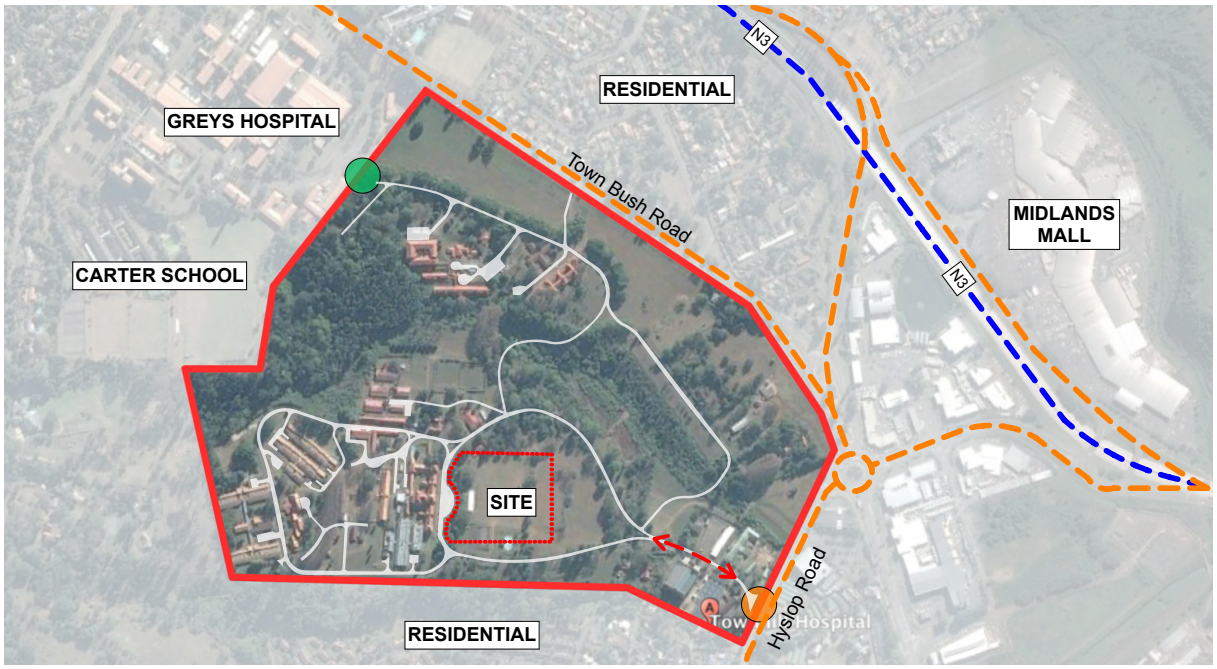


Fig. 7.3. Site Locality Map - Town Hill Psychiatric Hospital, Pietermaritzburg

The chosen site for the new psychiatric closed unit development is situated within the health zoned precinct of Town Hill Psychiatric Hospital, located within Pietermaritzburg. Bordering Town Hill, there are varying land zone usage which make up a diverse community.

Northern Boundary - The northern boundary of Town Hill is defined by Town Bush Road and adjacent a residential community.

Eastern boundary - The eastern boundary of Town Hill is defined by Hyslop Road, and forms the main entry point to the hospital.

Southern boundary - Defined by a green edge of trees, which forms a buffer to the residential community on the southern boundary.

Western boundary - The western boundary is defined by Carter Primary School, as well as Greys Hospital. Town Hill Hospital receives referral patients from Greys Hospital, as well as other district level hospitals within Kwazulu Natal. In the event of emergency, Town Hill Hospital refers patients to Greys Hospital for further medical treatment if necessary, and which is beyond the medical scope of Town Hill.

Fig. 7.4. Site Analysis Plan - Town Hill Psychiatric Hospital, Pietermaritzburg

key:

- Existing Asylum Buildings
- Acute Wards
- Sub-Acute Wards
- Neuropsychiatry
- Old prefab buildings - closed
- Adolescent Ward & Outpatient
- Occupational Therapy
- Management
- Nurses Complex
- Private Residence
- Support Facilities
- Dilapidated & Unused Buildings
- Laundry Services
- Internal Vehicular Route
- External Vehicular Route
- Pedestrian Route
- Site
- Town Hill Boundary Line
- 1 Administration Block
- 2 Existing Sports Field
- 3 Greys Hospital

7.3.2 Existing context and heritage buildings of Town Hill

Heritage Buildings:

1875 Asylum: Re-used as Administration

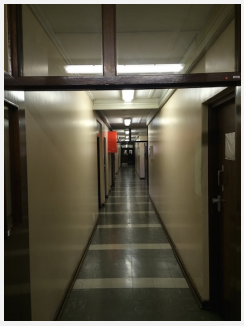
1875 Managements Home : Re-used - Offices

As previously noted with the case study research of Town Hill and analysis of the existing site context, there are two heritage buildings which were used as asylums in the late 19th Century. Highlighted in red on the site analysis plan (Fig. 7.4), the two ornate buildings, now used as a main administration block, and the other as psychotherapy offices. The symmetrical design of the main administration block, sits directly opposite the western edge of the demarcated site for the new design. The location of the demarcated site has specifically been chosen as it provides an opportunity to acknowledge the heritage building and heritage nature of the site, a theme focused on within this dissertation.

Directly behind the main administration block, a precinct has been formed through the construction of individual ward blocks laid out in a cottage plan fashion, and defined by an internal road on its outer edge. Within this precinct, one finds a male acute unit which consists of a shared block between acute and sub-acute patients, a female acute ward which also contains a shared acute and sub-acute facility, a neuropsychiatry ward, an occupational therapists office (highlighted in olive-green), service facilities for Town Hill hospital on the northern edge, and unused dilapidated buildings on the south-western corner. The design of the patient wards are isolated and disconnected from one another and operate in isolation. The dis-connect is further highlighted through the placement of service facilities and unused, deteriorated buildings placed amongst them. This ward precinct is poorly designed, and indicates a lost opportunity to connect the different ward blocks through a shared central space. The isolation of the patient wards is further emphasised with the placement of the adolescent and outpatient ward (highlighted in green) being located on the far northern end of the Town Hill site, situated amongst the psychotherapy offices and the nurses college.

Existing Male Ward (Hillside):

Exterior ward facade

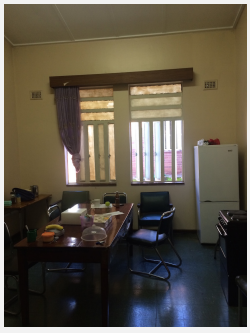


Typical corridor

Patient dayroom

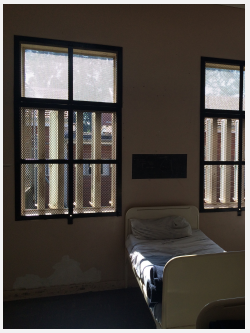
Existing Female Ward (Impala):

Exterior ward facade



Staff tea room

Multi-use space in corridor



Patient dormitory

Upon case study research and analysis of the psychiatric male and female closed buildings, one should be reminded of the institutional and jail-like character prevalent throughout the patient ward buildings, and the necessity for a move toward a facility of a therapeutic and salutogenic nature.

7.3.3 Town Hill access and vehicular routes

Due to the large scale of the Town Hill hospital site and the poorly designed layout of the wards, movement around the hospital is predominantly through vehicular use. The vehicular movement, indicated on the site analysis plan (Fig. 7.4), occurs on the outer edge of the ward precinct, and the outer edge of the proposed new site location, therefore providing an opportunity for a second ward precinct for hospital expansion. As indicated on Fig. 7.3 and Fig. 7.4, access to Town Hill is gained from a security controlled entry and exit point off Hyslop Road.

7.3.5 Site specific analysis

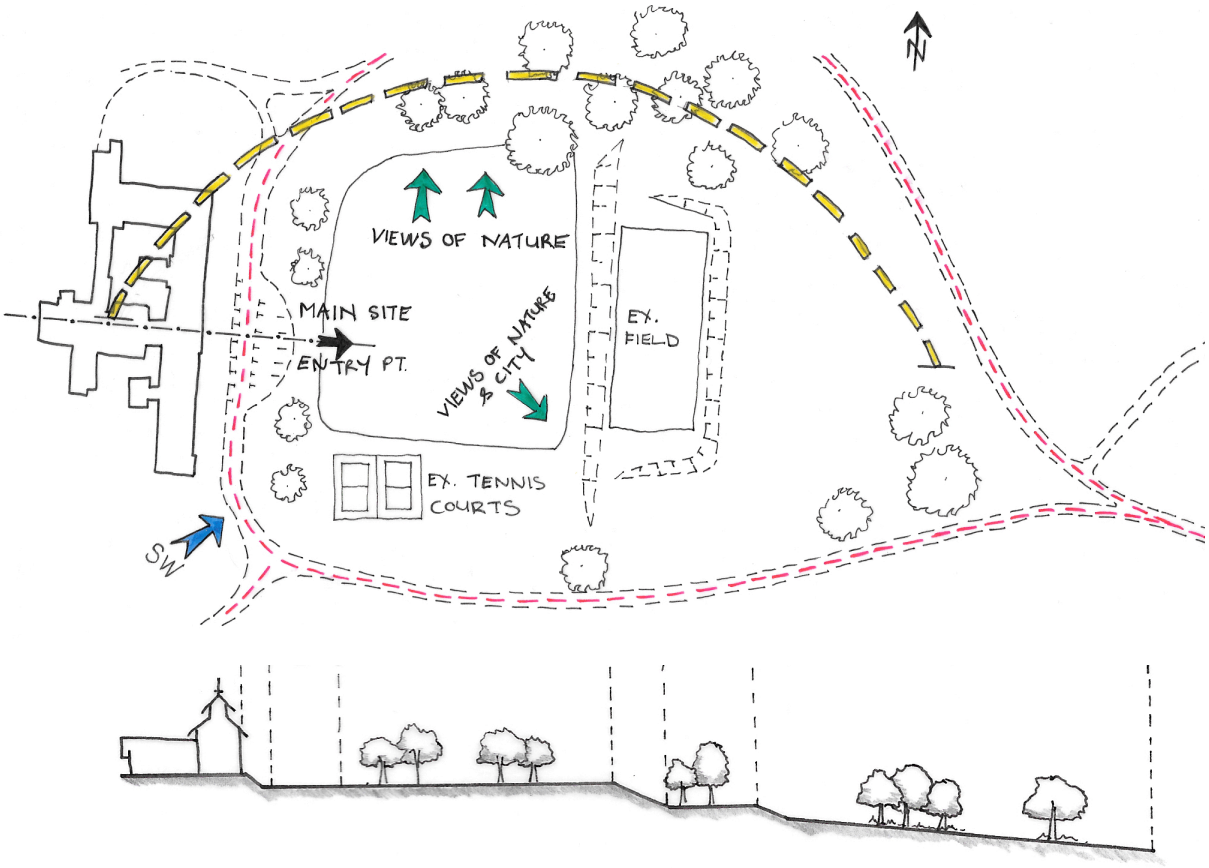


Fig. 7.5. Site analysis and site section. Not to scale.

7.3.5.1 Site features

The site within Town Hill hospital is located on the green-fields area opposite the main administration block. This site currently consists of two large sports fields and a tennis court facility which are rarely used. The sports fields are currently used for an annual sports day event where all patients and staff are encourage to participate. As indicated through interview data, the rare usage of these facilities are due to the shortage of personnel, who do not have the capacity to split staff members between ward observation, as well as accompaniment of patients around the gardens and to sports fields. A possible factor which also contributes to this low use, is that it is located far from ward areas therefore making accessibility difficult for staff and patient.

The topography of the site contains two flat platform levels. The larger sports field (top platform) sits at the road level of the main site entry point (opposite the administration block) and sits approximately 5 meters above the lower platform level.

7.3.5.2 Orientation

The site boasts a predominantly north - south orientation which is ideal for a therapeutic environment, as it maximises good natural daylighting. The site, being located in Pietermaritzburg, often experiences cooler temperatures during the mornings and evenings, therefore natural daylight penetration into the building should be encouraged to improve the comfort levels of the internal environment.

7.3.5.3 External Environment and Natural Views

Site:

• SE View of site - Natural Vegetation and city

• N view of site - Natural Vegetation

As seen in the imagery above, the site is surrounded by natural vegetation and trees enhancing its therapeutic and peaceful character, which is suited toward a healing environment. Due to the site being elevated, one can experience over toward the city toward the south-east corner of the site. Although the site edges are defined by an internal road of Town Hill, they are softened by the natural vegetation buffer and not directly visible. The western edge of the site (entry point) has a harder edge, with an existing car park and views toward the victorian architecture of the administration block.

7.3.6 Town Planning and Site particulars

Site Description - Erf 1860/1 of the farm Pietermaritzburg

Town Hill Zoning - E1

Town Hill Building Line - 7,5m; Side and rear space - 4,5m

Town Hill total site area - 745 000sqm (approximation)

Town Hill allowable coverage (%) - 50%

Town Hill existing coverage (%) - 6% (47000sqm) approximation

Proposed new Building - 8500sqm (approximation)

Proposed new coverage (%) - 7,5% (55500sqm) approximation

7.4 DESIGN AND TECHNICAL RESOLUTION

7.4.1 CONCEPTUAL AND THEORETICAL ISSUES

7.4.1.1 Introduction

The driving concept behind the design approach of the new closed ward facility, has been derived directly from site influential factors, such as orientation and the maximisation of natural views; learnings from the successes and failures of the evolution of the built form; and the experiences and expectations from the staff who have had experience in working within acute inpatient facilities.

The conceptual framework, as explored throughout this dissertation, is how one can create a balance between functional, social and psychological needs within a salutogenic environment. It is particularly important that this concept is evident in the design development and end product of the design. The functional needs will look specifically toward the layout of the facility, clear differentiation between staff, patient and visitor zones, and how security and safety can be achieved without compromising the therapeutic character of the facility, and patient privacy. Social needs will be addressed through the creation of space that is conducive to social interaction and engagement, adequate space for group and individual patient therapy, inclusion of family visitation areas and staff rest areas. Psychological needs will be addressed through the creation of a therapeutic environment that is conducive to healing and patient and staff wellbeing.

7.4.1.2 Concept Development

Represented in the following sketches: the influences of the European asylum model over time which have informed the design approach of the proposed new psychiatric closed facility in Town Hill.

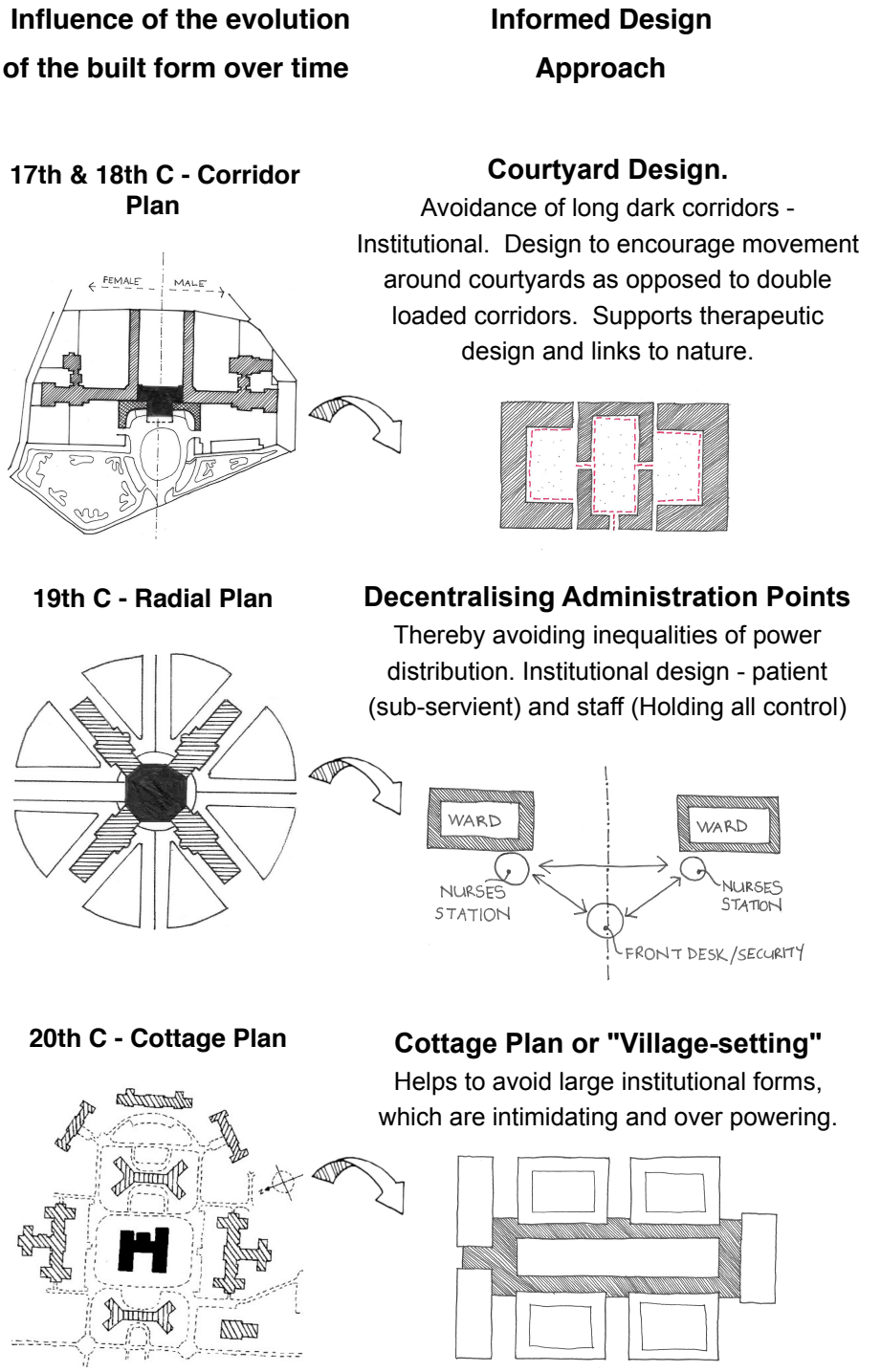


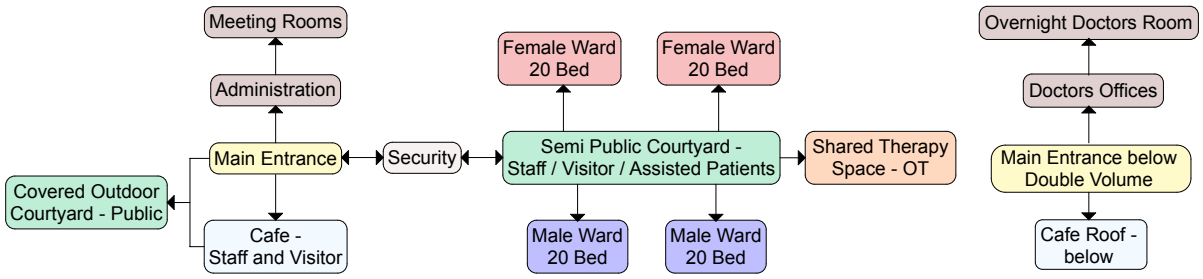
Fig. 7.6. Concept Sketches. Author's Own.

Functional Needs

Planning considerations: Building layout

The overall layout of the different facility components; the acute male ward, acute female ward, administration block and occupational therapy facility has been generated based on the influence of the cottage plan layout. The cottage plan layout allows for smaller, individual buildings, in a village-type setting, which are connected through space. It was important to avoid one large, institutional building form which is synonymous with asylum architecture. In order to create a therapeutic design, the buildings are arranged around a hierarchy of courtyard spaces. As indicated in the spatial diagram and the site zoning sketch, one progresses from a public zone of the entrance and cafe in the most public part of the site adjacent the main administration block, and moves toward a secure semi-public courtyard for staff, visitor and assisted patient use. From this semi-public courtyard, one has access to each of the male and female ward buildings and the occupational therapy facility. The concept of creating a village-type setting and the incorporation of courtyard architecture, allows one to circulate to each building as a journey through gardens as opposed to lengthy, and institutional corridors.

Spatial relationship diagram



Ground Floor

First Floor (Admin Block)

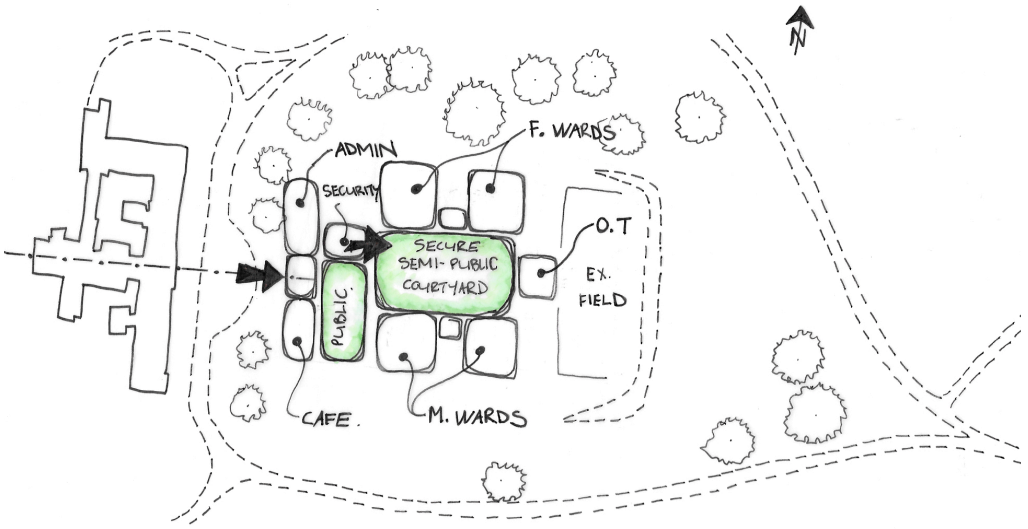


Fig. 7.7. Site Zoning Diagram. Author's Own, 2016.

As seen in Fig. 7.7, each of the male and female pods are designed on a north-south axis in order to maximise natural daylighting. Due to the structured rehabilitation programme, patients are required to have clear separation between day and night zones. Patients currently spend the majority of their day either in the secure patient courtyard, or in the patient day room. It is therefore important that the areas where patients spend the majority of their time, are placed with ideal northern orientation for a therapeutic environment. The following sketches are an exploration of the design of the building form in relation to the site.

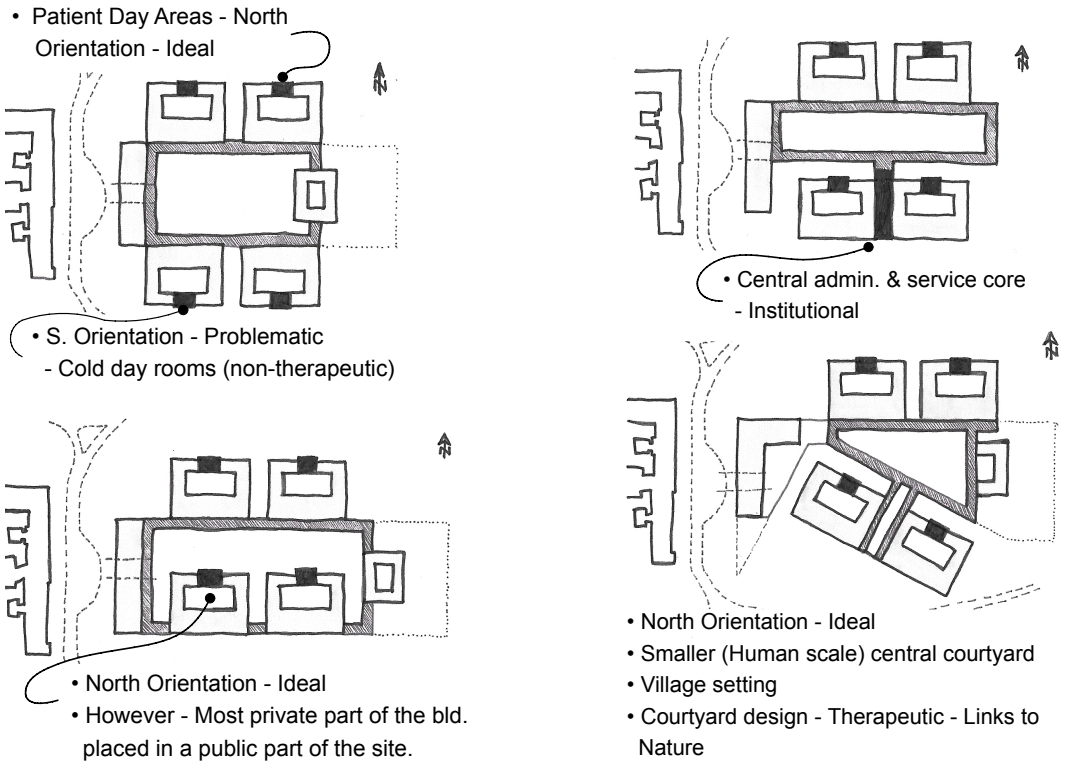
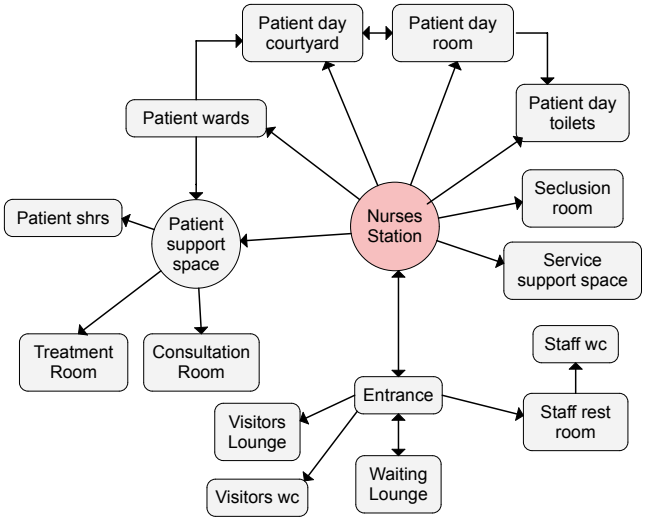


Fig. 7.8. Form Development Sketches. Author's Own, 2016.

Planning considerations: Ward Clusters



The functional need of each ward cluster had to be designed according to various considerations which include; adjacencies of the different staff, patient and visitor zones, flow of movement which allows for safety of patient as well as the staff as they move about their daily duties, and staff expectations for an optimum environment for delivery of care to patients. Indicated in the spatial diagram, it is evident that the placement of the nurses station is imperative to a successful design of a ward, for both efficacy of care delivery and surveillance ability. Through case study research, staff indicated the need for a nurses station that is central to ward areas, as opposed to being centralised to the facility as a whole (seen in the centralised administration axis of the asylum model). As seen in the zoning diagram of the new ward cluster (Fig. 7.9), a centralised entrance has been created which provides a single, security controlled entry point to each of the female ward clusters. Each 20-bed ward cluster has their own nurses station, placed in a location that is central for surveillance of patient areas, and provides quick and easy access to staff, visitor and patient zones,. The nurses station however, is not imposing on the patient zone, as it is set back and does not form a focal point within the patient courtyard space (refer nurses station location sketch in design recommendations). By creating transparency between the staff circulation and patient zone, the design seeks to achieve surveillance through high staff presence, as opposed to a singular observation point.

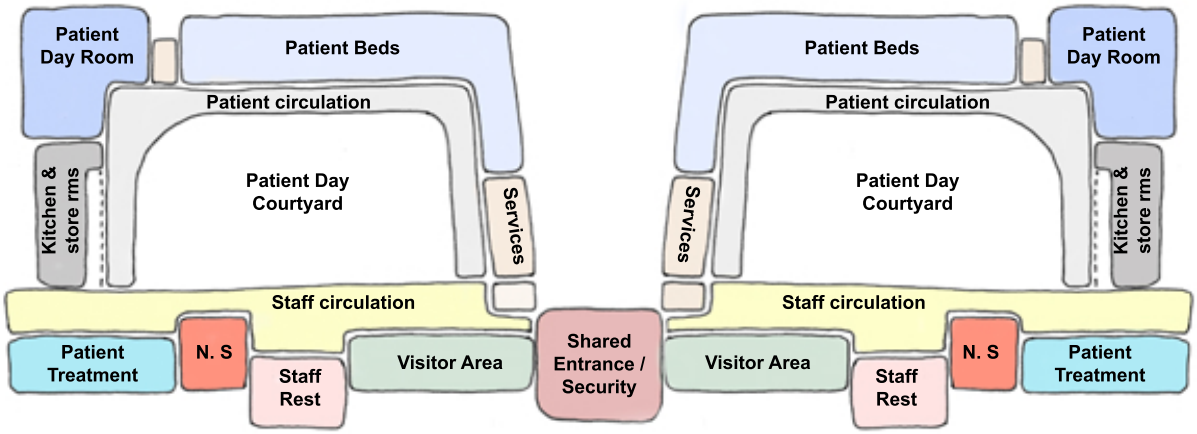


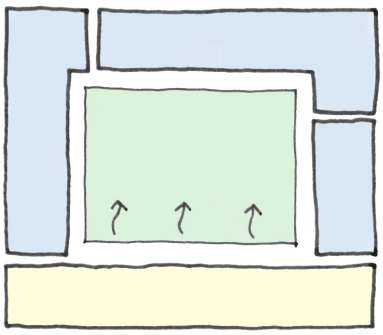
Fig. 7.9. Female ward cluster zoning diagram. Author's Own, 2016.

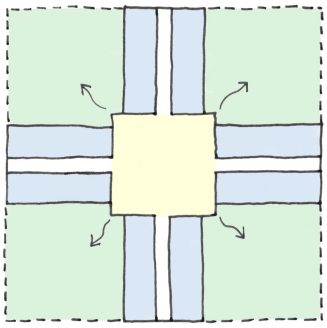
Zone Adjacencies:

The adjacencies of the different zones plays an important role in the flow of movement within the ward, staff and patient privacy, and noise control. Flow of movement can also impact the safety and security of all its users. In reference to the zoning diagram (Fig. 7.9), careful consideration has been paid to clear differentiation between staff, patient and visitor circulation. Visitor areas have been placed in close proximity to the security desk and entrance to the ward. This location provides a comfortable area for patient / family visitation, which does not compromise observation and safety, and the visitor does not have to pass through into the private ward zone. As seen in case study research, family who are forced to have visitation within ward zones due to lack of adequate space provision, can lead to a traumatic experience for family members. One can also see in Fig. 7.9, clear separation of staff circulation, which allows staff to move about daily duties without their safety being compromised and a controlled point within the patient treatment zone [Consultation room, treatment room, psychologists office (Individual therapy)].

Courtyard Design:

The concept of the design, courtyard architecture, has been carried through to each ward cluster. Each individual ward cluster is designed around a secure, private courtyard which is directly accessible to patients. As supported through precedent study of both Glenside Campus and Belfast acute hospital, patient courtyards are defined by architecture as opposed to fences (Fig. 7.10), which can portray a symbol of incarceration. As currently experienced within existing wards of Town Hill, a fence structure that encloses a courtyard both feels institutional, as well as provides a risk for patient absconding. A fence poses the question of who one is protecting, the public or the patient?





Far Left: *Fig. 7.10.* Courtyard diagram. *Author's Own, 2016.*
Left: *Adapted diagram Reeves, 2011. Author's Own, 2016.*

- Decentralised observation
- Garden provides day / activity spill out
- Garden as point of orientation
- Edge defined by building
- Single loaded Corridors

- Centralised observation (Radial asylum plan model)
- Garden exposed to perimeter (Lack of patient privacy)
- Internalised circulation (Long dark corridors - Institutional)
- Garden defined by fence (Caged in / prison-like)
- Double loaded corridors (Lack of light and ventilation)

Fig. 7.10. New psychiatric closed facility. Author's Own, 2016.

Not to scale.

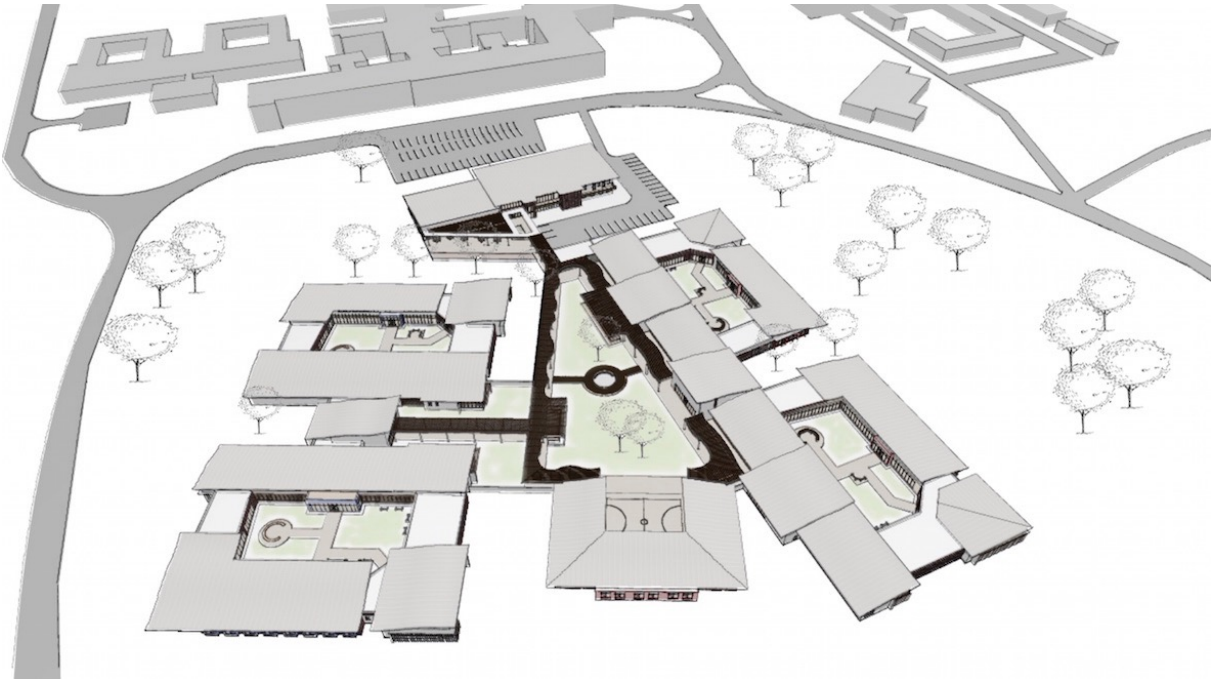


Fig. 7.11. Site perspective. Author's Own, 2016.

Social Needs

As previously concluded in the design recommendations of Part 1, it is important that the ward environment caters for the social needs of both staff and patient in order to improve staff morale and satisfaction, as well as the patients experience within the rehabilitation programme.

Cafe

The inclusion of a cafe in the design of the new facility (Located in the main entrance administration block) was a necessity, as this is currently not provided for within Town Hill hospital. As expressed by staff members, a cafe would greatly improve staff experience and can become a place for social interaction and collaboration been staff of the different wards. Staff would in turn, not have to leave the hospital premises entirely during break periods which is disruptive to patient care and problematic in case of emergency. The below sketch render is a view taken toward the cafe and administration block from the ward precinct security office. As one circulates from the main entrance toward and around the semi-public courtyard, they are directed by a covered walkway around gardens.

Fig. 7.12. Sketch render cafe and administration block.

Author's Own, 2016.

Staff Rest Area

For the staff, it was important to include a designated zone for a rest area in order for the staff to be able to have a respite period during their long shift hours. The staff rest area, as seen in Fig. 7.9, is placed in a location that responds to the staff needs as expressed through research data: placed away from patient wards, where they cannot be interrupted during their break period, and easily accessible from the nurses station in case of patient emergency. The design of this space includes a homey character, with comfortable furniture and views of the external landscaped courtyard. Staff have access to the external courtyard, where they are able to relax and destress within a natural setting.

Patient Activity (Day Room / Courtyard / semi-public courtyard / OT

Due to current issues being experienced from the lack of space provision for suitable patient day areas and activity space, it was important that the design of the new facility incorporated variation of space in order to catered for such needs. As expressed through staff interviews, allowing patients to be able to leave the ward, introduces normalisation to their rehabilitation programme. As previously mentioned, the design of the facility includes a secure semi-public courtyard (Fig. 7.14), which leads to the shared occupational therapy facility and a sensory garden, which patients can experience when accompanied by the staff, or with family if they settled enough to leave ward confines. Allowing patients therapy sessions external to their ward, provides variation to their daily routine and can form part of their rehabilitative process. Sensory garden can provide an experience of taste, touch, smell and sight, which can be beneficial to patient rehabilitation through evoking their senses.

Within each of the ward clusters, it was important to provide variation of space for patient movement throughout the day, and that would provide patients a sense of choice. Each ward includes a large dining room/lounge which can also serve as space for group therapy sessions, seating areas within the circulation that can provide opportunity for rest, relaxation or social gathering, as well as external group and individual seating space within the courtyard (Fig. 7.13).

Family / Visitor Area

As concluded within the design recommendations of Part 1, an essential part of patient rehabilitation is the inclusion of family in their rehabilitation programme. As previously discussed and represented in the zoning diagram (Fig. 7.9), a family visitation area has been designed for in each ward cluster which can be used as an informal meeting lounge, or therapy sessions between patient and family guided by the staff.

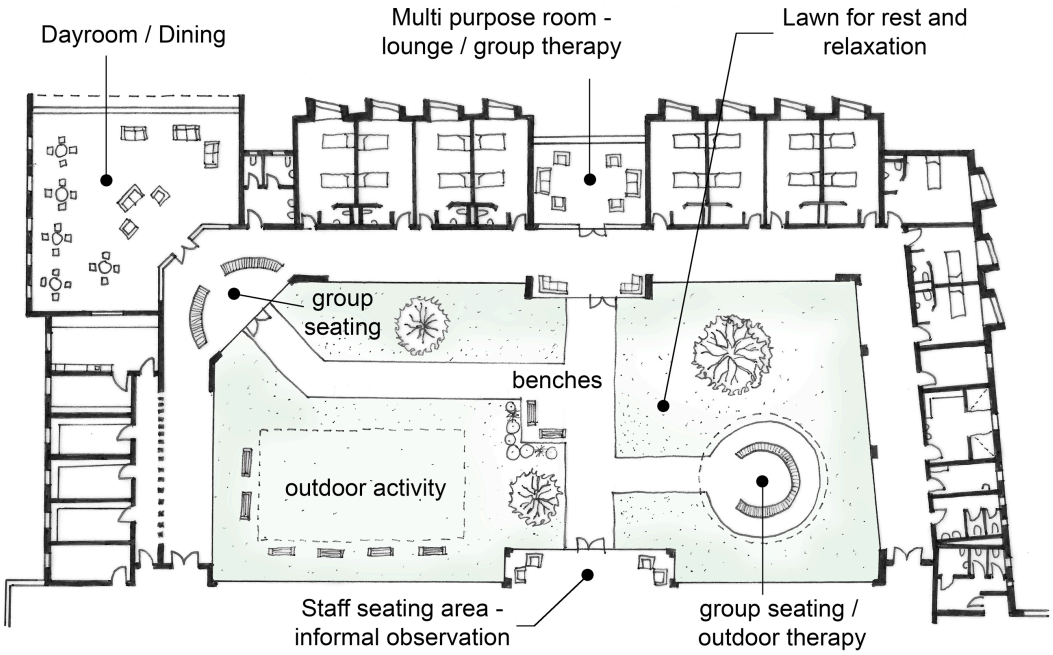


Fig. 7.13. Ward patient zone - Activity and day areas.

Author's Own, 2016. Not to scale.

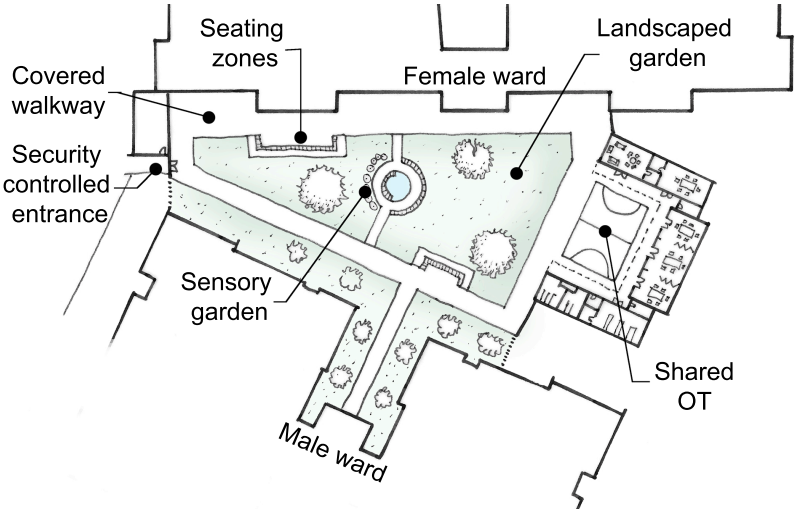


Fig. 7.14. Semi -public courtyard.

Author's Own, 2016. Not to scale.

Psychological Needs

Maximisation of natural light and cross ventilation.

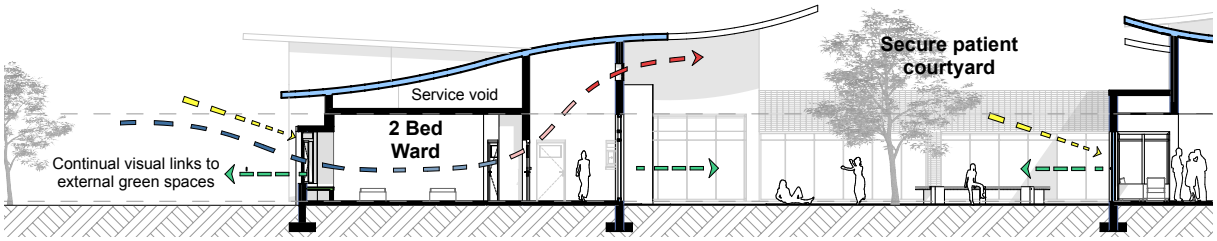


Fig. 7.15. Cross-section - Patient zone. Author's Own, 2016. Not to scale.

As can be seen in the section (Fig. 7.15), the courtyard design with a single loaded corridor, allows for a narrow floor plate which created the opportunity for the maximisation of natural light penetration into the building, as well as cross ventilation. Creating an environment that is bright, and has a flow of fresh air is highly conducive to the promotion of therapeutic milieu and patient and staff well-being. As discussed through literature research, providing natural ventilation has both health benefits, as well as infection control important within a health facility. The maximisation of natural light also helps to create a comfortable internal environment, which is particularly beneficial in the cooler climate of Pietermaritzburg.

Patient Rooms

The design of patient wards has the intention of creating a bedroom as opposed to a cell or institutional-like hospital room, currently prevalent in existing psychiatric ward design. Due to the dangers of providing furniture in patient rooms, each room has allowed for the design of a built-in window seat. The window-seat becomes a structural element as part of the architecture, as opposed to a loose object that can be a potential source of harm to the patient. Providing the patient choice within their room, through the provision of various places to rest or relax can help to create a more welcoming and homely space for the patient. Use of colour within patient rooms can also be used to create a homely environment, as opposed to the dull and institutional character of existing patient wards within Town Hill.

Connections to nature

The courtyard design of the facility supports continual visual links to external spaces, which is important for a therapeutic and less stressful environment. As one circulates around the single loaded ward zone, the patients' can view nature within the landscaped courtyard, or the external natural gardens of Town Hill during rest periods in the patient ward rooms built-in window seats. Similar to that of the patient, staff zones have clear visual links into the patient courtyard, which serves both for surveillance purposes, as well as visual links to green spaces. From the staff rest area, the staff have visual links to the external landscaped gardens of the semi-public courtyard.

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APPENDIX

- Semi-structured interview schedule

- Final Design