

D I S T I L

l i m i n a l a r c h i t e c t u r e

2 0 1 8

M A R C H (P R O F)

M a r n i v a n d e r H o v e n

| 1 2 1 3 6 7 2 8 |

“ l i m i n a l ”

:

occupying a position at, or on both sides

of, a boundary or threshold.

*Adaptive reuse of an abandoned water reservoir at
the limen between
the URBAN and NATURAL environments*

THE SITE
*Magalies Mountain, Mamelodi West,
Gauteng, South Africa.*
25°41'54.51"S
28°20'35.04"E

THE PROGRAM
Distilling of Place and its People

KEYWORDS
*Distillation;
Edge Condition;
Memory;
Threshold;
Liminality
Adaptive Re-use*

STUDY LEADER
Dr. Carin Combrinck

YEAR COORDINATOR
Prof. Arthur Barker

RESEARCH FIELDS
*Human Settlements and Urbanism
Heritage and Cultural Landscapes
Environmental Potential*



. . .

P R E F A C E

OO

...

DECLARATION

In accordance with regulation 4(e) of the General Regulations [G.57] for Dissertations and theses, I Declare that this Dissertation which I hereby submit for the Degree Master of Architecture [professional] at the University of Pretoria is my own work and has not previously been by me for a degree at this or any other tertiary institution.

I further state that no part of my Dissertation has already been, or is currently being, submitted for any such degree, diploma or other qualification.

I further declare that this dissertation is substantially my own work. Where reference is made to the works of others, the extent to which the work has been used is indicated and fully acknowledged in the text and list of references.

Marni van der Hoven

...

ACKNOWLEDGMENTS

Thank you to...

My Abba Vader. my rock and refuge, for giving me passion and strength.

Psalm 18:2.

My parents, Henry and Erna for believing in me and your encouragement through the difficult times.

The Godsent comrades. Michelle and Rudolph Erasmus, Lucille Witthuhn and Buckley Thompson. Words can not describe the depth of my gratefulness for each of you. I would not have done it without all the help your supplied me with.

Ouma Hettie and Oupa Mickey for carrying me in prayer.

Cindi Janse van Vuuren, for the light you carry.

Doctor Carin Combrick for helping me in helping me craft my thought for the dissertation.

My editor, Lizann Keuler.

...

ABSTRAK

Tussen die rustige natuurlike landskap van die Magaliesberg en die bruisende chaos van Mamelodi Wes is 'n onderskatte drumpel wat hierdie twee kontrasterende omgewings verbind. Die landskaperfenis vertel 'n verhaal van herstel en opheffing. Hierdie eens gebroke landskap is nou 'n omgewingstoeflug. Die drumpel word gedefinieer deur daardie ontasbare kwaliteit – gemeenskaplike energie – van die tussenruimte. Die behoefte om ruimte in hierdie tussenin-plek te skep is geïdentifiseer om die energie van hierdie omgewing vas te vang en die drumpel te definieer. Die drumpel is die gekose plek vir hierdie verhandeling.

Hierdie projek fokus dus op die definieer- en skep van plek in die tussenruimte as verbindinding van die stedelike omgewing met die natuurlike omgewing.

Die projek maak gebruik van 'n verlate waterreservoir geleë aan die voet van die Magaliesberg en aangrensend aan die drumpel. Die ingryping beoog die hergebruik van hierdie infrastruktuur om 'n essensiële oliedestillasie fasiliteit te huisves. Hierdie fasiliteit vertel 'n verhaal wat prakties sowel as poëties is. Die drumpel grens aan die Mothong landskap waar medisinale plante en kruie gekweek word. In reaksie op die Mothong bewarings- en omgewingsinisiatief is die geleentheid vir sosio-ekonomiese ontwikkeling geïdentifiseer, tewegebring deur die skepping van 'n distillasiefasiliteit wat openbare interaksie met die prosesse moontlik maak.

Toepaslike teoretiese benaderings word gebruik as 'n hulpmiddel om die terrein, program en gebruikers van die gebou te verstaan deur die werk van Arnold van Gennep (1960) en Victor Witter Turner (1979). Die konteks se tekortkominge en geleenthede dien as inspirasie vir die ontwerp. Die doel van die projek is om huidige omgewingsinisiatiewe uit te brei en sosio-ekonomiese geleenthede deur die voorgestelde program aan te wakker. Dit sal 'n meer bestendige toekoms vir die stedelike- en natuurlike omgewing moontlik maak.

...

ABSTRACT

Between the serene natural landscape of the Magaliesberg and the bustling chaos of the Mamelodi West Township lies an understated threshold that links these two contrasting environments. The heritage of the landscape tells of recovery and appreciation, as this once-broken landscape is now regarded as a small environmental haven. This threshold is defined by the intangible quality of the in-between space – that of communal energy. Therefore, the need to create space in this non-place is identified as this can capture its energy and define the threshold, which is the chosen site for this study.

The intention is for the architectural intervention to become a transitional device; allowing the user passage from the urban- to the natural landscape. The project focuses on defining and creating 'place' in the 'in-between' space of the threshold that connects the urban and natural environment.

The project utilises an abandoned water reservoir, which is within the threshold located at the foot of the Magaliesberg. The intervention envisions the re-purpose of this infrastructure to house an essential oils distillation facility. The threshold links to a landscape called Mothong, where medicinal plants and herbs are cultivated. In response to this existing conservation and environmental initiatives, the opportunity for socio-economic development was identified through the creation of a distillation facility that allows for public interaction with the processes.

The theoretical grounding for this project considers the concept of liminality of rites of passage as discussed through the work of Arnold van Gennep (1960) and Victor Witter Turner (1979). The Oxford English Dictionary defines liminality as being *“of or pertaining to the threshold or initial stage of a process”* (Oxford Dictionaries English, 2018). Tracing its etymology, liminality has the Latin origin *“limen”* – translating as *“threshold”* – which is an inherently architectural element.

The concept of liminality is introduced by an anthropology approach, which describes its three phases as separation, margin and aggregation. This guided the architectural interpretation of theory in this project.

CHAPTER 01 INTRODUCTION

- 1.1 PROPOSED CONTEXT
- 1.2 NORMATIVE POSITION
- 1.3 RESEARCH PROBLEM
 - 1.3.1 GENERAL ISSUE
 - 1.3.2 URBAN ISSUE
 - 1.3.3 ARCHITECTURAL ISSUE
- 1.4 PROJECT INTENTIONS
- 1.5 RESEACH QUESTION & SUB-QUESTION
- 1.6 RESEACH METHODOLOGY
- 1.7 LIMITATIONS, DELIMITATIONS, ASSUMPTIONS

CHAPTER 02 THEORY

- 2.1 LIMINALITY THEORY
 - 2.1.1 INTRODUCTION
 - 2.1.2 THE LIMEN ADOPTED INTO ANTHROPOLOGY
- 2.2 THREE PHASES
 - 2.2.1 SEPARATION
 - 2.2.2 MARGIN
 - 2.2.3 INTEGRATION
 - 2.2.4 CONCLUSION
- 2.3 ADAPTIVE RE-USE THEORY

CHAPTER 03 CONTEXT

- 3.1 INTRODUCTION
- 3.2 URBAN ANALYSIS: MAMELODI WEST
 - 3.2.1 MACRO ANALYSIS: URBAN CONDITION
 - 3.2.2 MESO ANALYSIS
 - 3.2.3. MICRO ANALYSIS : SITE FEATURES
- 3.3 THRESHOLD ANALYSIS: FOOT OF MOUNTAIN
 - 3.3.1 SITE SELECTION
 - 3.3.2 SITE FEATURES
 - 3.3.3 DAMAGE TO THE SITE
 - 3.3.4 USER OF THE SITE
 - 3.3.5 SITE HYDROLOGY
 - 3.3.6 EXISTING INFRASTRUCTURE
- 3.4 NATURE ANALYSIS: MAGALIESBERG
 - 3.4.1 MACRO ANALYSIS
 - 3.4.1.A ENVIRONMENTAL FEATURES
 - 3.4.2 MESO MAPPING
- 3.5 MICRO MAPPING
 - 3.5.1 FAUNA AND FLORA
- 3.6 URBAN VISION
 - 3.6.1 PRECEDENT

CHAPTER 04 PROGRAM

- 4.1 INTRODUCTION
- 4.2 PROJECT INFORMANTS
 - 4.2.1 CONTEXT AS INFORMANT:
 - MOTHONG AFRICAN HERITAGE SITE
 - 4.2.1.1 INDIGENOUS PLANTS
 - 4.2.1.2 FRESH PRODUCE CULTIVATION
 - 4.2.2 THEORY AS INFORMANT:
 - LIMINALITY IN RITES OF PASSAGE
- 4.3 PROGRAMMATIC LIST
- 4.4 CLIENTS

CHAPTER 05 PRECEDENTS

- 5.1 INTRODUCTION
- 5.2 THE THRESHOLD OF
 - 5.2.1 MOVEMENT AND PAUSE
 - 5.2.2 SYNOPSIS
- 5.3 THE THRESHOLD OF
 - 5.3.1 MOVEMENT
 - 5.3.2 SYNOPSIS
- 5.4 THE THRESHOLD BETWEEN
 - 5.4.1 ARCHITECTURE AND LANDSCAPE
- 5.5 THE THRESHOLD BETWEEN
 - 5.5.1 ARCHITECTURE AND LANDSCAPE
 - 5.5.2 SYNOPSIS (OF 5.4 AND 5.5)

CHAPTER 06 DESIGN DEVELOPMENT

- 6.1 INTRODUCTION
- 6.2 CONCEPT AND INTENTIONS
- 6.3 ARCHITECTURAL INTENTION
- 6.4 CONNECTION- ITERATION₁
- 6.5 THRESHOLD- ITERATION₂
- 6.6 JUNE EXAM - ITERATION₃
- 6.7 TECHNICAL - SEPTEMBER
 - 2018 CRIT- ITERATION₄
- 6.8 REFLECTION

CHAPTER 07 TECHNICAL

- 7.1 INTRODUCTION
- 7.2 TECTONIC CONCEPT
- 7.3 STRUCTURAL INTENTIONS
- 7.4 MATERIAL PALETTE
- 7.5 WATER
 - 7.7 STEAM DISTILLATION
- 7.8 ENERGY
 - 7.9 ENVIRONMENTAL PERFORMANCE
- SBAT RATING
- 7.10 CONCLUSION

CHAPTER 08 CONCLUSION

- 8.1 FINAL DESIGN PRESENTATION
- 8.2 LIST OF FIGURES
- 8.3 REFERENCES
- 8.4 ARTICLE

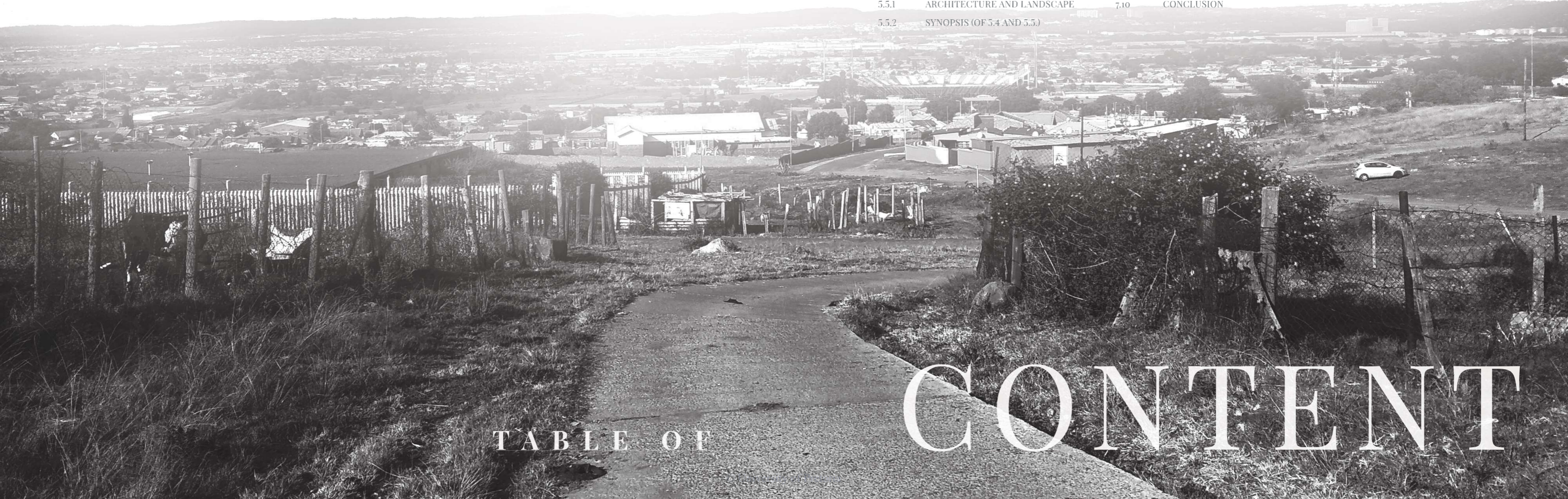


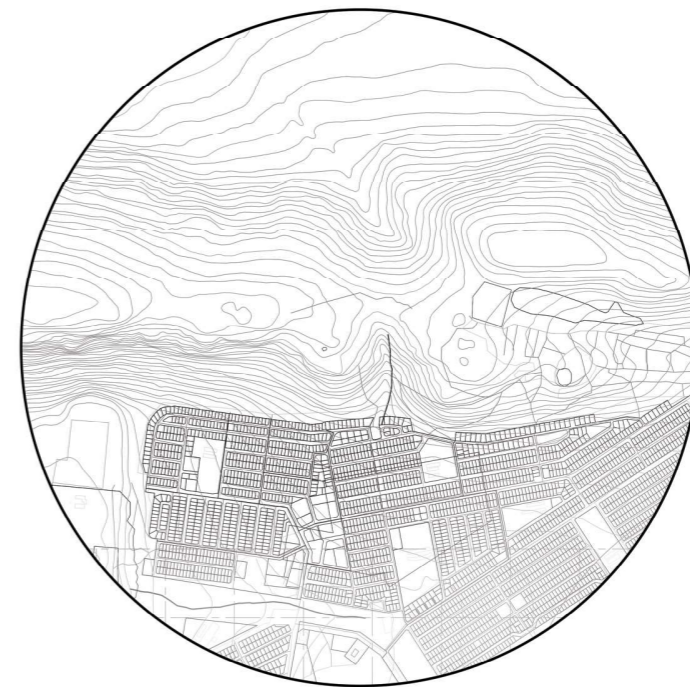
TABLE OF CONTENT

INTRODUCTION

- 1.1 The Proposed Context
- 1.2 Normative Position
- 1.3 Research Problem
 - 1.3.1 General Issue
 - 1.3.2 General Intentions
 - 1.3.3 Urban Issue
 - 1.3.4 Project Intentions
- 1.4 The Research Question
- 1.5 Hypothesis
- 1.6 Research Methodology
- 1.6 Delimitations & Assumptions & Limitations



MAMELODI



Area: 45.19 km²
Population: 334577 (7403.17 per km²)
Elevation: 1400m
Ecozone:
Climate: Cwa
Time Zone: (UTC+2)
Postal Code: 0122 (+)

Established: 1945
Demonym: Black African 98.9%
Language:
• Northern Sotho 42.3%
• Zulu 12.2%
• Tsonga 10.7%
• S. Ndebele 8.8%
• Other 26.0%

...

The following chapter will discuss the proposed context, followed by the research problem, research question project intention, research methodology and finally the delimitations of the project.

1.1 PROPOSED CONTEXT

...

Mamelodi West and the Magalies Mountain Range as study area

Nestled between the Magaliesberg and the industrialised area of Silverton lies the township of Mamelodi. This precinct is located on the periphery of the City of Tshwane, with its northern edge defined by the Magaliesberg mountain range.

Mamelodi is a residential suburb of approximately 45.19km² in size. Its origin can be traced to about 1860, when a group of indigenous people, seeking employment in the then newly established city of Pretoria, settled on the farm Vlakfontein. In 1890, the first stop on the railway line from Pretoria to Lourenço Marques (now Maputo) was at Eerste Fabrieken, an industrial area just outside Pretoria. This created economic impetus in the region and the settlement expanded to become a prominent black residential area in terms of the Native Lands Act 27 of 1913 (Nice & Walker et al 1991). Mamelodi was established on 30 October 1945 when the Pretoria City Council (PCC) bought parts 2 and 3 of the Vlakfontein 329 JR farm for

the purpose of laying out black urban areas (Walter & Van Der Waal 1991:3-4). Since 1987 development in Mamelodi has been to the east; starting with Mamelodi Extension 3 and through to the Mahube Valley. Development continues in Mamelodi - with the largest number of townships being concentrated in the Mahube Valley (Maree 2012:3).

Mamelodi hosts a large number of informal settlements, most of which have limited infrastructure. Although the township is expanding to the east-west lying escarpment of the Magaliesberg (Maree 2012:2), expansion area is limited. In the western section development is restricted by the cemetery that borders Eersterust. The northern part, which hosts the rapidly developing semi-urban areas of Derdepoort, Bavianspoort and Roodeplaat Dam is restricted by the Magaliesberg itself.

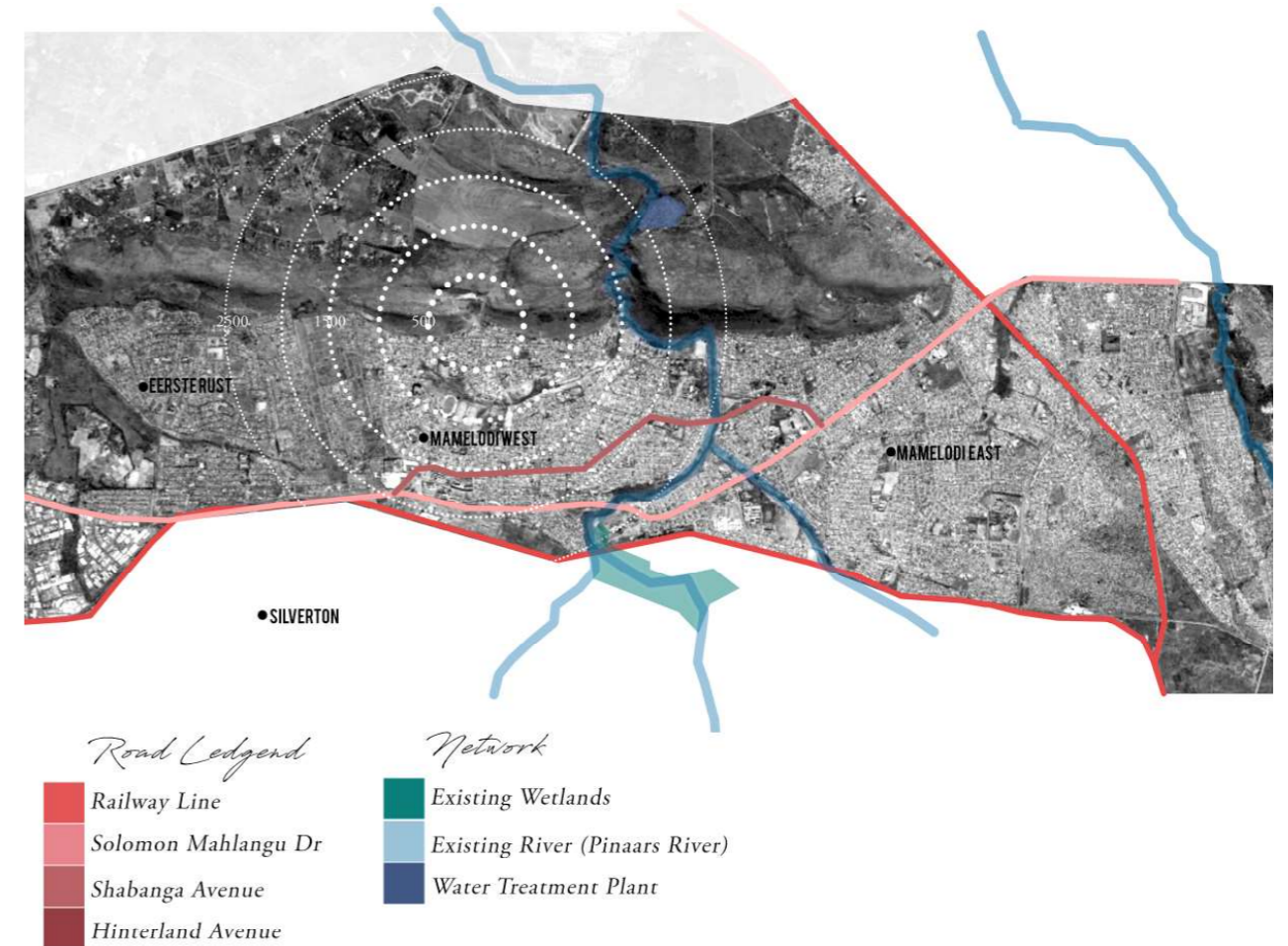


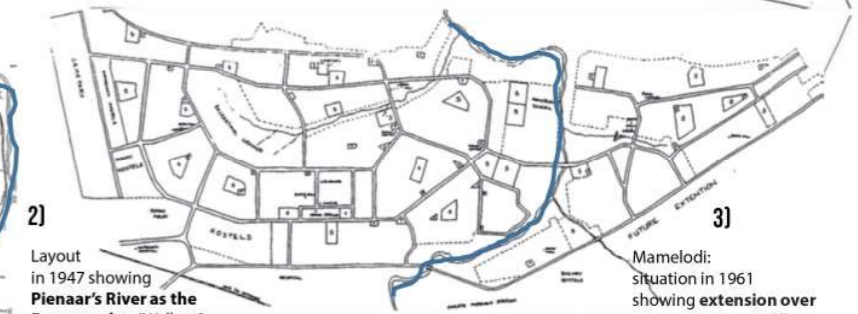
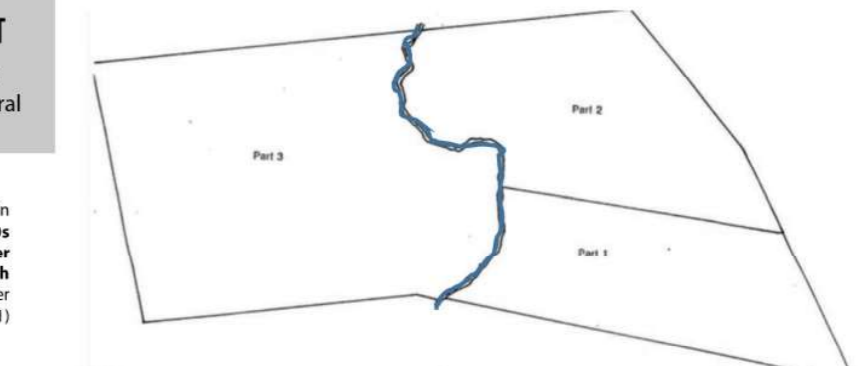
Figure 1.1: Mamelodi as study area (Author: 2018)

Figure 1.2: Historical Development (Walter & Van Der Waal, 1991)

HISTORY_NATURAL CONTEXT

The idea that place entails unending descriptions of 'processes that shape existential and aesthetic cultural experience' (Rewers 2004: 161).

- 1) Subdivision of the farm Vlakfontein 329 JR during the 1870s showing Pienaar's River cutting North-South (Walker & Van Der Waal, 1991)



1.2. NORMATIVE POSITION

...

design philosophy



Figure 1.3: Capturing ideas of the author's normative position (Author: 2018).

The author's design philosophy is defined by two core principles: drawing from the context and including cultures.

Drawing from the context

Although history and physical appearance form a relevant part of the context in which architecture is situated, context is more than this. Context is how the new will live with the old.

Context draws on the senses: the sights, smells and memories that define a place and adds to its uniqueness. It grows from communities and people, and architecture should respond to it.

Including cultures |

Architecture should aim to reflect and capture the shared strengths of a community, thus reinforcing pride in individuals and moving curiosity in visitors.

The inclusion of collective beliefs, the traditions and aspirations of a society, reinforces the respect of the society and drives design decisions.

In essence, the design philosophy is characterized by simplicity and purity in design; where architecture exists in harmony with its environment and has a deeper meaning than only the aesthetic. Architecture should always strive to capture not only the natural realm but also the cultural- and human environment to allow for a deep phenomenological understanding of place. Architecture, in the author's opinion, should allow the existing, utilise the existing, and serve to improve the existing – which can result in the making of meaningful places.

1.3. RESEARCH PROBLEM

...

[1.3.1]

General Issue

Current land use in the areas that border the Magaliesberg region place direct pressure on natural zones and biodiversity in the region. This is partly due to the need for housing and to poor land-use management. The natural landscape of the Magaliesberg (forming the northern periphery of Mamelodi) has seen early signs of urban sprawl encroaching the foot of the mountain range. Unfortunately, the section of the Magaliesberg adjacent to the townships of Mamelodi (to the east of the City of Tshwane) is characterised by socio-economic and development pressures that place a strain on natural resources and lead to the degradation of biodiversity and conservation.

The Gauteng Conservation Plan (C-Plan) and National Protected Areas Expansion Strategy (NPEAS) both identify the Magaliesberg mountain range as a natural feature with high biodiversity value (Maree 2012:3). Biodiversity is the variety of life forms within a given ecosystem, biome, or the entire Earth. It is often used as a measure of the health of biological systems. Protection of the Magaliesberg ridges will contribute significantly to the conservation of biodiversity, as these ridges are important predictors of biodiversity in the region. The ridges of Gauteng form a vital habitat for many endangered or Red Data plant species. Conservation of these ridges would therefore provide a habitat for a significant number of plant species – allowing their continued survival in a rapidly urbanising province. As this is a desirable long-term conservation plan, it is critical to establish appropriate measures to put a stop to urban sprawl on the natural environment (Maree 2012:11).

The 1999 Ecological assessment does not support the proposal for fencing off a part of the mountain for conservation and protection from the township for many the most obvious measure to contain this urban sprawl. The 1999 Ecological Assessment, found the proposal of demarcation to be unfeasible although it has been suggested that the value of this resources must be communicated to the local community (Maree 2012:12).

In the essay Conservation Biology, it is stated that people often seem unconcerned about the current unprecedented loss of biodiversity, as “a great many people simply do not prioritise the environment as an important concern relative to other issues in their lives” (Pew Research Centre 2015; (Manfredo et al 2017).

The introduction of social-ecological systems as a conceptual approach, in which values are seen not only as motivational goals held by people but also as ideas that are deeply embedded in society's material culture, collective behaviour, traditions and institutions (Manfredo et al 2017), can raise hopes for creating a change in land value.

Social values are the cognitive foundation on which people's prioritizations are built. If values change, corresponding behavioural changes typically follow across many situations. The values of individuals are largely shaped in youth and remain relatively stable throughout their lives (Inglehart 1997; Manfredo et al 2017).

The value-shift argument has permeated the conservation sciences for many years (Manfredo et al 2017). In the extensive social sciences literature regarding attitude and behaviour change, environmental education (Smyth 2006); government policy (Hoff-Elimari et al 2014); and deliberation (Dietz 2013) have all been proposed as vehicles for creating value change.

Therefore, evoking large-scale value change for the sake of conservation would require not only change among individuals but also among the groups, organisations, and societies in which those individuals are nested.

The social value of these groups should shift and directed to socio-ecological values. Change is slow, path-dependent, and occurs in response to other changes in a person's socio-ecological surroundings. A change in values contributes to the process of shifting behaviour (Manfredo et al 2017).

The conservation social sciences will be far more effective in contributing to long-term solutions if the focus is on attitude, norm, and behaviour change in the context of specific behaviours and the situations in which they occur (McKenzie-Mohr 2013; Manfredo et al 2017).

The dissertation argues that if there is an alignment on social and environmental values the resilience of the natural environment will be enhanced. In conclusion, the rich natural landscape should be valued for what it can offer to the urban environment without the depletion of its resources.

The prohibition process of urban encroachment requires re-conceptualization. The threshold between the natural environment of the Magaliesberg and the urban context of Mamelodi is investigated for possible solutions beyond the fencing off of environments. The dissertation takes a conceptual stance though problem solving of a possible strategy for developing a conservation plan.



[1.3.2]
Urban Issue



Figure 1.5: Open land or natural environments in proximity to rural-urban areas are experiencing a loss of ecological contribution and resourcefulness (Author: 2018).

The Magaliesberg, which is a prominent natural geographical feature of Mamelodi, is negatively affected by urban sprawl. Urban sprawl is thus an environmental threat to the natural landscape.

United Nations Educational, Scientific and Cultural Organisation (UNESCO) recognises the Magaliesberg as a Biosphere and as part of the Gauteng provincial conservation area (Unesco.org 2018). The mountain range stretches 120km from Bronkhorstspuit Dam (east of Pretoria) to Rustenburg in the west. The South African National Biodiversity Institute (SANBI) does not regard the portion of the Magaliesberg ranging eastwards from Wonderboom Nature Reserve toward Mamelodi as part of the conservation region. This further contributes to the threat of the natural environment.

“In areas where sprawl is not controlled, the concentration of human presence in residential and industrial settings may lead to an alteration of ecosystem patterns and processes” (Grimm et al 2000).

In Mamelodi, urban sprawl and industrialisation are cause for environmental concerns regarding the natural environment.

Open land or natural environments in proximity to rural-urban areas are experiencing a loss of ecological contribution and resourcefulness. The resourcefulness of the natural environment is overlooked as the need for housing development takes priority. Humanity’s impact through urban sprawl has resulted in the build-up of the city fabric to the foot of the Magaliesberg, thus causing tension between the natural landscape and the city.

[1.3.3]
Architectural Issue

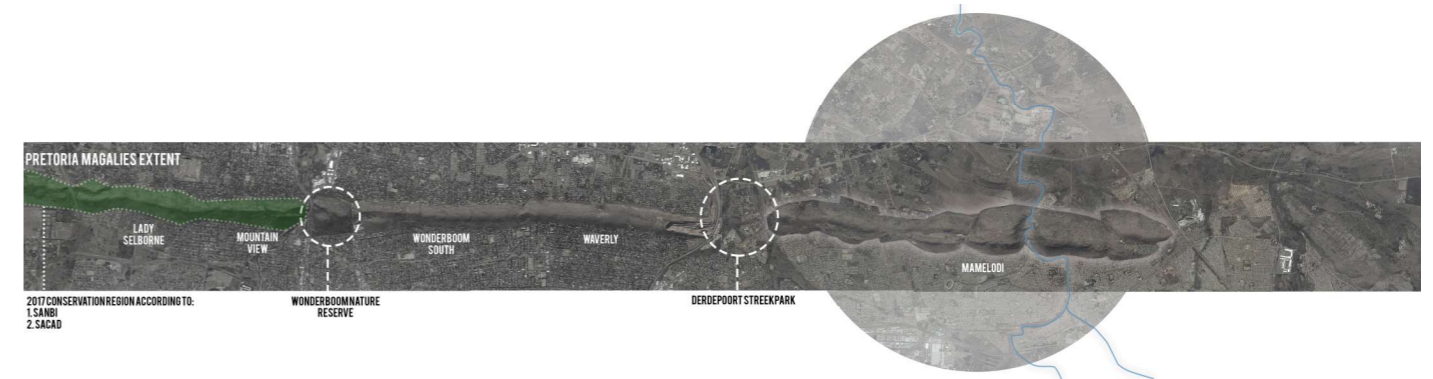


Figure 1.5: Magalies Mountain conservation region and the gateways that separate Mamelodi from (Tuke 2018)



Figure 1.6: Site as threshold - undefined and in neglected condition (Author: 2018)

The threshold between the serene, natural landscape of the Magaliesberg and the bustling chaos of the Mamelodi West Township, is evidence of the impact urban tension has on the natural environment. Spatially the threshold between the natural landscape and the township currently lacks definition and exists as a non-place.

Catherine Dee (2001) in her book ‘Form and Fabric in Architecture’ regards the threshold as a spatial component that provides for integration, subtle and complex transitions: the threshold is the space that links spaces, mediums or objects. The threshold separates and connects

contrasting environments – the urban to the natural and the natural to the urban – therefore taking on a hybrid identity formed of both realms. As an architectural element and spatial configuration the threshold as a transitional device encompasses the concept of the “limen” (Turner 1963) or threshold. An architectural typology within the threshold “can often provide visual and physical integration of the landscape if it possesses qualities of both the spaces it connects, the environment that is left behind as well as the place being entered” (Dee 2001:171). The concept of threshold in this dissertation suggests cohesion between contrasting environments that entices integration and symbiosis.

Footnote

1. Symbiosis: 1877, as a biological term, “mutually beneficial association of two different organisms.” Given a wider (non-biological) sense by 1921. An earlier sense of “communal or social life” is found in 1620.s (www.thesaurus.com, 2018).

[1.4]

Project Intentions

It is the intention of the project to harness the site potentials concerning the current environmental and infrastructural features. The dissertation conceptualises the relevant theoretical approach of liminality to construct a framework for the program. Though a layered programmatic approach the dual purpose of a practical and poetic interpretation of distill[ing] is applied through the three stages of liminality. The first layer of providing a of essential oil distillation plant stimulates socio economic opportunity. The second poetic layer considers the way through which people, place and building can transition the different stages within the building.

Furthermore, the project aims to give form to the spatial configuration of the threshold. This is done by using architecture to create a spatial morphology based on the understanding and experience of the limen. The architectural intervention is to become the transitional device for the user moving from the urban to the natural context.

The architectural intervention through spatial practice becomes the transitional device for the user from the urban to the natural context. This dissertation investigates the spatial practice for “producing the spatial forms and practices appropriate to, and necessary for, different productive and reproductive activities” (Borden et al 2001:6). Furthermore, the intervention extends current environmental initiatives (in the physical environment) to stimulate socio-economic opportunity.

[1.5]

RESEARCH QUESTION AND SUB-QUESTIONS

> MAIN QUESTION

How can architecture facilitate the transition of the liminal space between the urban and natural environments for the user?

> SUB- QUESTIONS

What are the experiential and architectural constructs of threshold space under the context-specific conditions of the site?

[1.6]

RESEARCH METHODOLOGY

To address the research issues and intentions, the following methods were used to develop the appropriate architectural response.

SITE INTERPRETATIONS

(Mapping: documents, site visits, photographs, verbal)

Various site visits were undertaken at sundry stages of the year and at different times of the day and week. Site sketches were made and photographs taken to capture the prevailing character and atmosphere of the area. The approach to mapping dealt with the statistical data of interpreting the surrounding area. The urban values were mapped as “modes of representation to confront an impermanent urban ground.” This included mapping the surroundings in

terms of rehabilitating landscapes; active social nodes; relevant institutions; bio-climatic conditions; water sources; and fauna and flora. Further documentation of factual and empirical data; agricultural farms; recreational activities in the Magaliesberg; and existing architecture was conducted.

THEORETICAL EXPLORATION

The theoretical approach to this project was guided through an understanding of the characteristics of the chosen site. The concept of liminality very strongly relates to the in-between condition, therefore liminality theory was the most appropriate lens. Liminality has been thoroughly studied in the field of anthropology under the themes of separation, transition and integration. These three conceptual themes were design

[1.7]

LIMITATIONS, DELIMITATIONS, ASSUMPTIONS

Various areas and possible locations for the intervention were explored in and around the study area. This exploration is illustrated in the Design Development chapter. It was decided to focus the design on the adaptation of the identified existing reservoir structure as this proved to be the most appropriate option.

It is assumed that the aim of this project on a conceptual level will have the desired effect on the

user, although emotions are subjective and cannot be generalised. Furthermore, the argument of the dissertation is a means of exploring the topic of liminality in architecture and is not applicable specific to all projects.

CONTEXT

- 3.1 INTRODUCTION
- 3.2 URBAN ANALYSIS: MAMELODI WEST
 - 3.2.1 MACRO ANALYSIS: URBAN CONDITION
 - 3.2.2 MESO ANALYSIS
 - 3.2.3. MICRO ANALYSIS : SITE FEATURES
- 3.3 THRESHOLD ANALYSIS: FOOT OF MOUNTAIN
 - 3.3.1 SITE SELECTION
 - 3.3.2 SITE FEATURES
 - 3.3.3 DAMAGE TO THE SITE
 - 3.3.4 USER OF THE SITE
 - 3.3.5 SITE HYDROLOGY
 - 3.3.6 EXISTING INFRASTRUCTURE
- 3.4 NATURE ANALYSIS: MAGALIESBERG
 - 3.4.1 MACRO ANALYSIS
 - 3.4.1.A ENVIRONMENTAL FEATURES
 - 3.4.2 MESO MAPPING
 - 3.5 MICRO MAPPING
 - 3.5.1 FAUNA AND FLORA
- 3.6 URBAN VISION
 - 3.6.1 PRECEDENT
- 3.7 URBAN VISION



...

3.1

INTRODUCTION

The following chapter will contextualize the project issues and intentions previously discussed. The analysis focuses on three scales of the urban, natural and site scale. The analysis will uncover the tangible and intangible attributes of the study area that will be used as design driver

The theory of liminality serves as an analogy to interpret the mapping of these two contexts (Mamelodi West and Magalies Mountain East). It guided the author to approach the constructs of this chapter on context according to her personal experience of liminality.

The author's exposure to Mamelodi throughout 2017 and 2018 was primarily urban-based of Mamelodi's urban users and around the existing architecture. At the end of 2017 the author encountered one of the stakeholders in Mamelodi, Doctor Emperiam Mabena; a professional African Indigenous Knowledge System (AIKS) researcher, registered doctor and conservationist.

In this liminal time (at the end of 2017 and the start of 2018) the author's interest in research in Mamelodi shifted from the urban towards working more within the nature context. Dr Mabena led the author to discover the Mothong African heritage site located in Magalies Mountain East and the serenity it holds. The two contexts that the dissertation considers are Mamelodi West and Magalies Mountain East. The following section analyse these environments in order to define the threshold connecting them. The mapping done firstly introduces the two contexts of the urban and the natural, where after the threshold is analysed.

3.2 URBAN ANALYSIS MAMELODI WEST

3.2.1 // MACRO ANALYSIS URBAN CONDITION

The macro-mapping illustrates Mamelodi's location in proximity to Pretoria (figure 3.1). The main roads leading in and out of Mamelodi are Solomon Mahlangu Drive, Tsamaya Avenue and Hinterland Avenue. The main environmental features are the Pienaars River and the Magaliesberg (figure 3.2). The wetlands of the Pienaars Rivier and smaller rivers in the context are considered green belts as they house vegetation and can be connected to open land areas. Other important environmental and recreational spaces are Moretele Park and the HM Pitje stadium (although it is not currently in use).

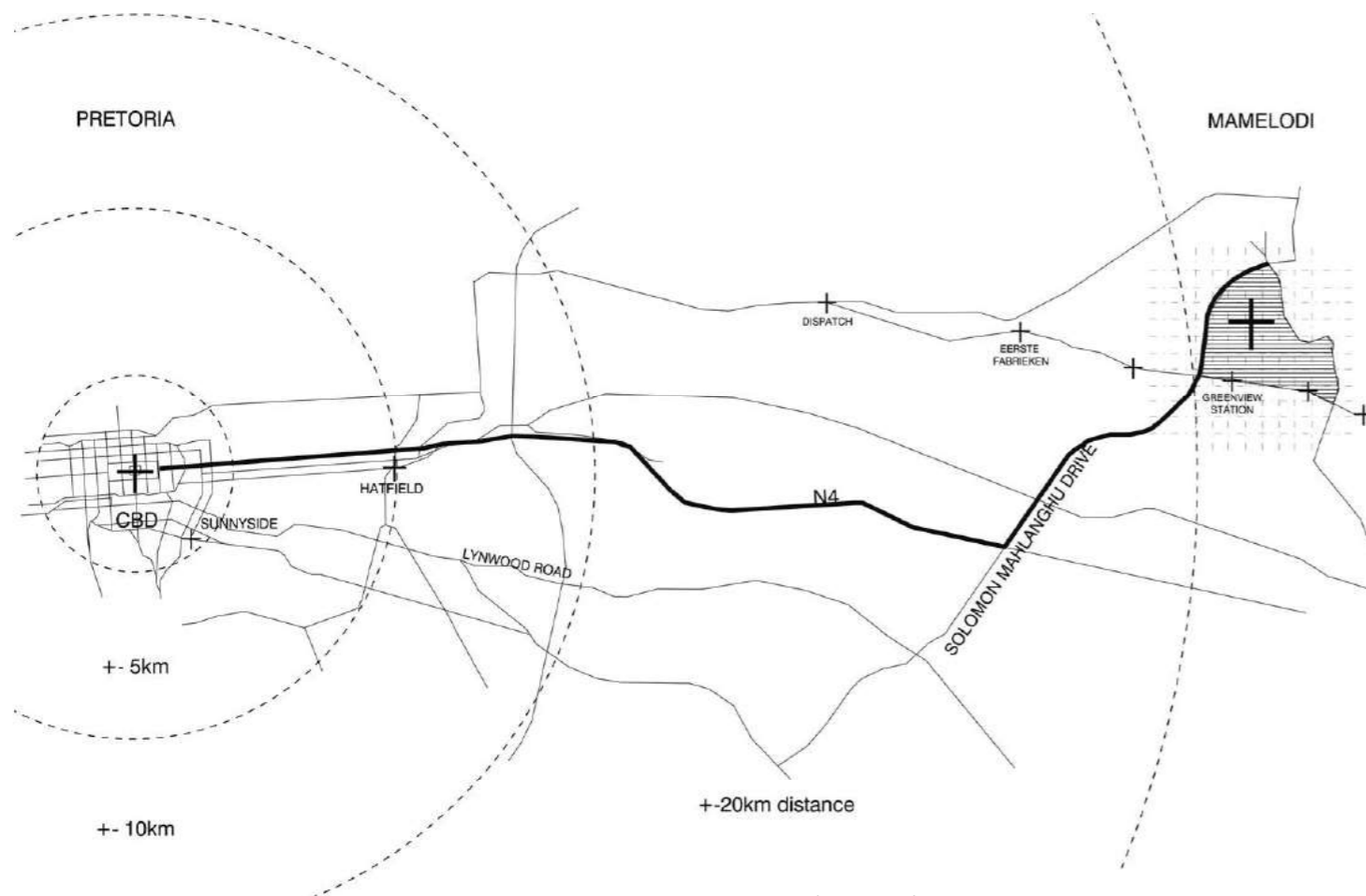


Figure 3.1: Neighborhoods in Mamelodi West (Kotze: 2014)

3.2.2 // MESO ANALYSIS

The precinct mapping zooms in on Mamelodi West and on the location of the proposed area for the scheme.

Mamelodi West is older than the area's eastern precinct, as the township originated in the west and only later developed to the east. Therefore, this precinct has a rich culture and a number of recreational spaces as well as a cemetery, The Mamelodi Rondavels, the Mamelodi Cricket oval, the That's it! Art Gallery and others. According to a recent report in The Guardian (2018), the precinct is not only established and still growing in the socio-cultural realm but also in the socio-environmental realm. In 2001, the African Mothong Heritage Trust

was established by Dr Mabena in association with the Council of Scientific and Industrial Research (CSIR, Technical University of Tshwane (TUT) and the University of Pretoria (UP). The site has only recently gained popularity with the community.

The activities mapped in Mamelodi West illustrate main roads that lead to Magaliesberg East, educational nodes, and cultural nodes. The mapping orientates the possible involvement of schools and inhabitants in the surrounds of the site, within a 5km and 10km radius.

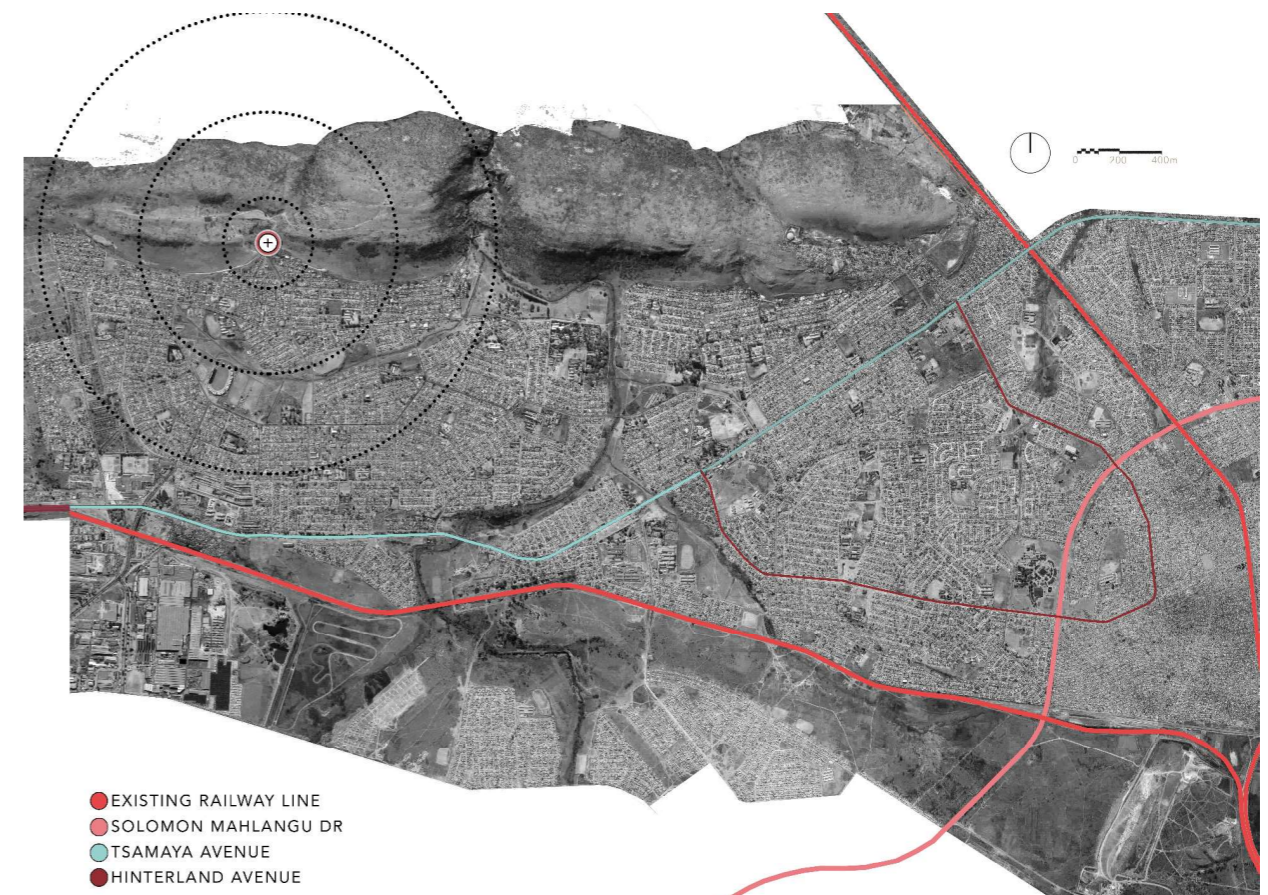


Figure 3.2: Neighborhoods in Mamelodi West (Author: 2018)

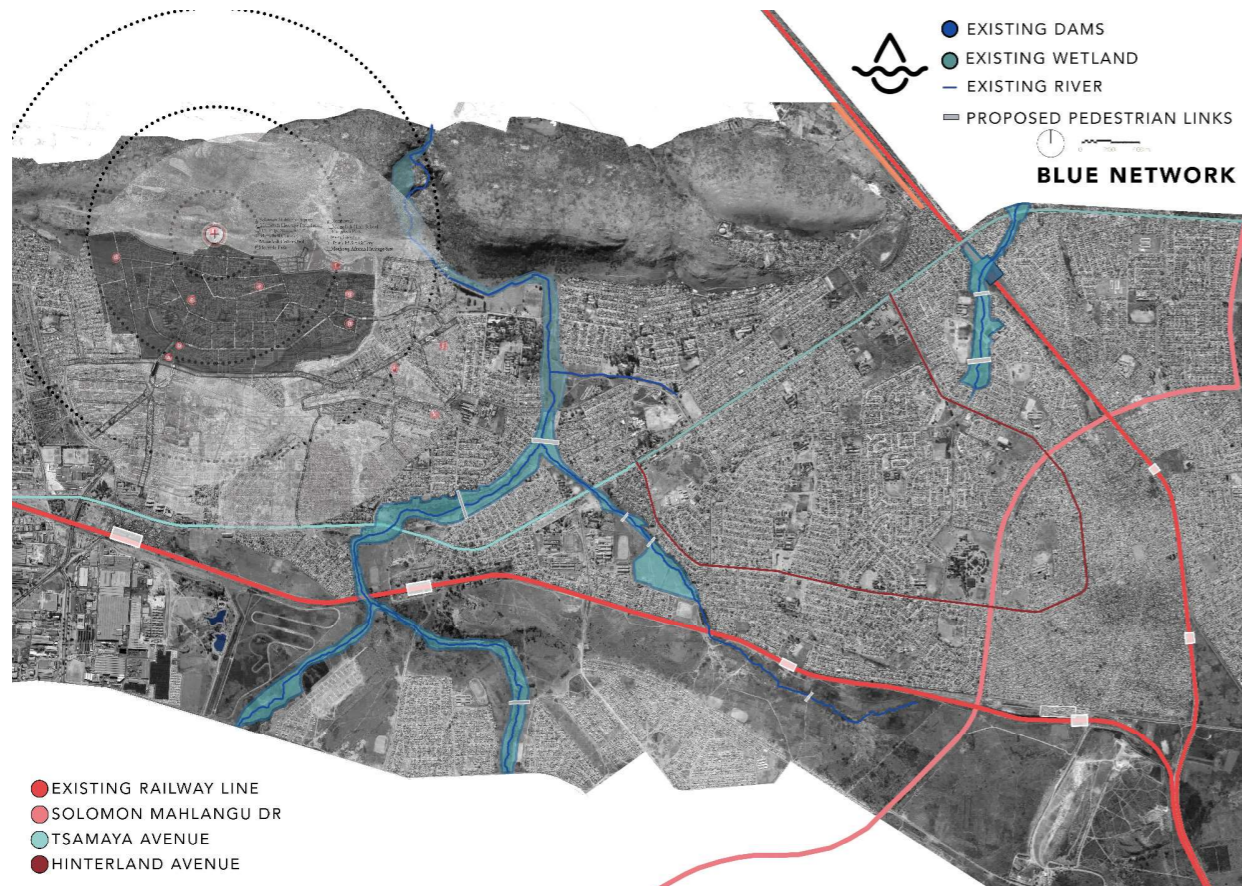


Figure 3.3: Blue Network in Mamelodi (Author: 2018)

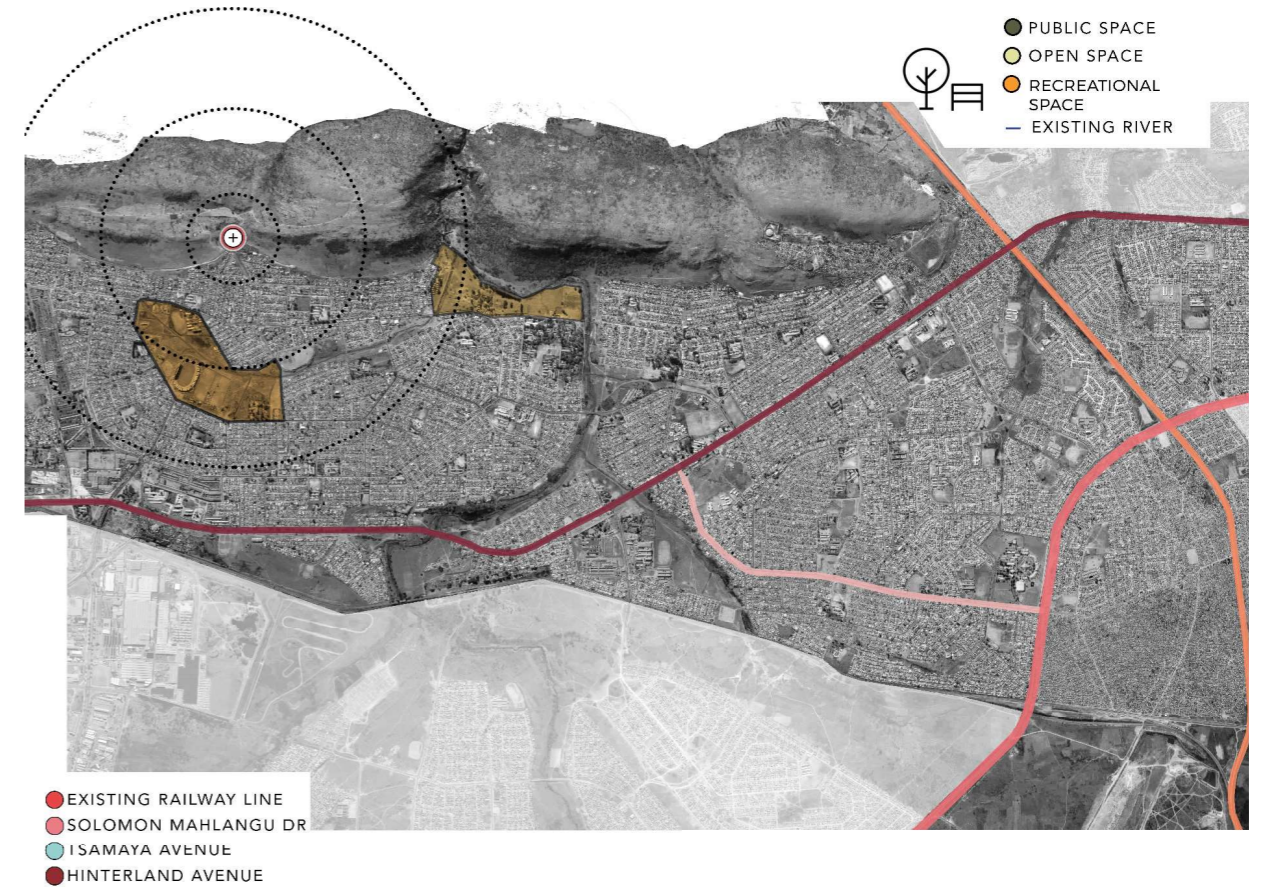


Figure 3.5: Recreational Spaces in Mamelodi West (Author: 2018)

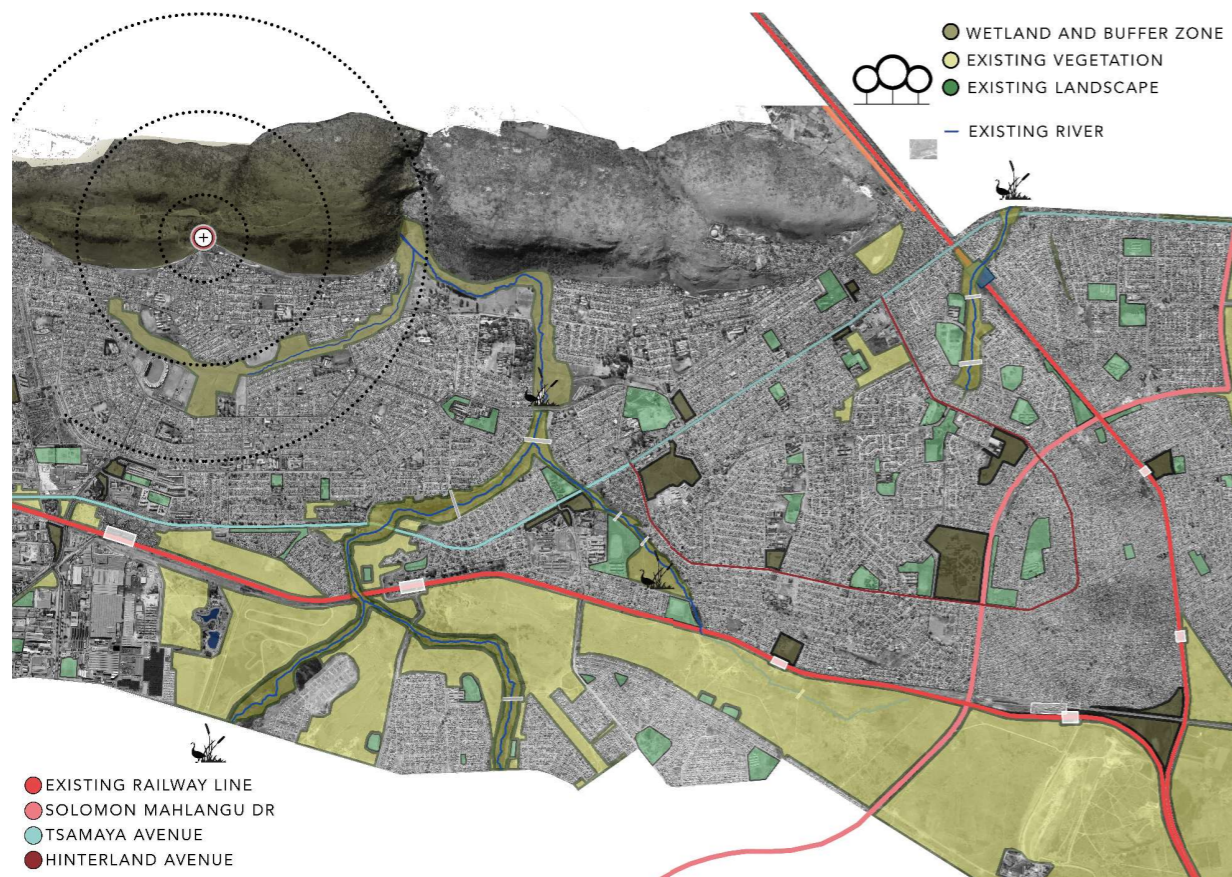


Figure 3.4: Green Network in Mamelodi (Author: 2018)



Figure 3.6: Meso Mapping: Showing (+) Threshold location - main streets in residential area marked out to show access routes to site (Levi: 2018)

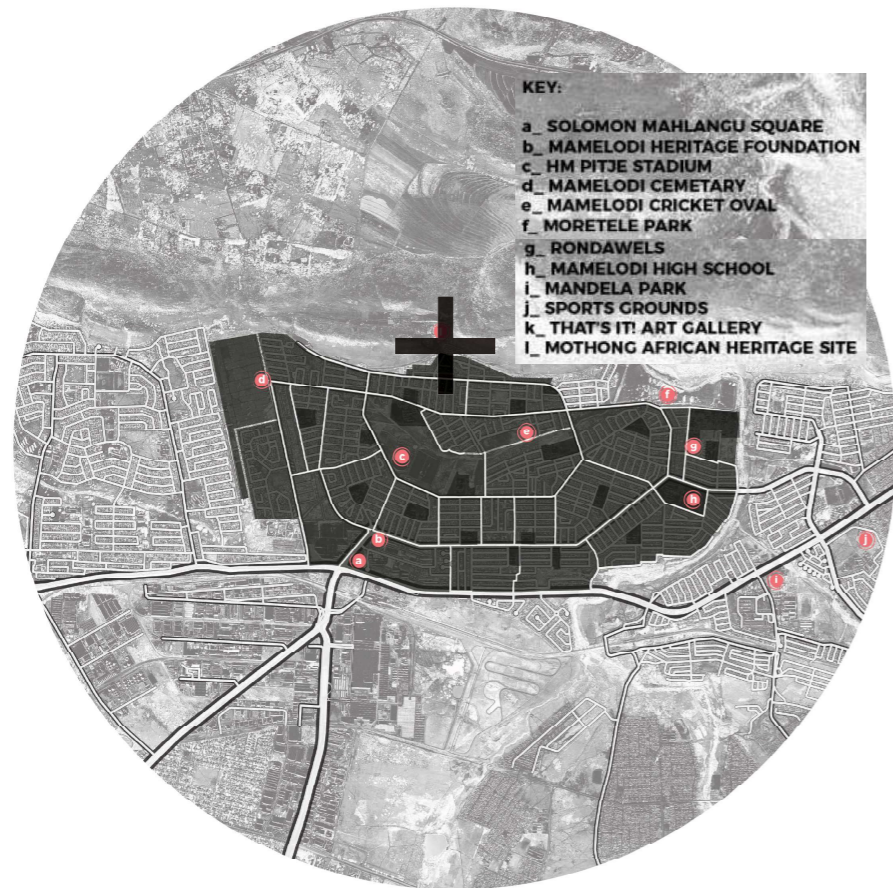


Figure 3.7: Cultural and Recreational nodes in Mamelodi West (Levi 2018)

3.2.3. MICRO ANALYSIS SITE FEATURES

Photographs of surrounding urban context

The area under study for the preliminal phase (urban) houses pockets of residential houses. It is accessed by End Street, which leads to the current entrance that is marked by a municipal fence at the foot of the mountain. The urban context is connected to the natural context by a wetland running through to Malaka Street. A small church is situated on the western edge of the wetland, whilst to the east and west informal housing can be seen.



Figure 3.8
Illegal shack on the eastern ridge. There is an attempt to halt and manage the spread of illegal housing on the mountain; note the "remove" sign on the shack (Maree, 2012:30).



Figure 3.9:
Cattle farming occupying just south of the Mothong project, intense cattle grazing (Maree, 2012:30)..



Figure 3.10
Encroaching up the ridge from formal and informal settlements (note the large Mamelodi cemetery in the Background (Maree, 2012:30).

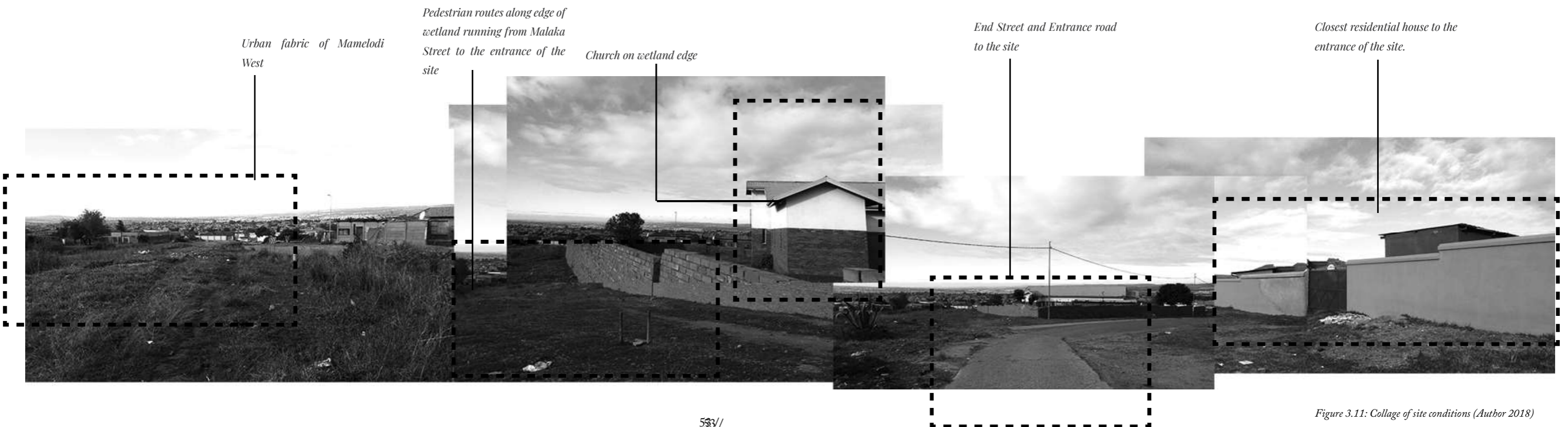
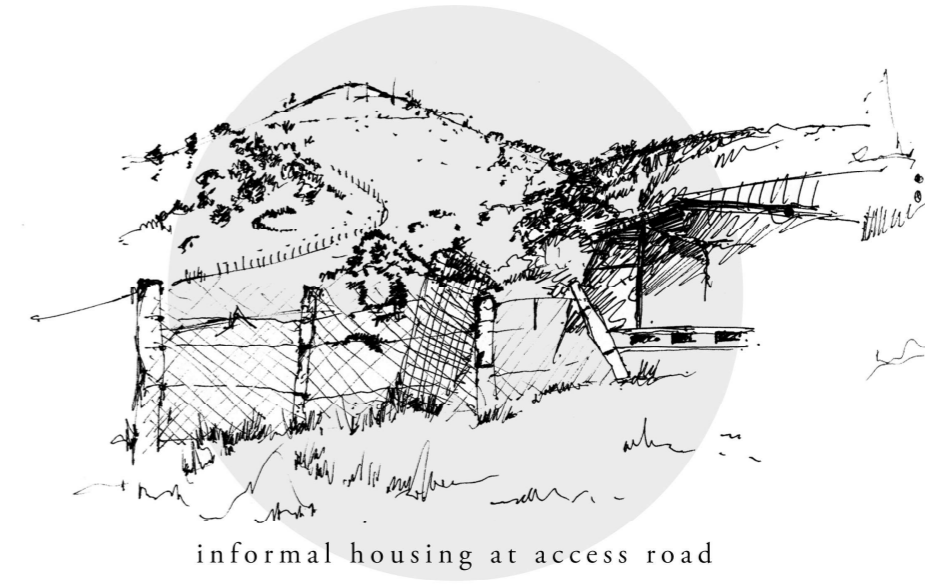


Figure 3.11: Collage of site conditions (Author 2018)

3.3 THRESHOLD ANALYSIS FOOT OF MOUNTAIN



informal housing at access road

Figure 3.12: Informal housing at entrance to site (Author 2018).

The 'threshold' lies between the states and statuses that the individual needs to cross and the change the community needs to recognise. For Van Genep (1960), this phase lies between two conditions: the one from which the individual or group departs and the one they will enter. The site serves as the transitional moment between the bustling urban context of Mamelodi West and the serene natural landscape of the Magaliesberg.

3.3.1 SITE SELECTION

The author's personal journey of discovery, combined with her desire to work within the natural context in proximity to Mamelodi, were the main drivers of the site selection. The site was also chosen for its proximity to the greater economic area of Mamelodi

West; its poetic and programmed nature; its magnificent view overlooking the city; and its current value to a greater cause by being a natural and valued resource.

According to the Ridge Policy of 1999, all construction on the mountain ridge should be avoided as these zones house Red Data fauna and flora (Maree 2012:12). Taking all these factors into account, the most appropriate location for the intervention, where possible development can take place, is at the foot of the mountain.

3.3.2 SITE FEATURES

The main physical features of the site are the connecting road leading from End Street (heading southwards and meandering all the way up

the foot of the mountain to the entrance of the African Mthong Heritage Site to the north) and the municipally constructed wire fence. There is a wetland running through the entire site, which almost reads as part of the mountain bleeding into the urban and contributes to the physical connection between the two environments.

The site has a presence of vastness as the outspread landscape and hills of the Magaliesberg present as such. Its intangible features are the community and the pedestrian energy generated by movement across the site. The sound of urban bustling is experienced as white background noise, which contributes to the feeling of becoming separated from one's former urban context. Closer to the threshold, natural

features, such as indigenous plant life, trees, and the soft sounds of birds, become more evident. This makes the idea of change and transition evident.

To the north-eastern side of the site, lies a monolithic structure embedded in the natural topography of the mountain hills.

Although its presence is understated, it is established through its flatness and concrete construction. According to historical maps, this abandoned water reservoir has been present on site since the establishment of Mamelodi West (figure 3.14).



Figure 1:

Figure 3.13: Collage of site conditions (Author 2018)

3.3.3 DAMAGE TO THE SITE

Degradation to the site, as a result of grazing livestock and manure damage, is evident in the area's wetlands. Furthermore, both the fence and the road to the foot of the mountain are ill-maintained. The water reservoir is still in a good condition, although its perimeter walls have been damaged

3.3.4 USER OF THE SITE

The site is used by an array of people and animals. Community members and residents in close proximity to the site experience it the most. Furthermore, it is also used by visitors to the Mothong Site as well as Dr Mabena and the employees maintaining the herb gardens. In closing, the site is not seen as a destination by its users, but rather as a place of movement and momentary pause.

3.3.5 SITE HYDROLOGY

The site drains to the south into the wetland due to the natural fall of the terrain's steep contours. There is a lack of infrastructure for water catchment along the foot of the mountain, which is addressed in the urban vision. The water reservoir no longer serves its function due to repairs that had to be done to the structure in 1999. According to an interview with a stakeholder (who grew up, and is still active, in the area) the reservoir had to be completely drained for repairs. Unfortunately, the project was stopped due to hazardous conditions on and around the site at the time. Even after rehabilitation of the area, the repair project was never completed and the reservoir has remained empty and forgotten ever since.

3.3.6 EXISTING INFRASTRUCTURE

Abandoned water reservoir

The architectural elements of the existing building include a concrete roof slab, thick concrete perimeter walls, concrete columns and a granolithic concrete floor slab. In order to facilitate the infiltration of the programme, adaptive spatiality is applied to the architecture of the monolithic, flat, enclosed structure. This changes its materiality, rhythm, and spatial experience to a lighter, more 'open' structure.

> APPROACHED TO THE EXISTING

Allowing the structure to open up two of its edges allows for public infiltration and a spatial experience of the distilling process of people and the place. A primary consideration of the scheme was the adaptive reuse of the existing structure. Approaching the existing concrete structure through the lens of adaptive reuse meant giving careful consideration to the existing roof, columns, walls and floor that will be discussed in the design development chapter.

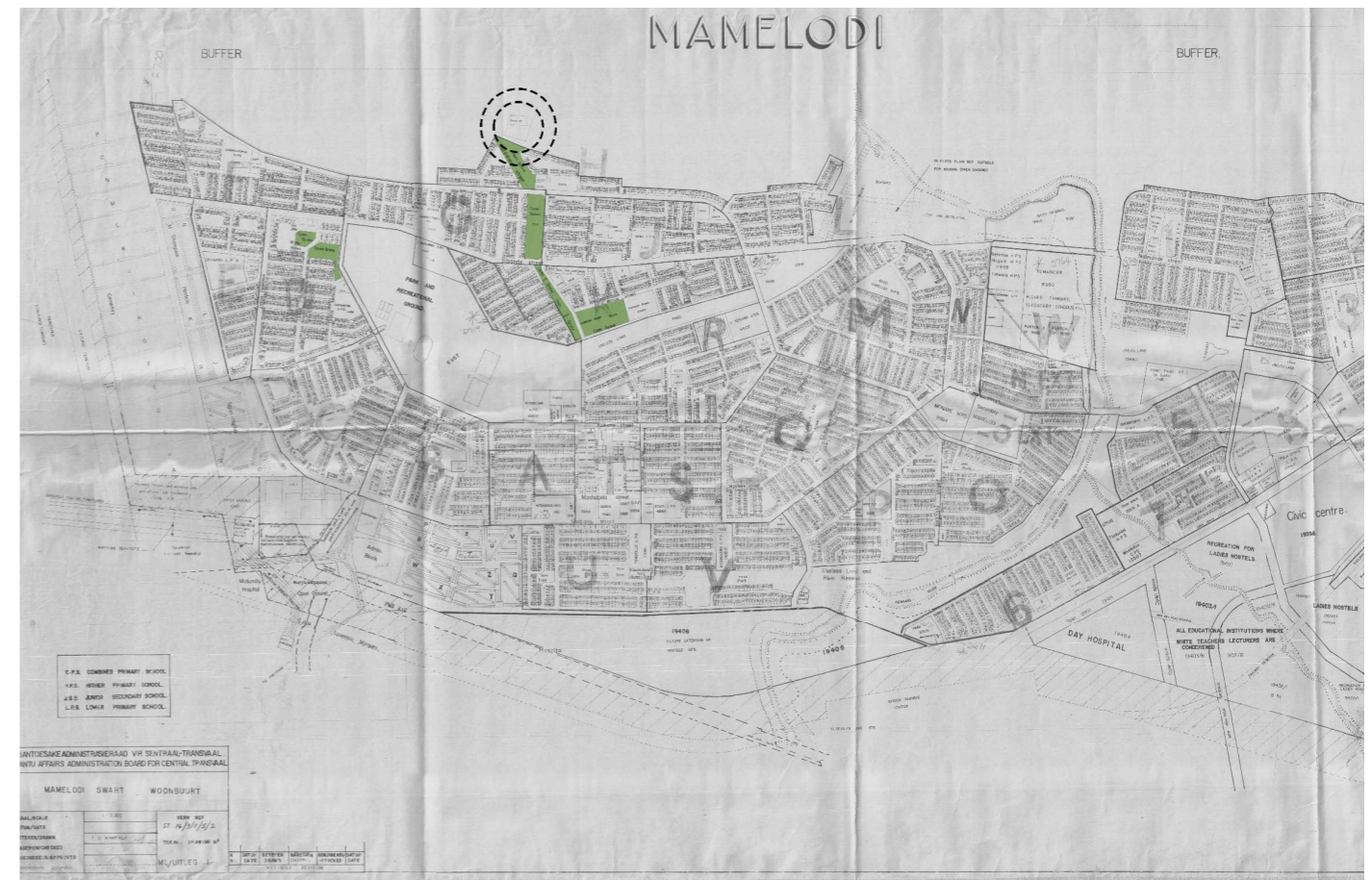


Figure 3.14: Historical Map Mamelodi showing location of water reservoir (Author 2018)



Figure 3.15: Site Location (Author : 2018)

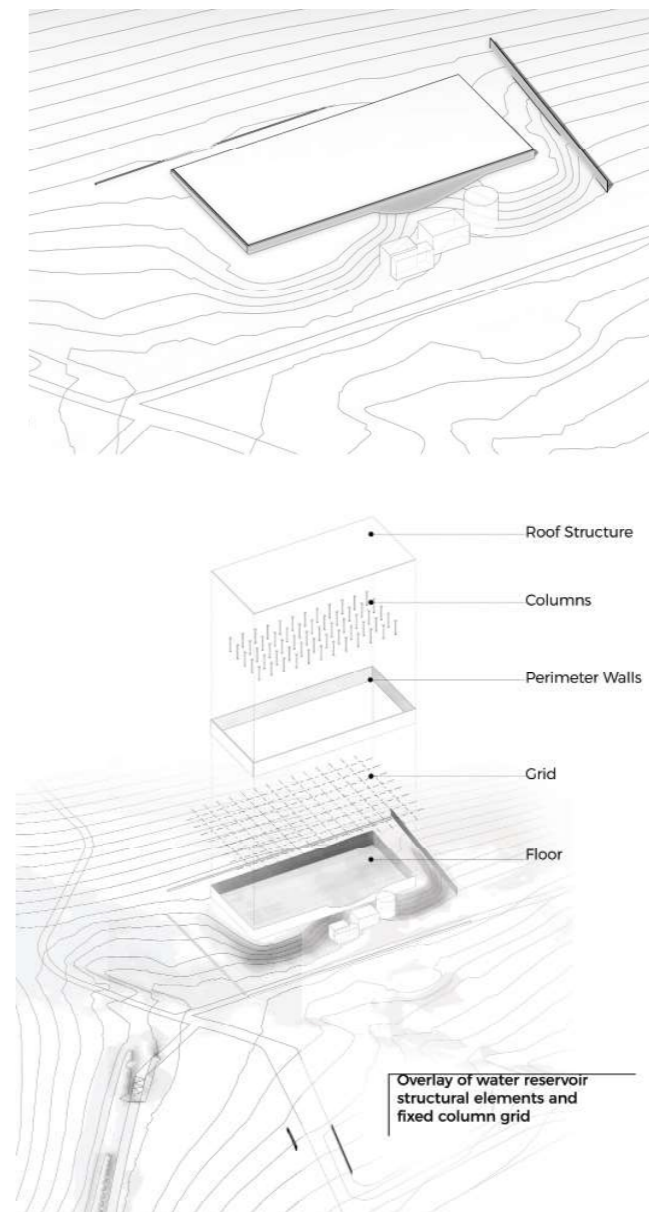


Figure 3.16: Existing Structure of abandoned reservoir exploded (Author : 2018)

3.4 NATURE ANALYSIS MAGALIESBERG

The final stage Van Gennep (1960) is re-aggregation or incorporation. In this stage the individual or group is readmitted to society as the bearer of a new status and identity. This final stage includes symbolic phenomena that represent the return of the initiate individual in their new identity to a stable, well-defined position and place.

The macro-mapping illustrates Mamelodi's location in proximity to Pretoria, the main roads leading in and out of the township, its main environmental features (the Pienaars River, the Magaliesberg, its wetlands, the existing vegetation and open land), and the recreational spaces in proximity to the proposed site.

3.4.1 // MACRO ANALYSIS

The Magaliesberg forms Mamelodi's northern edge and separates the township from farmlands further north. From the initial establishment of Mamelodi in 1945, through its development towards the east, and on to today, the mountain has played a substantial role in the shaping of the township.

3.4.1.a ENVIRONMENTAL FEATURES

The Magalies Mountain range is one of the most prominent and well known features of Gauteng. The mountain range is characterised by rocky hills and ridges with more dense woody vegetation and is famous for its indigenous animal and plant life,

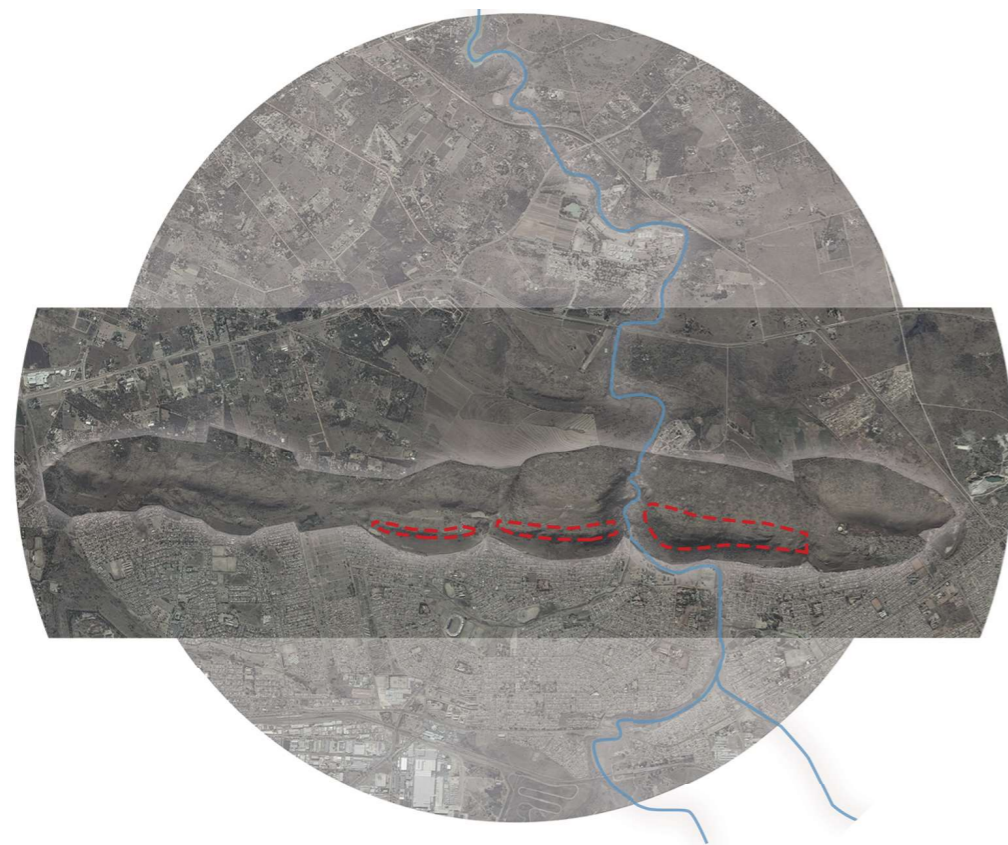


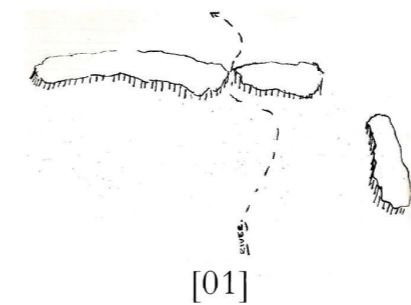
Figure 3.17: Quartzridges of the Magaliesberg - avoid for construction [marked in red] (Author: 2018).

water life, recreational space and activities being a tourist attraction (Unesco.org, 2005). The value of the ecological mapping is to substantiate the choice of threshold site, the primal and ecological value of the natural environment

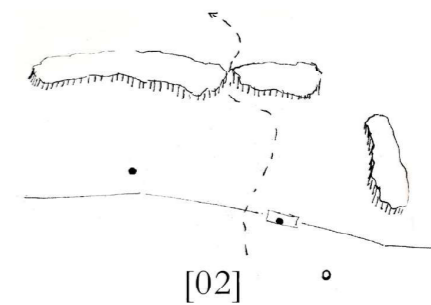
> Geology

Rocks found in the area are found in the Transvaal Sequence which is composed of mainly of quartzite with deeply eroded shales found between the

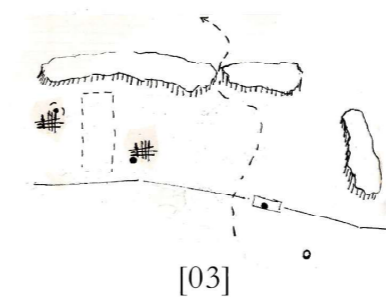
quartzite. The quartzite has been utilized in various areas for high-grade silica sand, Kimberlite pipes are located outside the study area which is normally Diamond bearing and Silverton Shales are used for brick making. (Maree, 2012:3). Quartziridges should be avoided for construction to preserve rd data Fauna and Flora. Therefore this understanding of the ridge policy of the Mountain indicates no-zones for possible intervention to take place.



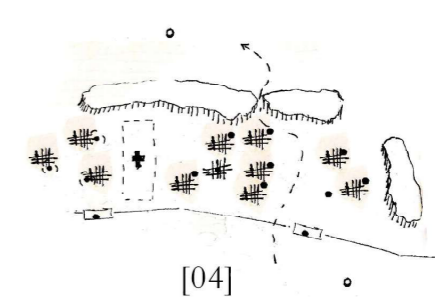
The unoccupied mountain



- Housing built for workers of first the factory then the station north of the railway line
- Sammy Marks home is south of the railway line



- Group Areas Act bring a regulated demarcation of development.
- The mountain, cemetery and railway line act as spatial divides between urban compounds of different racial groups



- Mamelodi expands Eastwards in patterns of individually grouped neighborhood systems. Overcrowding leads to housing developments pushed against and onto the mountain
- Eersterust develops eastwards
- Baviaanspoort develops northwards with farms, prison development and wastewater treatments developing southwards towards the mountains

Figure 3.18: Development of the Magaliesberg in relation to Mamelodi (Author 2018).

3.4.2 // MESO MAPPING

Activities within the postliminal

The Meso analysis takes a closer approach to the map the activities within *postliminal or* natural environment of the Magaliesberg, the mapping animal and plant life, recreational space and users of the site.

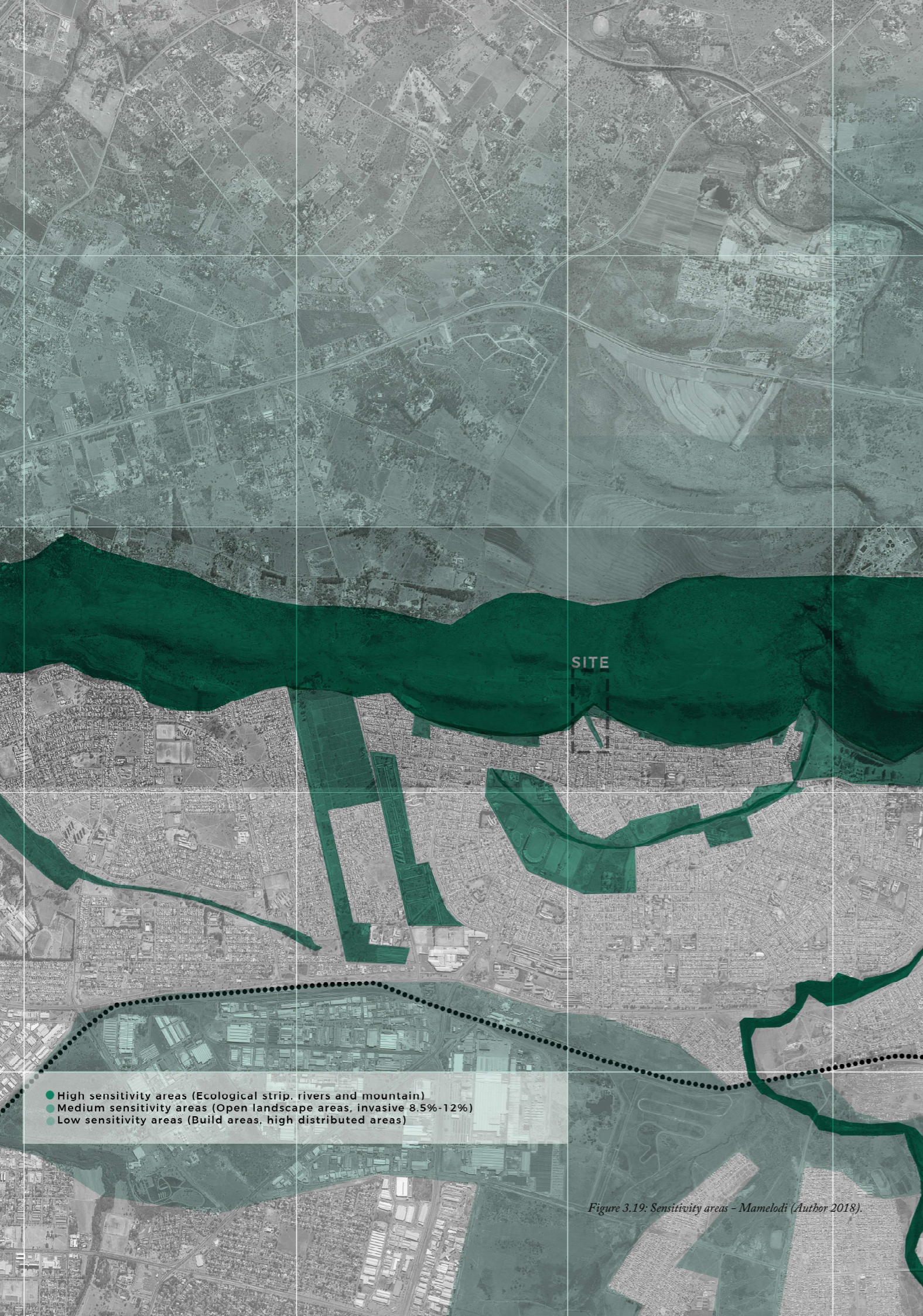




Figure 3.19: Sensitivity areas - Mamelodi (Author 2018).



Figure 3.20: Land use by community for cattle kraals (Author 2018)

-  Abandoned Water Reservoir
-  Identified threshold marked at focus area

> Movement

Movement on the site is primarily pedestrian. The secondary movement is vehicular although the use of the road running up the foot of the mountain is used by visitors to Mothong.

> Access

The main access for vehicles and pedestrians is through the existing fence adjacent to the water reservoir.

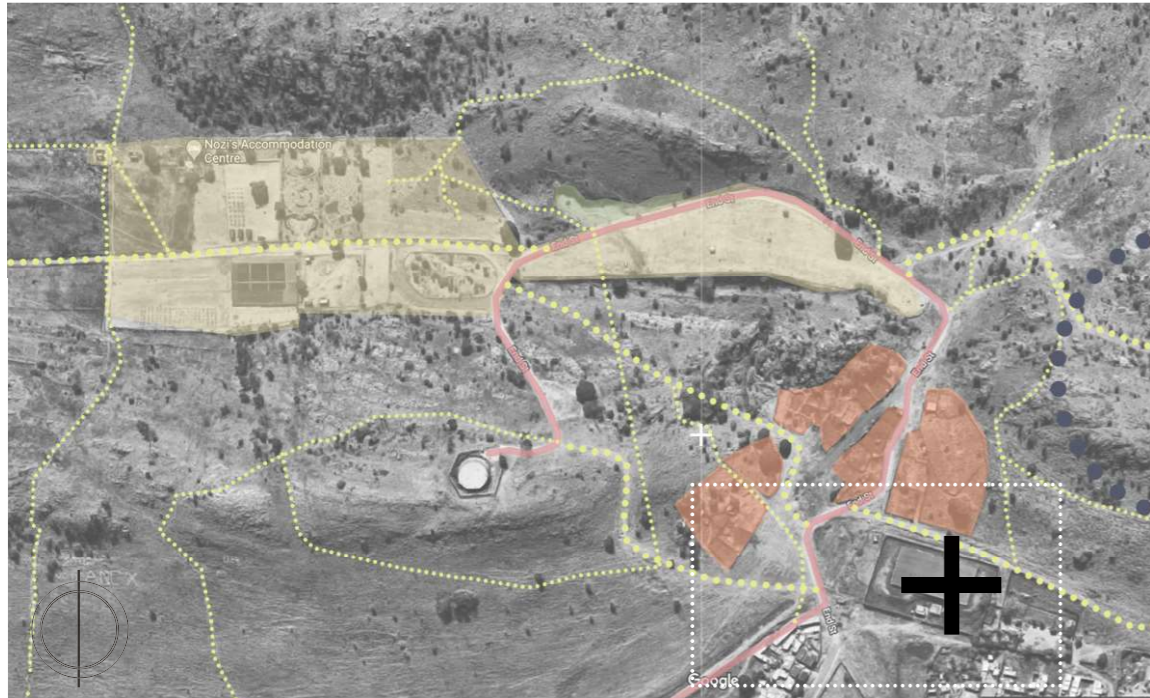


Figure 3.21: Pedestrian movement on site (Author 2018).

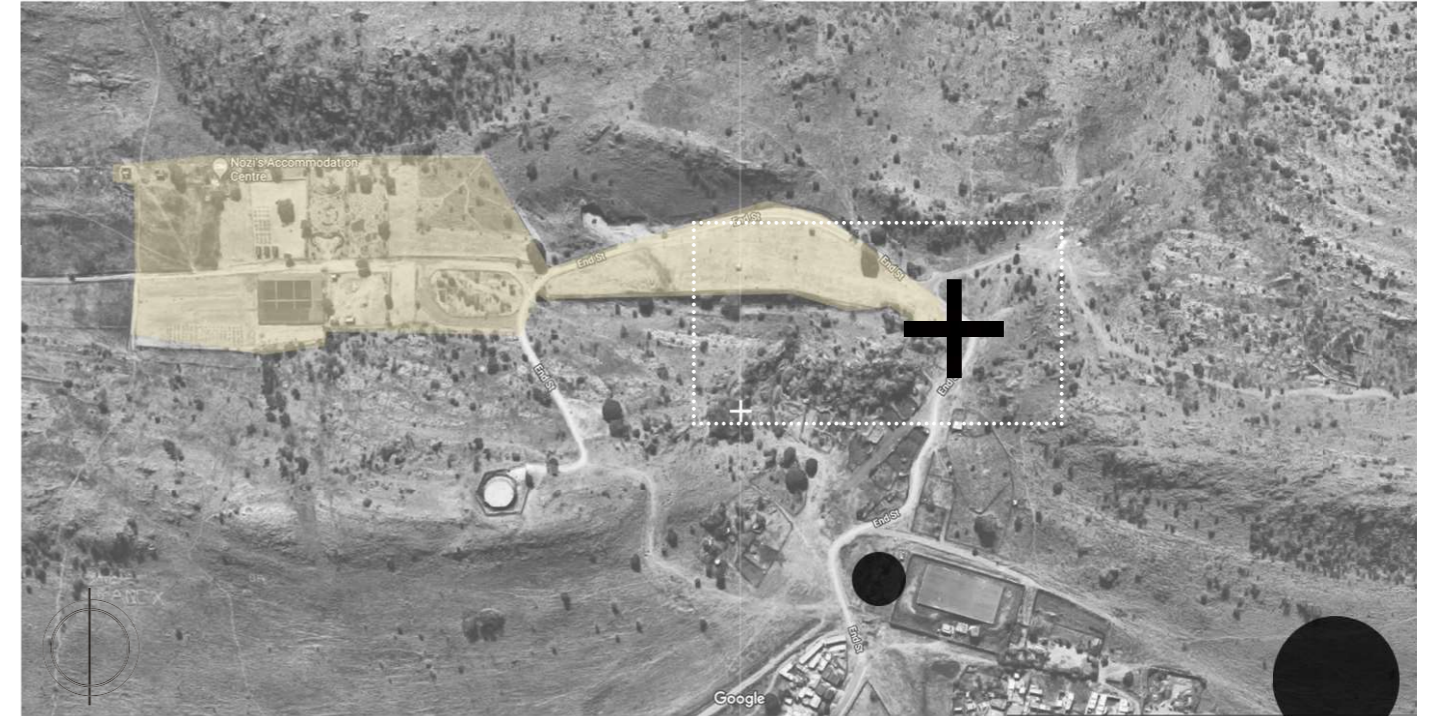


Figure 3.23: Dedicated area of Mothong African Heritage site (Author 2018).

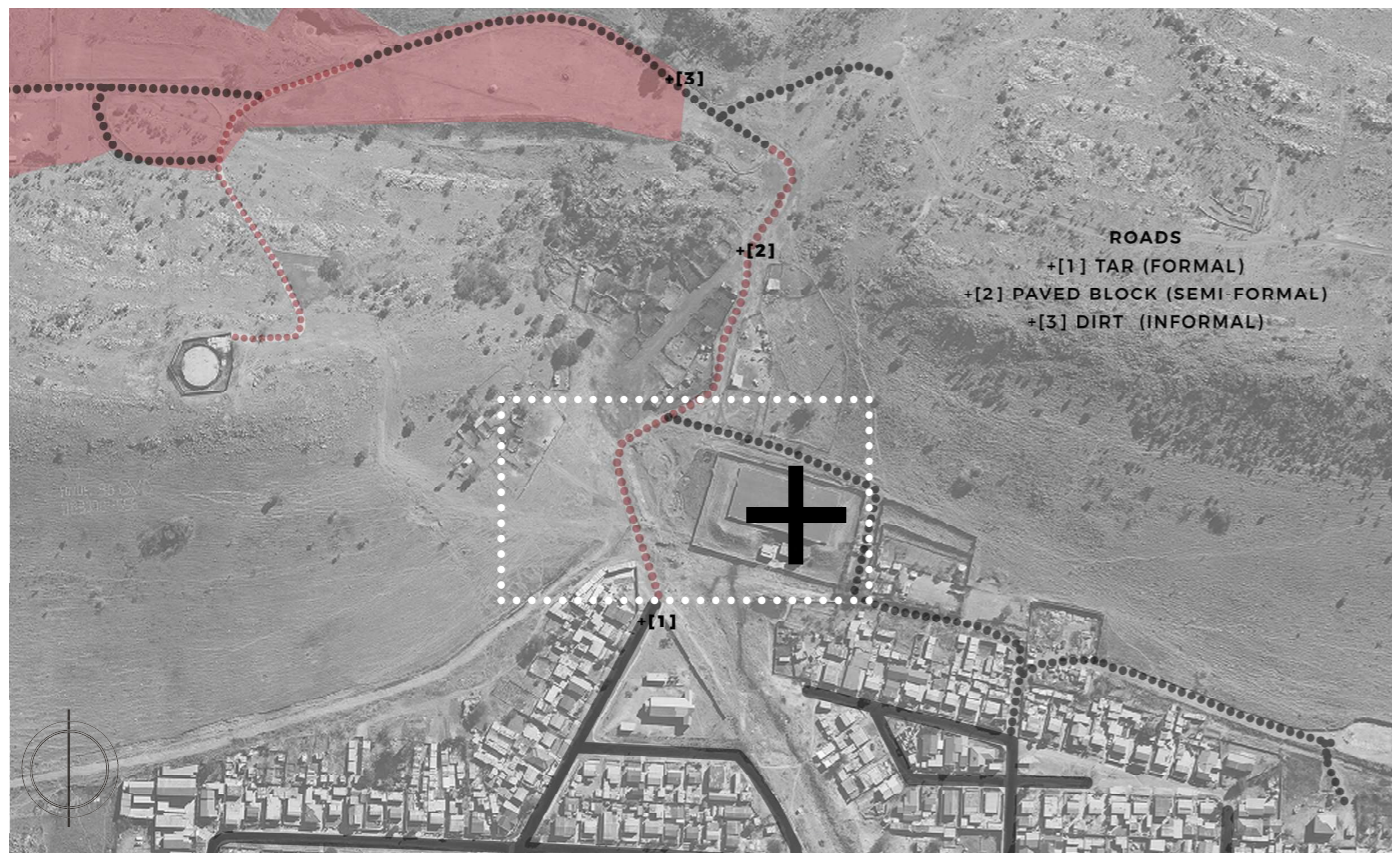


Figure 3.22: Existing road (Author 2018).



Figure 3.24: Pockets of residential houses (Author 2018).

3.5 MICRO MAPPING

the way of discovering the site – a narrative of the postliminal zone



Figure 3.25: Hydrology: Water infrastructure on site (Author 2018)

> Typography

The site has a steep slope towards the north and gradually becomes flatter towards the south as it is on the foot of the mountain. The typography slopes to the south towards the wetland in front of the site.



Figure 3.26: Hydrology: Wetland connecting urban and entrance of the site (Author 2018)

> Drainage

There is insufficient infrastructure in place for storm water catchment or site drainage. Water runoff is towards the south of the site, that runs into the northern edges of the residential pockets and partly into the wetland.



Figure 3.27: Doctor Ephriam Mabena and the Magalies Mountain (Author 2018)

In 1990, Dr Ephriam Mabena, a traditional healer to the residents of Mamelodi, received an ancestral calling to rehabilitate the misused plateau that is part of the Magaliesberg above Mamelodi, Section H. This once-broken piece of land – a messy, misused and extremely hazardous dump – has been healed and rehabilitated and is now a place of education and conservation. It is a little environmental haven. Starting in 2001, Dr Mabena has worked tirelessly to establish an indigenous planting nursery. This is the Mothong

African Heritage Site located on top of the plateau. It features a big garden where indigenous medicinal plants are cultivated and a large open garden available for camping, cultural events, and traditional ceremonies (Ledwaba 2018). This part of the Magaliesberg is a peaceful space in stark contrast to the “chaos below in the township’s streets, where taxis hoot endlessly, music blares from households and people mill about” (Ledwaba, 2018). The natural area around Mothong is also a haven for small creatures – home to various species of fauna and flora. Dr. Mabena hopes to build an environment where indigenous plants can be processed into cosmetic and medicinal products. As a man

with the gift of healing, he believes that the landscape is a resource that should be cared for and that should provide healing for the people that use it. The educational value of the site is in schools that occasionally bring pupils to learn about the plants and animals on the mountain and the significance of conservation. Through this, the youth is educated and encouraged to develop an appreciation for the natural landscape. Furthermore, this landscape is used as a base for knowledge sharing; specifically regarding traditional methods of planting and indigenous knowledge. Mabena’s efforts to preserve this part of the Magaliesberg, where the national flower, the protea,


grows in abundance, have not gone unnoticed. Mothong is in partnership with Unisa, the University of Pretoria, the Tshwane University of Technology, the Council for Scientific and Industrial Research and the department of science and technology. These partnerships include programmes in which botany and natural sciences students share knowledge and study indigenous plants and medicine (Ledwaba 2018).

3.5.1 FAUNA AND FLORA


Current conservation and indigenous systems at the Mothong Heritage site.

FLORA - THE MAGALIESBERG
VEGETATION, HERBS & MEDICINAL PLANTS

HERBS & MEDICINAL PLANTS



VEGETATION



Marikana Thornveld (SVcb 6) Rand Highveld Grassland (Gm 11) Id Reef Mountain Bushveld (SVcb 9)



VEGETATION: RIVER-BOUND

HARTEBEE SPRUIT
Alien Species: Bluegum & Pine

MORELETASPRUIT
Indigenous & Alien Species
Woody Species (Combretum erythrophyllum, Rhus Pyroides and Common Karee Lancea) & Lucerne (Pepper Tree, Privet and Syringa) around banks.

FAUNA:
Grey Duiker
Red Rock Hare
Scrub Hare
Spring Hare
Porcupine
Namaqua Rock Mouse
Highveld Gerbil
Black-backed Jackal
Rock Hyrax
Red Data Plants & Red Data fauna

FAUNA - THE MAGALIESBERG
MEROPS BULLOCKOIDES (WHITE-FRONTED BEE-EATER)

Kingdom: Animalia
Phylum: Chordata
Class: Aves
Order: Coraciiformes
Family: Meropidae
Genus: Merops (1)

Habitat:
Wooded savannas, sandy cliffs, African grassland and open scrub, especially in the Great Rift Valley of Kenya between 1400 and 2000 m (4593- 6562 ft) (Emlen 1990, Fry 1992)

Avoid heavy forests.
Colony sites on nearly vertical, bare cliff faces.
Can be on fault scarps in grasslands, banks of rivers, even man-made gravel pits and rock quarries.
Birds normally change sites during months before breeding season.
Colony sites usually need to be 4-7 km (2.5-4.4 mi) from foraging areas. (Emlen 1990, Hegner et al 1982)

Figure 3.28: Current conservation and indigenous fauna and flora at the Mothong Heritage site. (Author 2018)



Figure 3.29 Collage of photographs showing workers toil with the soil at the Mothong African Heritage Trust (Oupa Nkosi/ M&G) (Ledwaba, 2018).

From the analysis the following has been concluded :

Strengths

- Biodiversity conservation at Mothong African Heritage site.
- Indigenous plant life and medicinal herbs give a unique characteristic to the site and strengthens the biodiversity of the areas.
- The study area's proximity to the residential area and community.
- The site is in proximity to greater economic region of Mamelodi is of great benefit to the scheme.
- The existing infrastructure of the reservoir at the threshold is in a good state, therefore it can be utilized.
- There is beautiful views from the site overlooking Mamelodi West.
- The site is rich in recreational activities as seen at Mothong, as well as other uses by the community.

Opportunities

- The threshold between the urban and natural context has great pedestrian energy that can be harnessed.
- The energy on site can be harnessed to benefit the conservation and recreational activities of the area.

Threats

- The urban fabric is building up onto the foot of the mountain.
- Dumping at the wetland area and soil erosion due to the use of urban inhabitants are threatening the biodiversity of the natural landscape.

Weaknesses

- There is a lack of infrastructure for storm water harvesting.
- The wetland is in a deteriorative state.
- Roads leading to and on the site lacking infrastructure for water harvesting as well as pedestrian walkways.



Figure 3.30: Hand drawing of the conservation area of the bird sanctuary (Author 2018)

3.6 // URBAN VISION

3.6.1 PRECEDENT

Mamelodi Regeneration Strategy - GAPP Architects and Urban Designers

The Mamelodi Regeneration Strategy is a development proposal for the pre-appraisal phase of the City of Tshwane's Neighbourhood Development Programme, known as the Tsosoloso Programme (GAPP 2010:5).

The concept guiding this development proposes that the most effective way of stimulating economic activity, is to cluster appropriate land uses into hierarchical nodes, and link them with activity corridors that promote growth (GAPP Architects & Urban Designers 2010:21). The intention of this strategy is to concentrate activities in order to make services and facilities available and accessible via public roads, pathways and other supporting infrastructure (GAPP 2010:21).

Critique on this proposal is that the architects and planners were unable to capture and respond to the uniqueness of the township's contextual and historic layers. In the proposal, the planners prioritized green and open space within the urban context only while inclusion of the major historic and natural feature of the Magaliesberg is lacking.

The urban vision aims to use this nodal activation as a base, but relate it closer to the Northern periphery of Mamelodi. The urban vision aims to draw attention more towards the environmental and recreational opportunity present within the natural context.

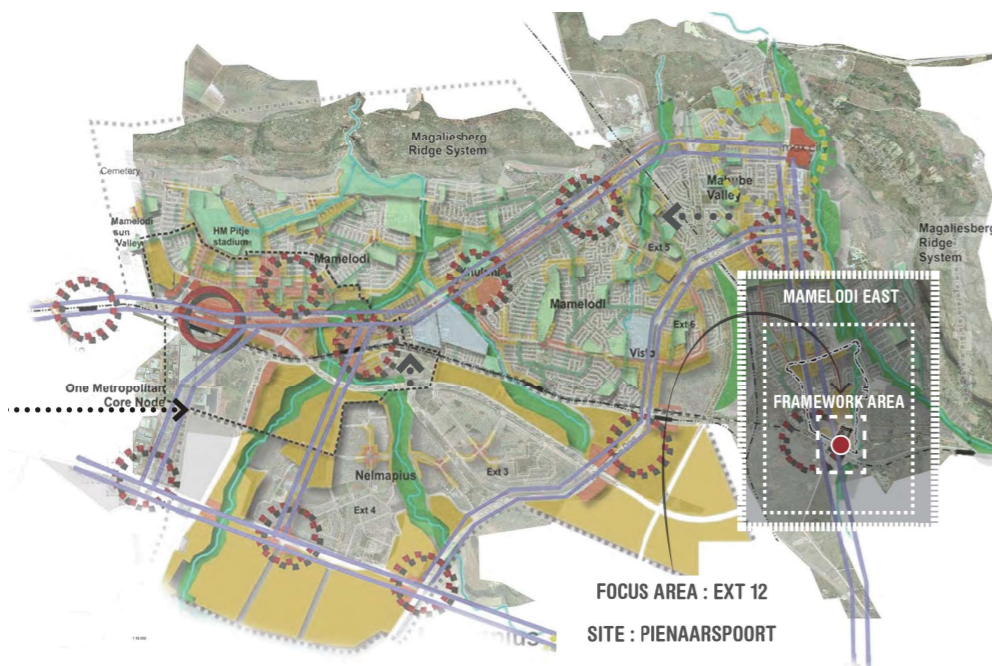


Figure 3.31: (Left) Mamelodi Framework proposal. (GAPP 2010)

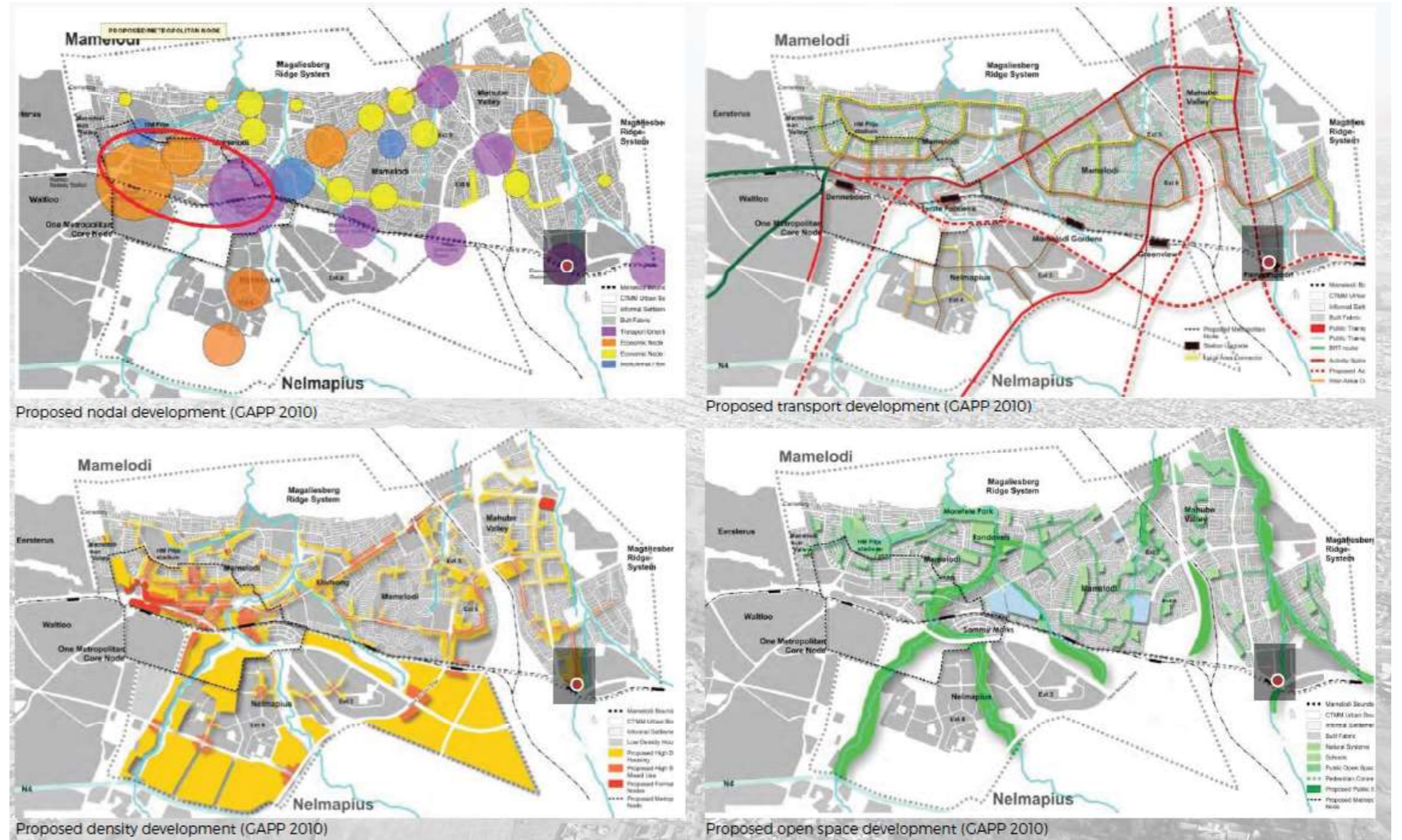


Figure 3.32: (Above) Collage of strategies depicting nodal development, vehicular movement, open space and housing density (GAPP 2010).

3.7 // URBAN VISION

URBAN AND PRECINCT VISION APPROACH

By understanding the context of Mamelodi through research and mapping, it has been identified that there is an imbalance between prioritizing urban enablement versus natural enablement.

The Magaliesberg which borders Mamelodi, Eersterust and Baviaanspoort is a shared natural resource with benefits currently undervalued. The mountain-scape boasts rocky outcrops; a valley fed by permanent river and smaller seasonal watercourse; heritage routes and cultural values as well as close proximity to the urban fabric.

The urban vision harnesses two identified nodes of access from the urban context to the mountain. These nodes were chosen for investigation for two 2018 Masters in Architecture projects. These two access nodes include Moretele Park at the Pinaars River and the Mothong African Heritage Site.

WHY THE SITES WERE CHOSEN?

(01) Marni van der Hoven

Distil - Architecture of the In-Between Condition

The proposed site is chosen due to its proximity to the greater economic area of Mamelodi West; the poetic and programmed nature of the site; its magnificent view overlooking the city; as well as its current value of being a natural resource.

(02) Cindi Janse van Vuuren

The Unending Rainfall of Architecture

The site choice originates from the normative position of the architecture student relating to the concept of non-place exploration through the catalysing potential of water. Mamelodi was chosen firstly for its position within the spatial legacy in the South African context, and the severe implication of ownership of place in the Magaliesberg where the Pinaars River enters the urban condition of Mamelodi West, near Moretele Park.

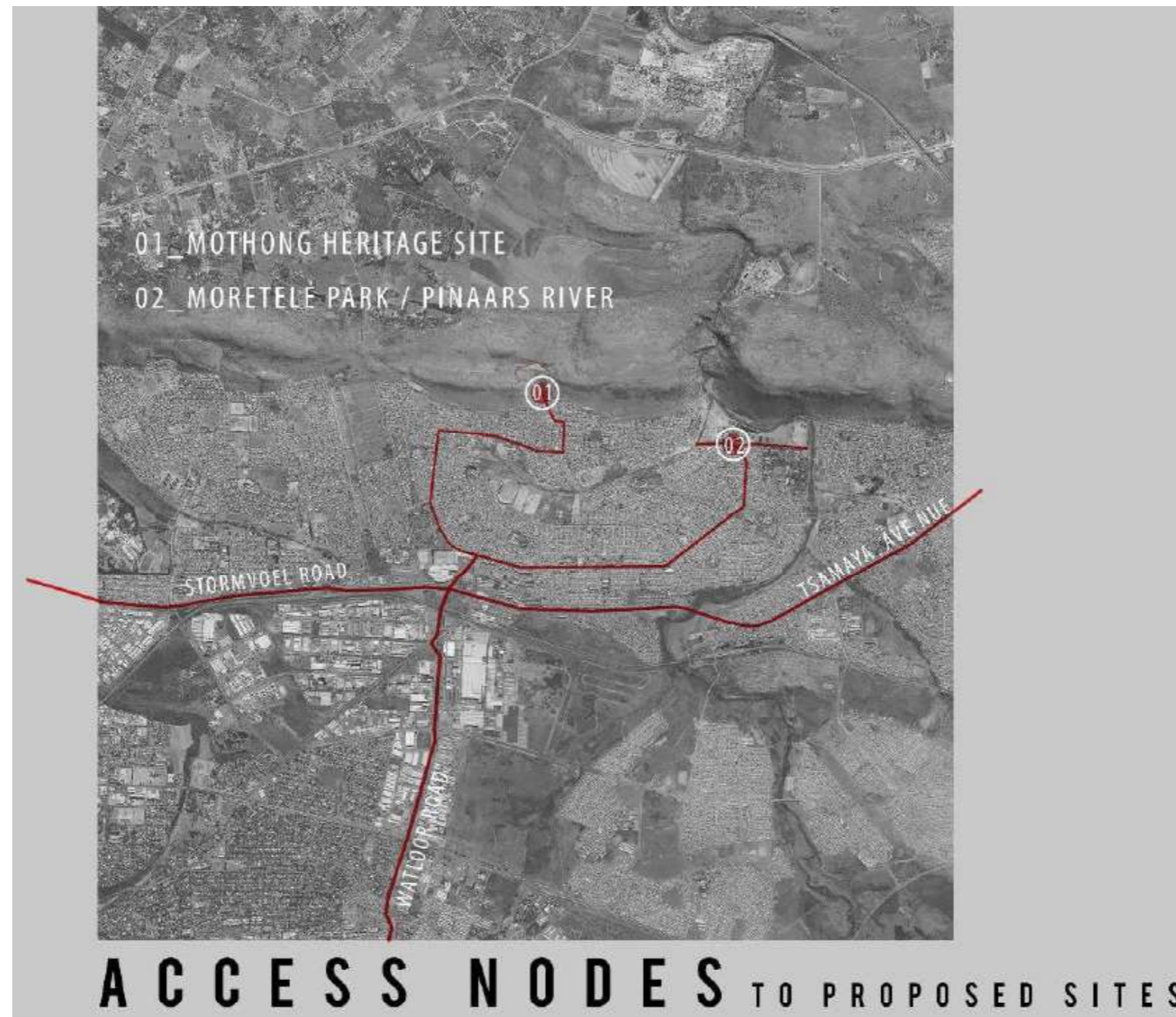


Figure 3.33: Access nodes to the Magaliesberg (Author 2018).

The intention for the urban vision is to create an architecture of 'community' and 'dialogue' and of the human and formal building of the 'realm of the in-between' place.

Investigation of the node at Mothong Heritage Site is investigated further into a site vision for this architecture dissertation.

(01) DISTIL - Architecture of the In-Between Condition

The site vision's theoretical approach considers the three zones of liminality namely the preliminal (the urban), the liminal (the threshold) and the postliminal (the Magaliesberg). The vision harnesses and builds on the existing positive features identified in the site by extending and increasing the area's biodiversity through the inclusion of socio-ecological and recreational activities.

Furthermore, the framework utilizes the strengths of the area and to adapt the principles of the GAPP (2012) urban upgrade to the context within the study area. The aim is then to make a positive contribution to the natural- and urban environments through the proposal at the threshold node. Furthermore,

3.8.2 // THE ISSUES AND PROPOSAL

IDENTIFIED DURING THE PRECINCT MAPPING:

1. The wetland in front of the site is a major contributor to the site's biodiversity, but is currently in a deteriorated and neglected state. Rehabilitation of the wetland is prioritised in the urban vision.

2. There is a lack of infrastructure for storm water catchment off of the slope at the foot of the mountain. The framework proposes that storm water be harvested through the provision of storm water channels at the foot of the mountain ridge. These will be channelled to the wetland in front of the proposed site and will therefore aid in the wetland's rehabilitation.

3. Extending on the GAPP (2010) proposal, corridors and pathways between nodes will be upgraded with sidewalks and storm water channels.

The urban vision proposes that the routes be upgraded in the following manner:

1. Pedestrian routes and walkways leading to the site 'node' are to be activated to give awareness of the 'node'.
2. End Street and the suggested roads leading to the site are to be activated with proper sidewalks, streetlights and bicycle routes.
3. Water is to be collected along these routes in order to be harvested and recycled – the proposal is that the water runs through the wetland to the water storage tank.
4. Bioswales are to be incorporated into the surrounding roads in the area as well as into new parking areas.

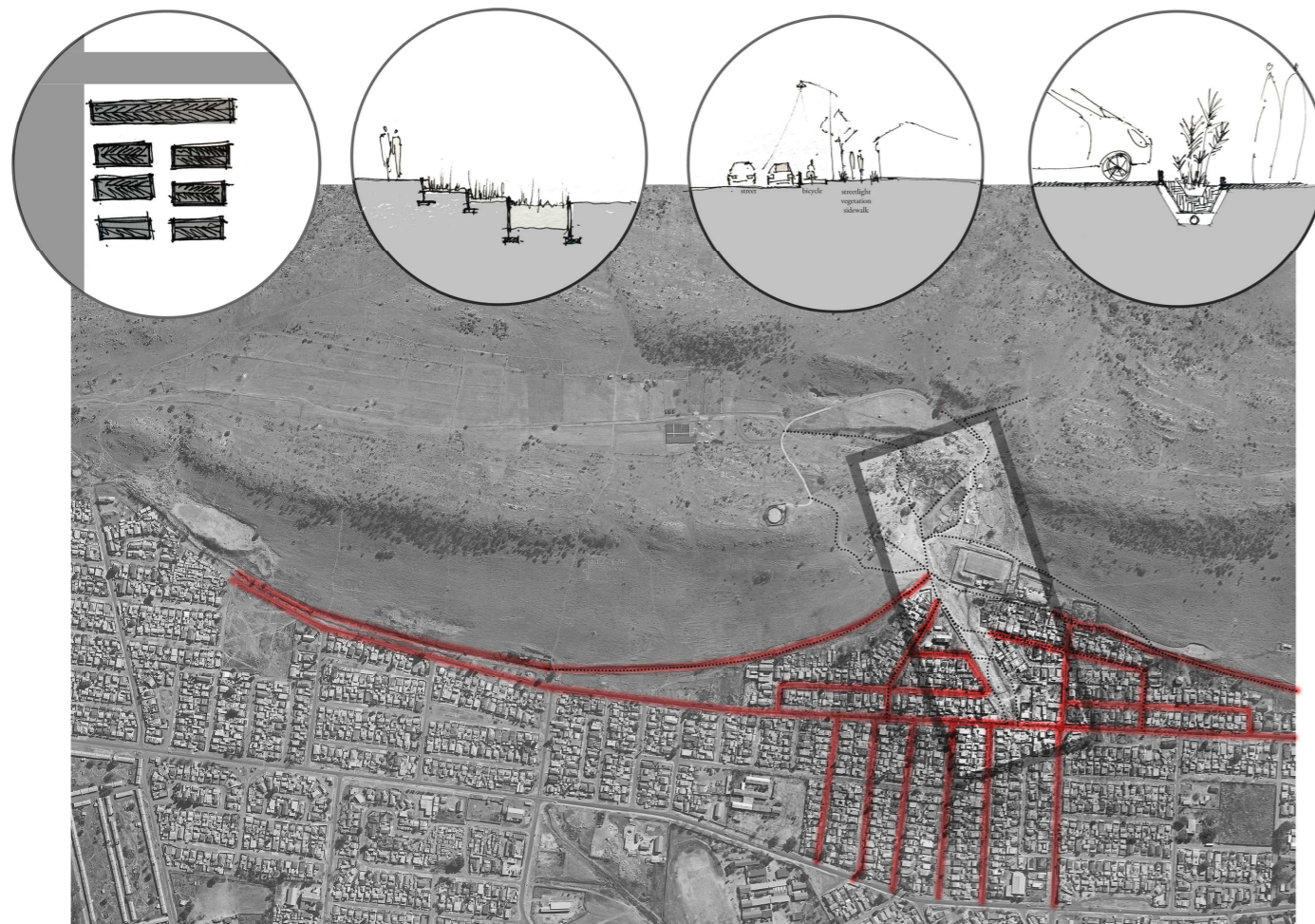


Figure 3.34: Site vision proposed urban upgrade diagram (Author 2018).



The amalgamation of instinctive social and natural conditions

Figure 3.35: Amalgamation of instinctive social and natural conditions (Jansen van Vuuren 2018).

SITE VISION

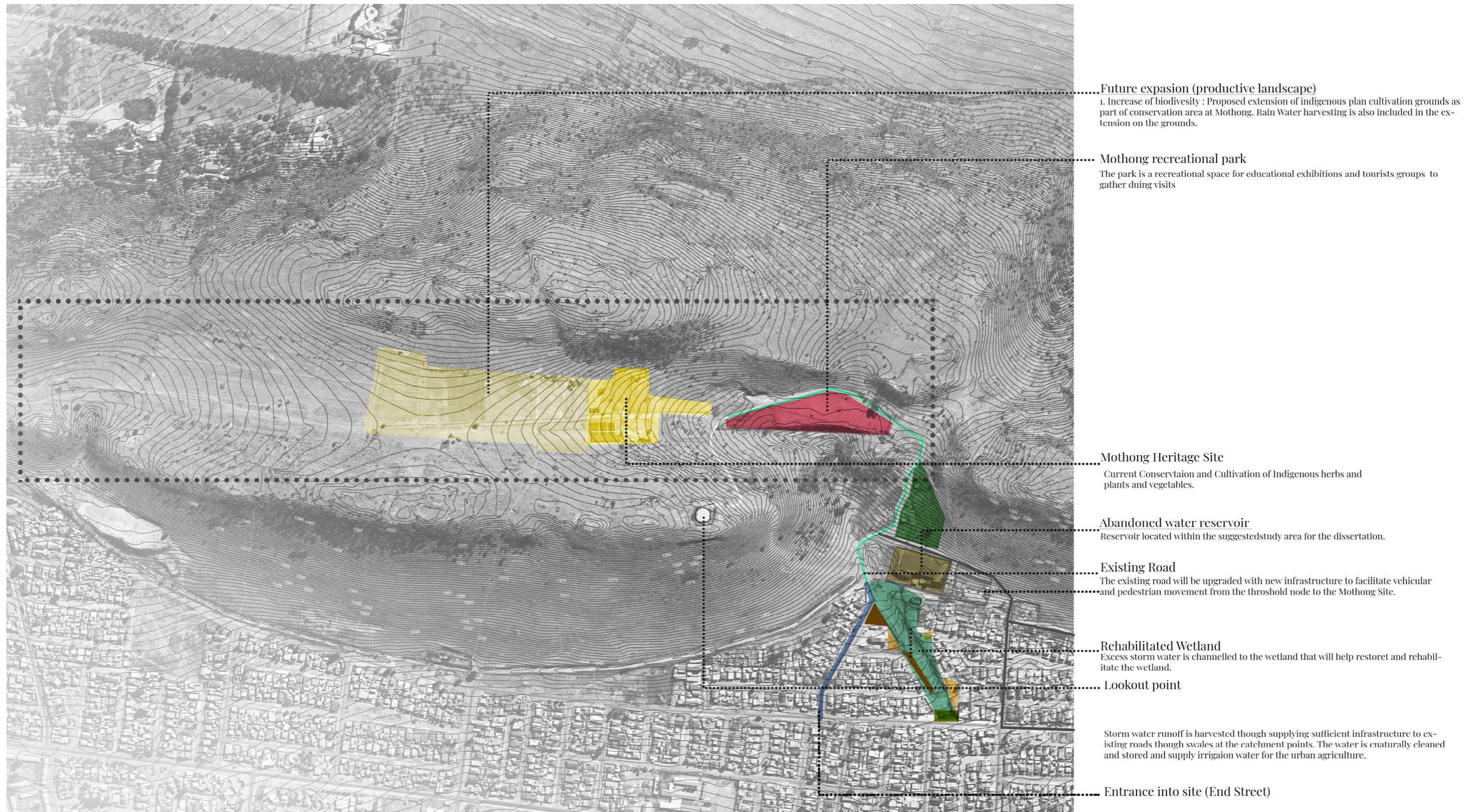


Figure 3.36: Urban vision diagram (Author 2018).

THEORY

- 2.1 LIMINALITY THEORY
 - 2.1.1 INTRODUCTION
 - 2.1.2 THE LIMEN ADOPTED INTO ANTHROPOLOGY
- 2.2 THREE PHASES
 - 2.2.1 SEPARATION
 - 2.2.2 MARGIN
 - 2.2.3 INTEGRATION
 - 2.2.4 CONCLUSION
- 2.3 ADAPTIVE RE-USE THEORY



...

This chapter discusses the theoretical approach of Liminality and adaptive reuse as a result of an understanding of the site condition as an in-between condition between the natural and the urban context.

LIMINALITY THEORY

The three phases of Liminality in Rite of Passage

2.1.1. // INTRODUCTION

The dissertation research problem deals with the importance of the transitional moment between the harsh urban and serene natural environment. The value of the theoretical grounding is to enable a better understanding of the transitional moment within socio-cultural realms – specifically through the lens of anthropology that gives insight into the human experience within this process. This transitional moment paves the way for a design grounded in liminality. The etymology of liminality shows the Latin root word “limen” that means threshold, which is an inherently architectural element.

Turner (1963) stated that liminality refers to any “betwixt and between” situation or object. Common architectural spaces that represent the in-between can, for example, be a parking lot, which can only function as itself in conjunction with another space – the space to which you are going. Therefore, the in-between space is not a destination but a place adjoining the former and the coming state. Other examples of liminality are, firstly, stairwells and elevators, which are clearly in-between spaces or thresholds as their purpose is to get you from one point to another. Secondly, liminality can be found in areas or zones such as the border areas between nations; in monasteries or prisons, and at seaside resorts or airports. Liminality can, thirdly, occur in “countries” or larger regions and even continents (Thomassen 2009:13).

Within the field of anthropology, the theory of liminality has been extended in thought, complexified in concept, and represented within the socio-cultural realm. In this study it is substantiated through a site analysis that discerned the characteristics of the site as being a threshold and in-between space. This chapter unpacks these themes and translates them to the discipline of architecture in order to aid the creation of spaces for people.

Liminality theory is comprehensively explored in the works of authors such as Arnold van Genepp in

Rite de Passage (1960) and Victor Turner in *Betwixt and Between* (1963). The exploration of liminality through anthropology provides a definition of the theoretical concept. Van Gennep (1960) and others have, however, showed that the construct of limen (as discussed in Rite de Passage) is not confined to culturally defined life-crises, but may accompany any change from one state to another (Turner: 1967: 93). Therefore, the liminal – meaning threshold and/or relating to a sensory threshold, or being an intermediate state, with the characteristic of being an in-between condition – can be translated into architecture.

“I prefer to regard transition as a process, a becoming, and, in the case of rites de passage, even a transformation” (Turner 1963:4).

2.1.2 // THE LIMEN ADAPTED INTO ANTHROPOLOGY

(i) Arnold van Gennep: Rite de Passage (1690)

Van Gennep defined rites de passage as those rites that “accompany every change of place, state, social position and age” (Turner 1960:4). There is differentiation between “transition”, which implies various moments and is considered a process, and “state”, which is considered a stable condition. Van Gennep (1960) distinguished between rites that mark the passage of a social group from one status to another and those that mark transition in the passage of time. Accordingly, he went on to explore “the basis of characteristic patterns in the order of ceremonies” (Van Gennep 1960:10). He discovered that during these cultural ceremonies, a person undergoing the transition process, occupies a state of in-between-ness.

Emphasising the significance of transitions in any society, Van Gennep (1960) favoured rite de passage as a distinct category, which shows that all rites of transition

2.2 THREE PHASES

2.2.1 // Separation PRELIMINAL PHASE

The state of familiarity

are marked by three phases: separation, margin (or limen), and aggregation (Turner 1963:5). The structure of these three phases is each unique as a stable 'state'. He found that, often, all the rites can be present in the margin phase. Thus, rite de passage implies that there is a distinct moment of transition within a state of flux that is positioned within the in-between-ness of two distinct and stable states. Van Gennep (1960) distinguished between a state (a fixed or unwavering condition) and transition (the process of transforming and becoming).

(ii) Victor W. Turner: Betwixt and Between (1963)

Turner (1963) expanded on the importance of the limen and built on Van Gennep's (1960) understanding of rites de passage.

His discovery of Van Gennep's (1960) Rite de Passage in the summer of 1963 inspired him to write the essay "Betwixt and Between: The Liminal Period in Rite of Passage", which became the most famous chapter of his 1967 publication, *The Forest of Symbols*. Turner (1963) confirmed Van Gennep's (1960) definition of society as a structure of positions, of which each marks a change in an individual's status. Turner (1963) stated that 'liminality refers to any betwixt and between situation and object.' It is evident that this understanding opens up the discussion for possible uses of the concept far beyond those that Turner (1963) himself had suggested.

The concept of the liminal space of cultural rituals focuses on how the 'passenger', the person within the phase, exits within these states and how the limen is defined through this.



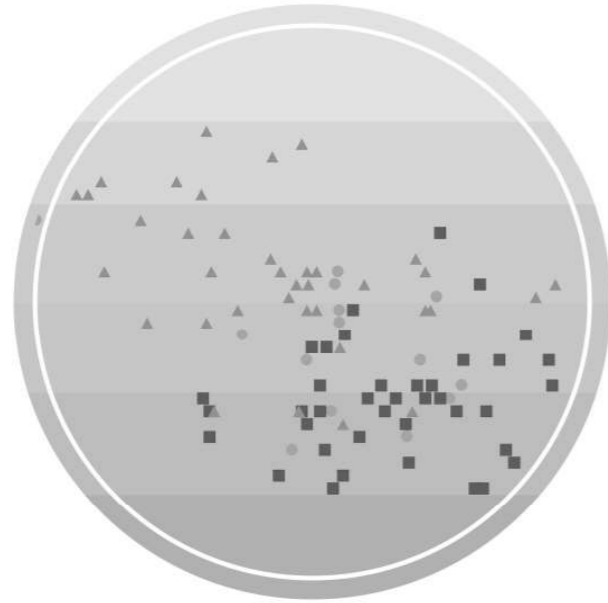
- Separation -

*Figure 2.1: Conceptual Illustration of State of Separation - Preliminal
(Author: 2018)*

The symbolic behaviour of this stage signifies the detachment of the person or group from an earlier fixed point in the social structure; from a set of cultural conditions or "state" (Turner 1963:5). This state can also be representative of what is known and familiar to a person, such as norms, value, and culture or routine. Van Gennep (1960) described this rite of separation as the pre-liminal rite, which metaphorically is the "death" of a person – the person is obligated to strip themselves from all things binding them to their former condition or routine. Symbolically, this rite signifies the initiation of the individual to detach themselves from a former fixed point in their social structure; enabling to continue to the next rite, which is the marginal phase.

2.2.2 // Margin LIMINAL PHASE

The state of change



- Transition -

Figure 2.2: Conceptual Illustration of State of Transition - Liminal (Author: 2018)

Van Gennep (1960) defined the liminal phase as a state, which implies a stable condition. This intermediate stage in the rite de passage is the liminal period. It is within the liminal phase that the person is subject to experiencing ambiguity, as they pass through a realm that has few or no attachments to either the past (separation) or coming (aggregation) state. In the ritual condition, the individual becomes nameless or without identity. Therefore, the power of this state to influence the perception of the individual is greater than that of any other state (Thomassen, 2006:22). The person in the liminal rite is disconnected and disassociated from anything they knew and their future is uncertain. This liminal period is very powerful as it has a very distinct energy. This period is one with great potential to either damage a person or raise great possibilities. This is the moment where the greatest potential for change can occur.

Turner considered the structurally negative characteristics of a person within the transition as to have nothing: he expressed it through the attributes of “structural invisibility”.

“We must regard the period of margin or ‘liminality’ as an interstructural situation” Turner (1963). The positive aspects of liminality are accompanied by

the processes of growth, transformation and the reformulation of old elements into new patterns (Turner 1963:6). According to Turner (1963), the symbolic power of this encourages the “passenger” to think about their society, and the powers that sustain them, although they have been detached from former norms and sentiments.

“Liminality may be partly described as a stage of reflection” (Turner 1963:14).

This understanding of liminality can inspire architecture in the making of spaces for reflection. The experience of the liminal space causes the occupant to question their surroundings, thus leading to a heightened awareness of the space as a transformative threshold between distinct places. Turner (1963) stated that the metaphor of dissolution is often applied to the liminal stage. What had previously constituted the identity of a place or person before separation must be broken down to enable transformation to Turner (1963), occur in order to enter the new state of aggregation. In Chapter 3 of his book Turner (1967) says stated that “during the intervening liminal period, the characteristic of the ritual subject is ambiguous, as he or she passes through a cultural realm that has few or none of the attributes of the past or coming state.” The person’s

status is therefore ambiguous: the person may feel confused, dislocated, lost and vulnerable; therefore this stage has the power to be destructive.

Moreover, as liminality is considered a process (Gennep 1960), a moment has to be created for reflection, thus a ‘pause’ must take place. Yi-Fu Tuan stated in *Space and Place* (1977) that “if we think of space that allows movement, then the place is a pause; each pause in movement makes it possible for a location to be transformed into place.” It is in this place of pause that the identity of a space can be explored by the user and a moment for reflection be created.

Fundamentally, the liminal stage is transitional and allows for change and growth. Through this scheme the characteristic of this phase that will be focused on is constructive rather than destructive. Therefore, the activities within this phase prioritise regenerative and enabling properties.

2.2.3 // Aggregation POSTLIMINAL PHASE

The state of unknown / new



- Integration -

Figure 2.3: Conceptual Illustration of State of Integration - Postliminal (Author: 2018)

Thirdly, the postliminal rite is as a state of integration back into society with a new identity, as a “new being” (Gennep: 1960: 21). Here the individual is “consummated in a stable state once more and by virtue of this gains rights and obligations of a clearly defined and structural type (personae), and is expected to behave in accordance with certain customary norms and ethical standards” (Gennep: 1967, p. 4-5).

2.2.4 // CONCLUSION

Liminality refers to a transformative state during cultural rituals. It is a phase that connects two contrasting conditions (the former and the future). Therefore, the state of liminality takes on a hybrid identity – reflecting both conditions, whilst being a state in its own character.

This state is fundamentally abstract as it is characterised by being a threshold or boundary: an in-between. In *Complexity and Contradiction in Architecture*, Robert Venturi (1966) defined the ‘both-and’ condition in which space has multiple readings; meaning it is both one thing and at the same time another’. From this viewpoint, the limen has very specific possibilities in the architectural realm.

It is important to note that liminality in Rite de Passage relates not only to cultural rituals of transition, but that its definition also has degrees that include physical markings, such as in the field of architecture. Liminality in historical architecture, according to Van Gennep (1960), is “about differentiating between”, what he calls, the “profane and the sacred world” (Turner 1960:94).

Van Gennep (1960) presented that in any rite of passage the “incompatibility between the profane and sacred world is so great that man cannot pass through one to the other without going through an intermediate stage.” The contrast between the two realms of the preliminal (represented by the profane) and the postliminal (representing the sacred) has to have a moment in between. It is this intermediate stage that is represented through the liminal realm.

“In memorable experiences, if architecture, space, matter and time fuse into one single dimension, into the basic substance of being that penetrate the consciousness, we identify ourselves with this space, this place, this moment and these dimensions, as they become ingredients of our very experience. Architecture is the art of mediation and reconciliation” (Pallasmaa 2007). It is understood through this that the elements of space, matter and time are inseparable from architectural experience.

The experience of the liminal space is more than just the static moment of existing between two conditions but a process (Van Gennep 1960). The making of architecture through conventions of form, material and light as well as the consideration of movement and change within place-specific conditions is a strong representation of the making of a liminal space in architecture. Kent Bloomer (1977) suggested in his book *Body, Memory, and Architecture* that architecture is “an incitement to action, a state for movement and interaction.” Emphasis on both the physical space and the qualities that make it a desirable place to inhabit can create a more powerful sense of place.

2.3

ADAPTIVE REUSE THEORY

Approaches to remodeling existing infrastructure

The London Based architects, Graeme Brookner and Sally Stone (2004) argue that when a building is reused, the most important and meaningful factor in the design of the new building is the relationship between the old and the new (Brookner and Stone 2004:79). The principles of adaptive re-use for this dissertation considers both the design of the original building, and function the original building. However, the building’s value extends beyond the physical bounds to the creation of new identity of place and the development of the history of the specific site. Adapting to the robust structure allows for the creation of a new ‘layer’ of old structure though using new elements and programme to highlight the potential of physical environment.

The Brookner and Stone (2004) developed three categories or strategies of building reuse based on the extent of integration between the host building and the new elements. These strategies are intervention, insertion, and installation, as defined below:

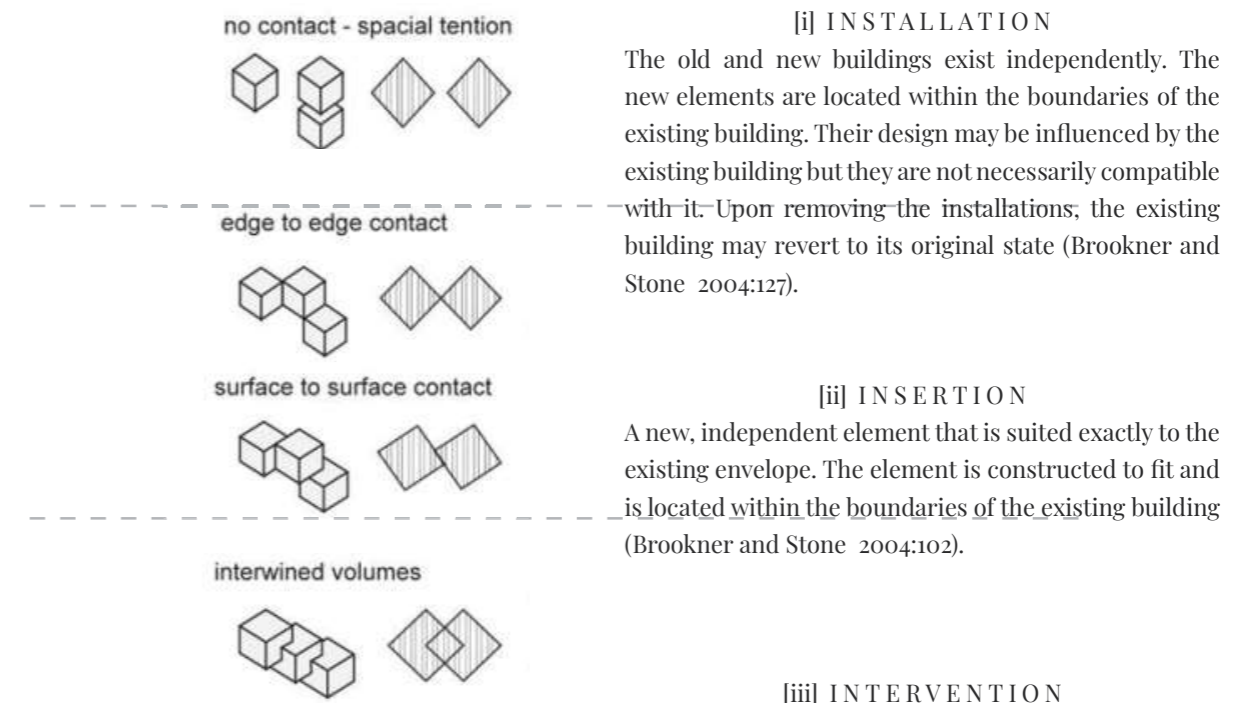


Figure 2.4: The extent of transformation of an existing building, including the three categories/strategies, four diagrams that illustrate the physical application, and a numeric scale that links the two measures (Gewirtzman, 2016).

The work of Parks and White who suggests simple diagrams to interpret possible **interventions** types. The categories include the following: “Gate, Wall, Corner, Bridge, Transition, Joint, Boundary, Filter, Umbrella, Roof, Parasite, Hat, Divider, New interior, Skin, Glue, Feature, Infill, Underground, Alignment and Dis-alignment” (Gewirtzman, 2016:8).

These categories are used throughout the design development of the project to interpret different adaptive reuse approaches to the existing infrastructure on the site. Within the built fabric, the elements such as wall, roof, column, and floor were considered for transformation. The new intervention in relation to the existing building took on various approached.

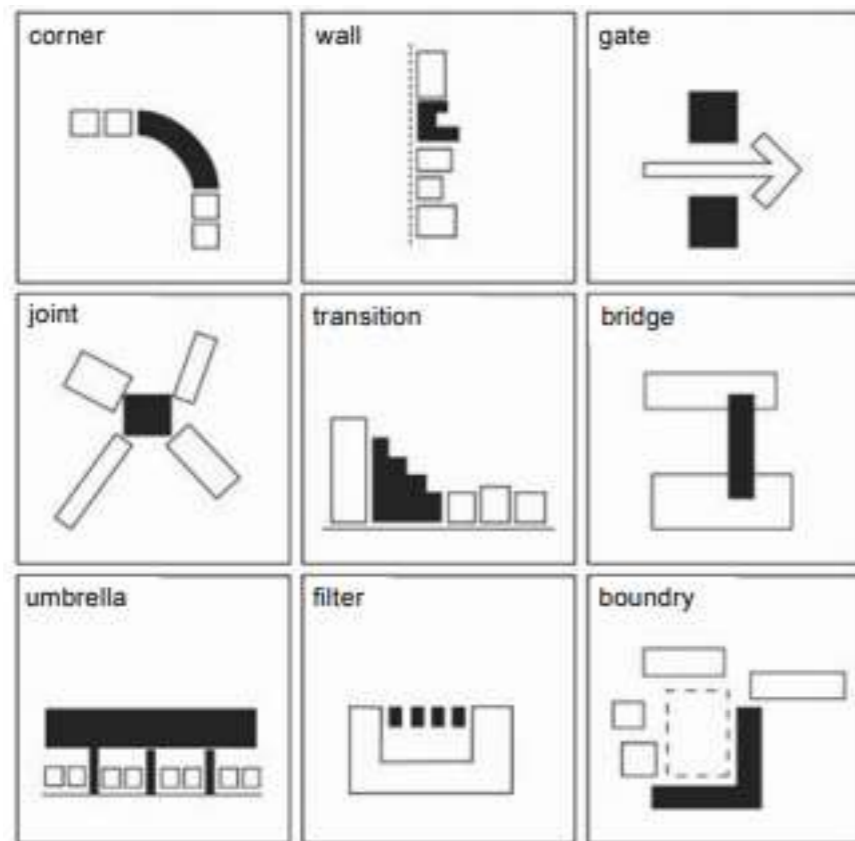


Figure 2.5: Intervention types (Gewirtzman, 2016).