

A
TECHNICAL
INSTITUTE
FOR
BLACK
FEMALES
IN
SOWETO

THE FEMNICAL INSTITUTE

VOCATIONAL EDUCATION IN TRANSITION TO A NEW AND EVOLVING ECONOMY

THE FEMNICAL INSTITUTE

Vocational Education in Transition to a New and Evolving Economy

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This research report is submitted to the Faculty of Engineering and the Built Environment,
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of Master of Architecture (Professional).



**SCHOOL
OF
& ARCHITECTURE
PLANNING**

This report is dedicated to my grandmother Azwihangwisi Esther Mafenya Mphaphuli who's hard work, creativity and individuality will forever be my source of inspiration.

01 | DECLARATION

I, Mukhethwa Nevhutanda [863912] am a student registered for the course Master of Architecture (Professional) in the year 2020.

I hereby declare the following:

I am aware that plagiarism [the use of someone else's work without permission and/or without acknowledging the original sources] is wrong. I confirm that the work submitted for assessment for the above course is my own unaided work except where I have stated explicitly otherwise. I have followed the required conventions in referencing thoughts, ideas, and visual materials of others. For this purpose, I have referred to the Graduate School of Engineering and the Built Environment style guide. I understand that the University of the Witwatersrand may take disciplinary action against me if there is a belief that this is not my unaided work or that I have failed to acknowledge the source of the ideas or words in my own work.



Signature

28 March 2021

Date

02 || ACKNOWLEDGEMENTS

This report wouldn't have been possible without the help and support of the people in my life.

Firstly to my mom, dad and siblings, thank you for your love, support and prayers throughout my architectural academic career, especially during my masters year, and for allowing me to do everything I wanted to do without question.

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Thank you to the community of Soweto and the people who gave me their time and a piece of their knowledge. To my newly found Wits friends that I got to engage with although remotely, thank you for all the advice, support and most importantly the motivation.

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And lastly a big thank you to my supervisor Dr. Sechaba Maape, who inspires me beyond his knowledge, for all his guidance and advice throughout this process.

I appreciate you all so much more than I can put into words.

ABSTRACT

In the following research report I will be exploring a revised model of a technical vocational education facility where the emphasis is a model focusing on black females. Black females suffer the most social and economic disparity in South Africa, and today their lives are characterised by violence both physically and economically. The South African education system in the past was designed to exclude portions of society, and today black females are still the main victims of this historic disparity. In addition, stereotypes that perceive African women as having weak technical capacity persist. This is in stark contrast of the reality that black females have always been technical, and that making was deeply connected to a making of the self, positioning technical education in the traditional context within the paradigm of phenomenologically developing the self as opposed to just educating for the market. Through architectural design, the study engages aspects of education, making and development of the self through the lenses of feminism, phenomenology of making and personal reflections. The result is the design of a technical school for black females located in Soweto Johannesburg, an area that has a deep history of turmoil in the education of black youth in South Africa. The site and design approach in this research report aims to expose a different way of thinking of technical education in response to both the economic, existential and socio/spiritual crisis facing black females in South Africa.

KEYWORDS.

- Black Female
- Woman Empowerment
- Embodied learning
- Technical
- Vocational
- Making
- Identity
- Township Development

CATEGORY.

- Education

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PROLOGUE

The journey of selecting a research topic is as daunting as it is frustrating. To select an area of interest that not only inspires you but allows for the opportunity to be challenged. I do some of my best thinking when driving in my little Opel Corsa, so it was no surprise that this was a space that led me to choosing what to write about. I remember driving down Khumalo Street past the Hector Pieterse Museum in Soweto one Saturday morning and thought about what I was going to choose as a topic. It was clear to me at this stage that education in the South African landscape faced a lot of headline worthy challenges with issues pertaining to fees, overcrowding and the overall quality of education that is being afforded to the youth, especially those in rural and township spaces. As I drove past the museum, which to me was a symbol of brutality towards black people and their right to adequate education. My first decision was to base my research in Soweto.

I have always taken interest in the importance of educating the black child. As a young black female myself, education has allowed me the opportunity to do my Masters at one of the best Universities in Africa, the University of the Witwatersrand. I was further inspired to design a technical institute for black females by my supervisor Dr. Sechaba Maape who brought to my attention that women, especially black women are underrepresented in the technical field.

This research will be driven by my fellow black females as it is advocacy and participatory focused, aimed at bringing a change in practices to help empower young black females in Soweto through interviews and questionnaires.

It is my creative belief that in order to have a good project, one must involve its community and user group but this has somewhat shown to be challenging due to the global pandemic caused by the corona virus. Apart from this obstacle, interviews and questionnaires have been conducted remotely to help better design the best possible technical institute that will be used by black females.

This research hopes to become a didactic building that acts as a precedent for women empowerment in Soweto. It is an institute that will equip black females with the ability to not only generate economic opportunities through vocational skills obtained but establish a sense of self and identity through making. This process will involve two black female generations, the young that will learn from the old and vice versa. It is also clear that it will need to move towards a more progressive thinking of how we approach technical environments that will be used by both generations by carefully understanding their experiences through the methodologies addressed above.



DOMAIN 01

INTRODUCTION

03 || MOTIVATION AND REASONING

It was the afternoon of February 19th 2020 when my father said to me in these exact words – “Before you commence with your research, you need to ask yourself ‘WHY?’. Why am I doing what I say I want to do?” I walked away from that conversation overwhelmed and asked myself the very same question. Why am I designing a technical institute for black females in Soweto? Apart from the main idea that was triggered by my drive past the Hector Pieterse Museum and inspiration drawn from my grandmother and supervisor, I broke this question down into three main separate questions.

CORE ISSUES

Why a LEARNING INSTITUTE in SOWETO?

Why a TECHNICAL LEARNING INSTITUTE in SOWETO?

Why a TECHNICAL LEARNING INSTITUTE for BLACK FEMALES in SOWETO?

Why a LEARNING INSTITUTE in SOWETO?

APARTHEID! - An established system of racial segregation that existed in South Africa from 1948 until the early 1990 (SAHA, 2018). Under the apartheid system was 'BANTU EDUCATION', the official system of education for black South Africans that was introduced from 1956 and was designed to seclude black people from knowledge beyond basic living standards. This system sought to educate basic knowledge such as, physical education development and sustaining a healthy body and acquiring training of practical skills and laboring knowledge, intellectual education such as basic reading, writing and spelling, and spiritual education in the belief of western religious practices and Christianity.

Between 1972 and 1975, schooling in Soweto was drastically transformed as the states policy was to stop building schools in urban townships. As the student population increased, conditions in the township started to deteriorate, mounting to a housing crisis which then led to the events of June 16, 1976 (see figure 1 below). It was on this day when black students from numerous schools of Soweto embarked on a peaceful protest to Orlando Stadium against an official order which made Afrikaans compulsory in black township schools throughout the country, alongside black education being sorely neglected while white schooling was free, compulsory and expanding. Among the first students to be shot and died on that day was a 12 year old school boy, Hector Pieterse (see figure 2 below). The number of people who died on that day was estimated up to 700 with thousands wounded. (SAHA, 2017).

Today, as I motivate for the need of an educational technical institution in Soweto, the scars of 1976 still remain. Almost 26 years into democracy we find that townships continue to isolate many black South Africans from resources that include adequate education due to a lack of educational facilities resulting in overcrowded classrooms that then limits students' contribution to economic growth due to the high drop-out rate in township schools (see figure 3 and 4 below).

Figures below

Figure 1:
Soweto students embarking on a peaceful protest on June 16 1976; source (Hadithi.Africa, 2020)

Figure 2:
Mbuyisa carrying the lifeless body of Hector Pieterse alongside Hectors sister Antoinette Sithole, photograph (Sam Nzima, 1976)

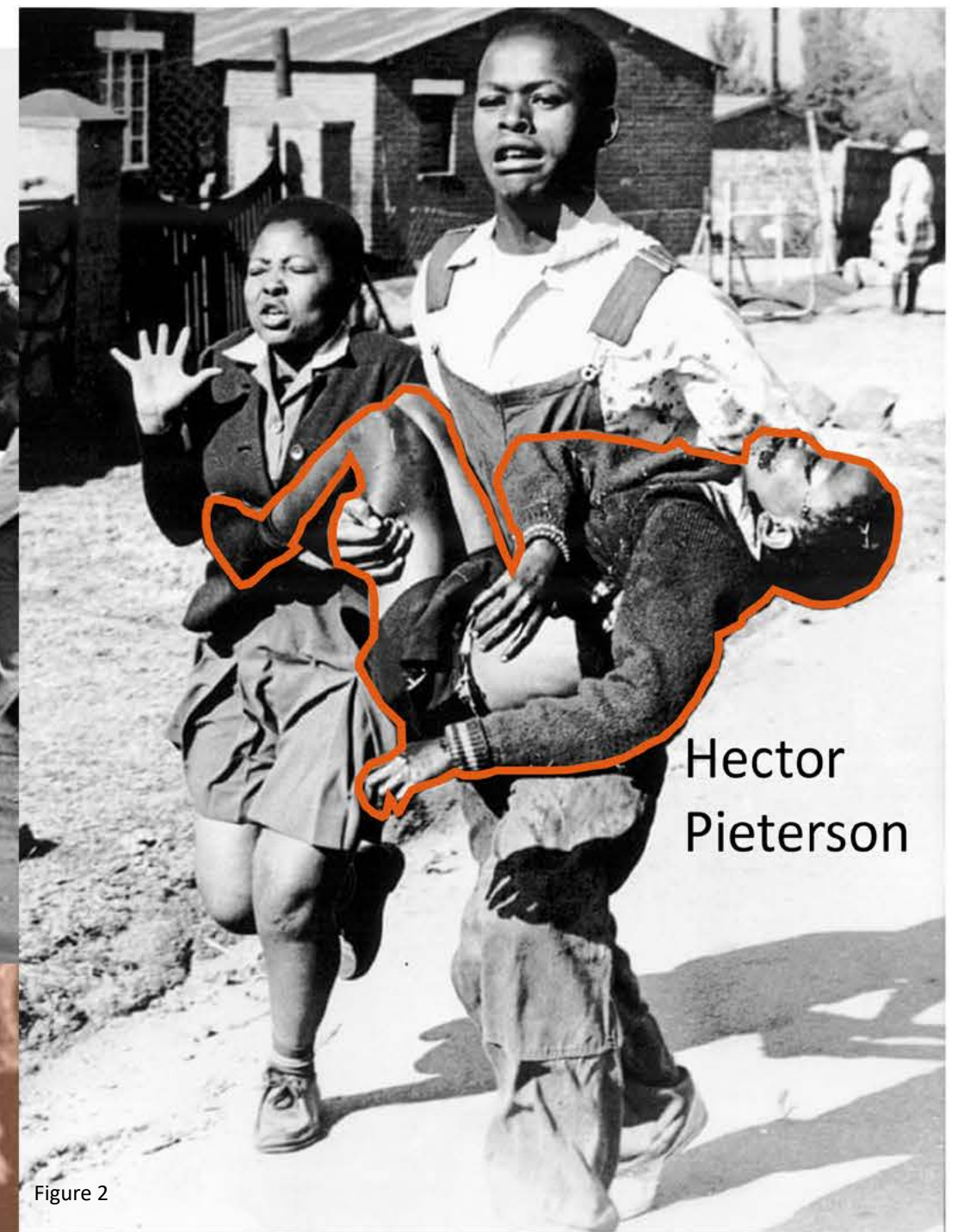
Figure 3:
Class of 1976 at a school in Soweto; source (SAHA, 2017)

Figure 4:
Class of 2018 at a school in Soweto; source (SAHA, 2018)

JUNE 16. 1976



Figure 1



Hector
Pieterse

Figure 2



Figure 3

LESSONS OF '76



Figure 4

CLASS OF 2018

....26 YEARS into DEMOCRACY

Why a TECHNICAL LEARNING INSTITUTE in SOWETO?

In September 2019, the department of basic education proposed an exit examination qualification known as a General Education Certificate. This means that at the end of grade 9 students can choose an alternative way of completing high school (see figure 5 below) but not limited to them. This is where my building will insert itself into the system. It will consist of a 3 year program structure that consists of a combination of different types of women who come together to create mechanisms that address issues faced by black women.

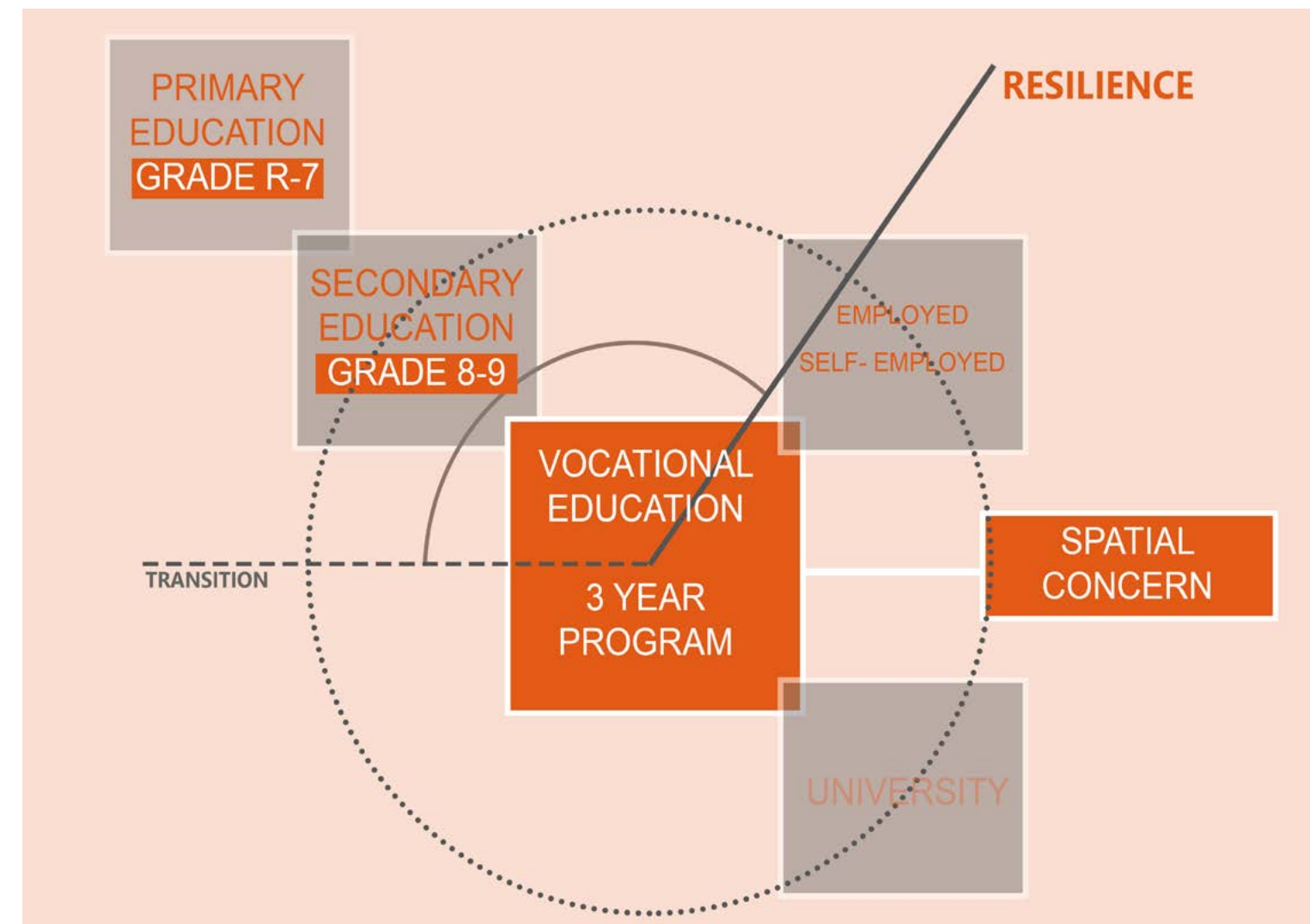


Figure 5: Femnical institute approach to inserting itself into the education system; diagram (Nevhutanda, 2020).

Why a TECHNICAL LEARNING INSTITUTE for BLACK FEMALES in SOWETO?

My mother has been teaching at a school in Atteridgeville, a township located in the west of Pretoria South Africa for the past 12 years. She tells us the stories, but because no one writes about them we never really get to know about them. As a public fee-free school in the township, it faces a lot of academic challenges and this has made me realise that some people will need an alternative way of learning which is possibly through creating their own knowledge by creating and interacting with physical objects and working with their hands. Through my lived experience, I have come to terms with the fact that black females have always been capable of being technical. For 28 years since the year 1952, my aunt Ester woke up every morning to go to Mutale, an area in Venda about 5km away from her home to make clay bricks and sell to the community as a means of income. Today she wakes up and makes traditional venda beads that she also sells to the community (see figure 8 below).

A technical learning institute for black females was also inspired by my dear friend Jennifer whom I got to know throughout my varsity career. She is a 26 year old female who helps with building kingdom halls for the Jehovahs' Witness congregation gatherings (see figure 12). She started volunteering in these projects in 2016 at the age of 22. She also took on a project to repaint her bedroom during level 2 of the South African lockdown (see figure 13 and 14).

When I look at these women, both from different times and generations, it is evident that black females have always been capable of being technical and my project will try to re-establish the technical ability black females have always had as this is deeply part of our tradition and culture. It is about reframing the narrative because there was never a time when black females were not technical (Heinrich Kammayer, 2010).

Figures below

Figure 6:
African women packing clay bricks for construction in Mozambique; source (Archdaily, 2020)

Figure 7:
Ester Mafenya Mphaphuli; photograph (Nevhutanda, 2018)

Figure 8:
Ester Nevhutanda making venda tradition beads under her veranda; photograph (Nevhutanda, 2020)

Figure 9:
Structure made for burning clay bricks to become hard; photograph (Khathutshelo Mutshinyalo, 2018)

Figure 10:
Jennifer Sibanda laying bricks at 94 Republic; photograph (Nevhutanda, 2017)

Figure 11:
Jennifer Sibanda and researcher passing bricks to one another at 94 Republic; photograph (Lebogang Mbewe, 2017)

Figure 12:
Jennifer Sibanda mixing concrete at Oliven; source (Jennifer Sibanda, 2018)

Figure 13:
Jennifer Sibanda mixing paint to start painting her bedroom; photograph (Nevhutanda, 2020).

Figure 14:
Jennifer Sibanda painting her bedroom; photograph (Nevhutanda, 2020)

Figure 6



Figure 7



Figure 8



Figure 9

....SINCE 2017



Figure 10:



Figure 11



Figure 13



Figure 12



....TO DATE



Figure 14

04 RESEARCH STATEMENT

Breaking Boundaries!

The aim of this research is to design a technical institute for young black females in the township of Soweto with a reciprocal approach to how young black girls and women gain knowledge and acquire a skill. Addressing the lack of research done in this topic, it will define the design principles of a technical space that is used by black females, suggesting traits of an alternative architecture shaped by women and discusses some of the main barriers and more recent opportunities which would allow women to design according to their specific goals, needs and priorities.

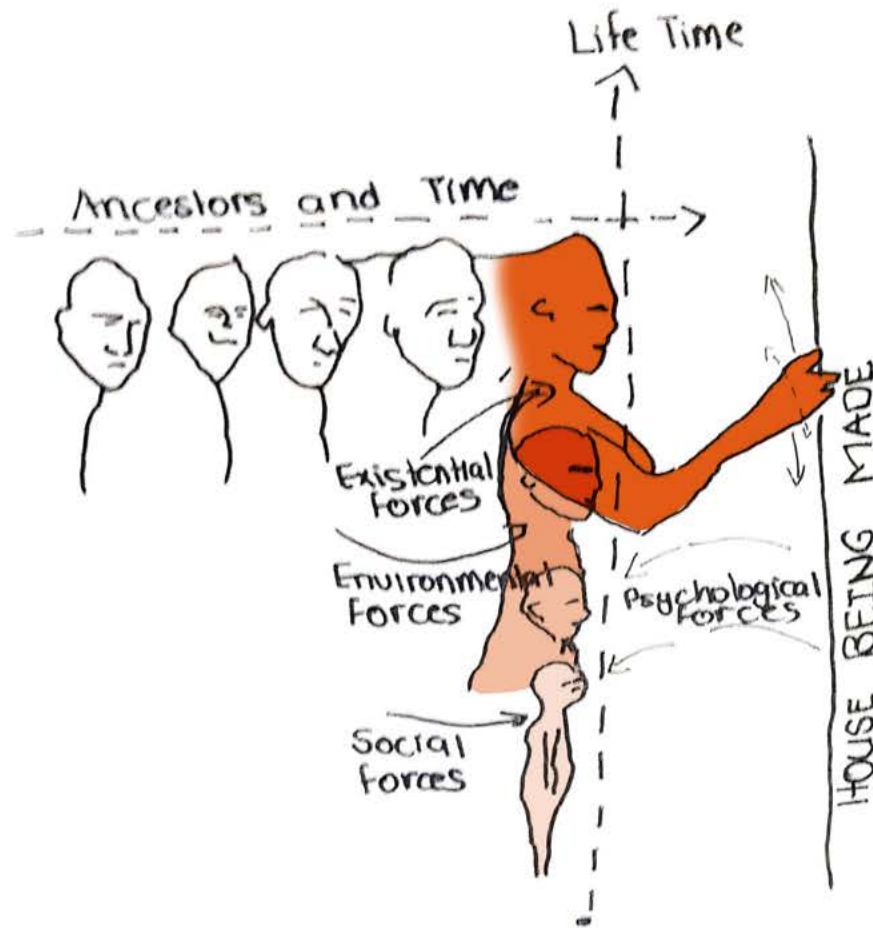


Figure 15: The principal of Reciprocity as described by Heinrich Kammeyer; sketch (Nevhutanda, 2020)

RECIPROCITY

Defined in the Macmillan English Dictionary for Advanced Learners (2007) as the practice of exchanging things with others for mutual benefit.

Described by Heinrich Kammeyer in his thesis (2010) as a phenomenology that is normally achieved unknowingly as the evolution of self through making (see figure 15).

Described by the researcher as the role of exchanging knowledge through making in the collective construction of making the self.

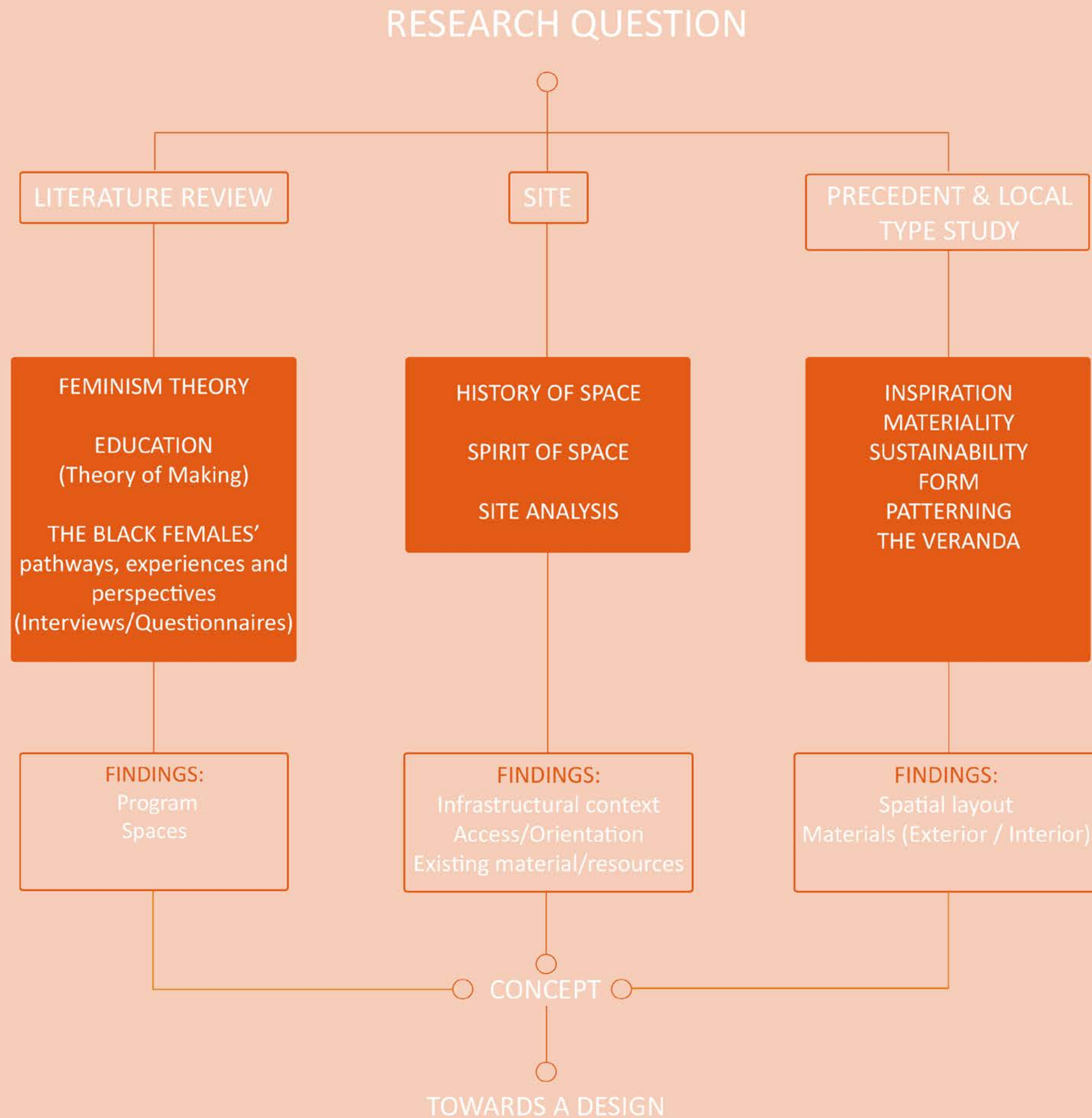
05 RESEARCH QUESTION

Main Research Question:

Using architectural design as an exploratory process, what are the various architectural interventions and elements that include planning, form, detailing, aesthetics, and programming one could and should consider when designing a technical vocational institution for black females in the context of Soweto, South Africa?

Sub-question:

What architectural methods have been used to create environments conducive for women learning and working if any?



07 || METHODOLOGY

This research is advocacy and participatory focused, aimed at bringing a change in practices to help empower young black females in Soweto and its built environment.

DATA COLLECTION

Research:

Gathering information through relevant literature to establish what architectural methods have been used to create environments that are conducive for women learning and making in technical vocational if any, and reach new conclusions.

Interviews:

Interviews will be conducted through cyber methods of WhatsApp, Zoom, or Microsoft Teams. Participants that will be interviewed will include, black architectural female practitioners, experts that design educational facilities, as well as education practitioners that work closely with young black females from the township of Soweto. Participants will not be pressured to participate in the project. Participants will not be asked for their names or any identifying information. All information given to the researcher will be held securely and not disclosed to anyone else. The researcher will be using a false name to represent the participants' participation in the research report.

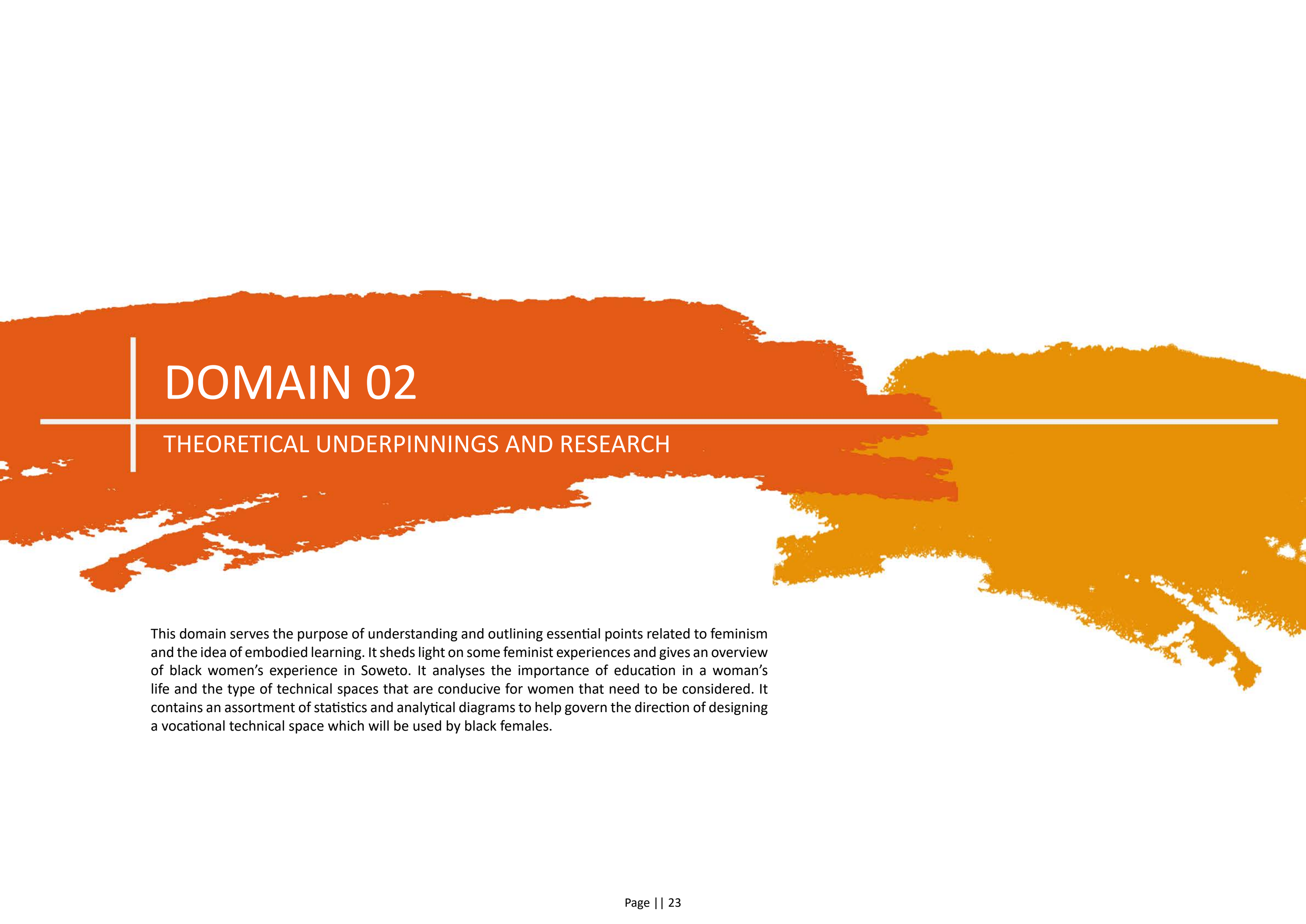
Questionnaires:

Questionnaires will be conducted through cyber methods of WhatsApp, Zoom, or Microsoft Teams. The participants include black female learners from Soweto from the age of 18. Participants will not be pressured to participate in the project. Participants will not be asked for their names or any identifying information. All information given to the researcher will be held securely and not disclosed to anyone else. The researcher will be using a false name to represent the participants' participation in the research report.

DATA ANALYSIS

All data will be referenced accordingly and will meet the universities research ethics standards. Any data that does not relate to the research will be omitted.

Data collection will not involve any vulnerable groups such as minors and raped or abused victims.



DOMAIN 02

THEORETICAL UNDERPINNINGS AND RESEARCH

This domain serves the purpose of understanding and outlining essential points related to feminism and the idea of embodied learning. It sheds light on some feminist experiences and gives an overview of black women's experience in Soweto. It analyses the importance of education in a woman's life and the type of technical spaces that are conducive for women that need to be considered. It contains an assortment of statistics and analytical diagrams to help govern the direction of designing a vocational technical space which will be used by black females.

“We teach girls to shrink themselves, to make themselves smaller. We say to girls, you can have ambition, but not too much. You should aim to be successful, but not too successful. Otherwise, you would threaten the man. Because I am female, I am expected to aspire to marriage. I am expected to make my life choices always keeping in mind that marriage is the most important. Now marriage can be a source of joy and love and mutual support but why do we teach girls to aspire to marriage and we don't teach boys the same? We raise girls to see each other as competitors not for jobs or accomplishments, which I think can be a good thing, but for the attention of men. We teach girls that they cannot be sexual beings in the way that boys are”

(Chimamanda Ngozi Adichie, 2013)



This image is an illustration of the researcher reproducing the “WE CAN DO IT” inspirational image to boost female workers morale.

The images was used to promote feminism and other political issues faced by women and served and still does as an iconic symbol of the strength of women.

Figure 16: An Illustration of researcher reproducing the “we can do it” image; illustration (Nevhutanda, 2020)

2.1 FEMINISM THEORIES

INTRODUCTION

Feminist:

“A person who believes in the social, political and economic equality of the sexist”
(Adichie. C, 2013).

The word ‘Feminism’ has been used by many scholars and researchers that have tried to define and explain it differently. For the most part, the word has been referred to as the belief that women live an injustice life with no rights and no equality to that of men. Zara Huda Faris explained this idea in her book, ‘Women’s Rights without Feminism’ as: “Women need feminism because there are women who suffer injustice, it represents their sufferings in addition to their dreams of having equal opportunities as men in societies controlled by men”. She also added: “Women have traditionally been dehumanised by a male dominated society, which they call patriarchy” (Zara Huda Faris, 2019).

“During the 18th century, women were not permitted to do anything without the control of men, especially in public places. This domination of men over women mainly existed in all the fields with no exception and gave women her stereotypical image of no more than a housekeeper, a mother and a wife” (Duverger Maurice, 2013). It was this stereotyped image that feminism debated and contested the inequality of women as society taught women how to catch a man and keep him, how to breastfeed children and handle their toilet training, how to cope with sibling rivalry and adolescent rebellion; how to buy a dishwasher, bake bread and cook gourmet meals; how to dress, look, act, and make marriage more exciting; how to keep their husbands from dying young and their sons from growing into delinquents. It taught them to pity the ‘neurotic’ and ‘unhappy’ women who wanted to be poets or physicists, technicians or presidents. Teaching them to give up their dreams and not give them any thought, to drop out of college to marry, because too much education would be a marriage bar. Before feminism aimed to pave the way for women in one way or another, its movement passed through a definition of waves.

“It is urgent to understand how the very condition of being a housewife can create a sense of emptiness, non-existence, nothingness in a woman. There are aspects of the housewife role that make it almost impossible for a woman of adult intelligence to retain a sense of human identity, the firm core of self or “I” without which a human being, man or woman, is not truly alive” (Hooks, B.,2000. pg 2).

For women of ability in this day and age, I am sure that there is something about being a housewife in itself that is dangerous.

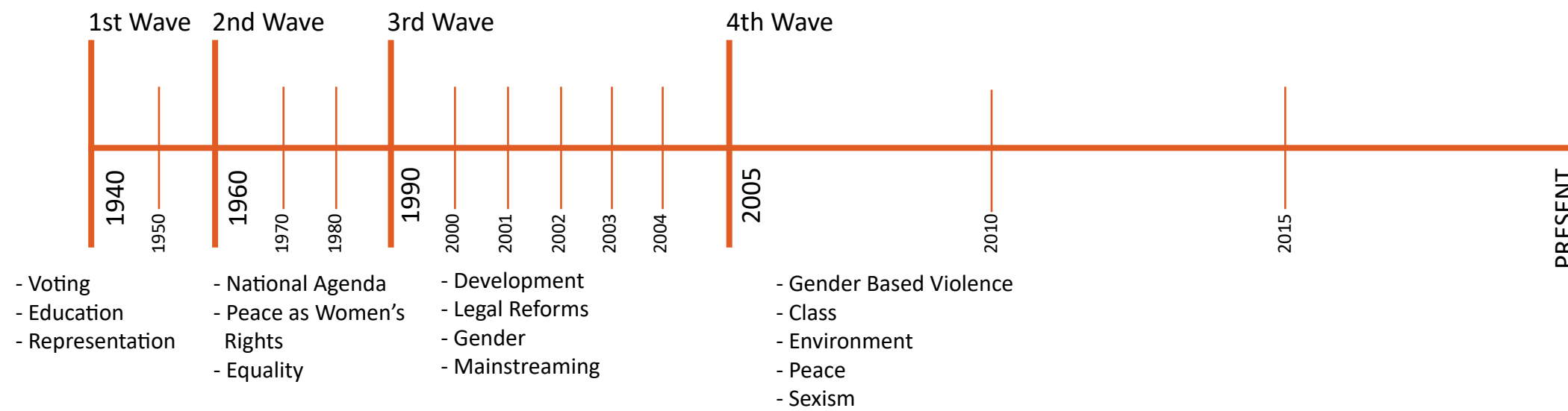


Figure 17: Feminist waves; diagram (Nevhutanda, 2020)

2.1.1 WAVES OF FEMINISM

The First Feminist Wave: Votes for Women

Nowadays if you spoke about the right to vote, people would say that everyone has the right to vote whether she is a woman or he is a man. However, this way of talking did not exist centuries ago.

This wave occurred in the 19th and early 20th century and was mainly concerned about women's voting rights. The struggle went far back as the Seneca Falls Convention in New York in 1848 that described women's grievances and demands to equal social status and legal rights (Korlokke, 2005 pg3). It was a long struggle before women won the right to vote, and in addition to voting rights, there were protests opposing ownership of married women by their husbands, women not being able to own property and get an education.

The Second Feminist Wave: The Personal Is Political

This wave is related to a broader group of women as it addressed their day to day practical issues of male dominance as a social construct and the perception and role of women in society. The wave took place from the 1960s to the 1980s and focused on issues of equality and discrimination. Betty Friedan was a key player in this wave as her book - *The Feminine Mystique* criticized the idea that women could find fulfillment only through childbearing and homemaking. She put forward that women are victims of false beliefs that require them to find identity in their lives through having a husband and children and causes them to lose their identities in that of their family (Daniel Horowitz, 1998). This criticism ignited the women's liberation movement in the 1960's and as a result the movement permanently changed the social fabric of the United States and other countries around the world.

The Third Feminist Wave: Transversal Politics

The fight for equality was still an on-going process into the third wave as a response to the perceived failure of the second wave, arguing that it over-emphasized experiences of upper middle class white women, forgetting that feminism should be inclusive in class and gender equality (Korlokke, 2005 pg21). This wave appeared in the early 1990s and continues to the present. It introduced the term 'intersectional' which demonstrates how race, ethnicity, class, religion, gender, and nationality are all significant factors when discussing feminism (Betty Friedan, 2013). The first and most important goal for the third wave was avoiding putting and classifying women into categories and removing stereotypical images. This group of feminists was not only looking for political, economic and social rights for woman but wanted her to perform in all domains and more importantly have a role in society.

The Fourth Feminist Wave: Technology

This movement is defined by tools that are allowing women to build a strong, popular and reactive movement online that addresses gender based violence, education, environment, peace, and sexism. Pioneers of the fourth wave include Amongé Sinxoto - a Wits Student activist who uses her social media as a platform to authentically represent what it means to be an African woman in the 21st century.



2.1.2 BLACK FEMINISM

While feminism posed as a movement for the emancipation of women globally, in practice, it concentrated on the needs of upper middle-class white women. It claims in its symbols and goals to the equality of all women from every ethnic and social belonging, but it did not give importance to the problems that black women had. When we speak about the rights, equality, injustice and suffering of women we can automatically make mention of the segregation of black women. Patricia Collins, one of the famous black feminists argues that feminism did not bring any rights to the black women at all. “Moreover, the black woman was separated from participating in any social, economic or political activities done by feminist organisations, which were controlled by white woman” (Collins, 2002 pg45).

Although the third feminist wave demonstrated how race, ethnicity, class, religion, gender, and nationality are all significant factors when discussing feminism, black females have always been classified as the lower class by both white men and women. This classification of black women started riots between white and black women which lead to black females creating another alternative of feminism known as ‘WOMENISM’. The term was invented by Alice Walker in one of her collection of essays ‘Coming Apart’ in 1976, and was established to resist anti-blackness within the feminist movement. It focused on the unique experiences, struggles and needs of black females and expressed their wishes and dreams. Walker considered womenism as the only truth in the life of any black female asking for equal rights with not just men but looking for equal rights with white women (DAS, 2014).

Affirmation:

As a black female myself, it took me a while to understand and accept feminism. The name was strange and problematic to me as I felt it did not recognise me, but the more I learned about it, I came to understand that feminism is not about women, neither is womenism, these two terms are about a very specific type of equality that applies to every single human being. It is about the personal agency and the ability for each and everyone one of us to make our own personal choices and have them respected by everyone else. It is essentially anti-authority of men is to women and black is to white. In light of this, it is important to recognise the need for this movement to still live on as many people still believe that the battle has not yet been won seeing that racism, access to education, gender inequality, and gender based violence is still a dire issue in South Africa.



Figure 18: Protesters march against racism in Cape Town in 2018; photograph (Michael Walker, 2018) - (top)

Figure 19: 13-year-old Zulaikha Patel and fellow schoolmates in a tense standoff with private security guards at Pretoria Girls High School; source (The Daily Vox, 2016) - (bottom)



Hate speech (racism to be precise) in South Africa is widely regarded as an on-going problem since the passing of Apartheid and still remains a societal and institutionalised problem. In 2016, South Africa started experiencing a lot of racism by citizens on social media. The race issue was sparked by the late Penny Sparrow (white estate agent) who took to her social media to express how disgusted she was by the overpopulation of Durban Beaches by referring to black people as “Monkeys”. She further insulted black people on an interview with Times Live by justifying her hate speech by saying: “I made the mistake of comparing them (black people) with monkeys. Monkeys are cute and they’re naughty, but they (black people) don’t see it that way, but I do because I love animals” (2016).

This hate speech sparked protests all around South Africa, calling on the government to take a stand against racism (see figure 18). 26 years into democracy, the battle has not yet been won.

This was also seen at the Pretoria Girls High School as pupils demonstrated against what they call racist school policies that prohibits them from speaking their native languages or keeping their hair in an Afro (see figure 19), sparking protests at other schools in the country for similar traits.



Figure 20: Wife of the late former South African President Nelson Mandela, Winnie Madikizela Mandela (centre), leading a march during a 'Women's Day' rally in Pretoria; source (The Conversation, 2000).

26 years into democracy, South Africa still remains far from being the paradise it promised to be to women. As Patriarchy remains deeply anchored at home, in the workplace and public environment, it also transcends the binary of race and class, also playing a prominent role in the spread of rape and domestic violence. This violence against women has been rooted in women's lack of power relative to men in society.

In 2000, the late wife of the late former South African President Nelson Mandela, Winnie Madikizela Mandela led a march during a Womens Day Rally in Pretoria to address issues of inequality faced by women in all aspects of their lives. In August 2019, South Africa also saw about 2000 protesters march to the South African Union Building in Pretoria to deliver a memorandum of demands that included protection and support for victims of violence, stronger sentencing for perpetrators, and protection for gender non-conforming people.

This battle is far from being won as patriarchy still has an influence on how women relate to men.



Figure 21 (left) and 22 (right): Koleka Putuma and other protestors marching to the Union Buildings on August 2018 to protest against Gender Based Violence; source (EWN, 2020)



Figure 23: Anti gender based violence protests at Cape Town in 2019 (Image remains uncredited due to the controversy of drone imagery to protect photographer).



Figure 24: Anti gender based violence protests at Cape Town in 2019; source (Ground up, 2019)

It is no secret that domestic violence is a dire issue in South Africa and in the formal industry where monitoring is possible and data can be collected, Gender Based Violence also exists.

"Gender Based Violence in South Africa is a second pandemic in the country as serious as the coronavirus"

President Cyril Ramaphosa

August 2019, South Africa heard about the rape and death of University of Cape Town student Uyinene Mrwetyana. Her murder highlighted the broader national problem of gender based violence and femicide in South Africa and ignited the movement #AmINext #EnoughIsEnough (see figures 23 and 24).

I speak for Karabo Mokoena, Precious Ramabulana, Tshegofatso Pule, Asitandile Lugalo and all the young women who were killed by men in South Africa.

The battle of Gender Based Violence has not yet been won as women and young girls in South Africa fall victim of rape and murder at the hands of men South Africa.

Taking into consideration the killings of young women which has been deeply entrenched in institutions, I attempted to understand the complexities of Gender based Violence in South Africa by looking at the Rape and Sexual Assault Statistics in South Africa (StatsSA, 2020) from 2010 all the way to 2019 (see figure 25). South Africa saw a decline in reported cases from the year 2011 to 2018. Numbers started increasing in the year 2019 and are currently at a high since the inception of the Corona Virus. Reports suggested that the number of Gender Based Violence cases have risen by 500 percent since the national lockdown in South Africa which took place from March 2020 (IOL, 2020).

RAPE AND SEXUAL ASSAULT REPORTED CASES IN SOUTH AFRICA FROM 2011 TO 2019

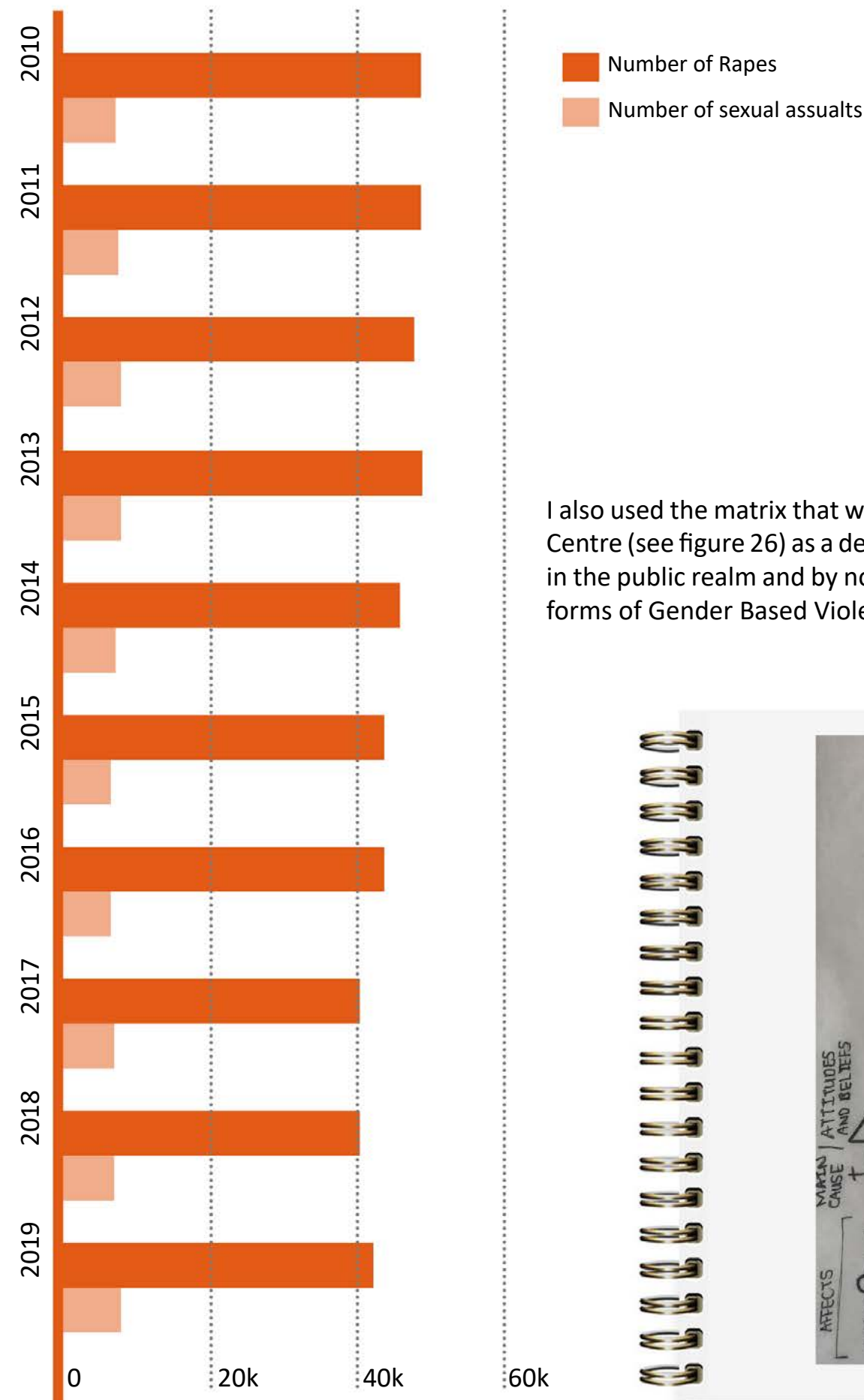


Figure 25: Gender based violence statistics in South Africa from 2010 to 2011; sourced (Stats SA); graph (Nevhutanda, 2020)

I also used the matrix that was adapted from the University of Alberta’s Sexual Assault Centre (see figure 26) as a design informative to try pin point what is distinctly frequent in the public realm and by no means does this neglect the ever present issues of other forms of Gender Based Violence that clearly exist.

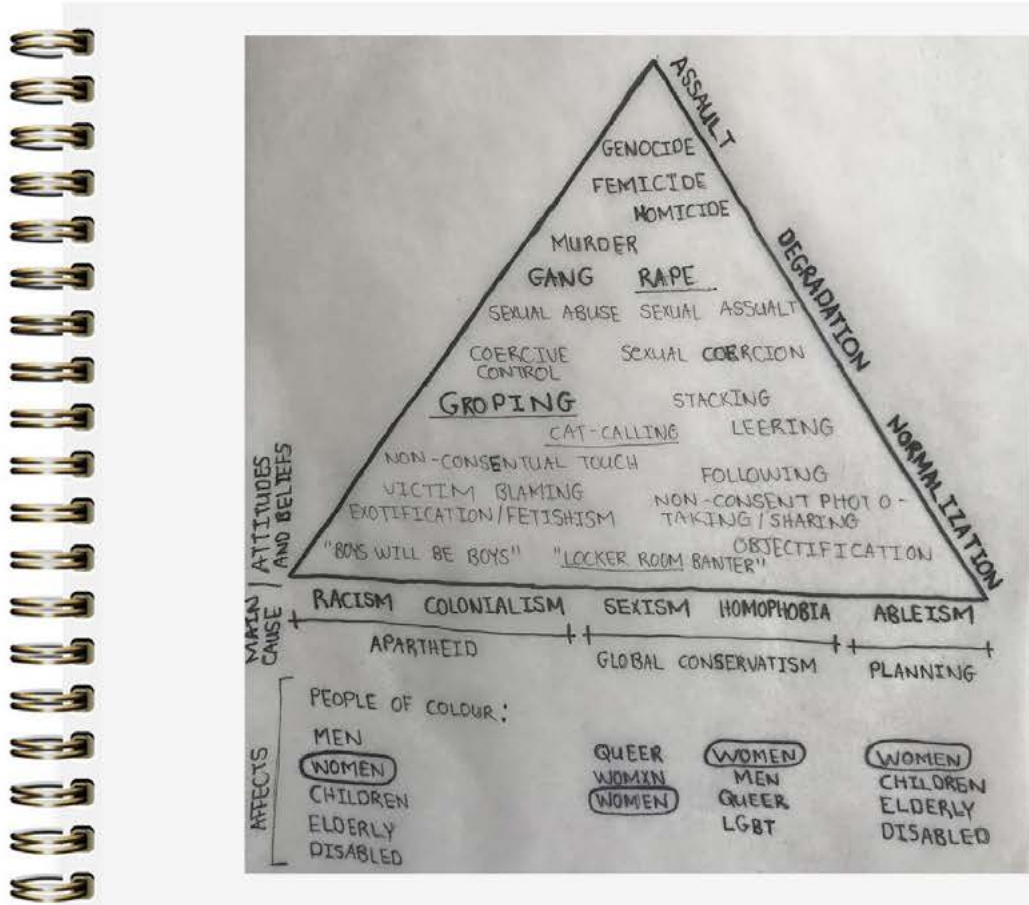


Figure 26: Matrix adapted from the University of Alberta’s Sexual Assault Centre; diagram (Nevhutanda, 2020)

2.1.3 FEMITECTURE



Figure 27



Figure 28

Figure 27 and 28: Women and children mobility in the built environment restricted in the 80s; photograph (Kate Hepburn, 1984)

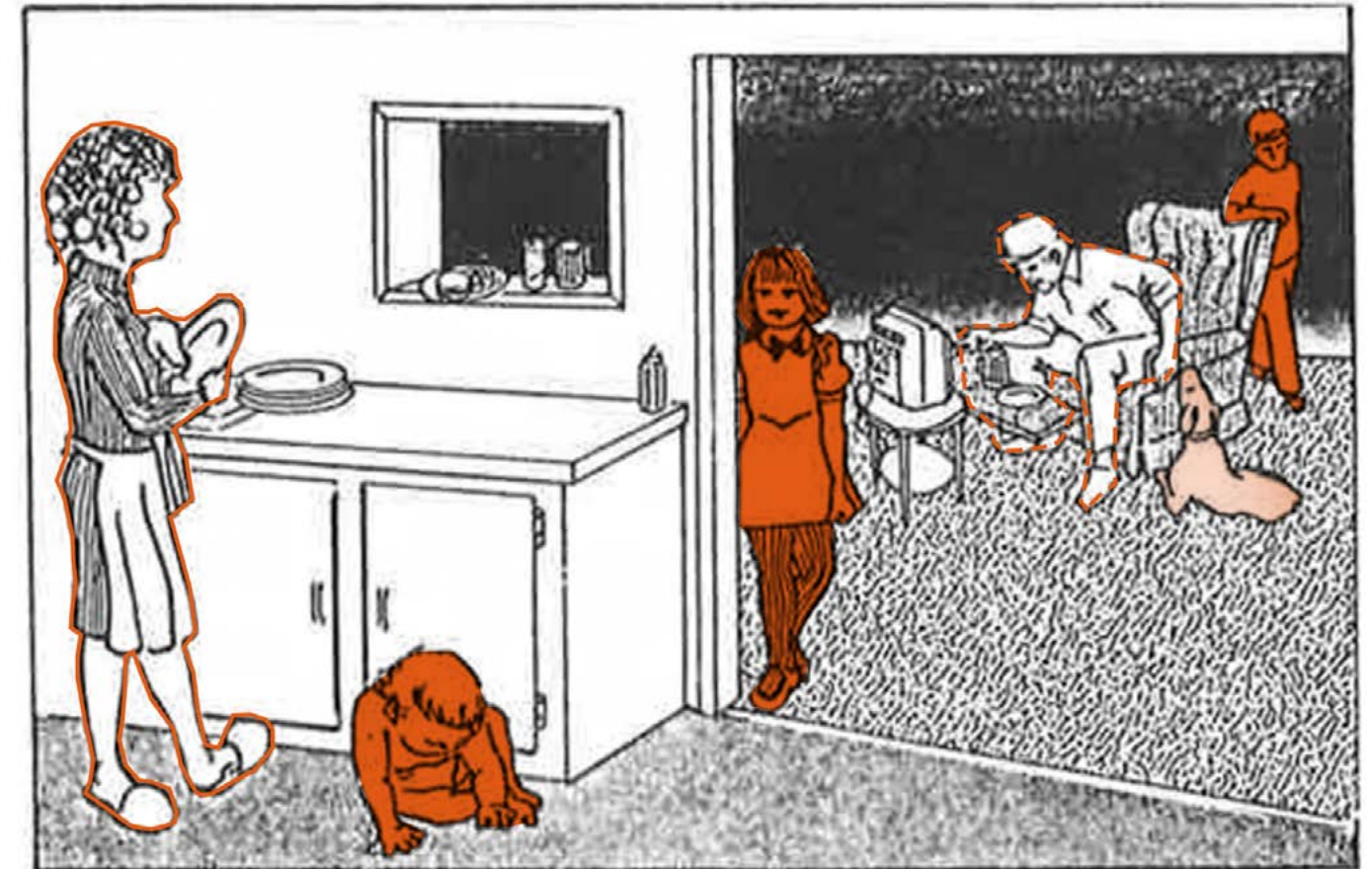


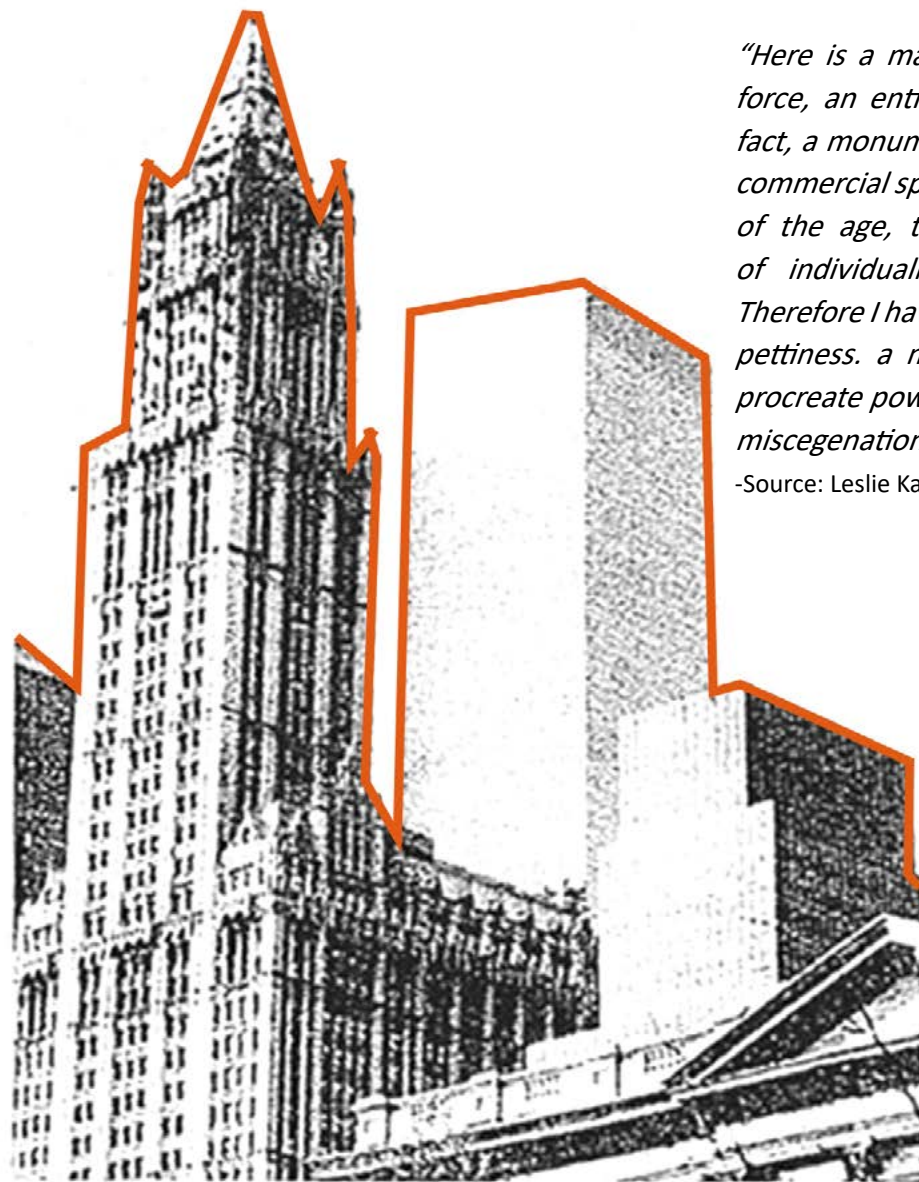
Figure 29: Stereotyped roles of men and women in the house; illustration (Ronald Graff)

The problem of social, political and economic inequality of women and its remedies are fundamental concerns of the planning profession. The built environment is not inclusive of women and young girls as those that design and construct these spaces have limited the visions and choices women have for living, learning and working (Weisman, 2000 pg1). Weisman (2000 pg2) argues that women have no inviolable space of their own as they have been taught to assume the role of a homemaker, housekeeper, and housewife, while men are offered places of authority, privacy and leisure (see figure 29). Although feminism has tried to pave the way for women, we find that these traditional and cultural roles still persist in design which then reinforces a stereotyped role of men and women in space.

Stereotyped gendered roles tend to be individualistic. The breadwinner (male) - father in this case comes home from work and relaxes with a glass of beer and watches his favourite sport while the home-maker (female) - mother prepares dinner. The children are back home from school and seem to be searching for someone to interact with (Weisman 1992 pg 164).

The built environment is a cultural artifact that is shaped by human intervention and intention. Weisman (2000 pg3) explains this environmental oppression towards women and how men have created the built environment in their own image (see figure 30) by using the Corporate Tower of the Wizards of Industry, and the Emerald City of the Wizard of Oz as examples. Women are perceived to not be interested in public spaces as both physical and traditional barriers exclude them and their children. Women find themselves in spaces where they struggle to get through a revolving door or subway turnstile while pushing their child in a stroller, or spaces where they cannot breastfeed their infants or have their diapers changed with the traditional assumption that they should be at home where they belong (Weisman 2000 pg4) - refer to figure 27 and 28.

Below is a building by Architect Henry Hobson Richardson. Architect Louis Sullivan who is often referred to as the 'Father of the Skyscraper' described this building in this way:



"Here is a man for you to look at, a virile force, an entire male. It stands in physical fact, a monument to trade, to the organized commercial spirit, to the power and progress of the age, to the strength and resource of individuality and force of character. Therefore I have called it, in a world of barren pettiness, a male, for it sings the song of procreate power, as others have squealed of miscegenation" (Sullivan, L.H., 1901).

-Source: Leslie Kanes Weisman

Figure 30: Skyscraper; photograph (Leslie Kanes Weisman)

The role of gender analysis grew in multiple industries including architecture. Research traces a feminist approach and debate to architecture back to the 1970s. However, it was only in the 1990s where architectural feminist theory gained strength and momentum. "The early stages of the architectural debate emerged out of the more overtly politicised discourse of feminism(s), where feminists of different persuasions took varying positions: some liberal, arguing for equal representation in architecture." (Rendell, 2012).

MAKING PLACE AND SPACE

The evolving understanding of feminist architecture is a process that allows its users space to create a place, throughout all its processes and outcomes.

"Moving from providing a gendered analysis of architecture and its multiple forms of representation to the production of work where subjects, selves, and spaces are understood to be constructed rather than represented. Critiquing architectural value systems as patriarchal, the notion that creating a building is a clean act of control and precision. That women have different priorities in the design of built spaces and the organisation of their production." (Rendell, 2012).

The interest is not in the product only but in the process itself of place and space making. Because of social constructs, women have adopted different value systems emphasising certain qualities such as "connectedness, inclusiveness, an ethics of care, everyday life, subjectivity, feelings, complexity, and flexibility in design," (Rendell, 2012). An architecture critical to its social and contextual settings suggesting that space is socially produced, and that space is a condition of social production.

'Spatial practice is the overriding ideal in feminist architectural projects, it has produced an understanding of practice as a process which occurs not only through the design of buildings but also through the activities of using, occupying and experiencing, as well as modes of writing and imaging which describe, analyse and interrogate' (Lefebvre, cited in Rendell 2012). This phenomenon is shown in Susana Torre Space Matrix. It demonstrates understanding and care for occupants paired with theoretical explorations. The result was two residential projects responsive to their occupants and the endless possibilities of dwelling.

HOUSE OF MEANING -SPACE MATRIX-

Architect: Susana Torre



Figure 31: Diagram showing Space Matrix concept; drawing (Susana Torre, 1981)

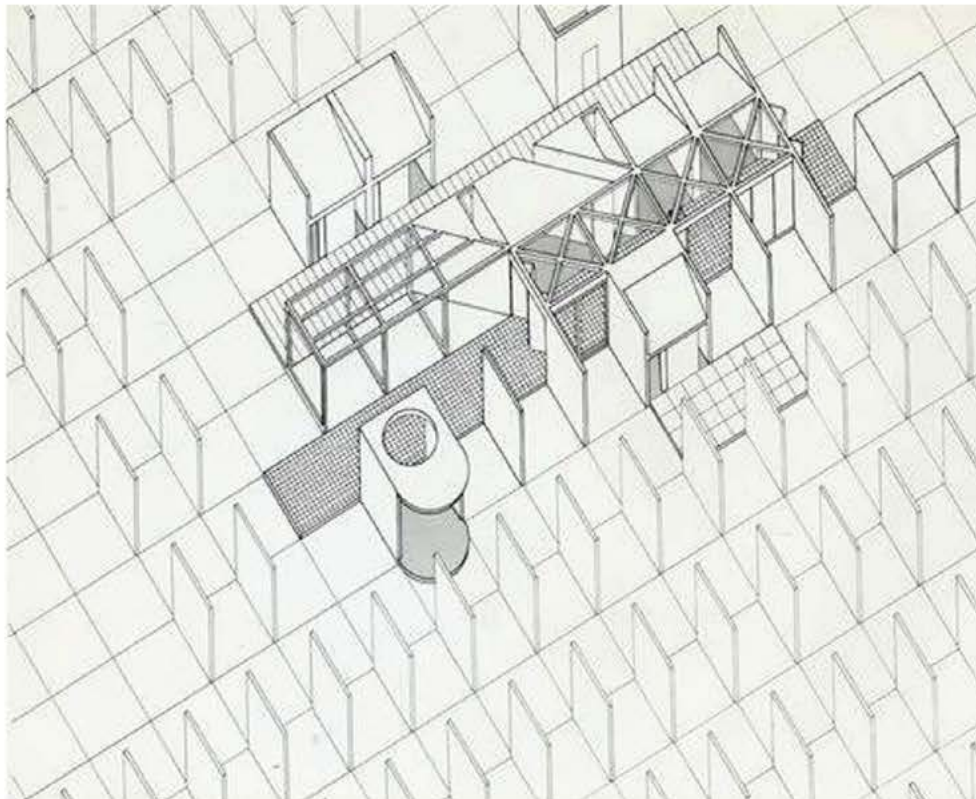


Figure 32: Diagram showing House of Meaning Space Matrix; drawing (Susana Torre, 1981)

Susana Torre argued that both the Victorian spatial arrangement of enclosed rooms and corridors and modernist open plan were inadequate for contemporary life. “The architectural design of an experimental residential centre focused on flexible and complex room arrangements, connections between indoor and outdoor spaces; open kitchens, laundry area, and play areas, cooperative cooking and homework.” (McGarth, 2018). She did not design The House of meaning as a specific house but to demonstrate the principles of Space Matrix. The basis of the Matrix is the following principles:

- Spatial continuity
- Hierarchy
- Multifunctional spaces and the architectural object in juxtaposition with the patterns of dwelling.

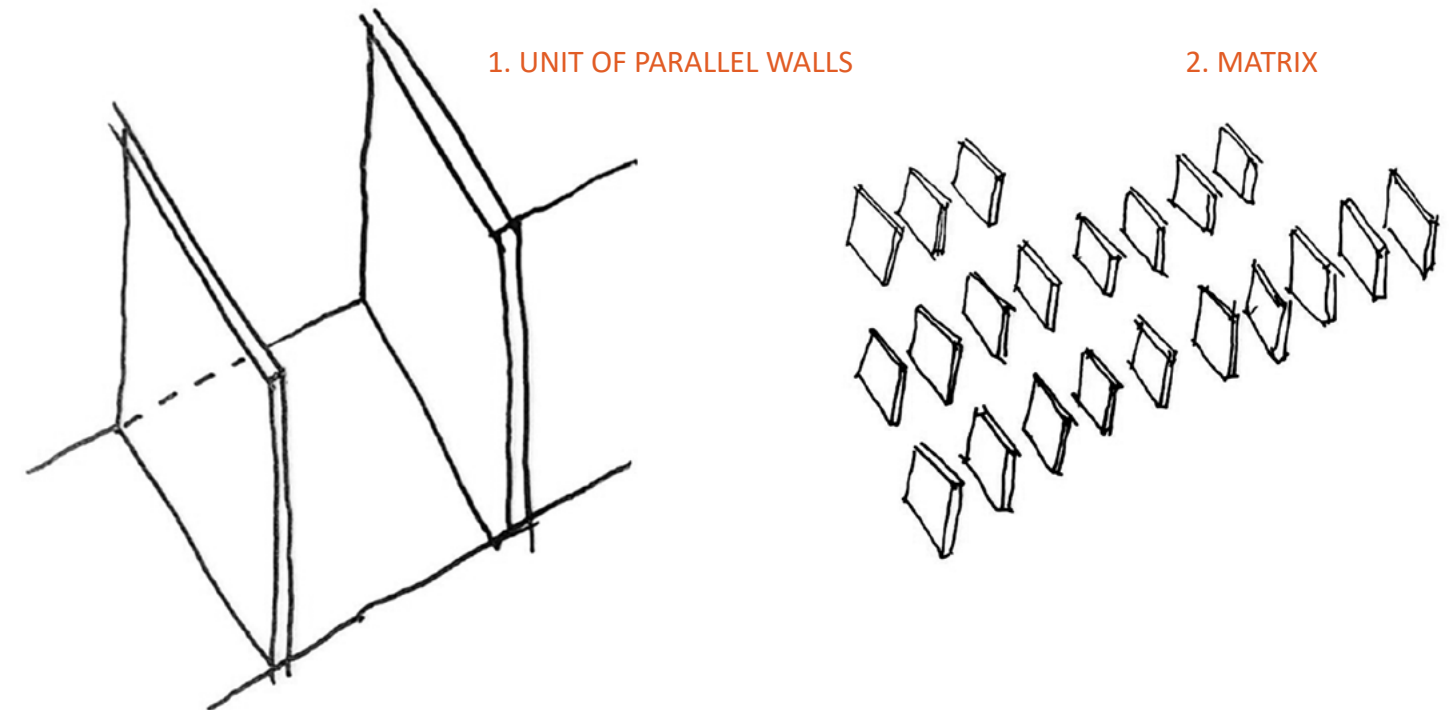


Figure 33 and 34: Analytical diagrams of House of Meaning; sketches (Nevhutanda, 2020)

The Wall is the primary architectural element. It distinguishes between outside and inside. It creates a boundary and support for shelter. The Matrix combines a series of fixed walls and a series of spatial incidents by placing walls in unusual places and using them to only suggest a potential to occupy space. Rather than using walls as a clear cut demarcations of specific rooms (Torre,S 1981).

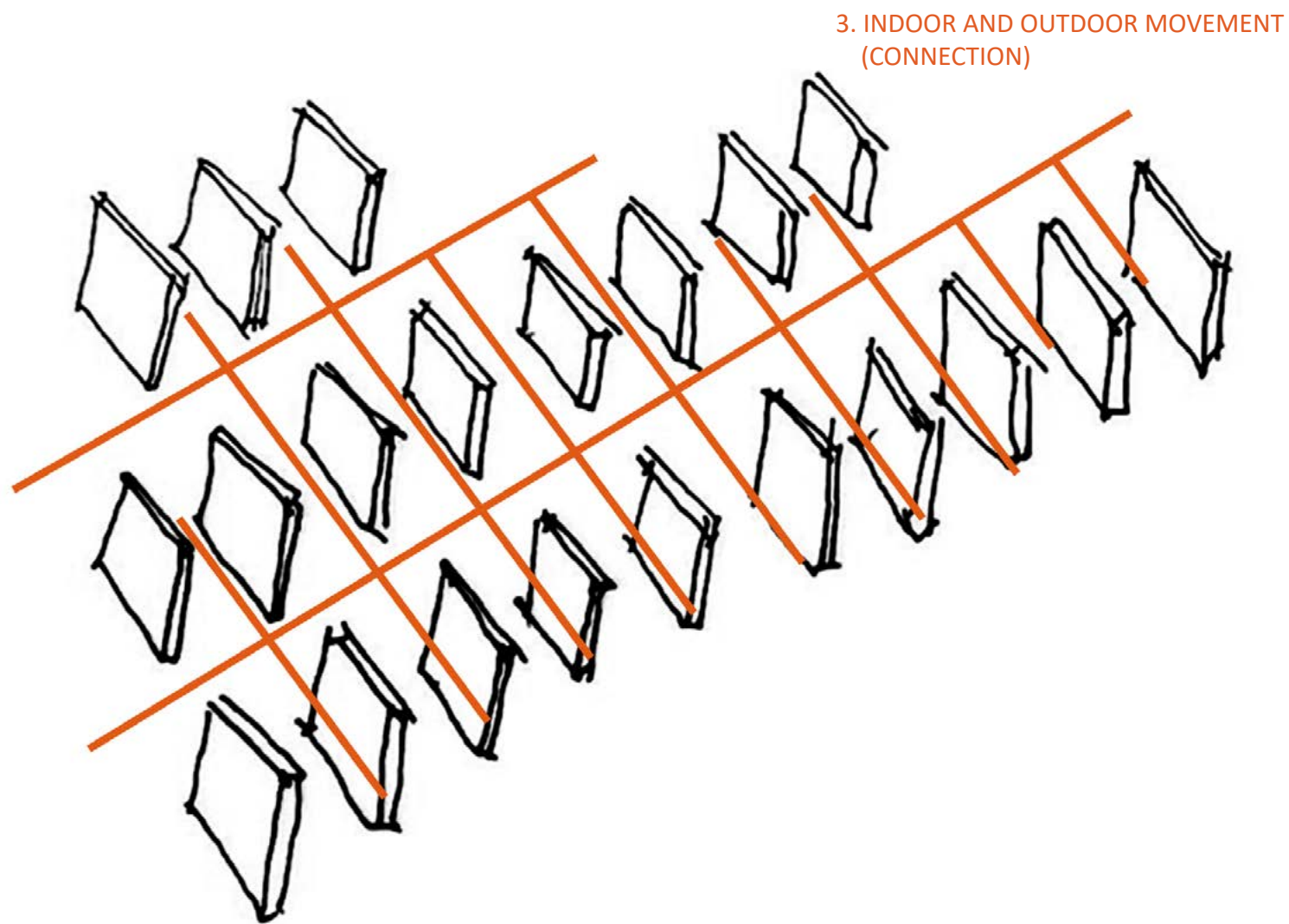


Figure 35: Analytical diagram of House of Meaning; sketch (Nevhutanda, 2020)

What happens in between the Matrix of walls is that there is a breakdown of conventional distinction between private and public, individual and shared and highlighting the possibility of opposites existing together and interacting to create a homogeneous space, capable of creating connections in all directions. This spatial continuity then does not reject the hierarchy of spaces which allow for physical distance & formal differentiation. Hierarchy is not explicit in plan and is rather clear in plans of different levels and the division of spaces at different heights (Torre, S 1981).

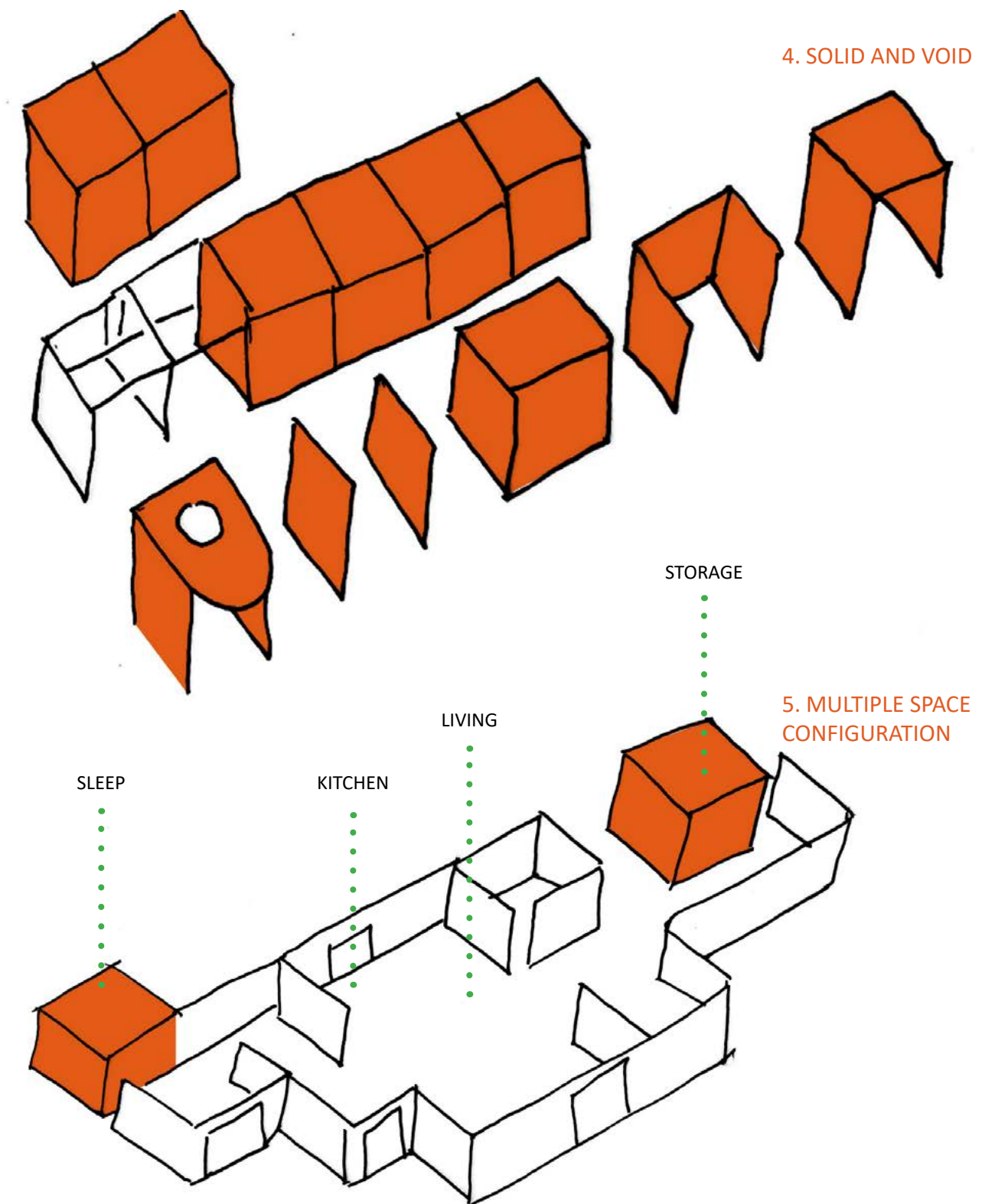
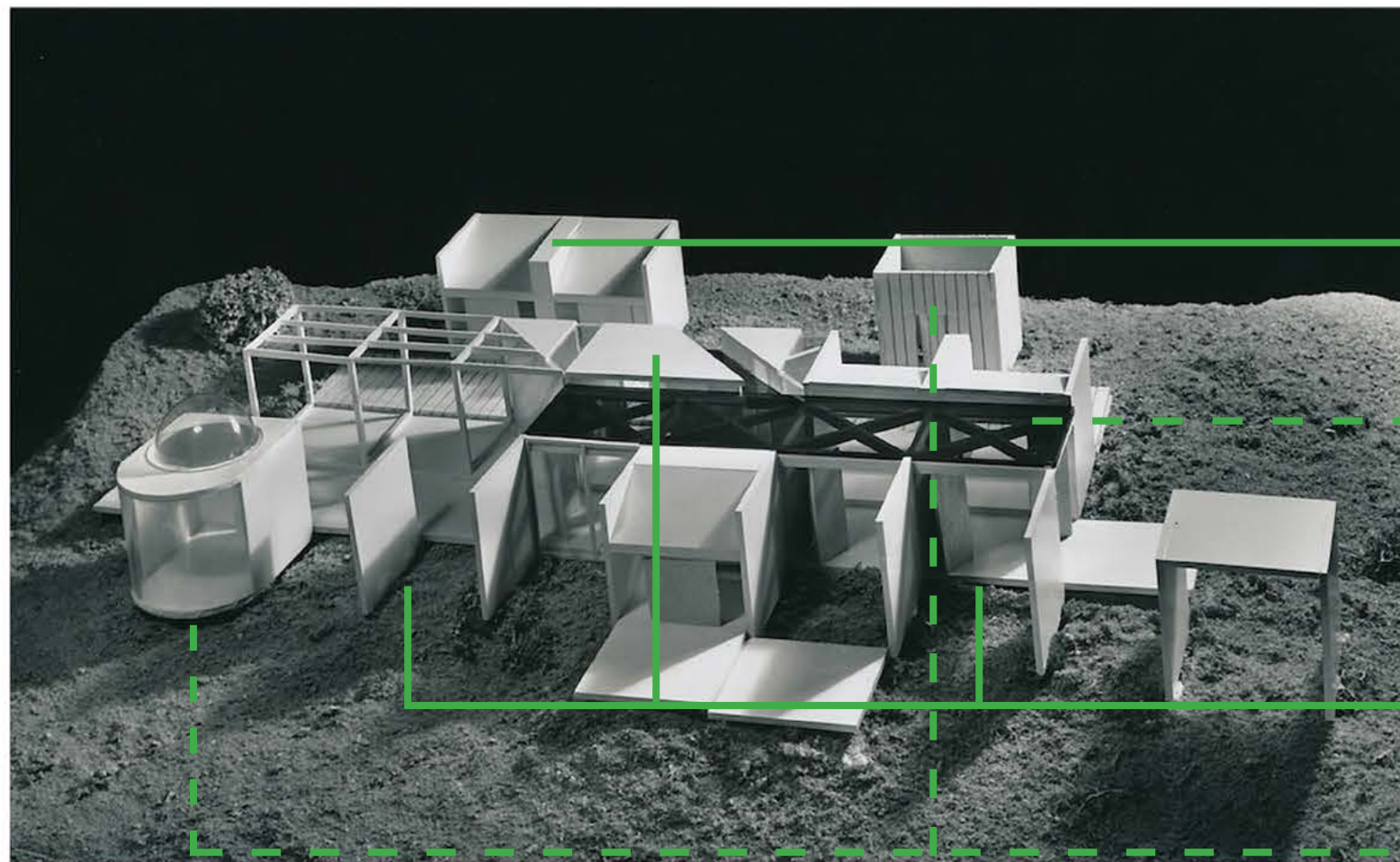


Figure 36 and 37: Analytical diagrams of House of Meaning; sketch (Nevhutanda, 2020)

Segregation of functions and single use provide unwholesome isolation between private, shared and public life. Close to the notion of multifunctional is close to the way people actually live, all these principles working as one can encompass other dwellings within it. The following two houses use the same principles outlined above but fulfill different needs and functions in different ways for different occupants (Torre, S 1981).



Joined pavillions = living quarters for frequent guests.

Living Arcade/Circulation

Portioned and dimensioned private rooms for multiple and interchangeable use. Partially/completely open to living arcade

Closed courtyard and sky lit room separated and disrupt spatial continuity

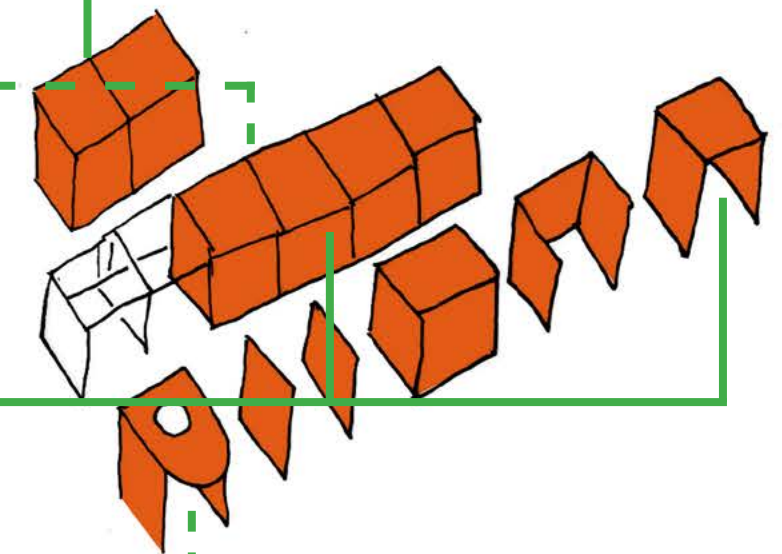
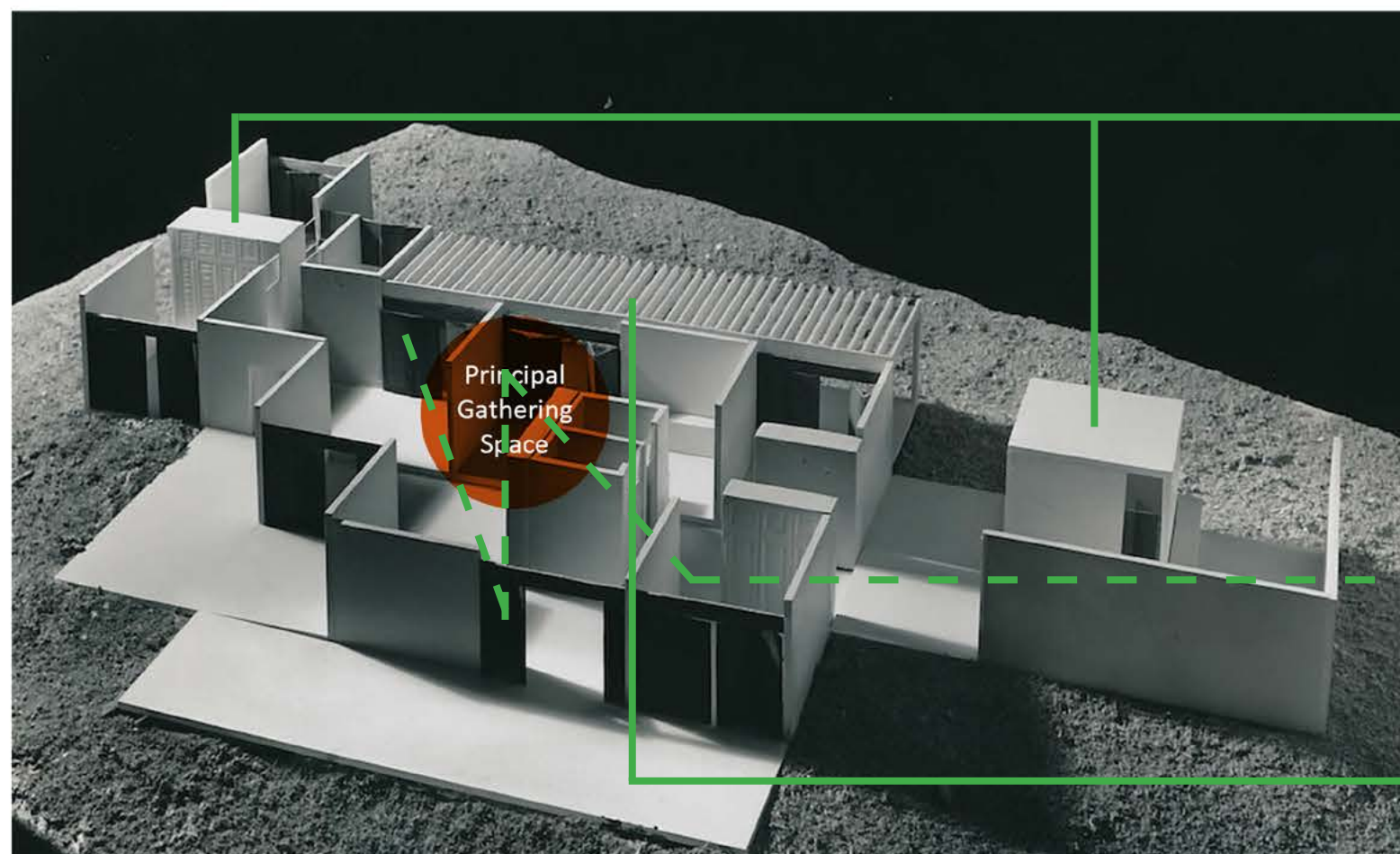


Figure 38: House of Meaning; source (Susan Torre, 1981)



Principal Gathering Space

Private rooms of each household paired at opposite ends of the house

Connecting space = three rooms in zig zag pattern that can be divided by moveable walls

Gallery is a secondary gathering space: living room, kitchen and private rooms open to it

Office and workshop for mother = Sapce for future additions to establish a third household

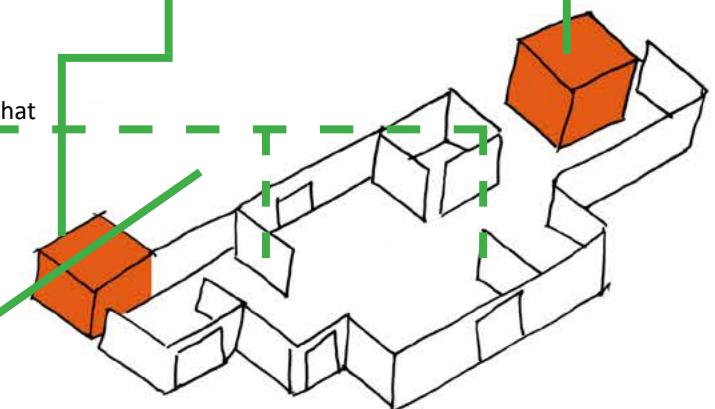


Figure 39: House of Meaning; source (Susan Torre, 1981)



2.1.4 LOCATING FEMINISM IN AFRICA

Gender being a western construct is an eminent debate when locating Africa in the feminism debate. Oreyonke Oyewumi wrote in her book - 'The Invention of Women': "As the work and my thinking progressed, I came to realise that the fundamental category 'WOMAN' — which is foundational in Western gender discourses — simply did not exist in Yorubaland." (Oyewumi, 2001 pgIX). The book interrogates the notion of "WOMAN" through the lens of Yoruban cultural history (The Yoruba were the dominant cultural force in Southern and Northern, Eastern Nigeria going far back to the 11th century), comparing it against the "cultural logic of Western social categories based on an ideology of biological determinism" (Oyewumi, 2001 pgIX). Suggesting that some African societies should not be dissected and viewed against these constructs.

On the contrary, writers such as Judith A. Byfield in 'Taxation, Women and the Colonial State' reveal the marginalisation of women in Nigerian society. An example of this is when Alake, king of Egaland in Nigeria wanted to impose taxes on women and were not otherwise allowed equal representation in society (Msafropolitan, 2012). This led to the women's tax revolt which was led by Funmilayo AnikulapoKuti (Chief and Educator). It is also with no doubt that certain South African old traditional practices enforce male dominance, comprising the equality and safety of women in society such as no rights in marriages and domestic violence (Pretorious, E 2006). However, what this highlights is that although some African cultures might have not based social hierarchies on gender, it may be because of colonial influences that gender constructs exist, hence decolonisation is a key resistance movement that aligns with feminism through the 'intersectionality theory'. Dissecting societies in African spaces through the lens of feminism is of importance. Debating on whether feminism is in African history does not take away from the fact that African societies rank lowest in the global gender equality index and have some of the highest numbers of violence and marginalisation of women, especially in South Africa (EWN, 2020).



2.1.4.1 PAN AFRICAN APPROACH TO ARCHITECTURAL FEMINISM

In trying to understand theories of architectural feminism, I had to understand its cross links to other theories, theories such as power (politics) and criticality. In Africa, an extra layer and the most important would be that of colonisation and capitalism. Capitalism in Africa cannot draw separation from Colonialism. Colonialism in the context of Africa is the practice by which Europeans reached positions of economic dominion through capitalism and economic practices from the 15th to the 19th century. Although hierarchal structures were present in tribes “Systems of class and differing methods of hierarchical ranking have existed amongst human societies for thousands of years” (Lokko, 2000 pg 18). The architecture produced was not of exclusivity as a resultant of capitalism. “Writers traveling in West Africa and the region historically known as Western Sudan did not record the kind of underprivileged housing we observe today in African cities.” (Elleh, 2013).

Transformations of African architectural typologies that result from ‘colonial capitalism’ highlight the ideas of elitism, exclusion and separation. Therefore, included in the exclusion and separation is the marginalisation of women. Numerous African spaces hold the legacy of colonialism, reflected at multiple scales. Colonisation as patriarchy, self-gain, capitalism, one group having power over the other and certain spaces, with this comes the embedded hierarchies of society, which places black women at an unequal plane (Musisi, 2017).

Expressive of rigidity, separation, control and often obtrude but still existing in polarity with how women move and express space and place, what is problematic is these natural moves and expressions fall under the term ‘informal,’ and cannot be used as templates.

“This is reflected in our use of urban areas, with the hierarchical tension between spaces such as markets and malls, and between modern African hybrids such as mobile money kiosks, and banks. Thus the most marginalised [by design] of the populace become a living map of our needs in the hybrid state that is our existence.” (Musisi, 2017).

Therefore architectural feminism in a pan African setting tries to be a “more inclusive development dialogue that transcends generation, class, and borders, for a manifested whole, prioritising the lived reality and not the ideal”

2.1.4.2 ARCHITECTURAL FEMINISM IN SOUTH AFRICA

Instead of looking at projects that are literal in their intentions of being a feminist building, I look at and try to understand how women occupy certain spaces and reveal their overlooked contribution to principles of feminist architecture in South Africa.

-To highlight that the role of the occupier is in creating long-lasting, responsive architecture is important-

In South Africa, the most obvious record of women contributing to architecture would be Ndebele women in traditional domestic architecture. However, it transcends beyond the perception that women create architecture as art in homes. In fact, predominant in creating Indigenous African architecture is the role of the whole community in creating their own spaces, contrary to patriarchal architectural traditions, where the architect designs and produces architecture as a solo artist.

“This argument reinforces calls for more creative, engagement with the lived spatiality’s of global connectedness.” (Matsipa, M. 2016).



Figure 40: Letty Ngoma painting the prefabricated market stalls in KwaNdebele in South Africa with her child on her back; photograph (David Goldblatt, not dated)

Matsipa (2014) outlines in her research - 'The Order of Appearances' the agency of marginalised urban actors by looking at black women in Johannesburg South Africa braiding hair on the side of streets and sidewalks and their relationship to architecture and town planning. Matsipa follows and interviews a hairdresser by the name Nomsa, detailing her choices of sub-letting a space in House X, in one of many re-purposed apartments and office buildings in the inner city. She rents a cubicle despite charging the same amount for her services compared to her sidewalk counterparts. The preferences of customers, quarrels with ground floor shop owners are her reasons but above everything the possibility of being arrested by the Metro Police.

"Nomsa's silences and evasion of questions about interpersonal violence in the inner city, suggests her refusal to being transformed into an embodiment of otherness, but also that the city is a highly fragmented social space that is patterned by threats of (unspeakable) interpersonal, gendered violence. Ultimately, these silences also register the precocity of profit margins for her, in this business location. She has very limited space to maneuver, especially in a context where the encroachments of inner city redevelopment and place increasing pressures on available street trading spaces. These encroachments intensify competition for trading space, they also create conditions for pricing wars, amongst different classes of traders i.e. those who work exclusively on the street and those who rent space in buildings." (Matsipa, 2014 pg 123).



Figure 41: Women braiding hair on Kerk Street in Johannesburg; source (2Summer, 2013).



Figure 42: A Women selling mielies (corn) at the Corner of Rissik Street in Johannesburg; source (2Summer, 2013).

URBAN SPACES AS ANTI-ARCHITECTURAL FEMINISM

Project: Lillian Ngoyi Square

Location: Pretoria, South Africa

Lillian Ngoyi Square at face value may represent an architectural feminist building, however, in its design principles and outcome it may have missed the theory of occupier as the spatial agent. The square has been successful in its representation and memory of the late Lillian Ngoyi together with the women responsible for the women's march in 1956. The architects also succeeded in an imagination of a more inviting square with the use of softer textures and materials, increased trees and seating. The question I present is; what happened to the informal traders that were once on the periphery of the square? I remember passing by on my way to church during the construction of the new square and thought of the removal of informal traders as temporary. Passing by a few months later after the opening of the square, I felt a sense of vastness and openness, as though something was missing.



The choice to analyse the square was to highlight the few (as I thought) feminist architectural projects that exist in South Africa. As I analysed this project, it was apparent of the untruthful appearance of what we may consider feminist architectural projects which is often influenced by political power or capitalism.

Till present, the periphery that was once made up of informal traders have not returned and those who have place themselves closer to the opposite side of the street. It seems as though the new design has emulated a buffer between what's 'new' and 'old', 'everyday occupants' and 'visitors'. Regimes of representation make up a new domain of politics in post-apartheid Johannesburg (Matsipa, 2014 pg6), as with many urban renewal projects seen in Johannesburg, this design missed an opportunity to allow informal traders and the closest occupants to filter into the design. Ironical to the purpose of the building, it missed the true principles of architectural feminism.

LILIAN NGOYI SQUARE BEFORE RENEWAL



Figure 43: Lilian Ngoyi Square before renewal; photograph (Nevhutanda, 2015).



Figure 44: Analytic diagram of Lilian Ngoyi Square before renewal; sketch (Nevhutanda, 2020)

LILIAN NGOYI SQUARE AFTER RENEWAL



Figure 45: Lilian Ngoyi Square after renewal; render (CO-ARC International Architects, 2017)

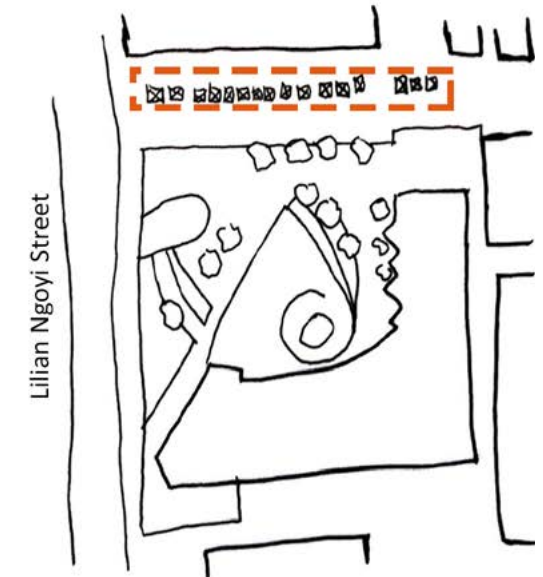


Figure 46: Analytic diagram of Lilian Ngoyi Square after renewal; sketch (Nevhutanda, 2020).

At the end of her study, Matsipa suggests directions for future research stating a “meaningful discussion of gendered work and urban informality will require further research, in terms of the broader context of gendered work in South Africa and globally as well as an engagement with key feminist debaters about such processes.” (Matsipa, 2014 pg139).



2.1.5 FEMINISM TODAY

“Feminism theory was not only looking for political, economic, and social rights for women but wanted her to perform in all domains and more importantly have a role in life and society” (Devaky, E S. 2006). Today, people may find it easy to dismiss the need for feminism because they believe the issues addressed by feminism have been dealt with. The special right, advantage, or immunity granted to man and woman would have those say ‘women have equal rights’, but do they really?

“Although South Africa has come very far as a constitutional democracy which is based of progressive values that include freedom, human dignity, equality, non-racialism and non-sexism, we still aren’t quite there as it remains far from being the paradise it promised to be to women” (Tsoaledi Thobejane, 2015). It is for this reason that I believe that feminism is still important today

Be it acknowledged:

In my opinion, patriarchy remains deeply entrenched in the lives of women as they continue to be discriminated against. Mr Mafundzwahini, a friend to my father once told his wife to stay at home and look after the children while he went out to work. These roles still persist as some men still believe that women should not have jobs and should simply stay at home, cook and take care of the children. Although there is nothing wrong with women taking up these roles, the problem is when society thinks that is all women are capable of doing and nothing more. Since the point of inception, women have always been capable of being technical (see figures 47-52 below).

JANE SEMANTA



Figure 47: Jane Semanta weaving a basket with her hands in Botswana; source (Darley's Travel Blog, 2011)

Ethnicity: African

Location: Motlhabaneng Village, Botswana

Jane Semanta is one of Botswana's top basket weavers and has her own store where she sells and allows women in the community to get together and learn how to weave baskets, mats and other items that can be woven. In the year 2010, the government of Botswana had sponsored her to go on a trip to Ohio to participate in the annual Midfest International, a cultural event that features international dance, music and food. While in Ohio, she was able to demonstrate the techniques and capabilities she had for weaving and displayed her goods to sell (Darley Newman, 2011).

ESTHER MAHLANGU



Figure 48: Dr Esther Mahlangu at work; photo (Courtesy of Melrose Gallery)

Ethnicity: African

Location: Mpumalanga Province, South Africa

Mahlangu is a 85-year-old grandmother who followed traditions passed down from her mother and grandmother and learned traditional Ndebele wall painting and beadwork. She is an expert in executing murals using a range of colour paints that emerged in the 1940s. "In the year 1986, researchers came to South Africa from Paris to document traditional arts and saw her paintings on her house and then invited her to create murals for an exhibition of international contemporary art. Her capabilities opened international doors allowing her work to appear in exhibitions in more than a dozen countries. She was the first artist and first black women to take part in the BMW Art Car Project. With a goal to preserve her culture and heritage, she runs an art school in the backyard of her home in KwaMhlange in Mpumalanga South Africa. When she is not traveling she teaches the youth in the community in the traditional style of Ndebele design how to mix pigments and paint straight lines, freehand without sketching using their fingers and chicken feathers" (SAHA, 2019).

ESTHER NEVHUTANDA



Figure 49: Ester Nevhutanda making traditional vanda beads under her Veranda; photograph (Nevhutanda, 2020)

Ethnicity: African

Location: Limpopo Province, South Africa

My Aunt Ester grew up in the Village of Dididi in Limpopo South Africa. Her grandmother used to make traditional hand beads worn in the Venda culture. She passed this technique down to her mother who then passed it down to her. During one of our talks in December 2019 when I went down to Limpopo to visit my grandmother, she demonstrated how she makes the beads and told me that when she was growing up, bead work played an essential part in the ornamentation of their body. She makes these beads and sells them to women in the community to wear with their Venda traditional attire. Because she is older and not very busy, she is open to teaching young girls who want to learn how to make these beads as she was taught.

FLORAH RANDELA



Figure 50: Florah Randela holding pot that she made and decorated; photograph (Louise De Waal, not dated)

Ethnicity: African

Location: Mukhondeni village, South Africa

Florah Randela is a resourceful and determined potter with quick and precise fingers. She makes clay pots in the most incredible and uncomplicated technique and decorates them with the traditional geometric Venda designs by using oxide that is sourced from Zimbabwe and graphite. In an interview with Louise De Waal, she says she had a vision of passing on the skills of traditional Venda pottery making when she started working with a few ladies from her village and this is when she formed a collective enabling each female potter to earn an income from their own creations (not dated).

JENNIFER SIBANDA



Figure 51: Jennifer Sibanda laying bricks at 94 Juta Republic in Johannesburg; photograph (Nevhutanda, 2017)

Ethnicity: African

Location: Kempton Park, South Africa

Jennifer Sibanda is a 26 year old young lady currently doing her BAS Honors at the University of Witwatersrand. Her passion of designing and bringing things to life was sparked by her passion for construction when she watched members in her Johavahs Witness Congregation build Kingdom halls. She always wanted to be a part of them and since the year 2017 she started volunteering to help build kingdom halls across South Africa as a way of giving back to her congregation. This skill helped her when she was doing her undergraduate diploma at the University of Johannesburg in Architecture when her class was required to build a wall at 94 Juta Republic in Braamfontein, Johannesburg.

MUKHETHWA NEVHUTANDA (Researcher)



Figure 52: Researcher laying bricks at 94 Juta Republic in Johannesburg with her classmates; photograph (Jennifer Sibanda, 2017)

Ethnicity: African

Location: Midrand, South Africa

Making and being technical was part of my childhood. Although my mother is now a teacher, I grew up seeing her sewing clothes in order to make extra income. My grandmother, Esther Mafenya Mphaphuli was always my source of inspiration because I always saw her finding ways to make things to sell. Also growing up very closely to my Aunt Esther who makes traditional Venda beads sparked a passion in me of designing and making. I am the woman I am today because of all these women in my life and it is undeniable that black women are capable of being technical in their own terms.

Despite women making up just over half of the population in South Africa (Plecher, 2020) and all the national conversations that go around about gender diversity in tech, women remain relatively underrepresented, underpaid and often discriminated against in the technical industry. Although the technical industry has a diversity problem, it is black women in particular who are not well represented. Due to the lack of research done in this topic, the researcher has been unable to give the exact numbers, but here is what Shani-Leigh Christiansen saw and experienced when she started her new job at a Colorado technical company. It was about 7 months into the job when she couldn't shake the feeling that something was missing, she was happy with the work and she loved what she did, it was what she saw around her that stood out - or rather, what she did not see. She was one of the very few black females in the company, none of whom held management positions (Brian Nordli, 2019). It is hard to see yourself grow in a space when you are not well represented, the lack of representation has the potential to leave one feeling dis-empowered without anyone to look up to. In light of this, it is important that black females build communities of their own where they can express their technical capabilities.

The late and former president of the Republic of South Africa Nelson Mandela once said: "Education is the most powerful weapon which we can use to change the world" (1990). As a mandate to design a technical institute for black females, my idea is that this becomes a space that empowers young black girls and women and allows them a place and role in society as they work on their technical capabilities and transition into an evolving economy, and through the process of making, they learn what it is and means to be young black girls and women. Seeing that education includes methods of teaching, training, and storytelling, the next section of this domain will explore the idea of the 'embodied learning', looking at the idea of making as a metaphor of making the self. In light of this, I will start the next section of this domain with a short anecdote of the impact that learning through making has in creating guiding principles of establishing a sense of self and identity (Ingold, T. 2013).

**"EDUCATION IS THE MOST POWERFUL WEAPON
WHICH WE CAN USE TO CHANGE THE WORLD"**
-Nelson Mandela-

2.2 EDUCATION

For young black girls and women, traditional and value systems have had a huge impact on career choices, especially of those that come from rural communities with well entrenched norms on the role of women in society.

Considering the stay at home restrictions in South Africa and across the globe, it was through a whatsapp call that I managed to engage with Lusani Phidane (see figure 53) who granted me the permission and consent to write this anecdote.

Phidane is a 23 year old young women motivated by dreams of a better life. She hails from the township of Soweto in the province of Gauteng in South Africa. Like many young women in her community, Phidane is accustomed to a life of making ends meet with the resources available to her. With her father being a labourer and her mother a domestic worker, she did not pursue her tertiary education due to financial reasons. Her next best alternative was to find a job to sustain the daily needs of her family and contribute to the family income. For Phidane, finding a job was a challenge on its own as she lacked basic skills. Armed with a high school education from a school in Soweto, the best that was available for her was to work in a retail shop which she did for 2 years. Phidane says that knowing how many young girls in her community face the humiliation of missing days of school due to their periods as they cannot afford sanitary pads has entrenched her desire to join the Dignify Her Foundation, to learn how to make sanitary pads and give them out to black girls in her community, in addition to coming up with technical solutions for issues facing women in her community while making a career out of it granted the opportunity.

That said, this story and many more untold stories of women who are more than capable of being technical goes to show that women can be at par with men when embarking on any career and that societal stereotypes and attitudes need not and should not hinder women from fulfilling their full potential leading to their full emancipation.

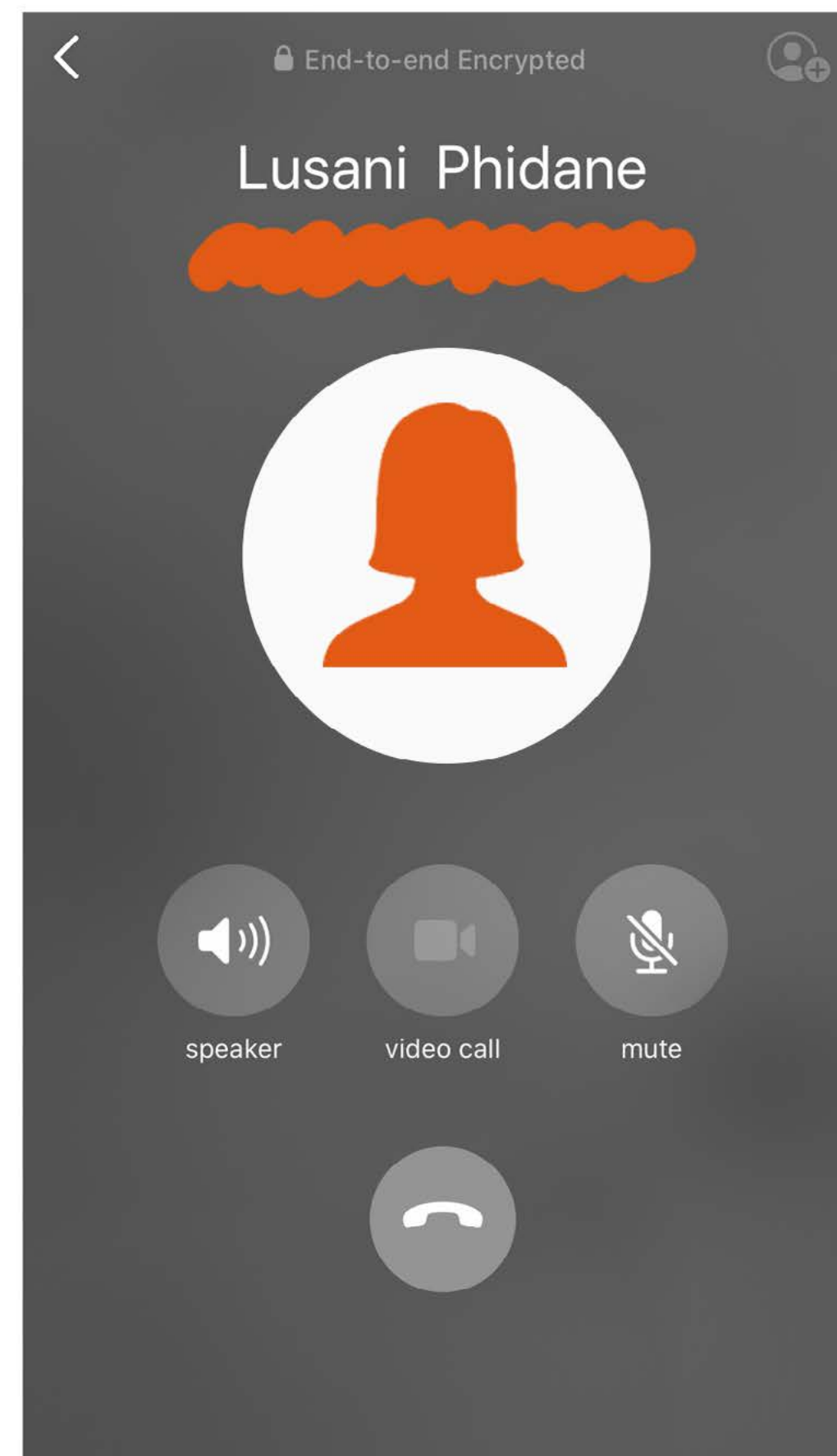


Figure 53: Screenshot of a whatsapp call between Lusani Phidane and Researcher (2020)

INTRODUCTION

We are born! We eat, we walk, we talk, we play, and most importantly we are taught and we learn; then we explore and respond. These are the defining moments of our livelihood that constitute to who we are and who we could possibly become. We are all different in some way or another, however, certain things we are taught over a period of time in the progression of our lives.

In my opinion, teaching and learning, be it skills, basic development, or a literate education, is an action required in order to support our livelihood. Let us not deny women the opportunity to learn and the spaces to teach them what they want and need to learn. One can only benefit from exposure to others. It is a shared belief that learning and development through exchange is vital for the future of an individual. This is my architectural contribution to recognising the need for a technical institution for black females that empowers them spiritually, socially, cognitively, and economically, while the education system typically looks at the cognitive and economic aspects of an individual.

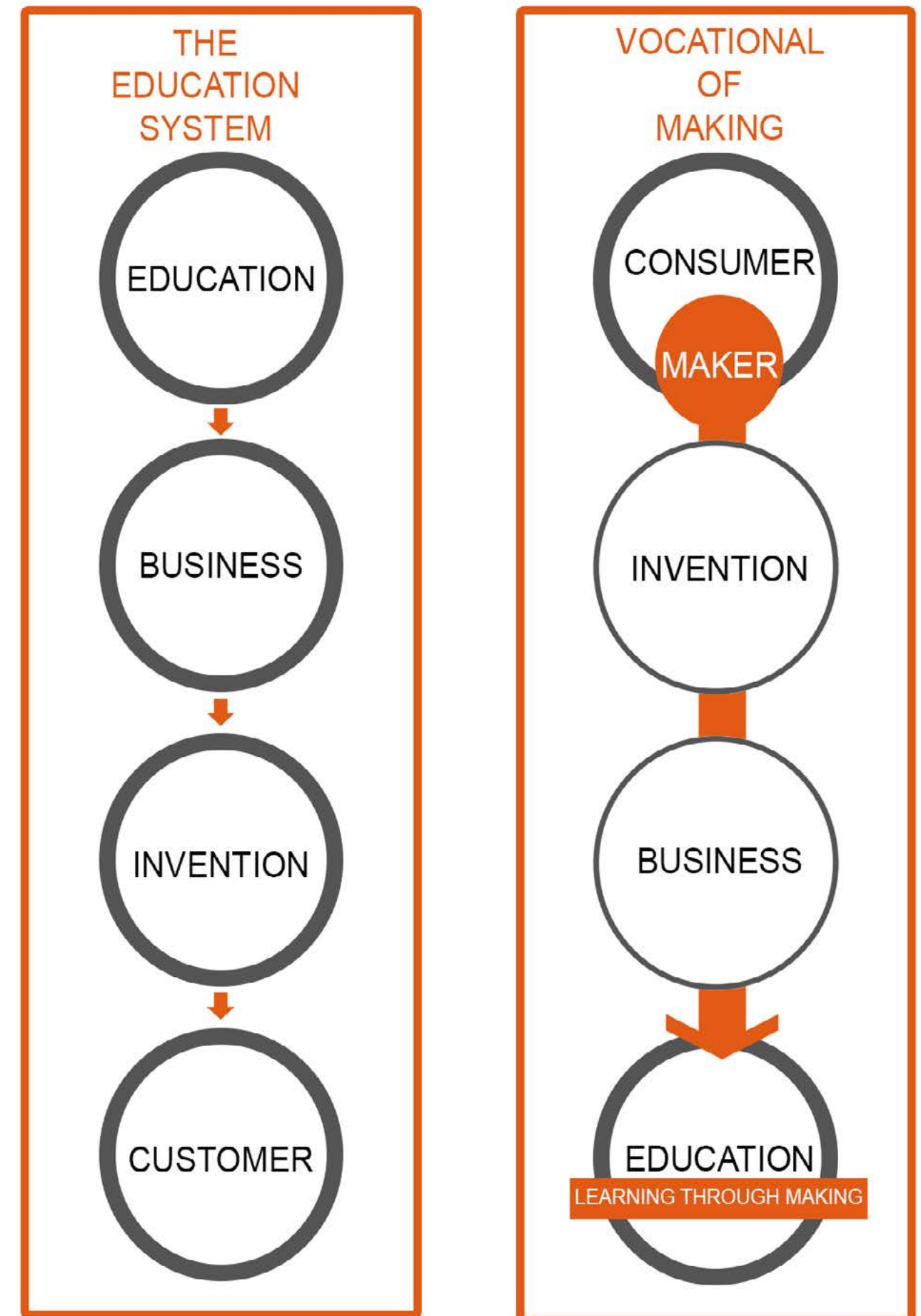


Figure 54: The current education system vs a new and imagined education system in South Africa; diagram (Nevhutanda, 2020)

2.2.1 HISTORY OF EDUCATION IN SOUTH AFRICA

Before South Africa became a democratic nation in 1994, the apartheid government created a context of inferior educational opportunities for black people (the bantu education act) which in most cases affected black females the most. After 1994, the democratic government, African National Congress (ANC) faced challenges to address the disparities that existed in South Africa, challenges that hinder black people from becoming an educated nation (Kem Ramdass, 2009). The footprints of apartheid remain evidently present in South Africa's Township schools, as townships were used as a method to segregate black South Africans, locating them in the outskirts of urban areas. Despite the end of apartheid, townships still continue to isolate black South Africans from adequate education. The South African Schools Act of 1996 established a precedent for equal education among pupils of all races and gender, but the overall marginalisation of township schools does not allow for true equality (Kem Ramdass, 2009). In today's South Africa, disadvantaged black students who come from the township disproportionately lack access to high-quality education and basic school resources and the gender inequality is to a large extent of patriarchy (Kem Ramdass, 2009).

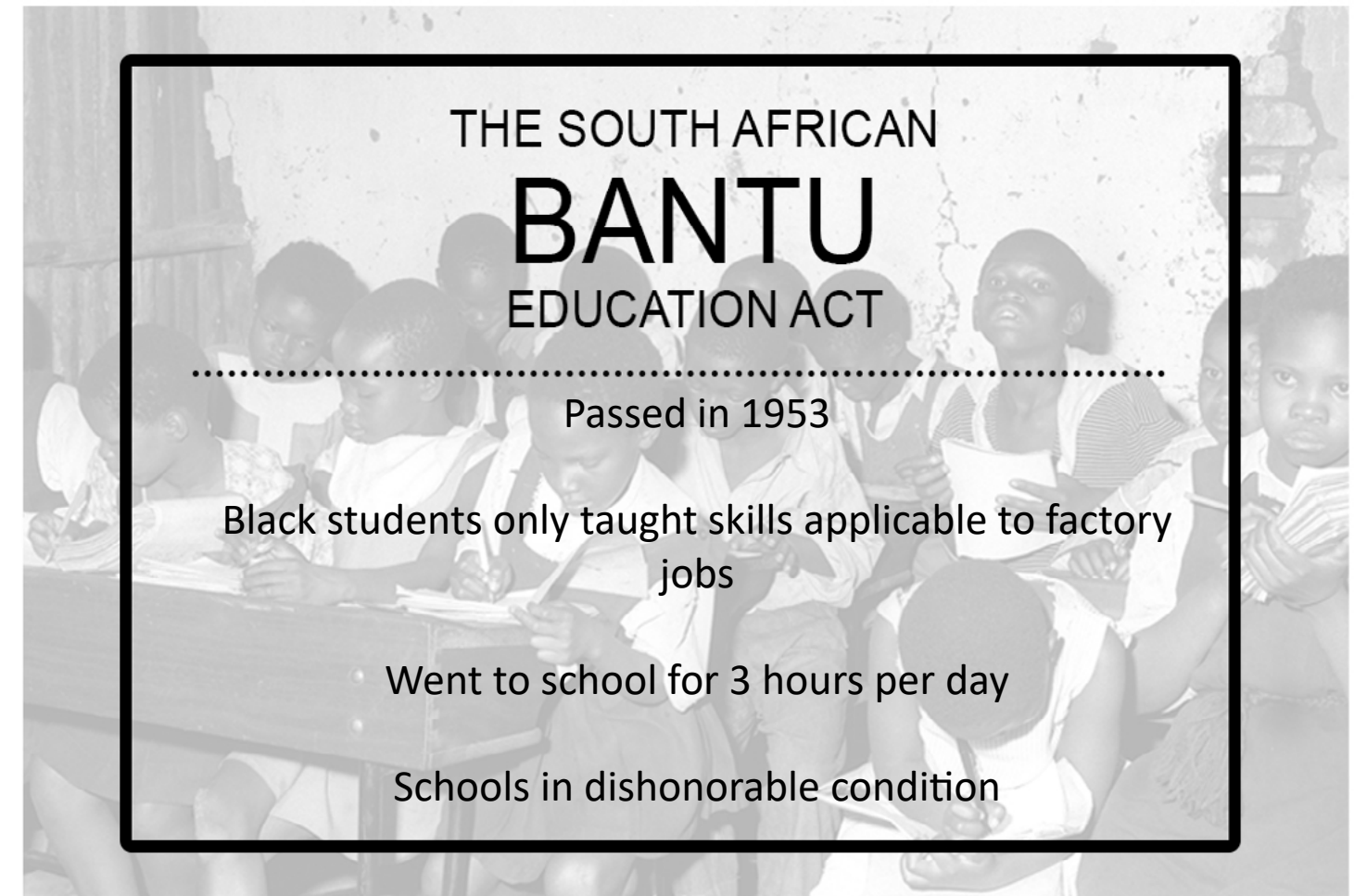


Figure 55: An 'illegal' school set up by the African National Congress Party in defiance of the Bantu Education Act, 1955; source (SAHA, not dated)



2.2.2 THE IMPORTANCE OF EDUCATING A BLACK CHILD/WOMAN

“If you educate a man you educate an individual, but if you educate a woman, you educate a nation”

(African Proverb)

By looking at the Techno-girls project as an example (see figures 56-58), it supports and guides young girls in making informed career and life choices. The project was brought by Unicef to South Africa in 2009 and it exists to deal with South Africa's skills shortage in science, technology, engineering and mathematics by encouraging girls from Grade 9 onwards from disadvantaged communities to choose these subjects in high school, steadily increasing the number of young South African females entering the science, technology and engineers sectors (Gabi Khumalo, 2013). With this being said, my research will further explore this through the idea of embodied learning as the emerging role of learning through making in education.

The major emphasis on the education of South Africa is to contribute to an emerging democracy, especially one that is equal and inclusive of all genders and races. This means that girls and women have equal learning opportunities as their male counterparts. For many years, women were kept from education and learning because knowledge would make them question the accustomed power of the conventions and beliefs which held them in their place; and it would show them how to achieve their freedom, and might even encourage them to assume leadership roles. It is only in recent years for this reason that feminist researchers and writers have emphasize on the importance of education in a females life.

Through my lived experience, I have come to terms with the fact that an investment in a girl child's education benefits the whole of society. As a young black female myself that grew up in the dusty roads of Vondwe village in the Limpopo province of South Africa, I have experienced how education propels you to create a better life and future for yourself and those around you. In my opinion, education helps level things out in one way or another, and it is one of the most important things we should focus on as a society as the best means we have to make a better world. When we choose which capacities we want to develop in young females, we are choosing the kind of world we want to create and live in. Therefore, the project of education in the lives of young black females is always Utopian.

I am further encouraged to undergo this research through a facebook post posted by Dream Girls Academy (2017) who echoed the words of Winnie Byanyima when she said *"By empowering a woman, we empower a child. By educating a girl child, we make it possible for her to grow up to become an empowered woman"*. I strongly believe that educated girls become women who participate in the social, economic and political existence of their nation, they are more likely to be healthy, and have educated children. By preparing young girls for the world of work, more effectively, they become women who are suitable for a world that is reinventing itself rapidly (Unicef, 2003).



Figure 56: Techno Girl Alumni celebrating 60th anniversary of 1956 women's march, at the Union Buildings Pretoria; image (Courtesy of TechnoGirls ZA, not dated)



Figure 57: TechnoGirls at Transnet Engineering workshop; Image (Courtesy of Transnet 2017)



Figure 58: TechnoGirls job shadowing at Daspoort Water Works; Image (courtesy of Water Research Council, not dated)



2.2.3 THE EMERGING ROLE OF LEARNING THROUGH MAKING (Making as a Metaphor of Making the Self)

“Life is a reciprocal exchange. To move forward you have to give back”

(Oprah Winfrey)



The department of higher education and training in South Africa has conceptualised Technical and Vocational Education and Training (TVET) as being developmental and transformative in addressing gender inequality, unemployment, and poverty (DHET, 2012). As part of the gap that my study seeks to fill due to the gender and race imbalance in the technical industry, it is important to extend and promote vocational learning so that females, specifically black disadvantaged women and young black girls are able to participate in these industries. Forster argues that participation and access of women in these institutions has been hindered by social, cultural, political and economic factors (Foster 2011). It is only in recent years that there has been an improvement in the inclusion of females in vocational training but we still see a preference for male participants in the African context.

This part of the domain elaborates on education through physical engagement which becomes part of making one's identity. Radically, the process of self is becoming established through the process of making. In the documentary 'Being in the world - on subject of the #Heideggerian Dasein (2018), Heidegger argues that the development of who you are as a human being comes through your practical engagement with something. Ryan Cross, a jazz bassist that was interviewed in this documentary said that in order for him to become a jazz bassist he had to engage with a bass guitar and that being connected to his instrument connected him to himself, therefore he becomes the instrument and the instrument becomes him.

Also revealed by Juhani Pallasmaa in his book - 'The Thinking Hand' (2009) explored how making through the hand shapes how one's perception and their practical engagement with the world. In this book, his whole world is seen through the eyes of his hands.

While the idea of making is not a new stream of education, the makers approach in *The Femnical Institute* should be favorably learner-driven to recognise individuality for all students to be given opportunities to shape their environments while helping each of them define their own individuality within a social and sharing context. Their individuality within such environments comes through the solutions that are created by the students and is taken from the process of exchanging knowledge (sharing), designing and making.

In my opinion, makers education can create equality in the education system by allowing opportunities for informal learning to take place in an innovative manner. This type of learning happens casually and turns action into knowledge through unintentional learning that happens not through the results of programmed instructions.

Through the principal of reciprocity described by Heinrich Kammeyer in his thesis (2010) as a phenomenology that is normally achieved unknowingly as the evolution of self through making, his subjective statement that making and being 'made' of the self is a prototype of lived experience that is applicable to all human beings as an observation that he made of the BaSotho female who make their own buildings as artefacts.

"Because of their social construct, BaStho females, made it impossible not to be makers, it was thus impossible for reciprocity not to evolve. As the dreamers of similar evolved artefacts-as-homes, they constructed and often reconstructed, till the dream was well constructed; they made their memories and further improvised ideas they had accumulated during their individual lived experiences. It is true to say that in BaSotho culture the women took pride in following a tradition of being builders, their inclusion into continuum engendered reciprocity" (Kammeyer, H. 2010).



Figure 59: A group of Basotho women working ryhtmically in unison to assure endurance and success; source (Kammeyer, 2010)

The freedom for women to invent and be innovative comes from accumulated experiences which makes her responsive to solve unexpected problems (discover through discovery ideas).

1.2.3.1 THE *BASOTHO* WAY OF MAKING THE HOME-AS-ARTEFACT (Making the self)

The process of making the home as an artefact were extremely collaborative. This process was a hands-on experiment. The operations and resultant end product were the results of the women's intentions, preference and personality. This is also dependent on the rules she was familiarised with since childhood through the notion of play, contributions of collaborators and outside help, experienced knowledge of elders and the availability of materials (Kammeyer, H. 2010). She similarly will be learning to make throughout her life, and after mastering the basics will bring her interpretation and application of cultural values to younger generations and the community at large.



Figure 60: Women making the home, artefact-as-home; source (Kammeyer, 2010)

THE PROCESS OF MAKING THE HOME

(Source: Heinrich Kammeyer, 2010).

PROCESS 1: The sapling framework is executed and ready to receive the earth plaster. This frame serves as a purpose for initial support, once the earth plaster has been applied it becomes inessential.

“Usually done by her husband, an expert or by herself” (Kammeyer, 2010).



Figure 61

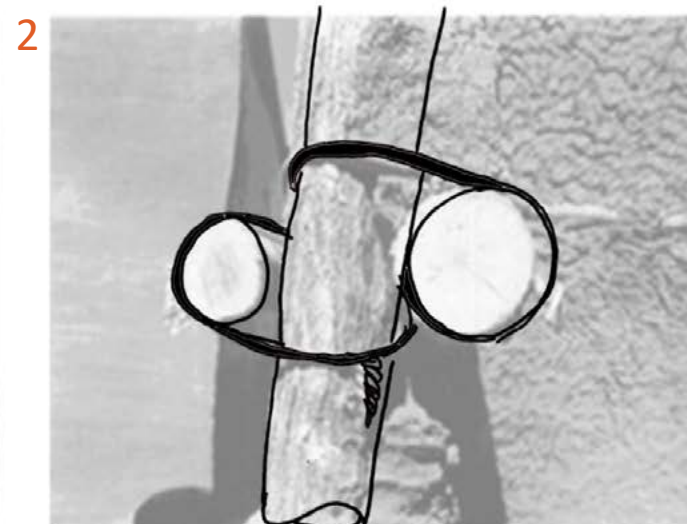


Figure 62

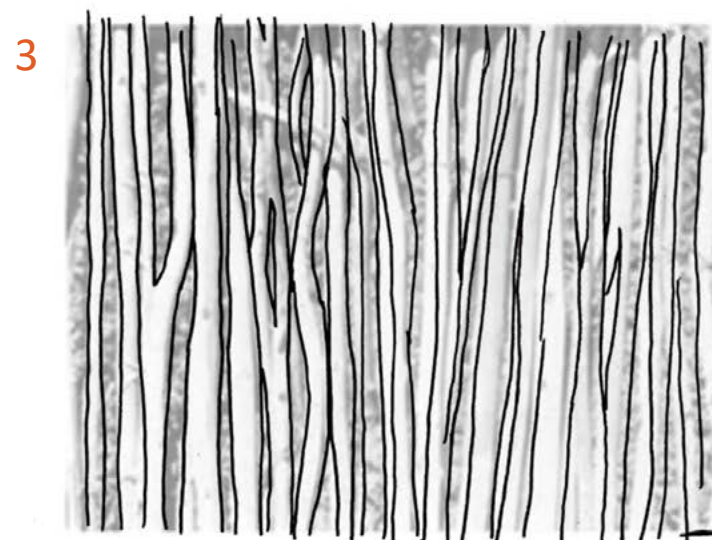


Figure 63

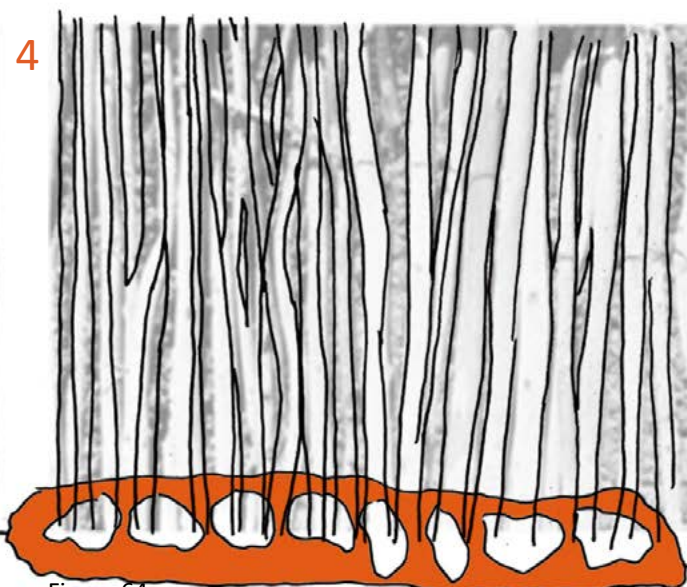


Figure 64

Figure 61 - 64: Sequential diagrams of starting the process of making a home; sketch (Nevhutanda, 2020)

PROCESS 2: Preparing the earth for use as plaster



Figure 65

Clay and Cow dung is gathered and mixed with water to the right consistency.

“Her source of knowledge of materials is from helping her mother as a child and from pier group neighbours who might know the context better”(Kammeyer, 2010)

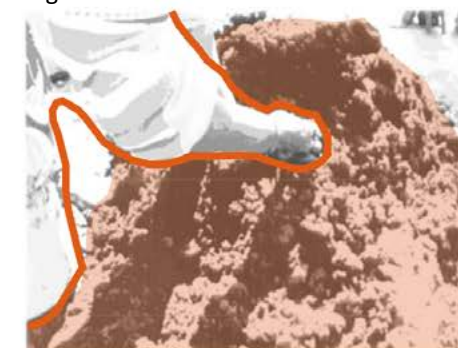


Figure 66

She uses her hands to mix the clay and cow dung together to test the consistency and also find any stones or organic material that could possibly reduce the quality of the plaster and obstruct the process of plastering.



Figure 67

All the mixed materials are gathered in a bowl for application to the timber framework (process 1) which will be already in place.



Figure 68

Her hands are full of the mixture in order to text its consistency and its mass to prevent damage to her body especially because she has to work in awkward positions.

Figure 65 - 68: The method used for mixing and preparing the earth and cow dung mixes; source (Kammeyer, 2010)

PROCESS 3: The application of the wet earth mixture to the timber framework

The pressure of the hand is counteracted by the bodily pressure to prevent her from falling backwards. This bodily adaptation became an integral component of inborn knowledge, enlarging her experience of reciprocity.

The process of layering the plaster sometimes resulted in unpleasant human errors.



Figure 69

The surface of the hand is used to apply the required pressure to force the clay in between the timber framework.



Figure 70

The texture of the surface is a result from the tactual action of the body at the threshold of interaction.



Figure 73: Home layered over a period of time which resulted in unpleasant human errors; source (Kammeyer, 2010)

The timber framework has become redundant. The home requires regular and constant maintenance of the wall seasonally to prevent erosion resulting in a wall thickness of almost 300mm. The inaccuracy and wrapping seen on the wall results in a story of the past and passing of time.



Figure 71

The surface of the hand is used to apply required pressure to plaster the clay on the wall.



Figure 72

The texture of the surface is a result from the tactual action of the body at the threshold of interaction.

Figure 71 - 72: The application of several layers of plaster; image source (Kammeyer, 2010); analysis (Nevhutnada, 2020)



Figure 74: A curved facade as a result of a sculptural hand; source (Kammeyer, 2010)

The process of layering over a period of time resulted in a curved facade through sculptural hand work

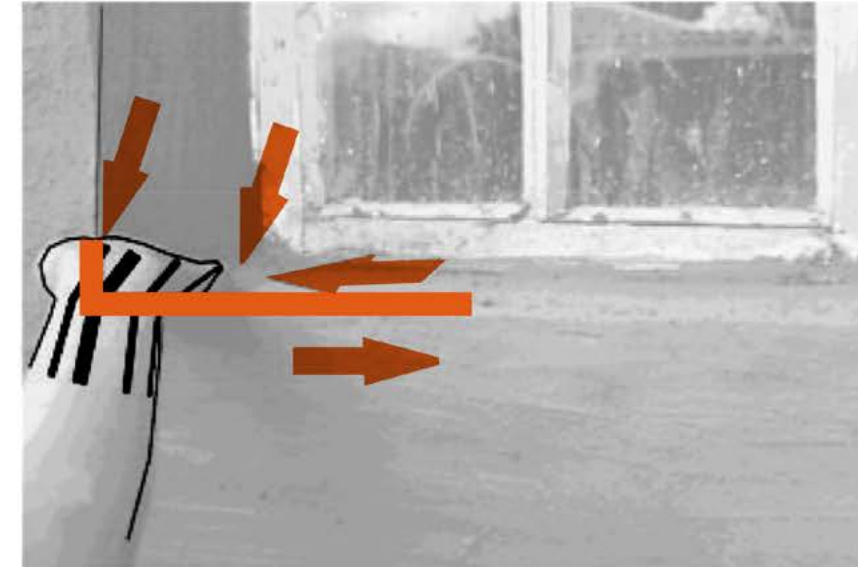
ACTORS ARE THE MAKING WOMEN (making as a metaphor of making the self)



ACT No.1

She uses her hands as a bowl to carry the plaster clay while her bodily forces act on the plaster clay.

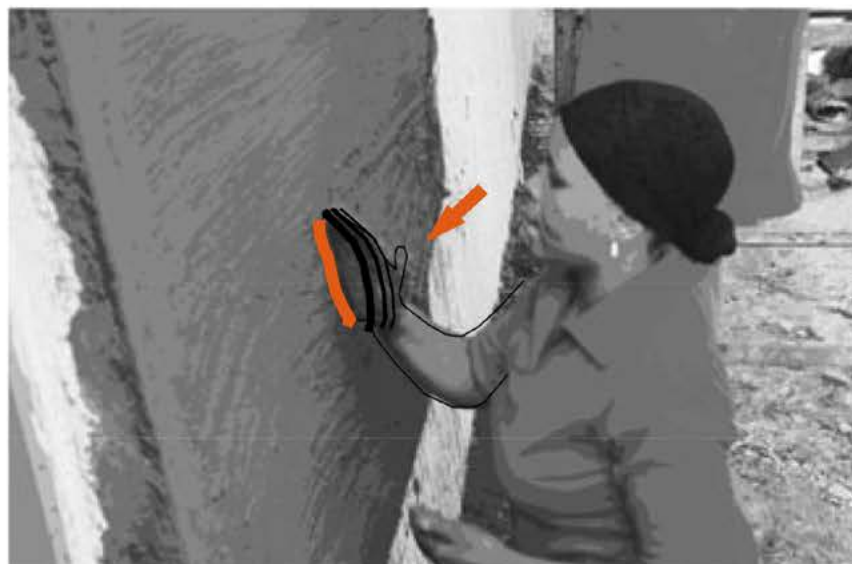
Figure 75: Actor making women - Using hands as a bowl; image source (Kammeyer, 2010); analysis (Nevhutnada, 2020)



ACT No.3

She uses her hands as a corner trowel.
Water penetration results from hand pressure on the mud mixture which is forced into the corner.

Figure 77: Actor making women - Using hands as a corner trowel; image source (Kammeyer, 2010); analysis (Nevhutanda, 2020)



ACT No.2

She uses the edges of her hand as a trowel and the texture of the surface results from the tactual action of the body at the threshold of interaction.

Figure 76: Actor making women - Using her hands as a trowel to apply mixture; image source (Kammeyer, 2010); analysis (Nevhutnada, 2020)



ACT No.4

She uses the full face of her hands as a trowel in order to apply the material.
Threshold of making: There is a vertical response of body to material and material to body resulting in reciprocity.

Figure 78: Actor making women - Using her hands as a trowel to apply material; image source (Kammeyer, 2010); analysis (Nevhutnada, 2020)



ACT No.5

She uses the full face of her hands as a light weight trowel to achieve a smooth finish.

Threshold of making: Horizontal response of body to material and material to body resulting in reciprocity.

Figure 79: Actor making women - Using full face of hands as a light weight trowel; image source (Kammeyer, 2010); analysis (Nevhutanda, 2020)

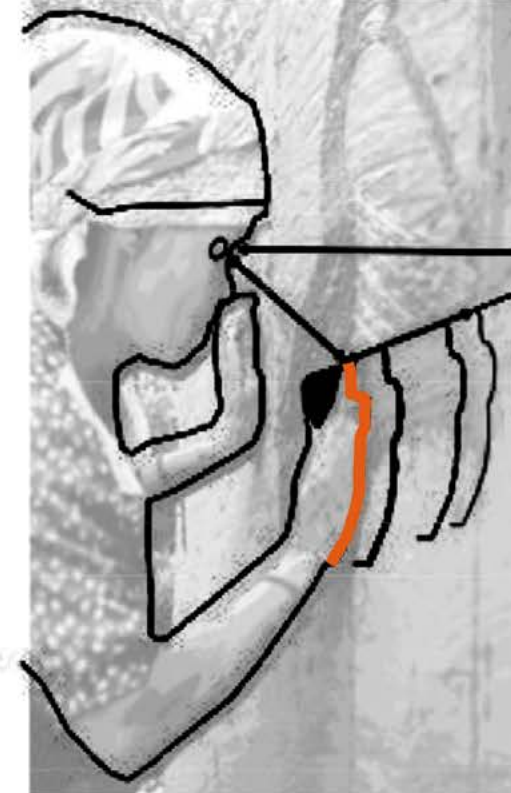


ACT No.6

She uses her hands to hold a fork as a tool to engrave into the clay to give it a resultant pattern that depends on the sun angle to be read.

Threshold of making: The hand is holding a fork as a tool to engrave patterns as a response of body to material and material to body resulting in reciprocity.

Figure 80: Actor making women - Using fork to engrave a pattern; image source (Kammeyer, 2010); analysis (Nevhutanda, 2020)



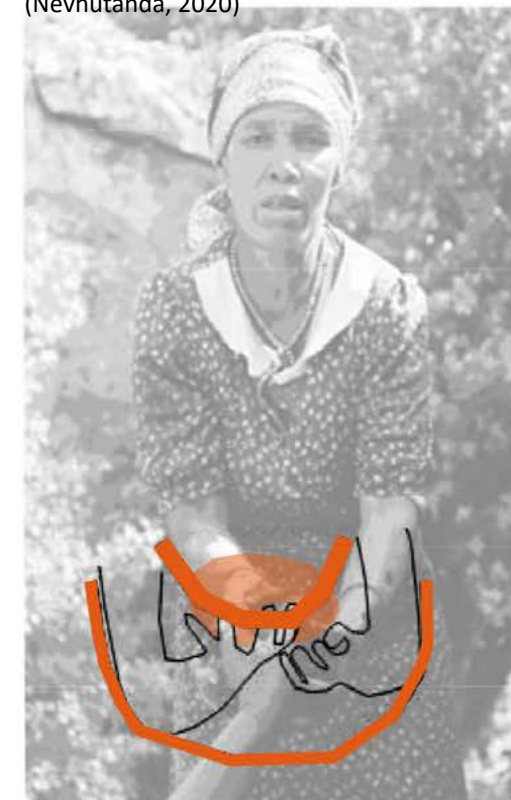
ACT No.7

She uses her hand as a threshold for the pattern made as an edging tool.

The eye perpetuates the line of the previous patterns to create a total coherence.

Threshold of making: The hand as a edging tool. The excess clay is bundled up in front of her hand. The eye and hand interaction comes from years of experience and self knowledge. This is the ultimate test of reciprocity existing.

Figure 81: Actor making women - Using her hand as a threshold for the pattern she made; image source (Kammeyer, 2010); analysis (Nevhutanda, 2020)



ACT No.8

Threshold of interaction: She uses her hands, arms and body as a bowl to carry the material.

Figure 82: Actor making women - Using her hand, arms and body to carry material; image source (Kammeyer, 2010); analysis (Nevhutanda, 2020)

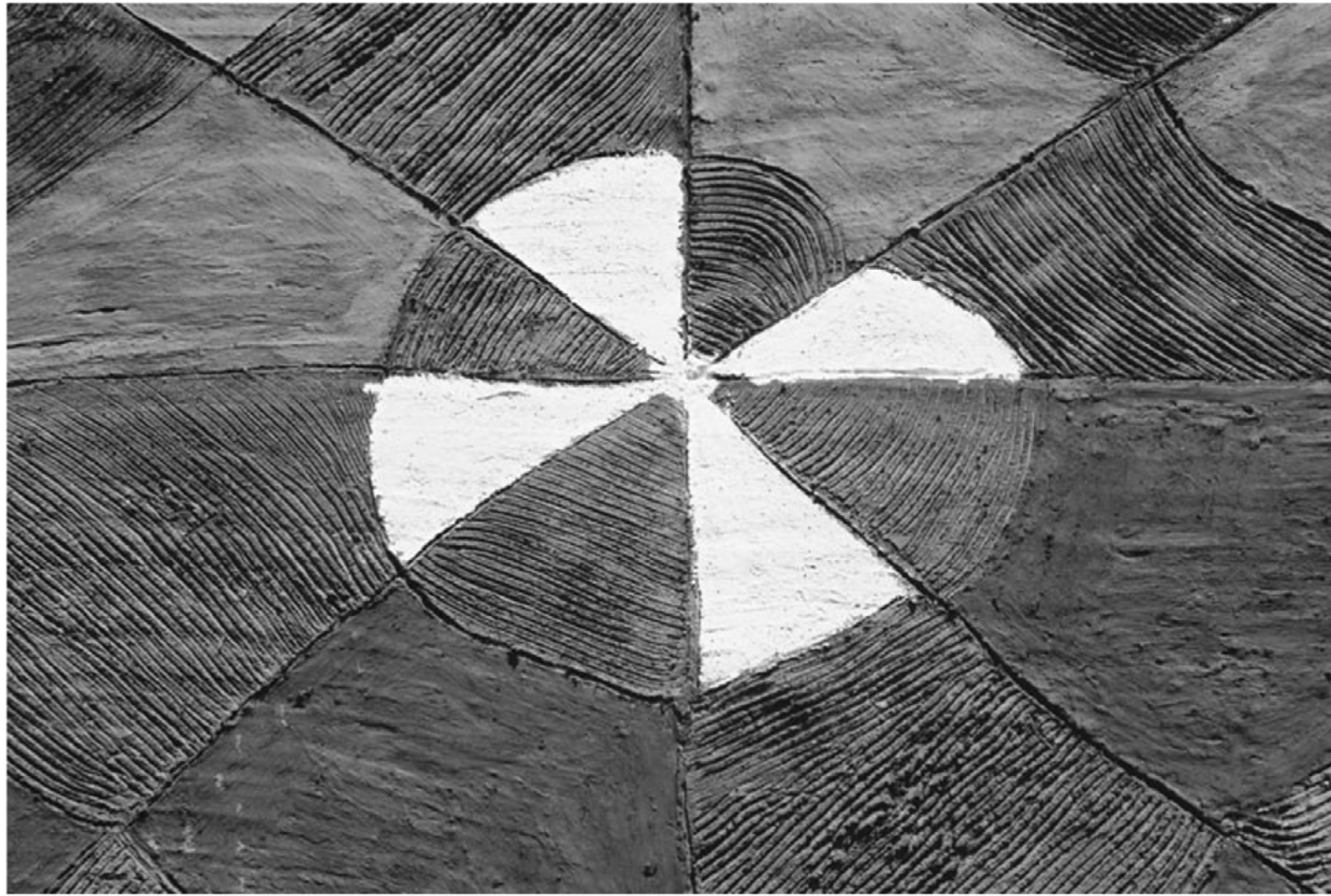
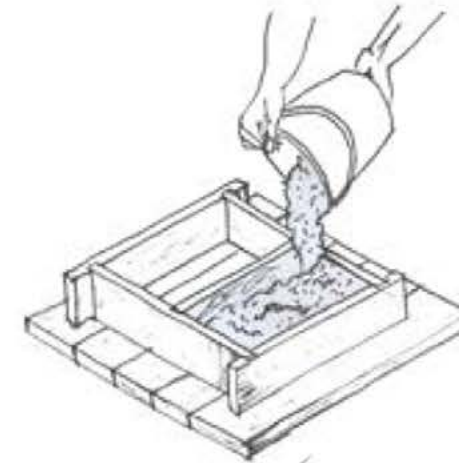


Figure 83: Detail of resultant pattern captured the haptic qualities of the tools (fork) used; Source (Kammeyer, 2010)

“During the process of making, all her senses were combined in an intense bond between herself and the task at hand, be it the building of an earth wall in this case. Associations were derived from the senses being stimulated but equally this stimulation resulted in the realization of new associations. The increase in the intended range of associations being executed led to reciprocity being engendered” (Kammeyer, 2010).

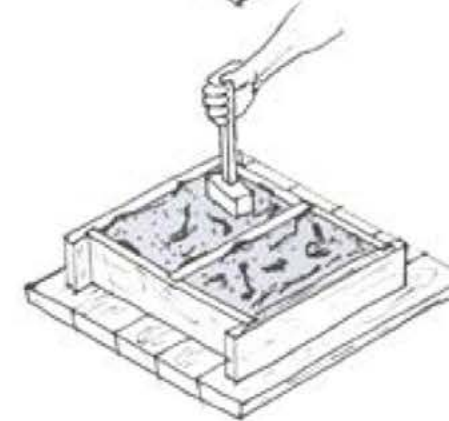
Interestingly, as seen in the process executed in acts 1-8, Kammeyer’s research notes that during living their experiences, humans create themselves by creating and they create because they create themselves (2010). Taking reference to what Kammeyer has observed and reported, the feminal institute will explore this process by using red clay bricks that will be made on site by the women in the community and young girls that will possibly use the building in future by using a compressed stabilized earth construction tool as a method.

THE PROCESS OF MAKING CLAY BRICKS AS A PROCESS OF MAKING SELF



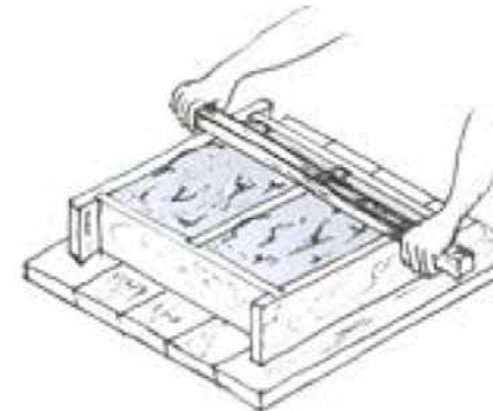
STEP 1:

- Materials are gathered and mixed with water to the right consistency using hands and feet
- All the mixed materials are gathered in a bucket and poured into a formwork shaped according to the desired size of the brick.
- * Threshold of making: Material to body and body to material of mixing materials together results in reciprocity.



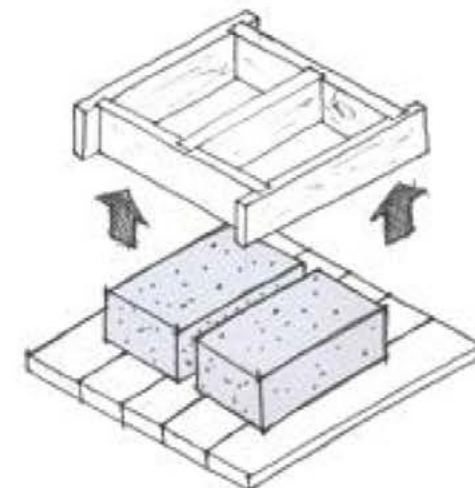
STEP 2:

- Using a timber (do it yourself) hammer to make sure that the mixed material gets to all edges of the shuttering.
- * Threshold of making: The hand is holding a hammer as a tool to allow the material to get to each edge of the shuttering as a response of body to material and material to body resulting in reciprocity.



STEP 3:

- Using a flat timber stick to flatten the material into the shuttering and make smooth.
- * Threshold of making: The hand is holding a hammer as a tool to allow the material to get to each edge of the shuttering as a response of body to material and material to body resulting in reciprocity.



STEP 4:

- Leave material in shuttering for 24 hours to dry.
- Remove shuttering once drying process is complete

Figure 84: The method of making clay bricks; source (Adam, 2001; sketches (Nevhutanda, 2020)



What has emerged from the research done above is that the women's association with making the house is a representation of how she has gone through a process of being made, as engaging with the house becomes the contents of her engaging with the self. As seen in figures 75 - 82, the actual muscle memory of in her arms and hands and the way in which her body is pastured and the way she gets used to smelling certain materials makes her sensitised to the grain of materials as it changes her body and psyche.

Juhani Pallasma (2009) confirms this by showing how the pencil in the hand of the artist becomes a bridge between the imagining mind and the emerging image, and how the hand-tool and eye-hand-mind combination are essential for ability and how ultimately the body and mind play a crucial role in creative work. Therefore, as women making the house, her perception of the world and perception of herself is seen through the eyes of her making the house and in that process of engagement, she becomes a maker of self, home and world.

I also want to reference an article written by Stephen Tournas (1996) From Sacred Initiation to Bureaucratic Apostasy: Junior secondary school-leavers and the secularisation of education in southern Africa, Comparative education. He talks about how the Tswana people have what, from a European point of view, is understood as a pre-rational reality, as their relationship to their environment is noticeably different because they saw themselves as part of it (2010). This did not only contrast with the dualistic view of the self, it also meant that in the Tswana culture, there is a different depiction of how education and employment go together which has also affected other cultures in South Africa. Therefore, the difference between the African way of knowing something and the European way is that in Africa we know through the whole being as opposed to cultures where it is only the mind that is prioritised. Knowledge in the African context has shown an archive, although very thin between the human and physical realms and, as Susan Bordo (1987 pg98) put it through, the Tswana self and world were one.

As former and late president Nelson Mandela quoted above, if we are to consider employment of rendering a service or self-employment of one running ones' own business as a special case in point of education, the Tswana youth, educated by initiation, are employed to manufacture tools and perform other services that they learned in a process governed by the principle of reciprocity (Tournas.S, 1996). I believe that the interpretation of equality depends on the nature and relationship between women and their world or environment through the agency of practical engagement and knowledge exchange, teaching them how to exist.

With that said, it is not only about teaching young black girls and women how to be participants in the market, but for them to also flourish socially in society in terms of the environments they occupy. To have young black females who have a passion and interest in making, who are confident, adaptable, independent, empowered and inspired to learn, it is important to understand that these spaces need to be effective for making and learning.



1.2.3.2 THE *BASOTHO* WAY OF MAKING THE HOME-AS-ARTEFACT (Spatial Analysis)

The buildings are spatially collected knots that create courts for different functions allowing for circulation. These spaces are associated with the gift of being together as a space of interaction, a place for easy discussion, relaxed and pleasant. Space is also caused by boundary walls, parts of it roofed and others opened, these boundary walls can deviate from being obstacles and become tools of use such as seating and work table (Kammeyer, 2010). The wall is also a useful canvas for decorating and painting as described in the results of reciprocity above.

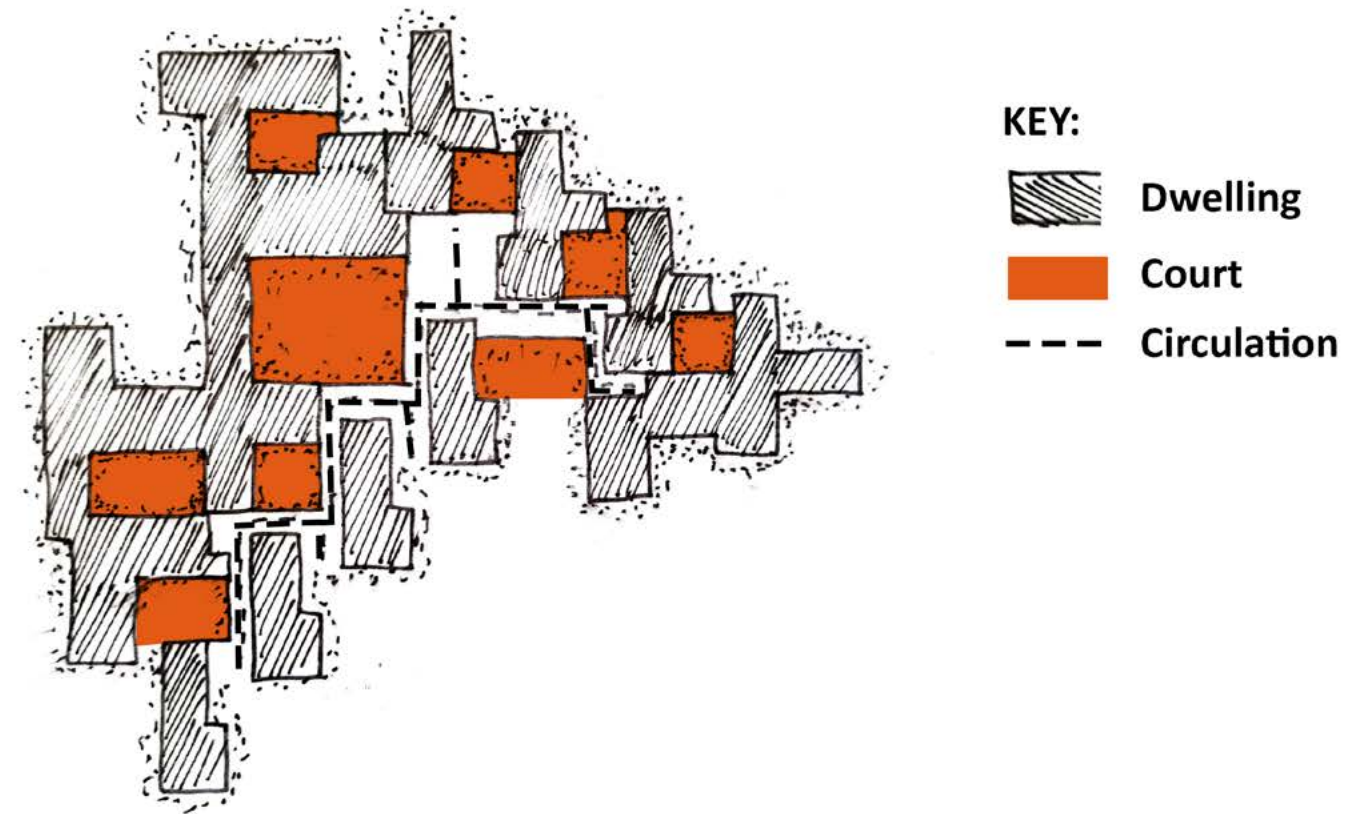


Figure 85: Artefact-as-container of internal and external spaces; source (Kemmeyer, 2010); sketch (Nevhutanda, 2020)

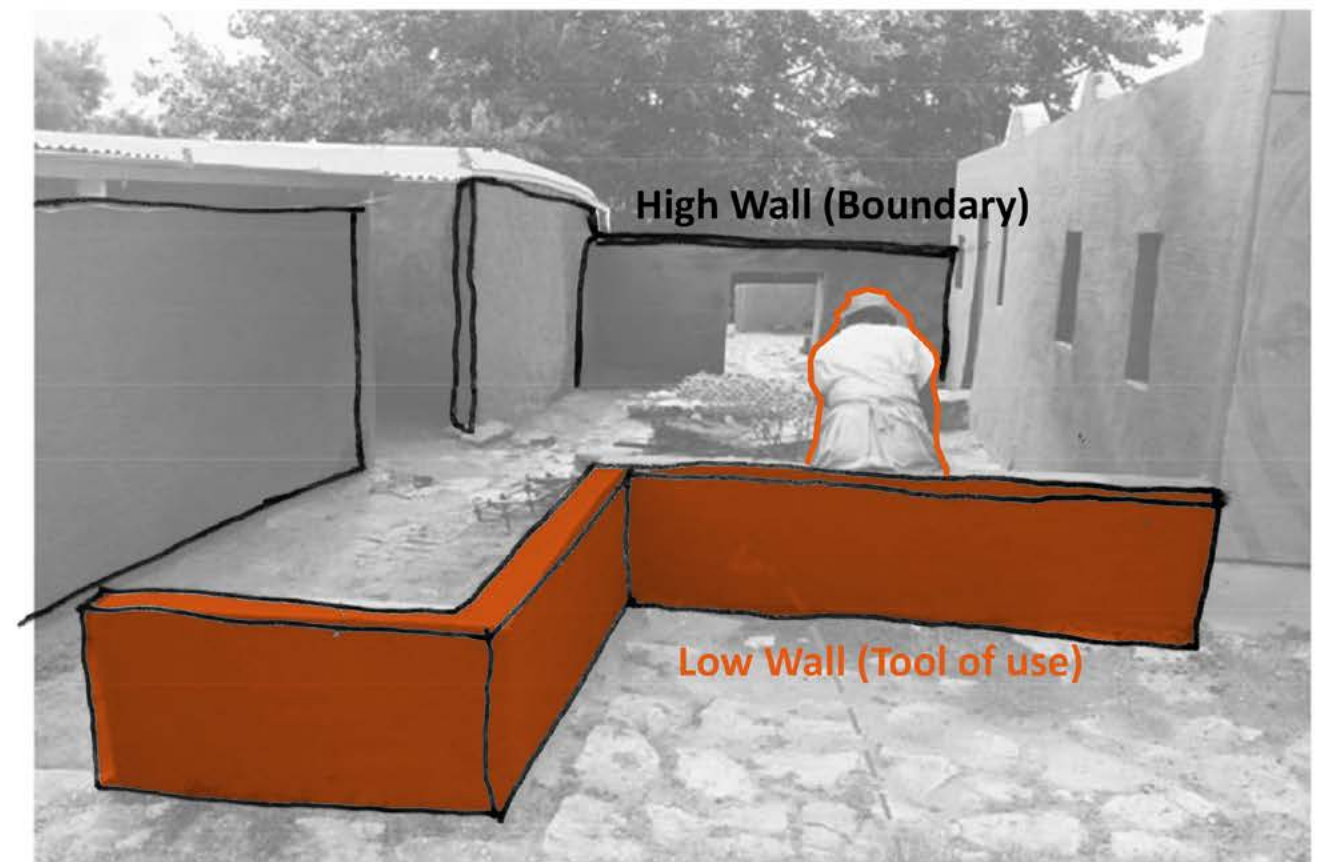


Figure 86: The boundary wall as a seating tool; image (Kemmeyer, 2010); analysis (Nevhutanda, 2020)



Figure 87: The boundary wall as a seating and meeting tool and decorative canvas; image (Kemmerer, 2010); analysis (Nevhutanda, 2020)

2.2.3.3 MAKERS SPACE FOR EFFECTIVE LEARNING AND MAKING

Educational environments are known to be a long-term resource, therefore it is significant that these spaces are mindful in being:

- * **FLEXIBLE** – to accommodate evolving ways of teaching (makers)
- * **CREATIVE** – to energise and inspire the users of the building
- * **ENTERPRISING** – to make each space capable of supporting different purposes
- * **FUTURE-PROOFED** – to enable spaces to be re-allocated and re-configured as they are in constant change

(Jics, not dated).

“Makers spaces also include **Creation labs** – focusing on digital creation; **Fab lab** – focusing in the fabrication of tangible objects; **Little makers** – offering a free play area that encourages children to create, imagine and build. To best define a makers space for effective learning and making by its purpose in the simplest of terms, it is a place where young individuals have an opportunity to explore their own interest, learn to use different tools and materials both in a physical and virtual way, and develop creative projects. These spaces should be anticipated and implemented as a concept that can be adapted to a wide variety of uses shaped not only by educational purposes that are defined by the wider curriculum but by its user needs” (Dale Dougherty, 2012).

PRECEDENT: University of Texas at Dallas Engineering and Computer Science West

Architect: Smith Group

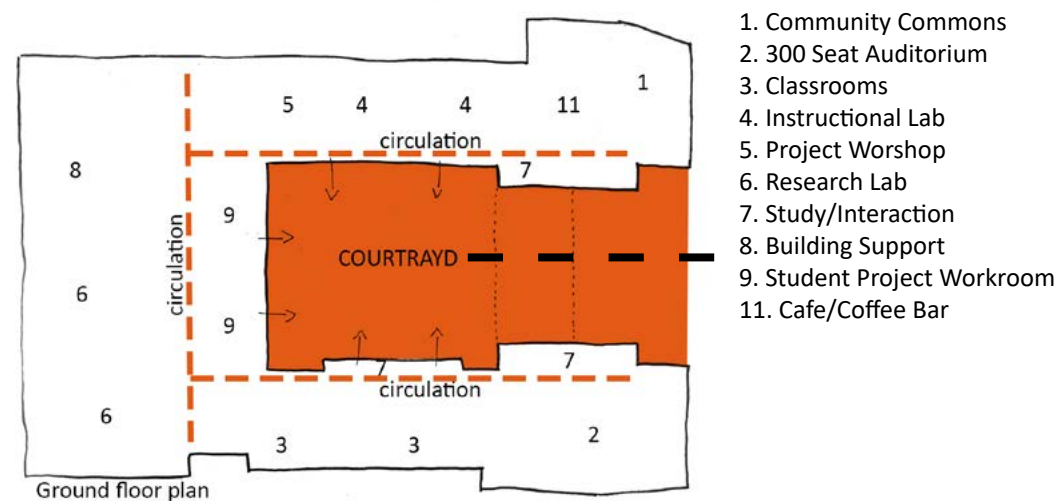


Figure 88: Ground floor analysis; source (Archdaily, 2020); analysis (Nevhutanda, 2020)

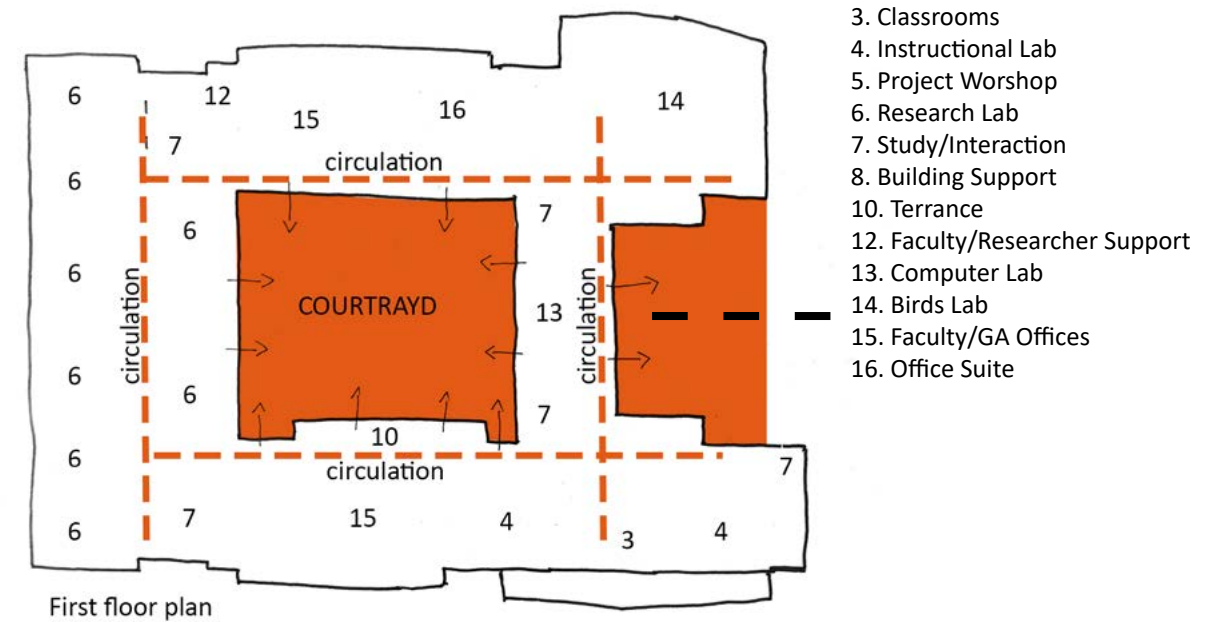


Figure 89: First floor plan; source (Archdaily, 2020); analysis (Nevhutanda, 2020)

Traditional classroom and lab environments are replaced with accessible, interactive workspaces to immerse students in hands-on learning. All labs and classrooms feature completely transparent fronts, providing uninhibited views to the research and learning activities within and outside (Pintos. P, 2018). The makers space is a flexible, active-learning environment with amenities placed around a central courtyard, this is done to empower collaborative learning, encourage team-based problem-solving, engage students while helping to build peer connections contained in a highly adaptable chassis that anticipate change and are column and obstruction-free for ultimate flexibility. The spaces are complemented by a rich variety of collaboration nodes throughout the building providing comfortable drop space between classes or meeting rooms for group study. The building is intentionally permeable, sited to create paths of travel through its halls and across its courtyard. The efficient U-shaped form creates a large-scale courtyard with breezeway and breathable shade trellis at roof (Archdaily, 2020) - (see figure 90)

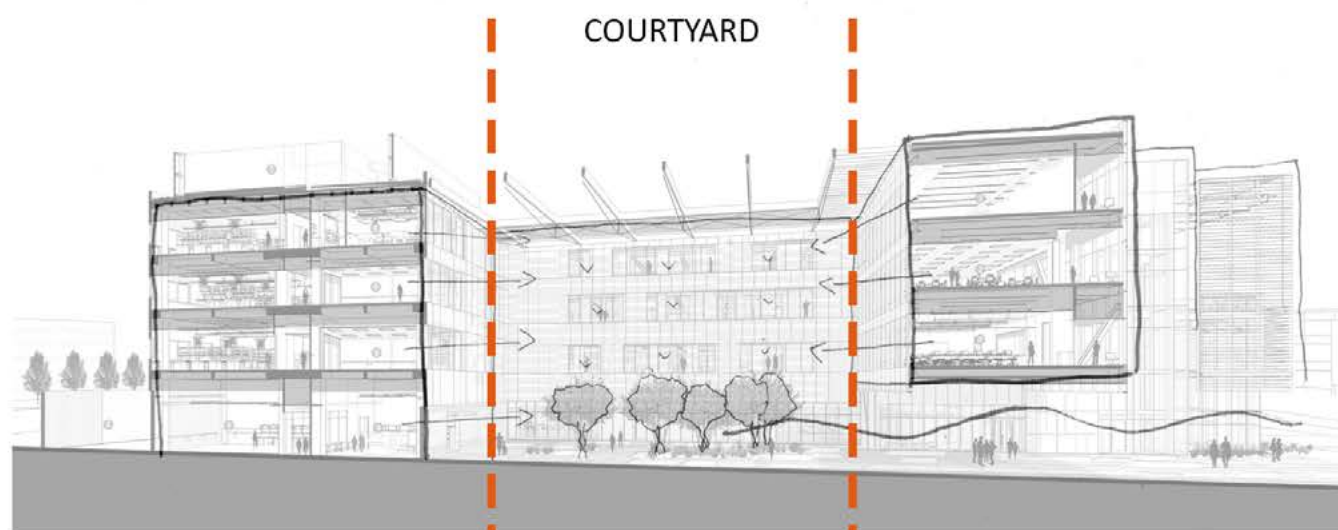


Figure 90: Section perspective; source (Archdaily, 2020); analysis (Nevhutanda, 2020)

The building is designed as a teaching tool itself, where exposed and color-coded building systems demonstrate how its engineering functions. Perforated metal ceilings with illuminated plenums allow students to trace systems within corridors and glass encased shafts provide visual access (see figure 90 and 91).

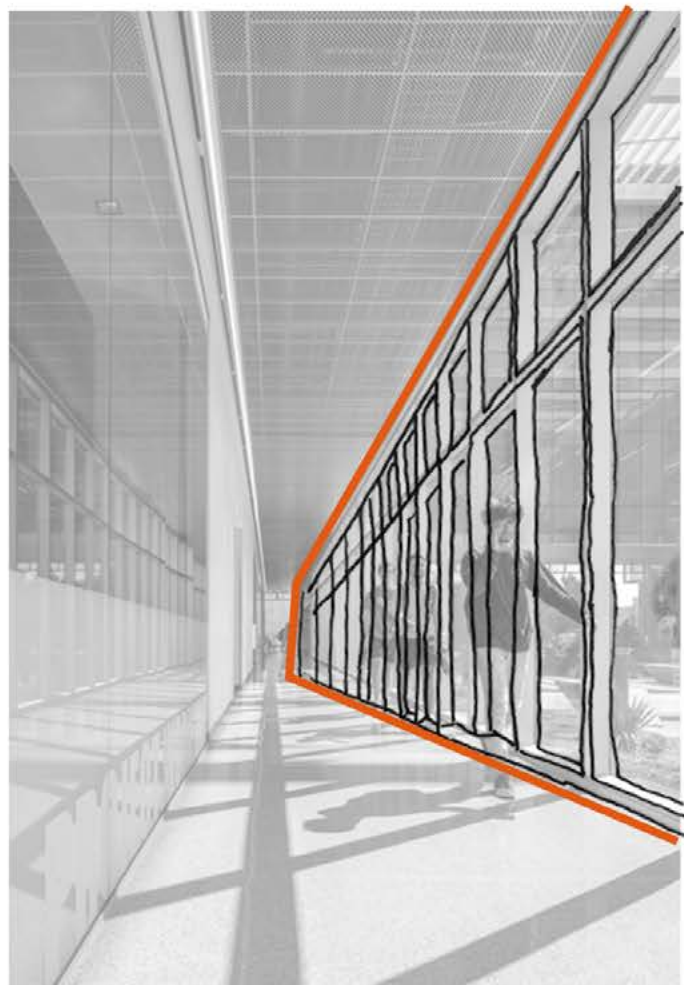


Figure 91: Passage (circulation route); source (Archdaily, 2020); analysis (Nevhutanda, 2020)

Interior transparency is maximized, so too is visibility to the outside world. Floor to ceiling glass is used around the courtyard allowing passers-by a window into workshops and light into the spaces.

ANALYSIS:

- U shaped building form creates a courtyard for social engagement and connection of amenities (Views) while the edges and street thresholds are open to public and community access.
- Building circulation takes place around the courtyard.
- One main line of circulation connecting the building to the street.
- Building structure and materials are used a learning tool of how the building comes together (encoded)

It is undeniable that women use and occupy space with subtle differences to that of men. Bringing this into light, I would like to argue for radical change with response to this system and the nature of this environmental oppression. The 'Cyborg Manifesto' by Donna Haraway was written in direct response to this oppression. Haraway advocates for the emancipation of women from an unjust society by challenging existing social norms and institutions (1997 pg160). The concept of the cyborg is a rejection of rigid boundaries and a symbol of a potential future. Weisman argues that the future vision for the built and planned environment is to be one which the totality of all females needs is environmentally supported (2000 pg3).

As environmental spaces should be defined by its user, it is important that as women we become our own spatial planners and become aware of our ability to exercise environmental judgment and make decisions about the nature of the spaces we occupy and make visible the full meaning of our experiences and reinterpret and restructure the built environment in our own terms and image, as the kinds of spaces that exist are denied access to empower and render power to us (Weisman 2000 pg5).

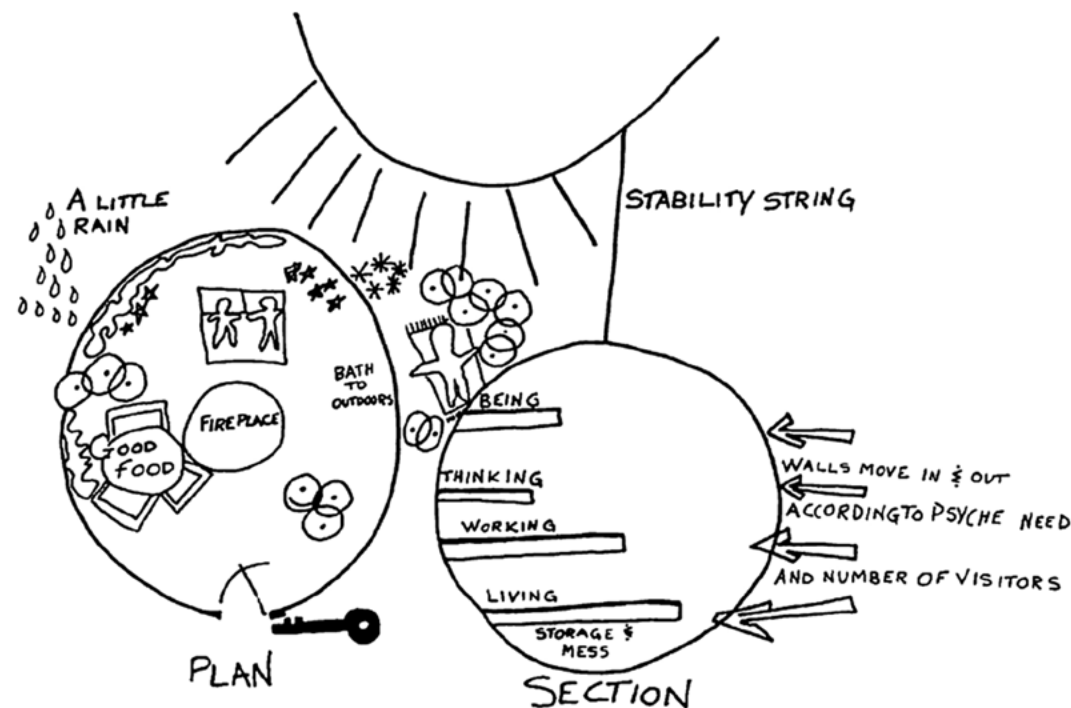


Figure 92: The Existential House; source (Leslie Kanes Weisman, 2000)

The drawing above is by a married woman in her mid-thirties with two children. She illustrated how she wanted her dream house to change itself in response to her own changing emotional states and practical requirements:

"walls move in and out according to psyche needs and the number of visitors."

She symbolized her strong need for privacy and control over space by including a large key near the entry to her dwelling (on plan).

Affirmation:

As environmental spaces should be defined by its user, it is important that as women we become our own spatial planners and become aware of our ability to exercise environmental judgment and make decisions about the nature of the spaces we occupy and make visible the full meaning of our experiences and reinterpret and restructure the built environment in our own terms and image, as the kinds of spaces that exist are denied access to empower and render power to us (Weisman 2000 pg5). My idea is that as black females, it is important that we participate in the planning of our own spaces to maximise on our undeniable potential and avoid the longstanding practice of stereotypical assumption. I think that the time for marching and parading is over and we need to take matters into our own hands and do it ourselves. In light of this, Karen. A Franck (2000 pg295) argues that we need to acknowledge women's ways of knowing, and work with them in designing spaces for them. Frances Bradshaw (2000 pg282) maintains that if women collectively design, organise and make buildings that suit their needs rather than having to fit into what exists already (buildings created by patriarchal culture) then the buildings are bound to look and feel different. It begins by being clear about our spaces and not just wanting buildings to look different. Bradshaw (2000: pg94) argues that making buildings were most people can feel they belong involves challenging who controls the design of the building. In 1978 when the Feminist Design Collective was formed, its main purpose was to understand and develop a feminist approach to environmental spaces by working with other women (Rendell 2000 pg282). This has meant that women have seen the need for, and started to make new kinds of buildings that suite them and their needs

“We will not create fully supportive, life-enhancing environments until our society values those aspects of human experience that have been devalued through the oppression of women, and as women we must work with each other to achieve this”

(Leslie Kanes Weisman)



The shape which architecture might take in response to female priorities and values cannot be described with certainty. From my personal experiences and observations as an aspiring architect, as well as looking at examples of an architecture shaped by women, with examples given by Lynne Walker (2000 pg244) when she said: *"Many women are actively involved in a range of activities and positive initiatives that are related to architecture, as they participate in the creation of the built environment, they allow the built environment and the spaces they occupy give priority to their needs as women"*. With studies related to social and gender differences, it seems safe to suggest that there would be a significant difference between an environment shaped by women values and priorities and our present environment shaped mainly by male values and priorities.

Although it is impossible to define a clear and absolute classification for male and female architecture, it may be possible to distinguish in comparison to biology and psychology, male and female principles in architecture. Male and female principles are not exclusive categories, but rather poles defining a progression of values (Weisman 1981 pg 12).

Be it acknowledged:

"It is the overwhelming dominance of the male principle that is at the root of architecture's problems today, rather than the inherent merit of the female principle and fault of the male. Dominance of the female principle would be equally bad, although it may be necessary for a time to restore balance. Architecture at its best merges function and form, flexibility and inflexibility, fitness to the individual scale and appropriateness to the larger social context, as well as service to the user and the creative action of the designer." (Weisman 1981 pg 14).

2.3 THE BLACK FEMALES PATHWAYS', EXPERIENCES AND PERSPECTIVE

2.3.1 ACCORDING TO THE BLACK FEMALES GOALS, NEEDS AND PRIORITIES IN SOWETO

As a mandate to get some answers addressed by my research question, fieldwork is central to this, and in general, as an approach I use in spatial practice. Although no one could have seen the pandemic hitting South Africa so hard, I sit with the big question: How do I do architectural fieldwork without being able to visit my site and physically communicate with the young girls and women of Soweto? I have always had to face a thriving challenge, that is how to communicate intangible issues and instrumentalise design as a tool of legibility. In the end, my project is concerned with being a tangible space in South Africa where design certainly plays an important role in that. How? This brings us to the now, the reason for this cyber method which has informed design ideas through narratives conducted through interviews and questionnaires in order to centre the unique goals, needs, priorities, identities and experiences according to black females in Soweto.

Despite the fact that the methodology used in this research study did not pose any threat or harm to the participants, there were ethical considerations that were upheld. All participants' who took part in these interviews and questionnaires have given consent, have been anonymised and privacy has been maintained. In presenting the following participants' profiles, I begin with a short narrative of each participant drawing on the information that will provide the reader with insight into the particular situations of each participant as well as their learning experiences and the kind of spaces they would desire to learn and make in. All participants are black females and hail from Soweto, South Africa.



Figure 93: An illustration of researcher holding her phone to demonstrate how interviews with participants were virtually conducted due to covid19 restrictions (2020)

PARTICIPANT 1

Participant 1 is a 20 year old student currently doing her final trimester of the N6 qualification at the South West Gauteng TVET (Technical and Vocational Education and Training) college in Soweto. She is the first of three children staying with both parents and the first of the family to study at a TVET college. Before she went to college she tried to enroll at university but has not attained the required points to pursue her engineering degree. In her own words she said she had difficulties adjusting to her engineering course as she lacked a basic background and says that furthering her secondary studies at a technical institute designed for black females would be an option she would consider. Her father runs his own welding business and she would sometimes helps him during her free time and she believes that black females are definitely capable of being technical.

She advised that safety should be the number one factor when designing such a space typically because TVET colleges do not take this into account as she sometimes feels unsafe when she is on campus. She is renting a room in the nearest high density residential area about 30 minutes' walk from campus, she advised that a residential space for the females on site should also be essential.

PARTICIPANT 2

Participant 2 is 23 year old student with a 6 months old baby who had to drop out of college in her second year of studying electrical engineering at a college she did not wish to disclose. She is the youngest of four siblings and her eldest sister had partially studied for an accounting degree, but withdrew because of lack of funding. The participants' decision to enroll at a TVET college was influenced by her brother who was in the engineering field. The participant has had the desire to go to university but could not afford to do so. As an aspiring electrical engineer, she believes that Soweto should have a technical institute that caters to the vast needs of the youth of Soweto, especially those who cannot afford to pay for higher education.

She also elaborated that this space should be safe and must take into consideration young girls that have children and would like to have their children in the centre while they learn.

PARTICIPANT 3

Participant 3 is 27 years of age who is single and has no children of her own. She lives with her single mother who raised her single handedly. While the participant was studying, she ran her own small business selling consumer products such as stationery to the local schools. She had initially enrolled at a local university of technology but could not complete her studies when she failed to qualify for government funding and had to withdraw as her family could not afford her fees. A few years later she wanted to enrol at a TVET college for electrical engineering because she has always known from a young age that she wanted to be an electrician as she was inspired by her uncle who could fix anything.

In her own words, she said if she had the opportunity to go back to grade 9 and choose an alternative way of completing high school she would ultimately go to a technical institute for black females provided it is safe for women and creates relationships that can establish how one can grow through making. Although she was not awarded the opportunities to do this, she is still running her business of trading in stationery

PARTICIPANT 4

Participant 4 is 19 years of age who decided to take a gap year as she was not sure what she wanted to study after high school. When asked if she would consider going to a technical institution she said she had never considered it as she had always considered the field and space to be a male domain.

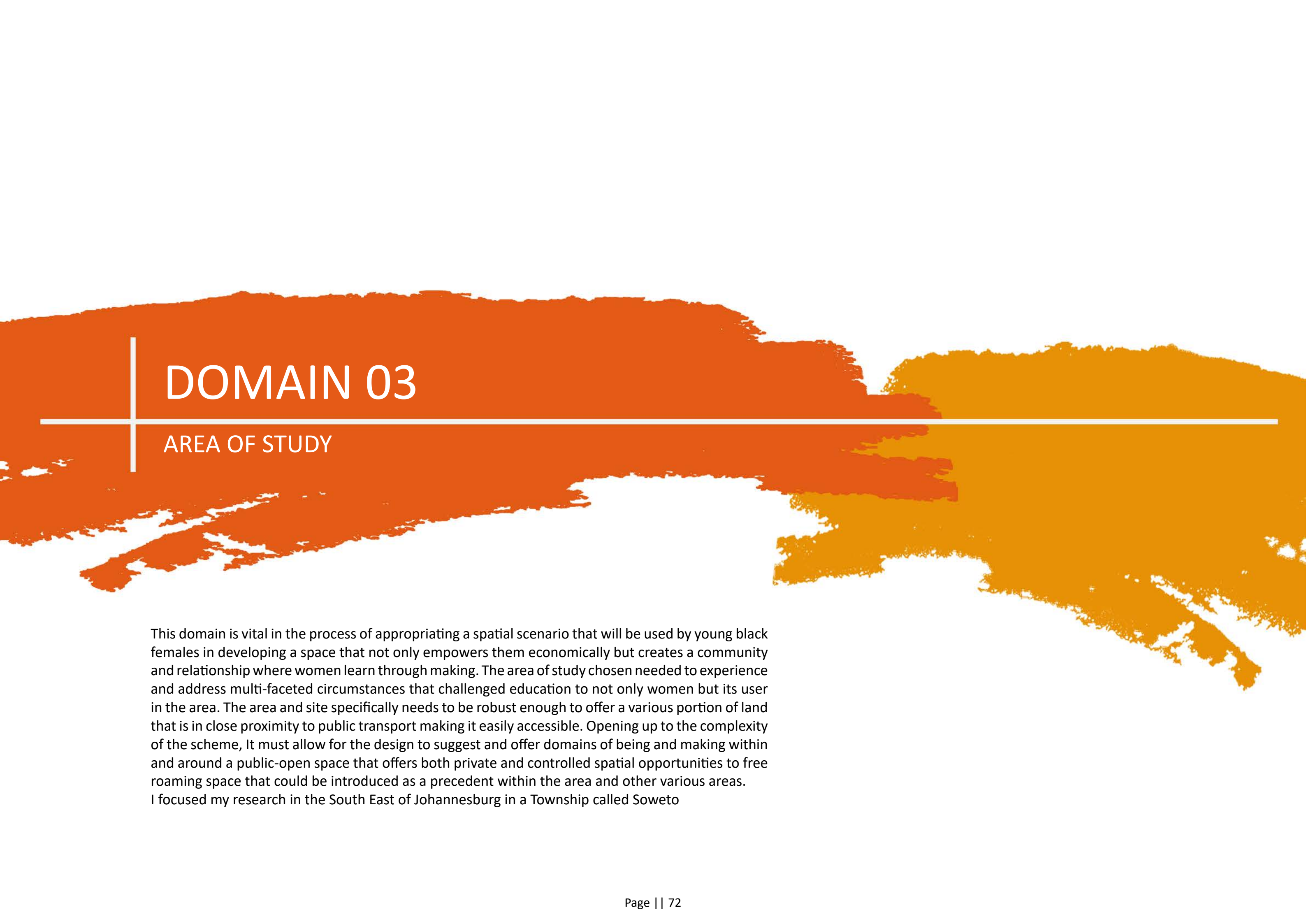
What is emerging from the profiles of these young black women participants and the many more that were interviewed but not included in this report is that almost all of them are motivated by dreams of a better life but are hindered because of their personal, social, political, financial and environmental circumstances.

CLOSING REMARKS

"I think woman retains a more human relationship to human beings and is not corrupted by the impersonality of powerful interests. I have watched women in law, in politics, and in education. Because of her gift for personal relationships she deals more effectively with injustice, war, prejudice. I have a dream about woman pouring into all professions a new quality; I want a different world, not the same world born of man's need of power which is the origin of war and injustice. We have to create a new woman and by creating a new woman we create a new community and world"

-Anais Nin, Notes on Feminism

I however hope this project will contribute to a growing spatial discourse for the betterment, however, significant, of the everyday lives of black women in Soweto and South Africa. It is my utmost desire that women's growing concerns and involvement will put forward cooperative modes of thinking that will produce tangible realities as a force in environmental change if approached with an attitude that will recognise the correlation of all phases of being and making. I desire that black women use their unique and capable skills and sensibilities in evolving new methods facing black women through the principle of reciprocity, and that they recognise this social necessity as a reality.



DOMAIN 03

AREA OF STUDY

This domain is vital in the process of appropriating a spatial scenario that will be used by young black females in developing a space that not only empowers them economically but creates a community and relationship where women learn through making. The area of study chosen needed to experience and address multi-faceted circumstances that challenged education to not only women but its user in the area. The area and site specifically needs to be robust enough to offer a various portion of land that is in close proximity to public transport making it easily accessible. Opening up to the complexity of the scheme, It must allow for the design to suggest and offer domains of being and making within and around a public-open space that offers both private and controlled spatial opportunities to free roaming space that could be introduced as a precedent within the area and other various areas. I focused my research in the South East of Johannesburg in a Township called Soweto

WELCOME TO SOWETO



Figure 94: A snippet of Soweto from the Hector Pieterse Museum, a few streets from the chosen site; source (Pinterest, not dated)

3.1 SOWETO

INTRODUCTION

Derived from the name South Western Township, Soweto lies south-west of the city of Johannesburg as the largest black residential area in South Africa (see figure 93). The township was formally established in 1930 after the discovery of gold in the city of Johannesburg as the city became the main economic centre and grew in population contributing in its own way to making Soweto a distinguished location of Johannesburg's African population for the benefit of its white population (Nieftagodien & Gaule 2012:1). Soweto and Johannesburg, spaces that are disentangle with separate histories that cast a light on each other.

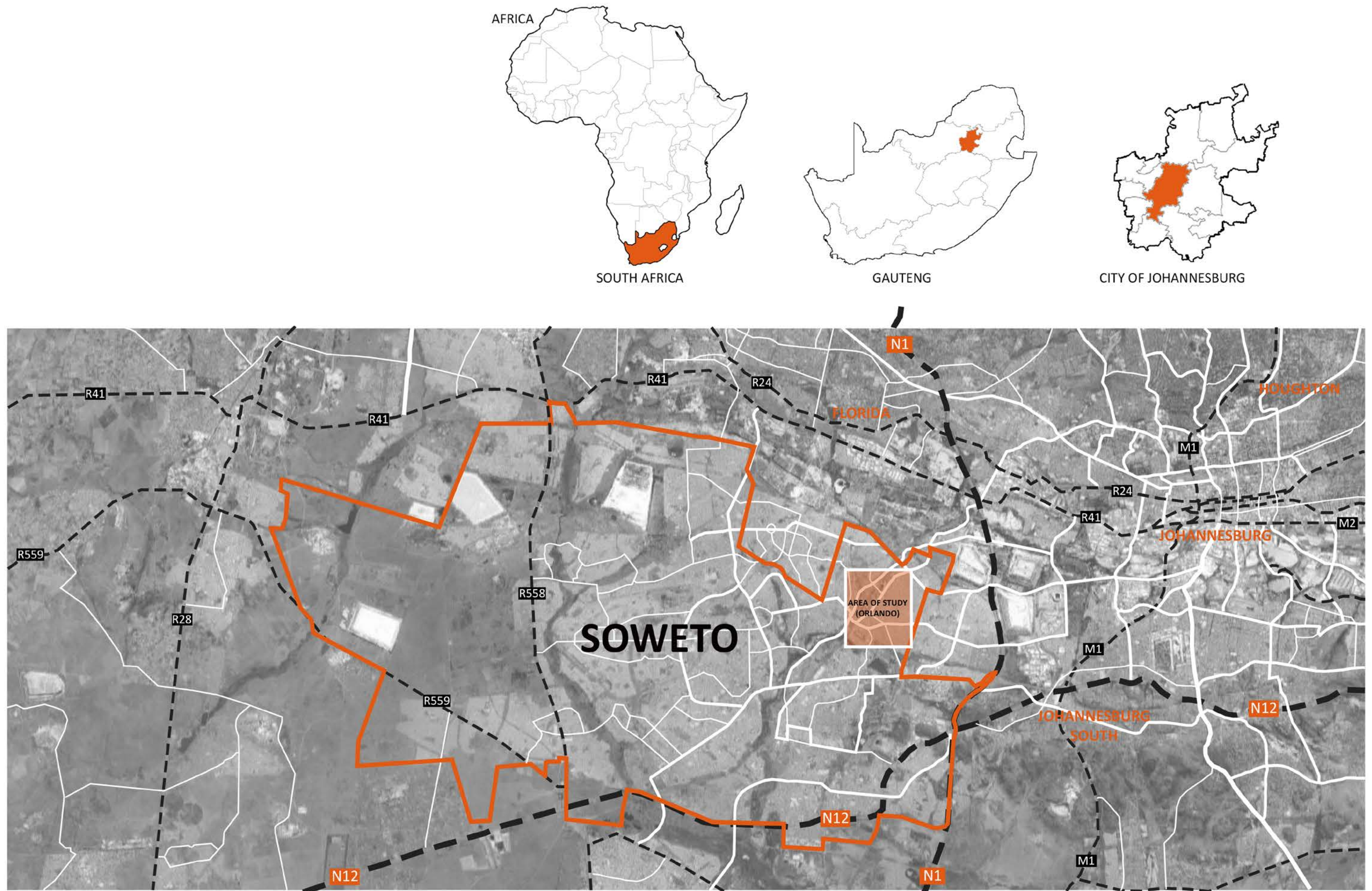


Figure 96: Google map image outlining Soweto, national and regional roads , and showing neighbouring areas; analysis (Nevhutanda, 2020)

3.1.1 HISTORICAL BACKGROUND

Soweto was established when the white government started separating black people from white people using the disreputable Urban Areas Act in 1923 that limited the movement of black African citizens requiring them to carry a pass book when they needed to be outside their designated areas (Nieftagodien & Gaule 2012:1). Soweto also experienced the suffering of Apartheid (meaning 'apartness' in the language of Afrikaans), this was an established system of racial segregation that existed in South Africa from 1948 until the early 1990 that proved that white people were in control over black African people (SAHA, 2018).



Figure 97: Inner City (Johannesburg) removals; source (Wits historical papers from Nieftagodien, N & Gaule, S., 2012).

3.1.1.1 ARCHITECTURAL IDENTITY THROUGH KNOWLEDGE OF SOWETO

The following maps demonstrate the expansion of Soweto through urban development from the year 1991-2009 and how informal housing expanded from the year 2001-2009.

KEY:



Area of Study

Figure 98: v
The expansion of Soweto through formal urban development ; source (15 Soweto, 2014).

Figure 99: v
The expansion of informal housing in Soweto; source (15 Soweto, 2014)



Figure 98

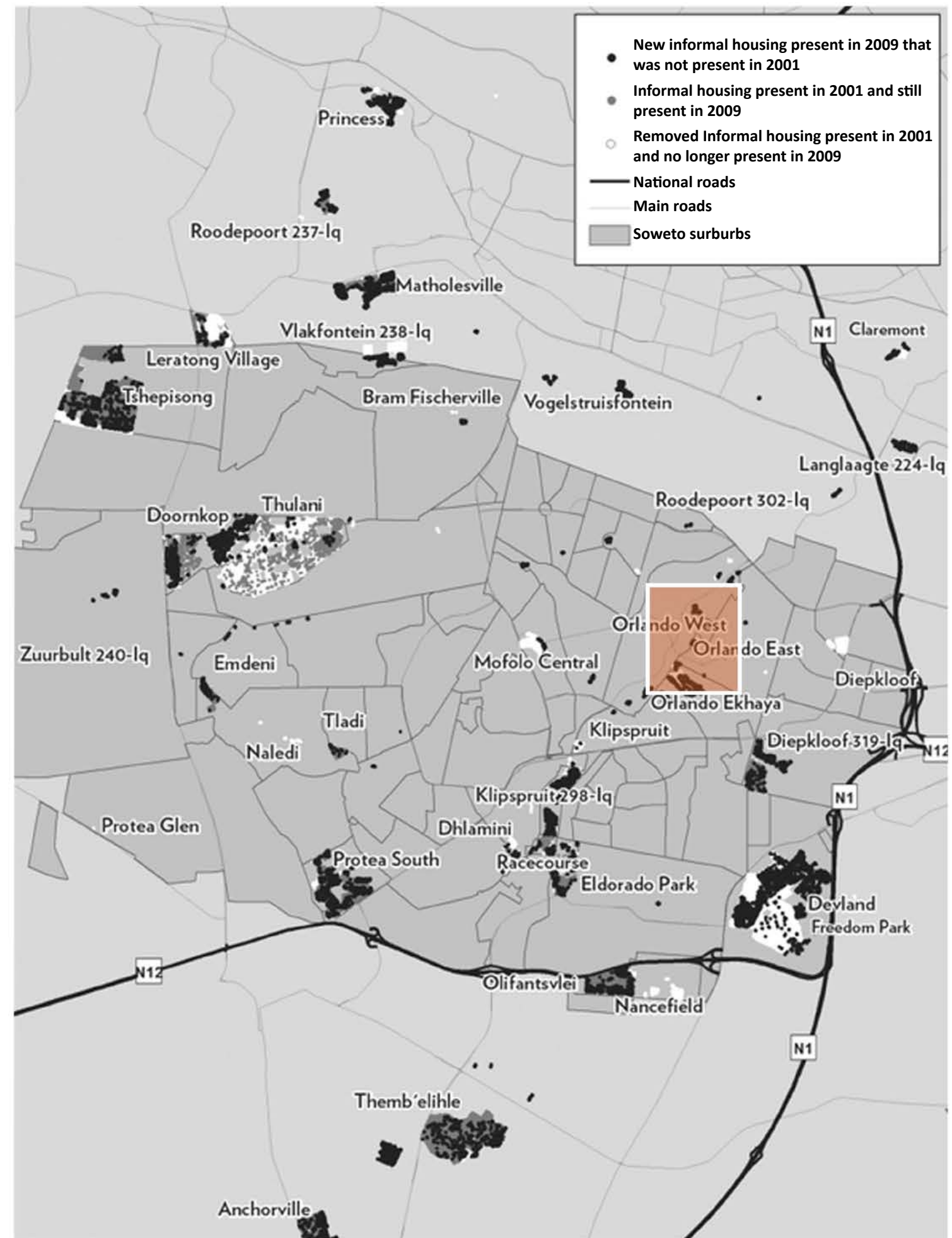
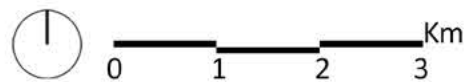
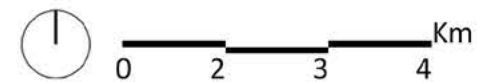


Figure 99



As people came to Soweto from all over to settle in what became the country's largest township, Orlando became one of the generally desired locations, the houses were bigger as described by Elinor Sisulu by saying: "It was a four roomed house that consisted of two bedrooms, a kitchen and a small room, which, though it had no bathtub, they called it a bathroom because it had a shower enclosure" (Nieftagodien & Gaule 2012 pg 17).



Figure 101: Housing being completed in Orlando in 1931; source (Museum Africa from Nieftagodien, N & Gaule, S. 2012)



Figure 100: Housing built in Orlando in 1931; source (Wits historical papers from Nieftagodien, N & Gaule, S. 2012)

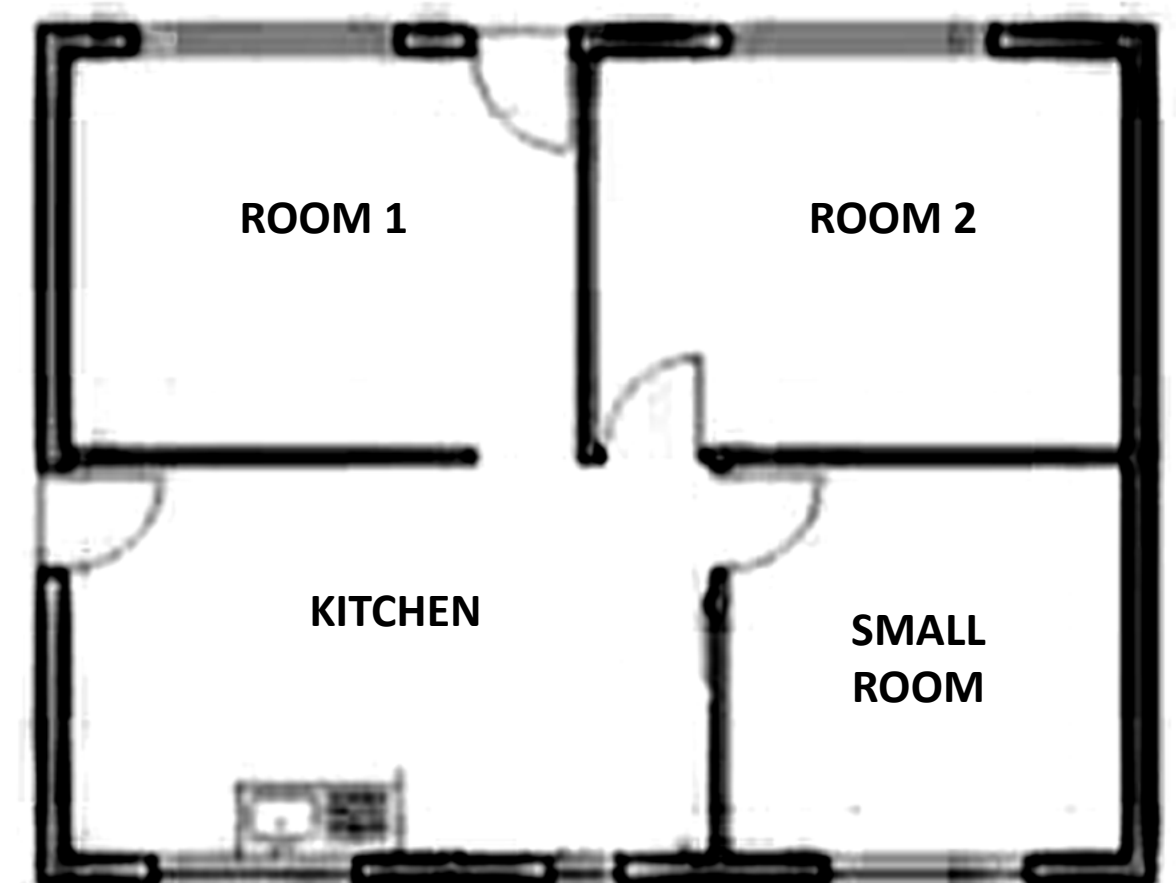


Figure 102: Typical floor plan of Orlando Houses; source (Mabuya, B & Scholes, M. 2020); sketch (Nevhutanda, 2020)

The creation of Orlando was passed through the Native Urban Act that consisted of a clause that determined that the government should provide housing for black people (SAHA, 2016). When observing the spatial planning of Orlando and Soweto as a whole, although common to colonised urban areas, as in the United States of America, it is evident that it was designed out of the 'agency of the township' being the apartheid government trying to be in control.

The monotonous house types that were built in uniform facing the streets created grid boundaries. Public facilities included spaces for typical colonial sports such as soccer and cricket, as well as churches and primary schools, while indigenous practices or institutions were not considered for inclusion (Hannertz, 2007). These monotony boundaries created design issues in terms of spatial awareness, security, inclusion and support especially for women in the area.



Figure 104: Spatial layout of Soweto in the 1950's; source (Museum Africa from Nieftagodien, N & Gaule, S. 2012).



Figure 103: Housing in Soweto built in uniform c 1970; source (Wits historical papers from Nieftagodien, N & Gaule, S. 2012)



Figure 105: Grid boundaries created by spatial layout of houses built in Soweto; source (Wits historical papers from Nieftagodien, N & Gaule, S. (2012).

Between 1972 and 1975, schooling in Soweto was drastically transformed as the states policy was to stop building schools in urban townships. As the student population increased, conditions in the township started to deteriorate and the provision of public housing declined sharply, mounting to an education crisis and the dawn of the June 16, 1976 Soweto uprising (Nieftagodien & Gaule 2012 pg51).

The morning of June 16, 1976 saw black African students between the numbers of 3 000 and 10,000 embark on a peaceful protest from their designated schools to Orlando Stadium to protest against having to learn and being taught in one of the 11 official languages of South Africa being Afrikaans (SAHA, 2016) - (see figure 106). During a National Assembly in May 1975, Punt Jason, then deputy minister of the Department of Bantu Education was characteristically unapologetic about their approach on this matter. When addressing this issue after numerous petitions and memorandums that came from the African Teachers' Association of South Africa, he said: "No, I have not consulted the African people on the language issue and I am not going to. This is the decision that has been taken and I am going to stand by it" (Nieftagodien & Gaule 2012 pg69).

The peaceful protest met by heavily armed police on their pathway to Orlando Stadium who fired teargas and later live bullets on demonstrative students (SAHA, 2016) - (see figure 107). Among the first students to be shot and shortly died on that day was 12 year old boy by the name Hector Pieterse, and the number of people who died on that day was estimated up to 700 with thousands wounded (SAHA, 2017). At the time these numbers were falsely recorded and published (see figure 108 below).



Figure 106: Soweto students embarking on a peaceful protest in rejection of being taught in Afrikaans; source SAHA from Nieftagodien, N & Gaule, S. (2012).



Figure 107: Students and police clash during June 16, 1976 protest; source SAHA from Nieftagodien, N & Gaule, S. 2012); photograph (Peter Magubane).



Students clench their fists in the "Black Power" salute as they march through Soweto streets.

4 DEAD, 11 HURT AS KIDS RIOT

Whites
ordered
out



The schoolboy killed in today's riot in Soweto is carried away from the scene of the disturbances. At the time of going to press he had not yet been identified. (More pictures on Page 4).

Police clash with protest marchers

AT LEAST four people are reported dead and 14 injured in Soweto today when police clashed with some 10 000 schoolkids who marched through the streets of the townships, protesting against being taught certain subjects in schools through the medium of Afrikaans.

One of the dead is a student and another an old man, who died from a stray bullet.

A policeman was also reported to be dead and a White motorist, who was stabbed to death. His car was stoned and set alight.

Among the injured were a student who was shot in the leg and another, with a bullet wound in his back.

Police and schoolkids clashed near the Bette Higher Primary School, Orlando West.

A White motorist passing was stoned, stabbed to death and his car set alight. Another White man's car was also set alight. He escaped with head injuries.

In Pheteni a police car was stoned and set alight but the Black police driver escaped uninjured.

About 300 police fired hundreds of rounds into the air as they tried to

quell the riot as kids hurled stones at the police.

At the time the police opened fire more than one thousand more pupils from Naledi on the west of Soweto were still marching to join the rioting pupils.

Smashed

Many of the 50 police cars which raced to the scene of the riot had their windscreens smashed by the rampaging students.

More than 10 000 students from a number of Soweto schools staged a march this morning through the township, protesting against the teaching of certain subjects in schools through the medium of Afrikaans.

The march follows the strike by students in ju-

To Back Page ➔

ALL White officials of the West Rand Administration Board and White visitors to Soweto have been ordered out of the area for the day.

This was said in a radio message to all offices this morning after police warned that they would not be able to protect Whites in the area.

The White staff of the Jabulani State School, left the premises in a hurry during examinations after a similar warning.

The teachers were warned after a White school inspector had been assaulted near Morris Isaacson High School on his way to the Jabulani school. The rear windscreen of his car was smashed.

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91,44 cm
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and R7
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Johannesburg. — Tel. 838-5749/38

Foreman blasts Frazier — Page 3

Figure 108: Sam Nzima's photo used in The World on June 16, 1976; source (Baker, A, 2016).

As the scars of 1976 still remain, it hurts me to know that townships like Soweto still continue to isolate many black South Africans from resources that include adequate education by limiting student contribution to not only the economic growth, but growth of establishing a sense of who they are.

3.2 SPIRIT OF PLACE_ Soweto Today

Soweto is a record of South Africa's apartheid history. Despite its pain-filled past, the very mention of the name Soweto gives rise to warm responses from many communities as it is rich in history. It has become a place of enterprise and cultural interaction as it has created some of the best popular tourist destinations and has managed to build its own sense of community. The streets are filled with life from street traders and people commuting from their respective places.



Figure 109: The late former president of South Africa Nelson Mandela's first house on 8115 Vilakazi Street; source (SAHA, 2017)



Figure 111: The Walter Sisulu Square in Kliptown; source (The Open Air Museum, not dated)



Figure 110: Hector Pieterse Memorial; source (Mashabane Rose and Associates, not dated)



Figure 112: The Orlando Towers; source (Soweto Tours, 2020)



Figure 113: Informal economy in Soweto; photograph (Sally Gaule, 2012)

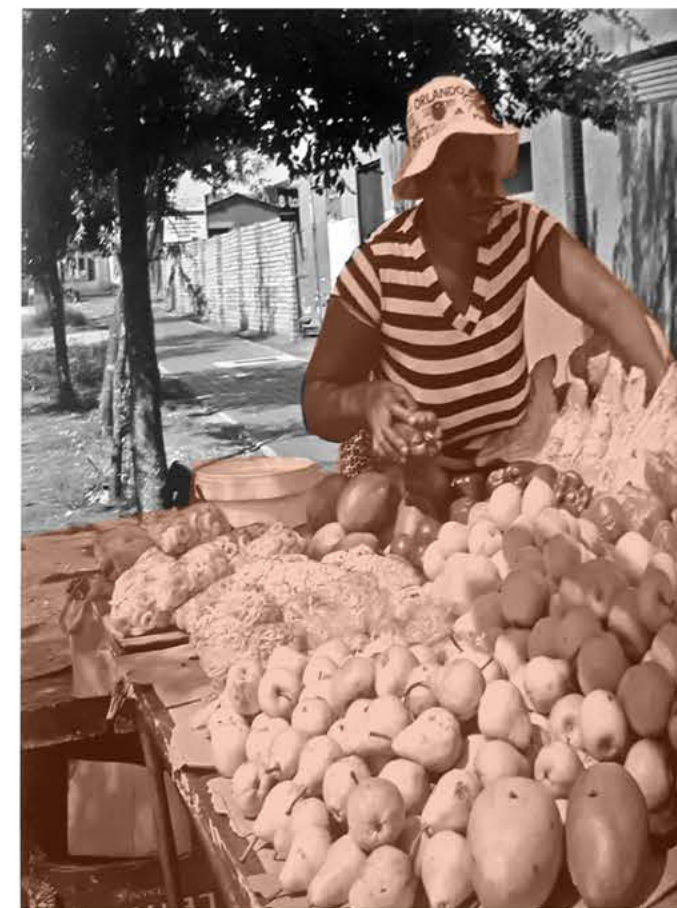


Figure 115: Anna selling fruits and vegetables on Moema Street in Orlando West; photographed (Sally Gaule, not dated); source (Nieftagodien, N & Gaule, S. 2012)



Figure 114: Trading on Vilakazi Street; source (Trip advisor, 2015)



Figure 116: Mfundo selling chicken heads and chicken feet and advertising her salon business; photographed (Sally Gaule, not dated); source (Nieftagodien, N & Gaule, S. 2012)

Since the dawn of South Africa becoming a democratic nation, it had a mandate to unify education by combining the previously fragmented racially based departments, especially in addressing the historical imbalance that existed as a result of the Apartheid “Bantu Education” (Soweto, 2003). This process is still on-going today and although progress has been made there is still a clear gap between education in the township schools and the suburban schools, therefore the imbalance is 100 fold in average as township schools manifest in the level of education received. Today, Soweto has 261 primary schools, 64 secondary schools, 1 tertiary educational facility (Vista), and 2 technical colleges. With all these, one of the biggest challenges is the fact that the majority of school graduates from Soweto are unable to find employment (Soweto, 2003).

An interesting case study was reading about the story of Ulwazi, a young women who matriculated in the year 2000. Today, she cleans cars with her older brother outside a well-known restaurant in Soweto charging R30 per car. She was born and raised in Soweto (Zola) and attended Grace High School in Roodepoort. Of her class of 32 pupils, only 28 came from Soweto and consisted of 4 white kids from the suburbs. All 4 of the white school graduates have obtained jobs in the telecommunication industry, 3 have been killed in a car accident and 1 died of natural causes. Of the remaining 18, 12 of them are unemployed or are working just like Ulwazi in the informal sector, with only 7 formally employed in Johannesburg (Soweto, 2003).

Affirmation:

A survey conducted from a Soweto School by Soweto Research project of pupils that matriculated in 2000 who could be traced revealed the following:

The education problem in Soweto has not been solved yet and it is demonstrated by the participants I have interviewed and the case study above, the education system and its support mechanisms have largely failed when it comes to employment. This goes to show that education in Soweto continues to be a fundamental social problem that has been instrumental in the development of the resistance movement of what was caused by apartheid, and possibly, instrumental in challenging the dominance of the African National Congress in post 1994 as South Africa became a democratic nation as seen currently through the pandemic caused by covid-19 as a catalyst for action to address the consequences of inequality in the education system.

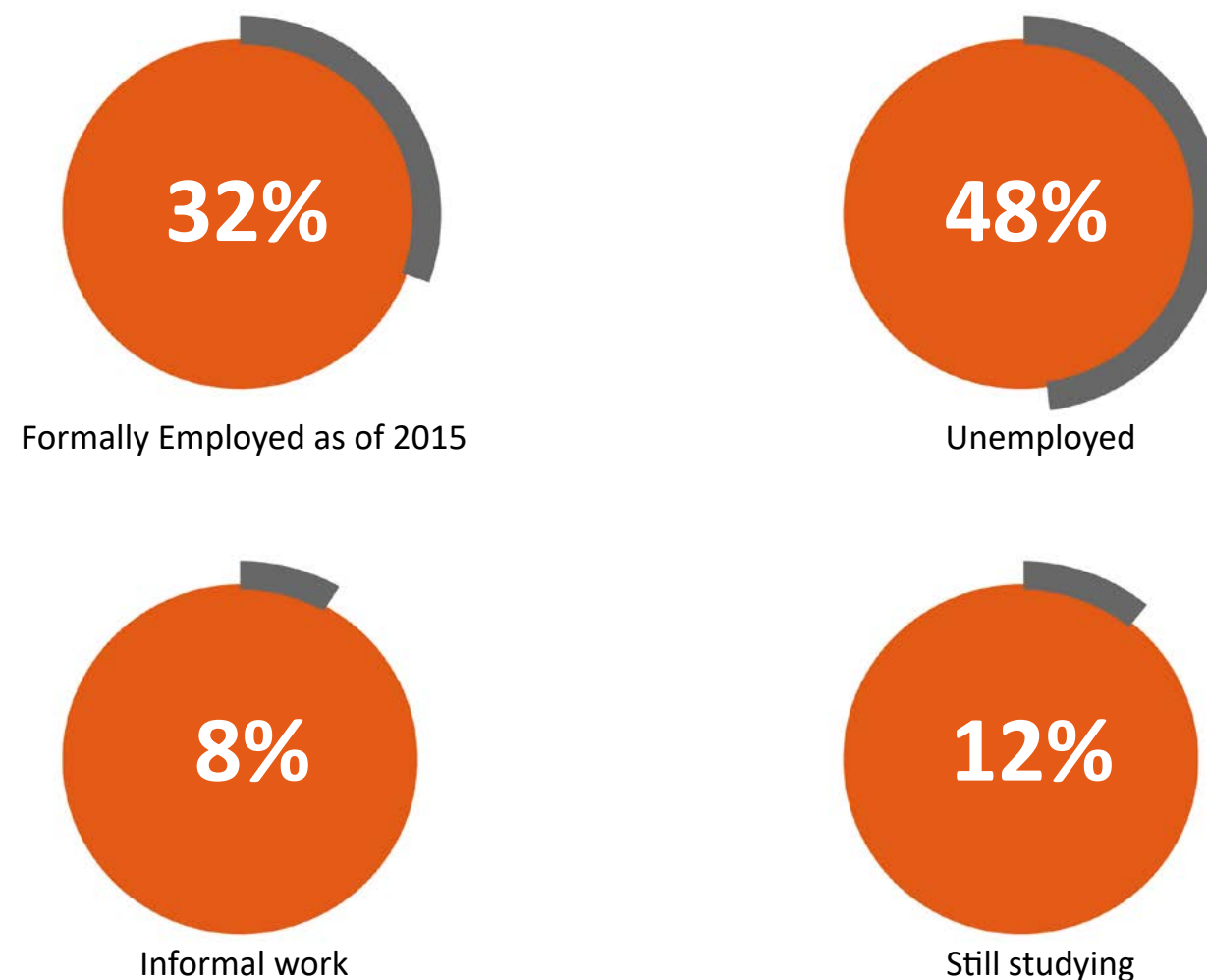


Figure 117: Employment and unemployment survey of students that finished high school from a school in Soweto in 2000; source (Soweto, 2003)

3.3 SITE ANALYSIS

The site that will be used for the application of the Feminical Institute sits in the heart of Orlando and is located at the corner of Mooki and Maopha street. Orlando is divided into two main parts, Orlando West and Orlando East which are separated by a main road, Mooki Street (demonstrated by the orange line in figure 118)

The following diagrams show how I have analysed the site and why I chose it as a place of intervention.

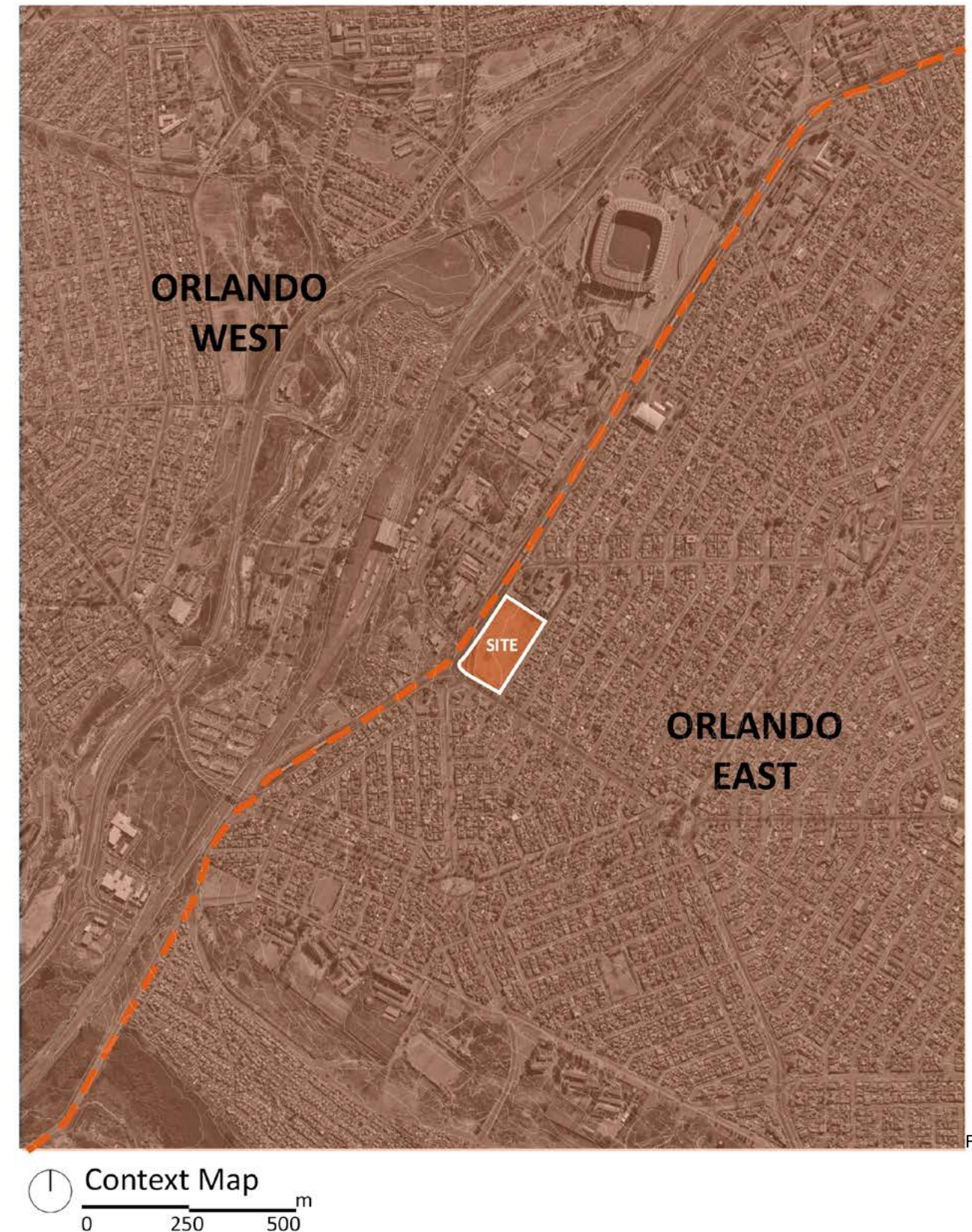


Figure 118

- >Figure 118:
Google Maps Image overlayed; analysis (Nevhutanda, 2020) - (Area of study)
- vFigure 119:
Google Maps Image overlayed; analysis (Nevhutanda, 2020) - (Land Use)
- vFigure 120:
Google Maps Image overlayed; analysis (Nevhutanda, 2020) - (Accessibilty and Transport)
- vFigure 121:
Google Maps Image overlayed; analysis (Nevhutanda, 2020) - (Educational Facilities)

3.3.1 SITE QUALITIES

3.3.1.1 LANDUSE (Figure 119)

The area has minimal vertical densification due to restrictions placed by the National Building Regulations and Building Standards Act according to the land use scheme of City of Johannesburg (City of Johannesburg, 2018). Soweto comprises of a dense built fabric and continues to see a population growth, therefore land owners and landlords are building more rental spaces horizontally in their back yards popularly known as 'Backrooms'. The street that my site lies along is embedded of civic buildings such as schools, community halls, a police station as well as a magistrate court

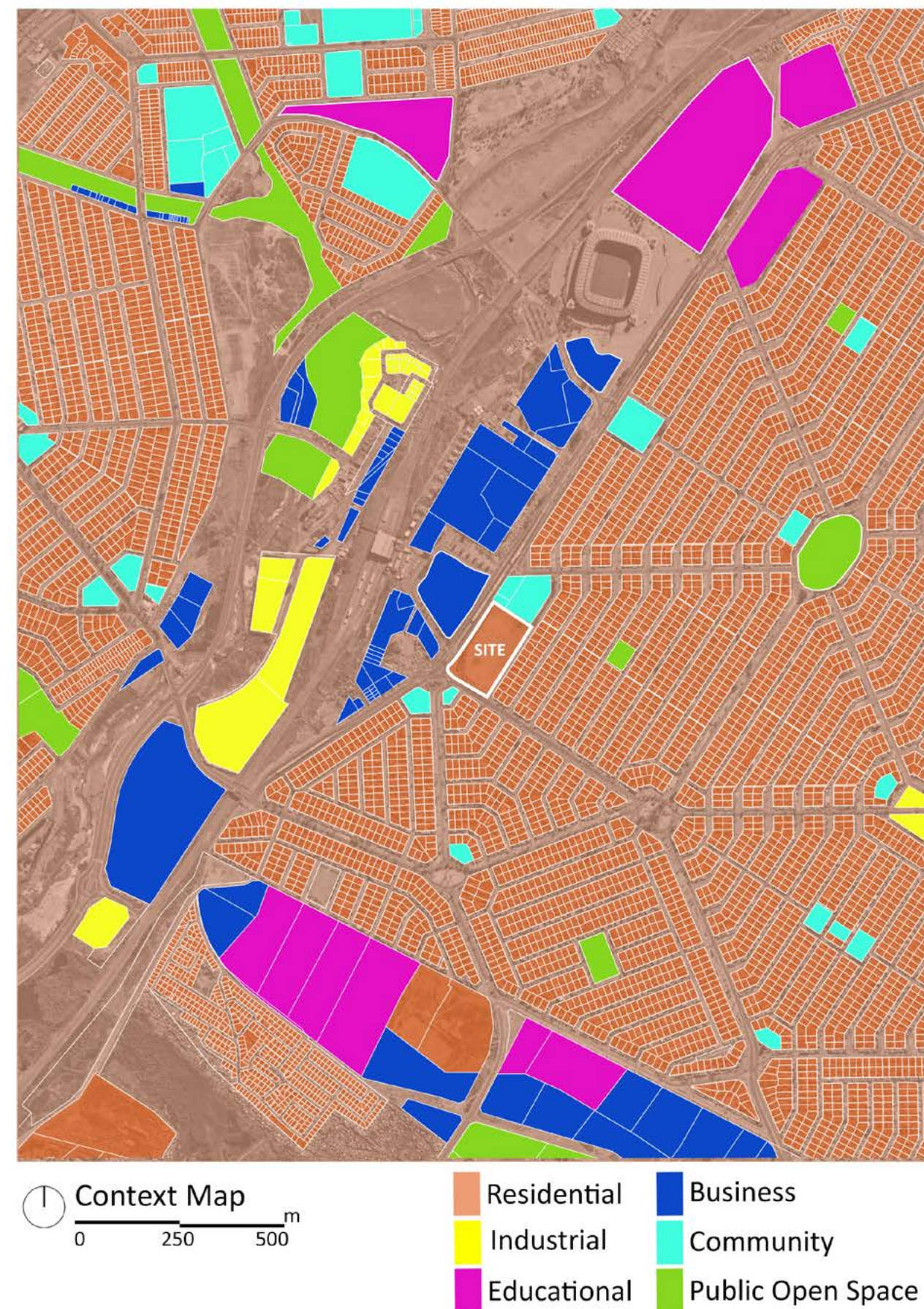
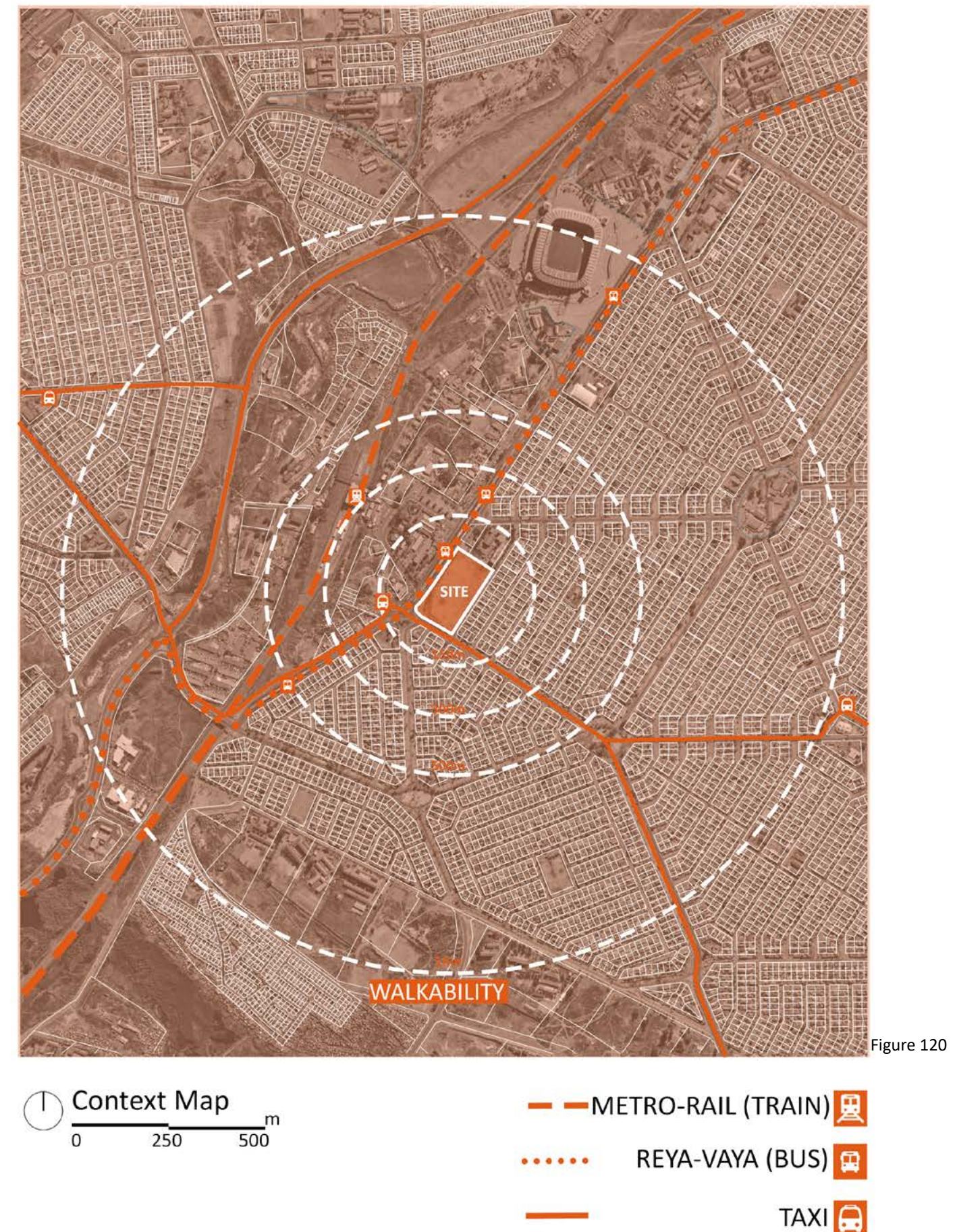


Figure 119

3.3.1.2 ACCESSIBILITY AND TRANSPORT: (Figure 120)

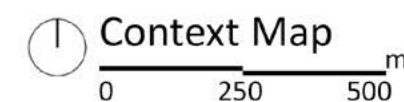
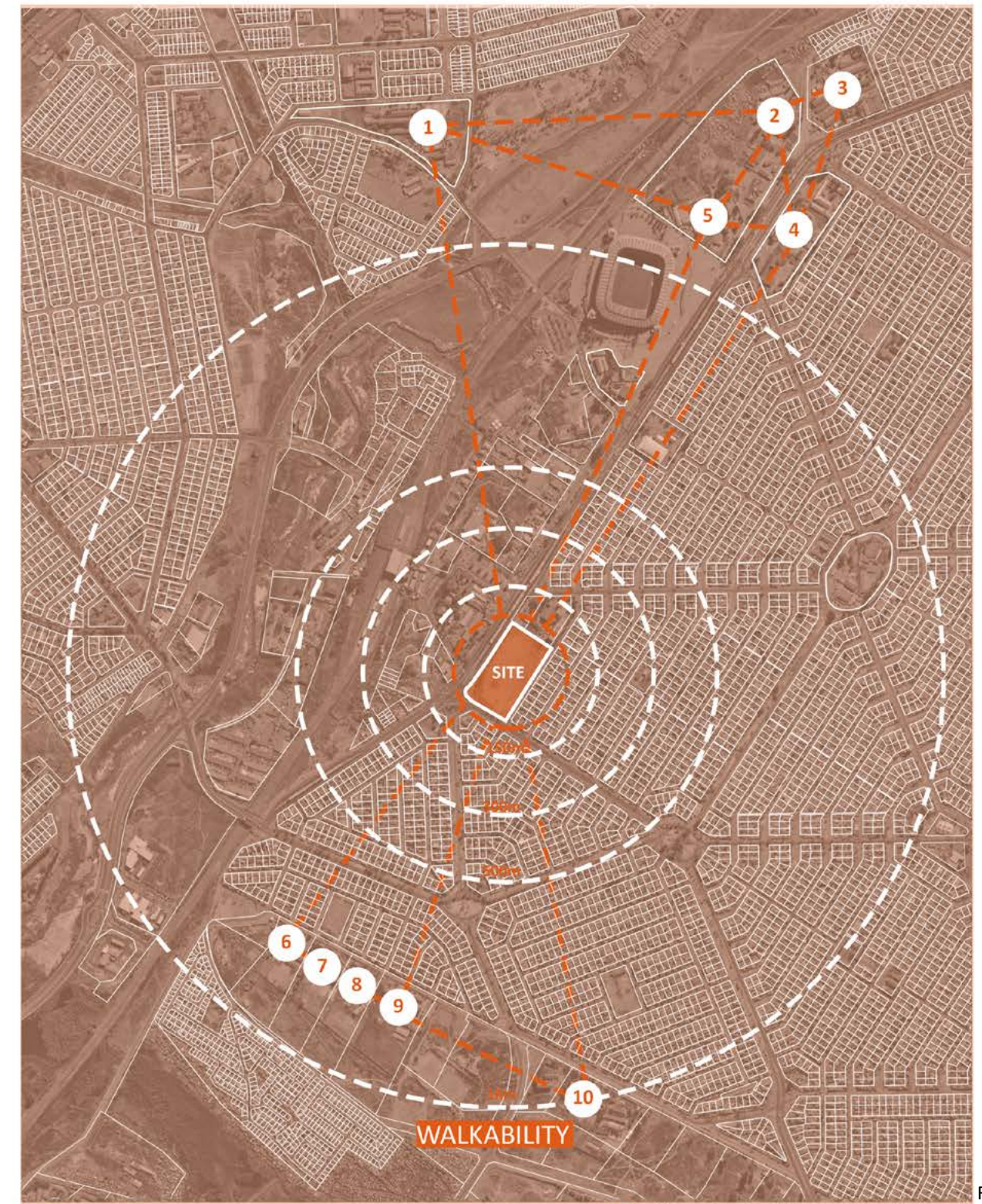
Access to transport and mobility is a huge concern to women in Soweto. It is where women are most vulnerable, especially for those forced to use dangerous methods of movement (Sisonke Gender Justice, 2017). Firstly, the site must take into consideration the distance from transport nodes to the site, is it close enough or must one walk a long distance to access public transport? Secondly, are these along safe and used streets? Thirdly, are these nodes well-lit and in the eyes of the public?

The predominant modes of mobility around my site are through the Rea-vaya Bus, Taxi, and Metro-rail Train which lie less than a distance of 1km. The major route of movement is along Mooki and Maopha Street making the site easily accessible.



3.3.1.3 EDUCATIONAL FACILITIES: (Figure 121)

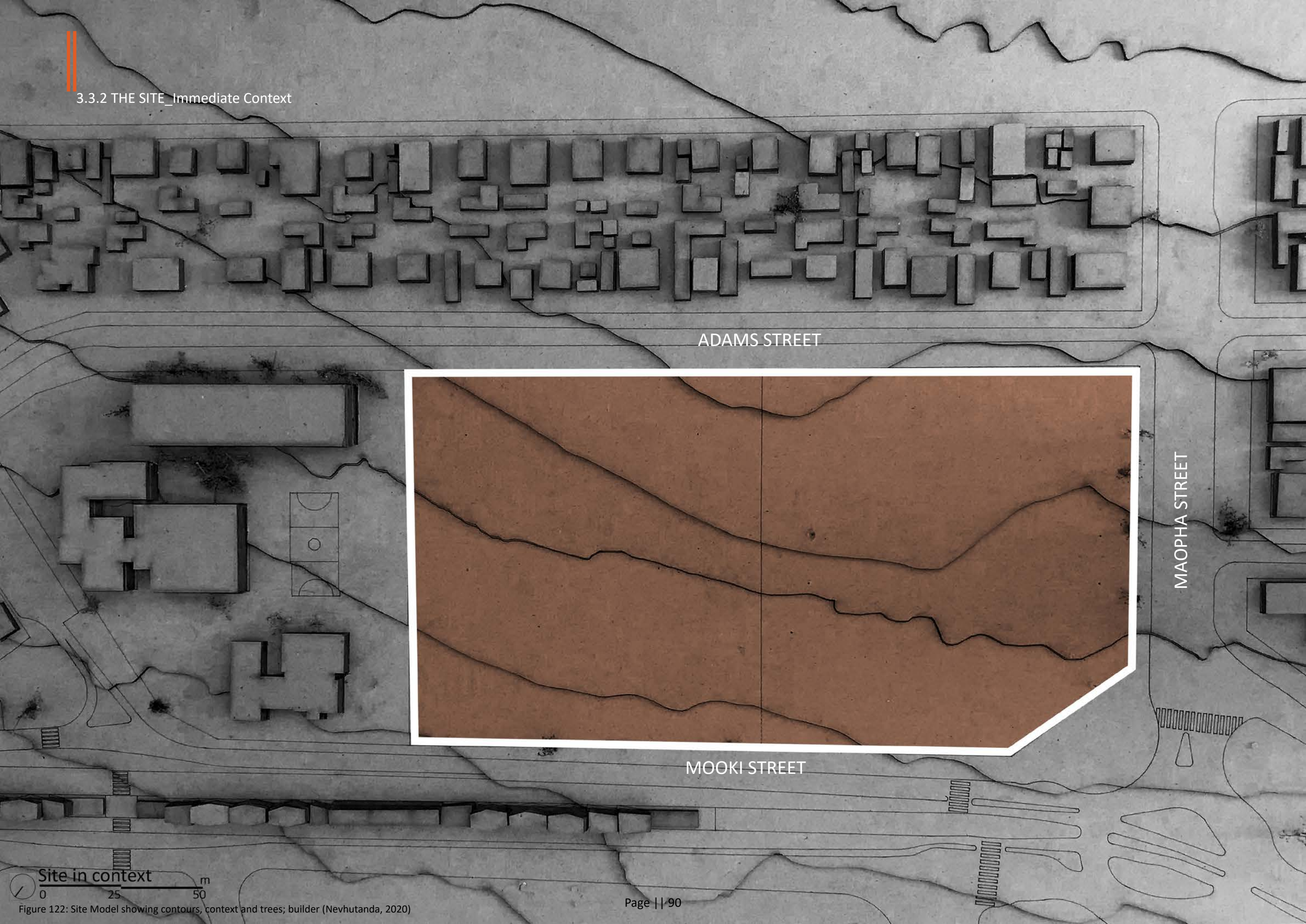
A fair amount of educational facilities that include primary and secondary education are increasingly popular around the site as a direct result of the overpopulated township. Based on the topography of Orlando residential homes and their scale, these facilities accommodate a vast number of learners, making the Femnical Institute a place of aspiration for students that want to find an alternative way of completing high school or continue with their studies after high school.



- 1 - Emadwaleni Secondary School
- 2 - Leratong Primary School
- 3 - Lofentse Girls High School
- 4 - Orlando High School
- 5 - Seleleka Secondary School
- 6 - Zakheni Primary School
- 7 - Zifuneleni Junior Secondary
- 8 - Selope Thema Primary School
- 9 - Bona Comprehensive School
- 10 - Emadwaleni Secondary School

Figure 121

3.3.2 THE SITE_Immediate Context



ADAMS STREET

MAOPHA STREET

MOOKI STREET

Site in context

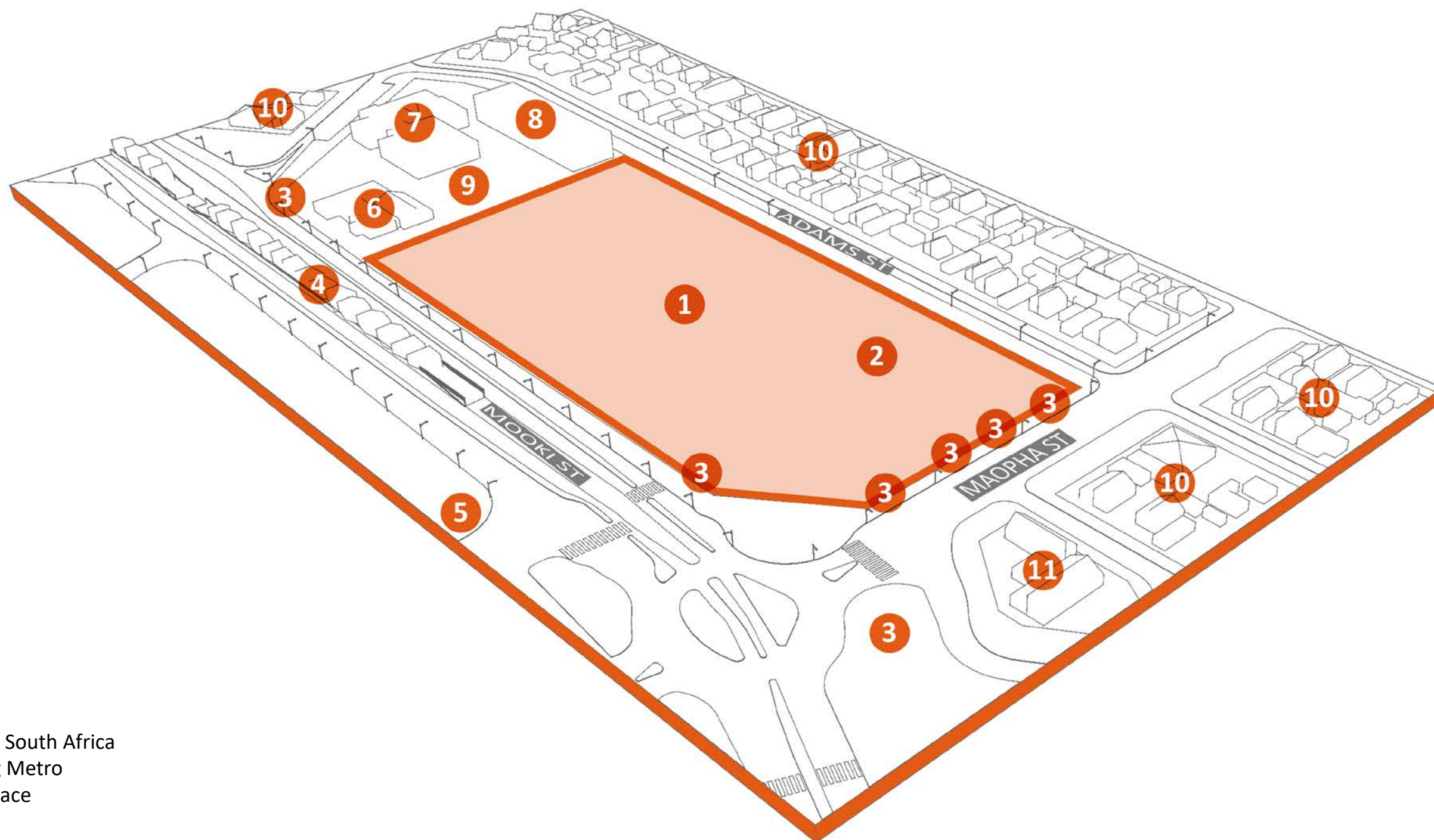
0 25 50 m

Figure 122: Site Model showing contours, context and trees; builder (Nevhutanda, 2020)

- 01. PUBLIC OPEN SPACE (SITE)
- 02. INFORMAL SOCCER FIELD
- 03. INFORMAL TRADING MARKET
- 04. REA-VAYA BUS STATION
- 05. TAXI STOP
- 06. PUBLIC LIBRARY
- 07. COMMUNITY CENTRE
- 08. UJ FEMALE RESIDENCE
- 09. NETBALL AREA
- 10. RESIDENTIAL HOMES
- 11. CHURCH

SITE INFORMATION:

- Located along Mooki Street, Soweto, South Africa
- Located in Region D of Johannesburg Metro
- Zoning and Landuse: Public Open Space
- Size: 2 Hectare



Activities observed in and around the site range from gatherings in the public open space (minimal). Recreational activities such as soccer and lunch hour stops are a daily occurrence at the informal markets along the edge of the site. Apart from playing soccer, almost entirely, the site is used as a large thoroughfare for the community to access the different amenities around the site. Other facilities sit in a community precinct that is rich in history and includes a public library, community centre and a female residence that houses the University of Johannesburg Soweto Campus students. What I love about this part of the area is that it begins to create a student environment for females (see figure 123 above).



Figure 124

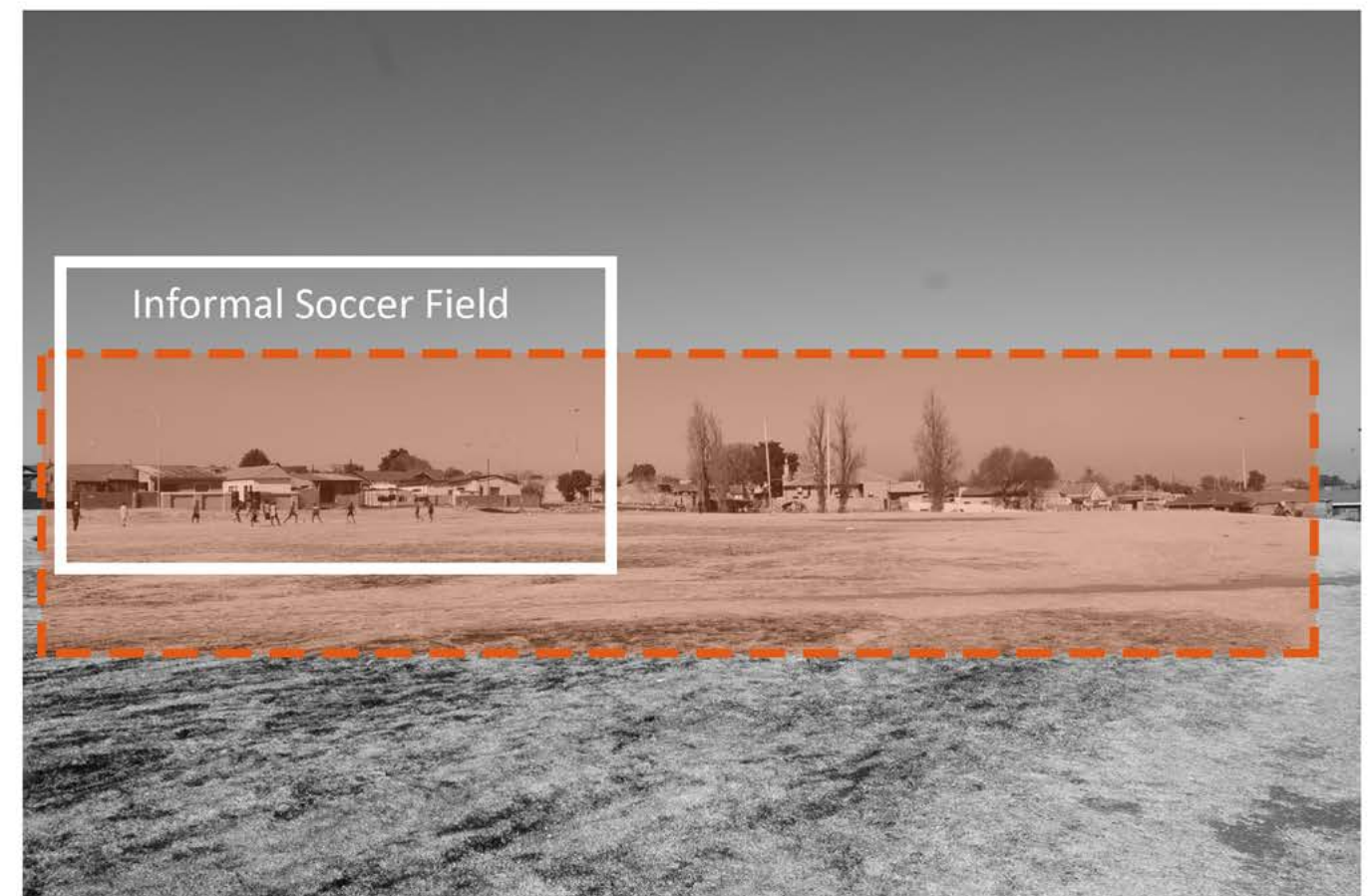


Figure 125

- >Figure 124:
View of site from Adams street with people playing soccer; photograph (Nevhutanda, 2020)
- >Figure 125:
View of site from Mooki street with people playing soccer; photograph (Nevhutanda, 2020)
- vFigure 126:
Informal trading on Maopha Street; photograph (Nevhutanda, 2020)
- vFigure 127:
Taxi and Rea-vaya mobility on Mooki Street; photograph (Nevhutanda, 2020)
- vFigure 128:
3 roomed match box house on Rathebe Street built in the 1930s when Orlando was established; source (Lizatlanaster, not dated)
- vFigure 129:
Community centre at the corner of Mooki and Rathebe Street built in 1949; source (SAHA, 2017)
- vFigure 130:
Description of public library; source (SAHA, 2017)
- vFigure 131:
Site in context; drawing (Nevhutanda, 2020)
- vFigure 132:
East - West Section through the site; drawing (Nevhutanda, 2020)
- vFigure 133:
North - South Section through the site; drawing (Nevhutanda, 2020)
- vFigure 134 - 138
Street sections showing activities around the site; drawing (Nevhutanda, 2020)



Figure 126



Figure 127

Most of the residential buildings in Orlando are still evident of the match box houses that were built in the 1930's when Orlando East was established. The Orlando Community Centre, built in 1949, was the first recreational hall in Soweto and hosted many political meetings and has now been deemed a heritage site. Behind the Community Hall is the Public Library which opened in 1950 as Soweto's first purpose-built public library.



Figure 128



Figure 129

Figure 130: Writing about the Orlando Library which opened in 1950 - source: SAHO

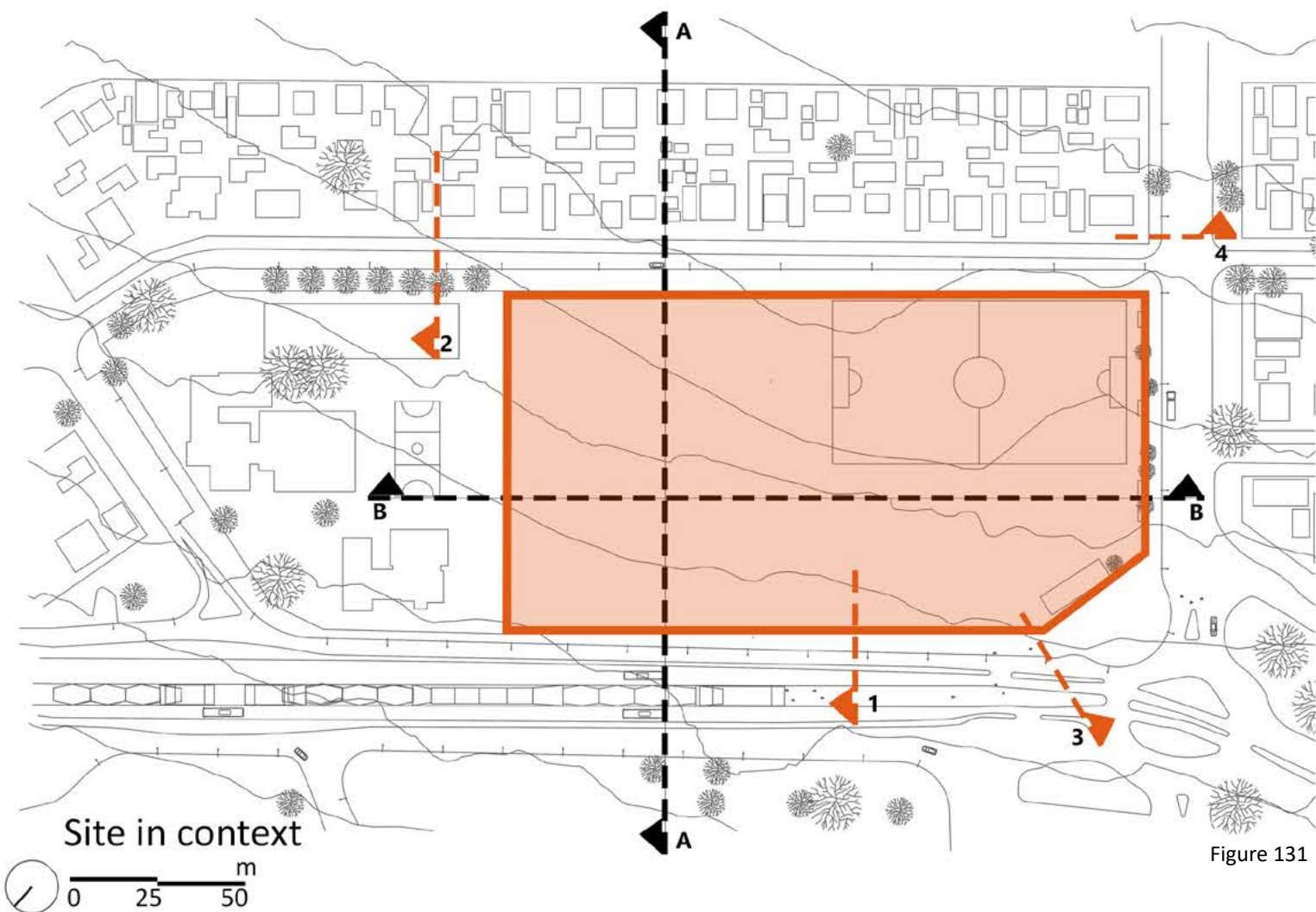
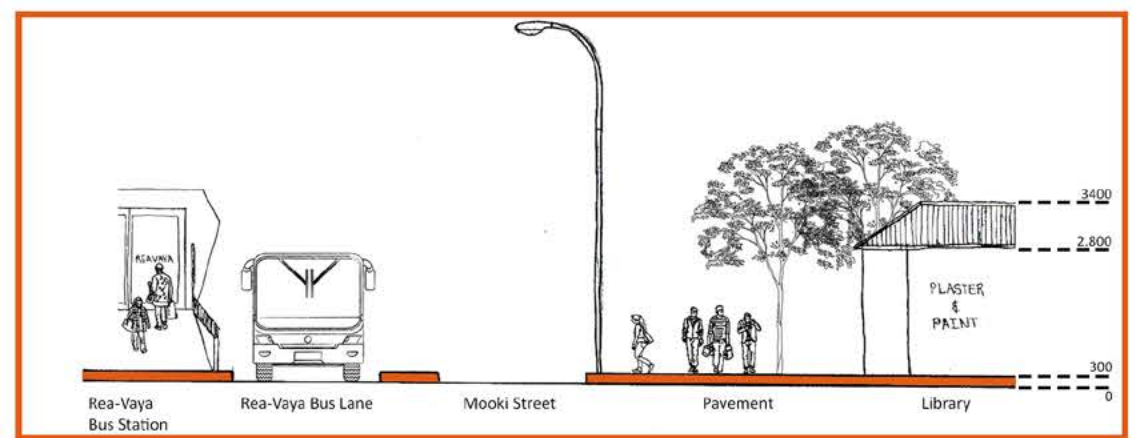
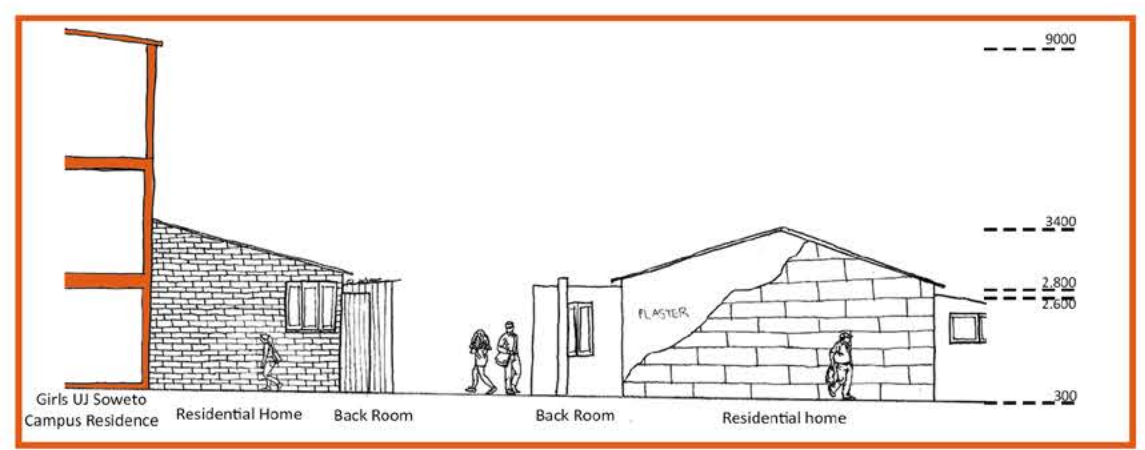


Figure 131



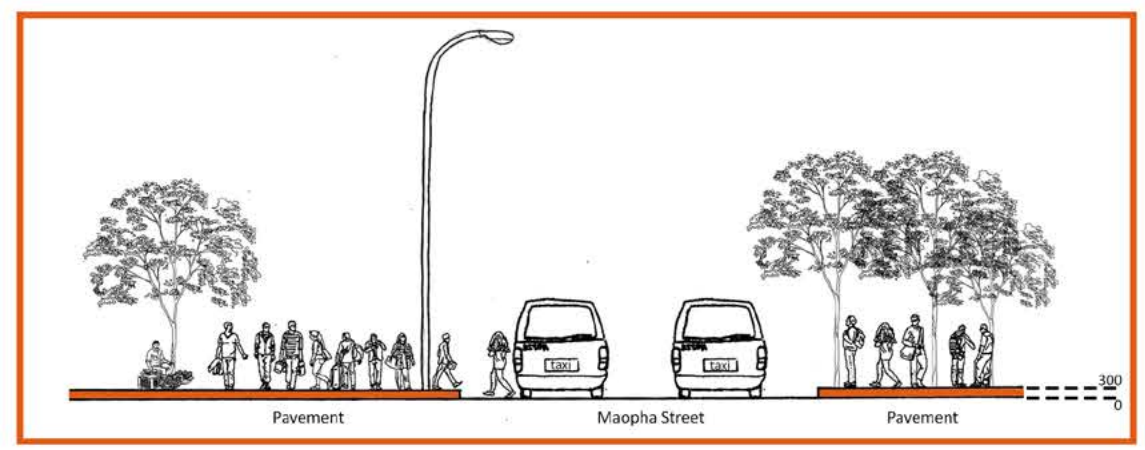
Sectional Elevation 1

Figure 134



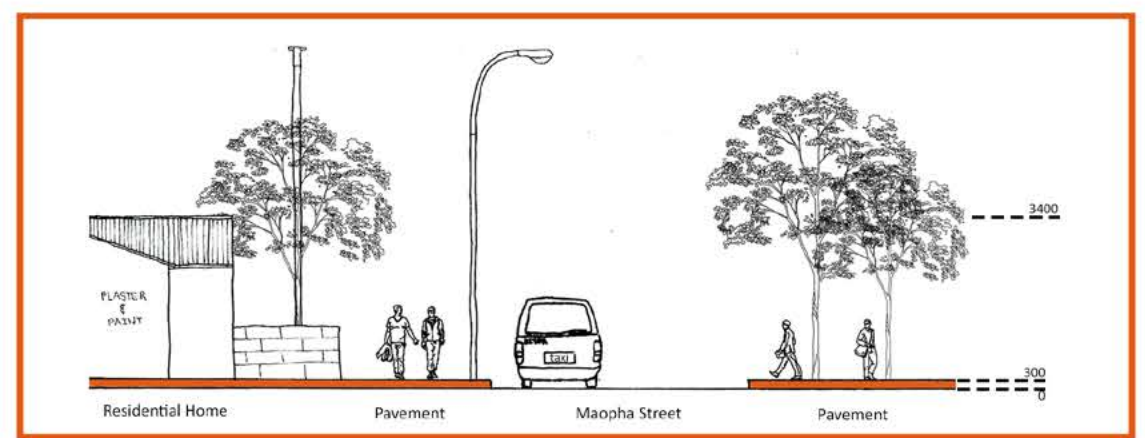
Sectional Elevation 2

Figure 135



Sectional Elevation 3

Figure 136



Sectional Elevation 4

Figure 137

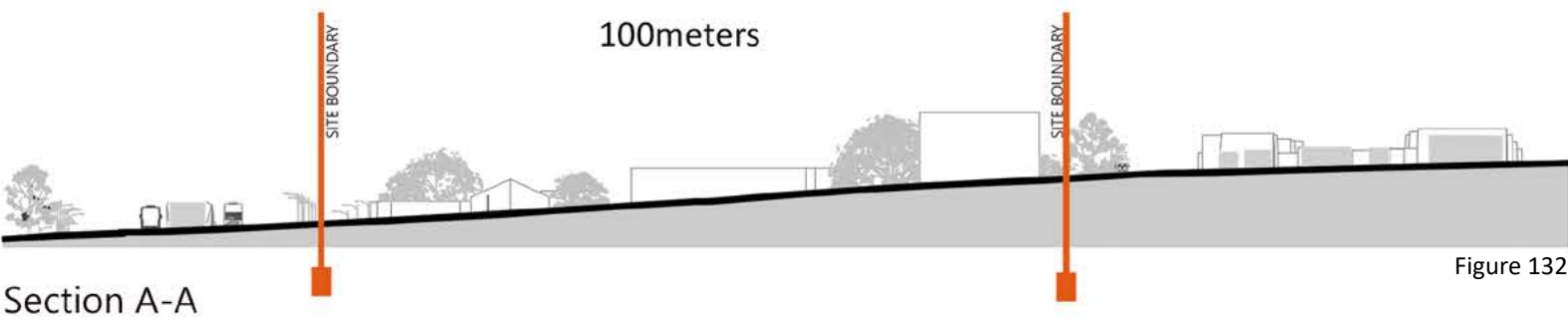


Figure 132

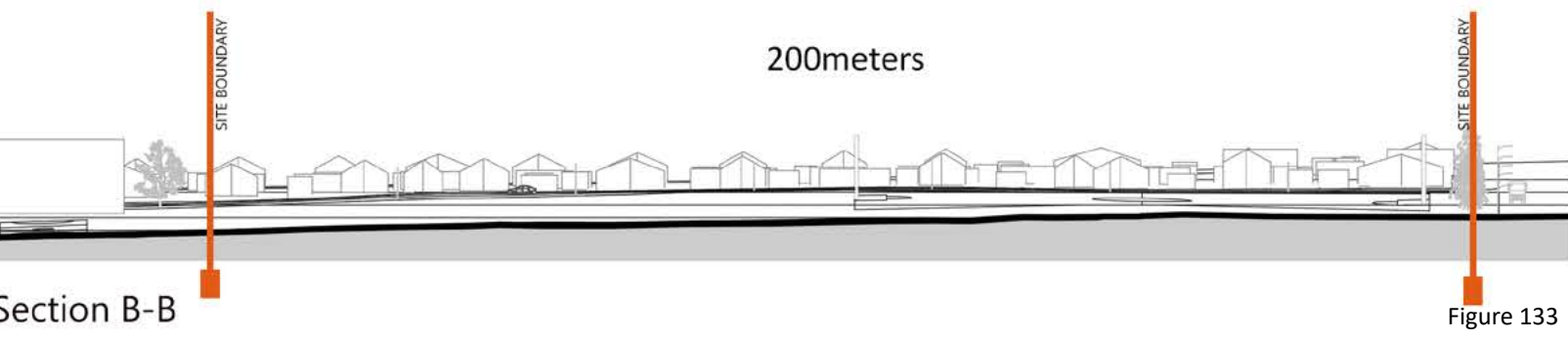


Figure 133

3.3.3 SITE ISSUES

A large factor in site selection, especially for a model that will be used by women is to take into consideration any issues connected to that site. Firstly, I took into consideration that my proposal sits on a site that has been deemed as a public open space. With that said, one must consider green spaces as a prized commodity and should remain of vital importance when improving livelihoods to not consume too much recreational and outdoor space. In this case the Femnical institute needs to respect the green space it inhabits.

From an architectural point of view:

- Must take into account that the site has been deemed as a public open space.
- Must not be imposing and monolithic in its height.
- Must be linked to scale and not the type of institutions we are used to.
- Must consider women's safety through security, inclusion and support

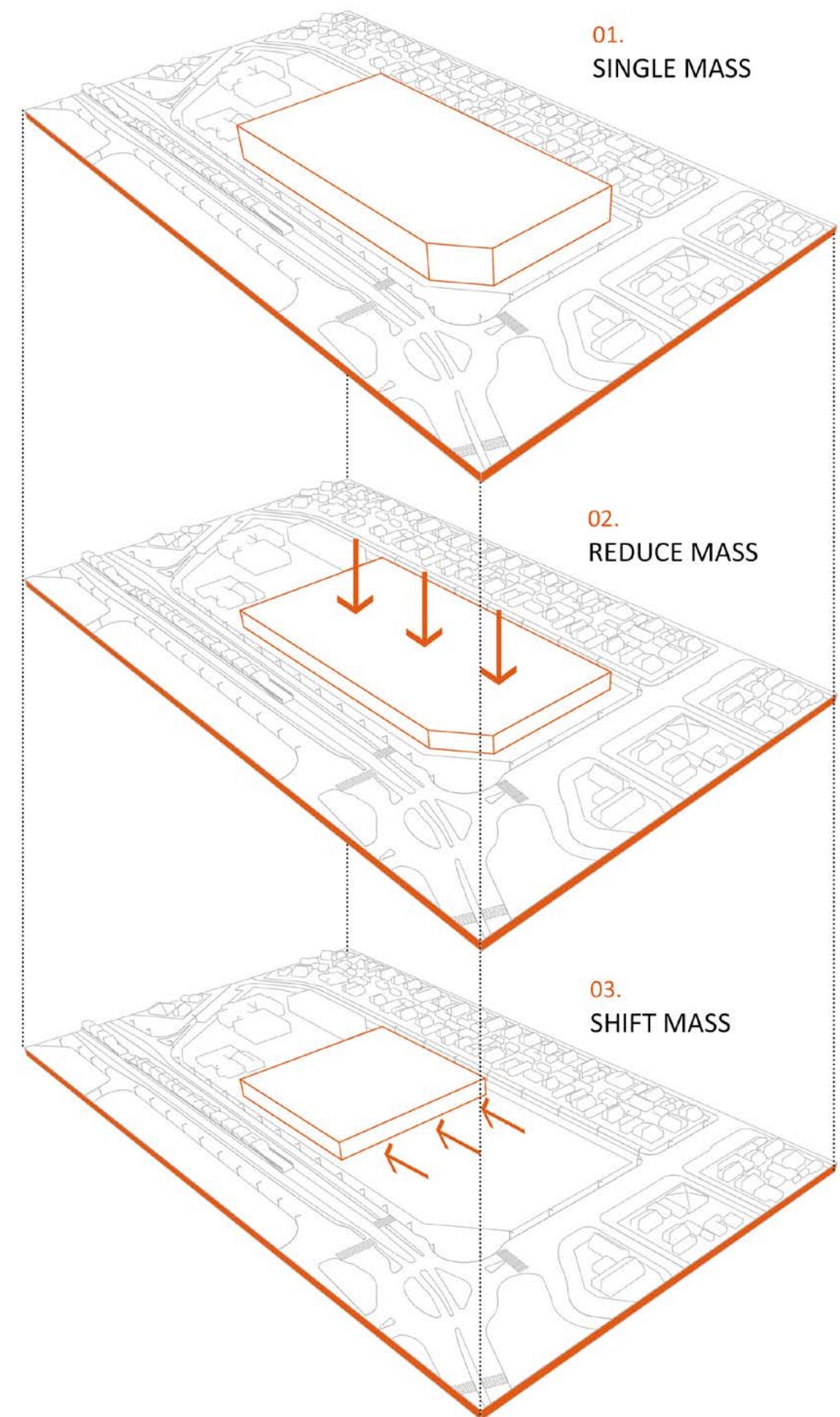


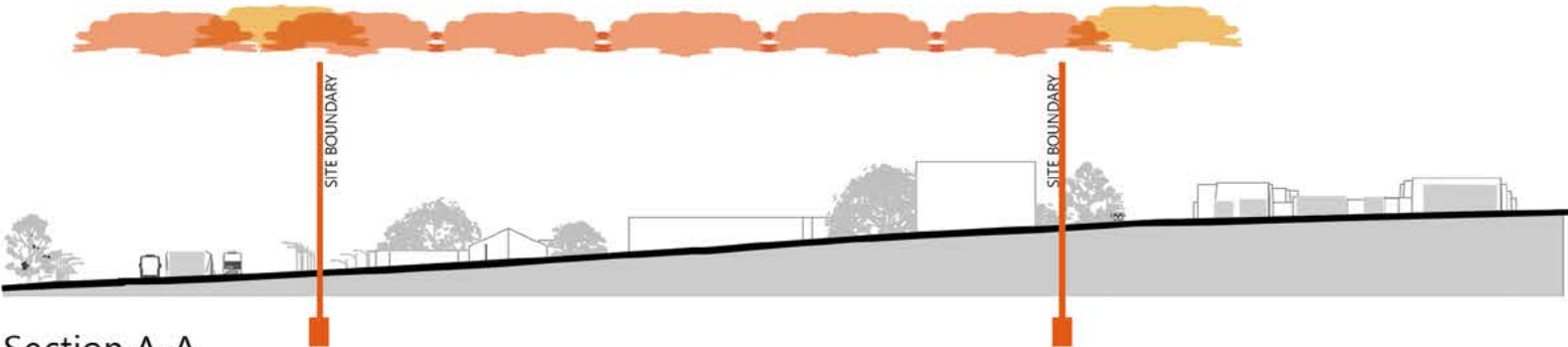
Figure 138: Site evolution; drawing (Nevhutanda, 2020)

Secondly, the public realm, a point of intersection that is regarded as male territory and consequently limited for female consumption. After a few visits and walks within and around the site, I registered for myself how I felt in the space which I identified as female and male dominance. Taking reference from a study conducted by Christian Nold called emotional cartography-technologies of the self (2009) which took a bio-mapping device that reads ones' biometric and emotions and made people walk around the city to show how spaces make them feel and how they reacted, this was ideally the best method but due to the lack of tools, I walked around the sight in order to gain these insights (see figure 139-141)

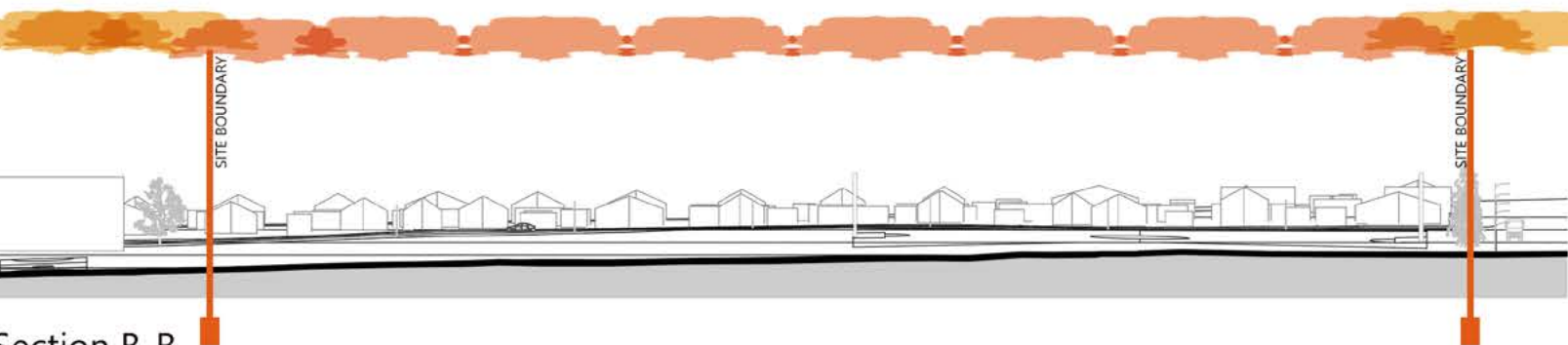
Although I experienced this subjectively, it is a valid methodology. As a black female from South Africa, to a large degree I represent the inter-subjective experience of black females through my embodied experience.

Female dominance

Male dominance



Section A-A
Figure 139: North - South section through the site showing male and female dominance; drawing (Nevhutanda, 2020)



Section B-B
Figure 140: East - West section through the site showing male and female dominance; drawing (Nevhutanda, 2020)

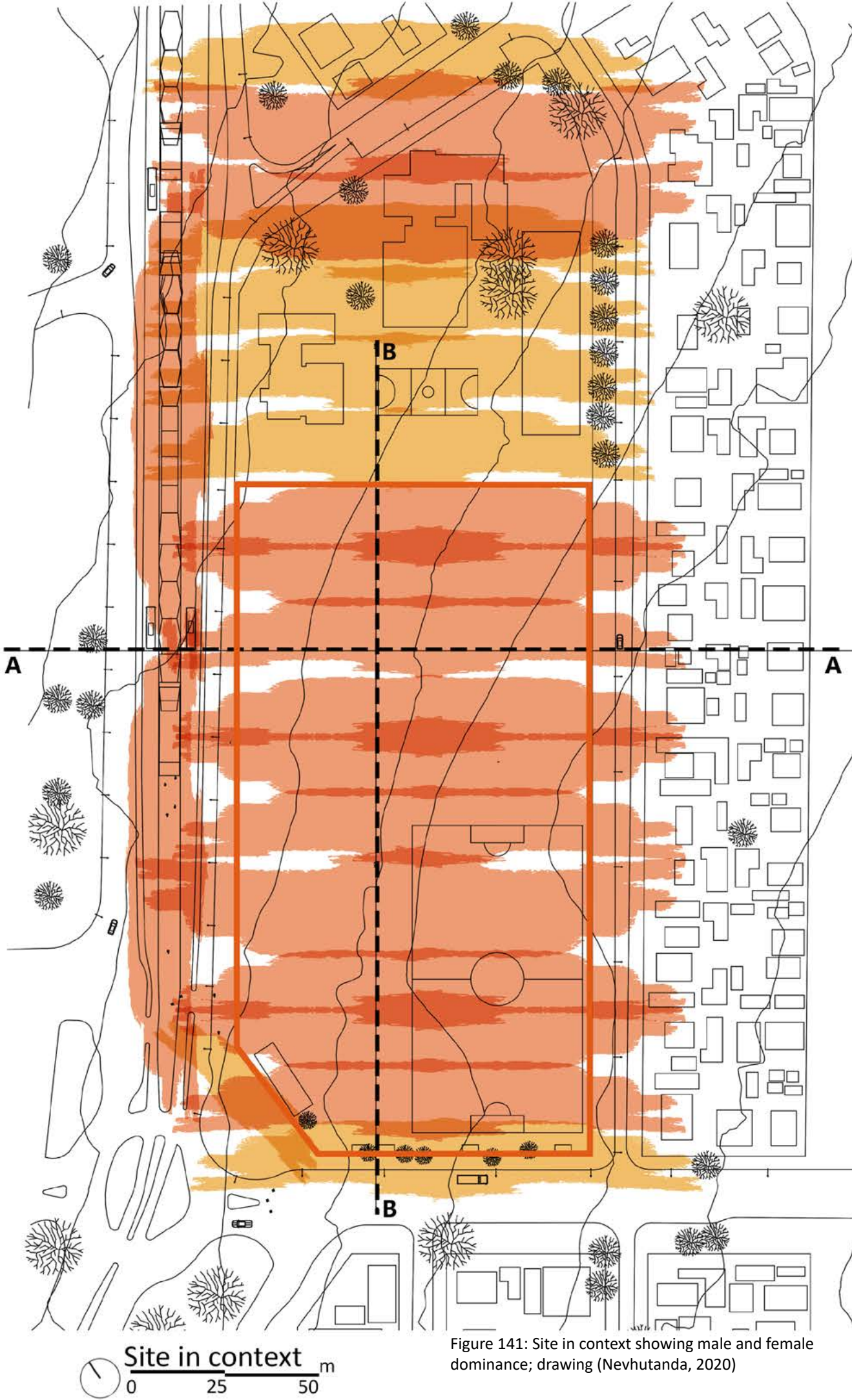


Figure 141: Site in context showing male and female dominance; drawing (Nevhutanda, 2020)

3.3.4 SITE INFORMANTS

01.

Size

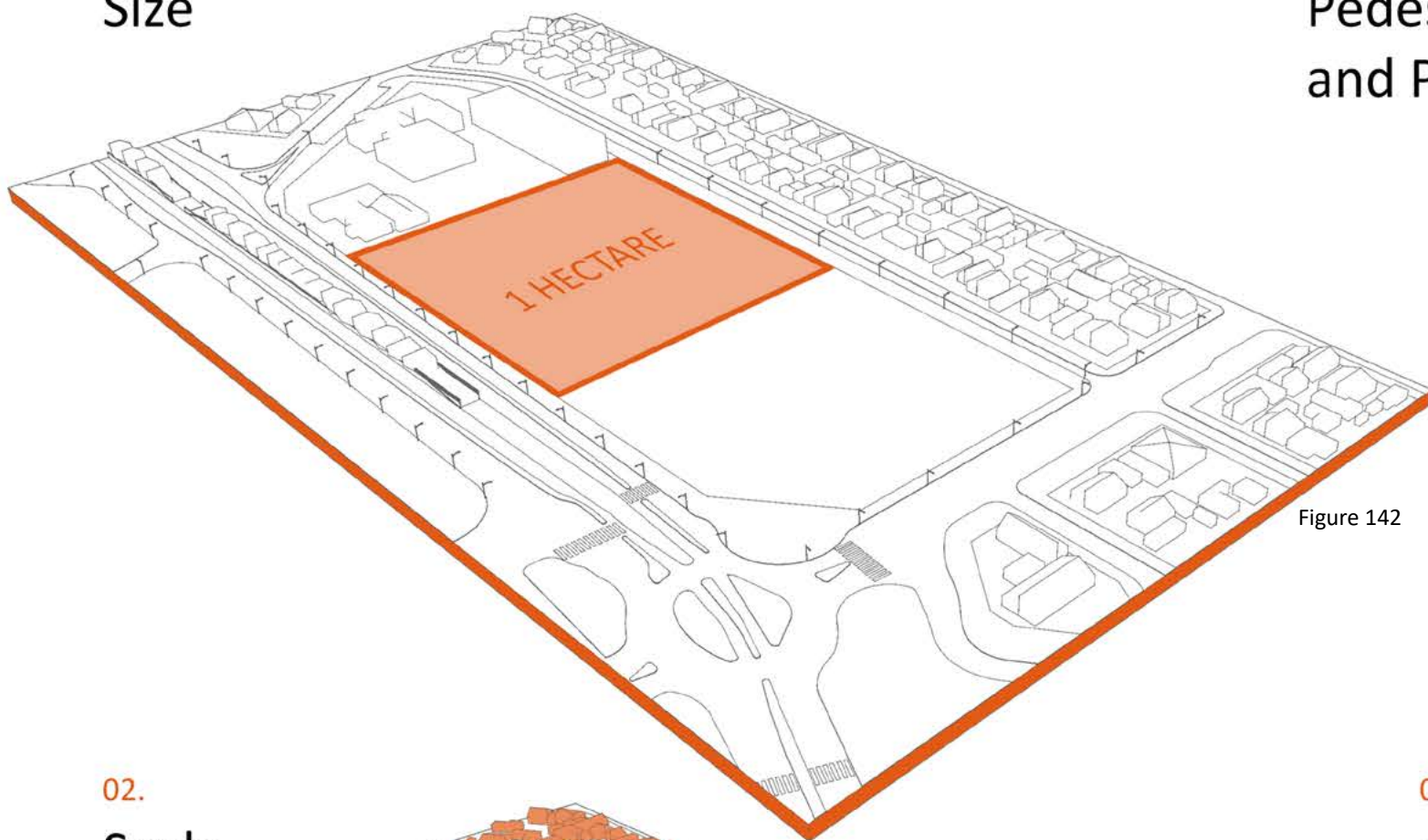


Figure 142

02.

Scale

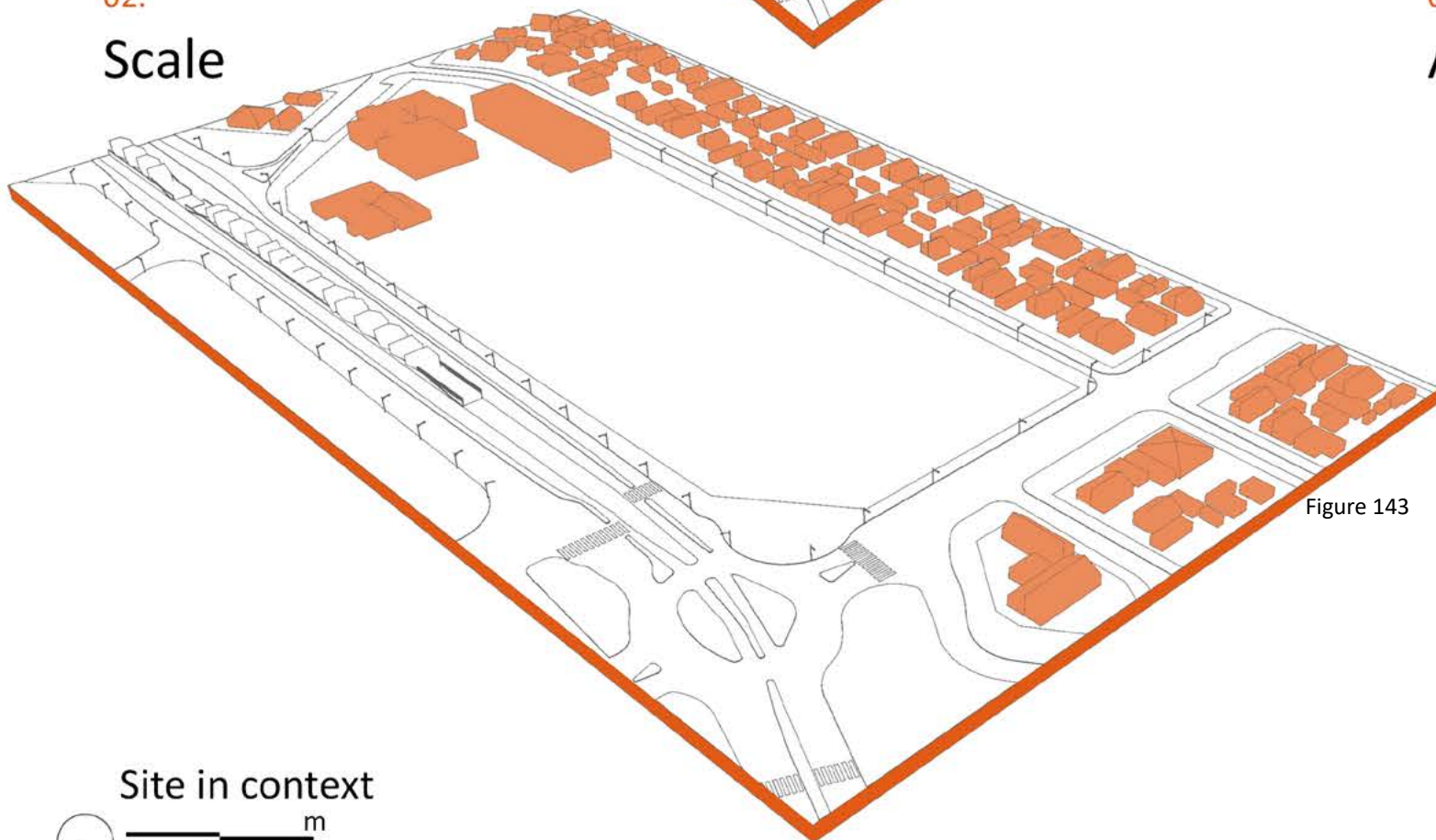


Figure 143

03.

Pedestrian thoroughfare
and Pause Points

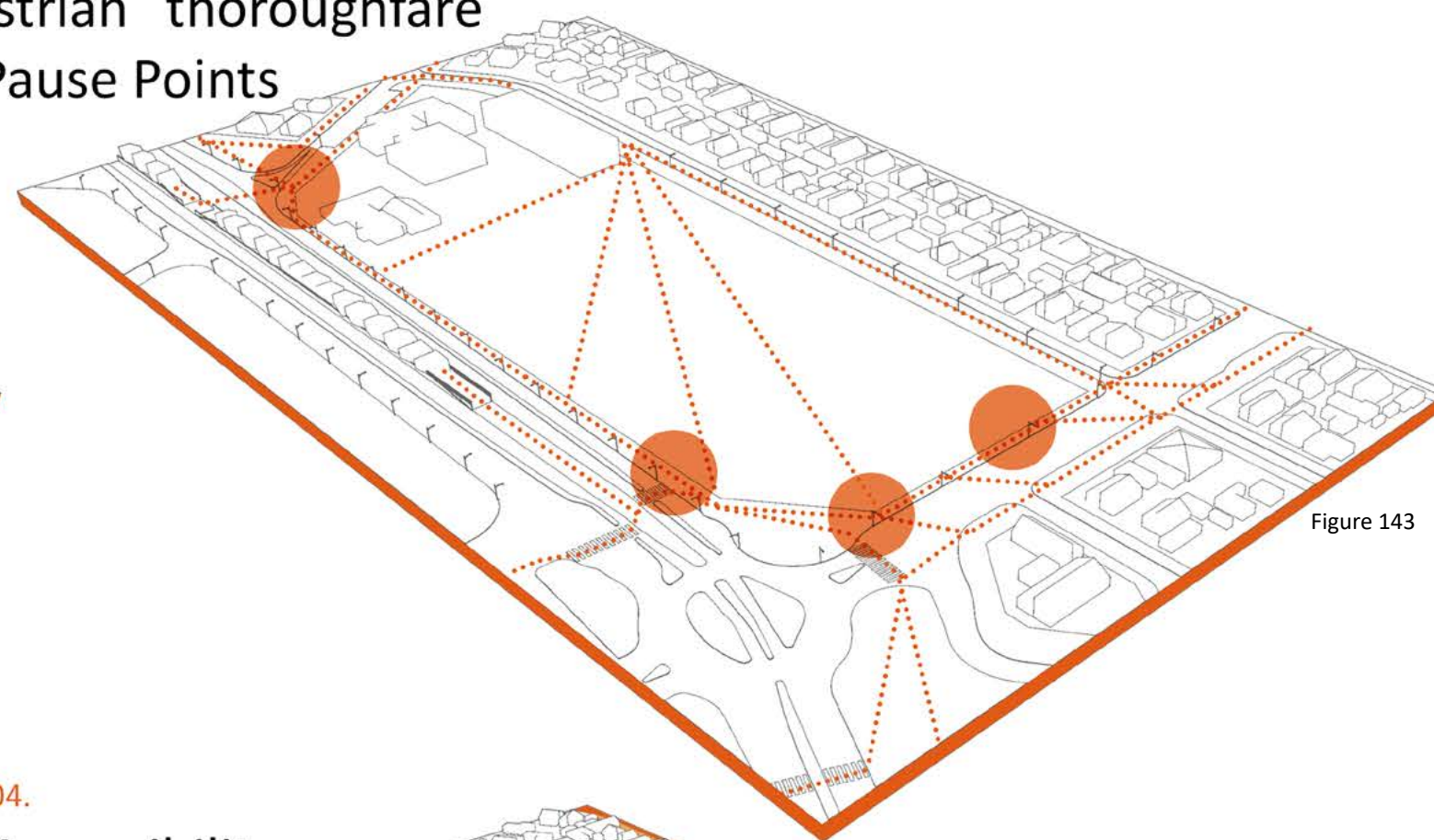


Figure 143

04.

Accessibility

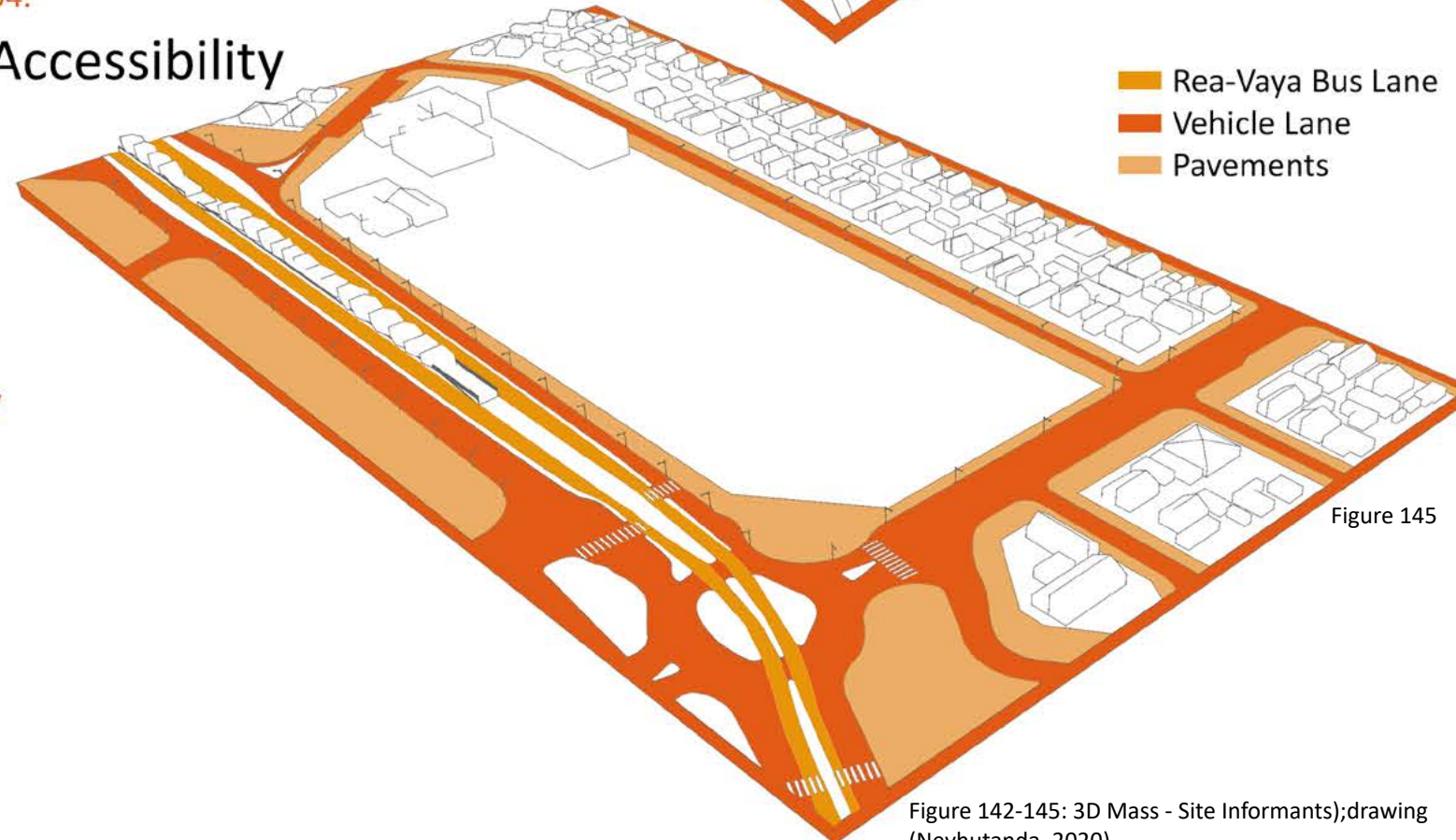


Figure 145

Site in context

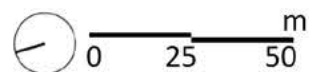


Figure 142-145: 3D Mass - Site Informants);drawing
(Nevhutanda, 2020)

05.

Site Slope

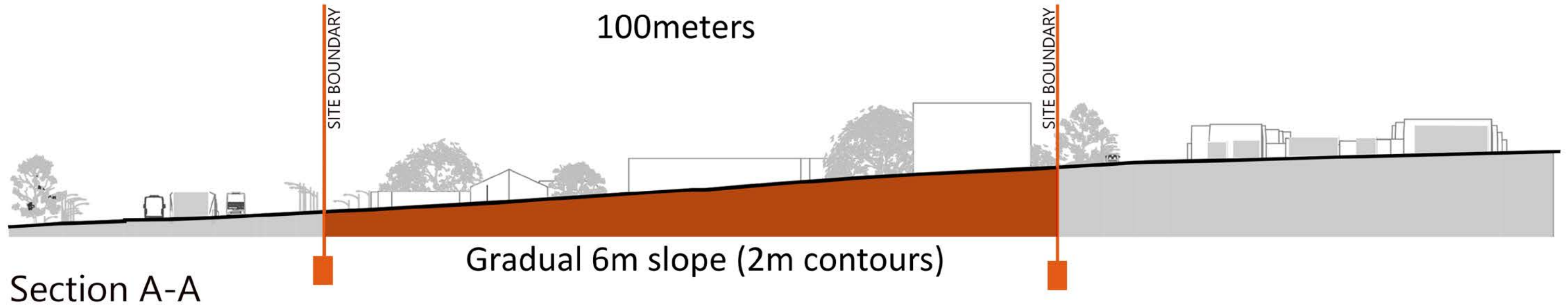


Figure 146: North - South section; drawing (Nevhutanda, 2020)

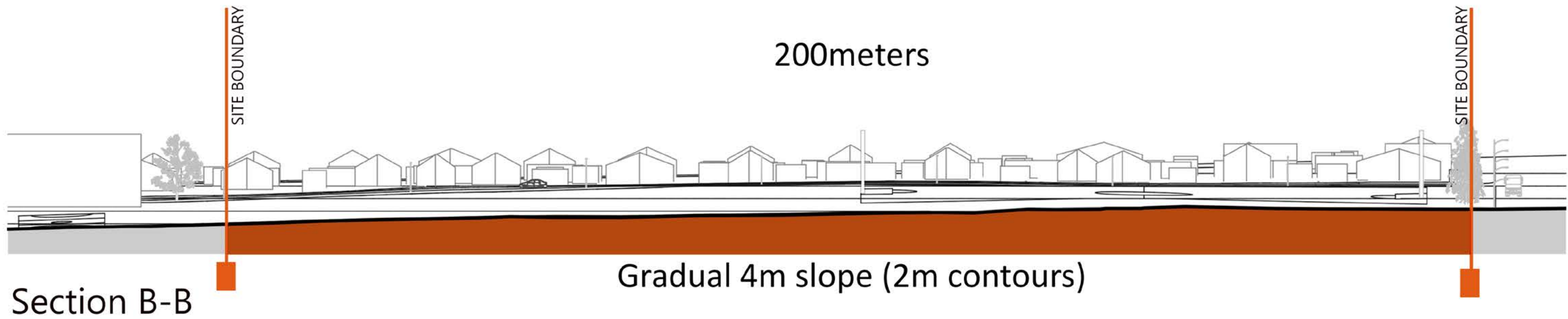
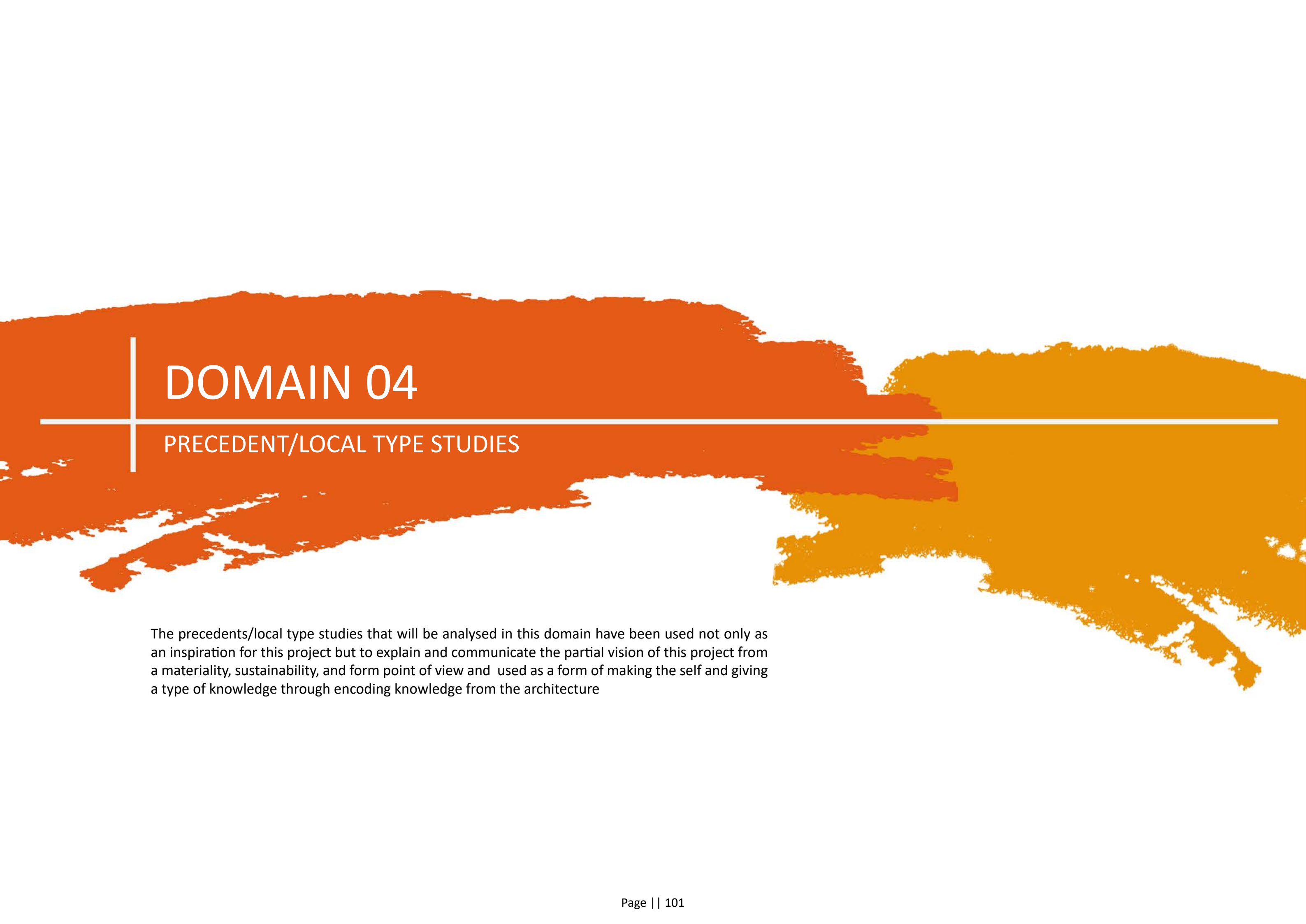


Figure 147: East - West section; drawing (Nevhutanda, 2020)

3.3.5 THE SITE_Immediate Context



Figure 148: Site Model showing contours, context and trees; builder (Nevhutanda, 2020)



DOMAIN 04

PRECEDENT/LOCAL TYPE STUDIES

The precedents/local type studies that will be analysed in this domain have been used not only as an inspiration for this project but to explain and communicate the partial vision of this project from a materiality, sustainability, and form point of view and used as a form of making the self and giving a type of knowledge through encoding knowledge from the architecture

4.1 PRECEDENT STUDY 01

Project name: Women's Opportunity Centre

Category: Inspiration

Architect: Sharon Davis

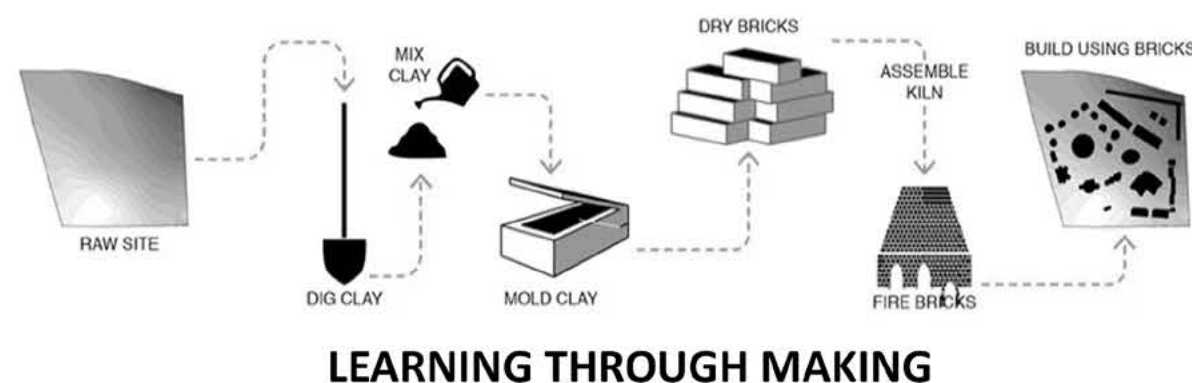
Location: Kayonza, Rwanda



Figure 149: 3D render of the Women's Opportunity Centre; source (Architizer, 2020).

ABOUT THE WOMEN'S OPPORTUNITY CENTRE

The Women's Opportunity Centre was designed as a support mechanism for the education of women and the support and advancement of the community. It is part community gathering space and part education centre for women which includes class rooms, guest lodging, and demonstration farm to attain job training and learn new skills to find employment. A market place has also been included in the scheme where women can sell the products they make on site. The 450,000 clay bricks needed for the construction were made at the centre by local women using a durable manual press method which was adapted from local building techniques (resulting in the principle of reciprocity as stipulated in Domain 02). As a result, women of Rwanda have learned marketable, income-generating skills and are now being hired as masons in the area (Archdaily, 2013).



LEARNING THROUGH MAKING

Figure 150: Process diagram of making clay brick ; source (Architizer, 2020)



Figure 151: Local women of Rwanda gathering raw materials for brick making; photograph (Bruce Engel, not dated); source (Architizer, 2020)



Figure 152: Local women of Rwanda brick making and shaping; photograph (Bruce Engel, not dated); source (Architizer, 2020)



Figure 153: Clay bricks ready for construction; photograph (Bruce Engel, not dated); source (Architizer, 2020)

DESIGN ANALYSIS

- Designed for women by women.
- Designed to empower the women in the community.
- Designed to create economic opportunities.
- Designed to rebuild social infrastructure.
- The centre creates clear site lines.
- There is passive surveillance towards the street scape.
- Private and vulnerable areas are fenced off and inaccessible form the public.
- Spatial planning has been clearly thought-out as a safety precaution by placing facilities around a community gathering space where the women spend most of their time.

4.2 PRECEDENT STUDY 02

Project name: Student residence and dining facilities (University of Mpumalanga)

Category: Design Account

Architect: Ludwig Hansen Architects + Urban Designers (LHA+Ud)

Location: Mpumalanga, South Africa

ABOUT THE STUDENT RESIDENCE AND DINING FACILITIES

The intent of this project was to create a building that focused around the social spaces coupled with student life campus. The building programme arranges these social spaces so as to enhance connectivity within the building as well as the broader Campus. The connectivity of social space encourages communal living and may foster a great student society (LHA + Ud, 2019). By splitting open the mass, the building programme cradles several intimate courtyards along the length of the site whilst acknowledging the larger urban axis. The ground floor programme responds with an active edge to the internal campus street, taking advantage of the perimeter blocks along the adjacent road (see figure154 - 156).



Figure 154: Ground floor active edge; source (LHA+Ud, 2019); analysis (Nevhutanda, 2020).

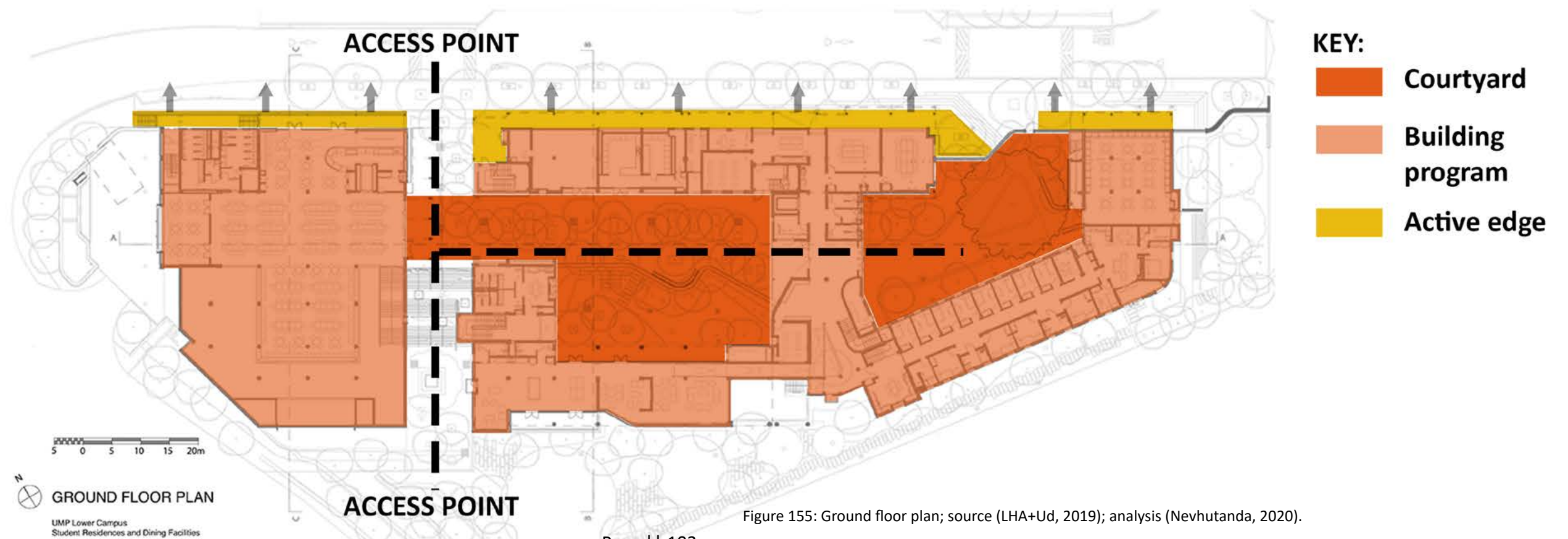


Figure 155: Ground floor plan; source (LHA+Ud, 2019); analysis (Nevhutanda, 2020).

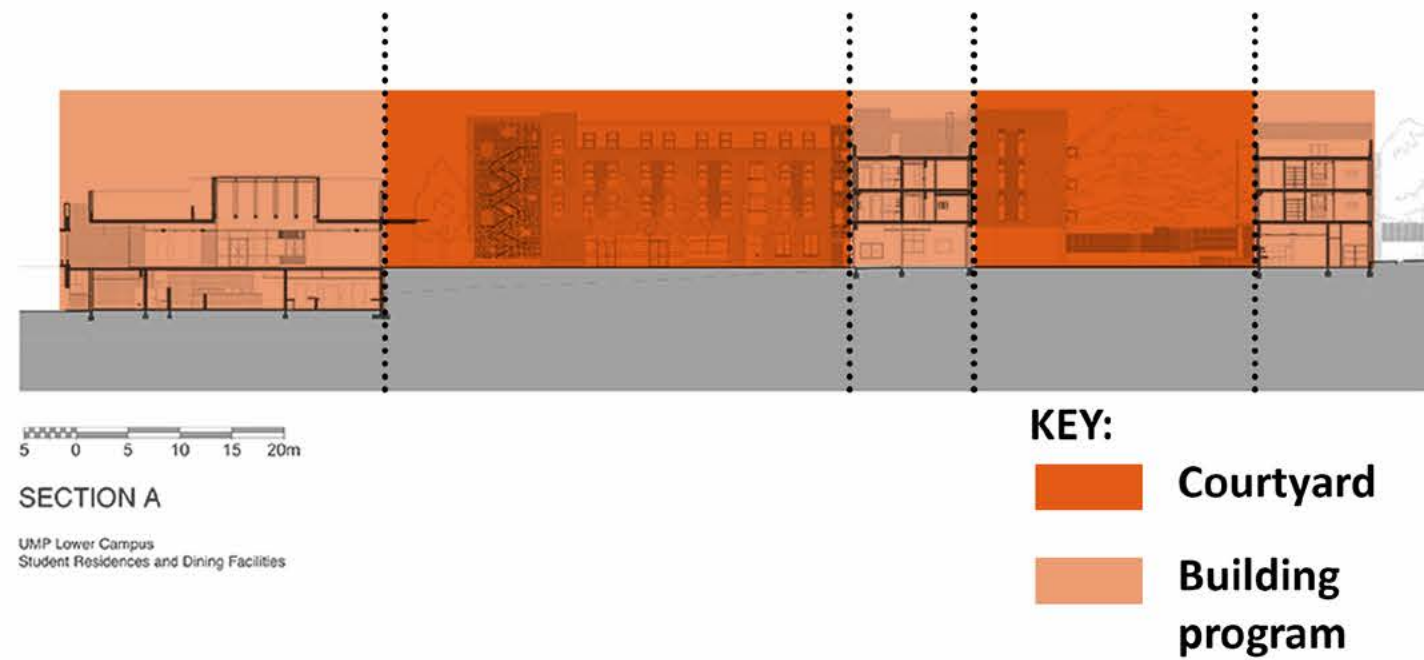


Figure 156: Section A; source (LHA+Ud, 2019); analysis (Nevhutanda, 2020).

DESIGN ANALYSIS

- Amenities are arranged around courtyards to create a social space in order to enhance connectivity within the building (Figure 155)
- Ground floor engages well with the street edge allowing for shading, seating and possibly trading/ market stalls in the near future (Figure 155)
- The building envelope is a thick masonry envelope with facade penetrations. In the case of my project I would like to see this as encoding knowledge through architecture (this idea is further elaborated in section 4.6 below) - (Figure 157-160)
- The building also consists of deep set glazed portions of windows while the entire south-west facade forms part of the larger University facade and responds accordingly providing momentary previews into the courtyards and social dining space by means of voids, materiality and penetrations in the building envelope (Figure 161-162)

>Figure 157:
West elevation analysis; source (LHA+Ud, 2019); analysis (Nevhutanda, 2020)

>Figure 158:
West facade brick penetration; source (LHA+Ud, 2019)

>Figure 159:
West facade brick penetration; source (LHA+Ud, 2019)

>Figure 160:
Internal brick penetration; source (LHA+Ud, 2019)

>Figure 161:
Momentary previews through brick facade; source (LHA+Ud, 2019)

>Figure 162:
Deep set glazed portions of windows; source (LHA+Ud, 2019)

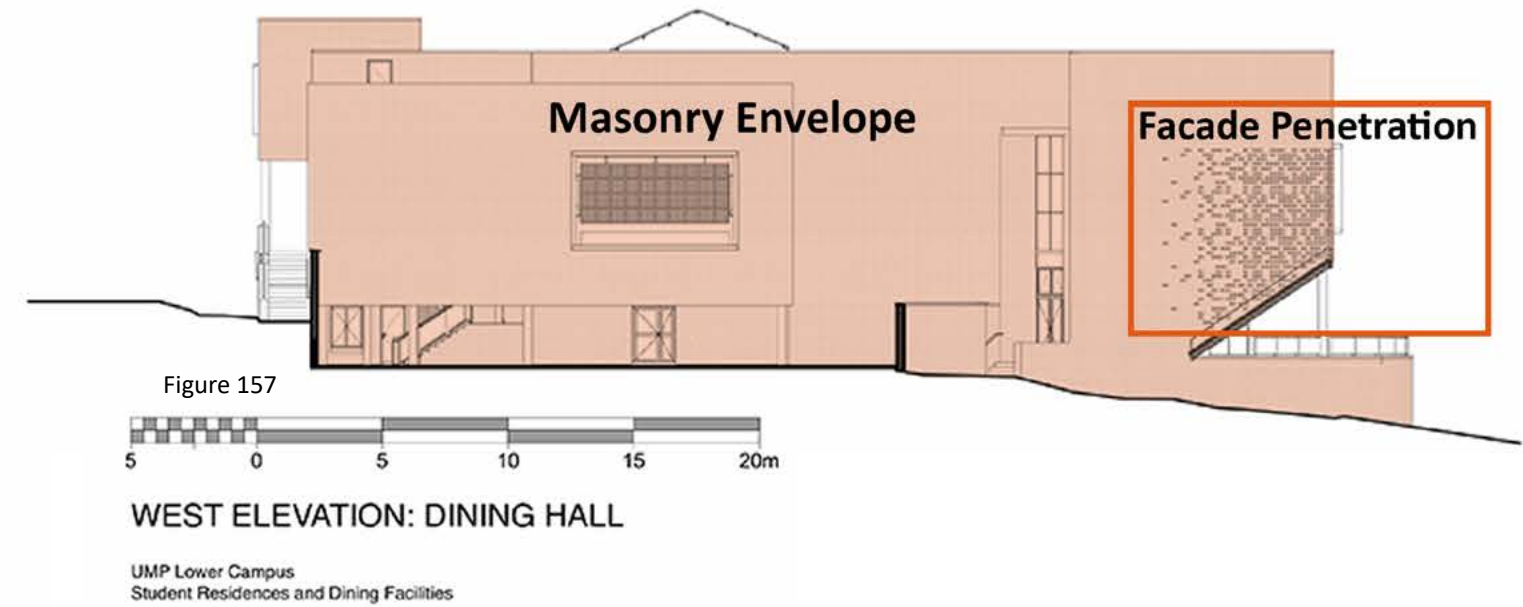


Figure 158



Figure 159



Figure 160



Figure 161



Figure 162

4.3 PRECEDENT STUDY 03

Project name: Hector Pieterse Museum

Category: Materiality

Architect: Mashabane Rose and Associates

Location: Soweto, South Africa



Figure 163: Hector Pieterse Museum; source (MRA, not dataed).

ABOUT THE HECTOR PIETERSON MUSEUM

The museum is located approximately 1.2km away from the area of study (see figure 164). It was born out of a study of the most visited places in Johannesburg, Soweto. The building came through from influences of the history of Soweto and having learned from extensive research into the events of the 1976 student uprising (MRA, not dated). During an interview conducted with Mr Phil Mashabane (2020), he described the design of the building as not for show but for the people, it was important that the building spoke to its context as a fabric and communicated the rich cultural history.

DESIGN ANALYSIS

Almost 90% of the building celebrates the old (Red brick and sheeting) match box houses built in the 1940's and are used as a finish on the inside and outside of the building (see figure 166-167). It was the request of the residents that red brick be used so that the museum sat comfortably within the existing context so that the building would be relatable instead of being a formidable, impenetrable fortress (MRA, not dated). This choice of building material appears to fit easily into the texture of its context as the building sits quietly and comfortably in its surrounding. Other materials that have been used are stone, gravel and steel.

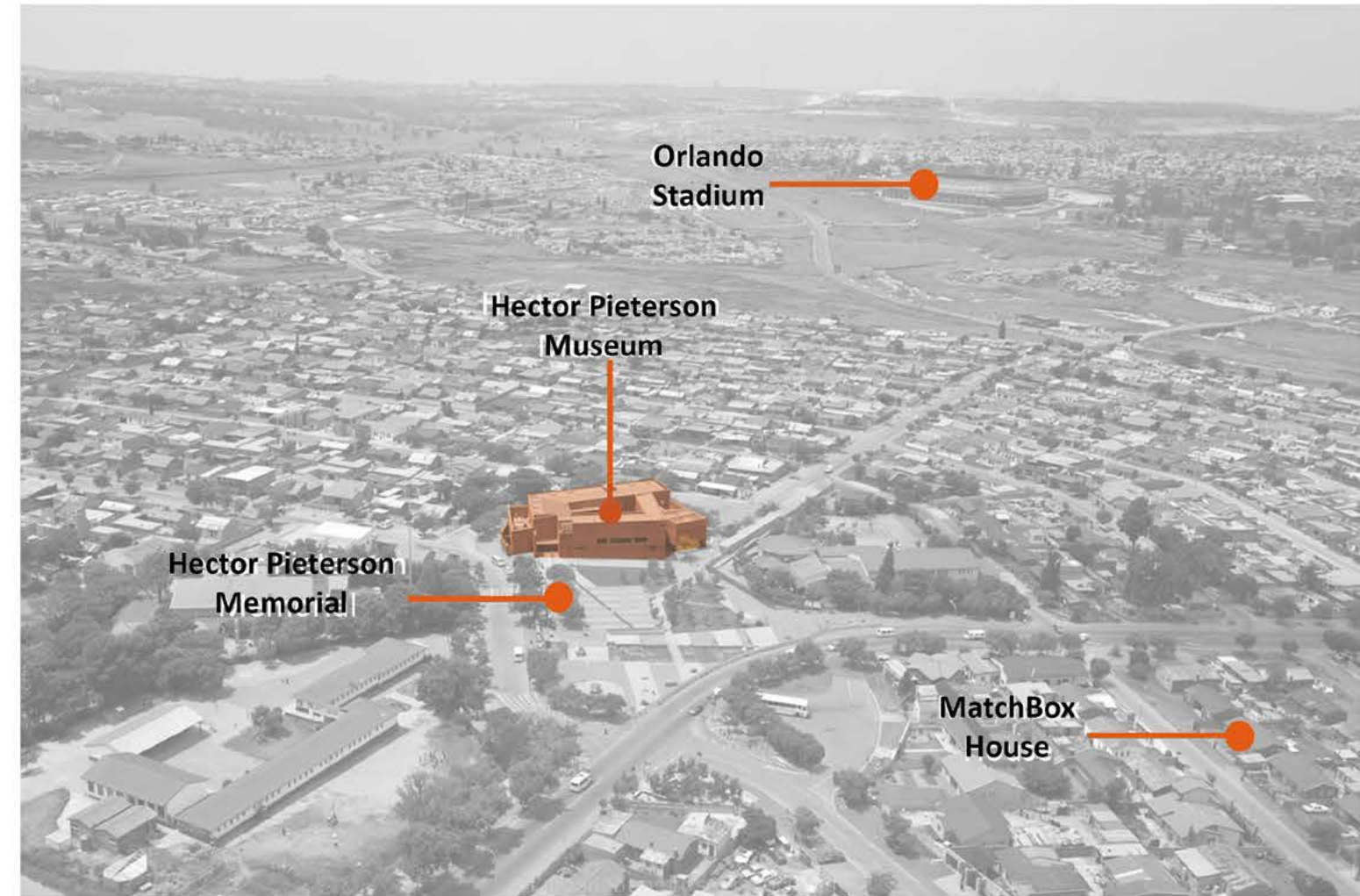


Figure 164: Hector Pieterse Museum in context; source (MRA, not dated).



Figure 165: Hector Pieterse Museum choice of materials: source (MRA, not dated)

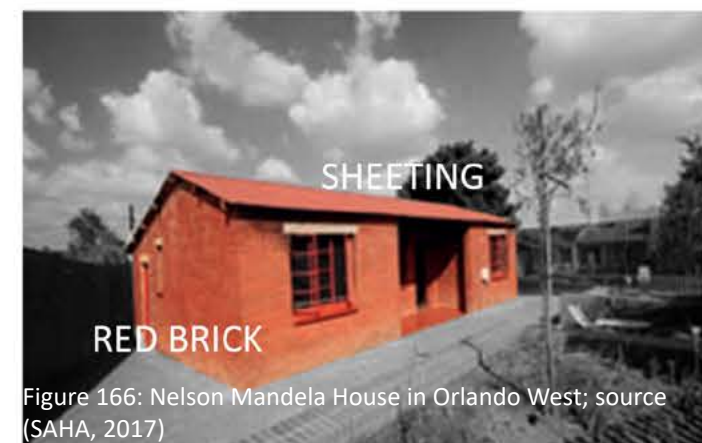


Figure 166: Nelson Mandela House in Orlando West; source (SAHA, 2017)



Figure 167: Match box house in Orlando East; source (SAHA, 2018)

4.4 PRECEDENT STUDY 04



Figure 168: Girl move academy; source (Archdaily, 2020).

Project name: Girl Move Academy

Category: Sustainability

Architect: Paz Braga in collaboration with ROOTSTUDIO

Location: Nampula, Mozambique

ABOUT GIRL MOVE ACADEMY

The Girl Move Academy is an educational model that helps empower women in social and economic vulnerable contexts. Beyond the building's functionality, the architect designed it to live up to the purpose of inspiring women and providing a new reference through sustainability, innovation and valuing local resources and knowledge (Archdaily, 2020).

DESIGN ANALYSIS

Materiality:

Almost 85% of the building is made of brick that was produced on site using traditional techniques. The building also consists of a structural foundation made through the construction of stones bonded together with mortar known as stone masonry footing to support the brick walls (see figure 169).

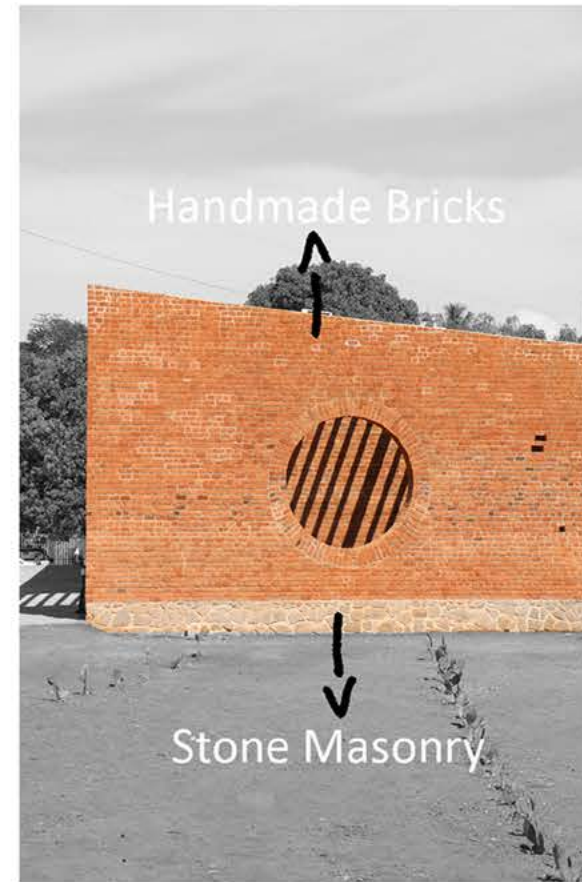
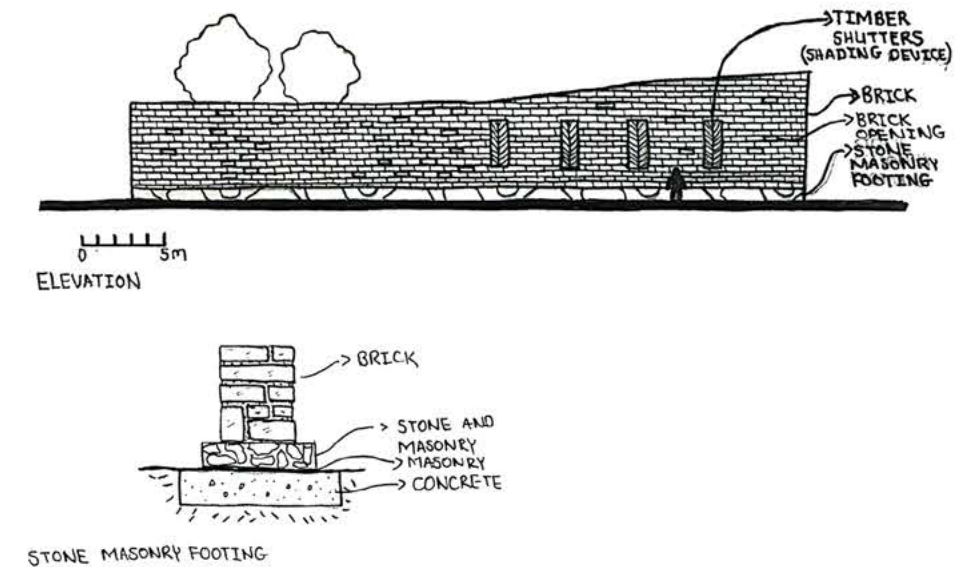


Figure 169: Girl move academy; source (Archdaily, 2020); analysis and sketch (Nevhutanda, 2020).



Cost Effective Construction:

The building is meant to be a symbol of women's leadership and a reference to the rest of the world, and a centre of knowledge creation, where ideas and visions can be embraced and discussed openly (Archdaily, 2020). Students and neighbours participated in the building process as construction was done in a demonstrational manner and knowledge was shared, which is what my project is trying to do. The need to use as much local materials as possible was to stay within a reasonable economic framework. The use of the earth as a construction material was important to dignify a material that normally is considered a poor material.



Figure 170: African Women of Mozambique brick making and packing ; source (Archdaily, 2020)

4.5 PRECEDENT STUDY 05

Project name: Channing School Performing Arts Centre

Category: Form

Architect: Buckley Gray Yeoman

Location: Highgate, London



Figure 171: Channing School Performing Arts Centre ; source (Archdaily, 2020).

ABOUT THE CHANNING SCHOOL PERFORMING ARTS CENTRE

Channing School is an independent girls' school. The school sits in the school campus that has a strong built heritage with a predominant sophisticated use of red brick to create a form of a series of pitched roofs as a response to the architectural context within and around the site, similar to that of Soweto. Like Soweto, the local height restrictions devised in the school regulate that a building cannot be higher than 3 stories. In this regard, the building is modest in height as it follows the level of existing historical buildings (Design Curial, 2019).

DESIGN ANALYSIS

The defining characteristics of this building are through a shell of hand-made red bricks complimented with the use of aluminium and glass. These materials were chosen with respect to architectural surroundings and created a contemporary architecture that resembles form by using a basic material (see figure 171). The series of pitched roofs as a design concept was also used as a form of bringing light into the building and for the functionality of solar panels on the roof (see figure 172-173).

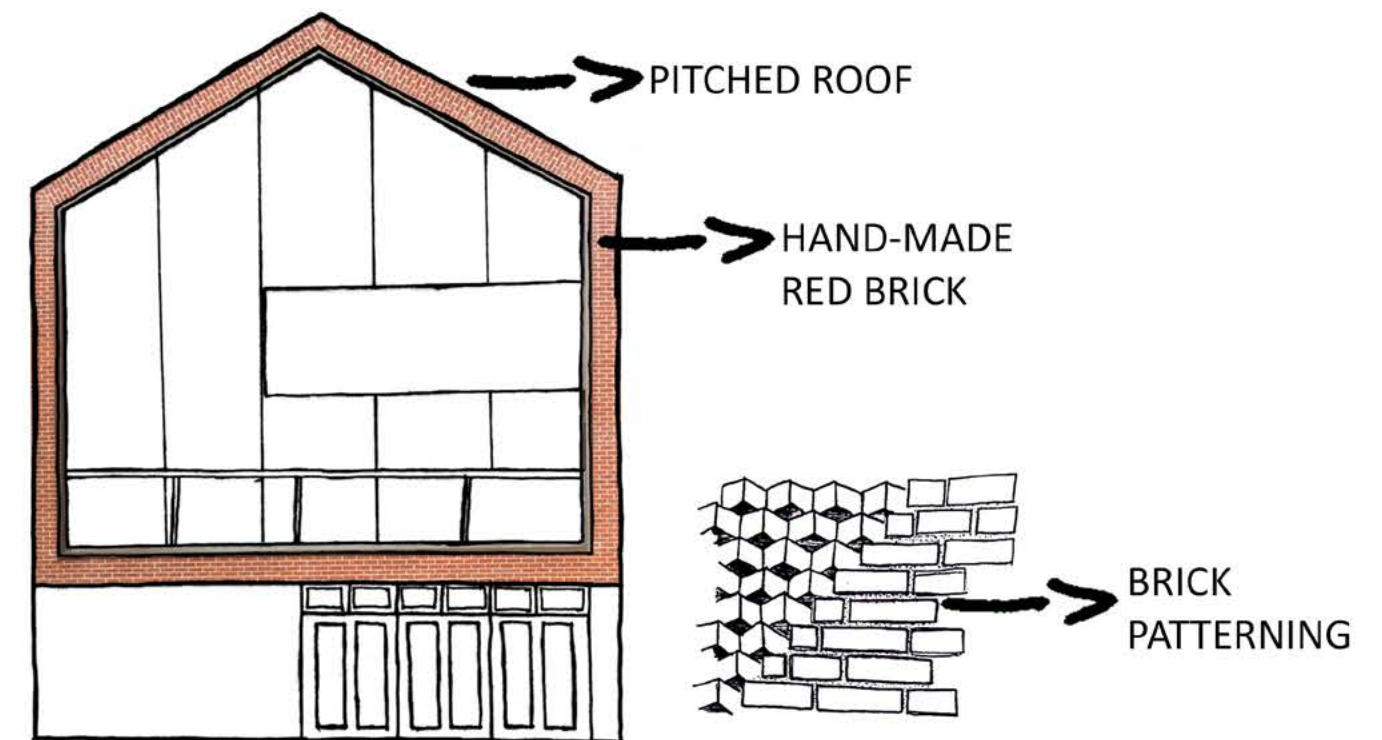


Figure 172: Form analysis and material expression; analysis and sketches (Nevhutanda, 2020).



Figure 173: Form and material expression; source (Archdaily, 2020); analysis (Nevhutanda, 2020)

4.6 PATTERNING _ Reference

Category: Encoding knowledge through architecture

As a project that wants to encode knowledge architecturally and give it meaning by resembling the way architecture and making is a form of making the self as researched by Heinrich Kammeyer referencing how the Basotho female made their homes as artefacts, I have also taken reference from the Ndebele and Basotho traditional home patterns (see figures 174-175). These patterns had and still have a secret language that is taught to women that go through different forms of initiations, sometimes to also represent the status of a woman (A Larsson & V Larsson, 1984). These patterns are only known by women who have been initiated, therefore I am unable to narrate what these patterns mean. Mary Nooter (1993 pg55) maintains that knowledge in the African context is encoded, gendered, and depends on age and the maturation stage that a person is at, and this is in some cases encoded in the architecture.

DESIGN ANALYSIS

Using brick patterning as a strategy to make the architecture of my building speak a language for the different women that will be using the space



Figure 174: Mural art of the Ndebele homes; source (Kuwala, 2017).



Figure 175: Mural art of the Basotho homes in Free State; source (de Lange, 2013).



Figure 176: Light penetration render achieved through brick patterning; source (BuildX Studio, not dated)

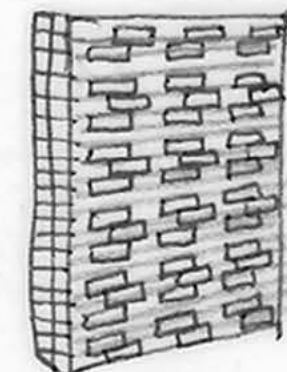
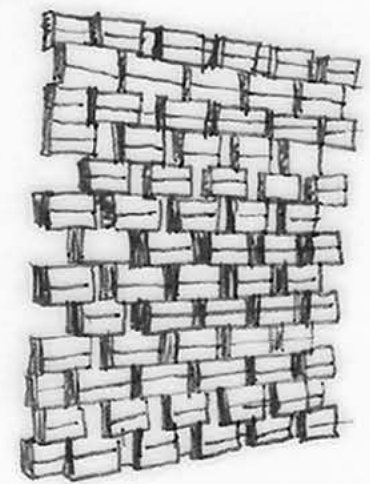


Figure 177: Brick patterning and penetration explorations; sketches (Nevhutanda, 2020)

4.7 THE VERANDA _ Reference

Category: Domain connected to hierarchy

A veranda is a roofed platform along the outside of a house, level with the ground floor. Taking reference from the dwelling unit of a Tswana household investigated by Anita Larsson (1984) in the Tswana traditional housing, her investigations show that the heart of the dwelling unit is an inner courtyard known as lolwapa. In order to enter the dwelling units, one has to experience the veranda, normally used as outdoor shelter that makes the dwelling flexible for changes in climate over the year in a private and public manner (see figure 178-180).

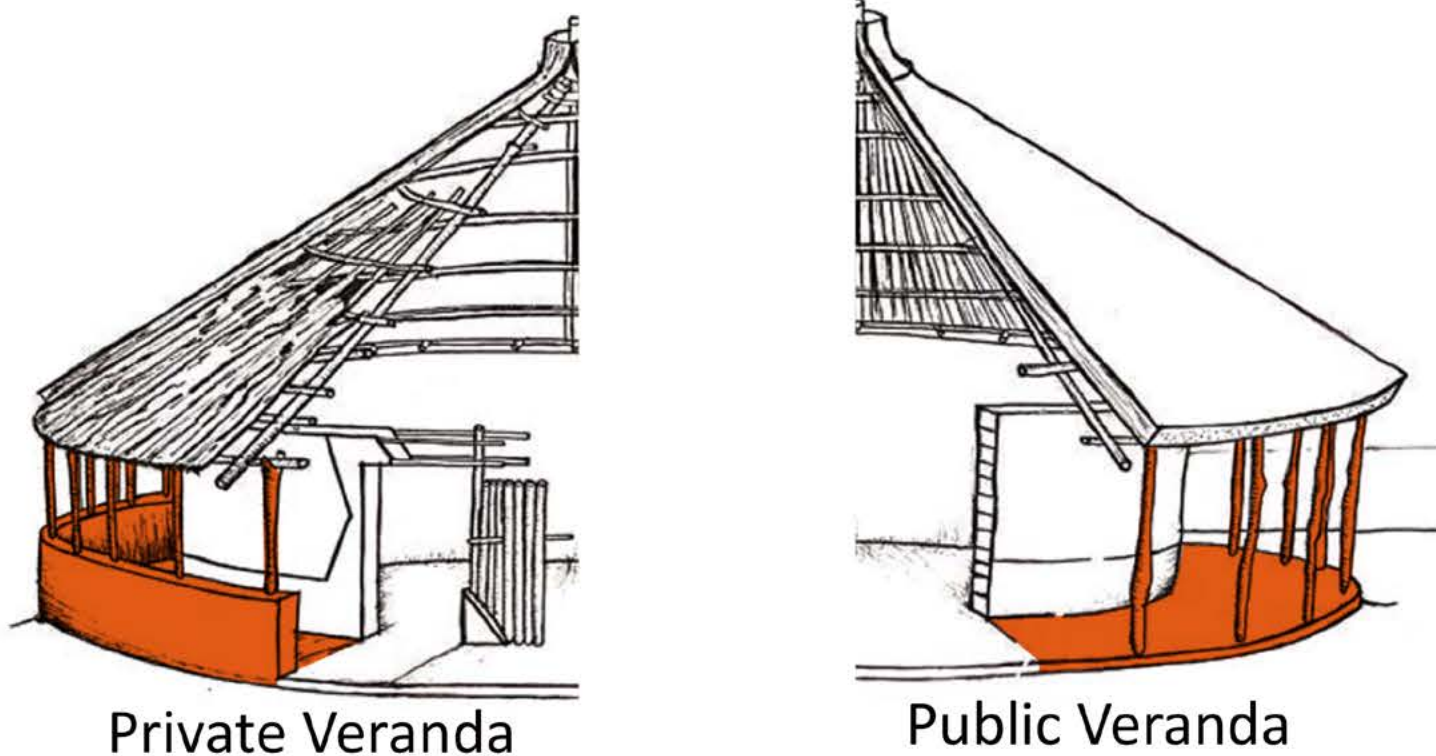


Figure 178: A depiction of the Tswana traditional housing exploring the veranda; sketch (Nevhutanda, 2020)



Figure 179: Tswana traditional housing using the veranda as a space to do the dishes; source (Larsson. A, 1984)



Figure 180: Public veranda around the Tswana tradition house; source (Larsson. A, 1984)

DESIGN ANALYSIS

Taking this into account, my architecture will narrate this in a contemporary manner, used for its purpose as mentioned above while creating a space of interaction, learning and making.

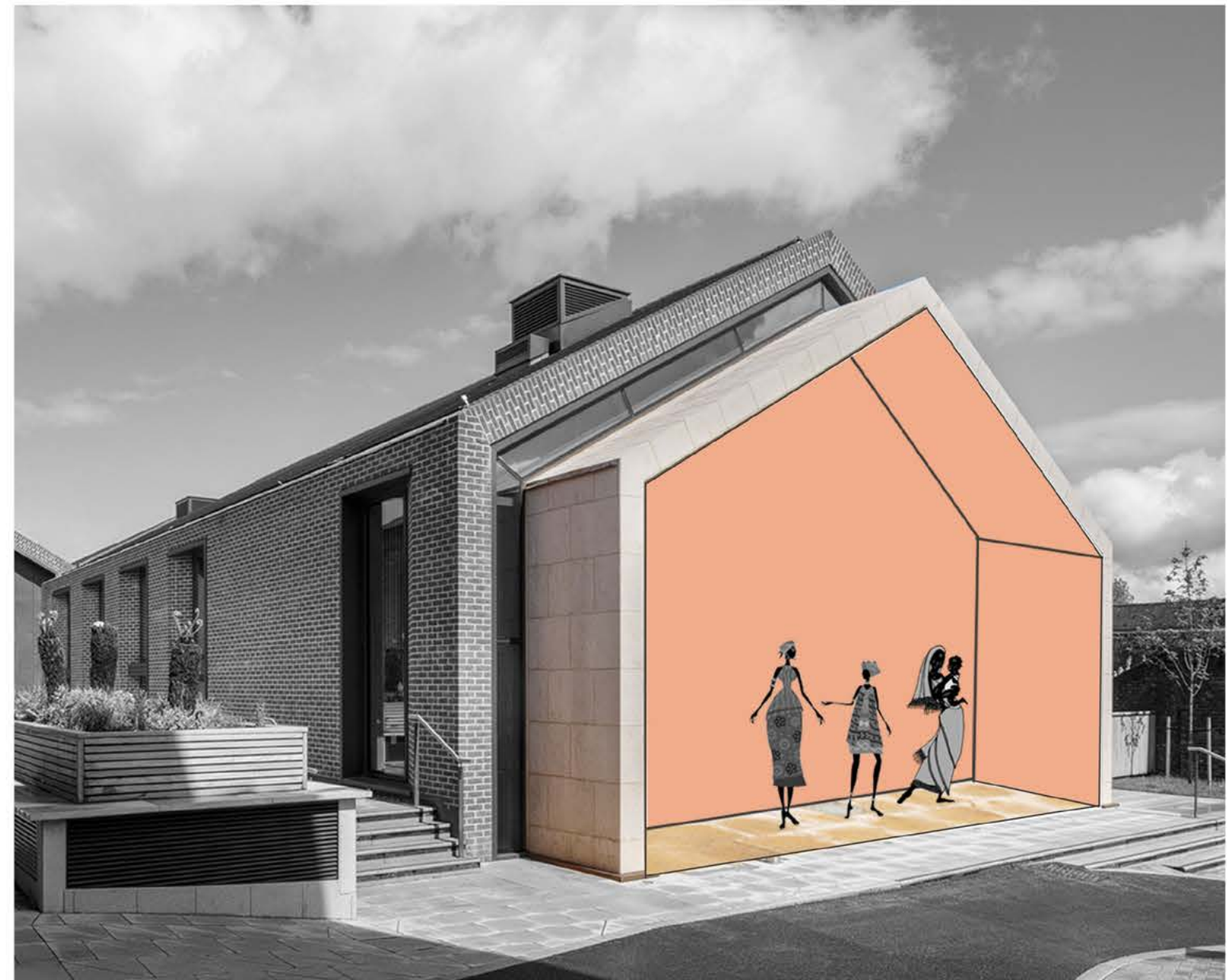
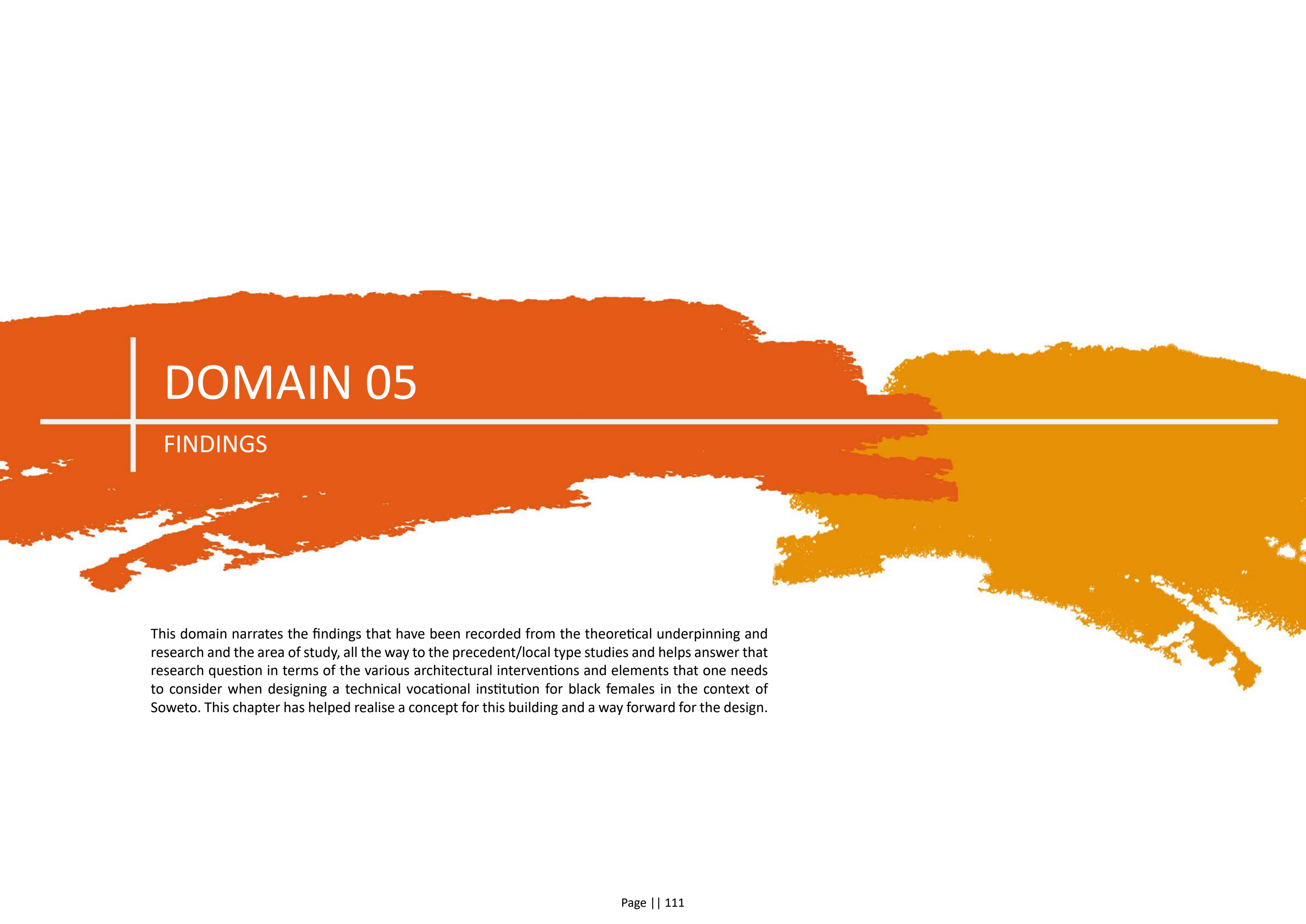


Figure 179: Contemporary analysis of the veranda explored on the Channing School Performing Arts Centre; source (Archdaily, 2020); analysis (Nevhutanda, 2020)



DOMAIN 05

FINDINGS

This domain narrates the findings that have been recorded from the theoretical underpinning and research and the area of study, all the way to the precedent/local type studies and helps answer that research question in terms of the various architectural interventions and elements that one needs to consider when designing a technical vocational institution for black females in the context of Soweto. This chapter has helped realise a concept for this building and a way forward for the design.

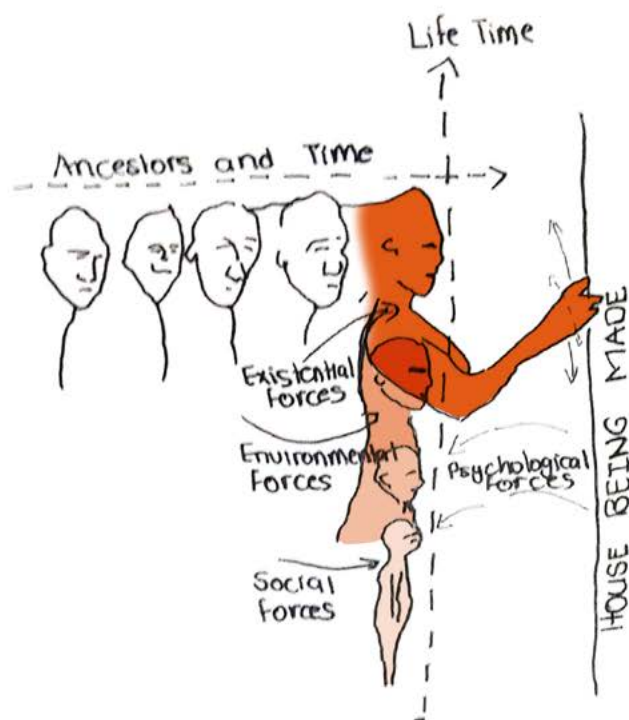
5.1 FINDINGS FROM THEORETICAL UNDERPINNINGS AND RESEARCH

Findings from theoretical underpinnings and research point out that feminism as a movement, for the most part was a direct response to patriarchy for the emancipation of women in order to challenge the systematic inequalities women face on a daily basis, be it economical, political or social. For many years women have fought for equality and the ability to make their own personal choices and have them respected by everyone else. Contrary to popular belief, feminism has nothing to do with saying women are greater or better than men as it works towards equality and not female superiority. Equality that applies to every single human being! Writers such as Chimamanda Ngozi Adichie, Leslie Kanes Weisman, and Zara Faris just to name a few have shown that patriarchal systems in society have hindered women's empowerment, especially African women as they still go through exploitation, manipulation, and intimidation.

"The result of reciprocity induced by present makers were from previously built examples as well as from discussions with role models from an older generation of makers, confirming that their internal being improved as an inward test of the extent of success" (Kammeyer, 2010).

The findings in the research outline that the Feminical Institute needs to:

- Be about creating the self in the 21st century through the process of making as the primary aim.
- Portray the self in architecture and architecture needs to be portrayed in the self.
- The values that are portrayed in the building are the values that are inside the person and it is an ongoing reciprocal process.
- The value that is in what will be made inside the institution are the values that are inside the person and it is an ongoing reciprocal process.



Demonstrated in figure 180 is the process of reciprocity and how the young girl watched those before her and as she grows up watching she eventually becomes old enough to make the house.

- Learning through making, the body is an instrument of knowledge which has capacity to store past and use in the future -

Figure 180: Reciprocal process; sketch (Nevhutanda, 2020)

This research has identified principles assisting to confirming that the creator, a BaSotho woman is proof of her lived experience of reciprocity.

The main finding is that women have always been involved in making and the process of making was part of the making of the self. This means that by allowing women to participate in these processes of making, we are allowing them an opportunity to develop a sense of self with the world.

Spatial analysis taken from the research - reference: House with meaning by Susan Torre and The Basotho way of making the home as artefact.

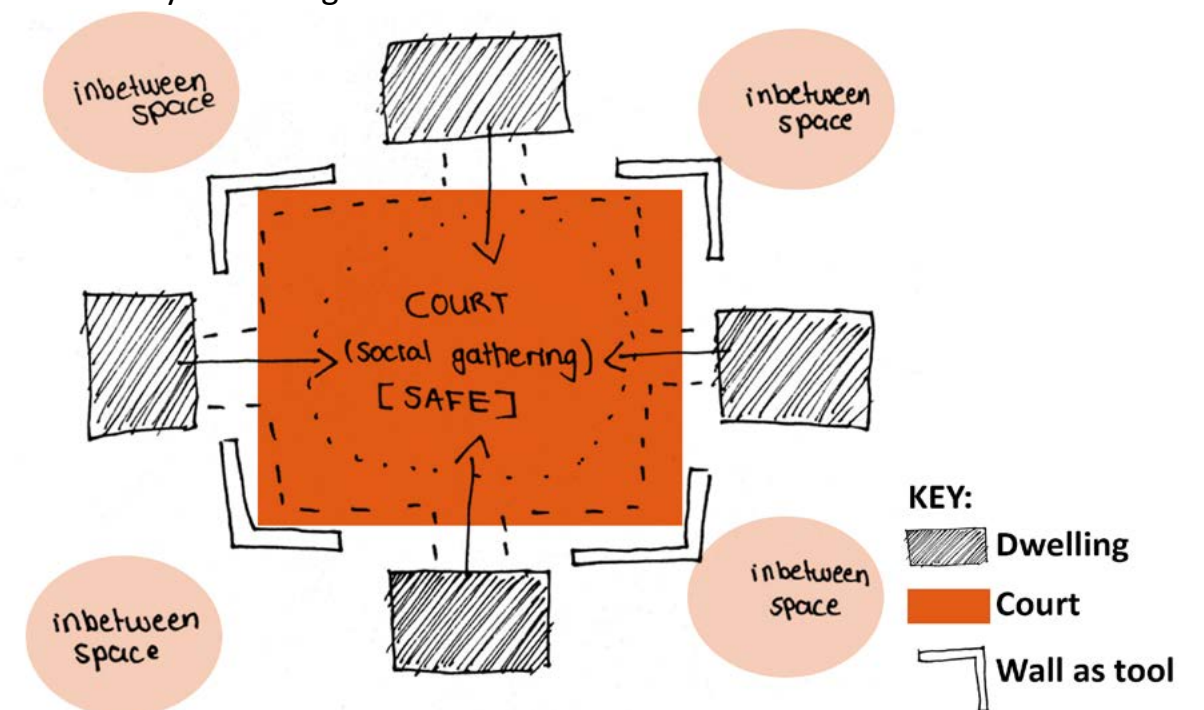


Figure 181: Spatial analysis taken from research; sketch (Nevhutanda 2020)

Wall as tool: Seating – Security – Creating a gathering space

The participants interviewed in this research have voiced out that the femnical institute must be one that is safe and conducive for women to learn, live and be empowered considering the increase of gender-based violence in South Africa reportedly within and around campuses of higher education institutions. In the early stages of domain 02, I made a matrix quadrants describing the relationship between where women feel safe versus the invisibility and visibility of these spaces. From the research gathered, it seems that women feel safest together during collective meets (protest or gathering). It is important that the Femnical Institute and its public realm serve as a space of immediate everyday safety for those who need it. (Refer to findings in area of study).

Although the area has experienced an affliction of the most important events of the fight against apartheid, the mention of the area sets in motion a warm reaction from many communities through its history. Findings point out that the area has become a space of enterprise and cultural interaction through its heritage, but research has also indicated in domain 02 (Urban spaces as anti-architectural feminism) that the lack of access of street traders to normal infrastructure is the course of most of the problems they experience, in particular, shelter against the sun and rain features consistently as a priority, as do storage facilities (Fadane. N. 1998 pg 24)

5.2 FINDINGS FROM AREA OF STUDY

Findings from area of study point out how the apartheid government has tried to be in control from the education system that was designed to hinder African people from being empowered to keep them locked in a lower level of society, all the way to how the monotonous house types were designed out of the 'agency of the township' and built in uniform creating grid boundaries

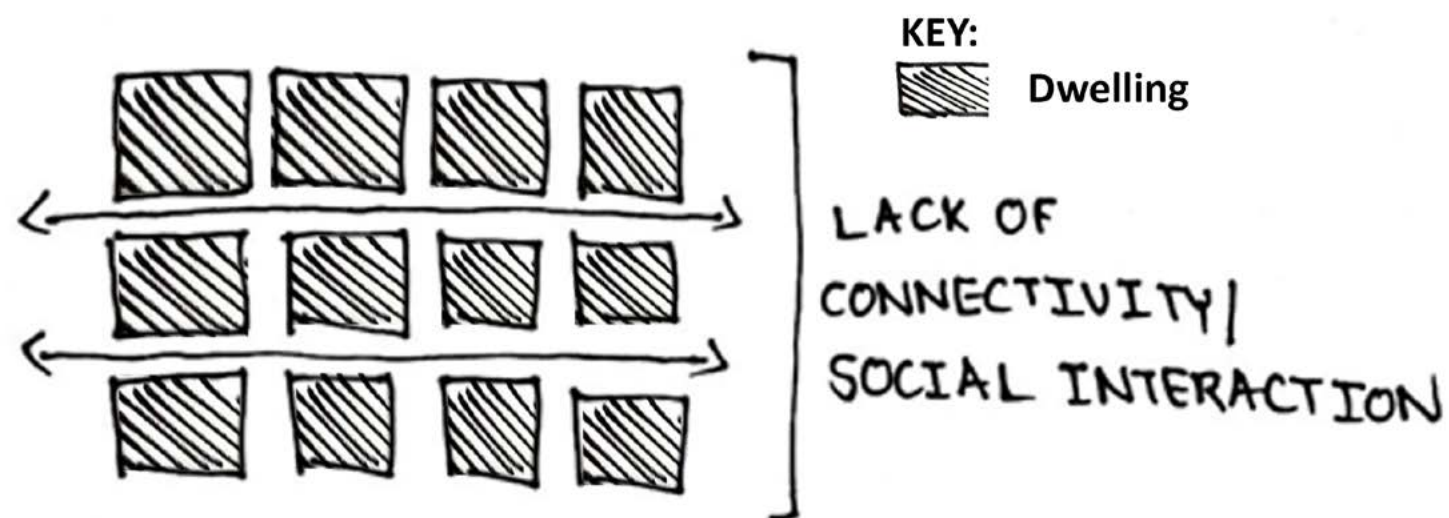


Figure 182: Soweto spatial analysis; sketch (Nevhutanda, 2020)

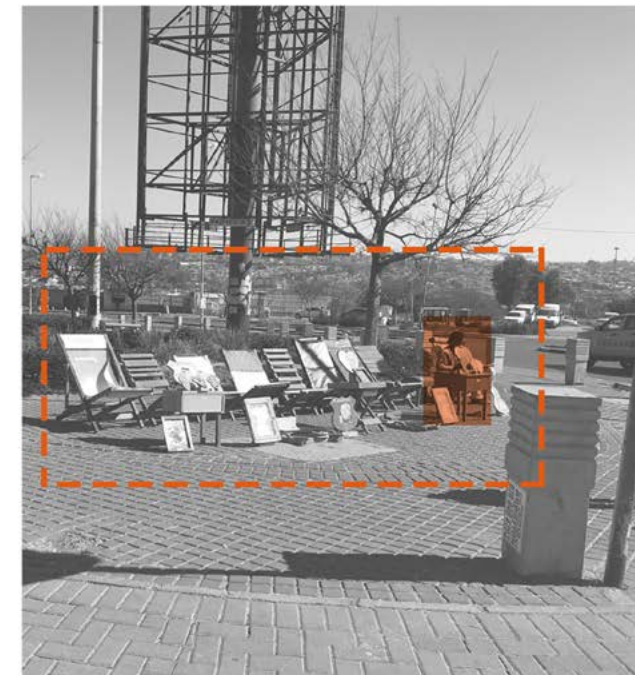


Figure 183: Street trader unsheltered at the corner of Mooki and Maopha Street; photograph (Nevhutanda, 2020)



Figure 184: Street trader unsheltered on Mooki Street; photograph (Nevhutanda, 2020)

A SPATIAL APPROACH TO ADDRESSING THE ISSUES RAISED ABOVE.

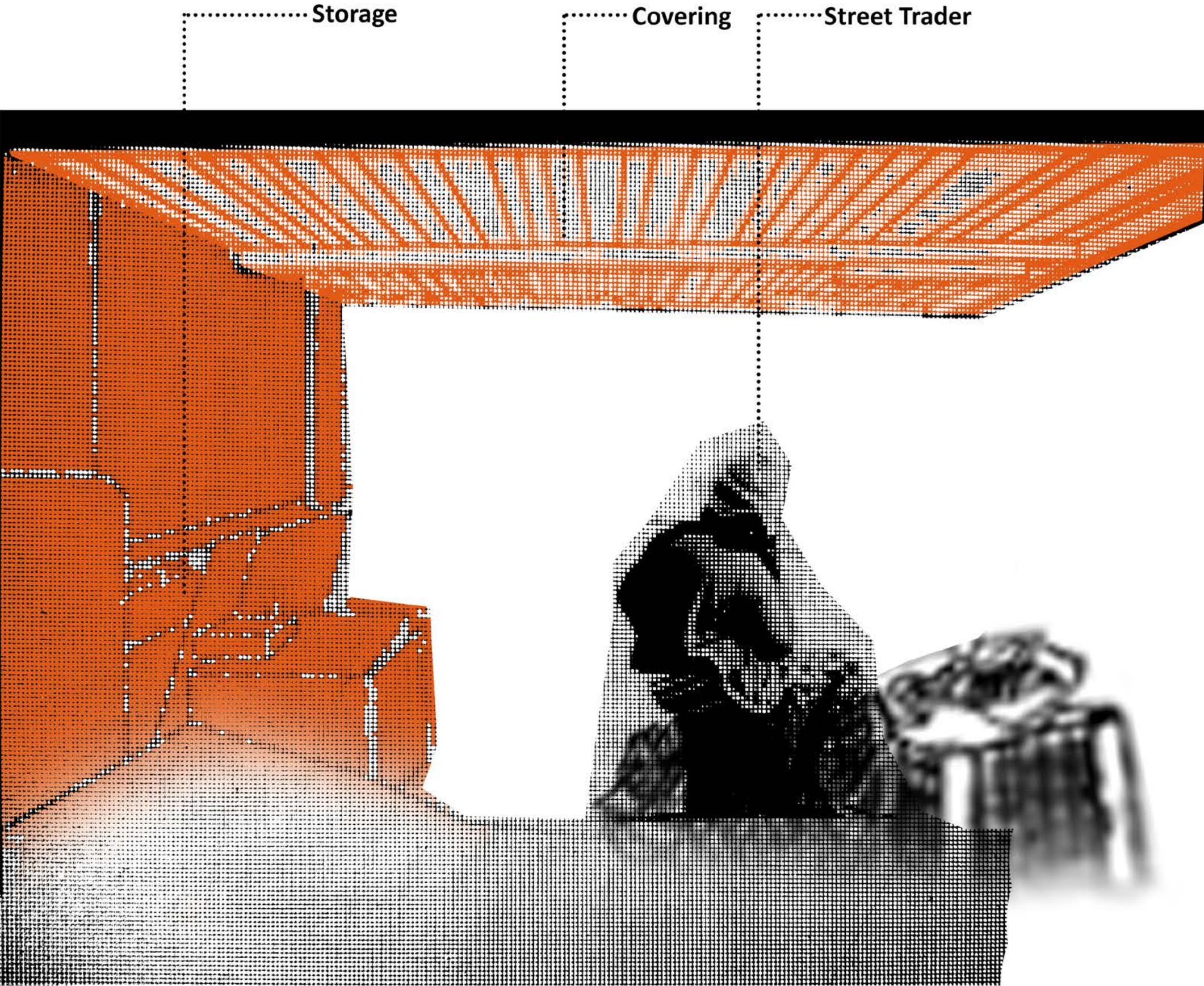


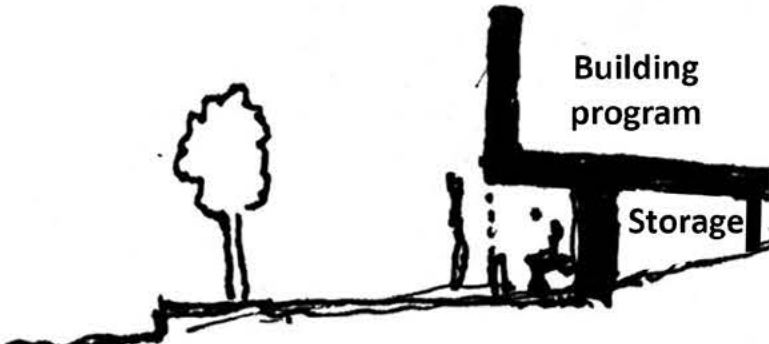
Figure 185: Spatial approach for street trader, drawing (Nevhutanda, 2020).

A DESIGN ANALYSIS

HOW THE LANDSCAPE MEETS THE BUILDING
HOW THE WALL ALSO BECOMES A SPACE
(Wall as tool)



Retaining wall as seating
that creates other seating
opportunities



Wall used as
seating/allowing for storage
Ground floor slab
cantilevered to allow for
shading

Figure 186: Spatial approach for street trader for design; sketch (Nevhutanda, 2020)

An intense site analysis has raised a few site issues with regards to the public realm that has been analysed as male territory and consequently limited for female consumption. This has raised the following design questions.

- What role does design have in improving the everyday experience in the public realm for women?
- What does safe space mean for multiple individuals sharing the same space?
- Is safe space proactive or reactive or perhaps both?

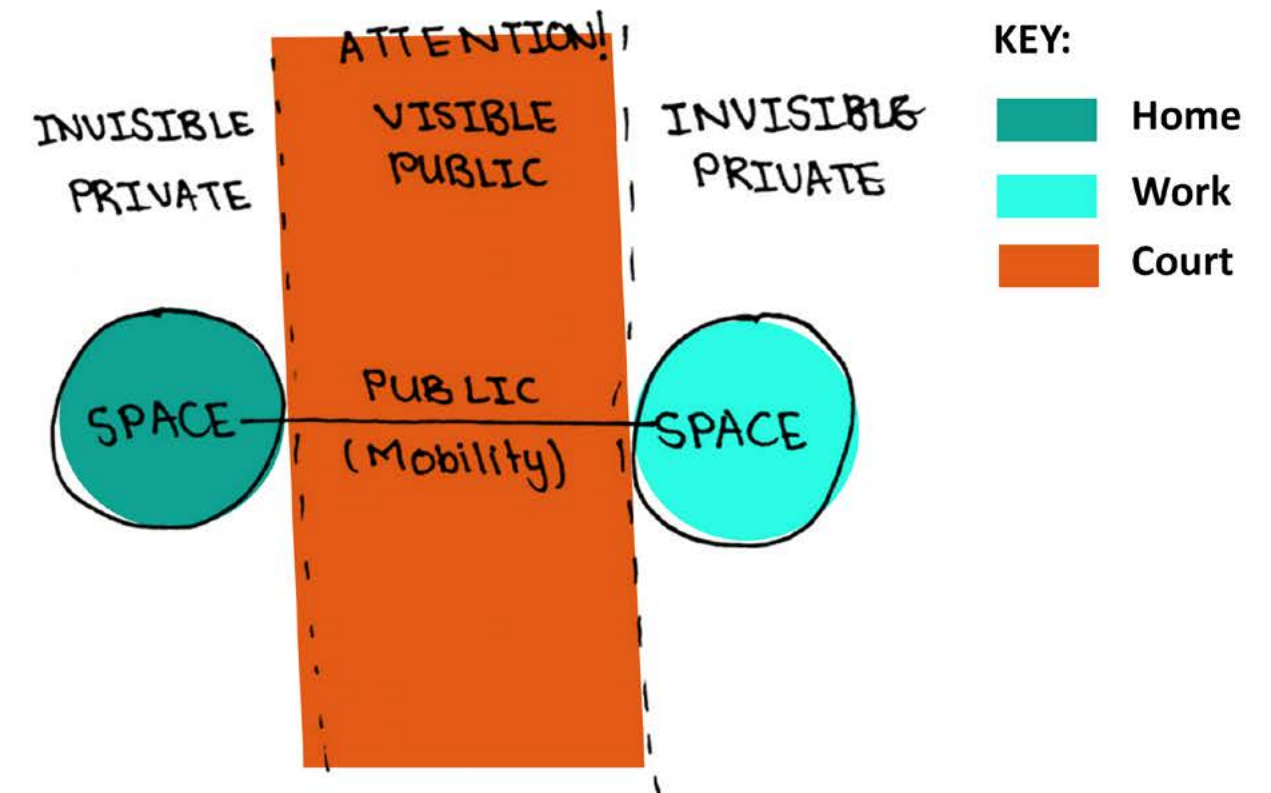


Figure 187: Analysing the public realm; sketch (Nevhutanda, 2020)

An intense site analysis has raised a few site issues with regards to the public realm that has been analysed as male territory and consequently limited for female consumption. This has raised the following design questions.

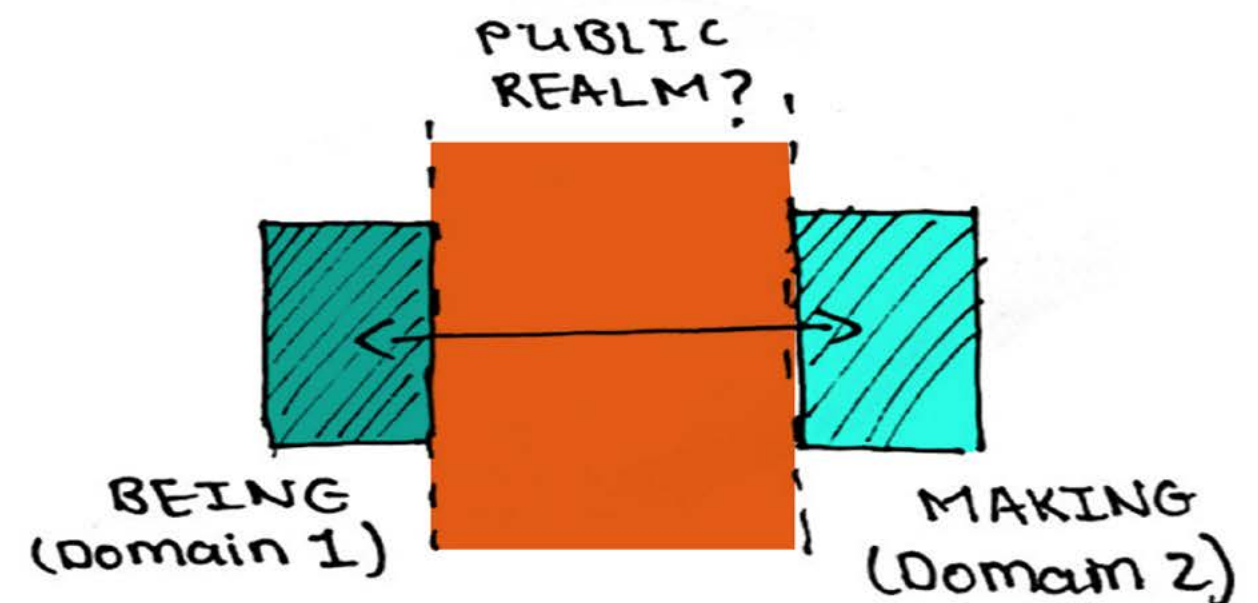


Figure 188: Analysing the public realm between domains; sketch (Nevhutanda, 2020)

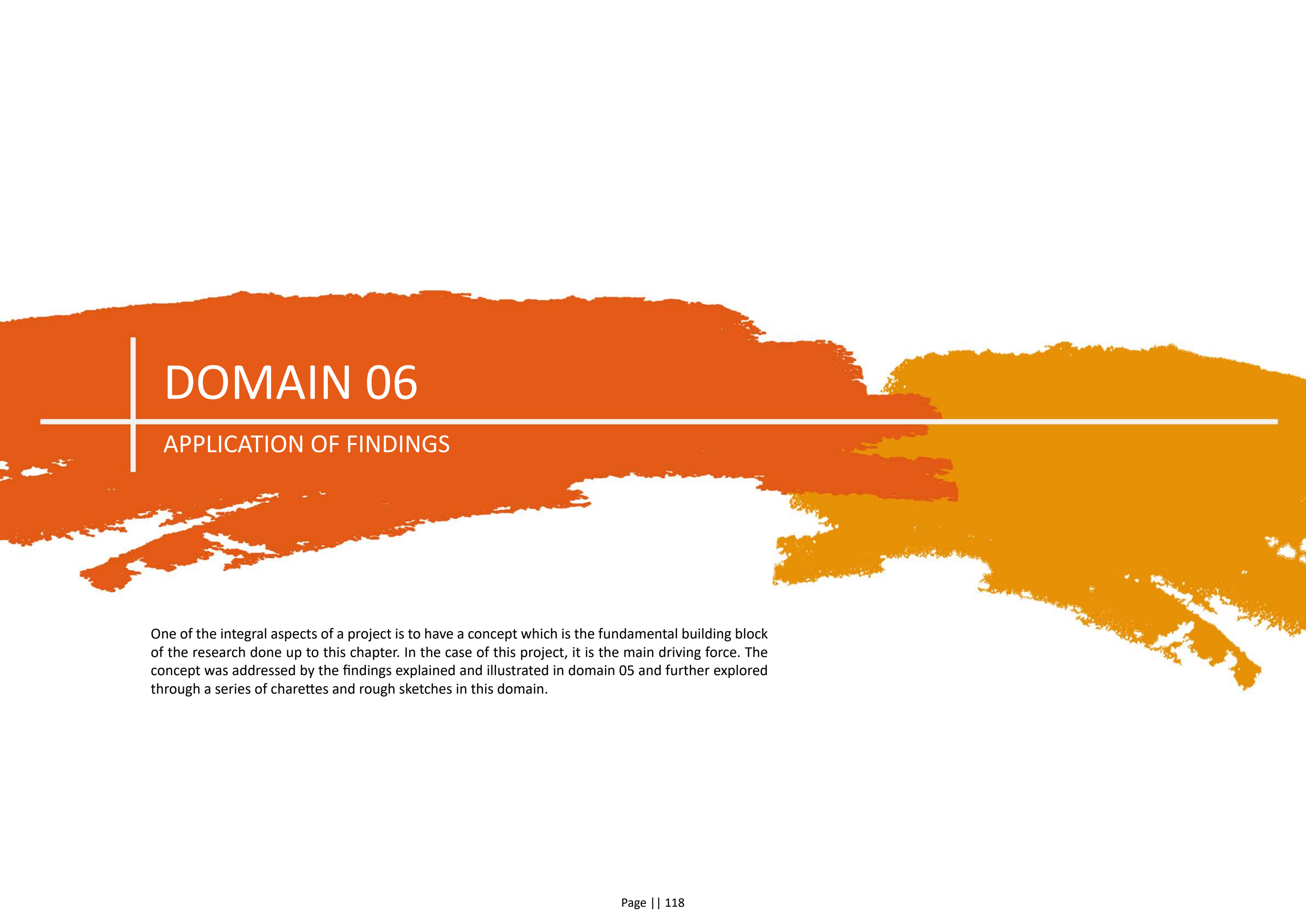
5.3 FINDINGS FROM PRECEDENT/LOCAL TYPE STUDIES

Findings from the precedent/local type studies have pointed out that for a space to be a female space it does not have to look like a female space, it just needs to create all the right conditions for women to live, learn, and make. All the precedents that have been analysed in domain 02 and 04 have inspired this project and have communicated the vision of the project as it takes into account its position in the landscape through size, form and materiality as the number one priority.

During a lecture series by Henning Rasmuss from Paragon (2020) hosted by the University of the Witwatersrand, he gave an examples of a few projects that fell victim of Covid-19 as some materials needed to be imported from places such as Europe, Italy, Turkey and Spain at high prices. *"It is a great lie that we as architects have been made to believe that any type of material can be sourced anywhere at any given time, we need to realise that this ends up as a carbon footprint that slowly melt the planet"* (Henning Rasmuss, 2020).

Taking this into account, the need to use as much local materials as possible is not only to be within a reasonable economic framework but to use materials that are easily accessible despite the circumstances.

Findings have also given the researcher a contemporary idea of how to depict spatial layouts and encode knowledge through the way the BaSotho women made their homes as artefacts as a way of making the self.



DOMAIN 06

APPLICATION OF FINDINGS

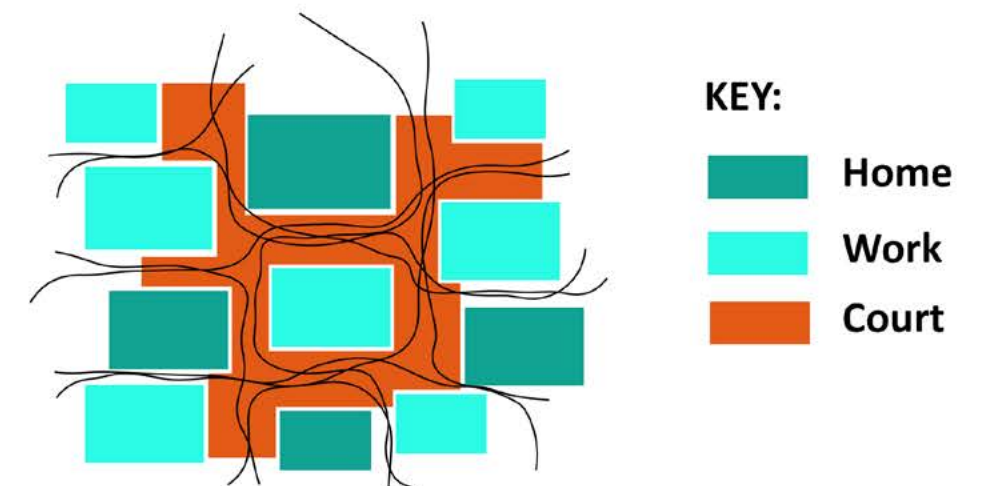
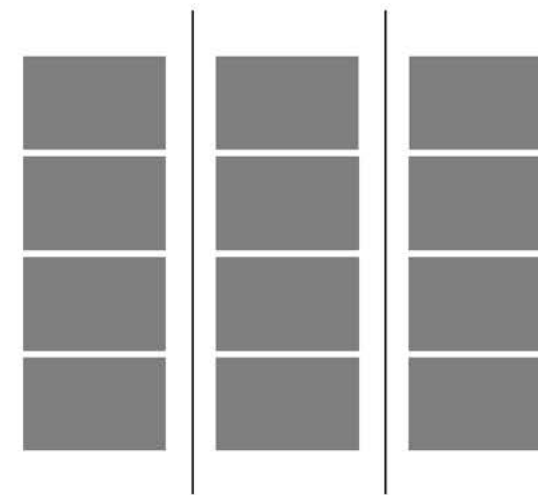
One of the integral aspects of a project is to have a concept which is the fundamental building block of the research done up to this chapter. In the case of this project, it is the main driving force. The concept was addressed by the findings explained and illustrated in domain 05 and further explored through a series of charettes and rough sketches in this domain.

6.1 CONCEPT

BREAKING AWAY

Away from what?

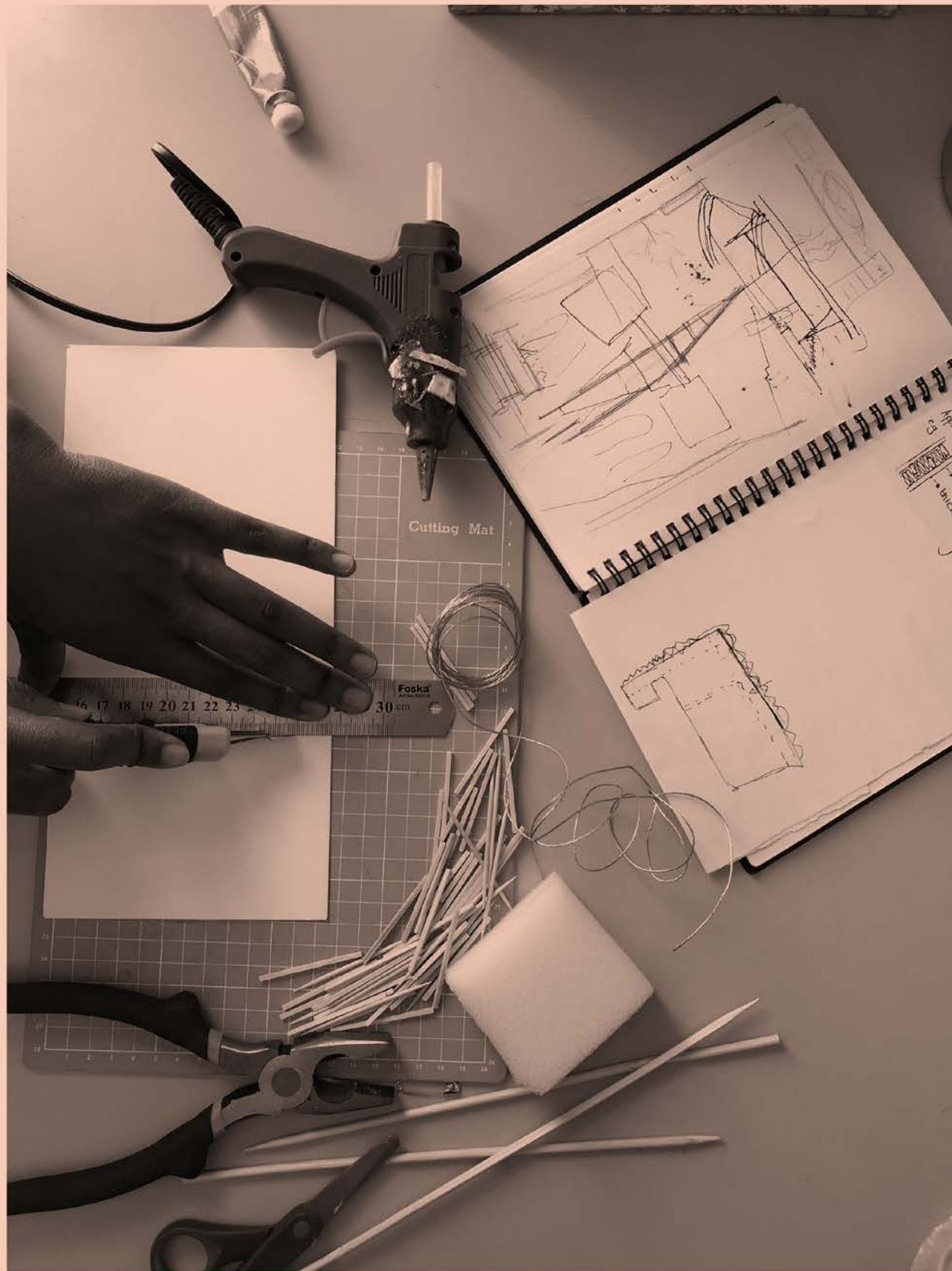
-Monotony Boundaries (Grid)
-Monumental Structures (Mans image)
-Patriarchal Beliefs



KEY:

- Home
- Work
- Court

Figure 189: Concept diagrams; diagrams (Nevhutanda, 2020)



6.2 CONCEPT DEVELOPMENT (Charretes)

A series of informal exploration models were built to further explore the concept. An integral process of the project that was hard to execute with the country on lockdown. Materials that were used for this exploration had to be sourced within the constraints of the researchers home.

The charrete is a narration of the concept by using hard materials to soft and fluid materials.

Figure 190: Charrete preparation by researcher, photograph (Jennifer Sibanda, 2020)

CHARRETE 01: THE BOUNDARY

(Figure 191)

For this model I used hard modelling clay. I chose this material as it was easy to access and holds a strong sense of hardness but can easily be dismantled when used with water or put out in the sun for a certain amount of time. I then questioned what I can do with this material and how I can achieve the idea of boundary. I then took the hard clay in its undefined form with my hands and started molding it into a big solid square. I limited myself to using my hands as a way to help me understand the principle of reciprocity investigated in domain 02.

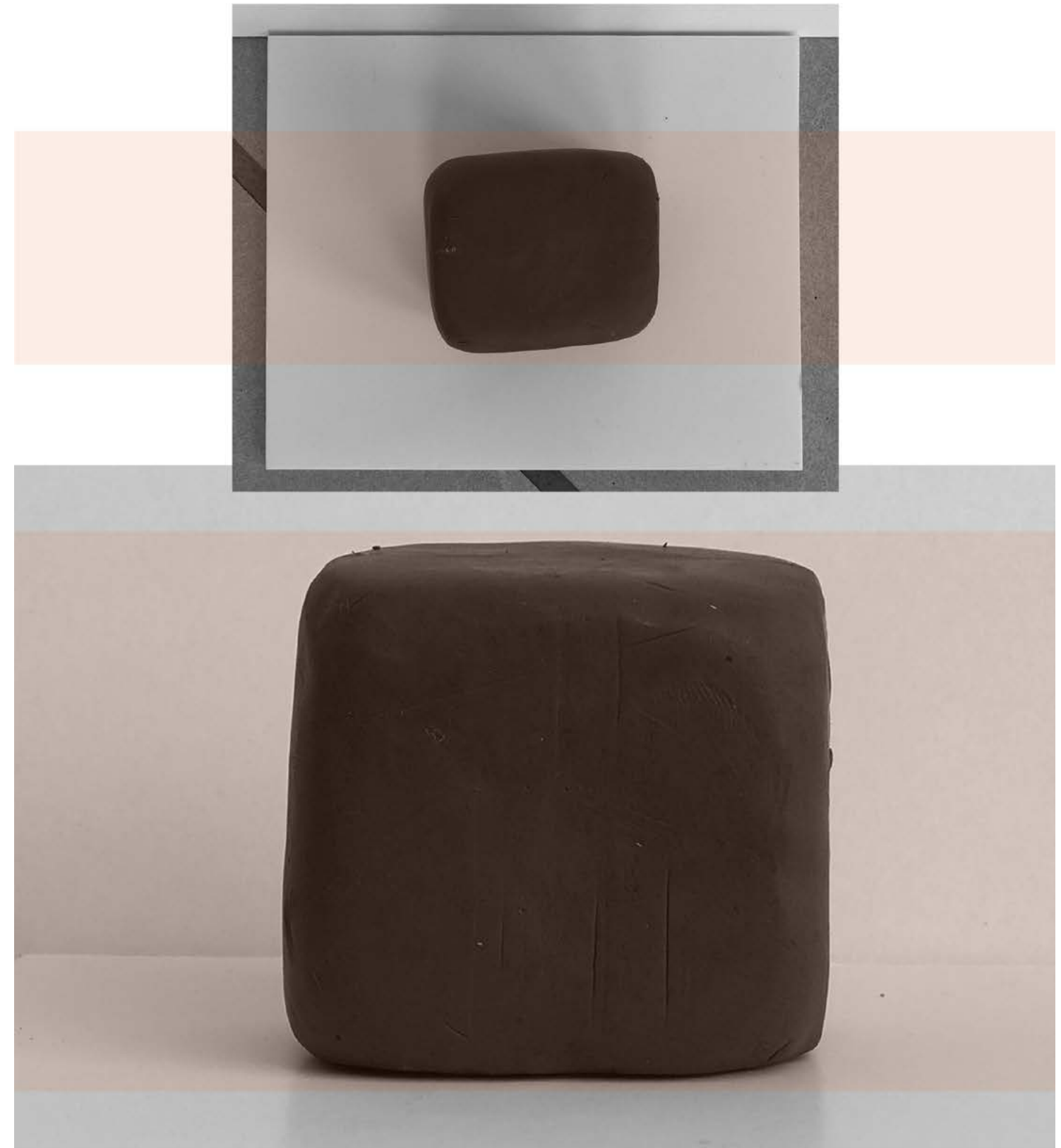


Figure 191: Exploration model; builder (Nevhutanda, 2020)

CHARRETE 02: THE BOUNDARY (Letting go)

(Figure 192)

For this model I used the same hard modeling clay and placed it over a sponge. I chose these two materials as an experiment of merging hardness and softness (clay containing the sponge). Results showed that the amount of clay used over the sponge was not enough to hold together over the sponge. I then had to use wire to hold the two materials together to stop the clay from coming off the sponge. Naturally, without the wire the clay would not hold. I further limited myself to using my hands as a way to help me understand the principle of reciprocity investigated in domain 02.

- Sponge: Symbolic to the black female
- Hard clay: Symbolic to Boundary
- Wire: Symbolic to the boundaries that hinder black females

I chose these materials as they were easy to access and portrayed the idea of slowly breaking away and dismantling patriarchal beliefs that have held women back

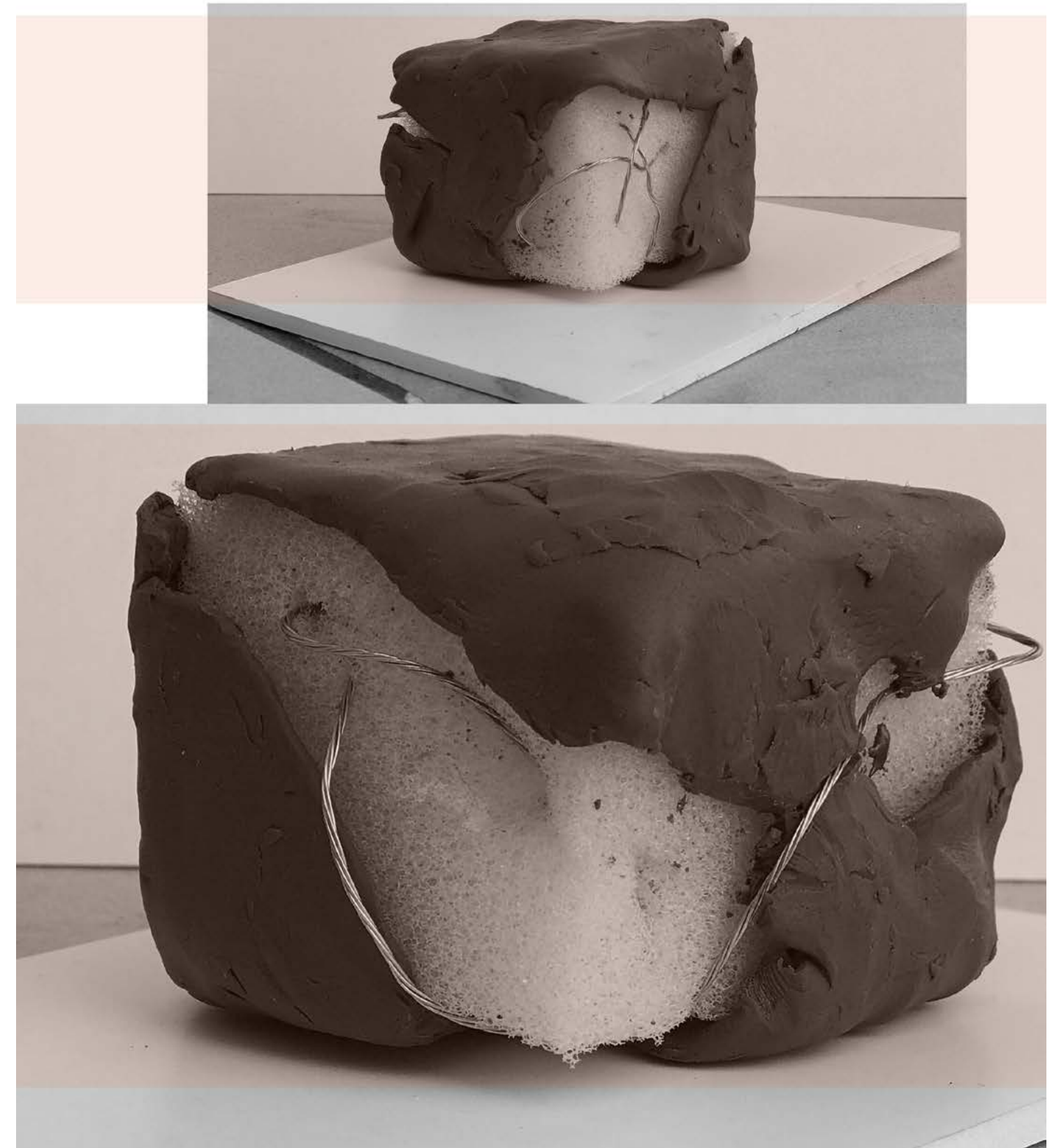


Figure 192: Exploration model; builder (Nevhutanda, 2020)

CHARRETE 03: BREAKING AWAY

(Figure 193)

For this model I chose to use plastic and wire, a process continued from charrete 2 with a different approach. . I chose these materials as it was easy to access. I then questioned what I can do with this material (plastic) and how I can achieve the idea of breaking away. I experienced how the material responds by pulling and stretching it. I then rolled up the plastic and wrapped it with wire and attempted to pull out the plastic through the wires that caged the plastic.

Plastic: Symbolic to women wanting to come out of how they have been defined and caged

Wire: Symbolic to the boundaries that hinder black women

I limited myself to using my hands as a way to help me understand the principle of reciprocity investigated in domain 02.

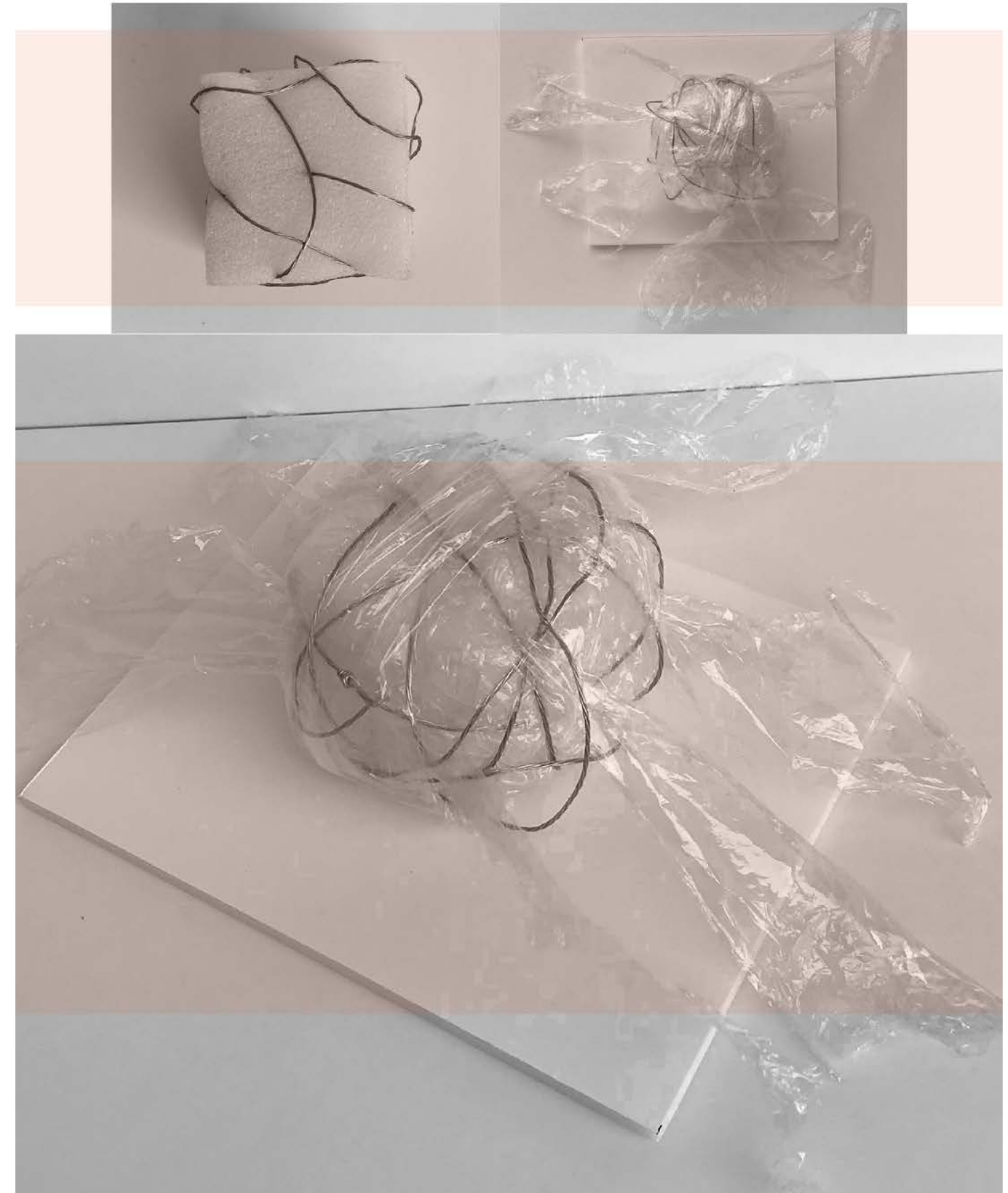


Figure 193: Exploration model; builder (Nevhutanda, 2020)

CHARRETE 04: BREAKING AWAY (Coming out)

(Figure 194)

For this model I chose to use gloop and wire as a continuation of the process from charrete 3 with a different approach. Gloop is a mixture of corn flour, water and food colouring (unfortunately I could not document this process due to technical issues). I chose gloop because I knew I was forced to make it from scratch as I needed it to respond as a material that would separate itself if brought together with other elements. My approach to this model was to test how gloop would respond to wire as a solid and liquid material. I started by rolling wire together and then went on to wrapping it with the gloop. A few minutes later, the gloop started to separate itself from the wire from top down, leaving the wire in the centre holding on to parts of the gloop.

Wire: Symbolic to the boundaries that hinder black women

Gloop: Symbolic to the capabilities of black women (Breaking away)

I limited myself to using my hands as a way to help me understand the principle of reciprocity investigated in domain 02.

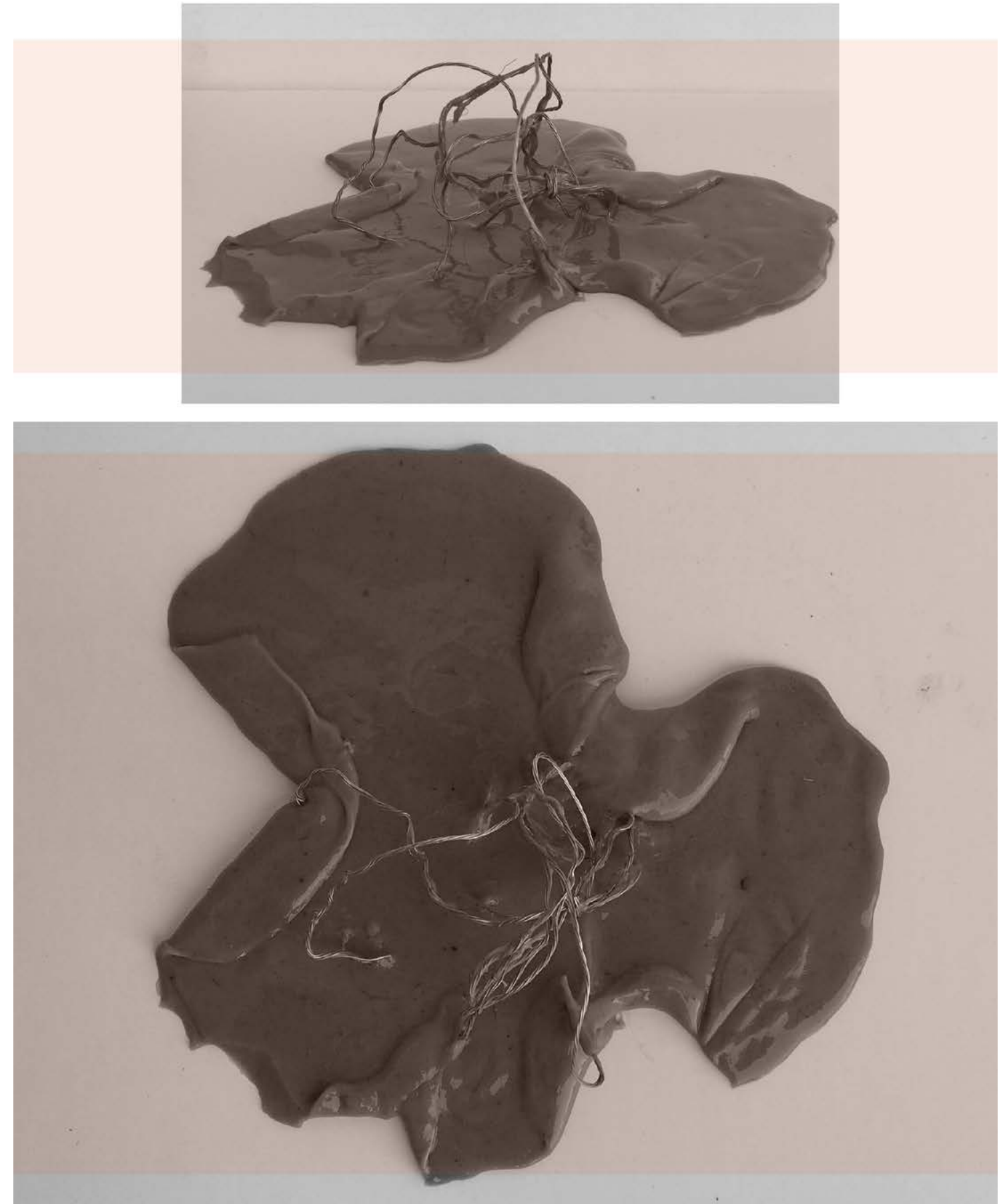


Figure 194: Exploration model; builder (Nevhutanda, 2020)

I appreciate the final result for the following reasons:

- It reminded me of the words by Henning Rasmuss (2020) when he gave examples of projects that fell victim to Covid-19 as materials needed to be imported from other countries. This process affirmed his words and made me realise that as architects we need to make sure we design or come up with ways to achieve what the building needs to best perform from materials that can be locally sourced. I experienced this first hand when I had to source materials within the limitations of my home to achieve results for the concept.
- It reminded me of the challenges I had to face and overcome during a pandemic.
- I learnt about different materials and how they respond to one another.
- It reminded me that the process was not futile and that it had value in my project.
- It became an expression of my connection to the project as I was making.

6.2 CONCEPT DEVELOPMENT (Sketches)

Figure 195 is a drawing of the exploration model that was built as charrete 4 (Breaking away_ coming out). I use this sketch in the next domains to investigate a conceptual transition.

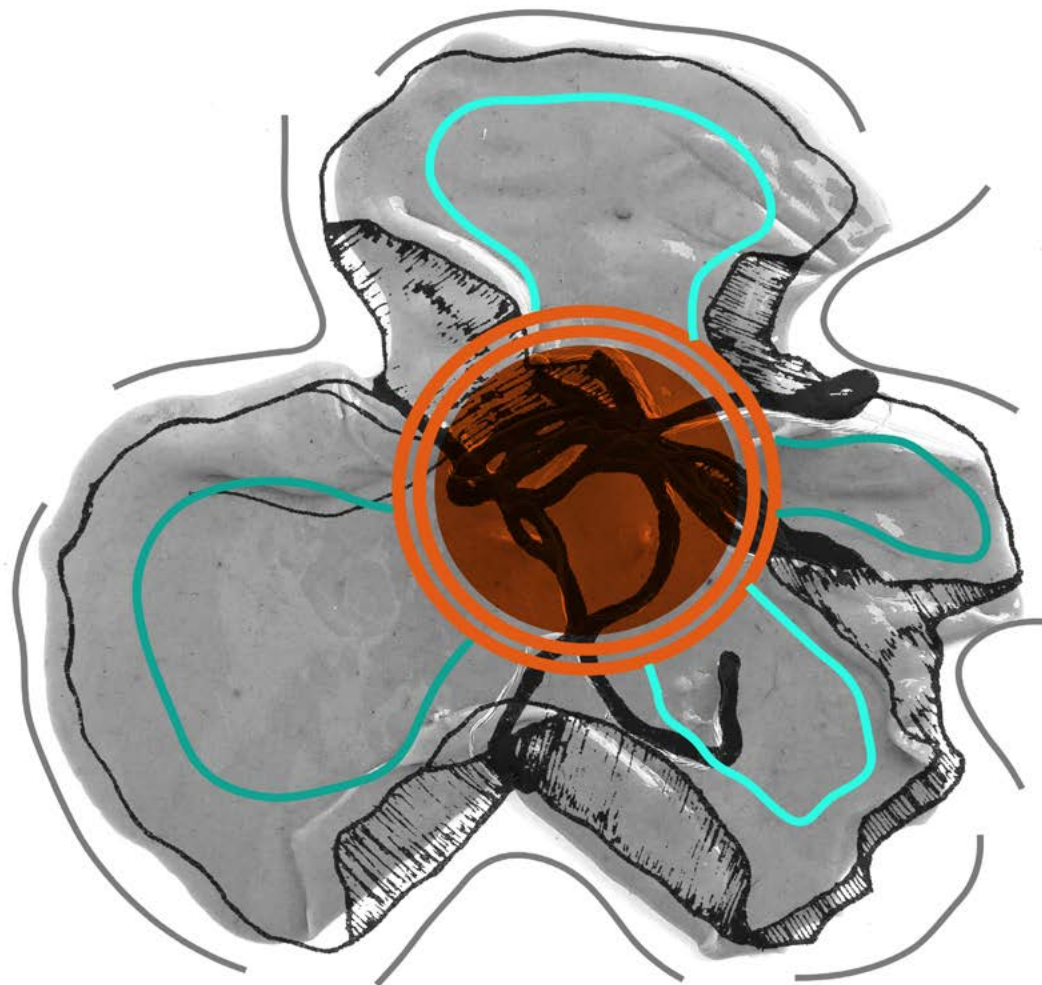
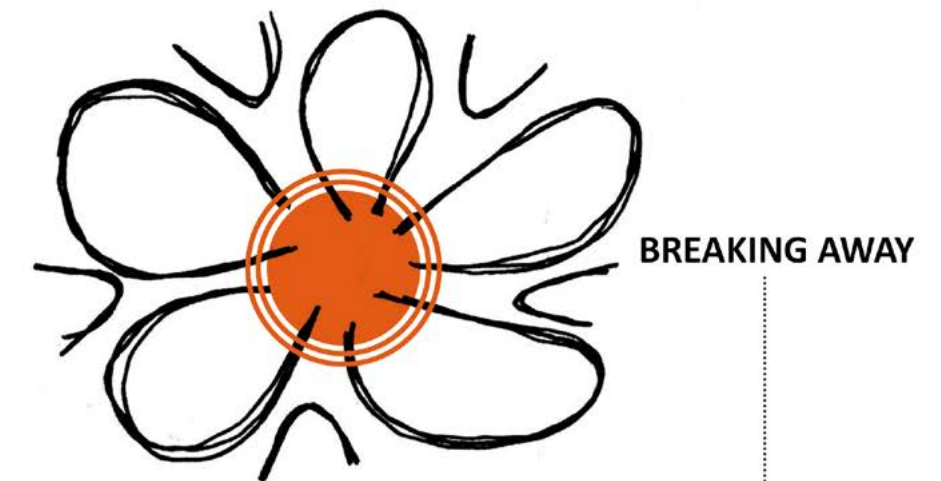
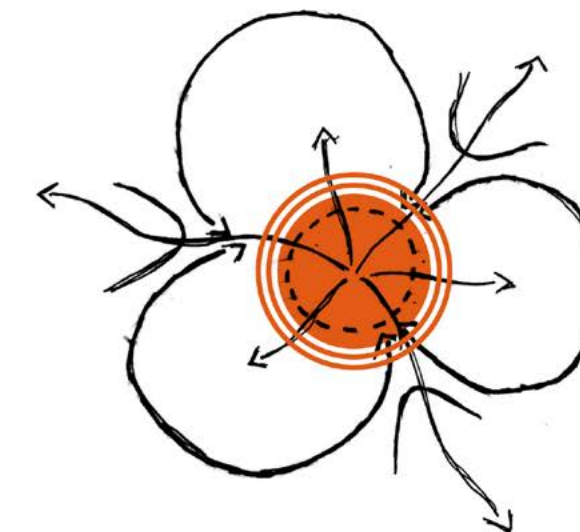


Figure 195: Concept diagram; sketch and analysis (Nevhutanda, 2020)

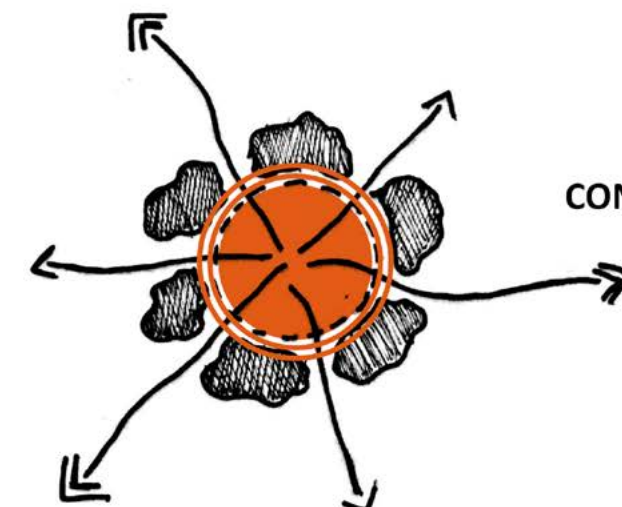
This concept is explored poetically through flexibility and connectivity in a visual and physical sense, looking at how people use and move around the site which then informs spatial planning.



BREAKING AWAY

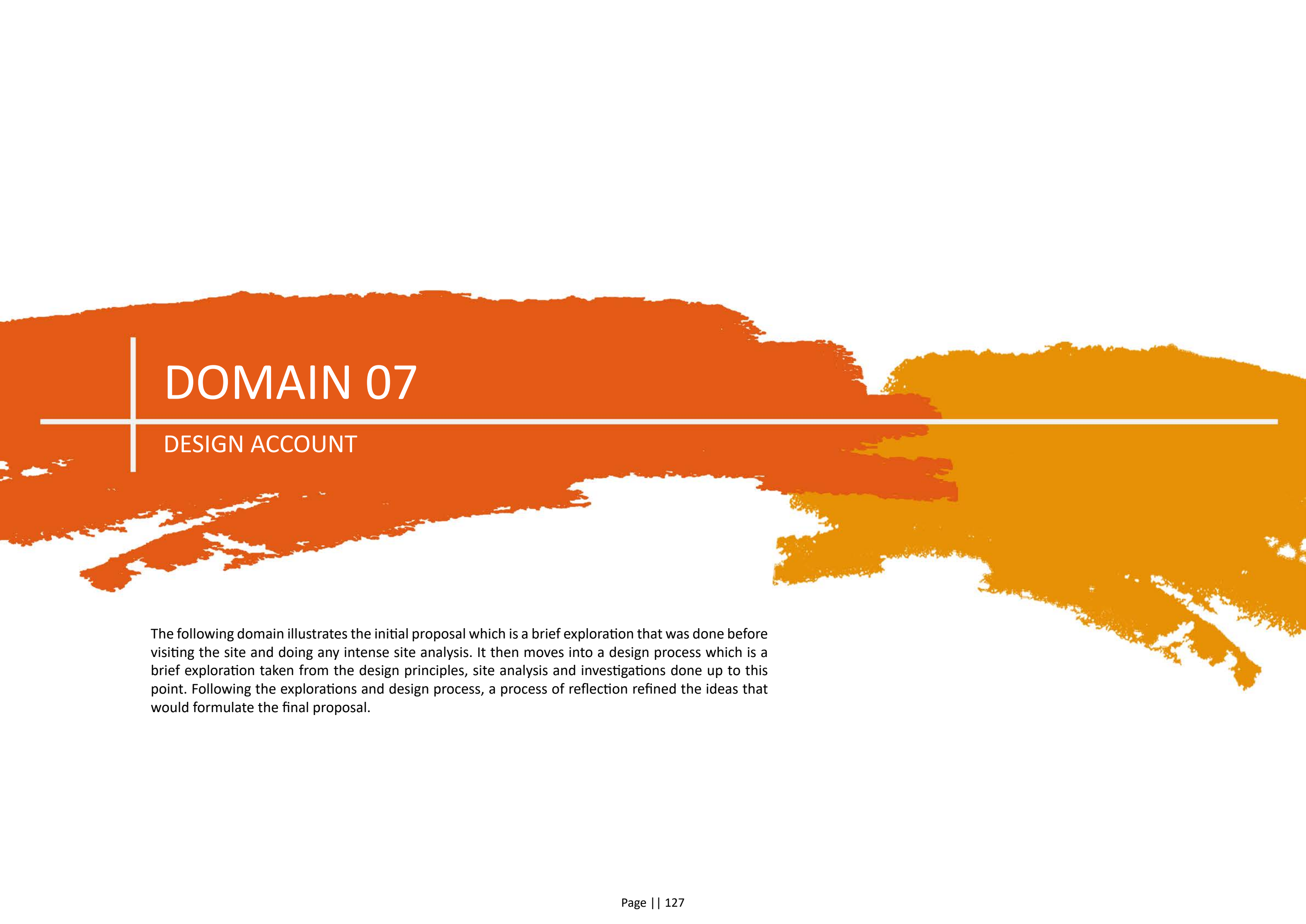


FLEXIBILITY



CONNECTIVITY

Figure 196: Concept diagrams; sketches (Nevhutanda, 2020)



DOMAIN 07

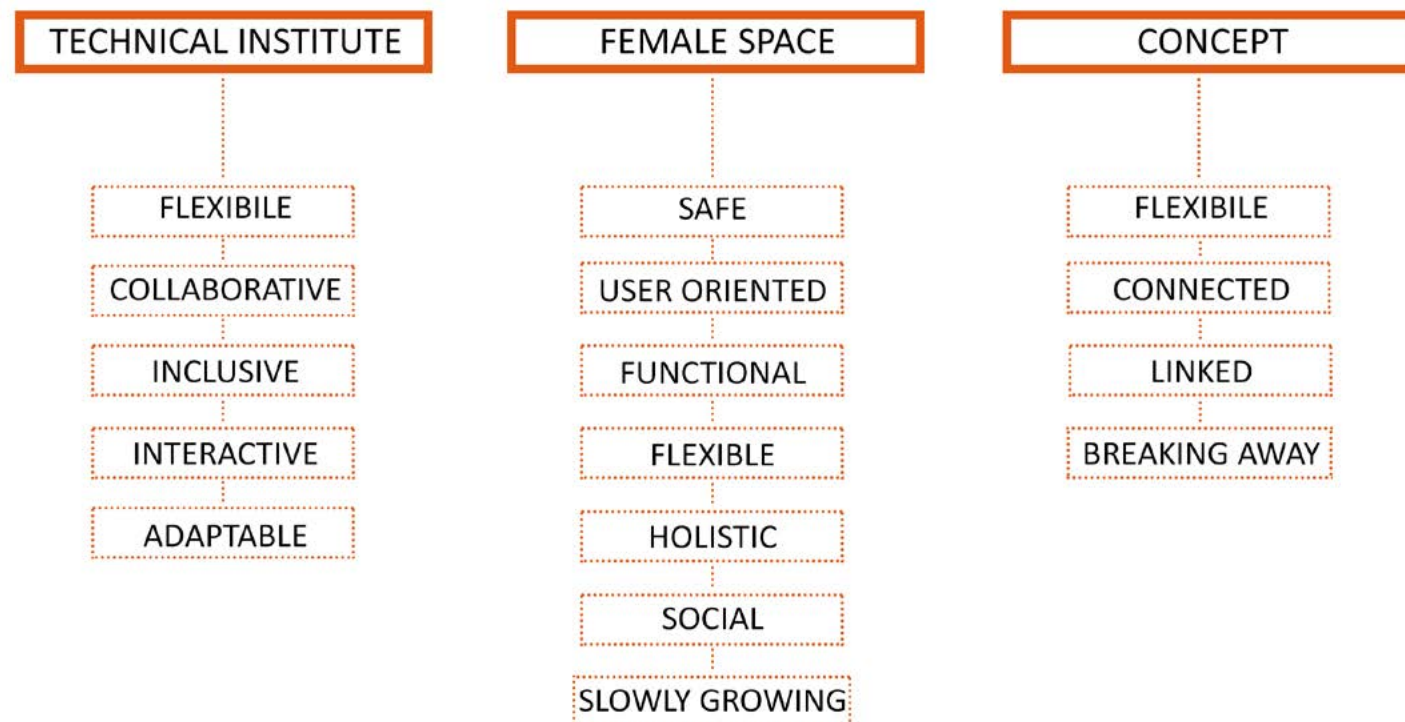
DESIGN ACCOUNT

The following domain illustrates the initial proposal which is a brief exploration that was done before visiting the site and doing any intense site analysis. It then moves into a design process which is a brief exploration taken from the design principles, site analysis and investigations done up to this point. Following the explorations and design process, a process of reflection refined the ideas that would formulate the final proposal.

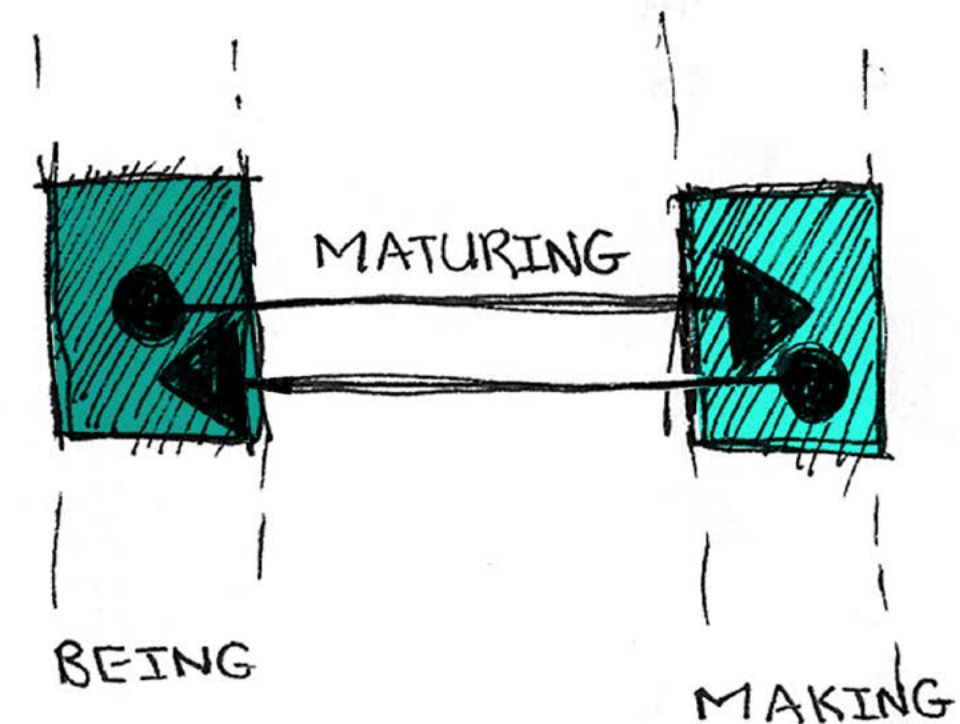
7.1 DESIGN PRINCIPLES

As an institution of knowledge exchange and creating the self through the process of making, the design principles derived from the knowledge gained up to this point have become the main aspects of the project to get towards a design.

These design principles are the fundamental requirements in designing a technical institute that will be used by black females.



As findings outlined that the Femnical Institute is all about creating the self in the 21st century through the process of making, the concept suggested that the institute be separated into two domains, domain of being (Home_Domain 1) and making (Technical_Domain 2). This came with the understanding that without domain 1, domain 2 cannot exist and without domain 2, domain 1 cannot exist.

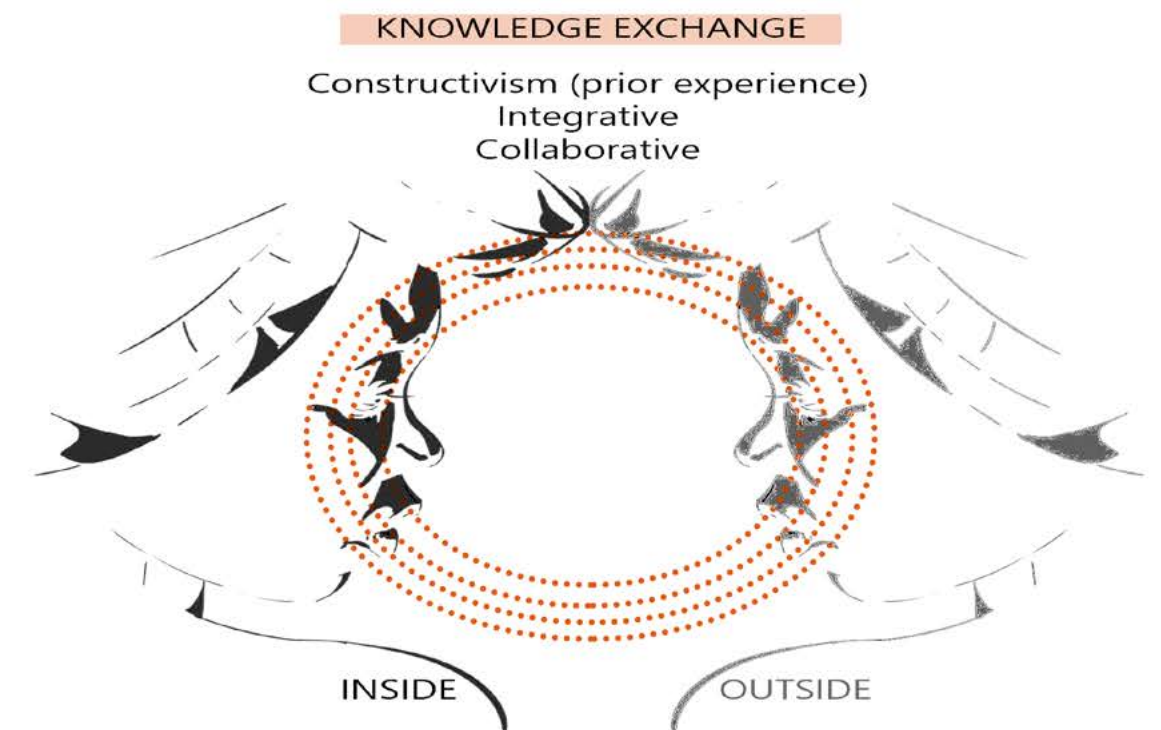
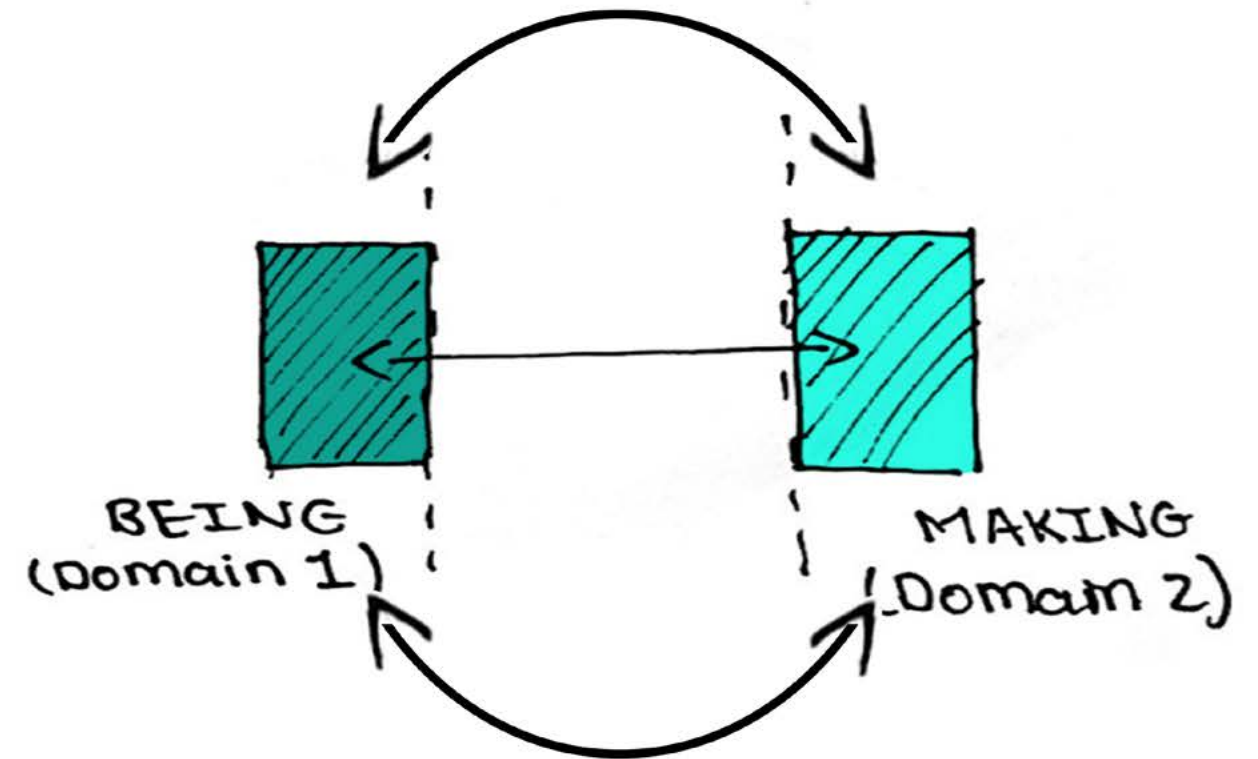
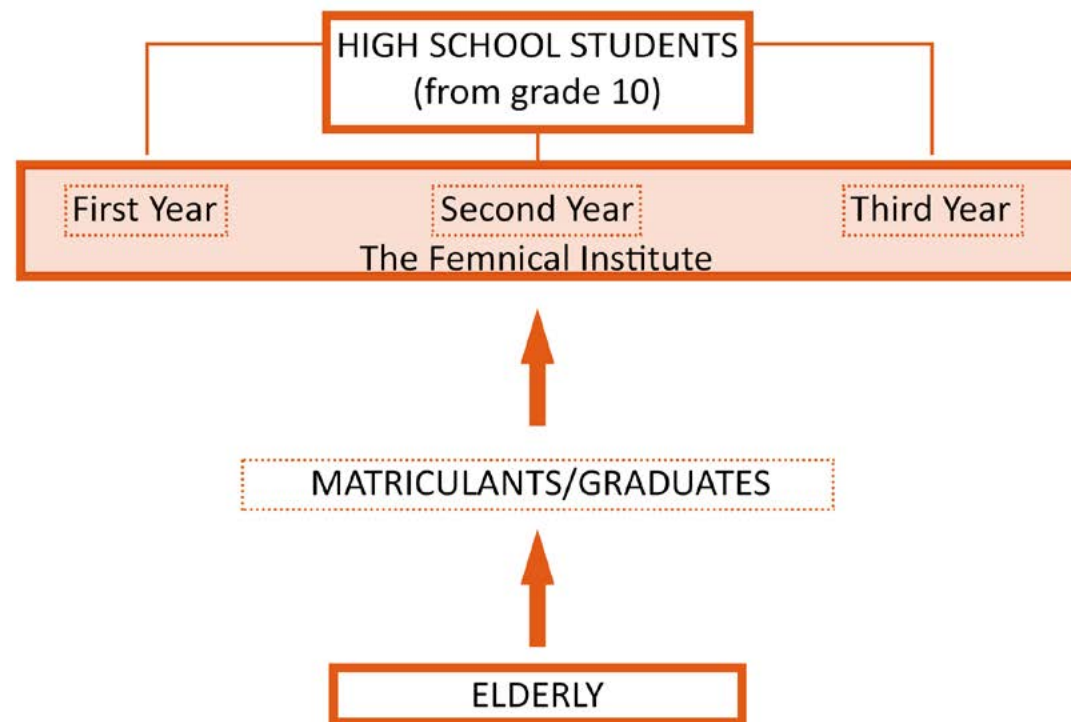


Domain 1: A place where a portion of the young black girls and women who will use domain 2 will be accommodated. In this space they will sleep, engage with one another (exchange knowledge) and mildly learn through making.

Domain 2: A place where young black girls and women will come together to learn through making and engage with one another (exchange knowledge).

7.1.1 LEARNING SEGMENTS

The Femnical Institute constitutes a place that includes a combination of different types of women who come together to create mechanisms that address issues faced by women.



Domain 1: The young girls and women coming from here are the agency of the female aspect of the curriculum

Domain 2: The young girls and women who come into this domain from the outside are influenced by the knowledge gained by the young girls and women of domain 1 as they act as a catalyst of knowledge in how the female is framed.



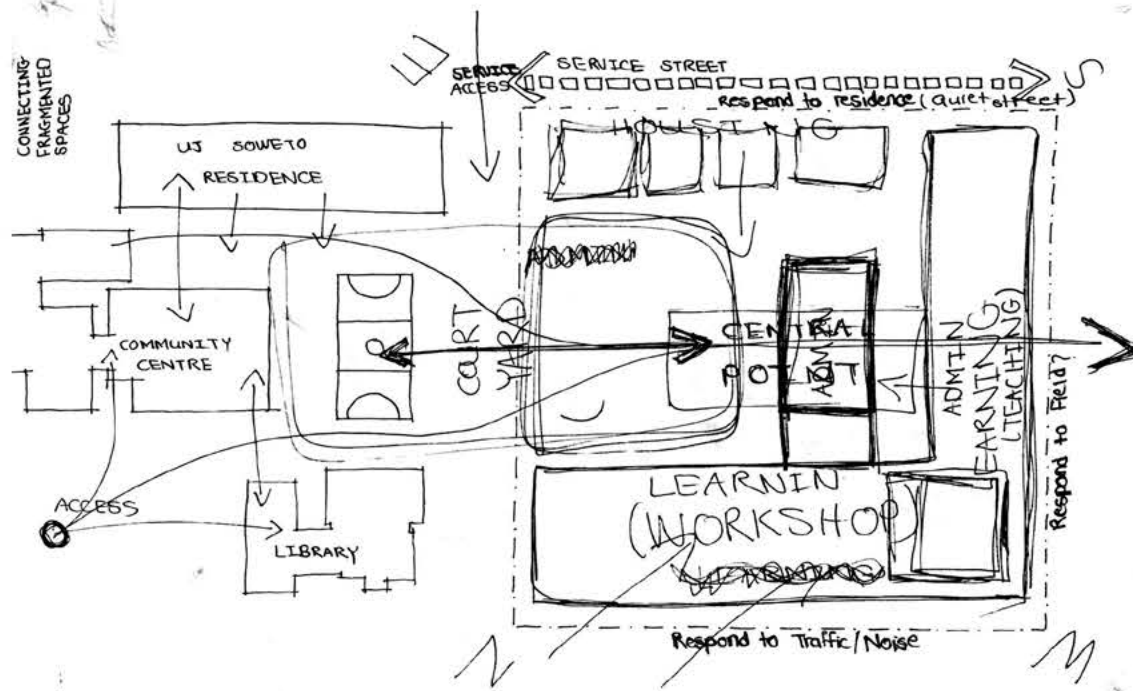
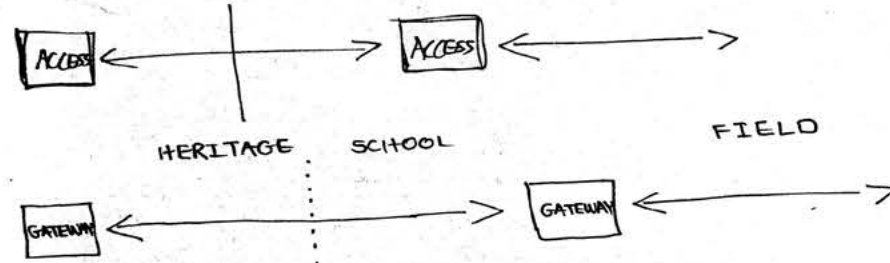
7.2 TOWARDS A DESIGN

7.2.1 INITIAL DESIGN EXPLORATIONS/ITERATIONS

This exploration of the design occurred prior to the researcher visiting the site. Most of the decisions took place before the bulk site analysis and research fusion occurred. This is evident in the proposal as it is largely evident on the production of an architecture that had no meaning and responded to surface-level site informants and understandings. The process resulted in a mass that was constrained to its site while not truly responding to it. The lack of response included the consideration of its surroundings and its functionality (see iterations/explorations 1 and 2).

ITERATION/EXPLORATION 1

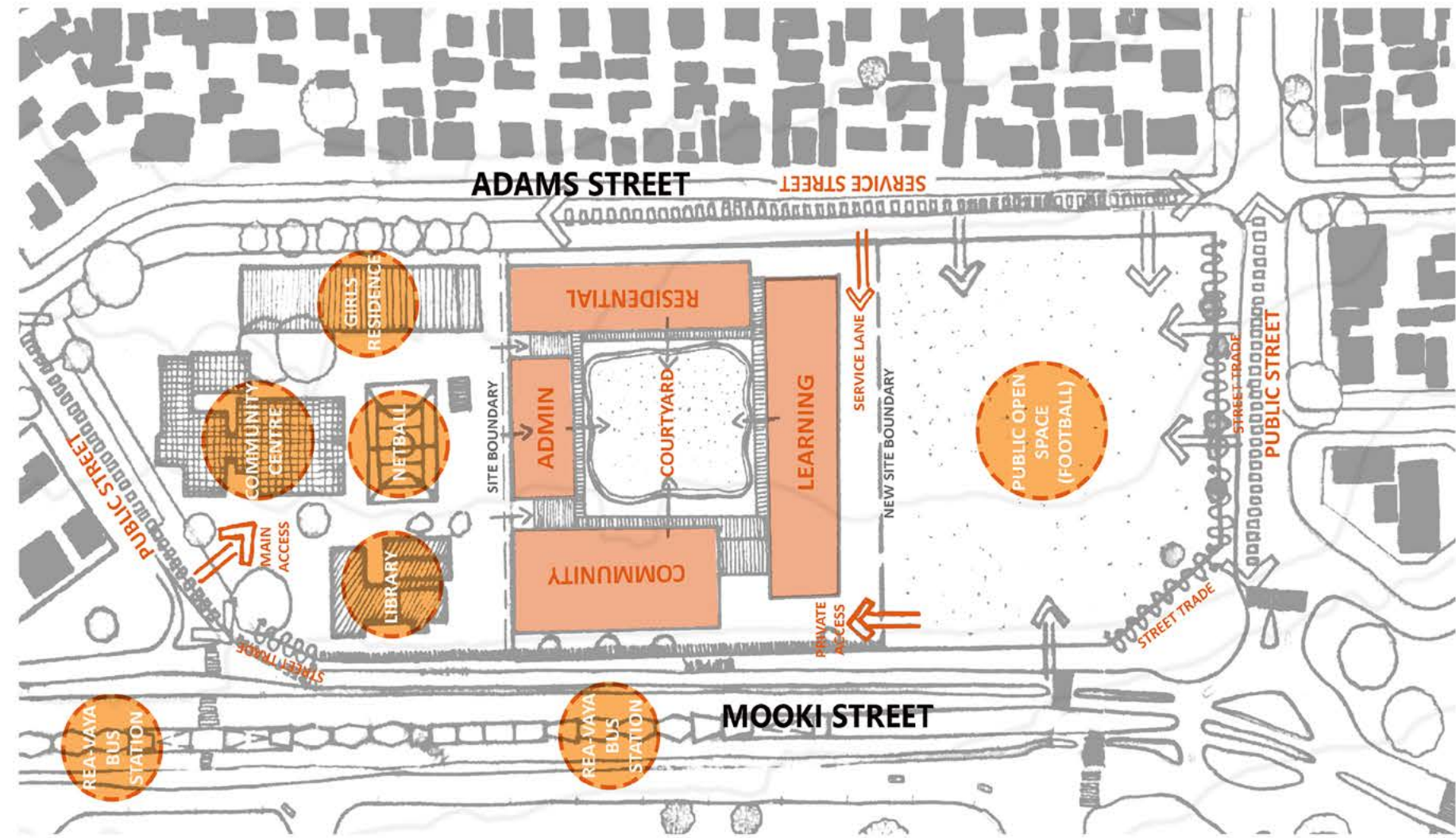
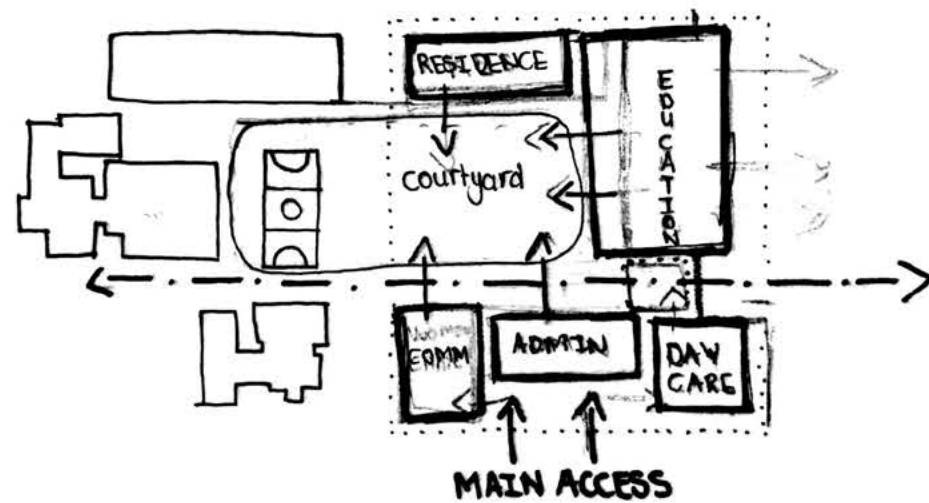
LINKING FACILITIES
ACROSS A LARGE PORTION OF
THE COMMUNITY



HERITAGE

SITE

FIELD

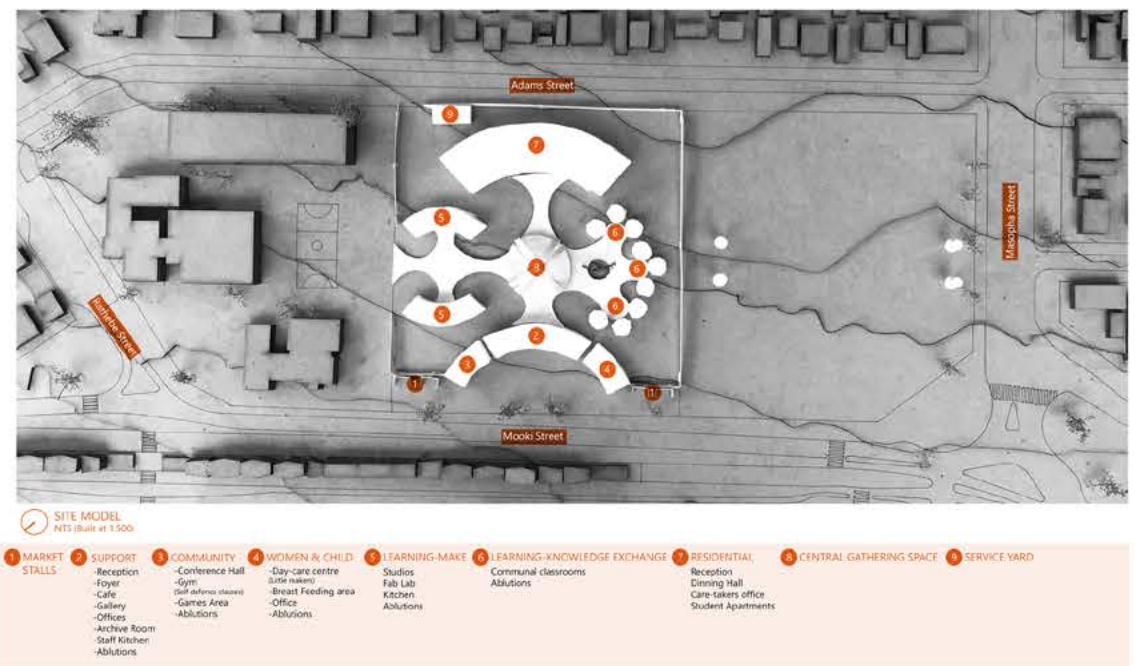
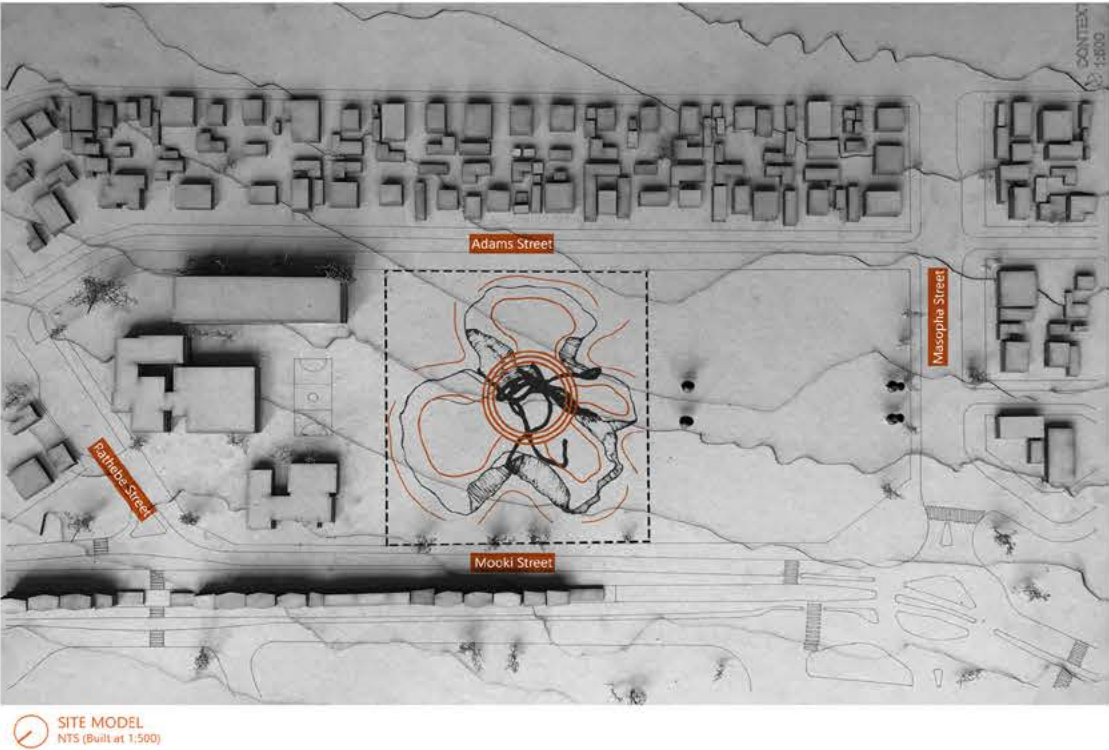


EXCLUSION

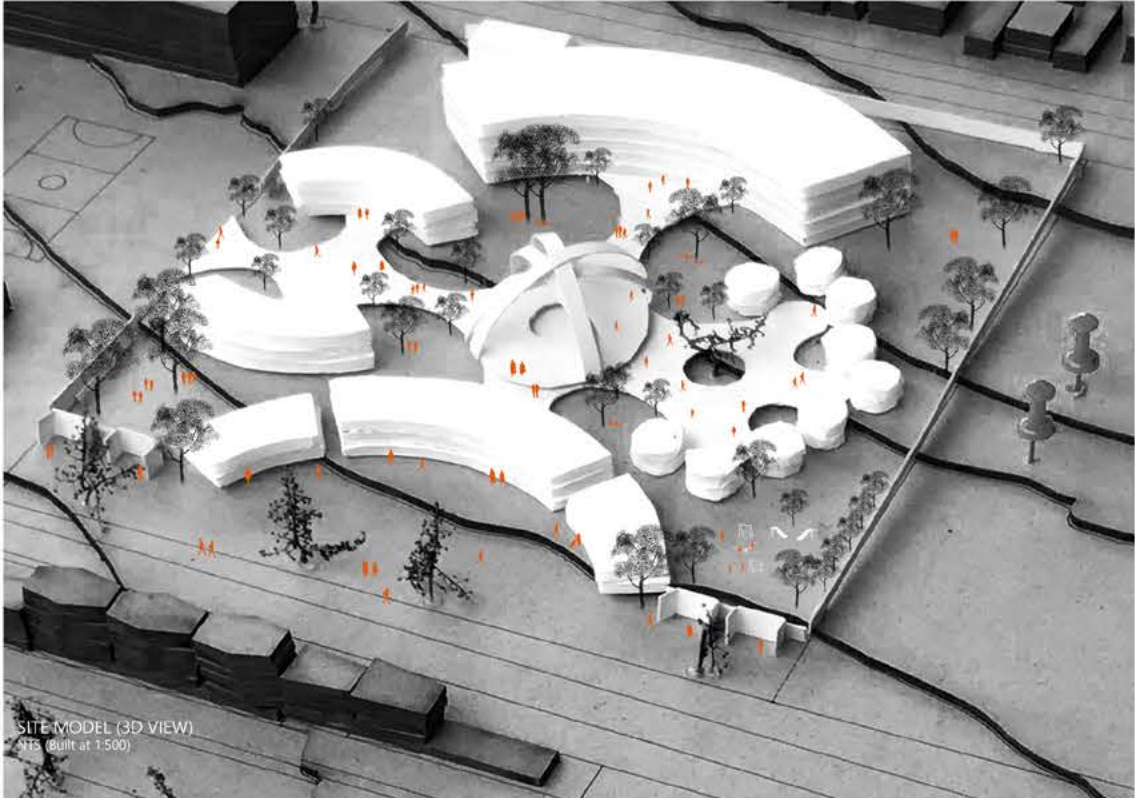
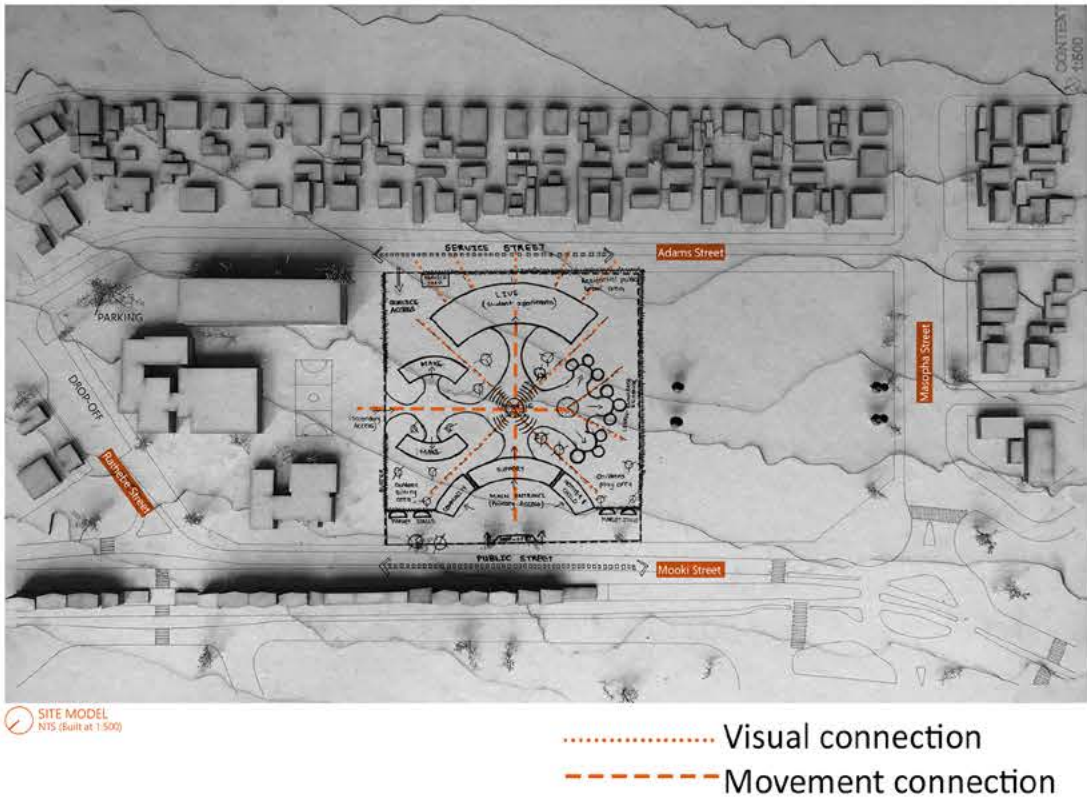
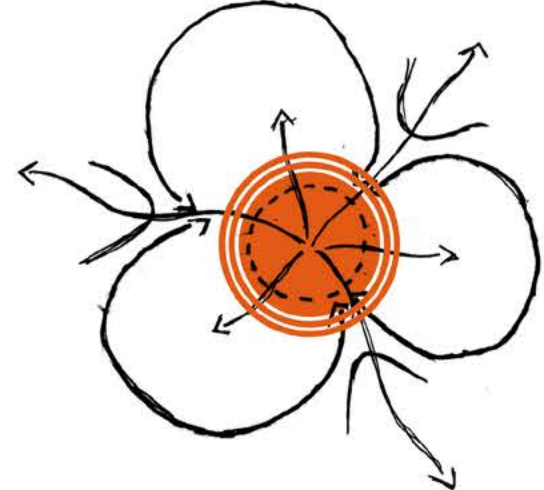


INCLUSION

ITERATION/EXPLORATION 2 BREAKING AWAY



FLEXIBILITY





The proposal presented the building as just that, a singular spatial experience. However, there is potential for the spaces to become part of the larger urban experience.

A proposal sited here would need to accommodate the existing informal soccer field, informal traders, the heritage precinct, mobility and how people move within and around the site. It will also need to take into consideration the public realm and its underlying strengths: Is it a place for casual gathering? Especially for the young girls and women who will be using the facilities on site, and is the public realm safe for young girls and women?

The governance of the site's thoroughfare in the design perhaps could be slightly reduced through a built development to induce a spatial experience of the proposal through programming, surface treatments, and architectural language. The proposal from here started to consider integration with the spaces that surround the site.

7.3 DESIGN PROGRAM

The exploration of the program for the design began with a program list that was informed by the research aimed at being a place that is conducive for young black girls and women to create the self through the process of making. The idea is to integrate two spaces with a central public realm to bring a sense of safety to the space. The fundamental aspect of the program is to provide collaborative spaces which are the main interphase that the females will be using to gather and make.

DOMAIN 1

GATHERING DOMAIN

- Central large gathering space
- Smaller gathering spaces
- Garden areas for casual gatherings
- Outdoor Gym (self defence classes)

HEALTH CARE DOMAIN

- Reception/Sisters desk
- Waiting Area
- Consultation Rooms
- Therapy Room
- Office
- Drug Storage
- Ablutions

COMMUNAL DINING DOMAIN

- Dining space
- Visitors area
- Kitchen
- Prep and collection space

COMMUNAL BATHING DOMAIN

- Showers
- Ablutions
- Changing space
- Laundry space

ELDERLY DOMAIN

- Veranda
- Sleeping area
- Lounge
- Kitchenette
- Bathroom
- Vegetable garden

STUDENT DOMAIN

- Veranda
- Sleeping area
- Dining area
- Kitchenette

DOMAIN 2

SUPPORT DOMAIN

- Reception
- Makers cafe and Kitchen
- Lobby
- Reception
- Day-care centre (little makers)
- Outdoor playing area
- Courtyard (Makers space)
- Meeting rooms
- Offices
- Staff Kitchen
- Filling room
- Ablutions

MAKERS DOMAIN

- Social space
- Courtyard (Makers space)
- Fab Lab
- Classrooms
- Printing room
- Study space
- Workshop space
- Repository
- Gallery
- Archive room
- Reading pods
- Lecture hall/Auditorium
- Ablutions

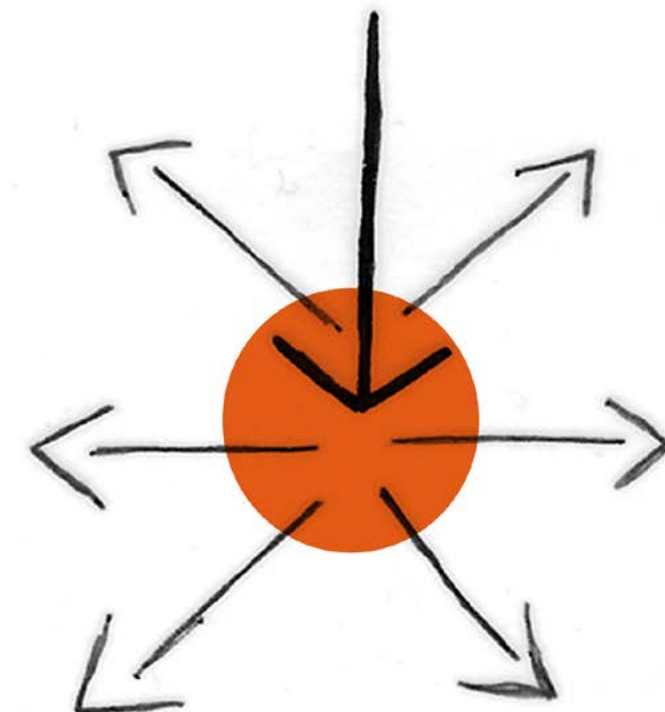
OTHER

- Market Stalls
- Public Parking
- Bus Parking
- Service yard

7.4 DESIGN PROCESS

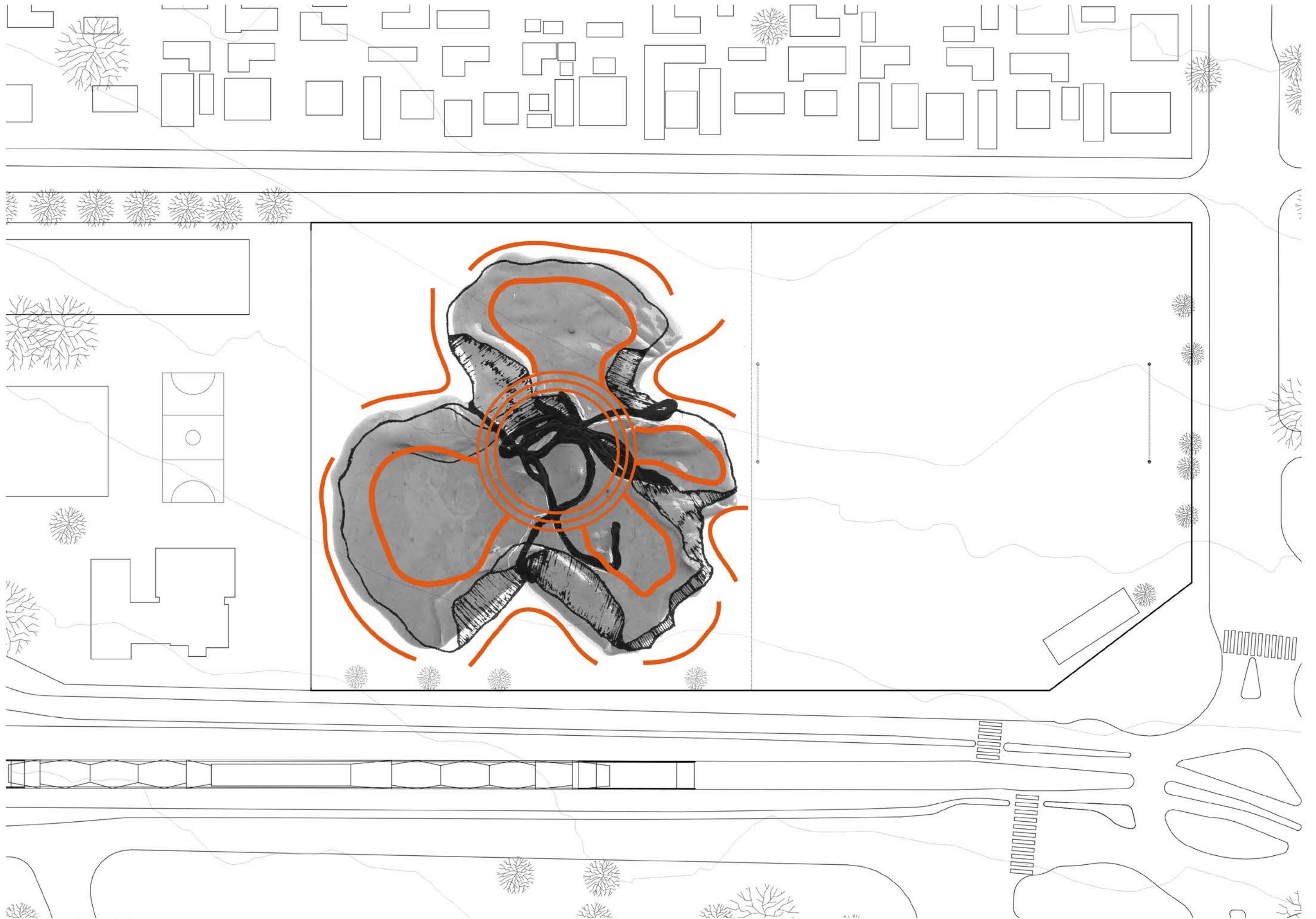
This design process occurred soon after the initial site visit, and therefore represents a response that is largely built on site impressions and informants and the interpretations of early research. These proposals focused on producing an architecture that meets the demands of the design principles and the design program. It explores the concept in order to account to a design that is suitable for black females.

This process was started by executing the concept of breaking away.



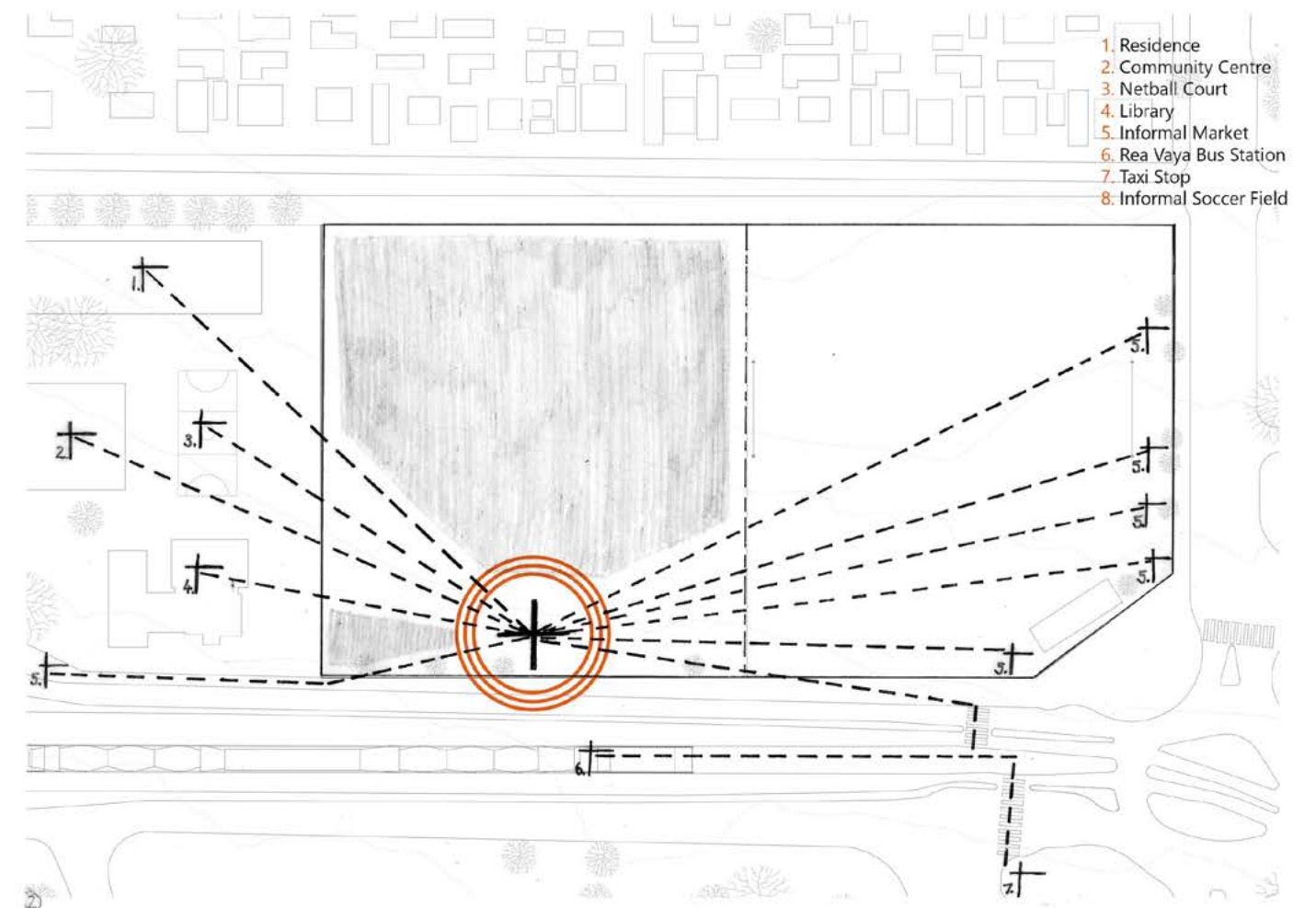
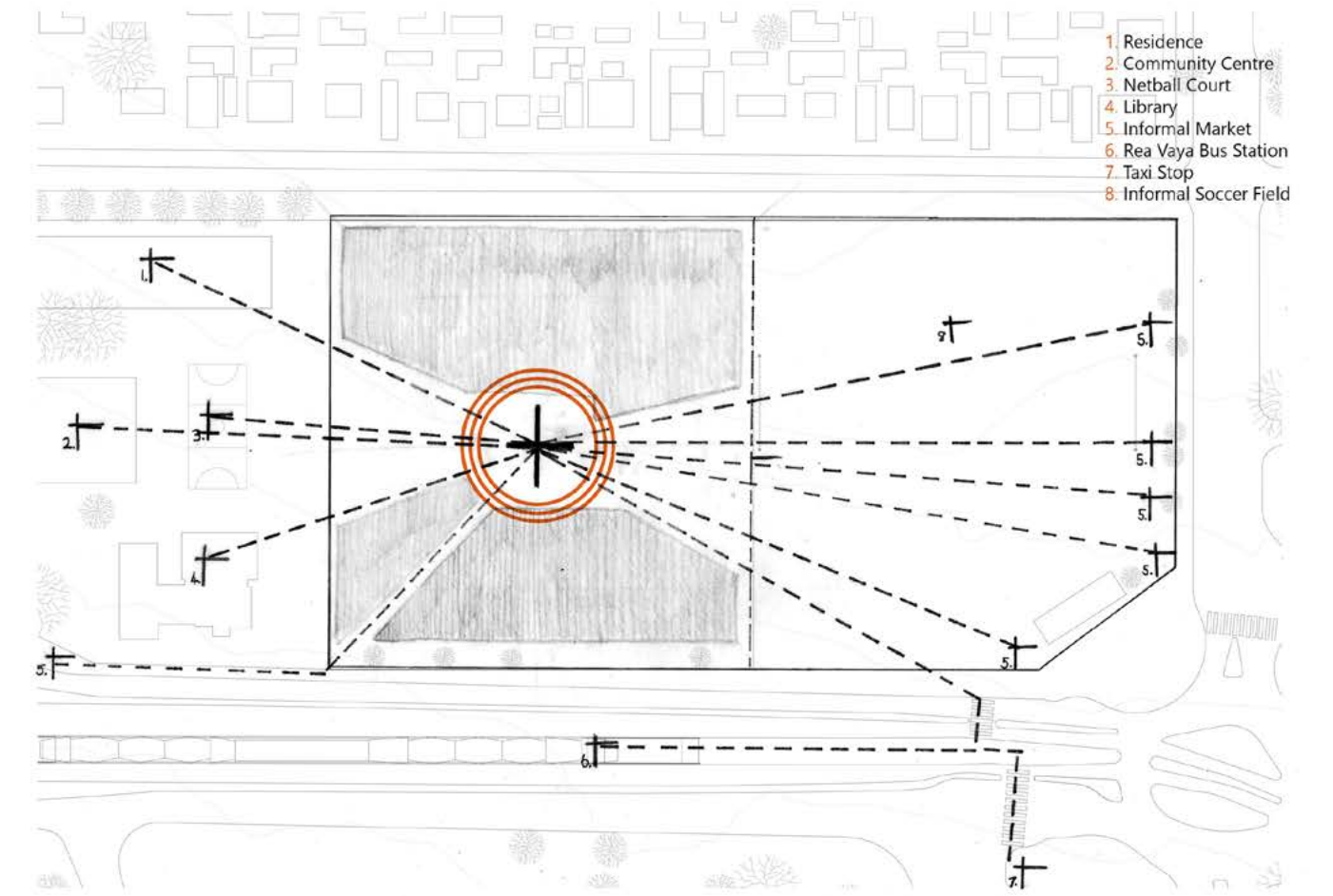
RADIAL
Diverging in lines from a common centre

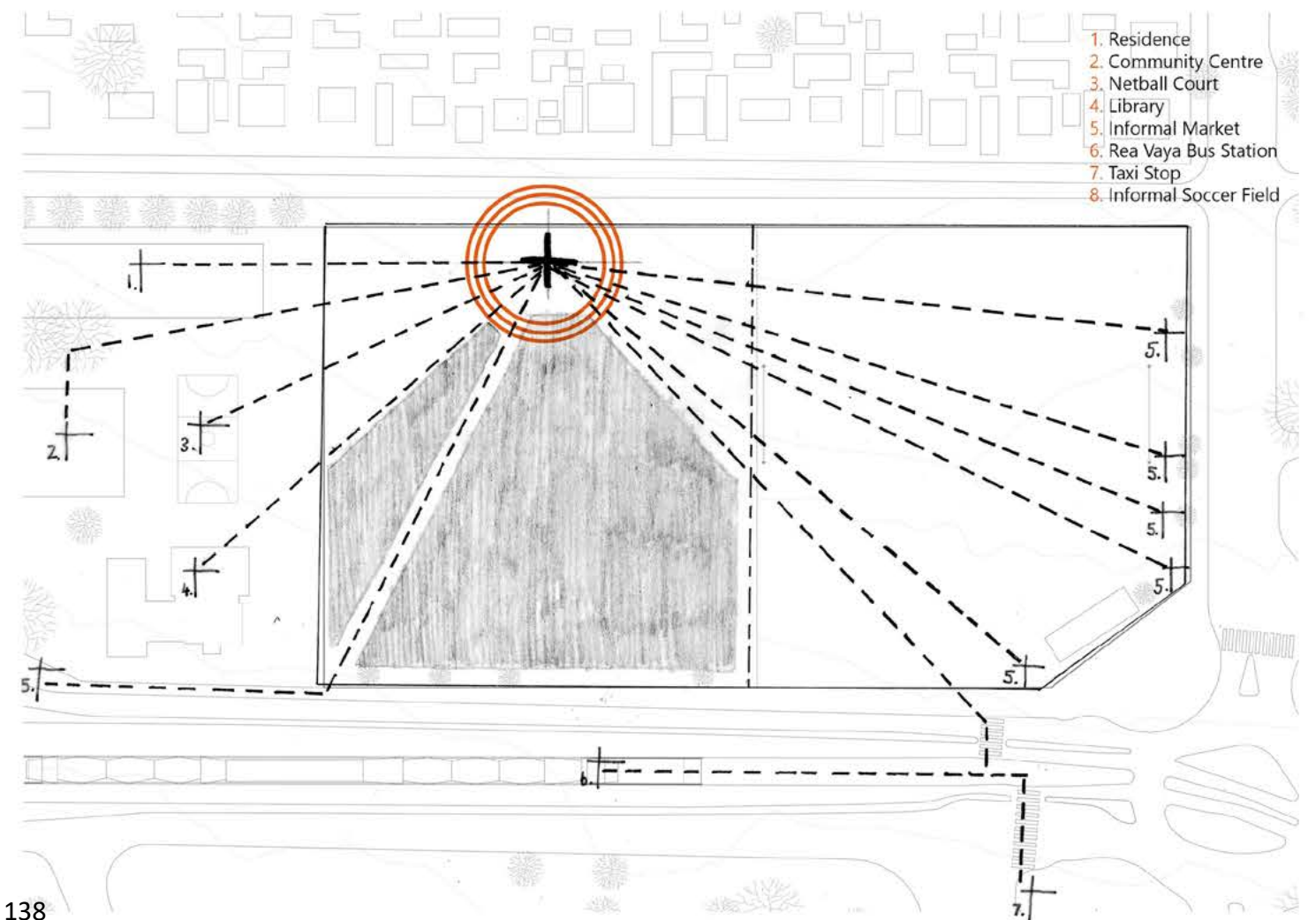
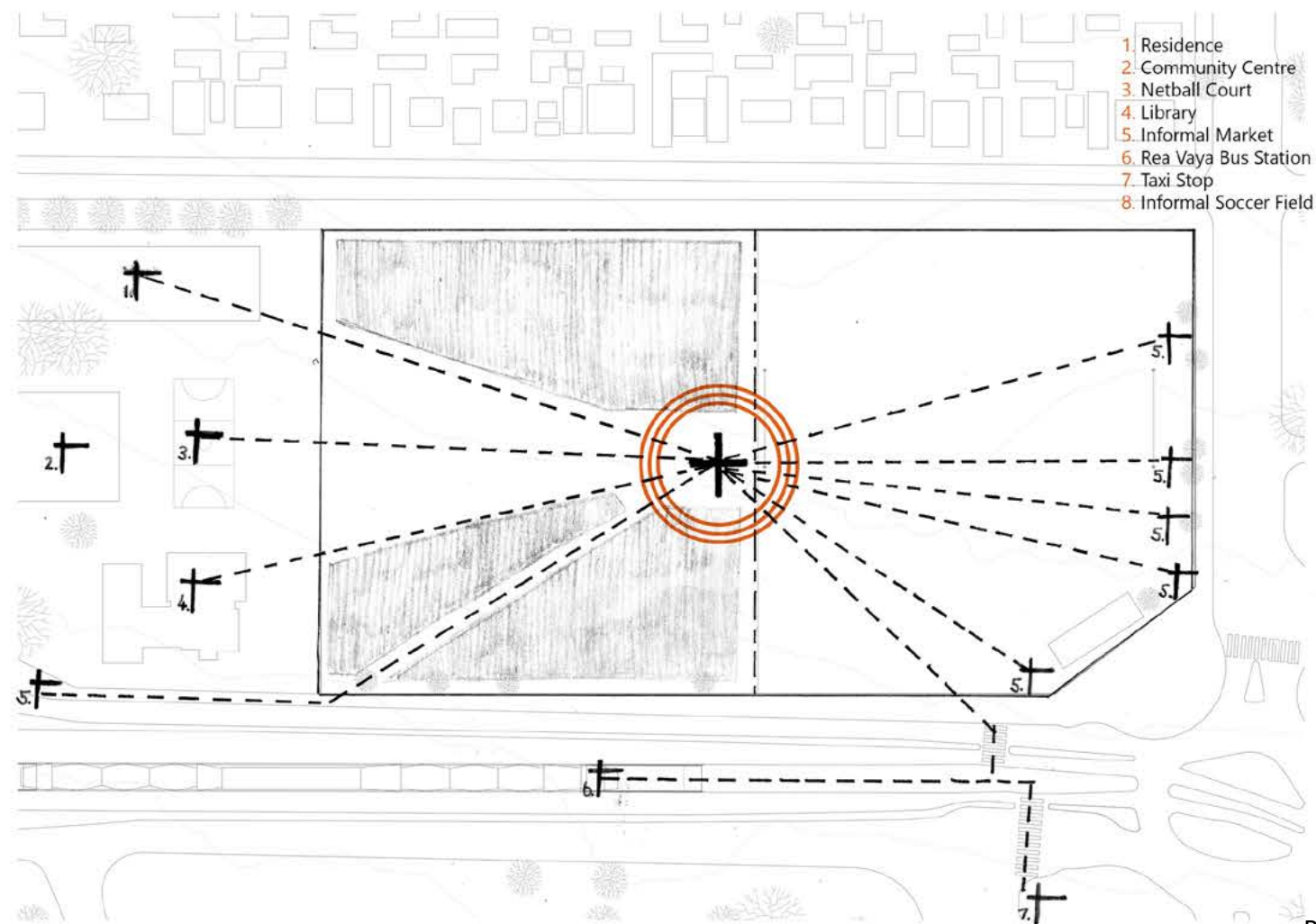
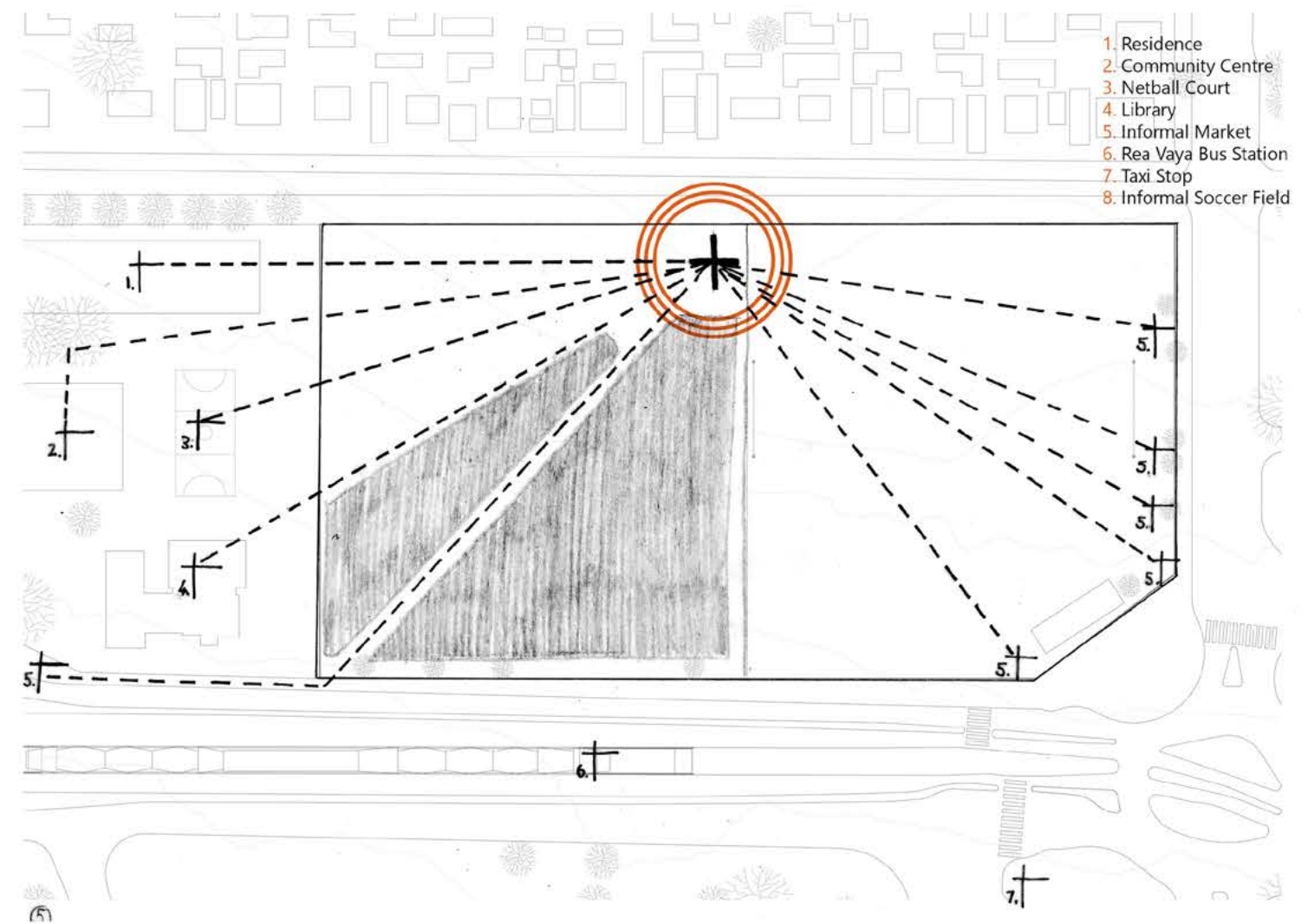
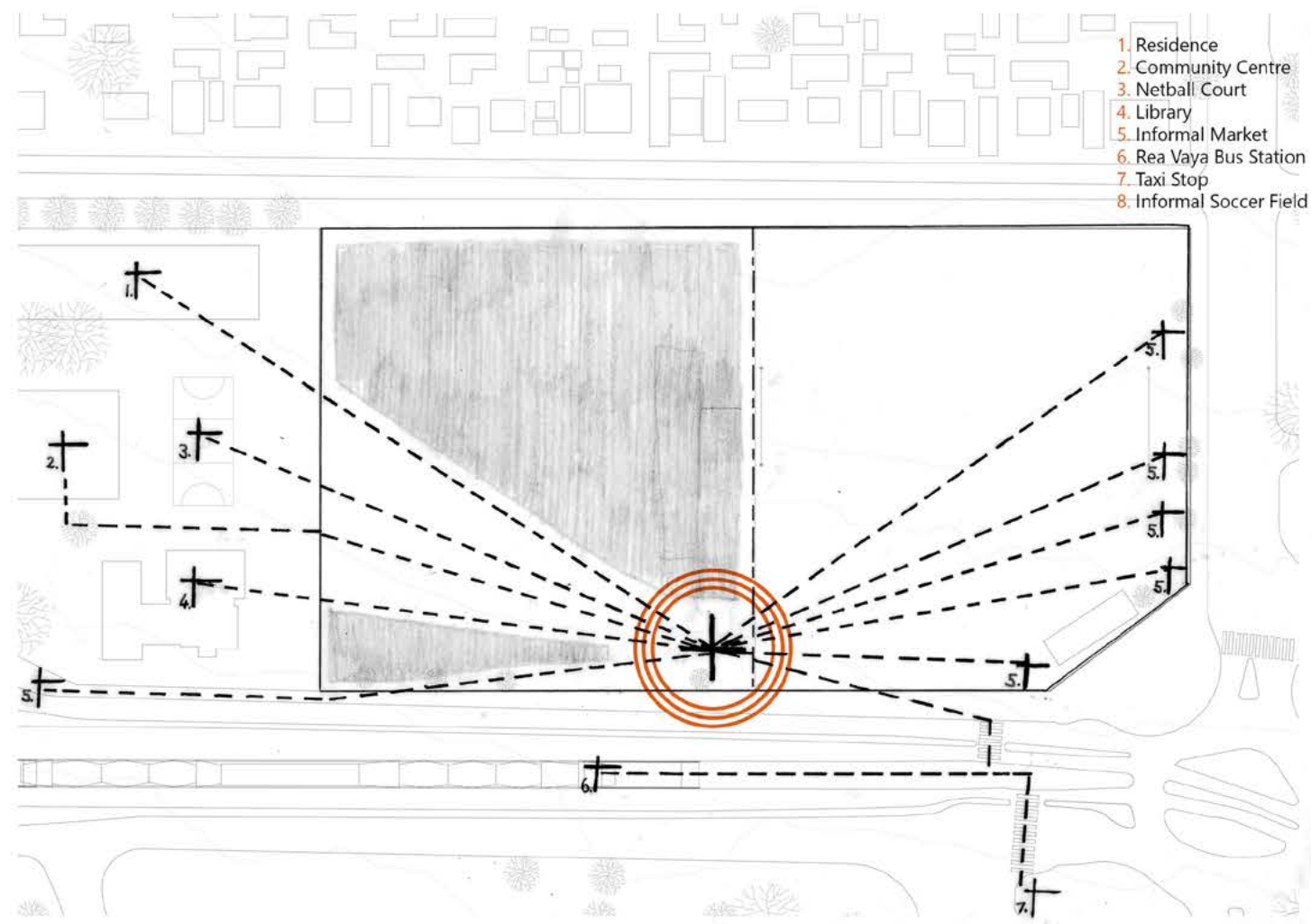
This was followed by placing the concept sketch onto the site while following the current 'reading' of the site according to its various parameters and restrictions. What emerged from this was seeing how the wire (symbolic to the boundaries that hinder black women) - (see figure 194 above) could be seen as a public space for the people of Soweto and the gloop (symbolic to the capabilities of black women breaking away) could be seen as the domains of home and technical institution.



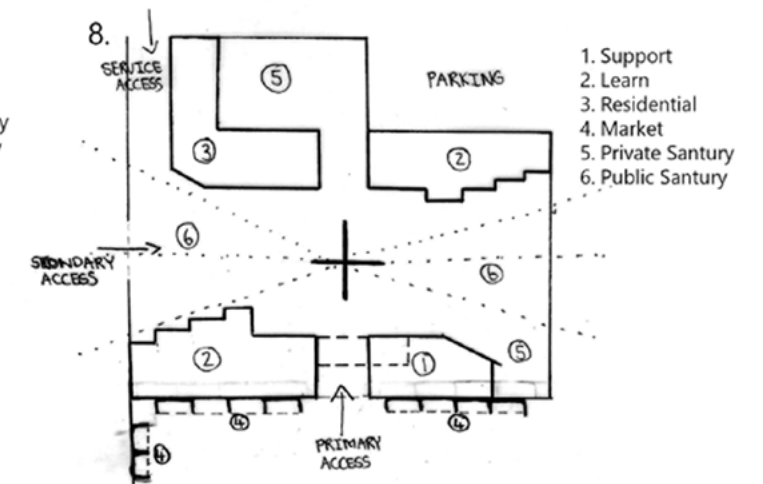
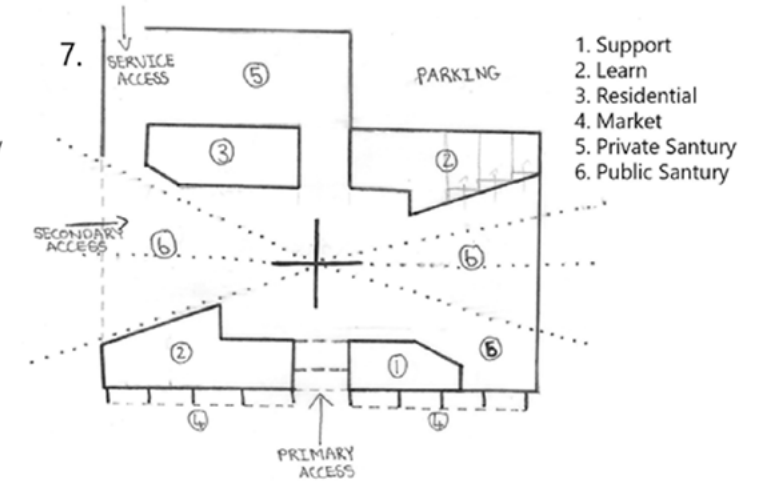
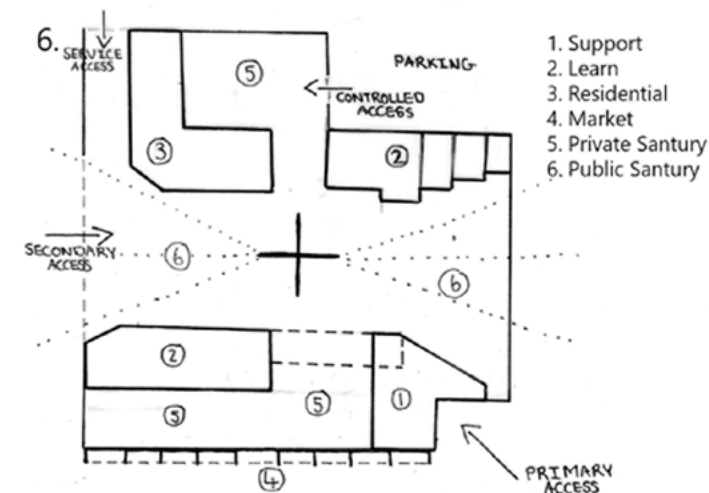
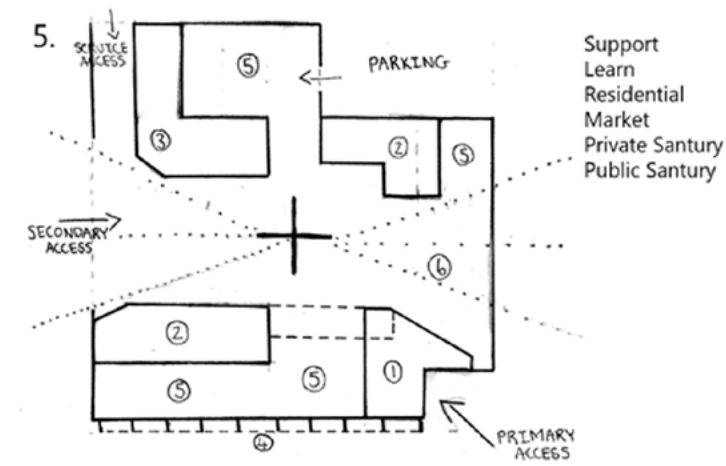
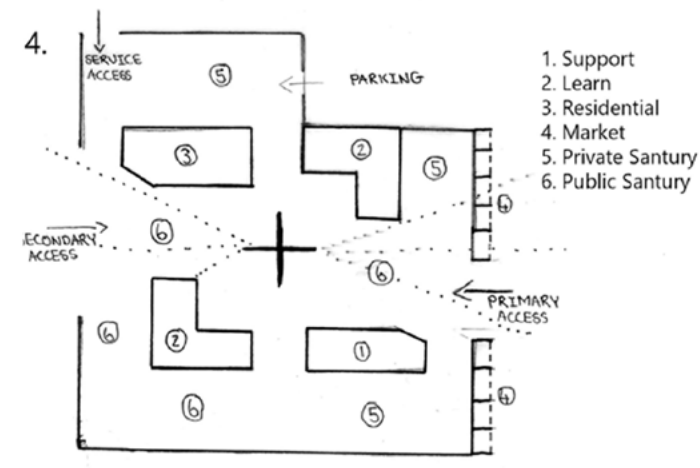
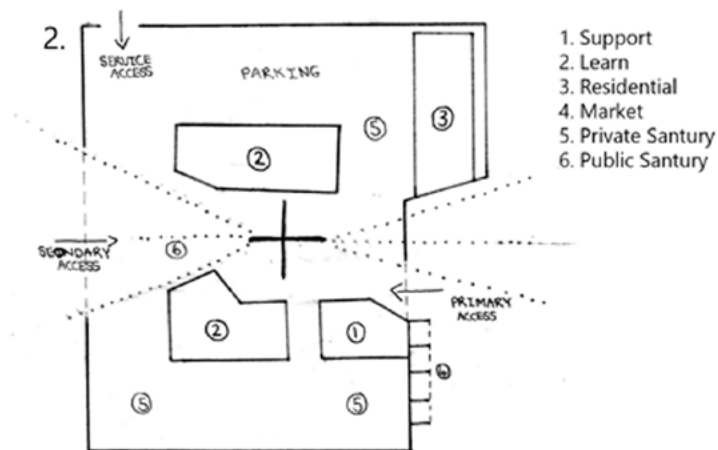
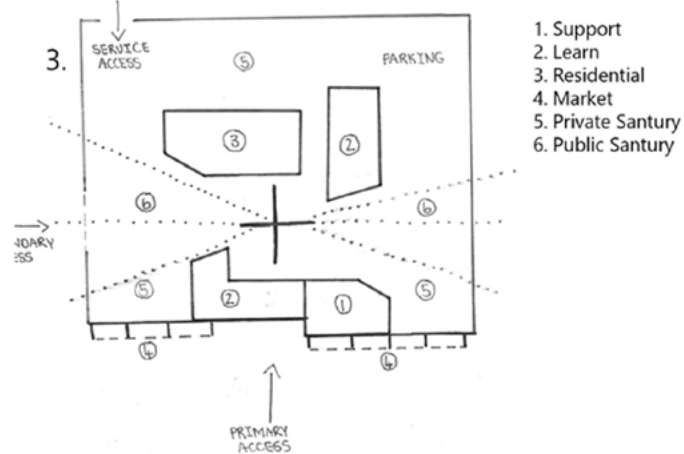
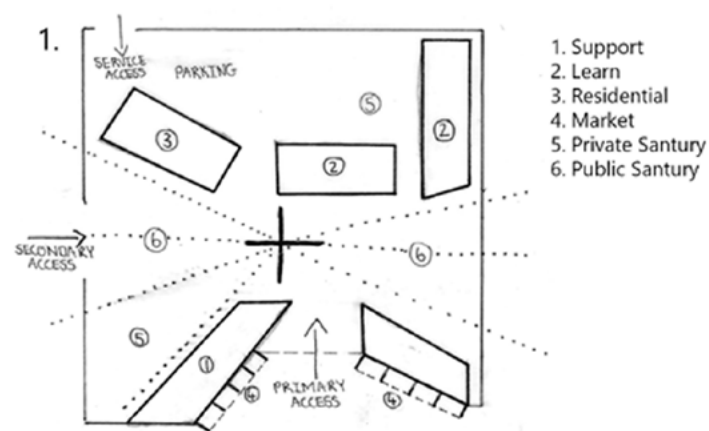


In order to account for a design that wishes to integrate its surroundings through flexibility and connectivity in a visual and physical sense, I moved the central node of the concept sketch 'public space' throughout the site using its centre to create connections and finally see where the built form can be placed. I like to think of this process as a kind of palm-reading of the site - what are the things on site telling me about how to go about designing this new space onto its surface?





Following this process, I chose the most suitable exploration that met the requirements of the design in terms of flexibility, connectivity and inclusion. This was then governed by quick explorations in plan looking at how the facility is accessed and ideally how the program would be lay out. These helped to arrive at a spatial organisation that accommodated the facility's programme and the thoroughfare of the site.

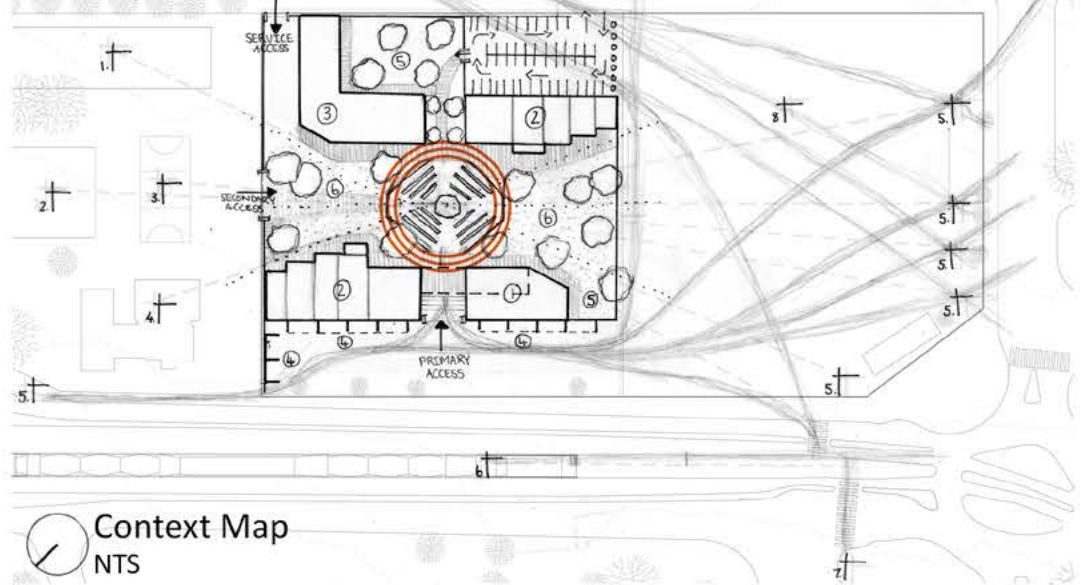


I then started taking into considerations things like parking, how people arrive and leave the place and the overall feel of the space and building as an idea (see illustrations below).

FINAL ITERATION 01

1. Support
2. Learn
3. Residential
4. Market
5. Private Sanctuary
6. Public Sanctuary

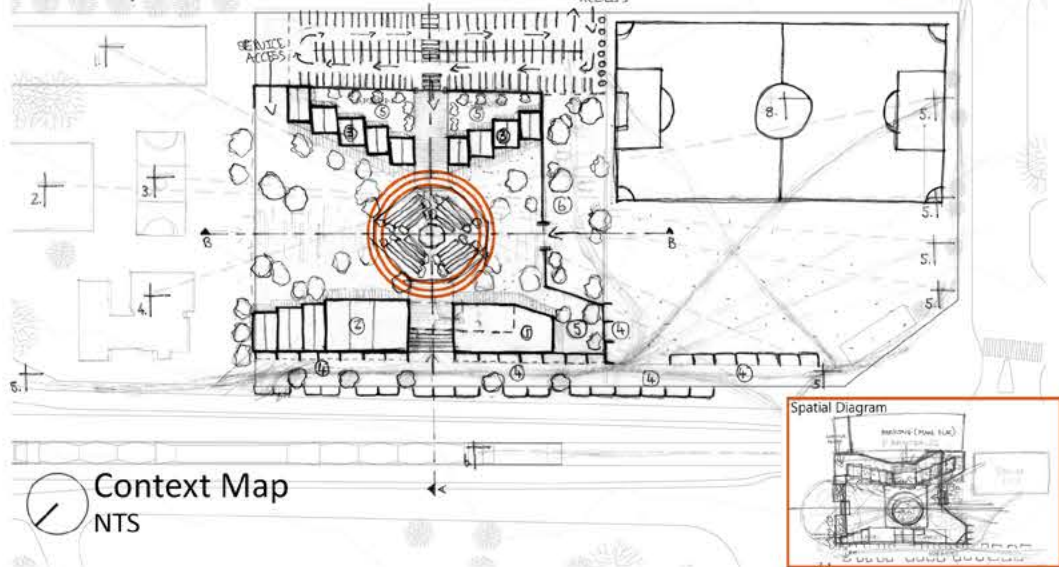
1. Residence
2. Community Centre
3. Netball Court
4. Library
5. Informal Market
6. Rea Vaya Bus Station
7. Taxi Stop
8. Informal Soccer Field



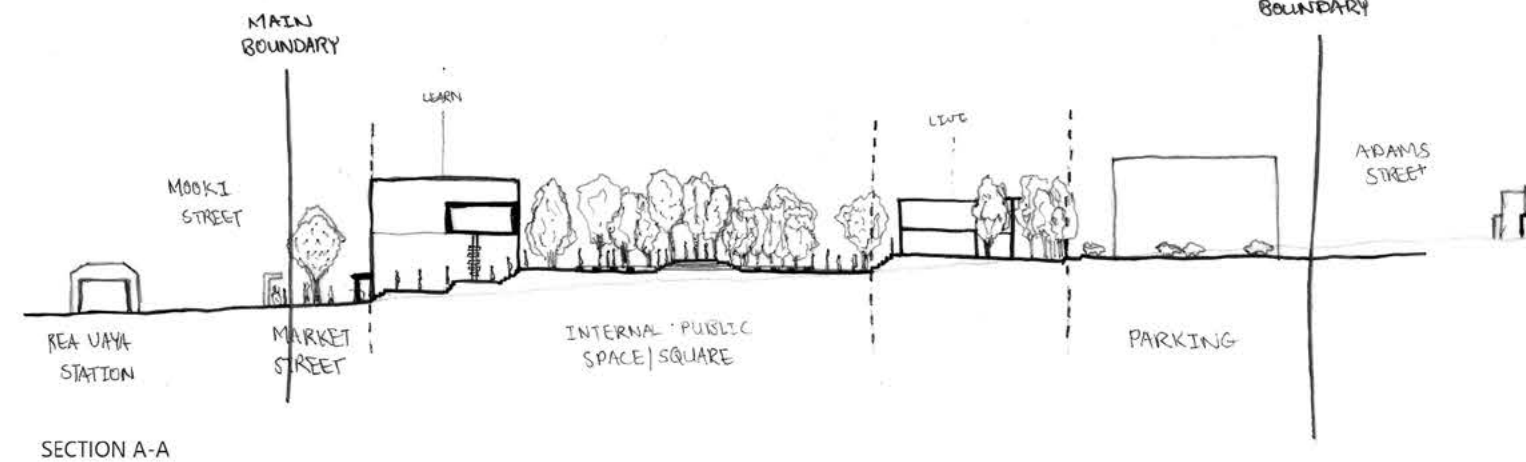
FINAL ITERATION 02

1. Support
2. Learn
3. Residential
4. Market
5. Private Sanctuary
6. Public Sanctuary

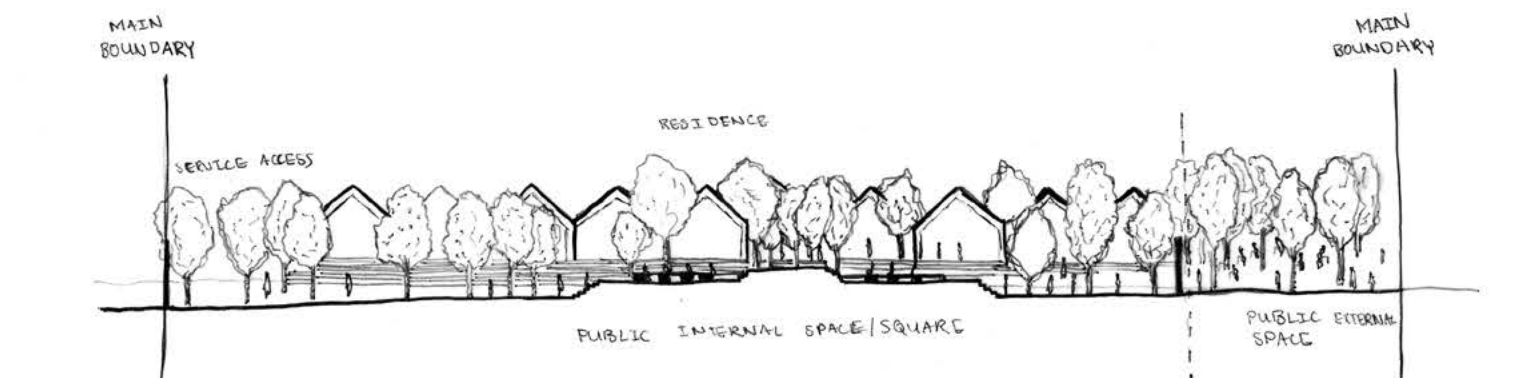
1. Residence
2. Community Centre
3. Netball Court
4. Library
5. Informal Market
6. Rea Vaya Bus Station
7. Taxi Stop
8. Informal Soccer Field



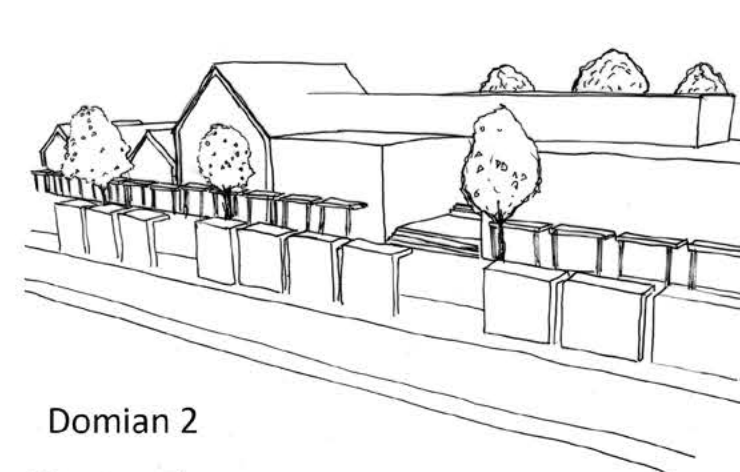
FINAL ITERATION 02



SECTION A-A

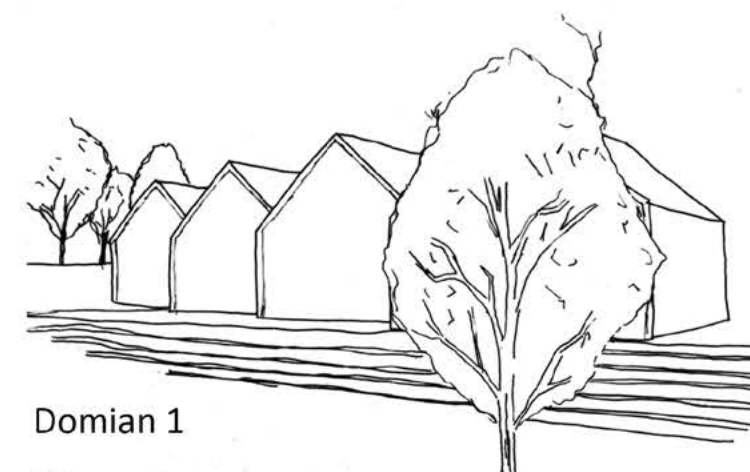


SECTION B-B



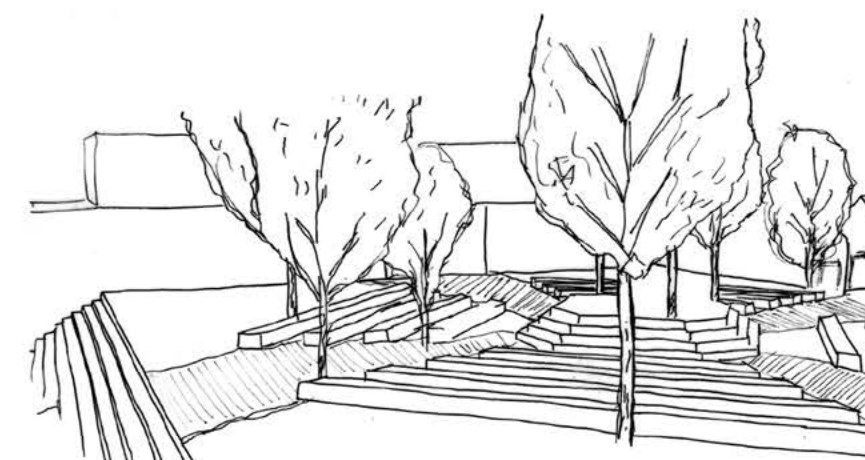
Domian 2

MAIN ENTRANCE/ MARKETS



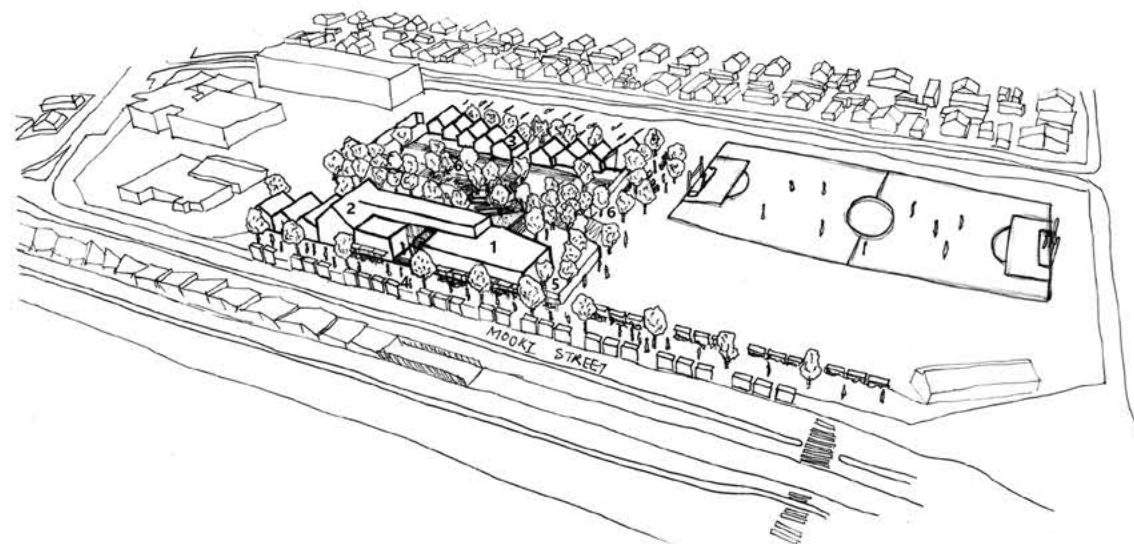
Domian 1

RESIDENCE FACING SQUARE



Public realm

INTERNAL PUBLIC SPACE/SQUARE

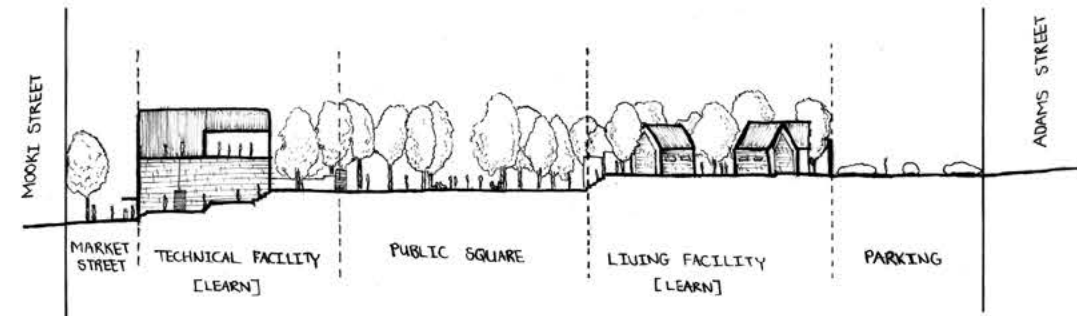


FINAL ITERATION 03

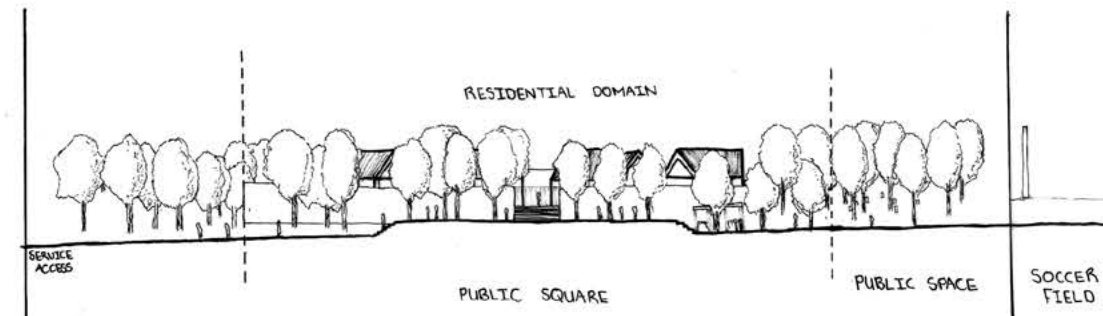
1. Support
2. Learn
3. Residential
4. Market
5. Private Sanctuary
6. Public Sanctuary

1. Residence
2. Community Centre
3. Netball Court
4. Library
5. Informal Market
6. Rea Vaya Bus Station
7. Taxi Stop
8. Informal Soccer Field

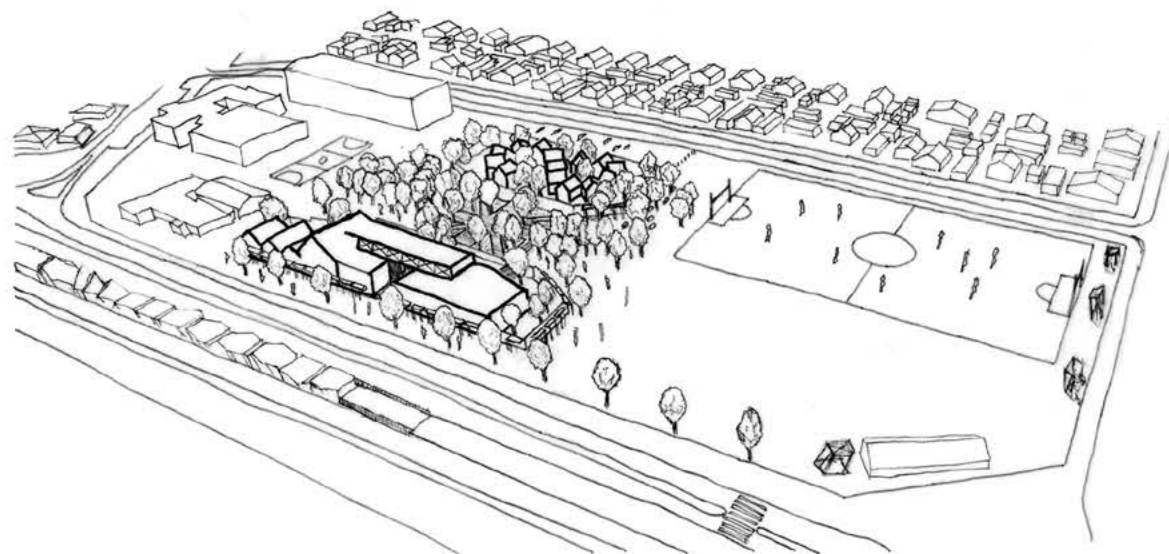
Context Map
NTS



SECTION A-A



SECTION B-B

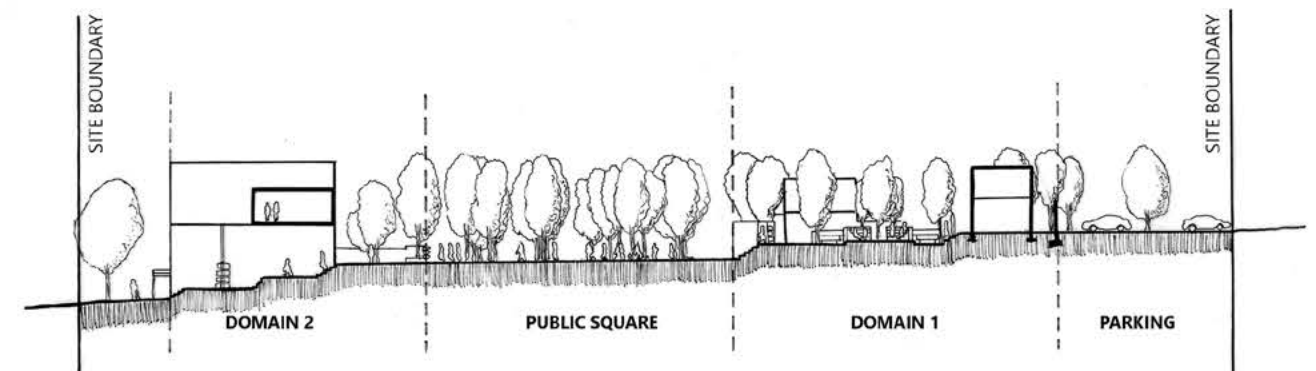


FINAL ITERATION 04

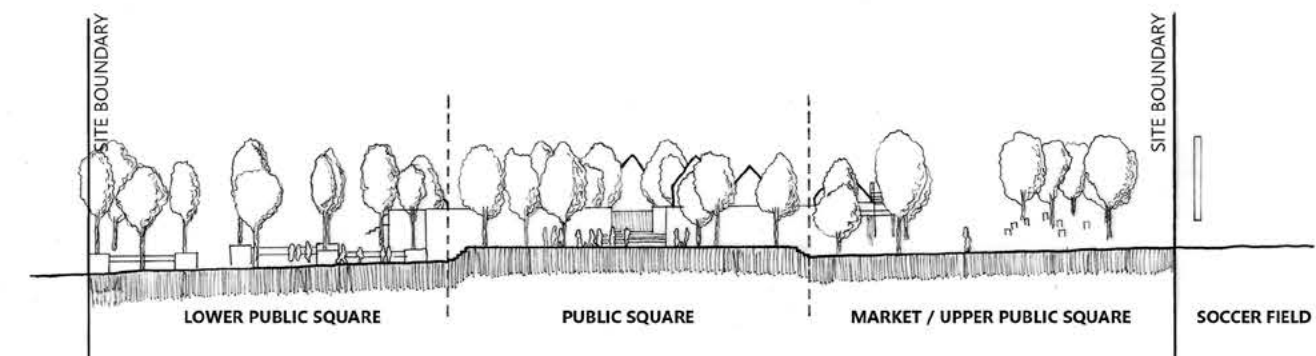
1. Support
2. Learn
3. Residential
4. Market
5. Private Sanctuary
6. Public Sanctuary

1. Residence
2. Community Centre
3. Netball Court
4. Library
5. Informal Market
6. Rea Vaya Bus Station
7. Taxi Stop
8. Informal Soccer Field

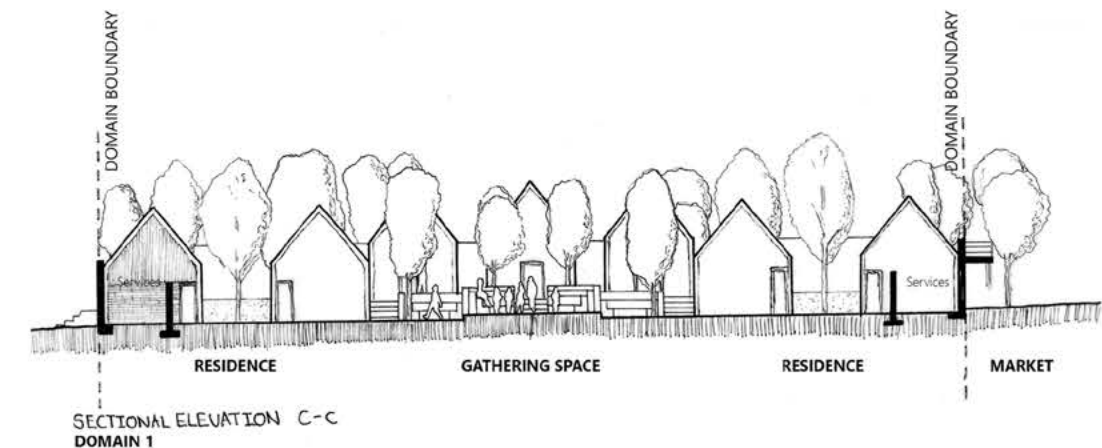
Context Map
NTS



SECTIONAL ELEVATION A-A



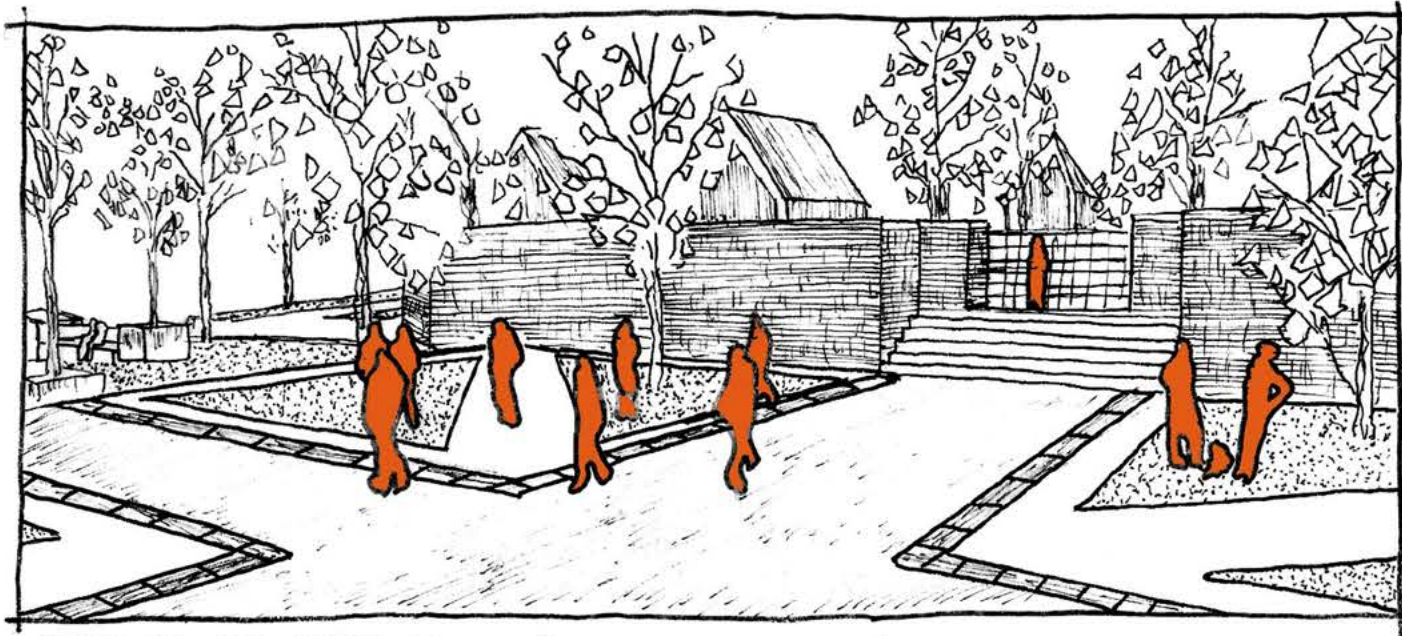
SECTIONAL ELEVATION B-B



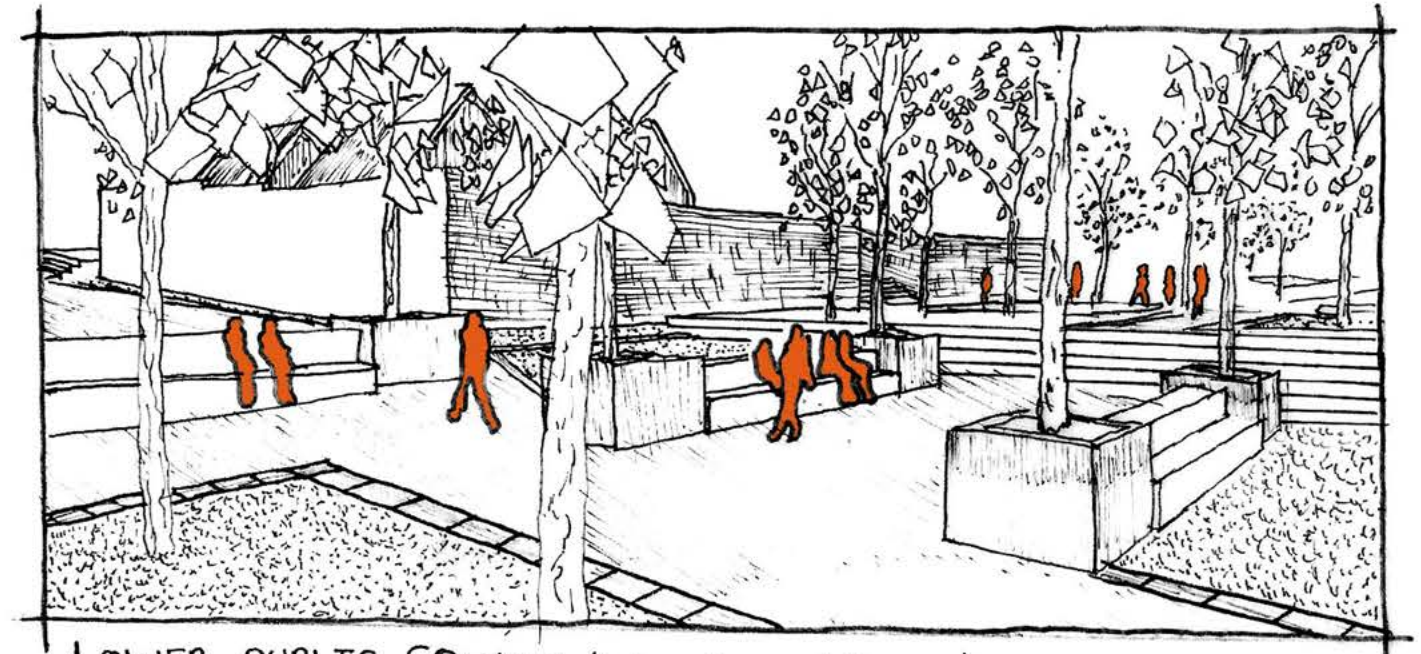
SECTIONAL ELEVATION C-C
DOMAIN 1

FINAL ITERATION 04

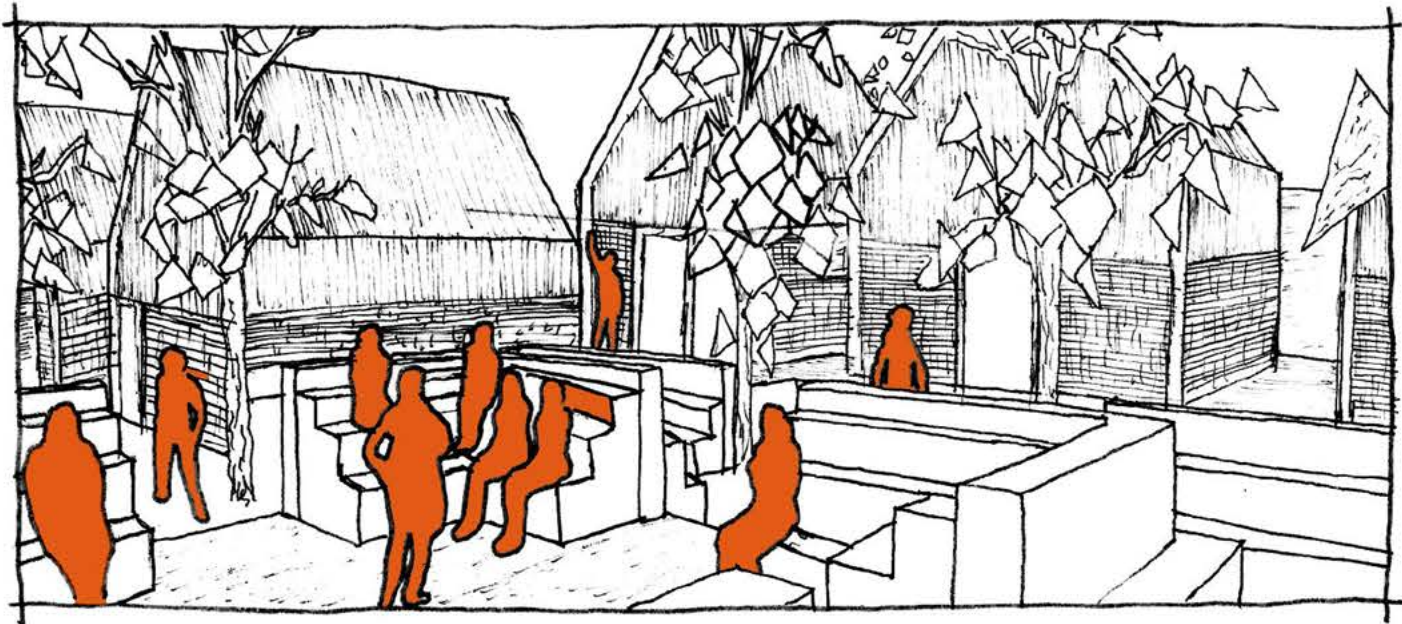
SPATIAL FEELING AND HOW PEOPLE USE THE SPACE



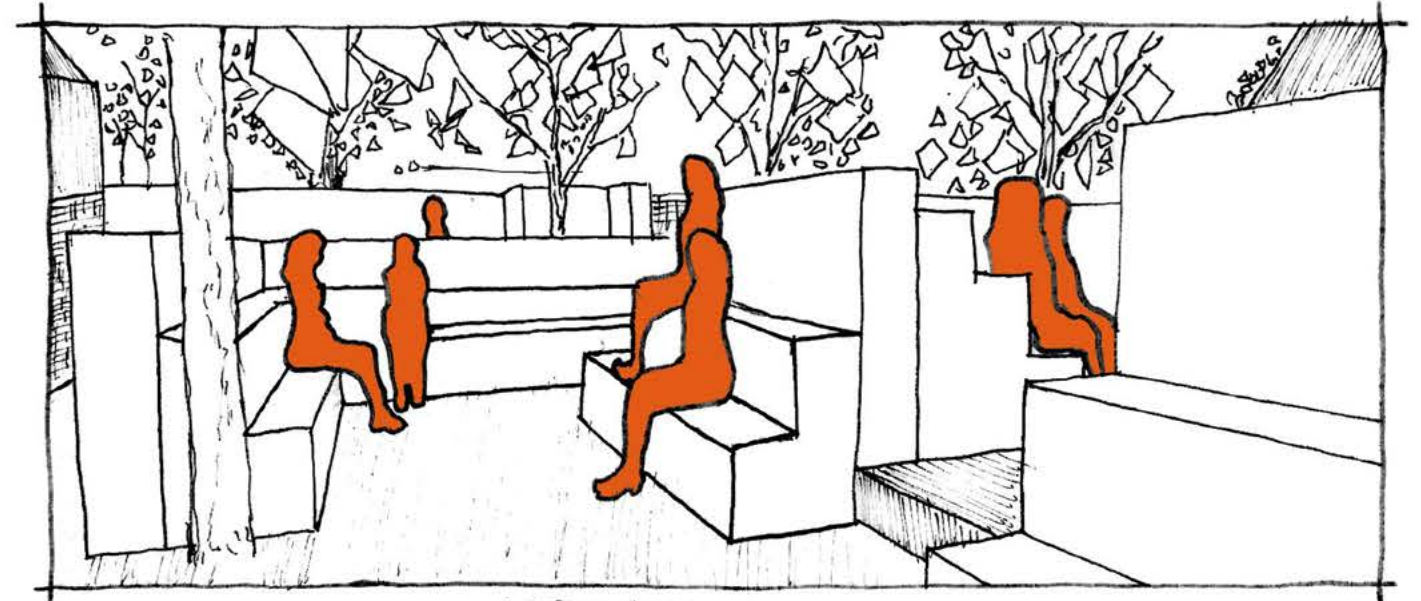
PUBLIC SQUARE (view from Domain 2)



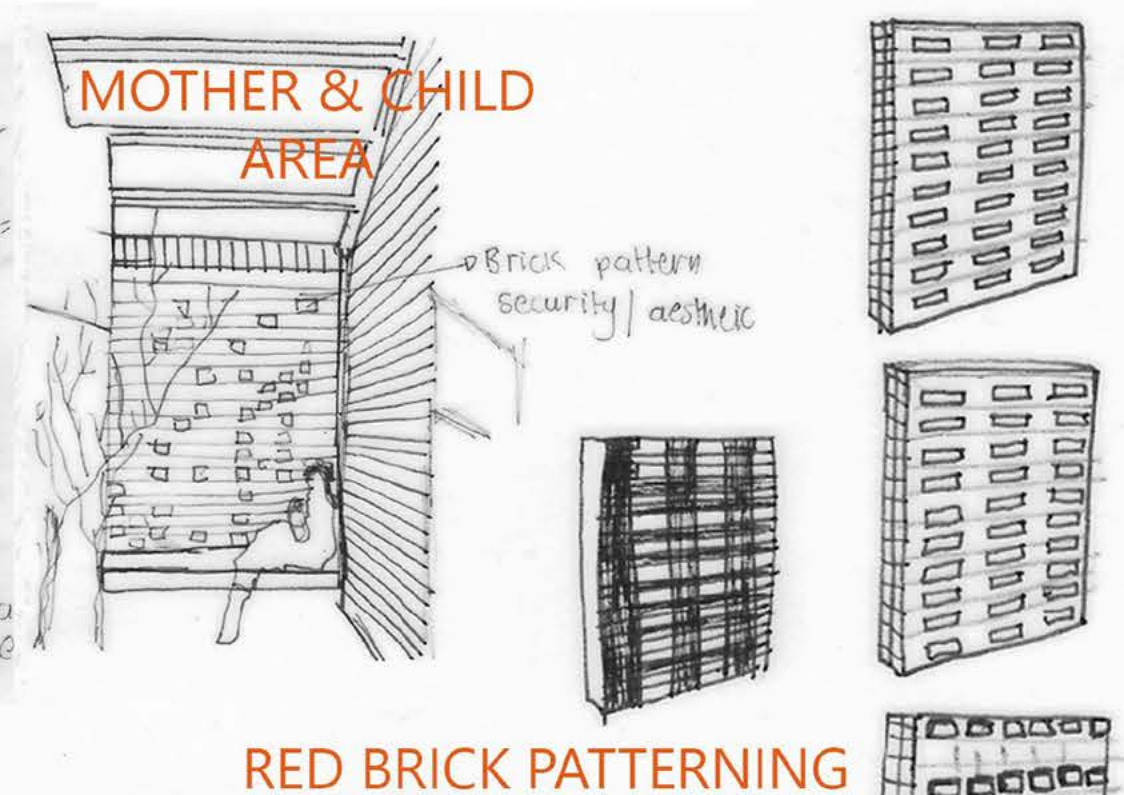
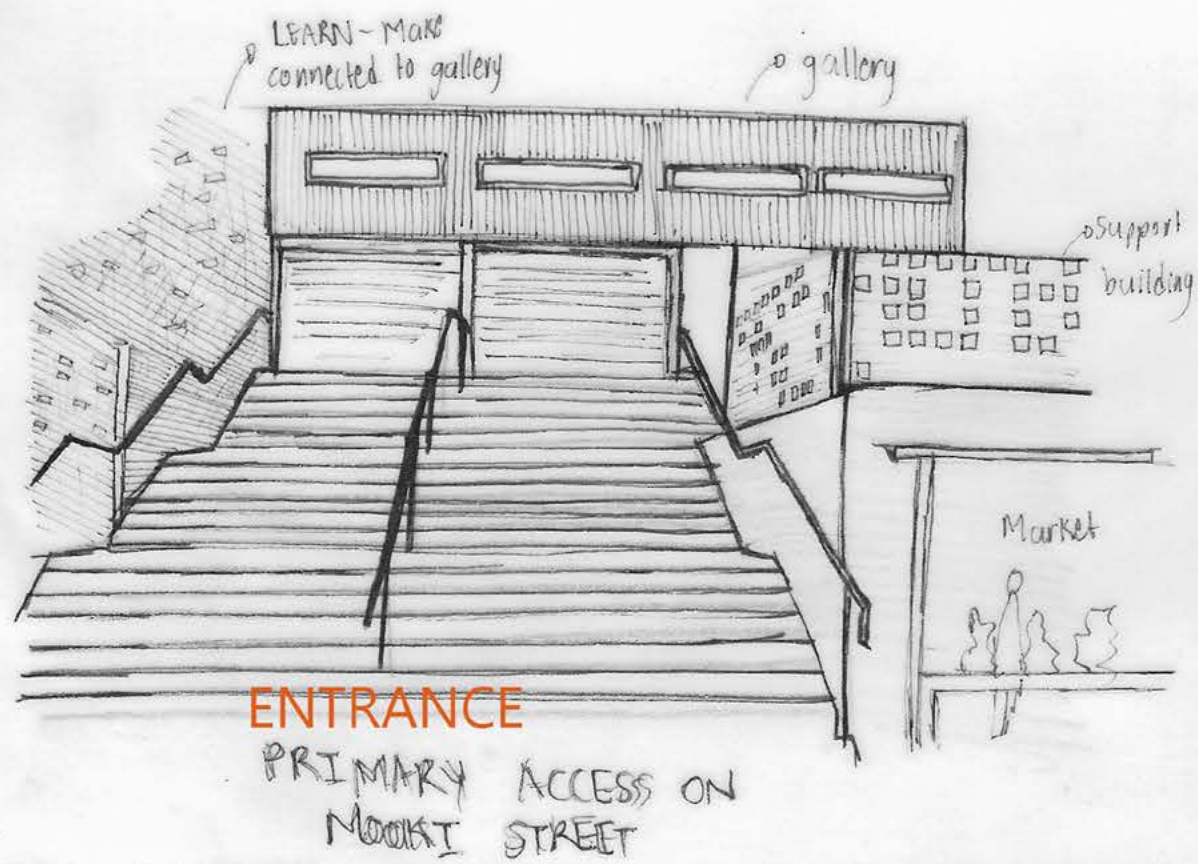
LOWER PUBLIC SQUARE (view from Library)



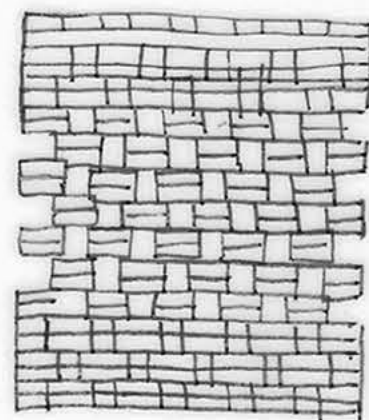
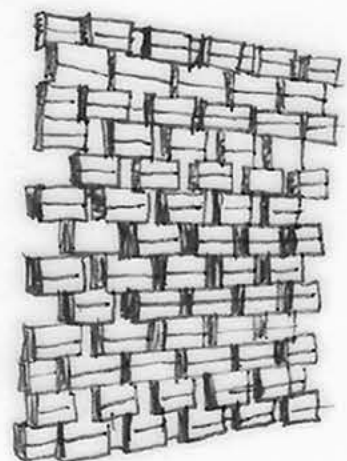
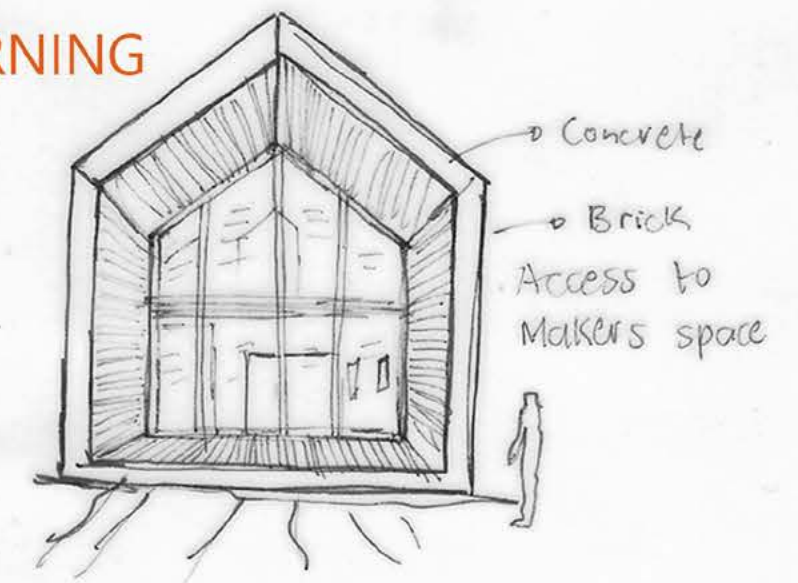
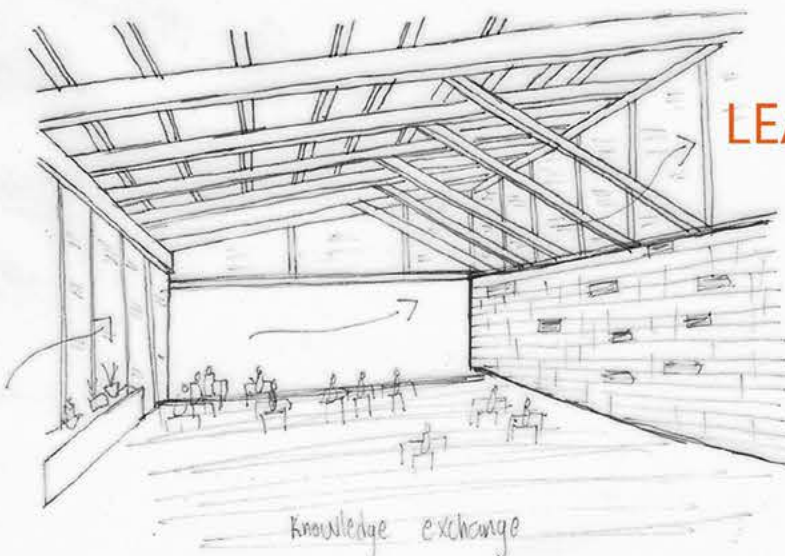
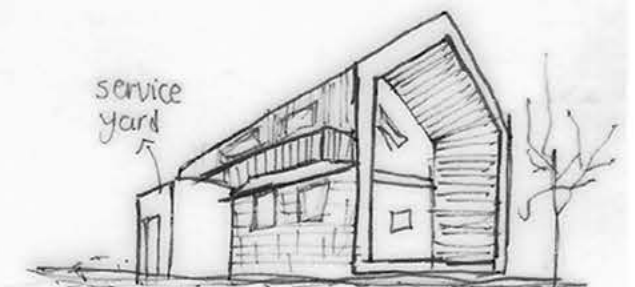
MAIN GATHERING SPACE (Domain 2)

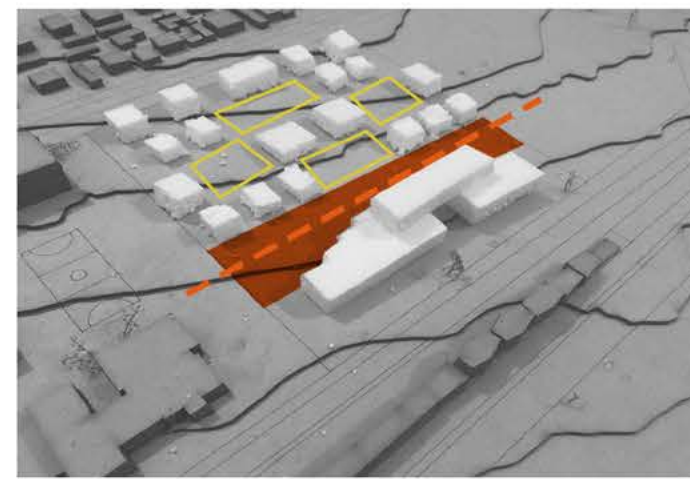


SPACE FOR SMALL/PRIVATE
DISCUSSIONS

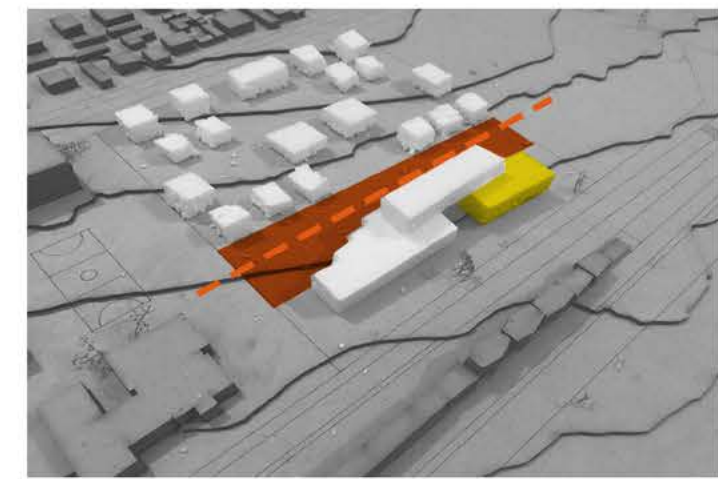


RESIDENTIAL

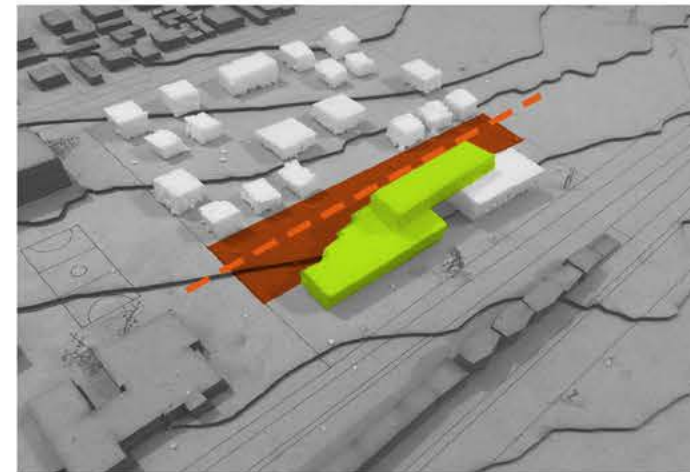




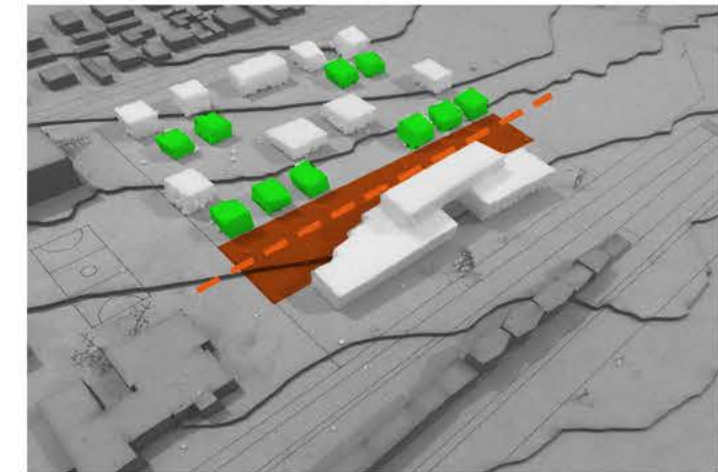
Gathering Domain



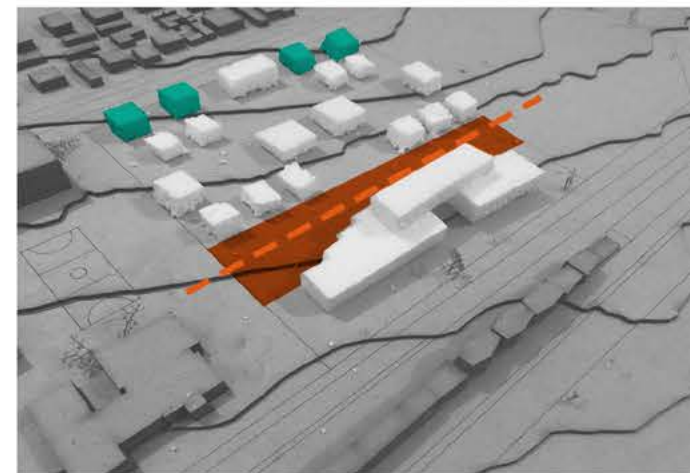
Support Domain



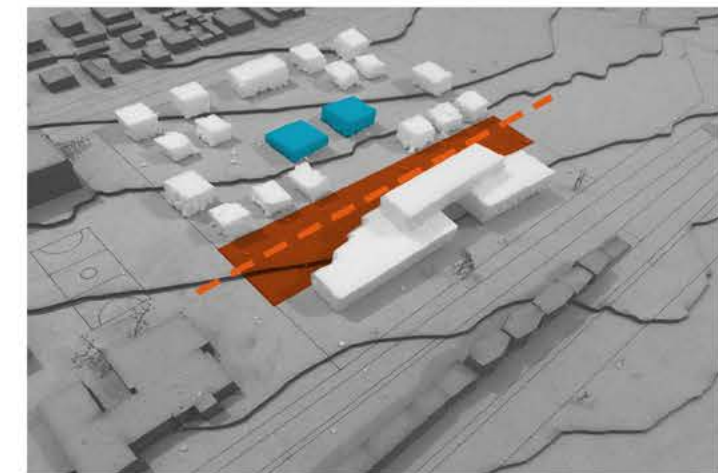
Makers Domain



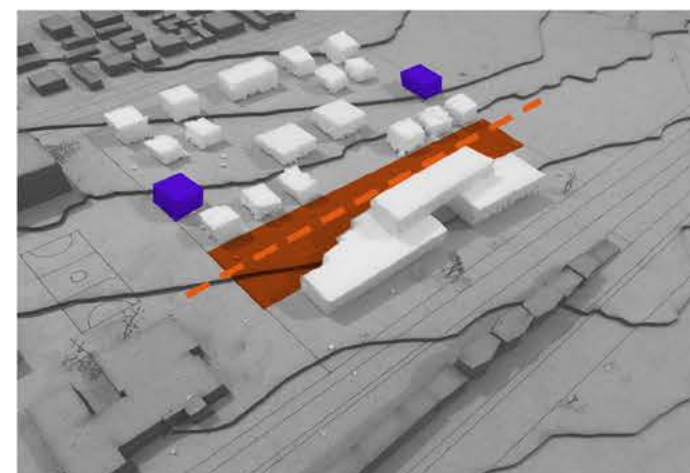
Student Domain



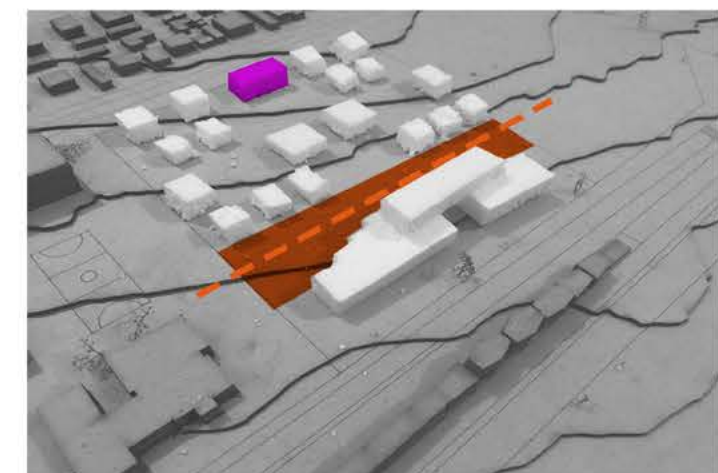
Elderly Domain



Communal Dining Domain



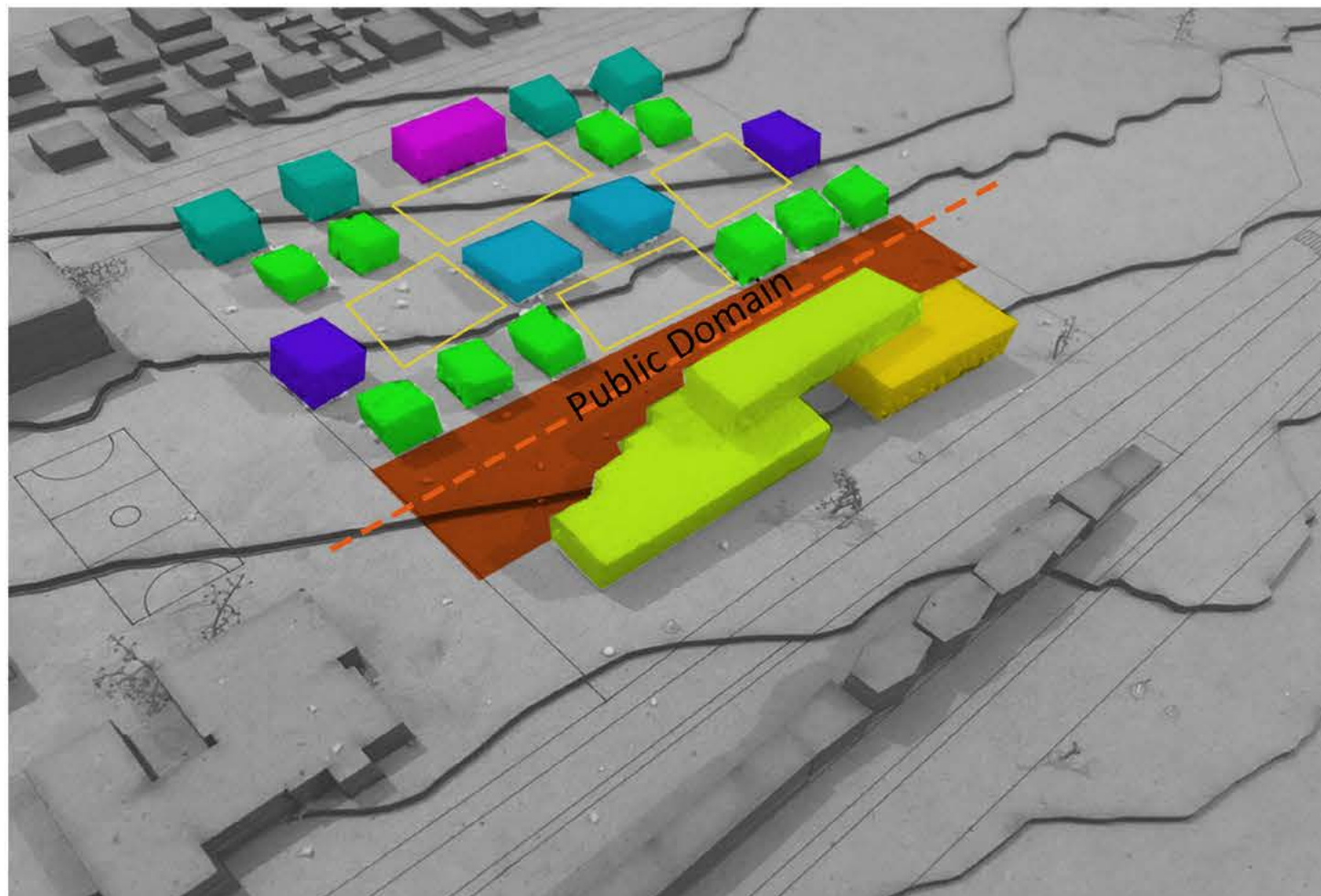
Communal Bathing Domain



Health Care Domain

7.4.1 PROGRAM EXPLORATION/LAYOUT

The program was further explored through a model building exercise. The model was informed by the knowledge accumulated from the design process. Evident in this model is how architecture has become a designator of space for the projects larger ideas for integration and inclusion to occur.



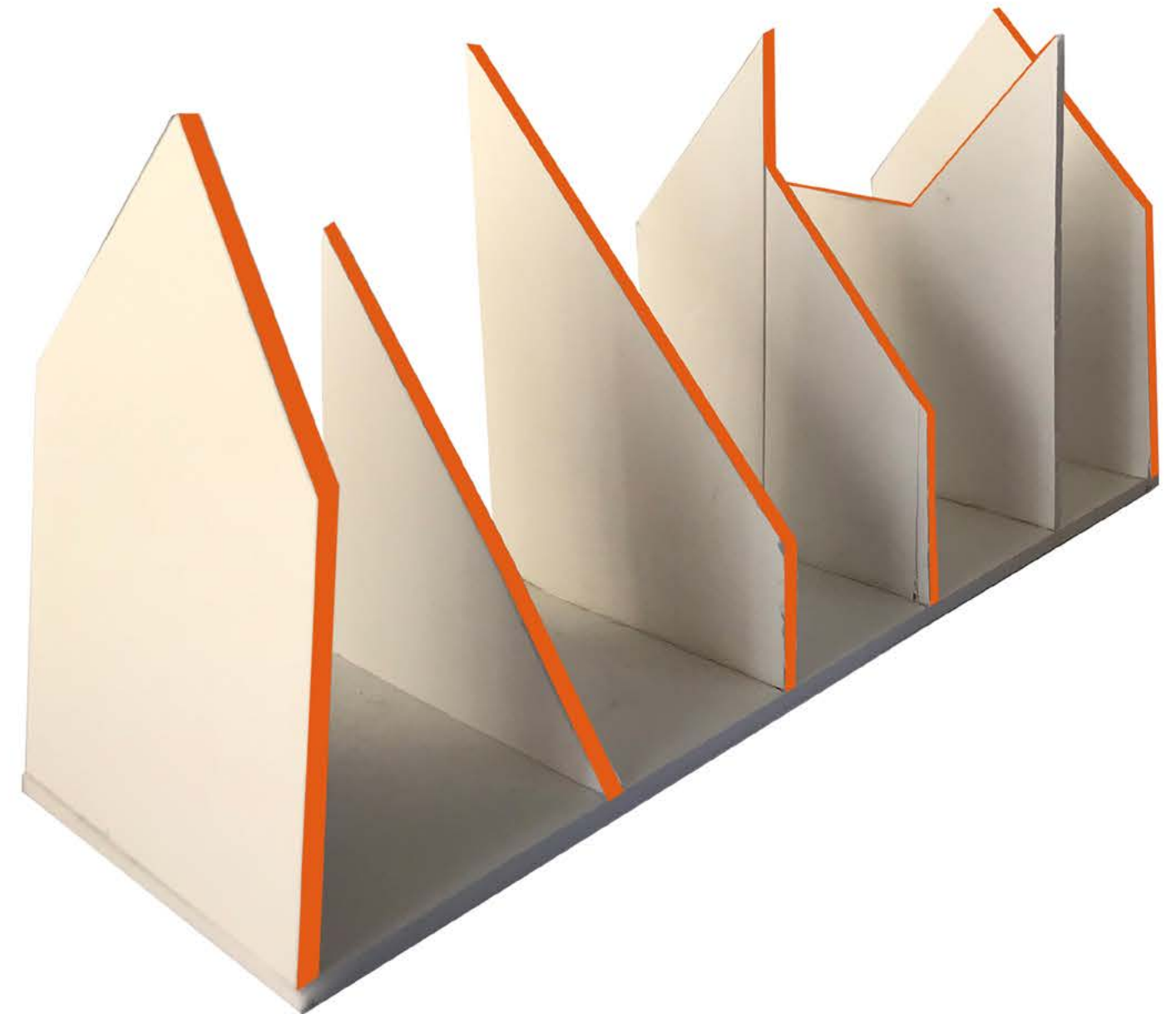


7.4.2 FORM EXPLORATION

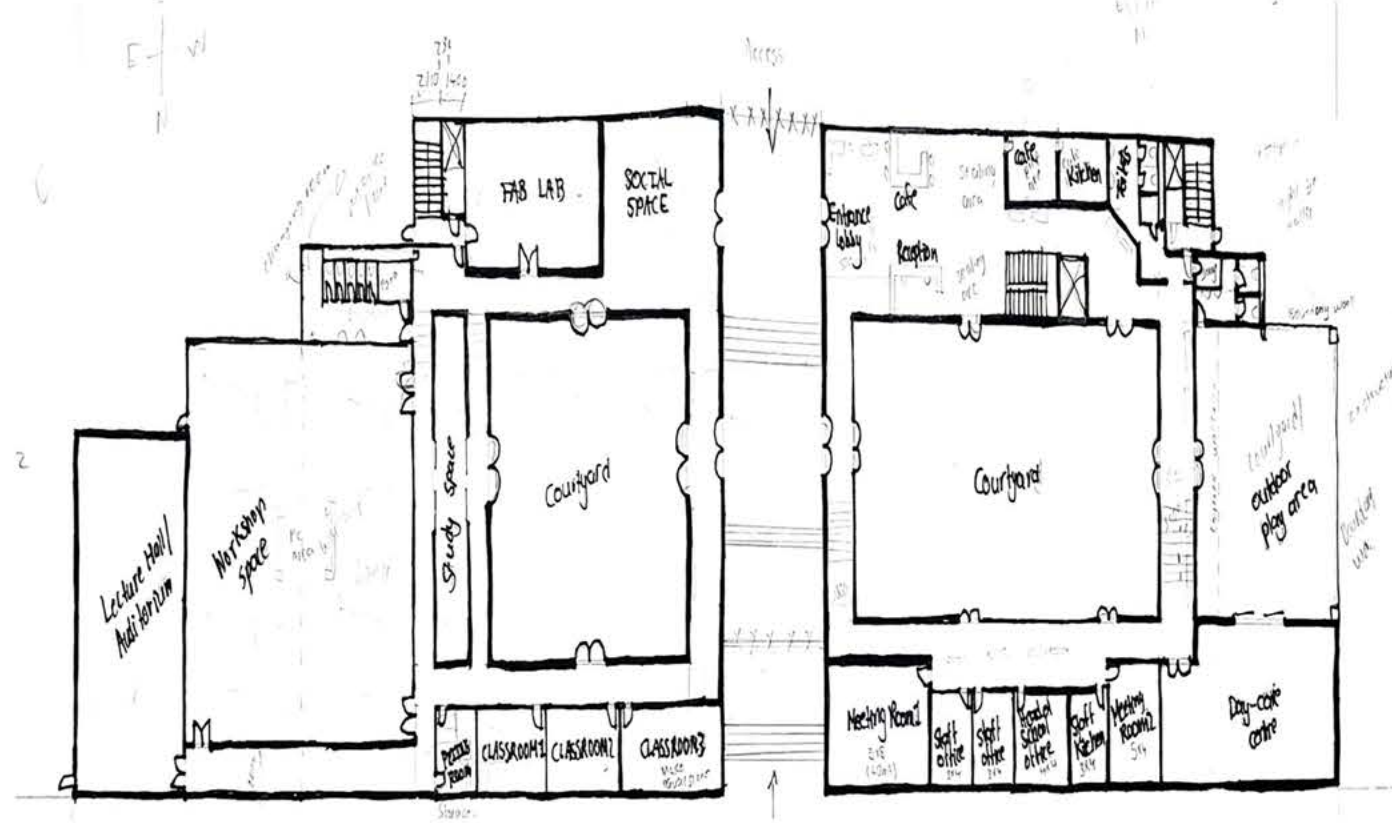
The form was explored soon after the site visiting after having a feel of scale and size of the surrounding context. This exploration was highly informed by the match box houses that were built in Soweto in the 1930 and shown domain 03 - Area of study



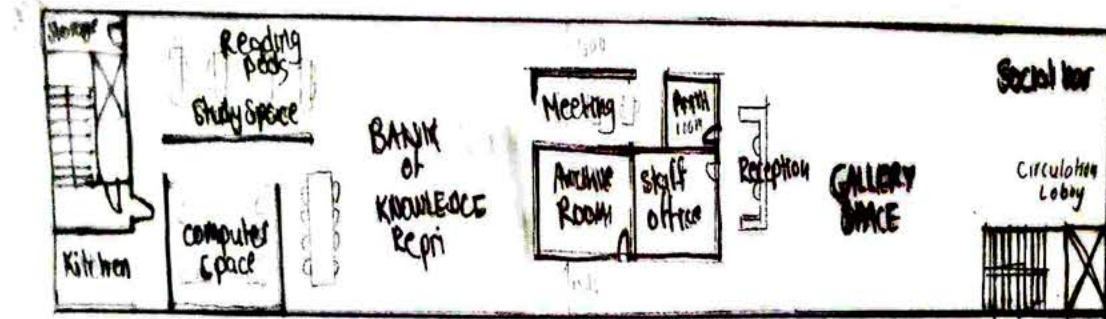
MATCH BOX HOUSE



DOMAIN 2

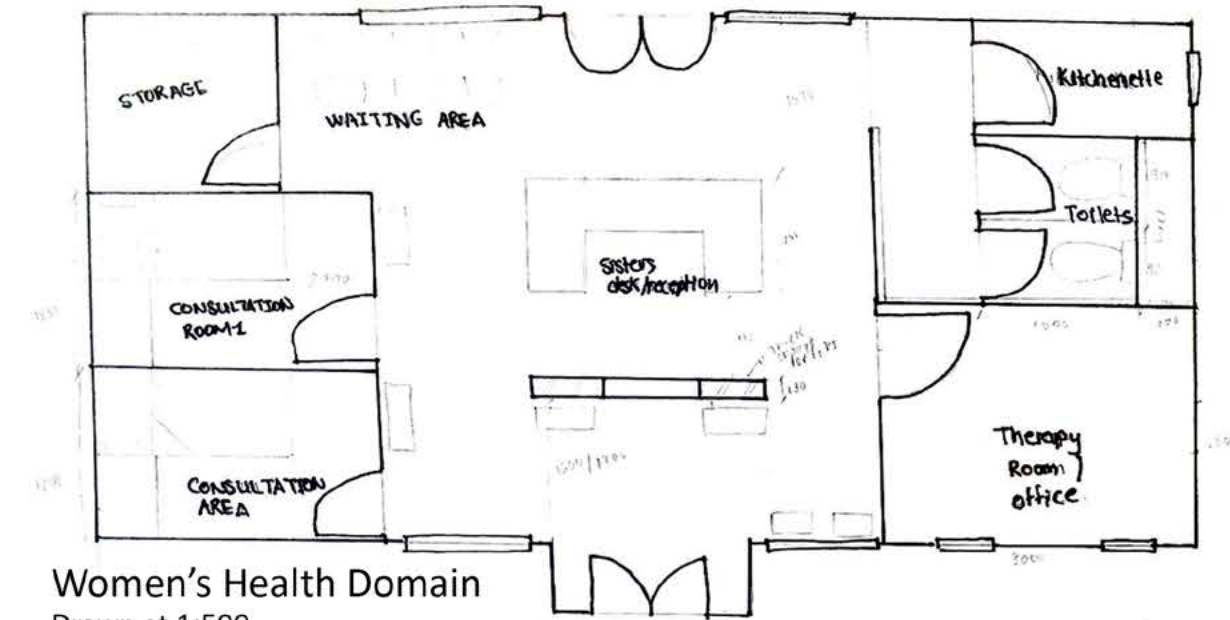


Ground floor plan
Drawn at 1:500

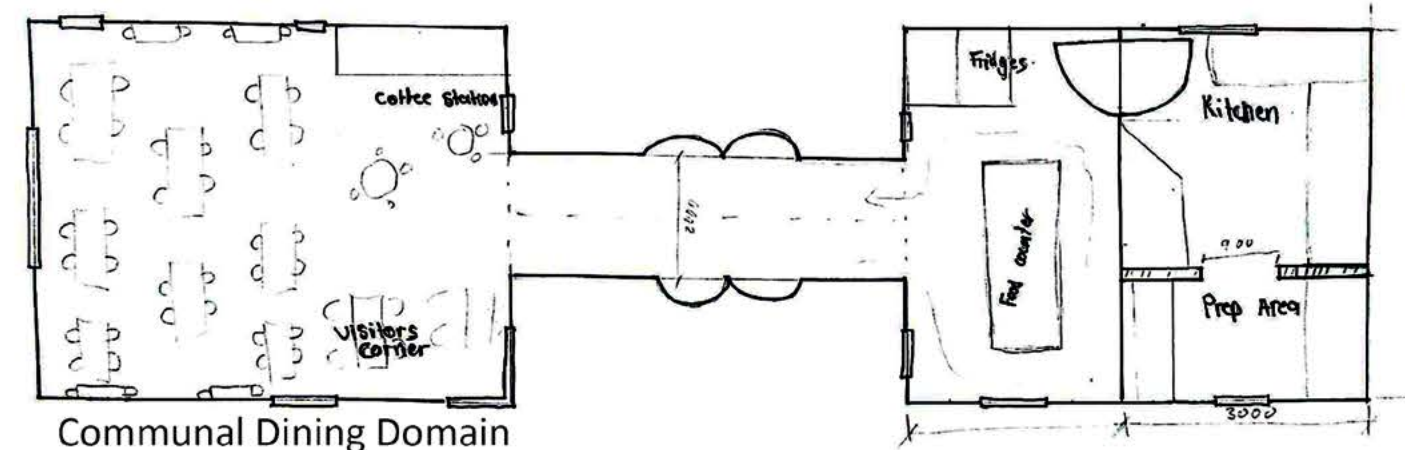


First floor plan
Drawn at 1:500

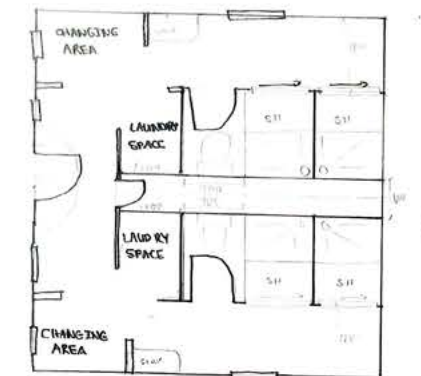
DOMAIN 1



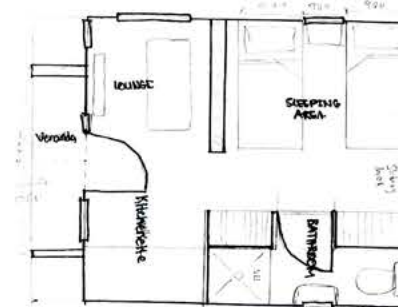
Women's Health Domain
Drawn at 1:500



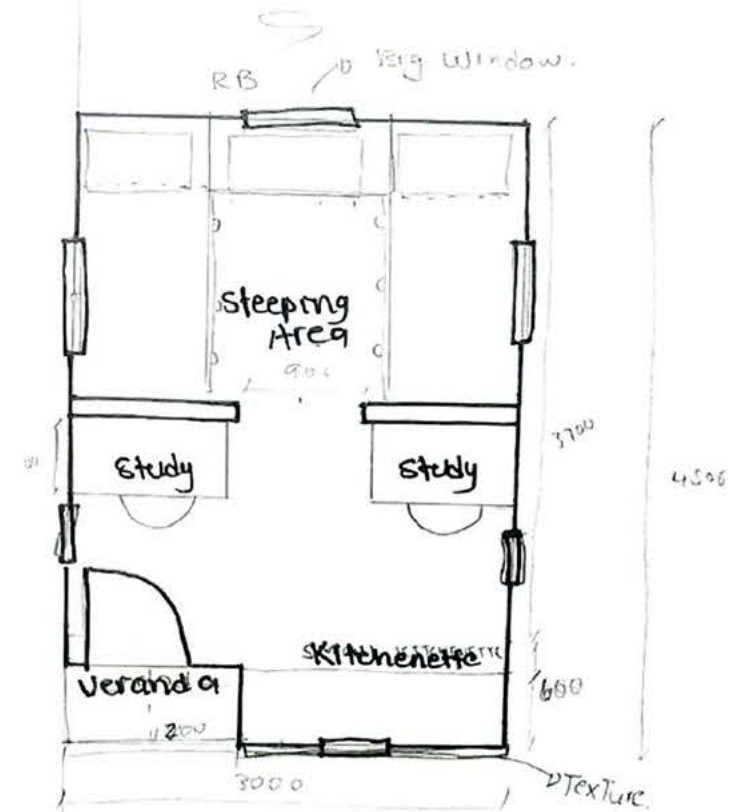
Communal Dining Domain
Drawn at 1:500



Communal Bathing Domain
Drawn at 1:500



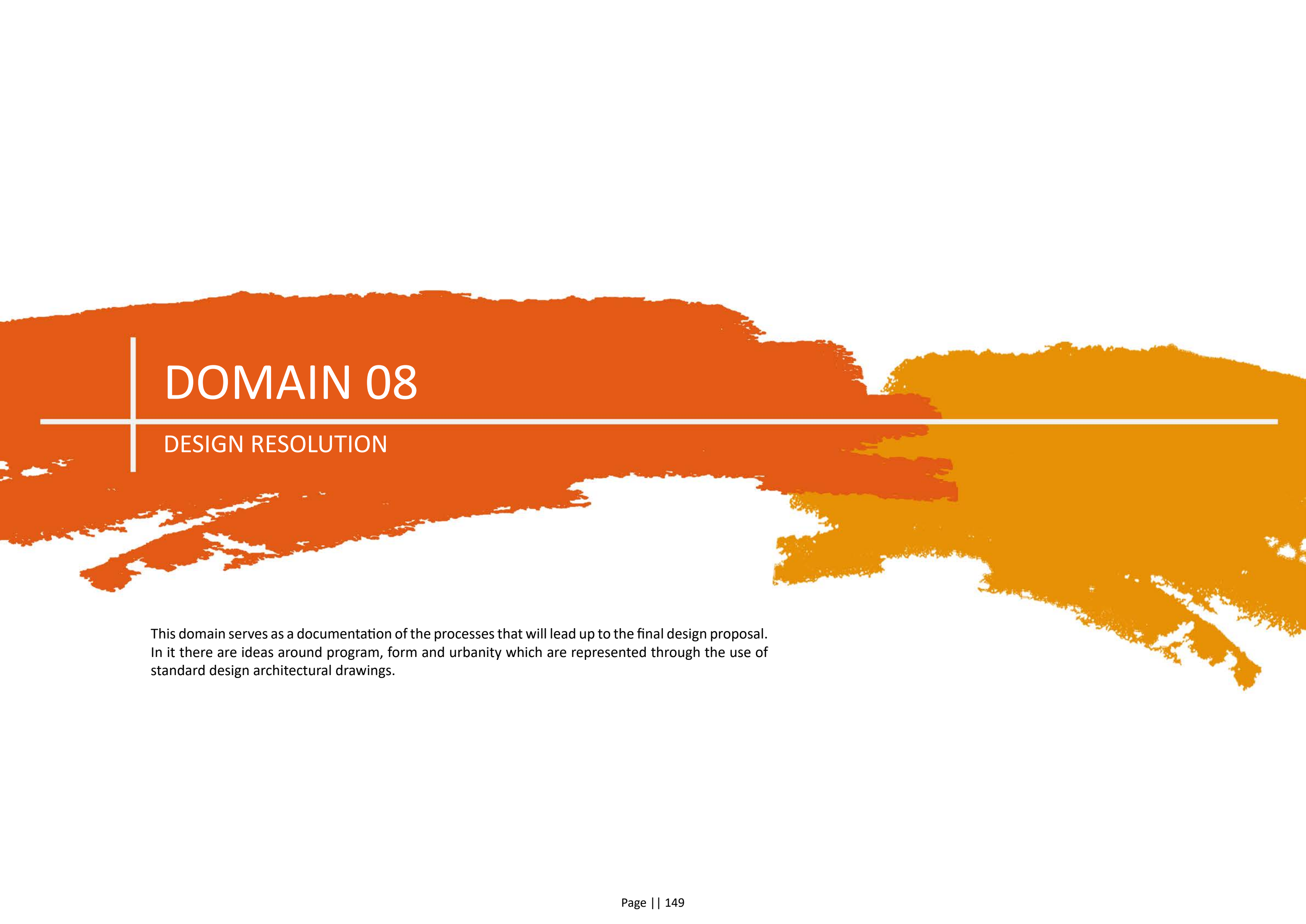
Elderly Domain
Drawn at 1:500



Student Domain
Drawn at 1:500



Following this exploration, i went through a process of reflection in order to define the final design. While the design at this point is largely under developed, it starts to speak to the interpretation from the discussion about flexibility, connectivity and inclusion. With the mandate of creating the self through the process of making, having a safe and conducive space for females, the facility seeks to accommodate existing users (informal traders) and consider them and their established social mechanisms. The result of this is illustrated as a more dynamic form that causes movement around and through the site.



DOMAIN 08

DESIGN RESOLUTION

This domain serves as a documentation of the processes that will lead up to the final design proposal. In it there are ideas around program, form and urbanity which are represented through the use of standard design architectural drawings.



Following the initial design process that was informed by an in-depth interpretation of the site, design informants and building program, a proposal that was more aligned to the essential ideas of the project began to be generated. This domain gives an overview of the design exploration subsequent to the proposals that the researcher undergone while illustrating the principles that were at the centre of it. Through a process of reflection, this stage of the project ultimately sought the generation of the principles to govern the final design proposal that would form the conclusion of the project. The major consideration for the proposal from here is to create a user experience in the facility that engages students and allows them to interact and engage through the process of making.

THE FEMNICAL INSTITUTE

Location: Soweto, South Africa

Category: Education

About the Femnical Institute

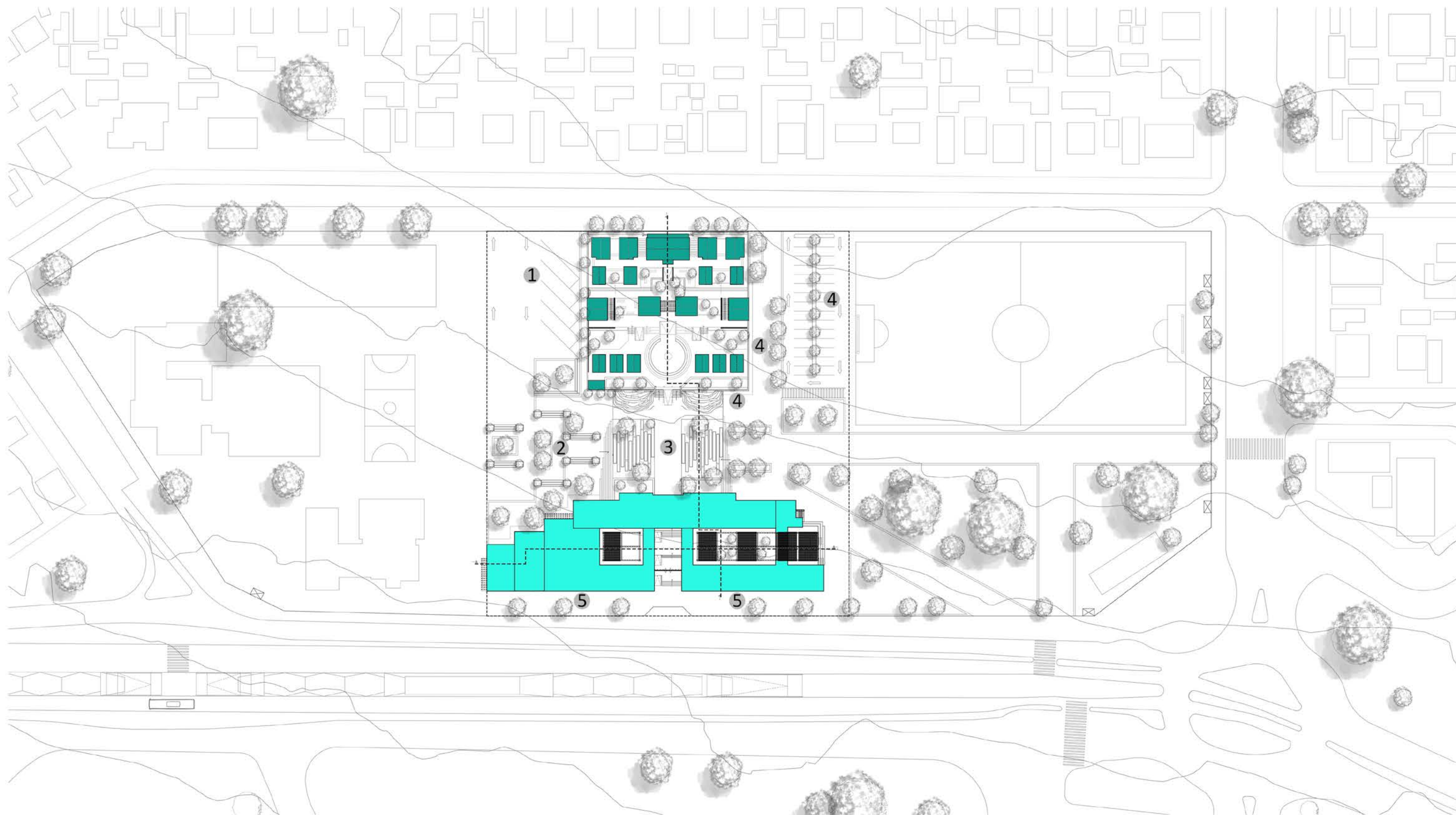
The project brief consists of the following:

Domain 1 (Being): A place where a portion of the young black girls and women who will use domain 2 will be accommodated. The main amenities include gathering spaces, shared rooms for the elderly and young, shared bathing space, a student dining area and health care facility.

Domain 2 (Maker): A place where young black girls and women will come together to learn through making. The main amenities include courtyards (makers space/ social space), fab labs, repository, workshop spaces, day-care centre (little makers), and market space for trading.

The intent is to create a building focused around social spaces (courtyard/public realm) to enhance connectivity within the building and the broader context. By splitting the mass to create access points from the street to the public realm, the building program also creates intimate courtyards and gathering spaces along the length of the site while acknowledging the larger urban axis.

The ground floor of domain 2 and edges of domain 1 responds with an active edge of market stalls taking advantage of the street edge and activities around the site. The building is a combination of masonry, concrete, and corrugated sheeting as an envelope, with deep set glazed windows that are covered patterned brick that is used as a language that encodes architecture onto the building that provides subtlety to this large building.



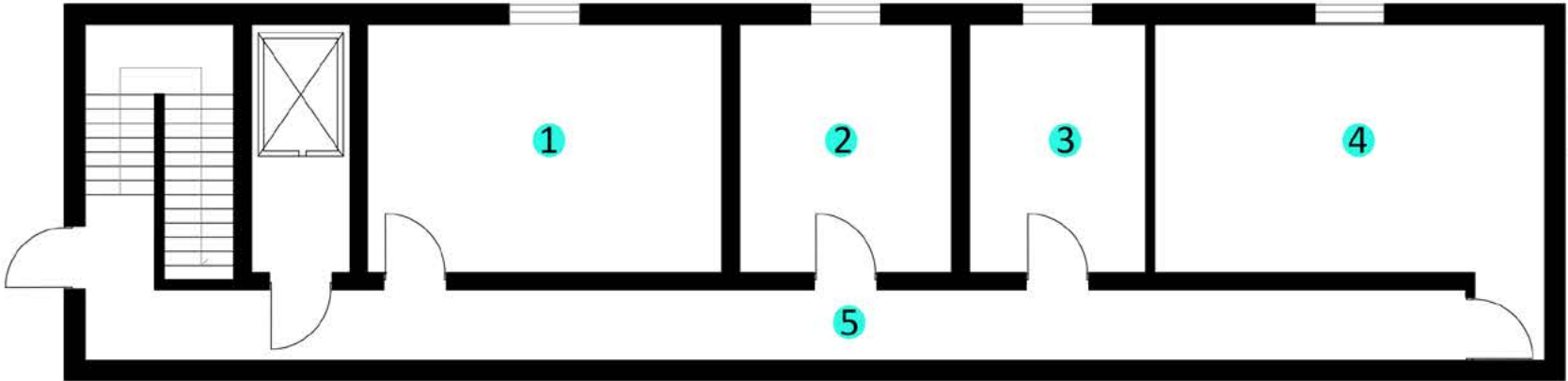
 **Site Plan**

0 25 50 m

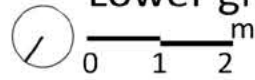
 Domain 1

 Domain 2

- 1. Bus parking
- 2. Lower public Domain
- 3. Upper public Domain
- 4. Public parking
- 5. Market stalls



Lower ground floor plan (Domain 2)



LOWER GROUND FLOOR

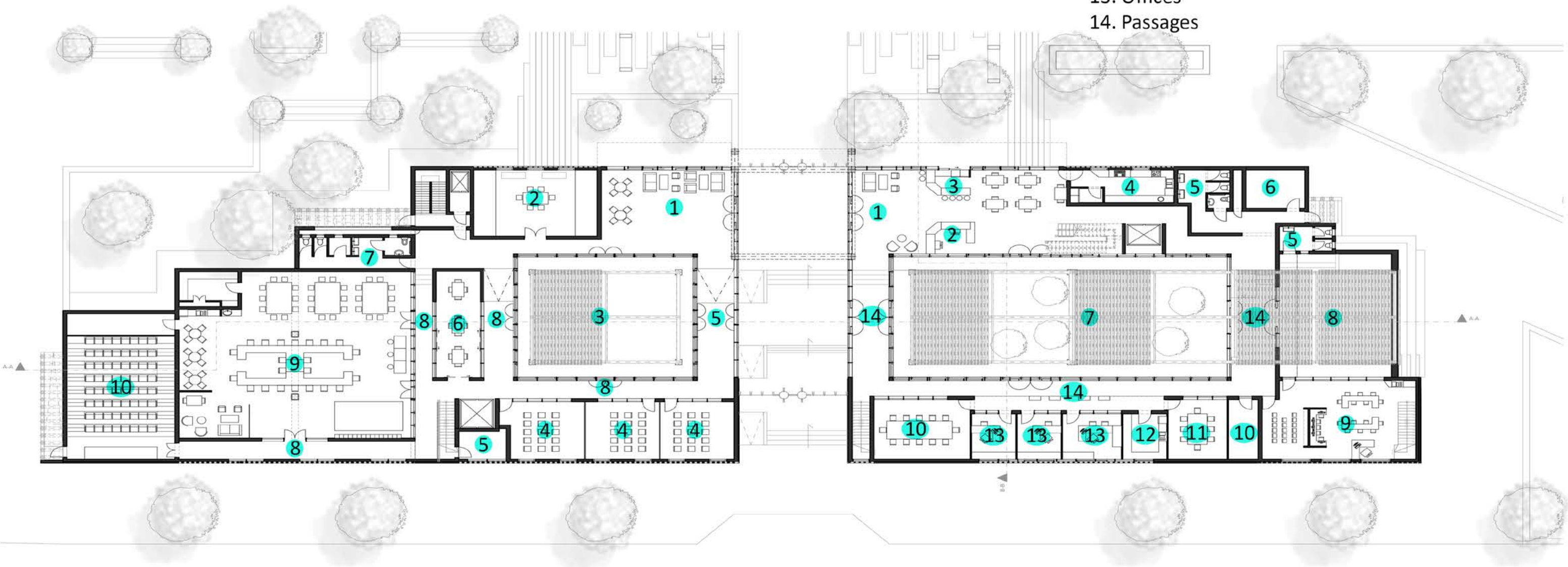
1. Refuse room
2. Water storage
3. HT/LT room
4. Generator room
5. Passage

GROUND FLOOR (Support Domain)

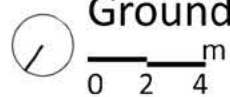
1. Entrance Lobby
2. Reception
3. Design cafe
4. Cafe Kitchen
5. Ablutions
6. Storage
7. Courtyard
8. Outdoor play area
9. Day-care centre
10. Filling room
11. Meeting room
12. Staff Kitchen
13. Offices
14. Passages

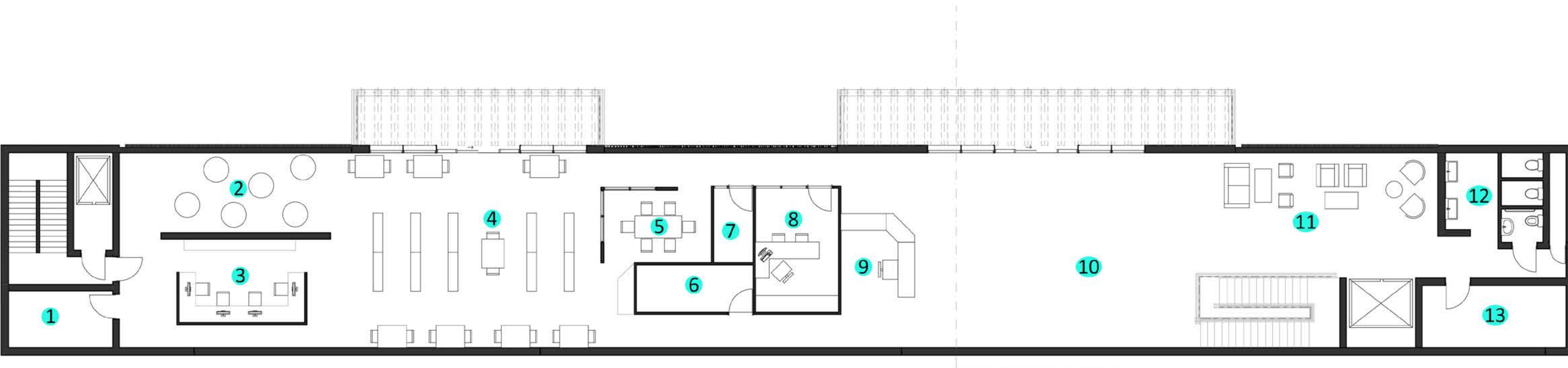
GROUND FLOOR (Makers Domain)

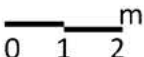
1. Social Space
2. Fab lab
3. Courtyard
4. Classrooms
5. Printing room
6. Study space
7. Ablutions
8. Passage
9. Workshop Space
10. Auditorium



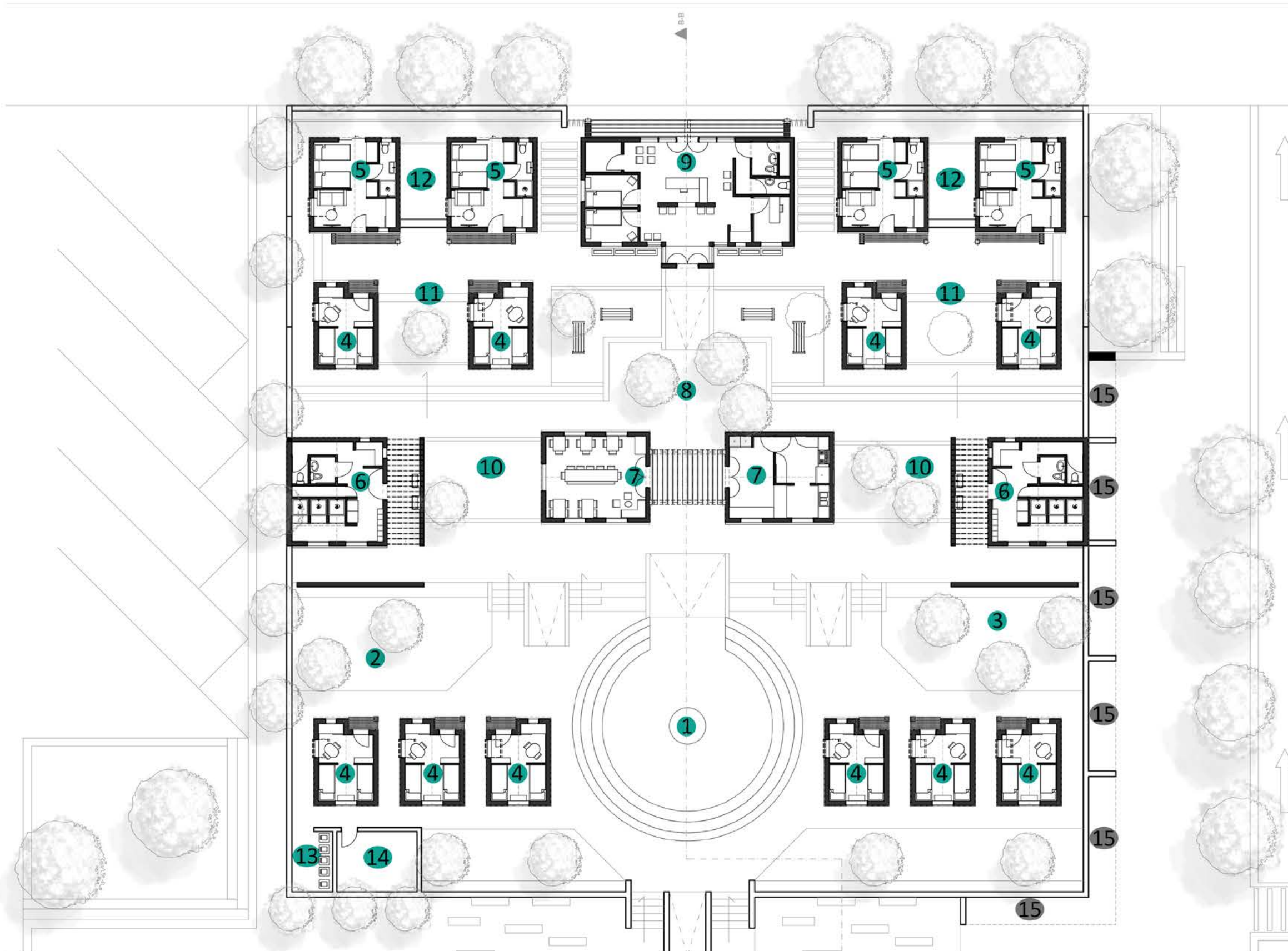
Ground floor plan (Domain 2)






 First floor plan (Domain 2)


- FIRST FLOOR
(Makers Domain)**
- 1. Kitchen
 - 2. Reading Pods
 - 3. Computer space
 - 4. Repository
 - 5. Meeting space
 - 6. Archive room
 - 7. Printing room
 - 8. Office
 - 9. Reception
 - 10. Gallery space
 - 11. Social space
 - 12. Ablutions
 - 13. Storage

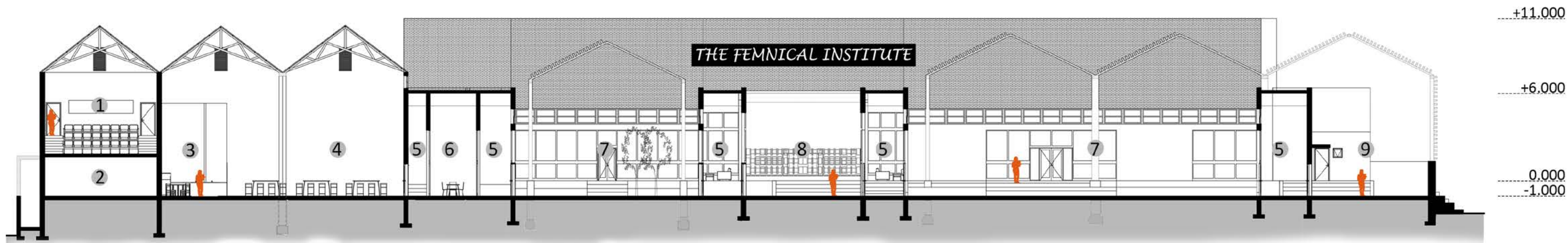


GROUND FLOOR

(Domain 1)

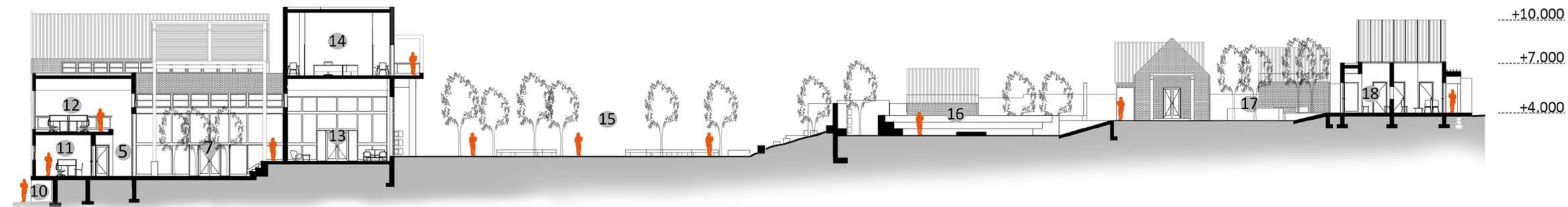
1. Main gathering space
2. Garden space
3. Outdoor gym
4. Student domain
5. Elderly domain
6. Communal bathing space
7. Dining room
8. Outdoor eating space
9. Health care domain
10. Garden space
11. Garden space
12. Vegetable space
13. Refuse space
14. Service room
15. Market stalls

First floor plan (Domain 2)



Section A-A

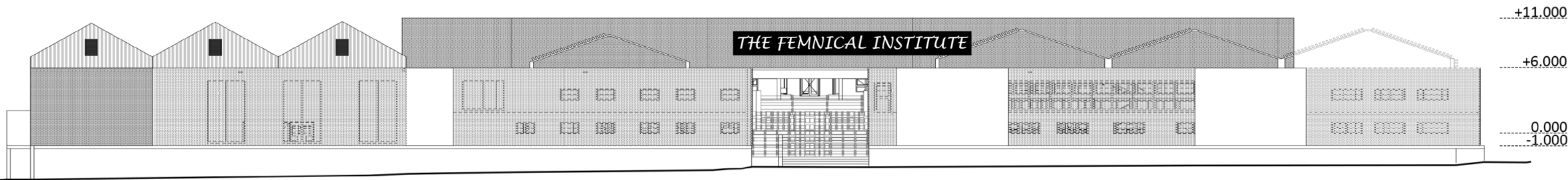
0 2 4 m



Section B-B

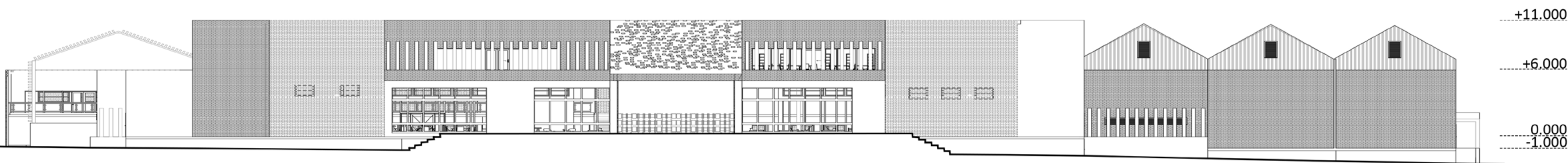
0 2 4 m

- | | |
|----------------------|---------------------------|
| 1. Auditorium | 10. Market stalls |
| 2. Storage | 11. Office |
| 3. Kitchen | 12. Open plan office |
| 4. Workshop | 13. Entrance Lobby |
| 5. Passage | 14. Repository reception |
| 6. Study space | 15. Public Domain |
| 7. Courtyard | 16. Main gathering space |
| 8. Entrance/Exit | 17. Outdoor eating area |
| 9. Outdoor play area | 18. Women's health domain |



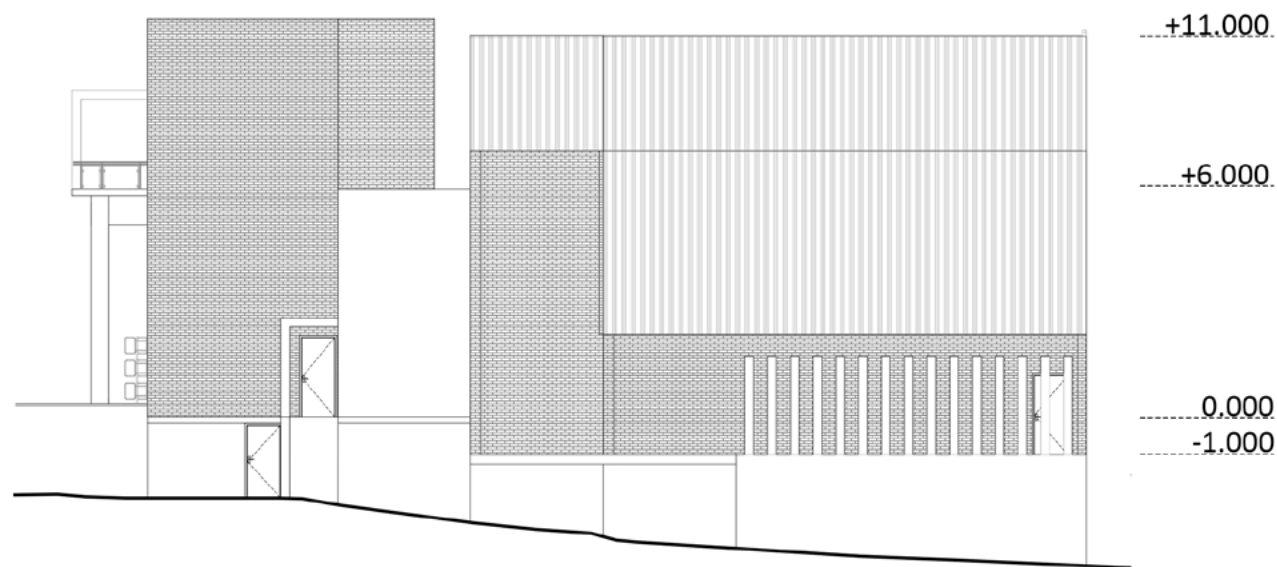
North-West Elevation

0 2 4 m



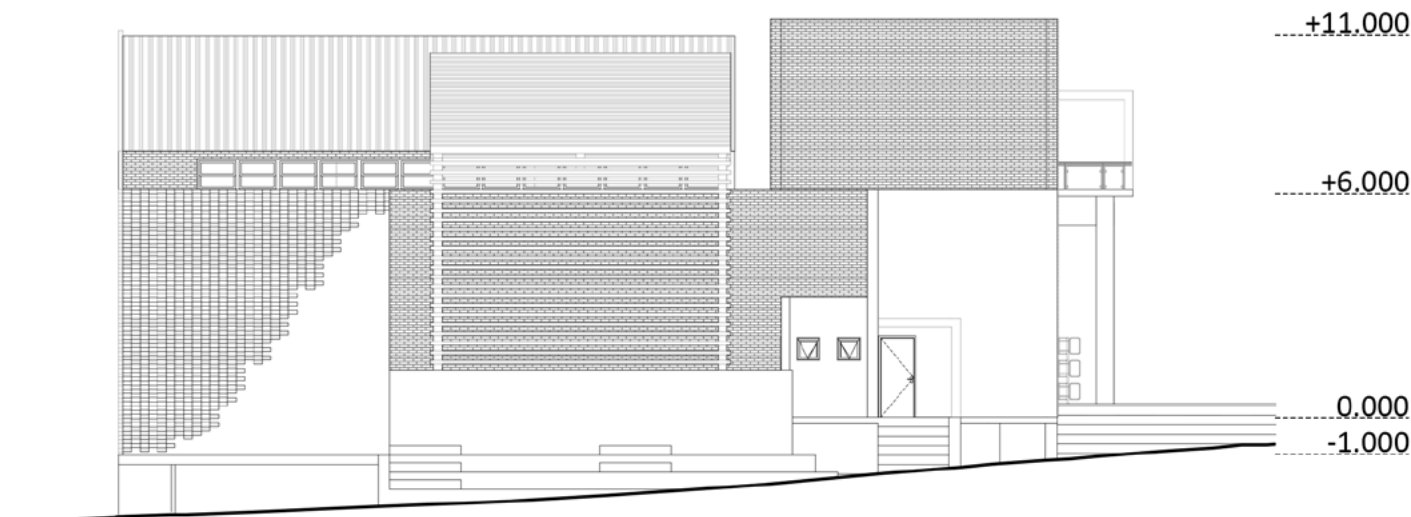
South-East Elevation

0 2 4 m



North Elevation

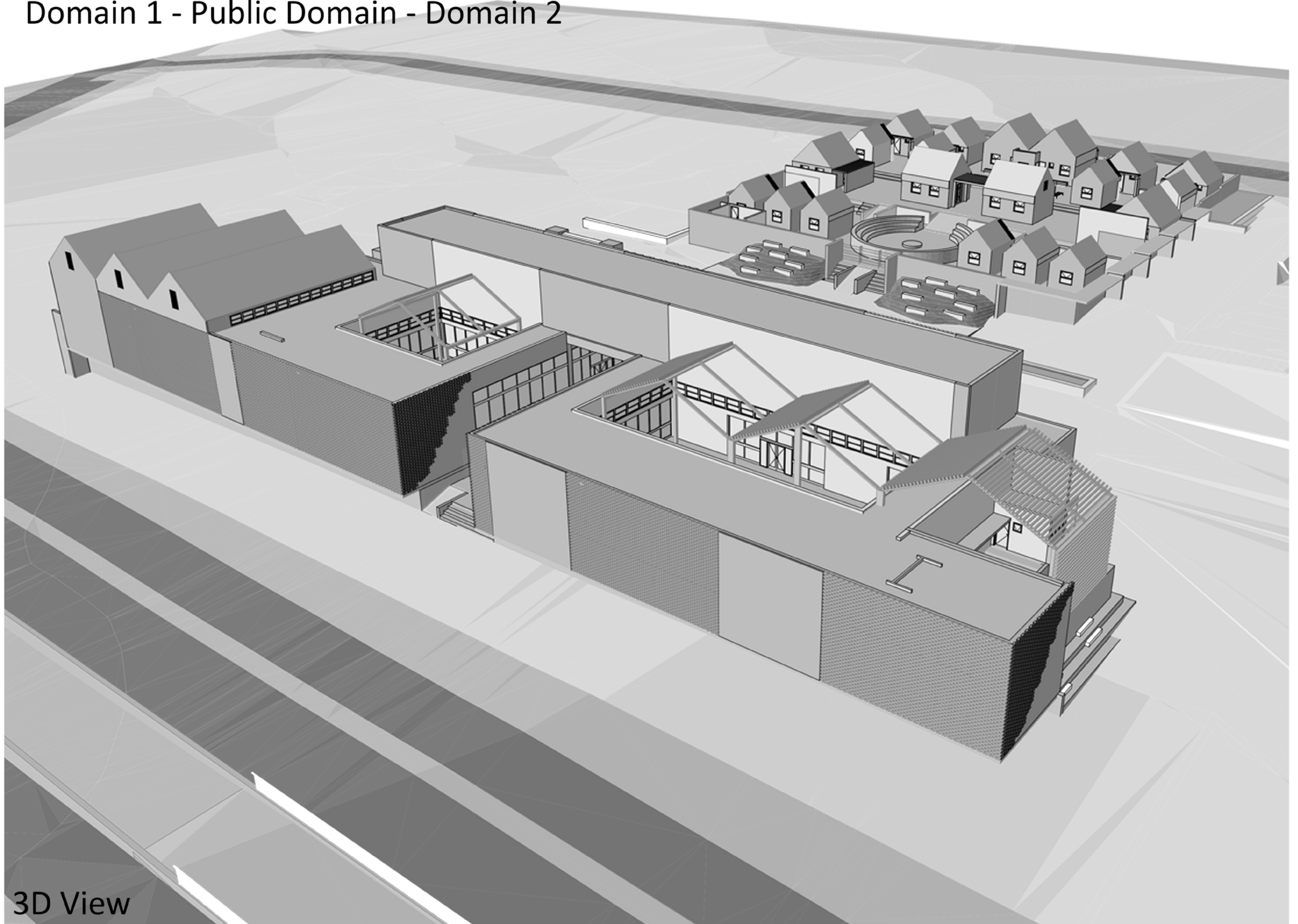
0 2 4 m



South Elevation

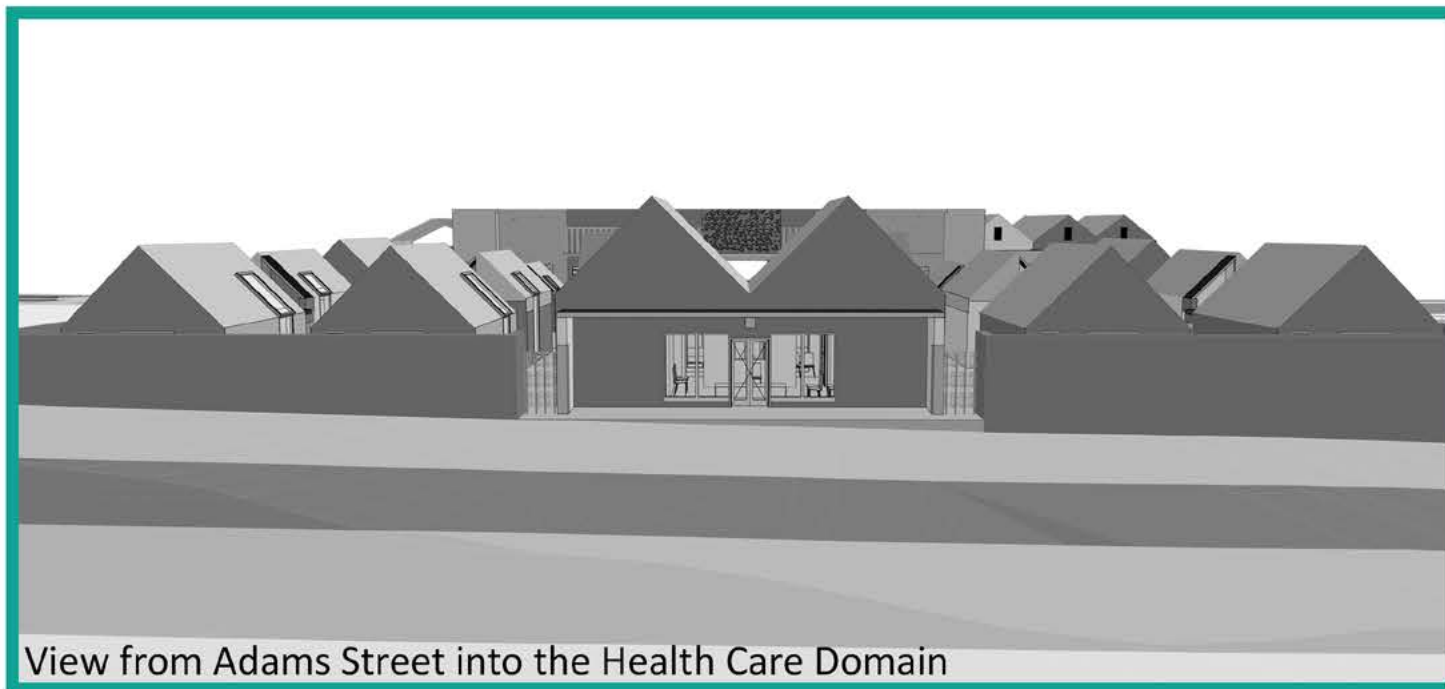
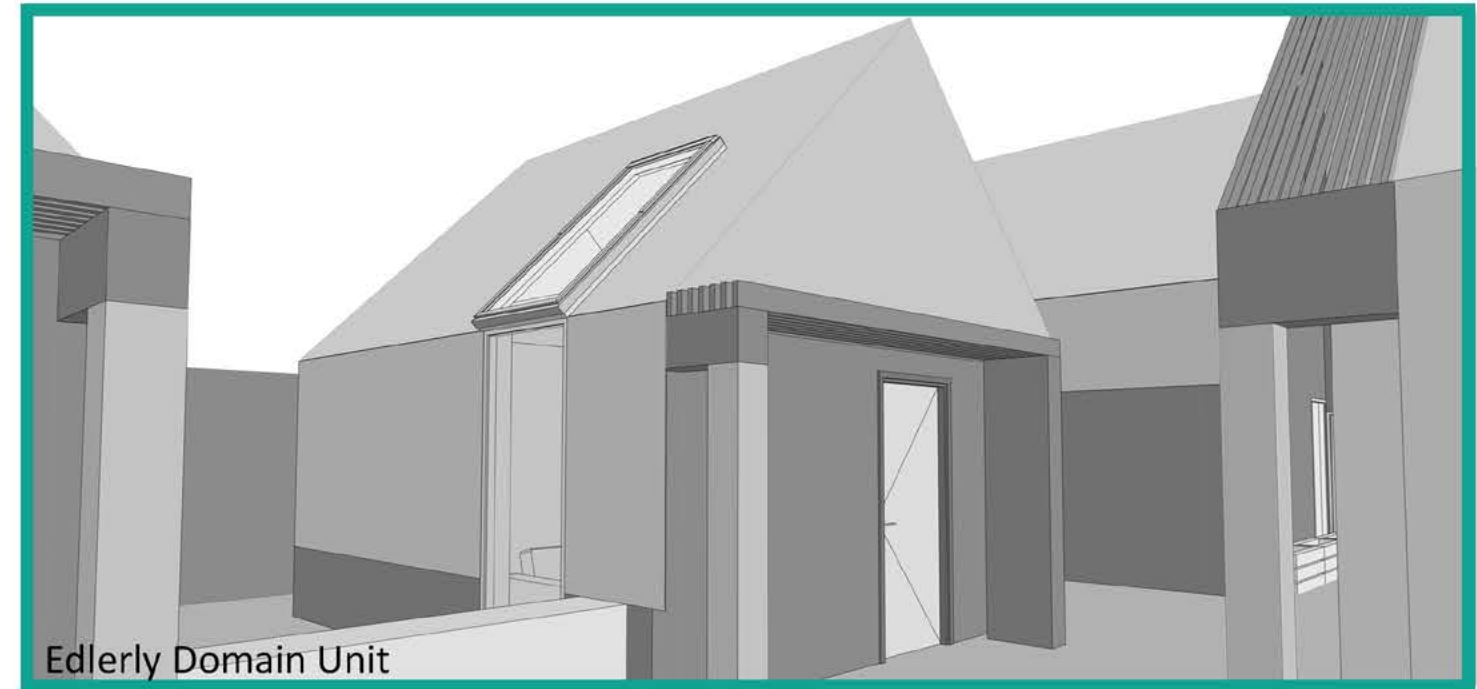
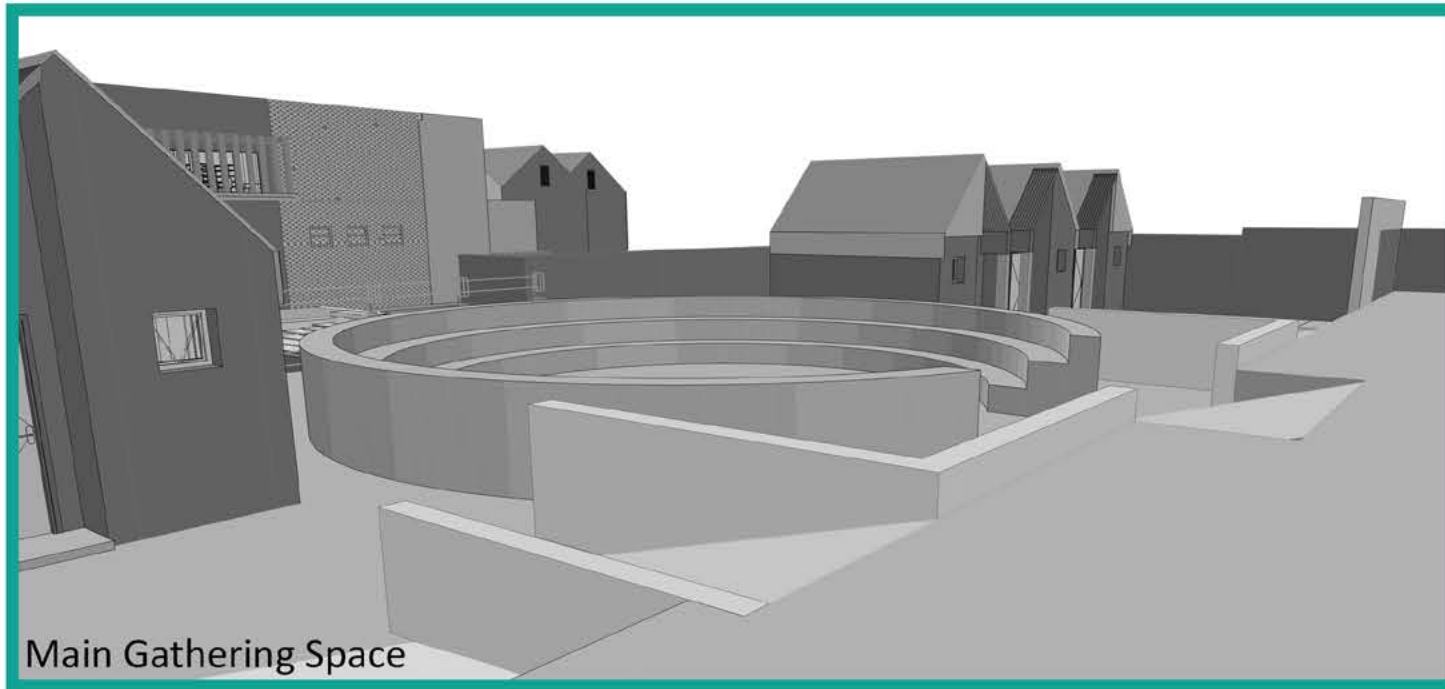
0 2 4 m

Domain 1 - Public Domain - Domain 2

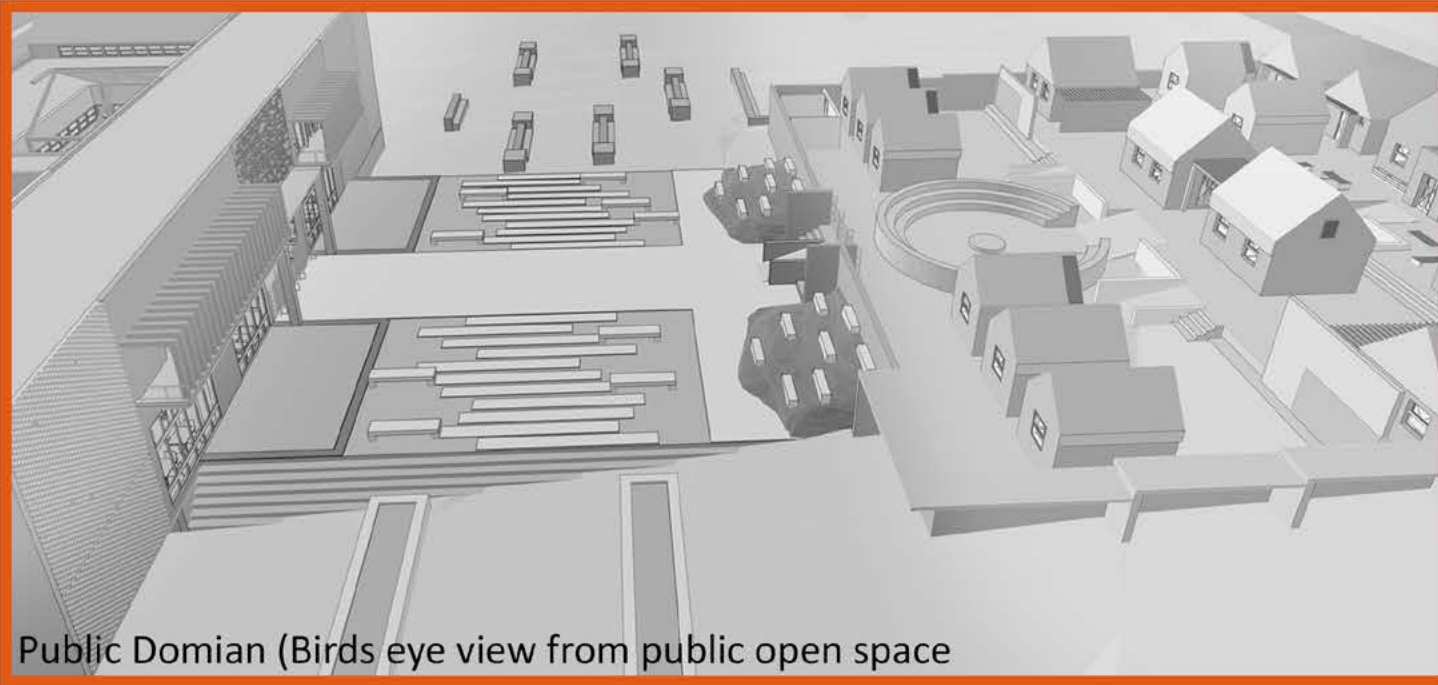


3D View

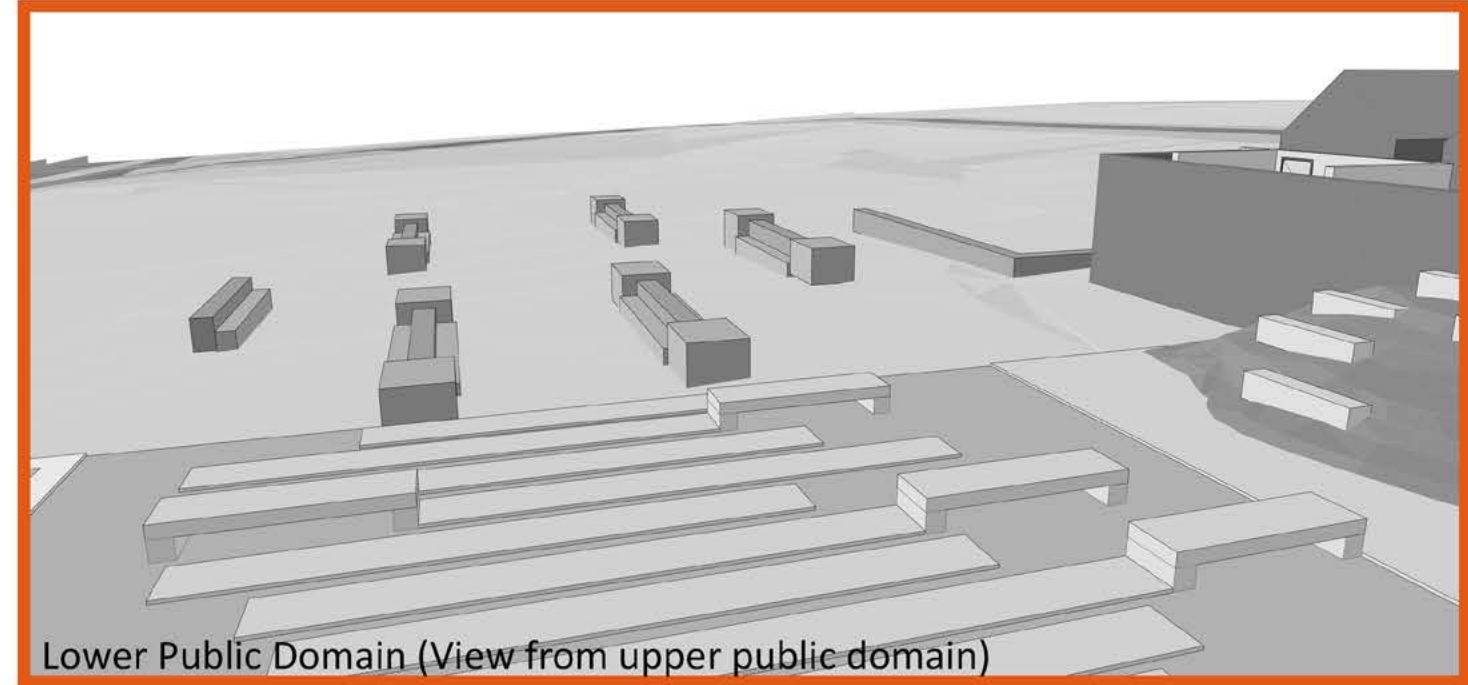
DOMAIN 1



PUBLIC DOMAIN



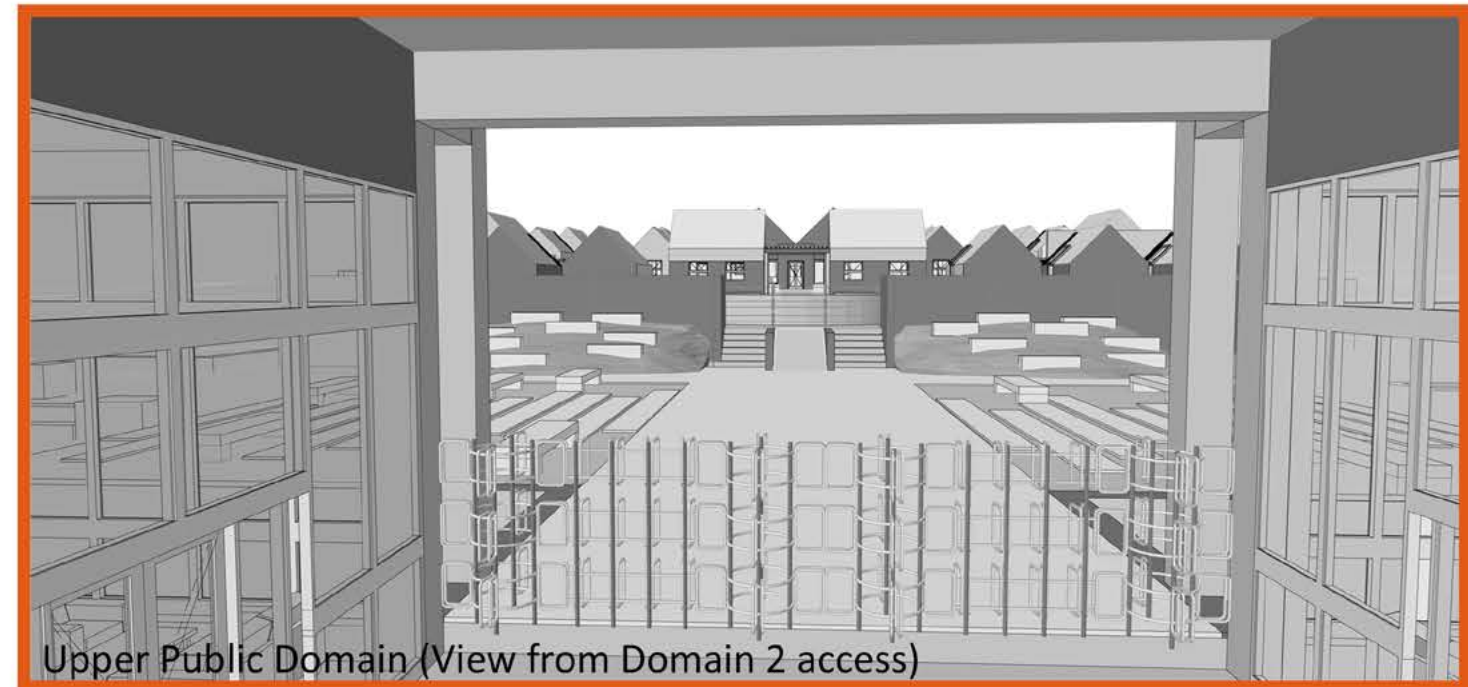
Public Domian (Birds eye view from public open space)



Lower Public Domain (View from upper public domain)

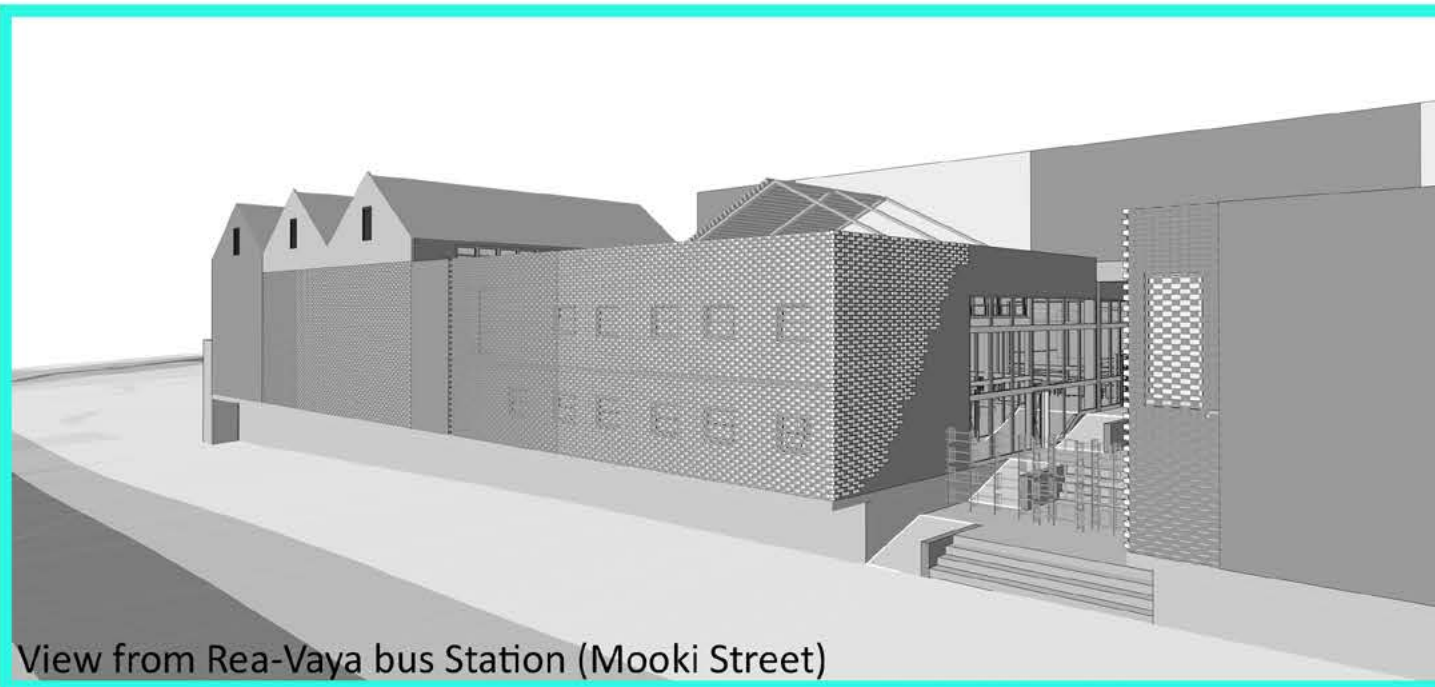
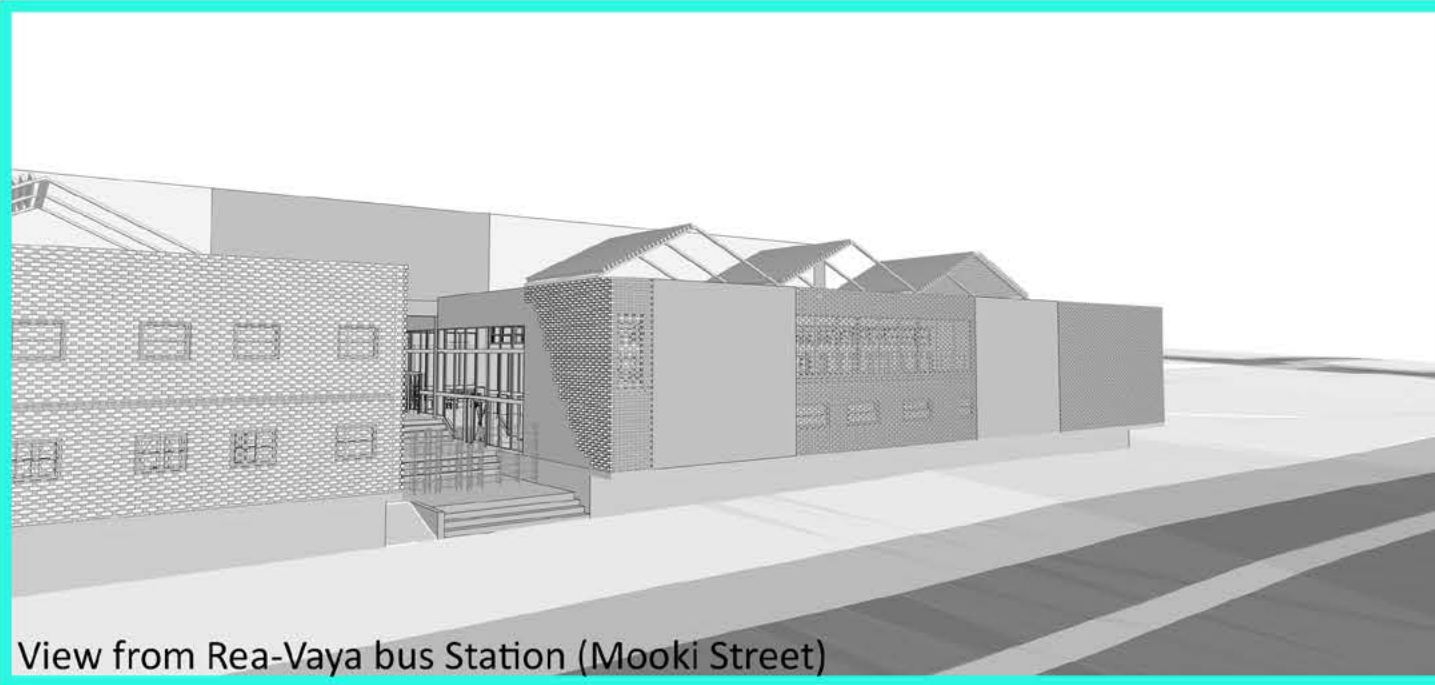


Upper Public Domain (View from Domain 2 access)



Upper Public Domain (View from Domain 2 access)

DOMAIN 2



FINAL DESIGN

The final design proposal occurs as a conclusion to the research, and follows a brief exploration process as seen earlier in this chapter. The proposal exists as a revised model of a technical vocational education facility focusing on black females with a central public domain that occurs as part of a larger system of two domains which will be explained later in the chapter.

The drawings that follow formed the digital presentation for the final examination, and are presented here with annotations to succinctly convey the core ideas of the proposal.



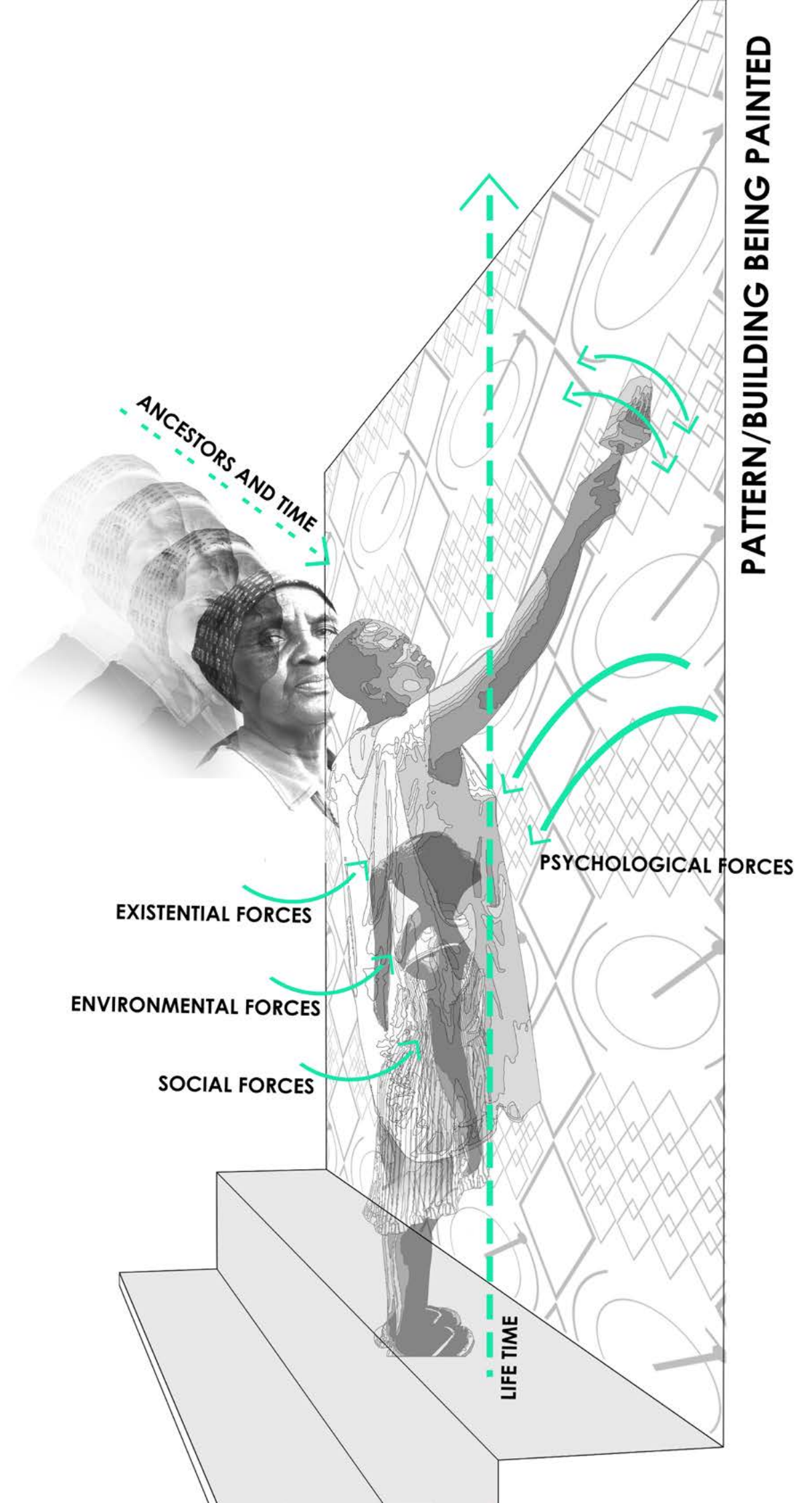
Project Aim

RECIPROCITY

THE ROLE OF MAKING IN THE COLLECTIVE CONSTRUCTION OF MAKING THE SELF

The Femnical Institute explores a revised model of a technical vocational education facility where the emphasis is a model focusing on black females. African women are perceived as having weak technical capacity, this is stark contrast of the reality that black females have always been technical, and that making was deeply connected to making of the self.

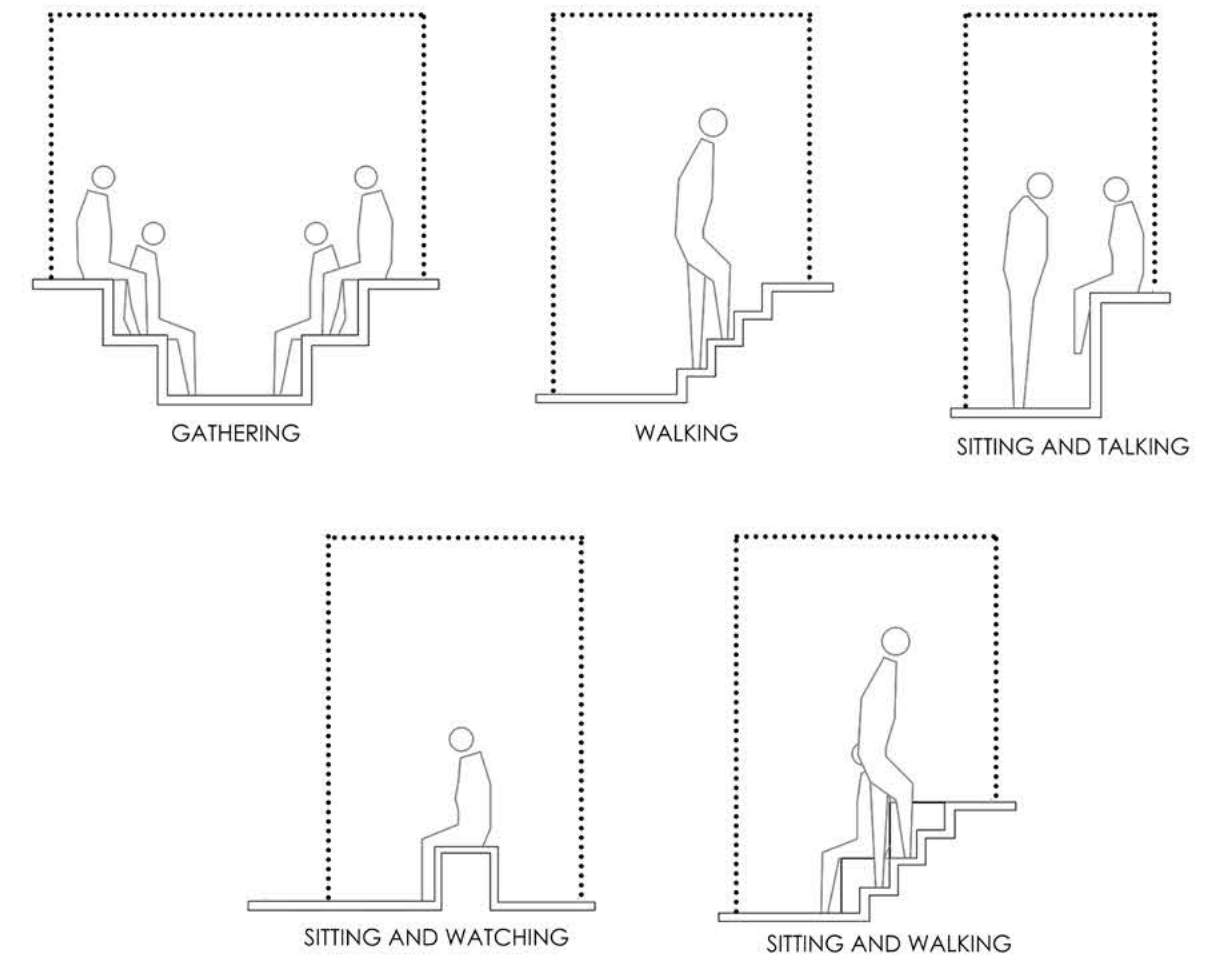
The diagram alongside demonstrates the process of learning through making and how the body becomes an instrument of knowledge and this knowledge is passed down to generations to come.



ARCHITECTURE AS OPPORTUNITY

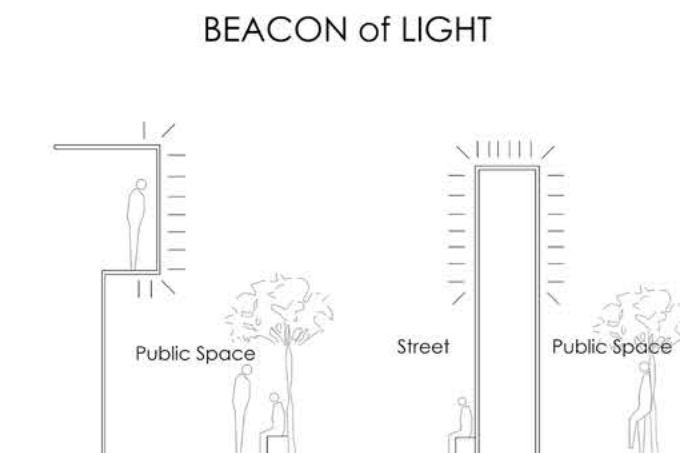
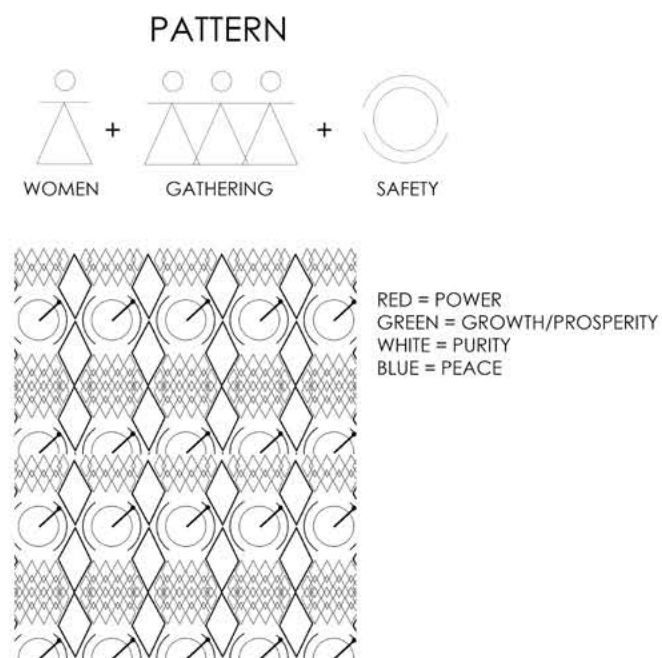
Upon realising similarities in concepts between my colleague, Anja Popara and myself, we conducted a virtual workshop in order to come up with an architecture that could be identified as a safe space for women through a visual language that is communicated and understood by women. We used traditional shapes and symbols combined with color meaning to convey the language of women, gathering and safety. What came out from this exercise was this pattern. In my project I used the pattern as a way to identify, teach and conceal spaces.

Our buildings are also identified as women safety zones by responding as a beacon that lights up public spaces allowing them to feel safer (see figure.....below)

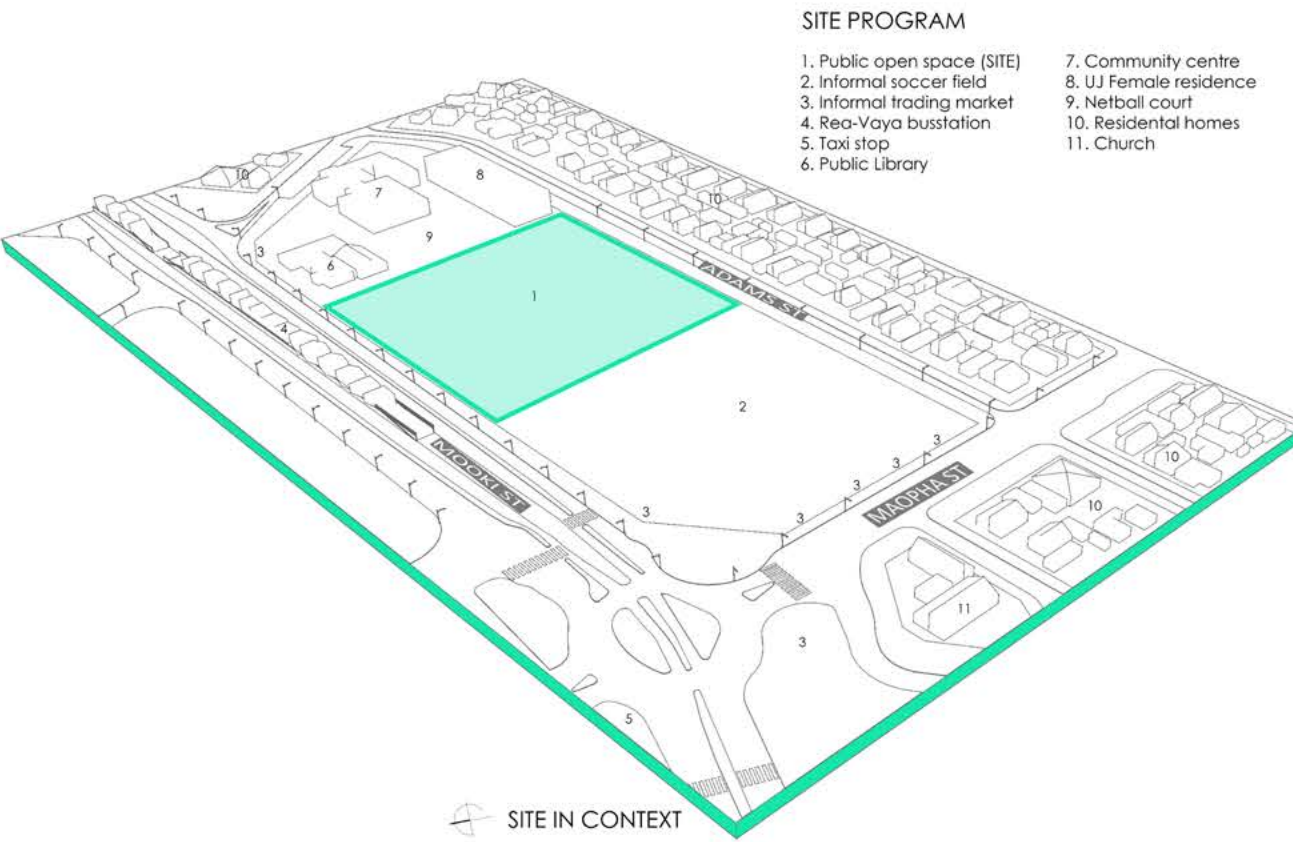
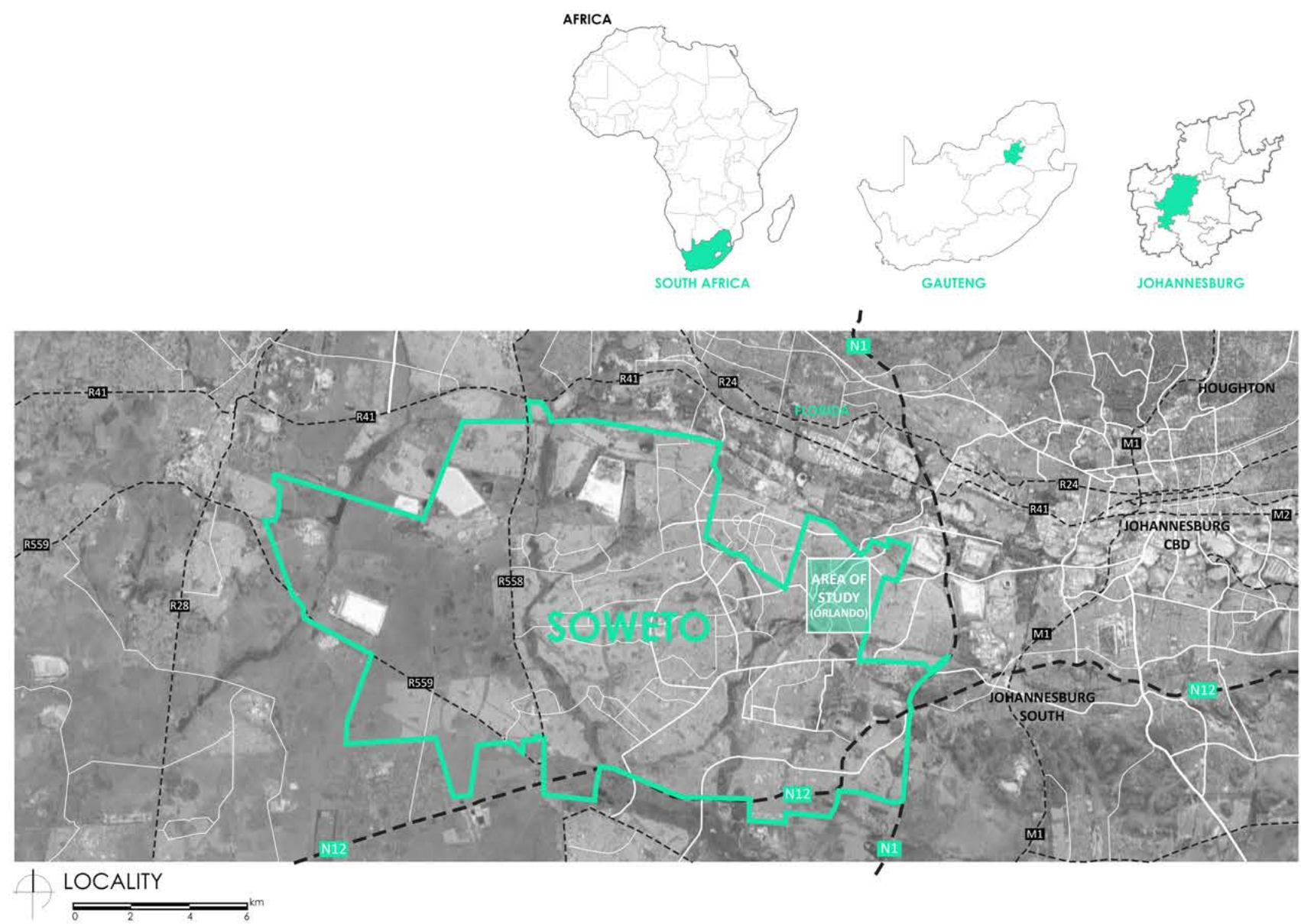


ARCHITECTURE AS WOMEN SAFETY ZONE

The building edges creates opportunities for its users to gather and interact with one another, while others sit and watch as a way of protecting the women inside the building (see figure..... above).



Location



SITE IMAGES

INFORMAL SOCCER FIELD



PUBLIC OPEN SPACE



INFORMAL TRADING STALLS



REA-VAYA BUS STATION

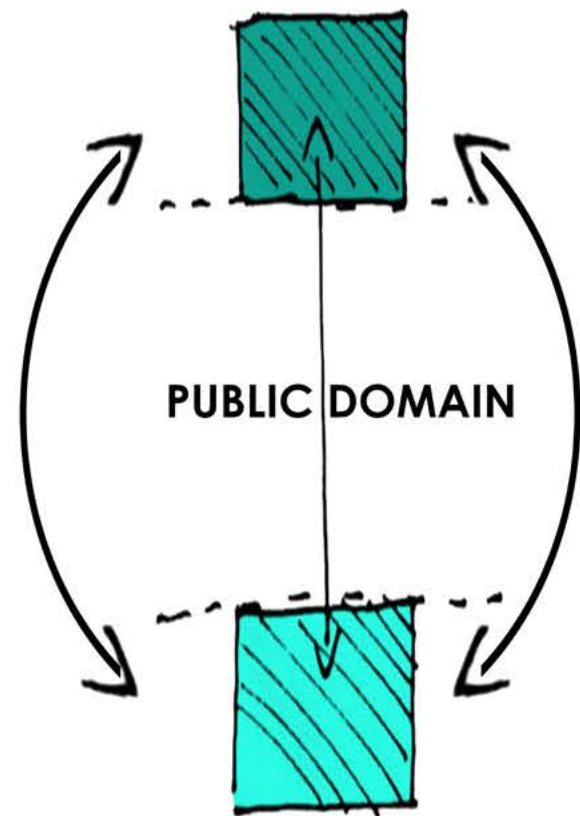


Domains

Domain 01: A place where a portion of the young black girls and women who will use domain 02 will be accommodated. In this space they will sleep, engage with one another (exchange knowledge) and learn through making.

Domain 02: A place where the young black girls and women will come together to learn through making and engage with one another (knowledge exchange).

The young girls and women who come into this domain from the outside are influenced by the knowledge gained by the young girls and women of domain 01 as they act as a catalyst of knowledge in how the female is framed.



- DOMAIN 01 (Being)
- DOMAIN 02 (Making)



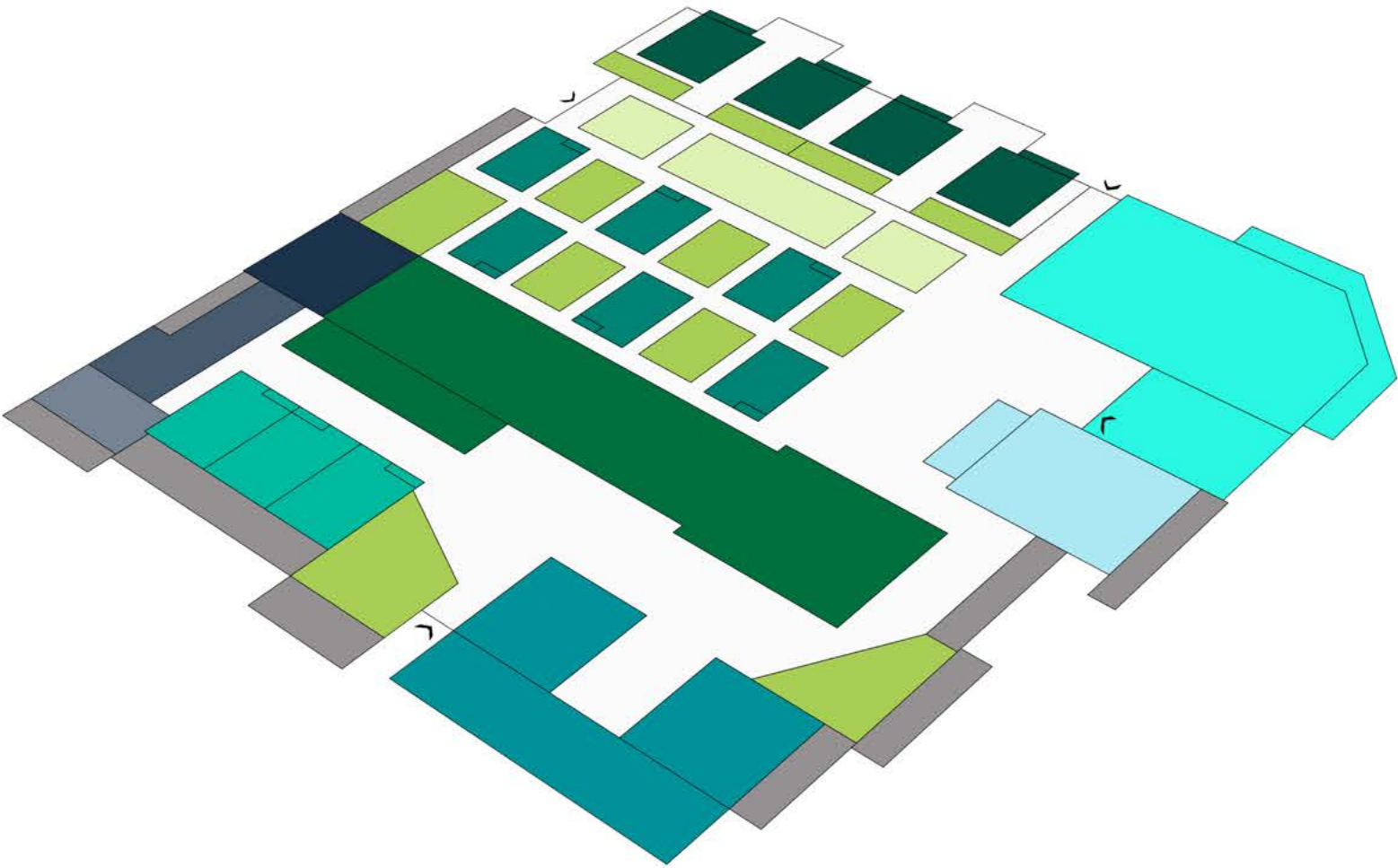
SITE PLAN
SCALE 1:500

SITE PROGRAM

1. Soccer domain
2. Public domain
3. Car parking domain
4. Bus parking domain
5. Market domain
6. Health facility outdoor domain
7. Community domain

Domain 01

PROGRAM

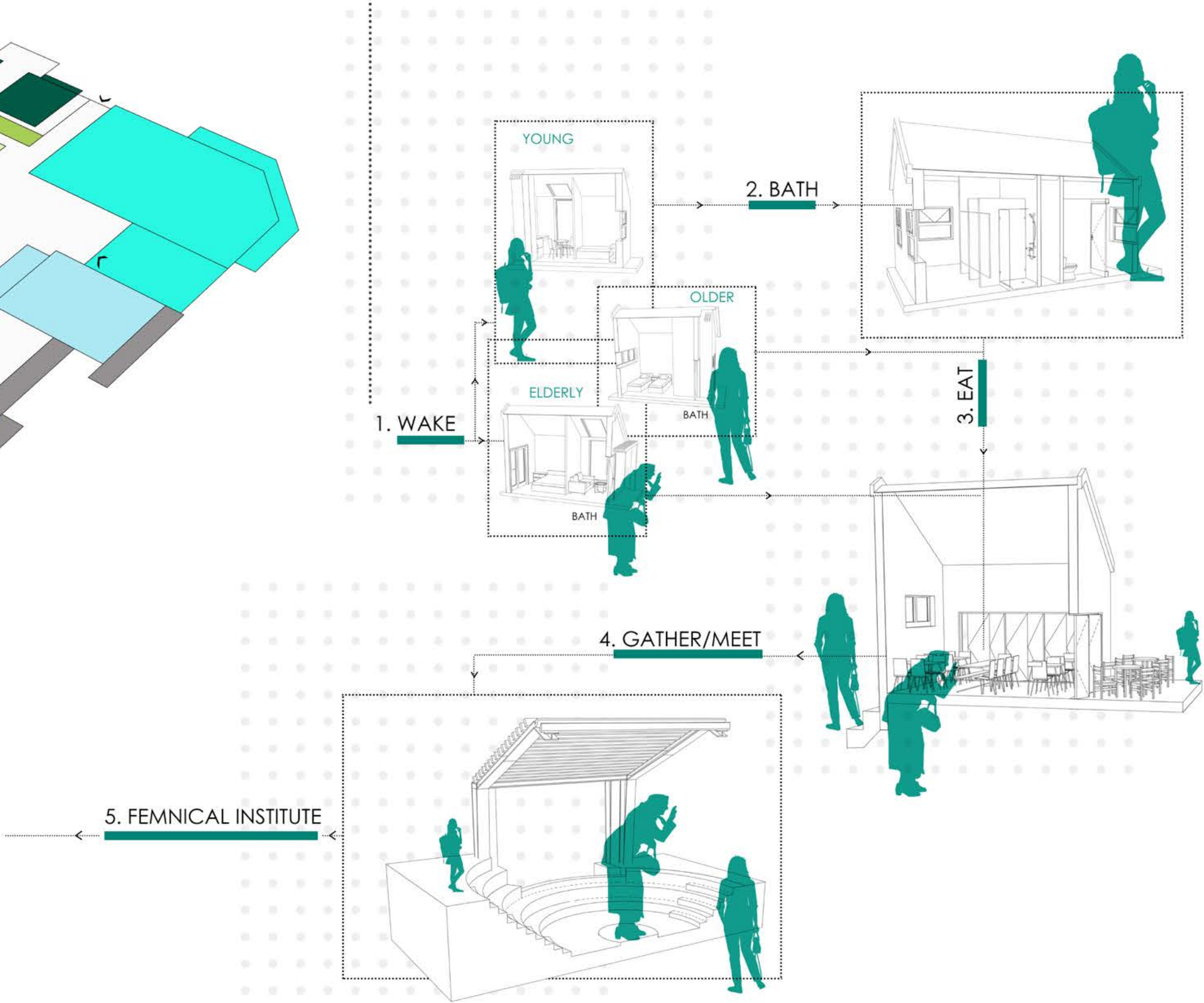


PROGRAM LIST

- Elderly sleeping domain
- Young girls sleeping domain
- Older girls sleeping domain
- Vegetable garden
- Garden sitting areas (social space)
- Making and gathering space
- Communal eating space
- Communal bathing space
- Health facility
- Storage
- Laundry
- Waste room
- Market stalls
- Circulation

EXPEDITION

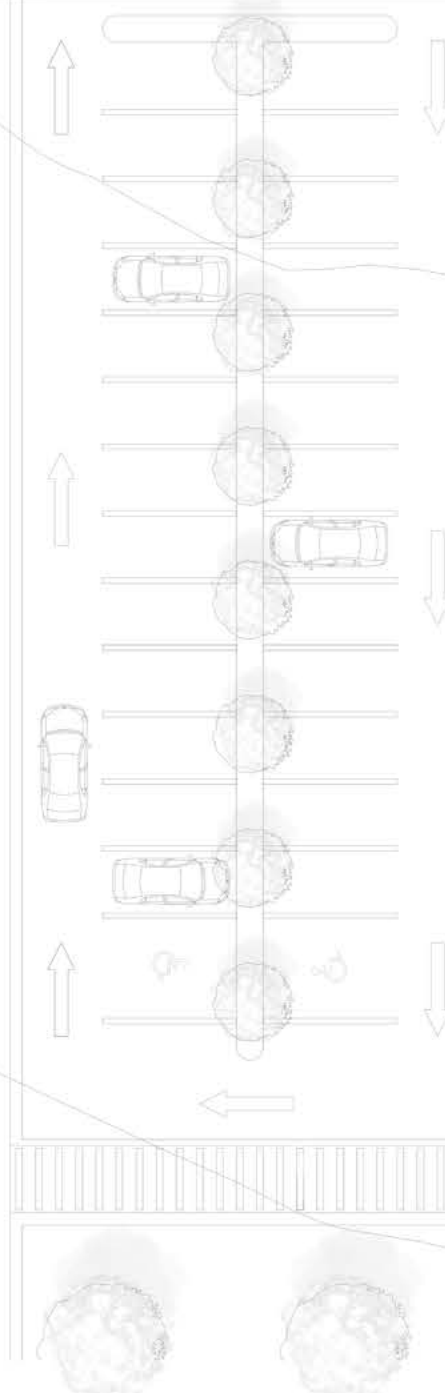
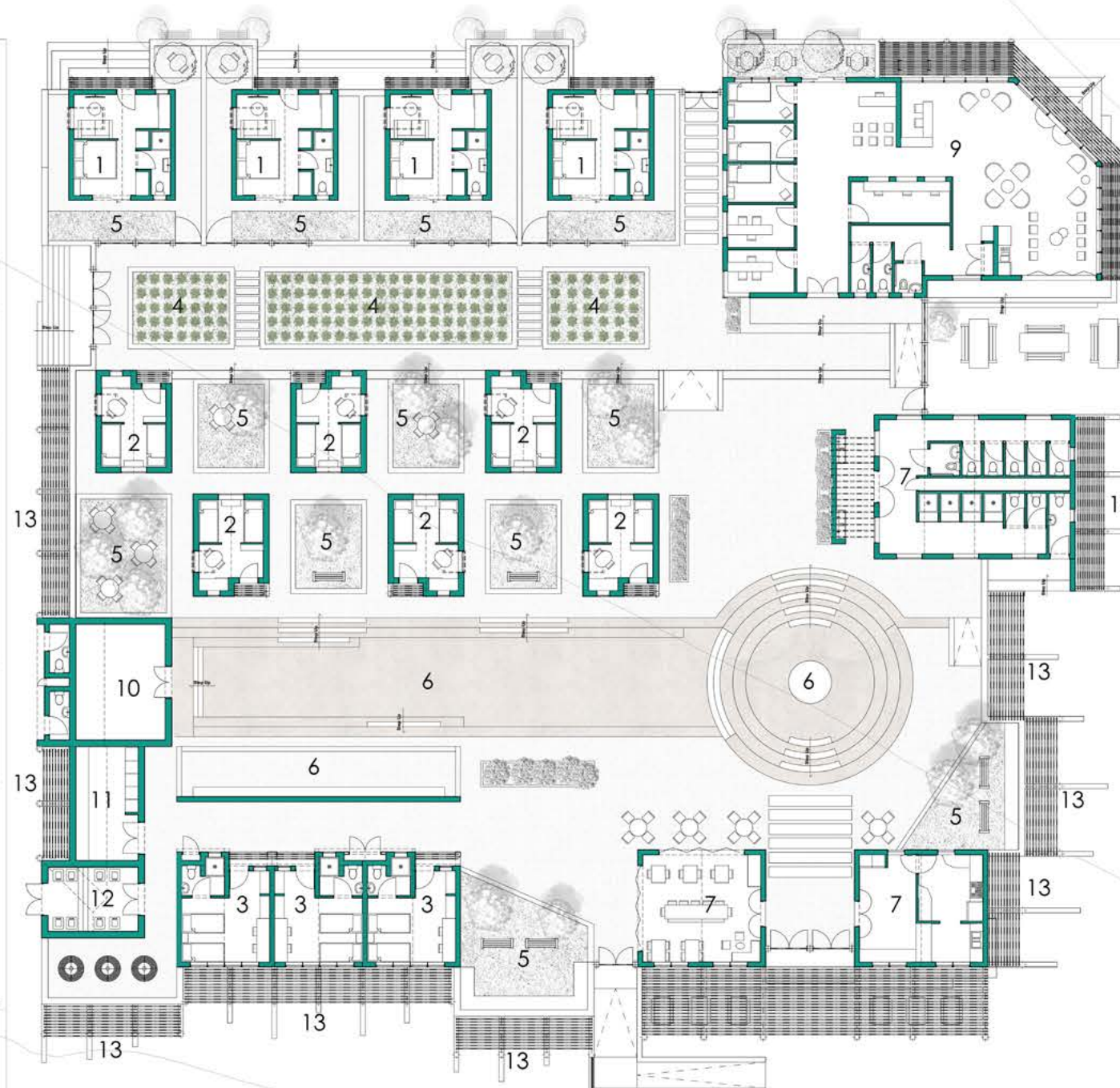
MORNING REGIME



ADAMS STREET

GROUND FLOOR PROGRAM

1. Elderly sleeping domain
2. Young girls sleeping domain
3. Older girls sleeping domain
4. Vegetable garden
5. Garden sitting areas (social space)
6. Making and gathering space
7. Communal eating space/kitchen
8. Communal bathing space
9. Health facility
10. Storage
11. Laundry
12. Waste room
13. Market stalls



GROUND FLOOR PLAN
SCALE 1:100



NORTH ELEVATION
SCALE 1:100



SOUTH ELEVATION
SCALE 1:100



EAST ELEVATION
SCALE 1:100



WEST ELEVATION
SCALE 1:100



North View_view of domain 01 from public domain



South West View_view of domain 01 (Health facility) from Adams street



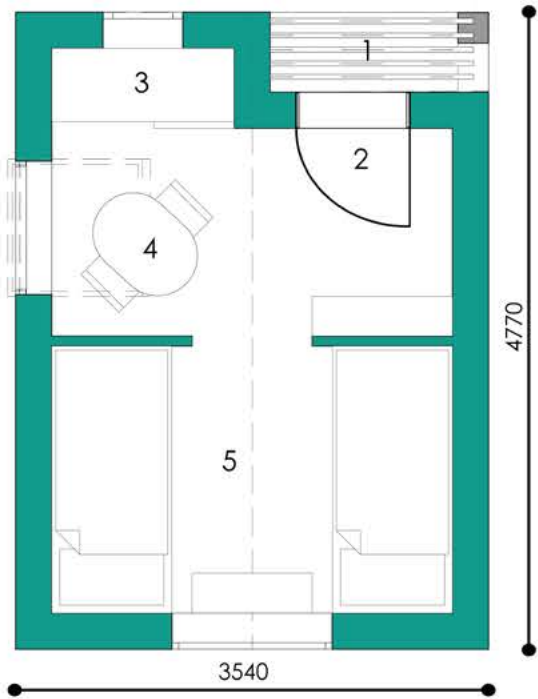
East View_view of domain 01 from bus parking area



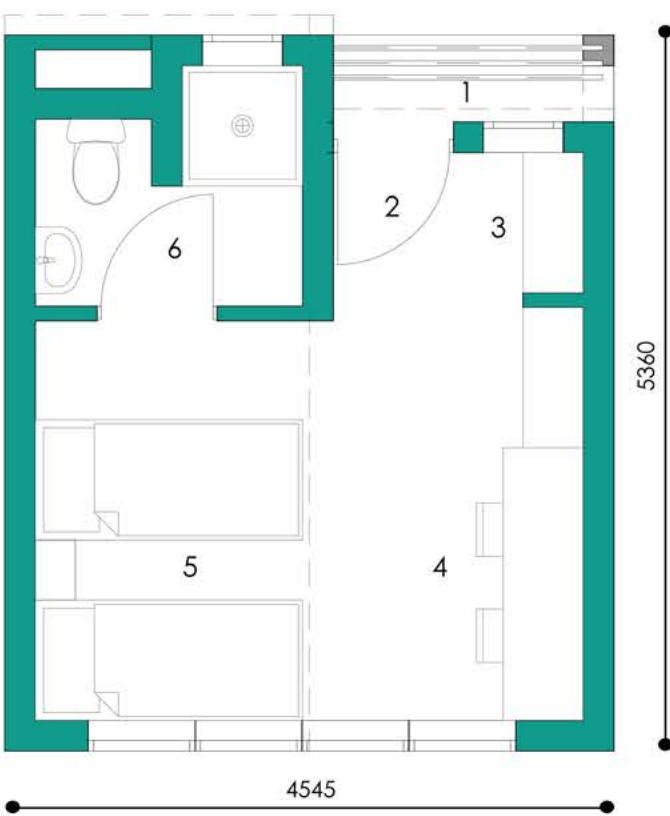
West View_view of domain 01 from car parking area

SLEEPING DOMAINS

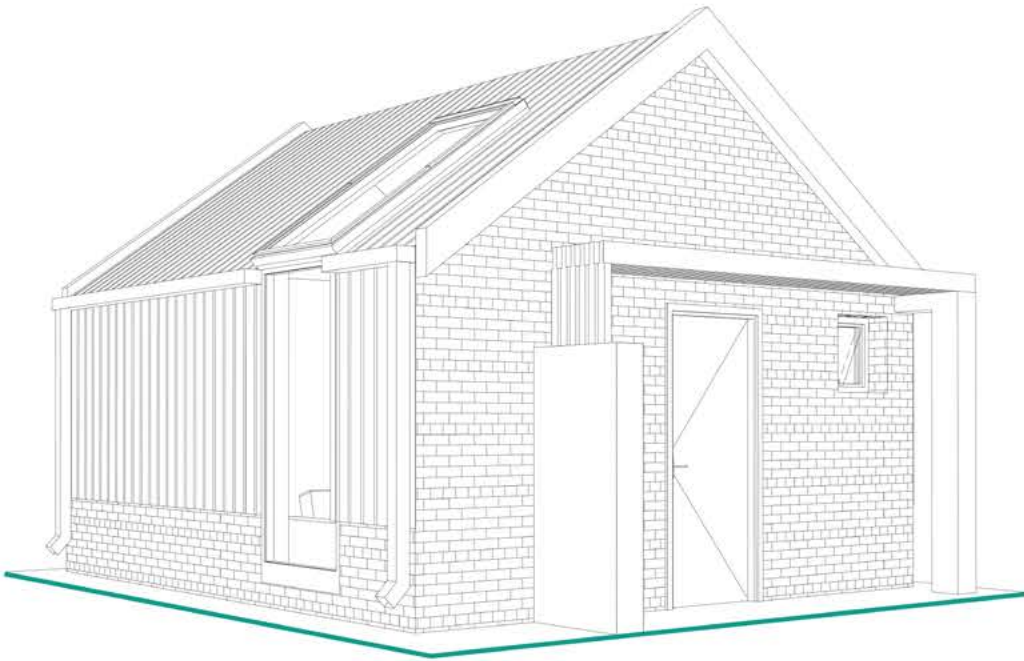
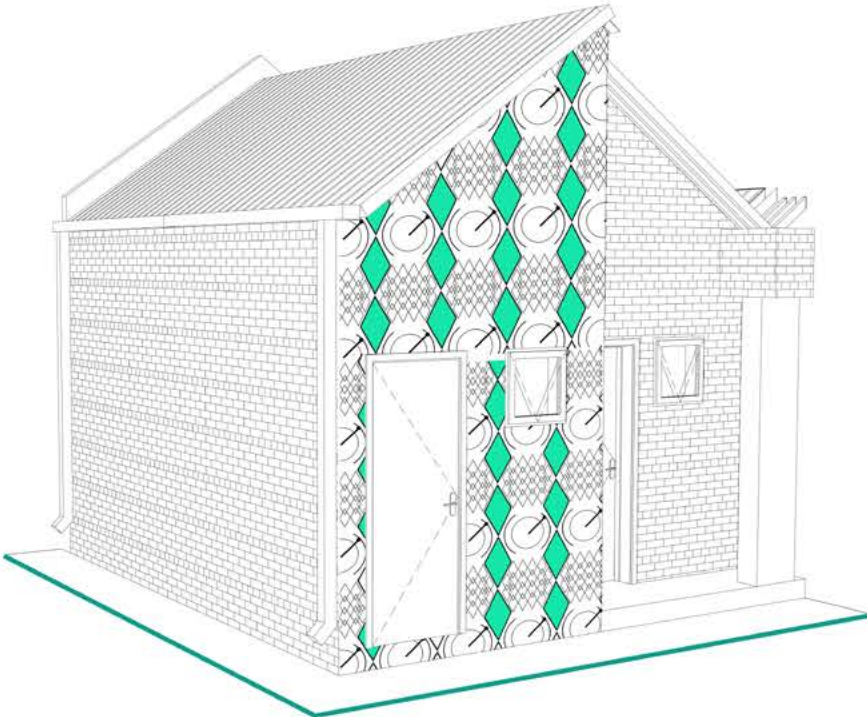
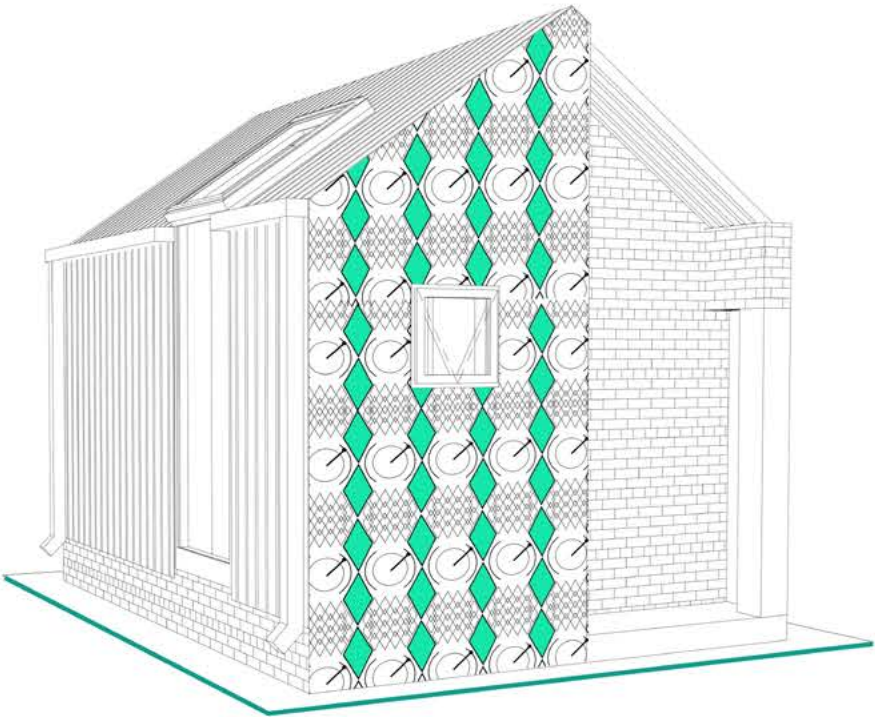
YOUNG FEMALES



OLDER FEMALES



ELDERLY FEMALES



PROGRAM LIST

- 1. Veranda
- 2. Entrance
- 3. Kitchenette
- 4. Dinning area
- 5. Sleeping area

PROGRAM LIST

- 1. Veranda
- 2. Entrance
- 3. Kitchenette
- 4. Study area
- 5. Sleeping area
- 6. Bathroom

PROGRAM LIST

- 1. Veranda
- 2. Entrance
- 3. Kitchenette
- 4. Living room
- 5. Sleeping area
- 6. Bathroom

VIEWS OF INSIDE DOMAIN 01



Gathering domain



Making domain



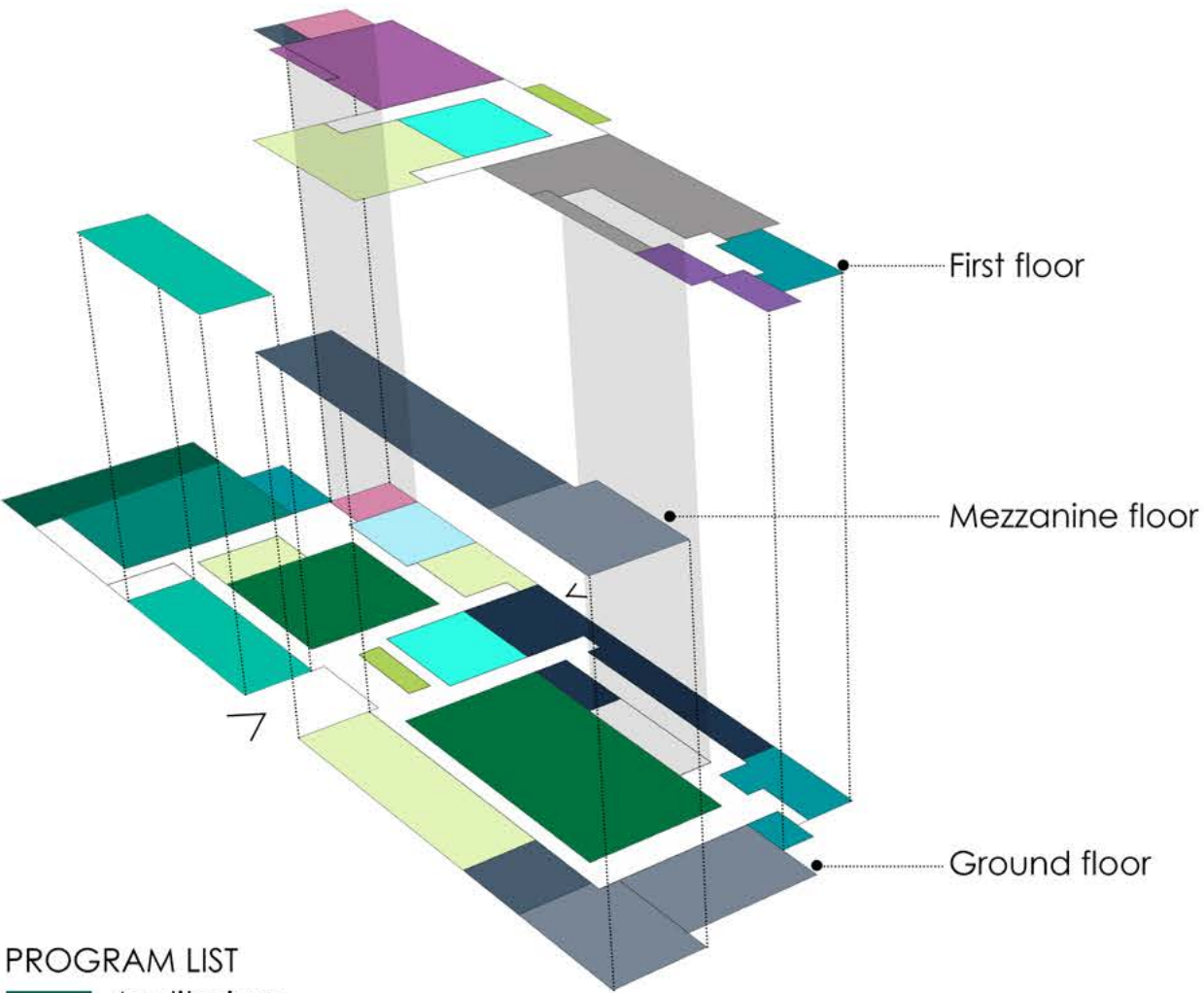
Garden domain



Vegetable Garden domain

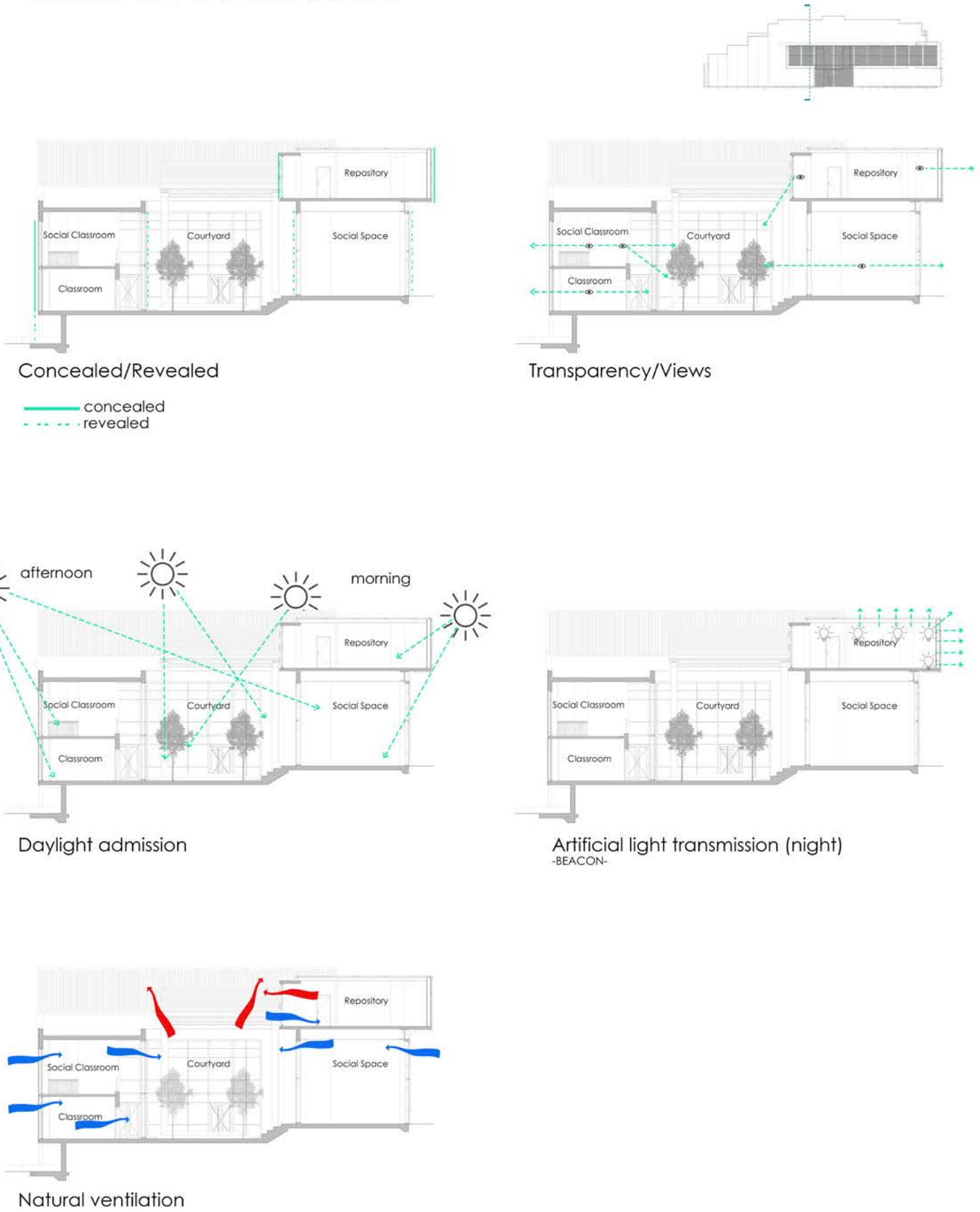
Domain 02

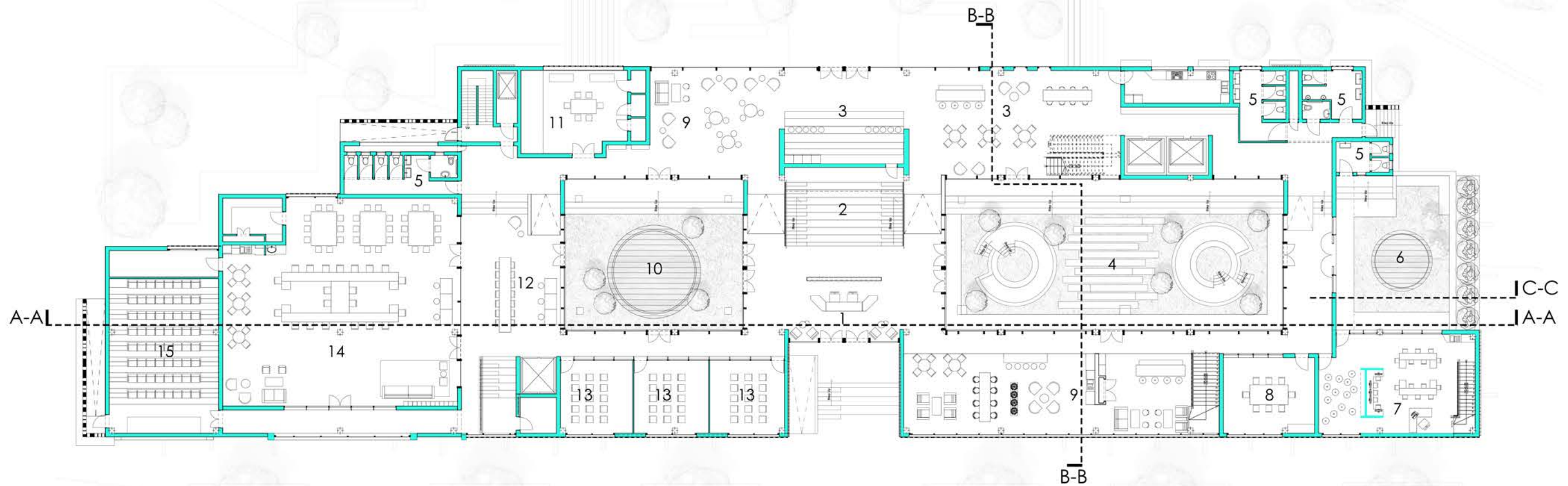
PROGRAM



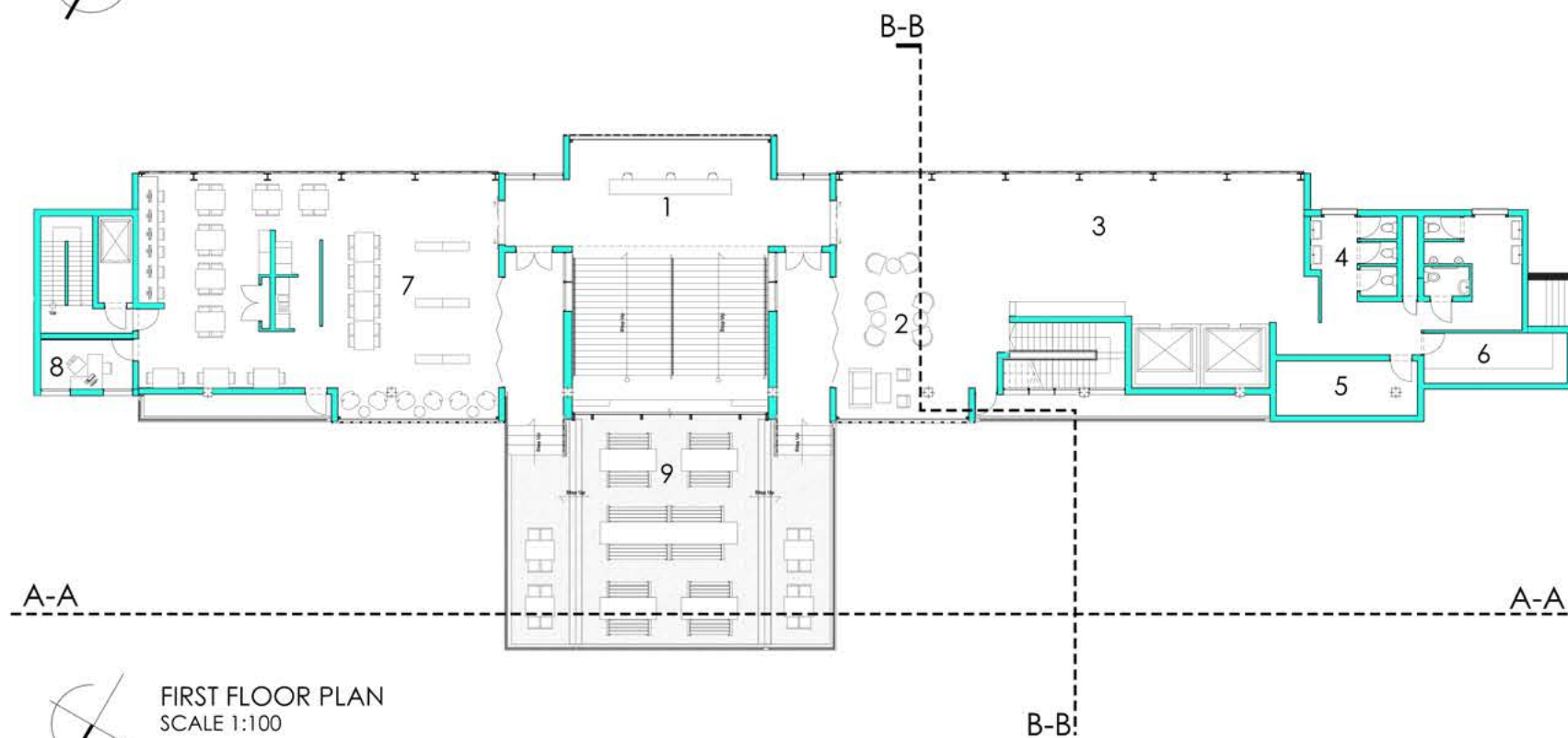
- PROGRAM LIST
- Auditorium
 - Studio/Workshop
 - Classrooms
 - Social space
 - Reception/Information desk
 - Making and gathering space
 - Ablutions
 - Fab Lab
 - Informal Auditorium
 - Cafe
 - Offices/Meeting rooms
 - Little makers (Day-care)
 - Gallery
 - Repository
 - Storage
 - Fire Escapes
 - Vertical Circulation
 - Horizontal Circulation

BUILDING PERFORMANCE





GROUND FLOOR PLAN
SCALE 1:100



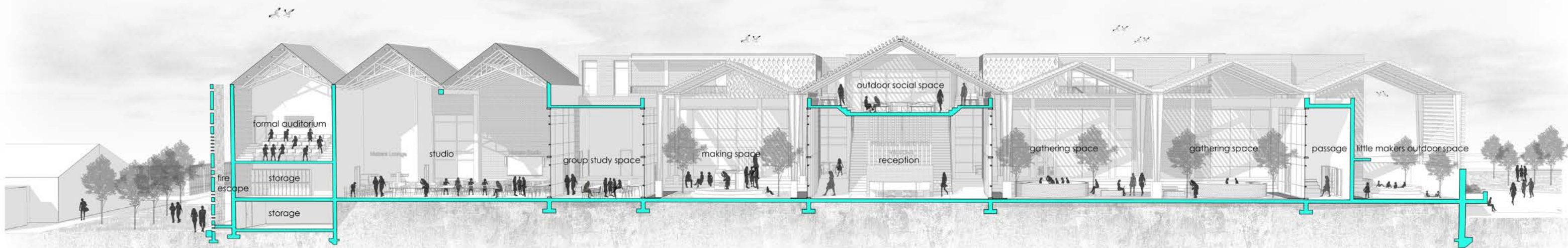
FIRST FLOOR PLAN
SCALE 1:100

GROUND FLOOR PROGRAM

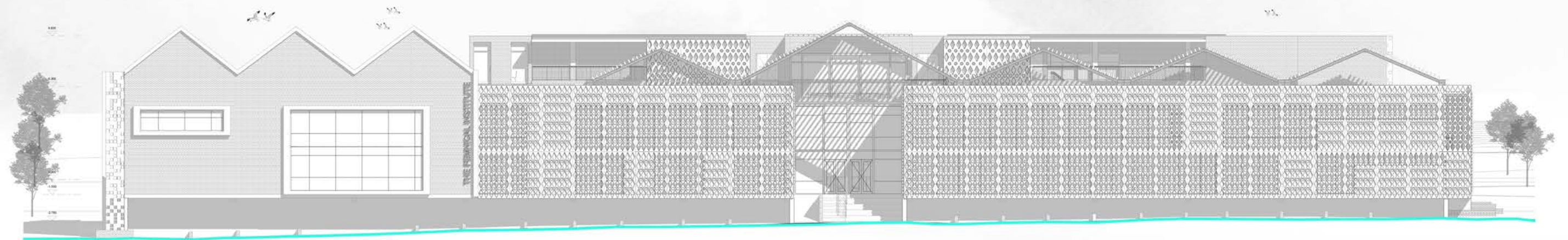
1. Reception
2. Informal auditorium
3. Cafe/Restaurant
4. Gathering domain (Courtyard)
5. Ablutions
6. Little makers outdoor space
7. Little makers (Day-care)
8. Meeting room
9. Social space/Lounge
10. Making space (Courtyard)
11. Fab Lab
12. Group study space
13. Classroom
14. Workshop/Studio
15. Formal Auditorium

FIRST FLOOR PROGRAM

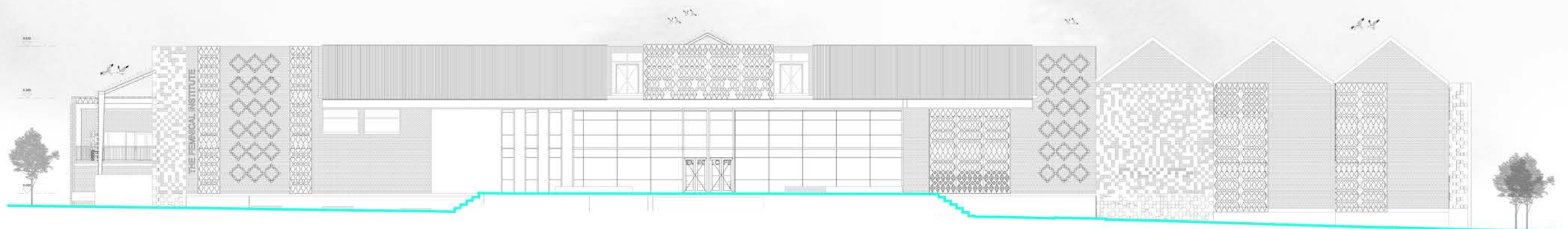
1. Information/Circulation desk
2. Lounge
3. Gallery
4. Ablutions
5. Storage
6. Archive room
7. Repository
8. Office
9. Outdoor social space



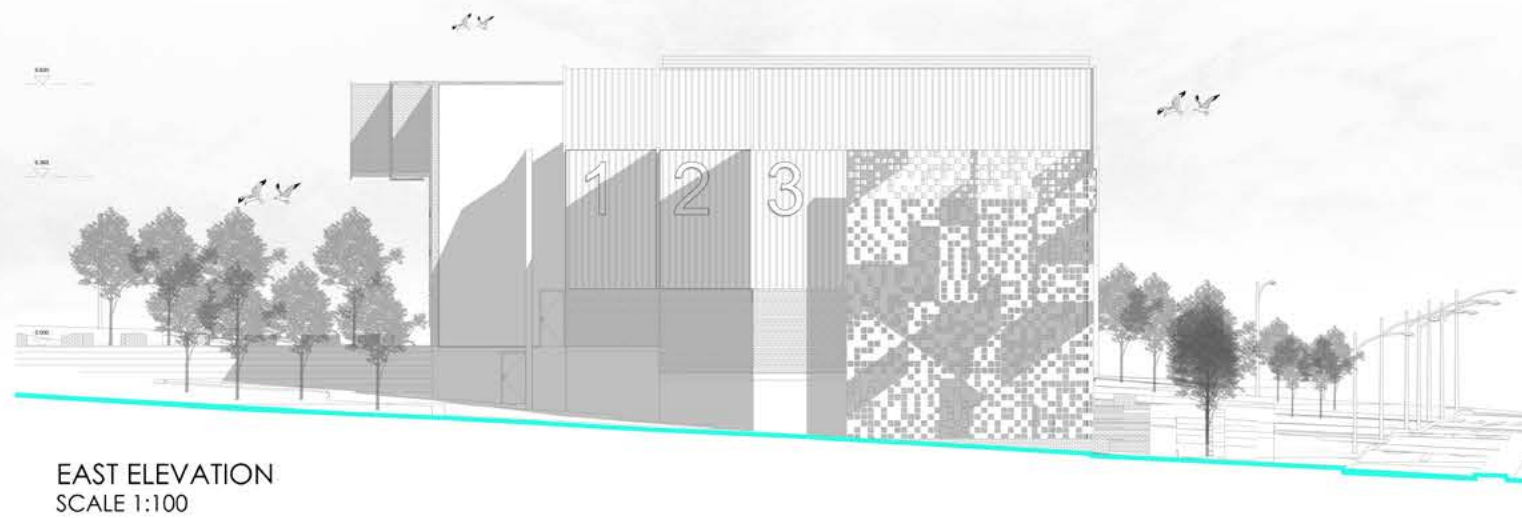
SECTION A-A
0 2 4 6 m



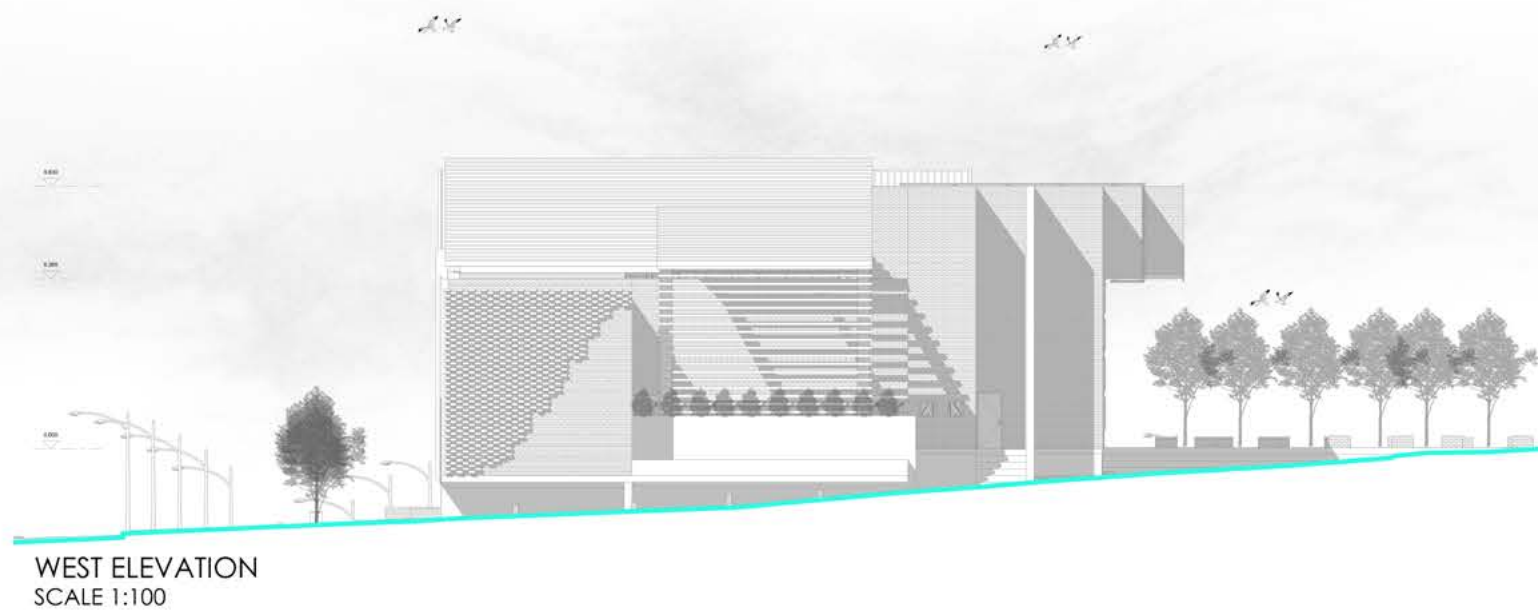
NORTH ELEVATION
SCALE 1:100



SOUTH ELEVATION
SCALE 1:100



South East View_ view from library



South West View_ view from soccer field

EXTERNAL VIEW



North West View_ view from rea-vaya station

EXTERNAL VIEWS

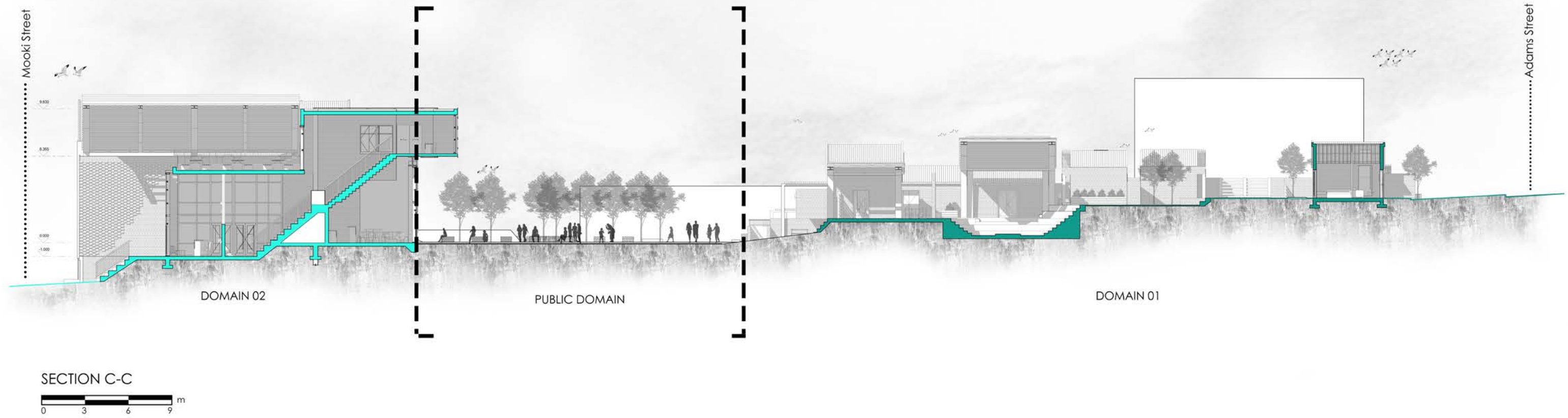


North East View_ view from rea-vaya station



North West View_ view from rea-vaya station

Public Domain



View of domain 01 and 02 towards public domain



Public domain (east view)



Public domain (west view)





Birds eye view (North East)



Birds eye view (South West)



Birds eye view (North West)



Birds eye view (South East)

ARCHITECTURE AS WOMEN SAFETY ZONE

Located in the City of Johannesburg is The Empire of Queens, a social reform centre for abused, traumatised and underprivileged women. The building incorporates the pattern and beacon of light in order to be identified as a women safe space.

The pattern has been incorporated in the landscape of the public park that leads one to the building while the building acts as a beacon for the public park

The idea is to have more “female buildings” that incorporate these principles to allow young girls and women to feel safer in public spaces as soon as they identify with the pattern and beacon.

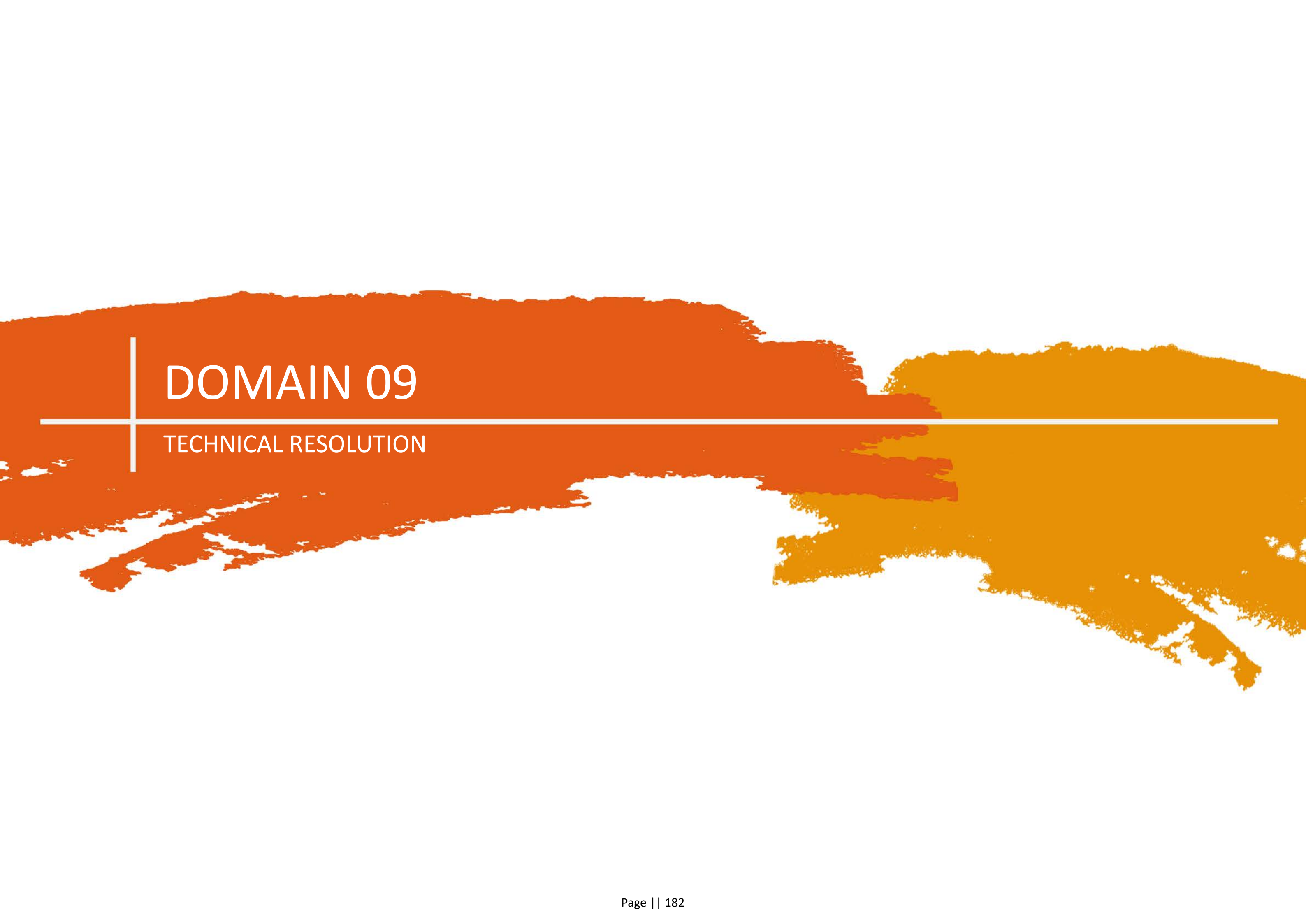
The project alongside is by Anja Popara (Masters student 2020)



PATTERN _ from public park towards buiding



BEACON of LIGHT_Lighting up the public park at night



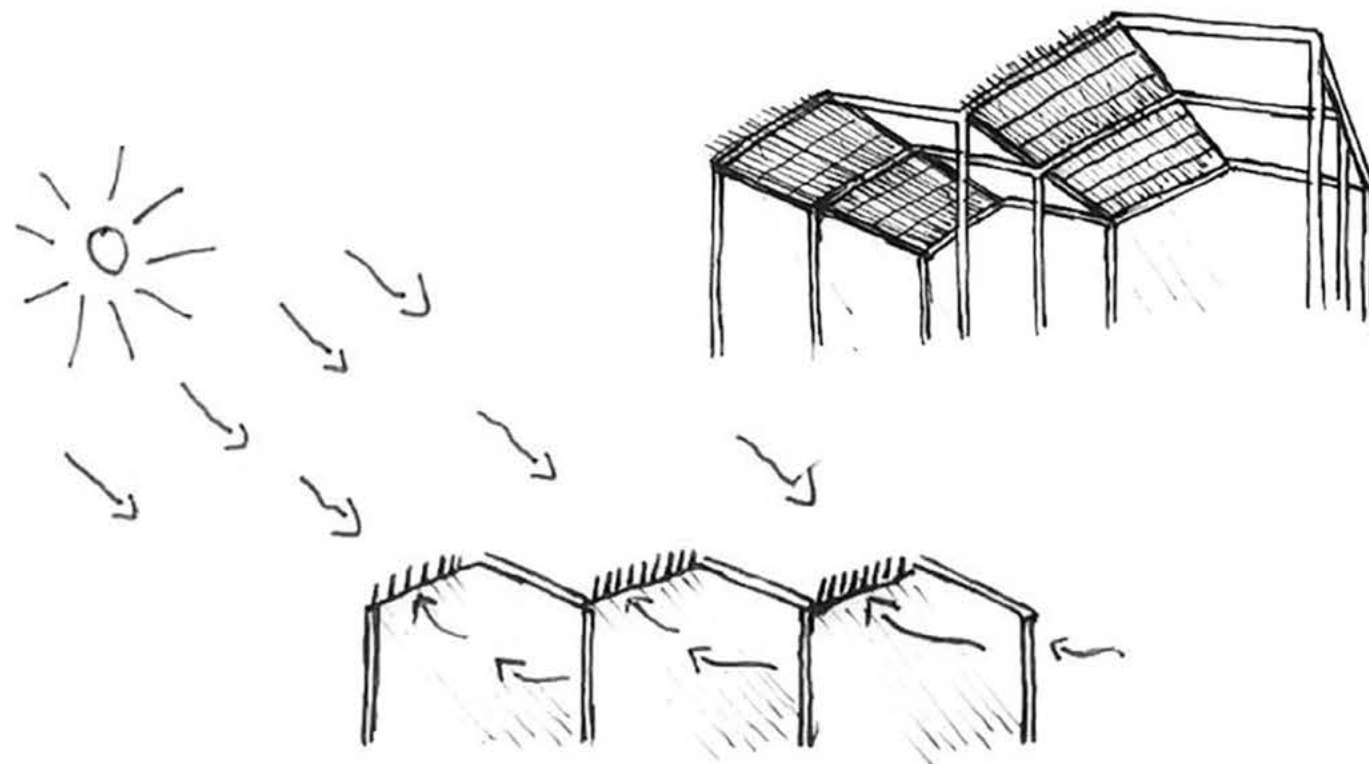
DOMAIN 09

TECHNICAL RESOLUTION

The materials that are being explored in this model are a representation of steel (structure), concrete (foundation), timber (louvers)

Gathering/social spaces are the fundamental aspects of the Femnical Institute. Due to the type of climate Johannesburg has, these spaces are out door and can be inhabited throughout the year. As a space that will be used regularly throughout the day, the design from here focused on exploring and detailing a shading device that allows these spaces to be used both in winter and summer.

With the aim to shade the spaces but to still make it feel like an outdoor space, I explored this through a quick sketch and model exercise. Evident in this model is how the above statement has been achieved. This process informed how the structure would come together with the aim to expose materials to allow the young girls and women who use this space to experience and get an understanding of how the shading device was made by exposing the connections and how all the elements come together.



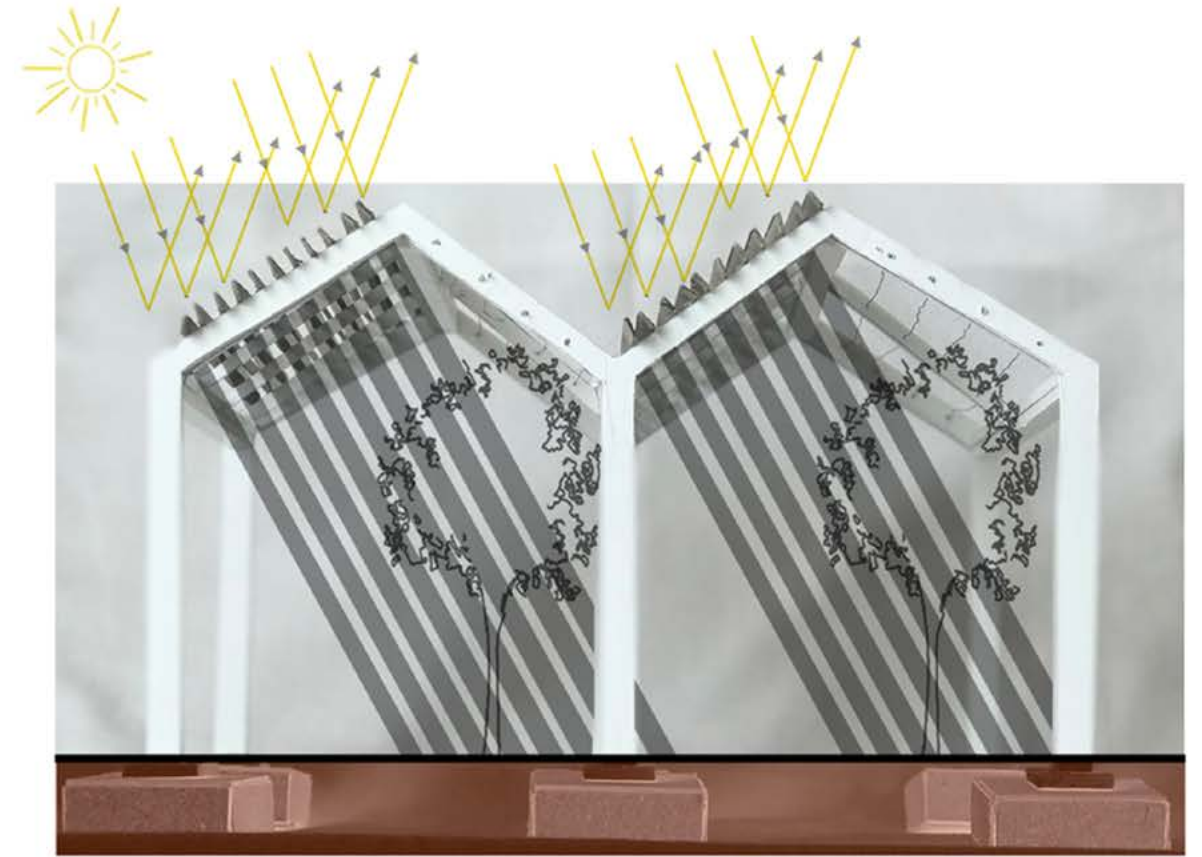
FRONT VIEW



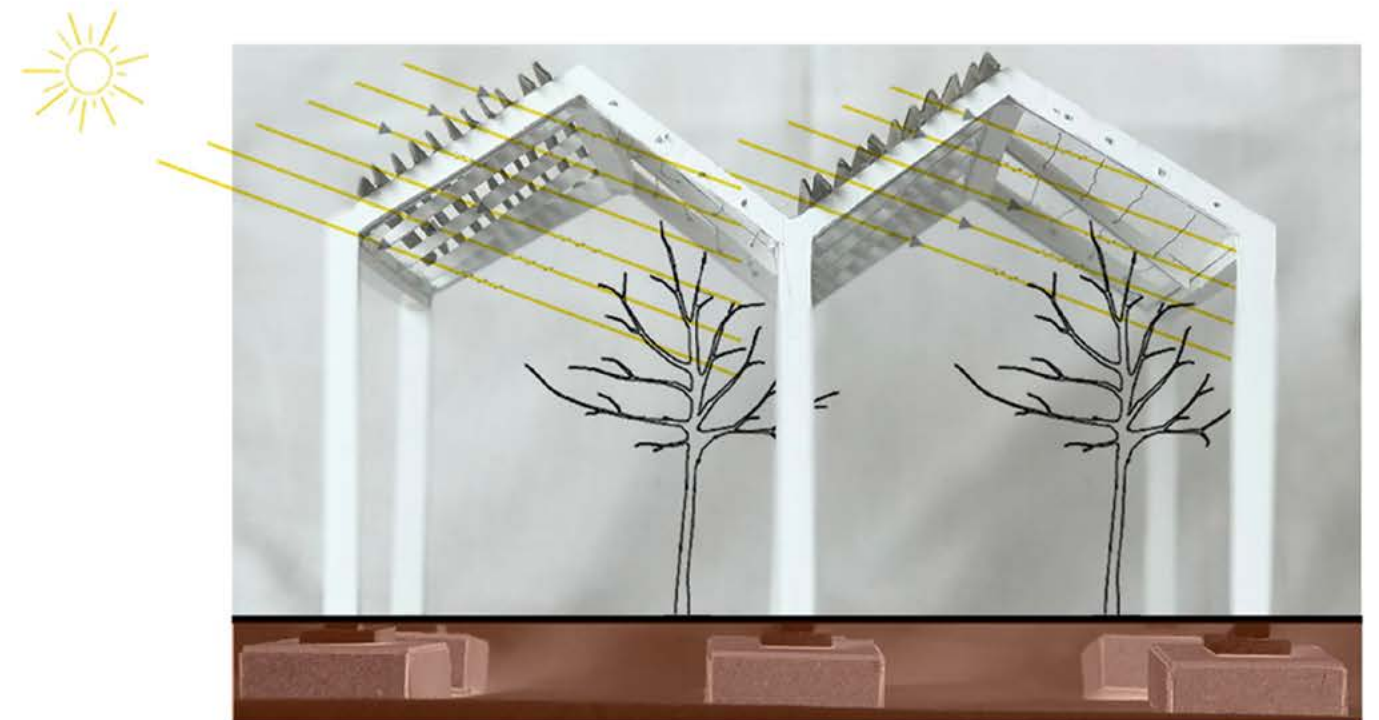
TOP VIEW



9.1 SUMMER AND WINTER EXPLORATION



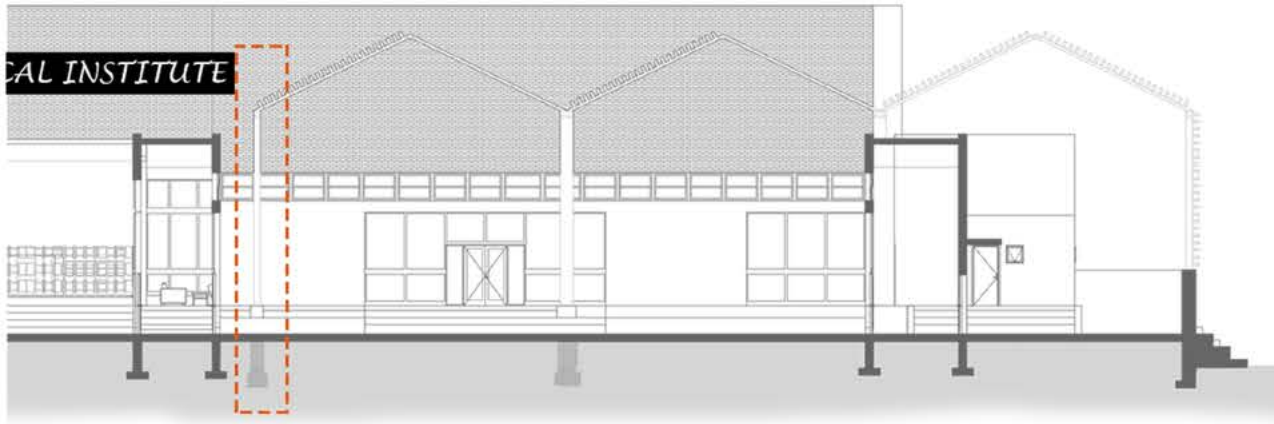
Summer Sun



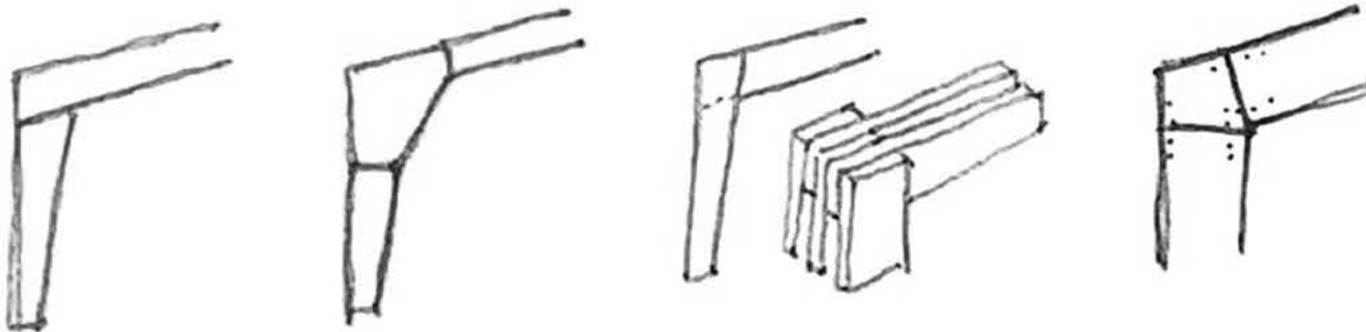
Winter Sun

9.2 DETAIL EXPLORATIONS

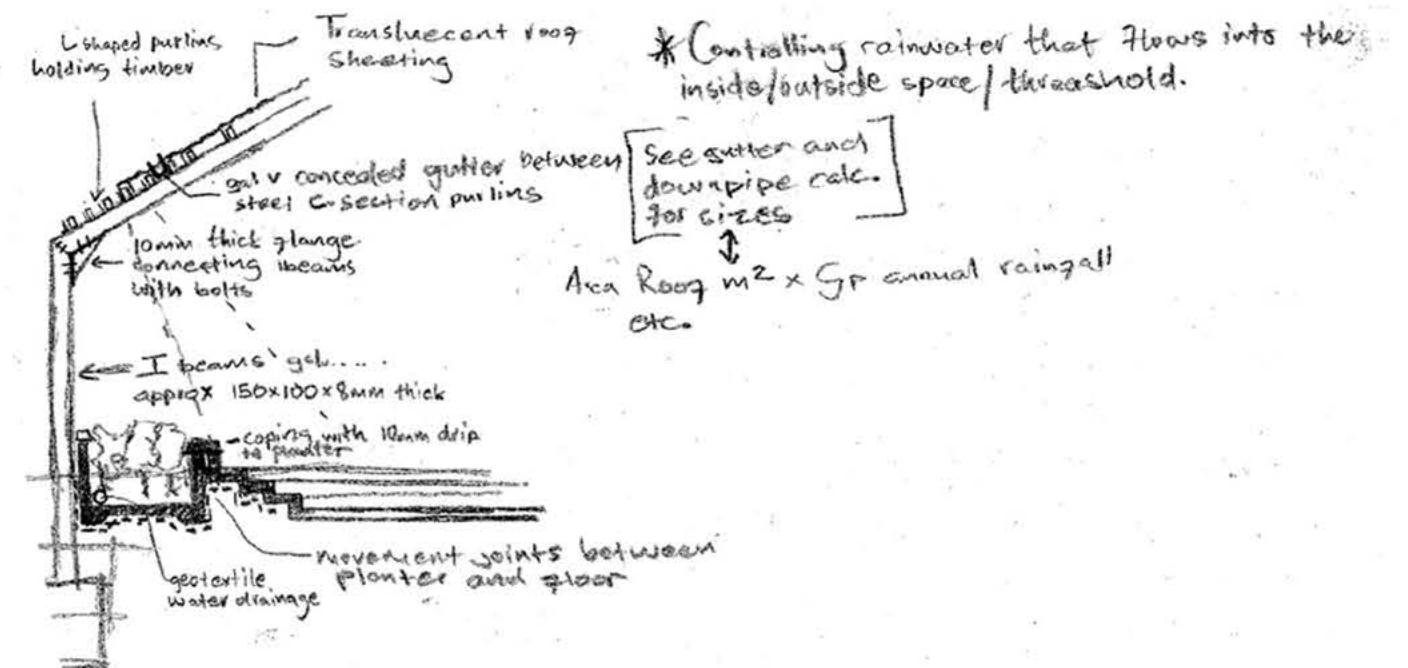
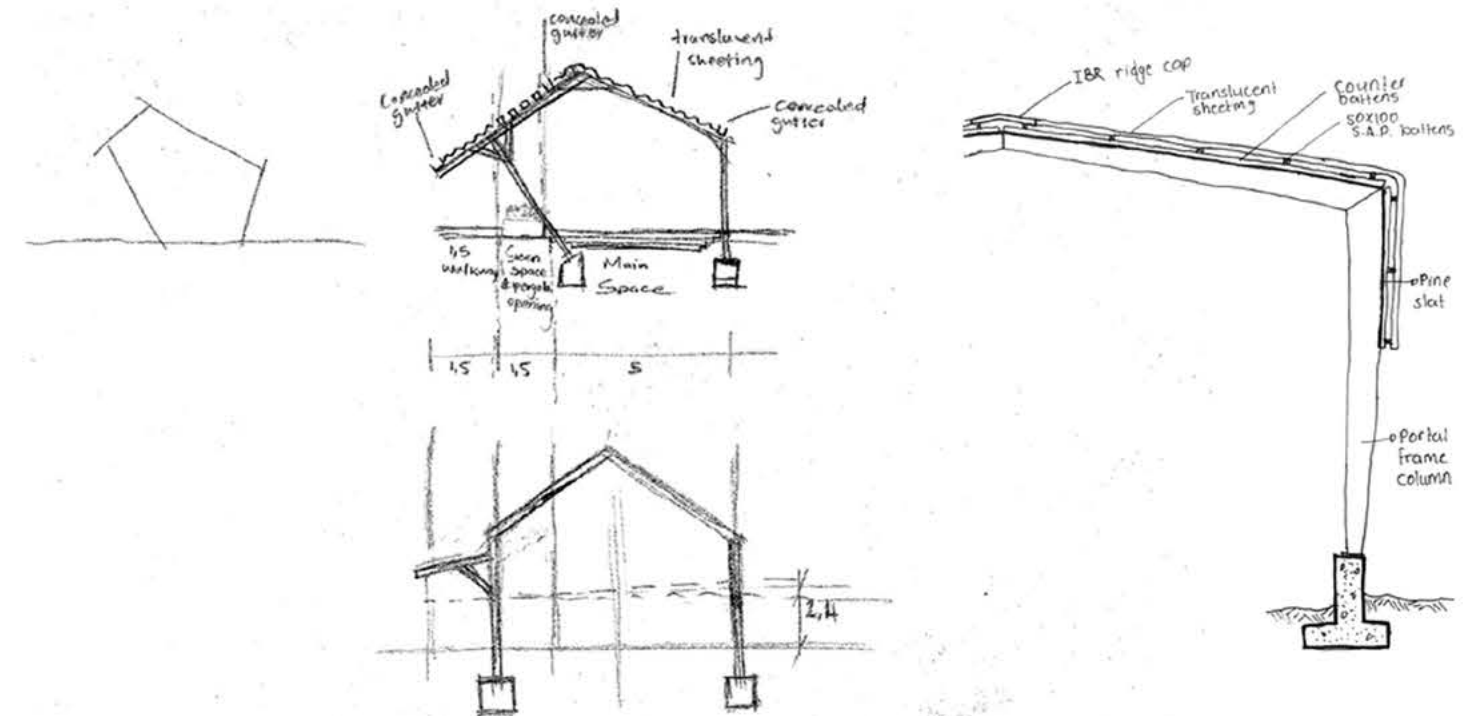
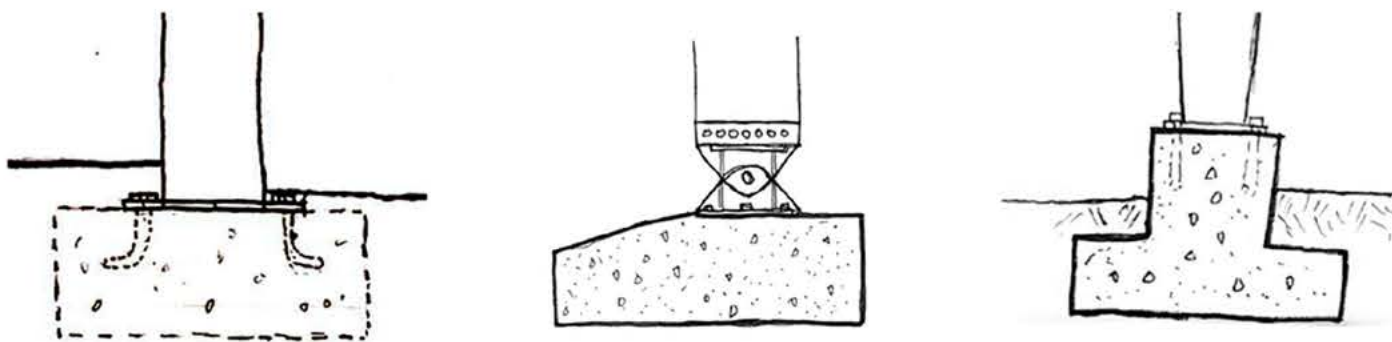
OTHER SHADING EXPLORATIONS

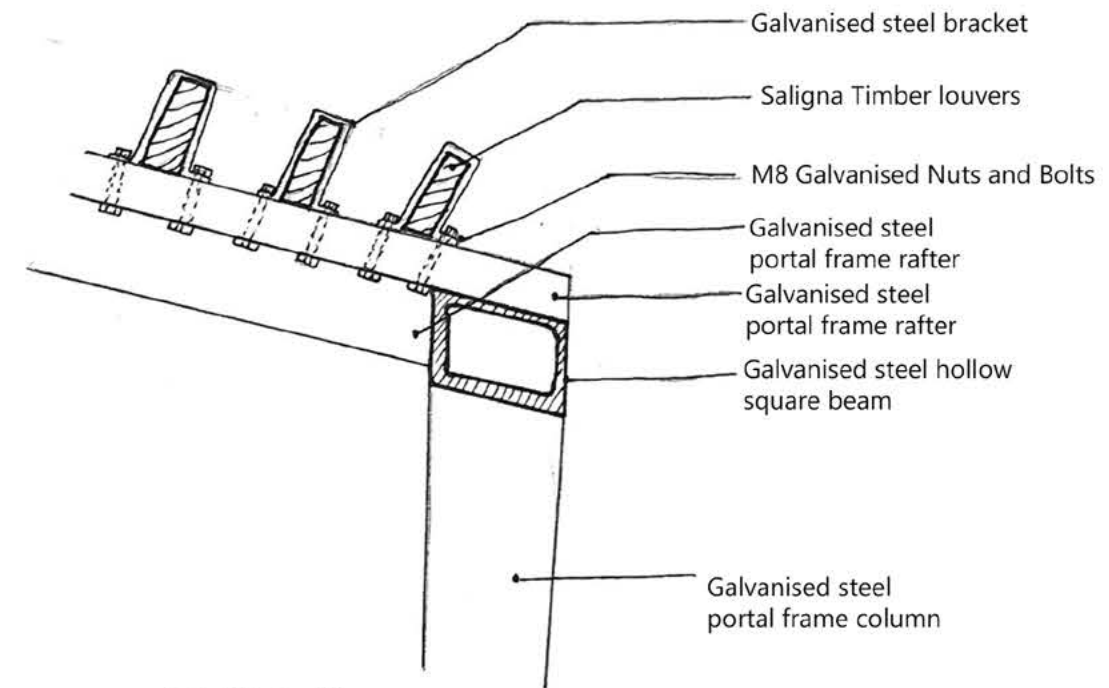
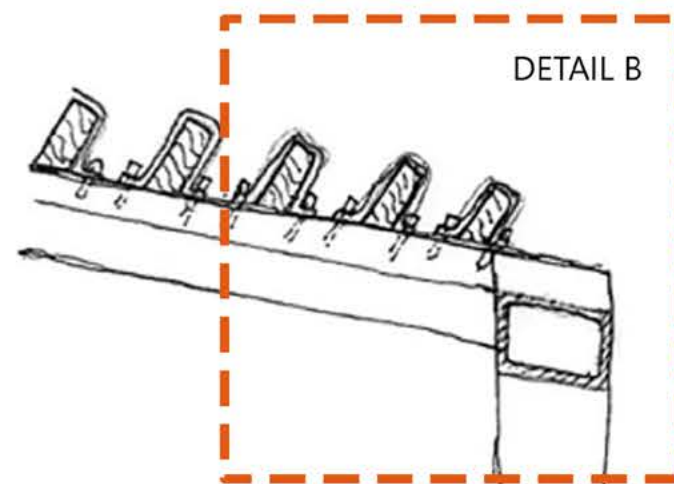
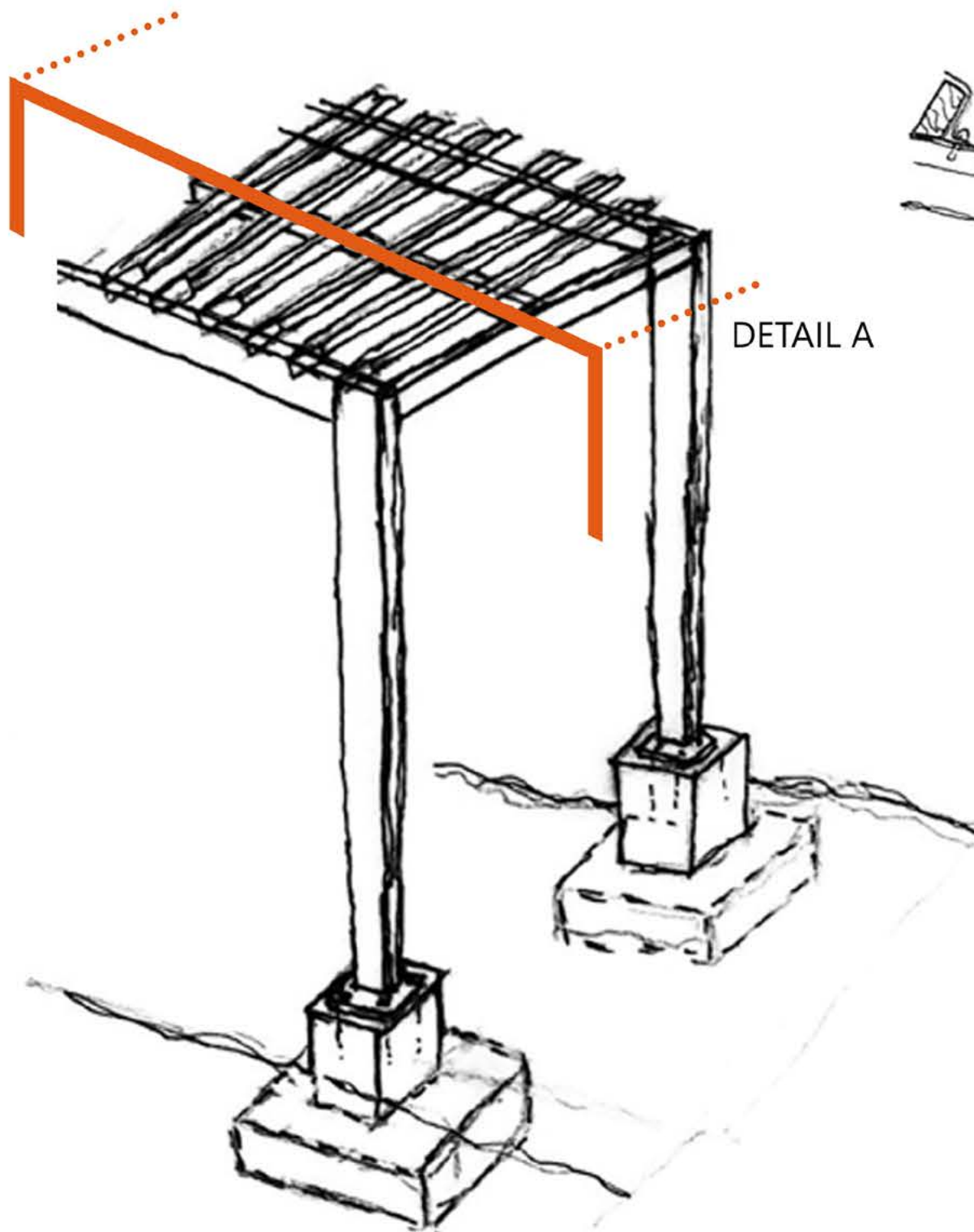


FRAME EXPLORATIONS

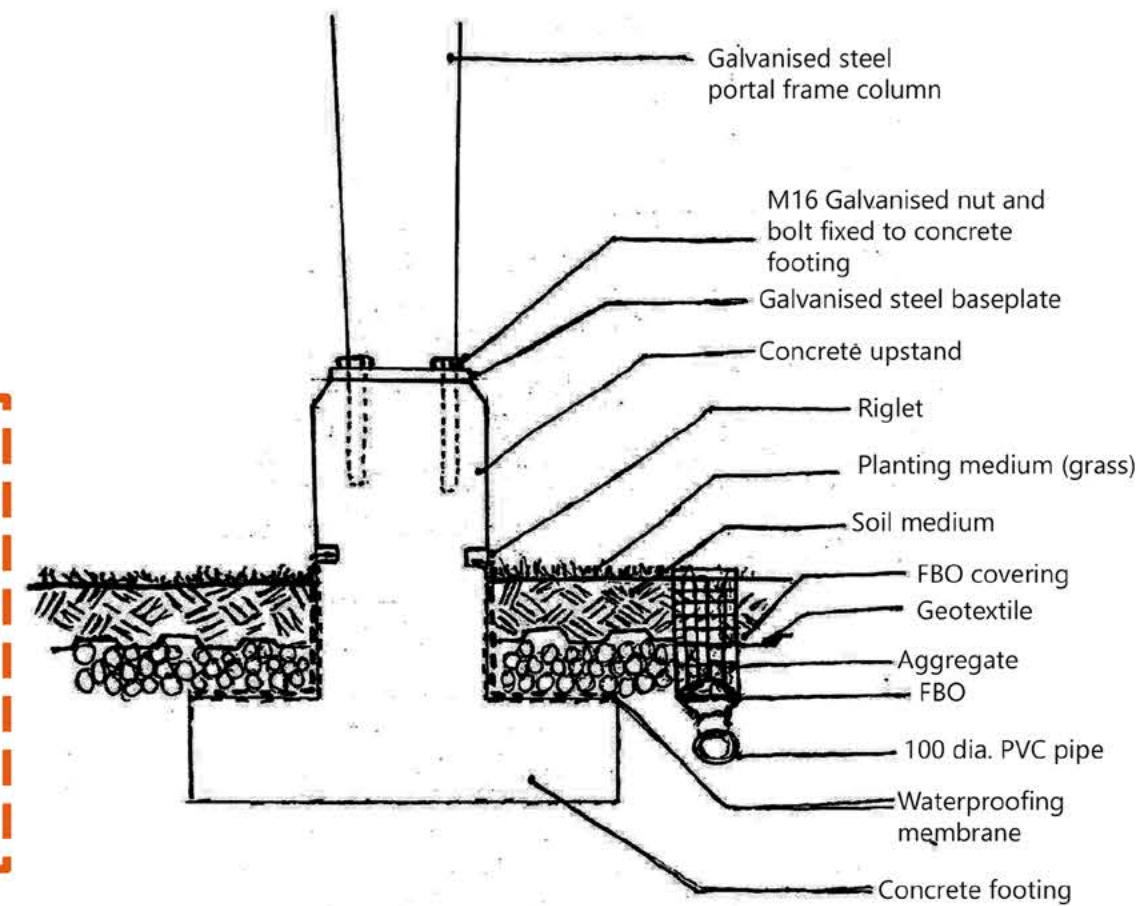
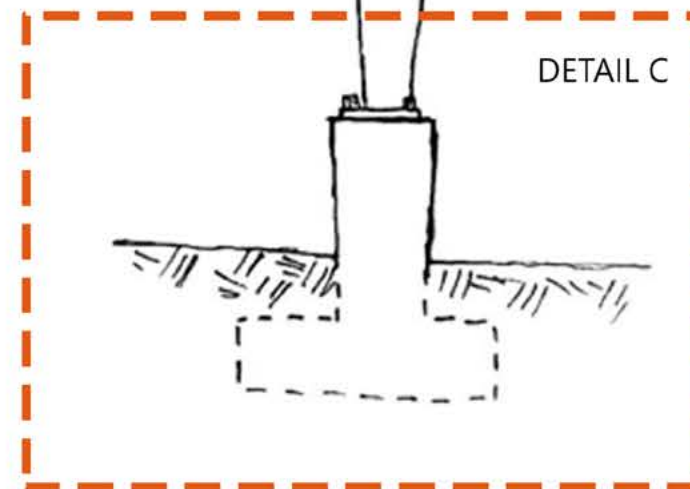


FOOTING EXPLORATION





DETAIL B



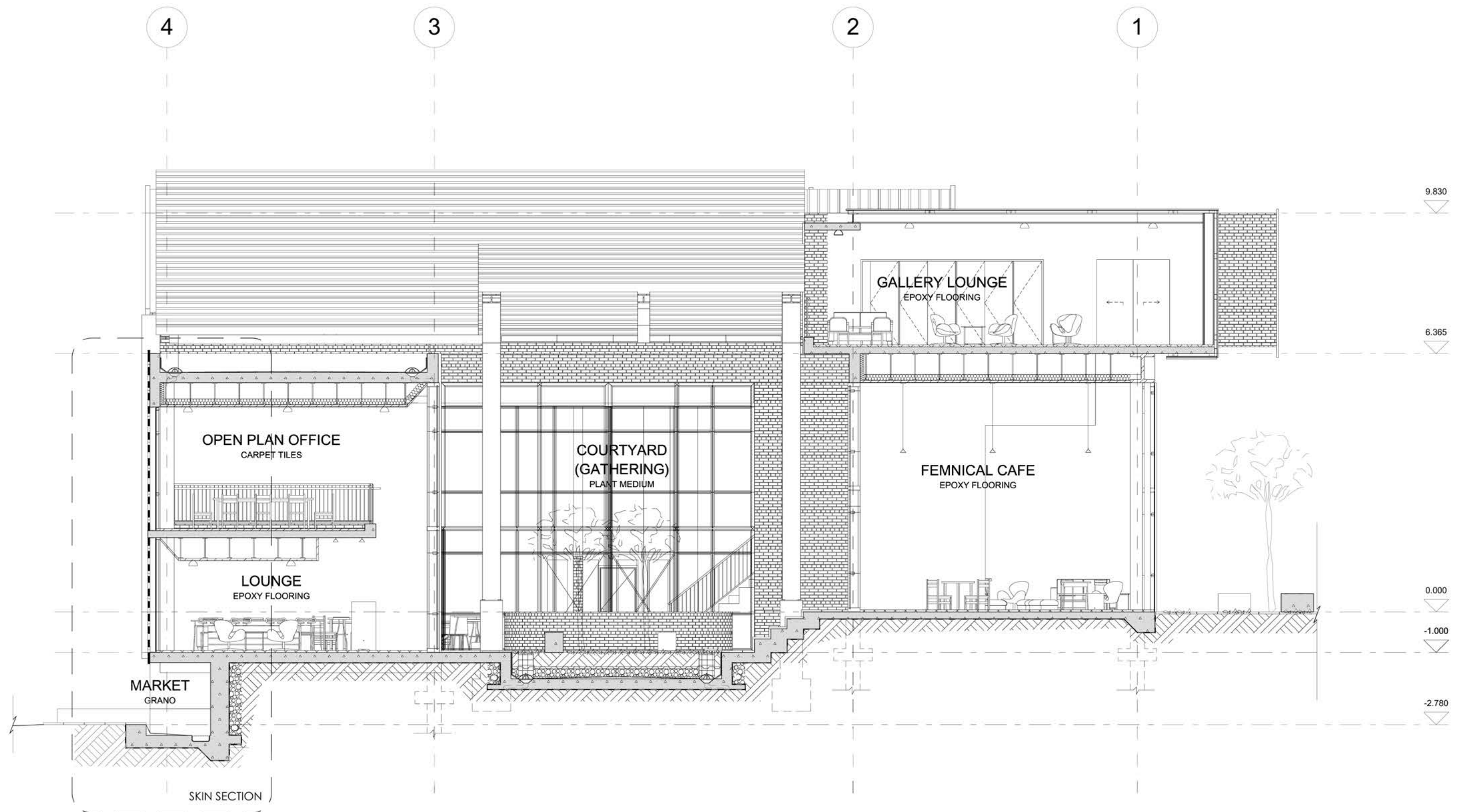
DETAIL C

DETAIL A

FINAL TECHNICAL RESOLUTION

The spaced that will require shading are highlighted alongside >>>>





SECTION B-B
SCALE 1:50

Refer to section line on plan in page 172

4

6.365



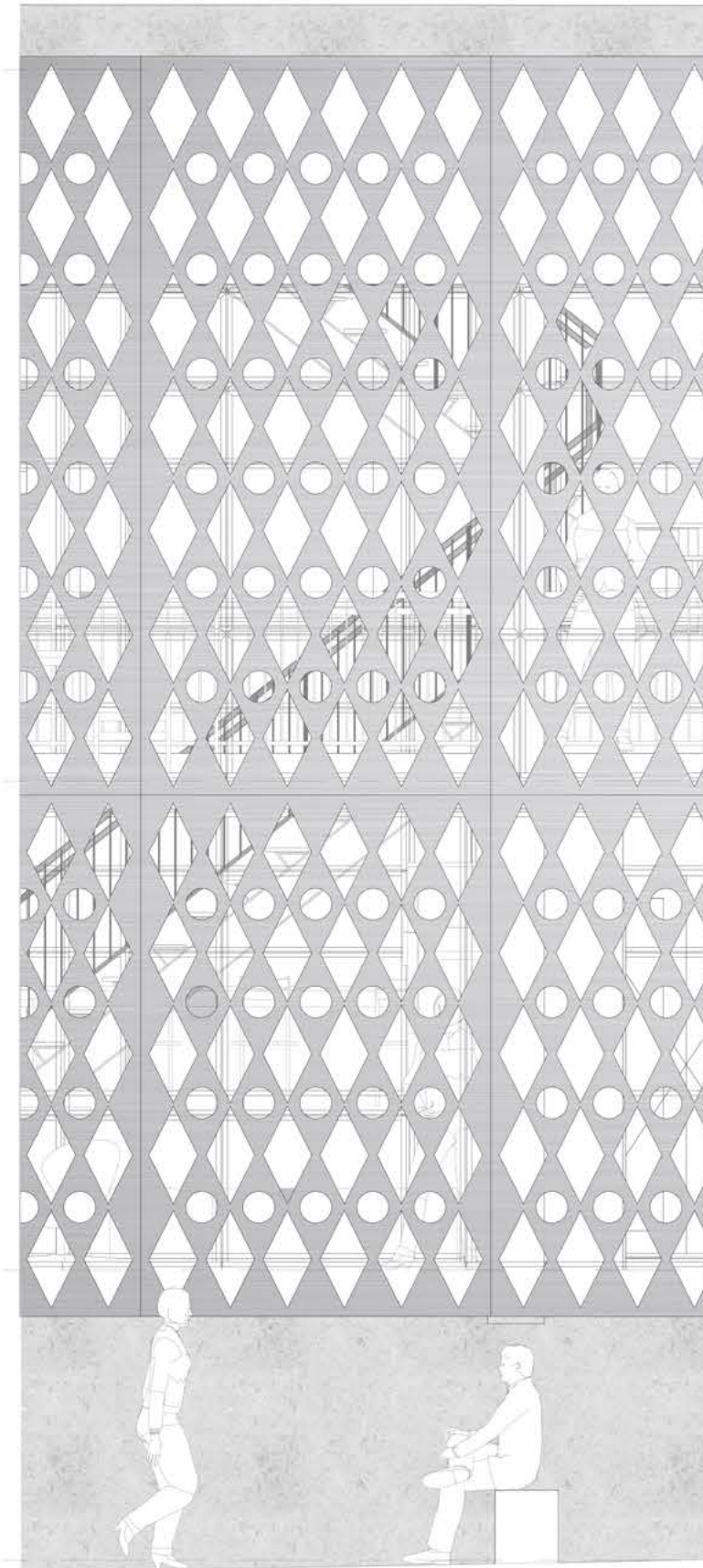
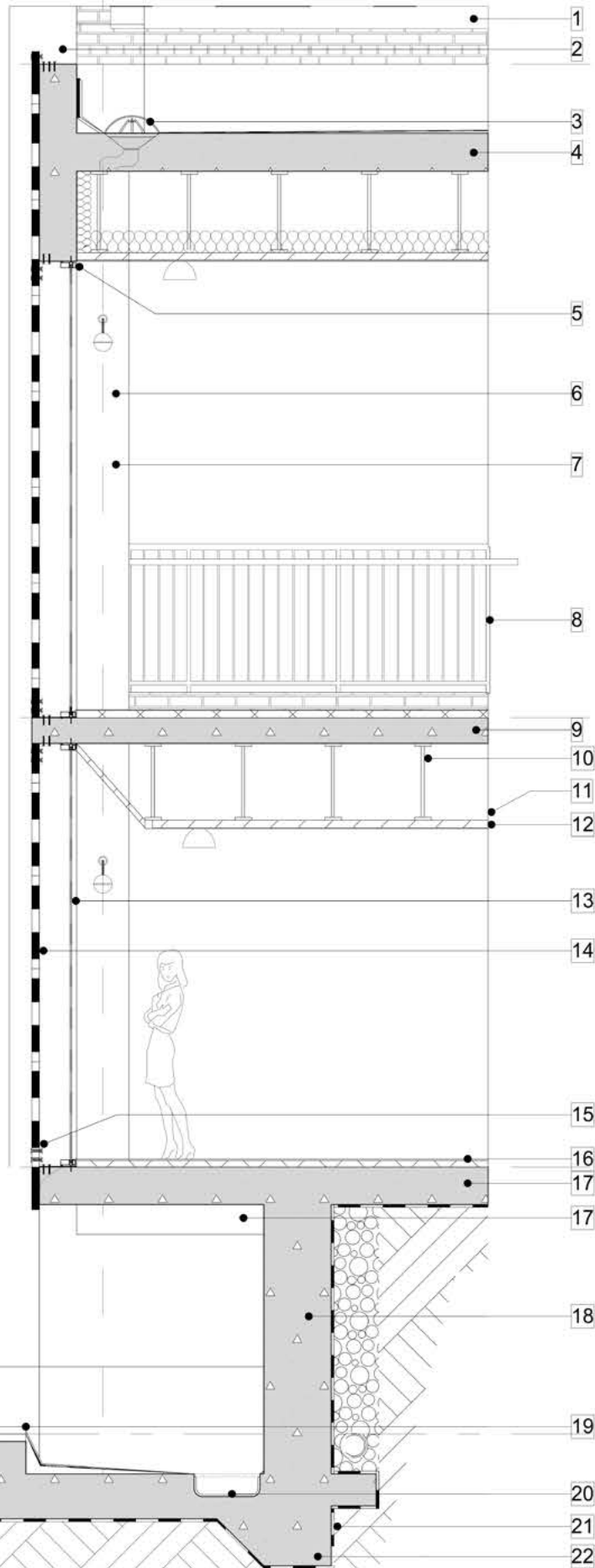
2.000



-1.000

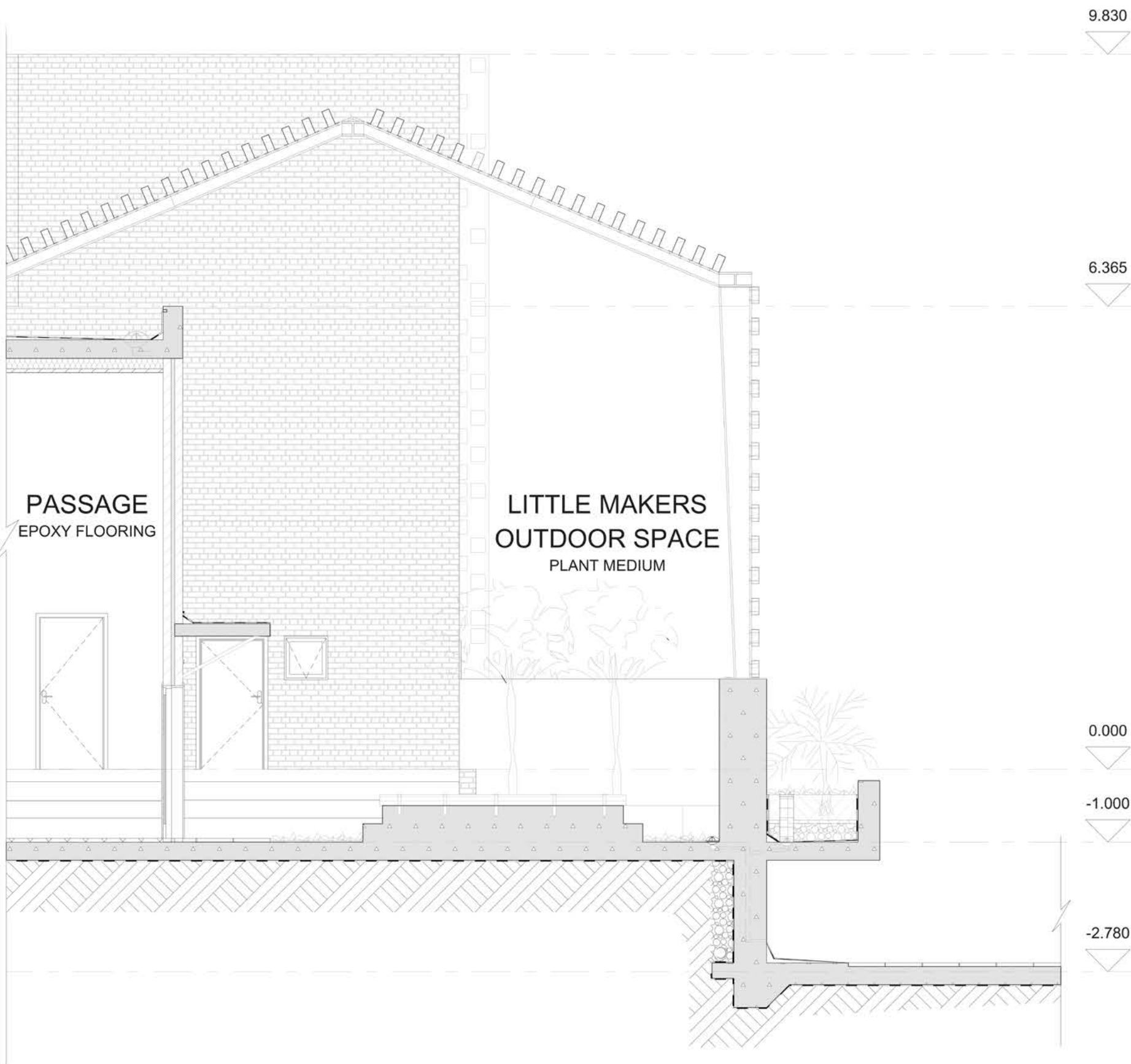


-2.780

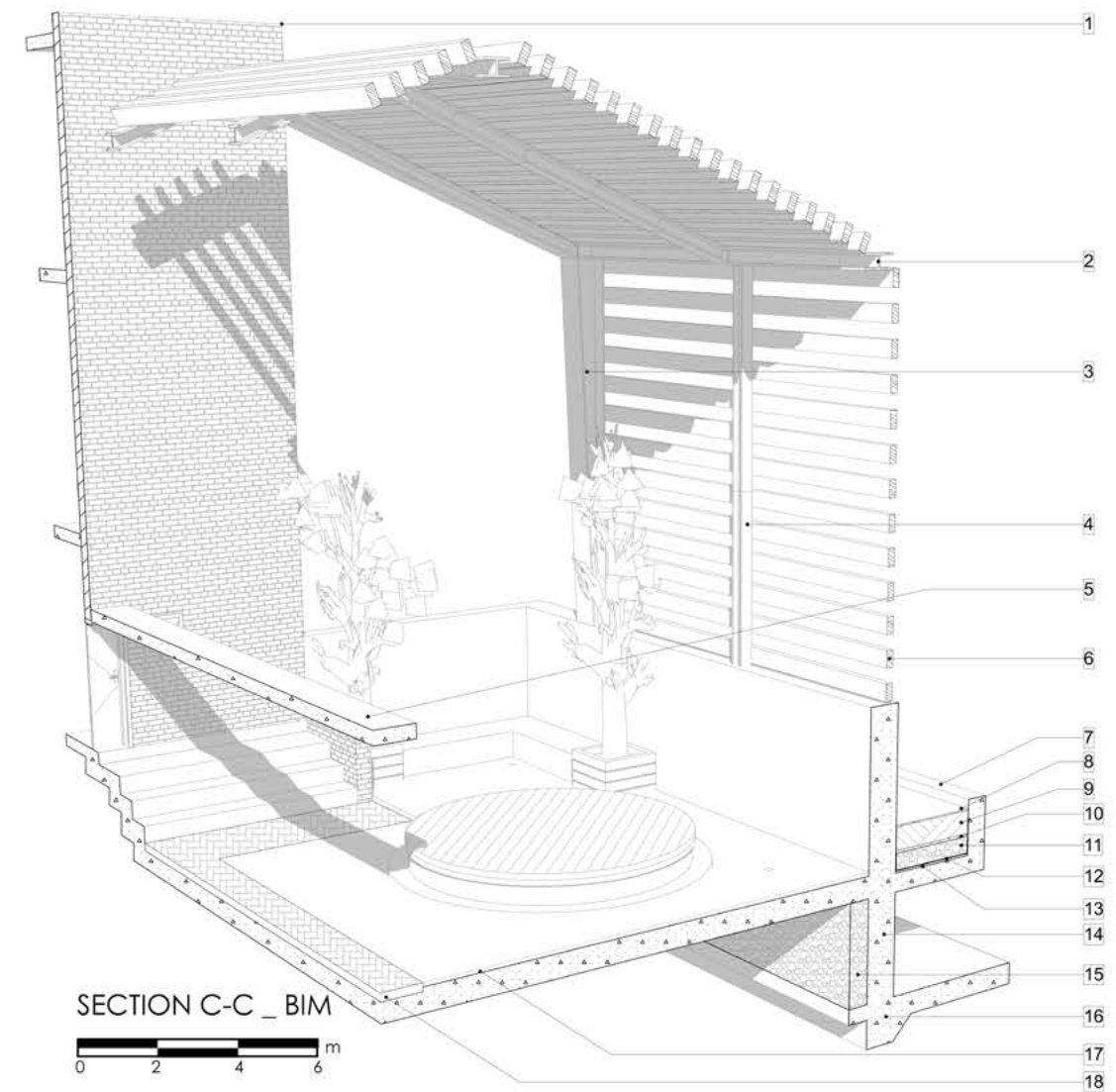


1. 270mm concrete wall
2. 450x450mm concrete column
3. Full-bore outlet
4. 255mm thick concrete slab
5. Extruded aluminium frame
- 6/7. 350x350 reinforced concrete column
8. 1000mm high steel balustrade
9. 170mm thick concrete slab
10. 20mm wide mild steel strap hangers @800 c-c
- 11/12. Suspended ceiling to engineers detail
13. Double glazed and air tight window
14. 100mm thick perforated metal panel
15. Unequal leg angle
16. 10mm thick epoxy flooring on 35mm screed to fall
17. 255mm thick concrete slab
18. 350mm reinforced concrete retaining wall with protective wall to engineers specification
19. Pavement blocks
20. Drainage gate on concrete drainage tank to storm drainage channel
21. waterproofing membrane
22. 450x600mm reinforced concrete thickened slab strip foundation

SKIN SECTION _ ELEVATION
SCALE 1:25

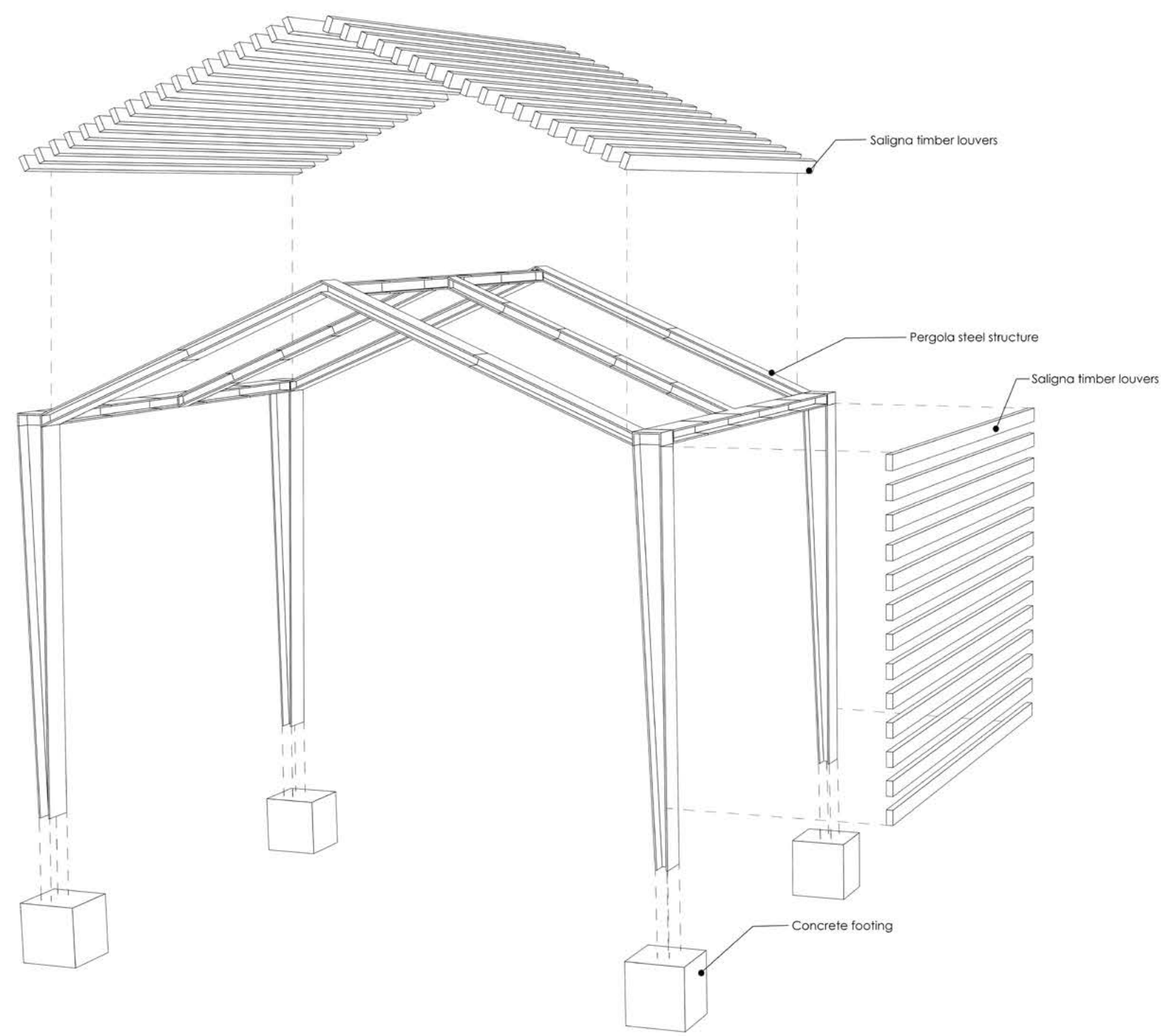


SECTION C-C
SCALE 1:50

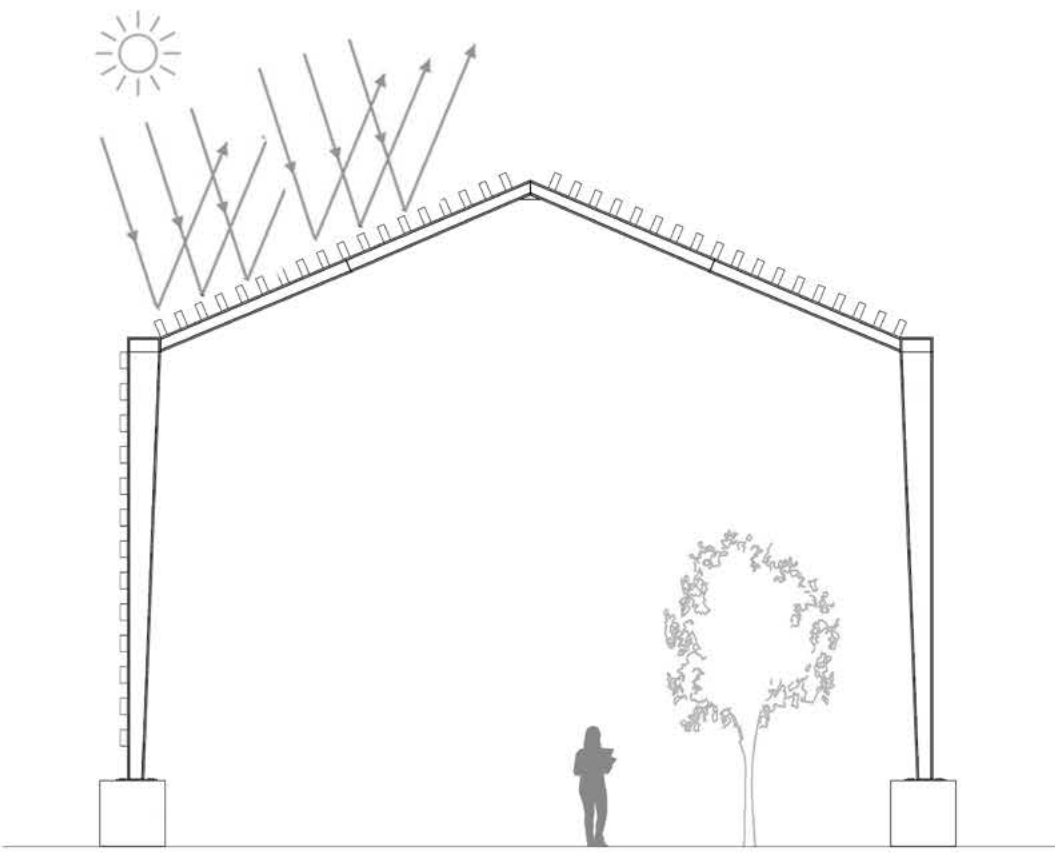


1. 230 Red brick wall
2. H-section (parallel flange)
3. Steel portal frame
4. H-section
5. 170mm concrete slab (cantilever)
6. Saligna timber louvers
7. 500mm high parapet up stand
8. Plant medium
9. 300mm thick soil
10. geotextile
11. aggregate
12. waterproofing membrane
13. 35mm thick screed @1:40 to fall
14. 350mm reinforced concrete retaining wall with protective wall to engineers specification
15. Protective wall
16. 450x600mm reinforced concrete thickened slab strip foundation
17. Plant medium
18. Pavement

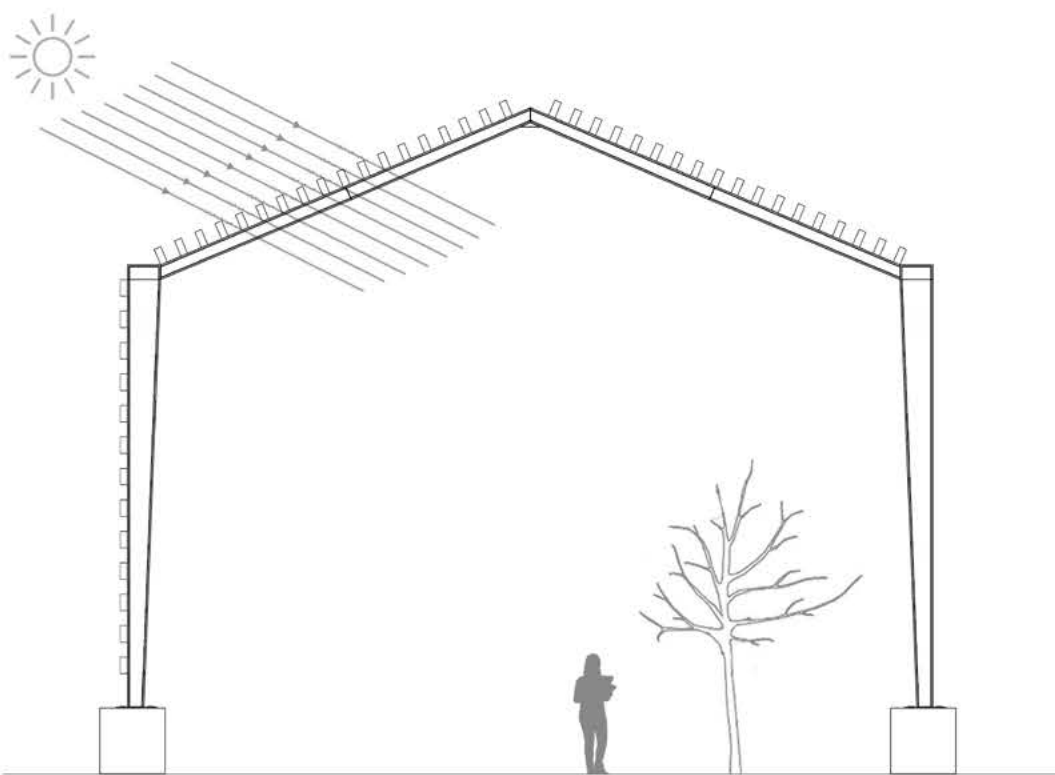
SHADING STRUCTURE



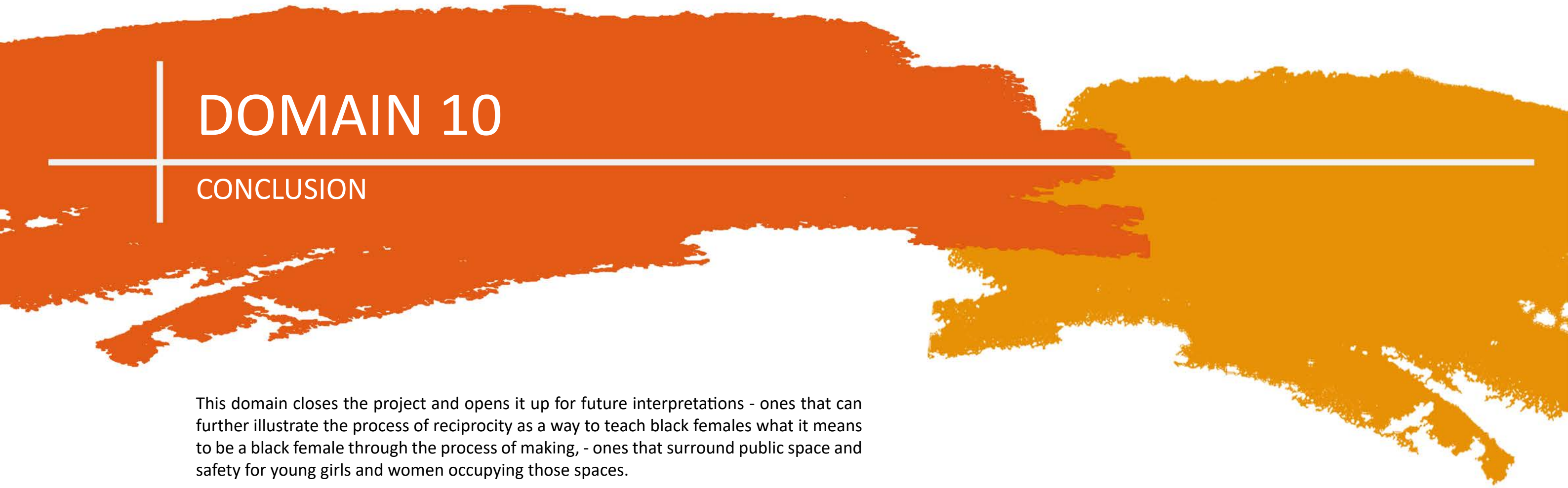
EXPLODED SHADING STRUCTURE



SUMMER



WINTER



DOMAIN 10

CONCLUSION

This domain closes the project and opens it up for future interpretations - ones that can further illustrate the process of reciprocity as a way to teach black females what it means to be a black female through the process of making, - ones that surround public space and safety for young girls and women occupying those spaces.



To reflect on this project according to its shortcomings and achievements is to consider how the design proposal thus far has embodied the projects title, concept and design principles. In terms of the final design proposal, the programme remains simple and process driven, allowing for a space that is interpreted by its user. With regards to the project scale, the question of whether it can be seen as a building erected purely for decoration of its context but suggests to being something else as a result of its appearance or not was considered. My argument lies in my own interpretation of what this building stands for, in part, which is a designate space for user interpretation of function contributing to their livelihood and environment. This project is in many ways the embodiment of the research, site analysis, concept, design principles and my thoughts. Overall, the process that lead me thus far was the knowledge gained from research and interviews that were conducted and are reflected in the work produced. Where I personally believe the shortcomings of the project occurred was through the process taken from the design account into the design resolution domain as spaces are still not interactive enough.

As the design may be taken further, the building (domain 2) needs to encourage more inclusive spaces across the axis of the whole building. With this in mind, and to conclude, the Femnical Institute represents to me a considerable step towards embodied learning for young black girls and women as part of making the self so that they understand what it means to be a black female through the process of making. I look forward to continuing with this project through the understandings developed thus far that will hopefully lead to its final completion.



DOMAIN 11

APPENDICES

- A - BUSINESS PLAN
- B - LIST OF FIGURES
- C - REFERENCES
- D - ETHICS CLEARANCE CERTIFICATE



APPENDIX A

BUSINESS PLAN

This domain of the report was prepared and submitted as a business plan for the 'Simulated Office Practice' course in partial completion of the Masters of Architecture (Professional) degree. The business plan outlines the specifications of the project, its development, economic feasibility and implementation.

01. THE CLIENT

A. CLIENT

The client for the project is the Dignify Her Foundation (DHF), a registered non-profit organisation (NPO) that is fully dedicated to providing quality supports and resources for the educational needs of young black girls and women in disadvantaged communities as well as assisting the collegiate needs for future technicians in South Africa. The DHF therefore has a special interest in the development of this project as it is committed to instilling hope where it is needed, one girl, one student, one community, and one society at a time.

B. ORGANISATIONAL STRUCTURE

The Dignify Her Foundation is indebted to the following organisations and departments for their support in order to help develop projects that provide quality support and resources for educational needs of young black girls. The decision making will be majorly governed by the Dignify Her Foundations and its board of directors who are mandated to fulfill their role as an organisation.

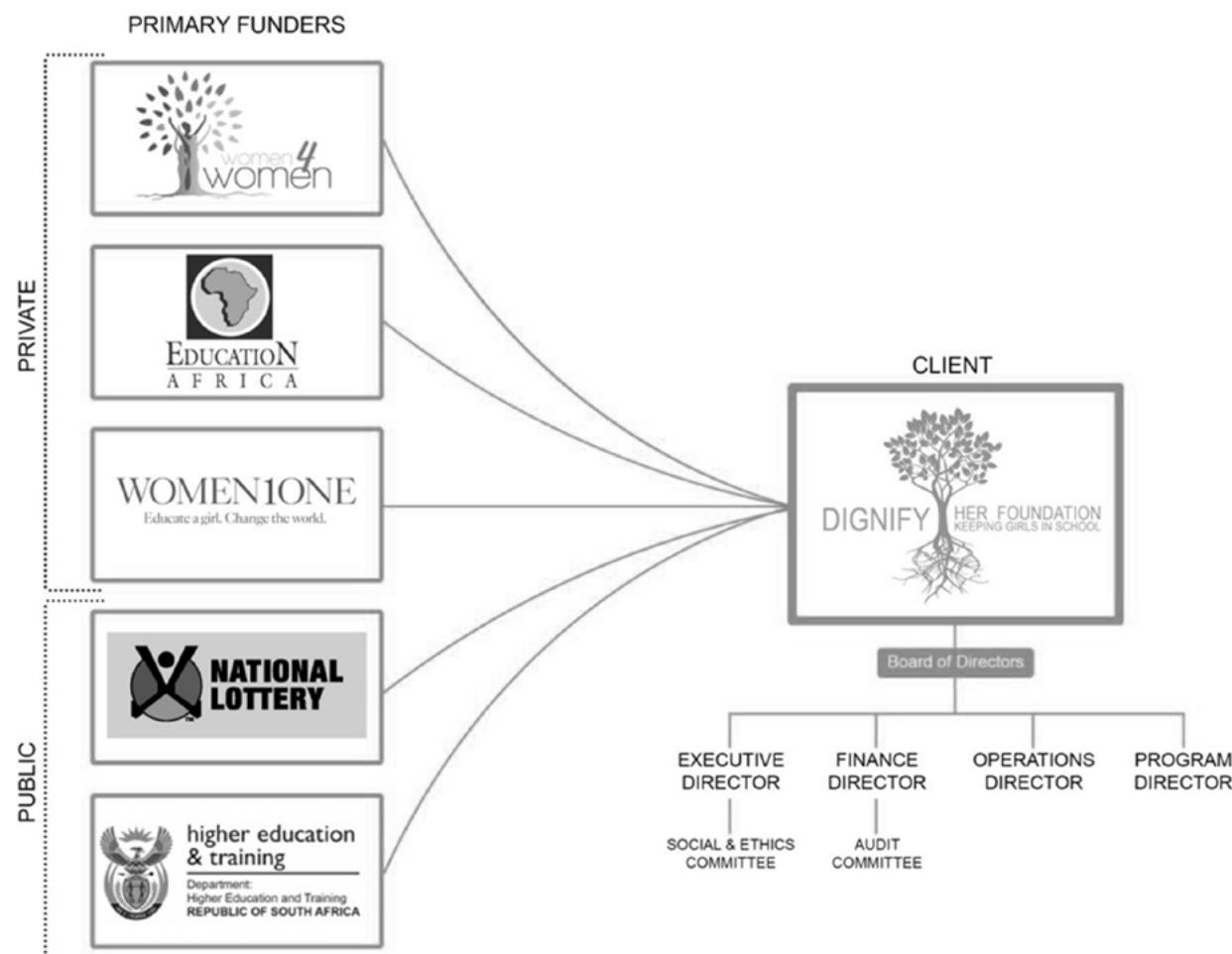


Figure 1: Organisational structure; diagram (Nevhutanda, 2020)

02. THE BRIEF

A. DESCRIPTION

The Dignify Her Foundation is required to execute the production of a technical institute that will be used by young black girls and women as a method to bridge the gender and race gap in the technical industry so that more black females can acquire employable skills.

B. PROJECT SCOPE

The programme requirements for the Femnical Institute should be categorised as follows:

Note: These categories must be organised in such a way that they create a central gathering space that will be used by all users at the same time as a makers space.

ADMINISTRATION	LEARNING	COMMUNITY	RESIDENTIAL
-Reception -Entrance Foyer -Sitting Area -Gallery -Offices -Boardroom -Archive room -Staff Kitchen -Ablutions -Day care centre	-Communal Space -Classrooms -Industrial space -Fab Lab -Equipment storage -Kitchen -Ablutions	-Gym (self-defence classes) -Games area -Conference Hall -Prayer Room -Ablutions	-Reception -Dining Hall -Offices -Sleeping dorm (shower, basin and toilet for every third learner)
Note: Within and around these categories should be made provision for general building services such as: -Grey water storage areas -Refuse and service yard -Parking			

Figure 2: Programme list; table (Nevhutanda, 2020)

03. PROJECT FUNDERS

A. PRIVATE FUNDERS

~WOMEN4WOMEN~

Women4Women is a non-profit organisation (NPO) that focuses on female empowerment, community upliftment and youth education. Their main goal is to improve the lives of the less fortunate and previously disadvantaged girls of South Africa by providing access to life skills and education. Their mission is to ultimately empower the girl child to have a brighter future and to make the right decisions for a better life (Women4Women 2018).

~EDUCATION AFRICA~

Education Africa is a non-profit organisation (NPO) that aligns itself with uplifting poor communities in re-establishing a culture of learning and teaching while making real change by alleviation through education. Their focus is to make a meaningful contribution to the educational growth and development of previously disadvantaged learners in South Africa with the aim to ensure that they are in a position to become global citizens and a competitive, productive element in the local job market (Education Africa [Sa]).

~WOMEN ONE~

Women One is a non-profit organisation that is devoted to creating change in the lives of women and girls globally through access to quality education. Founder and CEO Dayle Haddon says “We envision a world where every girl and women has access to a quality education” (WomenOne [Sa]). The organisation partners with institutions and other community-based organisations that provide girls and women facing extreme poverty, cultural barriers and emergencies access to life-changing education.

B. PUBLIC FUNDERS

~THE SOUTH AFRICAN NATIONAL LOTTERY COMMISSION~

Above and beyond regulating various lotteries that include sports pools, society lotteries, raffles and competitions, the South African National Lottery commission also serves as a grant funder that provides registered Non-Profit Organisations and Non-Profit Companies with funding to establish projects that improve the lives of everyday South Africans.

~DEPARTMENT OF HIGHER EDUCATION AND TRAINING~

The Department of Higher Education and Training is a national government department that aims to have a differentiated and fully inclusive post-school system that allows South Africans to access relevant post-school education and training in order to fulfill the economic and social goals of participation in an inclusive economy and society.

04. THE PROJECT

A. THE SITE

The site is located in the South East of Johannesburg in a Township called Soweto, Orlando East at the corner of Mooki and Maopha Street. The site was selected as it forms part of a major transport interchange making it easy to access. The site was also selected due to the low crime rates reported in the area. This was taken into consideration due to the killing of women in higher educational institutions.



SITE IN CONTEXT

Figure 3: Site in context; source (Google Maps, 2020)

B. SITE INFORMATION

- Proposed Building: Technical Institute for Black Females
- Land Value: R 4 914 000.00
- ERF No: 6576
- ERF Area: 2 Hectares
- Local Authority: City of Johannesburg

The site falls under an approved town planning scheme of the City of Johannesburg and its development rights are as follows:

PRIMARY RIGHTS/LAND USE SCHEME OF THE SITE			
	PERMITTED	PROPOSED	COMPLIES
FAR	Not Applicable	2.4	No
COVERAGE	Not Applicable	70%	No
USE ZONE	Public Open Space	Educational	No
HEIGHT ZONE	Not Applicable	3 Storey	No
BUILDING LINES	Not Applicable	5m	No
DENSITY	Not Applicable	5	No
PARKING REQUIREMENTS	Not Applicable	36	No

Figure 4: Landuse rights; source (City of Johannesburg landuse scheme, 2018)

According to the development rights under the town planning scheme of the City of Johannesburg, the proposed project does not comply with what is currently permitted. Due to the project not complying, the requirements to make the project comply would be to apply for amendment to the town planning scheme (rezoning) from use zone public open space to use zone educational.

C. TECHNOLOGY, SUSTAINABILITY, AND MATERIALITY

The architecture of the proposed building should essentially speak to its context as a fabric as its context is rich in cultural history and must contribute to the essence of the project as being a non-complex technological and structural system.

STRUCTURE

~Non-complex structural and technological system~

The basic components of the structural system for this project will include the following: -Foundation: Stone Masonry Foundation and Raft Foundation -Floor slabs: In-situ ribbon block concrete system -Beams: Cast In-situ Concrete beams -Columns: Cast In-situ Concrete columns -Walls: Clay red brick -Roof: Steel roof truss system

MATERIALS NEEDED FOR PROJECT

-Foundation: Concrete, Stone, Mortar, Cement, Sand and Aggregates. -Floor slabs: Concrete, Steel rods, bricks -Beams: Concrete, Steel rods -Columns: Concrete, Steel rods -Walls: Clay soil, stones (grinded), Sheeting for cladding -Roof: Steel trusses, Metal sheeting

MATERIAL AVAILABILITY

All materials listed above are found inside the main metropolitan area of the site and can be sourced from the local Builders Ware House, Cash Build, and Firmabuild Aggregates to name a few. The mandate of sourcing these materials from the local stores is to reduce the cost implications that come with sourcing materials outside the main metropolitan area.

The availability of clay soil for making the bricks on site will be sourced from the Klipriver wetland that runs through Soweto via the Orlando dam. The Orlando dam is about 2km away from the site and this is where the clay will be sourced to also reduce the cost implication that would come with sourcing this material outside the main metropolitan.

SKILLS REQUIRED

The building is situated within the metropolitan area where the available workforce will be acquired.

The workforce requires the following skills:

- Basic building and engineering knowledge and experience
- Artistic skills for façade cladding

D. FINANCIAL CONSIDERATIONS

Taking into consideration that the end goal of the project is not to capitalise on profits but to make a social contribution, it is vitally important that the following financial considerations are taken into account.

- Cost of Professional Fees
- Cost of Construction
- Cost of Operations (Economic viability)

B. PROJECT MANAGEMENT

PROFESSIONAL TEAM	ROLES and RESPONSIBILITIES	WORK STAGES
DESIGN TEAM		
Architect	-Must ensure that design complies with the South African National Building Regulations -Lead the design and co-ordination of the project. -Responsible for the inception of the design and the design implementation of the project brief	1-6
Quantity Surveyor	-To keep a close eye on the project finances and contractual relationships -Responsible to make sure that everything is financially in order	1-6
Structural Engineer	-Design and calculate and insert all the structural elements that will go into the building such as floor slabs, columns, and steel work of the roofing.....as required and permitted by the National Building Regulations. -Ensure that the brick strength is good enough for building. -Responsible to ensure the structural soundness of the building and its structures	1-5
Electrical Engineer	-Develop and test electrical devices and equipment's that include communication systems, power generators, motors to access the institute and other electrical systems.	3-5
Safety Engineer	-Ensure that the building is a safe learning environment and that the learners are safe from any health hazards. -Responsible to inspect facilities and make sure that it meets the minimum safety requirements.	5
Landscape Architect	-They will plan and design the open spaces on site so that they are aesthetically pleasing and conducive for learners to use comfortably. (This is very specific to the spaces around the gathering/meeting space)	1-5
PLANNING TEAM		
Town Planner	-They will review the existing site and assist in gaining planning permission for development rights for the institution to comply -They will ensure that the development is assessed for the environmental and economic impacts	1
Land Surveyor	-They will make exact measurements and determine property boundaries. -Provide data relevant to the site such as contours -Responsible for land survey reports	1
CONSTRUCTION TEAM		
Main Contractor	-Responsible for the completion of the project under the contract terms and conditions.	5-6
Sub-contractor	-Sub contracted by the main contractor to perform all or part of the obligations of the contractor's contract	5-6
Suppliers	-Supply the main contractor with materials needed on site	5-6

05. IMPLEMENTATION

A. PROFESSIONAL TEAM

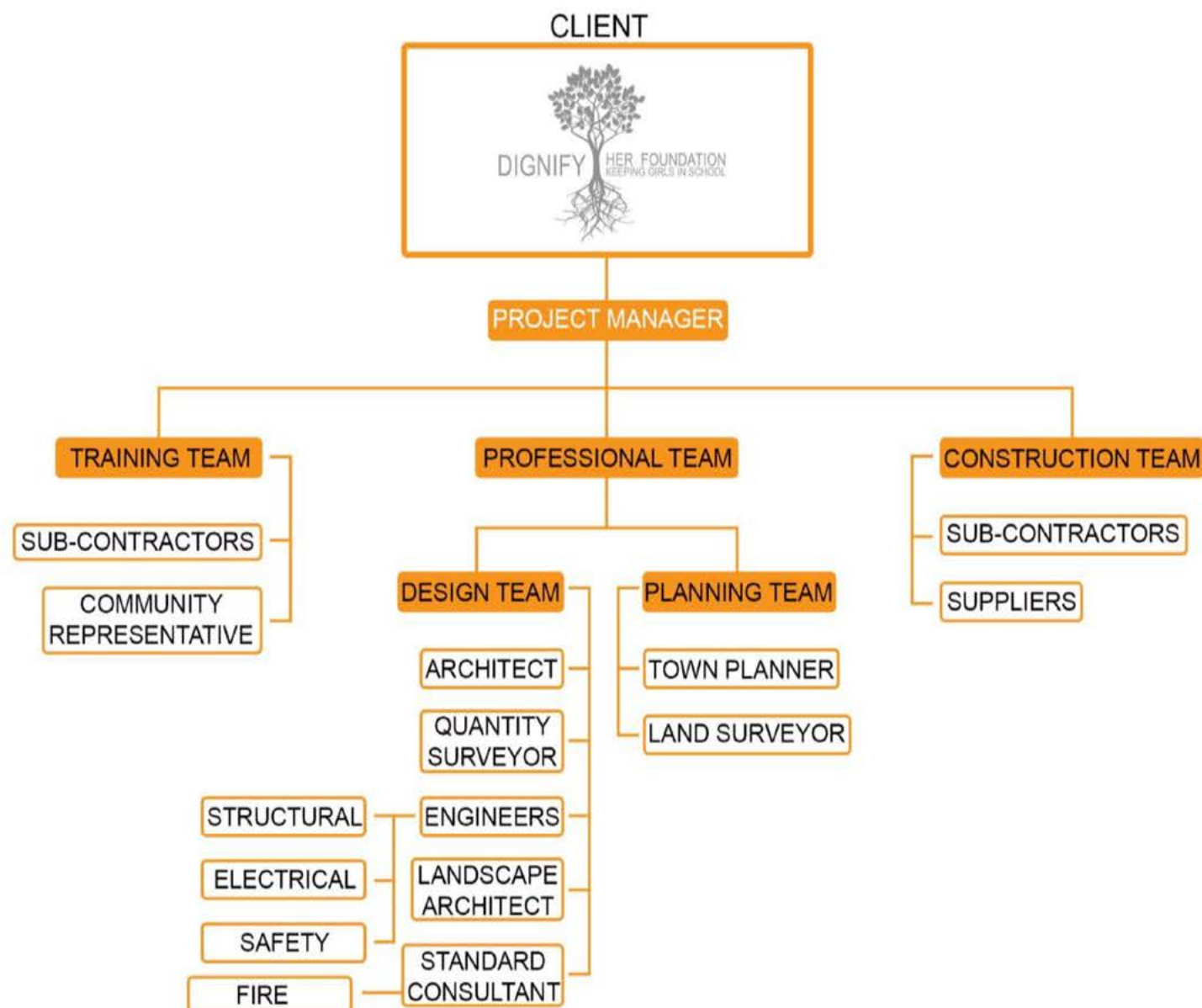


Figure 5: Professional team; diagram (Nevhutanda, 2020)

05. IMPLEMENTATION

C. PROCUREMENT AND CONSTRUCTION METHODOLOGY

BUILDING CONTRACT TYPE

The building contract that will be used for this project is the Traditional – design–led competitive tender as it allows for tenders to be sent to contractors and can then be submitted and evaluated. The advantage of this tender is that it allows for the project cost to be monitored easily, which is crucial for this project.

PROCUREMENT

The project manager will be appointed by the client so that he/she manages the professional team, the main contractor, the training team and the overall operations of the project. The construction team will be procured through a selected (invited) tender and will be selected by the client as the price becomes a determining factor.

As a result to help women learn marketable, income-generating skills and being hired as masons in the area, with the aim to empower its community, create economic opportunity, and rebuild social infrastructure, red clay bricks needed for the construction of the walls will be made on site by the local women of Soweto using a durable manual press method which will be adapted from local building techniques. This aspect of the project will take into consideration that most of the women who will be part of the brick making team will not have this skill and will require training. Training and making of clay bricks will occur before commencement of construction so that bricks are available and ready on time. The training will be done by a skilled workforce of three people who are also situated within the metropolitan area. Due to the limited funds of the project, the women that will be recruited are volunteers that fall under The Dignify Her Foundation volunteering agency within the community. Other volunteers will be recruited by the help of the women’s community representative of Soweto as she would have a better understanding of who might be specifically interested in volunteering for this particular program.

CONSTRUCTION METHODOLOGIES

Although the project is one that is non-complex in technological and structural systems, the construction method that will be implemented should still achieve a successful project with minimum wasted effort and expense. Therefore, the need for experienced personnel is critical for efficiency and vigorous construction to ensure no time and money is wasted. For a guide in when professional teams will be required to be part of the project, see project management table above.

D. FINANCIAL MODELING

Taking into consideration that the project is a social non-profit venture, it is unrealistic to assume that a project of this nature will be funded and sustained by the client. Therefore, the client will require a partnership which is inclusive of both private and public organisation and institutions as stipulated under project funders in implementing the development cost as shown in appendices D (Primary funding). Over and above the primary funders, it is also required that external funding is required to ensure that the project is self-sustaining in the long term (Secondary funding).

ECONOMIC VIABILITY

With reference to Appendices B – Operational cost. The project will need funding from the following entities and organisations to sustain itself:

- GOVERNMENT GRANTS - Department of Higher Education and Training
- NON PROFIT ORGANISATION - Women4Women
- OTHER ORGANISATIONS - The Swiss South African Cooperation Initiative (SSACCI)
- Renting out spaces to partner organizations
- Student registration fee
- Alumni donations
- Hosting special events and fundraising



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Figures in this domain reflect the design process from the concept. For this reason, and because all figures are drawn by the researcher, they are neither numbered in the document (they are to be read along with the text), nor are they listed here.

Drawings in this domain include explanatory diagrams, intuitive sketches and perspectives, axonometric views, plans, and sections.

DOMAIN 08: DESIGN RESOLUTION

Figures in this domain reflect the design resolution from the design process. For this reason, and because all figures are drawn by the researcher, they are neither numbered in the document (they are to be read along with the text), nor are they listed here.

Drawings in this domain include plans, sections, elevations and axonometric views of the initial and final design resolution

DOMAIN 09: TECHNICAL RESOLUTION

Figures in this domain reflect the technical resolution from the design resolution. For this reason, and because all figures are drawn by the researcher, they are neither numbered in the document (they are to be read along with the text), nor are they listed here.

Drawings in this domain include explanatory diagarms, intuitive sketches, photographed models, and final technical drawings

DOMAIN 10: CONCLUSION

This domain has no figures

DOMAIN 11: APPENDICES

(APPENDIX - A)

Figure 1: Organisational structure; diagram (Nevhutanda, 2020)

Figure 2: Program list, table (Nevhutanda, 2020)

Figure 3: Site in context; source (Google Maps, 2020)

Figure 4: Landuse rights; source (City of Johannesburg landuse scheme, 2018)

Figure 5: Professional team; diagram (Nevhutanda, 2020)

Figure 6: Project management; table (Nevhutanda, 2020)



APPENDIX C

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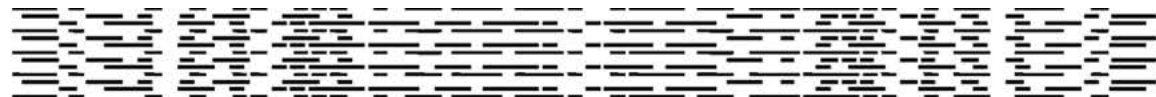
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APPENDIX D

ETHICS CLEARANCE CERTIFICATE



**SCHOOL OF ARCHITECTURE AND PLANNING
HUMAN RESEARCH ETHICS COMMITTEE**

CLEARANCE CERTIFICATE
PROTOCOL NUMBER: SOAP022/03/2020



PROJECT TITLE: The Femnical Institute – Vocational Education in Transition to a New and Evolving Economy

INVESTIGATOR/S: Mukhethwa Nevhutanda (Student No: 863912)

SCHOOL: Architecture and Planning

DEGREE PROGRAMME: Master of Architecture Professional (MArch Prof)

DATE CONSIDERED: 09 May 2020

EXPIRY DATE: 09 May 2021

DECISION OF THE COMMITTEE: Approved

CHAIRPERSON
(Dr Brian Boshoff)

DATE: (Signed electronically under lockdown: 10.5.20).

cc: Supervisor/s: Sechaba Maape

DECLARATION OF INVESTIGATORS

I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to endure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee.

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