RETHINKING THE DESIGN FOR PALLIATIVE CARE; EXPLORING THE CONCEPT OF MULTIGENERATIONAL LIVING IN DURBAN

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fulfilment of the requirements
for the degree of
Master of Architecture**

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DECLARATION

I hereby declare that this document is my own unaided work. It is for submission to the School of Built Environment and Development Studies, University of Kwa-Zulu Natal, Durban, in partial fulfilment of the requirements for the degree of Master of Architecture. It has not been submitted before, for any degree or examination, at any other educational institution.

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Date

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To my supervisor, Lawrence Ogunsanya, thank you for your guidance and support throughout the process of writing this document.

My mother, Yasmin Narot , who has always been understanding and whose encouragement and constant motivation has helped me persevere. I could not have done it without you.

My father , Nazzer Narot , who taught me to always be the strongest version of myself.

My siblings , Zahra and Suhail, for being a constant source of laughter and happiness.

DEDICATION

To my late grandmother, Shanti Deva;

I hope to have made you proud. Thank you for teaching me to be the best version of myself.

"...for those who love with heart and soul there is no such thing as separation."

- *Rumi*

ABSTRACT

"Architecture creates the places where human time takes place" (Harrison,2012)

The process of death and dying is an aspect of our society that greatly influences our social context. That being said, the terminally ill are not often accommodated in the way that they need to be. The institutions that house the terminally ill tend to be too clinical in both the built environment and their processes. The terminally ill and their families need a chance to emotionally prepare themselves for the processes ahead of them.

Even though the concepts around death and dying are often taboo, the design process should be sensitive while tackling palliative care. In the hope to ensure that the patients are exposed to nature, protection, sensory stimulation and a sense of sanctuary in a home-like environment which encourages social interaction.

This dissertation proposes to focus on the physical environment of hospice care that facilitates the dying process, through the design of integrated living and palliative care. The objective is to reintroduce life within the architectural environment through the embodiment of movement, visual interest, meaning, memory, choice and integration. It focuses on ultimately understanding perception while focusing on the senses to induce a sense of wellness.

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1. CHAPTER ONE

1.1 INTRODUCTION

1.1.1 Background

In South Africa, the current healthcare system is fragmented, as treatment and therapy are separated. Palliative care provides an alternative to the clinical method by coupling it with a psychosocial and existential approach to care. (Bergendahl,A, 2015)

Palliative care research in South Africa is at an early stage and there is an increasing need to develop a body of evidence that is relevant to South African conditions. One of the biggest challenges that palliative care in Africa faces, according to WHO (World health Organization), is an increase in cancer patients - that need palliative care- in the developing world by 2050.Within the last fifty years , Hospice palliative care started to tackle the modern understanding of the dying process. Instead of fixating on death itself , it focuses on stimulating the quality of life of the patients who have no possibility of being cured or to recover. This thesis is a response to the challenges faced architecturally through this process.

According to Diederik Lohman, a researcher who works closely with issues regarding palliative care , “In South Africa, because there is a shortage of doctors to visit patients in their communities, home-based care teams are often led by nurses. So nurses and social workers will go and visit a patient to assess their pain needs.” (Gonzalez, The South African Health News Service,2015)

Palliative care is a holistic approach to care and support for the patients and their families. One that considers the emotional, psychological and spiritual needs in line with their physical requirements. However, in the current context, places that offer this type of care, extending from the patient to their families, are often located in isolated places and have a stigma attached. When people think of a hospice , they see it as a place where one goes to , to die. Where in actual fact a hospice should be a place that can assist in a “good death”. While dying has a different meaning to people , hospices should offer support to encourage some comfort and dignity for the terminally ill.

While a great deal of architectural design focuses on spaces for healthy living, less attention has been paid to key elements of design that is ideal for dying patients and their families. The architectural intervention aims to question whether the design of palliative care would be incorporated into other types of housing in order to re-integrate the affected people back into society. These spaces must accommodate certain practical elements, such as accessibility, affordability, but must also impart a feeling of tranquillity refuge and healing. The intervention aims to offer a place for recuperation and wellness.

1.1.2 Motivation

Many people suffering from terminal illness, cannot afford private healthcare and have no means to access what is needed during their illness. These people suffer until their last days .It is even more concerning that their families or people taking care of them, have no access to information that could give them a better quality of life. Even after death, bereavement is an important aspect for people dealing with losing their loved ones. Death is a sensitive topic and is rarely talked about.

Sick building syndrome is now something that is spoken of ,regarding its effects. People are more aware that building can negatively affect ones health. Health depends on wholeness and balance. “Spirit motivation, levity of soul, forgiveness and freedom from grievance, as well as a healthy diet, exercise and environment are also essential to the well-being of people” (Moodley , K , 2014).

This research will explore how different people and cultures deal with the process of dying with the focus on the environment in which the terminally ill dwell. Due to the fact that access to these kinds of alternative therapies are limited, this thesis serves to unpack various concepts to propose a possible recourse to dealing with access, affordability, and lack of education surrounding palliative care.

1.2 DEFINITION OF THE PROBLEM, AIMS AND OBJECTIVES

1.2.1 Definition of the problem

The process of death has become more of a technical event rather than a physical, emotional and spiritual one. As medical technology has advanced, so too has the mechanisation of the death process and thus the spaces optimised solely for efficiency. Through the overcrowding and rapidly increasing death rate (STATSSA ,2009) within the country the problem has further been compounded as environments have become emotionless. Palliative caregivers ease patients’ physical pain with medicines, and they provide psychological, emotional and spiritual counselling to people who have life-threatening and terminal illnesses. However , most of those who are suffering ,don’t receive this type of care despite the country’s high death rates relating to terminal illness. Current hospices within the context are not necessarily suitable for end-of- life care ,these facilities often exist in churches or houses that are not specifically designed to meet the needs of terminally ill patients. These spaces have lost touch with people and even the reality of the process of dying. The quality of life and needs of terminally ill patients are not reflected in their treatment within the built environment and healthcare system.

1.2.2 Aims

This dissertation aims to explore the quality of life of the terminally ill, including their last days and its influence on architecture. It will examine how quality of life can be enhanced through architectural development while considering the issue of housing.

1.2.3 Objectives

- The objective of this dissertation is to find new emerging palliative care options for the terminally ill.
- To explore how the terminally ill can be incorporated into other forms of mainstream housing.

1.3 SETTING OUT THE SCOPE

1.3.1 Delimitation of Research Problem

This thesis will investigate and generate a basis of designing spaces which cater to the specialised need of the terminally ill, their family and caregivers. It intends to explore the complexities and and poetics of space concerning the built environment for palliative care. It should also accommodate the various cultural and religious beliefs without segregating them. Overall , the design should become a beacon of hope in the sense of creating a peaceful transition to death.
I have found these limitations:

- People perceive spaces very differently, it is important to create spaces that are universally perceivable.
- Time needed to research the extent of the subject.
- Death and dying is an extremely sensitive subject and constantly evolving.

1.3.2 Definition of terms

Palliative care - is an approach that improves the quality of life of patients and their families facing problems with life-threatening illness, through prevention and relief of suffering ,the early identification and impeccable assessment and treatment of pain and other problems .physical ,psychosocial and spiritual.(WHO, 2017)

Hospice Care – care designed to give supportive care to those suffering with terminal illness. (medicinenet, 2019)

Well-being- Can be defined as a good or satisfactory condition of existence; a state, characterized by health, happiness, and prosperity; welfare (dictionary.com). It is also closely related to health and the environment (East hope & White; 2006:1-2)

Phenomenology - the things which occur there "take place". The place is not so simple as the locality, but comprises of concrete things which have physical substance, shape, texture, and colour, and together join to form the environment's personality, or setting (Pallasma)

Health - is an elusively defined term. It's multi- level, involving processes, functions and psych-logical state as well as bodily structure. It has physical, life-energy, state-of-soul and fulfilment dimensions(Day: 2003; 181)

Multi-Generational housing - The U.S. Census Bureau defines multigenerational families as those consisting of more than two generations living under the same roof.

Biophilia - an innate and genetically determined affinity of human beings with the natural world- (according to a theory of the biologist E. O. Wilson)

Sustainability - Sustainable architecture designs and constructs buildings in order to limit their environmental impact, with the objectives of achieving energy efficiency, positive impacts on health, comfort and improved liveability for inhabitants. (Federica Garofalo,2013)

Wayfinding - Wayfinding can be defined as spatial problem solving. It is knowing where you are in a building or an environment, knowing where your desired location is, and knowing how to get there from your present location. (Passini,1992)

Universal design - Universal Design is the design and composition of an environment so that it can be accessed, understood and used to the greatest extent possible by all people regardless of their age, size, ability or disability. (National Disability Authority, 2012)

Stigma – a mark of disgrace associated with a particular circumstance.

"Good death" – a good death is one that is "free from avoidable distress and suffering for patient, family, and caregivers, in general accord with the patient's and family's wishes, and reasonably consistent with clinical, cultural, and ethical standards." (Defining a good death, 2016)

1.3.3 Stating the assumptions

It is assumed that enhancing the quality of life for the terminally ill and their families can be done through architectural environments. It is also assumed that by understanding how architecture and nature work together to create a better space for people. The architectural intervention will be affected by the diversity of individuals in society.

1.3.4 Key questions

What is palliative care?

What kind of spaces assist in the management of the terminally ill?

What are the current healthcare systems' shortcomings with regard to the built environment?

How can quality of life for the terminally ill be enhanced through architectural design?

What impact does environments (living in isolation or community living) have on the terminally ill ?

What is multigenerational housing and how can this type housing inform palliative hospice care?

1.5 RESEARCH METHODS AND MATERIALS

1.5.1 Research Design

The research design makes use of purposive, critical case study technique. The results of which tends to be more opinion based rather than a statistical one. Case studies of current Hospices and Palliative care environments were explored to understand the strengths and weaknesses of these places. It is understood that Palliative Care may take place in the patients' home , therefore it was important to observe how home-based care differs from a hospice setting. The Chatsworth Regional Hospice Association was used as a case study, as it is one of the only hospices in Kwa-Zulu Natal designed for its function.

1.5.2 Research Method

The approach towards the study was qualitative. The research focused on understanding the current palliative care and its strengths and flaws. It was based on understanding the needs of terminally ill patients along with understanding their experiences and perception of their surrounding environment, as well as the medical needs of the patients.

The qualitative research method captures data in a way that is perceptive rather than gathering statistics. The qualitative data was collected through interviews, case studies , and observations of members involved directly with people facing terminal illness.

To gain an understanding of the design problems and potential solutions, the scope of research will include international examples. The research is divided into two categories, primary and secondary research and both will contribute towards the framework in which the building will be designed.

1.5.3 Primary Data Collection

Interviews, case studies and observations were the means of primary data collection. As the study suggests, to understand the needs of the terminally ill , one would need to understand the way in which they perceive the environments that they encounter through their illness. While it is important to understand the needs of the patients, part of the palliative care theory is to provide care for the family members involved, this means understanding the processes that follow the death of the patient. Interviews were conducted with people who work directly and indirectly with the terminally ill (i.e. nurses , caretakers ,managers ,etc.) and professionals who have designed hospices. However, the patients themselves were not interviewed.

1.5.4 Secondary Data Collection

Secondary data was collected in the form of a literature review. This was based on findings extrapolated from an investigation into secondary research which consists of locally and internationally published works. Questions and issues raised and discussed further through the analysis and interpretation of information found in books, journals, photographs and internet sources which comprises of a literature review, theoretical framework and precedent studies. The theoretical discourse explores theories and concepts within the disciplines of architecture and psychology.

1.5.5 Sampling method

A purposive sampling method was used for the purpose of this study. Participants were selected on the basis of their knowledge, relationships, and experience regarding the subject at hand. In the current study, the interviewees selected would have to have experience at a hospice or relationship with a hospice and/or with people suffering with terminal illness.

The target population at the above mentioned institutions was specifically the nurses, social workers, and counselors. The study required an interview of each person mentioned at the various institutions.

1.6 SUMMARY OF CHAPTERS AND CONCLUSION

Chapter 1 : Background research

This chapter provides a foundation for the basis of the study though identifying the problem .The background of the study focuses on palliative care and its advantages and shortfalls. It provides a framework of the topic by looking at various sources of information related to the study as well as asking critical questions. It will touch on the gap between healthcare and housing .This research guides the research developed in the forthcoming chapters.

Chapter 2 : Theoretical Framework

This chapter presents theoretical framework that reflects the views and concepts of various authors with an analysis creating links between the theoretical framework and the research topic. It reviews the social theories as the main topic and is then broken down and linked to various architectural concepts and theories, which are then interpreted into aspects that inform design.

Chapter 3 : Literature Review

This chapter is a review of existing literature regarding the stigma of death and dying , interventions in palliative care and contextualizing the need for housing in relation to care, which assists in identifying the gap in information which requires further research. Furthermore , it justifies the right to health for people with terminal illness. It goes further too critically analyse the development of hospice care within the context of South Africa.

Chapter 4 : Literature Review

This chapter is a review of existing literature regarding the psychological aspects in the process of healing. In terms of healing, this does not focus on being cured of illness but rather allowing for a process of healing related to psychological and emotional needs. Furthermore, it focuses on critically analysing the nature of the architectural environment that is desirable.

Chapter 5 : Precedent Study

This chapter reviews, investigates and analyses an international hospice project which integrates housing and care, which was informed by the literature review. It critically analyses the project holistically against the theories and concepts mentioned above.

Chapter 6 : Case Study

This chapter reviews, investigates and analyses an existing local hospice within the South African context. It identifies the achievements and failures of the project which identifies a gap in which design can be developed.

Chapter 7 : Presentation Of Data And Analysis

This chapter analyses and discusses the data collected through interviews and observations and of the findings from both the primary and secondary data.

Chapter 8 : Conclusions and Recommendations

This chapter is a summary of the findings of the research document. It reviews the conclusions and initial aims stated on the onset of the research projects and further conclusions are presented.

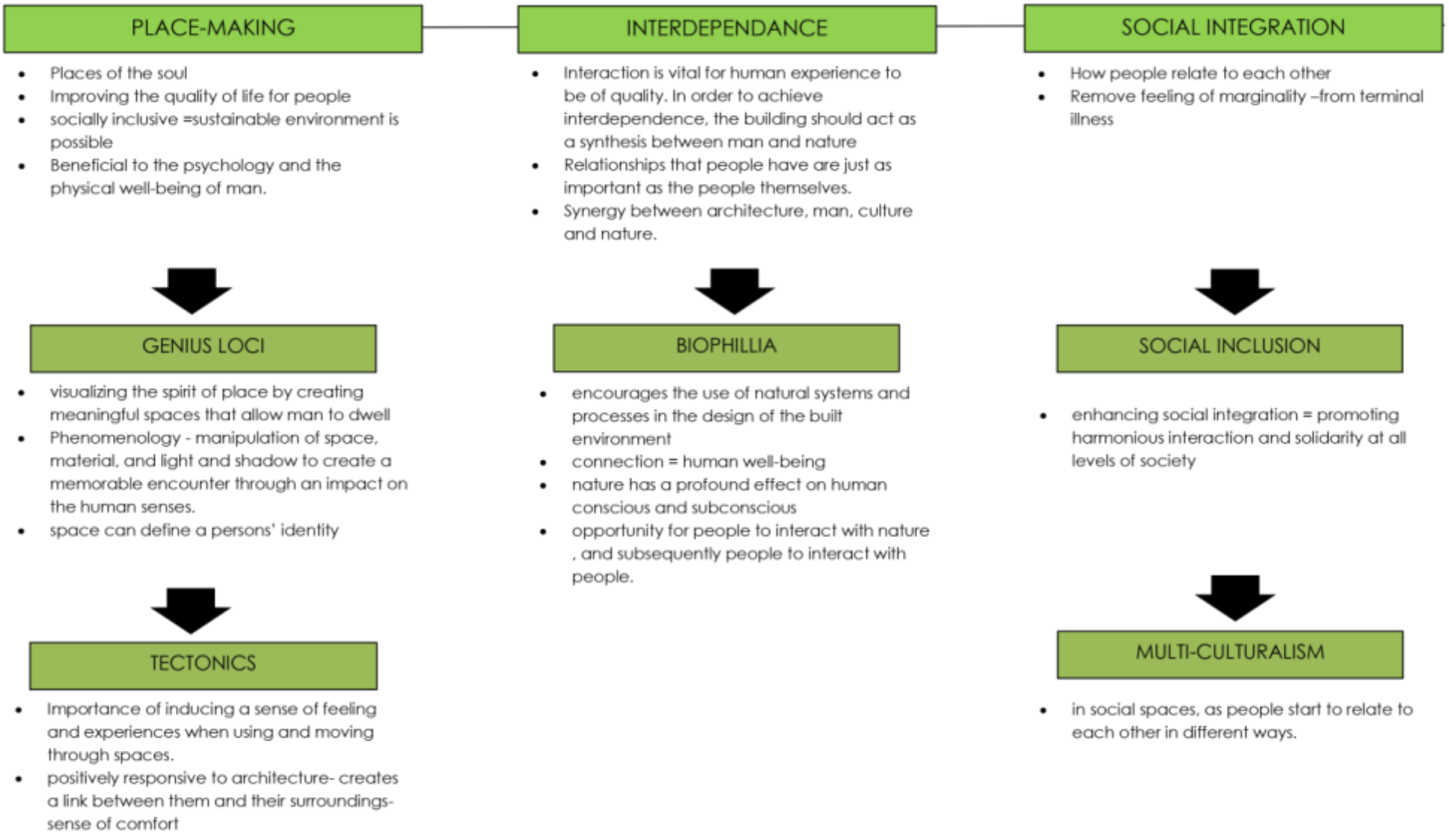

Figure 1 mind map of relevant point addressed by the theoretical framework.
by author

2. CHAPTER TWO- THEORETICAL FRAMEWORK

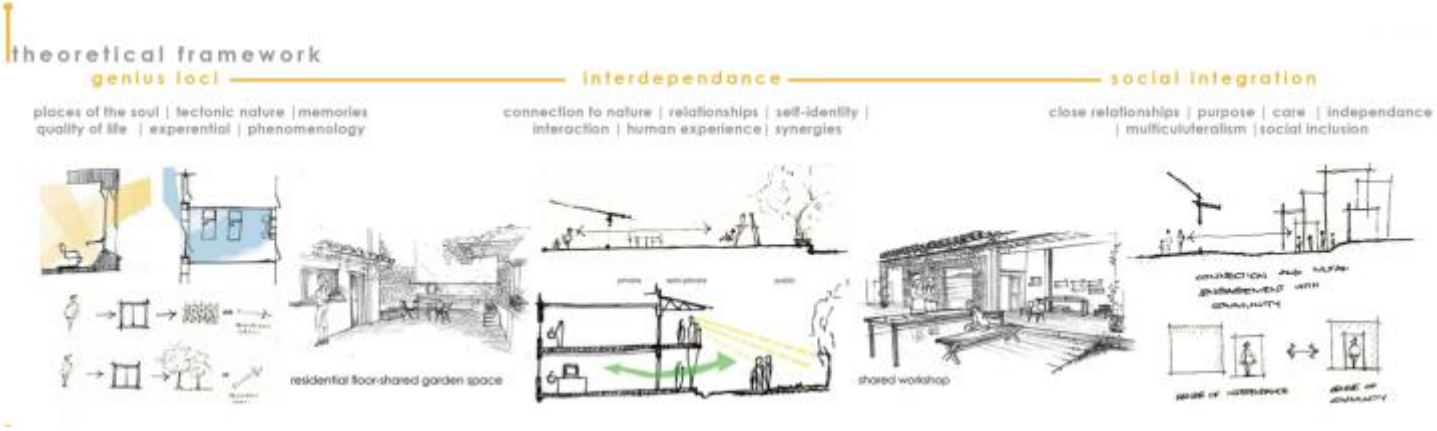

Figure 2 diagram conveying theoretical framework

This chapter begins to breakdown the theoretical framework to create a foundation for the forthcoming analysis presented in the chapters approaching as well as design. Mainstream architecture often focuses on the visual experience which doesn't allow for people with sensory disabilities to fully appreciate a space. Architectural space together with the concepts behind palliative care focuses on creating environments that promote dignity and independence amongst all users; thus, it is desirable to design an environment where all the human senses are stimulated. According to studies, the physical environment has an effect on the process of healing and well-being. Healing architecture is an evidence-based design concept, that represent a vision on how architecture affect human well-being, but more so affect the healing process for the individual (Frandsen, 2011).

The following theories and concepts would address possible solutions to creating comfort for the terminally ill, while understanding that the outcome is not to be healed but to grapple with the process of healing and how these ideas could be interpreted into a space.

2.1. **Concept of Genius Loci –Christian Norberg-Schulz**

The essence of Genius loci can be explained as "the spaces where life occurs …A place is a space which has a distinct character" (Norberg-Schulz,1980) . For architecture it means that focus needs to be on visualizing the spirit of place by creating meaningful spaces that allow man to dwell. The theory of phenomenology advises us to use sensory design as a tool to establish experiential , architectural space. Phenomenology in architecture can be seen through the manipulation of space, material, and light and shadow to create a memorable encounter through an impact on the human senses. Zumthor (2006) reveals the quality of that life is enhanced through architectural elements which stimulate the senses through human experience. He believes that the architecture should be created as a result of sound, light, materials and construction. For example, well-controlled lighting can enhance the feeling

one gets when one walks into a space which can inculcate feelings of well-being and comfort or opposes fear and discomfort.

Figure 3 Natural light is filtered through windows and narrow openings in the ceiling. From there, traversing the architectural space is only describable through individual sensorial experience.

Source: http://ideasgn.com/architecture/therme-vals-switzerland-peter-zumthor/attachment/therme-vals-switzerland-peter-zumthor-4/

Figure 4 natural light through the large windows.

Source: http://ideasgn.com/architecture/therme-vals-switzerland-peter-zumthor/attachment/therme-vals-switzerland-peter-zumthor-4/

Individually what people like may differ, however, how we respond to surrounding is not always subjective. Often, there are psychological reactions that are common to everyone. According to Day (2002) , Psychological responses are often complicated in the sense that some responses are more individual and others that are culturally conditioned. Day and Norberg-Schulz, both agree that place gets character from concrete things like materials, shapes, textures and colour. Norberg-Schulz believes character is inherent in a place and further goes on to suggest that space can define a persons' identity and that it is crucial that a space has objects that help human's orientate themselves. Day also believes that life takes place in a space for living .He describes how different forms can have an effect on peoples' behaviour.

Pallasmaa (1996) , questions why of the five senses we have , we dwell on habitually sight. "Pallasmaa demonstrates that the defeat of other senses to the visual has led to an impoverishment of our environment, depriving architecture of its most important task." (Rychlak,2013).

Place-making

"Place-making is the art of creating public 'places of the soul,' that uplift and help us connect to each other."

Figure 5 working with the community on design

Source: https://www.usip.org/academy/catalog/designing-community-based-dialogue-online-self-paced-course/

During the 1960's , Jane Jacobs and William H. Whyte, American urbanists, explored ideas about cities being designed around people and not just cars and shopping centres. It was seen as a radical approach to designing cities. The focus of this approach stemmed from improving the quality of life for people. The process of place-making aims to foster healthier lifestyles. Places are a conglomeration of people , objects and ideas embedded in certain temporalities. In "making "these places , a sense of belonging is encourages improving mental health and increases the capacity to address collective challenges. Through socially inclusive processes of place-making it shows that a sustainable environment is possible, while creating places that are beneficial to the psychology and the physical well-being of man.

Figure 6 highlighting the different aspects of place-making.

Source: https://www.pps.org/article/what-is-placemaking

Eikelenboom (2017) , an architect involved in healthcare design , questions how places of care are built and what can be learnt through the process about place-making in healthcare .It is important to focus on the way the built environment can affect health and perception .Her argument is that while many focus on the psychological aspects of place-making ,Place is actually a concrete object. Respectively it is a building, a courtyard or a room. Similarly it is an ongoing process of considering different materials, elements and users of the space.

Figure 7 sketch highlighting the engagement with the community and neighbourhood.

Source : sketch by author

Tectonics

Poulsen (2016) , describes tectonic as a balance between structure , construction and aesthetics. It can be understood as the expression of form and shape of the properties of a material. However, it is not just exposing the structure but about inducing a sense of feeling and experiences when using and moving through spaces. It can be argued that tectonic work has a 'purpose' and strives towards meaningful content (Hartoonian ,1994). It can then be said that it is a creative idea that materialize construction into a coherent structure. In a Semperian definition, it can be a creative element with only secondary focus on the function. He follows this definition discussing that architecture can focus on artistic design based on structures and materials.

During end of life care, studies show that it is important to stimulate the senses and induce a sense of feeling in people. When people are positively responsive to architecture it creates a link between them and their surroundings, in turn acknowledging a sense of comfort.

Figure 8 A raw construction holds a special poetic dimension by being finished and unfinished at the same time.

Building : Brookfield youth and community centre, Ireland

Architect: Hassett Ducatez Architects

Source: https://bycc.weebly.com/

Interdependence

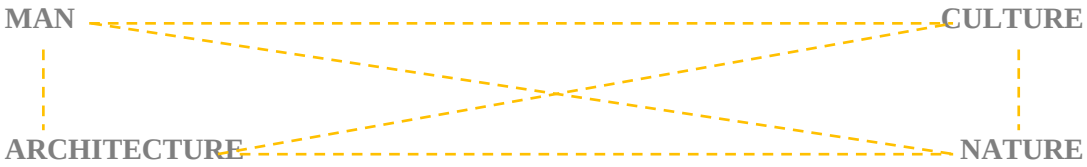

Figure 9 illustration of connections between man , architecture , culture and nature.

It is evident that people relate to each other in different ways .In Psychology, it is recognized that people in relationships are independent , dependent and co-dependent (which means they put aside their own well-being to maintain a relationship with another). Goldsmith (2010) , suggests that it is healthier to have interdependent relationships. This demonstrates relationships that are balanced and don't sacrifice their individuals values. The theory of interdependence was developed by Harold Kelley and John Thibaut , beginning in the 1950's.The progression of this observed the analyses of interdependence structure , identifying properties of interactions and relationships, processes and how structure influences motivation and behaviour.

Research suggests that people behave in a certain way due to unique experiences or cognitions or personalities , interdependence theory suggests that the relationships that people have are just as important as the people themselves. Given the above, it represents the nature and implications of interdependence.(Kelley, H. H., & Thibaut, J. W ,1978).Interaction is vital for human experience to be of quality. In order to achieve interdependence, the building should act as a synthesis between man and nature. It is imperative that architecture can co-evolve with people, nature, society and cultures to generate a synergy between architecture, man, nature and culture. In order to so, the relationship between nature, man and the built environment should be understood.

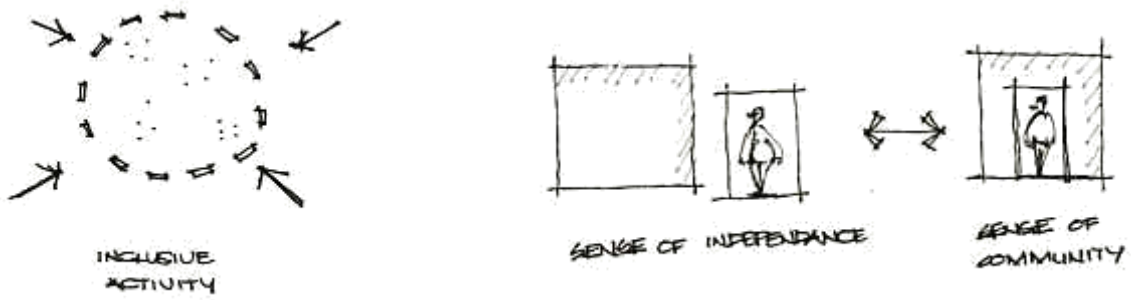

Figure 10 diagram illustrating an inclusive society.

Source :by author

Biophilia

Biophilic design is a design philosophy that uses natural systems within the built environment. It proposes that man has an innate connection with nature and that connection is imperative for the well-being of people.

Day (2002), discusses how nature has a profound effect on human conscious and subconscious, and is elevated when an individual has a heightened emotional state or is in an unfamiliar environment. Our environment can create connections to place by rooting our daily rhythm to the rhythm of nature expressed within the building, and provides "soul support".

Figure 11 A Buddhist view of Interdependence
Source: https://brewminate.com/a-buddhist-view-of-interdependence/

The concept of Biophilia can be complementary to architecture and can be described as design that "recognizes the inherent human need for nature together with sustainable and universal design strategies to create environments that truly enhance life" (Pollack 2006, p. 38).Contributing to spaces that encourage social interaction, Biophilia , has a great impact on architectural environments and enhancing well-being. Introducing Biophilia within architecture allows for the opportunity for people to interact with nature , and subsequently people to interact with people. Studies suggest that people that have access to nature often have a better sense of wellness than those without . (Sjoquist 2003, p.11-12).

Mafisa (2011) states that the role of nature is important within the architectural environment as it introduces the " Self" into a space that is calm and serene, providing a physical space for meditation and reflection to allow for a connection. She further discusses the natural elements appeal to the

senses which assist in the healing process. Further research suggests that “Architecture as compared to any other art form can have spiritual benefits to human beings and to the natural landscape or environment which it displaces and harms when it is constructed. The ideal would be when architecture and nature complement and respond critically to each another and allow for a symbiotic coexistence.”

Figure 12 Connection with nature. Creating spaces that have an indoor-outdoor relationship.

Source : https://i.pinimg.com/originals/8e/14/f2/8e14f2e5c98a61b99970292a44b91219.jpg

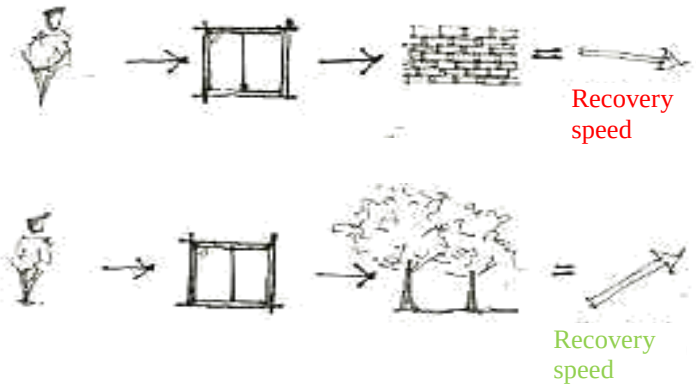

Figure 13 diagram showing the effect of nature on recovery.

source :by author.

Design requirements

Natural light is the most vital requirement in designing spaces. Sunlight impacts the nervous system, one’s mental health, and one’s appetite. Natural light also helps regulate human circadian rhythms, which are important to our health and mood, and regulate hormones such as serotonin and melatonin.It is important for spaces to incorporate as much natural lighting as possible. Roger Ulrich’s research showed that patients who had views or access to nature have a better recovery rate. The greatest achievement of Ulrich’s research with postoperative patients’ healing tendencies is the fact that, for the first time, the therapeutic benefits of nature were quantified. Creating spaces that allow patients to easily spend time outdoors - gardening or just walking in the space-make them feel relaxed and reduce stress.

2.2. **Social Integration**

The UN research institute , describes three different ideas concerning social integration;

"For some, it is an inclusionary goal, implying equal opportunities and rights for all human beings. In this case, becoming more integrated implies improving life chances. To others, however, increasing integration has a negative connotation, conjuring up the image of an unwanted imposition of uniformity. And, to still others, the term does not necessarily imply either a positive or a negative state. It is simply a way of describing the established patterns of human relations in any given society." (UNRISD,1994)

Feelings of marginality exist in more than just religion and ethnicity , in terms of dealing with terminal illness the impact of this stands strong .In understanding that social integration means different thing to different people, the basis of it still lies in how people relate to one another. When taking social integration as a positive goal, it attributes to the concept of inclusion. Often, it is not just that people are isolated from spaces that encourage integration but also that the type of interaction is not always positive. In this context, enhancing social integration can be understood as promoting harmonious interaction and solidarity at all levels of society.

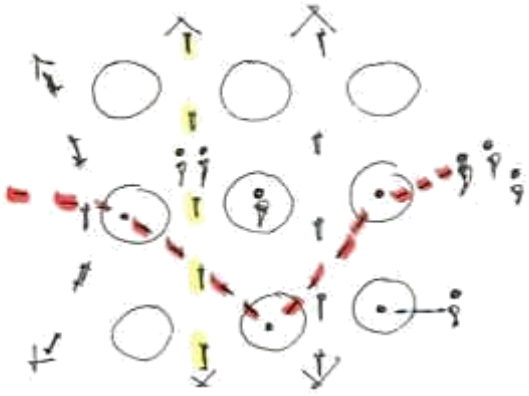

Figure 14. diagram showing various and overlapping user interactions.

source :by author.

Watkins (2007), suggests that the need for social integration lies in the deep disparities based on ; wealth, region, gender, age or ethnicity that reduce social mobility. This often leads to a fragmented society as well as impacting growth. In understanding this, it is evident that it is based on a personal and social level of growth and development. Within the South African context, culture is so diverse but often not understood. It often becomes a reason to disconnect and isolate oneself into societies akin. The concept of multiculturalism, can be further encouraged in social spaces, as people start to relate to each other in different ways. Multicultural integration expresses a recognition of diversity in people of different cultures and therefore perceive spaces very differently. In projecting these into spaces , public spaces act as a vehicle for multiculturalism, as they directly expose us to social diversity. Which could be in the form of parks , playgrounds, markets, and other social activities.

However, it is important to note that architecture cannot force interactions but can create these places to encourage interaction.

Design requirements

It is important to understand that architecture can only create places that encourage interaction. Social spaces such as gardens ,gardening ,courtyards , activities , communal eating spaces all can be designed as vital spaces for interaction. It is vital to have a balance of private and social spaces as patients in a palliative setting often require different levels of privacy and interaction. Some may prefer shared rooms while others may prefer private rooms. Studies also suggest that patients and their families require spaces for reflection and prayer . As a whole there needs to be a variety of spaces of different levels of privacy just like a home would have.

2.3. Conclusion

The thesis is geared towards focusing on creating a place that uses a collaborative community process to create common vision for a place that caters to more than just people facing terminal illness. Place-making would be an approach to creating a community which is self-sustainable and uses ideas of social integration to create a space that allows for interdependence of people in way that is healthy and allows for meaningful relationships through the process of life itself.

As a whole there are many factors contributing to an enhanced quality of space. Research suggests that space is a result of human interaction with the environment. Others focus on the importance of activity, including the physical space and meaning. Agnew (1987) suggests that place is a geographical setting for social action. It can be inferred that meaningful places are often derived through social spaces.

3. CHAPTER THREE -LITERATURE REVIEW

3.1. Introduction

"We would think that our great emancipation, our knowledge of science and of man, had given us better ways and means to prepare ourselves and our families for this inevitable happening. Instead the days are gone when man was allowed to die in peace and dignity in his own home."
(Kubler-Ross, 1970)

In South Africa, a growing cause of death and disease are due to chronic diseases and terminal illness (WHO , 2002) . The report by the Department of Health in 2006, suggest that these illnesses work in the same way in South Africa as they do in other countries , their manifestations differ somewhat.(Chronic diseases of Lifestyle in South Africa 1995-2005).However, the capacity in which they are dealt with here differ to these places where access to environments to assist and educate are more available.

Verderber and Rafuerzo (Innovations in Hospice Architecture, 2006), discuss the evolving nature and concept of the hospice movement against modern hospitals. The hospice and palliative care intended to increase the quality of life for the terminally ill during their last days. Through the progression of palliative care , there has been a shift in focus from being on cancer patients to those with other illnesses and diseases. However, as described above, there is very little education and training of this type of care. The way in which people of different ages and income are approached with care and assistance differ drastically. People that have access to more money are often treated better and get preference to support and care.

There have been many interventions in the treatment of patients regarding palliative care as well as the development of hospice architecture. Internationally there has been a movement towards specific housing and care, which includes people with terminal illness, however still limited .In South Africa, there is more assistance and education available to the wealthy as there are private facilities which incorporate palliative care. Recognizing that the built environment can play a critical role in ensuring a quality of life throughout the processes of dying and death is important but still it brings to question why there isn't as much focus on designing spaces for the terminally ill. When architecture addresses the healthcare environment, the focus is turned entirely towards the healthy and thriving. There is little or no focus on addressing the three stages of death; dying ,death and bereavement.

This chapter will focus on the background and development of care for the terminally ill ,including specific social , economic and psychological aspects which influence the development. The choice to care is often dictated by social standards, culture or religious values. It will focus on finding the gaps in intervention as well as potential for new innovation in South Africa.

3.2. A Place For Dying

3.2.1. The Stigma of Death and Dying

"We all fear what we don't know" (Buscaglia)

Science has proved that through development in technology people have a chance of living longer, however death is inevitable. Research suggests that while there may be relatively fewer deaths due to infection, there is an increase in the number of deaths due to terminal illness. This in turn, leads to more prolonged deaths due to terminal illness. Reasonably , people do not wish to be reminded of death daily through their environments, so it is understandable that there may not be such a demand for architecture to address the stages of dying and death. The subject of dying can be hard to discuss .One on hand, it is understandable that death is part of the experience of living and dying is expected. On the other hand, dealing with death is something that has an impact on personal and social bonds, and the individuals experience to say goodbye to the people and world around each other (Schruer, 2009) .

Often people avoid talking about or dealing with death, this poses a problem when eventually forced to experience death from the outside or even as the one who is dying. Subsequently, people are not prepared to deal with it emotionally, physically and spiritually. As hard as it is to lose a person , death is a natural process ,it should not be as shocking and disturbing as people have made it to be. Death is part of the cycle of life. Each of us is born, has a life and then dies. "Life and death are inexorably paired — we don't get to have one without the other. That is not negotiable. However, our attitude and beliefs about death and how we relate to life and death are both socially and individually negotiable." (Johnson,2012)

Sociologist, Tony Walter, argues the proclamation that people are so afraid of death that they are willing to look past the reality of death and its surrounding discussions. In his book, *The Revival of Death*, he expresses that in 1987, when death-studies were relatively new , even then death was talked about ,as there had been many books published on death and dying. He further argues that discussions had been taking place and people had been taking interest in understanding the dying process. This poses the idea that it may not be a matter of expressing interest or avoidance but rather the accessibility of information and reality of the subject matter. When dealing with terminal illness within the medical environment , focus is more on trying to achieve medical treatments to try and heal and less on the needs of the patient. The development of new technology has prolonged life and transformed the process of dying outside the home because the medical profession has accepted a role that refuses to give up the effort to save somebody's life. The ethical balance between a humanistic orientation to their dying patients and medical intervention is something that each physician faces. People view death as a medicalised and controlled process as it is often hidden away "often comes without tenderness, comfort, or serenity". People often view doctors and nurses in a negative way

when they lose a patient due to terminal illness, there should be a shift from it being a professional failure to understanding the cycle of life.

There comes a point when there has to be an acceptance that death is inevitable, rather than putting the patient through more pain and suffering. Verderber and Refuerzo said that “In this culture to not get better - decline, to die – is to fail... popular culture inevitably isolates the sick, the dying, and the grieving”. The medical environment supports this in the way in which the terminally ill are left to die. Understandably it may be more reassuring to hand over the dying process to professional medical staff as it is often a difficult process to deal with. The problem surfaces as people are then deprived of the opportunity to confront death and what comes with it. Many people believe that there is a certain dignity to have at the end of life and it often comes with acceptance and diverse rituals through the passage of life.

The fear and stigma of death associated with terminal illness often prevents people from dying a “good” death. By not acknowledging that palliative care is a specialized approach to end of life care ,in many places , leads people to die a very poor death in a hospital rather than dying at home , surrounded by loved ones. People often see palliative care as a last resort or when it’s time to give up rather than understanding that its sole objective is to increase the quality of life throughout the illness. Most of this fear comes from not being educated about terminal illness and not having support to confront illnesses. Understandably people would prefer to feel independent and do for themselves. However, as time goes by with terminal illness, people are often stripped of that ability. This is when people start to shift the responsibility on to others, some because they cannot handle the responsibility and others because they do not know how to and are overwhelmed by it.

By removing death and the dying process from the community and moving it to a hospital, it causes a shift regarding how it is dealt with and how it is perceived concerning death and dying. It can be seen as a way to hide the experience of death and organisation away from the public.

3.2.2. Hospice and Palliative Care

"Historically the most obvious ways in which architecture has attended to the needs of the mortal human body is through the design of buildings such as hospitals and other places of sanctuary and respite." (Warpole, 2009)

Figure 15 *It is heralded as one of the earliest iterations of our current holistic approach to healing.*
Painting : Healing Temple of Aesculapius (Asklepios) ,Robert Thom
Source : https://www.ancient-origins.net/history-ancient-traditions/dream-cure-effective-healing-power-dream-incubation-ancient-greece-009287

Healing temples in ancient Greece , dedicated to the Greek God of Healing Asclepius, were the equivalent of hospitals. These temples were for patients who were chronically or terminally ill. Far away from the hustle of cities and towns, these sanctuaries almost always had a fresh water source and views of the sea and surroundings. The word hospice itself is derived from the Latin word 'hospitum' meaning "guesthouse'. These were a place of shelter for the sick and travellers or pilgrims returning from long journeys throughout Europe. The middle ages saw the more conscientiously operated hospitals, providing 'hospice' quarters. These which included private rooms for people that could no longer travel further due to any illness or even exhaustion and were in need of some rest in order to carry on with their journey. However, the term was used more loosely and not specifically as a place of care for the dying, until the twentieth century.

Care for the elderly and those who were lacking in family or support ,before the industrial age , took place in Alms houses. Alms Houses were 'poorhouses' , which generally offered a place of residence to the poor and distressed. Alms houses along with monasteries were secluded sanctuaries which had internal courtyards and gardens. In these houses however, cleanliness was a luxury. Everyone regardless of their illness or condition were all housed together ,as inmates.(Mara, C.M. and Olson, L. eds., 2008)

Figure 16 Alms-houses with courtyard space (1920)

Source:https://www.ourwarwickshire.org.uk/content/catalogue_wow/warwick-lord-leycester-hospital-courtyard

The Ancient Greeks , by the 5th century BC , had recognized the healing benefits and therapeutic function of nature .As formerly mentioned , healing temples were where care of the sick took place. This holistic approach encouraged the sick to connect with nature. The Hippocratic traditions which focused on a balance between the internal and external environment are of fundamental importance in the development of naturalistic healthcare. (Tountas, Y, 2017) However, during the Renaissance Era , the palpable relationship between the indoor and outdoor realm had been lost seeing the development of hospitals. The focus shifted onto the outward appearance of the hospitals. Introducing sunlight into the healing environment became a sign of spiritual salvation which annulled the hygienic value. The focus on hygiene fixated on keeping the sick and dying isolated and away from the community.

Hospitals

There were similarities between the earlier European hospitals and early monasteries .They were often isolated from the rest of the world but still maintained spaces that allowed for connection with nature within the courtyard gardens. The establishment of modernist community hospitals saw its dawn post 1945.The 1960's saw the evolution of the high-tech hospitals which were focused in the cities. Described as machines for healing, they were designed with the focus on its appearance externally and payed little or no attention to the expression of internal planning.(Wrathall ,2016)

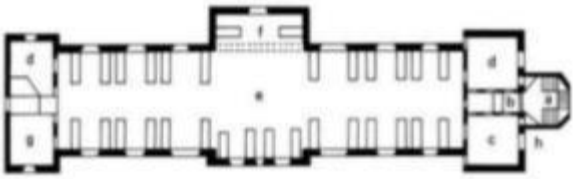

Figure 18 plan of Nightingale ward
Source:http://healtharchitecture.wikifoundry.com/page/Nightingale+Ward+Concept%3A

Figure 17 image of the Nightingale ward
Source:http://healtharchitecture.wikifoundry.com/page/Nightingale+Ward+Concept%3A

To compensate for rising cost of land , the courtyard gardens were no longer incorporated , this allowed for the medical environment to fully utilize the land in terms of space. Very often the rooms had no visual connection to nature and instead looked out into very sterile environments. There was also limited access to fresh air , believing that natural ventilation would contaminate the patients' health instead. The goal for design at this time was to make optimal use of space. The patients' needs were not the primary objective anymore but rather the capacity of the latest equipment. As Verderber (2008) states "Physical space became sparse giving way to the latest in an era of unprecedented expansionism and accelerating construction costs, had to be spent meeting more and more building code and regulatory agency requirements." Consequently, courtyards and gardens were not imperative design features , therefore there was a loss in connection to nature.

Hospice and Palliative care

Hospice , unlike a hospital , is not a place of recovery , but a place of relief. The hospice is a place where the ill and suffering can be relieved of pain and the stress of medical treatment. In comparing a hospice to a hospital , the praise in hospice is that the main purpose is to provide comfort and care for the patients and their families. Realdania (2009), describes the hospice as a temporary home for terminally ill patients and their families.

Often hospices act as a home to people who suffer from chronic illness ,which are not necessarily life-threatening, and not just terminal illness. In these cases , the patients still require specialized care and pain relief ,however, they spend short amounts of time in the hospice. When illness is of a critical nature they spend a period of time in the hospice ,other than that they live at home and have a constant communication with the hospice. The hospice has a manifold of functions to keep the patient and their families comfortable. Some of which are private or semi-private rooms, consultation facilities and other common and social spaces for the patients and their families to feel comfortable. Often there are also day-care clinics for the patients who require short term treatments. All of these tend to work together in order to create a communal facility and creating a space that provides extra care and assistance. The palliation staff is there to educate and assist the patients and their families.

The World Health Organisation (WHO) defines palliative care as "an approach that improves the quality of life of patients and their families facing problems associated with life-threatening illness, through the prevention and relief of suffering, the early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual" . Palliative care is a relatively recent area of modern medicine. As mentioned before its primary goal is to relieve pain and suffering so that the patients have a sense of liberation. In terms of medical development this is a shift in its purpose. While the medical environment seeks to find a cure , palliation provides soothing care. People would perceive this as a rare threshold where science surrenders , and humanity takes over. The mandate here is to sustain a certain quality of life rather than prolonging life. It chooses to treat

the person as an individual rather than the disease. A hospice should provide the relatives with closure and the dying with a state of calmness and dignity. When death is involved, the hospice is a place that attempts to remove the taboo that surrounds death in our culture. It is an integral part of existence and should be treated in a natural and dignified manner.

In South Africa , Palliative care services began in the non-governmental sector in the 1980's.When hospices were initially established , it was for cancer and HIV patients. These hospices were only available to those who could afford to support them. "Depending on admission criteria to a hospice service, patients with cancer, HIV, end-stage organ failure, progressive neurological disorders and tuberculosis (TB), particularly drug-resistant TB, receive palliative care – usually in the patient's home." (Gwyther, L et al ,2018). Hospice services in SA are led by nurses with support from a care team , including social workers, doctors and spiritual counsellors which are often volunteering.

Within Durban itself there are not very many hospices .These few hospices are also not able to accommodate very many people at a time. Often the Palliation staff travel to the homes of patients to assist the families. Even so, there is very limited education on palliative care and less access to knowledge about it. People are seldom aware that such a service is available to them, particularly those who live in isolated places.

3.2.3.Culture and Death

In the past the process of dying would take place in the comfort of one's own home as hospitals were scarce or not of existence. In dealing with the dying process the sick were involved in family and community until they died, which allowed for beliefs, customs and rituals to be more openly expressed and more easily facilitated .For those who had lost a loved one , the next step of the grieving and healing came at ease as part of the process. Understandably, the process itself was not easy but as the next step to losing someone it made the change more gradual. These processes that take place when losing someone is an integral part of cultural values.

One could say that not much has changed ,as people carry on with the same processes out of the hospital. However, one could argue that due to the clinical nature of hospitals , peoples responses are often different. By putting people in these situations they often have a lot more administration to deal with while having to deal with a lost one. It is often the case in hospitals that people become statistics in the greater scheme. Tony Walter , A researcher , establishes in his book " the revival of Death" how the process of dying has evolved. He states that over time people had surrendered the process of dying over to institutions as they had claimed to be more knowledgeable. Modern attitudes however , are offering that authority back to people.

Society often makes sense of death of an elderly person in terms of their age but is more tragic when the person is young. Even if this is the case this doesn't mean less for the quality of life in the elderly persons last days. Often the dying process is seen as a social taboo. In certain cultures death is discussed more than in others .Some cultures see that the process after death is quick while others extend the process of grief. Understandably , the physical and emotional strain of death on people and their families are avoided. As much as we may be able to come to terms with death and dying , people are never going to be happy about it , and that is not the objective. The focus is that patients and their families are comfortable in the process of dying , death and grieving.

Different cultures have different understandings of deaths and the reactions will vary greatly as does our society. A study shows that there is a significant amount of discussion around death, as there are many written directives in dealing with death. End of life care should cater to the needs of the individualized needs of the patients culturally. As the care provided will always be remembered by their families. The figure below shows the differences in the cultural attitudes towards death.

Religion	Beliefs pertaining to death	Preparation of the Body	Funeral
Catholic	Beliefs include that the deceased travels from this world into eternal afterlife where the soul can reside in heaven, hell, or purgatory. Sacraments are given to the dying.	Organ donation and autopsy are permitted.	Cremation historically forbidden until 1963.The Vigil occurs the evening before the funeral mass is held. Mass includes Eucharist. If a priest is not available, a deacon can lead funeral services. Rite of committal takes place with interment.
Protestant	Belief in Jesus Christ and the Bible is central, although differences in interpretation exist in the various denominations. Beliefs include an afterlife.	Organ donation and autopsy are permitted.	Cremation or burial is accepted. Funeral can be held in funeral home or in church and led by minister or chaplain.
Jewish	Tradition cherishes life but death itself is not viewed as a tragedy. Views on an afterlife vary with the denomination (Reform, Conservative, or Orthodox).	Autopsy and embalming are forbidden under ordinary circumstances. Open caskets are not permitted.	Funeral held as soon as possible after death. Dark clothing is worn at and after the funeral/burial. It is forbidden to bury the decedent on the Sabbath or festivals. Three mourning periods are held after the burial, with Shiva being the first seven days after burial.
Buddhist	Both a religion and way of life with the goal of enlightenment. Beliefs include that life is a cycle of death and rebirth.	Goal is a peaceful death. Statue of Buddha may be placed at bedside as the person is dying. Organ donation is not permitted. Incense is lit in the room following death.	Family washes and prepares the body. Cremation is preferred but if buried, deceased should be dressed in regular daily clothes instead of fancy clothing. Monks may be present at the funeral and lead the chanting.
Native American	Beliefs vary among tribes. Sickness is thought to mean that one is out of balance with nature. Thought that ancestors can guide the deceased. Believe that death is a journey to another world. Family may or may not be present for death.	Preparation of the body may be done by family. Organ donation generally not preferred.	Most burials are natural or green. Various practices differ with tribe. Among the Navajo, hearing an owl or coyote is a sign of impending death and the casket is left slightly open so the spirit can escape. Navajo and Apache tribes believe that spirits of deceased can haunt the living. The Comanche tribe buries the dead in the place of death or in a cave.
Hindu	Beliefs include reincarnation, where a deceased person returns in the form of another, and Karma.	Organ donation and autopsy are acceptable. Bathing the body daily is necessary. Death and dying must be peaceful. Customary for body to not be left alone until cremated.	Prefer cremation within 24 hours after death. Ashes should be scattered in sacred rivers.
Muslim	Muslims believe in an afterlife and that the body must be quickly buried so that the soul may be freed.	Embalming and cremation are not permitted. Autopsy is permitted for legal or medical reasons only. After death, the body should face Mecca or the East. Body is prepared by a person of the same gender.	Burial takes place as soon as possible. Women and men will sit separately at the funeral. Flowers and excessive mourning are discouraged. Body is usually buried in a shroud and is buried with the head pointing toward Mecca.

Figure 19 Religious beliefs about death , dying and funerals.
source: https://courses.lumenlearning.com/suny-nursing-care-at-the-end-of-life/chapter/diversity-in-dying-death-across-cultures/

Culturally sensitive bereavement and end of life care is often a contentious topic. Realistically , language and cultural barriers are a challenge when addressing people in times of death. While patients and families may need support , the situation may not permit that. For many cultures the approach of western medicine is not always appropriate and a direct approach comes across as harsh and insensitive. The palliative care approach teaches people to be sensitive to diverse cultures ,understanding that the patient and their families come first. As mentioned previously , many people are not aware of hospice facilities, therefore do not get the opportunity to have this kind of support.

However, it is understandable that the cultural position is complex and cannot be organized generally along ethnic lines. These cultural variations would need to be assessed in context of a particular patient rather than a population . For the reason that cultural backgrounds are meaningful to person in terms of their individual history and circumstances. One cannot just assume ethnic origins and religious background has the influence on decisions regarding death and dying (Koenig and Gates-Williams).

3.2.4.The Right to Health for the Terminally Ill

For many years the majority of South Africans have had their human rights violated, this includes their right to health care. Mubangizi and Twinomugisha express that there is no difference between the term ‘right to health’ and the ‘right to health care’, so long as the right to health does not mean that a person is guaranteed good health but rather the opportunity to access good health care. They go further to say that it can be defined as “the prevention, treatment and management of illness and the preservation of mental and physical well-being through services by the … health professions.” (Mubangizi, J., Twinomugisha, B, 2012).Albertus (2014) discusses why this leads to the understanding that a person’s health status does not impact their right to care. Hence, people with terminal illness have the right to health. Consequently, it may be argued that the right to health includes Palliative Care .Likewise this sanctions the right for people to refuse any type of care and treatment.

Figure 25. mother being able to spend time with her child while he is provided with care.

source: https://www.thestar.com/news/gta/2013/05/15/palliative_care_torontos_first_childrens_hospice_to_open.html

The Universal Declaration of Human Rights (UDHR), In article 25, stated that that “Everyone has the right to a standard of living adequate for the health and well-being of himself and his family, including food, clothing, housing and medical care and necessary social services”. The right to health, as interpreted by the International Covenant on Economic, Social and Cultural Rights (CESCR) contains four essential and interrelated elements, namely, Availability, accessibility, acceptability and quality (The AAAQs). These four elements will be discussed further below.

1.Availability

Adequate health facilities , goods and services should be available. This refers to the need and availability of technology as well. “In South Africa, terminally ill persons will not have their needs met unless sufficient facilities, trained care-givers and appropriate medication are made available to provide palliative care to them.”

2. Accessibility

Ultimately the goal would be for health care facilities ,goods and services to be accessible to everyone without any discernment. However due to historical circumstances the situation is not ideal. It is important that even the most marginalized and vulnerable people have access , regardless of their circumstances. The way in which places are designed or better yet how places have evolved to allow for living , often doesn’t allow people access to have healthcare facilities. As afore mentioned people in outlying areas have to travel far to get access to appropriate care , which is not always easy for them in terms of their physical and monetary circumstances. Perceptibly ,the terminally ill can be affected negatively by the excessive geographical distance between home and health facilities. In saying this it raises the issue of transport and time waiting for transport to such places. Often it is the case that access to information is feeble ,more so with people who have less income. It is also important that people with disabilities have access to buildings and can easily make their way around .Which will be discussed further with regards to universal design.

3. Acceptability

As discussed with reference to culture and dying the stigma of hospices and dying is an ongoing challenge. While healthcare should be conceptually universal , it should also be sensitive to the cultural diversity of South Africa.

4. Quality

Health facilities of good quality are vital for the well-being and care of patients. While quality is imperative , it is not effective when it is not accessible. Obviously , quality does not come without a price , which is where subsidization comes in and the right for everyone to have proper health care.

Everyone is eligible to palliation of unnecessary pain by benefit of his or her right to the highest achievable standard of health. Plaks and Butler (2012) ,state that “initiatives to improve the health of a country’s citizens are ineffective if they do not reach those in greatest need”. Studies in South Africa reveal that there are a substantial number of people in need of Palliative Care. International states already have the obligation to ensure access to palliative care , surely that is enough motivation for it to be a greater priority in South Africa.

Shortfalls in Palliative Care

“Most people, because they are poor, die in pain and despair, without receiving the benefits of palliative care that would have prolonged their lives and allowed them to live with a measure of joy, peace and even productivity in their last days,” Rian Venter, the director at West Gauteng Hospice, explains.

Figure 26 the right to healthcare regardless of circumstances.
Source: https://www.weforum.org/agenda/2015/01/3-ways-to-improve-healthcare-in-africa/

Palliative care has been described as “severely neglected” in South Africa, and there is a lack of access to it in public and private healthcare spheres alike. Simply put , it is just not prioritised .This is largely due to a lack of funds, but also a shortage of facilities and trained medical personnel. Where there are hospices , they are generally privately funded. When people are able to afford it, there situation is a bit better , but not always good enough . Even medical aid does not often cover palliative care. Dr David Eedes, a clinical Oncology Advisor expresses that due to the limited options available , patients end up spending time in expensive hospitals rather than having the opportunity to be managed at home. A report showed that most provinces in South Africa have very few hospices ,

while two do not even have one. According to the World Health Organisation (WHO), less than 14% of those in need of care worldwide receive it. Another recent study shows that patients in need of palliative care receive aggressive and ultimately useless interventions during their last days, offering nothing but misery. Dr Andrew Epstein also adheres to this, stating that these types of care are not helpful, and are more emotionally and physically harmful to patients and their families. Eedes suggests that because South Africa has multiple challenges contributing to the problem (i.e. lack of money, a lack of special skills in metropolitan areas, and inadequate training for palliative care) the approach to palliative care should be one that targets the various aspects at once.

For hospice care specifically, there are challenges. It is obvious that hospice care itself may not be appropriate and acceptable for all patients , as beliefs and needs may differ. It can be questioned whether hospice care can be cost-effective . As palliative care evolves , so should the design of facilities that enhance the quality of life for patients. As afore mentioned hospice care often takes place in spaces that are not specifically designed to cater for the needs of patients diagnosed with various terminal illnesses. These environments are often mono-functional and occupy underutilized spaces. These spaces are often static in infrastructure and are not able to adapt to changes in hospice and palliative care. While they have a sense of privacy , it can be argued that they are isolated environments that lack contribution to public spaces within cities. As discussed previously , hospices are found far away from many in need of it , therefore having limited integration between facilities , housing and community facilities.

That being said , many homes are not designed to cater universally to the needs of everyone despite their physical and mental state. It is more often than not that people have to make do with the space they are in while making changes to suit their needs. Studies suggest that it can be argued that where there is effective palliative care , healthcare costs may possibly be reduced. Understandably home-care will be less costly than staying at a hospital. While cost is a delicate topic to address when dealing with terminal illness , it is still significant, and ideally improving the patients quality of life. South Africa's National health insurance proposal argues that spreading funds more even will in theory result in removing the divide between private and public healthcare. However the same article argues that the focus on curative medicine is problematic , but whether or not it will have an impact on palliative care in the home is unclear. It could be suggested that within the built environment, focus could be shifted towards new initiatives to increase the potential of palliative care.

Overall it is clear that even though the hospital-centric approach to care is one that is currently standing , home-based care seems to be the more viable option. Within this however, there are many shortfalls which can be challenged and explored within the built environment, in terms of changing the direction of care within the South African context.

3.3. Interventions in Palliative Care

3.3.1. Contextualizing the need for housing in Palliative Care

According to Statistics SA, 32.2% of South African households are multi-generational. In the rural black communities this is more prevalent than with the urban white population, however , gradually increasing. The increase is in parents moving in with their adult children as well as vice versa , due to affordability and loss of jobs. In the case of South Africa , many people suffering with terminal illness may not have a home to stay in or where they do have a home they do not have the opportunity to be cared for. The issue of housing itself is definitely a concern in South Africa. While some cultures may see multi-generational living as normal , others may not.

Clark, D. and Whitelaw, S. (2017) make prevalent the fact that it is not often that housing issues in relation to palliative care is discussed .Shelter forms the bedrock of Maslow's hierarchy of needs yet its omission from palliative care is significant. While understandably, palliative care can take place anywhere, palliative care of an adequate quality cannot be anywhere. Current discussions are focused on family caregivers, and the role of families at the end of life and places of long-term care. These can generate a holistic idea of creating 'compassionate communities' that would promote shared concerns on death , dying and bereavement. There is little discussion into linking housing and palliative care, even though housing is a vital aspect of family. From the view of palliative and end-of-life care, it may be an opportunity to find a new frame of reference – one that puts housing at the centre.

Figure 27 Maslow's hierarchy of needs

Source: https://www.simplypsychology.org/maslow.html

Even though people with terminal illness are dying, they still deserve a good quality of life .The needs of the patients at the fundamental level is the same as those not suffering with a terminal illness, and goes beyond the pragmatic issues of accessibility , lighting and thermal comfort. It is often a reality that the patients have to face their illness alone until the last breath. While others have their families around them. However, even in the case of having families around them , the patients often do not get the care they need. Understandably this is not always intentional as people may not understand the needs of the terminally ill. Sometimes the patients themselves chose to die away from

their families. Where housing in palliative care comes in is to provide a space for a patient to spend their last days in a different environment away from their families but still getting the support they need. It can also assist in housing the patient and their families in a space that can provide the necessary care needed for terminal illness.

3.3.2.Multi-generational/Intergenerational housing

In Africa , it is said that when an old man dies a library is burnt down. (African Proverb)

Figure 28 image showing old age vs young
Source: http://www.pxleyes.com/photography-picture/4e5b4582475ff/Young-vs-Old.html

The concept of multi-generational housing is not a recent breakthrough, as families often live together with grandparents ,parents , children and grandchildren. As cities have developed, families have been separated as people find employment in the inner city while still supporting their families back home. In terms of developing this concept , multi-generational living tends to focus on the social aspects of a shared living environment between different generations. The architectural expression of this typology demands three basic design aspect ; shared spaces , dynamic movement of residents, and engagement of the greater community. It intends to provide a better quality of life for the terminally ill and their families. In offering this opportunity to live with individuals willing to offer care , they are able to maintain a relatively independent life while receiving care. There is a significant gap in the health care system for one of the most vulnerable patient populations which are the homeless , who more than often die in isolation. Multi-generational care intends to allow a group of people, whether it is a family or not, to live with one another. In the South African context , many households currently may not afford to see that all the children attend an educational facility. The opportunity of interaction

between different generations may facilitate education of different aspects in life , encouraging growth throughout a community.

Tatiana Epimakhova (2016) , suggests that a strong sense of community and collaboration is essential to a healthy environment. Moreover, a living environment needs to be a supportive space which in all efforts is a from a base of a socially cohesive and integrated environment. To support this, Christopher Alexander stresses the focus of balance within a community ,encompassing all life stages. Understanding that each age creates its own experiences by contributing to a larger community. His focus was to "Make certain that the full cycle of life is represented and balanced in each community." (Alexander, C., et al., 1977, p.145). Looking at our city as a study , it is evident that it is designed for healthy adults as a preference to children, elderly and people with disabilities. Hence , multi-generational environments support the development of all phases.

Contrary to the above situation, Yvonne Kuhnke (2015), observed a multigenerational housing project in Germany. She posed the question as to whether "*new intergenerational forms of living also solve the social problems that have arisen from demographic change"* .While she was unable to find tangible evidence that the relationships reflect the expectations of the vast research presented, in a qualitative manner she was able to understand that people do assist each other in these projects. She stated that the assistance is "predominantly 'typical' of support amongst neighbours, characterised by a manageable extent and low degree of commitment". Nursing however, is where neighbours often do not know how to or want to get involved. "Such projects should be considered under the aspect not of an easing of public sector responsibility in future", Kuhnke therefore proposes, "but rather of their significance for the quality of life."

Given the above , it can be understood that different people respond in different ways. While people may find it a bit sceptical to rely on others in times of need and that enough people are so willing to assist without any materialistic recompense in return. There are many examples of people willing to support others. The basic nature of this stems from the African philosophy of Ubuntu ,which conceptually speaking means different things to different people , however , it is an understanding of " I am because we are" in layman's terms if it doesn't benefit the greater good (community) it doesn't benefit me. A concept which often extends through many cultures in a different ways. While this may not be a concept that can be taught , it is one that people often find in their journey through life and in search of inner peace. That being said, there will always be people searching and therefore helping each other.

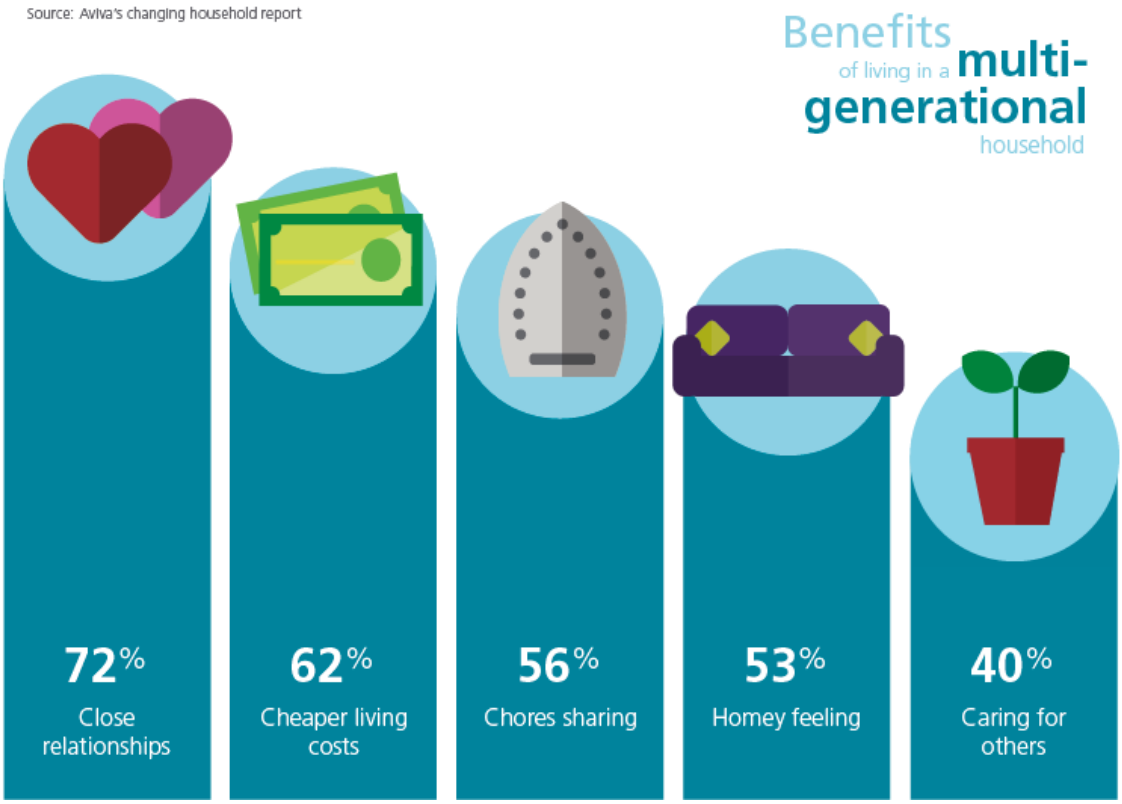

Figure 29 . graph illustrating the benefits of multigenerational living
Source: http://observationsfromasimplelife.blogspot.com/2017/08/multigenerational-households-pros-cons.html

3.3.3. Synthesising multi-generational housing and palliative care

Mixing matters (Burke ,2018) sets out why increasing connections between generations is key to the health, well-being and future of individuals, communities and the country. Often children are not able to be put into educational environments due to lack of family income, in addition to the influx of orphan children in Durban. In ageing populations where the 'dependency ratio' puts an increase in strain on health and social care in many local communities , hence it being more important to look for alternative approaches to the problem. One idea is to strengthen the links between housing issues, compassionate communities, and the provision of palliative care.

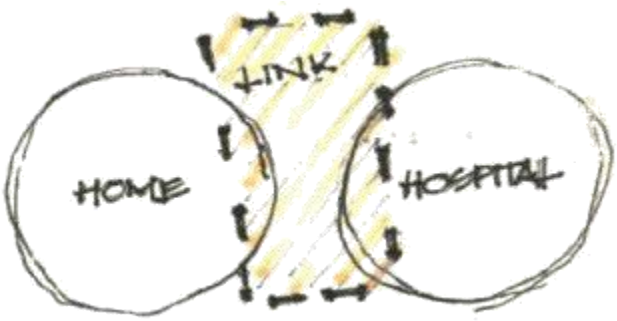

Figure 30. diagram illustrating the link between home and hospital

A study by Burke reads : "*A greater risk of isolation in older age can lead to a greater reliance on social care. Social isolation – as a result of shrinking social networks – has a comparable impact on early death to smoking or alcohol consumption, and a greater impact than obesity. Higher residential and social segregation correlates with lower levels of trust in others, as segregation fuels the perception of difference when diversity increases - and trust levels are lower where people perceive difference. Fragmented communities negatively impact health and wellbeing. Low levels of trust negatively impact our health, our immune systems, stress levels and blood pressure."*

There has been research in social sciences and health literature that show how cultural diversity positively influences patients , families, and care provider responses. This innovation in palliative care is a chance at providing housing for the terminally ill as well as social and community support with access to a care environment. Furthermore , it could be even more beneficial as a means of incorporating education , skills development and research. For individuals dealing with terminal illness , living alone causes more difficulty , as daily house chores can become a difficult task . Multigenerational housing can lead to financial, environmental and social benefits. Living together gives people the opportunity to share expenses , responsibilities , service and facilities. In terms of reducing the environmental impact, people would be sharing resources and reducing the size of their ecological footprint.(Galand, E . 2017)

Figure 31 intergenerational interaction

Source : http://www.toyproject.net/2017/04/innovative-intergenerational-care-in-fujisawa-japan/

In Japan , research has indicated the benefits of intergenerational interaction .It has shown that it a possible direction in counteracting loneliness and isolation , as older adults have a chance to learn about contemporary culture (Thankg, 2001).It has also proven to be a chance for them to feel more productive and a way of contributing to their community, encouraging a feeling of belonging (Suzuki, 2013). Living together means shared activities and experiences and thereby real connections between the generations. Aoi Care is an example of an intergenerational programme in Japan .To the community it is physically and metaphorically close . Tadasuke Katou who had founded Aoi Care ,

previously worked in a traditional retirement home and was troubled by how the elderly mainly just laid in their beds and slept. His approach focused on operations are based on participation and communication with the community. Ultimately this understanding emphasises the need to move away from a one size fits all approach .Often it is easier to put people and things into boxes to make it easier for us to understand , however perfect systems are not realistic. Aoi Care is situated within the community and the buildings allow the public street to meander through , allowing the neighbourhood to travel through it during their daily routes. As children travel to and from different places they often come into contact with the elderly in Aoi Care. Progress in this programme saw the introduction of employees bringing their children to the day-care .Often interaction between generations is something that is pre-planned , however , here people are allowed to come in and out as they please and plan their own activities together.

3.3.4.Conclusion

There seems to be a common negative perception that people have of a hospice and palliative care facilities .Hospices are extremely scarce and situated in areas that are not accessible to those who are in need of it, this is in addition to the rooms available being limited. Generally, it can be inferred from research that a hospice located within the local context is very isolated from society. Often , death is more acceptable at the end of a long life ,whereas younger deaths are seen as more tragic. However, people of all ages can be diagnosed by an illness that is terminal. Even though people are living longer lives with terminal illness ,they are often living in poor health and away from the comfort of home. In fact, two-thirds of all deaths occur in healthcare facilities, nursing homes, and other places that are not the dying person’s home (Fulton and Owen, 1994).

Each generation benefits differently by living in a diverse group. Everyone have different needs and common needs can be linked. Some may say we have evolved from turning to religion for meaning in our lives to entrusting professionals for advice, and, now, have turned to searches within the individual. A lack of social integration makes it harder to address key social and economic .According to a study by Burke (2018) ,there are three significant areas that make national challenges more difficult to solve due to lack of integration; long-term unemployment; recruitment and career progression; community health and wellbeing. Lack of integration within communities often increases anxiety and health problems. Divisions across different ages often cause social isolation. Benefits of social integration include an increase in life expectancy , increase recovery times and less mental health issues.

An architectural environment can assist in fostering recovery and preventative care , while encouraging change in social stereotypes , by promoting intergenerational relationships. As a result, redefining the terminally ill within a society ,instead of them being seen as a burden , they would be a source of development in society.

4. CHAPTER FOUR – CONCEPTUALIZING THE HEALING SPACE

4.1. Design principles and architectural response in creating spaces for palliative care, incorporated into housing

4.1.1. Universal design

Universal design (UD) fundamentally means accommodating the needs of everyone regardless of their size , age and functional capacity. In some way or the other , most people have a disability , for some it may be permanent and others may be temporary. Some people may have issues with sight, mobility, hearing, speech, touch, understanding, strength or sense of direction (Poulsen,M et al, 2016).However, Universal design should work for everyone not just those with disabilities. The idea first appeared in the 60′s and was describes by Ronald L. Mace as “the concept of designing all products and the built environment to be aesthetic and usable to the greatest extent possible by everyone, regardless of their age, ability, or status in life.” Universal design sets out design principles that focus on adapting design according to the abilities of people and consequently making a building accessible and usable.

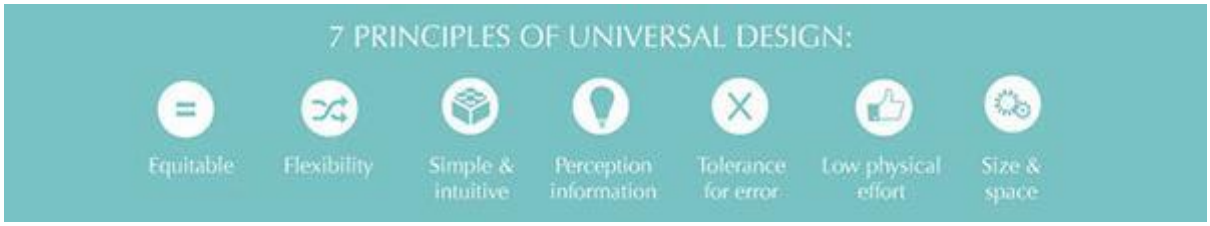

Figure 32. Diagrams reflecting the 7 principles of universal design.
Source: https://designgroup.us.com/expertise/design-one-size-fits-all

Burgstahler,S , in her paper titled 'Universal Design in Education: Principles and Applications', discusses the seven design principles that have been established by the Center for Universal Design , 1997. As well as stating the principles , she presents an example of each one;

" 1. Equitable use. The design is useful and marketable to people with diverse abilities. Career services example: Job postings in formats accessible to people with a broad range of abilities, disabilities, ages, racial, and ethnic backgrounds.

2. Flexibility in use. The design accommodates a wide range of individual preferences and abilities. Campus museum example: A design that allows a visitor to choose to read or listen to the description of the contents of display cases.

3. Simple and intuitive use. Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level. Assessment example: Testing in a predictable, straightforward manner.

4. Perceptible information. The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities. Dormitory example: An emergency alarm system with visual, aural, and kinaesthetic characteristics.

5. Tolerance for error. The design minimizes hazards and the adverse consequences of accidental or unintended actions. Instructional software example: A program that provides guidance when the student makes an inappropriate selection.

6. Low physical effort. The design can be used efficiently and comfortably and with a minimum of fatigue. Curriculum example: Software with on-screen control buttons that are large enough for students with limited fine motor skills to select easily.

7. Size and space for approach and use. Appropriate size and space is provided for approach, reach, manipulation, and use regardless of the user's body size, posture, or mobility. Science lab example: An adjustable table and work area that is usable by students who are right- or left-handed and have a wide range of physical characteristics and abilities. " (Burgstahler,S ,2009)

While some principles come down to basically allowing for wheelchair facilitation , people with heavy luggage or people that have reduced mobility. Others focus on details such as bathrooms being accessible to wheelchairs ,whether the person is left or right handed or parents with small children in pushchairs or similar. Pictograms is a universal language that could be used as signs together with braille, to help with language barriers or people with cognitive difficulties. (Poulsen,M et al ,2016)

Figure 34 depicting a general emergency exit.

Source: http://squareone.blog/universal-design-and-the-five-ws-and-how/

Figure 34 . depicting a universally accessible emergency exit

Source: http://squareone.blog/universal-design-and-the-five-ws-and-how/

Although it is clear that there are many factors of universal design , the key elements are to accommodate all abilities and all age groups, making spaces inclusive, participative and accessible for everyone, and creates an environment where everyone can retain their independence and agency. (Authority and Design, 2016)

For instance , using the example of sloped sidewalks on pedestrian walkways , a simple ramp onto a sidewalk to allow for wheelchair access. This does more than allow for wheelchair access, their utility goes further to assist parents with strollers , people rolling bags and other equipment on wheels. This is a good example of how designing for the “extreme” case makes the experience better for everyone.

Figure 35 walking guide for the blind

Source:http://www.ntt.co.jp/activity/en/creation/accessibility/

Alternatively, studies suggest that the concept of universal design is seemingly not widely accepted and more controversial than anticipated. Ann Heylighen through her research paper - *About the nature of design in universal design*- confronts these notions as it is often received rather sceptically. The study focus group consisted of architectural directors of an architecture school. Through her interviews , there had been a few key motives that did not warrant a full support of Universal Design. The concept of UD may be viewed as unscientific; while having good intentions, but rarely surpassing that level. This corresponds with the idea of it being utopian as it is not possible to design for every single person. By the same token , accessibility is a universal issue but the attitude towards it should be considered as common sense .The study expressed above presents us with questions from Rittel and Webber's -*Dilemmas in a General Theory of Planning*- : who judges the usability of a building feature ? who decides whether it can be used by all people to the greatest extent possible, or whether, ‘‘the design is usable and marketable to people with diverse abilities’’, as stipulated by the first UD principle ?

4.1.2.Sustainability

In a world where resources are being exhausted at an disturbing rate, sustainability is a concept that should always be considered from the start of a design. The concept of sustainability is the idea that "the planet's resources and environment are finite and fragile. Therefore, humanity has the obligation to uphold the environment and minimize the waste of finite resources." A sustainable design can be further understood as a reaction to the ongoing environmental issues that we face , such as the depletion of natural resources , damage to the ecosystems and loss of biodiversity. (Shu-Yang et al, 2004). Sustainability extends vastly from building materials ,to the running of a building , to creating spaces that are socially sustainable. Environmentally, green architecture helps reduce pollution, conserve natural resources and prevent environmental degradation.

Jong-Jin Kim, an architecture professor at The University of Michigan, in his paper titled "*Introduction to Sustainable Design"* , proposes three principles of sustainability in architecture. It is often said that during a building's existence, it affects the environment by means of human activities and natural processes. The different stages of development have diverse effects on the surrounding environment from site development, to construction, to how people use the building after completion. The process of construction itself disrupts the local ecology. Reasonably, it is understood that as cities develop the demand for architectural resources (i.e. buildings and building products) increase. Therefore in understanding this, it is clear that there needs to be efforts in dealing with this moving forward in design. The proposed three principles of sustainability in architecture, namely ; economy of resources , life cycle design , and humane design. Economy of resources focuses on the reduction , reuse and recycling of natural resources. Life cycle design considers a system for the building process and how it impacts the environment. Humane design considers the human and natural world interface. (Kim, J.J. and Rigdon, B., 1998.)

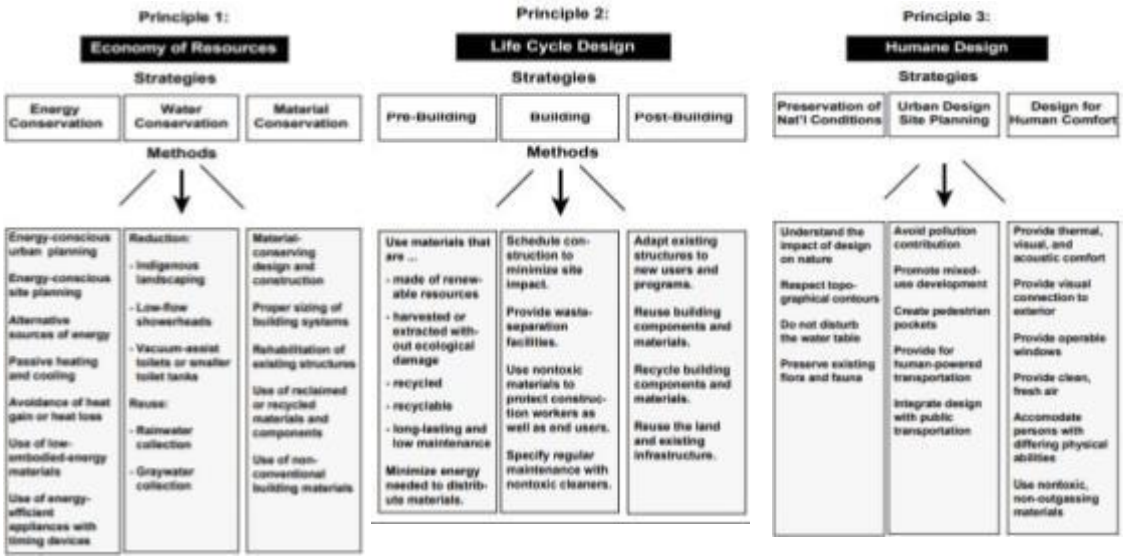

Figure 36 three principles of environmental sustainability , adapted from Kim, J.J. and Rigdon, B., 1998

While it may be an ambitious goal ,A zero energy building ,sets out to produce the same amount of energy that it consumes. Hospice facilities can be considered as twenty-four hour buildings. While most treatments take place during the day ,the facility runs like any other home. People are in need of different things at different times.(Nissen et al., 2008) . Contrary to Hospitals ,Hospice facilities, rarely make use of high-tech machines that use a lot of electricity. Even so ,the utilization of electricity produced by other renewable sources is a viable resolution.

Design specifications to consider ;

Resources

- Materials Made From Renewable Resources ;Using materials that can be produced at a rate exceeds the rate of human use would be sustainable.EG.
- Materials Harvested or Extracted Without Causing Ecological Damage; Often renewable materials need to be obtained causing environmental damage. It is important to consider the local circumstances.
- Recycled Materials ;Using recycled materials can reduce the amount of waste produced.These also preserve the embodied energy that would be wasted. As well as reducing the consumption of materials from natural resources.
- Materials that a low maintenance and have an extended life-span; Using less energy and chemicals to clean and to discard products. It sometimes allows for the occupants to have less exposure to chemicals.
- Respecting site topography; The existing topography should be considered. Changing the topography affects the microclimate of the site.
- Preservation of flora and fauna ; it should be considered as resources to the site.
- Integration of public transport; on an urban scale it is important that design promotes public transport .This eliminates major costs and well as environmental damage. It also lowers the rate of traffic and need for excessive parking spaces.
- Promotion of mixed use development; this allows for a live, work, play situation. Creating a greater sense of community and a safer environment.

Human Comfort

- Thermal , visual and acoustic comfort; peoples performance depends on their comfort within spaces .When spaces are too hot or too cold, people often perform poorly. The effect of lighting is essential to perform tasks appropriately. Noise is a determining factor for comfort within a space, as it is often distracting .

- Connection to the outside; Light plays a vital role psychologically and physiologically in humans.
- Operable windows; this allows the occupants to have control over the temperature and ventilation within a space. Fresh air benefits people beyond the need for oxygen.
- Accommodate Persons with Differing Physical Abilities; life span is an important aspect of sustainable design. It is important for building to be durable and spaces to be adaptable. In terms of adaptability it is important to consider people of different ages and physical abilities. Subsequently, the more a space or building can be used the more useful it is.

(These design goals have been adapted from Introduction to Sustainable Design ,1998)

With sustainability at the forefront of design, Green architecture focuses of eco-friendly design. Green architecture produces environmental, social and economic benefits. Thomas (2009) advocates that in an economic sense , it would reduce the cost on energy and water while improving productivity of the facility. Moreover , in a social sense they should have a minimal impact on the local infrastructure. When architecture adopts sustainable practices and makes a deliberate attempt to drive the form of the building out of desire to develop a connection to the local environment, the public who occupy these buildings will become more likely to take an active interest in their natural environments. Likewise, If people are regularly exposed to the processes necessary for building maintenance, and are involved in the upkeep and energy usage of the building which they inhabit, they become aware of the significance of their role as members of a larger natural eco-system. This increase of awareness ultimately could help to increase society's ability to apply sustainable concepts to a variety of other problems.

Sustainable hospice design is imperative as it is funded through charitable measures. Simple environmental strategies that focus on passive principles such as "rigorous insulation, exemplary airtightness, mechanical ventilation and heat recovery, breathing wall technology, optimized daylighting and solar gain" (Taylor , 2015) , are integral features that will help deliver an efficient low-energy building that will require substantially less heating and artificial light .This endeavour begins to fill in the gaps of the healthcare systems shortcomings with regard to the built environment . Additionally ,it starts to create a better environment for the terminally ill.

4.2. The Senses as Perceptual Systems

4.2.1. Conceptualizing the Healing Space

Often people may consider whether a space can make you sick or encourage healing. Esther Sternberg, through her book -"*Healing Spaces: The Science of Place and Well-being*" , frames the scientific investigation of the links between the healing process and the environment by asking a simple question: "Can the spaces around us help us heal?" (2009, p. 1)She articulates how physical space affects and transforms the healing process. Mafisa (2011), states that healing involves a process where the recipient receives a physically external antidote in order to help them heal. Thereafter , the recipient would have look within themselves in order to achieve a level of acceptance and retrospection to further process healing. She suggests that ignoring the physical qualities could decelerate the process of healing. Stark (2009), describes healing as the process of re-establishing harmony within the organism. He further goes on to suggest that the illness implies a change in equilibrium within the body , which indicates a need for the body's natural ability to heal and regenerate.

The concept of healing functions holistically, which embraces factors that affect a person's life. That of which includes the self, family , community and context in which the individual carries out daily life. Healing like that which attributes to the theory of social inclusion, depends on establishing successful relationships and developing reciprocity between these factors .This further supports the notion mentioned before, asserting healing as not a process of curing or fixing , instead as a state of equilibrium.

With respect to architectural parameters that can be derived from healing environments, it transpires into architectural space in plan , layout ,and window placement. Healing architecture exists through the body, its relations and security. Within these are other fragments that affect the design parameters within the physical frame and side effects which focus on the physiological and psychological. Accordingly , the body itself is related to the human body and its senses which encompasses things like ;light , art , sound , air and movement. For instance light comes in different varieties ,it can be diffused , direct and artificial. All these influence the body and human experience in different way. Studies suggest that daylight has a massive impact on spaces. If a room has an absence of light a person could understandably become unaware of the time frame and space they are in. When rooms are exposed to the right amount of daylight and artificial light, positively affect depression, pain, stress and can be used as a form of therapy. (Frandsen, 2011)

4.2.2. Sensory stimulation

Architecture itself is a tool for humans to experience surroundings. Mafisa (2011) states that " Man lives when he can orientate himself within an environment and proclaim his identity, so that he

experiences his environment as a meaningful experience. The sense of place is therefore important in the "art of space making" as it helps the user define the use of space and how to use it." Sensory architecture is an amalgamation of all of the senses and experiences within the surroundings. A building that allows one to be comfortable with their "self" empowers a person to be free in expression within the space. Freedom of expression within a space , transcends a space into art , this creation of space should strengthen and stimulate the Self. Mafisa (2011), suggests that the senses connect to the self on a physical and emotional level , which can be used to create an enriched layering of spaces. Pallasmaa, (2005) states that "*the sense of self, strengthened by art and architecture, allows us to engage fully in the mental dimensions of dream, imagination and desire... [so that] Instead of merely creating objects of visual seduction, profound architecture relates, mediates and projects significance, It defines horizons of perception, feeling and meaning; our perceptions and experiences of the world are significantly altered by architecture."* While we all may share similar functions and tasks in our daily lives , such as working, eating and sleeping , the way in which people carry out these functions will differ according to cultural , social and environmental conditions. Hence the essence of place, removed from its functional approach is its identity to the user. Mafisa (2011) suggests that this "place" becomes more meaningful through senses and memory.

Gibson,J.J (1966), In his book "The Senses Considered as Perceptual Systems" , describes the senses as more than just being a means of sight , hearing , and the others .But rather they are instruments to perceive space and what is around us. He describes the relationship of the body relative to an object and vice versa , as a perceptual system where we are literally in touch with our surroundings. The quandary here however is that while considering that the brain presides the perceptual system , the perceptual systems is conceived through an individual's history of exposure to an environment . Therefore bringing to question ; "How much does perceiving depend on organs? How much does it depend on growth? How much does it depend on experience?" (Gibson, J.J , 1966). Canter, D (1974), supports this idea in his book "Psychology for Architects" ,expressing that sensations that people receive are diverse while their perceptions are often more stable.

Materials

In order to create a certain atmosphere, choice and combination of materials is very important. Articulating what was mentioned previously, in choosing materials the user is able to read and comprehend a space in a certain way, moreover having an effect on the indoor climate in a psychological way. Acoustics within a space are different depending on the materials and interior , these of which either absorb, reflect or scatter soundwaves. Although it may not seem as obvious, the materials used in a space can also affect the way temperature is perceived. For example the use of steel or concrete can make the space seem cold and hard in comparison to the use of timber. Materials go further than being perceived by tactility , but also by stimulating the sense into perceiving a space a

certain way. As a result of materials being typically used in a certain way , some materials allude to particular places and feelings. Taking a home for example , often timber is used as a floor finish along with tiles in areas that may be exposed to weather. Vinyl or linoleum is often found in more clinical environments, therefore creating that sort of atmosphere.(Zumthor , 2006).

Figure 38 materials and textures that appeal to the senses

Source: https://www.interiorsandsources.com

Figure 38 choice of materials assist in creating a homely hospice environment

Source: https://www.interiorsandsources.com/article-details/articleid/13668/title/a-natural-refuge

In mentioning that sustainability plays an important part of choosing materials , it is important to be tactful about not compromising the quality of space. The use of steel offers a great amount of freedom and strength within design. Brick for example is more traditional and has connotations to a homely environment. While these have a long life span , the production of them often uses a lot of non-renewable natural resources. Where wood may be considered more renewable , with a lower carbon dioxide footprint, depending on the time of wood used. The use of wood gives offers a lot to an interior environment , however in certain instances may require a lot of maintenance. Hence , using a variety of materials may award less maintenance within a space.

Light

Pallasmaa (2006) describes the presence of light in architecture as an indicator of life. The way in which light is manipulated in architecture gives a space its character. Often character is something that is remembered and recalled in memories. Mafisa (2011) suggests that light has ability to encourage a therapeutic state of mind for its user. Spirituality of a space can be achieved through the play of light and void.

As Pallasmaa (1986) describes, the observation that “the artistic dimension of a work of art does not lie in the actual physical thing; it exists only in the consciousness of the person experiencing it...Its meaning lies not in its forms, but in the images transmitted by the forms and the emotional force that

they carry.” Both colour and light are vital components in architecture. They influence the way in people live and respond. Zumthor (2006) expresses that when lighting is appropriate and controlled it enhances feelings for the user of a space, which is reflected in their well-being and comfort. Colour and light are both significant in its vernacular across the world. Jean-Philippe Lenclos (1999), supports this as he describes colour as being sacred and symbolic to different cultures around the world. His research suggests that colour has different meaning and can be symbolic across religion , morals, customs , and psychology.

The existence of daylight has the ability to reduce pain and the incidence of depression (Ulrich et al., 2008).Large windows ensures the presence of daylight in creating an atmosphere . Rubin et al., (1998) , suggest that windows should not have permanent or immovable obstructions to sunlight. Windows and skylight should be used well and as much as possible. Access to outdoor areas is also an important contribution to ensuring patients receive ample daylight. Sunlight is just as important as daylight as studies show that patients exposed to natural sunlight have decreased levels of stress and recover faster.

Figure 39 image showing light entering a religious space , creating a stronger atmosphere.

Source :https://soranews24.com/2012/11/16/the-breathtaking-allure-of-the-stained-glass-of-nasir-al-mulk-mosque-in-iran/

Acoustics

Sound in all environments is an important factor. Noise pollution often affects the way in which people perform in spaces. Improving acoustics can positively affect the working environment by reducing the amount of errors, due to audibility. For people that are recovering or dealing with illness, their senses are heightened and hearing can be more significant for them. While patients do need quiet

time to help their bodies heal, music therapy can be an effective method of soothing the mind. Music can in some ways be a distractor that can be used as a stress relief. (Frandsen, 2011) .Through the design of architectural environments for well-being measures need to be taken to absorb, reflect or mask disruptive frequencies – all of this can be done with the right materials and layout.

Nature

Figure 41 image of a healing garden space which incorporates water and nature.

Source : https://naturesacred.org/sacred_place/anne-arundel-medical-center/

Integrating nature into healing and treatment environments has for the most time proven to be effective. The elements within nature emulate the qualities necessary for the spaces, induces feelings of serenity. Studies suggest that even the simplest forms of integration become a psychological tool of distraction , manifesting recovery. Although nature is not able to heal the physical ailments of terminally ill patients, exposure to the outdoors can calm the nerves, relax the mind, and refresh the spirit. Hospice patients have benefited from the availability of accessible gardens, pathways, and outdoor areas for years. An understanding in the healthcare community as to the importance of (and significance of) gardens in healthcare facilities proves that human beings desire emotional support just as much--if not more--than physical remedies. Nature has always been a key component of healing environments (Van den Berg, 2005). It reduces stress (Van den Berg, 2005), it reduces negative emotions (Ulrich et al., 2006), it can enhance positive emotions (Ulrich et al., 2006), it can reduce anxiety of patients and family (Smith, 2007), it can improve health outcomes linked to post-operative complications that are coupled to stress such as headaches, and it can help dealing with pain. In architecture , the language of forms often correlate to feelings associated with a space. Redstone , expresses that the natural environment has soft edges ,and no right angles . However, the right angles in our everyday life are endless in the built environment. The architecture of a healing environment can take on the qualities of natural conditions through imitation in form. While one might feel constrained and boxed in rectilinear spaces, the fluidity of an organic space creates no such feeling.

4.2.3.Space, Place and Home

"Recognition, memory, choice, sharing with others, the acquisition of significance: all these contribute to the processes of architecture." (Unwin 2009)

Figure 43 an environment that one can feel comfortable in is one that has elements of a home. Source: https://onmilwaukee.com/family/articles/multigenerationalliving.html

As discussed previously with regards to sensory architecture , it is recognized that architecture has the ability to change perceptions and induce feelings within an environment. Winston Churchill, recognized this in saying that ; "*We shape our buildings and later they shape us.".* While perception may vary , the purpose of architecture is to evoke a response. Mafisa (2011), said that by *"understanding the relationship between people and the environment , one can begin to define oneself within ones environment"* . Bergson (1911) discusses the idea that memory constructs our unconscious state of recognition in space, time and matter from which we develop our intuition. While the idea may seem abstract , it is important in understanding how intuition is essential when dealing with space and architecture.. Suvanajata (2001) further elaborates on Bergons ideas suggesting the intelligibility of space should focus on internal and external connections to create a unique space and experience. Often people are not conscious of the movement in spaces as it may happen instinctively, Bergson (1911) gives an example of this saying ; "*when you speak of the town, of the street, of the other rooms in the house, of so many perceptions absent from your consciousness and yet given outside of it. They are not created as your consciousness receives them; they existed then, in some sort; and since, by hypothesis ,your consciousness did not apprehend them, how could they exist in themselves unless in the unconscious state?"* (Bergson,1911).

Following this research , it can be understood that one must be able to differentiate between spatial dimensions before creating man-made space. Our understanding of space and appreciation often develops from a source of intuition. Suvanajata goes on to discuss that once we understand space and

project it into other spaces so does our understanding of socio-cultural frameworks. Therefore as we create architecture for a specific function , the structural and experiential dimensions are fused together so that we are able to comprehend the 'being' of things with the 'action' of our movement. Lefebvre (1991) ,states that social values are always found in a space .He supports this research in saying that spatial relations are initially conceived through intuition , thereafter as space is "culturalised" or institutionalised , through understanding spatial configurations. And it is only then when space is created for a particular purpose is its relation with everything else around it.

Often individuals who end up in an institutionalised environment during their last days , become nothing but a number in a the greater scheme, and become ostracized by the society at large. In a palliative environment an overall sense of security and continuity is require, these of which are associated with a home. Often people will associate a home with a house , however , in different places and cultures it may be something different. It may well be that peoples associations to home , has something to do with their place of birth or ethnicity, any sort of association may invoke a sense of homeliness. This project focuses on the home as a physical object as well as focusing on the experiential and psychological notions of a home. The perfect concept of a home is the idea of it being a place of retreat. While the home has functions to play out , the experiences in this space is what really defines it as a home, alluring to a sense of comfort (Meesters and Coolen, 2009).For that reason ,a palliative environment should encourage such interactions and situations for the patients and their families. A home is considered a personal space , where a person can inhabit and utilize space in ways that are meaningful to them. While this can be a sense of comfort it is also a means of expression. Meesters and Coolen, (2009),suggest that the home is therefore a frame for social interactions between friends and families. Therefore spaces need to have a great degree of flexibility as well as flexibility in terms of how people carry out their days. Allowing people to have a choice is important in reclaiming dignity and freedom through the process of dying.

4.2.4.Conclusion

Figure 46 a family enjoying quality time together.
Source: http://www.paikesekilluperekeskus.ee/quality-family-time/

Architecture can be considered a vessel for human experiences as people experience surroundings through the senses. Sense of sight is generally the priority in architecture and other senses get neglected. If this is the case , it creates spaces that are visually biased and devoid of any lived experiences. Day (1995), proposes that if our senses are vital in perceiving a space , they are like a Well-being is brought upon by how one feels within a space. We create a visual of a place based on how it is received though our senses. Our feelings and health change as our perception of a place changes. In the human mind places , feelings and moods are all related and within a physical space can inspire a sense of healing.

5. CHAPTER FIVE - PRECEDENT STUDIES

The aim of the following precedent studies is to investigate architecture that provides environments that are conducive to healing, have therapeutic qualities and have a sensory approach to design. One the one hand the study will analyse an existing nursing home facility .On the other hand it will look at a hospice facility that aids in preparation for death and creates an environment that enhances the persons quality of life.

The environments must display how the built environment can be designed to improve the quality of life for the patients. This will highlight crucial design criteria that the proposed facility would entail, in promoting holistic well-being. The precedent studies will provide the tools to benefit the users of the space.

The criteria for analysis was generated through understanding the needs of the patients and their families through the research discussed in the preceding chapters . The analysis will be conducted according to the following criteria and with relevance to the theoretical framework;

Home-like environment and sense of community

Connection to nature

Designing for patient and families

Natural Light, Colour , and tectonics

Universal Design and Wayfinding

Social interaction / Sense of community

Sustainability

5.1. Urban Hospice, Copenhagen

Figure 47 entrance of urban hospice

Source:https://www.architecturalrecord.com/articles/12818-urban-hospice-by-nord-architects-copenhagen?v=preview

Architects: NORD Architects

Floor Area: 1000m2

Date Completed: 2016

5.1.1.Introduction

Figure 48 indicating the location of the Urban Hospice. Source : google maps

The Urban Hospice is situated in a densely populated area of housing and historic buildings in Frederiksberg, within Copenhagen, Denmark. The area in which the hospice sits is tranquil and the vision intended to provide a warm and protective atmosphere for the terminally ill. The design replaced an existing facility that was no longer fit for purpose. The focus was to create a more functional layout that incorporated courtyard design and more open spaces. The understanding of patients' needs for privacy and respect for personal dignity is the primary focus.

5.1.2 Historical and social context of the study

The terminally-ill patients in this palliative-care facility in Copenhagen survive on an average of just 19 days after admission, with many dying in the first week. While it is heavily staffed for expert round-the-clock care, the environment needs to be as domestic as it is clinical—a dignified, calm, even cheerful place for patients and their families. It is normal in Denmark for hospices to be in the rural hinterlands, rather than the city but the idea is to be close to the relatives.

5.1.3 Evaluations and analysis

Home-like environment and sense of community

The aesthetic of the hospice does not read as a hospice , if you were to look at it from the street , it could read as an office or museum. Through analysis of literature, what hospice should do is have an aesthetic of a homely environment. However, the building does respond to its context and sits well within the urban environment. It does not act as a landmark that could attract sightseers. As it is in a residential neighbourhood the building is of a low-scale. The project intended to create a warm and protective environment for the patients. An important aspect of this was a collaboration between the users and makers of the space. Place-making suggests that in order for users to feel a sense of ownership and belonging, it is important to get the users involved.

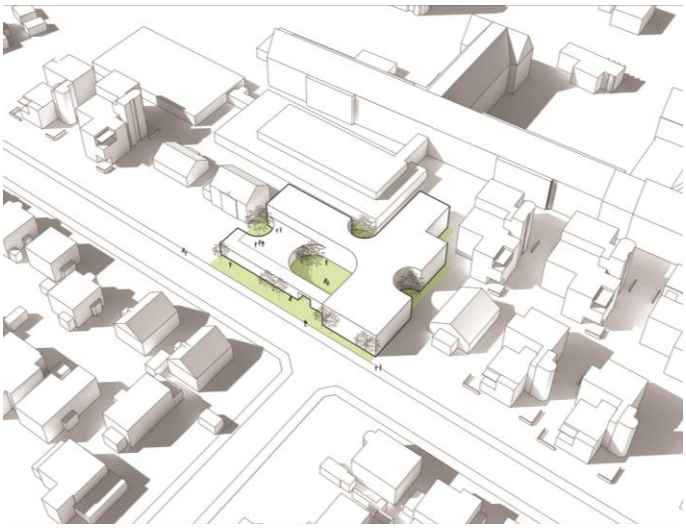

Figure 49 diagram showing the hospice in its context
Source : https://www.architecturalrecord.com/articles/12818-urban-hospice-by-nord-architects-copenhagen?v=preview

Figure 50 view of courtyard

Source : https://www.architecturalrecord.com/articles/12818-urban-hospice-by-nord-architects-copenhagen?v=preview

Connection to nature

While the site is constrained to the buildings sitting closely around it, the design allows for private gardens for the patients and families to come out into light and fresh air, even with their beds. The central courtyard provides a private space for relaxation and social gatherings. It is surrounded by circulation spaces that look into it. The mezzanine above arcs over the courtyard creating a connection between the space above and below. Smaller courtyards are created within the building to cater to different levels of privacy required.

Figure 52 ground floor plan

Source :
https://www.architecturalrecord.com/articles/12818-urban-hospice-by-nord-architects-

Figure 51 second floor plan

Source :
https://www.architecturalrecord.com/articles/12818-urban-hospice-by-nord-architects-copenhagen?v=preview

The layout of the building encourages a self-contained community .A courtyard separates the patients from the staff areas. When entering the building , the privacy of the patients are not disturbed as the public areas are situated in one space .

Designing for patient and families

The second floor of the building is a space dedicated to just patients and their families. The design accommodates 16 residents and each room has a sleeper-couch that can be converted for the family. This allows for flexibility is space and gives the patients the option of having family over with them. Additionally, there are two rooms which can be used just for family. The roof terrace provides patients and their families a more private space as well as creating social space for the patients..

Natural Light , Colour , and tectonics

Figure 54 counselling room

Source :
https://www.architecturalrecord.com/articles/12818-urban-hospice-by-nord-architects-

Figure 53 communal living space

Source :
https://www.architecturalrecord.com/articles/12818-urban-hospice-by-nord-architects-

Even though rooms are left simple with light coloured walls, The wood starts to speak of tactility within the space and may encourage a sense of place in relation to a home environment. A simple design decision that achieves a space that is less clinical. White walls in this space , encourage a feeling of openness , creating a bright room . Daylight plays an important role in the function of the building. As a counselling room , a certain sense of comfort needs to be achieved, As Ulrich explains daylight and natural light , is important in spaces that intends to create a sense of well-being as it encourages a reduction in stress and depression. This is also depicted in the other recreational spaces within the building .As sunlight creates a brightness within a space , from a wellness aspect it is also known to be able to kill bacteria.

Figure 55 reading space

Source :
https://www.architecturalrecord.com/articles/12818-urban-hospice-by-nord-architects-

Figure 56 light and textures in corridor

Source :
https://www.architecturalrecord.com/articles/12818-urban-hospice-by-nord-architects-

Universal Design and Wayfinding

The hospice is fairly simple in accommodating functions and in plan there is ease of the flow of functions which is important for people suffering with terminal illness , in terms of using a space easily. Because it is designed similarly to a home the functions of spaces flow well between one another. The facility is designed without any bathtubs , which is imperative in terms of universal design. And does not incorporate any shower facilities, reason being the patients could be wiped down .This does not seem appropriate as people should be able to have more dignity in their last days. Electric hoists are integrated into the bedrooms to assist the staff and patients. The building is two stories and has a central lift for those who are not completely mobile. Overall , the design seems to lack in being universally accessible.

However , There is no separate morgue ,the bodies remain in place for 24 hours, so that families and friends can visit to pay their final respects . Each room is air-conditioned in such a way that they can be easily refrigerated following a death by lowering the thermostat. While this is not a common feature in the South African context , it may not be as culturally acceptable. Such a facility should have a separate holding area and space for families to grieve.

Often hospices has a separate entrance for undertakers to remove the bodies, here the bodies are moved through public areas as “Death and life share the same entrance”. This also alludes to the big cultural differences when designing spaces. The approach here was to not have grief as a secluded aspect but rather it be celebrated. Design should allow for both secluded grief as well as the opportunity to celebrate the transition to death.

Sustainability

The design makes use of an environmentally friendly wood. It is a modified sustainably-sourced softwoods by heating the wood with furfuryl alcohol – an agricultural by-product. The wood is durable and stable. The process of manufacturing this wood increases its lifespan and overall resitance without chemical treatments. The high-performance qualities and resistance to wear and weathering make Kebony the perfect material for external cladding in projects such as this and provides a sustainable alternative to tropical hardwoods which circumvents the need for deforestation.

Windows throughout the building are triple-glazed for acoustical and thermal insulation, including the large curved ones around the courtyards. Surfaces are tough and washable. And though the rooms have operable windows for use when appropriate, most of them are air-conditioned. Soundproofing solves acoustic needs, and even the thick doors have rubber seals.

Social interaction

Figure 60 . showing the entrance and exit of the building. The building is positioned on the street edge.
Source : https://www.architecturalrecord.com/articles/12818-urban-hospice-by-nord-architects-

Even though the hospice is situated within the community ,it does not allow for any interaction with the outside environment. The whole hospice faces inwards creating a self-contained community. While it is necessary to have spaces that allow for isolation at times , design should encourage more spaces of interaction as it is beneficial to the well-being of people. There are no spaces that allow for interaction with the community or environment.

5.1.4 Conclusion

While the design may give off the aesthetic of being a perfect place , many aspects considered in the literature review are not considered here. The design doesn't consider enough social spaces to improve the quality of life for people. That being said the intention of the facility is to only provide care for a very short period of time. Another area of the hospice which is missing is the accommodation of children.

5.2 Eltheto Housing and Healthcare complex, Rijssen, Netherlands.

Figure 61 views of the Eltheto Housing and healthcare complex.
Source : https://www.archdaily.com/774238/eltheto-housing-and-healthcare-complex-2by4-architects

Architects: 2by4Architects

Floor Area: 20 000m2

Date Completed: 2013

5.2.1 Introduction

Figure 62 indicating the location of the housing and healthcare complex. Source : google maps

The Eltheto housing and healthcare complex is located in Rijssen , Netherlands. It was designed for the elderly and is situated in an urban area. The site was chosen with careful consideration of the amenities in close proximity. While the site hosts a healthcare facility , it is situated across from a hospital which provides further medical care.

5.2.2 Historical and social context of the study

The purpose of this design was to reconsider the way people viewed the elderly ; being a group of people that functioned outside of the modern society and only in need of care. Currently, many healthcare centres and housing projects for the elderly are still designed in this way. Over the past decennia this resulted in a range of introvert buildings where the main focus is healthcare instead of the quality of life itself.

5.2.3 Evaluations and analysis

Home-like environment and Designing for patients and families

Figure 63 depicting the different types of housing , catering to the different levels of care needed.
Source: https://www.archdaily.com/774238/eltheto-housing-and-healthcare-complex-2by4-architects

In Rijssen there are many housing programmes that are existing , this one in particular focuses on quality of life and being part of the existing society. The architecture of each housing block caters to the different levels of care needed for the elderly. While some of the elderly living in these housing blocks are more independent, others are more socially orientated , while some are in need of more assistance than others. Although the blocks are separated they are all part of one environment that together with the public spaces forms an integrated social environment for generations of the elderly. Together with the clients, the municipality, the future residents and the inhabitants of the neighbourhood, workshops were held to find answers to questions such as what is happening in the

outdoor space and how do we want to live now and in the future. The multigenerational component of this development is missing however, allowing for only the elderly to live in. That being said , due to the nature of facilities available in this complex , it introduces the community into the public spaces and amenities available.

In designing this space, focus was on creating a sustainable lifestyle for the elderly which includes the

Figure 64 housing was designed around central healthcare and overlooking public spaces.
Source:https://www.archdaily.com/774238/eltheto-housing-and-healthcare-complex-2by4-architects

most basic of needs that are often overlooked. The research indicated the negative effect of moving the elderly away from their lifestyle that they connect with. It suggested that their life expectancy will decrease , become less mobile, more dependent on people and socially isolated from the people that they are comfortable with. Often the most important thing for the elderly is a sense of companionship which gets taken away first. Apartment layouts are also designed to allow for flexibility of space. Bedrooms can be turned into work or study spaces.

The goal of this development was to allow the elderly to be a part of modern life and society by providing the appropriate care and housing to fit their needs. As their needs change they are able to move into different buildings designed to provide more specialized care, In this people will be moving within the same environment and won't lose relationships created.

Connection to nature

Figure 65 showing the visual connection to the terraced garden.

Source:https://www.archdaily.com/774238/eltheto-housing-and-healthcare-complex-2by4-architects

The design itself doesn't bring nature into the building .In terms of the connection to nature it is merely a visual one from the buildings. For example, the residents have a view of the public spaces and gardens , the sliding doors lift the barrier between inside and outside. The one building has a day-care on the ground floor and the green landscape stretches out of it linking it to the public square. The green space includes sheltered areas for children to play. The ground floor is also where many independent residents stay , who get their own outdoor space at the square and street.

Natural Light , Colour , and Tectonics

Figure 66 showing the use of colour , natural light and tectonics in the interior.

Source:https://www.archdaily.com/774238/eltheto-housing-and-healthcare-complex-2by4-architects

In the interior design on the first floor, the corridor has been given a large width, making it possible to realize a flexible experience with different activity areas. This way the residents can move around freely in the closed space and still discover new things and experiences. The different experience niches and interactive places are designed in such a way that the senses are stimulated and where images from the past are evoked. Skylights give these special places extra atmosphere and allow daylight into spaces creating a brighter atmosphere. The public space is made up of green spaces with many trees and plants. These of which were chosen specifically by colour , shading , flowering period and fruit types, contributing to a healing environment.

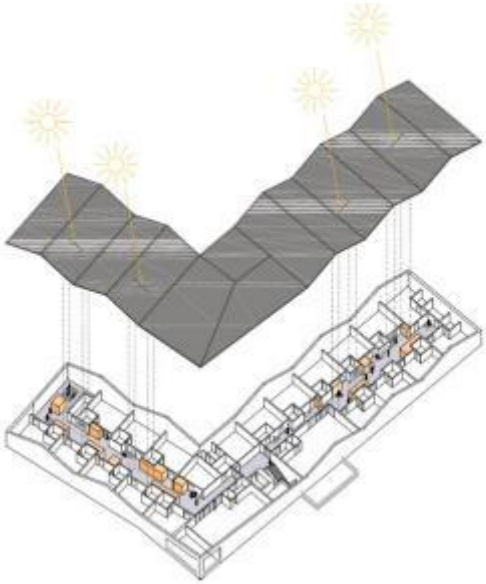

Figure 67 diagram indicating skylights in corridors.

Source:https://www.archdaily.com/774238/eltheto-housing-and-healthcare-complex-2by4-architects

Universal Design and Wayfinding

Figure 68 showing the grouped circulation space. Lift as an effort of universal design

Source:https://www.archdaily.com/774238/eltheto-housing-and-healthcare-complex-2by4-architects

The centre is accessible directly from the public space in order to strengthen even more the relationship between the indoor and outdoor spaces as well as the overall public character of this

modern healthcare complex. The building is designed with lifts to assist those who are physically challenged in any way.

The housing layouts differ between the complexes .For example, one apartment has two bedrooms. The main bedroom is connected to the main living area with a sliding door which allows the resident to stay in bed if necessary while interacting with the living space. The bedroom is also directly accessible to the bathroom , which functions well as a care bathroom due to its large size and layout.

Sustainability

The healthcare is the heart of the community and public space , providing care to the extended community. The central complex offers more than just healthcare, it combines amenities and attraction necessary for daily routines. These include eating spaces, day care, wellness centre, hair salon and commercial space. This creates a sustainable environment in the sense that people can get what they need in minimal distance of local shops and amenities. The buildings do not solely run on alternative energy resources; however they do make use of solar panels as a resource.

Social interaction and sense of community

Figure 69 highlighting some of the different activities available.
Source:https://www.archdaily.com/774238/eltheto-housing-and-healthcare-complex-2by4-architects

There are four housing blocks that are positioned around public spaces which are interactive. The healthcare is the heart of the development and neighbourhood. The owners of the “public space” encourage the patients to use the space in a way that makes them feel comfortable. There are opportunities for social interaction encouraged through activities such as communal gardening, social events, games and meetings. People also have the opportunity to just relax and contemplate in the courtyard spaces while observing the world around them. The flora has been specifically selected to enhance the space, contributing to a healing environment.

On the ground floor on the square side, the square continues to the house and the residents can privatize part of the space. Planters form the separation. As a result of this set-up, the seniors are expected to make more use of the square and more social interaction will develop between users and residents. The galleries have also been designed in such a way that they can partly be privatized.

5.2.4 Conclusion

Overall the design covers most of the aspects considered in the literature review as it is specifically designed to suit the needs of the elderly in a nursing environment. While this does not have an actual hospice component, it deals with many hospice and care features that hospice includes. Vital to this housing and care complex is that it is situated around many public spaces and amenities to encourage people to interact and socialize on different levels, this addresses the idea of giving people a sense of independence and social stability through the various stages of care. Certain spaces on the ground floor are open to the public while others are exclusively for residents. While public activity is mainly on ground level, it also allows for spaces of solitude when needed. The buildings are suited well for the environment it is located in and responds well to its context as it is designed for the greater community as well.

6. CHAPTER SIX – CASE STUDY

The following case study was specifically selected due to its relevance to the study and literature presented. It is critically analysed and evaluated on the premise of the issues presented in the previous chapters. A single case study has been identified, a hospice based in the Chatsworth community. It identifies the needs of the terminally ill and proposes a clear approach to care. This information will aid in the refining the brief and schedule of accommodation for the proposed design of a Hospice facility in Durban.

6.1. Chatsworth Regional Hospice Association

6.1.1. Introduction

Figure 70 indicating the location of the Chatsworth Hospice. Source : google maps

The Chatsworth Hospice is located in a densely populated area of Chatsworth. While it is situated within the community they are often involved in many of the hospice activities and fundraisers. However, the site is completely closed off to the general public and does not offer any public activity. This can be understood as creating a private and serene environment for the patients of the hospice. The hospice consists of a 24-hour in patient facility which holds 10 patients and a day care facility that can host up to 50 patients. The patients are admitted into the hospice for both respite care and end of life care. There is a professional team which consists of individuals trained specifically for palliative care. There are doctors, psychologists, social workers and spiritual leaders available for consultation when necessary. It also offers home-based care, where the nurses assist patients and families in their homes.

6.1.2.Historical and social context of case study

Figure 71 entrance of the Chatsworth Hospice. Source :own image

The suburb of Chatsworth was developed in the mid-1960's.The apartheid policy forced over 800 000 South African Indians into this area. There had only been a single State Health care facility -R K Khan Hospital- to serve the population. With the progression of time, a large proportion of patients would have been termed incurable and/or terminally ill and sent home to fend for them, with or without family support. There were no hospices in Chatsworth to provide the specialised palliative care and medication management which such patients required. Thus the hospice was established to serve the needs of cancer patients in the community. This was possible with the help of the local community and the nursing staff at the hospital, as it operated from two small rooms at the hospital initially. The nursing staff would care for patients during their free time. (Chatsworth Hospice, 2017)

6.1.3.Evaluation and analysis

Home-like environment and sense of community

Figure 73 visitors entrance from the parking.
Source : authors image

Figure 73 reception and waiting area.
Source : authors image

The hospice buildings sit below road level at the entrance; hence there is no direct visual connection of what is happening around the site. Unless people know where the hospice is located, they will not know what it is. In that sense it is private just as a home would be. The descent towards the entrance can signify the journey of dying and being rooted but also the transition from the worldly things to a calmer environment. The reception has a very homely styled interior, from the type of furniture used to the detail in finishes and furnishing, fostering a sense of comfort for patients and their families.

The concept of this hospice encompasses aspects of place-making, such as community involvement in the process of establishing and running of the hospice. As this is a completely volunteer based organisation, the direct community is in charge of the running and organization of the hospice. Funding of the hospice often comes from the community and people involved in the hospice; however, there are fundraisers to help raise funds for the upkeep of the hospice. That being said most of it is covered by the direct community, which emphasises that when a project grows from a community the people feel responsible for the project.

Connection to nature

The design of the hospice allowed for courtyards to be integrated between built spaces .This allows the patients to go out into private garden spaces whenever they feel like. There is a strong connection from their wards to nature as the wards overlook garden spaces which they can access directly. As it is situated in a residential area it is very quiet and serene. The meeting rooms and boardrooms also open up into the garden, allowing the staff to also have the sense of connection with a natural environment which has an effect on the psychology of spaces. An effort has been made to bring nature into the building; however, it is in terms of very few pot plants. The hospice team acknowledge that it is not enough and that there should be more greenery incorporated inside as it stimulates the senses and makes the space feel fresher.

Designing for patients and families

The Hospice caters to many needs of the patients as well as their families before and after death. The wards are shared but they are not fully occupied as the team states. As a consequence, families wanting to visit for a longer period of time would not disturb other patients as only one patient would be in a room. The wards are more clinical as a hospital, allowing for a chair for visitors but no additional couches. However, close to the wards is a smaller room that consist of chairs and a table for a more conversational space. As the living component of this is temporary ,patients do not have much of a chance to make their space their own .There are also therapy spaces for the patients that come in on a Wednesday . Patients receiving end-of life care do not receive any of these therapies as they are not suited for them at this stage. Family counselling is considered for the patients families before and after death. Even after the death of their loved ones, often families have a close relationship with the

Hospice. In the inpatient facility, there is a single prayer room for people of all faiths to use, and a storage facility for all the different books of different faiths. At any point the patients and families can use this space.

Natural Light, Colour, and Tectonics

The wards are east facing and allow them to have direct sunlight entering the room at sunrise and throughout the day. Alexander (1977), states that windows can become a place of withdrawal, reflecting and relaxing .This is increasingly important as often the patients do not have the strength to get out of bed hence the visual connection is important .The rooms are all painted white which comes across as very clinical, however, the use of colour comes in furnishing, bedding and curtains.

Corridors are mostly well ventilated and have enough of natural light coming in as these facilities need. The passage in front of the wards has a big glass window that allows light through the shallow passage .However, this window cannot be opened to allow for natural ventilation. Inside the hospice there is not much focus on tectonics, all the walls are plastered and painted in a mostly identical manner.

Universal Design and Wayfinding

The design of the buildings are standard brick with pitched roofs, none of them can be identified as different from each other .There are no signs or indications to illustrate how to use the space or how to find different places .An important aspect for these patients is to be able to move freely around the facility, however, if the patient has not been to the facility before they would not know how to get around. The approach to accessibility within the facility is that the buildings are single story and everything happens on one level, making it easy for people with and physical impairments to get around. The facility however, is only accessible to wheelchairs from the second entrance, which is not ideal for a facility that houses many people who aren't able to walk at all or need assistance. The rest of the facility however, is wheelchair friendly and doesn't have many change in levels that are not catered for.

Sustainability

The hospice makes use of rain water harvesting by means of Jojo tanks, these are implemented to sustain much of the vegetation on the site. There are no alternative energy resources being used to maintain the facility, it would be more appropriate for a facility that is run on charitable fund to look at other sources of energy, such as solar power, in order to save costs. They are, however, looking at establishing a hydroponics farm in order to sustain the facility, the produce grown would be used in the facility and excess could be sold locally. They offer free training for caregivers, awareness programmes for grade 10 learners, as well as public awareness programmes. In addition to running

charity fundraisers. In terms of sustainability, this is important as the people who partake in these programmes have a place to practice and be involved.

Social interaction and sense of community

Often the people suffering with terminal illness are either neglected by their families or are not given appropriate care to make sure they have a reasonable transition to death. Therefore hospice fosters a sense of family between the staff and patients. Social interaction is encourages though communal spaces such as the dining room, garden and hall. Patients that are based in their wards often eat in isolation or the nurses give them company, very rarely do they eat with others. Upon visiting the hospice, many of the patients from the ward get assistance to get out of their wards and roam around the hospice to be in a different space. The nurses do a great job of interacting with patients and build a very close relationship with them.

The hospice encourages creating relationships with others that are dealing with terminal illness, which is why they host about fifty day patients every Wednesday. The community gets involved in preparing food for them. The clinic at the hospice offers medical consultations, occupational and diversional therapy, access to complementary and alternate therapy and assistance with social problems. Social interaction within groups are encouraged as an opportunity for support and it being therapeutic; “it dispels the commonly held belief that diagnosis of a life-threatening disease means the end of life.” Excursions and entertainment are offered to the hospice patients’ right until the end. These opportunities allow people to feel comfortable if they have to be admitted into hospice. This is important for the patients because they are spending time around people that may share similar issues and gives them an opportunity to develop relationships. Sometimes they even get students to volunteer at the hospice. Where this seems to fail is that there is no engagement with the community for activities and socializing, the patients socialize between themselves.

Once a year, the hospice hosts a day of remembrance for all those that were lost due to terminal illness. Families of the deceased are invited and they light candles in a sacred space which holds a plaque in memory of the deceased. This is a way of maintaining relationships and allowing the current patients and families a trusting space.

6.1.4.Conclusion

Overall the staff approve of the design of the building and what it has to offer. They suggest that this is more than sufficient for people suffering with terminal illness. However, this is the most that’s ever been offered in palliative care hence the feeling of it being good enough. Through the literature review, a better understanding of the needs of people suffering with terminal illness suggest that a lot more can be done in terms of increasing the quality of life. While the hospice encourages social

interaction within the hospice, it does not completely consider integrating the community into the facility .Including intergenerational contact would be more beneficial to the patients and community. The private gardens are not particularly encouraging in terms of well-being and meditative space as they are all the same. The facility, while it is very welcoming once inside, seems very isolated from the community as it activities and spaces are all focused inwards. Even though it is important to have such private spaces, research suggests that they would benefit from community interaction on a more regular basis .The general sense of place is considered in terms of a home-like environment. The genius loci of this facility are based on the historic nature of the site and because of the people that contribute to this place. Overall there is a sense of place created in terms of the relationships created between the patients and staff, the interior spaces also starts to speak of this too. However, more could be done to achieve a better quality of life and sense of place.

7. CHAPTER SEVEN –PRESENTATION OF INTERVIEW DATA AND ANALYSIS RELATING TO THE THEORETICAL FRAMEWORK AND LITERATURE.

7.1. Introduction

The research conducted in this document has explored the quality of life for the terminally including their last days and the role of architecture in this aspect. The process examined how quality of life can be enhanced through architectural environments while considering the issue of housing. Furthermore this section of the dissertation is based on the discussions in chapter 2, 3 and 4 which have formed a framework for analyses in order to address the problem statement. The literature drew upon theories relating to healing environments, meaningful architecture and social interaction .The research unpacked the needs of the terminally ill in relation to architectural environments and impacts that architecture can have on healing environments. Thereafter, contextualizing the needs and issues relating to the terminally ill. The precedent studies have been analysed to understand how it can be applied in the built environment, its strengths and weaknesses. In a similar manner the case studies and interviews explored these environments more critically within the context of Durban.

7.1. Analysis and discussion of the interviews

For the purpose of the study people in the field of hospice and palliative care had been interviewed. The data collected through the interviews are of a qualitative nature therefore is based on information that cannot be measured. Overall there had been a general perception of palliative care, which all participants alluded towards. The participants were selected based on their different roles in the institutions .There were 6 people interviewed individually. The interview consisted of 20 questions that that covered topics that arose through the literature review, regarding the nature of hospice, palliative architecture and integrated housing. The first part of the questionnaire covers the interactions through experience with people suffering with terminal illness. Thereafter, understanding palliative care in a hospice and at home. It follows with questions about the environment for the terminally ill and finally looks at possible improvements in palliative care with regards to an architectural setting. The purpose of these interviews and data collected through it informs the architectural intervention proposed.

Question 2 – ***Could you tell me about your experience interacting with people with terminal illness***?

The general consensus towards this question was that it is a very experience to a hospital as the patients require a different type of care. There is a stronger focus on emotional support for both patients and their families. The participants had said that they often formed very close relationships with them both, as even when the patients pass on, families still keep in contact. Corresponding to the problem identified in chapter one , there is a stigma attached to hospice as a place to die .While

hospice offers a lot more than that in terms of support and allowing them to feel more comfortable with the dying process.

Question 5 – *Do you think that the hospice is an appropriate place for people with terminal illness?*

Most of the participants confirmed that hospice is the appropriate place for people suffering with terminal illness as they have the technical background in approach to care for these people. The general consensus is that this needs to be a supportive environment which has a holistic approach to care. The understanding is that this type of care is not curative, however the focus is on the psychological, social and spiritual well-being of the patients. Hence, the types of spaces needed are those that are therapeutic and calming. Zumthor (2006) reveals the quality of that life is enhanced through architectural elements which stimulate the senses through human experience. The theory of phenomenology informs us to implement sensory design in order to establish experiential, architectural space .While they are certain that it is beneficial to the terminally ill to be in a hospice ,they are well aware that many people prefer the comfort of their home. Besides the home being identified as a place of retreat, it is also a space where people feel comfort in having shared memories in a place and identifying it as a place where they can follow a certain routine. As previously discussed the essence of genius loci can be described as “the place where life occurs”. The research suggests that, often people with terminal illness do not have the family and care support they require. Many people do not know that free care is offered to support families and the terminally ill.

Question 7 – *Do you think that only nurses should be looking after the terminally ill?*

Half the study suggested that nurses should be the ones to look after the terminally ill during end of life care , and the other half suggested that anyone should be able to as long as they have a certain understanding on the needs of the terminally ill. During their last days, most patients are bed ridden and need nurses to administer pain relief. They need their own space to feel comfortable in and someone to take care of their basic sanitary needs, sometimes the patients feel more comfortable with family members, others with an outsider. In many instances families are too distraught to cater to the needs of the terminally ill. Therefore there is understanding that it could be an amalgamation of both home and a hospice.

Question 7 – ***Does your environment (hospice) in an overall sense, induce a sense of wellness? Why? How?***

And

Question 13 – ***Do you think that the quality of life for the terminally ill can be improved through architectural spaces? If yes, how?***

The people interviewed at one care facility felt as if their particular hospice environment induces a sense of well-being for their patients, as they felt they have adequate therapeutic spaces while the other interviewees felt that they needed a better quality environment to care for their patients. They both agree that more can be done from a design perspective to create better quality of spaces that enhance human experiences. The overall understanding is that brighter colours in spaces, artwork, nature and lighting can be improved to enhance the quality of spaces. Some even suggest that familiar environments are also conducive to healing spaces as people feel more comfortable .Focusing on architectural spaces can also be a diversion from the illness into a peaceful space.

During the discussion with the interviewees, they confirmed the notion that not many people are aware of hospice and palliative care, and that it is not accessible to everyone. Some were also unsure of whether a housing component would be beneficial, while others thought it would be a good idea as they were aware of international precedent. They do believe that because hospice works on a completely voluntary basis, people are inherently helpful to those in need. Furthermore, suggesting it could enhance the quality of care as nurses could visit people in their homes where they feel more comfortable.

7.2. Conclusion

Most of the individual that had been interviewed strongly believed that the role of architecture is extremely important in the palliative environment. Overall the belief was that multi-generational housing could improve the quality of palliative care in terms of accommodating to the needs of people. They agreed that social integration is an important aspect in improving the quality of life for the patients as opposed to ostracizing them. They were interested in the idea of intergenerational relationships. This is in line with the research explored in the literature review. The study confirms that people who have experiences with those suffering with terminal illness support the argument brought forward in the literature review and people are thinking along the same lines in terms of progression in care for the terminally ill. From these findings conclusions and recommendations were suggested thus concluding the study.

8. CHAPTER EIGHT – CONCLUSIONS AND RECOMMENDATIONS

8.1. Introduction

This chapter summarises the findings throughout the research developed from literature, precedent studies, case study, and structured interviews with people involved in hospice facilities. The recommendations are presented to generate design principles for the proposed architectural intervention of a Hospice facility in the City of Durban.

The following findings and recommendations attempt to draw key architectural principles to answer the key research questions;

What is palliative care?

What kind of spaces assist in the management of the terminally ill?

What are the current healthcare systems' shortcomings with regard to the built environment?

How can quality of life for the terminally ill be enhanced through architectural design?

What impact do environments (living in isolation or community living) have on the terminally ill?

What is multigenerational housing and how can this type housing inform palliative hospice care?

Understanding the aim

This dissertation aims to explore the quality of life of the terminally ill, including their last days and its influence on architecture. It will examine how quality of life can be enhanced through architectural development while considering the issue of housing. This was done through primary and secondary research. The secondary research became the foundation on which the primary research was developed. It considered understanding the needs of the terminally ill and how it differs from a clinical approach to care. In analysing the quality of life it was clear that it needs to be considered within the boundaries of the built environment. It was clear that the terminally ill need spaces that are well considered in terms of a healing space .This includes aspects of lighting , natural ventilation , nature, universal design as well as spaces that encourage social interaction as that it vital for human well-being.

Objectives

This dissertation identified two main objectives;

- The objective of this dissertation is to find new emerging palliative care options for the terminally ill.
- To explore how the terminally ill can be incorporated into other forms of mainstream housing.

These objectives allowed a narrower focus on research to help identify a progression in palliative care. There were many emerging palliative care options, however, this dissertation focused on those that linked to the research considered. Often in hospice designs, the patient is isolated in a space within the hospice and is not encouraged to interact with others as much as needed. Research has shown that for people to feel comfortable even during their last days they need to have more than just pain relief. In terms of incorporating the terminally ill into mainstream housing, research suggests that allowing people to fit into a family is beneficial to both parties. However, this dissertation focuses on allowing patients and their families to be housed within hospice as that would make them feel more comfortable. As well as creating an overall extended home environment for the patients and their families, where the community is also welcome through other public spaces. Multigenerational living includes exploring concepts of shared spaces and engagement of the community. By creating an extended family, this offers support to families emotionally and physically. Also considering that housing itself is often not affordable to everyone, this type of care is a “luxury” .Research also shows that intergenerational contact is beneficial to both the old and young regardless of their abilities.

Addressing the key questions ;

The key question was evaluated in order to support and understand the problem statement. The primary question needed to be understood and answered to move on to creating an understanding the architectural boundaries of the supporting questions.

The key question is; **What is palliative care?**

The understanding of this question kept on extending throughout the process of this dissertation. The basis of Palliative Care lies in understanding the needs of the terminally ill. This means focusing on getting the patients and their families to understand that death is inevitable and reducing the amount of pain that the patient is in. This understanding came from the literature review as well as the interviews conducted.

Question 2 : **What kind of spaces assist in the management of the terminally ill?**

In addressing the spaces that assist in the management of terminal illness , concern was on literature and interviews. This was taken from the various needs of patients and in an overall sense of well-being for people suffering with any illness. There are a few spaces that are universally acceptable and

needed in the case of terminal illness. However, this project seeks to go beyond the basic needs of the patients.

Question 3 : **What are the current healthcare systems' shortcomings with regard to the built environment?**

This question focused on Durban in specific, in order to address this question , it was required to understand the level of healthcare in the area and what is currently accessible to people. One must understand that the current healthcare system cannot cope with the need for healthcare as a starting point. The healthcare system with regard to built environment , falls short in the sense that many spaces that are treating patients are not equipped and designed to cater to the needs of the patients. This question is addressed through the primary and secondary research.

Question 4 : **How can quality of life for the terminally ill be enhanced through architectural design?**

Quality of life is a highly subjective measure of happiness. Factors that play a role in quality of life vary according to personal preferences and what people need at a particular time, but include emotional and physical well-being.The precedent studies and theoretical framework and literature review assist in achieving an architectural response to this question.These would focus on the types of spaces and detailed features of spaces that induce an overall sense of well-being.For example , the colours in room , types of furnishings ,how people are able to move through spaces , etc.

Question 5 : **What impact do environments (living in isolation or community living) have on the terminally ill?**

This question focused on the physical environment of those suffering with terminal illness. Often by the end of their lives , the terminally ill need more assistance to carry out daily activities. Studies also show that social interaction is important for a healthy lifestyle. Living in isolation means that a person will be alone during their life. Patients need to be administered with painkillers and often will not be able to do that themselves. Community living provides an opportunity for people to help each other. The research compares the quality of life of those who live in isolation and those who have the opportunity to have people around them.

Question 6 : **What is multigenerational housing and how can this type housing inform palliative hospice care?**

The research focused on understanding multigenerational living and determining how it could possibly fill in the gaps of palliative care in this context.

8.2. Conclusions and Recommendations

Ultimately, incorporating housing is not a means of replacing palliative care; the aim is that when architecture is specifically designed to cater to the needs of the terminally ill, it could enhance their quality of life. Designing for the terminally ill goes beyond universal design, it includes Meaningful architecture, socially inclusive design and spaces that address the holistic well-being of the patients and their families. Intergenerational relationships not only assist people physically but also psychologically. As people are raised in different generations , their values and perceptions of life and the world are often diverse, creating gaps in understanding each other. Due to the modernization of lifestyle , globalization and influence of diverse ideologies this gap is getting wider. While the intention of these are not negative , often the outcome is not understood. Therefore , this gap in understanding is an opportunity for generation to make a concerted effort to understand each other

Everyone has something to offer to each other and through observation many people are willing to help others. Nature has a therapeutic effect on the well-being of humans and can enhance the quality of daily life. Incorporating this into an environment for the terminally ill can be very effective as it allows them to dwell in a calming space. Designing an environment for well-being is about a balance of all things human. A healing environment is one that promotes harmony of body, mind and spirit. Designing for this more holistic approach impacts the outcomes of a space.

The following design principles were developed though research and critical analysis , ;

1. Courtyards- these spaces provide the opportunity for human interaction as well as a space to connect with nature.

2. Connection to nature –spending time outdoors or in a garden makes them feel refreshed or relaxed; but more hard evidence or proof of this phenomenon is necessary for fields that rely so often on statistics and facts to accept these ideas. Many people claim that spending time gardening, picking flowers, or walking in the park reduces stress and helps them relax.

3. Sensory design-important to focus on all the senses, these impact the psychology of space.

4. Natural light - Sunlight impacts the nervous system, mental health, and appetite. Natural light also helps regulate human circadian rhythms, which are important to our health and mood, and regulate hormones .

5. Universal design- patients need to have ease of movement within the space to give them a sense of independence.

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Appendix A- research ethics: consent form

RESEARCH ETHICS: CONSENT FORM

Project title: Rethinking The Design For Palliative Care ; Exploring The Concept Of Multi-Generational Living In Durban

Researcher: Sumaya Narot

Brief Introduction and Purpose of the Study: The research seeks to investigate and document the current design of Hospice and Palliative Care in the city of Durban .The research proposes to re-address the physical environment of palliative care that facilitates the process of dying, through the design of integrated housing and palliative care.

Procedure: I am asking you to participate in an interview session. The session will be up to 1 - 1.5 hours (maximum) in length. You will be discussing specific questions regarding the current hospice and palliative care system.

Risks or Discomforts to the Subject: None

Benefits: None

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

Participation: Your participation is voluntary and you may withdraw from the study at any stage. You will not be forced or pressured to take part in this study for any reason. Any questions that you may have at any stage of the study will be answered by the researcher

Ethics Approval: This project was approved by the School Research Ethics Board of the University of KwaZulu-Natal. If you have any questions or concerns about your rights or treatment as a research participant, you may contact the Chair of the Research Ethics Board: Mr Prem Mohun, 031 2604557. Mohunp@ukzn.ac.za

1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions.
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason.
3. I agree to take part in the above study.

4. I agree to the interview consultation being audio recorded

Name of Participant Date Signature

Name of Researcher Date Signature

Appendix B- Gatekeepers letter

26 June 2018

To whom it may concern,

Sumaya Narot, a Masters student in the School of Built Environment and Development Studies formally requests permission to interview staff in your institution/department and use the data collected and/or use the data produced by your institution. She would like to use this data for her Masters dissertation entitled: *"RETHINKING THE DESIGN FOR PALLIATIVE CARE ; EXPLORING THE CONCEPT OF MULTIGENERATIONAL LIVING IN DURBAN."* The purpose of her request would be to gain an understanding of the needs of the terminally ill from people surrounding them. The dissertation will acknowledge *The Chatsworth Regional Hospice Association* and the research will be shared with *The Chatsworth Regional Hospice Association* if requested.

Thank you and Kind regards,

Student : Sumaya Narot
Supervisor:Lawrence Ogunsanya
School of Built Environment and Development Studies
Email: Ogunsanya@ukzn.ac.za
Tel number: +27 31 2602050

Permission granted for the use requested above:

Name:_____

Signature:_____

Date:_____

Built Environment And Development Studies
University of Kwa-Zulu Natal
Howard College Campus
Durban
4041

Appendix C- Interview schedule

The participants of this interview would be people directly or indirectly working with terminally ill patients and families.

What is your connection/relationship with people suffering with a terminal illness?

_____

_____

Tell me about your experience interacting with people with terminal illness?

_____

_____

Tell me about your experience interacting with families of people with terminal illness?

_____

_____

From your understanding ,what is hospice and palliative care?

_____

_____

Do you think that the hospice is an appropriate place for people with terminal illness?

_____

_____

Do you think that palliative care should be conducted at home instead?

_____

_____

Do you think that only nurses should be looking after the terminally ill?

_____

_____

Do you think families are equipped to look after people with terminal illness?

_____

_____

In your experience ,so people with terminal illness prefer to return home during their last days?

_____

_____

Does your environment, in an overall sense, induce a feeling of wellness? why ? how?

_____

_____

Do you believe that architecture can affect human wellbeing?

_____

_____

Do you think palliative care is effective? if not , why?

_____

_____

Do you think that the quality of life for the terminally ill can be improved through architectural spaces? If yes , how?

_____

_____

Do you believe that people are inherently helpful towards others in need ?

_____

_____

Do you think palliative care is accessible to everyone in need of it ?if not what makes it inaccessible?

_____

_____

Could integrated housing be a way of incorporating palliative care into everyday life as a self-sustaining system?

_____

_____

Are the present facilities "up to date" technologically or is upgrading necessary? How out of date? Can existing systems be modified to accommodate upgrades?

_____

_____

How could the program be improved?

_____

_____

What would you consider should be done from an architectural perspective regarding palliative care?

_____

_____

Are the families of the terminally ill sufficiently considered with the techniques of palliative care?

_____

_____

Thank you for participating in this Interview.

PART 2

DESIGN REPORT

Introduction

This report outlines the proposes design of the Hospice and housing facility located in North Beach , Durban . The main purpose of this design project is to provide a hospice facility for the community which includes an exploration of multigenerational living. *Palliative care accepts death as the outcome and focuses on non-clinical approach to holistic well-being. Therefore the building does not include a high care facility.*

Problem statement

The process of death has become more of a technical event rather than a physical, emotional and spiritual one. As medical technology has advanced, so too has the mechanisation of the death process and thus the spaces optimised solely for efficiency. Through the overcrowding and rapidly increasing death rate (STATSSA ,2009) within the country the problem has further been compounded as environments have become emotionless. Palliative caregivers ease patients' physical pain with medicines, and they provide psychological, emotional and spiritual counselling to people who have life-threatening and terminal illnesses. Thousands don't receive it, despite the country's high death rates from infectious diseases, cancer and heart disorder (Taylor,2015).Current hospices within the context are not necessarily suitable for end of life care as this facility often takes over existing churches or houses that are not specifically designed to meet the needs of terminally ill patients. These spaces have lost touch with people and even the reality of the process of dying. The quality of life and needs of terminally ill patients are not reflected in their treatment within the built environment and healthcare system.

Aims

This dissertation aims to explore the quality of life of the terminally ill, including their last days and its influence on architecture . It will examine how quality of life can be enhanced through architectural development while considering the issue of housing.

Objectives

- **The objective of this dissertation is to find new emerging palliative care options for the terminally ill.**
- **To explore how the terminally ill can be incorporated into other forms of mainstream housing.**

Key questions

What is palliative care ?

What kind of spaces assist in the management of the terminally ill?

What are the current healthcare systems' shortcomings with regard to the built environment?

How can quality of life for the terminally ill be enhanced through architectural design?

What impact does environments (living in isolation or community living) have on the terminally ill ?

What is multigenerational housing and how can this type housing inform palliative hospice care?

Methodology

The approach towards the study was qualitative. The research focused on understanding the current palliative care and its strengths and flaws. It was based on understanding the needs of terminally ill patients along with understanding their experiences and perception of their surrounding environment, as well as the medical needs of the patients. The case study chosen was Chatsworth Regional Hospice Association. This was chosen after a critical analysis of the literature review and developing a criteria of analysis in line with the research question. A purposive sampling method was used for the purpose of this study. Participants were selected on the basis of their knowledge, relationships, and experience regarding the subject at hand. In the current study, the interviewees selected would have to have experience at a hospice or relationship with a hospice and/or with people suffering with terminal illness. The target population at the above mentioned institutions was specifically the nurses, social workers, and counselors. The study required an interview of each person mentioned at the various institutions. Architects who have been involved with healthcare design were also interviewed.

The research conducted for this project explored the quality of life for the terminally including their last days and the role of architecture in this aspect. The process examined how quality of life can be enhanced through architectural environments while considering the issue of housing. The literature drew upon theories relating to healing environments, meaningful architecture and social interaction .The research unpacked the needs of the terminally ill in relation to architectural environments and impacts that architecture can have on healing environments. Thereafter, contextualizing the needs and issues relating to the terminally ill. The precedent studies have been analysed to understand how it can be applied in the built environment, its strengths and weaknesses. In a similar manner the case studies and interviews explored these environments more critically within the context of Durban. For the purpose of the study people in the field of hospice and palliative care had been interviewed. Overall there had been a general perception of palliative care , that all participants alluded towards. The participants were selected based on their different roles in the institutions .There were 6 people interviewed individually. The interview consisted of 20 questions that that covered topics that arose through the literature review, regarding the nature of hospice , palliative architecture and integrated housing.

Concepts and Theories

Architectural space together with the concepts behind palliative care focuses on creating environments that promote dignity and independence amongst all users; thus, it is desirable to design an environment where all the human senses are stimulated. The physical environment has an effect on the process of healing and well-being. Healing architecture is an evidence-based design concept, that represent a vision on how architecture affect human well-being, but more so affect the healing process for the individual (Frandsen, 2011). The following theories and concepts would address possible solutions to creating comfort for the terminally ill, while understanding that the outcome is not to be healed but to grapple with the process of healing and how these ideas could be interpreted into a space. The three main theoretical drivers are Genius Loci , Interdependence , and Social Integration.

Concept of Genius Loci –Christian Norberg-Schulz

“the spaces where life occurs …A place is a space which has a distinct character” (Norberg Schulz,1980)

natural light through the large windows.

Building : Therme Vals , Switzerland

Architect: Peter Zumthor

Natural light is filtered through windows and narrow openings in the ceiling. From there, traversing the architectural space is only describable through individual sensorial experience.

- Focus needs to be on visualizing the spirit of place by creating meaningful spaces that allow man to dwell.
- Implementation of sensory design in order to establish experiential, architectural space.
- Phenomenology in architecture can be seen through the manipulation of space, material, and light and shadow to create a memorable encounter through an impact on the human senses.
- Individually what people like may differ, however , how we respond to surrounding is not always subjective. Often , there are psychological reactions that are common to everyone. According to Day (2002) , Psychological responses are often complicated in the sense that some responses are more individual and others that are culturally conditioned.
- “Place-making is the art of creating public ‘places of the soul,’ that uplift and help us connect to each other.” Jane Jacobs and William H. Whyte explored ideas about cities being designed around people and not just cars and shopping centres. The focus of this approach stemmed from improving the quality of life for people. The process of place-making aims to foster healthier lifestyles.

- Tectonics -Poulsen (2016) , describes tectonic as a balance between structure , construction and aesthetics. It can be understood as the expression of form and shape of the properties of a material. However, it is not just exposing the structure but about inducing a sense of feeling and experiences when using and moving through spaces. During end of life care, studies show that it is important to

A raw construction holds a special poetic dimension by being finished and unfinished at the same time.

Building : Brookfield youth and community centre, Ireland

Architect: Hassett Ducatez Architects

stimulate the senses and induce a sense of feeling in people. When people are positively responsive to architecture it creates a link between them and their surroundings, in turn acknowledging a sense of comfort.

Interdependence

- Goldsmith (2010) , suggests that it is healthier to have interdependent relationships. This demonstrates relationships that are balanced and don't sacrifice their individuals values.
- Research suggests that people behave in a certain way due to unique experiences or cognitions or personalities , interdependence theory suggests that the relationships that people have are just as important as the people themselves. Given the above, it represents the nature and implications of interdependence.(Kelley, H. H., & Thibaut, J. W ,1978)Interaction is vital for human experience to be of quality. In order to achieve interdependence, the building should act as a synthesis between man and nature. Architecture should co-evolve with people, nature, society and cultures. Generating a synergy between architecture, man, culture and nature. In order to so, the relationship between nature, man and the built environment should be understood
- Biophilia - Humans have an innate connection with the natural world and that exposure to the natural world is therefore important for human well-being. Day (2002), discusses how nature has a profound effect on human conscious and subconscious, and is elevated when an individual has a heightened emotional state or is in an unfamiliar environment. Our environment can create connections to place by rooting our daily rhythm to the rhythm of nature expressed within the building, and provides "soul support".

Social Integration

- enhancing social integration can be understood as promoting harmonious interaction and solidarity at all levels of society.
- The concept of multiculturalism, can be further encouraged in social spaces, as people start to relate to each other in different ways. Multicultural integration is recognizing diversity and difference of people from different cultural backgrounds who may value public places quite differently. In projecting these into spaces , public spaces act as a vehicle for multiculturalism, as they directly expose us to social diversity. Which could be in the form of parks , playgrounds, markets, and other social activities. However, it is important to note that architecture cannot force interactions but can create these places to encourage interaction.

The literature review covered understanding the stigma of death and dying ,interventions in palliative care and contextualizing the need for housing in relation to care, which assists in identifying the gap in information which requires further research. Furthermore, it justifies the right to health for people with terminal illness. It goes further to critically analyse the development of as before mentioned. Further literature was then analysed regarding the psychological aspects in the process of healing. In terms of healing, this does not focus on being cured of illness but rather allowing for a process of healing related to psychological and emotional needs. Furthermore, it focuses on critically analysing the nature of the architectural environment that is desirable. There seems to be a common negative perception that people have of a hospice and palliative care facilities . Hospices are extremely scarce and situated in areas that are not accessible to those who are in need of it, this is in addition to the rooms available being limited. Generally, it can be inferred from research that a hospice located within the local context is very isolated from society. Often , death is more acceptable at the end of a long life ,whereas younger deaths are seen as more tragic. However, people of all ages can be diagnosed by an illness that is terminal. Even though people are living longer lives with terminal illness ,they are often living in poor health and away from the comfort of home. In fact, two-thirds of all deaths occur in healthcare facilities, nursing homes, and other places that are not the dying person's home (Fulton and Owen, 1994).

Each generation finds its own advantages of living among a diverse group. All generations have many common needs that can and should be linked. Some may say we have evolved from turning to religion for meaning in our lives to entrusting professionals for advice, and, now, have turned to searches within the individual. A lack of social integration makes it harder to address key social and economic .According to a study by Burke (2018) , there are three areas where a lack of integration between people from different backgrounds has made national challenges harder to solve: long-term unemployment; recruitment and career progression; community health and wellbeing. A lack of integration in communities increases anxiety and ill-health. A lack of friendships across age groups can expose individuals to a higher risk of social isolation. More effective social integration leads to increased life expectancy, better recovery times from health issues and fewer mental health issues. Research shows that low levels of trust correlate with low levels of wellbeing and lower life satisfaction. An architectural environment can assist in fostering recovery and preventative care , while

encouraging change in social stereotypes , by promoting intergenerational relationships. As a result, redefining the terminally ill within a society ,instead of them being seen as a burden , they would be a source of development in society. Architecture can be considered a vessel for human experiences as people experience surroundings through the senses. Sense of sight is generally the priority in architecture and other senses get neglected. If this is the case , it creates spaces that are visually biased and devoid of any lived experiences. If our senses are an important factor in how we perceive and react in a space then we can discern that the senses are much like are in that they are like a "...gateway between reality and our feelings" (Day, 1995)The process of well-being itself is brought about by how we feel in a space. We create a visual of a place based on how it is received though our senses. Our feelings and health change as our perception of a place changes. In the human mind places , feelings and moods are all related and within a physical space can inspire a sense of healing.

Through this a criteria of analysis for precedent and case studies were developed. The following are considered;

- Home-like environment
- Designing for patients and families
- Connection to nature
- Natural Light , Colour , and Tectonics
- Universal Design and Wayfinding
- Sustainability
- Social interaction
- Sense of community

Precedent study - Eltheto Housing and Healthcare complex, Rijssen, Netherlands.

The aim of the following precedent studies is to investigate architecture that provides environments that are conducive to healing, have therapeutic qualities and have a sensory approach to design. One the one hand the study will analyse an existing multigenerational facility that includes a living component. On the other hand it will look at a hospice facility that aids in preparation for death and creates an environment that enhances the persons quality of life.The environments must show case how architectural spaces should or can be designed to improve a patients well-being. These will offer pivotal design criteria intended to achieve the desired therapeutic setting of my intervention. These precedent studies will provide positive tools and effects that may be used to in designing beneficial environments for the facilities users, staff and the general public. They will also assist in providing guidelines to follow to achieve the desired intervention.

depicting the different types of housing , catering to the different levels of care needed.

housing was designed around central healthcare and overlooking public spaces.

Home-like environment and Designing for patients and families

In Rijssen there are many housing programmes that are existing , this one in particular focuses on quality of life and being part of the existing society. The architecture of each housing block caters to the different levels of care needed for the elderly. While some of the elderly living in these housing blocks are more independent, others are more socially orientated , while some are in need of more assistance than others. Although the blocks are separated they are all part of one environment that together with the public spaces forms an integrated social environment for generations of the elderly. Together with the clients, the municipality, the future residents and the inhabitants of the neighbourhood, workshops were held to find answers to questions such as what is happening in the outdoor space and how do we want to live now and in the future. The multigenerational component of this development is missing however, allowing for only the elderly to live in. That being said , due to the nature of facilities available in this complex , it introduces the community into the public spaces and amenities available.

The focus of the design comes from a life style research that looks at the different needs and characteristics of elderly. Part of the research indicates that if elderly have to move away from their life style, in order to receive health care, their life expectancy will decrease. They become less mobile, more dependant and eventually

socially isolated. Loneliness has become a major issue among elderly, especially if one of the partners has passed away. Apartment layouts are also designed to allow for flexibility of space. Bedrooms can be turned into work or study spaces. The goal of this development was to allow the elderly to be a part of modern life and society by providing the appropriate care and housing to fit their needs. As their needs change they are able to move into different buildings designed to provide more specialized care, This way they can stay home longer and when they eventually need to move they'll stay within the same neighbourhood.

Connection to nature

showing the visual connection to the terraced garden.

The design itself doesn't bring nature into the building .In terms of the connection to nature it is merely a visual one from the buildings. For example, the residents have a view of the public spaces and gardens , the sliding doors lift the barrier between inside and outside. The one building has a day-care on the ground floor and the green landscape stretches out of it linking it to the public square. The green space includes sheltered areas for children to play. The ground floor is also where many independent residents stay , who get their own outdoor space at the square and street.

Natural Light , colour , and Tectonics

In the interior design on the first floor, the corridor has been given a large width, making it possible to realize a flexible experience with different activity areas. This way the residents can move around freely in the closed space and still discover new things and experiences. The different experience niches and interactive places are designed in such a way that the senses are stimulated and where images from the past are evoked. Skylights give these special places extra atmosphere and allow daylight into spaces creating a brighter atmosphere. The public space is made up of green spaces with many trees and plants. These of which were chosen specifically by colour , shading , flowering period and fruit types, contributing to a healing environment.

Universal Design and Wayfinding

showing the use of colour , natural light and tectonics in the interior.

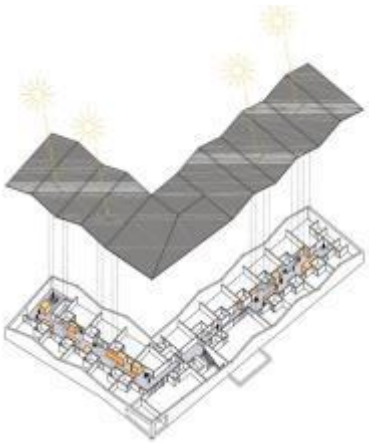


diagram indicating skylights in corridors.

The centre is accessible directly from the public space in order to strengthen even more the relationship between the indoor and outdoor spaces as well as the overall public character of this modern healthcare complex. The building is designed with lifts to assist those who are physically challenged in any way. The housing layouts differ between the complexes .For example, one apartment has two bedrooms. The main bedroom is connected to the main living area with a sliding door which allows the resident to stay in bed if necessary while interacting with the living space. The bedroom is also directly accessible to the bathroom , which functions well as a care bathroom due to its large size and layout.

Sustainability

The communal healthcare centre is located in the centre of the public space and can be seen as the heart of the whole complex. It provides health care services not only for the people living at Eltheto, but also for the neighbourhood. Besides health care the centre incorporates many some public services, such as a restaurant, a library, a shop for daily groceries, a meditation centre, day care, hair salon and numerous activity areas and office spaces. This creates a sustainable environment in the sense that people can get what they need in minimal distance of local shops and amenities. The buildings do not solely run on alternative energy resources, however they do make use of solar panels as a resource.

Social interaction and sense of community

Highlighting some of the different activities available.

These 4 housing blocks are situated around several public spaces. The public spaces interact between the housing blocks, the centrally located healthcare centre and the neighbourhood. The public space is owned by the client, a housing corporation and a heath care organization, who want the elderly to use the public space according to their own ideas. The elderly are stimulated to organize themselves and use the public place for programs like communal gardening, outdoor events and meetings, play games like Pétanque or just sit under one of the trees and enjoy the things happening around them. The public space acquires its green character by its numerous trees and plants, all carefully chosen by colour, shading amount, flowering period and fruit types criteria. All this contributes to the so-called natural healing environment. On the ground floor on the square side, the square continues to the house and the residents can privatize part of the space. Planters form the separation. As a result of this set-up, the seniors are expected to make more use of the square and more social interaction will develop between users and residents. The galleries have also been designed in such a way that they can partly be privatized.

Overall the design covers most of the aspects considered in the literature review as it is specifically designed to suit the needs of the elderly in a nursing environment. While this does not have an actual hospice component, it deals with many hospice and care features that hospice includes. Vital to this housing and care complex is that it is situated around many public spaces and amenities to encourage people to interact and socialize on different levels, this addresses the idea of giving people a sense of independence and social stability through the various stages of care. Certain spaces on the ground floor are open to the public while others are exclusively for residents. While public activity is mainly on ground level, It also allows for spaces of solitude when needed. The buildings are suited well for the environment it is located in and responds well to its context as it is designed for the greater community as well.

Conclusion

The interviews that were done showed that the people currently involved in hospice environments share a similar perception of palliative care. Most of the participants confirmed that hospice is the appropriate place for people suffering with terminal illness as they have the technical background in approach to care for these people. The general consensus is that this needs to be a supportive environment which has a holistic approach to care . The understanding is that this type of care is not curative , however the focus is on the psychological, social and spiritual well-being of the patients. Hence , the types of spaces needed are those that are therapeutic and calming. Zumthor (2006) reveals the quality of that life is enhanced through architectural

elements which stimulate the senses through human experience . The theory of phenomenology informs us to implement sensory design in order to establish experiential, architectural space .While they are certain that it is beneficial to the terminally ill to be in a hospice ,they are well aware that many people prefer the comfort of their home. Besides the home being identified as a place of retreat , it is also a space where people feel comfort in having shared memories in a place and identifying it as a place where they can follow a certain routine. As previously discussed the essence of genius loci can be described as “the place where life occurs”. The research suggest that , often , people with terminal illness do not have the family and care support they require. Many people do not know that free care is offered to support families and the terminally ill. Half the study suggested that nurses should be the ones to look after the terminally ill during end of life care , and the other half suggested that anyone should be able to as long as they have a certain understanding on the needs of the terminally ill. During their last days , most patients are bed ridden and need nurses to administer pain relief. They need their own space to feel comfortable in and someone to take care of their basic sanitary needs, sometimes the patients feel more comfortable with family members , others with an outsider. In many instances families are too distraught to cater to the needs of the terminally ill. Therefore there is understanding that it could be an amalgamation of both home and a hospice.

The people interviewed at one care facility felt as if their particular hospice environment induces a sense of well-being for their patients , as they felt they have adequate therapeutic spaces while the other interviewees felt that they needed a better quality environment to care for their patients. They both agree that more can be done from a design perspective to create better quality of spaces that enhance human experiences. The overall understanding is that brighter colours in spaces , artwork , nature and lighting can be improved to enhance the quality of spaces. Some even suggest that familiar environments are also conducive to healing spaces as people feel more comfortable .Focusing on architectural spaces can also be a diversion from the illness into a peaceful space. During the discussion with the interviewees, they confirmed the notion that not many people are aware of hospice and palliative care , and that it is not accessible to everyone. Some were also unsure of whether a housing component would be beneficial, while others thought it would be a good idea as they were aware of international precedent. Furthermore , suggesting it could enhance the quality of care as nurses could visit people in their homes where they feel more comfortable. Most of the individuals that had been interviewed strongly believed that the role of architecture is extremely important in the palliative environment. Overall the belief was that multi-generational housing could improve the quality of palliative care in terms of accommodating to the needs of people. They agreed that social integration is an important aspect in improving the quality of life for the patients as opposed to ostracizing them. They were interested in the idea of intergenerational relationships. From these findings conclusions and recommendations were suggested thus concluding the study.

In response to the aims and key questions , incorporating housing is not a means of replacing palliative care , the aim is that when architecture is specifically designed to cater to the needs of the terminally ill , it could enhance their quality of life. Designing for the terminally ill goes beyond universal design , it includes meaningful architecture , socially inclusive design and spaces that address the holistic well-being of the

patients and their families. *The objective of the dissertation was to find new palliative care options for the terminally ill* .As a result research has shown that intergenerational relationships not only assist people physically but also psychologically. When people are raised in different time periods, their values and perceptions of the world can be quite different, and this can lead to difficulties in understanding one another. The generation gap is widening due to fast changing lifestyle, globalization, migration of young and influence of diverse ideologies. Because of this gap in understanding between generations, it is important for one generation to make a special effort to understand the other generations. Parents and caregivers can create opportunities for children and older adults to spend time together in order to build a relationship. Everyone has something to offer to each other and through observation many people are willing to help others. Nature has a therapeutic effect on the well-being of humans and can enhance the quality of daily life. incorporating this into an environment for the terminally ill can be very effective as it allows them to dwell in a calming space. Designing a healing environment may not be so much about the cure, but about the balance of all things human. A healing environment is one that promotes harmony of body, mind and spirit. Designing for this more holistic approach can then impact outcomes.

DESIGN DEVELOPMENT

site selection criteria : The following criteria are imposed with the intention of finding the ideal urban area that would host a palliative care facility;

1) Community
   Too few residents would not be enough to sustain the development and allow the full potential to be exercised.

2) Degree of Urbanity
   Good urban characteristics are required for the development of this typology. Proximity to the city, access to employment, transport, and other amenities are important criteria for the selection of a site.

3) Residential neighbourhood
   For the development to reach its full potential its purpose should be to be able to assist the direct community first, therefore should be located in a residential neighbourhood that currently understands the nature of shared amenities and spaces .

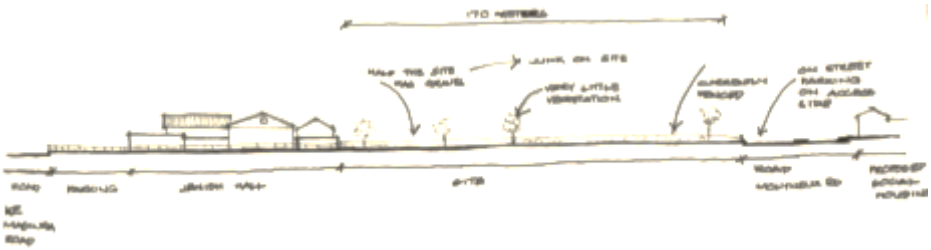
4) Accessibility
   The site should be easily accessed to pedestrians and vehicles. Proximity to transport routes and other general amenities are important.

5) Economic opportunity
   the nature of the area should allow for a variety of uses , to encourage economic sustainability for the development.

6) Environment
   Currently situated in a tranquil space or has the ability to further encourage a peaceful environment. In an environment that is accepting of cultural differences.

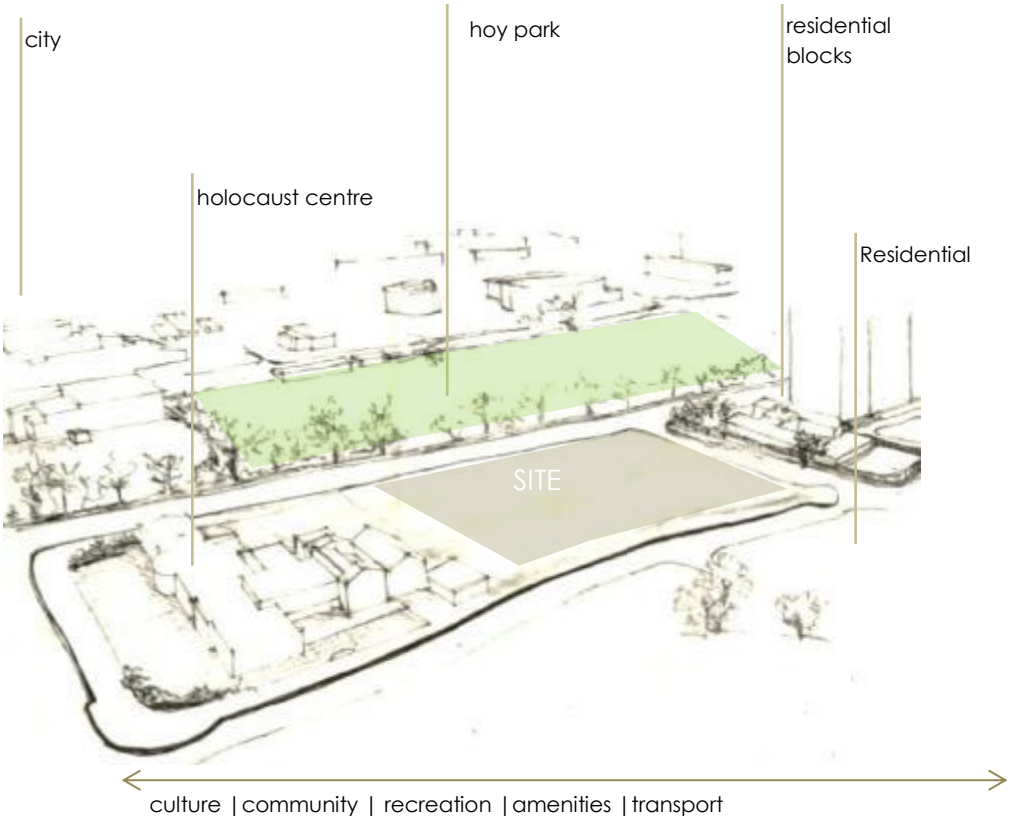
North beach is a residential zone in central Durban , it is flanked by the golden mile. The site offers many recreational opportunities as well as having access to various transport routes. The selected site is situated next to the Durban holocaust centre and sits between Hoy park and the Golden mile.

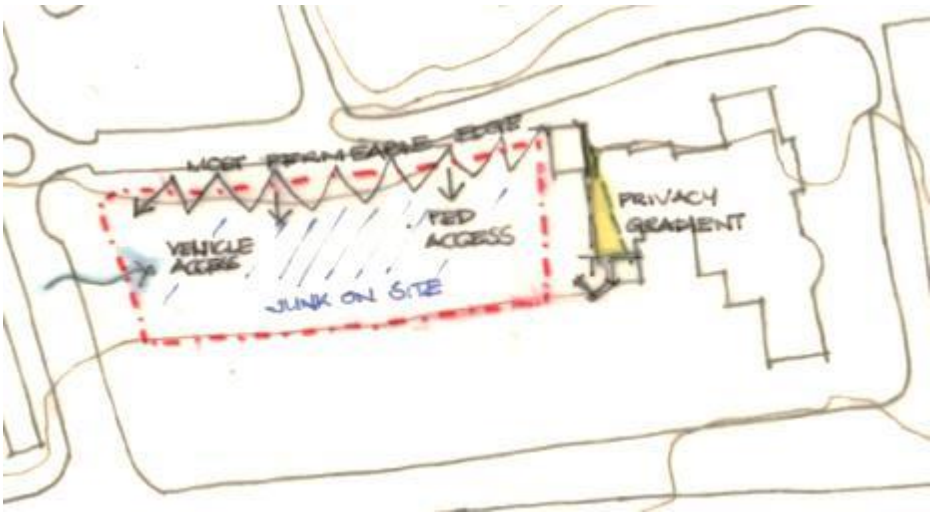
site :corner of playfaiy rd and molyneux rd



context

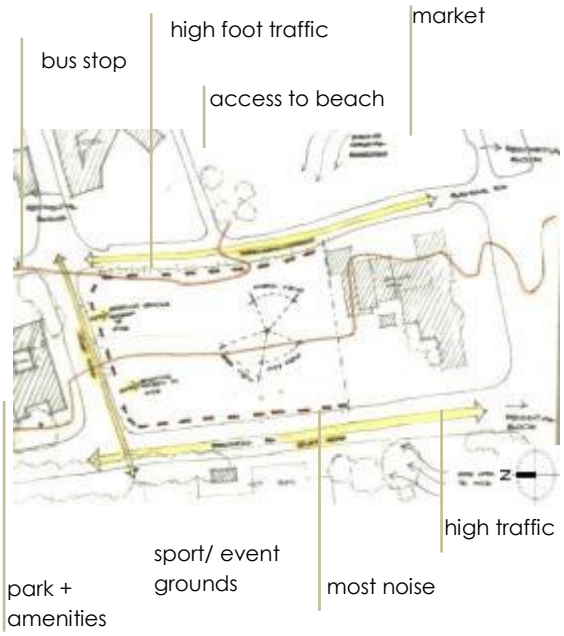
The site is surrounded by nodes that are rich in Durbans history. During the second world war ,the Jewish hall situated next to the site , was a haven for soldiers .It was open to all soldiers as a place of retreat. Durban Jewish Centre (DJC) hosts various conferences, examinations for universities from across the country, corporate gala dinners and weddings from all religions. Surrounding the site are many facilities and activities to cater to the needs of the community ,including ; religious, recreational , retail ,residential. From the site there are views of both the ocean and the CBD. Currently, there are no hospice facilities in the area.

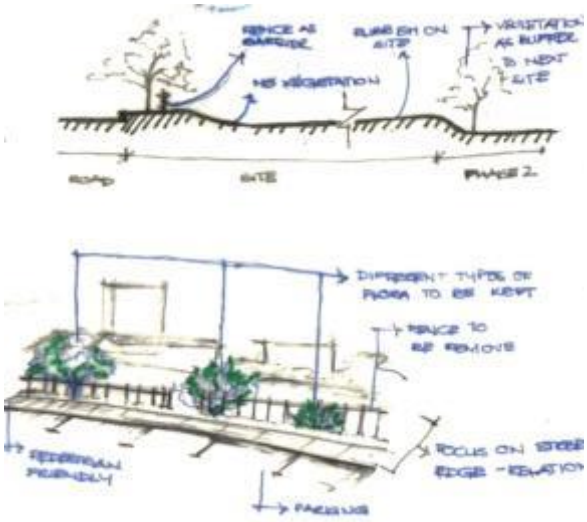




response to context

The site concerned is unused and is fenced off , however it has vagrants occupying the space occasionally , and is not well maintained .There is currently some vegetation on site that will be kept through the design process. The site has potential to link well to the existing context such as parks , the beach and the residential community. In response to the macro context , how the building will encourage links and further development is shown in the master plan scheme. This suggests a phase 2 of the development where site b will be developed into a commercial space that also hosts a centre for alternative therapies as well as a research and educational centre. This will assist in further funding the hospice development. In addition , site c will have a formalized market space to cater to the needs of the community. While these benefit the community they give patients a chance to be part of a community and create their own independence while they can.





micro analysis

Orientation: The site is rectangular in shape, the length faces east , which also faces the ocean. East lighting is appropriate for habitable spaces. The orientation is important in incorporating natural light into the space and to make use of Photovoltaic solar panels to absorb sunlight as a source of energy to generate electricity.

Access ; currently there are two drive in access points from Molyneux rd .The intention is to use these access points for the hospice as it is the quieter road .

DESIGN DEVELOPMENT

Design intention *It is important to remember that the dying are still living – encourage living your best life*

To create a design that substantiates personality and give the patients and families a sense of having their own space within a secure and comfortable community. Ideas that fit with the desire of creating a safe and homely atmosphere as described in sections of both palliative and healing architecture. Ultimately , incorporating housing is not a means of replacing palliative care , the aim is that when architecture is specifically designed to cater to the needs of the terminally ill , it could enhance their quality of life

Design Concept : Scripting the narrative

a concept that explores the rituality of divesting and the poetic potential -focus on personal experiences and remembering of intimate spaces

Design Strategies

Designing for the terminally ill goes beyond universal design , it includes meaningful architecture , socially inclusive design and spaces that address the holistic well-being of the patients and their families. Intergenerational relationships not only assist people physically but also psychologically. When people are raised in different time periods, their values and perceptions of the world can be quite different, and this can lead to difficulties in understanding one another. The generation gap is widening due to fast changing lifestyle, globalization, migration of young and influence of diverse ideologies. Because of this gap in understanding between generations, it is important for one generation to make a special effort to understand the other generations. Parents and caregivers can create opportunities for children and older adults to spend time together in order to build a relationship. Everyone has something to offer to each other and through observation many people are willing to help others. Nature has a therapeutic effect on the well-being of humans and can enhance the quality of daily life. Incorporating this into an environment for the terminally ill can be very effective as it allows them to dwell in a calming space. Designing a healing environment may not be so much about the cure, but about the balance of all things human. A healing environment is one that promotes harmony of body, mind and spirit. Designing for this more holistic approach can then impact outcomes.

The following design principles were developed though research and critical analysis , ;

1. Courtyards- these spaces provide the opportunity for human interaction as well as a space to connect with nature.
2. Connection to nature –spending time outdoors or in a garden makes them feel refreshed or relaxed; but more hard evidence or proof of this phenomenon is necessary for fields that rely so often on statistics and facts to accept these ideas. Many people claim that spending time gardening, picking flowers, or walking in the park reduces stress and helps them relax.
3. Sensory design-important to focus on all the senses, these impact the psychology of space.

4. Natural light - Sunlight impacts the nervous system, mental health, and appetite. Natural light also helps regulate human circadian rhythms, which are important to our health and mood, and regulate hormones .
5. Universal design

Multigenerational living

- shared spaces , dynamic movement of residents, and engagement of the greater community.

- offer support to families –emotional + physical

-Housing itself is not affordable to everyone, therefore care would be a luxury

- Intergenerational contact is beneficial

Older – learn about contemporary culture

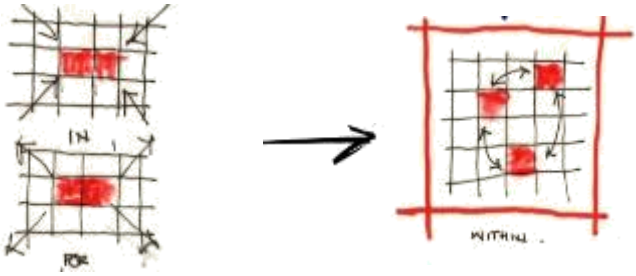
- feel more productive , gain independence again

- purpose

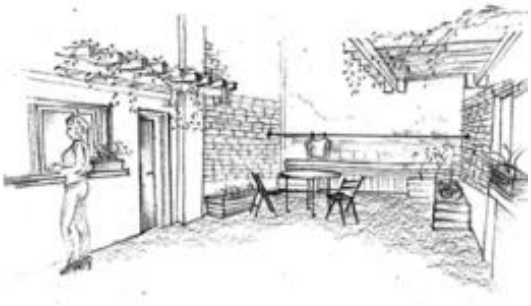
Younger –learn about experiences

- develop new skills and perspectives

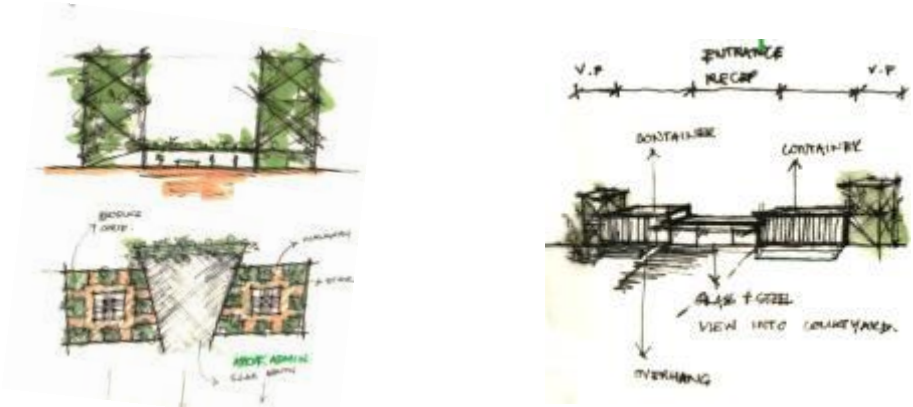
process / conceptual sketches



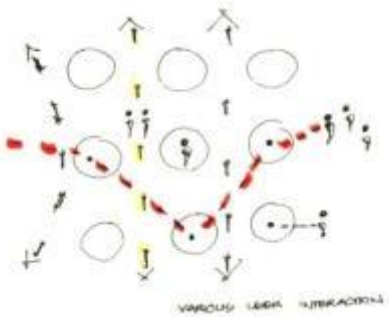
The built form needs to respond to its context and become a part of a greater scheme



residential floor-shared garden space



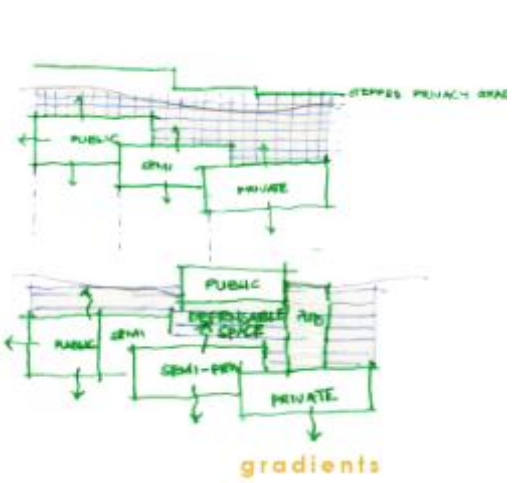
Introducing a farming grid , and interactive space that gives patients a chance to be involved in daily activities that would also provide food for them.

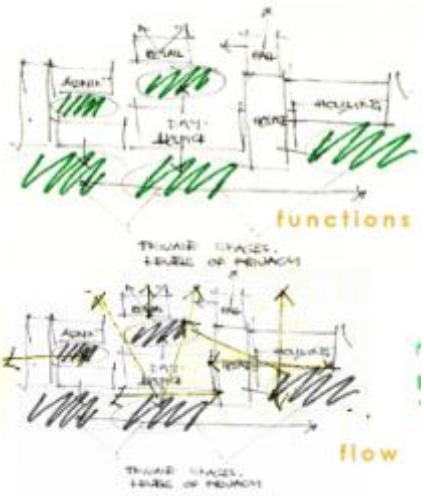


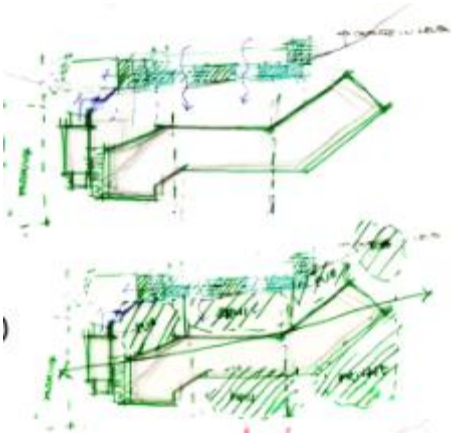
Opportunity for various user interactions

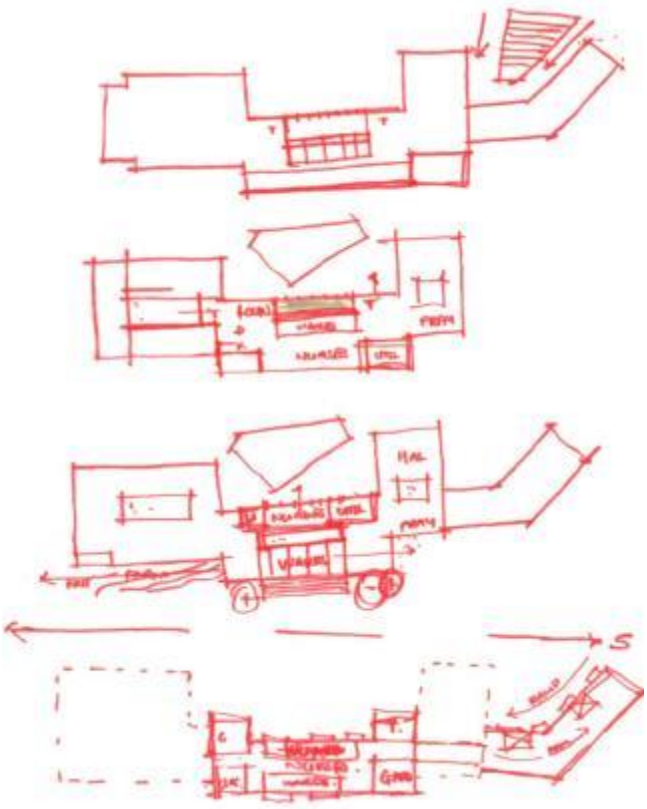
Space and form evolution

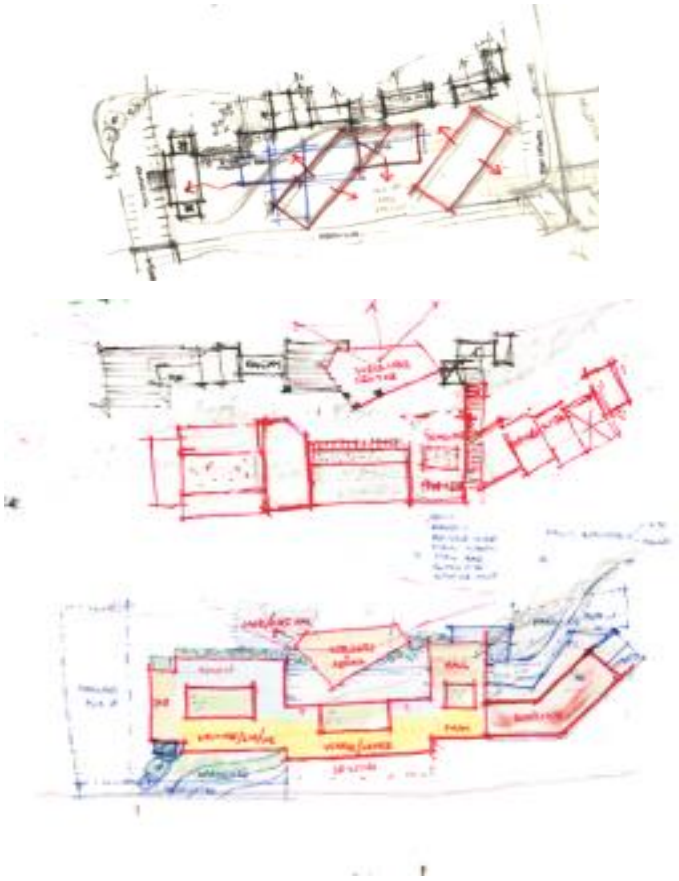
The approach to design is to develop a strong architectural framework , to clearly respond to the existing and historical cues in the precinct, and provide integrated spaces for the patients and greater community to dwell. The proposal is conceived as an assemblage of complementary components, spaces, and overlapping functions. The building developed from a single mass. The mass was broken up by transitional and defensible space to create places of varying levels of privacy and for different functions .The design interlinks different spaces through courtyard spaces.



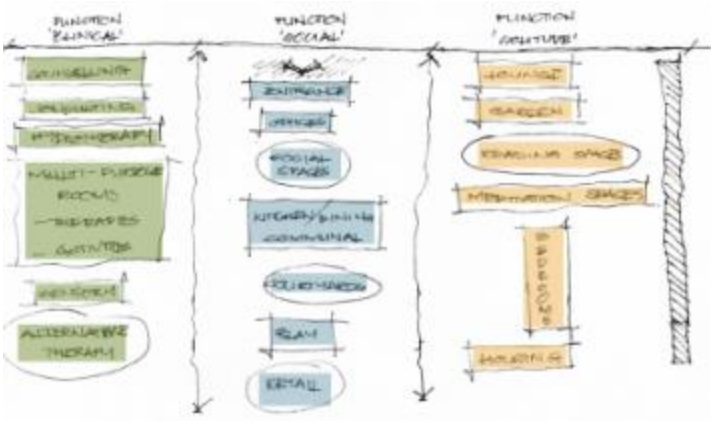


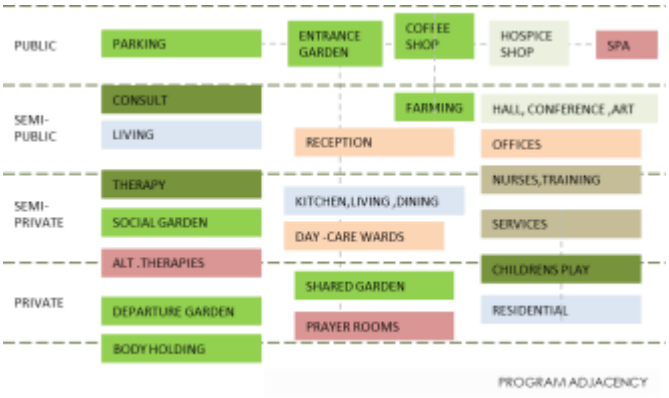




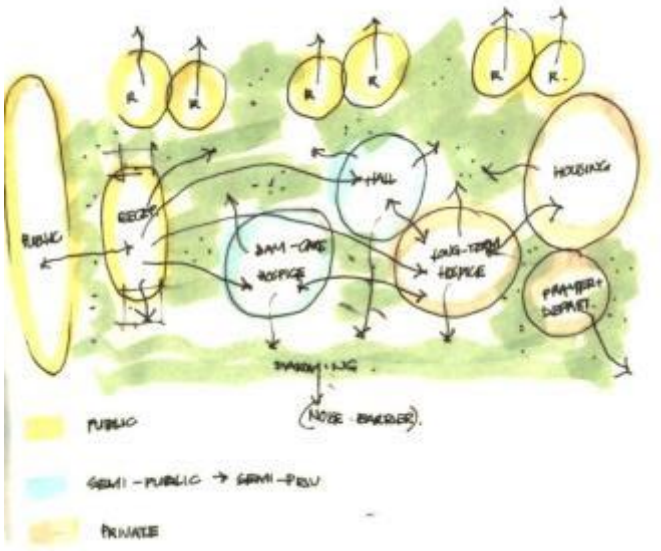


Spatial programming

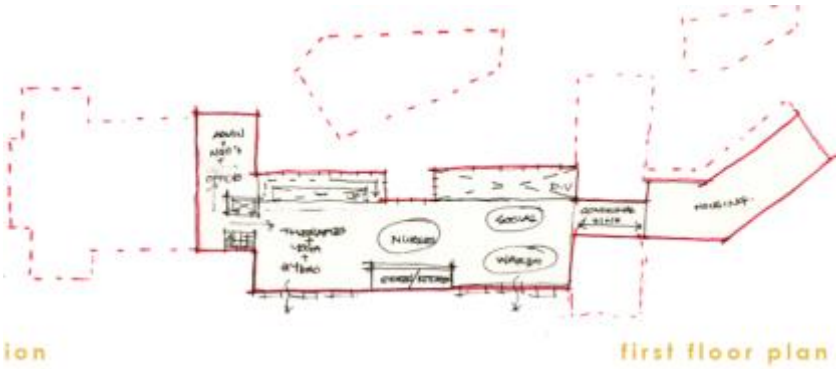


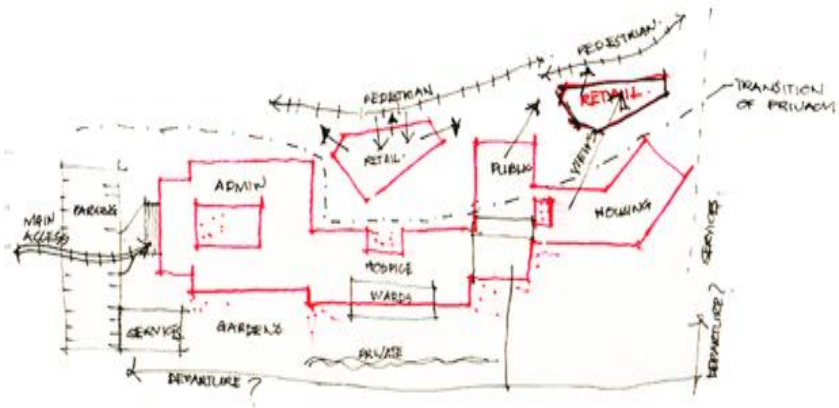


The building layout is designed in relation to the site context with public spaces placed on the open ground floor facing Playfair Rd to create an accessible ground for users. The semi-public and semi –private, and private spaces are further into the site and on the upper floor. Courtyards act as transitional spaces and as connecting elements between the spaces. Spaces are connected incorporating natural lighting and ventilation and overlook the central courtyard space allowing users to feel closer to nature. The spaces on the upper floor are designed in such a way that they overlook the courtyard spaces. The courtyard serves as a healing garden which allows for users to relax in in a natural greenspace. Furthermore, activities in the courtyard can be viewed and will encourage users into the building.

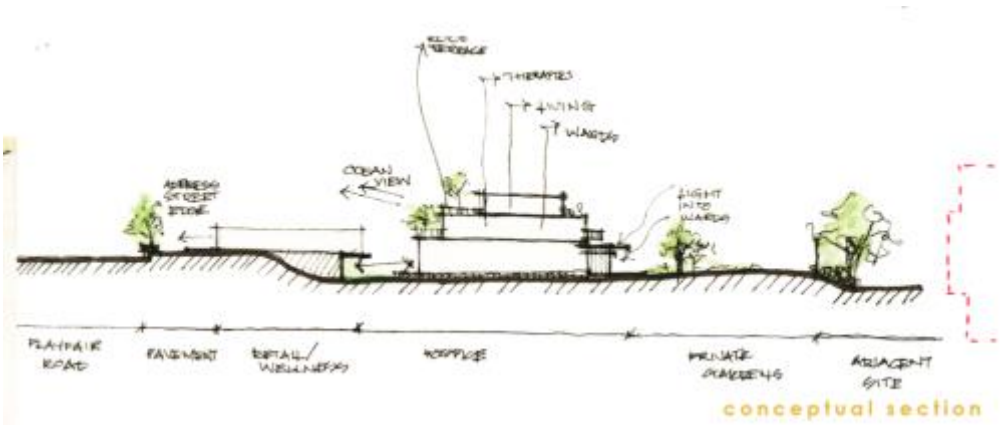


Design development drawings

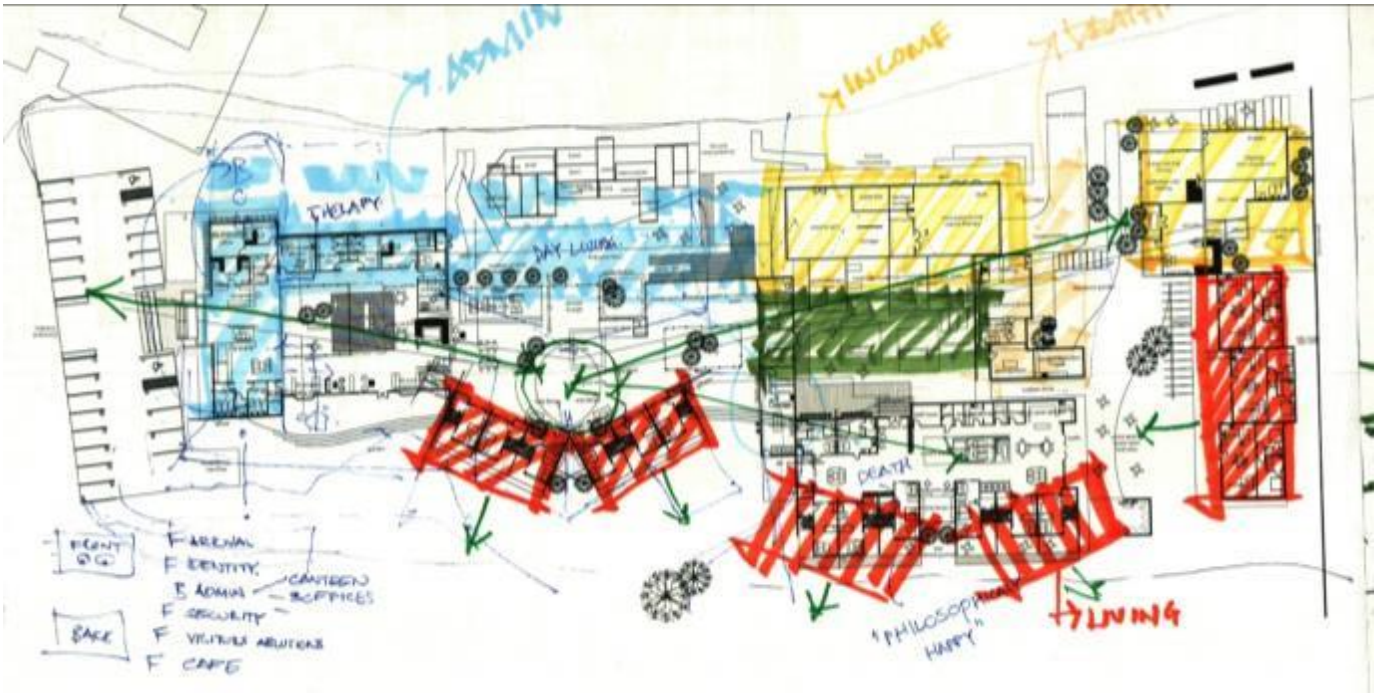




spatial interactions

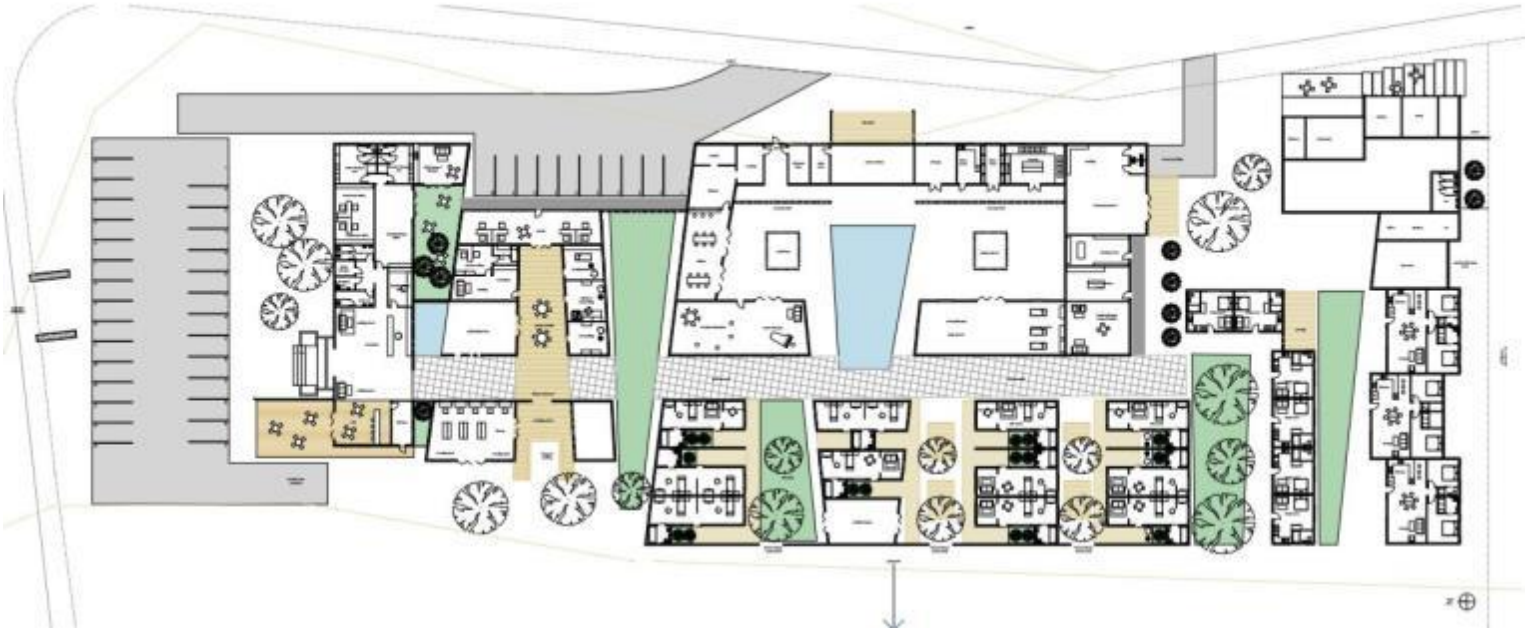


Focus on axis and view lines through the building to define spaces.



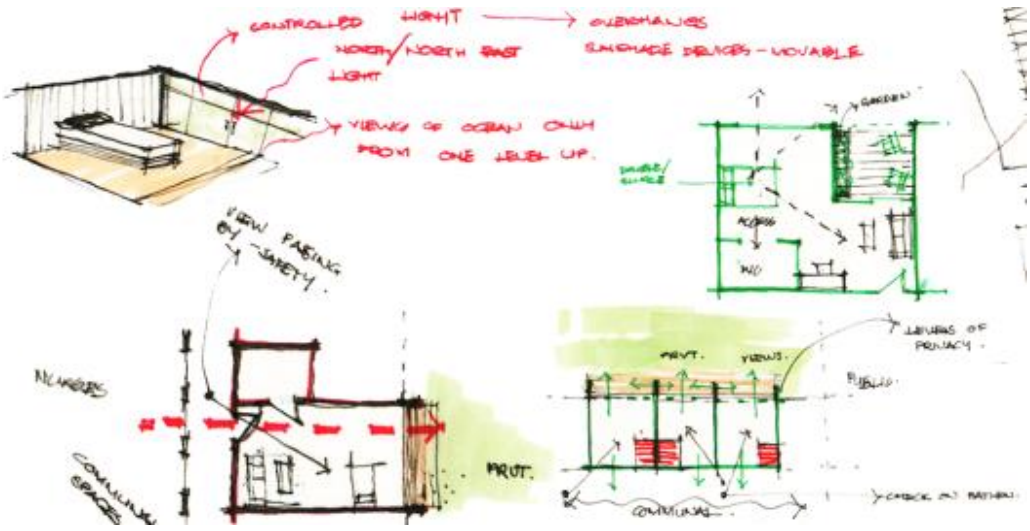
Process of linking functions to further define spaces, creating defensible spaces

Merging the above concepts , considering sick building syndrome. Building now focuses on space of relief between functions .

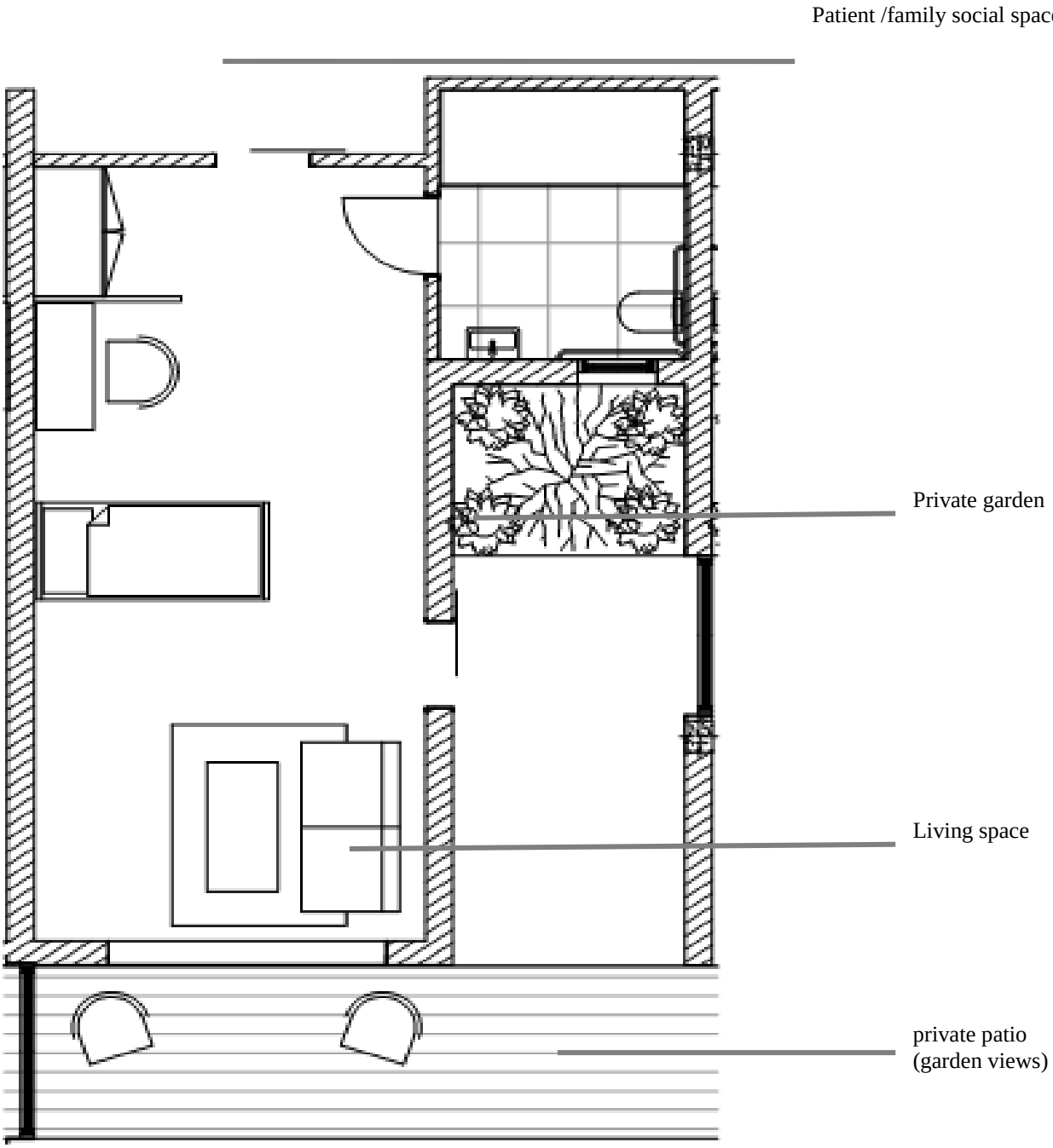


Internal spaces

Wards are designed as private rooms as well as shared rooms. This gives the patient their own space to live in during their last days or during their stay. It allows their families to be comfortable in a space that the patient has made their own. The patients have free reign in decorating their rooms. Family members have the opportunity to spend the night at hospice with the patient as this room allows for a sleeper couch. The room designed for the patients that are in their last days have a bed in the room for the family member to stay overnight. The Hospice also has to family rooms for family members to spend the night , these are completely separate units with their own kitchenette and living space. Each room has their own private garden which contains plants that induce a sense of well-being and has healing properties. This gives patients the opportunity to participate in the pleasure of choosing plants and growing their own flowers, fruit and vegetables. From the bed the patient has a view through the garden and can come out into a shared space to encourage sustaining healthy relationships and interactions. Creating a view towards nature and green environments has a positive response on humans physical and psychological well-being, concerning stress, concentration and pain. A view towards vegetation has a calming effect. (Frandsen, 2011). The wards are designed in a way that allows the patient to enter into their rooms from communal spaces, this gives the feel of a home –like space .



Patient rooms should induce a sense of well-being by having a connection to nature and natural light penetrating the space. It should also have a home-like feel.

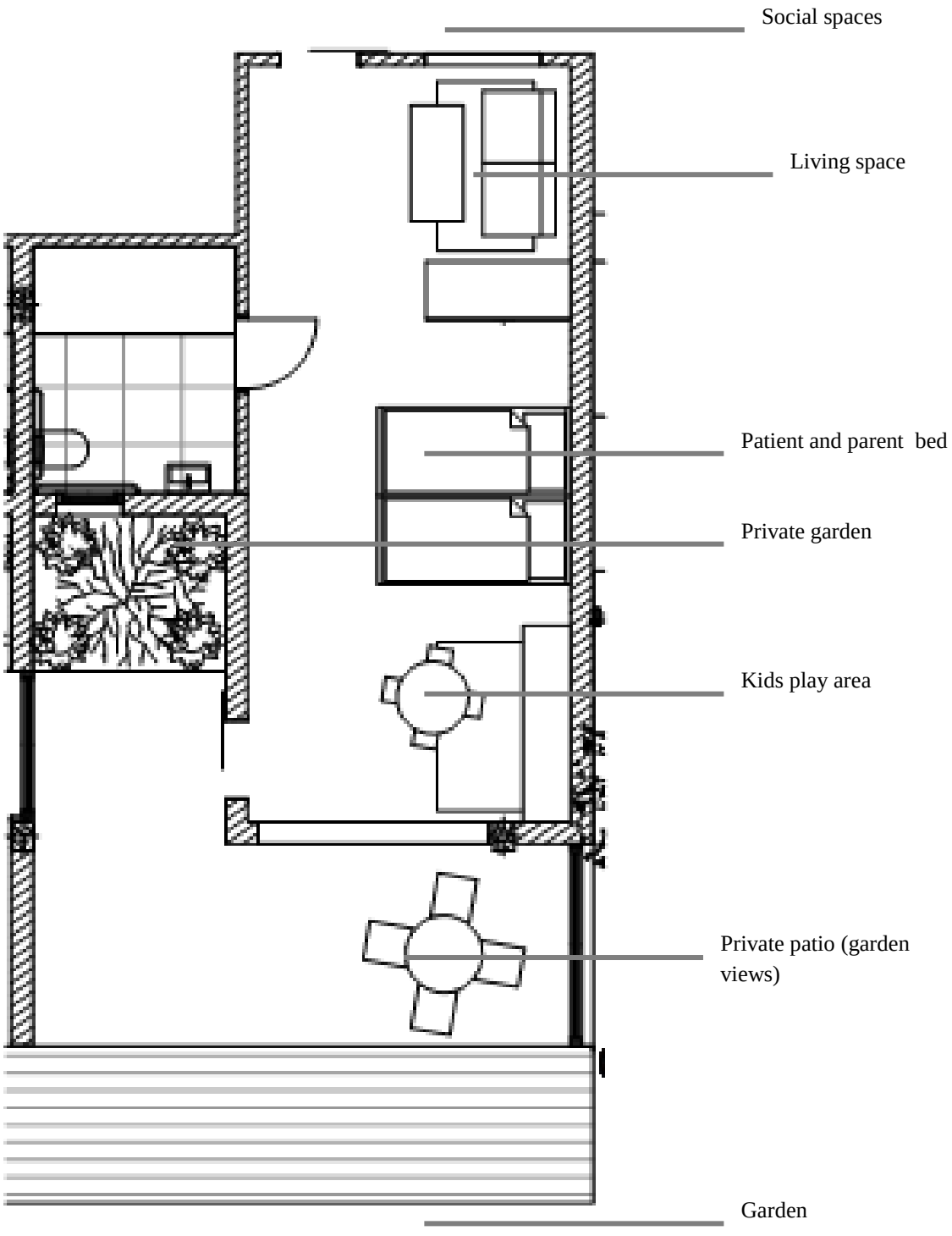


Typical day ward layout

Internal spaces

Children wards are designed to cater for the needs of the child and their parents. These have a bed for the parents for the parents over , which allows the child to feel more comfortable knowing their family is close by. The rooms have a little kids play area facing the garden. This encourages them to keep active as much as they can and gives a connection to nature. These wards are situated next to the communal kids play area, encouraging interaction with others. Small niches such as holes in the wall, a window placed low, or a bean chair in a more quite zone of the complex will facilitate places for shy children to withdraw when needed. Besides creating seating niches, a low placed window allows for smaller children to have a view of the outside, and allows for daylight to enter which have the same positive effect on children, teenagers and adults.

The patient and staff plays outside. (Bayt-Abdullah Childrens Hospice, 2014))



Typical children's ward layout

Construction method

The bulk of the design focuses on a load bearing construction method as it is single storey. It is a structural system focuses on loads of buildings i.e. weight of building itself plus the live loads get transferred to the ground through walls. Walls bear the load of roofs, floor and of course self-weight. The design becomes double storey in the housing component which allows the more able bodied to use the levels above.

Walls

Masonry walls, built of individual bricks, usually in horizontal courses bonded together with some form of mortar. Several earth-derived products are used; either air-dried or fired, are reasonable in cost and well suited to the climate. Bricks are relatively easily obtained and provide a solid structural envelope that suits the coastal temperatures of Durban. Face brick is aesthetically pleasing and is used as a design element to enhance the textural feel of the building. Exposed face brick creates a warm cosy and rustic atmosphere. Even though clay for brick must be quarried, clay is abundant and can be easily obtained from surface deposits. Bricks are commonly manufactured and sold near the quarry site, reducing transportation costs and air pollution. Bricks are long-lasting materials and have a thermal mass insulation value.

Roof

The roof is designed simply , and the weight is supported by the loadbearing walls. It is designed as a dual pitched roof with a roof light running above the circulation space. This allows light to enter into the building .This roof was chosen in order for the drainage to work accurately with the building, for the least amount of maintenance. Storm water is collected in Jojo tanks and used for irrigation.

Screens

Screens are made from brick or concrete to deal with the weather conditions on site .Aluminium screens would rust. Where timber is used it is treated specifically for the weather conditions.

Services and Environmental strategies

The proposal acknowledges the proposed hierarchy of circulation for pedestrians and vehicles along the site. Pedestrian access is along Playfair rd as it is has high foot traffic. The proposal creates a retail and community driven space along that road. And the admin turns its back to the road .acting as a buffer for the spaces after.Service access as well as short term pick up and drop off is proposed from the Molyneux rd entrance. The site allows for mostly on street parking to access the retail and commercial aspect , as walking is encouraged for holistic well-being purposes. There is a parking area for vehicles and bicycles, located on the north side, in front of the entrance.

The interior design conditions have been selected with consideration to reducing the building's energy use and carbon emissions, whilst providing an optimal internal environment.The buildings have a short spans and design makes use of cross ventilation as a means of ventilation and fresh air flow through spaces , providing a naturally cooled environment.

Primary incoming services and main power and distribution hubs will be located on the ground floor with primary mechanical plant located at the top of the site with easy access for maintenance. Solar panels are used on the roof as a alternative energy resource.

Materials

The type of finishes helps define the function and ambience and warmth the space should have. The finishes of the building are true to the materiality of the structure. The addition textures and materials will add experiential quality of the space, this would be in complete contrast to the lighter, transparent qualities of the glass curtain walls that form part of the design. Within the space, soffits are often left exposed, timber floors enhance the feeling of a home-like space and light feel and cement screed surfaces which are in contrast to the lightness and transparency of spaces. In the exterior spaces , there is a play on hard and soft surfaces between these are often materials that create a good transition between the spaces. These vary from grass ,cobblestone , loose stone, gravel and paved areas. The choice of colour and the tactile experience from different material is an important factor. Smaller children are often dressed in coloured clothes and have toys with bright colour palettes, which add a great deal of colour to the environment. Colour variation is important, as colours can be clearly distinguished by children and can act as a common reference, while also determine the mood in a given space.

The bulk of the building consists of brick , this material is important part of South Africa's architectural heritage – in every province you will find beautiful and functional schools, social infrastructure, hospitals, churches, stately homes, forts and lighthouses. You will also find affordable brick homes moulded from South African soil that have protected and served South African families across several generations. In terms of the hospice design, recycled and aged brick are often used to show that things don't always die even though something has reached it time , its not always lost. The same with people after death, while they may not be around anymore they always leave something behind. Brick also ads a lot of warmth to a space , and has connotations of a home environment.

Other reasons for brick use;

SECURE: ROBUST & LOW RISK

SAVE – TIME & MONEY

SPEED OF CONSTRUCTION

INEXPENSIVE CONSTRUCTION TOOLS

SUSTAIN – HEALTH, COMFORT & COMMUNITY -Sustainably designed buildings are energy efficient, resource-efficient and serve the long term economic, social and environmental needs of communities. Clay brick masonry demonstrates all these qualities during construction, throughout its long operational life.

Materials pallet (recycled where possible) :

Recycled concrete for pavers

Wood

Glass

Brick

Concrete

Bamboo