A CONTEMPORARY AFRICAN ARCHITECTURAL RESPONSE TO MATERNAL HEALTHCARE FACILITIES:
Towards a Maternity Care Centre for KwaMashu

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THE DECLARATION

I, Zamasomi Sbusisiwe Mzoneli, hereby declare that the research compiled, assessed and documented within the following thesis is independent research, except with work where an individual has been stated. It is an independent body of work, exclusively done by Zamasomi with the assisted direction of Mr Juan Solis-Arias. This dissertation is a qualified procurement of the research required degree in Master of Architecture, to the University of KwaZulu Natal, therefore, has not been proposed to any other academic institution for any degree or process of masters requirements before this submission.

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Zamasomi Sbusisiwe Mzoneli

_____03/05/2021_____

Date

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Lastly, to God. For the miracles, you continue to bestow upon my life. Thank you to my mother and son. Thank you for the path of life you have chosen to give me.

Thank you

THE ALLEGIANCE

I affirm the allegiance of this maternal healthcare facilitating study to the little man, my son, that I was unexpectedly blessed with. His birth inspired my research topic and encouraged me to use my knowledge and experiences to support other young single moms.

To my son, Rei Alejandro Sphakeme Mzoneli

RESEARCH ABSTRACT

The built environment has always had the power to have a positive or negative impact on its users. Whether it is a home, office, or public space, the architecture articulates its intentions. Healthcare spaces specifically require an architecture that is highly responsive to the needs of its inhabitants. The subject of maternity is seldom discussed within the built environment, therefore, making it vital to conduct and initiate as an architect who is well experienced in the process of maternity. The social issue of maternal mortalities has been confronted through cultural and medical interventions as this has been assumed as the only cause. As a result, the following dissertation research is driven towards confronting maternal mortalities through the built environment by answering the question, "How can the principles of contemporary African architecture inform the design process of maternal healthcare facilities in a historically segregated community ?" with the objective of developing a successful healing architecture respondent to maternal healthcare facilitating that resembles contemporary African architecture constituents.

The dissertation at hand aims to explore how contemporary African architecture, in the context of maternity healthcare facilities, can enhance healing and care through its fundamental design strategies specific to the user within historically segregated communities. One has identified a built environment problem in healthcare facilities designed for the purpose of maternity care; there is a lack of facilities as well as facilities designed with a regard to healing design constituents that could eliminate much of the psychological and social issues affecting maternal mortalities. Literature research, interviews and questionnaires with professionals and community leaders will be conducted to gain further knowledge into the maternity care facilitating gaps experienced by the women and their families. Primary healthcare facilities have become highly congested which has eliminated the nurturing aspect caregivers used to provide. This is vital in ensuring that beyond the physical health, the psychological health is well to ensure a healthy pregnancy, labour, mother and child.

The dissertation explores the range of cultural, health, and educational influences upon maternity care facilitating in Africa and South Africa itself, through the concept of maternal healthcare. These influences are identified and questioned in their effect upon women in maternity facilities. Within the local context, the choice some women take in utilizing the facilities provided is largely influenced by external factors such as insensitive medical staff, lack of access to facilities, and national healthcare system discrepancies. The dissertation directs one to examine the phenomenology theory of placemaking, that can be implemented within the built environment. The theory looks into the significance of 'genius loci' thus exercising the need for healing architecture within healthcare facilities. Lastly, the concept of contemporary African architecture is explored through the lens of agency in maternity care centre facilities and eco-sustainability within historically segregated community spaces. The design confronts the need for a healing space that services the most marginalised African women with healthcare and education in adhering to dignified basic health needs, therefore, enabling a positive well-being for women.

These concepts and theories direct the paper towards establishing the guidelines that will support the architectural design of a maternity care centre within KwaMashu. This aligns with the aims and objectives to solve the research problem of a lack of adequately designed healthcare facilities that could eliminate the high maternal mortalities social issue within South Africa and Africa.

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PART ONE:

THE RESEARCH BACKGROUND ISSUES

CHAPTER 1: RESEARCH INTRODUCTION

Chapter one is a compilation of the overall investigation proposal for the study within maternal healthcare facilities with the hopes of designing a maternity care centre for KwaMashu. The chapter allows one to be familiar and grasp the research background and the problem at hand i.e. inadequately designed healthcare facilities for maternity care. Primary and secondary data collection strategies focus on the importance of understanding the social issues affecting maternal mortalities and ultimately impeding the success of maternal public healthcare facilitating within South Africa as well as healing architecture within a healthcare space. The intentions of decreasing the mortalities, through the built environment, are focused on ultimately designing a maternity care centre that can facilitate the care, healing, and well-being requirements for African women in KwaMashu, Durban.

The purpose of concepts and theories being investigated, concerning the study lies in their importance of assisting in understanding the topic and ideas related to it. This theoretical framework will provide an overview of the development effects of maternal healthcare on the built form. Maternal healthcare, phenomenology and contemporary African architecture will be investigated to further emphasize the importance of considering identity, healing, and agency within the spatial design currently lacking within maternal healthcare public facilities.

The research will involve online-based participatory exercises with skilled healthcare architects, healthcare staff, a gender-based professor, community leaders, and King Edward Hospital maternity unit as an online-based case study, in the means of social investigation into the processes and evolutions of maternal healthcare facilitating. Framing this, the research will be undertaken through an approach of responsive design and participatory learning process with the means of a collective engagement with researchers and professionals to obtain the most accurate information (Barge, Shock- ley-Zalabak 2008, p. 251).

1.1 INTRODUCTION

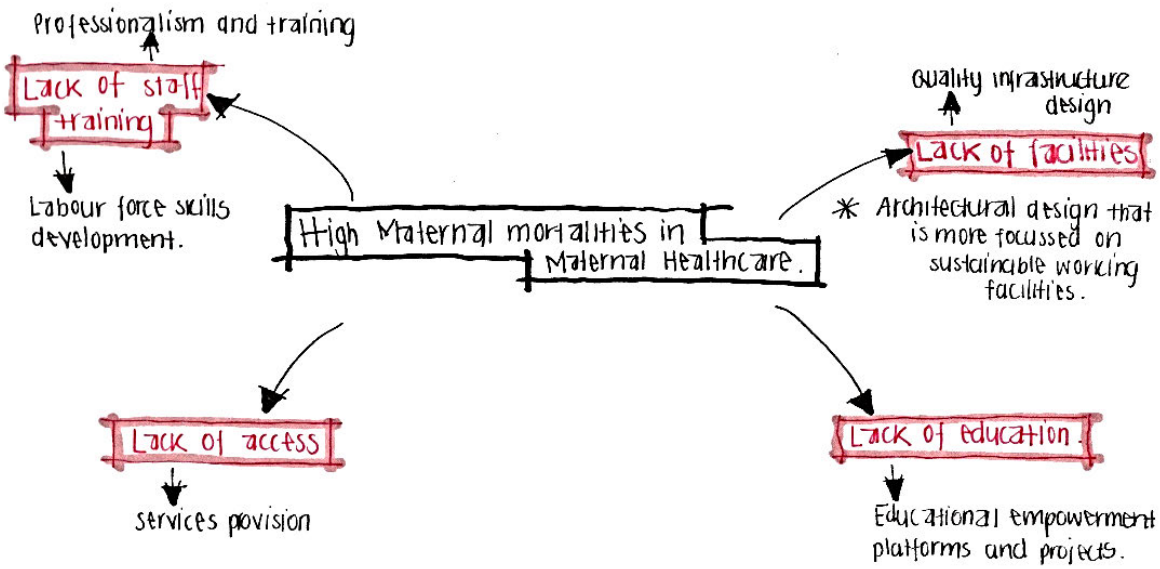
1.1.1 Background

Architecture has the power to be a positive or negative influence on people inhabiting it. Designing within a healthcare environment requires an architecture that is highly responsive to the needs of its inhabitants. A maternity care centre facility can promote healing, provide spaces that cater to physical, psychological, and social health needs by implementing contemporary African architectural constituents that enhance the users healing and inhabiting experience. Architecture, however, tends to focus primarily on the functionality of spaces that often leads to cold, uncomfortable spaces that negatively affect healing spaces (Lawson,2010). This highly affects maternity patients during pregnancy and labour transitional stages where they experience a vast amount of physical, social, and psychological changes as expectant mothers.

Childbirth should be a joyful occasion alas; it often brings more heartbreak and trauma for most African families (Kyomunendo,2003). Southern Africa has recently been facing an increased epidemic of mother and child mortality's due to pregnancy and childbirth complications (Department of Health, 2011). With the rapid population growth and lack of adequate facilities, these numbers have escalated exponentially (Sibiya, Ngxongo & Bhengu, 2018). This has become a problem for the traditional and social intentions of architectural function and program, which, due to the speed of societal transformation, have had to undergo radical change often as soon as they are inhabited, often not fast enough to meet the demands. As a result, most African women and facilitators are left helpless in accessing healing healthcare care and knowledge spaces especially in townships and rural spaces (Sibiya, Ngxongo & Bhengu, 2018). Nurse Ngwenya of Goodwin clinic in KwaMashu highlighted the need for more caring and nurturing facilities within primary healthcare with tertiary healthcare facilities simultaneously but with a focus on nurturing, healing and education towards a healthy well being for African women (Interview,2020). These requirements being privacy, inclusive spaces, comfort within an unfamiliar territory and the freedom to practice traditional pregnancy and birthing rituals.

The research has an interest in the agency of designing a new typology of facilities within public maternal healthcare. From an African perspective, this inquiry will focus on historically segregated communities where the majority of the most marginalized African women dwell (Molefe,2009). Therefore, the proposed healing architectural facilities provide adequate spaces for African women in caring and healing. In providing a catalyst for future maternity facilities, the interest lies in researching and understanding the existing maternity unit typology (online case study: King Edward VIII Memorial Hospital) to develop a healing and sustainable maternity care centre proposed for eThekwini townships, which will ultimately be a model for the solution to adequate healthcare architecture design with the means of eliminating maternity mortalities in Southern Africa.

This will involve inquiry into the maternity unit and maintenance history of modern Southern Africa and traditional African skills and knowledge surrounding maternity care and midwifery, training, education, and how they can be adopted and appropriated in an architectural inquest. This will be in the means of developing a contemporary African architectural system of modern, recyclable materials and sustainable zero-emission practices, based on local and traditional skills and memories, that can be assembled in creating self-awareness, participatory manner with the hopes of facilitating the need for sustainable spaces that contribute to the needs of maternal healthcare facilitating within KwaMashu, KwaZulu-Natal.



(Figure 1. Factors contributing to maternal mortalities. (Sibiya, Ngxongo & Bhengu, 2018) (Sketch by Author,2020)

1.1.2 Motivation and Justification

The chosen topic interest came about from the personal experience of giving birth and how the process was calm and special. This is not the case with most African women's experience of childbirth, instead, it is seen as the most dangerous thing she can do. Although this is the reality, it should not be the case. The maternity journey should bring lots of happiness to a woman. Bearing a child at the tender age of 24, the journey shall be cherished for many years as it is an extraordinary process of bonding and creating life. This further strengthens the bond with one's partner as it establishes the creation of a family.

Research into the topic allowed for a greater insight into the bigger issue at hand that has not been discussed to the extent it should be. This is due to the unfortunate reality of it mainly affecting the less fortunate, most marginalized African women in historically segregated spaces, who do not have an equal voice within society. Most African countries still believe that the husband is the one that determines how the woman, his wife, treats her body (Kyomuhendo:2003). Research into the topic has revealed that beyond the medical, a lack of adequate healthcare architecture design is a driver of maternal mortality underlined by cultural and economic factors (spatial challenges). Most African countries continue to experience minimal basic service provision, highly evident in healthcare facilitating. Therefore, this paper is taking a more nuanced approach to see ways that architecture can holistically address the epidemic of maternal mortality through adequate healthcare facilitating (Allanson et al.:2015).

As an African woman living within a westernized societal lifestyle, basic knowledge of the process of childbirth only goes as far as knowing the westernized medical procedures. However, there is a great depth of information regarding traditional ways of childbirth, which have worked for many years' pre-colonization, which has been forgotten. Many women dwelling within the South African homelands and historically segregated spaces still practice these due to cultural beliefs (Sibiya, Ngxongo & Bhengu, 2018). An integration of both sides of knowledge can be useful in the context of KwaMashu, Durban.

The motivation behind the study is in the agency of redeveloping a healing architectural typology of a Maternity care centre in the historically segregated spaces that is respondent through satisfactory healing architecture in contemporary African architecture. This will be in the hopes of meeting the healing, social and physical needs that a maternity facility should provide as improved facilities have the potential of improving healthcare (Sibiya, Ngxongo & Bhengu, 2018). Women empowerment is also an important factor that simultaneously requires spaces that allow the distribution of knowledge and awareness on the subject of family planning, maternity and motherhood. Recently, architecture has adjusted its focus to a more human responsive approach (Kim,2011). This approach regards the positive psychological effects that space can be on a positive impact (Boscherini, 2017).

The architectural dissertation will be looking at the failure of current systems of public healthcare infrastructure today and its background post-colonization and post-apartheid through precedent studies and an online-based case study. Both these timelines are of importance as they will reveal the evolution of childbirth facilitating knowledge and sustainability going forward. This will lead to the subject of placemaking and genius loci implemented within facilities needed to create a holistic architectural typology that can be implemented within the government sector, and simultaneously perform as a self-sustaining maternity care centre through the utilisation of contemporary African architecture. The concept of contemporary African architecture discusses the importance of context within the related space as well as culture, lastly, the user-bases and how important these elements are to designing healing spaces distinctive to a historically segregated space for African women. Medical spaces have been designed as per westernized requirements and the concept allows one to divulge into what are the spatial requirements specific to an African space. This aims to assist the less fortunate African women and their community in supporting their cultural beliefs, societal and physical necessities as women within maternity.

1.2 Research problem, aims, and objectives

"A Nation thrives when mothers survive; we must strive to keep them alive"
Ellen Johnson Sirleaf

1.2.1 Problem statement

Maternal healthcare facilities lacking fundamental healing and contemporary design constituents to assist in reducing maternal mortalities within South Africa:

Maternal mortalities refers to the death or loss of women and infants due to complications during pregnancy or childbirth (World health organisation,2019). Zooming out on to Africa, maternal deaths have been occurring at the highest rate in the West Africa of the continent. Although UNICEF data shows that maternal mortalities have dropped to almost half the number between 1990 to 2015, numbers for less developed countries such as SA continue to be high (UNICEF,2015).

Numerous public healthcare facilities, such as King Edward Memorial Hospital, within our country, report large numbers of maternity mortalities monthly due to inadequate access to efficient healthcare and poor conditions of healthcare facilities that do not meet healing needs (Sibiya, Ngxongo & Bhengu, 2018) and a lack of professional staff training (doctors, nurses, midwives). The above is a result of extreme poverty issues within the most marginalised spaces (KwaMashu) that simultaneously triggers direct maternal health issues such as hypertension, sepsis, and the leading cause in Africa's maternity mortalities, haemorrhage (Say L et al,2014:4). King Edward Memorial Hospital has since then released reports, elaborating how they have tackled mortality. One major change is that the hospital improved the infrastructure system by merging with the Princess Margaret Hospital for Children in 1993 and appointing new management staff. Although these changes have since improved the statistics, the proposed study will look into filling in the gaps in access and facilities currently provided, how these can be improved through the enquiry of an architecture student. This study will benefit the most marginalised African women enduring the physical and emotional pains of a natural life-bearing process. The maternal journey brings about life and an abundance of blessings into families and when the mortalities are not taken seriously by society, the ones that suffer the most are its women and infants.

1.2.2 Aim

The study aims to explore how contemporary African architecture, in the context of maternity healthcare facilities, can enhance healing and care through its design fundamental design strategies for the user.

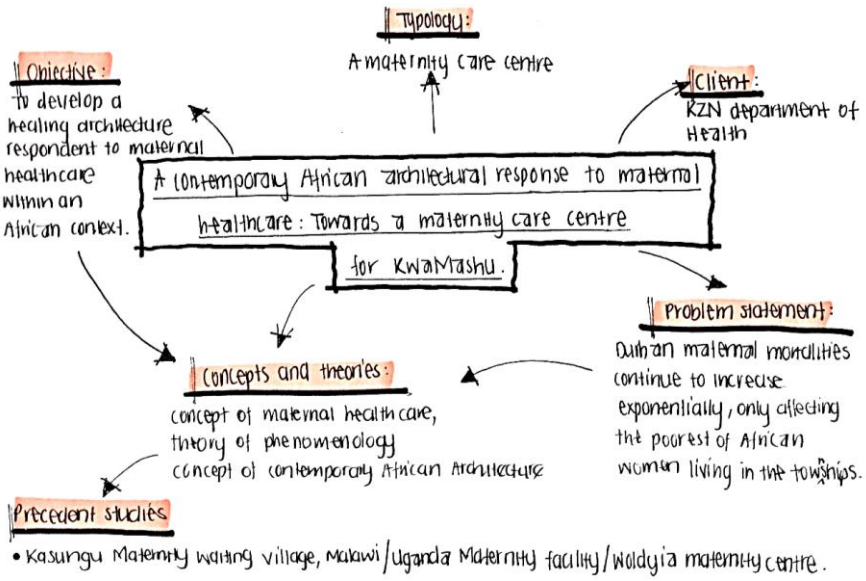
1.2.3 Objectives:

1. To prove that contemporary African architecture has unique characteristics that are conducive to enhancing maternal health.

2. To convey that contemporary African architecture, possess the constituents of healing architecture which can be translated into a maternal healthcare facility.

3. To develop a successful healing architecture respondent to maternal healthcare facilities that resemble contemporary African architecture constituents in the township of KwaMashu.

This empirical research analysis intends to recognize and therefore be familiar with the general causes of maternity mortalities in the means of designing a maternity care centre that meets the care and healing needs of the maternal journey for eThekwini African women with the consideration of traditional and modern beliefs. This ensures that the proposed facility considers social and environmental impacts in the proposed facility. Lastly, the research will assist in generating a model to be followed by all corners of Africa as we are the continent with most mother and child mortalities.



(Figure 2. Research constituents. Sketch by Author,2020)

1.3 Setting out of the scope

1.3.1 Delimitations

Exploration study conducted is within the context of the discipline of architecture. All research is geared towards the development of a brief for a proposed healing enhanced Maternity care centre in KwaMashu, one of numerous eThekwini townships in which many African women dwell (Sibiya, Ngxongo & Bhengu, 2018). The social conditions and finances will not hinder the design proposal but instead use the proposal as a tool to improve the contextual issues at hand. Research within an existing maternity unit public facility at King Edward VII memorial hospital will assist in determining the facility problems and needs for a Maternity healthcare centre focused on providing for women in KwaMashu. Literature review input of possible new ways of re-imagining spaces for women within the eThekwini context will assist in designing a healing space defined by its context. The project intends to facilitate the less fortunate who require healthcare from the government sector, therefore it is limited to a realistic proposal but with an innovative way of imagining a maternity care centre. The healing maternal healthcare facility will be used as a catalyst to be proposed throughout the continent. Implementing eco-sustainability within the facility will be limited to the ideas of energy renewal, water management, local materials, landscape garden biodiversity, natural lighting and natural ventilation all in the means of producing a sustainable healing space.

The literature surrounding the topic issues, with the concept of maternal healthcare, the theory of phenomenology of placemaking and the concept of contemporary African architecture. The primary areas of research will include cultural influences, healing architecture and eco-sustainability. The research does not intend to have a fixed outcome but generates ideas and concepts derived from the research. The research also intends to not go into general hospital design but only focus on maternity unit spatial planning by exploring the current conditions of the existing maternity care units with a consideration to administration and services needed whilst applying a sustainable approach.

1.3.2 Definitions

Agency:
An organization or person performing or providing a service on behalf of someone else.

Contemporary African architecture:
A developed architectural, African context-related traditional style that deals with the continent's societal issues of decolonization.

Doula:
A facilitator that has the educational expertise to provide healthcare women with the necessary information on their health, physically and emotionally throughout and after their pregnancy.

Eco sustainability:
The manner of a range of ecosystems to maintain their essential, original functions and processes, and retain their variety of life on earth across all of the different levels of biological organizations, in full measure over a long period.

Maternity healthcare:
A collection of healthcare aided and dispensed by a medical professional within a birthing facility to pregnant women during antenatal care, delivery and postnatal care.

Midwife:
A person, by profession, usually female, assisting women with childbirth either in an institutional medical facility or in a personal home.

Modern medical healthcare:
The organized provision of medical care to individuals or a community through medical professional practitioners such as doctors, therapists etc.

Traditional medical healthcare:
A healthcare healing system that involves sacred plants, culturally focused practices that are implemented by experienced community healers.

1.3.3 Assumptions

Maternal healthcare research

The assumption is made that maternity South Africa's maternal healthcare facilities have not been adequately planned out to assist in maternal healthcare provision. Private facilities illustrate how important the spaces provided for women are during labour. Government hospitals were designed in the means to provide minimum requirements for Africans. Privacy is essential during maternity and this has not been implemented. One can also assume that African women are not comfortable with going to the provided facilities because of the physical, emotional and intellectual abuse they experience from the facilitators. A maternity care centre that focuses on the essential needs of women and babies during and shortly after maternity will ease these concerns as it will regard cultural beliefs, privacy gradients and women empowerment to further enrich them from going forward as mothers.

Social research

The site is located in one of the eThekwini townships of which, due to South African history is far from the CBD and major nodes of the municipality (Falling within the eThekwini town planning zone called former R293.). This could affect the access to the proposed facility for some medical professionals who prefer to work within the city. The poor living conditions in these townships add to the lack of access to the facilities that usually are of high costs. The high unemployment rate that the country currently faces also could be the cause of the lack of knowledge of pre-natal and post-natal care. Gathering primary sources from professionals within the government sector will be difficult and consequently, gathering information from old patients with personal experiences in the hospitals, clinics such as King Edward hospital and KwaMashu community health centre will be as equally difficult as this is an epidemic that is under critical scrutiny by the department of health.

1.3.4 Hypothesis

"My educated conjecture, in the means of providing a tentative explanation" (Leedy,2010) for my research is to ultimately design a Maternity Care Centre which will function as a self-sufficient, well-functioning maternal healthcare model for the Southern African, eThekwini township context, in assisting to aid the reduction of maternal mortality rates by facilitating them with nurturing healthcare spaces. This will also help to reduce many of the social issues that impact African women within their households and in society in general through caring, healing and educational spaces that will ease the maternal journey and empower African women as a whole going forward.

1.3.5 Key research questions

Primary Question:

- How can the principles of contemporary African architecture inform the design process of maternal healthcare facilities in a historically segregated community?

Secondary Questions:

- What are the constituents and theories of contemporary African architecture for the design of a maternity healthcare facility?

- How can an architectural response to maternity healthcare facilities be of an influence towards reducing the social issues affecting maternal mortalities facilitating amongst African women?

- How can a responsive healing architectural design be a catalyst for a conducive maternity care centre in KwaMashu?

1.4 Concepts and theories

1.4.1 Concept of maternal healthcare

Maternal healthcare focuses on the socio-developmental issues that have affected the problem statement of maternal mortalities. The concept has led to an awareness of maintenance and emphasis on contextual identity and knowledge (Nyathi, 2005). One will begin with reviewing cultural influences on Maternity from the international, African and South African lens. Sewell defines culture as the human and theoretical experiential aspects of life derived from an intense lived lifestyle. (Sewell:2004). Cultural practices have an uncontested connection to human behaviour and means of living thus influencing the issues faced around gender within healthcare in South Africa, answering the question: **"How can an architectural response to maternity healthcare facilities be of an influence towards reducing the social issues affecting maternal mortalities facilitating amongst African women?"**

In the reading *Afrocentrism and Afrocentric Method*, Kershaw describes how although black and white lives may be intertwined, they do not resemble one another (Kershaw,1992). Nyathi states an important African issue of 'fading memories' that have not been captured enough thus, there is a high desire to promote and preserve these African cultural traditions (Nyathi,2005). The issue of maternal healthcare in Africa is unique from the rest of the world because of our African social and cultured tissues. This can be seen in the study of traditional medicine that is practised primarily in Africa as per the African traditional beliefs (Naidu,2014). It is highly essential to view the problem through an Afrocentric identity with all of its race, gender, nationality, disabilities and sexuality issues when regarding maternal healthcare in society (Naidu,2014). Because of the vast responsibility within maternal healthcare, literature review on the background, purpose and organisations that monitor and train the staff is imperative in understanding the infrastructure provision required (Sibiya, Ngxongo & Bhengu, 2018). Some beliefs add to the lack of knowledge, access to education and female self-empowerment. Therefore, the concept looks into the social issues within women empowerment, equality and dignity driving the design of holistically healing maternal healthcare space. The Afrocentric perspective allows one to engage with contemporary African architecture through the lens of an African perspective.

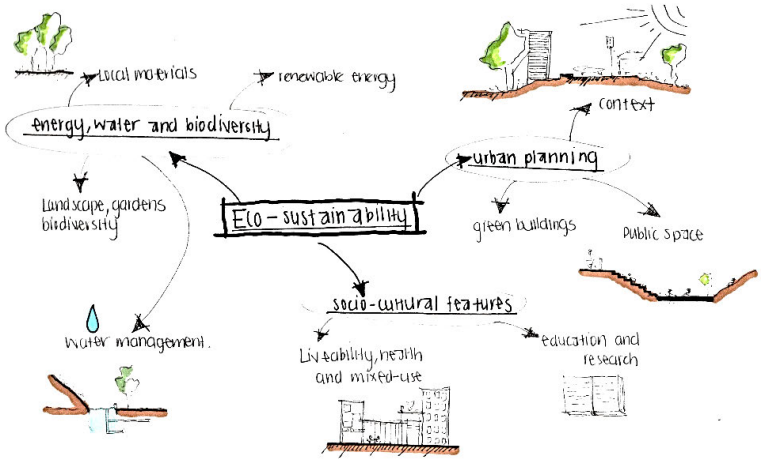
1.4.2 Phenomenology: Placemaking theory

The theory of placemaking looks at multiple means of planning public spaces. As the proposed typology depends on a user-based approach, its public engagement requires adequate design on its interface with the contextual public spaces. A maternity care centre aims to heal and enhance positive well-being throughout the maternal journey. Healthy lifestyles are promoted and within a community space such as KwaMashu, communities involvement is essential in reviving the healing and nurturing purpose of a healthcare centre. The theory focuses on accessibility, spatial design, urban design and user-based prosperity. This theory allows the study to investigate Maggie Centres as a source of research. The centres are successful in their function as cancer support facilities because of the strong consideration of the public and private spaces (Jencks,2015). Placemaking looks into the importance of designing with a consideration of the relationship between humans and the environment they dwell on.

A user-based approach leads the literature review onto Norberg-Schulz's literature, *"Genius loci-towards a phenomenology of architecture"* (1998). The literature will unpack the importance of the role architecture plays as it "explains the environment and it makes its character manifest" as Norberg-Schulz writes (1998). The theory of place also arises from the concept of phenomenology through the ideal of genius-loci, the unique spirit of a place. The agency lies within the architect to discover the genius loci and design with the means of enhancing the natural attributes of the context. Frampton's '*Towards a critical regionalism'* also discusses the idea of man inhabiting spaces with greater experiential meaning (1983). Designing spaces that adhere positively to their unique climatic conditions, therefore, achieving aesthetically and ecologically successful architecture. The theory will discuss the importance of place and identity of a context largely lost in international style architecture without the ornamentation practised in postmodern architecture. This emphasises the cultural context later mentioned in the concept of contemporary African architecture being the independent variable within the research topic.

1.4.3 Concept of contemporary African architecture

In the means of an agency, one must be aware of the effects of architectural developments upon communities. The responsibility of the architect is fundamental when designing a public building that administers in providing a human right for the most marginalised group, black women (Kyomunendo,2003). One of the problems with the existing government healthcare facilities is that they are not flexible in meeting the ever-changing needs within healthcare provision. This results in many discrepancies within the system and thus result in potential maternal mortalities (Sibiya, Ngxongo & Bhengu, 2018). Touching on many aspects in the approach to designing, planning and management of spaces, the concept looks at the built environment, economy, governance, services, equity in fairness for all people and lastly, social and cultural (Kultermann, 1969). Focusing on an African perspective allows the literature to guide the study towards a proposal that uniquely works for African women within South Africa. (Murray, 2010) Eco sustainability has allowed for designing in the hopes of tomorrow forever changing realities whilst still maintaining the purpose of the architecture to withstand and adapt to the environment in keeping to ecological responsibility. Due to societies constant need to evolve and improve, the built form can no longer solely consider its purpose for current affairs (Westra, 2011). Too many buildings have demonstrated how their lack of adaptation to new ways of thinking have left them abandoned and dissolute. Along with designing for contingency, eco-sustainability introduces the consideration of climatic conditions with regards to energy and water issues, thus ensuring the built form works with our biodiversity instead of adding more to the carbon footprint.



(Figure 3. Eco-sustainability constituents. Sketch by Author,2020)

1.5 Research methods

1.5.1 Philosophy and strategy

Approached quantitatively, research methodology included existing literature review, precedent studies, online-based case studies and questionnaires as well as semi-structured interviews with community leaders, healthcare staff, University of Kwa-Zulu Natal gender studies programme professor and medical facility architects. The literature review examined the concept of Maternal healthcare, the Phenomenology of placemaking theory and the concept of Contemporary African architecture. Precedent studies further established the sub-concepts of healing architecture and eco-sustainability within the project typology exploration and understanding. The online-based case study highlighted the need for translating the sub-concepts of health, context, culture, agency and 'spirit of place' as the key concepts lacking in the current public maternity healthcare facilities within the KwaZulu-Natal context. All sources of information were referenced along with all ethical means of digital/virtual engagement paired with informed consent letters before interviews were conducted.

The research was geared towards understanding the research question at hand, **'How can the principles of contemporary African architecture inform the design process of maternal healthcare facilities in a historically segregated community?'** The concept of contemporary African architecture looked at research through the lens of agency and eco-sustainability architecture and was predicted as the key to challenging the existing knowledge of the design necessities required in maternal healthcare facilities. The imperative research variables within the study were contemporary African architecture as the research independent variable and maternal healthcare as the research dependent variable. Sampling was approached through a quota system as the study relyed on quantitative data collected from professionals such as architects experienced in architectural healthcare design as well as medical staff, with major importance put on nurses experienced in the thorough day to day maternal healthcare spaces specific to the community KwaMashu opposed to the community leaders.

A medical practitioner, gender studies professor and community nursing sister were the sources of primary data collection within the quota sampling system. All participants identities were kept anonymous where necessary. An online-based case study report was done on King Edward VII Hospital in Durban, a public hospital. Due to the COVID-19 pandemic, site visits were controlled and limited to external analysis in adhering to the national regulations. These regulations did not permit public access to the facility as the country was in stage 5/4 of the lockdown regulations. Ethical clearance also didn't permit research within the facility to be conducted should the case study authorities not accept the entry of research scholars. If the possibility of a virtual tour to the site presented itself (COVID-19 South African regulations), that would have been the most effective approach towards case study primary data collection. Online and external analysis based on research was thus performed on the case study. Further research, although being secondary data, was through precedent studies to gain recent research examples of architecture with similar intent, purpose, concepts and themes in the maternity unit space as well as the most appropriate methodologies regarding the research at hand.

The means of secondary data collection assisted in providing insight into existing literature and research concepts previously implemented that relate to the topic and the above-mentioned research variables. The review of the literature was guided by the theories (maternal healthcare, phenomenology of place and contemporary African architecture) which assisted in understanding the relationship between maternal healthcare facilities, architecture and the constituents of contemporary African architecture in the overall means to develop a healing architecture responsive to maternal healthcare within an African context. The concept of maternal healthcare and its social issues were explored through an architectural and contextual lens. The research aimed to ultimately explore the subject of maternal healthcare facilities in eThekwini regarding maternal mortalities. This was with the hopes of ultimately addressing the research question, **'How can the principles of contemporary African architecture inform the design process of maternal healthcare facilities in a historically segregated community ?'** The philosophy behind investigating this question was to give the agent (architect) the context of the problem, therefore, leading to the agent's response being of an ethical manner.

Evolving from the key question above is, **'How can the development of maternity healthcare infrastructure be of a positive impact towards reducing the social issues affecting maternal mortalities facilitating amongst African women** ?' Due to the sensitivity of the topic interest, the chosen research approach to collect and analyse primary and secondary data will be in a quantitative manner. Interviews, questionnaires, case study observations and literature sources will be the instruments used to collect primary and secondary data.

1.5.3 Analytical framework

The primary question at hand is **'How can the principles of contemporary African architecture inform the design process of maternal healthcare facilities in a historically segregated community?'** The concept of eco-sustainability looks at research through contemporary African architecture and can be predicted as the key to challenging the existing knowledge of maternal healthcare infrastructure and its means of being responsive to the users. The imperative research variables within the study are contemporary African architecture as the independent variable and maternal healthcare as the dependent variable.

The research study will be approached, collected and analysed in the theory of interpretivism (constructivism) (Dawson, et al., 2015) through in-depth literature review and investigations of quantitative research by the means of precedent studies and desktop online-based research on the case study. All sources of information will be referenced along with all ethical means of digital/ virtual engagement paired with informed consent letters before interviews. All participants identities will be kept anonymous where necessary. Further research will be through precedent studies to gain recent research in the maternity unit spaces as well as quantitative research methodologies regarding the research at hand and its participants. Due to the COVID-19 pandemic, no site visits to the case study will be allowed, therefore no gatekeepers letter will be requested from the hospital but instead, from a questionnaire participant who would also allow access to his medical practice. If the possibility of a virtual tour to the site is arranged by the authorities, that would be the only acceptable approach towards an online site visit.

The means of secondary data collection will assist in providing insight on existing literature and research did that relates to the topic and the above-mentioned research variables. The review of the literature will be guided by the concepts and theories, therefore, assisting in the objective of determining and understanding the cultural beliefs of maternity healthcare facilitating in traditional and modern medicine by answering the question, **'How can an architectural response to maternity healthcare facilities be of a positive impact towards reducing the social issues affecting maternal mortalities facilitating amongst African women ?'**

Literature review:

Previous and similar writings around the subject will stem from the review of literature from journal articles, published works and data sets relating and discussing question 1 of the research, **'How can the principles of contemporary African architecture inform the design process of maternal healthcare facilities in a historically segregated community?'** Chapter 2 of the dissertation will be further discussing the nature of the current state of spatial design and architectural issues that have directly affected maternal mortalities and the facilitating. The literature subtopics that will be focused on will be :

Concept of maternal healthcare (Kyomunendo,2003) (Sibiya, Ngxongo & Bhengu, 2018)

Phenomenology: Placemaking theory (Norberg-Schulz, 1998)

Concept of contemporary African architecture (Osman, Bennett,2014)

Precedent studies:

Researching on precedent studies will allow one to get an African response and perspective to the problem statement. This will assist in understanding how maternal healthcare has been applied and engaged with as a social and architectural issue, therefore, establishing the successful and unsuccessful outcomes regarding the problem statement and concepts that relate to the chosen research topic.

This quantitative approach addresses question 3, **'How can an architectural response to maternity healthcare facilities be of a positive impact towards reducing the social issues affecting maternal mortalities facilitating amongst African women ?'** Along with using data analysis, the sources will help to establish what has been done thus far and where the gaps still exist, statistically, in addressing the issue. These will be collected through the general research that might have literature and virtual sources directly associated with the issues faced by the community. The secondary data collection will help to substantiate and elaborate on the primary data collection by using prominent authors literature and their referenced works.

The quantitative research approach will come directly from the first-hand information sourced through direct contact with participants and professionals within the subject matter, by the means of interviews, questionnaire's, storytelling (an African perspective of data collection) and case studies. This research will be compared amongst each other looking at how the facilities compared to the system work together and identify the existing gaps.

These will be done through online interviews and questionnaires distributed online due to the lack of means of contact as per the COVID-19 lockdown regulations. Research questions are further unpacked within the precedent studies; Kasungu Maternity waiting village, Malawi; Kachumbala maternity facility, Uganda and Weldya maternity centre, Ethiopia.

Online focused Interviews:

Primary data collection will be the main means of getting the most accurate research. This data aims to focus on the research questions 3 and 4, through questionnaires of 10-15 questions maximum from the context of maternity unit design. This will be done through key informative online interviews taken with 4 Architects who have experience designing medical facilities such as maternity units, as well as Professor Maart of the University of Kwa-Zulu Natal whose profession focuses on the gender studies programme.

Physical interviews will commence with an introduction of myself as the researcher to the participant. These will be recorded interviews. This allows for a closer and more accurate reading of the behaviour of the person being interviewed. Professor Maart's interview will further assist in understanding the social issue around gender issues amongst African women in KZN, as she works within a gender studies programme at UKZN. The goal of the interview with the architects is to start to understand the approach behind the design of a maternity unit or care centre.

This will assist in answering research question 4, **'How can responsive healing architectural design be a catalyst for conducive maternal healthcare facilities?'** The chosen architects are well aware of the concerns of such a space and will be able to assist in the insight of how they would deal with the issue of maternity mortalities through the built form. The purpose of interviewing these specific participants is because they will provide first-hand experiences, perspectives and the most accurate data that will aid in making the study as realistic as possible. Consequently, it still maintains the means for a range of responses. The questions will be based on the subject of maternal healthcare.

Questionnaires:

Questionnaires will be distributed to 10 people. 5 community leaders, 5 healthcare and admin staff. The questionnaires will be distributed to the above 10 people because of the range in their relation to the research topic. The sampling size is to ensure that information provided is limited and focused since the questions asked are broad therefore information obtained will be as broad. Sampling size has been kept to a minimum due to the Covid-19 pandemic which has required limited contact and engagement with the respondents.

Questions proposed will be asked for factual information such as traditional Zulu beliefs, perspectives on maternity care facilities and knowledge on the effects of maternity mortalities. This will help to gain data on more personal matters such as living conditions and how women are recognised within their homes and communities relating to their spatial challenges. (general broad questions)

Desktop online-based research case study:

Case studies will be done on the existing King Edward VII Memorial Hospital, a government hospital located in Congella, eThekwini. The hospital is the second biggest hospital within the Southern Hemisphere **(**Abbai, Govender, Nyirenda 2018) accommodating citizens of KZN as well as some from the Eastern Cape. The main interest in the Hospital is the fact that it is also a teaching hospital for UKZN Nelson Mandela R Medicine School as well as the Nursing College.

The hospital's speciality lies in orthopaedics, critical care, paediatric care and advanced midwifery. Using the hospital as a case study will assist in investigating the healthcare system alongside the educational aspect. The medical and nursing schools are known to have produced some of the most advanced doctors and nurses which leaves one thinking, how can the healthcare system itself be at such an unsatisfactory standard when the students produced are of such high prestige? The problem being investigated within the proposal is based on the maternal mortalities rates that have fluctuated especially, at the King Edward VIII Memorial Hospital. Since two of the hospital specialities deal with the problem statement through improved facilitating and interventions within the built environment, the online-based case study will help assist to determine what works in the facility and ways to amend the gaps.

The lack of adequate maternal healthcare design draws data from the concepts and theories being researched in the means of designing a Maternal Care Centre for KwaMashu. Investigating how this has been carried through the system will also guide the investigation in determining the current facilitative gaps that could be affecting maternal mortalities. The department of health facilities within the provincial and local scale. Within the local scale, they have provided clinics (Community Health Centres) within the KZN townships. These informal case studies will be conducted through interactions with the relevant staff members and architects by recording, taking site tours and sketching elements captured within the facilities.

Ethical means of research have been maintained with each interaction with participants. A thorough report of the research purposes will be disclosed to the participants through a consent form. In total 3 interviews will be conducted, and 10 questionnaires distributed.

The research collection method will present a variety of results to inform architectural design principles. These will be thematically and descriptively analysed by

self-selecting through a hierarchy of importance in determining the best information to present and base the architectural enquiry on.

1.5.5 Research Materials

1. Narratives from published literature, journal articles, research reports, documents, conferences and dissertations will be used.

2. Oral histories/recordings directly from participating community leaders through storytelling and interviews. These questions asked will be left open-minded to allow for additional information to be provided.

3. KwaMashu is a township with which one can relate, in terms of accessing participants to engage with. This allows for research materials of questionnaires to be distributed amongst people that will give an accurate representation of the issues being addressed. Questionnaires will be given to community leaders, the director of medical space, medical staff, admin staff, janitors and security guards of the community health care centre.

1.5.6 Research analysis

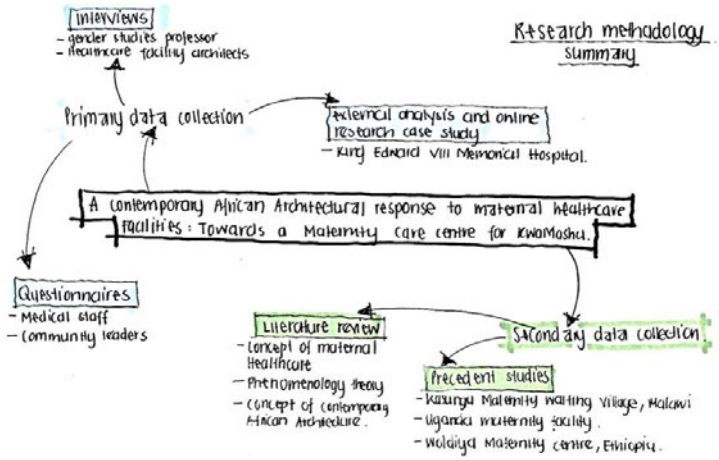
The research analysis method will be made through descriptive and thematic analysis. This will be done by sampling the research through self-selection with regards to the topic objective as well as purposive means, giving the data a hierarchy of importance to determine what information to guide the design. All qualitative studies will be sampled through what is most convenient with the research problem and, lastly chain sampling, as the research is implemented with the design report that concludes on the qualitative researchers meaning behind their research and one's review from the literature. A descriptive analysis will be conducted on the link between healing architecture and the Afrocentric perspective of maternity care. The report will indicate the means and standard deviations. The context demographics (historically segregated community) will be taken in high regard throughout the analysis.

The township is predominantly made up of Zulus that come from the North of KZN, as well as those forcefully removed from the Cator Manor area during Apartheid Zulu people still highly believe and recognize traditional practices and perspectives. Most people have moved there permanently and some still have families in the homelands.

When determining the legitimacy of some qualitative research obtained, these demographics have to be regarded to conclude the research outcomes accurately. The quantitative data obtained from primary data (interviews, questionnaires, storytelling and case study) will be filtered and analysed against qualitative data obtained from secondary data (literature and precedent studies) concepts and theories.

Quantitative study sampling will be done through systematic and cluster sampling from the primary data collected research material. The information will be reported of the returns and non-returns of the above questionnaires, interviews and case studies. This information will be presented in table form with special attention to the number of participants and non-participants. The analysis method used here will be through wave analysis (Creswell,1994) where the research will examine the responses to specific questions and how they may vary between males and females. Lastly. The analysis method will identify the statistics to be used regarding the demographics of the township space. The rationale will be provided for the choice of statistics to establish whether the data meet the assumptions of the statistic.

In conclusion, thematic, discourse, textual and descriptive analysis will be implemented for both data collection and the research analysis through images, text, reports tables and illustrations will be presented.



(Figure 4. Research methodology Sketch by Author,2020)

1.6 Conclusion

The data will be presented through narrative/verbatim information included in substantiating the facts brought forward in addressing the research questions. Mapping diagrams of contextual issues will convey the gaps, similarities and existing solutions to some of the research questions. With primary data collected, such as interview and group discussion recordings, these will be presented through a written document called a research report that will coincide with the analysis and discussion as well as the design report outcome justification. These will be used throughout the design dissertation in supporting the proposed built form outcome. Concurrent and convergent validity (Campbell. Fiske,1959) of the research will assist in establishing what is adequate and not adequate to utilise in the design.

King Edward VIII Memorial hospital online-based case study is the main facility specialising in maternal healthcare, yet it falls short in meeting the demands and sustaining the purpose of adequate caregiving. The data will be presented in illustrations for the potential need for a diverse space that integrates traditional and medical knowledge, as well as traditional and organisational South African practice within caregiving professionals. The research involves a large amount of direct participation which is essential in designing for the means of an eco-sustainable building that directly affects people. Maternal healthcare is directly influenced by social lives therefore the contemporary African architecture should consider those who will be utilising the space. Most of the important answers in this dissertation come from the professionals themselves, specifically medical staff. They are directly involved in the practice of maternity and can share their lived experiences of the problem. It is still evidently a problem that the most marginalised black females face therefore the study can assist in bringing awareness to the issue and hopefully more respondents in addressing it through the built environment.

The dissertation will proceed to discuss social issues affecting maternity care within historically segregated communities in the means of understanding spatial challenges unique to the context. These spatial challenges will be reinterpreted from a contemporary African architecture concept linking healing architecture concerning the context, users and the typology as a maternity care centre.

CHAPTER 2: CONCEPTS AND THEORIES

This chapter focuses on secondary data collection through a literature review around the conceptual theories of Maternal Healthcare, Phenomenology: Placemaking theory and Contemporary African Architecture. Maternal healthcare looks into the global, African and South African lens of the spacial challenges influenced by cultural influences upon maternity care. Thereafter, literature goes into the theory of education from maternity to motherhood as the social means of reducing the mortality rates which can be included within the Maternity care centre design. The theory goes into focus on the health caregivers and government public health system finally, focusing on the design of Maternal healthcare facilities. Architectural theory within Maternal Healthcare looks into Genius Loci and the phenomena of placemaking as the key theories. These theories create the basis in which to approach architectural design that is responsive to the healing of its users. The final literature review concept looks at the response of the architect as the agent when designing for a collective of people who require a space of hope and health in further allowing their recovery to progress positively. The theory of eco-sustainability concludes the literature discussing the elements unique to contemporary African architecture in being socially and ecologically aware of the architecture defined in the context of Africa, South Africa.

These concepts and theories individually are linked to facilitating maternal healthcare needs with consideration to what African women in historically segregated communities require in connection to their beliefs, context and contemporary architectural elements that branch into healing architecture. Fundamental design elements have a great influence on restructuring and eliminating spatial challenges to introduce positive spaces with a long-lasting effect in the improvement of African women's overall psychological and physical maternal healthcare.

2.1 Concept of maternal healthcare

Leininger defines culture as a combination of morals, beliefs and lifestyle standards that have been shared through generations of a specific group of people, guiding their manner of thinking, decision making and particular actions through life (Leininger,1991:47). This chapter looks at the social issue of maternal mortalities influenced by architecture, traditions and spatial challenges. The public health system and staff are further reviewed in the literature to understand the social issue behind the problem statement within South Africa, eThekwini. Overall, with the means of designing healing spaces, regarding values, beliefs and practices true to the context.

2.1.1 Cultural influence on maternity

The circumstances of maternal mortalities are highly critical as they affect two individuals: Women and fetus/infants. This continues to hinder the medical field as it highlights the lack of quality within the system. However, one tends to focus primarily on the western medical system as the only possible cause of maternal mortalities when traditional means are being implemented without the necessary medical precautions. The depth of research done behind the traditional means of childbirth continues to remain minimal, however, based on Callister's article, traditional means are still highly practised worldwide. Callister discusses how childbearing is an extremely intimate and sensitive process that is emotionally and spiritually felt based on the profound 'long term memories', women can remember of their childbearing experiences (Callister:1995). Society must be aware of the personal nature of such a journey and be respectful of the personal cultural and spiritual beliefs women wish to practice regardless of the normalized and accepted beliefs of society (Grodin:1993).

There is a general fallacy that traditional and cultural influences on maternal healthcare only affect third world countries since one would believe that the economic state inequality contributes to the disregard of cultural importance within the mainstream systems. Kruske, Kildea and Barclay discuss the cultural influence of maternal healthcare in Australia towards the natives, Aboriginal and Torres Strait Islander women. This is a population that is diminishing at a fast rate in its cultural beliefs and population inhabitants (Kruske, Kildea, Barclay:2006).

Dominant cultures in Australia tend to perceive their own beliefs as the norm, a consensus throughout the world thus leading to them, such as the white population of Australia, finding it difficult to accept that people are different in their race, ethnicity and more importantly, their cultural beliefs. Cultural beliefs vary in knowledge and interpretation within different races (Kruske, Kildea, Barclay:2006). Even within first world countries, one must be mindful of the past and present influences that shape today's communities such as the Aboriginals and Torres Strait Islander society. New Zealand's Maori citizens are custodians of the concept of cultural safety and have done so themselves by including other cultures who came to live in New Zealand, despite the disappearance of their culture and language (Ramsden:1993) Caregivers usually make the mistake of implementing the standardized western cultural beliefs upon patients that have their own cultural beliefs. (Takeuchi&Goge,2003) The dichotomy is created in the scenario where the immigrant's cultural beliefs are scrutinized instead, the practitioner implements their practices (Davis, Floyd & Sargent, 1997).

Within the African context, there must be an awareness of social life issues that impede the normal childbearing process. Callister mentions this point, regarding caregivers in specific contextual issues, having to implement special efforts to the woman facing issues such as having no access to the healthcare systems because of cultural beliefs, traditional gender roles, personal hesitations towards medical healthcare practices and psychological difficulties (March of Dimes Birth defects foundation,1993). The struggle within Africa is access to adequate access to essential basic services, therefore, leaving the subject of maternal mortalities within communities amongst women to resolve within themselves.

Figure 5. Maternity unit facilities in Africa are only made up of the most basic necessities. Privacy is seen as a luxury enabling many women to witness the maternal difficulties and mortalities around them.
Source: https://www.newsecuritybeat.org/wp-content/uploads/2013/07/African-Maternity-Ward.jpg

Ugandan citizens have a strong socio-cultural belief behind the use of traditional medicine. In areas such as Benin, Kyomunendo explains, how women of the community take great pride in being able to give birth by themselves as they are highly admired by the public. A significant trend among West African women. Botswana on the other hand have 50% antenatal class attendance but 90% of those women prefer to not attend any post-natal health classes and give birth ultimately at home (Kyomunendo,2003). Kang discusses a point that is evident in today's society where community perceptions usually determine good births or pregnancies (Kang: 2014). He states the example of how the general perception of good birth is a natural birth but instead in some countries, caesarean surgery is a good birth choice motivated as a better way to give birth for the upper-class modern woman (Kang: 2014). However, in developed countries, communities and their healers have begun to show an interest in herbal medicine again (Betew, 1999). Western orientated medicine and traditional medicine practices come about from their ancient evolving communities beliefs and values (Chipfakacha, 1994).

There is a strong African belief that if a woman is not able to give birth to children of her own, shortly after getting married, she must seek assistance from traditional healers with the use of herbs (Shewamene, Dune & Smith, 2017). Shewamene, Dune and Smith's literature, "*The use of traditional medicine in maternity care among African women in Africa and diaspora: a systematic review"*, state that in countries such as Ethiopia and Uganda, traditional medicine utilised in the past, is highly common to be used today again. However, Nigeria had cases of less educated but adequately earning income young ladies between the ages of 20 and 30, using traditional Medicine (Shewamene, Dune & Smith, 2017). Shewamene, Dune and Smith's article discusses the use of traditional medicine by women of Africa. Women gravitate towards traditional medicine for healthcare purposes because access to formalized medical healthcare facilities is difficult, the belief that traditional medicine is much more effective, less expensive and easier to obtain (Shewamene, Dune & Smith, 2017). Traditional medicine can be utilised for a range of female medical conditions from menstruation, infertility, pains, pregnancy, birth and menopause conditions where a range of herbs and natural plants such as lemons, ginger, garlic etc. are utilised to enhance or treat where necessary (Shewamene, Dune & Smith, 2017).

Figure 6. Elders in the community who are experienced in traditional practicing ways of protecting the new-born from spiritual and physical harm.
Source: https://www.easytrackghana.com/images/photos/outdooring.jpg

Traditional medicine in the South African context, is primarily used for herbal medicines, abortions, breast cancer treatment, family planning contraception, irregular and/or painful menstruation and contraception (Steenkamp, 2003). Naidu's research elaborates on a traditional healthcare practice called 'Kgaba' where almost 18 medicinal herbs are prepared and combined with ostrich eggshells and baboon urine. This is practised by the Khoi Khoi people of South Africa as the means of protection from evil and harm as well as inducing labour (Naidu,2014).

Marianne Littlejohn writes in her article, *Birth in South Africa: indigenous traditions,* how important the burial of the placenta and cord is after the birth of a child. The process of the cord falling off establishes the infants belonging to the mother and community, thus an animal is slaughtered, and the skin is given to the infant as a form of protective clothing. The baby comes as a talent and gift from the spiritual world and all these practices are highly favoured to this day (Littlejohn,2011). In the means of protecting the baby, herbs are also used to further enhance the well-being of the baby. One herbal mixture mostly used amongst Zulu women is 'isihlambezo' a powerful medicine Naidu states is given from God and the ancestors that offer guidance and protection to the mother and unborn child (Naidu,2014). Herbs are also consumed orally during pregnancy in the means of cleaning the womb (Varga & Veale, 1997) and to attain an easy and quick delivery (Gumede, 1978). Other cultural practices such as 'uKucola' a cleansing practice that wishes a new-born baby belonging to the ancestors, happiness and success (Nyathi, 2005). Within the South African context, these practices cannot be ignored as they are still highly implemented without the necessary monitoring and educational awareness, which has resulted in the numerous maternal mortalities caused by the lack of cohesion between the traditional and medical healthcare practices. Allowing a space for these practices is crucial in ensuring user comfort.

Many black women in South Africa hold an inadequate level of education (Aitchison & Rule: 2016). Adult basic education and training (ABET) statistics state that only 52% of South African aged 15 and above have full general education (grade 9 and more). According to ABET (2016), half or less of the 52% are black women alone. The most marginalised uneducated black women are easily excluded in social, political and cultural environments. Education and training can be highly beneficial not only in being able to participate in all environments, but it has tremendous benefits for health and allows for greater employability (Iniguez-Berrozpe, Elboj-Saso, Flecha & Marcaletti, 2019). Apartheid laws did not consider the majority of the population as citizens, seniors or otherwise, therefore adult education did not exist for black men and women. Adult education for black people begun with night schools which was unfortunately referred to as the " night school movement " therefore resulting in it being banned by the apartheid government (Aitchison & Rule, 2016). Since 1994. Most South African adult education policies have focused on education and skills in economic or social value rather than for enhancing one's well-being (Aitchison & Rule, 2016: 3). The individual and group focused Adult Basic Education and training create enthusiasm amongst adults to take the second chance at furthering their education (Panitsides, 2014). Women can become self-efficient, enhance their personal development, improve family and social relationships and their professional status (Hammond & Feinstein, 2005). Having sufficient information on both practices gives women the freedom to make an informed decision allowing for an easier pregnancy and labour. Such information includes healthcare providers, types of delivery methods, places of birth, the possible healthcare procedures and pre-natal to post-partum care plans within traditional and medical healthcare.

Figure 7.Women engage with the process of maternal healthcare awareness the more they are educated in a humane manner of the many decisions they may take for personal well-being. This requires empathy from staff in being informative, caring and supportive.
Source:https://one_org_international.s3.amazonaws.com/international/media/international/2015/07/Breastfeeding_in_Ghana.71.jpg

2.1.2 Maternity care

Staff members within the healthcare system should always aim to provide an emotionally safe and satisfying experience for all women in maternity care. This can be accomplished in the simplest process from prenatal to postnatal care: Informing women through classes and regular emotional check-ups to ensure the most positive psychological and physiological energy whilst being in an unfamiliar environment. Consistency of such support must be maintained through post-natal care, allowing space to invite all questions in the means of eliminating anxiety. Relationship dynamics between mother and child, husband and wife, patient and doctor should be made aware of to the caregiver to allow him/her to inform the mother and family of the psychological receptiveness throughout.

Figure 8..The first trimester of pregnancy is usually the stage that most women experience maternity complications due to a lack of humane antenatal care. This quality and nature of care establishes the rest of the pregnancy journey outcome.
Source: https://www.yourictmagazine.com/images/WinSenga-0317.jpg

South Africa experiences a large number of stillbirths compared to neonatal deaths which highlight the lack of quality in the antenatal care stage being provided adequately. However, as mentioned in the previous section, most South African women do not participate in antenatal classes. Within the context of South Africa, access, education and a lack of facilities are the primary reasons (Naidu,2014).
As an experienced mother, this stage comes with a lot of anxiety and confusion on top of the sudden awareness that you are carrying a life. The first 12 weeks make up your first trimester where most of the emotional imbalance occurs as the body is preparing to accommodate for the baby (Stoppler,2019). Sibiya, Ngxongo and Bhengu discuss the general perception within the Zulu community that once the public noticed a woman's pregnancy, then they may lose their unborn child from witchcraft practice which is why the women do not attend the antenatal care provided in ensuring a safe and healthy mom and baby (Sibiya, Ngxongo & Bhengu, 2018).

A woman experiences so many side effects of high fevers, abnormal vaginal discharge, lower abdominal pains and shortness of breath (Kyomunendo, 2003). Because of this culture passed down of isolating and keeping the pregnancy a secret, the women also do not engage and inform themselves and the professional caregivers of their health conditions should anything happen (Sibiya, Ngxongo & Bhengu, 2018). However, The caregiver must be knowledgeable of the mothers' needs and seek to ease and make her comfortable with as much information, guidance and support leading up to her birth (Kang, 2014).

Figure 9. The quality of healthcare allows patients to gain a trust in the facilities and its staff ; A large means of reducing the mortality rate.
Source: http://africanhealthsciences.org/wp-content/uploads/2017/11/6-4.jpg

2.1.3 Caregivers - Doulas, midwives and nurses

One can hardly comprehend the extensive amount of weight caregivers carry with every individual childbirth. This is not only a professional space but a highly opinionated and personal space that is filled with a range of emotions. Each caregiver is as important as the next and each one is needed just as much as the other. In the western medical world, the priority is on the doctor because of his assured abilities to tackle medical procedures, in ensuring that lives are kept. However, his engagement with the patient is short-lived and requires minimal emotional engagement. The care, support and comfort are given by the doulas, midwives and nurses, in the same hierarchy.

The definition, a doula is someone who provides the necessary emotional and well-being support women require during pregnancy and labour. Through the African perspective, this caregiver is commonly used within cultural practices with the elders of the family. Although she may not be called a doula (traditional midwives), she is responsible for ensuring the emotional wellbeing of the mother (Shewamene, Dune & Smith, 2017).

One can easily mistake the purpose of the doula and midwife, but it is imperative to note that the doula is more involved with the mother's everyday activities and further guides her throughout the pregnancy, labour, before and within the healthcare facility. They do not deliver babies or provide medical care like midwives and nurses, but they are certified and trained to assist during this process (Kang,2014).

Kang's literature, "*Influence of culture and community perception on birth and perinatal care of immigrant women: Doula's perspective"*, discusses the impact of doulas regarding their influence on community traditional practices upon foreign women's birth journey and antenatal care. As stated above, doulas can support women in cases where they cannot talk for themselves. This would be highly evident in immigrants who have culture, language, self-esteem as social issues within west-ernized countries (Kang,2014).

Figure 10.. Professions within maternal healthcare were one of the few first careers available for black women. This became their means of independence and education in a highly male dominated African cultural system.
Source: https://images.csmonitor.com/csm/2018/09/0913%20MATERNITY%202.jpg?alias=standard_900x600

Currently, midwives are trained with nurses as a package of a four-year degree or four-year diploma. This can be achieved from universities such as UKZN in obtaining the degrees or affiliated colleges such as Durban University of Technology for diplomas. The South African Nursing Council guides prospective students in the routes they may take to obtain their profession in the nursing industry. Doulas complete specific short courses and also get trained and mentored by nurses in being aware and knowledgeable about the maternal journey. (www.sanc.co.za, accessed: 2020)

Murphy, Gathara, Mwaniki, Nabea, Mwachiro, Abuya and English performed a study within Kenya, Nairobi in the means of understanding the reason behind maternal mortalities when most of the women in the community give birth in healthcare facilities (Murphy, Gathara, Mwaniki, Nabea, Mwachiro, Abuya & English, 2019). What they were able to conclude from their studies was that the nurses had the best knowledge of caring for the mother after birth and the instant routine newborn care. The problems discovered were in the lack of knowledge in emergency and check-up services within newborns, primary healthcare. This is a training skill one develops with experience which many of the student nurses still have not had enough of (Murphy, Gathara, Mwaniki, Nabea, Mwachiro, Abuya & English, 2019). Within the local context, the subject of South Africa not reaching the millennium goal intrigued Schoon and Motlolometsi to conduct a study behind the staffs' attitudes and lack of skills have been identified as the key factors affecting maternal mortalities. The integration of midwifery and nursing undergraduate training has been identified to harm the quality of the midwifery profession. The training they receive is unfocused and is usually allocated to all nurses, who are not all interested in the study of maternal healthcare. The system puts these nurses in the responsibility of maternal healthcare because they have the qualifications to be responsible (Schoon & Motlolometsi:2012). Schoon and Motlolometsi proposes inter-professional training which allows for task sharing, therefore redefining professional accountability and training for maternal care (Schoon & Motlolometsi. 2012). Caregivers usually claim that the cause of maternal mortalities is a lack of staff members to assist, lack of professionalism within the workspace, negative staff attitudes and poor management of the facilities.

A lack of professionalism and poor management was discovered in Armstrong, Rispel and Penn-Kekana's reading, '*The activities of hospital nursing unit managers and quality of patient care in South African hospitals.'* Nurses are being trained adequately however there is never enough time to completely focus on all the patients for the time required. The study was done in 6 public hospitals and 3 private hospitals, within each major unit: the medical, surgical, paediatric and maternity units. The study revealed that 25.8% of the time was spent on patient care, 16% on hospital admin, 14% on support and communication, 3,9% on managing stock and equipment, 11.5% on staff management and 11.8% on miscellaneous activities (Armstrong, Rispel and Penn-Kekana, 2015).

This identified the need for more admin staff to share the work with, for the major caregivers to focus on the patients (Armstrong, Rispel and Penn-Kekana, 2015). Specified job descriptions with a specified scope of work designated to advanced midwives independently were also discovered by Schoon and Moltolometsi as a lacking factor within South African healthcare. Midwifery is a profession on its own that needs individual training to know how to provide care from antenatal to postnatal care completely and focus primarily on maternal healthcare. Currently, not one caregiver has the sole training in advanced maternal healthcare (Schoon & Motlolometsi,2012). Dividing the two professions allows the healthcare system to delegate equal responsibility and define the training amongst the two professions.

Medical practitioners, doctors, also lack interest in maternal healthcare but because their training includes obstetric emergencies, they are found responsible for the primary healthcare services (Schoon & Motlolometsi. 2012). The department of health can begin by looking at identifying and empowering midwives and establishing midwifery as a profession that is independently a necessity. This will create a domino effect of women being aware of the advanced skills specialised within maternal healthcare and therefore be prepared to make the means of travelling long distances assured they will receive the appropriate care (Schoon & Motlolometsi. 2012). Schoon and Motlolometsi advise in key module subjects that would be implemented completed with a certificate for the specified module: Basic maternal ambulatory, antenatal and post-natal care, advanced maternal ambulatory care, basic labour care, comprehensive labour care and advanced obstetric care. Making these modules compulsory to all healthcare professionals, depending on their chosen profession, ensures that from the doctor's profession to the doula profession that they have the same standard of training and skills (Schoon & Motlolometsi. 2012).

Figure 11. Public healthcare staff and facilitators need to consider African women and their social issues. The level of care staff convey plays an essential part in allowing women to be comfortable accessing modern medicine.
Source: https://www.philips.com/c-dam/corporate/about-philips/sustainability/healthy-people/fabric-of-africa/maternal-child-and-newborn-health-main.jpg

The country depends on moderately trained healthcare givers to provide quality maternal services within a broad spectrum of maternal healthcare. Schoon and Motlolometsi's suggestion for inter-professional education assists in defining responsibilities and accountability amongst health caregivers. Once the training is revised, is when one can start to identify the issues amongst women being unresponsive to state healthcare, where infrastructure lacks in service delivery and the public health system as a whole.

2.1.4 Government and healthcare

The healthcare system in South Africa extends from the basic provision that is offered free by the state to the more specialised that occurs within the public and private sectors. The public sector accounts for the majority of South African citizens which has led to it being under-resourced for numerous health conditions. Maternal healthcare, unfortunately, falls within the under-resourced, whether in materials, staff or basic accessibility to the facilities for the public. Many South Africans reside on the outskirts of the major cities. The Department of Health has provided mobility services to reach people on the outskirts, however, it is not near enough since there continue to be many maternal mortalities in KZN that occur mainly in the rural areas.

Sibiya, Ngxongo and Bhengu discuss the importance of access to healthcare for pregnant women especially in rural parts of KZN. This is shown in their studies that reveal that pregnant women do not receive the state mandatory healthcare to ensure safe pregnancies. If they concentrate on providing more antenatal care access, authors believe in the positive influence over the programme and pregnancy outcomes (Sibiya, Ngxongo & Bhengu, 2018).

The maternity mortality rate has reduced in numbers significantly by 45% between 1990 to 2013. Countries with feeble healthcare infrastructure continue to have high fertility rates, South Africa included (Lawson & Keirse, 2013). This is largely due to the inaccessibility of healthcare facilities, human resources, infrastructure and a lack of focused antenatal care utilisation (Arthur.2012).

KwaZulu-Natal is highly densified with a high birth rate and consequently, amongst the highest maternal mortalities within the country (Amnesty International, 2014). The challenges faced by many KZN rural community women are largely linked to the poor healthcare received in rural spaces, compared to urban spaces (Schoevers & Jenkins,2015). As per department of health statistics,52.6 maternal mortalities for every 1000 new-borns within rural areas and 32.6 maternal mortalities for every 1000 new-borns within suburban areas (Department of Health KZN, 2011) The department also revealed that within the years 2012/2013 128 maternal deaths occurred (Department of Health KZN, 2014) and 97 within the years 2013/2014 (Department of Health KZN, 2015).

A report done by the '*South African saving mothers'* between the years 2011-2013, into the causes of maternal mortalities, revealed a lack of attendance by women for antenatal care coupled with a delayed reaction in seeking care (Department of Health, 2014b). One must be aware of the three delays contributing to poor healthcare outcomes: 1. deciding to seek care when and when not necessary, 2. being able to access the care and 3. receiving the necessary care timeously. These three delays have been proven to contribute to the cause of maternal mortalities (Titaley, Dibley & Roberts, 2010). This study revealed numerous social and system lacking problems such as operating hours. Within the built environment, healthcare facility infrastructure, the organisation of healthcare services and local healthcare facilities were a concern that needs adequate facility design of healthcare maternal centre (Levesque, Harris & Russell, 2013).

One must emphasize that healthcare access is the accessibility to the healthcare service, a healthcare service provider or a healthcare facility. General healthcare services are provided by primary healthcare professionals, which are a necessity for homelands since community healthcare centres and hospitals are distant and centralized to business hubs (Department of Health, 2001). Sibiya and Gwele argue on the subject of developing community facilities made up of nurturing primary healthcare services in KZN.

2.2 Phenomenology: Placemaking Theory

This will be a theoretical review of the phenomena of placemaking theory as a a theory that will guide in the design of healing and caring spaces that enable recovery and healthy wellbeing for a maternity care centre. This ensures the implementation of designing quality spaces that people can participate in good or bad health with the means of enhancing maternity health for the better. Overall, placemaking theory is critical in the study of a responsive architecture within healthcare, thus the architecture can be a success in its function and quality for healthcare purposes.

2.2.1 Genius loci

Phenomenology looks into the architectural design process of returning to things as opposed to mental constructions. Within the theory of placemaking, this looks into the recognition of the environmental relationship humans have with internal/external spaces. Place plays an integral part in human existence. One cannot imagine any occurrence, act taking place without the reference of a place or locality (Norberg-Schulz, 1998). He also goes on to discuss the conscious and subconscious feeling that a person experiences once within a space that is made up of the physical and symbolic elements of nature and the human environment (Norberg-Schulz, 1998).

Norberg-Schulz theory on *Genius Loci, Towards a phenomenology of architecture*, aims to investigate the psychic implications of architecture than the practical side, however, highlighting how the two aspects relate to one another. This further reinstates that architecture, although being of a functional purpose also has to embody the psychic essential aspects because people are influenced by their environment.

Architecture comes in a range of ways to adapt to the many different situations that each requires unique solutions in meeting the practical and psychological human aspects. A maternal healthcare centre should be a nurturing space where the occupants can orientate and identify themselves within an environment, therefore able to experience space as being meaningful. Nurturing spaces become more than just a shelter but a healing space where well-being is enhanced. This relates to the fundamentals of contemporary African architecture, using and adapting to the context.

" Architecture means to visualize the genius loci and the task of the architect is to create meaningful places whereby he helps man to dwell."

Christian Norberg-Schulz, 1998

Norberg-Schulz reading focuses on architecture and its intentions one can identify with his argument, that architects can not only focus on the practicality of architecture, especially within the subject of healthcare spaces where the intention is for healing. Architecture should aim to be a product that gathers and enhances the properties of a place to allow people to dwell poetically. The way the spaces relate to the phenomena of place spatial characteristics such as light, nature and orientation allows people to identify with space thereby constituting a spirit of place.

A place is a space that has its unique character -genius loci- " a spirit of place" that we are faced with daily. Architecture aims to exude quality meaningful places that draw people to dwell. This is the phenomenology in architecture, a theory that speaks to the concrete existential aesthetic in architecture. Thus, the place requires consideration on the shape, climate, texture and colours to ensure an environmental character conducive for maternity healthcare centre users.

Everything we do as humans has either deferred or immediate emotional and spiritual consequences. The identity of its users is to a high extent a function of places and things. Materials implemented in architecture have energies that exert social or psychological effects (Day, 2002). Basic maternal healthcare centre experiences such as arriving, waiting, eating, sleeping and dealing with a mirage of emotions require different environmental characteristics to meet the different cultural traditions and climatic conditions. Spaces enriched in "archetypal soul " needs have timeless conducive effects. Medical facilities designed during Apartheid avoided an engagement with contingency thus leaving the facilities with many spatial and contextual design issues that impede the health system from working with the ever-changing social issues faced today. Although there are practicalities that must remain such as health and safety regulations within healthcare design, dynamic and timeless spatial designs can be planned out in the means of allowing for healing conducive architectural spaces distinctive to their user and context at hand.

“ So as long as the design of the building was neutral, it was thought, they could be put to different uses…” (Hertberger,1991:146) However, the difficulty in a neutral design is that the building lacks distinctive features for healing. The question then, regarding this study, is what features are distinctive of a maternity care centre in the means of being a responsive healing space?

The basic relationship between man and his environment can be defined as existential space which looks into the concept of space and character following basic psychic functions of identification and orientation. Norberg- Schulz discusses four key elements that affect the existential space.

1. Naturally, an order being constructed around the course of the sun, the natural phenomenon where the world becomes a space that is understood as a “structured” space in which the four main directions represent different qualities.

2. Primary natural elements such as vegetation, water, stones all constitute to make a place meaningful and sacred. These spaces are never chosen and rather left in their beautiful natural state.

3. The character of natural places and their relations with basic human traits and senses: sight, speech, hearing, touch and smell.

4. Light, an experienced phenomenon that is part of our reality. The sun not merely being a thing but a concept of light. The phenomena of light can model the form through a play on light and shadow.

All these elements are treated and considered accordingly by the use of their spacial enclosures, a distinctive design quality required of any man-made place occupied for a long duration of time. The interior spatial quality of space is determined by the degree of enclosed spaces and openness enabled: Spatial direction, solidarity and transparency. (Norberg-Schulz,1998) These visual transitional zones are important in their intentional relation to direction, nature, sensory organs and light. As Robert Venturi states, “Architecture happens at the meeting of interior and exterior forces of use and space.” A contemporary African architecture conceptual lens.

Within the twenty-first century, Day elaborates on the purpose of designing spaces that embody several qualities to nourish us in the varied circumstances of life. This is in the means of achieving quality balanced spaces. For buildings to be timeless in quality and function, they need to 'belong' to their setting, topography, vegetation and orientation. The result of the opposite intention or forced/ imposed concept creates environmental, social and psychological damage which in turn damages us.

Day explains the characteristics of an institutionalised building that has been designed with a focus on metal constructions. The buildings are usually following a uniform internal structure that is being repeated no matter where the surroundings are with an importance put on the functional practicality.

1. Daunting entrance spaces.
2. Long straight corridors for fast movement with doors along the sides.
3. Standardized experience general to all sensory organs.
4. A complete indoor experience in space and time usually with artificial lighting.
5. Requiring the user to unnaturally adapt their behaviour in experiencing the space

On the contrary, spaces of this nature, usually being hospitals, require individual human attention to people dealing with health issues with the means of healing. One can state that hospitals receive people with medical and/or psychological health concerns, visitors approach the space with anxiety, concern and sometimes hope. These hospital spaces must be conducive for both health issues irrespective of the hierarchy attention. Wards can be demarked and designed to be healing promotive yet accepting and providing for visitors where they may occupy the space. This can be achieved through the following minor architectural elements.

1. Angling walls to avoid pausing spaces to be confronted with.
2. Stimulating corridors with nature, light, water features that will create calm and ease even within circulation spaces
3. In setting doorways to characterize each room, inviting textiles and materials
4. Openings to outdoor spaces and surroundings
5. Softer artificial lighting, gentle spaces, compelling spaces
6. Flooring, ceiling heights to be gestured for positive stimuli

Although these are healing design features, adding to the overall budget costs that are usually prioritized on equipment, more facilities and staff. A simple example of adding more window openings that allow for access to the landscaping enables a faster recovery, therefore, cumulating to less patient stay which is a large portion of the hospital expenses. Day states how window openings have generated savings of 500 000 dollars per bed space over 10 years. These savings can be further utilised on the landscaping, 1% of the project cost (Day, 1998). Evidence-based research shows that a more patient-focused experiential perspective is required: The quality is in the relationship the spaces created with the patients who inhabit the facility in a state where they require space to assist their healing process with a regard to their culture.

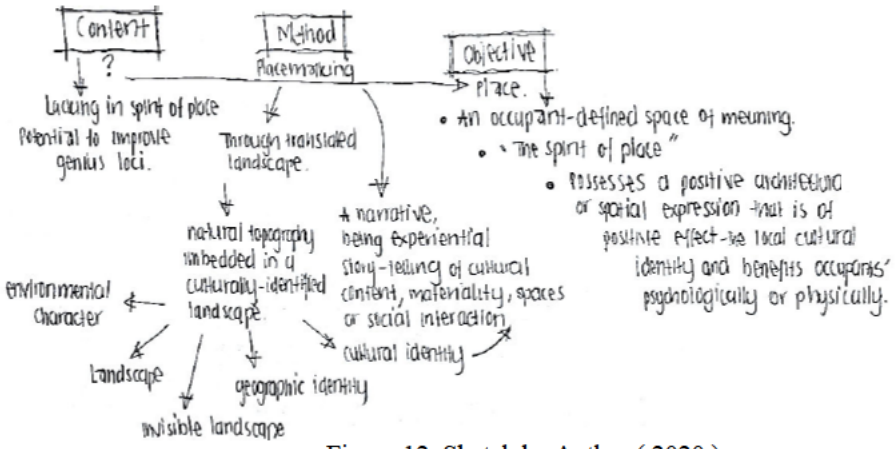


Figure 12. Sketch by Author (2020)

2.2.2 Placemaking theory

Placemaking refers to a collective interactive process by which we can shape our common realm to maximise shared value (Project for public spaces, 2018). The concept encourages one to be aware, within architectural design, of the physically, culturally and socially influenced identities that make space and simultaneously assisting in its ongoing evolution.

A space of quality can allow a range of activities to happen for the public. Community involvement plays a critical role as the local communities participation within creating life in the space collectively contributes to health, happiness and wellbeing. This participation defines public space. In-between our architectural buildings are where and how people navigate themselves, therefore, the interface needs to be thought through since many different people engage or fail to do so which constitutes the success of the space (Project for public spaces, 2018).

Historian-theorist Kenneth Frampton's *"Towards a critical regionalism: Six points for an architecture of resistance"* discusses the question of, to develop towards a modern world, is it required that one forgets fundamentals of cultural previous architecture? This questioned progression is evident within international style architecture where importance was on the volumetric, mass-produced lightweight industrial materiality adopted during post-world war I, which lacked any substantial relation to cultural and contextual architectural fundamentals. Combining world culture and universal civilisation aims to restructure to a new architecture that allows for the development of the modern world without forgetting the fundamentals of cultural past architecture, context, and senses towards the making of place. This 'regional modernism' as termed by Sri Lankan architect, Minnette De Silva is evident in her work that was expressive but never ornamental (evident in postmodern architecture.) as to lose the regional characteristics that enable a lack of disruption towards the natural landscape. Critical regionalism identifies with the same individual and local architectonics features connection, against the alien abstract ones imposed of the international style architecture and exaggerated in postmodern architecture.

This theory aims to revive these fundamentals of placemaking that have been lost in today's uniform, limited architecture dependent on technological advancement. Frampton discusses how this high tech approach opposes the 'specifics of expression' that culture identifies itself with. One can see how the theory aims to mediate between international and post-modern architecture to bring the purpose of placemaking design back to its natural context and cultural expression. (Frampton, 1980)

" No new architecture can emerge without a new kind of relation between design and user, without new kinds of programs…" (Tzonis, Lefaivre. 1981)

Critical regionalism has a strong relationship with the unique natural elements available on-site, being embedded in the design strategies. Frampton discusses topography, context, climate and light as key influences of spatial quality that in turn are influenced by the building membrane tectonics. The tectonics of this membrane are manipulated in their materiality and craftwork in expressing a 'structural poetry' as a whole, opposed to the mere façade representation.

This new architecture bridges the humanistic architecture of the future. (Frampton,1980) A conscious means of bringing together aspects of modern architectural developments (evident in materiality and the progressed sciences behind it) with unique constituents of place. Light, orientation, context and materiality influenced experiential spaces with the user's sense of smell, hearing and taste enabling the “nearness” Heidegger discusses the lack of in the existing limitation from engaging within the poetry of construction (Heidegger, 1954). However, the concept of critical regionalism has also been questioned as it comes as a construct that is imposed by higher authorities, as mentioned in Eggener’s “ *Placing resistance: A critique of critical regionalism*” Although this may be true, the process of understanding the concept of contemporary African architecture has identified fundamental placing making strategies linked to critical regionalism that enable the means of designing spaces with the “spirit of place’ in mind.

The subject of genius loci looks into the rhythms, harmonies, counterpoints, sensory delights and the whole qualitative side nourishment of humans and their feelings. This directly touches on the architectural theory of healing architecture, an architecture of hope as Charles Jencks would define. In the subject of public healthcare, the literature on architecture for healing emphasizes the need for places of healing rather than machines for treating. (Lawson, 2010) The subject has to become more of a necessity than an option, especially in new healthcare facilities. Materiality, lighting, life energizing surroundings, soul, place and health these elements overlap the physical and influence the mind as well as inspire the spirit. Designing for the senses requires nurturing an appropriate mood. Spaces designed in this consideration feed the soul , therefore, support positive health outcomes. Spaces that heal and enable positive well-being create a sense of place for their inhabitants. The critical regionalism and genius loci sub-theory are imperative in designing healthcare facilities in the means of being responsive to the healing experience physically and mentally not only for the individual but the community involved too in connection to its environments unique natural and cultural characteristics. A link to the contemporary African architecture perspective identifies with the above design elements that directly influence the spatial challenges faced in historically segregated communities. Implementing design with consideration to the genius loci expressed as per an influence to the context and its users.

2.3 Concept of contemporary African architecture

2.3.1 .Agency in Architecture

The subject of agency, directed towards the architect, looks into whether the an architect aims to act in service for the client or is guided towards designing for the better. A public healthcare building that aims to aid in healthcare services, requires a direction towards designing for the better. Within the context of South Africa, basic resources are still scarce and require new interventions to be considerate of the users and community requirements in ensuring to uplift and create sustainable spaces. These are spaces that enable one to define contemporary African architecture, an exploration in establishing the necessities for African Architecture post-independence.

Agency pertains to the manner in which a person conducts themselves irrespective of societal beliefs and perspectives (Awan, Schneider & Till, 2011). Awan, Schneider and Till, authors of the book *Spatial Agency*, state that the above quote is the common understanding of agency, a frequently practised means of an agency that results in a division created between social structures and architecture from engaging with one another. This perspective of the practising agency today causes the designed architecture to not critically engage with societal structures, therefore, resulting in architecture that lacks adequate human engagement. We see this in much of Apartheid architecture designed for the majority of the public (Black population). Authors such as Gidden, thus propose that instead of agency and the structure of society contradicting themselves they should be considered congruently where they imply one another (Giddens, 1987).

One must understand that the agent, is the human, and the structure of society, non-human aspects have been mentioned in Latour's theory where "any societal event or object is only understood as immersed in set cooperation's between human and non-human" (Latour, 2005). The Actor in the study at hand, the non-human being recognised as the existing maternity unit design for public hospitals are the current nature in accepting the maternal mortalities with a lack of agency within the system and educational process.

As the agent, Awan, Schneider and Till describe one's role as being to work simultaneously within the existing conditions in the means of transforming them to influence their result for the better. One must have clear intentions but allow their intentions to be flexible and receptive to those engaging with it, a notion discussed in Till's book, *Architecture Depends*. This highlights the importance of mutual knowledge as the quality of the agency. Learning to adapt one's knowledge from local knowledge by creative discursive space, yet practical to allow for vision and insight simultaneously being real and grounded (Gidden: 1987).

This local knowledge usually comes through generations of mutual knowledge between agents. Within the means of designing with an agency, knowledge must be shared between the practitioners and participants that allows for discursive yet consciousness " working with and on behalf of practical transformative action." (Awan, Schneider and Till, 2011). The integration of traditional and medical knowledge establishes the practical means of going forward yet allows for flexible and inventive approaches to brewing within the mutual discussions.

The engagement of participants and practitioners does not only manifest mutual knowledge but also creates a sense of ownership and identification of place. This conceptual organisation of parts into a whole to establish place, Unwin, discusses in he is literature *Analysing Architecture*, that architecture begins as a mental conscious desired behaviour to create and make a place out of space (Unwin,2009).

Evolving new reinterpreted ways of identifying places which are caused by conditions of architecture, space, climatic conditions and progress of time ultimately for people with needs, desires and beliefs (Unwin,2009). The role of agency in architecture plays a vital part, especially within community-based architectural design. Being responsive, flexible and engaged with the participants and the context through mutually shared knowledge allows for an architectural response that can be accepted towards the traditions and cultures practised within the setting. Although society changes at a rapid speed, the human aspect must always be considered highly to make sense of the space being inhabited.

2.3.2 Eco-sustainability

African architecture developed from a vast amount of African intertwined history influenced ideas and beliefs coming from the extensive European and African encounters (Folkers & van Buiten, 2019). Recent film literature has represented the possibility of historical events such as slavery, colonialism and oppression encounter with Europeans being non-existent. The possibility of this reality foresees architectural typology that bypasses the modernist architectural influence but is a combination of the native traditional designs with a space-age technological influence (Folkers & van Buiten, 2019). This can be seen as the vision of independence-era architecture in Africa (Advanced technologies using local materials with the means of local and traditional building practices.).

Contemporary African architecture can be traced to architecture constructed and developed within the independence era. This architecture was a representation of the post-colonial periods. The modernist movement was adopted and adapted to suit the African context through the means of responding to the climatic conditions and use of local materials (Fisher, Le Roux, Murray & Sanders, 2003). Some architects such as Hassan Fathy rejected the concept of modernism and as a result, created appealing architecture within Egypt for the less fortunate communities, rooted in African tradition (Folkers & van Buiten, 2019).

‘Architecture of independence: African Modernism’ looks at architecture in the West African areas with contemporary architecture dating from WWII to the late 1970s and early 1980s. This was the timeline in which these countries, Ghana, Senegal, Cote D’Ivoire, Kenya and Zambia achieved self-rule from colonisers. There was a shift from local architecture imposed by colonisers for their use to an international style influenced by the Bauhaus and Le Corbusier. Africa’s tropical climate zone meant the adaptation to suit the context was developed which was distinguished as tropical modernism. This architecture encompassed the countries socio-political and socioeconomic background represented through memorials, schools, landmarks and convention centres (Herz, Focketyn, Schröder, Jamrozik, Baan & Webster, 2015).

Modernism includes capitalism, colonialism and modern ways of thinking and constructing. ‘ This is modernism within the African context and its influence facilitated by public works departments in the means of serving colonialist institutions. Literature has failed to include the physical labour to build these projects by native residents (Folkers & van Buiten, 2019). Although the modern architecture of Africa failed to include the labour and foreman participation of native Africans, the sustainability thought behind these structures has also been forgotten. Constructing buildings that easily adapt to the existing environment was one of the modern African architectural strategies. These would be implemented through adequate sun orientation, long ceiling eaves for shading, pitched roofs allowing ventilation openings for comfortable interior spaces, elevating the buildings thus allowing wind to circulate below finally, locally suitable materials that work with the climate and local construction methods (Folkers & van Buiten, 2019).

African architecture was never included within conversation until the first decades of the twenty-first century. Architectural literature is still highly based on a Eurocentric perspective of Africa. The relevance of African culture based on oral tradition has been demonstrated by postmodern research philosophers as well as cultural anthropologists, to be as a forward, regardless of the written word being the norm (Folkers & van Buiten, 2019).

Contemporary African architecture is still split between two worlds :

1. European Western-initiated modernism failing to meet African states.
2. African traditional architecture requires further development.

Africa became an exclusive playground within the experimental process of discovering a contemporary African architectural concept. Similar to West Africa, South Africa was influenced by modernism as academics and architects were adopting the Bauhaus and Le Corbusier inspired architecture for racial segregation and past/present conservation ideologies (Folkers & van Buiten, 2019). South African modern architecture is represented through the town planning design of the ‘native’ townships. Modernist ideas of minimum standard and climatic design were adopted in the housing types designed for Africans (Fisher, Le Roux, Murray & Sanders, 2003). The private and public sector has also had a tremendous influence in defining contemporary African architecture in South Africa.

Contemporary African architecture is unique in a country's demographics, politics, social construct, climatic conditions and historical events. South African architectural modernism was implemented based on producing controlled environments that became dehumanizing in their spatial quality and scale (Osman & Bennett, 2014). With the many self-exploratory modern era architectures, some architects were questioning the specific identity of South African architecture. This began with Gabriel Fagan's work (illustrated below with his private home design) in 1925 displaying a search for local identity through environmentally responsive architectural expression (Fisher, Le Roux, Murray & Sanders, 2003). House Fagan displays the innovative ways of utilising local materials to provide for an inhabited space within harsh climatic conditions.

Figure 13. Die ES by Gwen and Gawie(Gabriel) Fagan
Source: https://openhousebcn files.wordpress.com/2014/07/openhouse-magazine-die-es-an-architects-home-freunde-von-freunden-gwen-and-gawie-fagan-257-930x620.jpg

Much of South Africa's contemporary architecture developed after the transition to 1994. However, the industry is still very much influenced by those in power within the political, social and physical landscape. South Africa's built landscapes within the city, township, farmlands and rural homelands are starting to open with the globalising forces further highlighting the tensions of wealth and poverty (Murray, 2007). Post-Apartheid architecture has been resembled through reconfiguring national memory. This has been implemented through sponsored competitions, government policies of 1994, urban restructuring and tourism all in the means of further discovering and establishing South Africa's architectural identity (Murray, 2007).

Figure 14. KwaMashu aerial view. Source: Google maps, 2020

South African historically segregated communities in post-apartheid have always been viewed as a space of underdevelopment, in need of upliftment whilst simultaneously also seen as a space of exclusion and resistance where people are asked to participate with the urban projects as the community. The shift of professional and architectural design teaching has been in the means of understanding the township communities when implementing interventions of a post-apartheid era (Murray, 2007). Osman and Bennet's article, *Understanding Architecture over time and changed teaching approaches* discuss the new realm of educating and applying architecture within the South African context by approaching it through participatory design (Osman & Bennett, 2014). The focus in architectural education has been focused on important buildings, a concentration on the rich, but with radical urbanisation and industrialisation, 'a major concern has been on developing social benefits of architecture to societies common people' (Glazer, 2009:p.7).

The studio space is the platform in which participatory design can be implemented and enforced within the industry, by allowing the studio to be open to community involvement instead of a confined university campus. The student can learn a large amount of knowledge in discovering and reinventing the undefined concept of contemporary African architecture by allowing the city and community spaces to be the classroom (Osman & Bennett, 2014). As Kultermann states, experience is the education essential in achieving the best architectural outcome sustainable in its function and time (Kultermann, 1969). Collaborations with locals in the means of spacial community developments enhance the social facilitating and contributes to amending the social issues experienced by the most marginalised groups (Oosterlynck & Albrechts: 2011).

" Comprehensive social and environmental design" (Kultermann, 1969: p.97)

South Africa's institutions are comprised of a broad spectrum of scholars coming from all realms of backgrounds. The range in experiences and knowledge can be practised by students as future agents within the built environment industry. Therefore, it is important that whether the context is within the city, historically segregated communities (township), suburb or rural area, community development projects need to be studied in the context of a sustainable vision.

Five key strategies must be considered in designing community spaces:
(Osman & Bennett, 2014)

1. Long-term thinking in search of design clues.
2. A decision-making process that ultimately regards key structuring elements for settlements and their contents.
3. Managing the expectation community and education institutes in being ethical and accountable.
4. Exploring the potential and achievement by designing alternative design interventions, context-related construction methods and materiality and process decisions geared in income-generating opportunities for the community.
5. Investigating finances, the funding options, their extent and establishing the resources from the beginning.

Although these strategies are important elements in designing contemporary African architecture, the concept is still highly diverse that it cannot be categorized or defined into one description. As an architecture student, contemporary African architecture has no distinctive features but general awareness, adaptation and accountability that connects to healing architecture. Social development is dynamic and unique in its context, therefore, requiring constant renewal (Kultermann, 1969). Understanding and learning about the African experience develop common characteristics which could become the common prototypes of contemporary African architecture.

Figure 15. Personal sketch representing the design exploration of contemporary African architecture. Source: Author,2020

1.6 Conclusion

Chapter two discussed the concept of maternal healthcare, the phenomenology of placemaking and the concept of contemporary African architecture in a broad spectrum with the ultimate link to their effects on maternity care facilities design and the contemporary African architecture approach. These were deduced with the means of understanding how to improve maternal healthcare facilities in a manner that is fitting to the context. It is imperative to generate an architecture that has a sense of place to provide a positive healing space that considers culture, context and maternal care necessities. The concept of maternal healthcare elaborated on the inadequate facilitating conditions African women experience within their cultural practices amongst the community, society and the facilities provided for them by the government. The staff and facilities play a large role in the manner in which African women are receptive to healthcare facilities. To ensure and accommodate the social and psychological needs African women require healthcare environments that need to focus on nurturing the relationship between patients and their physical, psychological and cultural environments by designing facilities that are daily spaces of treatment and sustainable spaces for health and well-being improvements.

Although the social understanding is imperative, the dissertation deduces these circumstances spatial challenges lead towards how contemporary African architecture can be a catalyst towards adequate healthcare design for maternity care. The concept enforces the use of placemaking in consideration to healing architecture that promotes healthy well-being and recovery in healthcare facilities. Identifying the need to connect with the context and its attributes such as sun, orientation and biodiversity to inform the quality of spatial design. These touch more on the psychological enrichment that ultimately engages with the physical process of a healthy maternal process.

The literature establishes the linkage to the topic at hand regarding the subject of maternal mortalities concerning how they are affected by the built environment through access, circulation, privacy gradients, nature influence and community inclusivity (as per cultural beliefs).

CHAPTER 3: PRECEDENT STUDIES

The chapter will be comprised of secondary data collection through analysis of succeeded and proposed built environment examples located in Africa. The mentioned precedent studies will be investigated through the lens of the conceptual and theoretical drivers discussed in the previous chapter, fixed within the typology of a maternity care facility. The first precedent study is located in Malawi, a built successful example that is primarily a maternity care facility. The second example is the Kachumbala maternity facility based in Uganda, which had been adapted from the previous unit design. The third study is on a proposed project for women in Ethiopia, facilitating operations and medical facilities alongside a waiting home. The final precedent study is on a local example private facility, located in Johannesburg and built to accommodate all means of birth. This is an example of a private facility that is focused on providing natural and medical services for women in South Africa outside of the typical hospital program.

3.1 Kasungu maternity waiting village, Malawi

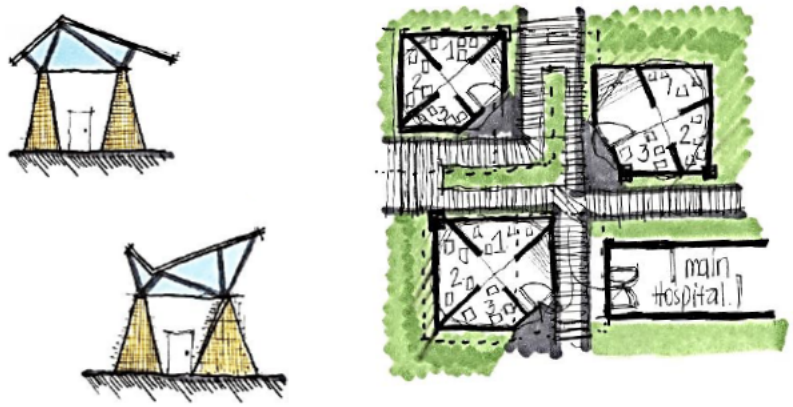


Figure 16. Personal sketch of planning and structural elements applied Source: Author,2020

Architect: MASS design group, known for humanitarian projects.
Location: Kasungu, Malawi (Central Malawi) near Kasungu district hospital
Project Year: 2015
Size: 670sqm
Client: Ministry of Health, University of North Carolina Project Malawi
Relevance: Homes for expectant moms

Kasungu Maternity waiting village aims to address material mortalities by providing access to skilled professionals directly opposite the existing health care centres. The waiting village space allows women to obtain monitored assistance from 36 weeks until delivery. The design is a new prototype in replace of the old inadequately designed facility that also did not meet the means of prenatal and daily care. The waiting village adheres to the need for accessibility in rural locations for African women especially on their final week of pregnancy as a literature review has deduced is a necessity in reducing maternal mortalities in Africa.

Figure 17. Kasungu Maternity waiting village
Source: Google earth https://massdesigngroup.org/work/design/maternity-waiting-village

The waiting village was **adapted from the usual singular block concept** that is found in many public hospitals within Africa. This is the old hospital design that did not take into consideration the 'spirit of place' with space. The architect's concept is made up of a series of compounds clustered around courtyard spaces. This concept was inspired by the vernacular Malawian traditional villages. Family homes are made up of many small compounds utilised individually by immediate families. The courtyard spaces have also been implemented which create and accommodate for gatherings and socializing for the women and their families travelling from far, a familiar way of living allowing for comfort in an unusual setting. The compounds are made up of 3 units with 3 bedrooms and 4 beds in each bedroom. The village has been made to be comfortable for women by providing seating throughout for informal conversing whilst navigating around the village.

Figure 18. Kasungu Maternity waiting village gathering compound
Source https://massdesigngroup.org/work/design/maternity-waiting-village

Educational and gathering shared spaces and have been incorporated through multiple larger compounds. The vision the architects had is for the waiting village experience to ultimately become an empowering space with educational workshops around the subjects of pre-and post-natal care as well as handcrafts skills, training assistance in earning an income independently. Education enriches healthy well-being and awareness of their choices in society, cultural practices and physically.

Figure 19. Kasungu Maternity waiting village women utilising the seating areas
Source https://massdesigngroup.org/work/design/maternity-waiting-village

Eco-sustainability methods have been enforced in ensuring comfort, security and privacy for the women of Kasungu waiting village. Natural daylighting and ventilation was a large aspect in making the interior spaces comfortable within the hot climate simultaneously minimizing the use of artificial lighting. This has been done through the large overhanging locally sourced wooden trusses supported metal roof sheets. The roofs have large overhangs which extend towards the courtyard spaces to allow for easy navigation within the village during rainy days. Locals were taught how to make compressed stabilized earth blocks using press machinery which would assist in them also being able to construct their spaces using the learnt skill. Along with the locally sourced materials, the combination of the materials and skills allows the community to further maintain and adapt the spaces with time for the needs of women.

Figure 20. Kasungu Maternity waiting village
Source https://massdesigngroup.org/work/design/maternity-waiting-village

The project was able to create an aesthetically pleasing waiting village whilst being rooted in providing a space that prioritizes meeting the essential needs of the women. Construction methods and materials were kept simple and effective to sustain the buildings time and enable further developmental plans when the waiting village requires expansion. Separating the standard one block structure gives women some privacy and adequate space from the usual large groups to clustering into smaller intimate groups. The compounds sit well amongst the neighbouring buildings in scale and aesthetics, which could be the cause of why the waiting village has been welcomed well by the women of Malawi, to utilise during their pregnancy and childbirth journey.

Concept of maternal healthcare: A literature review on the concept of maternal healthcare looked into the sub-concepts of cultural influence on maternity, maternity care, caregivers and government healthcare. Culture plays a large role in the maternity journey African women experience. Much of the practices are implemented without proper knowledge. Kasungu Maternity waiting village allows for a space interim to the final labour stage that allows women to gather in the common interest of maternity to be educated, cared for regardless of the external influence of the community. Although not all traditional practices are negative, most are not in the interest of the woman. A familiar space that has been designed with the architecture purposefully relating to contextual identity enforces even more comfort for the women to feel at peace.

Phenomenology of placemaking theory: Placemaking theory was deduced through the sub-theory of 'spirit of place' in which the importance of the essence of space was discussed. This is essential in a healthcare facility where patients are not in the best health therefore requiring physical and emotional assistance especially in the case of maternal healthcare. Kasungu maternity waiting village was able to be a space that catered to the positive well-being and care for the African women of Malawi. The educational and gathering spaces provide a pause space between the maternal care procedures for the women to rest with access to natural sunlight and ventilation both indoors and outdoors. This ensures that the facility is sustainable to be used for a long duration of time as it responds positively to its occupants'.

Concept of contemporary African architecture: The waiting village adapted the usual singular block design that is common in most healthcare facilities built at a time of colonisation. Contemporary African architecture looks into the development of African traditional architecture is being implemented within the design of Africa's infrastructure projects. This requires in-depth research on the context in its cultural qualities as we as the natural environmental conditions. Kasungu Maternity waiting village achieved physical comfort in the design consideration of the hot climate that requires efficient ventilation and natural daylighting. Including the community in its indigenous architectural design features and skills allows them to utilise the space and maintain it themselves throughout its years.

3.2 Kachumbala maternity facility, Uganda

Figure 21 Personal sketch of planning applied, and essential facilities provided Source: Author,2020

Architect: HKS Architects and Engineers.

Location: Kachumbala, Uganda

Project Year: 2018

Size: 275sqm

Client: Women of Kachumbala

Relevance: An adequate sustainable medical facility for women to give birth to live.

Kachumbala maternity unit is an adaptive reuse project from the existing ward built in the 1950s. The ward was made up of two outdated rooms for a total population of 160000 women. This resulted in many women, travelling from far, to rather stay home and give birth in a more comforting space. However, medical complications were faced and lead to maternal mortalities. Therefore, the goal and purpose of the new facility was to design a space that was comfortable in its capacity and climatic conditions.

Figure 22. Kachumbala Maternity facility
Source https://www.hksinc.com/what-we-do/case-studies/kachumbala-maternity-unit/:

Figure 23. Kachumbala Maternity facility, Uganda
Source: http://africanism net/self-sustaining-maternity-facility-in-uganda/

The facility is made up of two delivery suites, a post-natal recovery ward with seven beds, an isolation room with two beds, family areas and flushing toilets within the facility. The existing facilities lacked ventilation, sunlight and had all pre-and post-natal care services done in one space as well as nursing administration.

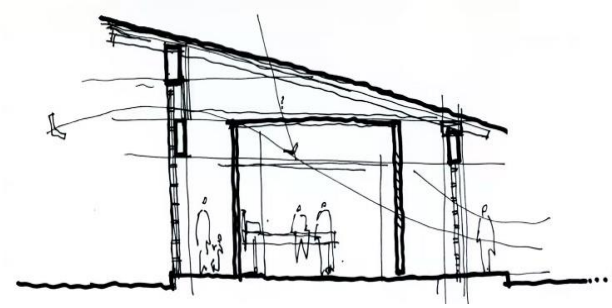


Figure 24. Kachumbala Maternity facility sketch illustrating passive design strategies
Source: . https://www hksinc.com/our-news/articles/by-the-people-for-the-people-kachumbala-maternity-unit-opens-in-uganda/

Eco-sustainability was a major concern in the facility being a self-sufficient and passive. The Kachumbala community has no access to a reliable water and electricity source. They also have to account for their hot dry climatic conditions. Therefore, power is generated through solar panels, water is collected off the roof and into tanks. Ventilation and natural sunlight were also vital and achieved through local architectural elements of terracotta screens added onto the external wall whilst still being a self-shading element. The terracotta is made from the local red medium colour clay.

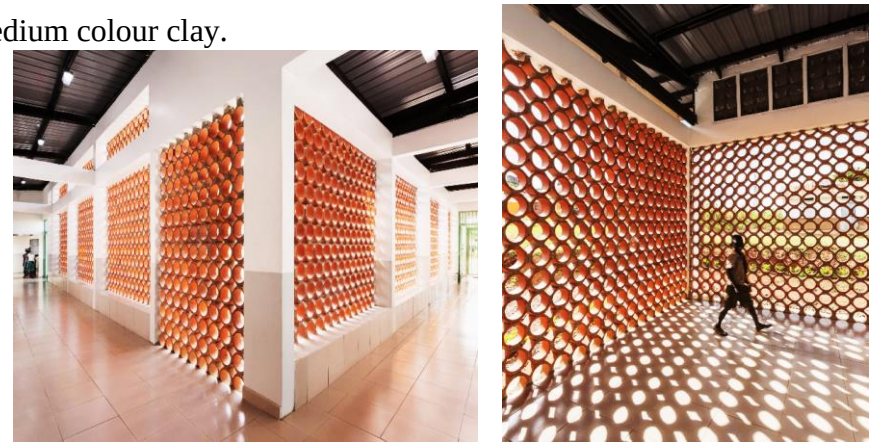


Figure 25. External walls utilising the terracotta screens
Source: http://africanism net/self-sustaining-maternity-facility-in-uganda/

Figure 26. Locals working in the construction and administration of the facility.
Source: http://africanism.net/self-sustaining-maternity-facility-in-uganda/

Together with Engineers For Overseas Development, **local skills and workforce** were utilised in training and hiring 40 community members. EFOD has been located within Kachumbala therefore, they are experienced in assisting HKS Architects through the hiring and training process, presenting the locals as paid construction workers, valuable skills for future employment. The site does not have access to electricity, therefore the construction methods used required no cranes, lift trusses or machinery. However, press block machinery, developed within Uganda was used which allows the elimination of fire, clay bricks thus saving trees from being cut and burnt.

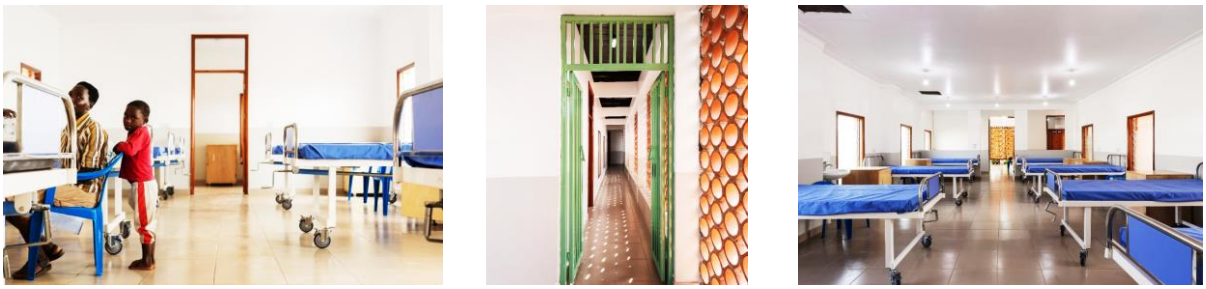


Figure 27. Interior spaces of the wards and passageways
Source: http://africanism.net/self-sustaining-maternity-facility-in-uganda/

Kachumbala maternity facility as a precedent study represents the successful implementation of facilitation, eco-sustainability design and local skills and workforce as the means of providing an adequate maternity unit within a rural area. The facility is being utilised efficiently currently because of its focus on the requirements the women need. They have been provided with enough space away from home whilst simultaneously enabling comfort with the consideration for the hot African climate. Architects sometimes forget how independently a project doing tends to isolate the locals thus creating a divide between the development and those meant to be inhabiting it. A sense of ownership has been achieved in the locals being able to be part of the implementation of the project. This ensures the maintenance of the facility after architects are done constructing. The above three principles applied will be addressed further within part two of the dissertation.

Concept of maternal healthcare: Kachumbala maternity facility was an existing facility that could not accommodate the large capacity of women. Not having enough staff and facilities discouraged many women from using the facility as most of the women came from remotely far locations in Uganda. Access and adequate healthcare provision are large problems Africa faces. Kachumbala Maternity facility was adapted to work more efficiently for women so they would travel the distance to obtain adequate care and services. Improving the facility and its functionality created more trust in women obtaining medical healthcare.

Phenomenology of placemaking theory: Although the facility wasn't an entirely new project, the adaptive reuse work was implemented on the interior spatial planning that required a well thought-through strategy that would ensure privacy and comfort between the many different units. Allowing the interior to access the exterior visually also enhanced the calming, safe and comfortable aura the redeveloped facility encompasses.

Concept of contemporary African architecture: Kachumabala maternity facility adapted the facility with a large consideration to the locals. The existing facility did not connect with the locals in its functionality like a built space and services provision. The sub-concept of eco-sustainability was implemented in the precedents study by ensuring its sustainability in providing natural resources such as water and electricity, for itself. Africa still struggles with basic service essentials for instance water and electricity which are vital in a healthcare centre. Being aware of the contextual difficulties allowed the architects to include the locals through skills development and facilitation of a basic necessity such as healthcare.

3.3 Weldiya maternity centre, Ethiopia

Figure 28. Google earth and Personal sketch of planning applied within medical facility and waiting village
Source: Author,2020

Architect: Xavier Vilalta Architects

Location: Weldiya, Ethiopia

Project Year: 2013 - 2017

Size: 800sqm

Client: IPI Foundation

Relevance: New waiting home space for mothers with a medical facility adjacent to the childbirth process.

The project is made up of a maternity unit, for the operational and medical space, and a mothers waiting area, a temporary waiting home for upcoming mothers within the 3rd trimester. The two components of the facility are connected by a mutual entrance space that visitors and families use during waiting periods of the childbirth process, allowing them to be integrated with the building. The new program of a separate maternity unit and mothers waiting home was developed from the sociocultural analysis of the site.

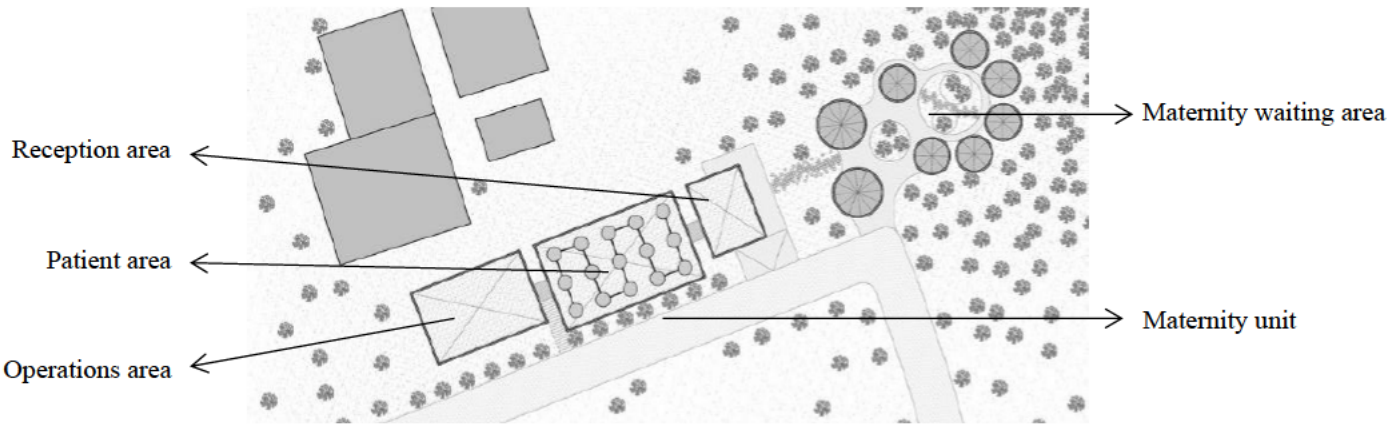


Figure 29. Proposed site plan of the Weldiya Maternity facility
Source: https://www.archdaily.com/353892/woldya-maternity-center-xavier-vilalta-architects/

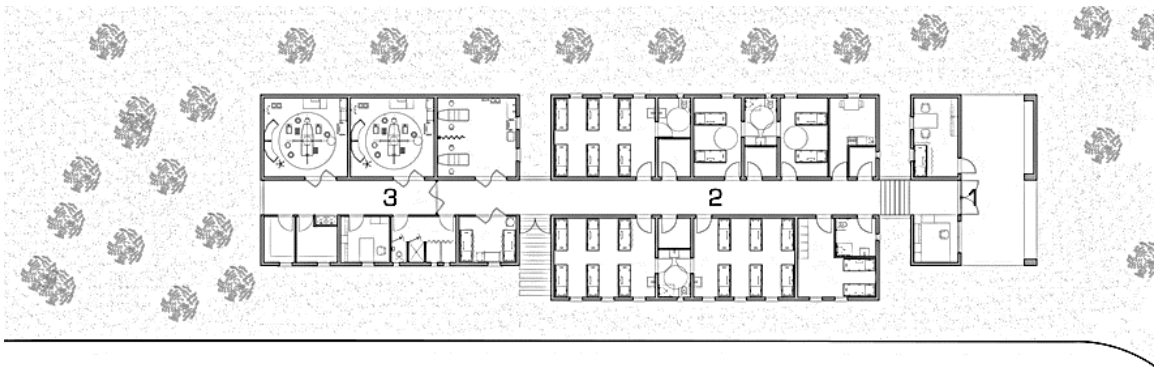


Figure 30. Weldiya Maternity unit-built plan
Source: https://www.archdaily.com/877633/woldyia-maternity-center-vilalta-arquitectura/

The maternity unit is made up of 3 main components that are connected by a central corridor. The 1. reception, 2. patient and 3. operation blocks are separated to allow natural light and ventilation within the corridor. Built around the principle of eco-sustainability, the building is self-sufficient in utilising traditional construction methods familiar to the Ethiopian context. A lightweight prefab concrete system has been used for the maternity unit with flat concrete slabs enabling the installation of solar panels for electricity to be utilised through photovoltaic panels within the rooms.

Figure 31. Weldiya Maternity unit central corridor displaying the light entering within the building gaps
Source: https: https://www.archdaily.com/877633/woldyia-maternity-center-vilalta-arquitectura/

Ethiopia experiences a favourable climate ranging from 12 degrees to 27 degrees with regular precipitation. The facility enables water collection from the roof and storage in tanks installed on site. As stated before, this enables the buildings independent sustainability if there may be water or electricity scarcity within the village.

Figure 32. Patient ward displaying the photovoltaic panels providing electricity
Source: https: https://www.archdaily.com/353892/woldya-maternity-center-xavier-vilalta-architects/

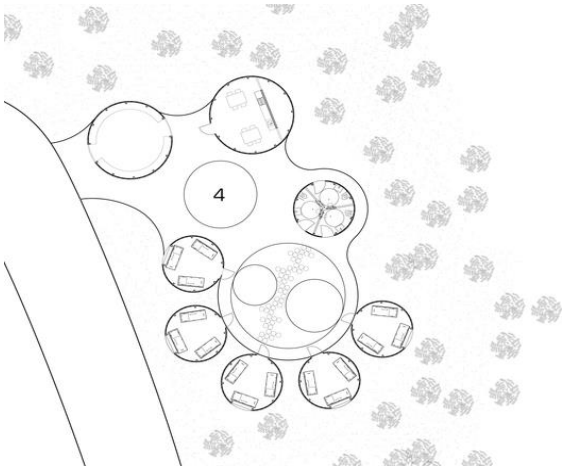


Figure 33. Weldiya Maternity waiting home built plan
Source: https://www.archdaily.com/877633/woldyia-maternity-center-vilalta-arquitectura/

The maternity waiting homes display much of the **African influence (Afrocentric identity)** with textiles, architecture sculpture and planning layout. The structure is inspired by the traditional tukuls, Ethiopian huts, that collectively make a home. The waiting home is made up of 5 rooms, a kitchen area, a day living area and bathroom facilities. The huts have been constructed in a steel frame structure with bamboo on the exterior.

Figure 34. Weldiya Maternity Centre proposed 3D's
Source: https://www.archdaily.com/353892/woldya-maternity-center-xavier-vilalta-architects/

The architects had started designing the facility before receiving funds to construct the project. This is the main reason the project has span a timeline of 5 years. What was designed initially has been built but the waiting home was relocated to the side along the road. The project is a good example of the integration of a waiting home and medical facility. It is highly evident in the architectural aesthetics, of the traditional African architecture against the simplistic modern architecture yet, have successfully merged the facility as one can see through the finer details. Although the normal hospital maternity unit requires many facilities, the above precedent studies have conveyed the critical facilities that African women require based on the causes of maternal mortalities, in meeting their **medical and cultural necessities** throughout their pregnancy journey.

Concept of maternal healthcare: Weldiya maternity centre was a completely new facility that was a great opportunity for the architects to touch on all the aspects that African women require in Ethiopia need. They were successfully able to account for all maternal healthcare infrastructure necessities. Modern medicine and traditional medicine spaces were designed where the concept of the waiting home became the transitionary space allowing the family to engage and continue with traditional practices building up to the delivery whilst the waiting home could be close to the main maternity unit should there be any complications. This precedent study shows how modern and traditional African healthcare infrastructure can work together in eliminating maternal mortalities.

Phenomenology of placemaking theory: Upon arriving at the facility, the architects considered the necessity for families to be part of the delivery process by ensuring an inviting entrance and waiting space that mutually connects to both the maternity unit and the maternity waiting home. The maternity unit is a simple interior spatial design that defines the private spaces in a hierarchy for the family, patient and staff, allowing for easy circulation. The waiting homes were designed in the means to accommodate essentially as homes away from home where the architecture displays a strong Afrocentric identity to ensure comfort.

Concept of contemporary African architecture: One of the issues many of Africa's basic service facilities have is ensuring the facilities can be maintained for a long duration in terms of infrastructure, water and electricity. This has become an essential component in contemporary African architectural design where the building can collect, produce and sustain itself to function by utilising Ethiopia's climatic conditions.

3.4 Conclusion

The precedents studies discussed were able to conceptually, theoretically and visually elaborate on how maternity care issues facilitating were addressed within architecture whilst considering maternal healthcare, phenomenology placemaking theories and contemporary African architecture. It is evident that throughout Africa, maternity facilities for African women generally all require an understanding of African beliefs and means of living. The projects analysed were built and designed independent of the government, therefore the independent architects presented the projects as humanitarian projects that would assist the countries in reducing maternal mortalities. All three were designed as the main maternal healthcare facilities for the community. Each is analysed through their layout-spatial planning, education enforcement, African influenced gathering spaces with a consideration on the eco-system, community skills, Afrocentric perspective and ultimately maternal healthcare. The same analytical pointers will be used in investigating the online-based case study.

South Africa's public healthcare has established a hierarchy in the services provided as per each public healthcare facility. One can say that the country can provide a public facility of similar standards for locations away from the mainstream hospital facilities. An online-based research case study on one of Durban's main maternity care units will unpack the current conditions of the maternity healthcare infrastructure in Durban, KwaZulu Natal.

CHAPTER 4: KING EDWARD VIII MEMORIAL HOSPITAL

4.1 Introduction

The literature review and precedent studies have elaborated and defined the essential needs for maternal healthcare facilities are primarily psychological and educational whilst being environments that induce healing and healthy well-being. The case study chosen assists the research study in understanding how the facility design has either considered or overlooked the needs of its patients, visitors and staff and to further establish what positive aspects could have been implemented in the means of making it an environment of healing.

The chosen case study is the King Edward VIII Memorial Hospital situated in Durban, Congella area on Sydney road. The hospital is a government regional/tertiary hospital. It is the oldest and second biggest hospital within the Southern Hemisphere. The hospital plays a vital role in also being the University of KwaZulu-Natal's Nelson Mandela Medical School, allowing students to interact with staff, patients in learning first-hand about the medical profession. The hospital specialises in orthopaedics, critical care, paediatric care and advanced midwifery.

4.2 Justification of case study

The dissertation originally wanted to adapt the facility by using the aspects that work and redesigning around them. However, with further research on hospital history and location, one established the context as being the initial problem. Located within a highly industrial area, the means of implementing healing architecture already present a challenge in designing for access to appealing views. The hospital was designed for the black population of Durban since many of the black people (especially women) migrated from the homelands to the city. Due to the forced removals, the black population, of a near residential area called Cato Manor, were relocated to the newly allocated township of KwaMashu which is around 22km's away. This created many problems for women to commute for primary healthcare services during their pregnancy. These issues with The King Edward VIII Memorial Hospital location motivated the need for a maternal healthcare facility located within KwaMashu that learns from the mistakes and lack of healing design implemented on the maternity unit. With the hospital specialising in paediatric care and advanced midwifery, the facility allows for focused research within a local setting.

The development of hospitals stems from the modern age, specifically during industrial Capitalism. Within the South African setting, the context for hospitals was imprinted with a vast amount of contradictions and social policies which resulted in the separate development overpowered with the unequal distribution. The result of King Edward VIII Memorial Hospital stems from many years of Apartheid policies. The hospital was built in 1936 on one of Durban's oldest industrial sites, as a response to the hospital shortages experienced once there was an influx of African and Indian indigenous Durbanites (Dyer et al, 1986).

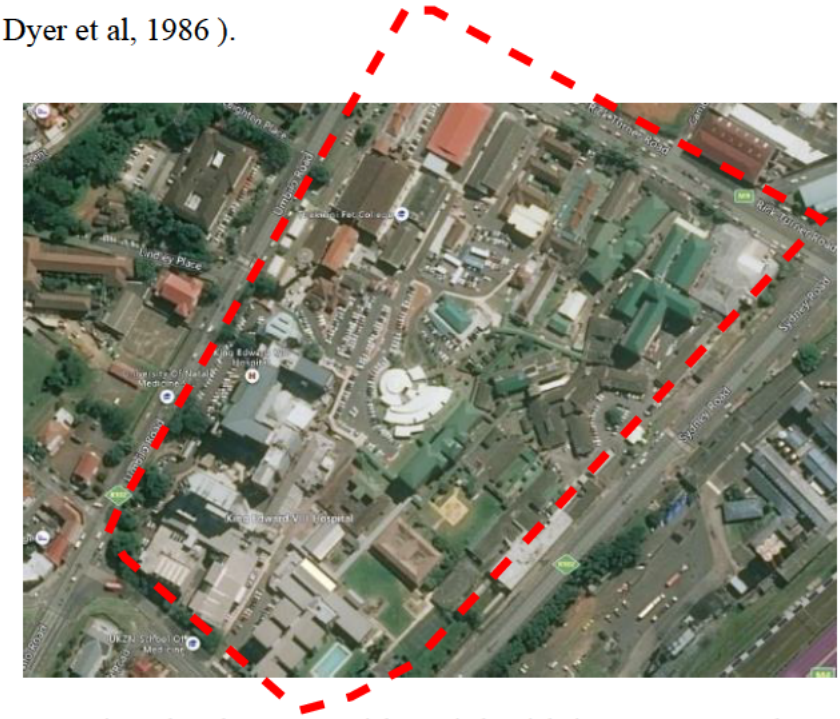


Figure 35. King Edward VIII Memorial Hospital aerial view Source: Google Maps,2020

The original building was made up of two separate buildings comprised of general wards "N" for natives and "I" for Indians each made of clinics, theatres, admin buildings and a maternity ward sitting amongst the maintenance buildings. A shortage of beds, staff and equipment have been a large problem that has constrained the hospital. The hospital sits with 52 wards and 60 patients each. The hospital is divided into three "patient care" areas starting with paediatrics, gynaecology, obstetrics, reproduction and maternal-child interests. Area two has speciality areas and theatres. Along with healthcare facilities, the hospital has been a site for the college of nursing, producing mainly black nursing professionals and University of Natal Medical school for black doctors (Since the 1950s). In the turn of democracy, the hospital benefitted in eliminating patient intake since much of the population was distributed to all the Durban hospitals. However, this reduced much of the influx of funds that were essential in maintaining the facility, resulting in the lack of maintenance visible today.

4.3 Maternity unit

Figure 36. King Edward VIII Memorial Hospital Sydney road entrance Source: Google Maps,2020

Upon arriving at the hospital, the Sydney road main entrance has miles of people along the street entrance waiting for transportation, selling fruits and new moms with their infants sitting and chatting amongst each other. The Sydney road entrance elevation looks over into the main industrial area. This is the entrance pregnant women use throughout their monthly check-ups as well as when they start labour. Most of these women use the pedestrian entryway which is a flight of steps that is not physically conducive for pregnant women. She is then led to the maternity unit located on the left and near the entryway. However, on arrival, the facility is not inviting or easy to navigate through. During the different pregnancy stages, the facility provides a range of services in monitoring primary care. The healthcare services have been put as a priority as opposed to the patients using the facility.

The interior conditions of the hospital display the many years of misuse and abuse of the space with a lack of maintenance. The maternity blocks are connected by endless mazes of brickwork. One does not find it easy to navigate or orientate themselves easily around, especially as a visitor. The overall unit appears to be not ordered as it's made up of a collection of additions through the years, resulting in services being exposed in public day to day spaces. The ward resembles a lack of warmth and basic maintenance with the walls requiring a basic paint job. Interior décor features are lacking where curtains and artwork could make the space warm through a visually positive appeal.

The main labour ward is a large open plan hall with beds lined up lacking privacy with no divider curtains installed. This allows inadequate space for visitors and especially for the patients to personally process their labour. Visually experiencing all the other women's labour creates anxiety and an emotional rollercoaster amongst successful or unsuccessful deliveries. The illustration below displays the government maternity unit facility quality proposed for all public hospitals. King Edward VIII Memorial Hospital is currently under construction after the existing facility was damaged by strong rains and wind conditions in 2019.

Figure 37. Typical government maternity unit labour ward interior with central nursing station Source: Google Maps,2020

The new main labour ward has been designed to be similar to the existing one but with more attention to staff and patient access as well as service provision. The spatial planning remains a rectangular open plan general ward that has been temporarily divided into beds for the normal patients, induction patients and cardiac patients. The nurses' station has been put as the central admin and workstation whilst nurses attend to their patients. This allows them to all take responsibility for the patients collectively should one of the nurses be excused. What is unique about King Edward VIII Memorial hospital is how their other facilities such as theatre rooms and admission rooms are separated from the main labour ward. However, the circulation of these facilities requires staff and patients to go outside. These facilities can be enhanced through pedestrian access routes, allowing for ease and comfort in accessing the facilities. Since the maternity unit also acts as part of the nursing college, the immediate student nurses can assist when staff shortages occur, and it ensures a level of trust knowing that the hospital is also an educational facility thus the standard of healthcare is consistently updated to remain of a good standard.

4.4 Accommodation schedule

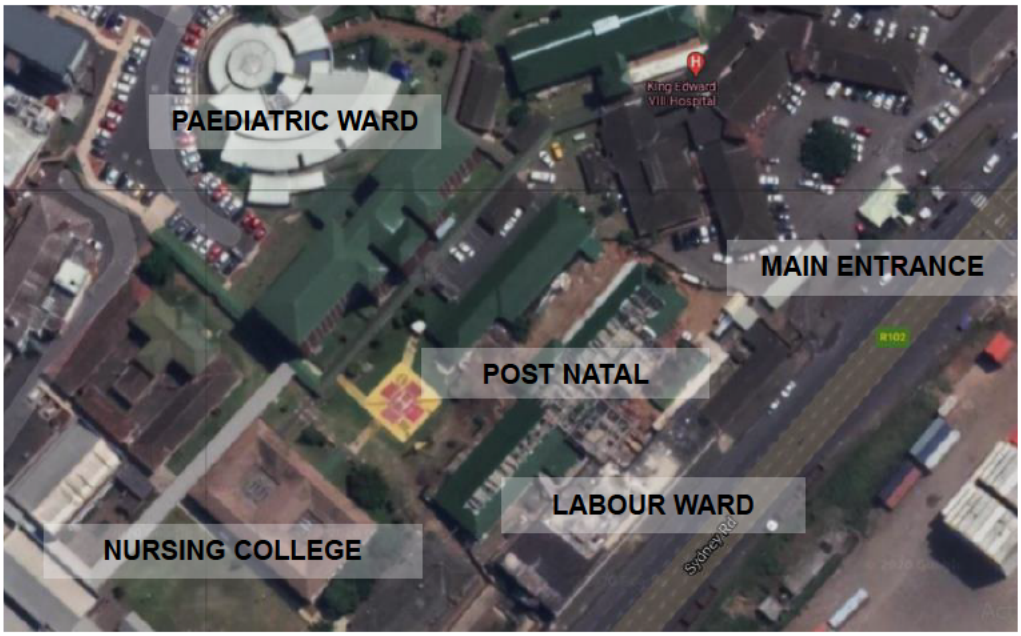


Figure 38. King Edward VIII Memorial maternity unit area Source: Google Maps,2020

The maternity unit facilities are all located on the immediate left of the hospital upon entry from the Sydney Road entrance. Upon entry to the hospital, patients have been directed towards the reception/assessment and admissions area where women are registered for filing and evaluation. This initial step allows the patient to be admitted with ease once they are in labour. However, by law, no government hospital can reject the patient even if they have not received any prior antenatal care. These patients are assessed and usually sent straight through as referrals to be monitored strictly. Since King Edward VIII Memorial Hospital is a tertiary level facility, primary healthcare is encouraged to be continued in clinics. A patient record book allows King Edward Hospital to be aware of any complications during pregnancy that may affect the labour and delivery process. The hospital provides the following facilities:

1. 16 bedded labour ward (x 4 beds for referrals)
2. Theatre
3. Post C-Section/ High care recovery ward
4. Neonatal assessment area
5. Nursery ward: Neonatal ICU and Normal neonatal
6. Border moms (Discharged moms with admitted infants)
7. Doctors/nurses changing rooms for neonatal care (white uniform)
8. Outpatient family planning services

Concept of maternal healthcare: Many of the issues the occupants have with the facility is the lack of empathy for the African women's cultural beliefs and personal requirements. The facilities have been improved to allow for better staff services which is a positive base to implement efficient maternal healthcare. Designing with the integration of traditional medicine implementation could further enhance the model of a public healthcare facility in South Africa.

Phenomenology of placemaking theory: One of the major issues, the dissertation aims to address is the lack of adequately designed public healthcare facilities. King Edward VIII Memorial Hospital is a tertiary level facility that was however designed during Apartheid black and Indian facilities were not conceptualized and designed with proper consideration. The case study allowed one to locate the major architectural discrepancies that must be avoided to design a facility that is a characteristic of an adequate 'spirit of place'. The site selection process for the dissertation will use the case study as a lesson in ensuring the context enhances the facility healing purposes.

Concept of Contemporary African architecture: Public healthcare services usually have issues of providing for large numbers using their facilities. Water and electricity are essential in a healthcare facility yet are not always accessible. Designing in an eco-sustainable manner ensures the facility can sustain and provide for its essential resources to make sure it can be of adequate service provision. King Edward Hospital currently lacks an architecture unique to the South African context in its climate and cultural reference. Developing the concept further allows for an architecture suitable within its context and for its occupants.

4.5 Conclusion

The case study has provided a good insight into the maternity unit facility currently utilised by most women in KZN. This brought to light the current conditions of healthcare public facilities that require further design implementations to ensure facilities that take into consideration the physical, social and psychological environments of its occupants for the facility to be a space of healing. The design layout displayed the lack of consideration for the users' privacy gradients, a focus on the educational aspects with the staff training, inefficient gathering spaces for patients, non-existent eco-system integration to induce healing. Local skills were never considered as the facility was designed by historically opposing authorities that didn't consider the skills Africans also bring to the success of an infrastructure. Finally, the contemporary African architecture design approach can be enforced in improving the facilities standards.

CHAPTER 5: RESEARCH ANALYSIS AND DESCRIPTION

Within this chapter, one can summarize and discuss the findings from the research off of literature review, precedent studies and case study. This secondary data supports the primary data collection of interviews and questionnaires in making sense for academic purposes. Since the subject lacks substantial research within architecture, the social and medical influences have to reveal the justification of the study by identifying where the problem is and how the built environment could be of assistance. The conceptual theories guide the process of identifying the most important points to extract and implement within part two of the dissertation. As per the quantitative research methodology, the quota system form of analysis has forced the study towards focusing on the fieldwork response which will give much of the contextual data the proposed facility would benefit from. The relevance of this analysis allows for a focused approach to the design principles recommended in chapter 6.

5.1 Introduction

The following section is comprised of a focused review of the information gathered through primary data collection; interviews, questionnaires, and secondary data collection; literature, precedent studies and case studies. The analysis will assist in compiling the final chapter discussing the research conclusion and recommendations going forward into part two of the dissertation.

The questionnaires are made up of inquiries directed towards leading community members that engage with the public, specifically women of KwaMashu daily and consequently, render essential services like the police, post office manager, council member, school principal and pastor whilst being involved in the issues of maternity within the community. Interviews conducted with professionals within the community healthcare field, medical architecture field and gender studies enabled primary data collection to be more focused on the medical, built environment and social issues affecting maternal mortalities, therefore, allowing for a broad review as a whole to be examined further.

The chapter, thereafter, engages with the secondary data interpretation from the range of theories, literature, precedent studies and case studies formulated within the research.
A critical analysis will be made concluding all angles of data collected. Within the study, fieldwork with community medical staff allowed for greater insight into the gaps within the healthcare provision specific to the context. Her professional experience within the chosen design site was vital in obtaining even more quantitative data about facility numbers and a primary healthcare-focused space. Conclusions from discussions in primary data collection will determine the relevance of a maternity care centre within KwaMashu whilst the secondary data will reinforce maternal healthcare, the phenomenon of placemaking and contemporary African Architecture research discussed within the primary data collection data.

5.2 Investigative approach

Upon beginning the investigation, the approach was as mentioned in the introductory chapter. The largest major research change was not being able to access interviews with some participants as they didn't have means of virtual online communication during the COVID-19 pandemic lockdown. An informal interview and questionnaire with a family member who is a general practitioner was the main source of research as the participant also allowed questionnaires to be distributed to his staff members, who were nurses, and the facilities around his practice of treating women during their pregnancy and post birthing care. He gave access through the means of a research gatekeepers letter, attached in the appendices. The timelines were also slightly modified due to the pandemic COVID-19 which disabled access for the process of a thorough physical case study investigation.

The three main concepts and theories assisted in serving as the foundation in focusing on the concept of maternal healthcare, phenomenology: placemaking theory and concept of contemporary African Architecture. The journal articles and published literature from the various thinkers assisted in understanding the discussions and facts presented by the professionals presented through interviews and questionnaires. This was the best means of obtaining information from the participants thus giving the professionals in architecture and sociology an open conversational space to share their knowledge. Professionals within medicine and education participated through interviews and that allowed the study to gain facility necessities from the experiences relating to maternal healthcare.

The investigation then leads towards exploring and analysing the built form examples that also address the problem statement. The precedent studies involved 3 successfully constructed examples located within Africa. A public maternal healthcare facility independent of the hospitals and clinics does not exist as yet within the South African context. The 3 examples relate to the architectural principles concluded from the literature review and project description literature on the phenomenology theory and eco-sustainability. Once an analysis of African built examples was done, the study focused on the current built form public facility. The case study, therefore, focused on King Edward VIII Hospital, identified by community leaders within KwaMashu as the hospital used the most by women in the community for their maternal healthcare needs. Informal interview with Sister Ngwenya of Goodwill clinic concluded on direct information about the healthcare facilitating state within KwaMashu.

5.3 Limitations and problems

The problem statement subject is currently a very sensitive topic amongst the KZN department of health, their nursing and medical staff as well as the case study hospital, King Edward VIII hospital. This resulted in a very strenuous obstacle to confront, in the hopes of researching at hand. Although the built environment subject is a public facility investigation, the topic of maternal mortalities is currently being investigated seriously thus resulting in medical staff and facility administrators being anxious and hesitant to assist in sharing information that could potentially hinder their careers. Obtaining secondary data on the case study required an extensive amount of research since the building is more than 80 years old. Whilst within lockdown state regulations, family members familiar with the facility as previous medical staff became the main means of secondary data collection about the facility. Drawings on the web did not collate with both the family source and the current facility as it had been recently renovated due to natural causes. One had to analyse the similarities and conclude on the most possible representation of the facility then and now from an external study of the facility and internally through medical staff participants.

The lockdown state regulations mentioned previously were a result of the sudden pandemic the country was confronted with from March 2020, therefore, communication with the necessary staff and facilities was difficult since the department as a whole was focused on the COVID-19 respiratory virus before any individual academic assistance. The lack of one on one engagement did not only hinder the online-based case study data collection but also resulted in a time-consuming process in attempting to schedule interviews with architects within a medical design. However, questionnaires were distributed once the nation was at a level where public engagement was relaxed. A community and family member were able to assist in collecting data about their knowledge and facility accessibility.

Therefore, due to the pandemic, one could not conduct 5 online based interviews as proposed since participants were not able to access means of communicating via zoom, skype and MS Teams. 4 interviews were conducted: 1. Gender studies-based professor 2. Medical facilities architect 3. Community nurse of Goodwin clinic 4. General Practitioner from Zululand.

5.4 Summary of analysis

5.4.1 Concept of maternal healthcare

An in-depth interview with Professor Maart, of the UKZN gender studies programme, posed a great question towards the subject of culture: " If it is cultural, why doesn't it benefit you ?" (women) Numerous unequal practices in KwaZulu-Natal are validated as cultural practices resulting in them being left unquestioned or challenged as impeding on human rights. This has subsequently led to so many unjust actions performed upon women to be normalized as cultural beliefs. The literature review gave an accurate detailed review of the cultural beliefs, implemented on women in maternity healthcare, as highly recognised within Africa. Many have never been tested and continue to cause mortalities but are never questioned as they are a product of generational knowledge passed down and highly engraved within the mind. Too many practices, due to the overall cultural beliefs, the male (father, spouse) is in charge of the decisions made upon women's bodies, since women are seen as possessions of their father or spouse once married. Her sole purpose is to build 'his' family and take care of it. Her thoughts, choices, opinions are never valid, and this is merely regarded as a cultural belief.

Professor Maart, as a woman experienced in childbirth, highlights the importance of education amongst both males and females. Men are in-denial on the subject of gender and therefore, fail to recognise agency in being aware. Amongst women, the lack of knowledge and acceptance of cultural practices upon themselves, that does not necessarily benefit them, is largely caused by not having an adequate education. However, not all cultural practices are to be shone upon, but one must be aware of their options, respect their beliefs but ultimately do what they feel is best for their own body, mind and well-being. Gender-based education should include physical and mental interpretations to push towards gender-neutral, cultural and well-being responsibilities.

Although the childbirth process is universal, the engagement with each stage is highly unique within different cultures. Being aware of the stages and journey helps one understand why antenatal care is highly imperative in the first stage of pregnancy. The lack of focus and regard for this critical stage has been a large cause of maternal mortalities within the government hospital, King Edward VIII hospital.

A combination of access to facilities, staff negligence, shortages, as well as cultural beliefs contribute to the inaccuracies whilst detecting deficiencies within the early stages. The built environment can largely assist in adding infrastructure that facilitates primary healthcare amongst remote locations. KwaMashu is a community great in being the example of how although located far from the hospital, their women prefer the remote hospital regardless of the KwaMashu community health centre being closer. King Edward VIII Hospital is a tertiary hospital that facilitates all the maternity care stages. It is imperative that from the antenatal stage, all information correspondents should be clear to achieve positive childbirth. A lack of communication between the two government facilities highlights the inefficiency in utilising the community healthcare centre for maternity care.

The government referral systems and developing strategies require further work for people to use different facilities for different stages of their pregnancy journey. As the architect, one proposes a facility adequate in scale and resources rendering maternity healthcare services alone within remote locations such as townships to focus on the maternal healthcare problems independent of general healthcare facilities. Due to South Africa's history, necessities that many townships still have no proper access which should be provided for in the means of assisting and bridging the gap. Specialised healthcare and educational architecture to the less fortunate women can assist.

5.4.2 Phenomenology: Placemaking Theory

The concept was researched through the lens of spirit, place and space with the prospect of designing for healing responsive spaces. Starting with a look into the importance of regarding the spirit of place implementation within the spatial design as a guide to designing responsive positive spaces. Medical facilities have always prioritized designing for the practical and sanitary needs over the patients, staff and visitor's needs. These are the main users of the facilities and like any built environment project, the users should always be a priority to ensure a sustainably used facility. Although a healthcare facility is not a permanent residence, allowing for an induced healing process that enables speedy recoveries and reducing costs on patients stay which required enhancing the facilities internal and external spaces.

Healing architecture can be further utilised within the design typology (part two) with the means of ensuring a positive, well-being by implementing the subconcept of genius loci.
Starting with the many ways that nature can be incorporated into healthcare architecture to create a positive healthcare space as discussed in the topic of critical regionalism. This was not an urgency within the South African healthcare facilities designed for black people. This is seen in the case study location, internal spatial arrangement and regard for patients. Whilst medical staff may oppose the idea of making the healthcare space comfortable for its patients, in cases such as maternal healthcare, the patients emotional and psychological health is imperative in enabling safe and successful health outcomes. Designing their facility needs around healing architecture allows for a positive 'spirit of place' that will also encourage the use of medical facilities as opposed to unsupervised home births. Key elements are as follows :

1. The **African identity** is imperative in making the facility a welcoming, familiar space that users can feel at ease within by incorporating 'ubuntu' ways of living that regard gender roles and daily cultural practices which largely involve the community. Healthcare architecture design within South African public facilities requires a more Afrocentric perspective since a large population of the users are Africans. Focusing on privacy gradient, visual stimuli and comfort:
2. **Privacy gradients** being treated are concerning private, semi-private and public space-making. This regards individual ward spaces that are private but spacious enough for practicality and visitors. Regarding the treatment of privacy gradient allows the patient some dignity during a highly personal experience such as maternity. The privacy gradient is also regarded within the public spaces such as courtyards where some only allow patients and their visitors and other the public to interact with, allowing both options of engagement.
3. The **visual stimuli** throughout the facility enhance positive well-being. Spending many hours enduring healthcare necessities can be daunting and disheartening especially when there are medical complications. A healthy state of mind can be enhanced with access to nature and appealing views into beautifully designed landscapes within courtyard spaces that women can interact with.
4. **Comfort** is essential especially within the context of South African healthcare facilities for maternal purposes. Literature review on the cultural influences highlighted one of the reasons women are hesitant to use public healthcare facilities are because they are uncomfortable in those spaces from the staff treatment, lack of necessities and maternal healthcare-specific facilities allowing women to control their surroundings and birthing options.

5.4.3 Concept of contemporary African architecture

The responsibility of the architect can be concluded as highly essential in the facilitating of spaces for healthcare and education. One tends to approach a project in a selfish manner by assuming they know what is required merely based on their qualifications. Designing for a community requires engagement with the people in the means of gaining knowledge unique to their context. The responsive manner sets a tone for the infrastructure in the utilisation and purpose within the community. Hospital design is planned with the purpose of it functioning for 50 to 100 years before any renovation or adaptation. A maternity care centre that intends to be a living space accommodating for comfort, healthcare and education requires its design to be distinctive to its community. Planning from a large, medium and small scale allows potential success in its function and service to the community.

There is a large stigma apparent in township infrastructure design that neglects the importance of aesthetically pleasing and functioning spaces. The same energy implemented within suburb infrastructure should be reciprocated within the township infrastructure. One is aware that the importance of township infrastructure is to meet the essential needs of a lack of facilities and access. However, the success of the project is dependent on how people respond to it over an extensive amount of time rather than it is the primary purpose of merely being a facility.

Eco-sustainability was implemented in precedent studies projects to ensure there is a natural harvest of essential resources such as energy and water. These resources are essential in healthcare facilities and are required daily. Designing around nature in the hopes of capturing the natural suns energy and rainfall to be utilised should public resources be scarce, is essential. This theory also identifies the need to construct buildings that are true to their context in their culture, topography and climatic conditions. The cultural and climatic condition response is imperative in ensuring the spaces are socially and physically comfortable for the users. The way the building responds to its surroundings contributes to a publicly inviting space to allow the facility to speak to the internal private users and external public: An essential part of a sustainable public building.

An interview done with Sister Ngwenya of Goodwill clinic was successfully conducted with her consent amidst COVID-19 regulations. Sister Ngwenya was approached informally as she had noticed my interest in the clinic and the design site during my research. I was able to book an appointment with her after working hours to have an open discussion about my dissertation proposal and the reality of the project.

Sister Ngwenya elaborated on the existing projects around the area and the healthcare standards in KwaMashu and the design site area. This created links to the existing migrant labour women's homes that were initially used as spaces for the wives dwelling in the rural homes, to use during the process of waiting to give birth. They would be near the facilities and have assistance from the spouses living in the KwaMashu area. Demographics and data of the daily numbers expected also highlighted much of the social issues touched on in chapter 2. This justified the reasoning behind ensuring that the space empowers women and their families. The societal stigma of underage pregnancies within KwaMashu is highly evident thus leaving man young women ashamed and unmotivated to continue achieving their career goals. Many encounter the spatial challenge of not having a safe space to seek healing, help or even nurturing healthcare regarding their teenage pregnancy. Sister Ngwenya highlighted how historically segregated communities need such nurturing spaces. Our cultural beliefs, often geared by unfair gender roles continue to take control even within maternal care spaces.

Contemporary African Architecture, as discussed in chapter 2, comes as a concept that has a range of outcomes as its largely dependent on the context at hand. It highlights the need to design for the users, concerning their cultural beliefs of gathering or approaching maternity, however, in a contemporary ‘inclusive’ manner that considers the fundamentals of healing and nurturing when it comes to designing healthcare facilities, even within historically segregated communities.

5.5 Conclusion

The literature focused on has highlighted similar points addressed within the precedent studies and points distinctively absent within the online-based case study design. The online-based case study elaborated on the design mistakes made in the past on infrastructure produced for African women requiring healing. Research proceeded with engaging with community leaders and nursing staff who are involved in the community and hospital programmes geared towards awareness, certainly contributed to the research by confirming the infrastructure necessities in meeting the health and gender issues within Afrocentric identity, through a positive and thoughtful architectural responsiveness.

One can conclude that the findings uncovered the element of healing architecture lacking within healthcare facilities. Unfortunately, it has had drastic implications on basic human rights such as birth and pregnancy. Often left aside, is the continued mortalities caused by the lack of facilitating within the public healthcare facilities. Since the dissertation focuses on historically segregated communities, social issues are part of the issue and therefore highlights the need for a multi-purpose space that can be self-sufficient. A space that can be occupied by as many people in the community to eliminate social issues and empower growth amongst healthy physical and psychological health. Overall, this would be required through a space that can provide means for healing and nurturing simultaneously empowerment and family spaces. Its dynamic nature, driven by the core maternity care centre as the anchor, will sustain its lifespan for many years

These findings have enabled many of the research questions, aims and objectives to be answered and discussed further with chapter 6. Much has come to light between the literature reviews in comparison to the reviews of those living and experiencing the effects of a lack of facilitating in public healthcare. The research has enabled a thorough investigation towards the background research on issues around the influence of adequately designed maternal healthcare facilities towards the social issue of maternal mortalities with the objective of designing **a Maternity care centre for KwaMashu.**

CHAPTER 6: RESEARCH CONCLUSION AND RECOMMENDATIONS

6.1 Concluding statement

The findings within maternal healthcare facilities, government healthcare facilitating system and built environment response emphasized the necessity and understanding of a Maternity Care Centre in KwaMashu. The knowledge identifies the key principles one can be guided by in implementing a proposal for a public healthcare facility typology that meets the needs of women with their healthcare facilitating, well-being and education. The lack of insight and agency towards facilitating maternity care within Africa highlights the inequality of basic infrastructure needs for impoverished black women. There is no accountability amongst society in uplifting and confronting the issue that continues to hinder African women and their families.

KwaZulu-Natal lacks agency and blames the issue on culture without discussing the government system appointed in being of service towards basic healthcare facilitating (Prof. Maart interview,2020). Public health facilities need to be redesigned to serve as healing spaces that respond to the users and utilises natural conditions in their favour of providing for its environment. Our history has largely affected the infrastructure we have had to adjust to amidst a new democratic South Africa. Public hospitals designed for the black population were not designed with much concern for the users, however, the new generation of architects and planners can redevelop typologies that can work against the past narrative and for the means of a progressive nation for all its citizens. King Edward VIII Hospital site is a clear example of the lack of regard for its patient's healing and care. Located in an industrial area of Durban where pollution, noise and waste are apparent when the facility is meant to heal and implement green spaces, fresh clean air and tranquillity. Before 1994, one could not question such healthcare design but today these design choices can be learnt from and discussed to design facilities that support peoples well-being. Similar to Maggie centre’s being individual buildings focussed on all aspects affecting cancer patients, the African context requires facilities that are more focussed on major health problems such as HIV and AIDS, TB and the subject at hand in this dissertation, maternity healthcare.

A general hospital that services in the central to primary healthcare level, cannot facilitate all maternity healthcare with a socio-economic and educationally encouraging environment. A space that assists women in being cared for and caring for themselves is equally important as it adds to general health and welfare. Research within the precedent studies shows the realistic approach of designing public healthcare for African women. The client has been established as the department of health of KwaZulu-Natal and they have a minimal set budget for the provision of healthcare infrastructure. The dissertation can assist in being a catalyst for a focus within the issue of better public health facilities that can address, the lack of facilities, training, access and education amongst the most marginalised of South African citizens, facing an unbearable childbirth process. The overall vision seeks to provide for townships and rural settlements in managing the above problems and being focused primarily on maternity healthcare facilitating. The dissertation has unpacked the social issue of maternal mortalities and how they are strongly related to the lack of basic services provided to the less fortunate. This was done through the concept of maternal healthcare, however, the dissertation is focused on the built environment issue which is facilitating for African women within public healthcare with adequate facilities.

The research hypothesis of designing a Maternity Care Centre that functions as a self-sufficient, well-functioning maternal healthcare model for the context of eThekwini township space, will be displayed in the final design within part two of the dissertation. However, this hypothesis already displays signs of being achieved based on the secondary research findings. Precedent studies largely displayed the success of Maternal Healthcare facilities that are self-sufficient, well-functioning spaces within their contexts for their users.

The concepts and theories literature, precedent studies and case study as summarized in the previous section answered the primary question of how contemporary African architecture can assist in responding to maternal healthcare facilities. The constituents and theories discussed were further elaborated through the precedent studies conveying how these design elements would be responsive to facilitating maternal healthcare. Secondary questions were further answered through the precedent studies success as well functioning built examples today.

Contemporary African architecture as an independent variable and the research concept has proved the unique characteristics that are conducive to enhancing maternal healthcare facilities. Notions of agency and awareness of the eco-sustainability measures largely ignored, have been used on existing projects that remain sustainable in their user and environmental importance, thus substantiating its healing architectural constituents required in enhancing maternal healthcare facilitating. The final objective will therefore implement these constituents in developing a successful healing architecture that will be respondent to maternal healthcare facilitating.

The study aimed to explore how contemporary African architecture, in the context of maternity healthcare facilities, can enhance healing and care through its fundamental design strategies for the user. The design theory phenomenology of placemaking and concept of contemporary African architecture identified and unpacked the effect they have on the users dwelling experience within a space. They highlight the importance of engaging with the environment to find clues as to how to enhance interior comfort, visual stimuli, privacy gradient and true to the identity of the users' culture. These design strategies will further be implemented within part two of the dissertation.

A literature review has also been done within part two of the dissertation. This is in the means of describing the project and its typology. One cannot define the specific typology but elements of maternal healthcare facilities, healing architecture, adult education and contemporary African architecture are a composition of the type of maternity care centre African women in Durban needed. They collectively touch on the basic healthcare facilitating needs and beyond the emotional and well-being needs unique to their context and demographics. The proposal assumed that the space would be a multi-purpose facility with a chore concept driven by a maternity care centre. Historically segregated communities have been gaps within infrastructure and development requirements thus, integrating different economically empowering facilities ensures the lifespan and usability of the maternity care centre. This ensures that the space is continuously being occupied by the whole community.

The architectural principles extracted from the literature review research, case study issues and importantly, the precedent studies, further assists the dissertation towards the design recommendations. These are recommendations that have been implemented and proven to be successful in designing a maternity care centre unique in it the purpose of being a space comprised of healthcare services, educational services and well-being enhancement, as the initial hypothesis of the dissertation: The design of a Maternity Care Centre which will function as a a self-sufficient, well-functioning maternal healthcare model for the Southern African, eThekwini township context, in assisting to aid the reduction of maternal mortality rates by facilitating them with nurturing healthcare spaces.

Upon beginning the research, key questions were asked in response to the topic and its means to resolve the problem statement. A primary question at hand was how can the principles of contemporary African architecture inform the design process of maternal healthcare facilities in a historically segregated community? The principles of contemporary African architecture are rooted in the relevance of contextual identity. Applying African means of inclusivity, dwelling and gathering, direct the design towards addressing the users of the community. Even more so, when being specific to the typology of a maternity care centre, the concept of African architecture answers the question, ‘What are the constituents and theories of contemporary African architecture for the design of a maternity healthcare facility’ by discussing architectural elements required in healing design. Access, circulation, privacy gradients and inclusivity of the users and surrounding biodiversity in the means of creating a holistic space that induces health. This further proves that contemporary African architecture has unique characteristics that are conducive to enhancing maternal health.

Concerning historically segregated communities, the question of ‘How can an architectural response to maternity healthcare facilities be of an influence towards reducing the social issues affecting maternal mortalities facilitating amongst African women?’ touches on the need for spaces of empowerment to eliminate gender roles that have often hindered African women. An architectural response allows for a shift in the mindset of women also being able to occupy spaces of economic growth and societal roles imperative in today's future roles.

Woman empowerment spaces that educate women and their families, eliminate the negative perceptions of using medical facilities for childbirth and pregnancy. In doing so, more families will have fewer chances of unhealthy pregnancies and maternal mortalities as any complications will have been detected at an early stage.

The dissertation research aims to convey how contemporary African architecture, in the context of maternity healthcare facilities, can enhance healing and care through its design fundamental design strategies for the user. This was unpacked in the relation contemporary African architecture has to healing design through context and biophilia aspects that enhance recovery and positive psyche. The exploration is unpacked and further answers the question 'how can a responsive healing architectural design be a catalyst for a conducive maternity care centre in KwaMashu?' thus conveying how contemporary African architecture, possess the constituents of healing architecture which can be translated into a maternal healthcare facility.

6.2 Design recommendations

Part one theoretical framework has assisted in establishing key principles that will be utilised in guiding the design recommendations. These are in the hopes of developing a successful healing architecture respondent to maternal healthcare facilities that resemble contemporary African architecture constituents in the historically segregated community of KwaMashu. The research was contextually focused for it to be well addressed for a project towards a maternity care centre in KwaMashu. The recommendations will be executed in part two design report of the dissertation.

1. Accessible medical and cultural necessities
2. African influence, true to the local context in a social and physical aspect
3. Redesign a new internal spacial concept for South African healthcare facilities
4. Educational and gathering shared spaces conducive for women to engage with
5. Eco-sustainability

Upon arriving at the centre, they should be made aware of the precious gift of life they have been blessed with. They should be given a tour of the premises and informed of the many options of delivery they have from traditional, tested and approved theories and practices. This is the reception/information space being the first encounter of a mother during her first trimester. Part of informing the mother of the facility by ensuring she is comfortable and aware is also informing her about her health, through an antenatal care process. Vitamins and treatment (if needed). This should be with the assistance of medical staff such as nurses, doctors and specialists such as obstetrics and gynaecologists, therefore establishing the medical journey till childbirth. The nurses, with midwives and doulas, should make the mother aware of the emotional challenges they may encounter and their part as professionals in assisting them. This initial encounter sets a positive journey between staff and mothers enabling the best communication and care taken upon the mother.

Establishing the different hierarchies of spaces is essential in distinguishing the types of services. Internal planning requires a cohesive movement for staff whilst still achieving privacy between emergency, delivery and maternity wards. The adaptation of the singular block maternity unit "hall" should be broken up into a variety of birthing plan options, therefore, providing for all women whilst achieving privacy. Hospital basic design is , therefore, essential in accommodating the necessary spatial requirements allowing staff and patients to work and be at care adequately. Essential services such as emergency facilities are required, displaced on the private side of the centre with immediate access to in and out emergency patients. Wards should be designed to allow for customization in allowing each woman's personal needs such as the choice of a shower or bath, working stations, reading couch or even shared vanity space alongside shared family space too. Family members should be regarded for their continued support through the monthly check-ups, therefore, a range of furniture must be accommodated with the public and private consultation spaces. These all assist in comfort during the unfamiliar process of labour and delivery process.

This space should be private, warm in the aura dispersed and above all comfortable. Literature review states the importance of allowing the internal spaces to engage with nature through green courtyards, adequate natural sunlight and ventilation. The quality of the centre should ensure a humanistic aesthetic that relates to the majority of the users. Physical and visual connection of cultural interpretation should be interpreted through an architectural design allowing mothers to relate with space and construct a positive meaning from the environment along their journey in childbirth, away from the comfort of their homes. This can be achieved by placing African inspired communal spaces in the means of engaging through inviting spaces indoors and outdoors, giving women the comfort of relaxing amongst other women enjoying the private courtyard spaces designed with the thought on the healing effects nature provides.

Alongside the healthcare facilities, educational spaces will be utilised through-out pregnancy, especially closer to the due date and after. The educational facilities should have adequate space and equipment for each mother to be involved in practical and theoretical learning methods. Since there will be a range of pregnancy stages involved, furniture configurations should be flexible in suiting the educational process.

Three types of educational spaces are required:

1. The pregnancy development space educates women about the health, diet, rights within the working world and precautions to look out for.
2. The motherhood development space, educating in new-born care, mom's care and the intricate details of how to manage overall childcare through all the developments, health check-ups and nurturing.
3. The women education and empowerment space aiding women with their emotional, spiritual, economic well-being either as mothers or just women with the desire to be independent and further their education.

Lastly, designing a healthcare centre requires the implementation of eco-sustainability methods to ensure its independent sustenance should water and electricity sources be scarce. This is one of the elements that make the typology of the maternity care centre. Eco-sustainability incorporates contemporary African architecture and healing architecture which will be further researched in part two, in making sure the spaces are in contact with nature and the overall spirit of a place is achieved. Contemporary African architecture is focused on the architecture designed for the South African context in climatic conditions, history and demographics unique to the country. This ensures a part of the sustainability of the building by making sure it is of use for a long period.

The focus will remain on the healthcare facility provided as this is the built environment addressing the problem of maternity mortalities. The educational spaces aim to be an addition to enhancing education around the subject of maternity care and develop the social, economic and political encounters as citizens in society. The centre should be designed to accommodate a range of facilities that ultimately affect each other through the process of motherhood and community engagement. The design shall display how contemporary African architecture, in the context of maternity healthcare facilities, can enhance healing and by extension reduce the rate of maternal mortalities. This represents a new way of thinking about maternity care facilities and simultaneously empower the community of KwaMashu through the social, economic and healthcare facilitating in the means of representing the township space as an innovative, growing space.

APPENDICES

GATEKEEPERS LETTER

UNIVERSITY OF
KWAZULU-NATAL
INYUVESI
YAKWAZULU-NATALI

DATE:

To whom it may concern

Miss Zamasomi Mzoneli, a research student within architecture masters, hereby customarily seeks your permission to distribute questionnaires and/or conduct formal interviews with the staff at your institution and thus utilise the research gathered on her master's Research Project entitled: A CONTEMPORARY AFRICAN ARCHITECTURAL RESPONSE TO MATERNAL HEALTHCARE FACILITIES: Towards a Maternity Care Centre for KwaMashu, and the findings will be shared with the institution if requested after the study has been completed.

Thank you and Kind regards

Mr Juan Solis-Arias, Lecturer in Architecture
UKZN, Built environment and development school
Contact details : solis@ukzn.ac.za / 0604928804

THE UKZN HUMANITIES AND SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE (HSSREC)

APPLICATION FOR ETHICAL APPROVAL
For the research with human participants

AN INFORMED AGREEMENT RESOURCE FORM

Certain situations in which witnessed verbal permission will be accepted as well as situations, where participants informed permission, may be altered by HSSREC in the means of being ethical.

Research participant consent form to assist in a Research study

Appointment:

Warmest greetings,

My name is Zamasomi Mzoneli from the University of KwaZulu-Natal, Howard Campus, Architecture, planning and housing department.

You are being invited to consider your participation within an exploration that involves research about the phenomena of maternal healthcare facilitating towards a maternity care centre for KwaMashu. This is in the means of critically investigating maternal healthcare in the means of addressing maternal mortalities by designing a maternal healthcare Centre for women and infants of KwaMashu. The exploration is expected to have a total of 20 participants: 2 architects that have designed maternity facilities, 5 hospital administrators, 5 hospital medical staff, 2 janitors, 2 security guards and community leaders.

The importance will be on the staff members which will be made up of nurses, doctors, and midwives. 5 community leaders will give background research into cultural beliefs of maternal healthcare. The following procedures will be performed 1. Online focused interviews with architects and a gender issues focused professor 2. Questionnaires are digitally shared amongst staff, admin, and community leaders. Therefore, this entails doing fieldwork at these venues and gaining gatekeeper permission to access and obtain participation from the staff members within the facilities. The participant's enrolment will be expected to be 12 months. The research funding privately with some assistance from the UKZN Architecture department

The research exploration may, unfortunately, come with the following difficulties and /or discomforts; participation from the community might be difficult to obtain since this is a very personal and private topic for some households. The hope is that the study will create the following benefits, the research will assist in the research needed in generating a model to be followed by all corners of Africa, as we are the continent with most mother and child mortalities. Participants can also choose to verbally add their input if the formalities of an interview, questionnaire are not a comfortable space for them.

The following exploration has been ethically reviewed and approved by the UKZN Humanities and Social Sciences Research Ethics Committee (approval number: HSSREC/00001879/2020).

Should any concerns, issues or questions occur, the research student can be contacted through their contact detail (0722939032) or the below contact details as follows:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION
Research Office, Westville Campus
Govan Mbeki Building
Private Bag X 54001
Durban
4000
KwaZulu-Natal, SOUTH AFRICA
Tel: 27 31 2604557- Fax: 27 31 2604609
Email: HSSREC@ukzn.ac.za

Participation within the following study is a choice. A withdrawal by the participant is permitted at any time, and should a participant not want to participate any longer, there will be no consequences or other benefits to which they are normally entitled. However, the withdrawal could hinder the research in addressing maternal healthcare issues in South Africa and thus hinder the potential for the researcher to gain adequate information for their study. Participants can notify the researcher as soon as they wish to withdraw by verbal or written means. The researcher may terminate the participant from the research process if they feel that the participant is not being truthful or under influence during the research process.

Participants personal details will not be required to maintain confidentiality. The researcher will distinguish the participants through coding such as participant 1a for staff, 2a for ex-patients and 3a for community members.

STATEMENT OF AGREEMENT

I (research participant) have been notified, regarding the research topic in exploring maternal healthcare facilities, by Zamasomi Sbusisiwe Mzoneli UKZN student number: 219075539.

I understand the objective and as a result, the procedures of the research to participate in a discussion or interview or questionnaire assisting in her research.

I, as the participant, will be required to ask to answer the researcher's questions as per my satisfaction.

I hereby state that my involvement in this study is completely my choice and I may withdraw myself at any time I please without a change in any of the benefits that I may be entitled to.

I am aware of available remuneration or medical treatment should an injury occur to me because of study-related procedures.

Should I require further questions/concerns or queries related to the study I am participating in, I understand that I can contact the researcher at her direct line: 0722939032

Should I have any questions or issues regarding my rights as a study participant, or if I am concerned about aspects of the research or the researchers then I may contact:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION
Research Office, Westville Campus
Govan Mbeki Building
Private Bag X 54001
Durban
4000
KwaZulu-Natal, SOUTH AFRICA
Tel: 27 31 2604557 - Fax: 27 31 2604609
Email: HSSREC@ukzn.ac.za

Additional consent, where applicable

I hereby provide consent to:

Audio-record my involved interview/focus group discussion YES / NO

_____ _____
Signature of Participant **Date**

_____ _____
Signature of Witness **Date**
(Where applicable)

_____ _____
Signature of Translator **Date**
(Where applicable)

A CONTEMPORARY AFRICAN ARCHITECTURAL RESPONSE TO MATERNAL HEALTHCARE FACILITIES:
Towards a Maternity Care Centre for KwaMashu

EXERCISE ONE. Research student to interview a Professor within gender studies. Ask the participant if you may take no more than 30 minutes of their time to interview them on the above topic-related questions. Notes may be taken during or after the interview to be assessed and compiled by the research student.

GUIDELINES. The questions asked by the research student have been drafted in a manner that will allow the interview to remain focused. The person being interviewed may speak freely throughout the interview. The stipulated time of 30 minutes may not be exceeded.

Name: Professor Rozena Maart – UKZN Gender studies

Age: 58 years

Interview questions for Professor Rozena Maart of the UKZN gender studies programme

1. **What is meant by the term gender?**
2. **What is the difference between gender equity, gender equality and women's empowerment?**
3. **Why is it imperative to take gender concerns into account in maternal healthcare architecture design?**
4. **With your experience as Professor working within KZN around gender issues, what are the top 3 issues the province faces?**
5. **Why are young ladies at a greater risk of sexual violence and exploitation?**
6. **How can gender-focused education be of benefit regarding maternal healthcare?**
7. **What are the key things that women need to further empower and make them feel at ease within a maternal care centre?**

Facetime interview exercise conducted by Zamasomi Mzoneli (18/09/2020)
Research fieldwork requisite for the degree in master's in architecture
At the UKZN, Howard Campus located in
Durban, South Africa for
May 2021

EXERCISE ONE. Research student to interview community nurse. Ask the participant if you may take no more than 30 minutes of their time to interview them on the above topic-related questions. Notes may be taken during or after the interview to be assessed and compiled by the research student.

GUIDELINES. The questions asked by the research student have been drafted in a manner that will allow the interview to remain focused. The person being interviewed may speak freely throughout the interview. The stipulated time of 30 minutes may not be exceeded.

Name: Sister N. Ngwenya

Job title: Manager, Professional nursing sister of Goodwin clinic

Location of work: Goodwin clinic, Emakhosini KwaMashu

Hours of work: 40hrs a week

Requirements to hold this position/career: Diploma/Degree in registered nursing/midwifery

Interview questions for community nurse of Goodwin Clinic:

1. **What is the greatest role a nurse plays in the caring and nurturing of pregnant women?**
2. **As a nurse of Goodwin Clinic, what do you find is the gap in public healthcare facilities within KwaMashu?**
3. **What do you think is the cause of maternal mortalities in Africa, and specifically in South Africa?**
4. **What are the biggest issues in maternal healthcare within this community?**
5. **How does the community perceive teenage pregnancy and pregnancy in general?**
6. **What is your opinion regarding the beliefs of maternity traditionally vs medically?**
7. **What traditional birthing practices do women in the community still believe and practice regardless of the medical practices?**
8. **What type of employment do the women of the community generally do?**
9. **What are some of the social issues that the women and families of this community encounter?**

10. **How can maternal healthcare facilities assist in easing the social issues that the women and their families if this community face?**

11. **What facilities, in your opinion, are the most essential in maternal healthcare and why?**

12. **How do you think the community and public can be incorporated in making a maternal healthcare facility a positive haven for women to utilise?**

13. **What is your opinion on the government healthcare facilities regarding maternal healthcare in South Africa?**

14. **How do you think the government can further empower women and mothers through the built form?**

15. **What would you like to see being proposed for a Maternity Care centre within KwaMashu?**

A CONTEMPORARY AFRICAN ARCHITECTURAL RESPONSE TO MATERNAL HEALTHCARE FACILITIES:
Towards a Maternity Care Centre for KwaMashu

EXERCISE ONE. Research student to interview medical facility architect. Ask the participant if you may take no more than 30 minutes of their time to interview them on the above topic-related questions. Notes may be taken during or after the interview to be assessed and compiled by the research student.

GUIDELINES. The questions asked by the research student have been drafted in a manner that will allow the interview to remain focused. The person being interviewed may speak freely throughout the interview. The stipulated time of 30 minutes may not be exceeded.

Name: Angela Hesketh

Job title: Chief Architect Department Health Province of KwaZulu-Natal

Location of work: Pietermaritzburg

Hours of work: 7:30 – 16:00

Requirements to hold this position/career: Bachelor Degree in Architecture, March / Adv BArch, Min 6 years post-grad experience, registered professional architect.

Interview questions for medical facility architect:

1. **What do you see as the greatest strength of a person in your profession?**
2. **What is your concern about the maternal healthcare issue**?
3. **What do you think is the basis of maternal mortalities within the country?**
4. **What is your opinion concerning the beliefs of maternity traditionally vs medically?**
5. **What are some of the social issues that you encounter within maternal healthcare facility design?**
6. **What facilities, in your opinion, are the most essential in maternal healthcare and why?**
7. **Do you receive updated training to assist you within your field and how frequently?**
8. **What is your opinion on the government healthcare facilities regarding maternal healthcare in South Africa?**
9. **How do you think the government can further empower women and mothers through the built form?**
10. **What would you like to see being proposed for a Maternal Care centre within KwaMashu?**

Online virtual interview exercise conducted by Zamasomi Mzoneli (28/09/2020)
Research fieldwork requisite for the degree in master's in architecture
At the UKZN, Howard Campus located in
Durban, South Africa for
May 2021

QUESTIONNAIRES

A CONTEMPORARY AFRICAN ARCHITECTURAL RESPONSE TO MATERNAL HEALTHCARE FACILITIES:
Towards a Maternity Care Centre for KwaMashu

EXERCISE ONE. Research student to distribute questionnaires amongst community leaders of KwaMashu. Participants range from male to female, senior citizens to young adults. Research student to ask leaders for no more than 20 minutes of their time. Notes may be taken during or after the interview to be assessed and compiled by the research student.

GUIDELINES. The questions asked by the research student have been drafted in a manner that will allow the interview to remain focused. The person being interviewed may speak freely throughout the interview. The stipulated time of 30 minutes may not be exceeded.

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Participants: Officer Mkhize, D. Mthiyane (Post office), Rev. Nzama, L. Ncayiyana and Mr R. Cele

Location of work: KwaMashu (police officer, manager, priest, council member and principal)

Date: 19/09/2020 - 21/09/2020

Community leaders will be assisting towards the research students understanding of the community current resources and necessities. The questions to be answered are on the subjects of education, employment, housing, healthcare and other essential services. The process will only take 10-15min maximum.

The research student will be benefitted from understanding the community needs and services which will help the research student to address the services needed in the community. There will be no risks or penalties in the participation or lack of from the community leaders.

Questionnaire for community leaders

Demographic, socio-economic and basic services

1.1 Which area in the eThekwini municipality do you live in?

1	=	North	
2	=	South	
3	=	Central	
4	=	West	
5	=	Outside eThekwini	

1.2 What is your age?

1	=	0-11	
2	=	12-18	
3	=	19-25	
4	=	26-35	
5	=	36-45	
6	=	46-55	
7	=	56-65	
8	=	66 +	

1.3 Race (by observation, do not ask)

1	=	African	
2	=	White	
3	=	Coloured	
4	=	Indian/Asian	
5	=	Other	

1.4 Gender (by observation, do not ask)

1	=	Female	
2	=	Male	

1.5 Occupation

1	=	Student	
2	=	Employed	
3	=	Looking for work	

1.6 What is your approximate monthly income?

1	=	0-1000	
2	=	1001-2000	
3	=	2001-3000	
4	=	3001-4000	
5	=	4001-5000	
6	=	5001-6000	
7	=	6001 +	

1.7 Do you have reliable access to the Internet? If so, where do you usually use the internet?

1	=	Home	
2	=	School	
3	=	Work	

1.8 How is education valued within the community?

1	=	Highly	
2	=	Rarely	
3	=	Never	

1.9 What age group bracket experiences pregnancy the most?

1 = 12-18 ☐
2 = 19-25 ☐
3 = 26-35 ☐

1.10 What is the perception of teenage pregnancy in the community?

1 = Used to it and it has become a norm ☐
2 = Judgemental and highly negative towards young ladies ☐
3 = Concerned and pushing for awareness and education on the matter ☐

1.11 Where can young ladies receive education and assistance with teenage pregnancy?

1 = School ☐
2 = Community organisations ☐
3 = Community Healthcare Centre ☐

1.12 What healthcare services are available within the community?

1 = Basic ☐
2 = Intimidate ☐
3 = Advanced ☐

1.13 How efficient is the provision of healthcare services?

1 = Basic ☐
2 = Intimidate ☐
3 = Advanced ☐

1.14 Which of the major public hospitals do community members, specifically women, go to?

1 = Mahatma Gandhi Hospital ☐
2 = Entabeni Hospital ☐
3 = King Edward Hospital ☐

1.15 How often does the community of KwaMashu face maternal mortalities?

1 = Highly ☐
2 = Rarely ☐
3 = Never ☐

Questionnaires distributed by Zamasomi Mzoneli
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A CONTEMPORARY AFRICAN ARCHITECTURAL RESPONSE TO MATERNAL HEALTHCARE FACILITIES:
Towards a Maternity Care Centre for KwaMashu

EXERCISE ONE. Research student to distribute the questionnaire to the medical director, staff, admin, janitor and security guard. Participants range from male to female, senior citizens to young adults. Research student to ask leaders for no more than 20 minutes of their time. Notes may be taken during or after the interview to be assessed and compiled by the research student.

GUIDELINES. The questions asked by the research student have been drafted in a manner that will allow the interview to remain focused. The person being interviewed may speak freely throughout the interview. The stipulated time of 30 minutes may not be exceeded.

Name: Dr. LNF Mzoneli, Thandeka Mzoneli and Themeblihle Nzimande (King Edward nurses)

Job title: Healthcare facility director and Doctor, Nursing sisters

Location of work: Dr LNF Mzoneli surgery (Nongoma), King Edward Hospital, Congella, Durban

Hours of work:40 hrs a week

Requirements to hold this position/career: diploma/degree in registered nursing/midwifery

Questionnaire for medical director, staff, admin, janitor and security guard:

Questionnaire for a healthcare facility director, admin, staff, janitor and security guard

1.1 Which area in the eThekwini municipality do you live in?

1	=	North	
2	=	South	
3	=	Central	
4	=	West	
5	=	Outside eThekwini	

1.2 What is your age?

1	=	0-11	
2	=	12-18	
3	=	19-25	
4	=	26-35	
5	=	36-45	
6	=	46-55	
7	=	56-65	
8	=	66 +	

1.3 Race (by observation, do not ask)

1	=	African	
2	=	White	
3	=	Coloured	
4	=	Indian/Asian	
5	=	Other	

1.4 Gender (by observation, do not ask)

1	=	Female	
2	=	Male	

1.5 Occupation

1	=	Student	
2	=	Part-time employment	
3	=	Full-time employment	

1.6 What is your approximate monthly income?

1	=	0-1000	
2	=	1001-2000	
3	=	2001-3000	
4	=	3001-4000	
5	=	4001-5000	
6	=	5001-6000	
7	=	6001 +	

1.7 What social issues directly affect maternal healthcare issues?

1	=	Demographics	
2	=	Education	
3	=	Access	

1.8 What age group bracket comes pregnant or with pregnancy issues the most?

1	=	12-18	
2	=	19-25	
3	=	26-35	

1.9 What is the perception of teenage pregnancy within the healthcare facility?

1	=	Used to it and become the norm	
2	=	Judgemental and highly negative towards young ladies	
3	=	Concerned and pushing for awareness and education on the subject	

1.10 How relevant are the beliefs of maternity care traditionally, compared to medically within healthcare?

1	=	Traditional practice is still strongly believed	
2	=	Both medical and traditional means are practised	
3	=	Only medical means are practised	

1.11 How involved are males within the maternal healthcare of their partner?

1 = Males are not involved at all
2 = Males are involved off and on where acceptable
3 = Males are highly involved

1.12 Does the facility assist in educating young ladies about safe sex and family planning?

1 = Yes
2 = Seldom
3 = Never

1.13 What healthcare services are available within the facility?

1 = Basic
2 = Intimidate
3 = Advanced

1.14 How efficient are the facilities and staff members?

1 = Basic
2 = Intimidate
3 = Advanced

1.15 Which of the major public hospitals caters more for maternal healthcare?

1 = Mahatma Gandhi Hospital
2 = Entabeni Hospital
3 = King Edward Hospital

1.16 How often are their cases of maternal mortalities?

1 = Highly
2 = Rarely
3 = Never

1.17 What is perceived as the leading cause of maternal mortalities?

1 = Lack of education and training
2 = Lack of facilities
3 = Lack of access

1.18 What facilities are needed in preventing maternal mortalities?

1 = Better hospital design quality
2 = Advanced hospital technology
3 = Better services provision

1.19 What do you think the government can improve on in creating care and awareness towards those affected?

1 = Counselling and awareness
2 = Sex education in schools
3 = Better mobile services provision

1.20 Do you think a focused maternal healthcare facility is needed that meets the above concerns separately?

1 = Yes
2 = Integrate with existing facilities
3 = No

Questionnaires distributed by Zamasomi Mzoneli
Research fieldwork requisite for the degree in master's in architecture
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