

Building Landscapes

Mending the fracture between cite' and ville through an urban architecture of place

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Mending the fracture between cite' and ville through an urban architecture of place

by
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in the
Faculty of Engineering, Built Environment and Information Technology
University of Pretoria

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Course Coordinator:
Prof. Arthur Barker

Study Leader:
Prof. Arthur Barker

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…….....
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Project Summary

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Programme
Entrepreneurship - Public market & Business incubator

Research field
Human settlements & urbanism

Client
Department of Trade and Industry

Theoretical premise
To mend the fracture between a city's lived experiences (cite') and the built environment (ville).

Architectural approach
Using place-making theories to restore the lost character of place of Pretoria by creating new productive and spiritual connections between man, nature and the built environment.

Abstract

It is difficult to imagine the notion of growth as negative, but what if the means to achieve such growth has negative consequences? Despite warning signs of modernisation as an unsustainable development, from the 19th century onwards, our cities have been preoccupied with maintaining an accelerated rate of economic growth to the detriment of its people's well-being (Amin 1997:70).

According to Lorenzo Fioramonti, the global issue of 'growth-at-all-costs' is especially evident in our cities today, where the conceptualisation of growth and modernity is most visible. The nature of 'growth-at-all-costs' through modernisation has not only resulted in poverty and inequality, but also affected the material city through constant friction between the natural landscape and the emergent built environment (Highmore 2005:14). Godfrey (2012:1) states that a city's greed for growth is anthropocentric and has demoted nature as an object to overcome and exploit, contributing to the subjugation of nature within our cities (Highmore 2005:150).Fioramonti (Mtongana 2017) argues that the only way to maintain and preserve our social and ecological assets and create a sustainable future for humanity, is to place the well-being of man, nature and their relationship with each other, at the centre of development.

To better understand the consequences of modernity in cities today, the complexity of a city needs to be unpacked. Sennett (2018:2) conceptualises a city as a combination of *cite*' and *ville*, where *cite*' refers to the consciousness of place through its lived experiences and *ville* to the built environment. Ever since the Industrial Revolution, urban theorists have failed to successfully plan cities where *ville*, the built environment, and *cite*', the lived experiences, seamlessly fit together (Sennett 2018:84). The remnants of this fracture between the knowledge of building i.e., *ville*, and the knowledge of living ie., *cite*' is especially visible in the city of Pretoria.

Biljon (1993:42) argues that as a result of modernity and its preoccupation with growth, the city of Pretoria's development focused mainly on developing *ville* through positivist planning schemes and as a result neglected *cite*', and in so doing 'lost' the initial sense/character of place, of the city.

This dissertation will attempt to find ways in which architecture, through place-making, can improve the lived experiences of Pretoria's citizens, in order to establish new relationships that are able to mend the fracture between *cite*' and *ville*. By situating the investigation within Trevenna, adjacent to the Apies river, this dissertation is able to adopt the city of Tshwane's regenerative vision, which encourages place-making as a means to celebrate the 'lost' character of Pretoria as a city that is part of the natural landscape (City of Tshwane 2013).

Expression of thanks

To Jesus Christ my Saviour, who's grace never failed me even when I made mistakes and Him who carried me when I wanted to throw in the towl.

To Renée, my beautiful wife, thank you for always believing in me and motivating me to be the best I can be. Thank you for your love and understanding for all the times I had to work late, get up early and snooze my alarm 10 times before I actually wake up. Lastly, thank you for working extra hard to provide for us whilst I study full-time. I love and appreciate you.

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Figure 1.1: Manchester from Kersal Moor (Wyld 1852, edited by Author)

Introduction
01

In pursuit of modernity

The advent of the Industrial Revolution signified modernisation and signalled liberation from nature (Marien & Fleming 2005:567). Industrialisation sparked the growth of cities such as London and Paris as they presented the most economic opportunities, but this influx of people was met with the inability of the city and its infrastructure to accommodate the rapid growth. This resulted in poor living conditions such as overcrowding, pollution and poor sanitation (Highmore 2005:33).

In Paris, under the guidance of Baron Haussmann, the city underwent a massive transformation as boulevards were constructed to supply the city with a network of wider and straighter roads. These boulevards allowed for the increase in traffic flow as well as enhancing the circulation of goods which in return increased consumption (Highmore. 2005:32). According to T.J Clark (1984:23), Haussmann's modernisation was only made possible by relocating the working class from the city's centre and placing them in Belleville on the outskirts of the city, which at the time had little infrastructure to accommodate the masses (Highmore 2005:69).

The warning signs of urban modernisation as an unsustainable development was already noticeable during the 19th century and our cities have ever since been preoccupied with maintaining such an accelerated rate of economic growth to the detriment of its people's well-being (Amin 1997:70).



Figure 1.2: Demolition of Butte des moulins for Avenue de l'Opera (Desconocido 1870, edited by Author)



Figure 1.3: The photographic memory (Marville 1877, edited by Author)



Figure 1.4: Boulevard Haussmann (Rue des Archives 1929, edited by Author)

Preoccupied with growth

It is difficult to imagine the notion of growth as negative, but what if the means to achieve such growth has negative consequences? With our current economic system's success being measured by the total value of services and goods produced by the Gross Domestic Product (GDP), its performance has become synonymous with our prosperity and well-being (Constanza 2014:284).

According to Lorenzo Fioramonti, the global issue of 'growth-at-all-costs' has resulted in poverty, inequality as well as the depletion of our natural systems. Fioramonti argues that the only way to maintain and preserve our social and ecological assets and create a sustainable future for man is to place the well-being of man, nature and their relationship with each other at the centre of development (Mtongana 2017).

This preoccupation is especially evident in our cities today where the conceptualisation of growth and modernisation is most visible. Highmore (2005:14) suggests that our cities demand an intense rhythm, one with a rapid tempo of circulation to which society must either adjust to, just tolerate or suffer from. According to Aubert (Fortier & Juarez 2017:209), the accelerated pace of living gives a false impression of self-realisation and has had a visible negative effect on how we produce, consume and interact.

The nature of 'growth-at-all-costs' i.e., modernisation, doesn't just impact the pace of the city, but it also affects the material city with its constant friction between the natural landscape and the emergent built environment. (Highmore. 2005:14). Godfrey (Godfrey 2012:1) states that our greed for growth is anthropocentric and has demoted nature as an object to overcome and exploit which constitutes towards the subjugation of nature within our cities (Highmore 2005:150).

Research problem

Urban issue

The fractured city -Pretoria's positivist city development favoured the built environment *(ville)* and has had negative spatial and cultural consequences on the lived experiences (*cite')* of the city. As a result, space has become physically and socially fragmented and 'lost'.

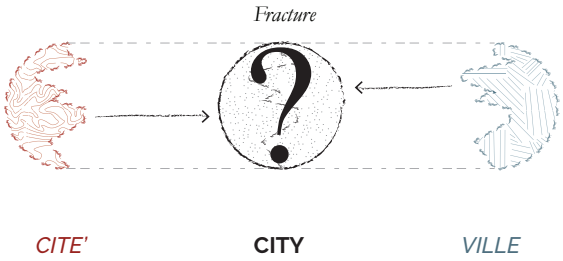


Figure 1.5: City fracture (Author 2019)

Architectural issue

Placelessness - The lost sense of place of the city of Pretoria caused by the fracture between *cite*' and *ville*.

Research question

How can architecture create a sense of place to mend the fracture between *cite*' and *ville?*

How can architecture improve the lived experiences of citizens of Pretoria?

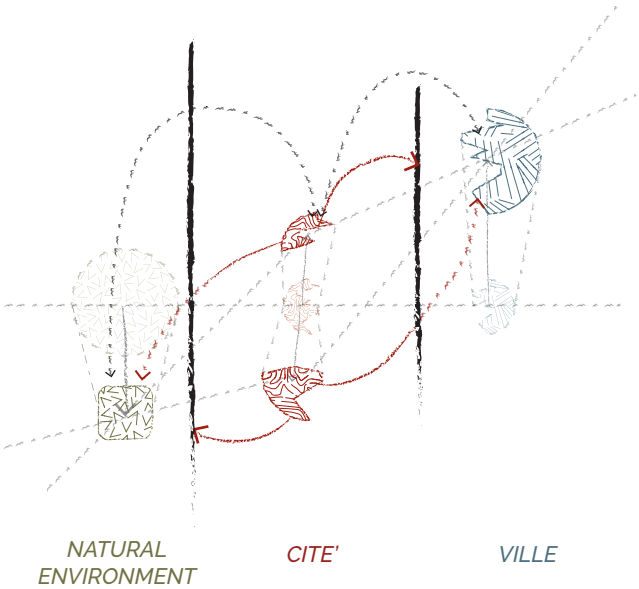


Figure 1.6: Placelessness within Pretoria (Author 2019)

Research Methodology

This dissertation aims to use and apply place-making theories in conjunction with historical research and qualitative analysis in order to restore the lost character of place in Pretoria, by creating new productive and spiritual connections between man, nature and the built environment.

Although the origins of this dissertation is based on literature reviews and theories, the analysis

and understanding of Pretoria's historical development as well as its current conditions will play a vital role in identifying opportunities for interventions.

Mapping, qualitative and historical research

Rieniets (2014) reiterates the importance of public space and the understanding thereof. Understanding these public and interstitial spaces within the city of Pretoria is therefor crucial to the success of the project. This analysis will not only drive the site choice for the dissertation, but it will also help better understand the current urban condition. The analysis will be done through both a desktop and field study. The appropriation of public and interstitial spaces will be documented and illustrated through mediums such as maps, drawings and photographs.

Literature review

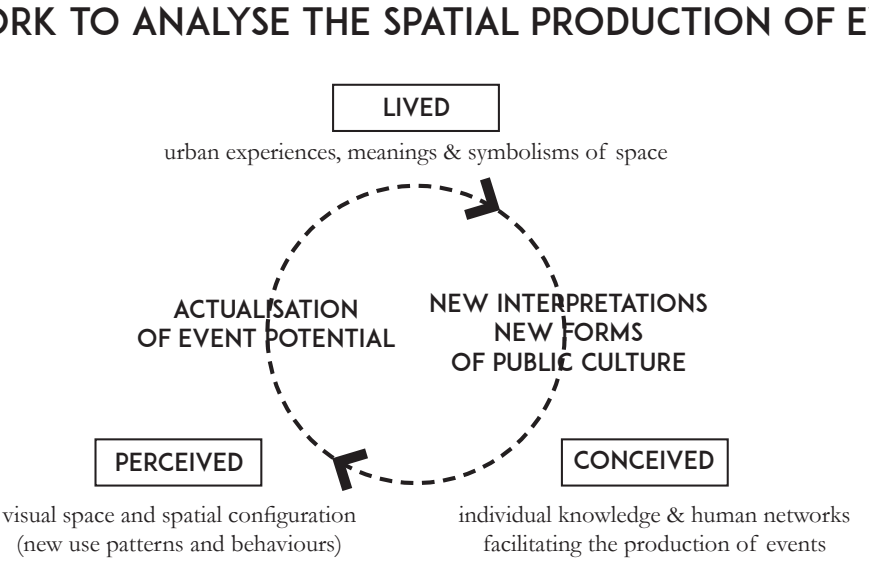
To help interpret the findings of the analysis, parameters will first have to be established through a literature review of the development of the city of Pretoria as well as literature relating to the evaluation of daily rituals and the production of space. Literature on the urbanisation and the inability to accommodate the rising economic demand in the city of Pretoria has identified a specific demographic group to work with whereas literature on the production of space has stated the importance of their daily rituals as it contributes towards an identity and a sense of belonging with the city of Pretoria.

As illustrated by figure 1.7, a framework by Lehtovouri (2009) will be used to analyse the current spatial production of events [lived space] within the city. By using this framework new interpretations and forms of public culture can be identified. These finding will become the driver for the architectural design in order to actualise the latent event potential.

Limitations

The chosen site for this dissertation is situated next to the Department of Trade and Industry (DTI) campus in Travenna, Pretoria. The study was limited in terms of available information on DTI. Public works was contacted for information on the building, but confidentiality prohibited them from sharing any information.
Information on the two heritage buildings situated on the site also proved to be limited, as not a lot of information was publicly available.

Figure 1.7: Conceptual framework to analyse the special production of events (Lehtovouri 2009, edited by author 2019)



The site's current condition as a fall out space also resulted in safety issues, where we were warned by security of the dangers in the area, specifically adjacent to the Apies river, limiting site visits and the regularity thereof.

Delimitations

Due to the size of the site and time restrictions for this project, a smaller focus area has been identified for the intervention. The rest of the site will fall under the Tshwane 2055 vision as a cultural gathering space with a focus on the regeneration of the green corridor and the introduction of a boardwalk next to the river. This will however only be presented in theory and will not be documented in detail.

Assumptions

It has been assumed that this project and the identified site will fall under the City of Tshwane's 2055 vision for Pretoria as part of the Kopanong district - cultural meeting place with a strong focus on the regeneration of the river.

Project research intention

The intention of the project is to mend the fracture between cite' and ville by re-establishing Pretoria's lost sense of place and to create a social, economic and environmental resilient city whilst being sensitive to the history of place.

Terminology

Cité:
The French concept referring to the consciousness of place through its lived experiences which equates to dwelling (Sennett 2018:2).

Ville:
The French concept describing a building or the built environment (Sennett 2018:2).

Liminal space:
The word liminal is derived from the Latin word for threshold. This can be best described as a transitional or in-between space (Liminal space 2016).

Preoccupied growth:
This concept described by Fioramonti (2017) refers to the preoccupation with economic growth without considering the effects on natural and human capitol.

Place-making:
Friedmann and Cresswell describes place-making as an event, open and flexible, brought into life by its social practices (Friedmann 2010:154, Cresswell 2004:39).

Positivist planning:
Biljon (1993:42), describes positivist planning as predominantly focused on infrastructural development and not on addressing the needs of the people. It dealt mostly with the issue of 'things' rather than with the needs of its inhabitants.

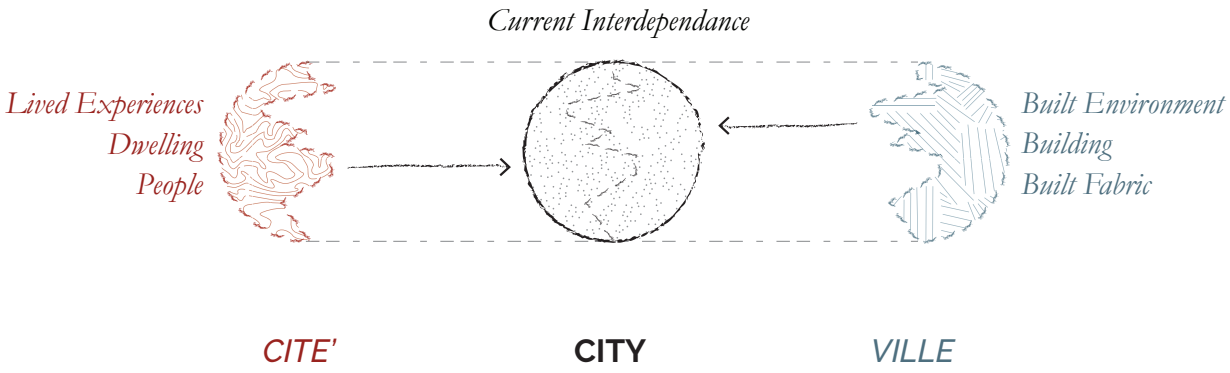
Kopanong:
This word refers to meeting place or a place where people gather. This is a cultural meeting place demarcated in the Tshwane 2055 vision, which embodies the African dualism of our spiritual and productive connection with place (City of Tshwane 2015).

Lived space (refer to sometimes as third space):
Henry Lefebvre (1994) believes that the practice of everyday rituals is what creates 'lived experiences' and is very important in conceptualising space as a while. It is within this lived space where a person or community can establish an identity which has the potential to contribute greatly towards a sense of belonging within a city.

Appropriation:
The Cambridge Dictionary (2019) describes appropriation as the act of taking something that is not your possession and using it without consent. In the context of this dissertation it describes spaces that are being used for an entirely different purpose than it was initially intended or designed for.

Production of space:
This term refers to spaces that are formed as a result of social interactions (Rieniets 2014:181).

CITY's DUALISM



This project originates from a theoretical understanding of a city as a marriage [interdependant relationship] between its cite' and ville.

Figure 2.1: A city's interdependance (Author 2019)

Background
02

A city's duality

Dating back to early Christianity, Christian philosopher St. Augustine Hippo (354AD - 430AD), presented the notion of the city as a metaphor for God's design of faith (Sennett 2018:2). There was a clear distinction between the physical realm i.e., the earthly city, and the spiritual realm i.e., the city of God. Although the Christian metaphor vanished, this dualism between the physical and the metaphysical remained (Sennett 2018:1). It was not until the early 18th century that the French translated the concepts into *cite*' [chi-the] and *ville* [vil-h] where *cite*' referred to the consciousness of place through its lived experiences which equates to dwelling and *ville* to building or built environment (overall city) (Sennett 2018:2).

If cities were built exactly how people wanted to live, then fitting *cite*' and *ville* together seamlessly would have been an easy task, but unfortunately the reality in a city is that our experiences are seldom seamless but rather filled with contradictions (Sennett 2018:3). Highmore states that unless industrial and urban rhythms are in harmony with the human body, the dissonance will produce sickness within the city (Highmore 2005:149).



Figure 2.2: Opera Avenue Drilling (Marville, 1853, edited by Author)



Figure 2.3: Eixample (Juventud 1931, edited by Author)

A forced marriage

During the 19th century attempts were made by Baron Hausmann's boulevards in Paris, Ildefons Cerda's new city block grid in Barcelona and Frederick Olmsted's 'artificial' park in New York, to reconcile this dualism through the transformation of the *ville* in order to improve and shape *cite*' (Sennett 2018:31,37,43), but each attempt was met with unmanageable behaviour of people in the city. Georg Simmel argues that it is exactly this forceful reshaping of the *ville* that affects our behaviour and lived experiences i.e., *cite*', in the city either by being socially unresponsive, socially responsive or by adopting certain behaviours brought by peer pressure (mob mentality) (Sennett 2018:55).

The fractured city

Following the failures of the great generation and its attempt to merge the *cite*' and *ville*, architects, sociologists and urban planners of the 20th century let go of the idea and as such finalised its divorce by specifically focusing on either the *cite*' or *ville*. From the 1890's, the Chicago school of thought focused on the *cite*' and stressed the importance of the social structure of the city (Sennett 2018:68,80) and neglected the quality of the built environment i.e., *ville*, whereas in Paris in the early 1920's, Le Corbusier's view was that of a functional city, with efficiency and speed a primary design driver to the detriment of its *cite*' (Sennett 2018:70).

Figure 2.4: Central Park, Grand Drive (Library of Congress 1869, edited by Author)





Figure 2.5: Construction of Central Park (Unknown 1890, edited by Author)



Figure 2.6: Views of New York and Environs (Magnus, 1886, edited by Author)

On the other end of the spectrum, is PostModernist Jane Jacobs (1916-2006) who argued against the conception of a city as a functional system with her view of a city being shaped by its numerous small-scale lived experiences and interactions (Sennett 2018:78,80). Lewis Mumford (1895-1990) criticised Jane Jacob's approach as it is unable to address the bigger picture of opening the city i.e., the *ville*. Mumford envisioned a new planned metropolis, where (through formal ways) the *ville* should facilitate social reformation. Through his approach, he believed the built environment could gradually lead a city's people and lived experiences to be better aligned with what the community really wants, but his top-down approach also had its flaws by favouring development of one part of the city over the other (Sennett 2018:83-84).

A smarter city

Following the regionalist thinking of Lewis Mumford and the technological advances of the 21st century, 'smart cities' such as Songdo in South Korea and Masdar in Abu Dhabi were developed with urban technologies, aimed at creating, cleaner and more user-friendly cities (Sennett 2018:159). The problem with these 'smart cities' is that they are too prescriptive and fear change. Every element of how the city should function and the elements of living have been laid out precisely in, built form. According to Sennett (2018:161) this has resulted in a too-tight fit between function and form, hindering spontaneous *cite'* encounters.

If this investigation has made only one thing clear about our cities, is that there is no generally accepted approach. The city is fractured between the knowledge of building i.e., *ville*, and living ie., *cite'*. Before the relationship between *cite'* and *ville* can be explored, an understanding of the city of Pretoria's development is needed.

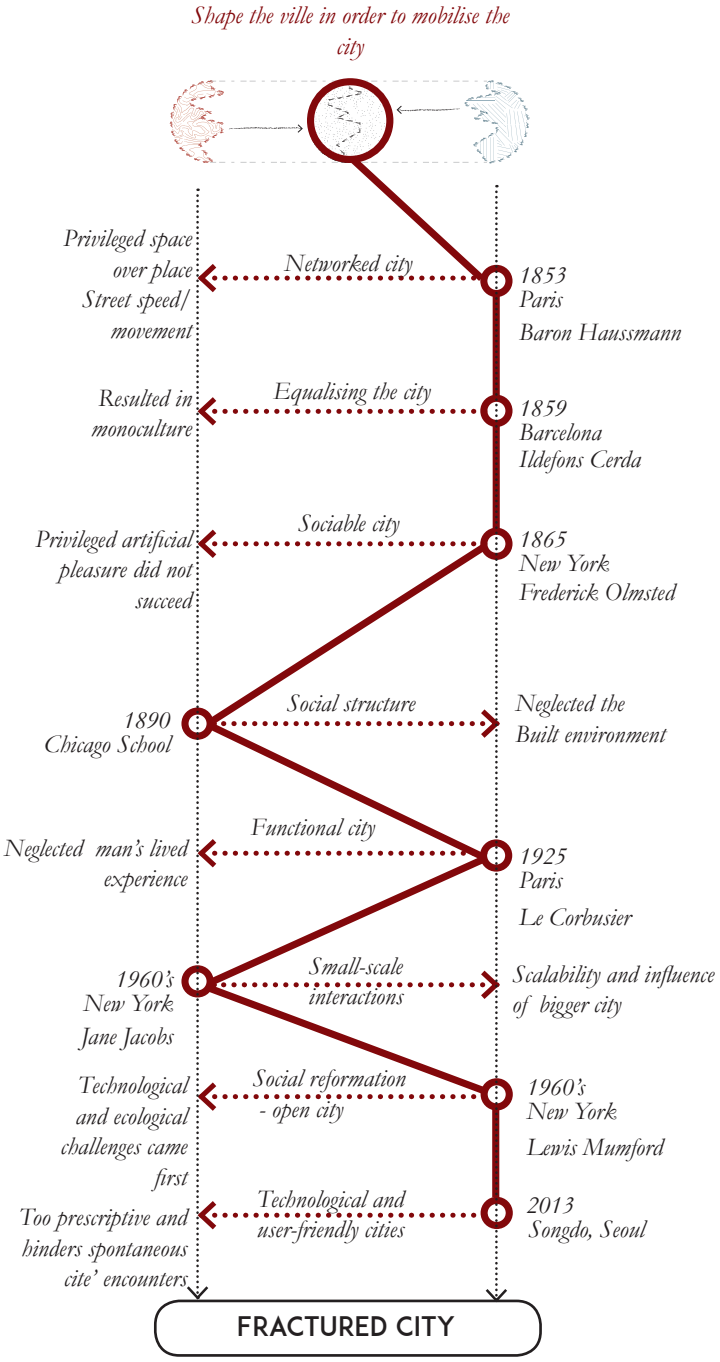


Figure 2.7: History of fractured city development (Author 2019)

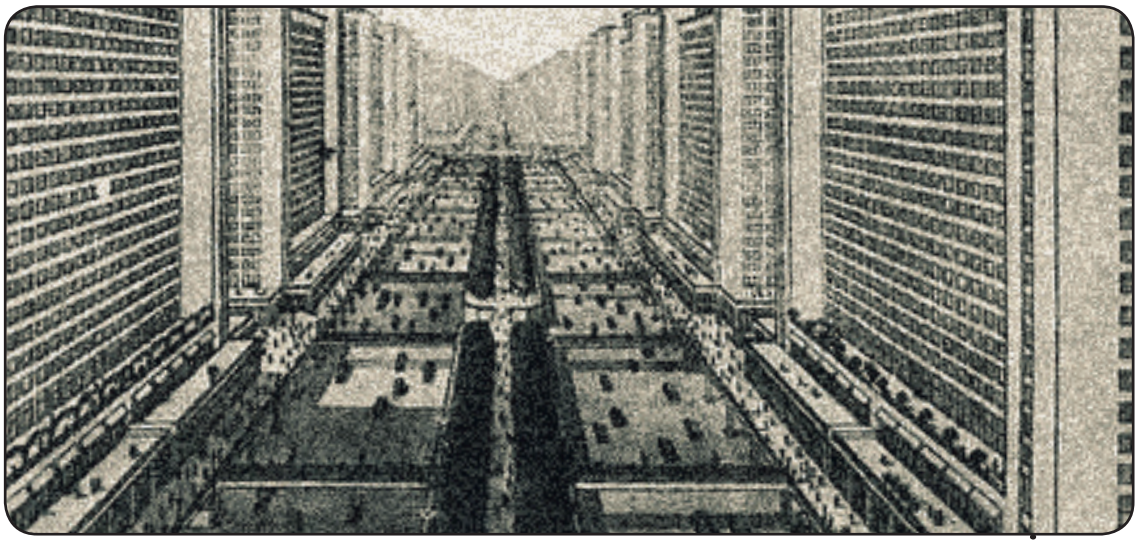
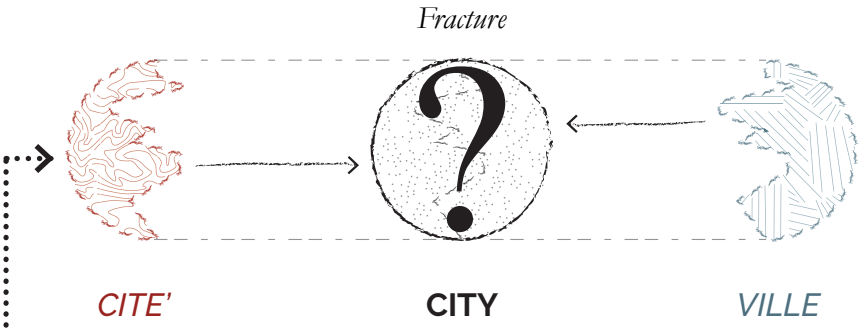


Figure 2.8: La Villa Radieuse (Le Corbusier 1930, edited by Author)



Through the theoretical lens of cite' and ville, the consequences [fracture] of city planning and development of Pretoria in its pursuit of modernity and its preoccupation with economic growth is investigated.

Figure 2.9: Consequences of a fractured development (Author 2019)



Figure 2.10: Mulberry Street in New York City (Unknown c. 1900, edited by Author)



Figure 3.1: The Apies River and Union Buildings (Wenning, edited by Author)



Figure 3.2: The Apies River with Meintjieskop (Pierneef 1914, edited by Author)



Figure 3.3: Apies River, Transvaal (Pierneef 1937, edited by Author)

Context
03

Origins and development of Pretoria

Pretoria's character and sense of place is derived from its natural landscape which consists of ridges and rivers. According to Jeppe (1906:7) during the early years of the town's establishment, the Apies river did not just provide the people of Pretoria with healthy freshwater and productive food systems, but it was also a place of social and spiritual fulfilment. It is exactly these natural features, providing protection and a source of life, which prompted the Voortrekkers to settle in 1839, and establish the town of Pretoria by the 1850's with its functional pioneering town planning grid overlaid over the natural landscape (Biljon, 1993:38).

This first planning transition from natural to functional resulted in a harmonious marriage between man and the natural order/landscape as a sensitivity to place and social nature of people was still present (Biljon 1993:39), but it didn't last long. In 1903 the first democratic council of Pretoria was elected and soon after more water management infrastructural development started rolling out (Haarhoff et al. 2012:781). At that time, a major change affected Pretoria's sense of place as the Apies river was channelised. This modification, although functional in use, completely disregarding the river's former natural state (Goodman 1992).

Up until the 1940's, Pretoria's development was mostly governed by building and health regulations, as it had no clear framework for development, but as the city grew larger, a strict development plan had to be formulated. The council appointed William Holford

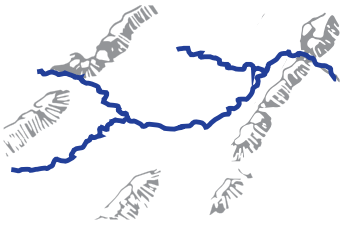


Figure 3.4: Untouched natural landscape (Jordaan 1987, edited by Author)

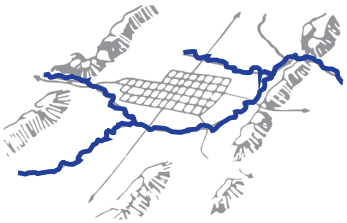


Figure 3.5: Harmony of classical and cosmic order (Jordaan 1987, edited by Author)

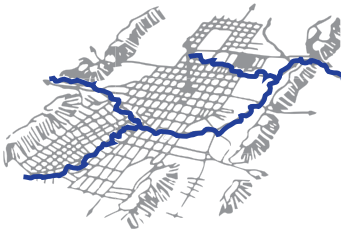


Figure 3.6: Expansion of the city (Jordaan 1987, edited by Author)

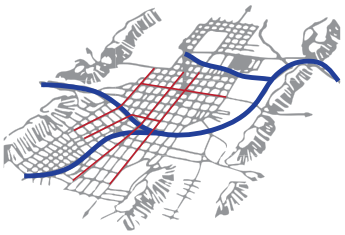


Figure 3.7: 1910-1930 Channalisation of the Apies river (Jordaan 1987, edited by Author)



Figure 3.8: 1992 Implementation of Ringroad (Jordaan 1987, edited by Author)

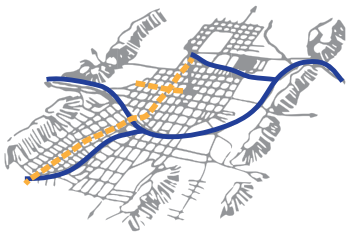


Figure 3.9: 2013 BRT infrastructure implemented (Jordaan 1987, edited by Author)

in 1948 to formulate a proposal for the city's development. His proposal had two components; one was to strengthen the image of Pretoria as the administrative capital through implementing a strict blueprint planning scheme indicating building heights, setbacks and densities, and the other infrastructural component was to physically define the CBD with a limited access ring road which would also accommodate more vehicular traffic through the city (Biljon 1993:41). It is clear that the first development framework undermined the sense and character of place, defined by the natural landscape, through enforcing a rigid blueprint planning scheme, as well as to undermining the social nature of the city's people by favouring vehicular infrastructure development.

Numerous iterations of the original ring road proposal had been made to scale down on the size of the intervention. It was not until 1992 that the southern leg of the proposed road ring road was implemented. In order to execute the vision, land had to be expropriated and buildings demolished for road-building purposes (Biljon 1993:41). The expropriation of land for road-building resulted in fragmented public space, a spatial disconnection of the public environment, coined by Transik (1986:2-6) as 'lost' space. Through the fragmentation of public space, the social nature of the city's people was forced to change and as a result influenced lived experiences.

In 1973, the Pretoria city council decided to formulate a two-phase master plan for the whole city that would regulate any future planning. According to Biljon (1993:42), the first phase, Policy Plan, was very functionalist, comprehensive and blueprint-like with strong underlying Garden-City-thinking. The second phase, the Structure Plan, intended to optimise vehicular movement within the city as well as to minimise conflict between land uses (Biljon 1993:42).

The next major step in the city's planning and development framework was the conception of the Greater Pretoria Guide Plan by the Pretoria City Council in 1984, which instated statutory guidelines for all town planning schemes to adhere to. This 'guide' claimed to be process-driven, but was also blueprint-like and functionalist at its core.

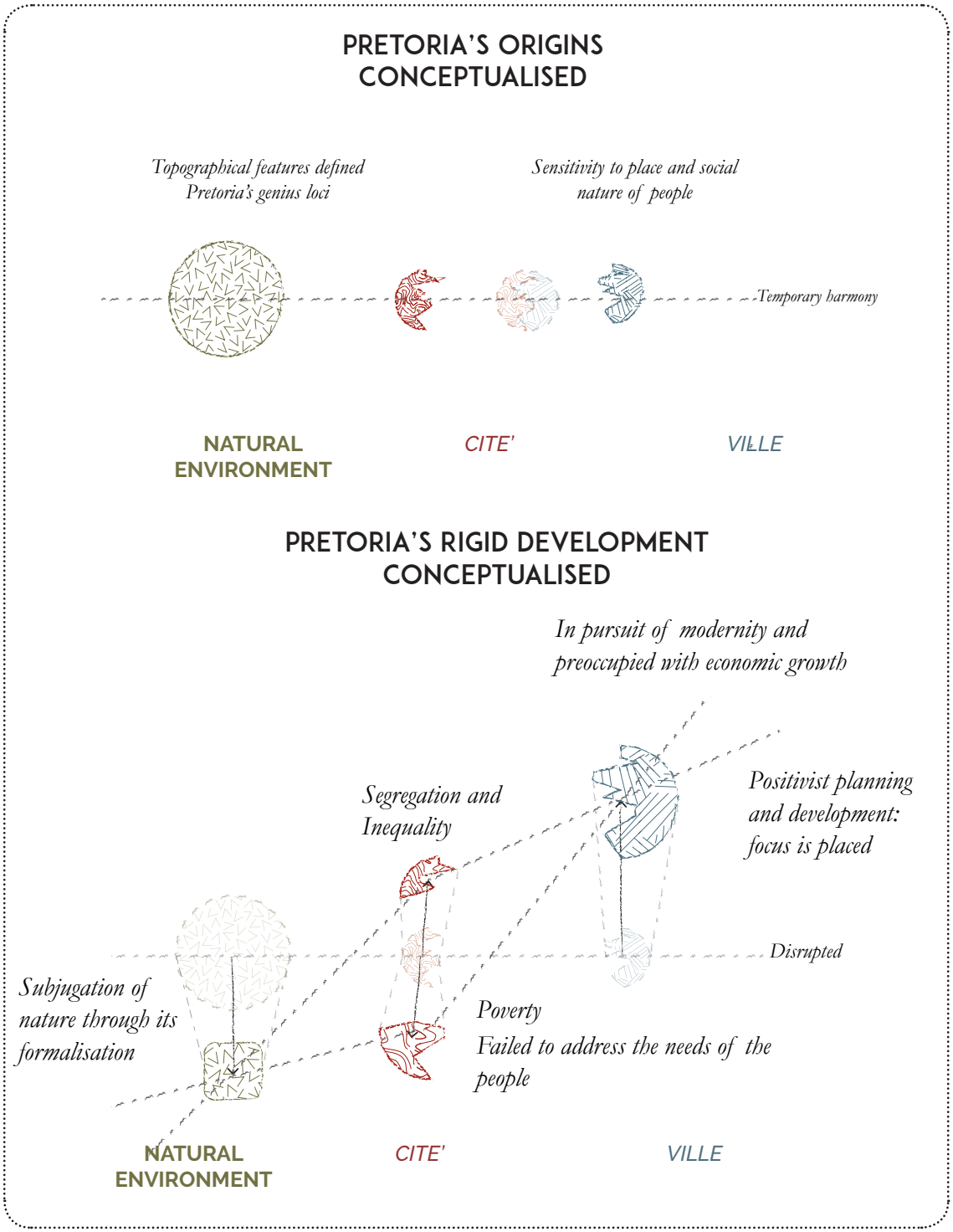


Figure 3.10: Pretoria's origin conceptualised (Author 2019)

Figure 3.11: Rigid Development overtime conceptualised (Author 2019)

Following the inception of the Greater Guide Plan, the Structure Plan for Pretoria was revised in 1992 to be more accepting of the new South Africa, but with its blueprint structure, it still failed to address challenges of sustainability, inequality, poverty and informality within the city (Biljon 1993:43).

The development of Pretoria started out slowly and conservatively, with an understanding of place and the social nature of the city's people (figure 3.10), but as the city grew, the scale of interventions also grew larger and started to change the character of place as well as the social nature of people. According to Biljon (1993:42), the city's planning and development rationality was positivist (and not normative) and focused predominantly on infrastructural development and not on addressing the needs of the people. It dealt only with the issue of 'things' rather than with the needs of its inhabitants (see figure 3.11).

Regenerative Frameworks

With the establishment of the new democratic South African government after 1994, the city council's attention shifted from merely developing rigid planning schemes, to focusing on inner-city regeneration strategies and visions that celebrates our heritage and the country's diverse cultures (City of Tshwane 2005) (see figure 3.15). The Tshwane Open Spaces Framework proposal of 2005, aimed to identify place-making opportunities in areas with a confluence of nature and city to redefine the 'lost' character of the city of Pretoria, a city that is part of the natural landscape (City of Tshwane 2005). The spatial framework's normative approach (opposing the development frameworks' positivist approach) hinged on the spatial dualism of the African context as it emphasises the importance of a spiritual and productive connection to nature. The Apies river was identified as an important natural asset and therefore its regeneration and upgrading were highlighted as central themes within the framework and a key target for the city's 2030 vision (City of Tshwane 2013).

In 2013, the City of Tshwane's Renewal Project was initiated to focus on the city's economic growth. One major infrastructural development was the implementation of the Bus Rapid Transit System (BRT) as part of its movement strategy to improve circulation not only within, but also to and from the city. The implementation of the BRT system meant that public space and land had to be expropriated to build the new roads for the required bus lanes and stations (City of Tshwane 2013).

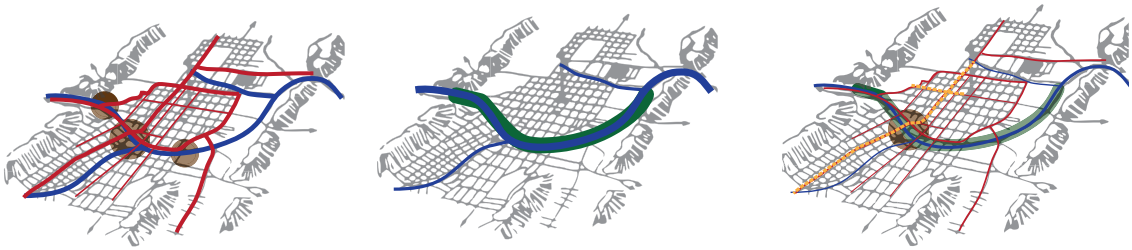


Figure 3.12: Left, 2005 Placemaking: Confluence of nature anc city (Jordaan 1987, edited by Author)

Figure 3.13: Mid, 2015 Nelson Mandela Green corridor (Jodraan 1987, edited by Author)

Figure 3.14: Right, 2055 Kopanong - The gathering space (Jordaan 1987, edited by Author)

Urban vision

The Tshwane Open Space Framework's vision statement proposes a network of interconnected ecologies and systems that facilitate economic, social and environmental upliftment (City of Tshwane 2005). Thus, identifying the regeneration of open spaces in the city as an important strategy for providing socio-economic and ecological place-making opportunities. These places have the power to enhance community integration, generate and facilitate economic activity and stimulate growth (City of Tshwane 2013).

The Tshwane inner city Regeneration Strategy of 2015 and vision for 2055 envisages a city where its people have access to social and economic opportunities in order to improve their quality of life (City of Tshwane 2015). The Regenerative Strategy has identified various projects of regeneration within the city, with one of these being the Nelson Mandela Green Corridor development. This project focuses on the rezoning and spatially restructuring the urban fabric through design interventions on both sides of Nelson Mandela drive, as well as upgrading the Apies river into a

promenade with public access and circulation which interacts with the river itself (City of Tshwane 2015).

According to Fourie (2001), the construction of the Department of Trade and Industry was the first attempt in realising the Nelson Mandela Green Corridor vision as it started out with great ideals of being inclusive but ended up being closed off due to its private functions. The purpose and outcome of the inner-city regeneration is to create a more resource efficient and resilient city, to sustainably grow an inclusive economy and to foster social cohesion, happiness and encourage healthy citizens.

It is very clear that the city of Pretoria's planning and development frameworks are very functional and prescriptive whereas the visions provided throughout the years have all been focused on the well-being of people and nature. This positivist development favoured the *ville* and has had negative spatial and cultural consequences on the lived experiences of the city. As a result, space has become physically and socially fragmented and 'lost'. For years there has been a disconnect between the city of Pretoria's vision's goals and their frameworks' and planning schemes' ability to measure its development success. Pretoria's sense of place has been lost due to the continual blueprint planning schemes, the city's positivist development prioritisation and the city's negligence towards the cultural and social health of its people.

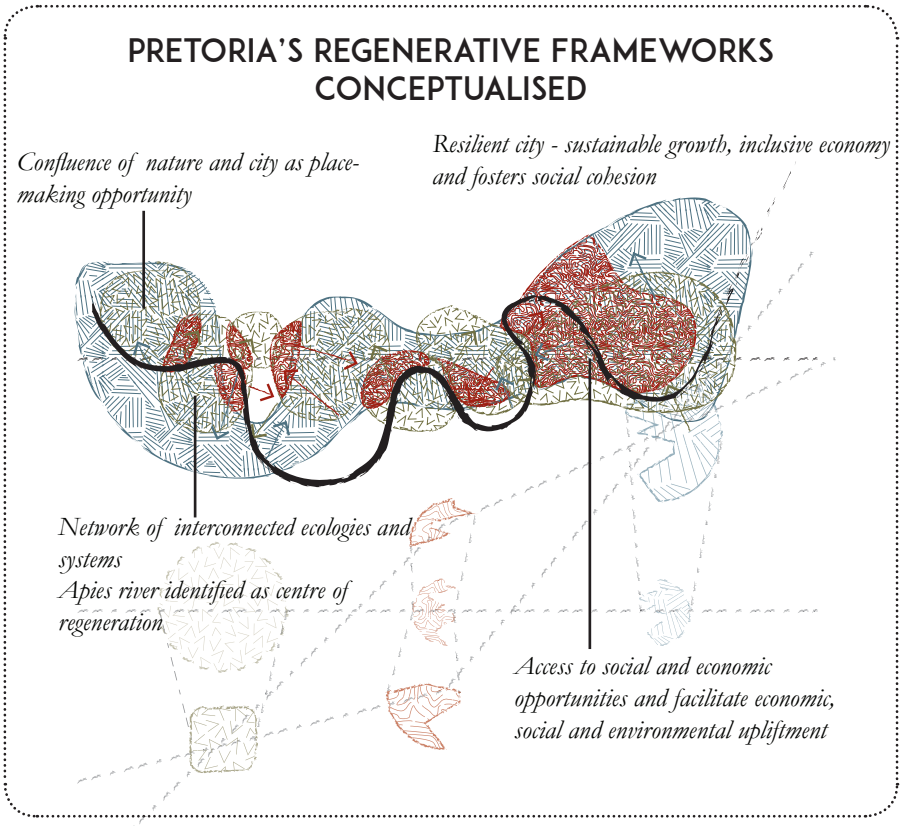


Figure 3.15: CoT's Regenerative Framework conceptualised (Author 2019)

Figure 3.16: Achieving the Regenerative vision (Author 2019)

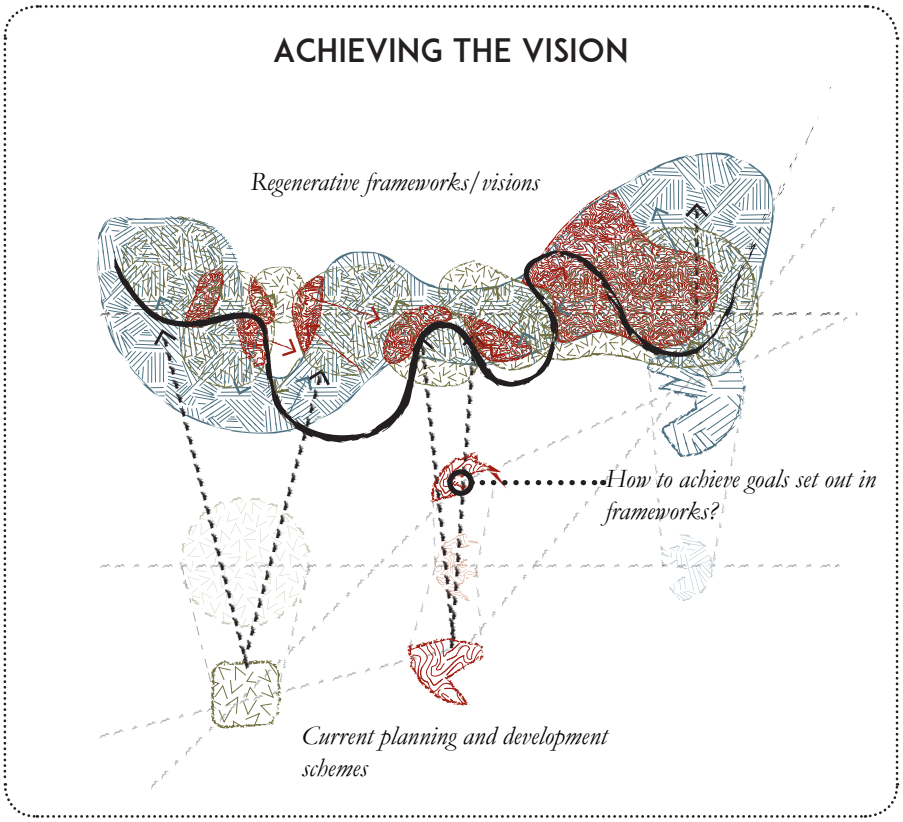




Figure 3.17: Trevenna Macro location (Visco[c-ity] Group 2019)

Site selection

To address the disconnect between the city of Pretoria's past development and their latest regenerative development goals, the dissertation will situate itself within Tshwane's 2055 vision for the city. The area designated as 'Kopanong' or the gathering space, located in Trevenna adjacent to the Apies river, has been identified as a hub for social, economic and environmental enablement and growth. As mentioned in the Tshwane Open Space Framework, regenerating the Apies river and establishing a spiritual and productive connection with the natural landscape is a central focus in order to redefine the lost sense of place of the city of Pretoria. As this dissertation aims to improve the sense of place and bridge the divide between *cite*' and *ville* in the city of Pretoria, the chosen site has the best opportunity to reconcile the lived experiences and the built environment through an architecture that supports place-making.

To better understand and respond to the urban condition, an analysis of Trevenna was done. The most relevant finding were that a robust economic trade and services network exist due to a high amount of pedestrian flow for the residentially dense Sunnyside. The presence of physical barriers inhibit social interactions and thus discourages public place-making. Lastly, there is a poor relationship between the Built environment and the natural landscape as the built environment doesn't engage but rather subjugates the environment it is in.

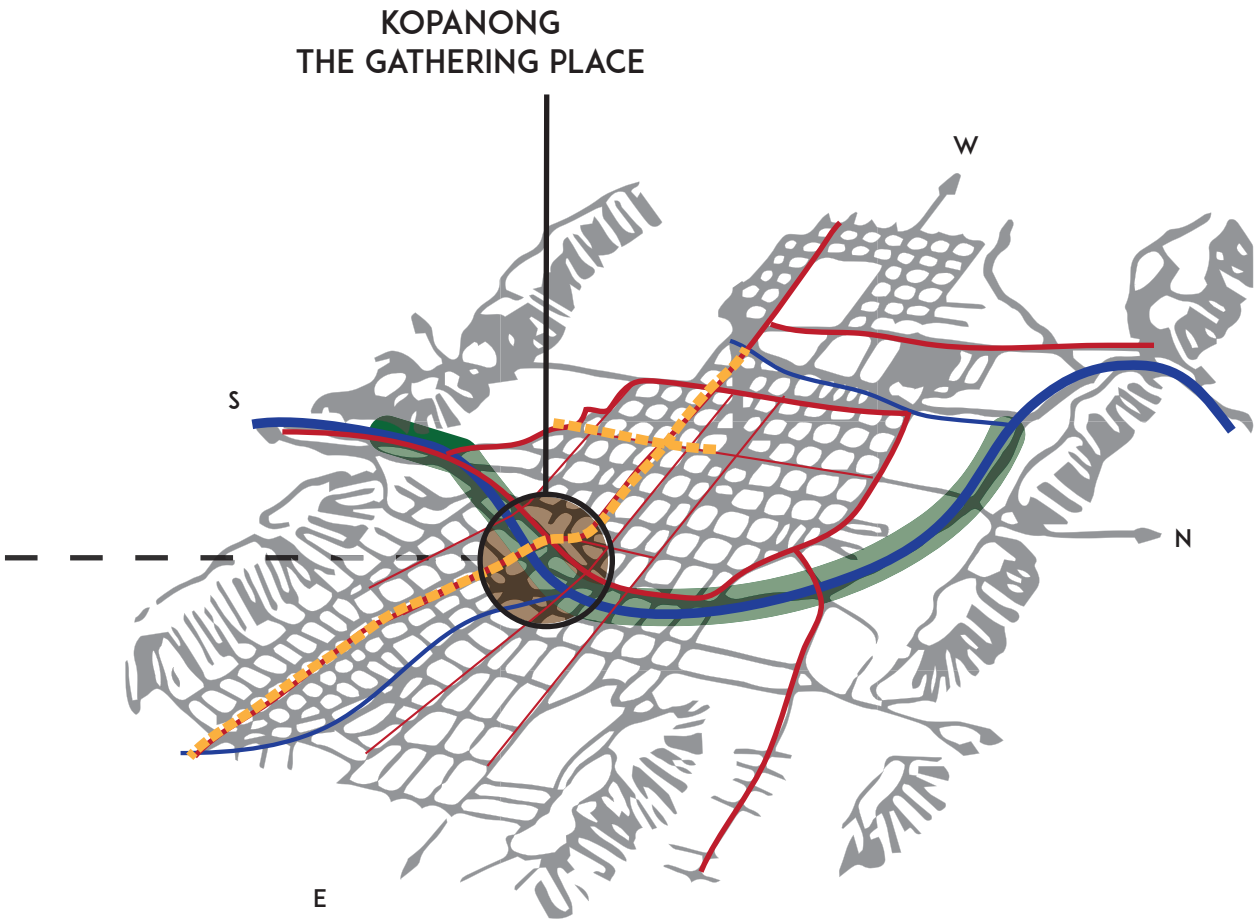


Figure 3.18: 2055 Kopanong - The gathering space (Jordaan 1987, edited by Author)



Figure 3.19: Micro Location: Trevenna (Visco[city] Group 2019)

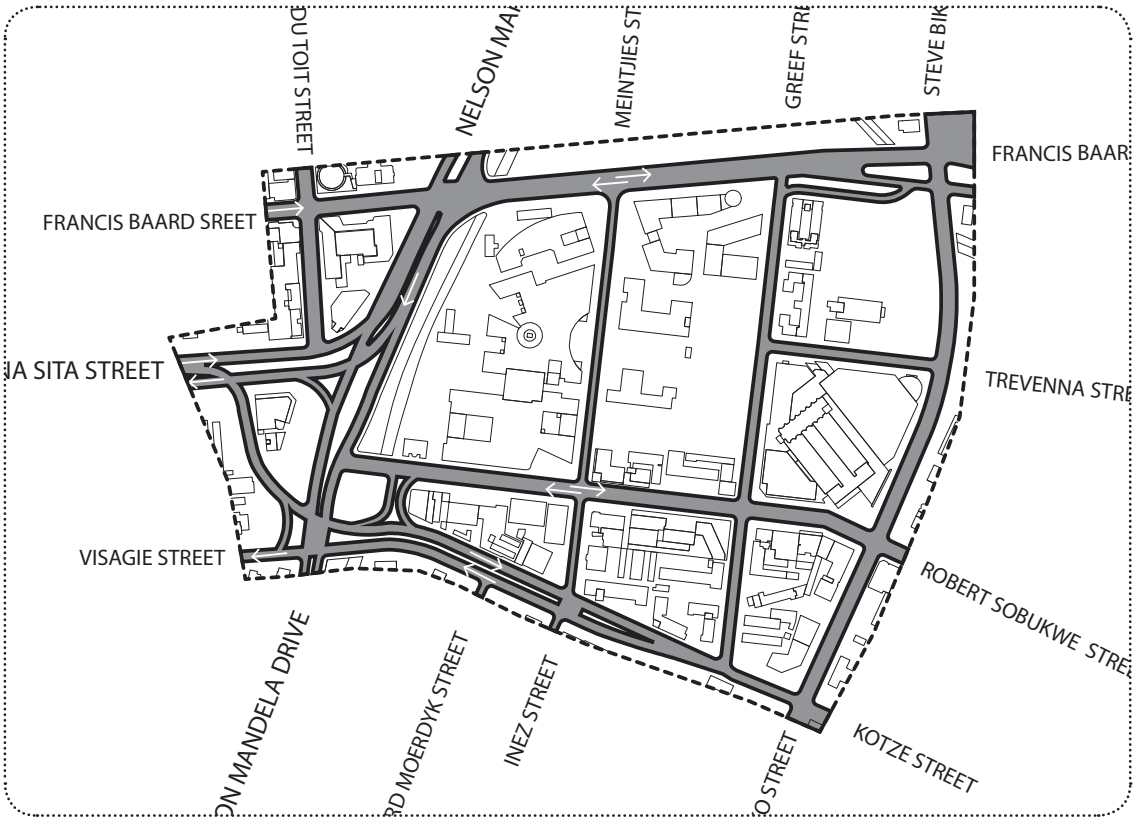


Figure 3.20: Analysis: vehicular realm (Visco[city] Group 2019)

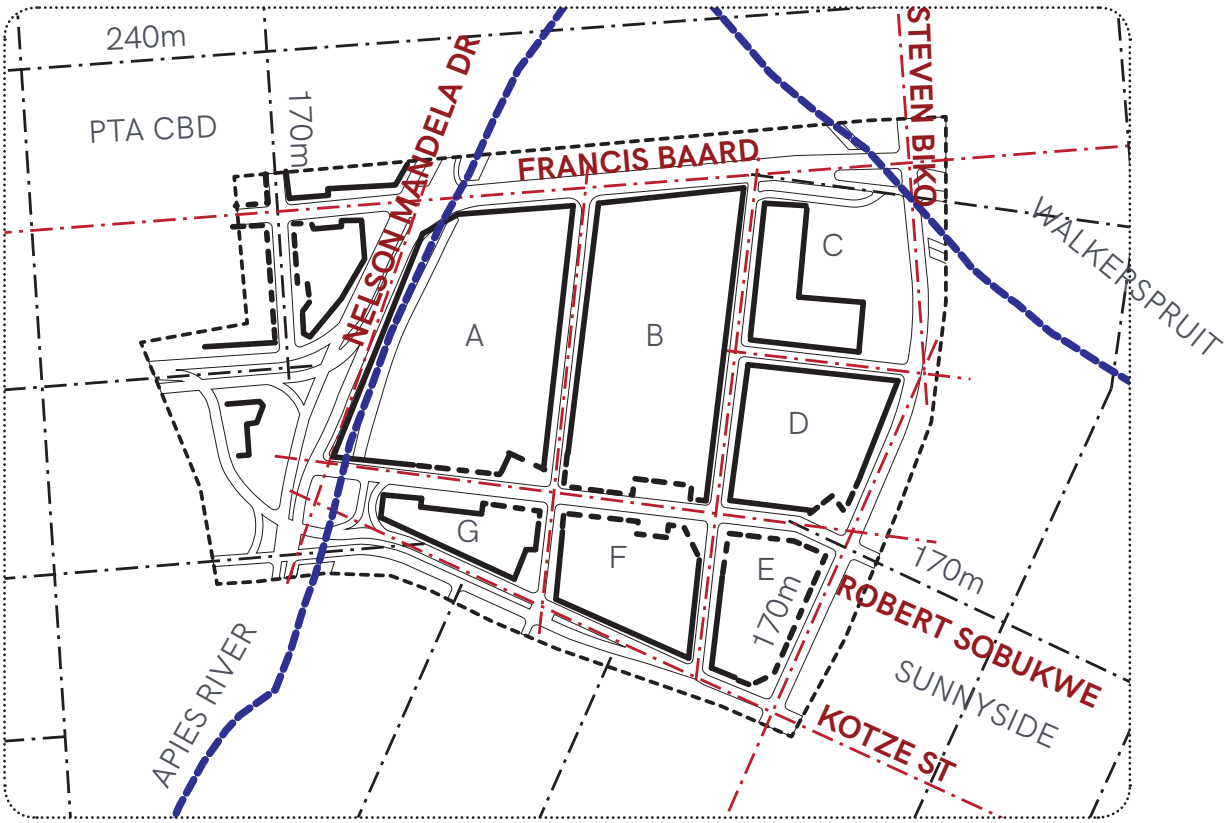
Vehicular realm

Figure 3.21: Analysis: Typologies (Visco[city] Group 2019)

Builidng Typologies



- Residential
- Restaurant/Bar
- Retail/Service
- Church
- Education
- Theatre
- Mixed Use



A,B - Very large block

C,D - Small block

E,F,G - Very small

Urban morphology

Figure 3.22: Analysis: morphology (Visco[city] Group 2019)

Pedestrian realm

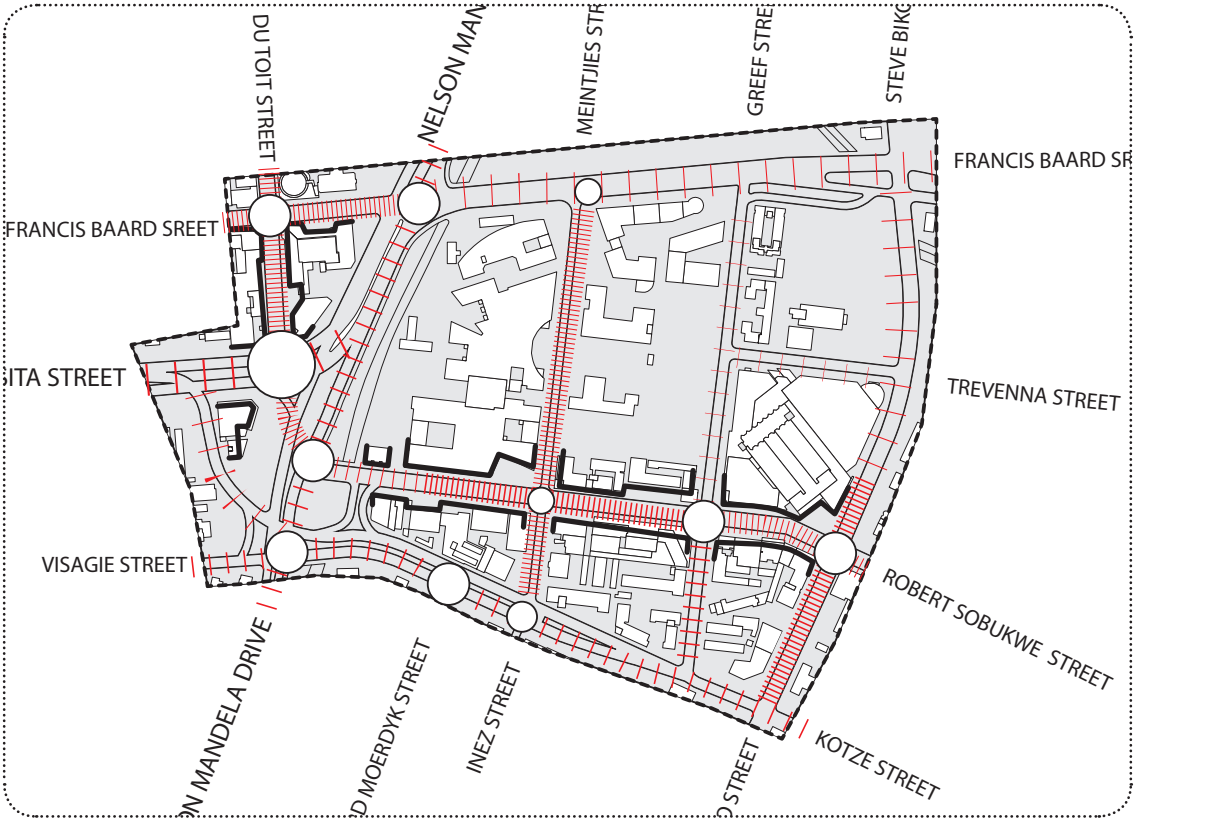
Figure 3.23: Analysis: pedestrian realm (Visco[city] Group 2019)

Low traffic interference

High traffic interference

Low activity

High activity



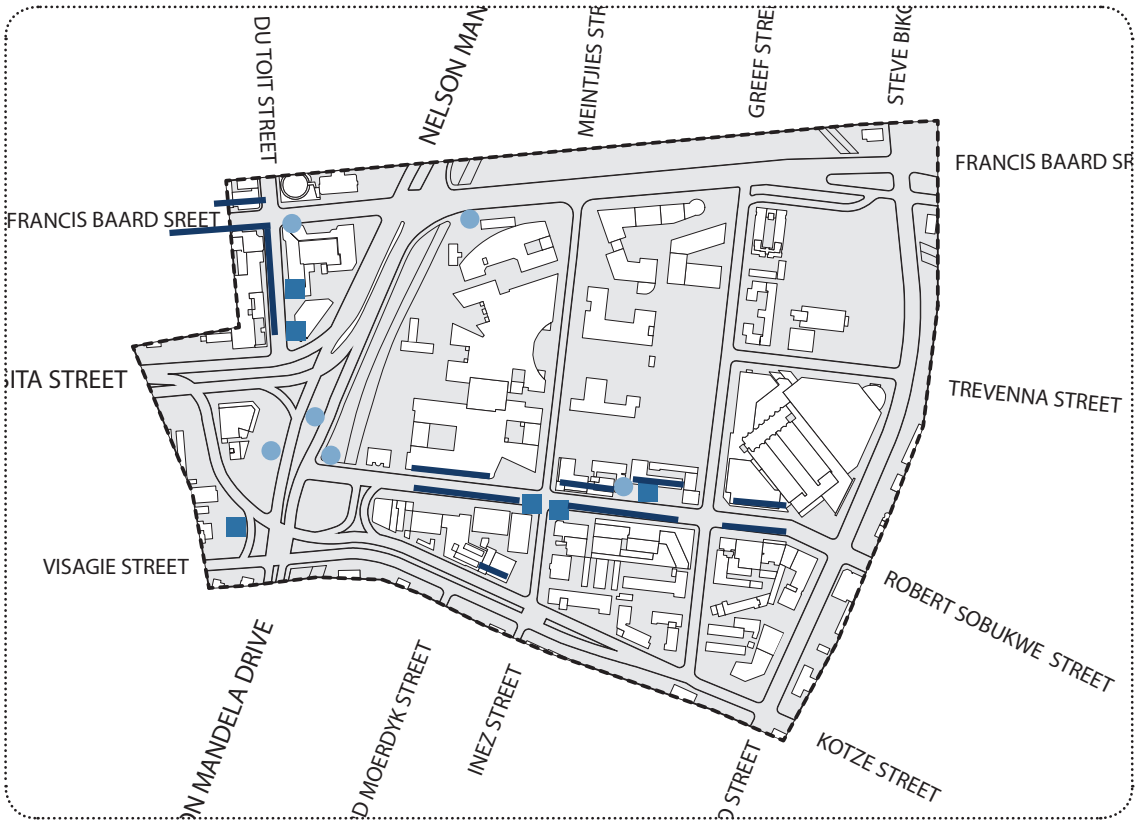
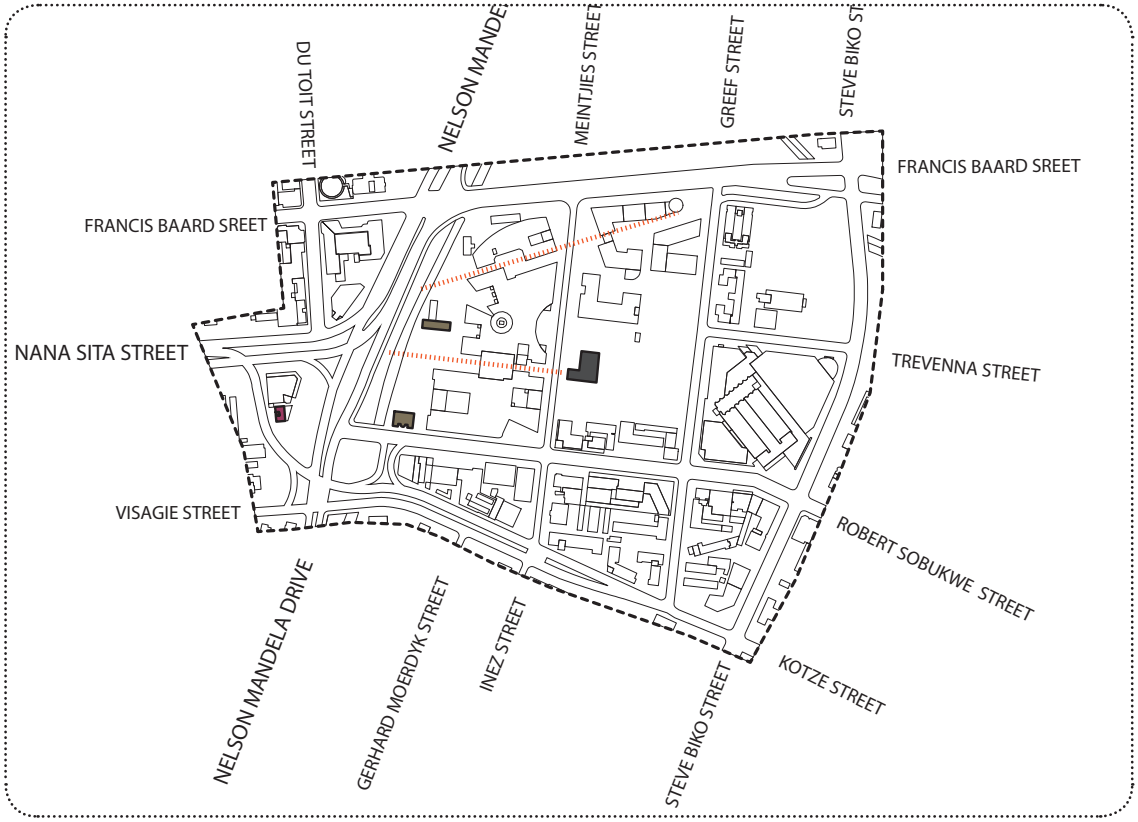


Figure 3.24: Analysis: economic activity (Visco[city] Group 2019)

Economic activity

Figure 3.25: Analysis: heritage fabric (Visco[city] Group 2019)

Heritage Fabric



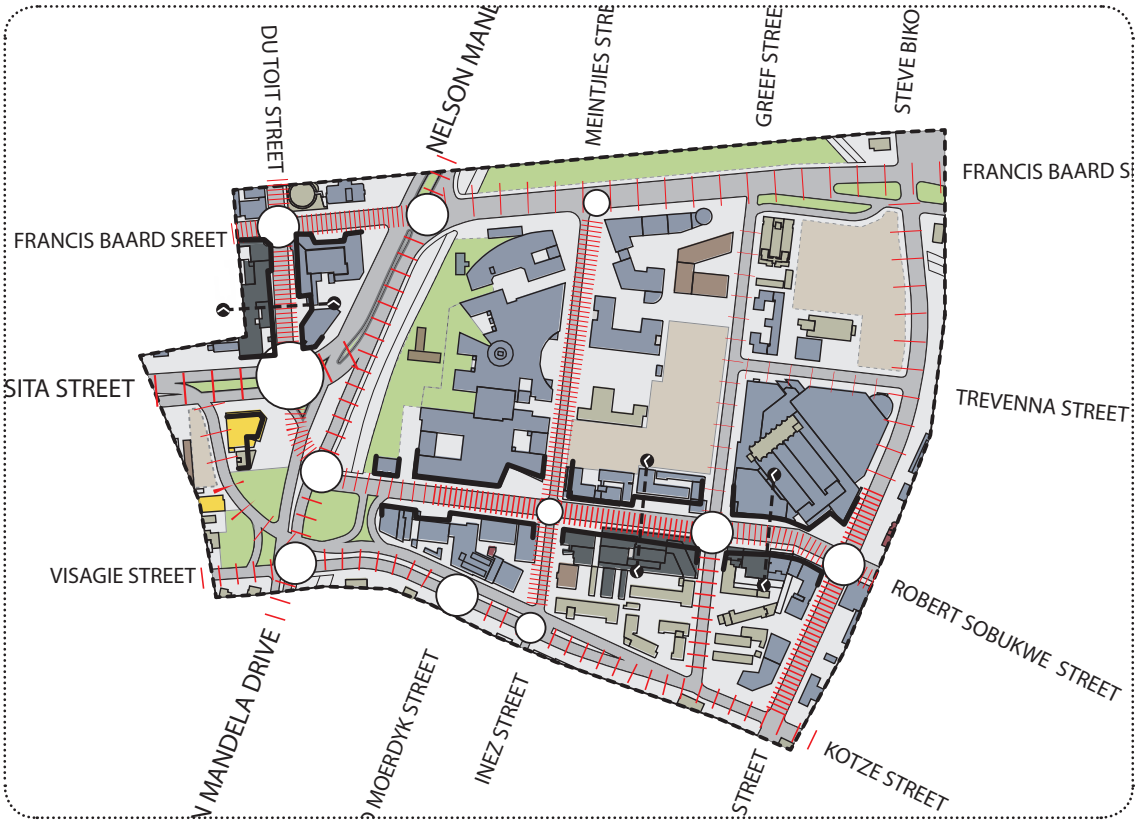


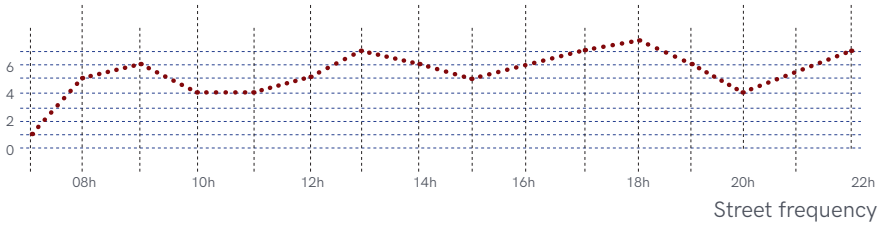
Green spaces

Figure 3.26: Analysis: green space (Visco[city] Group 2019)

Layered findings

Figure 3.27: Analysis: layered findings (Visco[city] Group 2019)





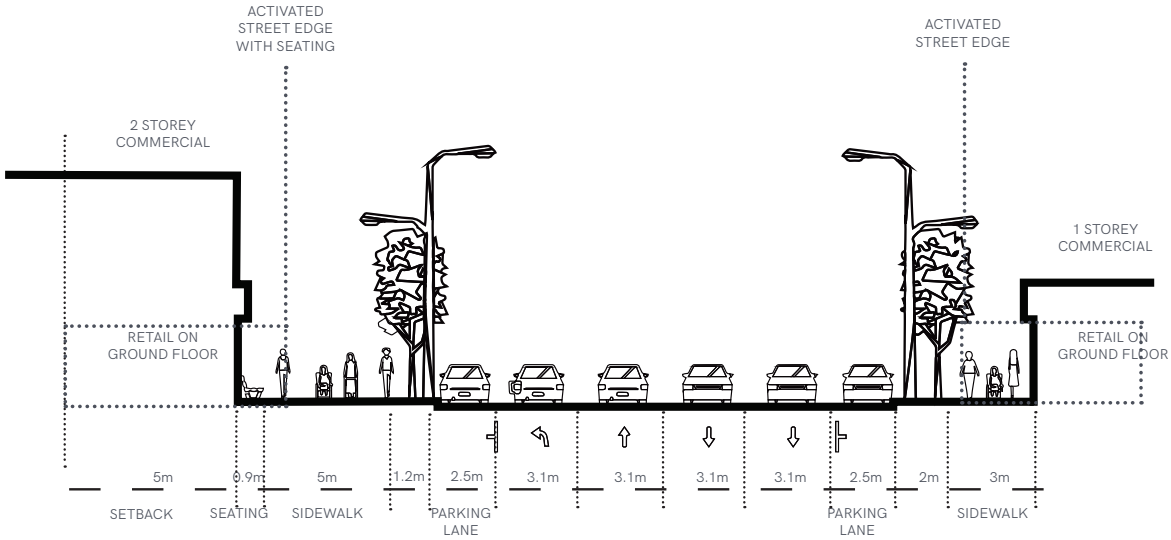


Figure 3.28: Analysis: street section A (Visco[city] Group 2019)

Section A-A

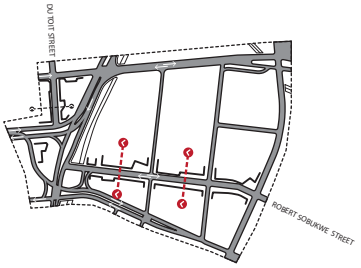
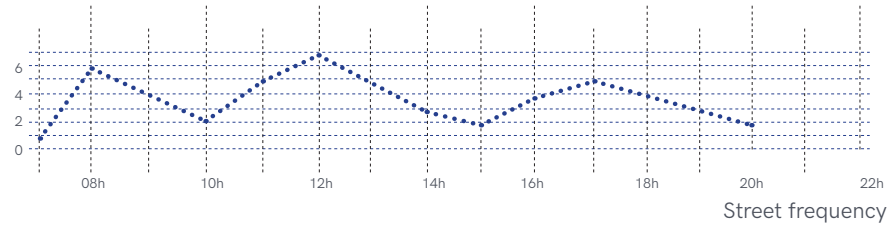
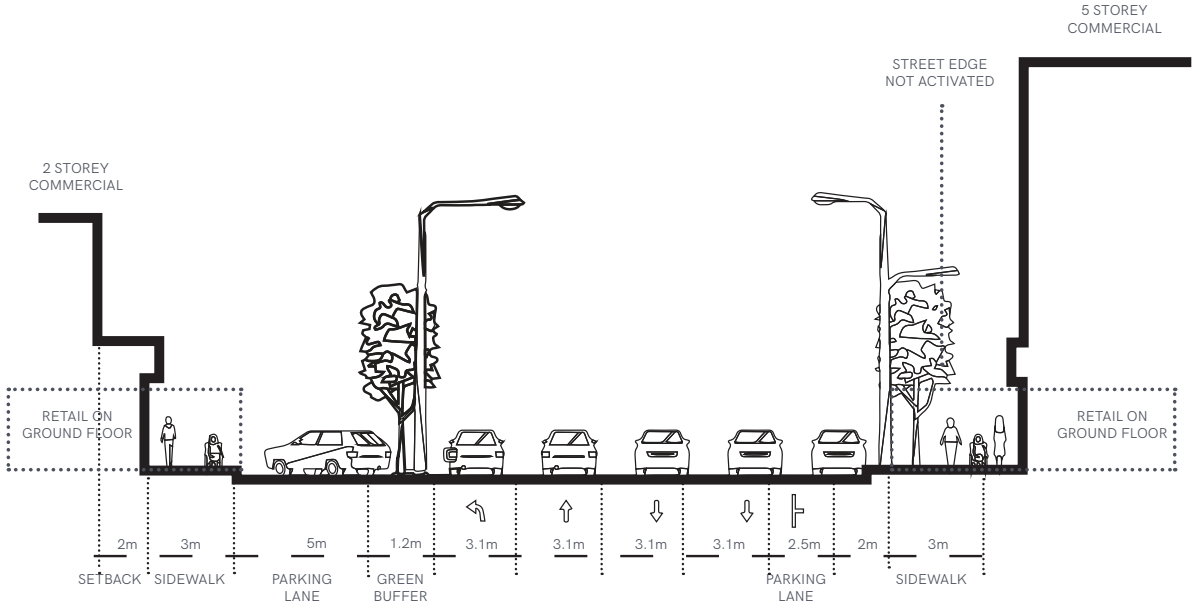


Figure 3.29: Analysis: street section B (Visco[city] Group 2019)

Section B-B





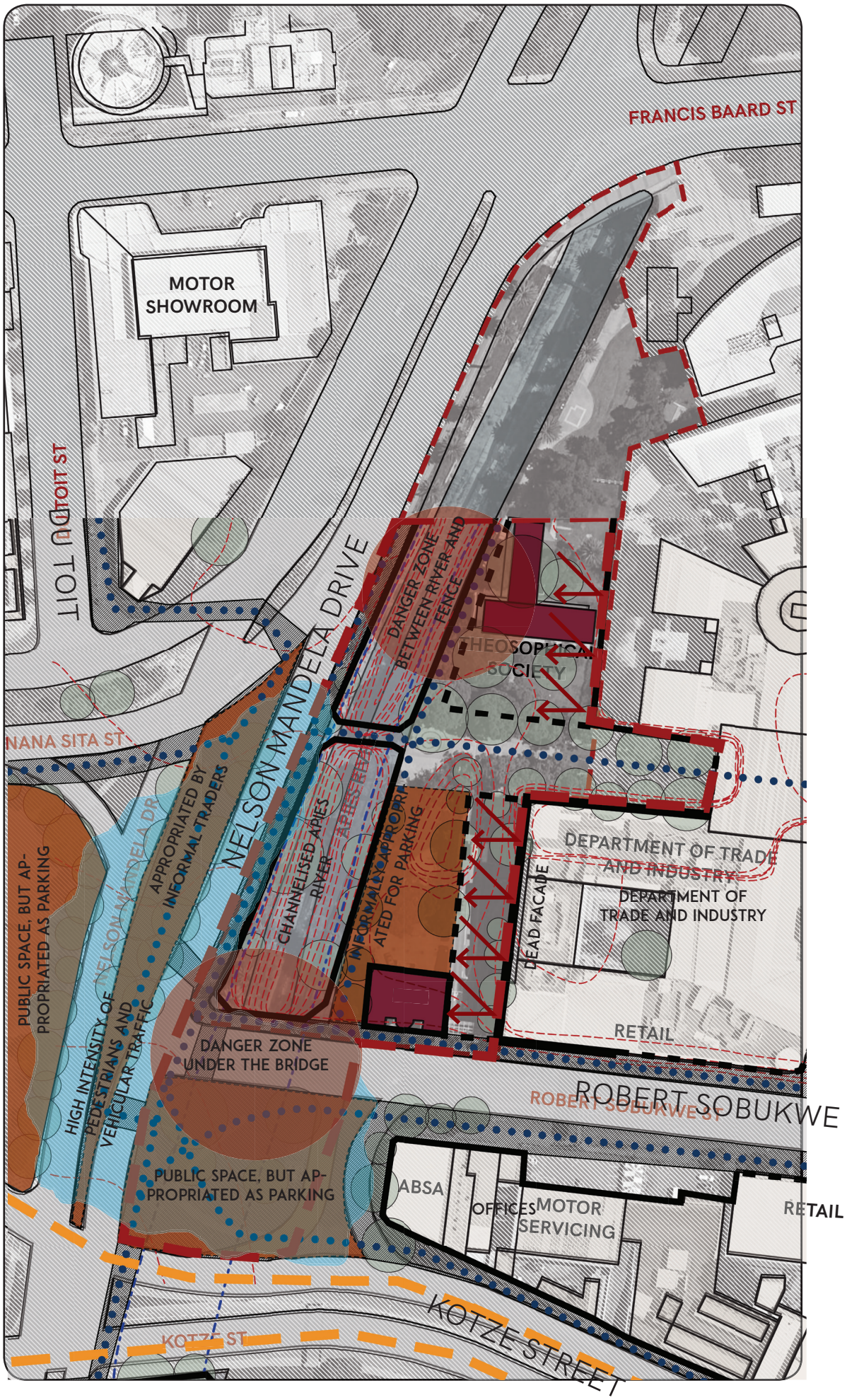


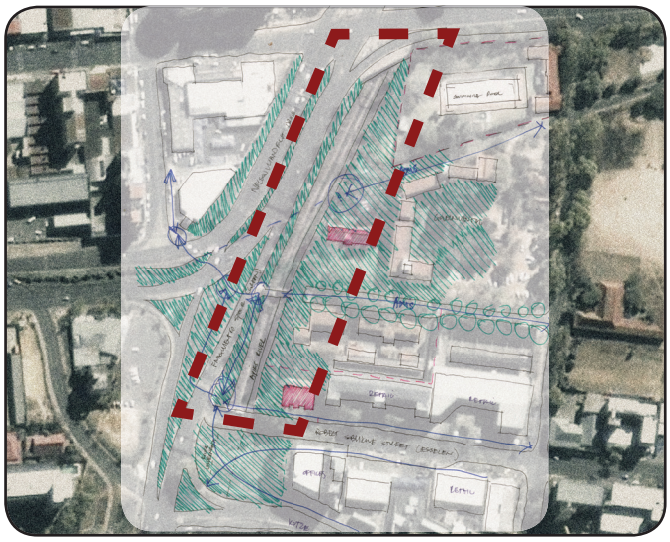
Figure 3.30: Site Analysis (Author 2019)

Development over time



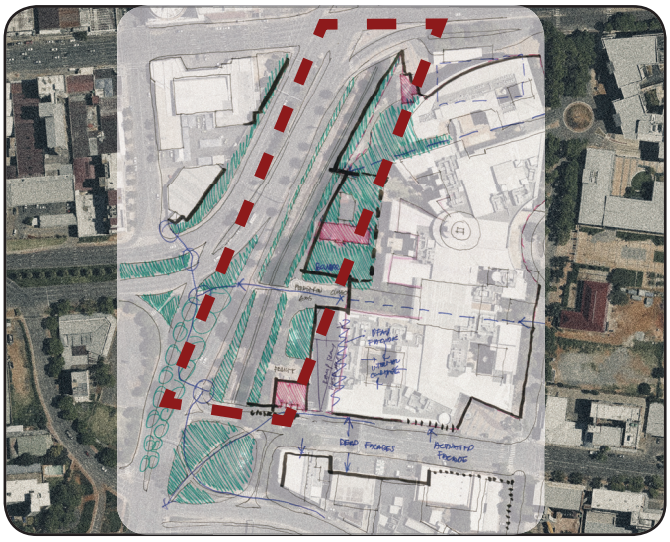
Before the implementation of the CoT's ringroad in 1992, the urban fabric around the Apies river was still mostly unaffected (illustrated in figure...). Not only did private residences (on the western bank) had unrestricted access to the river but the public (on the east) also had access to engage with the natural landscape through pedestrian routes.

Figure 3.31: 1948 Aerial photograph (UP, edited by Author)



To construct the ringroad in 1992, public space had to be expropriated as well as private residences demolished to make the road-builidng possible. The private residences on the western bank were removed to make way for the road and as a result the road has formed a barrier, restricting physical interactions with the Apies river. The eastern bank was still untouched, allowing engagement.

Figure 3.32: 1999 Aerial photograph (Google maps 1999, edited by Author)

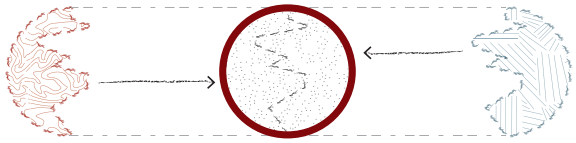


The construction of the Department of Trade and Industry was supposedly a catalyst project for the regeneration of the Apies river (City of Tshwane 2015), but has had the opposite effect on the urban fabric by restricting the public from using the space around it, further isolating any opportunities for engagement with the Apies river.

Figure 3.33: 2009 Aerial photograph (Google maps 2009, edited by Author)

PROPOSED SITE

Condition and development overtime



CITE'

VILLE

Formalisation as functional object

Natural landscape erased - Left with scar in landscape which is inaccessible. Lack of ephemeral quality

Formalisation

1 *Channelisation of Apies river: Functional for hygiene*

Due to its physical disconnect, it is being negatively appropriated and is classified as a danger zone

Effect on the city

Focus on vehicular traffic

Fragmented public/ social space for pedestrians

Acceleration

2 *Road infrastructure: Construction of ring road and constant widening of lanes*

Left-over spaces are being appropriated - Positve and negative

Effect on the city

Form followed function

The architecture tried to accommodate the original site's desire lines but with its private function it was due to fail, which led to closing off its thorough ways.

The building's form turns its back against nature as all interactions are internalised.

Isolation

3 *Construction of DTI as a private governmental building for the new government*

The internalisation of programme has left the external facade dead which doesn't contribute towards place-making next to the river

Effect on the city

The building doesn't take into account the site's heritage and doesn't respond to the heritage buildings on site.

Urbanisation

An increase of people, pedestrian and vehicular that use Robert sobukwe as a thoroughfare.

4

Retail had to adapt to cater for the increase of people and pace of living

An on-the-go commercial spine was developed as people only move through and not linger in the spaces/ street

Effect on the city

FRACTURED SITE

Figure 3.34: Proposed site's fracture overtime (Author 2019)

Current condition

The chosen site for the dissertation is situated between the Apies river, to the west, and the Department of Trade and Industry to its east, and Nelson Mandela drive. The site is a busy thoroughfare for pedestrians travelling to and from Sunnyside to Pretoria's CBD. The CoT's positivist development focus has had a significant impact on the site's lived experiences, with the three biggest issues being the chanalisation of the Apies river, public space being expropriated for road-building purposes and the privatisation and mono-functional development of the Department of Trade and Industry.

In contradiction to the initial conceptualisation of the *cite*' and *ville* as positive realisation of space it, currently can be more critically described. *Ville* refers to abandoned and lost spaces which have lost its initial and/or planned value and *cite*' reflects the negative connotations of everyday lived experiences of those forgotten locales (Sennett 2018:3). Relph (1976:142-3) affirms that a positive relationship to place is not the only lived experience one can have, but as one explicitly distances oneself, the relationship becomes one of alienation or 'outsiderness' and thus affects the lived experience negatively.

The question then becomes how architecture can mend this fracture between *cite*' and *ville* by creating better lived experiences that foster an enriched sense of place and belonging within the city? How can architecture change the emergent *ville* to produce instead of consume experiential qualities and enhance the sense of place? In order to establish a sense of place, place-making strategies that has the potential to reveal latent opportunities, need to be investigated.

"The existential purpose of architecture is therefore to make a site become a place, that is, to uncover the meanings potentially present in the given moment" – Norberg-Schulz 1979:18



Figure 3.35: Walking the street (Author 2019)

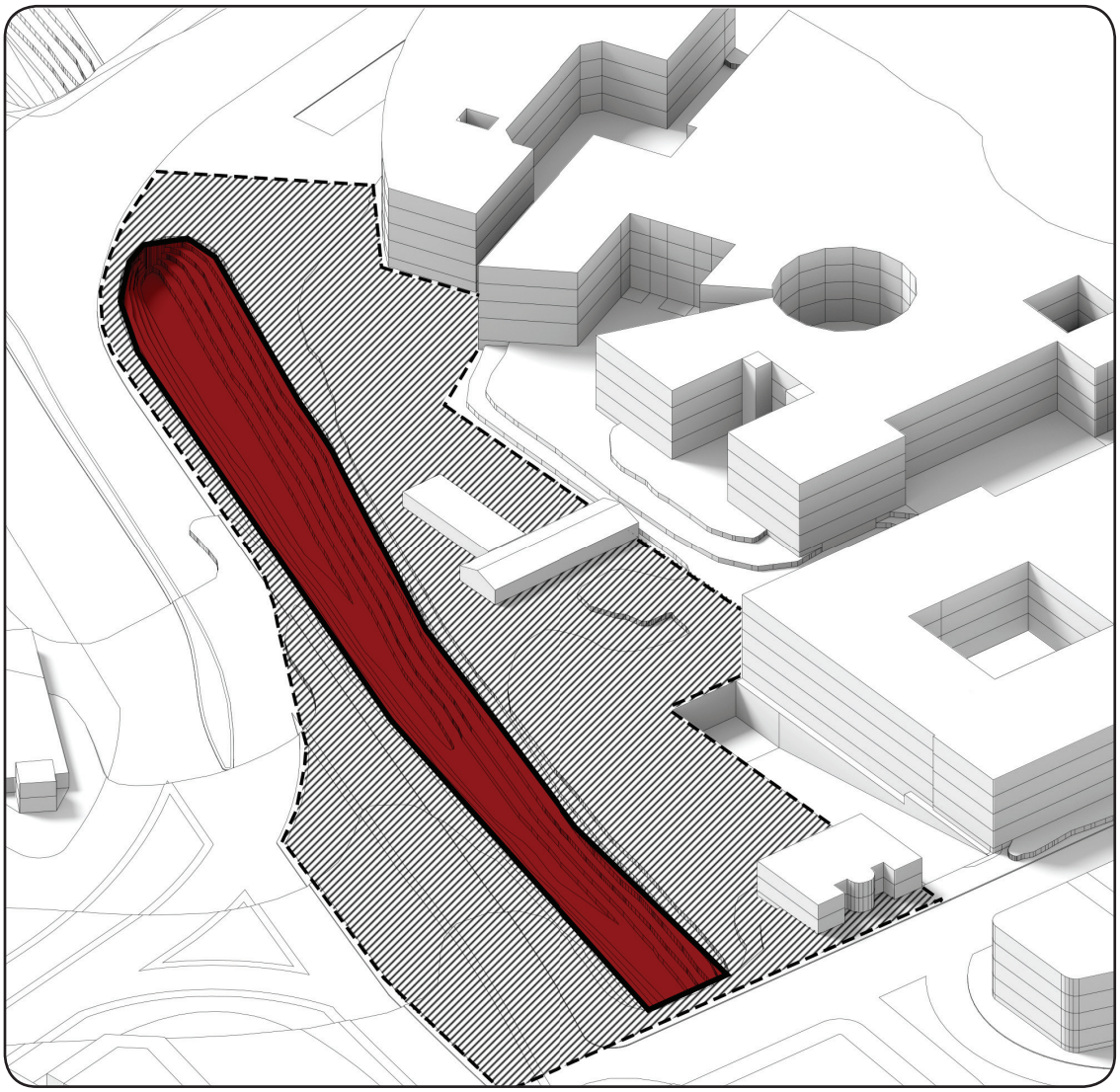


Figure 3.36: Channelised Apies river Axo (Author 2019)

Figure 3.37: Degraded river bank (Author 2019)



Figure 3.38: View to Robert Sobukwe Street (Author 2019)



Channelised Apies Rivers

The chanalisation of the Apies river has left a physical scar in the landscape, resulting in little to no interactions between the city's citizens and the river on a spiritual or productive level. Its formalisation has also resulted in the river's initial character of place being lost.

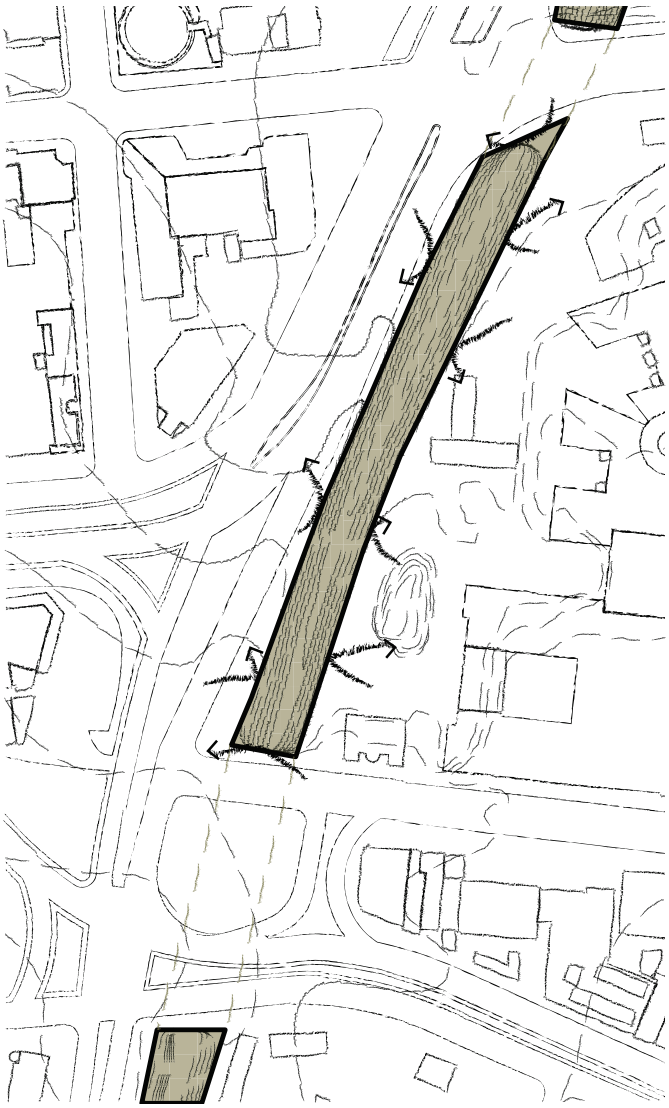


Figure 3.39: Scar in the landscape (Author 2019)

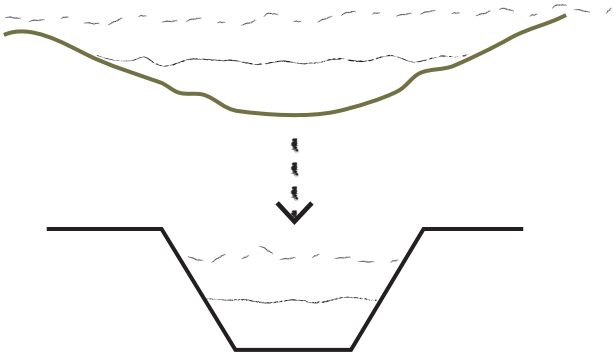


Figure 3.40: River modification (Author 2019)

Figure 3.41: View of Apies north (Author 2019)



Figure 3.42: View from Theosophy (Author 2019)



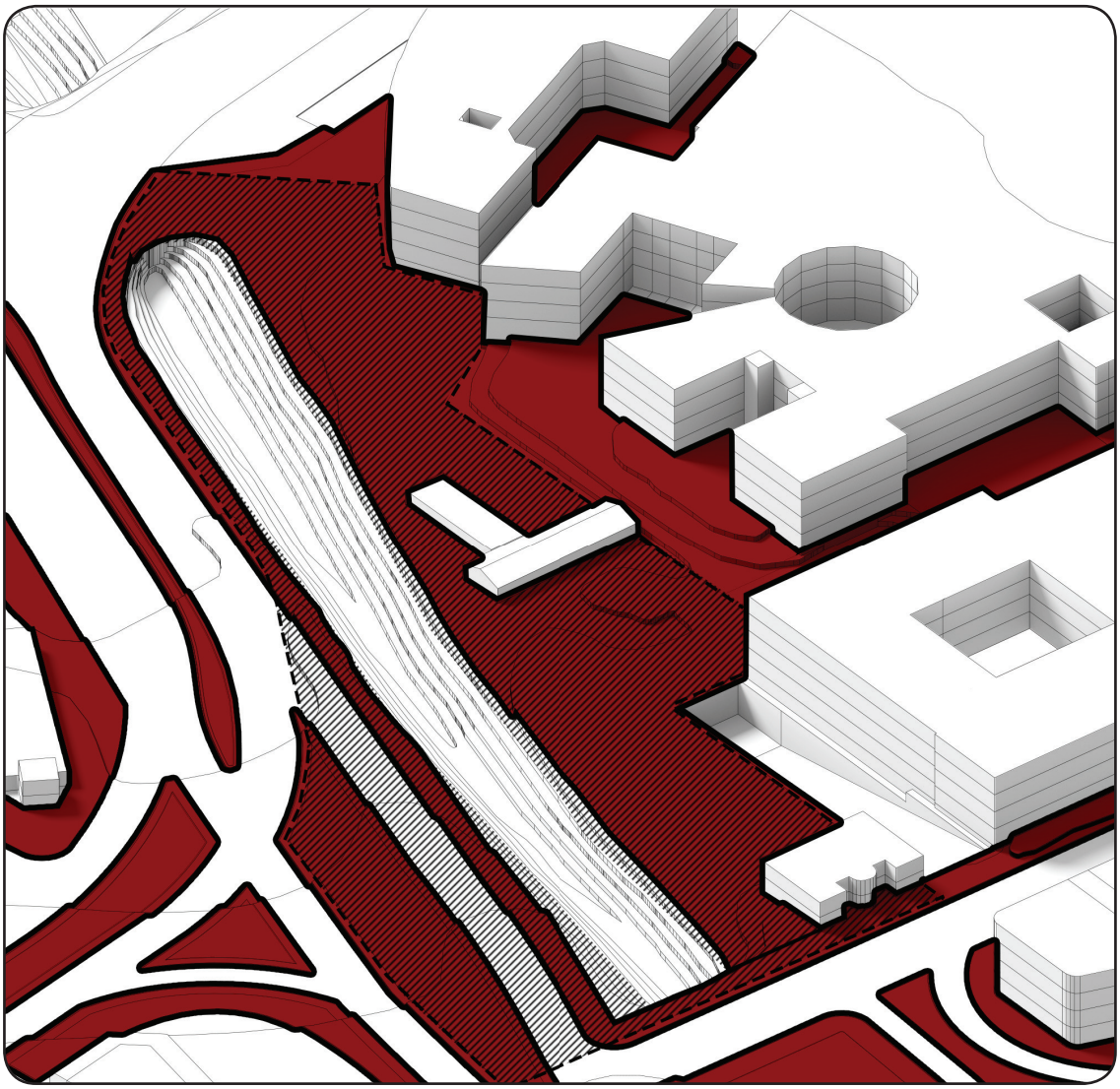


Figure 3.43: Public space fragmented axo (Author 2019)

Figure 3.44: Nelson Mandela Drive sidewalk (Author 2019)



Figure 3.45: Pedestrian crossing (Author 2019)



Fragmented public space

Due to road building, public space, such as sidewalks and green space adjacent to the Apies river has become fragemented to such an extend that traffic islands have been created, making it difficult to experience and interacting with urban space for a pedestrian. This is classified as “lost” space.

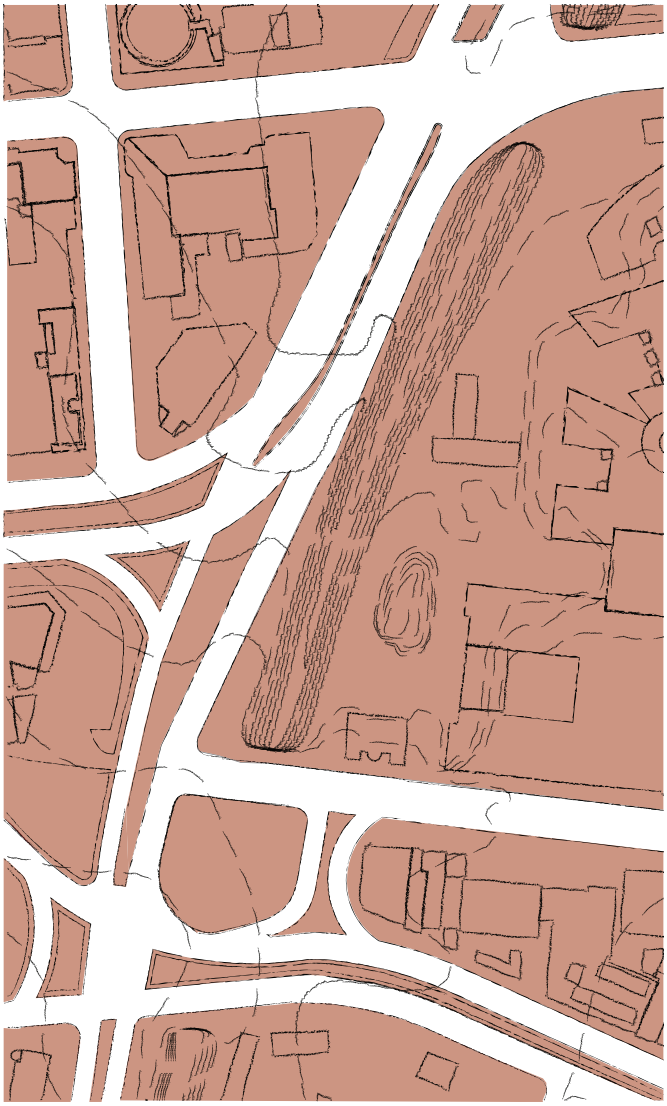


Figure 3.46: Public space fragmented (Author 2019)

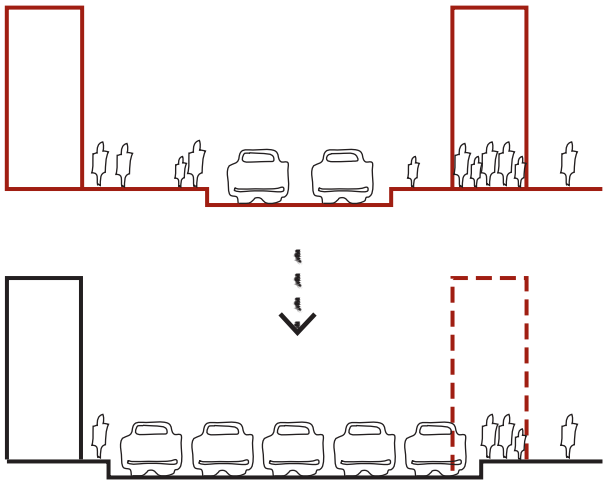


Figure 3.47: Space expropriation (Author 2019)

Figure 3.48: View of busy pedestrian crossing (Author 2019)



Figure 3.49: Traffic island (Author 2019)



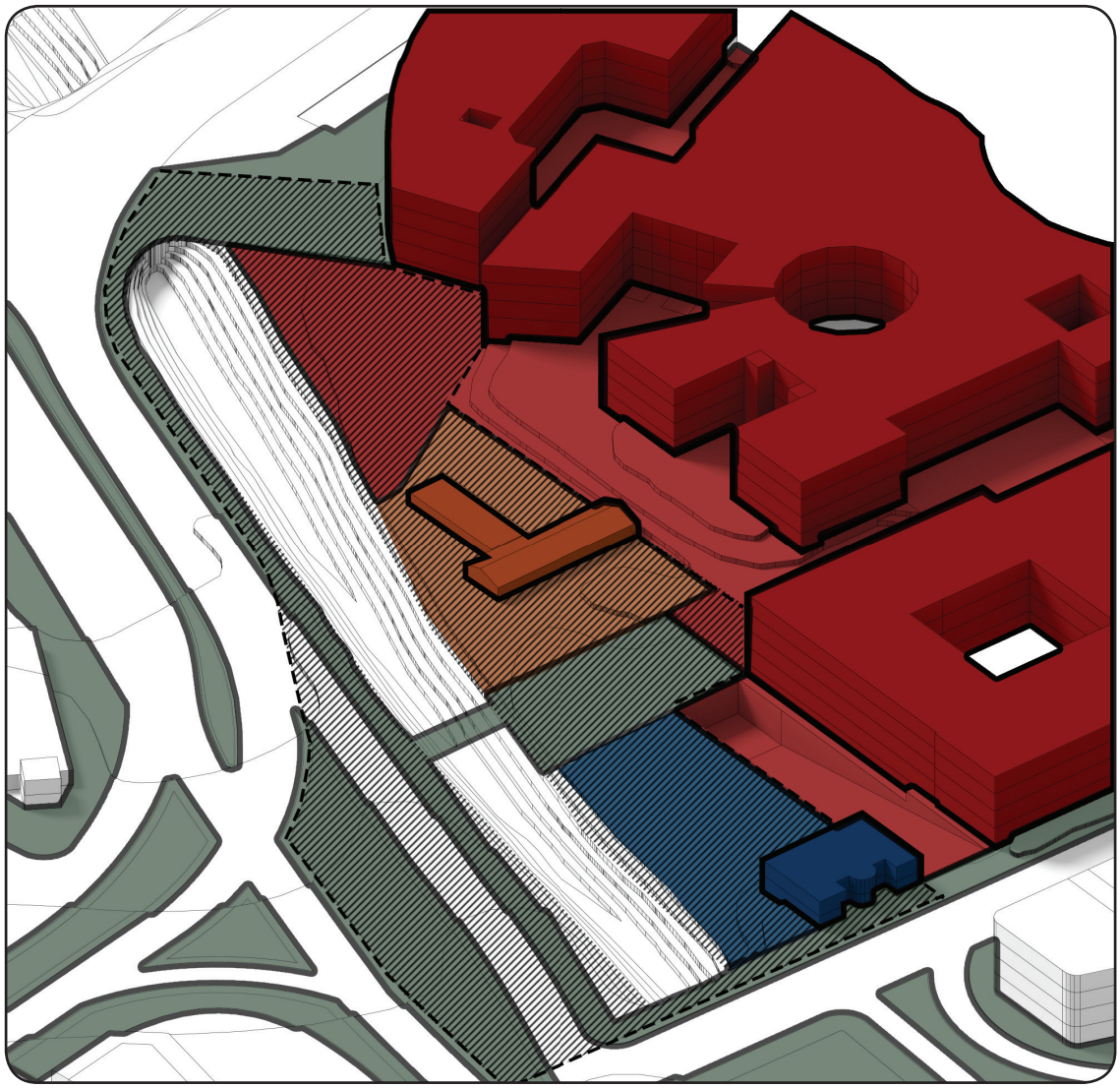


Figure 3.50: Priviatisation of public space axo (Author 2019)

Figure 3.51: View of Theosophical Society (Author 2019)



Figure 3.52: View to DTI boundary (Author 2019)



Privatisation of public space

Also contributing to lost and inaccessible space is the construction of DTI and privitisation of public space. The public is discouraged and sometimes unable to use the space adjacent to the Apies river.

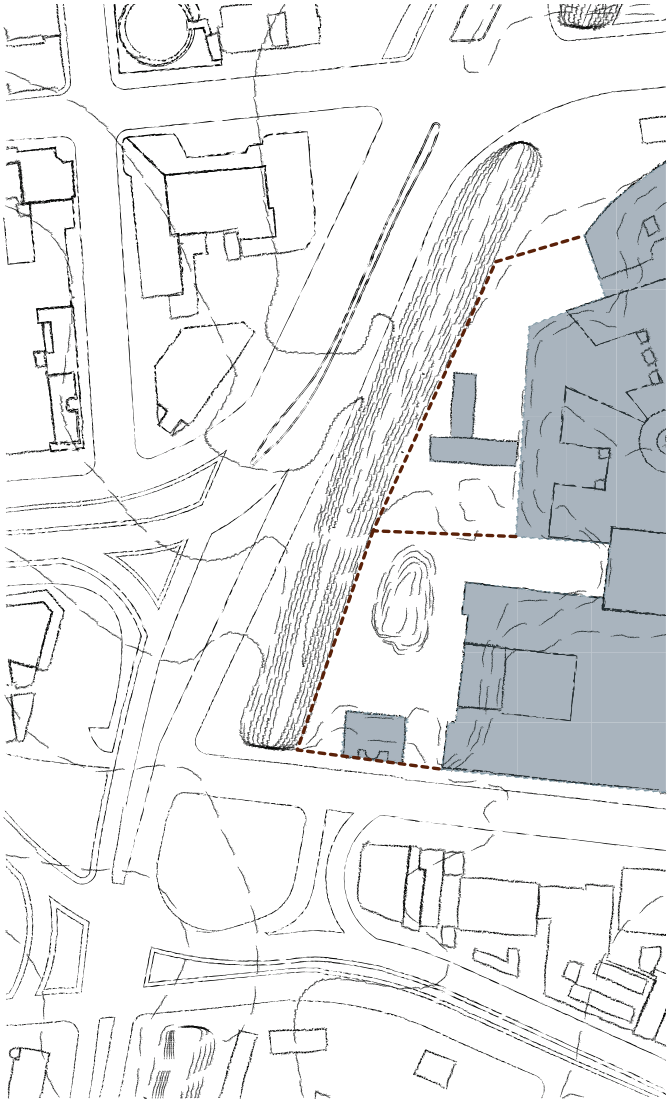


Figure 3.53: Security lines (Author 2019)

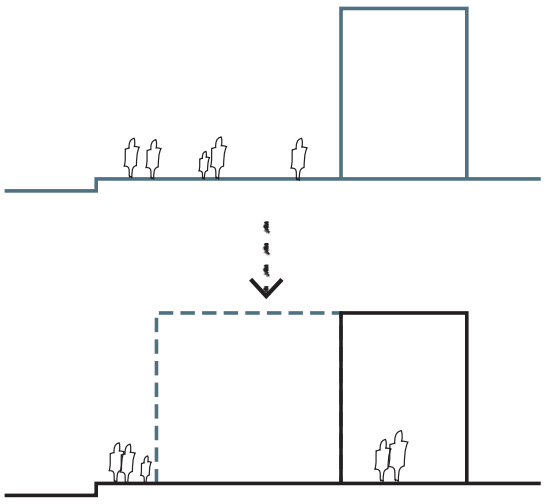


Figure 3.54: Current condition inaccessible (Author 2019)

Figure 3.55: View to DTI (Author 2019)

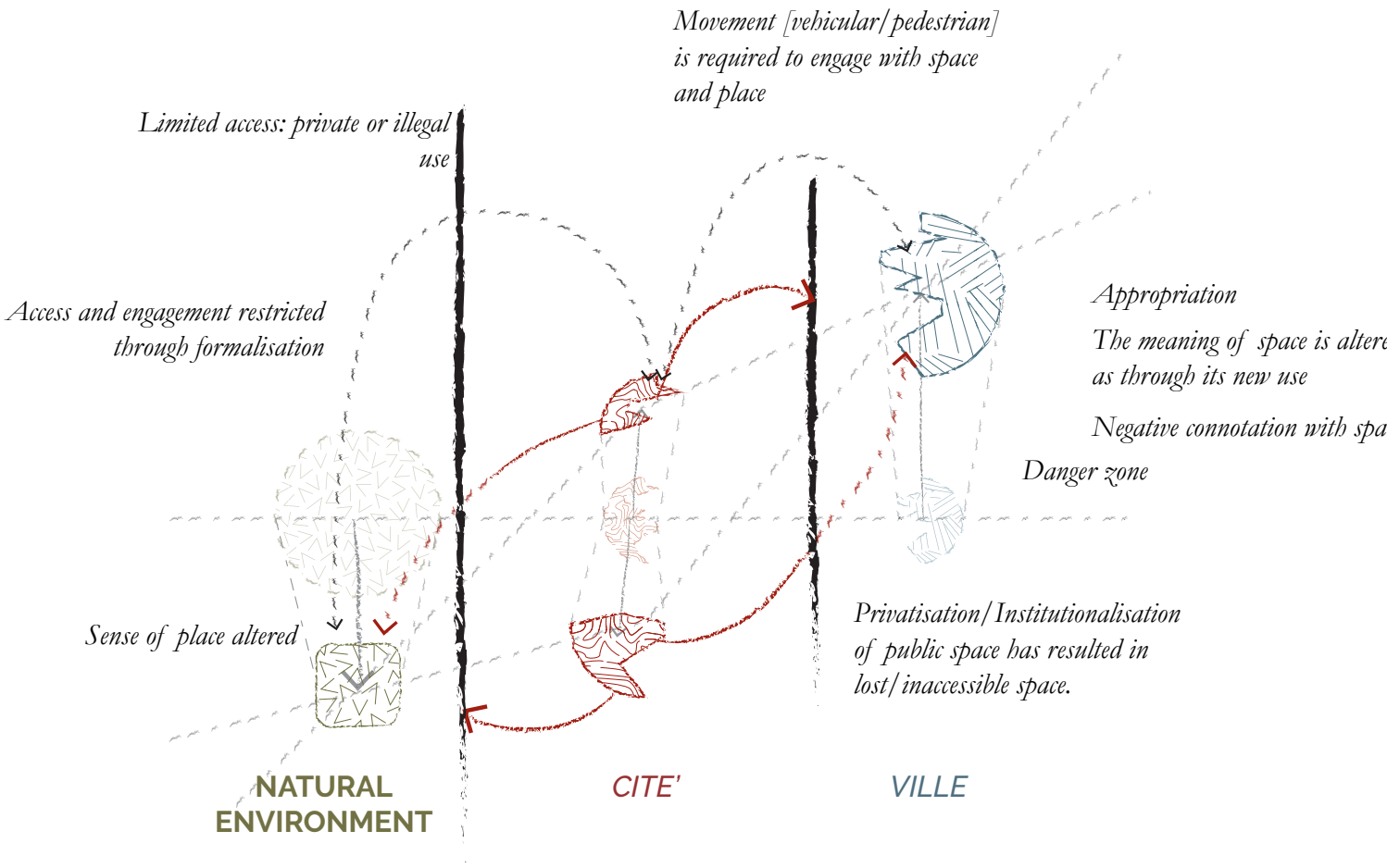


Figure 3.56: Walkway adjacet riverbank (Author 2019)



CURRENT CONDITION CONCEPTUALISED

Access
Transitions
Engagement is lacking



As the city grew, the scale of interventions also grew larger and started to change the character of place as well as the social nature of people. Pretoria's planning and development rationality was positivist and not normative and focused predominantly on infrastructural development and not on addressing the needs of the people.

Figure 3.57: Chosen site's fracture conceptualised (Author 2019)

Historical significance

Spiritual – event potential - Gathering space for people (theosophy)

The Theosophical Society lodge sits on the east bank of the Apies river. The historic place is confined to the building's footprint.

According to Clasquin (1999:347) the site choice for the Theosophical Society was an accident of geography. At the time of its construction, it stood on the outskirts of Pretoria, but as the city has expanded it now centrally located as it is situated just outside the CBD. Seeing that the Theosophists are open (as part of their teachings) and accepting towards other religious traditions, its current location makes it an ideal place for groups to meet. Their motto is 'there is no religion higher than Truth' (Clasquin 1999:347) and the society claims they have no dogma of any kind.

Due to its openness, the facilities have become so popular amongst different spiritual and alternative group that on any given evening two client groups use the venue at the same time e.g., a Buddhist group in the library and a Yoga class in the main hall. The function of the building has expanded so much that regular open days are held in order to promote activities such as astrology, aromatherapy, vegetarian food as well as the distribution of spiritual books and other materials (Clasquin 1999:346).

Figure 3.58: Top: Theosophy axo (Author 2019)

Figure 3.59: Cent: Theosophy from the street (Google 2019, edited by Author)

Figure 3.60: Left: lost space (Author 2019)

Figure 3.61: Right: View from DTI (Google, edited by Author)

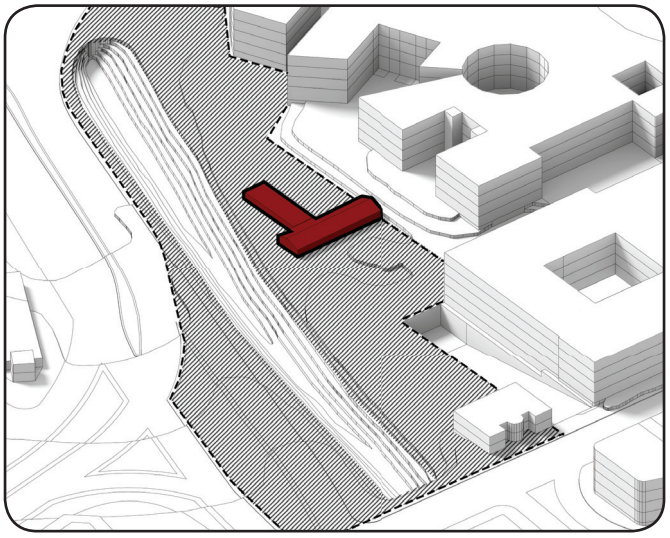










Figure 3.62: Tramcar crossing over the Apies (Hardijzer 1908, edite by Author)

Heritage value (Cultural/ spiritual)

It was the first building erected and owned by a South African lodge in Pretoria in 1927. Their lodge building has served as a venue for many other religious and philosophical groups, which might otherwise have declined because of a lack of a suitable venue.

The Tshwane 2055 vision demarcates the study area as a cultural meeting place, called the 'Kopanong', which embodies the African dualism of our spiritual and productive connection with place. The vision strives to foster place-making within the city that promotes cultural diversity. By using the vision as a framework for development, value/ significance can be ascribed to the Theosophy lodge's function as a cultural and spiritual catalyst.

The latent identity of the building seems to be rooted more in the function as a spiritual meeting place rather than a building of architectural significance. The very essence of the building and why it was constructed ties well into the Tshwane 2055 vision and retaining the integrity of the programme in the new proposed design will be important.

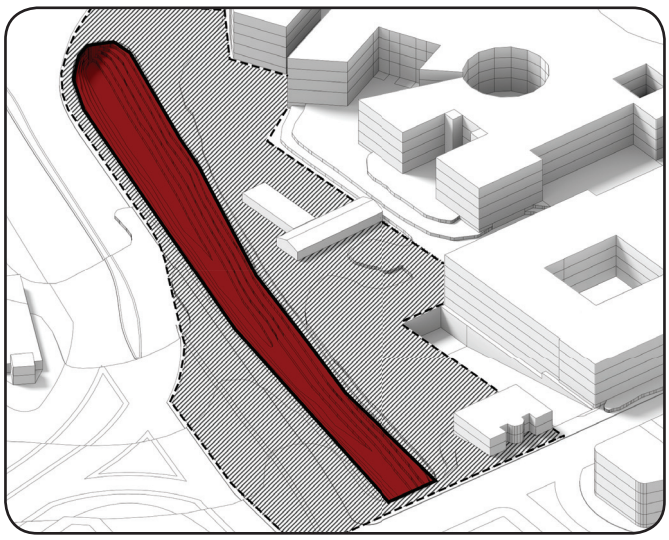
Water as life source and the rituals associated with it – productive, spiritual and recreation.

During the settlement of the town of Pretoria, the Apies river played an important part in the daily lives of its people. The river was not only a physical source for freshwater and productive food systems, but also a place of spiritual and social fulfilment (Jeppe 1906:7). As the city of Pretoria developed, it focussed mainly on developing the built environment through positivist planning schemes and as a result neglected its lived experiences, and in the process 'lost' the initial sense of place of the city (Biljon 1993:42).

The Apies river had been modified to such an extent that today it is unrecognisable as a river that once had such a strong spiritual and productive







affinity (Goodman 1992). Due to this change, the citizens of Pretoria are physically detached from the Apies, unable to connect with the river on a spiritual and productive level.

According to the CoT (Open Space Management Zone 2007:52), their Open Space Framework's development goal is to regenerate the Apies river by removing the modification that was made and, in the process, rehabilitating it back to its natural state. By regenerating the Apies river, new spiritual and productive connection with the river is made possible.

Figure 3.63: Top: Tram Bridge in Esselen Street (Unknown, edited by Author)

Figure 3.64: Mid: Canalisation of Apies river (Unknown, edited by Author)

Figure 3.65: Bottom: Apies river axo (Author 2019)

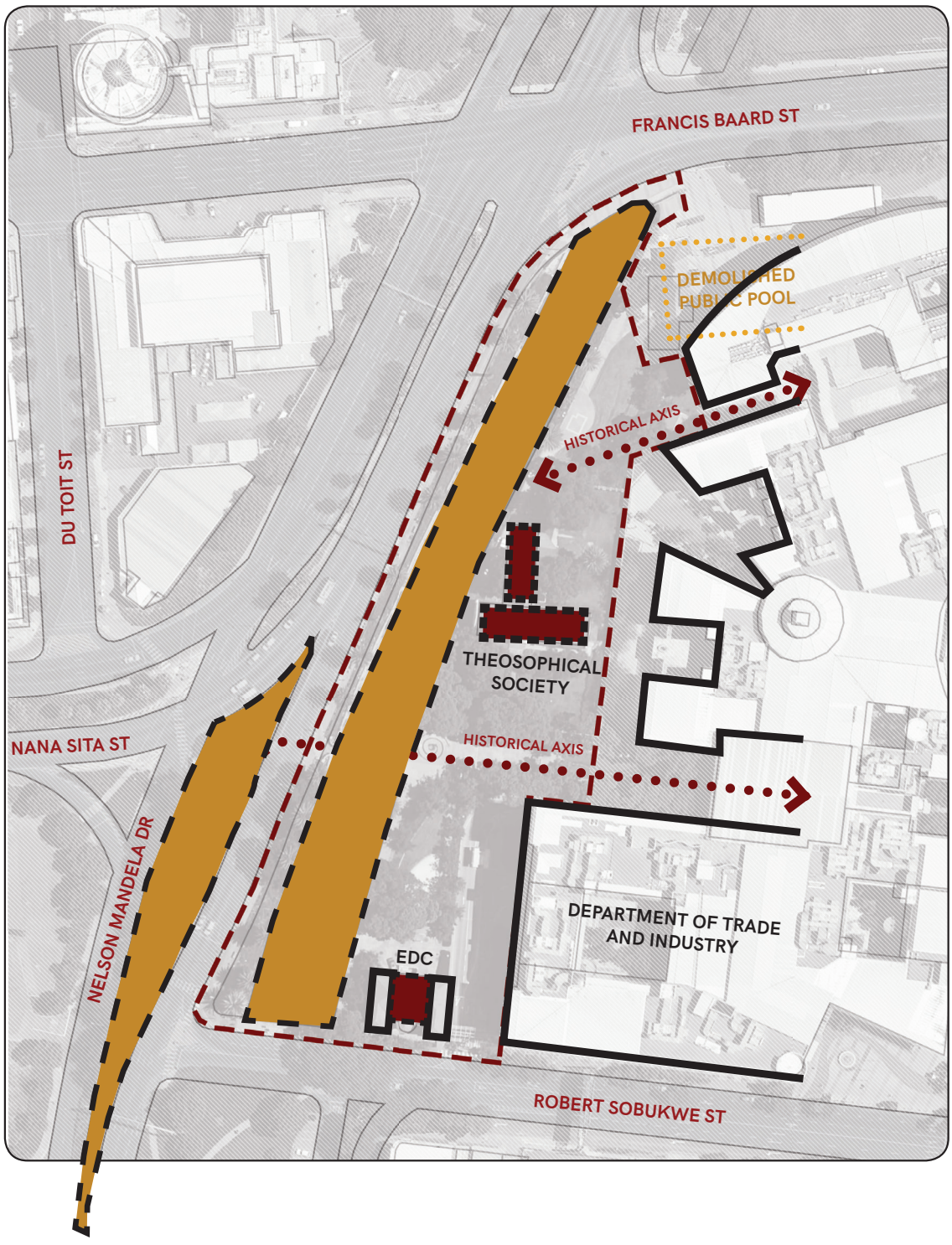
Architectural significance – Les Mansions 1934

The Les Mansion Art Deco building designed by architect L. Elis in 1934 for client Philip Novis is situated on the southern edge of the site in Robert Sobukwe (previously Esselen Street). Originally designed as a block of flats, the building is currently being used as an office for a security company.

This eighty-five-year-old building, with its symmetrical street façade, balconies and entrance portal is synonymous with the 1930s building style in Pretoria.

The rectangular recessed surrounds that frame each window, the horizontal protrusions that decrease in size underneath the balconies, are all characteristics of the Art Deco movement (Meiring 1984).

Figure 3.66: Heritage Fabric (Author 2019)



Currently protected under the National Heritage Resource Act 25 of 1995, due to the building being older than 60 years, the importance of the various architectural characteristics need to be analysed and an appropriate heritage theory adopted in order to allow responsible development.

In his article Architectural design in historic contexts Prof. Arthur Barker (2019:5) discusses Rodolfo Machado's theories on the remodelling of old buildings. Machado believes that change is unavoidable in remodelling, but that a balance between past and future needs to be achieved and that the significance of the past increases in value when being transformed or altered. He continues by comparing the past to a 'canvas' on which each remodelling can make its mark, building up meaning that can either 'be accepted, transformed or suppressed' (Machado 1976:46-49). Machado states that a new story or chapter begins when a building is changed to such an extent that the original function is no longer recognizable, but that this signifies a new interpretation born out of the past (Machado 1976:46-49).

This approach of transformation was adopted in order to allow a new sense of place to be created. Retaining some of the Art Deco characteristics in the form of the symmetrical street façade became important. The first transformation came in the form of removing the entrance portal and opening the building up to the public (and their everyday rituals) and in so doing, enhancing the building's relationship with the natural landscape. The second strategy was to create a connection between the old and the new, this was achieved by removing the roof off the existing building and extending the new market space roof over the existing heritage building. These changes allowed for the vision of a new type of ville, one that is conscious and sensitive towards the lived experiences and the importance of man's connection to nature, to take shape.

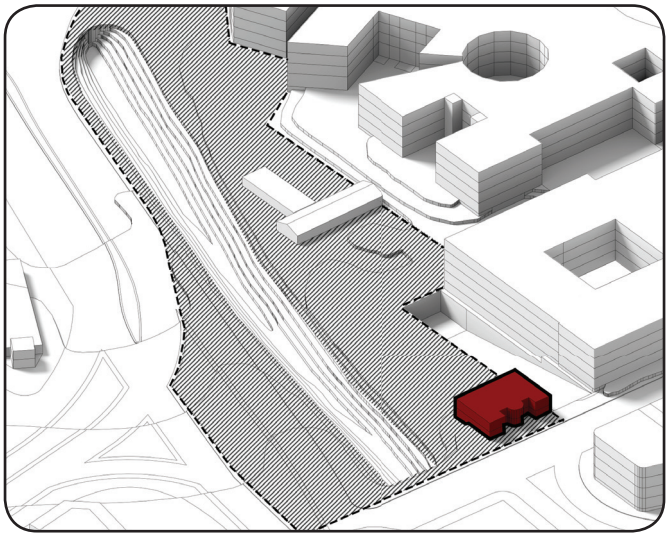


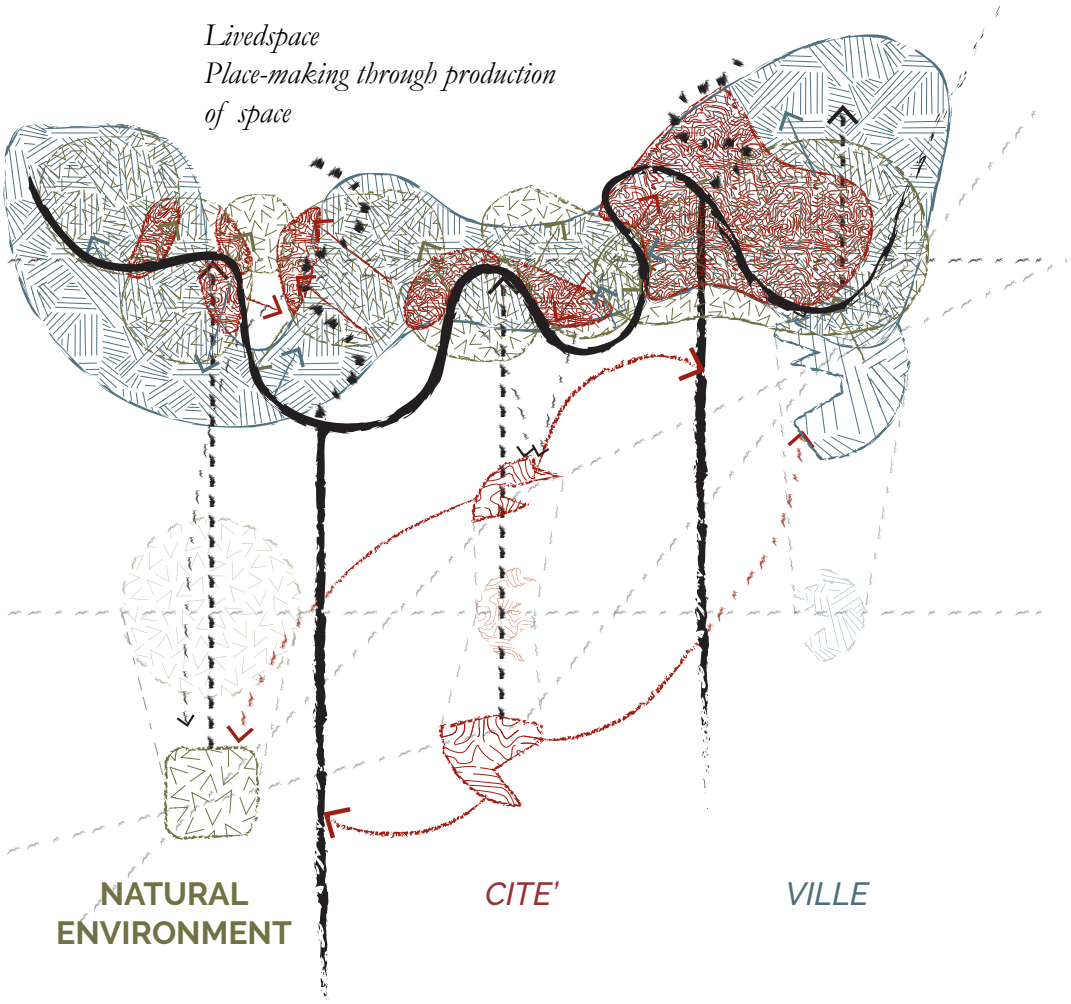




Figure 3.67: Top: Les Mansions axo (Author 2019)

Figure 3.68: Mid: Les Mansions Northern facade (Author 2019)

Figure 3.69: Bottom Les Mansions Southern facacde (2019)



In order to achieve the design, appropriate theories will be used to generate and support the architecture and its function. Thirdspace and the production thereof will be used to reinterpret daily rituals on site to support place-making. Biophilic design will be used to reconnect man and nature, thus creating a new type of relationship between cite' and ville.

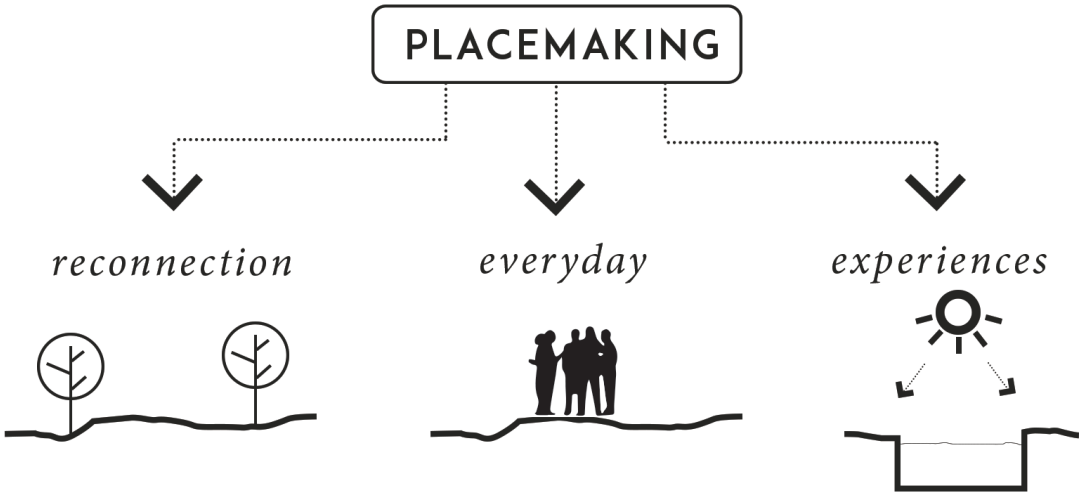
Figure 4.1: Appropriate theories conceptualised (Author 2019)

Theory 04

Facilitating Place-making

Place-making can be defined as the creation of environments with a unique sense of place that are sensitive to and reveal the unique nature of their cultural and natural context (Behrens & Watson, 1996:10-11). According to Cavallaro (2001:3) place and meaning are inseparable. In the same way as humans are necessary to ascribe meaning to any physical location or feature, so is human activity for necessary for place-making. Lehtovuori (2010:80) argues the primacy of place-making should move from physical location, or features, to that of meaning given through human activity. Lehtovuori (Lehtovuori 2010:80) echoes Cavallaro's thoughts by saying that places do not exist apart from human beings, but that they are produced, rather than found, through their interactions.

According to Van Rensburg and Da Costa (2008), urban space is a vehicle for social participation as well as the expression of identity. Lehtovuori (2010:49) states that public urban space is open and diverse and must be reconceived to allow for appropriation of the everyday. In contrary to the conception of a building, which dominates, possibly sterilises and closes space, the production of space through appropriation of everyday rituals opens up opportunities and has the potential to contribute greatly towards public place-making within a city, as it generates meaning. Therefore, it is important to carefully investigate the way in which spaces are appropriated and 'produced'.


PLACEMAKING
reconnection
everyday
experiences

Everyday rituals and the production of space

In order to understand the impact the production of space has and the opportunity it provides for place-making, the elements of space need to be understood. Theorists Henri Lefebvre (1994:33) and Edward Soja (1996:69-70) developed the spatial triad, to facilitate ways in which we think about space. The three spaces are the perceived or physical space, conceived or mental space and lived or social space. In reality, when interacting with space, these three conceptualisations of space do not appear separately, but are only brought forth through analysis (Lehtovuori 2010:55).

The French philosopher, Henry Lefebvre (1994) states just how valuable the practice of everyday rituals are within the production of urban space. With reference to Lefebvre's (1994) spatial triad, the practice of everyday rituals falls within the 'lived space' and plays an important role in the conceptualisation of space as a whole. It is within this lived space where a person or community can establish an identity which has the potential to contribute greatly towards a sense of belonging within a city.

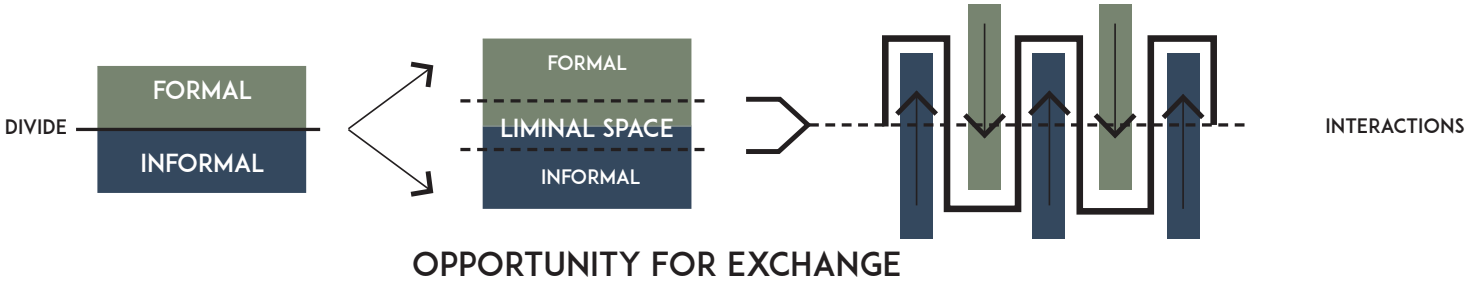
Friedmann and Cresswell beliefs that place-making is an event, open and flexible, brought into life by its social practices (Friedmann 2010:154, Cresswell 2004:39). Compared to the 'power' that is required to actualise a new building and the possibility of it becoming obsolete, Lehtovuori (2010:54) supports place-making through appropriation as it doesn't require much to realise and is constantly remade; It is ephemeral and thus has the ability to change over time. Lethovuori (2010:103) refers to these ephemeral or momentary articulations as 'weak places' and believes those momentary places are the seeds of the production of social space.

Complexity of the production of space (or lived space):

Knowing the potential for place-making through the production of space is one thing, but designing for appropriation is another. According to Lehtovuori (2010:103) the 'spatial' foundation for weak places (which will allow for more appropriation) are sometimes those which are less prescriptive and underdefined. Before this investigation can attempt to generate design guidelines, a better understanding of our current view on the production of space is needed. Laura Lutizo (2016:6-7) argues that within a city's lived space, there is a dichotomy between how spaces were conceived to be used and how spaces are being appropriated, not only because of the current *ville*'s inefficiency to facilitate appropriation, but also due to the traditional lenses through which cities are being viewed. These traditional perspectives portray appropriation within cities as untidy, unregulated and an inefficient use of space, which is in direct contrast with how the conceived use of space is perceived; namely tidy and

Figure 4.4: Left: Place-making theories (Author 2019)

Figure 4.2: Bottom: Opportunity for exchanges (Author 2018)



regulated (Lutizo 2016:7). This antithetical approach impedes the opportunity for interaction and exchanges between these two spheres on economic, social and spatial levels. Lutizo (2016:9) argues that the above mentioned dichotomous relationship focuses too much on the differences between the conceived and the appropriated rather than seeing the potential for integration.

However, Lutizo believes that instead of separating the two spatial practices, architecture should seeks to create a liminal space where exchange can happen. By embracing both spatial practices, the spatial dichotomy is transcended, enabling architecture to become a platform for interactions, yielding richer lived experiences. Kretz and Salewski (2014:174) supports this change and states that for a city to successfully develop, it must move away from its own rigidity. This shift will result in new and better relationship potentials between the parties involved.

In his essay, "Space for Encounters", Rieniets (2014:181) writes that public space is a key component in the development of relationships. It connects and integrates seemingly different people without eliminating their differences. It can therefore be assumed that public spaces can act as liminal space, as it encourages exchanges between parties that are unlikely to interact otherwise.

Appropriation of public space plays a vital role in the production of social space within a city, however the answer for integration lies not within the formalisation, but rather using architecture as a platform to facilitate spatial exchanges. Through the use of architectural design, existing infrastructure such as streets, sidewalks and parks can become weak places where encounters can take place. By facilitating the production of space through appropriation, architecture has the potential to create better lived experiences and an improved sense of place.

Place is not just a location or `container' for an event, but it plays a dynamic and relational role in the conception of space. Relph (1976:141) argues that the three aspects of space, activity (lived), physical features (perceived) and projected meaning (conceived) is not quite enough to create or define a place, but only being 'inside' of space and experiencing deeply will distinguish it from space. This is called the 'moment of signification' (Lehtovuori 2010:77). The fact that space's physical features, meanings ascribed to it and social activities produced within it, is not enough to define a place, and without deeper experiences, it will weaken over time. It is important to give attention to the design of experiences that evoke emotions, as it will ultimately result in a stronger places (Lehtovuori 2010:88). According to Relph (1976:145), phenomenology can provide a way for revealing emotions or symbolism and translating that into deeper experiences.

In order to improve the *cite'*, a shift in how *ville* is conceptualised is required. The conception of space should not just be preceived through visual representations, but as momentarily as it may be, also through experiences (Lehtovuori 2010:103).

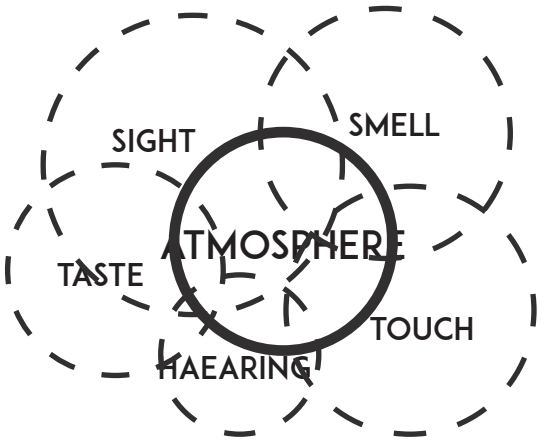


Figure 4.3: Spatial atmosphere (Author 2019)

Phenomenological experiences

Alan Gussow's (1971:26) believes that place is established when feelings take hold of an environment. He argues that 'deep experiences' are catalysts that convert any physical space or environment into a place. A traditional phenomenological understanding of place recognises that within a delimited physical space, there will always be numerous lived experiences (Merleau-Ponty 1945:337), but according to Lehtovuori (2010:97) phenomenological place cannot be understood as just the physical location, container of objects, people or their network of activities, it has to be viewed as an event that binds those elements together (Lehtovuori, 2010:97).

Lehtovuori (2010:88) extends the definition of place-making by arguing that not any human experience will create place, but the constant process of 'throwing meaning' over phenomenological/sensory experiences in relation to physical space will. Jacobs (1961:8), in her book The Death and Life of Great American Cities, states the importance of the sensorial when interacting with places. She believes that all our human senses should be considered when making place. Day (2002:158-159) adds that place communicates through the experience of smell, sound, colour, light, form and space and that a place experience is strongest when the different senses are integrated. This amalgamation of experiences, through design, is what Pallasmaa (2014) calls the 'experiential atmosphere'.

An atmosphere unifies and encompasses the perceptual and emotive impression as well as the physical and social situation of space. It is neither just the material object or the symbolic subject, but is suspended in between. Through the notion of atmospheres, the necessity and contribution of architecture is realised (Sayegh et al 2016:2). Lehtovuori agrees with Sayegh and Böhme that the concept of atmospheres have a key role to play in designing for phenomenological experiences (Lehtovuouri 2008). Atmospheres are not something

relational but the relation between object and subject itself. It is 'spatial and to an extent material' (Lehtovuori 2010:129).

Apart from the physical location and atmosphere of a place, Day (2002:158-159), states the movement through a space allows for interaction which makes experience possible. As mentioned above, the positivist development of Pretoria has favoured vehicular movement and has had a negative effect on how both the pedestrian and driver experience the city. In terms of experiencing place, a driver loses his ability to experience place, instead he moves through space (Sennett 2018:163). Travelling in a moving vehicle at around 80km per hour results in a narrowed consciousness, restricting the viewer's focus to one specific object (Sennet 2018:184-5). However, walking enables objects to become 'round', resulting in more curious observation of the object's context and contours as opposed to the speedy observation of a flat images when driving in a car. Sennet (2018:184-5) believes that walking encourages 'deep lateral consciousness', an unattainable consciousness when moving at high speeds.

According to Sennett (2018:163) the positivist mentality was that faster movement meant freedom, resulting in sidewalks becoming less important than roads. So much focus is put into the development of vehicular circulation that walking has lost its value. The irony is that by focussing on the vehicular realm, the value of pedestrians and their ability to experience, are taken away (Highmore 2005:69).

Exemplified through the investigation of the chosen site in Trevenna above, as a result of the socio-spatial condition, a negative lived experience is also possible when the relationship with place become that of 'outsiderness' (Lehtovuori 2010:87). In order for us to truly experience a place, Richard Kearney (1986:74) argues that 'through our bodies as living centres' we interact and experience the world. The experience of 'outsiderness' cripples our ability and hinders any for potential interactions between our body, environment and imagination (Pallasmaa 1996:41), that is why it is important to be immersed in the space rather than just viewing it from the outside (Cloke & Jones 2000:663).

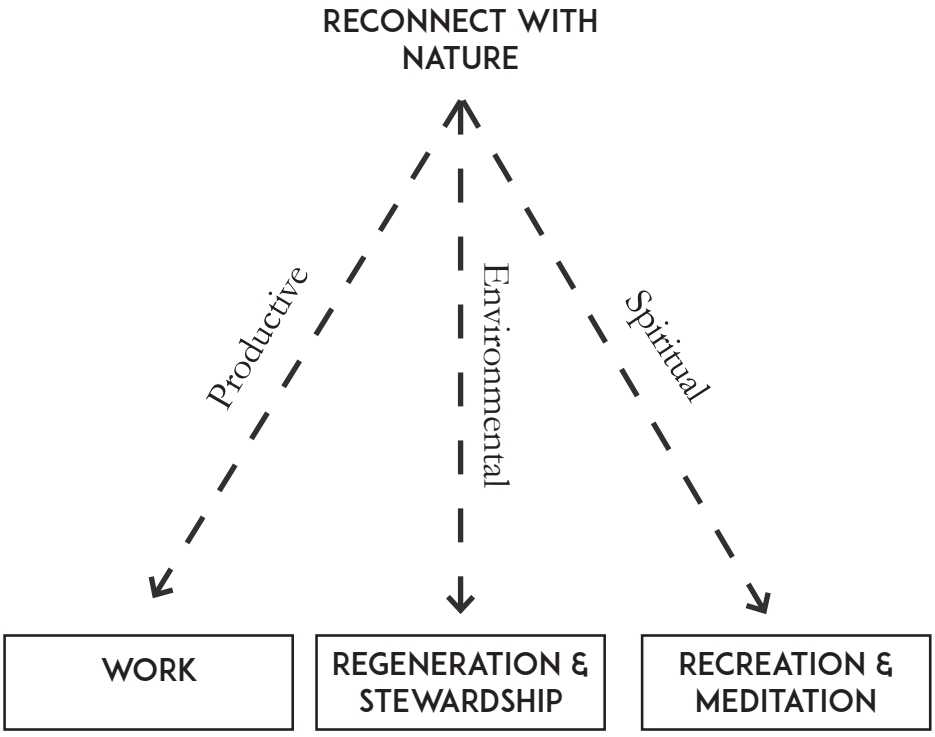


Figure 4.5: Connecting with nature (Author 2019)

Connection to nature

Relph (1976:45) believes that, before a contribution to the restoration or maintenance of place can be made, an understanding of its significance to humans is needed. Without this understanding it would be impossible to know why a place is special or how to mend it.

Modernisation has resulted in the homogenisation of the earth's lush cultural and biological diversity, destroying the very place we call home (Mang 2007:2). The notion that nature is an obstacle that needs to be conquered, has resulted in the subjugation of nature for the purposes of humanity (Dobson 2000:51). Oliver (2000:229) believes Modernity is at the heart of man's disciplinary attitude towards nature, in an attempt to satisfy man's needs and to represent modern society.

This view is prevalent in the development of Pretoria, specifically in the subjugation of the Apies river to controlled processes, in an attempt to contribute towards one specific need of modern society without considering the repercussions beyond its monofunctionality (Oliver 2000:229).

According to Mang (2007:46-7), our anthropocentric worldview has caused us to undermine the socioecological diversity of the places we inhabit, robbing these places of richness. This disconnection with nature has not only resulted in cities robbed of spiritual and material richness, but also degraded cities' ecological and biological place (Mang 2007:2).

An increasing number of people have taken a stand against homogenisation of the natural landscape and are encouraging others to rediscover place, by understanding the massive contribution these places make to our quality of life. This call aims to encourage people to rediscover the true meaning of being native to place, and amidst a rapidly evolving world, developing roots and building community (Mang 2007:3).

This rediscovery of place comes hand in hand with the unification of man's relationship with the ecological patterns of place and at the same time building strong communities to support regional patterns, yielding authentically unique 'cultures of place' (Mang 2007:47). This change can only occur once we reestablish intimate contact with the natural environment that envelopes us. Nature is not abstract, it is omnipresent, invaluable and unique in its diversity of place (Mang 2007:47).

Cloke & Jones' (2000:663) perspective on dwelling involves man being part of the landscape, as he moves through it time and time again, as part of his everyday life. By moving through and becoming part of the landscape, we gain a different perspective from someone who merely gazes upon it from an external position. Mang (2007:47-48) believes that by re-embodying the places we inhabit, the possibility arises to become more in tune with a place's rhythms and in so doing, awakening the spirit of place.

This very idea of man as part of nature motivated the development of Pretoria and contributed greatly to its character of place. Unfortunately, due to positivist planning schemes man's relationship to the river has become weaker and has resulted in a perspective of gazing down on instead of becoming part of the natural landscape. The architectural challenge lies in discovering ways of re-establishing a physical and spiritual connection between man and nature and in so doing, awakening Trevenna's dormant spirit of place.

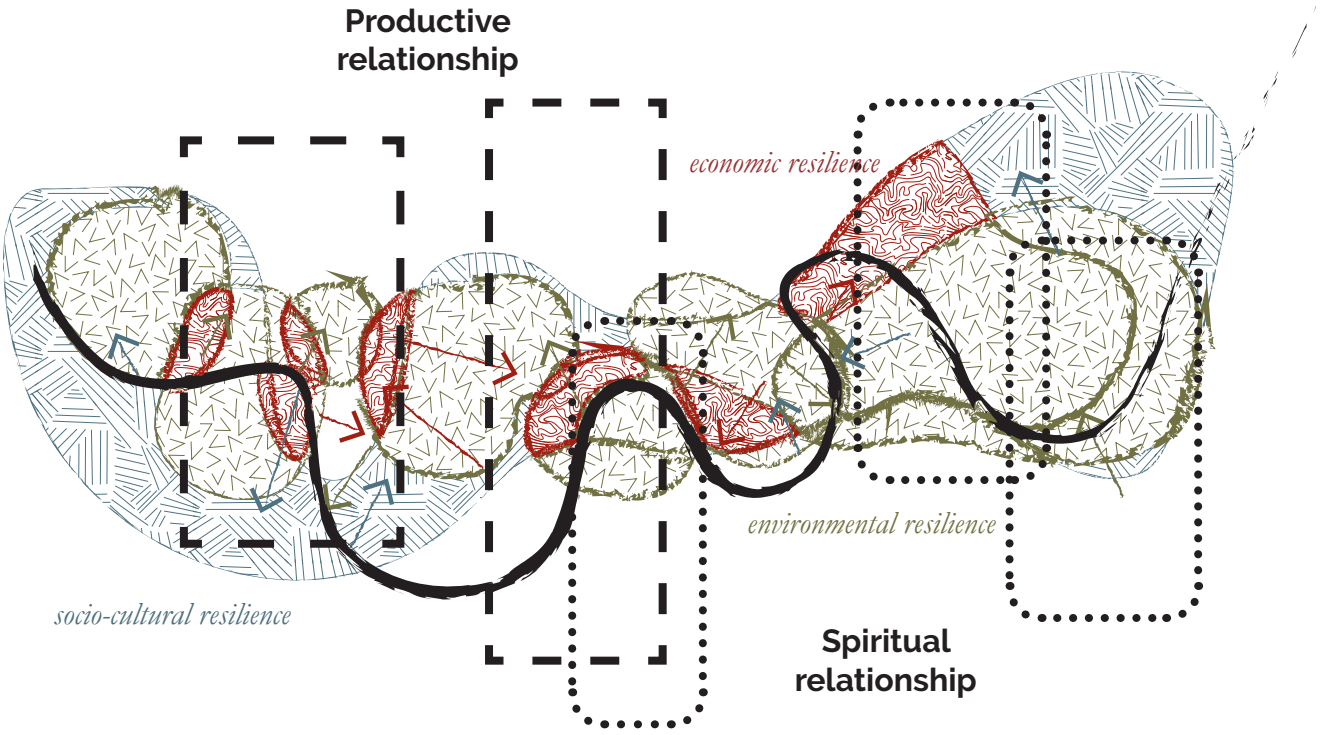


Figure 5.1: Regenerative Framework Foci (Author 2019)

Programme
05

Spatial dualism

During the settlement of Pretoria, the Apies river played an important part in the daily lives of its people. The river was not only a physical source for freshwater and productive food systems, but also a place of spiritual and social fulfilment (Jeppe 1906:7). As an effect of Pretoria's positivist development, the Apies river has been modified to such an extent that today, it is unrecognisable as a river that once had such a strong spiritual and productive affinity (Goodman 1992). Due to this change, the citizens of Pretoria are physically detached from the Apies, unable to connect with the river on a spiritual and productive level. To address the disconnect, the CoT's has identified the regeneration of the Apies river as a crucial part to achieve its vision of a social, economic and environmental resilient city (City of Tshwane 2015).

According to the CoT (Open space management zone 2007:52), their Open Space Framework's development goal is to regenerate the Apies river by removing the modification that was made and, in the process, rehabilitating it back to its natural state. By regenerating the Apies river, new spiritual and productive connections with the river is possible. The regenerative framework specifies that both the Apies river's potential social function as well as its infrastructural function be addressed, through appropriate uses and interfaces (City of Tshwane 2007:7). According to the CoT's Regenerative Framework (City of Tshwane 2013), these new connections provide socio-economic and environmental place-making opportunities that have the potential to redefine the city's lost sense of place.

The celebration of everyday rituals and man's reconnection with nature through sensory experiences, as researched in this document, have the potential to make place and foster new lived experiences. Combining the CoT's Regenerative Framework's strategies with place-making strategies, appropriate programmes and functions for the architecture has been identified.

The selection of programmes was largely influenced by the three foci of the Regenerative Framework, namely to achieve economic, social and environmental resilience through new spiritual and productive connections to the Apies river.

Economic resilience

The issue: spatial dichotomy

Everyday rituals that are present in Trevenna are mostly economically driven activities and have the potential to strengthen the city's economy. But there is a dichotomy in the spatial practices of those everyday rituals, as some activities, classified as the 'formal', prescribe to how spaces were conceived i.e, retail/shops and offices, whereas other activities, called the 'informal', appropriate space as they see fit i.e, street traders. According to Lutizo (2016:9) this antithetical approach to how both spatial practices are perceived, impedes the opportunity for interaction and exchanges between these tw spheres on an economic, social and spatial level. According to Bromley (2000:1,11) street





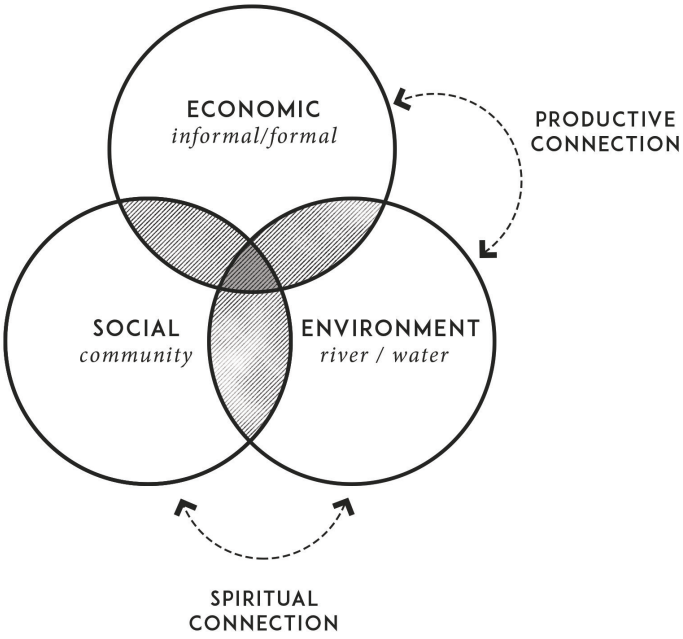


Figure 5.2: Top: Robert Sobukwe economic activity (Visco[city] 2019)

Figure 5.3: Mid: Economic activity traffic island (Visco[city] 2019)

Figure 5.4: Bottom: Programmes influences by Regenerative Framework foci (Author 2019)

Figure 5.5: Top Right: Pedestrian movement in Robert Sobukwe (Visco[city] 2019)

Figure 5.6: Bottom Right: Sidewalk appropriation (Visco[city] 2019)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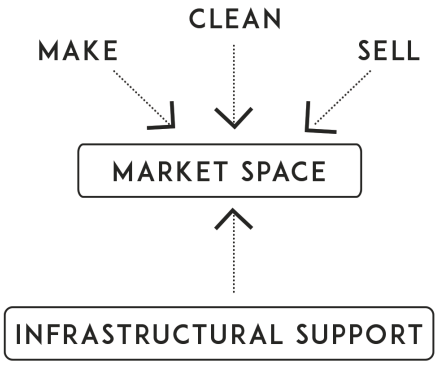


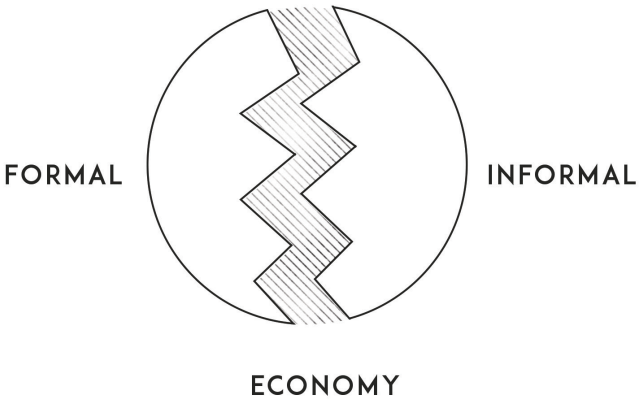


Figure 5.7: Top: Inclusive economy (Author 2019)

Figure 5.8: Mid: Infrastructural support (Author 2019)

Figure 5.9: Bottom: formal vs informal (Author 2019)

trading should be just another occupational group that supports the vitality of the streetscapes by producing and promoting social interactions as well as contributing to the economy.

The traditional perspectives of appropriation through street trading are portrayed within cities as untidy, unregulated and inefficient and thus having little value (Lutizo 2016:7). The argument against street trading is often further strengthened by the perception that street traders are a manifestation of poverty and underdevelopment. This notion has resulted in street traders being marginalised and excluded from future city development frameworks (Bromley 2000: 12-16). The integration of the growing workforce is hindered due to the lack of infrastructural transformation of our cities. Hernando de Soto (1989:14), a Peruvian economist, adds that it is exactly this lack of provision and support from the government that forces people into employment within the informal sector where they work as day labourers, selling goods on street corners without the necessary support or facilities.

The opportunity: Infrastructural and entrepreneurial support

For the city to become more resilient, it should foster an inclusive economy and support communities through quality infrastructure (City of Tshwane 2015:3). Lutizo (2016:11) believes that through architecture, a liminal space can be created where exchanges take place. For this to happen both spatial practices should be embraced, transcending the dichotomy and enabling the programme to become a platform for interactions, yielding richer lived experiences (Kretz and Salewski 2014:174). Rieniets (2014:181) suggests that public space is a key component in developing relationships as it connects seemingly different people without eliminating their differences. It can therefore be assumed that by creating a public market space, it can act as a liminal space that supports the everyday rituals with the necessary infrastructure, encourage exchanges between parties and fosters an inclusivity. Through a public market space, the everyday rituals are not only facilitated but also celebrated as they contribute towards public place-making which improves the lived experiences within the city.
A public market space will strengthen the economic

resilience of the city by providing the necessary infrastructure for both formal and informal rituals to function, allowing for exchanges and interactions to take place and thus promoting socio-economic inclusivity. The market will allow for appopriation by street vendors as it provides spaces to sell, make, clean and store their good. Combined within street trading, the market will also accommodate formal retail spaces coupled with their own preparation and storage areas to make the process of selling more accessible to entrepreneurs. Last but not least, the market space should be robust enough to allow for public events.

In order to grow a labour-absorbing economy, building infrastructure for formal and informal economic activities to take place as well as to allow for interactions and exchanges, is not quite enough. Individuals/entrepreneurs need to be equipped and empowered to take advantage of economic opportunities (City of Tshwane 2019:46). The CoT's Integrated Development Plan 2019 acknowledges the important role Small, Medium and Micro Enterprises (SMMEs) play within the city's economy and prioritises their promotion and development as they are key drivers for economic growth (Seda 2016:5).

In the 1995 government policy on SMMEs development was documented which focused on not only improving infrastructure but also increasing non-financial and financial support as well as creating a demand for services and products provided by SMMEs (Seda 2016:6). In line with the government policy and the National Small Business Amendment Act (Act 29 of 2004), institutions such as The Small Enterprise Development Agency (SEDA) and The Small Enterprise Finance Agency (SEFA) were established with the responsibility of business development and support (The DTI 2008). According to SEDA (Seda 2016:7) apart from poor infrastructure, access to financing, a lack of credit history, the inability to produce a business plan as well as poor market research and business ideas are some other limitations that hinder the success of SMMEs. Constraints such as limited entrepreneurship capacity and the shortage of skills hinder the potential of economic growth possible (The DTI 2008). That is why it is such an important task to provide support through the means of a business incubator as entrepreneurs and SMMEs have the potential to really contribute towards a more economically resilient city.

According to Merriam Webster dictionary an incubator is defined as a place or organisation that supports new and/or developing businesses by providing shared services, management assistance or subsidised commercial space (Merriam Webster 2019). Linking the business incubator with the Department of Trade and Industry's (DTI) existing Enterprise Investment Programme (EIP) increases the potential to strengthen the economic development of the SMMEs (The DTI 2014:2). The business incubator will encourage partnerships between different enterprises (big and small), skills transfers, allow opportunity for networking, access to funding and ongoing mentorship (The DTI 2014:2).

The incubator provides the opportunity for entrepreneurs to receive support from a variety of professionals. They will form part of a network of business owners that can help support and educate younger businesses. Through its connection with DTI, entrepreneurs share in DTI's resources and business development expertise. Thus, the incubator is a platform for SMMEs that provides infrastructural, financial and non-financial services that supports their development with the aim to create a more stable environment for businesses to be established and grow.

The business incubator strives to provide both non-financial support and financial support. The non-

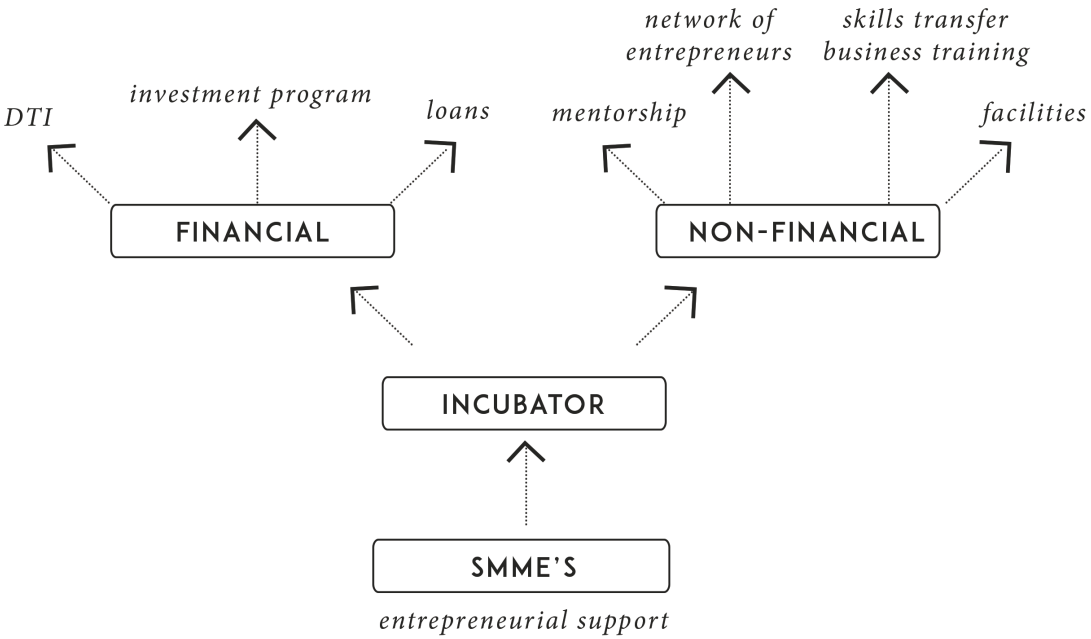


Figure 5.10: Entrepreneurial support (Author 2019)

financial support will be through its business development training programme which require seminar rooms where training is provided by experts to budding entrepreneurs [learning].
As the business incubator encourages partnerships and skills transfering, workshop spaces are also provided where entrepreneurs can meet to develop and/or test their business ideas together [testing]. Studio spaces are also provided for those who need to work in private but also need to use the facilities of the incubator [making]. Lastly, the business incubator provides maker/preparation spaces that are linked to the subsidides retail spaces of the public market to support and promote a business from inception to implementation.

As for the financial part of the business incubator, a public interface is important as it will allow any entrepreneurs to approach and make use of financial services. A public foyer and waiting area links with the administration and financing offices where entrepeneurs can apply for financial assistance (short term loans, daily loans), equipment rental as well as apply for subsidised retail space. A combination of smaller and larger meeting spaces are required for general daily applicants as well as larger public/private investement presentations. Apart from being part of DTI's investment programme, a physical link between the business incubator and DTI is required as most of the resources (financial and non-financial) are already present within DTI but not yet accessible to most.

Social and cultural resilience

The second focus of CoT's Regenerative framework is to create a socio-cultural resilient city. But due to the city's positivist development, its citizen's lived experiences have been negatively effected. Within Trevenna specifically, the chanalisation of the Apies, public space fragmentation and DTI's mono-functional and privatisation has led to a loss in the sense of place and has negatively effected the lived experiences within the city.

As an attempt to restore the cultural and social signifiance of the Apies river, a programme that allows for social interaction/exchanges between people is encouraged but also interaction with the Apies river. Apart from the public market space that is a platform for exchanges, an ancillary programme is required to foster a new relationship with the Apies river. By using the Cot's Regenerative vision as a framework for development, the latent event potential of both the natural river and Theosophical society a social and cultural catalyst for the site.

Suitable programmes that can act as a social and cultural catalyst whilst encouraging a physical and spiritual connection with the landscape is realised in the form of recreational programmes consisting of a public swimming pool, an event or gathering space as well as a cafe' and garden that serve both the public and private, as it will allow groups of people to come together and enjoy the river, as it once was - a source of social and spiritual fullfilment.

The swimming pool, gathering space and cafe' is public as it encourages interaction/engagement between people of different social and cultural backgrounds and is also part of the natural landscape, as it promotes a stronger relationship with the river through either a physical or visual connection with it.

Environmental resilience

The imminent water crisis looming over South Africa and the rest of the world, has increased the need for innovated ways to harvest, store and re-use water. Through the introduction of building functions such as water harvesting, water filtration, water purification and the re-distribution of water back into the city, the project aims to improve environmental resilience whilst providing a platform to re-establish a productive and spiritual connection between man and the Apies river.

Although the channelization of the Apies river was taken as a precautionary measure to future proof the city against potential flooding, the formalisation of this natural resource has led to a disconnect between the city dwellers and the natural environment. This disconnect, has resulted in a total disregard for water as a valuable source of life, leading to the current polluted state of the river.

What if, instead of formalising rivers to protect against flooding, we design buildings that embrace it and instead of losing the connection between man and nature, architecture becomes a mediating platform between the two? By re-evaluating what 21st century urban architecture looks like, this dissertation explores ways in which our buildings can improve natural urban environments and in so doing, catalyse environmental regeneration and induce positive change.

SANS spatial requirements

SPACE	FUNCTIONAL REQUIREMENTS	OCCUPANCY	AREA	TOTAL OCCUPANCY	TOTAL AREA
Public Market				**243 Occupants**	**660**
Retail		F2		28 personnel	**350**
Retail 1,2, 5		F2 - small retail - 1 per 15m²	30m² per shop	6 personnel	90
Retail 3		F2 - small retail - 1 per 15m²	25m² per shop	1 personnel	25
Retail 4		F2 - small retail - 1 per 15m²	20m² per shop	1 personnel	20
Informal trading space 1-10		1 person per 5m²	10m² per stand	20 personnel	100
Preparation area 1-10		1 person per 5m²	10m² per stand		100
Decanting room - equipment storage		J3 - low risk storage	15m²		15
Open market space		A1 -Public assembly - 1 person per 1m²	215m²	215 public occupants	**215**
Public ablutions	< 250 occupants	50% Male/50% Female	95m²		**95**
	Male: 2 W.C + 4 WHB + 3 Urinals Disabled: 1 W.C. + 1WHB Female: 4 W.C + 4 WHB Disabled: 1 W.C. + 1WHB				
	24 external cold water taps				

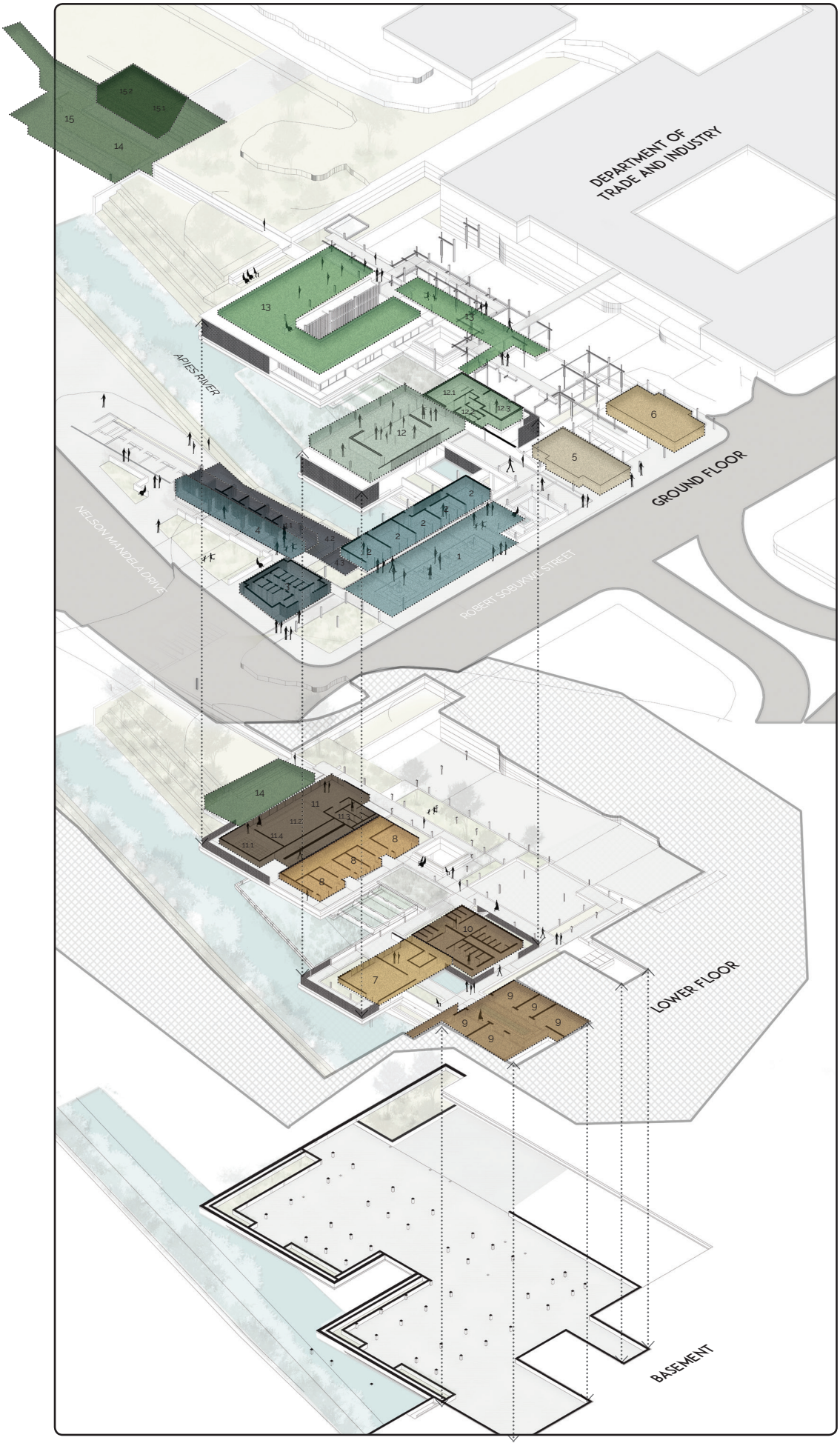
SPACE	FUNCTIONAL REQUIREMENTS	OCCUPANCY	AREA	TOTAL OCCUPANCY	TOTAL AREA
Restaurant				**83 Occupants**	**285**
Coffee shop		A1 - Entertainment and public assembly - 1 person 1 seat	200m²	77 people	
Seating internal		45 seats	140m²	45 people	140
Seating external		32 seats	60m²	32 people	60
Kitchen		B3 - Light commercial - 1 person per 15m² = 6 Personnel	40m²		40
Storage dry			20m²		20
Storage cold			5m²		5
Refuse area			5m²		5
Toilets			15m²		15
	Unisex: 2 W.C + 2 WHB Disabled: 1 W.C. + 1WHB				

SPACE	FUNCTIONAL REQUIREMENTS	OCCUPANCY	AREA	TOTAL AREA
Incubator				
Administration		G1 - Offices - 1 person per 15m² = 18 Occupants		**271,5**
Foyer + Waiting area (GF)			48m²	48
Reception (GF)			12.5m²	12,5
Adminstration office (GF)			10m²	10
Financing office 1, 4 (FF)			23m²	23
Financing office 2 (FF)			12,5m²	12,5
Financing office 3 (FF)			12,5m²	12,5
Consulting small (GF)			12,5m²	12,5
Consulting small (GF)			12,5m²	12,5
Boardroom large (GF)			40m²	40
Kitchnette + lounge (FF)			50m²	50
Boardroom small (FF)			23m²	23
Ablutions (GF)			15m²	15
	Unisex: 2 W.C + 2 WHB Disabled: 1 W.C. + 1WHB			
Learning/Teaching		A3 - Place of instruction - 1 Person per 5m² = 60 occupants		**297**
Studio spaces 1-6			15m²	90
Lecture room 1			70m²	70
Lecture room 2			50m²	50
Meeting room			20m²	20
Outdoor amphi				
Equipment storage			10m²	10
Foyer + Waiting area			15m²	15
Office			12.5m²	12
Ablutions			30m²	30
	Male: 1 W.C + 2 WHB + 3 Urinals Female: 2 W.C + 2 WHB			
Testing/Making		B3 - Light commercial/industrial - 1 person per 15m² = 30 occupants		**437**
Maker's space 1			29m²	29
Maker's space 2			19m²	19
Maker's space 3,4			40m²	80
Maker's space 5			29m²	29
Storage 1			10m²	10
Storage 2			10m²	10
Kitchnette + lounge			25m²	25
Workshop			95m²	95
Ablutions + changeroom			140m²	140
	Male: 2 W.C + 4 WHB + 3 Urinals + 3 showers + 15 lockers Disabled: 1 W.C. + 1WHB Female: 4 W.C + 4 WHB + 3 showers + 15 lockers Disabled: 1 W.C. + 1WHB			

Figure 5.11: SANS spatial requirement (Author 2019)

Figure 5.12: Layering programme on site (Author 2019)

Programme placement



PUBLIC MARKET

MARKET SQUARE 1
RETAIL 2
ABLUTIONS 3
VENDING STALL 4

CLEANING/PREP 4.1
GROWING 4.2
DECANTING 4.3

BUSINESS INCUBATOR

ADMINISTRATION 5
FINANCE OFFICE 6
WORKSHOP 7
STUDIOS 8
MAKER'S SPACE 9
ABLUTIONS/CHANGING ROOMS 10
TRAINING CENTRE 11

LECTURE ROOM 11.1
SEMINAR ROOM 11.2
ABLUTIONS 11.3
STORAGE 11.4

GATHERING SPACE

RESTAURANT 12

KITCHEN 12.1
STORAGE 12.2
ABLUTIONS 12.3

GARDENS 13
EVENT SPACE 14
SWIMMING POOL 15

ABLUTIONS 15.1
CHANGING ROOM 15.2



Figure 6.1: Parti of concept on site (Author 2019)

Concept 06

Hierarchy of design informants

Fractured city - *cite'* and *ville*

Over the years, Pretoria's development framework has been very functionally driven. This positivist development has favoured the *ville* [built environment] and has had a negative spatial and cultural consequences on the *cite*' [lived experiences] of the city. By prioritising infrastructural development, the cultural and social health of the city's people has been neglected.

A physical result of this fracture between *cite*' and *ville* is the 'lost' or 'fragmented' urban public space that has becomes hard to interact with as it is either inaccessible or dangerous. In order to mend this fracture between *cite*' and *ville*, a place-making architecture is needed that is sensitive to its past, present and future context.

Cultural significance of the Apies river

The Apies river use to play an important role in the daily lives of its people, being not only a physical source for freshwater and productive food systems but also a place for social and spiritual fulfilment, but as Pretoria developed the Apies river's initial sense of place had been lost as the river had been modified to such an extent that it is unrecognisable as a natural river that once had such strong spiritual and productive affinity.

To preserve the social and cultural significance of the Apies river, it needs to be rehabilitated to a state where new spiritual and productive relationships between the city and river can be established through meaningful lived experiences.

Regenerative Framework

The City of Tshwane's Regenerative framework focuses on inner-city regeneration and has identified place-making opportunities in areas where the city and natural landscape come together in an attempt to redefine Pretoria's lost sense of place. Kopanong or "the gathering space" becomes an important node regeneration as it has te most potential for social, economic and environmental enablement and growth.

The regeneration of the Apies river plays an important role in achieving the city's vision where all of Pretoria's citizens have access to social and economic opportunities through a network of interconnected ecologies that facilitate social, economic and environmental upliftment. These new connections between city and river provide infrastructure for socio-economic and environmental place-making opportunities that not only have the potential to redefine the city's lost sense of place, but also to create a more resource efficient and resilient city, grow an inclusive economy and foster social cohesion.

Place-making theory

Place-making is defined as the creation of environments with a sense of place that reveals the unique nature of its cultural and natural context. Within Pretoria, place-making is specifically important as it has the potential to reveals the city's lost character. To recreate place as stated in the CoT's Regenerative vision, three sequential strategies have been identified that will aid in the process.

The first strategy is celebrating the everyday rituals taking place in public space as they have the ability to generate meaning. These activities encourage social exchanges and interactions but the meaning ascribed to a place through these rituals are only temporary and can be seen as 'weak'. In order to establish 'stronger' places, deeper experiences are necessary.

The second strategy focuses on phenomenological experiences and how its can provide a way to reveal emotions and translate them into experiences. When designing for people, their senses should be taken into account as their experiences are strongest when the different senses integrate. When we interact our bodies are living centres of our experiences and that is why it is important to be fully immersed in a space rather than just observing it from the outside.

The final strategy is to reestablish an intimate relationship with the natural landscape instead of just merely viewing in from afar. By being immersed in the landscape, deeper experiences are made possible, we become more in-tune with a natures rhythms and in the process awakening the spirit of place.

Current conditions on site

Channelised Apies river:

Rather than integrating into the surrounding context functionally, the river has become a scar which divides the landscape and denies interaction with city and its people.

Fragmented public realm:
Due to the expropriation of public space and demolition of buildings for road-building purposes the public realm has become fragmented which resulted in lost space that is difficult to interact with.

Mono-functional development and privatisation of public space:

As an effect of private developments, not only the existing buildings' function have become private but the public space surrounding the buildings. This restricted access of the DTI also contributes towards the lost space adjacent the Apies river.

Programme as informant

Appropriate programmes were selected that reinforce a spiritual or productive connection with the river whilst promoting an economic, social and environmental resilient city.

Economic resilience:
To foster an inclusive economy and support the community, a public market will provide quality infrastructure needed to run a business, where a business incubator provides entrepreneurial support by equipping entrepreneurs with business development skill as well as to offering them financial support.

Social resilience:
The Apies river's recreational historical significance lends itself as a driver for a suitable programme that will be a catalyst for social interactions. The recreational programmes, Cafe', event space and public swimming pool aim to encourage social interactions between different people as well as to promote a better relationship between the city and the Apies river.

Environmental resilience:
To insure that the Apies river will continue to be relevant on an urban level as both a spiritual and productive source, its water as an important resource need to be respected. By addressing the Apies river's past water condition [flooding], its current water condition [polluted and weak flow] as well as postulate a future prospect where water is scarce, a suitable function for the architecture would be to harvest, filter and provide water to the surrounding community.

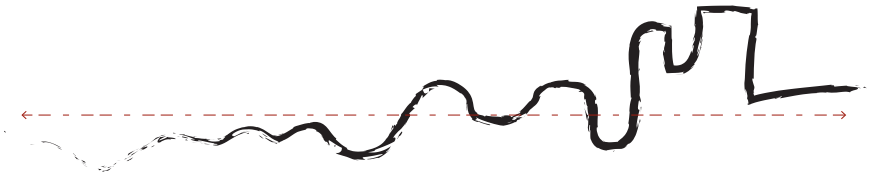
Locational driver

Creating a place that established new productive and spiritual connection with the Apies river, it has the potential to support the city's in becoming social, economic and environmental resilient.

Trevenna is perfectly situated between Pretoria's Central Business District and the residential area of Sunnyside and acts as a thoroughfare for pedestrian traveling to and from work. Due to the site's location, the potential for social, economic and environmental links are enhanced.

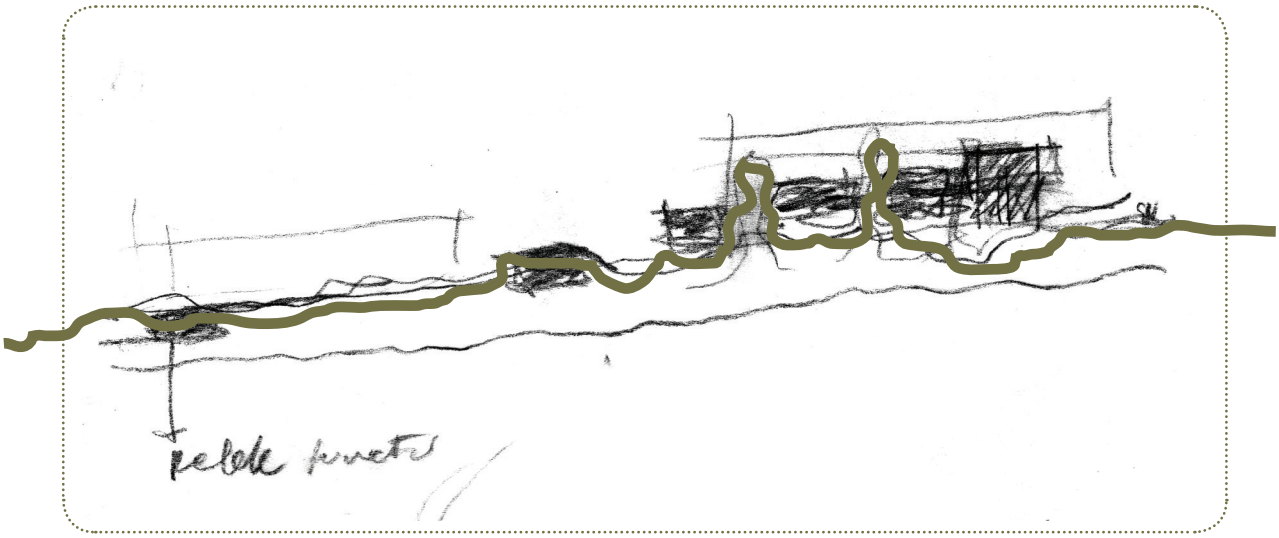
Thus by situating the architecture within this urban liminal space, new and better relationship potentials between the parties involved is made possible.
It connects, and integrates seemingly different people without eliminating their differences.

Configure built environment to allow for better lived experiences



Natural lived experiences

Built lived experiences



Natural cite'

Built cite'

Figure 6.2: Top: Design concept - Transconfiguration (Author 2019)

Figure 6.3: Bottom: Transconfiguration layered onto site (Author 2019)

Trans-configuration

Design concept

Synthesising the design informants led to the identification of the concept of trans-configuration. Applying the concept of trans-configuration the architecture will attempt to foster transitions between the man-made city and the natural environment/landscape. From artificial to natural – man-made to natural. The architecture becomes part of the natural environment around it.

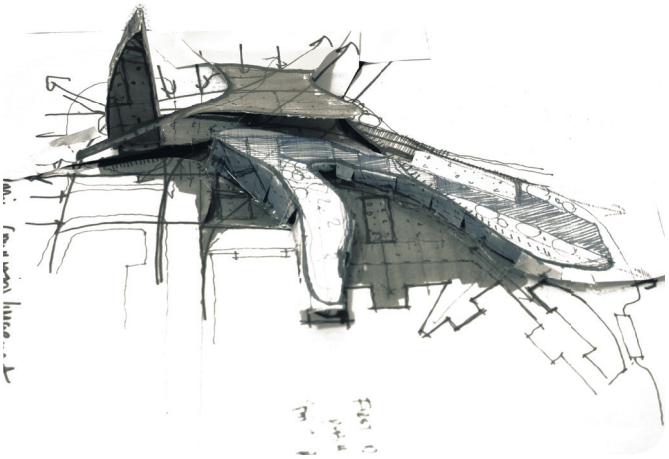
The concept of trans-configuration is a combination of two concept namely, trans and configuration. In chemistry, trans refers to a molecular structure where atoms are on the opposite ends of a molecule or bond (Cambridge dictionary 2019) much like our city's current condition where its lived experiences (*cite'*) and built environment (*ville*) are on opposite sides.

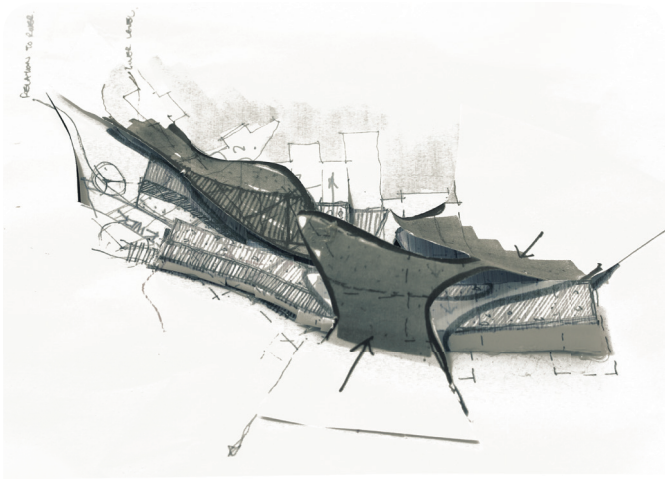
The second concept is configuration. According to the Cambridge dictionary (2019), it is to arrange parts of something in a particular form, in order for it to be used for a particular task. This concept suggest that for the city to generate new and improved lived experiences, the way in which the built environment is configured needs to be addressed.

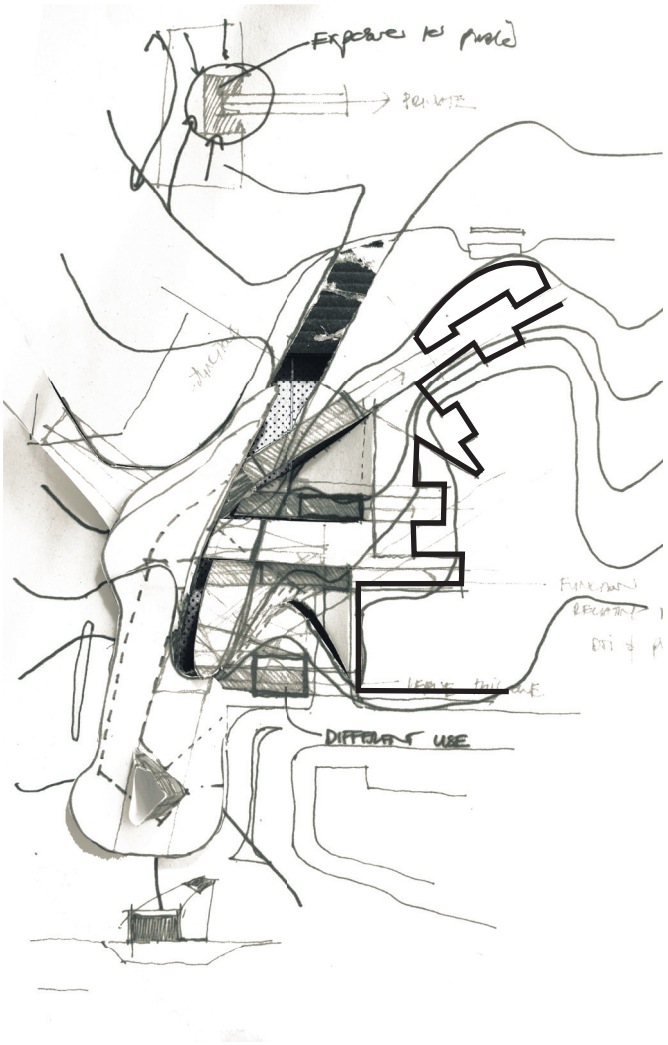
Due the positivist city development (how the built environment was configured) the sense of place of the city of Pretoria was lost as the importance of its lived experiences have been disregarded.

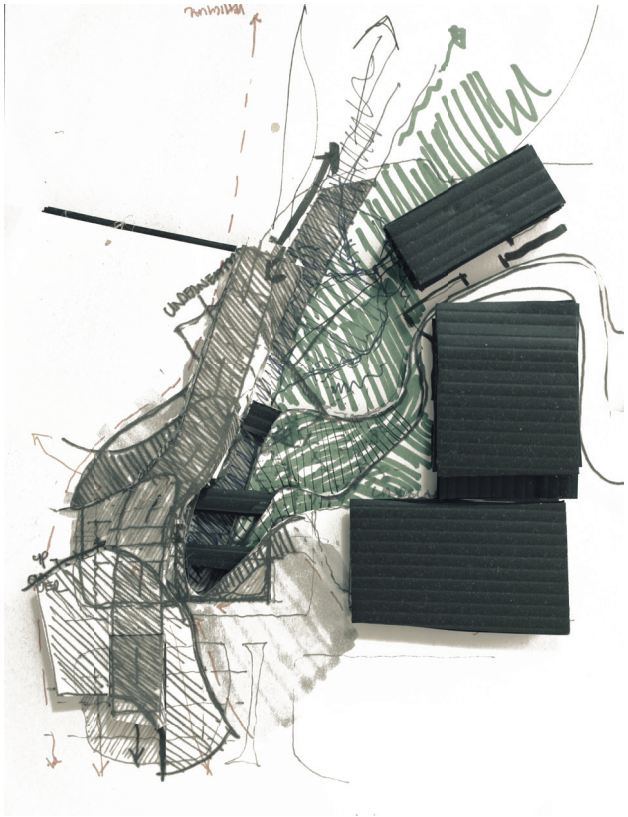
To re-establish the sense of place as a city that has a productive and spiritual connection with the landscape, new lived experiences will have to be created that transcend the current conditions. Place-making strategies will be used to reconfigure the built environment and create new lived experiences by celebrating the rituals of the everyday, enhancing sensory experiences as well as reconnecting with nature.

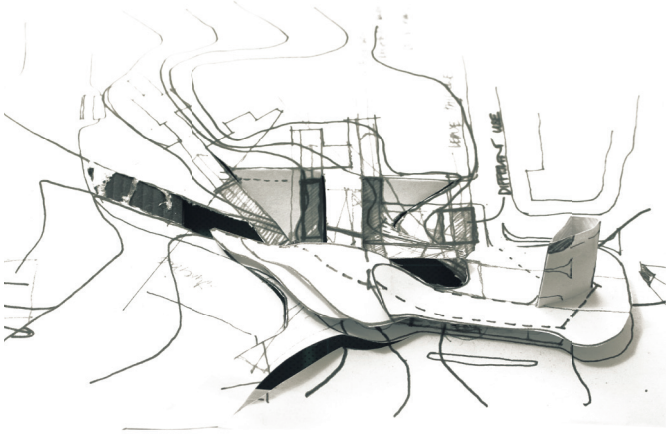
The architecture should therefor act as a transition between the artificial built environment (*ville)* and the natural landscape, creating better lived experiences (*cite')* through the new spiritual and productive relationships between man and nature.



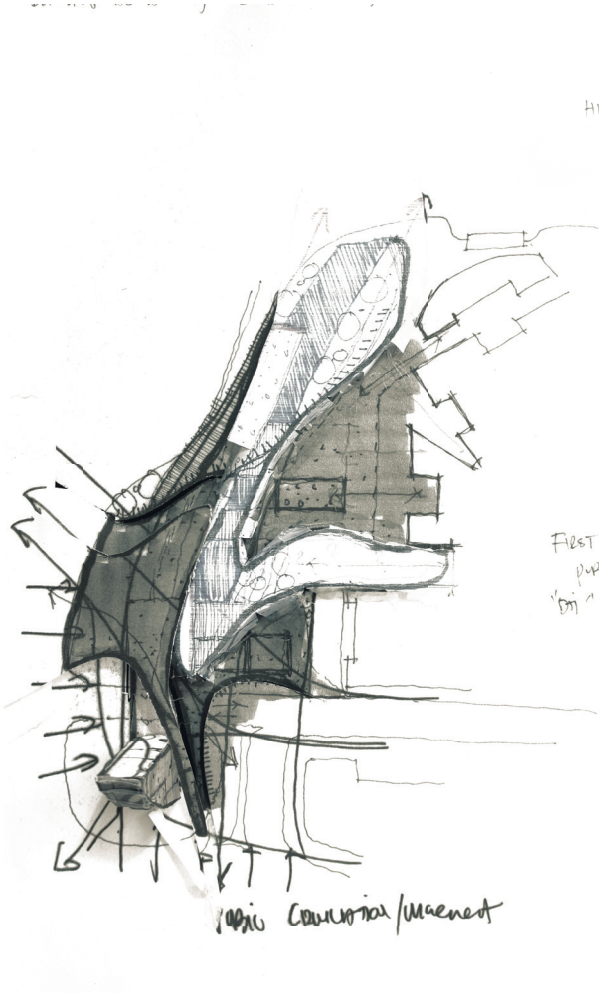








Conceptual spatial explorations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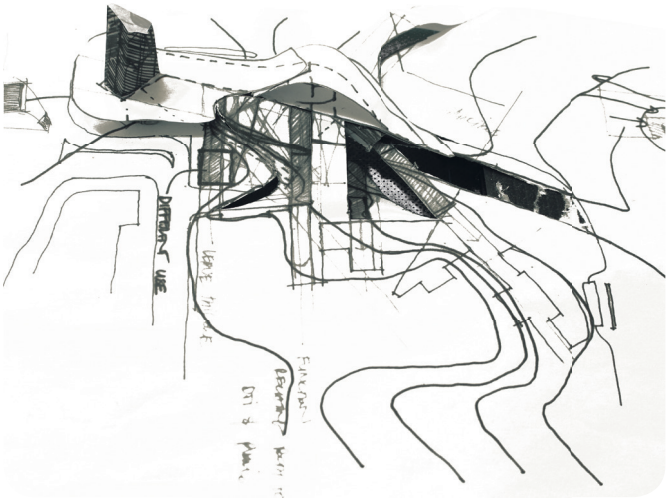
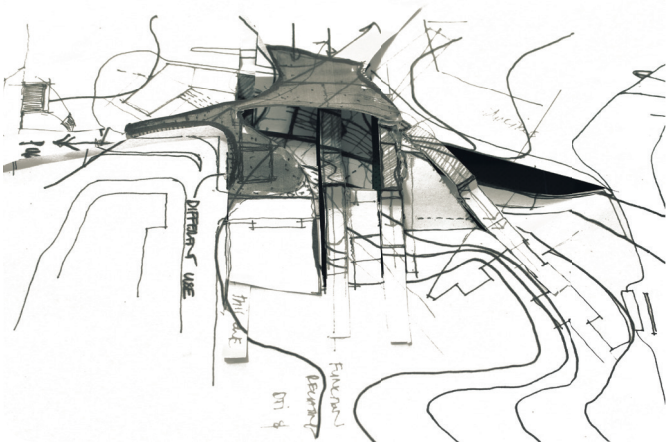

DIFFERENT USE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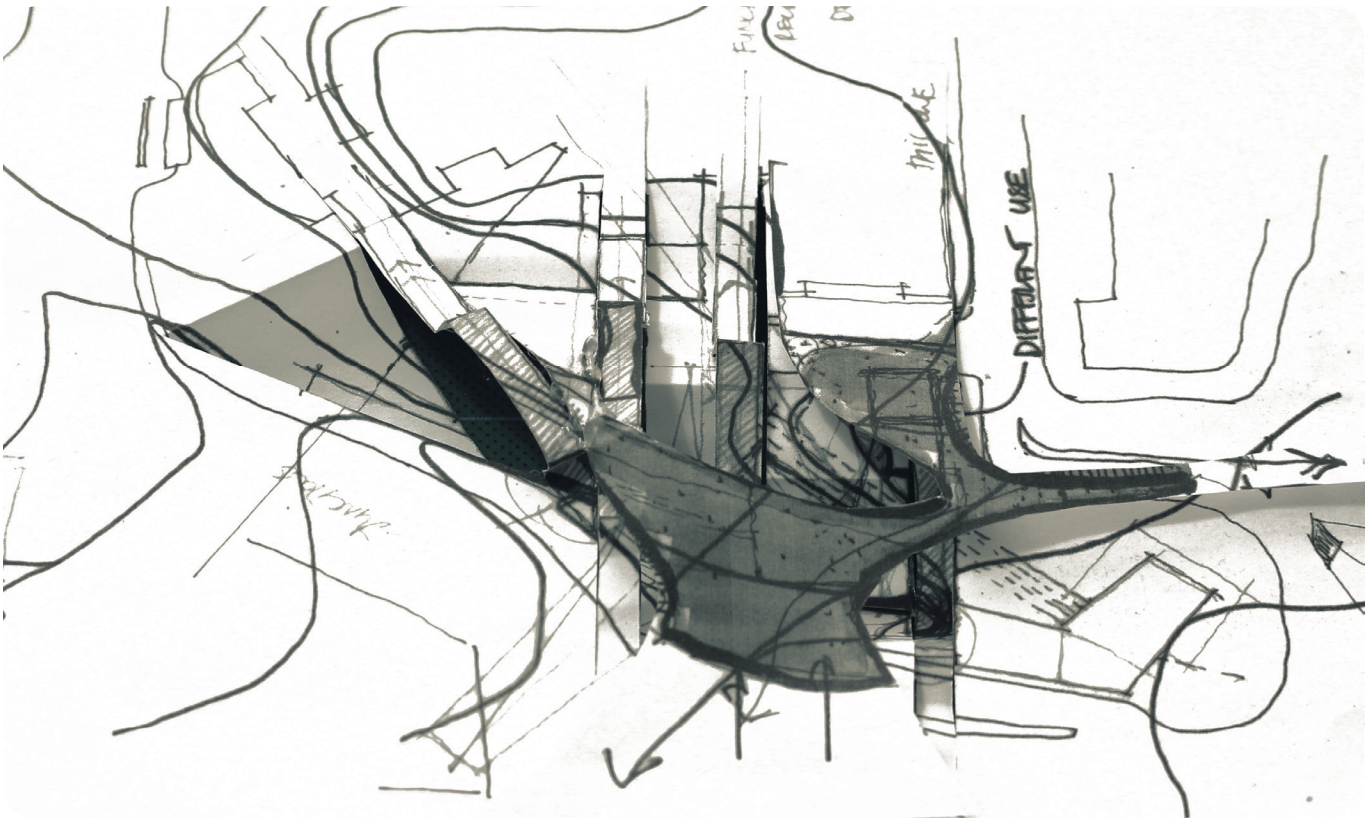
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Figure 7.1: Maquette iteration 5 - pedestrian link (Author 2019)

Design development
07

Applying design informants

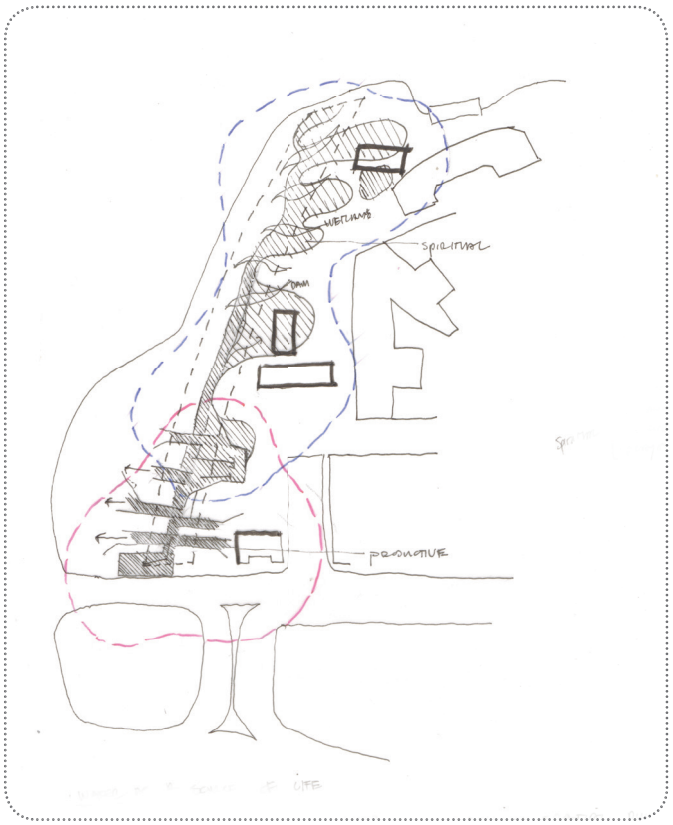
The Apies river played a significant role in the establishment of the city of Pretoria as it contributed towards the well-being of its people, on a productive and spiritual level. Therefor it is important for the new programme to re-establish those lost connections between man and the Apies river.

For the architecture to successfully reconnect man and nature, it needs to address the current conditions on site that have caused the disconnect and the loss of place. The new structure must become an interface between the isolated channalised Apies river, the private DTI and the "lost" in-between public spaces that are underused.

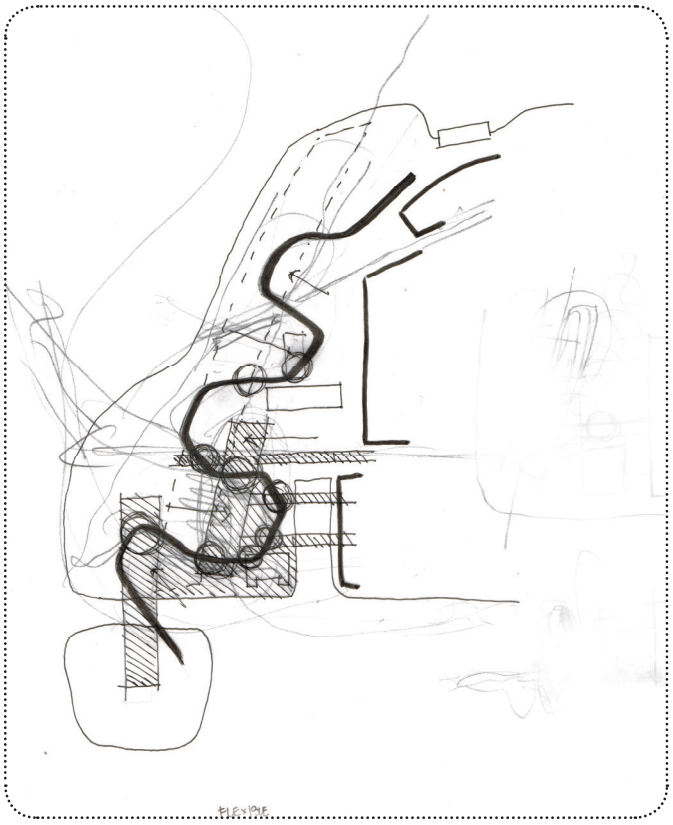
By positioning the new structure between the river, DTI and the southern street edge, a dialogue is formed between public/ private and man/nature. An entrepreneurial programme is a suitable response to the site's current economic condition as it has the opportunity to support both informal and formal economies by providing infrastructural and entrepreneurial/business support through a connection with DTI.

On the southern edge, the market space is activated by the busy pedestrian flow, which in turn encourages more vendors to be established as it provides the necessary infrastructure on site for vendors and shop owners to function. The market space acts as a deep threshold, drawing people away from the street edge and into the site, encouraging not only frequent social interactions, but also more visual and physical connections with the Apies river.

The next transition from the public market space to the private space, function and resources of DTI is through







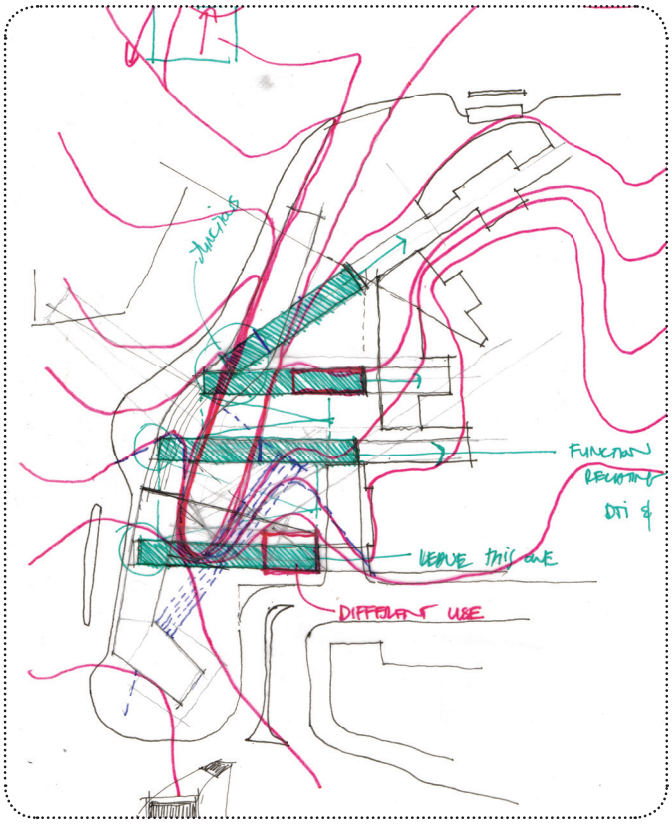


Figure 7.2: Top left: Response to Apies river (Author 2019)

Figure 7.3: Bottom left: Conceptual response to landscape (Author 2019)

Figure 7.4: Top right: Conceptual programmatic response (Author 2019)

Figure 7.5: Bottom right: Conceptual formal response (Author 2019)

the business incubator. The incubator sits perpendicular to the street edge and extends deep into the site. In order to still have a visual connection with the Apies river from the public market space, the incubator's spaces are halfway submerged underground, thus keeping the sight lines open.

Formally, the structure responds well to the street edge and river, but functionally and climatically the east-west orientation isn't favorable. By cutting the incubator's space up and rotating them to a north-south orientation, better thermal performance is achieved and easier physical connections with DTI is made possible.

By fragmenting the structure, a gentler design is achieved that is not so opposing as compared to DTI, and is also easier to embed within the landscape, strengthening the connection with the natural landscape. From the southern street edge to the northern part of the site, the design is developed to trans-configure our lived experiences, from man-made to natural. A progression of architecture and experiences takes place as one moves deeper into the site, having stronger spiritual connections with the Apies river as the architecture is deeper embedded in the landscape.

Figure 7.6: Conceptual layering on site (Author 2019)



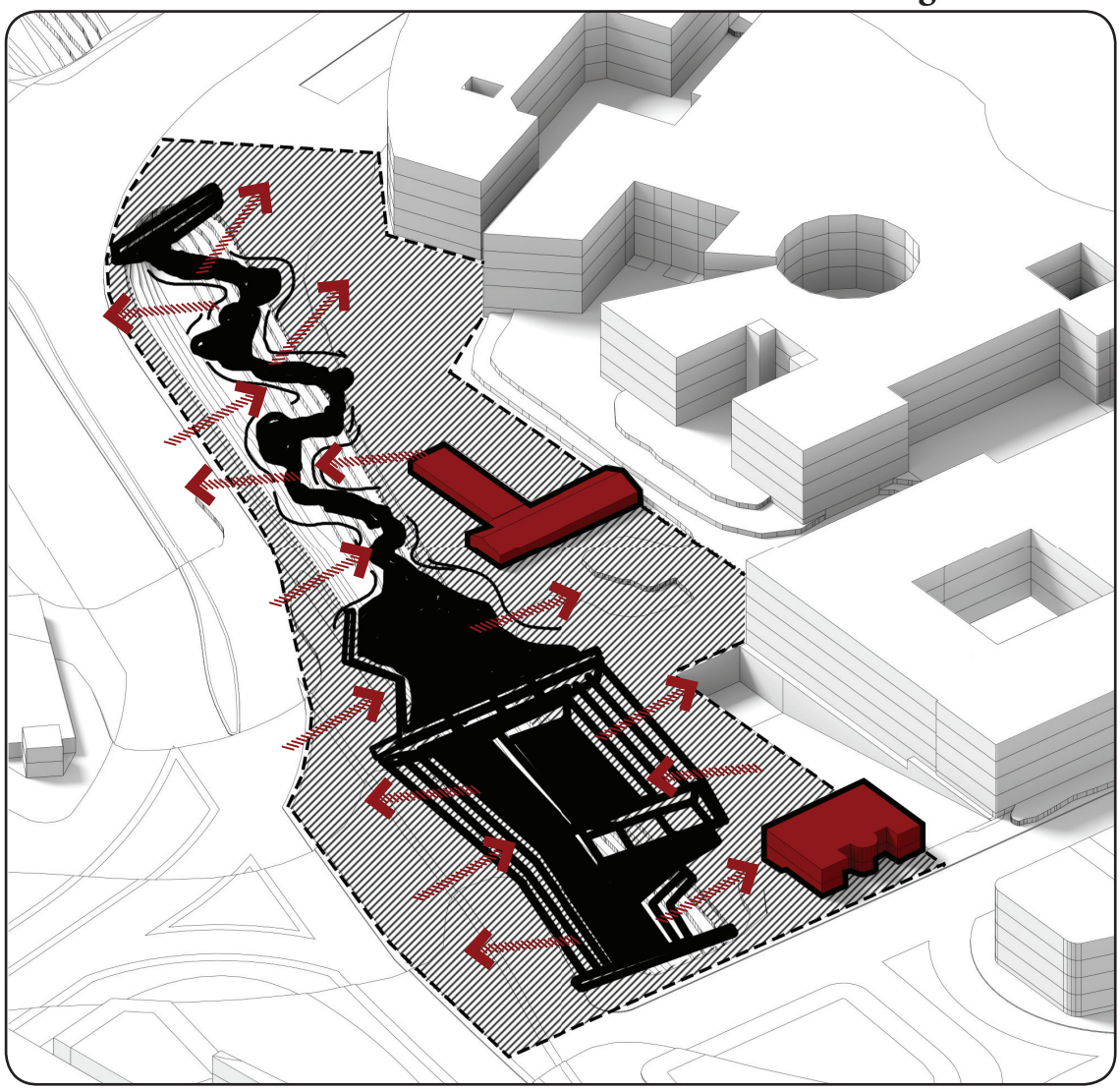


Figure 7.7: Reconnect the Apies (Author 2019)

Reconnect the Apies river

Removing modifications where necessary to allow for new possible spiritual and productive interaction/connections with the river.

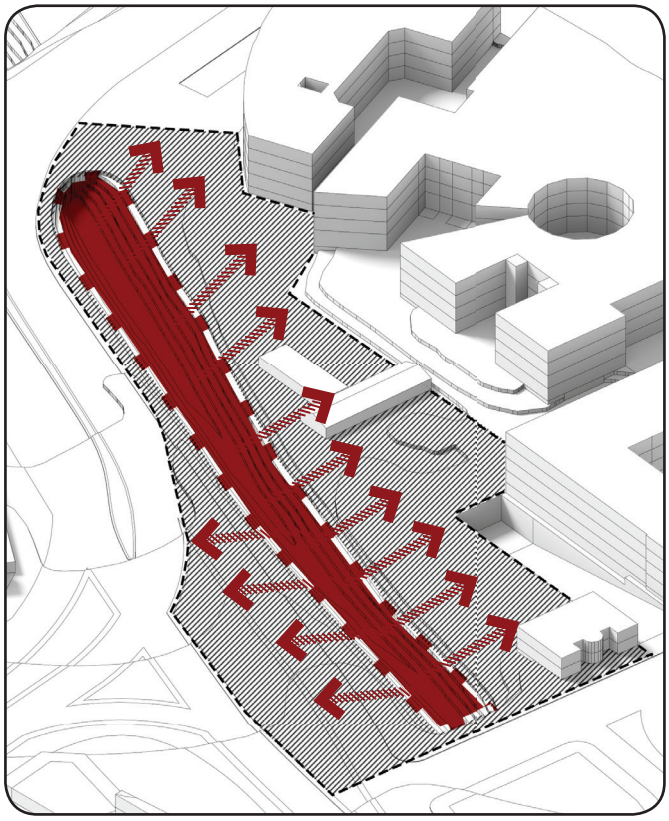


Figure 7.8: Apies river current condition (Author 2019)

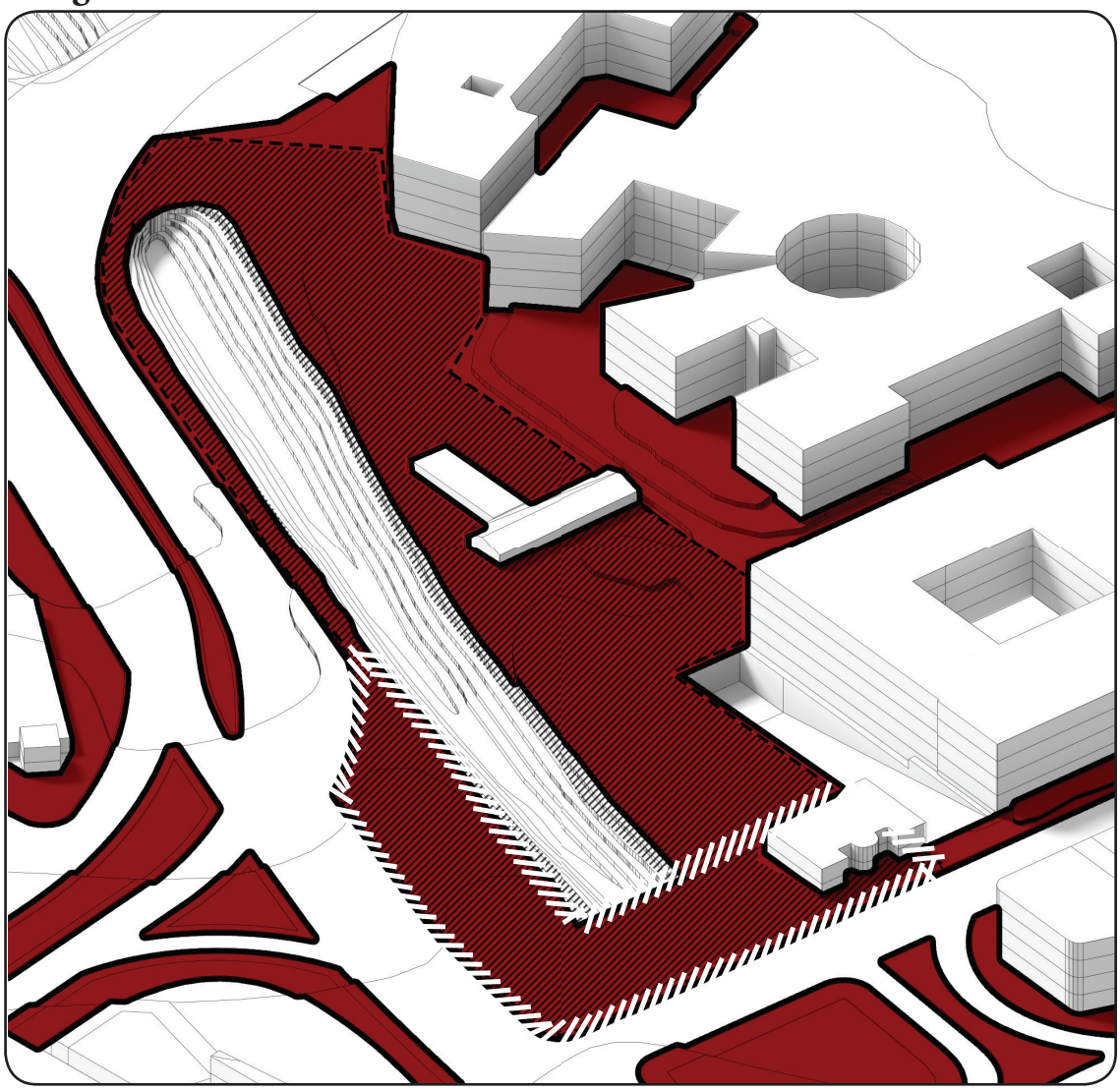
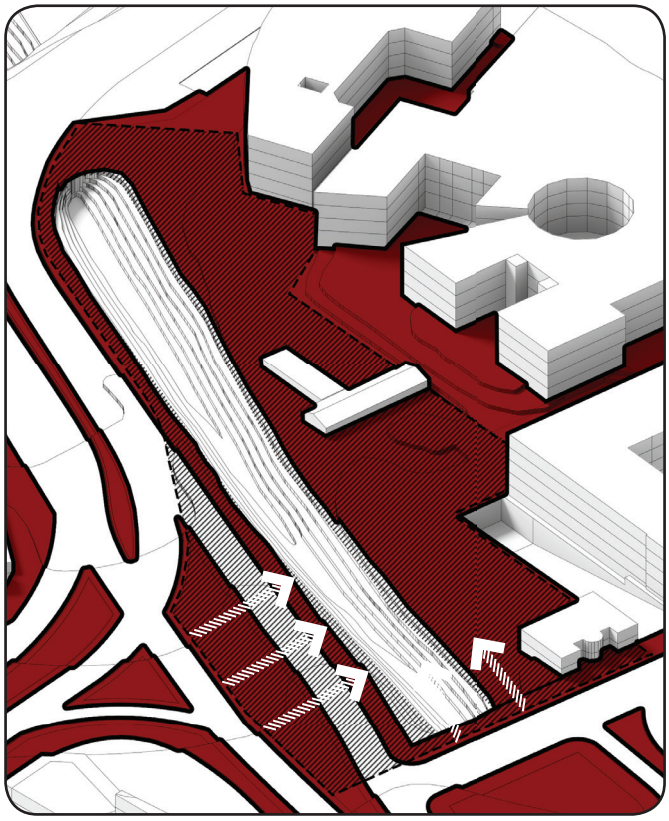


Figure 7.9: Reconstruct the public realm (Author 2019)



Reconstruct public space

Widening the public realm by moving the pedestrian island against the site to activate the lost space.

Figure 7.10: Fragmented public realm current condition (Author 2019)

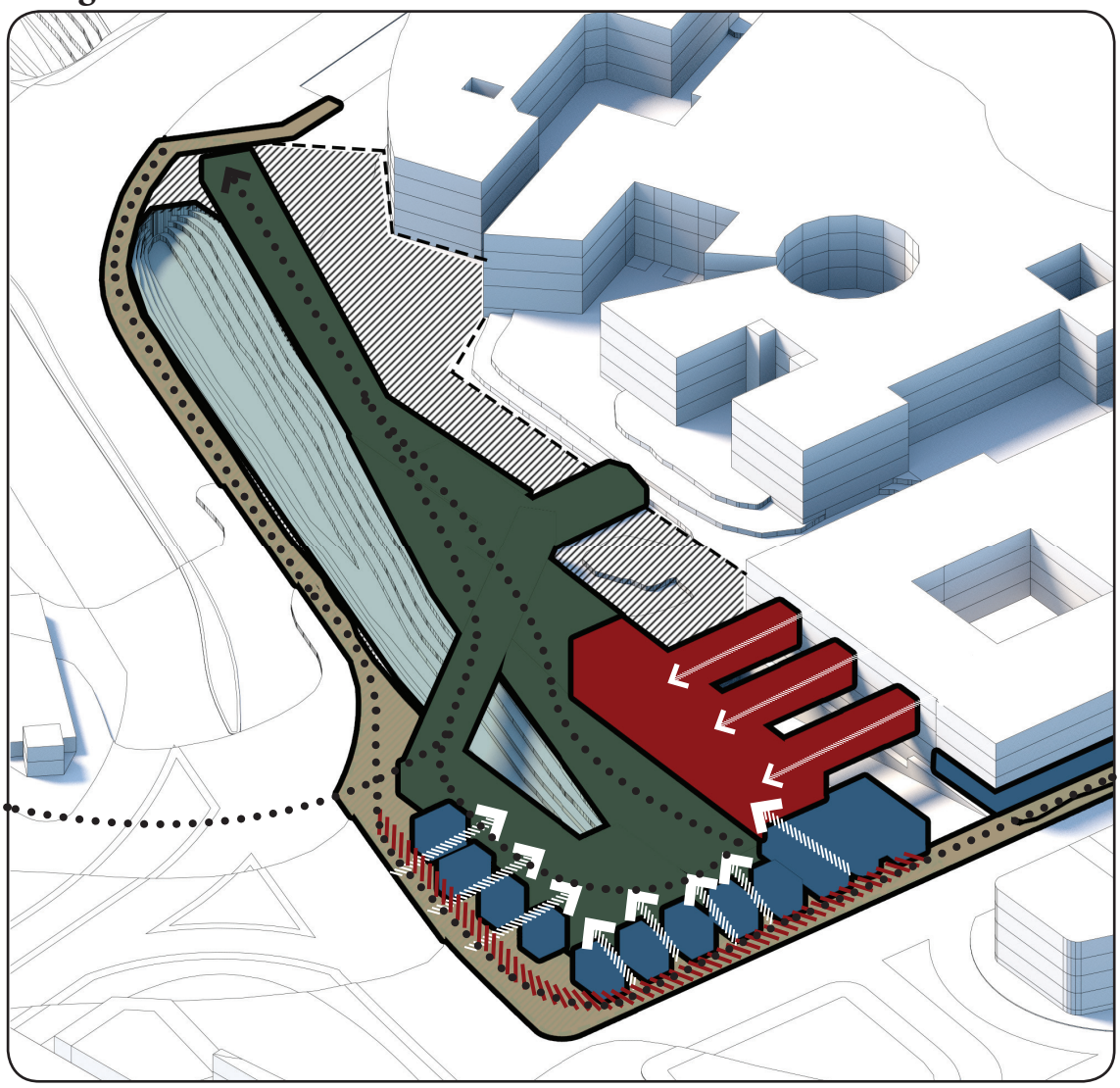


Figure 7.11: Reactivate the site through programming (Author 2019)

Reactivate the site through programming

Programming the site is crucial in achieving its full potential of mediating between public/private and man/nature . Situated on the southern edge of the site, where the highest pedestrian flow is, is the most public programme. As one progress into the site the programme becomes more private and intimate with the natural landscape.

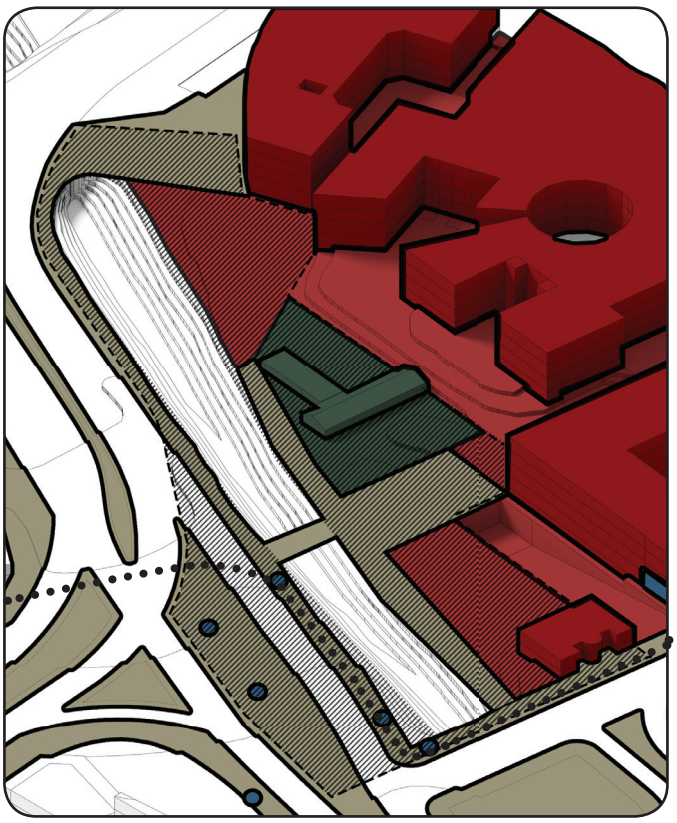


Figure 7.12: Programme current condition (Author 2019)



Figure 7.13: Hierarchise access and circulation (Author 2019)

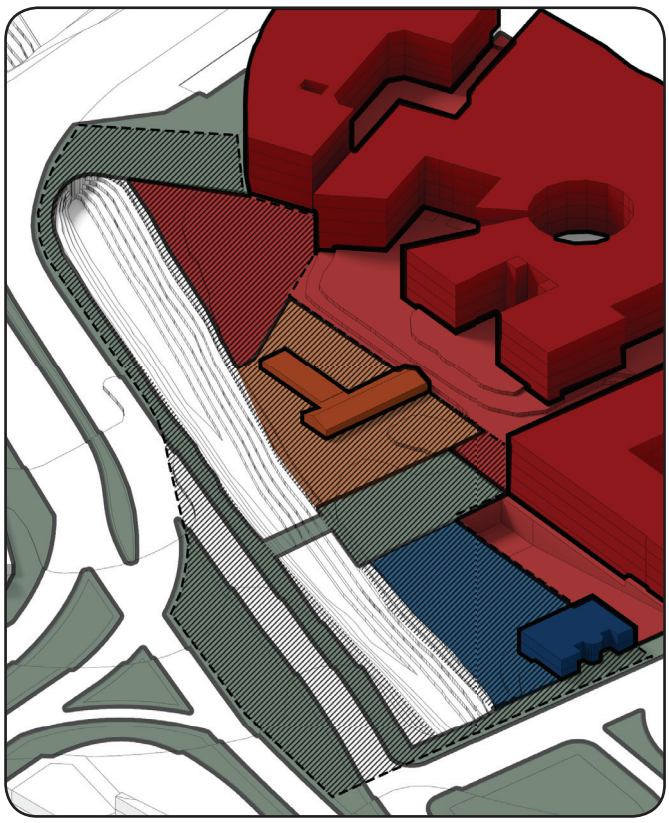


Figure 7.14: Restricted access current condition (Author 2019)

Reorganise access and circulation

Hierarchise access and circulation for different users within the site to allow for better intergration/interaction without compromising security.

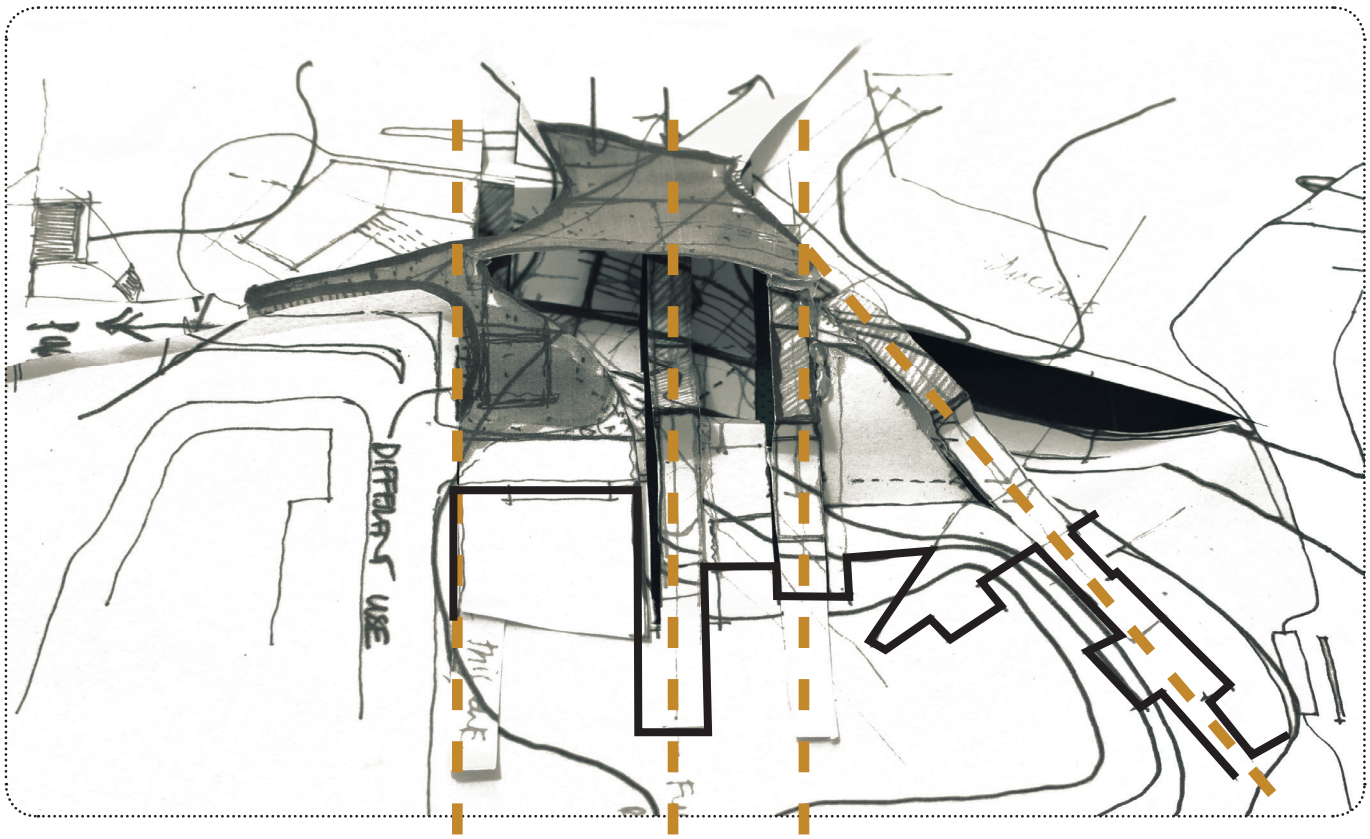


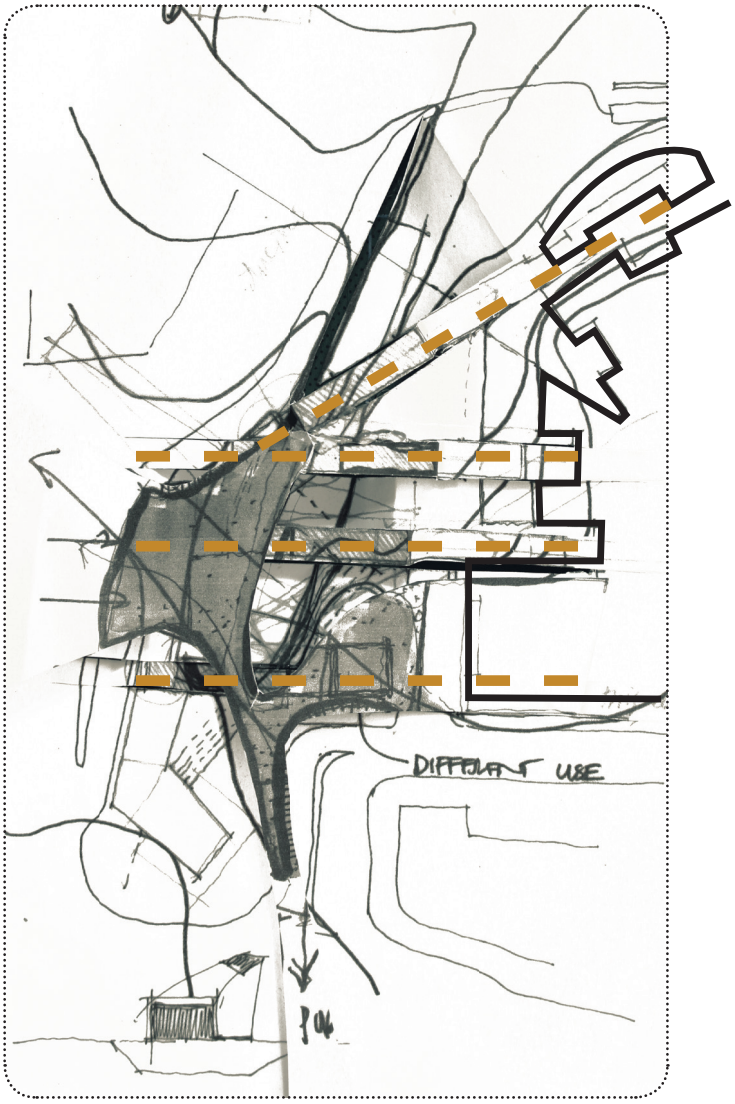
Figure 7.15: Top: Final concept maquette - view towards the Apies (Author 2019)

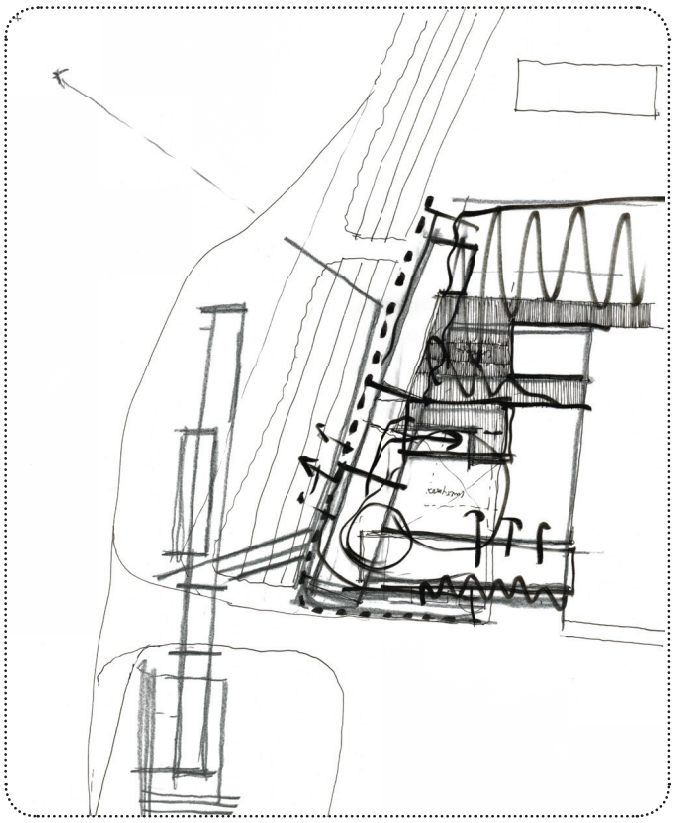
Figure 7.16: Bottom: Final concept maquette aerial view (Author 2019)

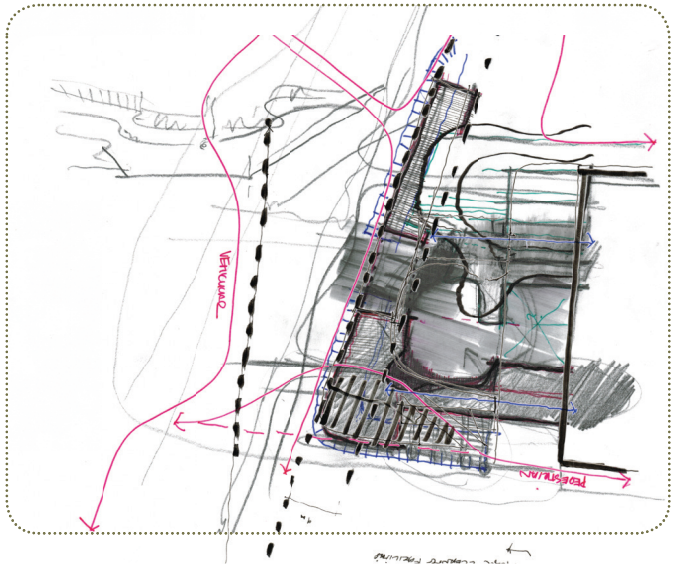
Iteration 1

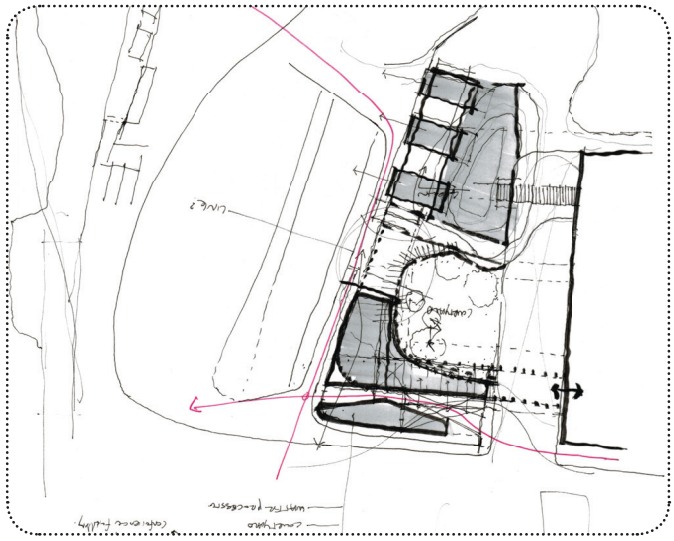
The design focused on creating a better pedestrian realm by linking the different fragmented public spaces caused by road-building.

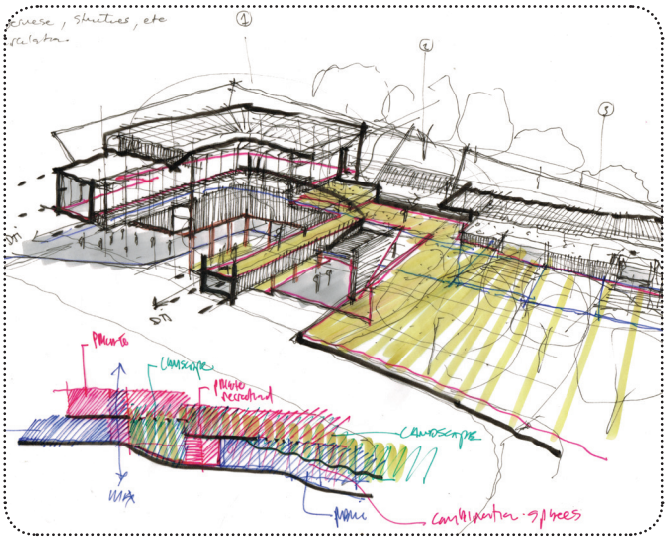
Critque: The design just became a bridge over Nelson Mandela Drive with little to no response to the Apies river as well as DTI.











Iteration 2

The second iteration explored how a stronger dialogue between existing DTI can achieved by position the new building on the eastern bank of the Apies river.

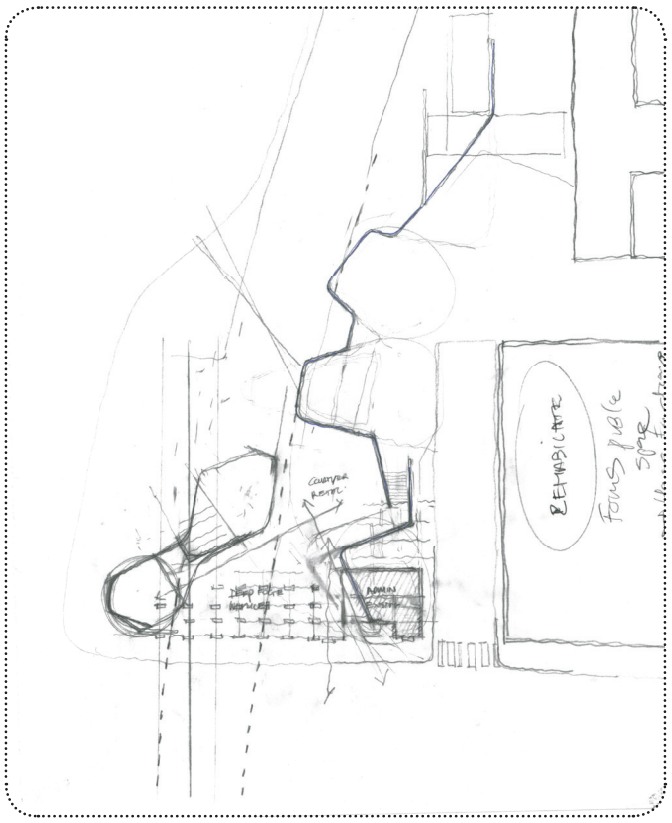
Critique: Although the design had a stronger response to DTI, engaging with both the public and the Apies river was limited.

Figure 7.17: Top left: Linkages with DTI (Author 2019)

Figure 7.18: Mid left: Creating courtyards (Author 2019)

Figure 7.19: Bottom left: Responding to street edge (Author 2019)

Figure 7.20: Bottom right: Hierarchy of spaces (Author 2019)



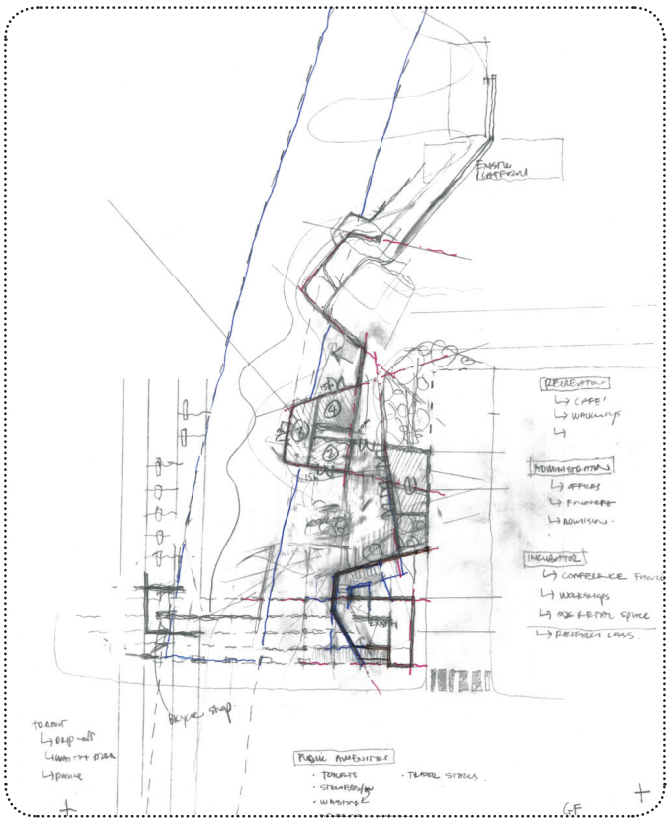


Figure 7.21: Top left: Thresholds (Author 2019)

Figure 7.22: Top right: Relation to river (Author 2019)

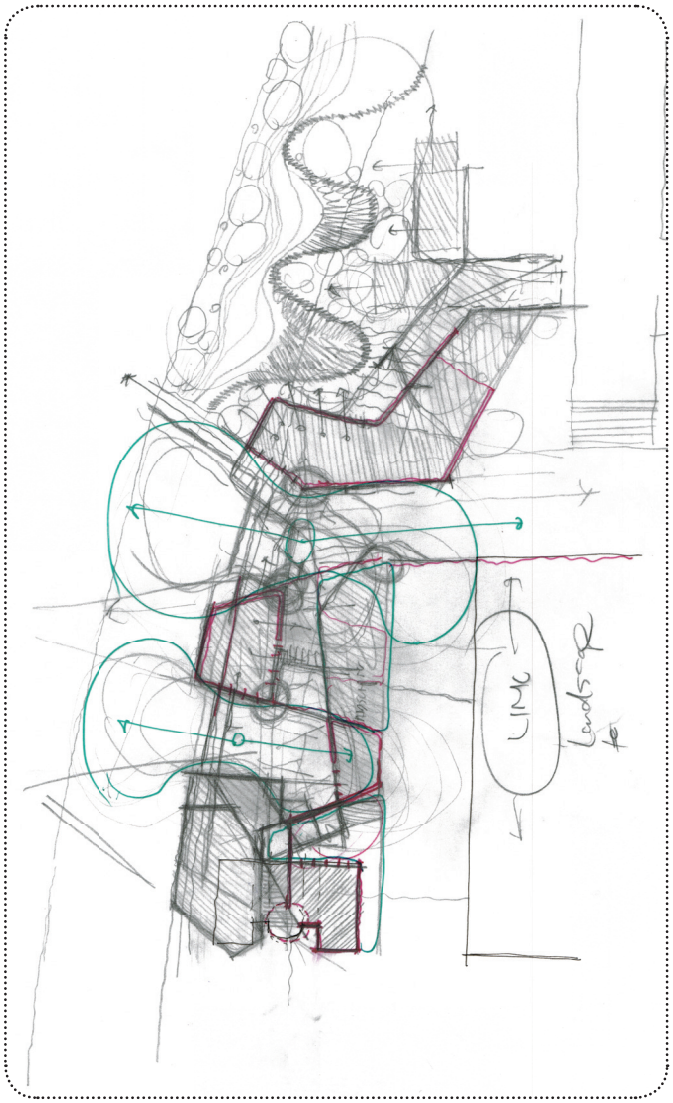
Figure 7.23: Bottom right: Relating to landscape (Author 2019)

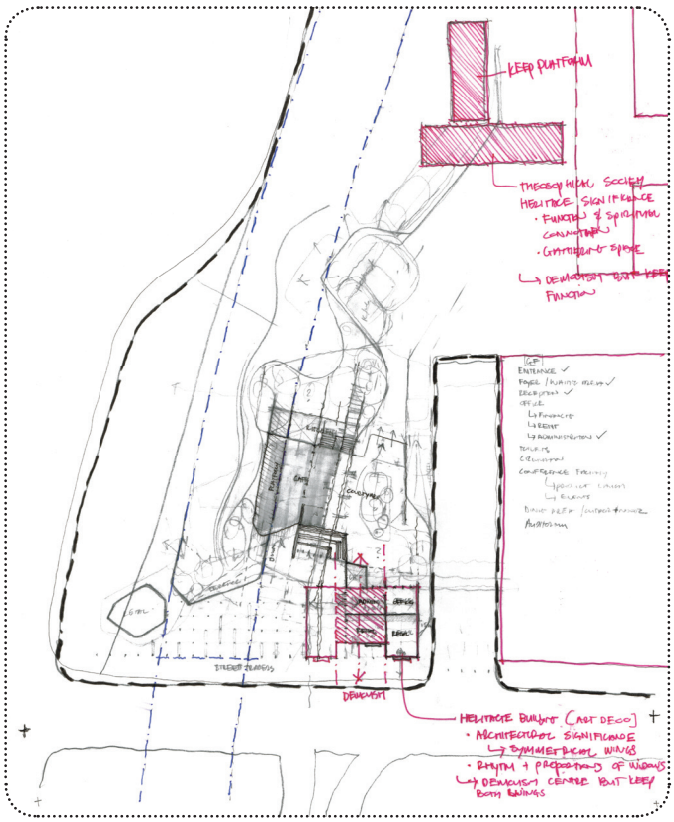
Iteration 3

The position of the new building remained the same, but its public interface towards Robert Sobukwe street was enhanced by creating a better threshold onto the site.

The linearity of the new building was also changed into a organic shape in an attempt pull the landscape into the building as well as to extrude the publiding into the landscape.

Critique: The design's response deeper in the landscape was starting to integrate well, but still doesn't create a strong public edge.





Iteration 4

Iteration 4 attempts to respond to the heritage building on the street edge by cutting through the building and connecting the new building physically with the old.

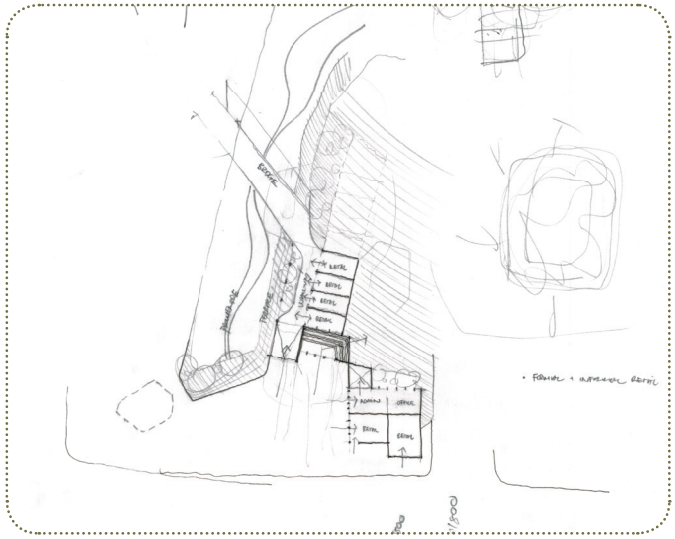
Critique: The formal response of the design was unsuccessful as it tried to force an organic form whilst responding to the river, heritage building and DTI's strong rigid lines.

Figure 7.24: Top left: Programming existing (Author 2019)

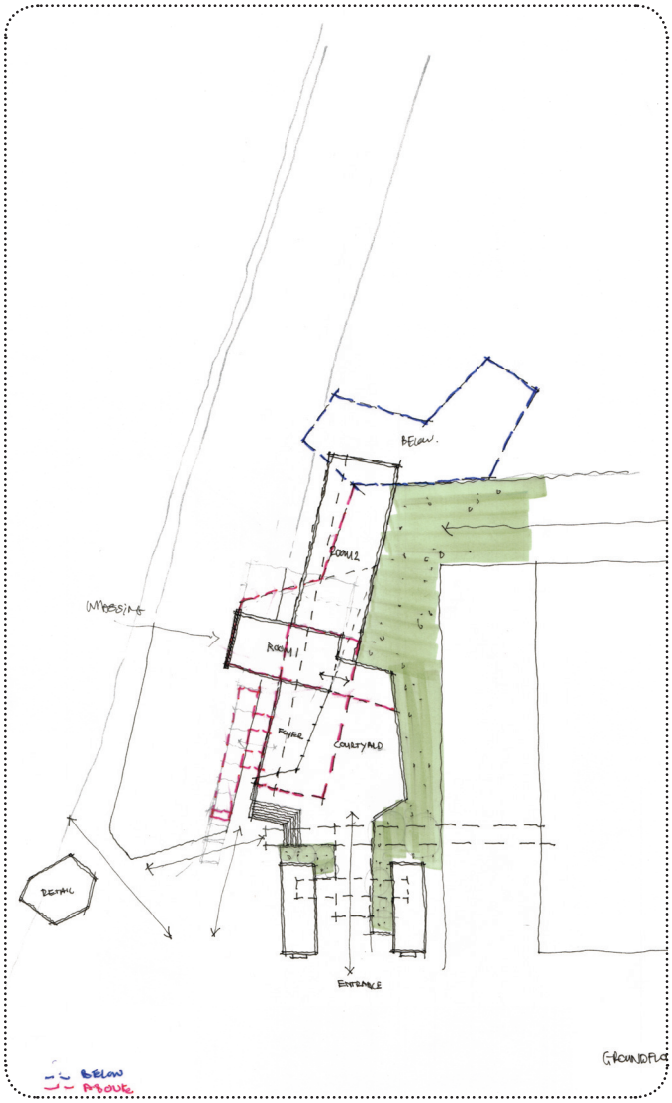
Figure 7.25: Mid left: Lower level circulation (Author 2019)

Figure 7.26: Bottom left: Ground floor retail (Author 2019)

Figure 7.27: Bottom right: First floor incubator (Author 2019)









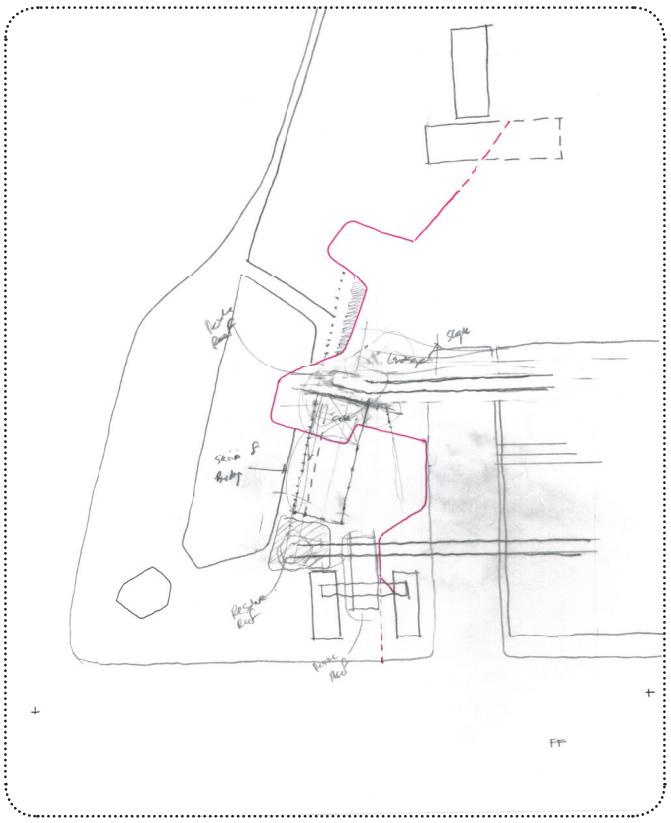


Figure 7.28: Top left: Layering natural threshold over lower level (Author 2019)

Figure 7.29: Top right: Layering natural threshold over ground level (Author 2019)

Figure 7.30: Bottom right: Layering natural thresholds on site (Author 2019)

Iteration 5

Iteration 5 refocussed on the relationship between the building and the natural landscape by extending the buliding into the landscape as well as creating a courtyard within the new buliding.

Critique: What determined the "organic" line between landscape and building and what does it represent? What is inside and what is outside?





Iteration 6

In order to determine what is inside and what is outside, the landscape/river and the type of engagement the public has with it was designed. Terracing the river banks and creating seating for people to sit and enjoy the river physically and visually.

Critique: Each floor plate of the design is so different that it is impossible to rationalise a structure that will make the building work.

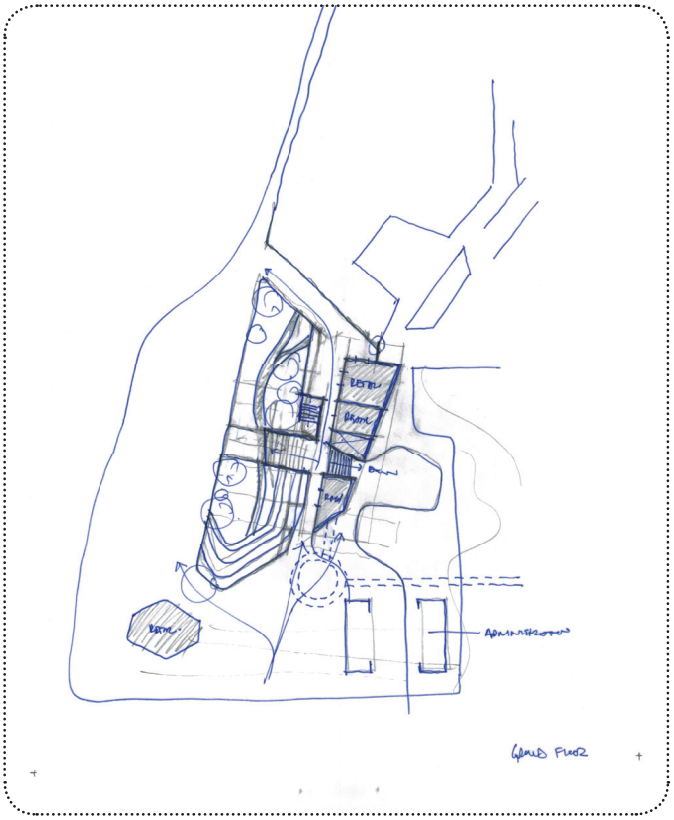
What attracted people to the new river space? Why would people stay?

Critique 2: The design focused so much on the river that it lost all its strong connection with DTI.

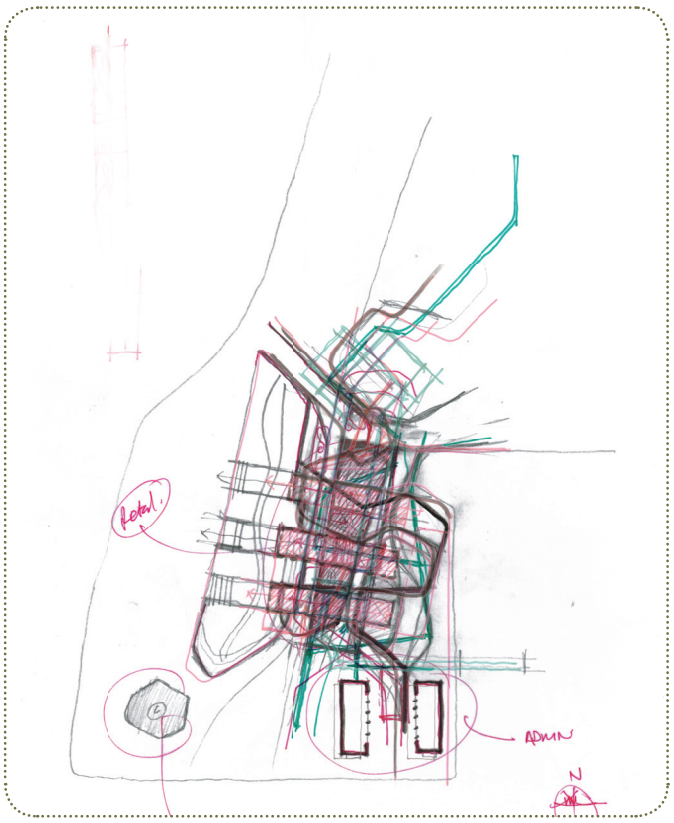
Figure 7.31: Top left: Ground floor level's natural transition (Author 2019)

Figure 7.32: Bottom left: Lower level's natural transition (Author 2019)

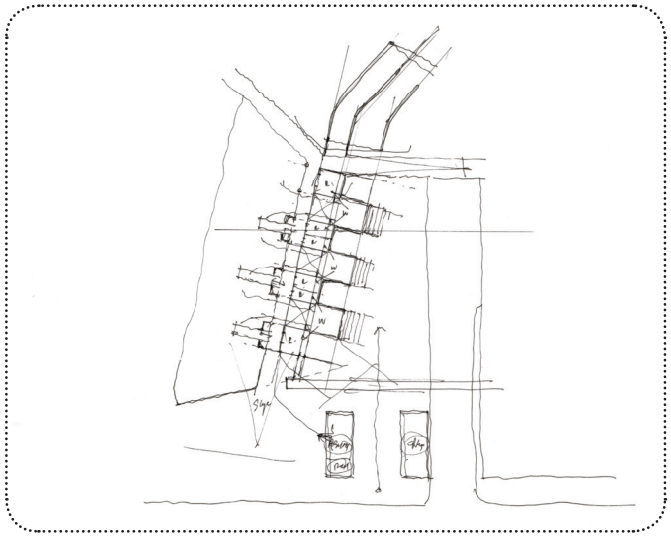
Figure 7.33: Bottom right: First level responding to climate (Author 2019)













Iteration 7

This iteration explored how the design can keep relating to the river but also re-establish physical/visual links with the existing heritage building as well as DTI.

Critique: The design is still confused as to what its formal response should be, river or DTI? both?

Critique 2: Public edge is non existent.

Spatial exploration was lacking as it made it difficult to get a handle of the spatial hierarchy on the site.

Figure 7.34: Top left: Ground level threshold revised (Author 2019)

Figure 7.35: Top right: Linearity of context (Author 2019)

Figure 7.36: Mid left: Lower level responds to river and courtyard (Author 2019)

Figure 7.37: Bottom left: Viewpoints over river (Author 2019)



Iteration 8

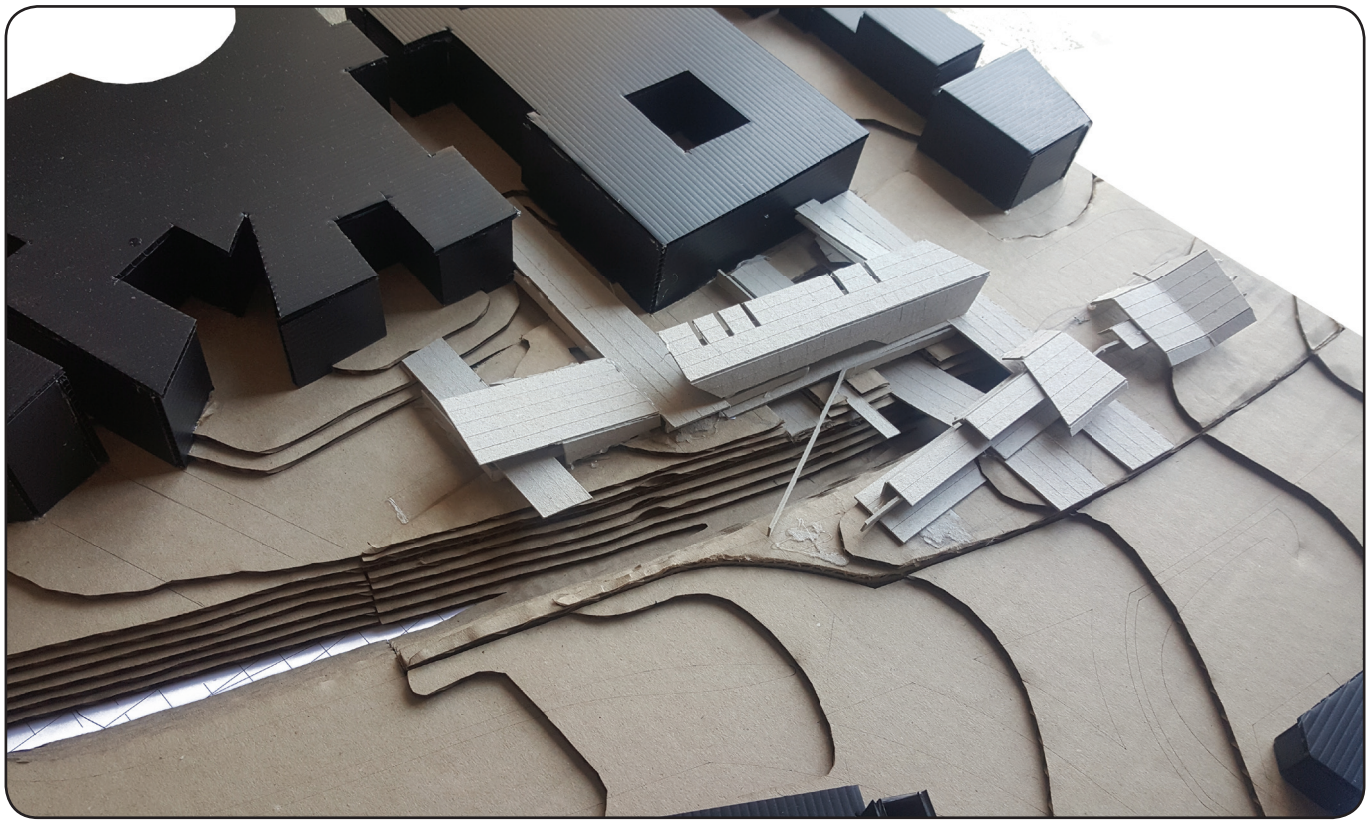
The design focused on scale and spatial hierarchy on site. The new building next to DTI attempts to mediate the scale between DTI's and the public. There is also a progression in scale from south to north. As the building extends into the site the scale becomes more intimate.

The physical links with DTI also creates opportunities for courtyards spaces between the existing and new, allowing the natural landscape to interact with both whilst creating a buffer.

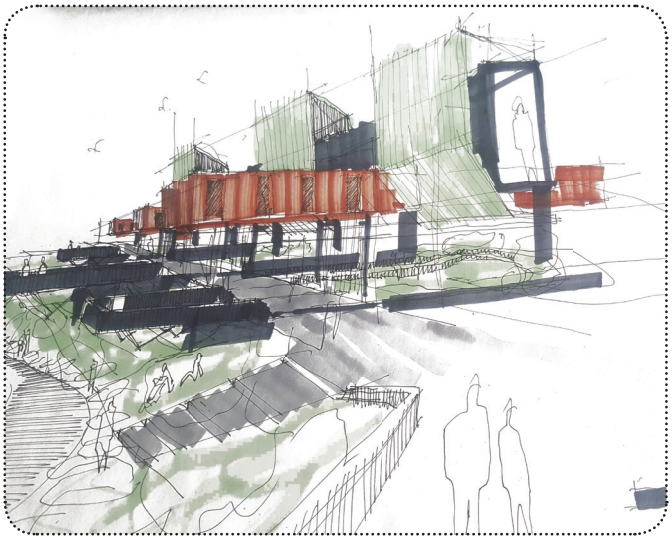
Critique: The building is very long and not broken up enough (too linear) with its main orientation being west.

Figure 7.38: Top: June synthesis of spatial explorations (Author 2019)

Figure 7.39: Bottom: View from Nelson Mandela Dr (Author 2019)







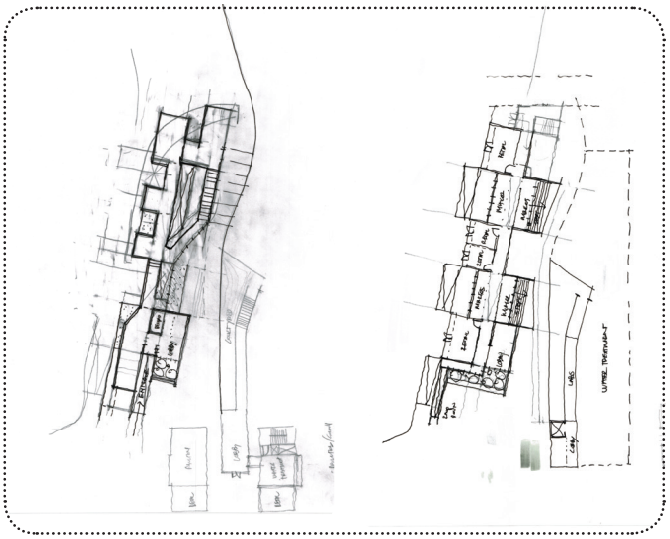


Figure 7.40: Top left: Concept plan June (Author 2019)

Figure 7.41: Top right: View from Robert Sobukwe street (Author 2019)

Figure 7.42: Mid left: Concept Ground level (Author 2019)

Figure 7.43: Mid right: Concept lower level (Author 2019)

Figure 7.44: Bottom left: Concept water system (Author 2019)

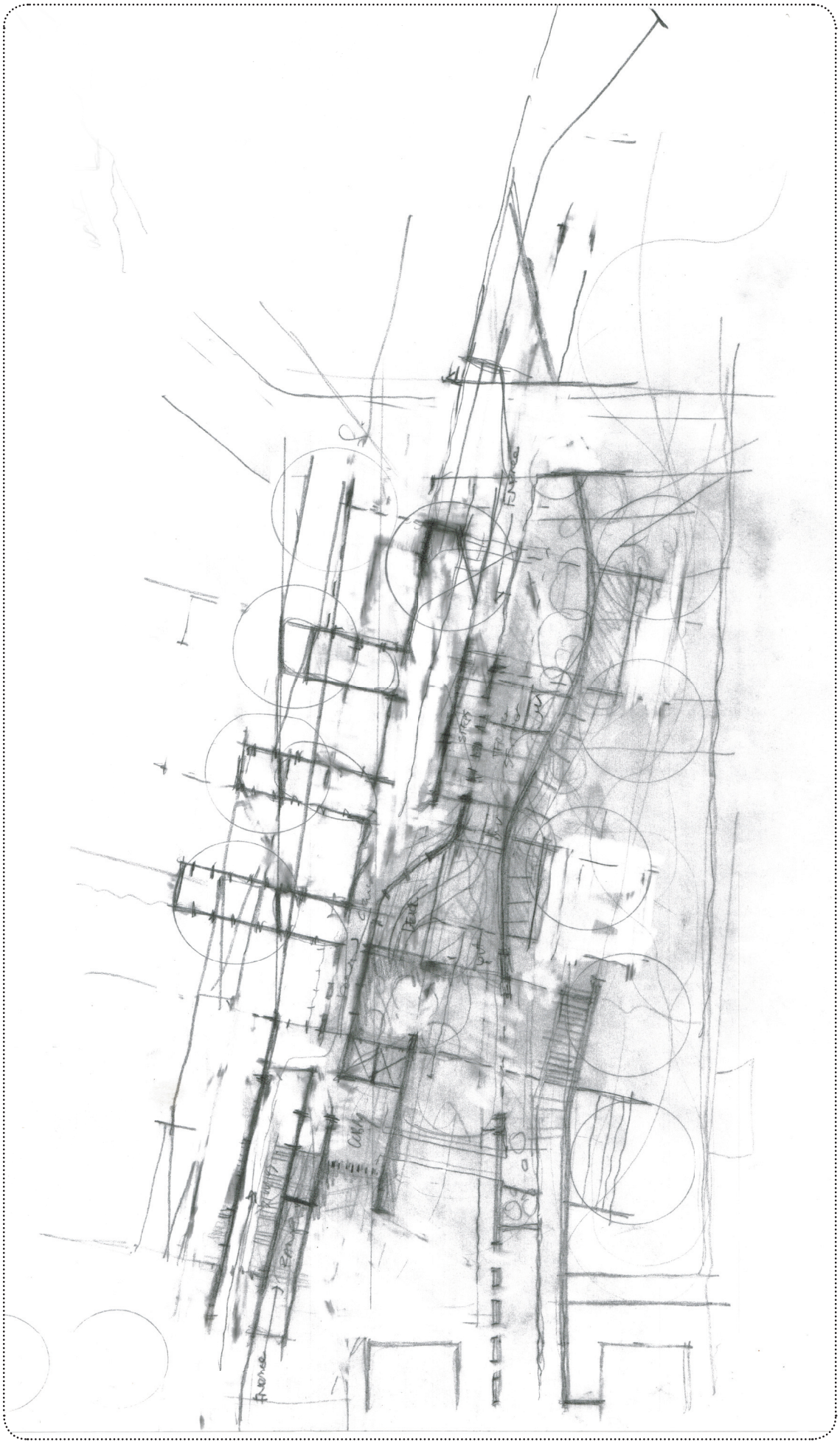
Figure 7.45: Bottom right: Final concept plan June (Author 2019)

Iteration 9

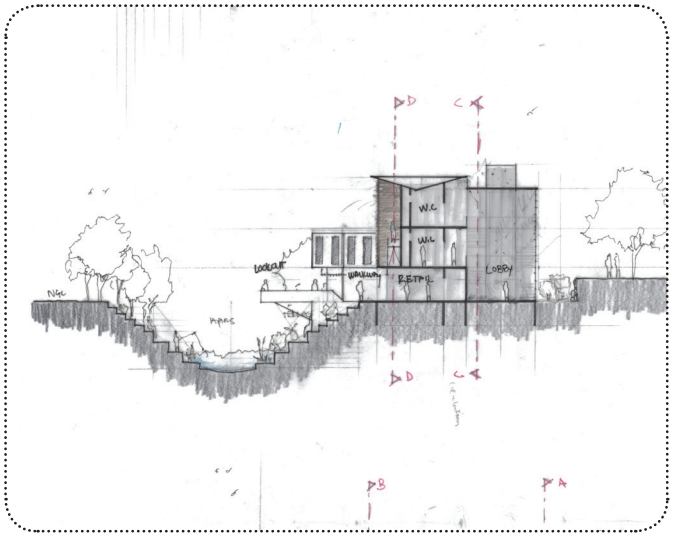
Iteration 9 still kept the physical connections with DTI, but attempts were made to address the climatic response as well as the physical connection with the river/landscape. By cutting the design up and rotating sections, more facade is exposed to north/ southern light.

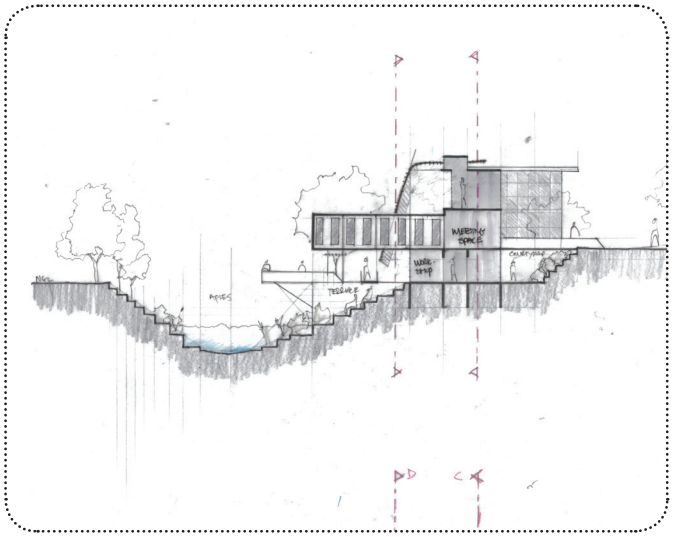
Critique: an uneconomic facade with all its pullout and push backs. Public realm still non existent.






BOARDROOM
STUDIOS
WEETING SPACE
AUDITORIUM 6 & 3 SEATS
STUDIOS
WEETING SPACE
VOID
STUDIOS
LOUNGE
SEATING
COURTYARD
WAITING
INFO
LOBBY
F WC
M WC
D WC
APIES RIVER
TRANSIT
PUBLIC MARKET
RETAIL
RETAIL
RETAIL MANAGER
RETAIL
RETAIL
WORKSHOP
WORKSHOP
WORKSHOP
WORKSHOP
CIRCULATION
COURTYARD
RETAIL
RETAIL
RETAIL
RETAIL
STORAGE
LOBBY





Iteration 10

The building was programmed with retail on ground floor in an attempt to activate the site as a thoroughfare for pedestrians walking to and from work.

A better lateral interaction between building and landscape was designed due to the scale of the building going down the close it gets to the river as well as contouring the river bank to form part of the building.

Critique: Building looks too much like a building and not enough like a landscape. Still no street edge designed. The relationship and physical connection between DTI and the new building is lost.

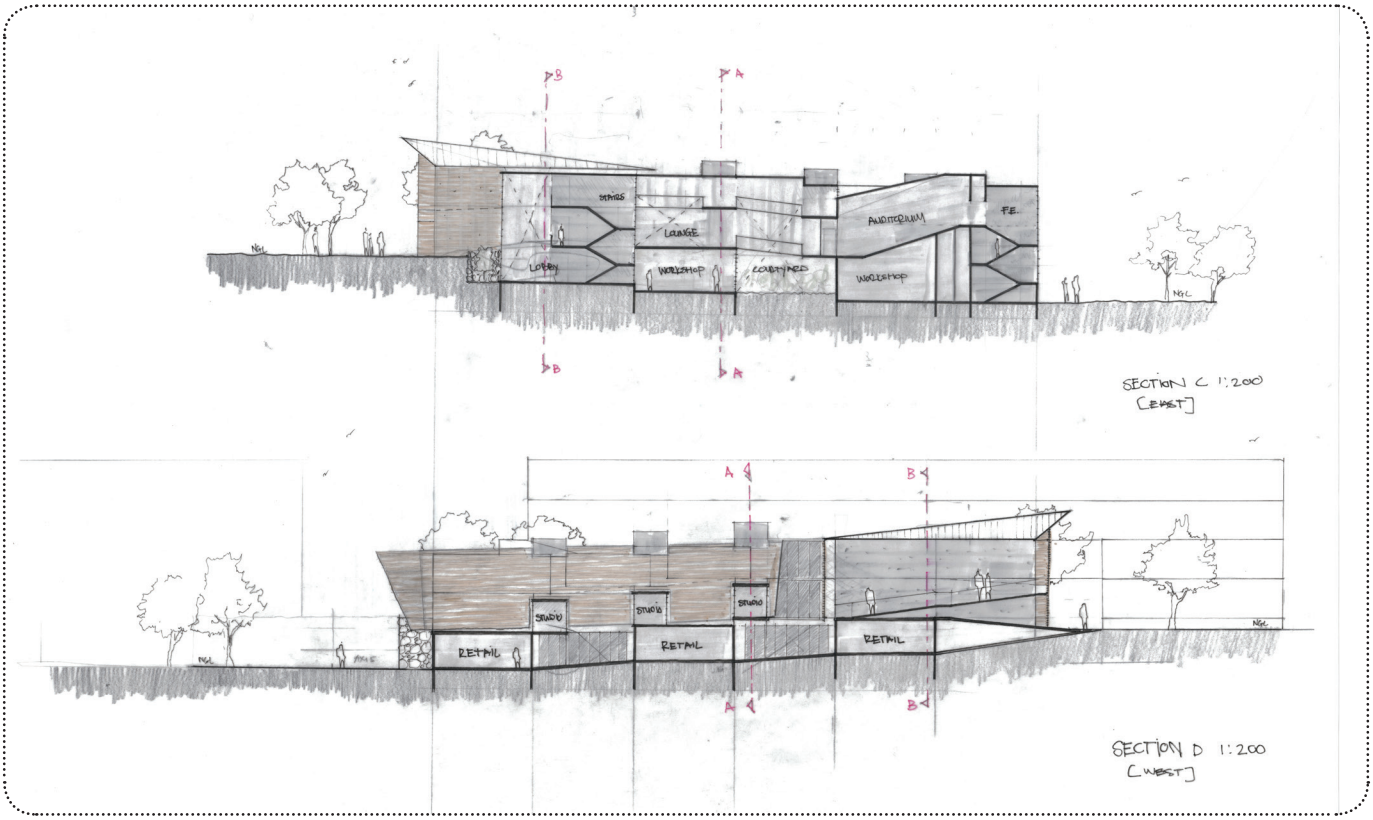


Figure 7.46: Top left: June Lower level plan (Author 2019)

Figure 7.47: Top right: June Section A (Author 2019)

Figure 7.48: Mid Left: June Ground level (Author 2019)

Figure 7.49: Mid right: June Section B (Author 2019)

Figure 7.50: Bottom right: June section C & D (Author 2019)

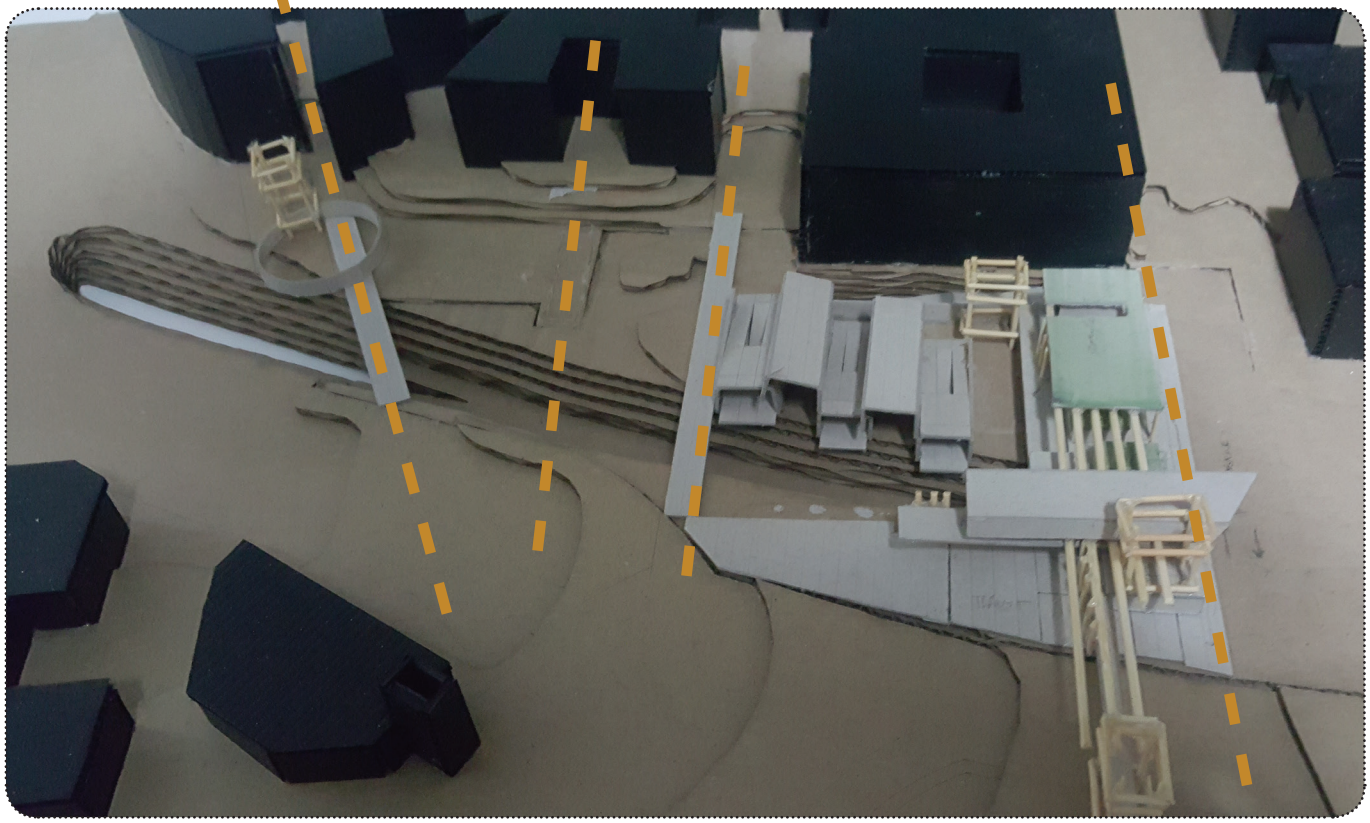


Figure 7.51: Top: Maquette of edges and linkages (Author 2019)

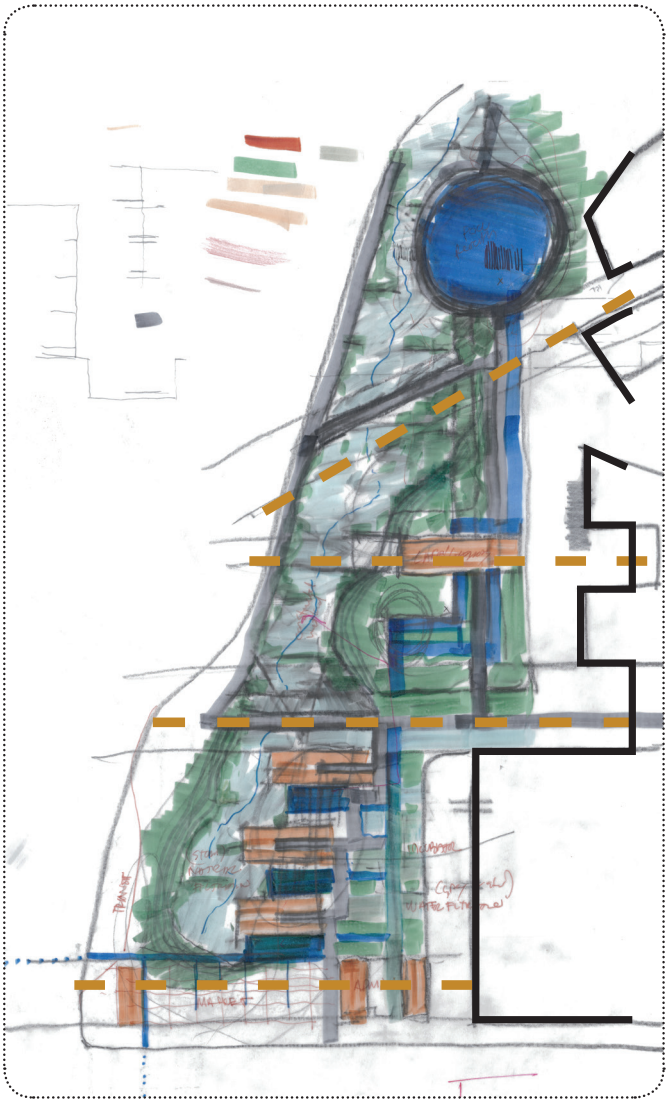
Figure 7.52: Bottom: Concept site plan (Author 2019)

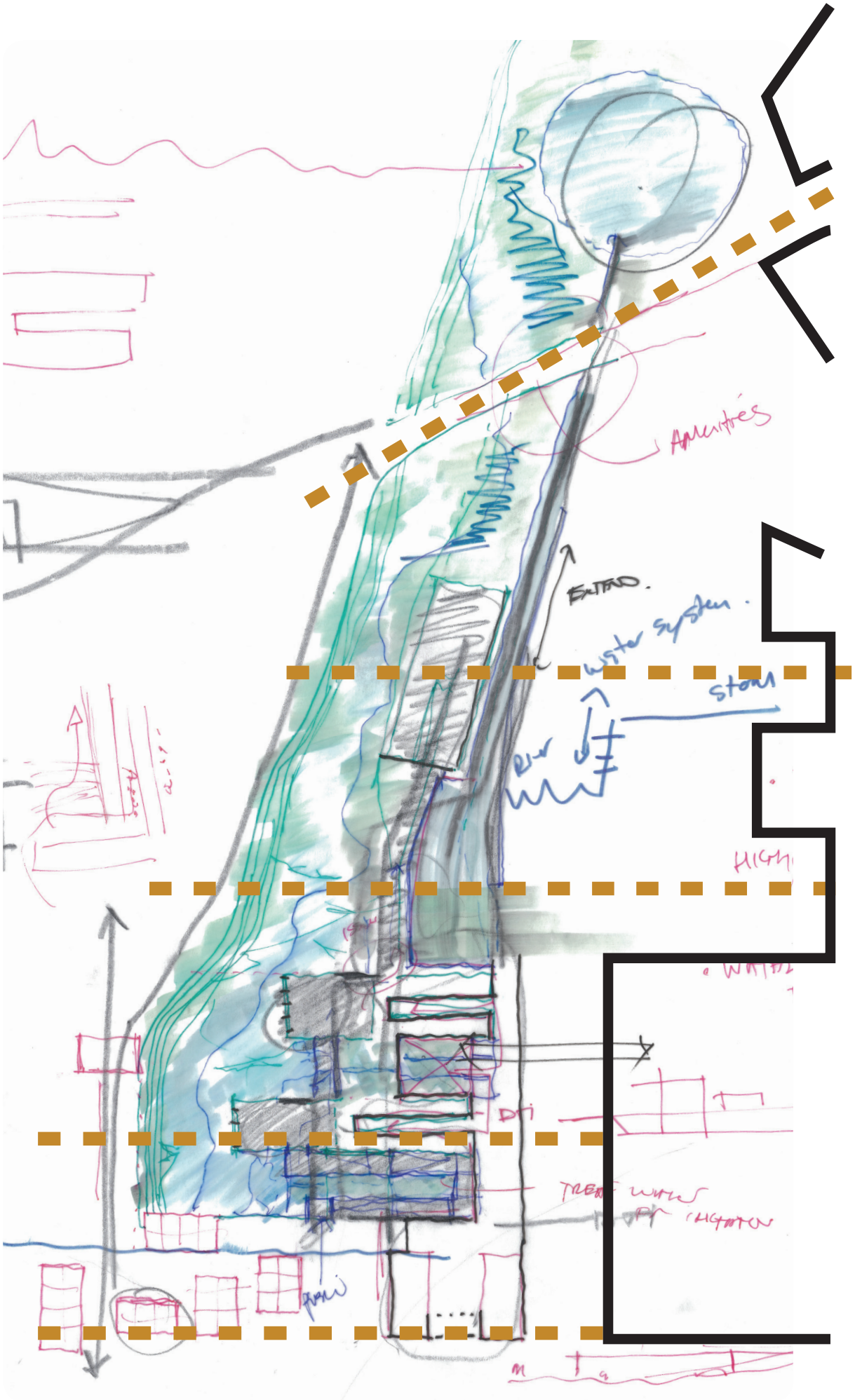
Figure 7.53: Right: Concept site showing transitions into the site (Author 2019)

Iteration 11

Iteration 11 addressed the lack of the relationship with the street as well as with the landscape by creating a strong public edge that engages the pedestrian flow.

Instead of having one building that is 'forced' onto the site, much like DTI, the new building is divided up into pieces according to its functions and their relationship with the natural landscap.




Amenities
Storm
HIGH

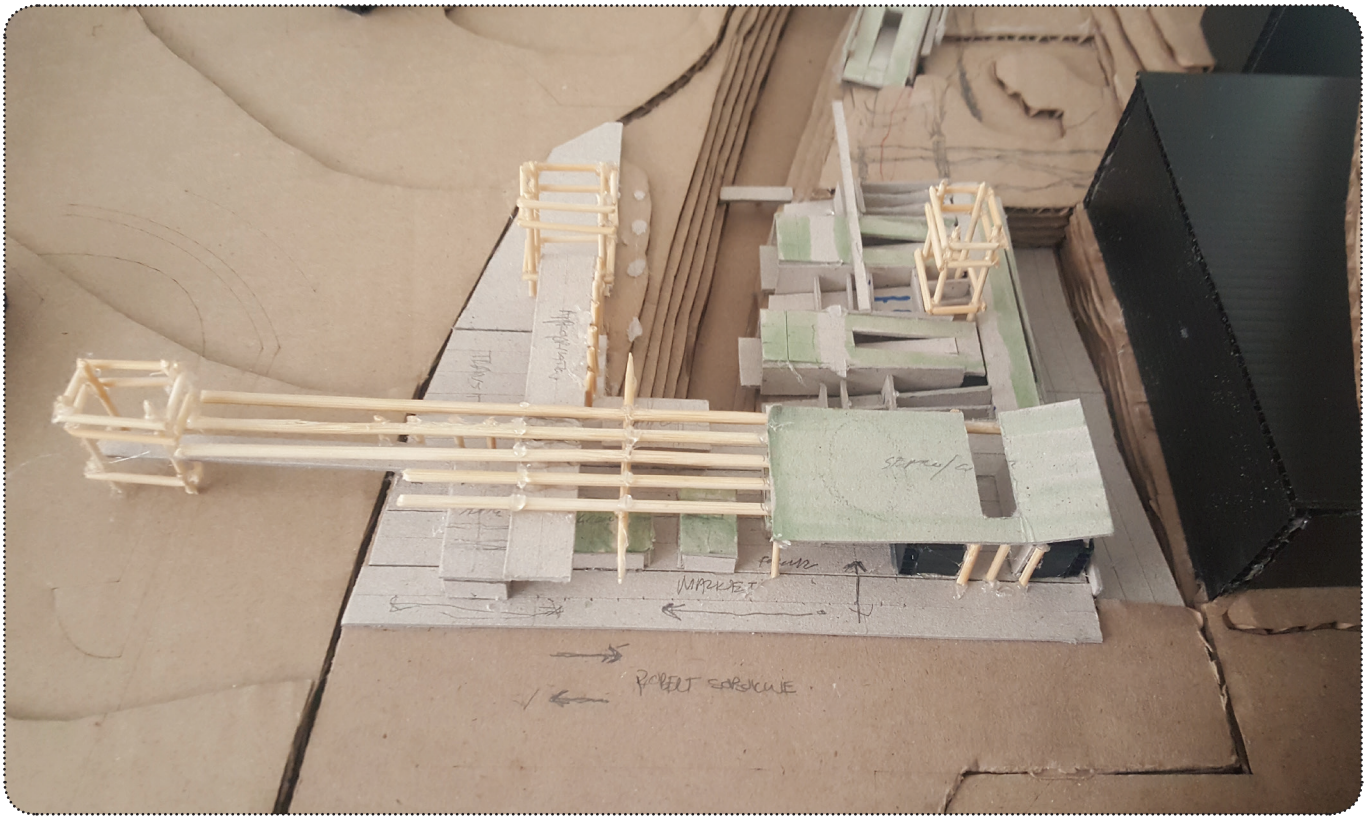


Figure 7.54: Top: Existing and new (Author 2019)

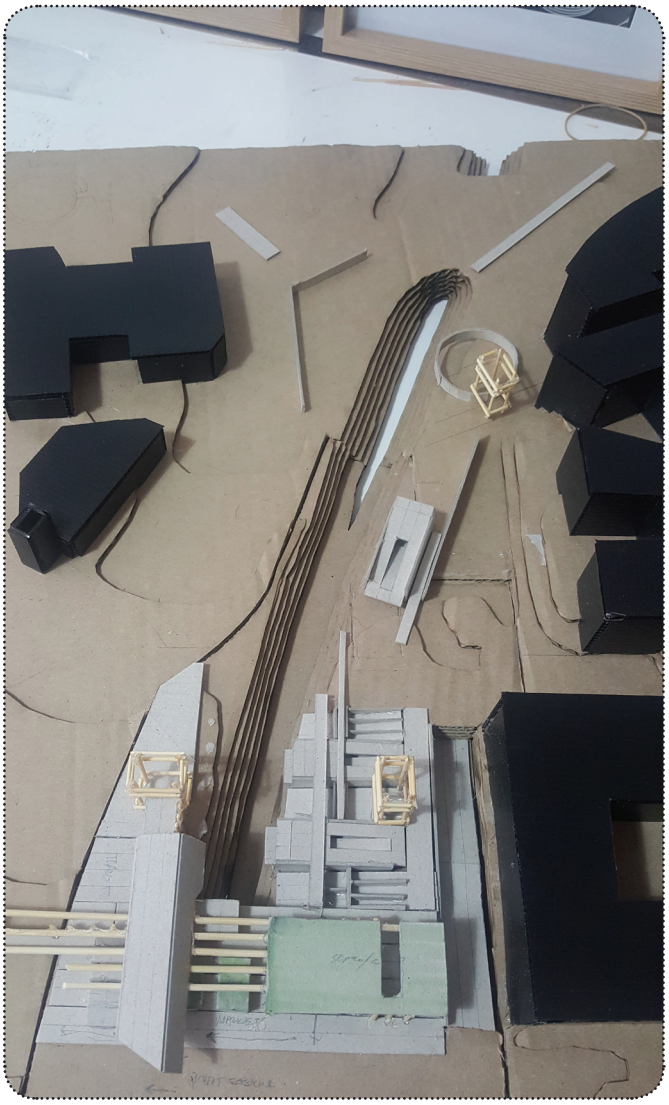


Figure 7.55: Bottom: Inserting infrastructure onto site (Author 2019)

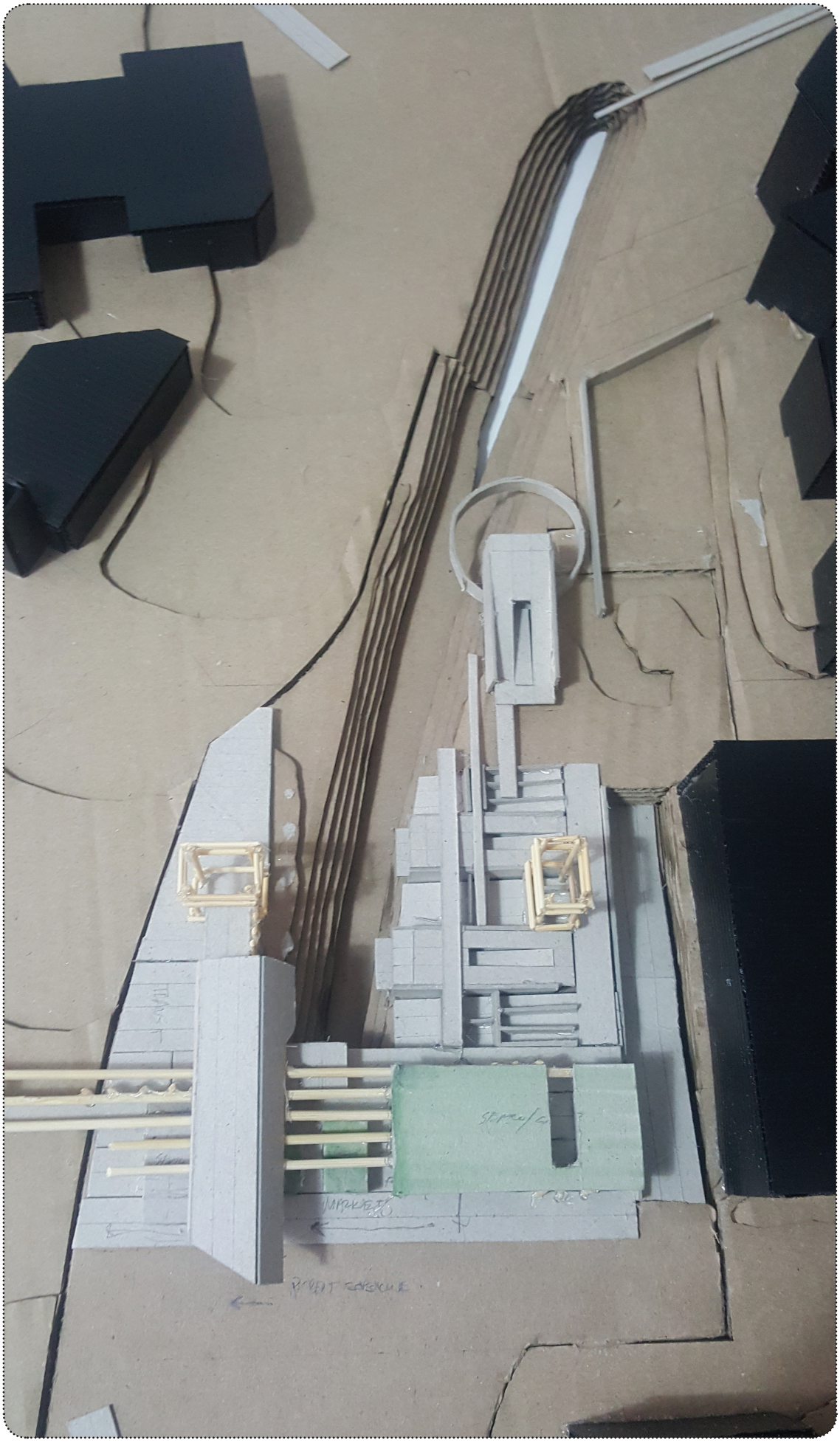
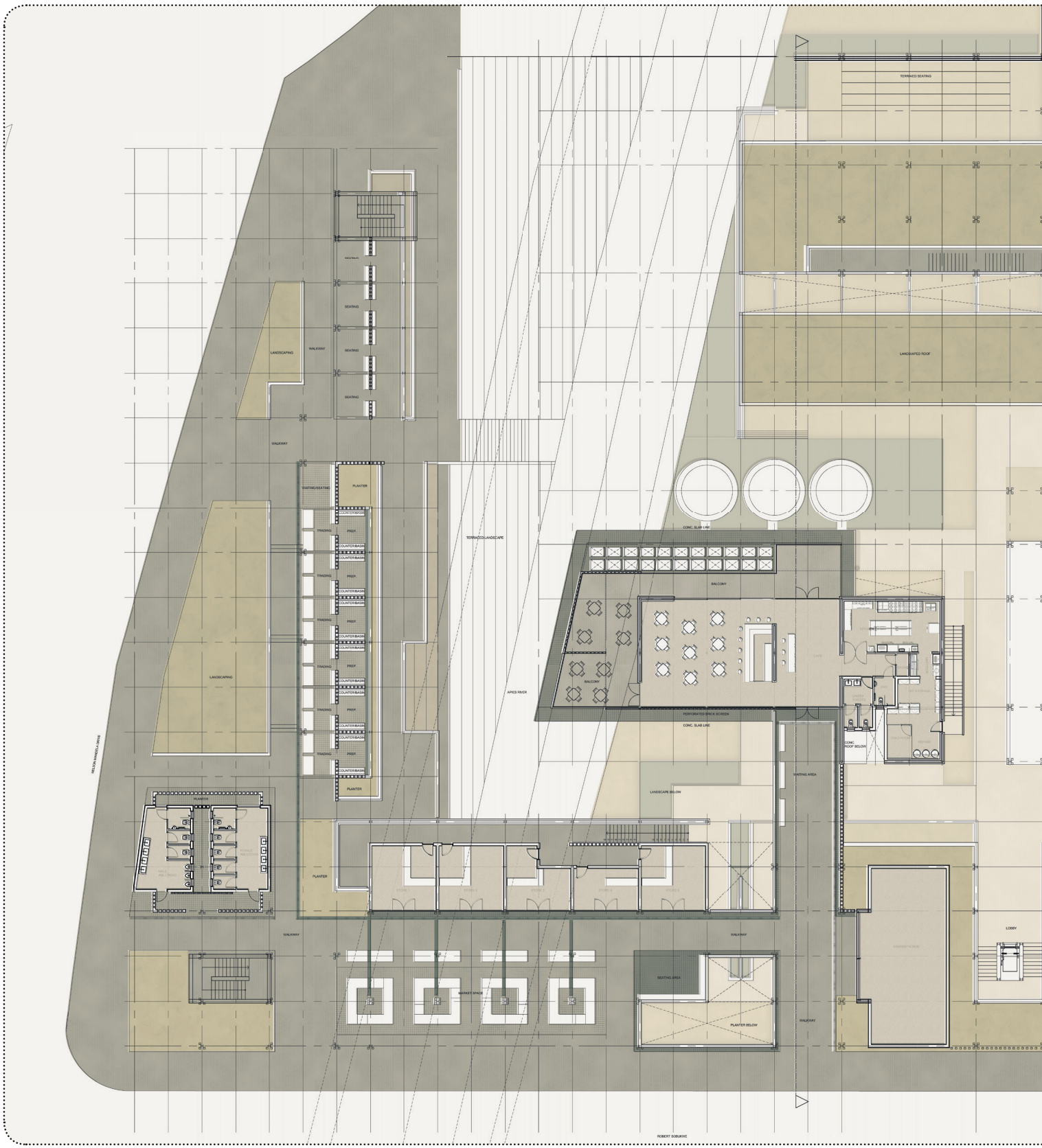


Figure 7.56: Exploring the recreational and event space (Author 2019)

Iteration 12

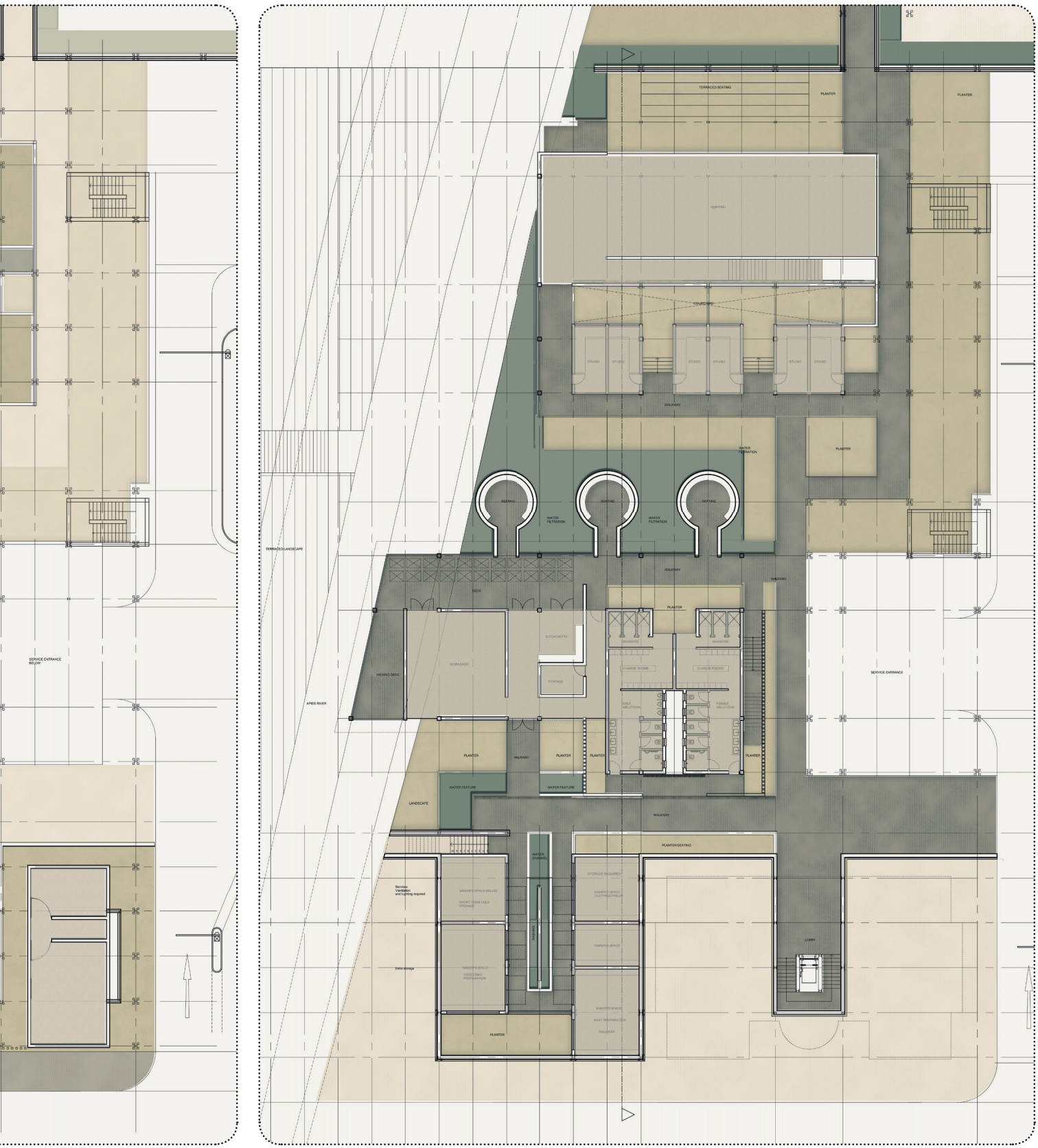
Iteration 12 successfully addresses the relation between formal and informal economic activities on the site by providing the necessary infrastructure for both to thrive. The market space is robust enough to allow for flexible usage by street vendor as well a bigger communal market events. The fixed vending stalls also provide a save space to clean, prepare and sell their goods to passing pedestrians.

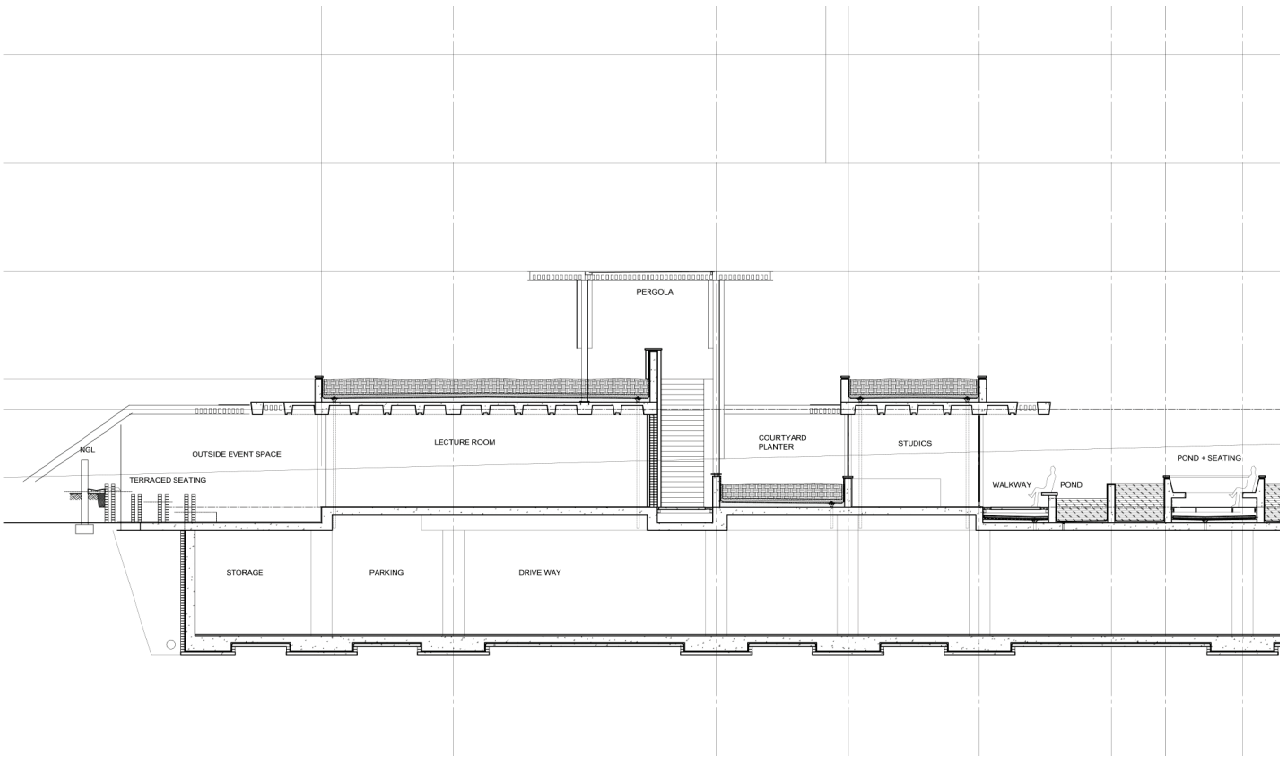
Figure 7.57: Ground floor plan - Market space (Author 2019)



The lower floor is semi-public and provides facilities for entrepreneurs to produce/make and test their products within a safe environment. The design in layout in such a way as to allow for optimum interactions with the landscape as well as the existing structure such as DTI and Les Mansions.

Figure 7.58: Lower floor plan - Incubator (Author 2019)





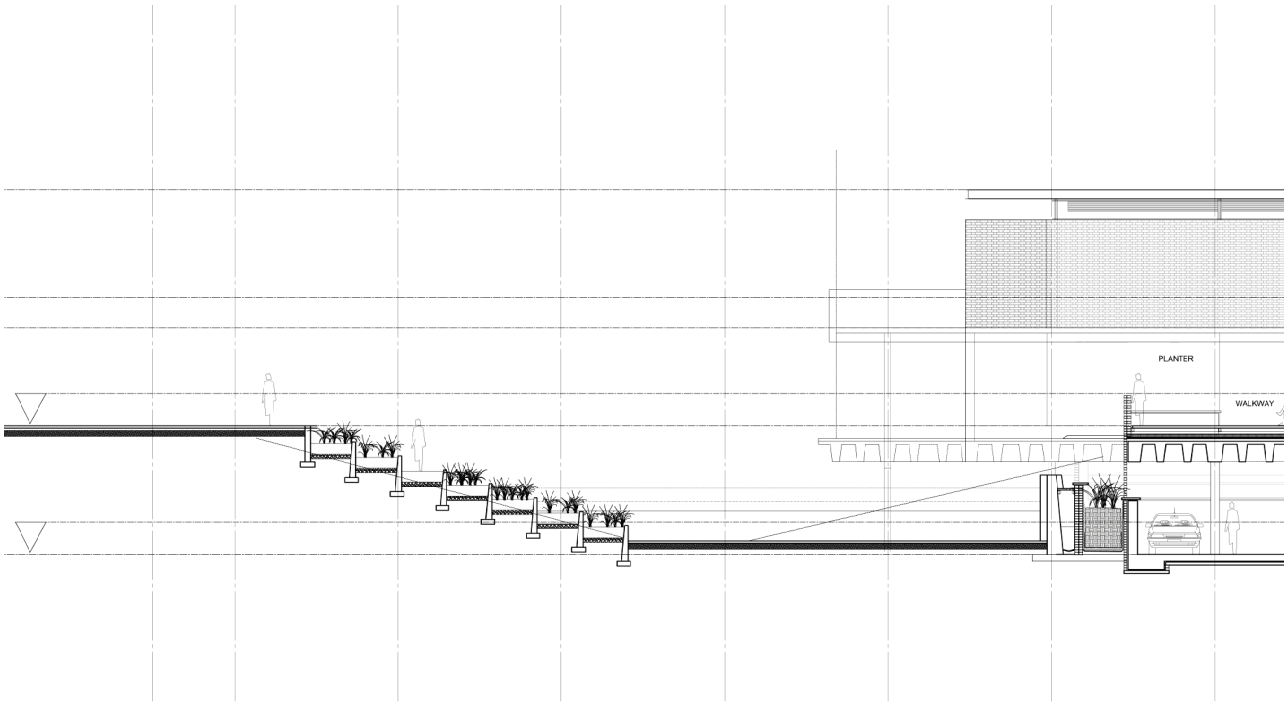
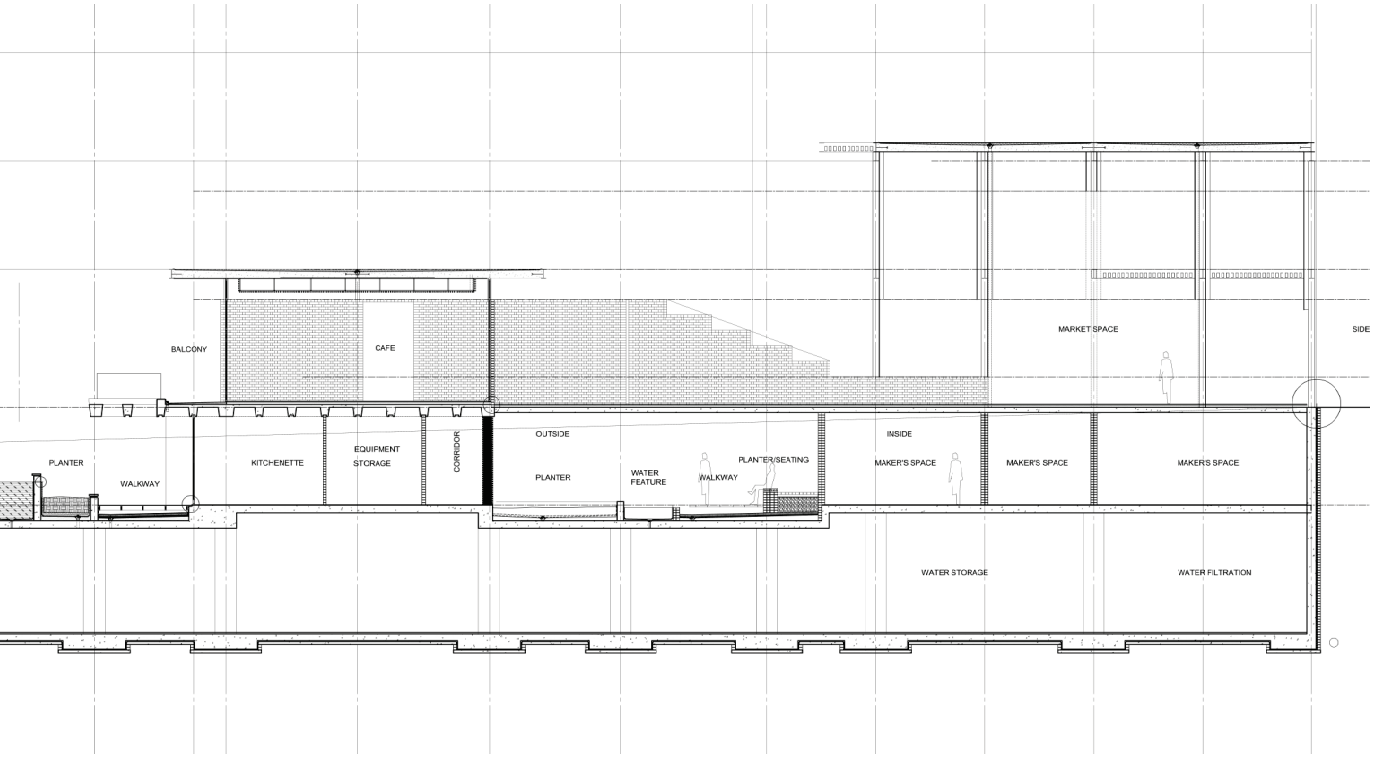
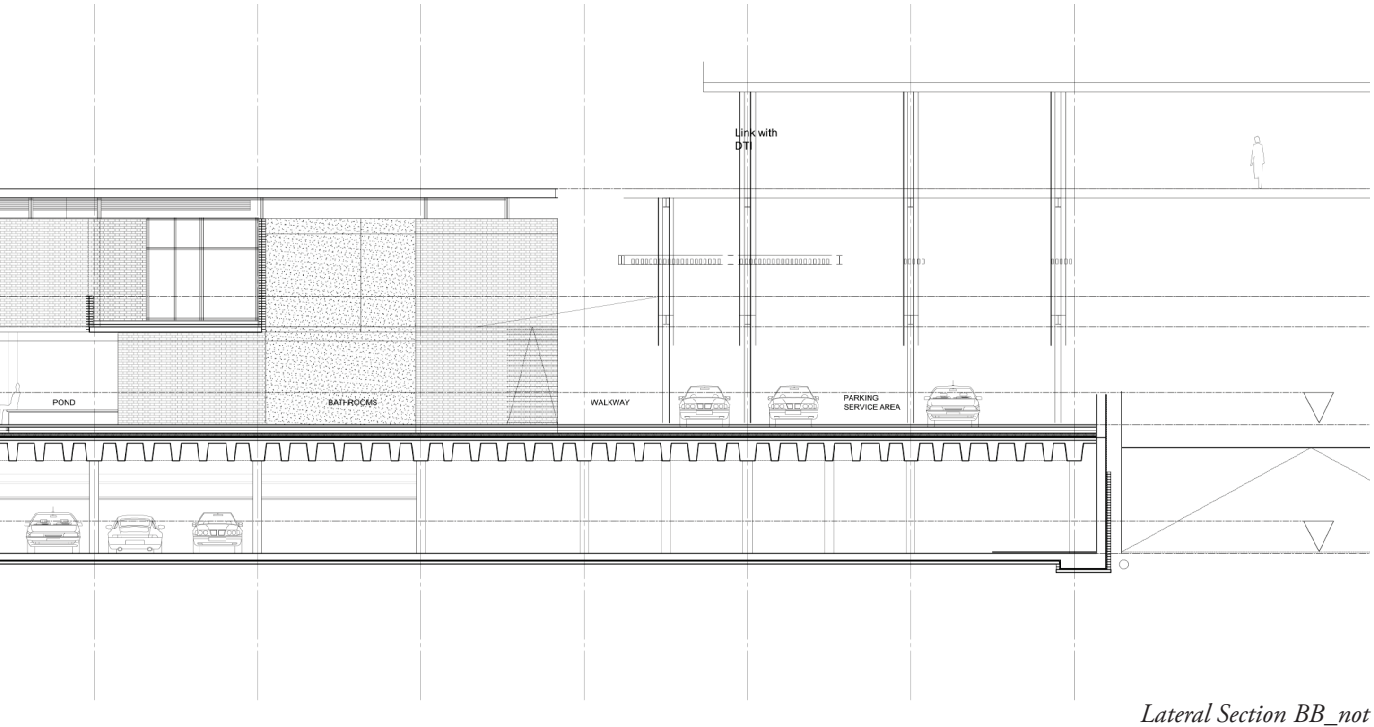


Figure 7.59: Top: Longitudinal Section A (Author 2019)

Figure 7.60: Bottom: Lateral Sectoin B (Author 2019)

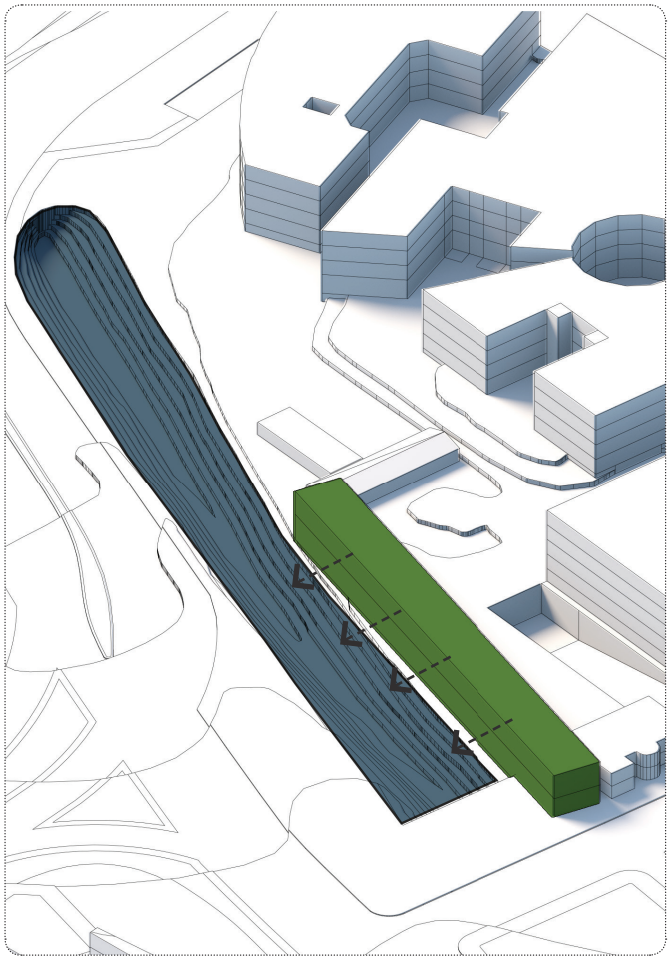


Longitudinal Section AA_not to scale

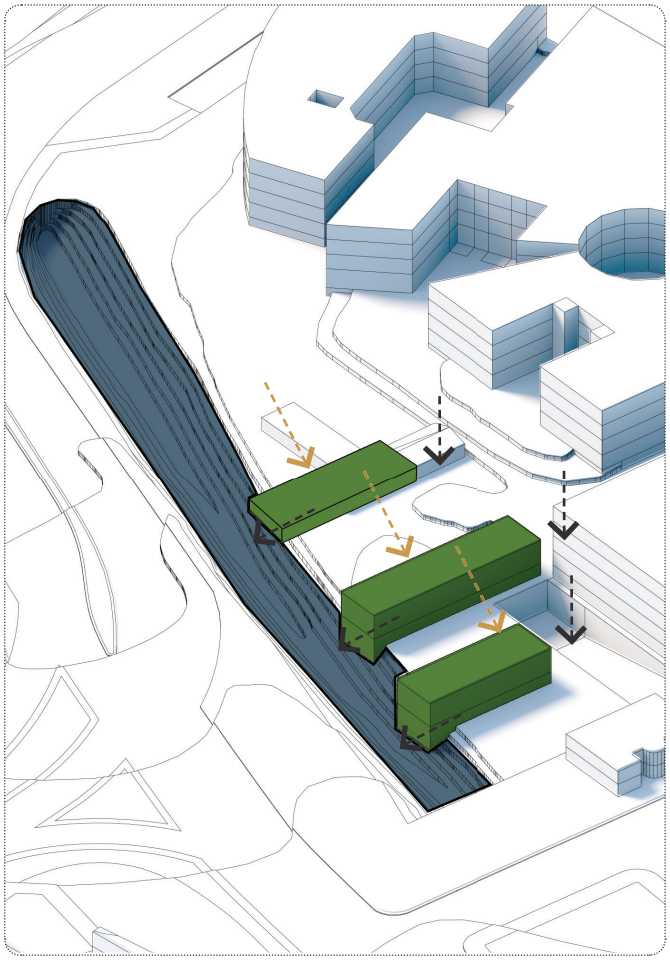


Lateral Section BB_not to scale

Reconnect with Apies River



Climatic response



Linkages/relationships

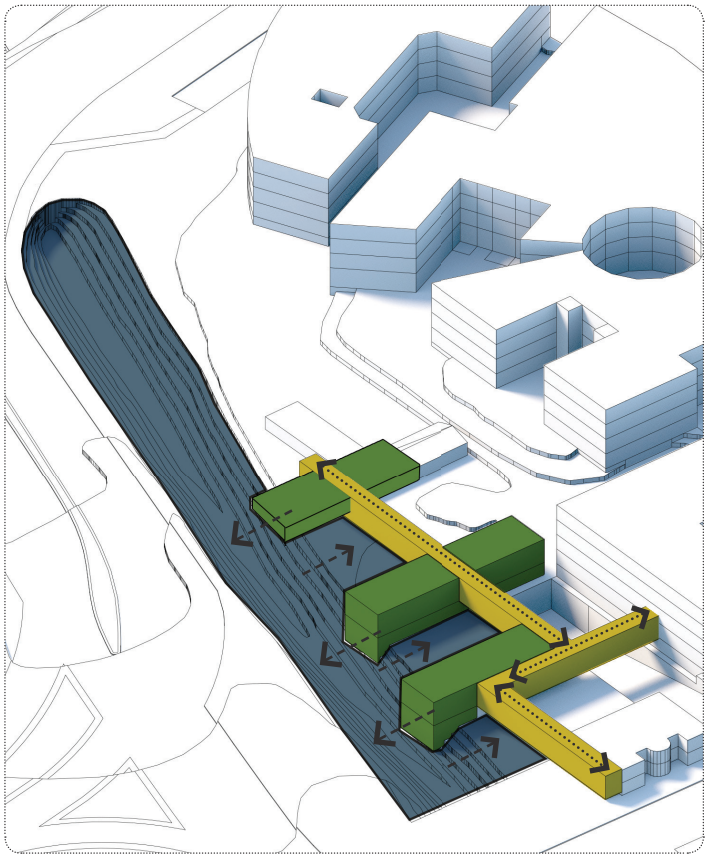


Figure 7.61: Top left: Reconnect with river (Author 2019)

Figure 7.62: Top right: Respond to climate (Author 2019)

Figure 7.63: Bottom: Restore relationships (Author 2019)

Les Mansion's existing fabric



Les Mansion's demolition



Les Mansion's new insertion



Les Mansion's transformation



Explaining the final design: Heritage adaptations

Les Mansions

This approach of transformation was adopted in order to allow a new sense of place to be created. Retaining some of the Art Deco characteristics in the form of the symmetrical street façade became important.

The first transformation came in the form of removing the entrance portal and opening the building up to the public (and their everyday rituals) and in so doing, enhancing the building's relationship with the natural landscape.

The second strategy was to create a connection between the old and the new, this was achieved by removing the roof off the existing building and extending the new market space roof over the existing heritage building. These changes allowed for the vision of a new type of ville, one that is conscious and sensitive towards the lived experiences and the importance of man's connection to nature, to take shape.

Figure 7.64: Les Mansions' existing fabric (Author 2019)

Figure 7.65: Les Mansion's demolition (Author 2019)

Figure 7.66: Les Mansion's new insertion (Author 2019)

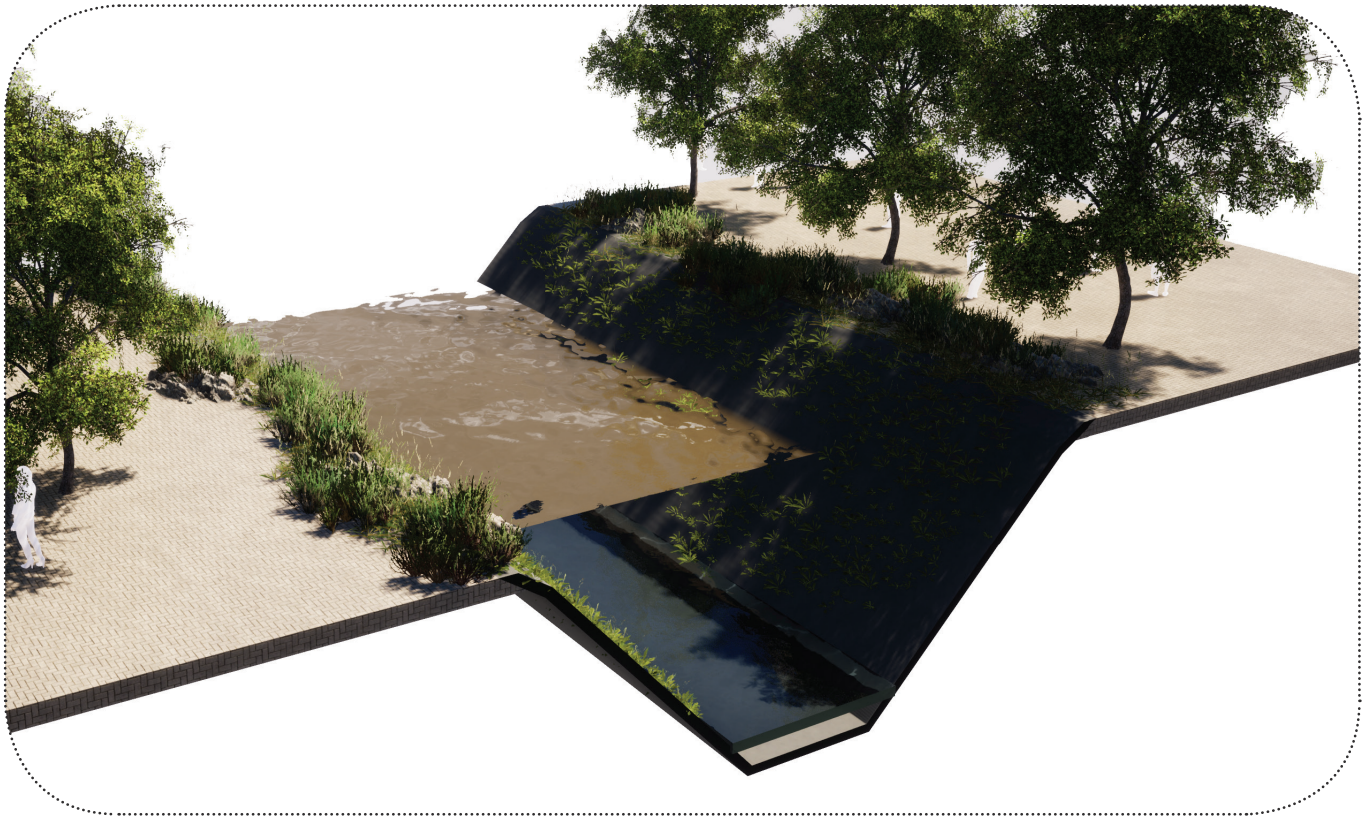
Figure 7.67: Les Mansion's transformation (Author 2019)

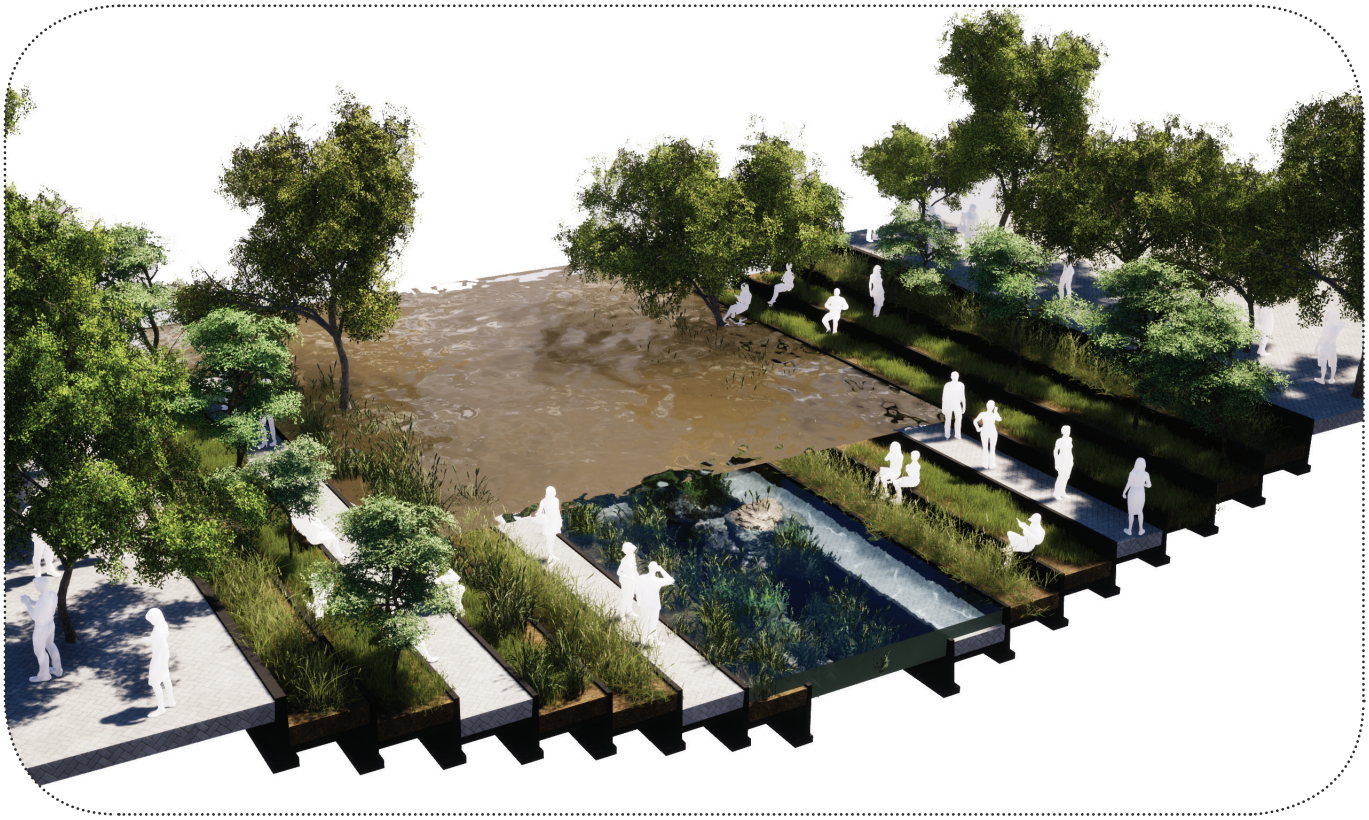
Figure 7.68: Top: Apies river existing condition (Author 2019)

Figure 7.69: Bottom: Apies river's promenade transformation (Author 2019)

Explaining the final design: Heritage adaptations

The Apies river's modifications were removed to allow for better interactions between city goer and river as a productive but also recreational source. By widening the river, it is possible to decrease the depth thus enabling easier connections. The landscape is terraced with pedestrian and bicycle walkways on more than one level.





Public realm

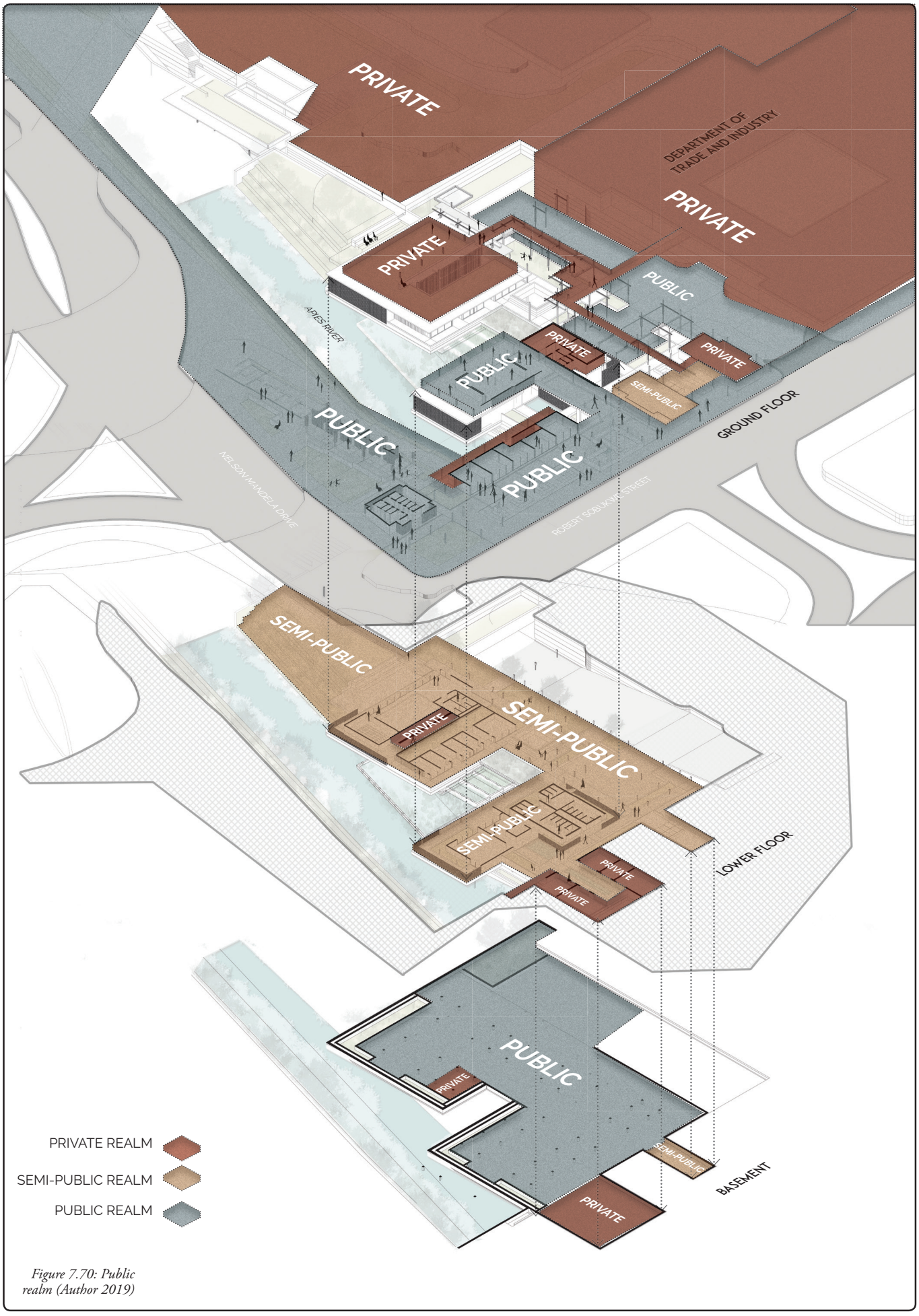


Figure 7.70: Public realm (Author 2019)

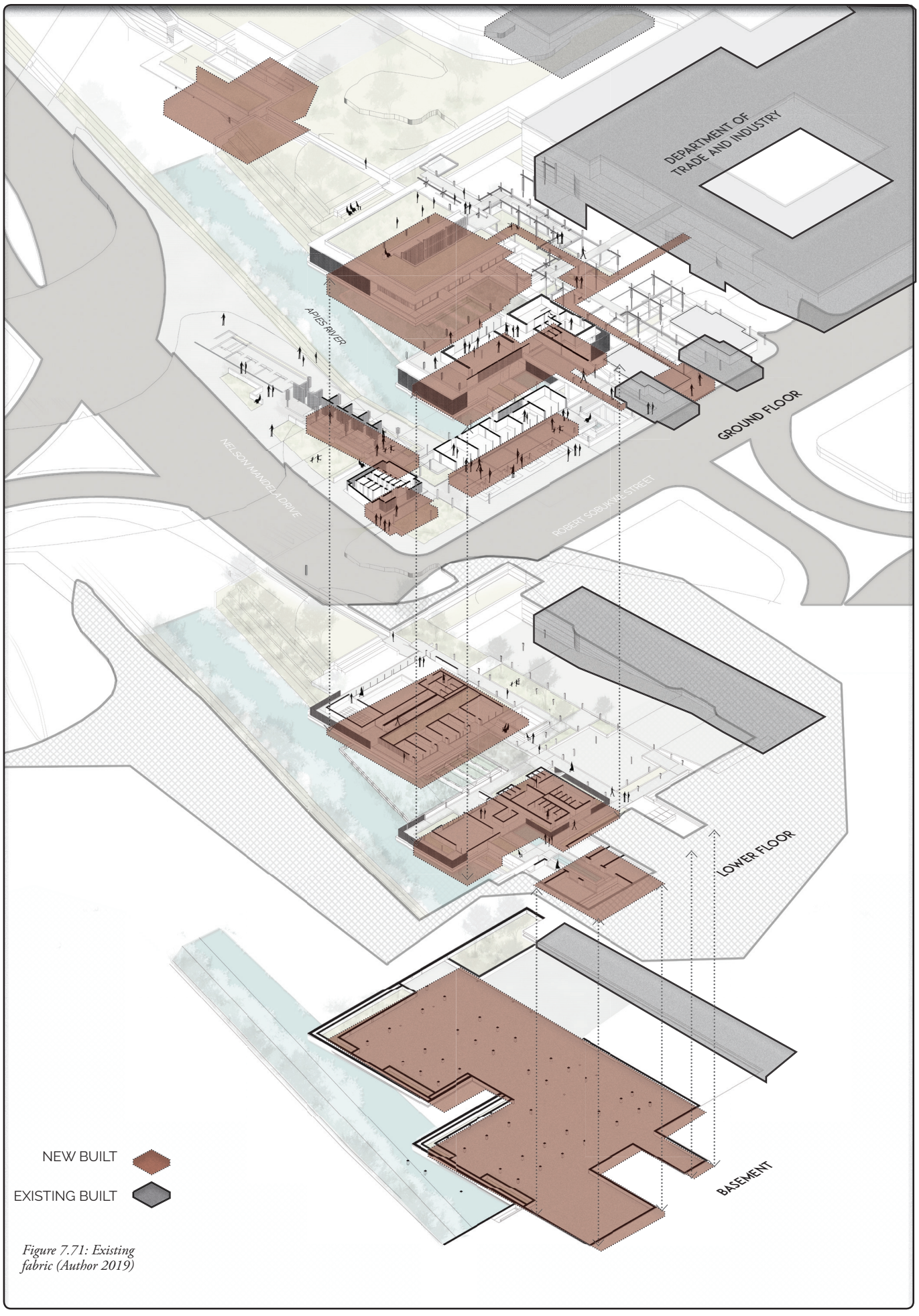


Figure 7.71: Existing fabric (Author 2019)

Landscaping

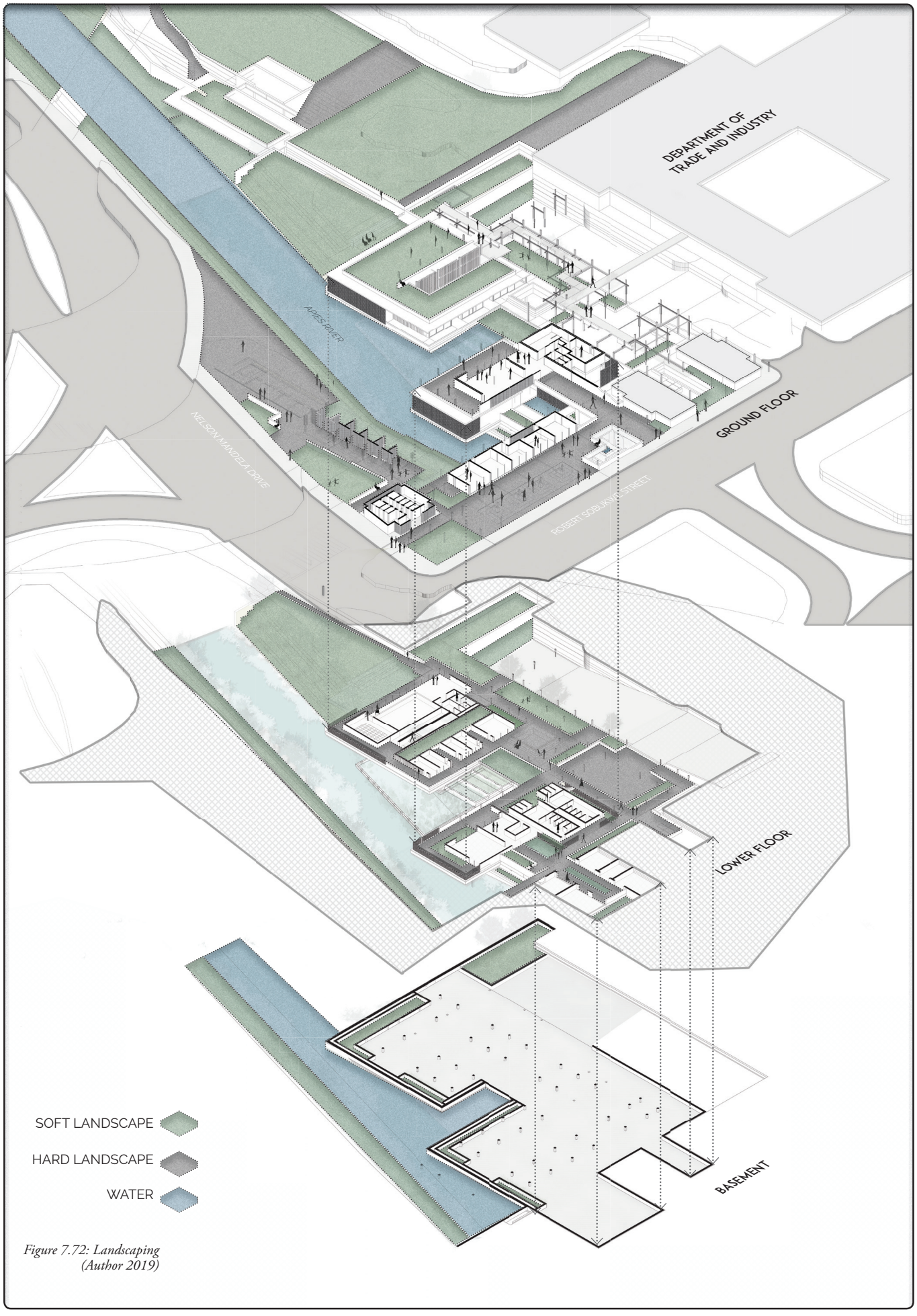


Figure 7.72: Landscaping (Author 2019)

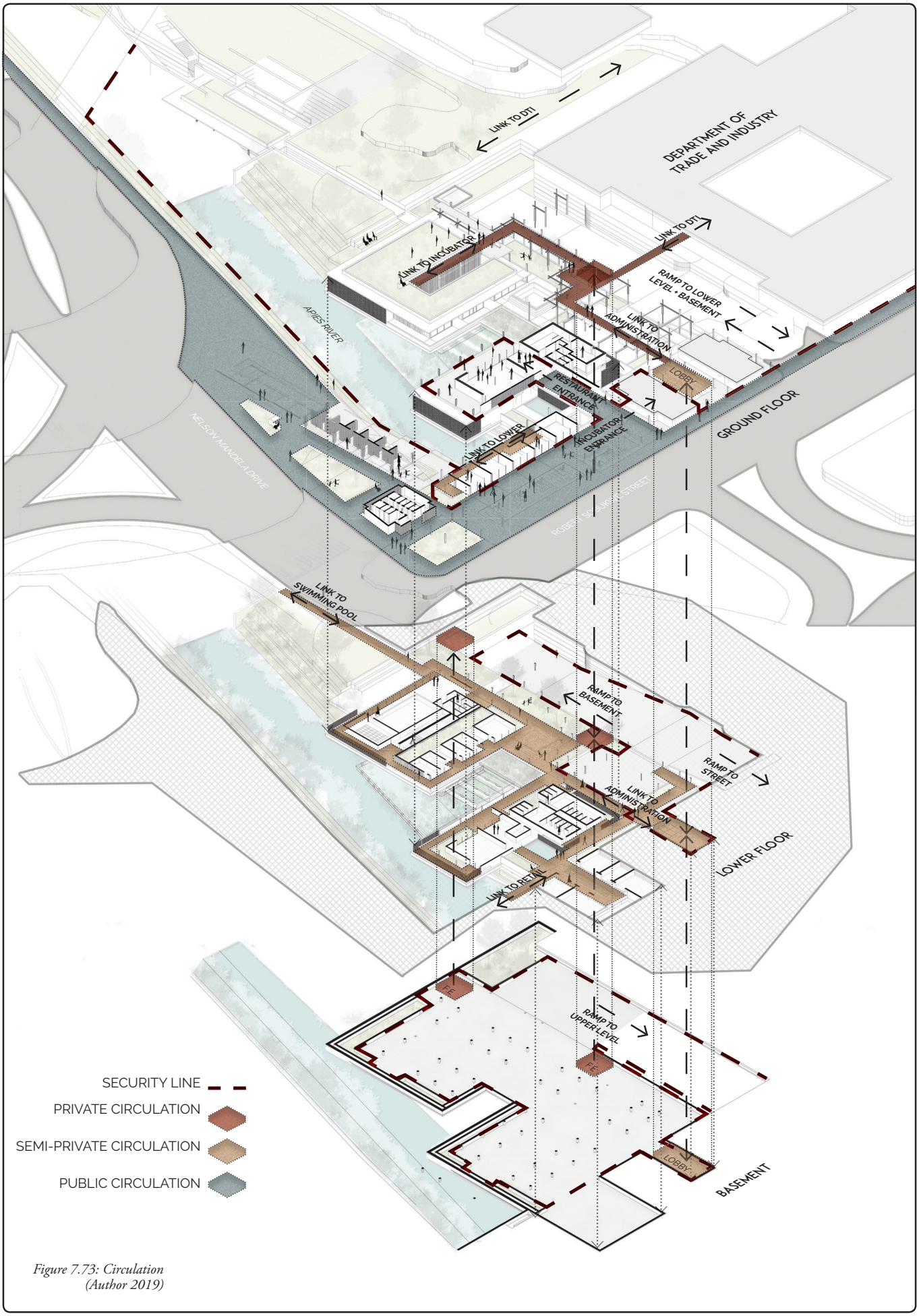


Figure 7.73: Circulation (Author 2019)

Explaining the final design

The basement plan consists of parking and space for water treatment services.

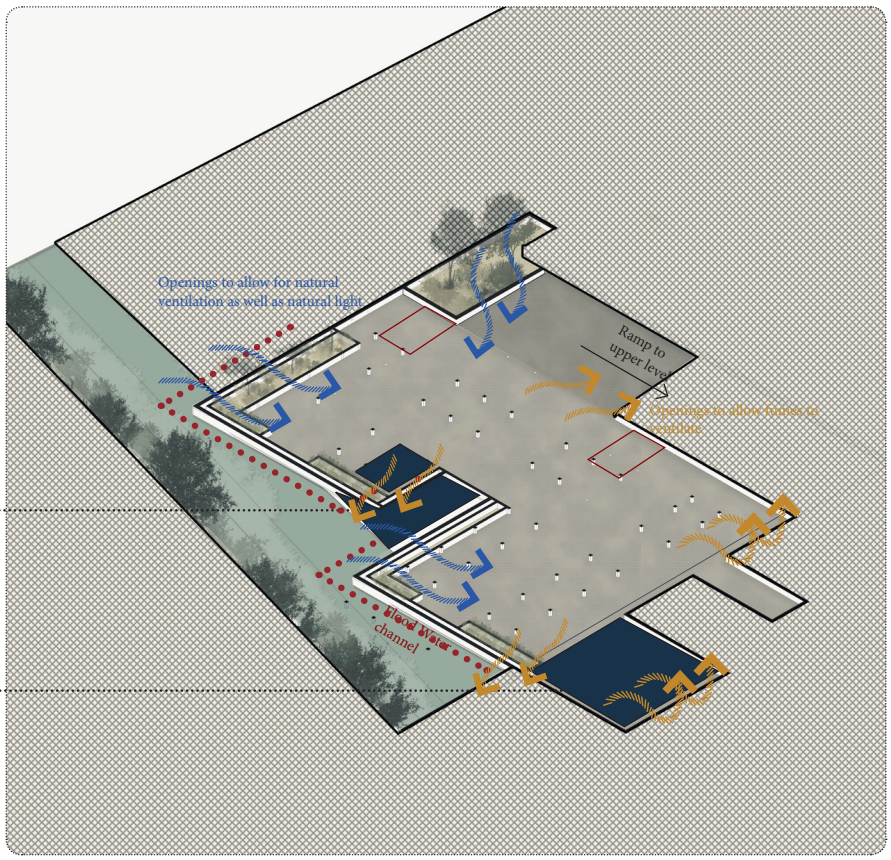


Figure 7.74: Basement ventilation (Author 2019)

- Basement -

Explaining the final design

Lower floor plan consists of the maker's space and the business incubator

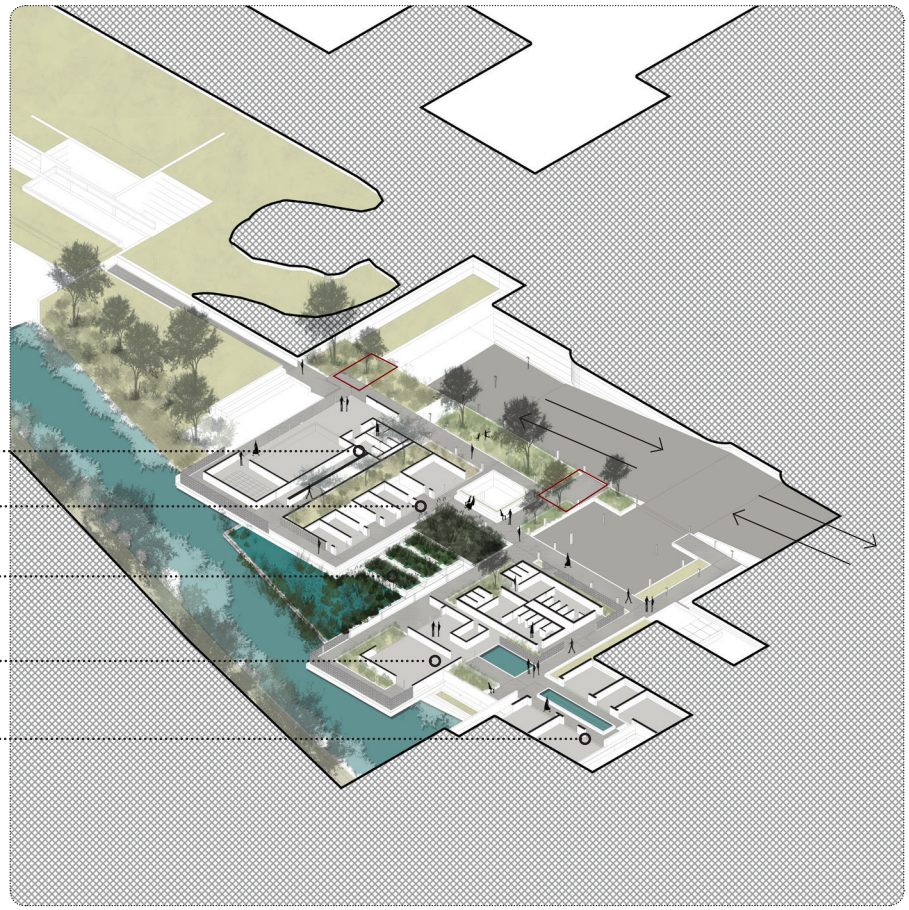


Figure 7.75: Lower floor spatial layout (Author 2019)

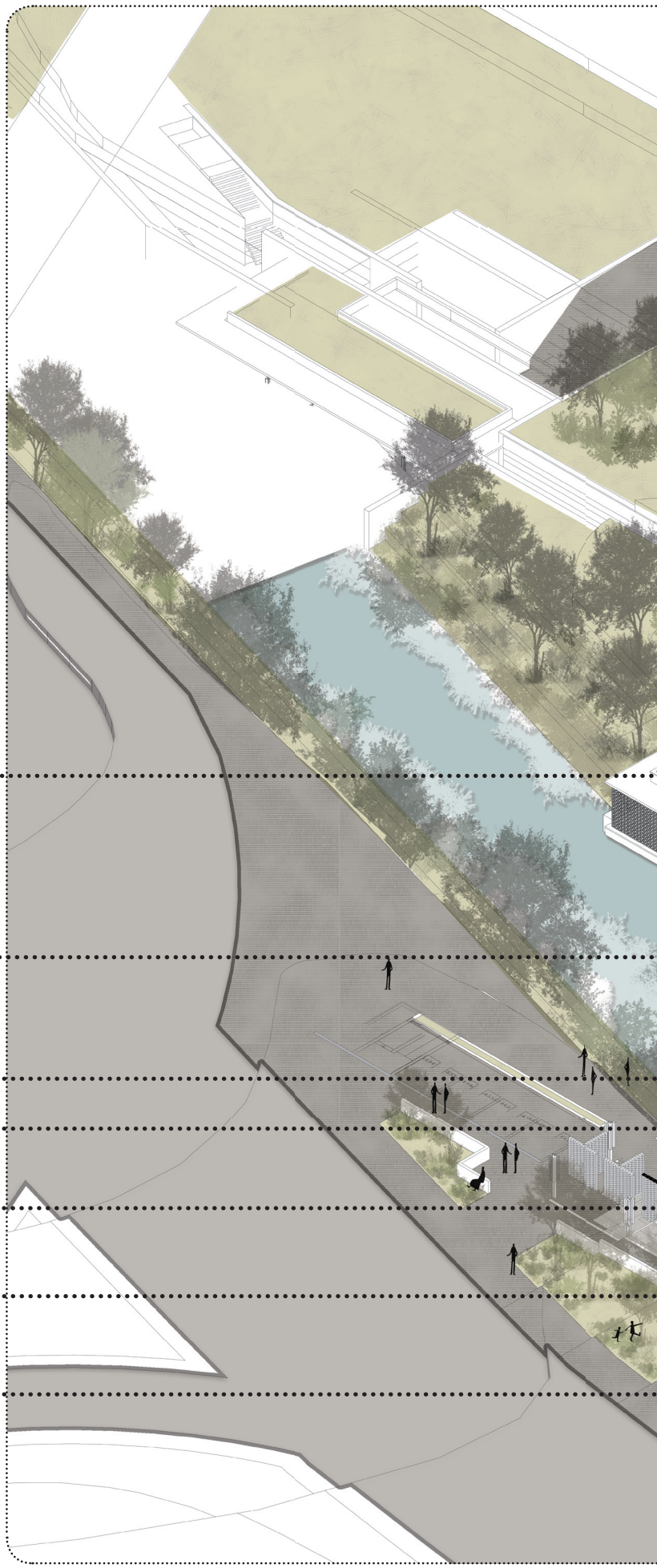
- Lower floor -

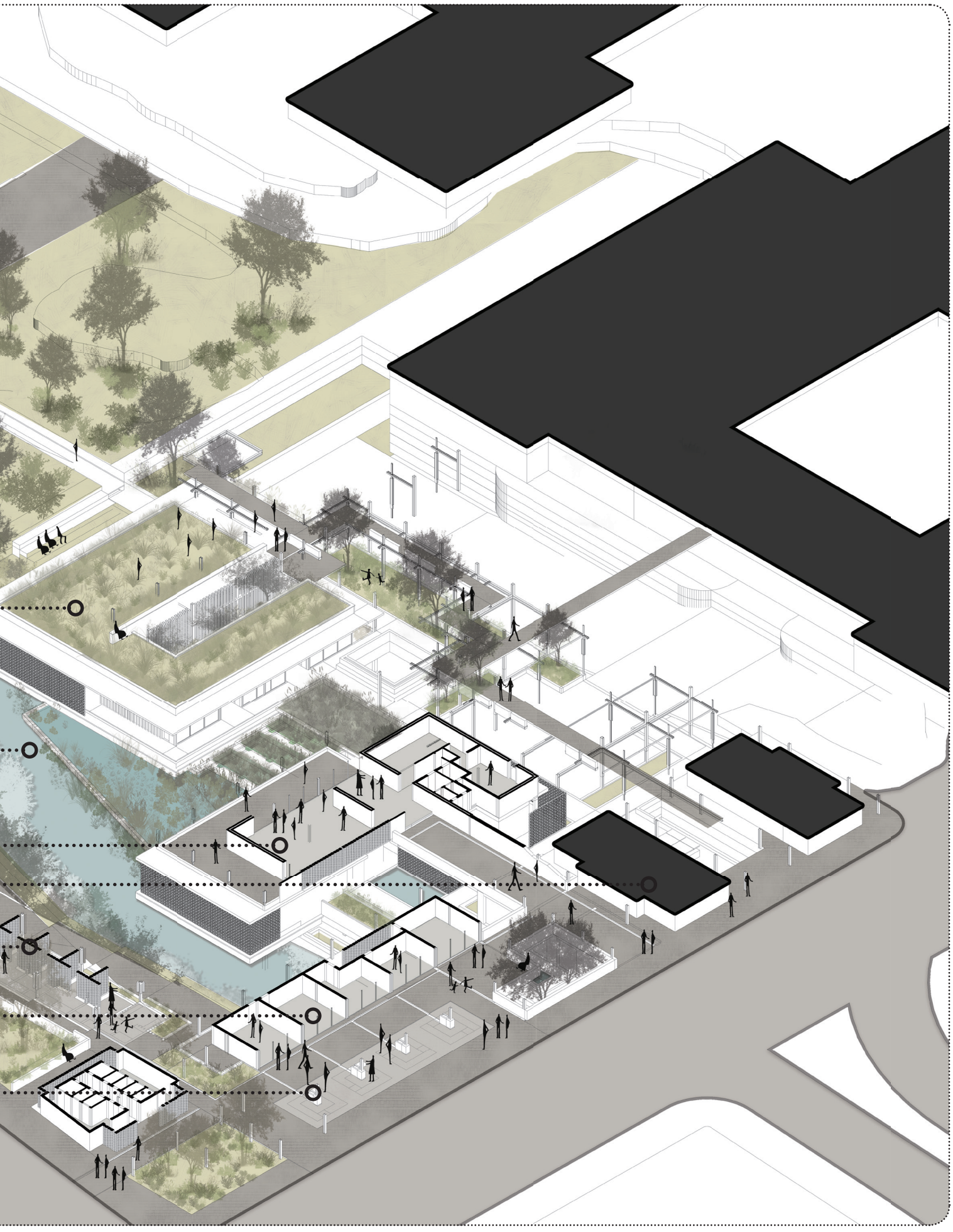
Explaining the final design

Groundfloor plan houses public programmes such a the formal and informal retail space, market square and a cafe' overlooking the Apies river.

A private garden is created for DTI's office workers to also enjoy the Apies river.

Figure 7.76: Ground Level spatial layout (Author 2019)





Site plan

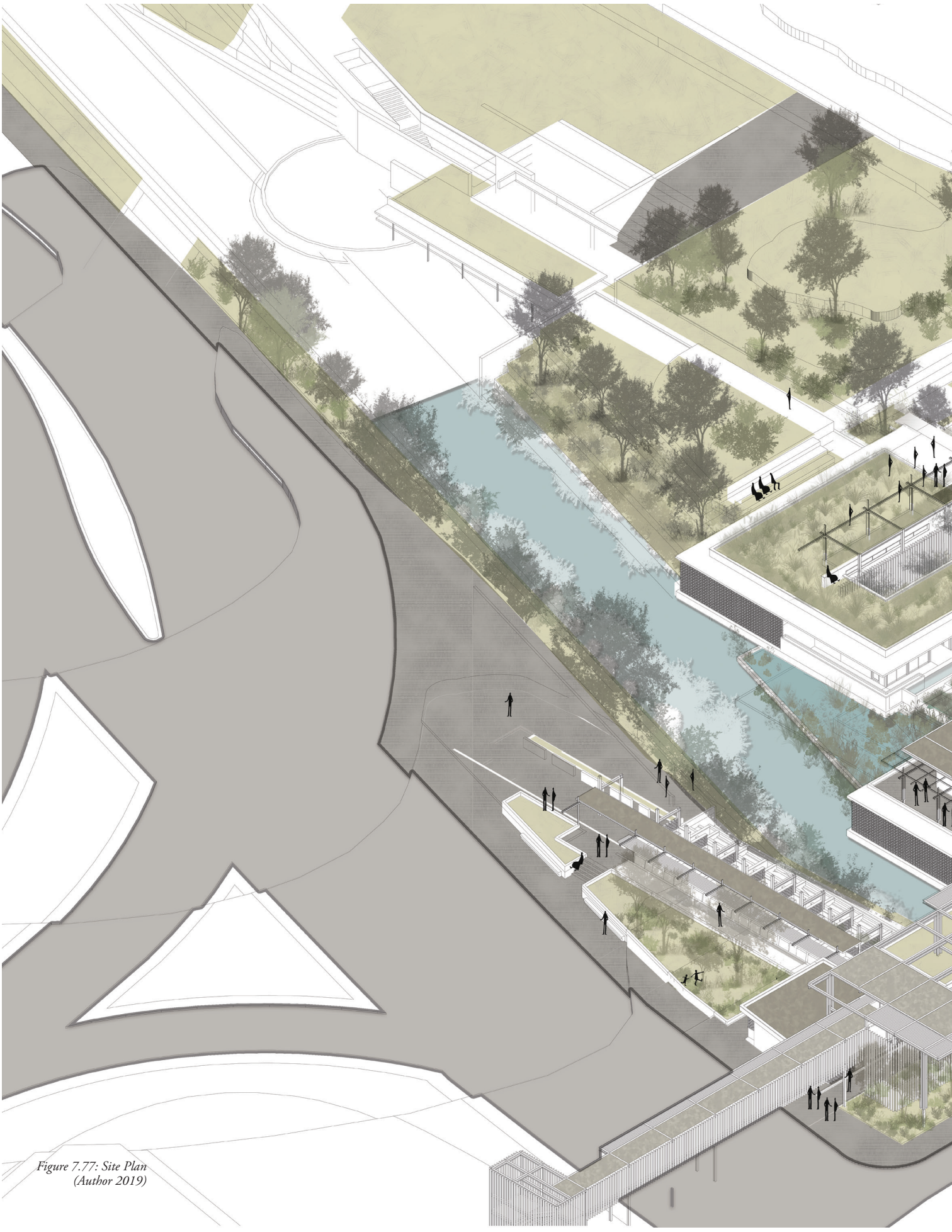


Figure 7.77: Site Plan (Author 2019)

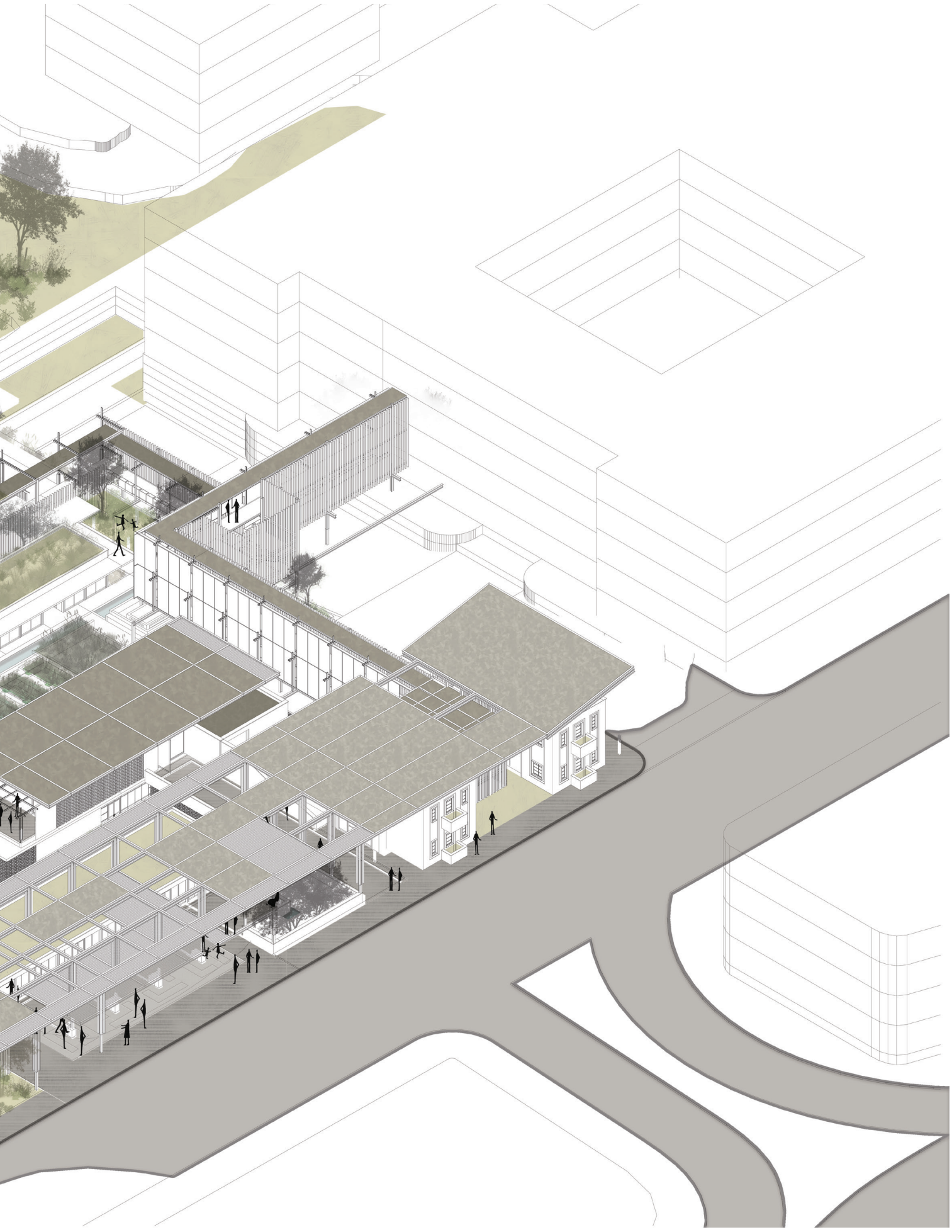
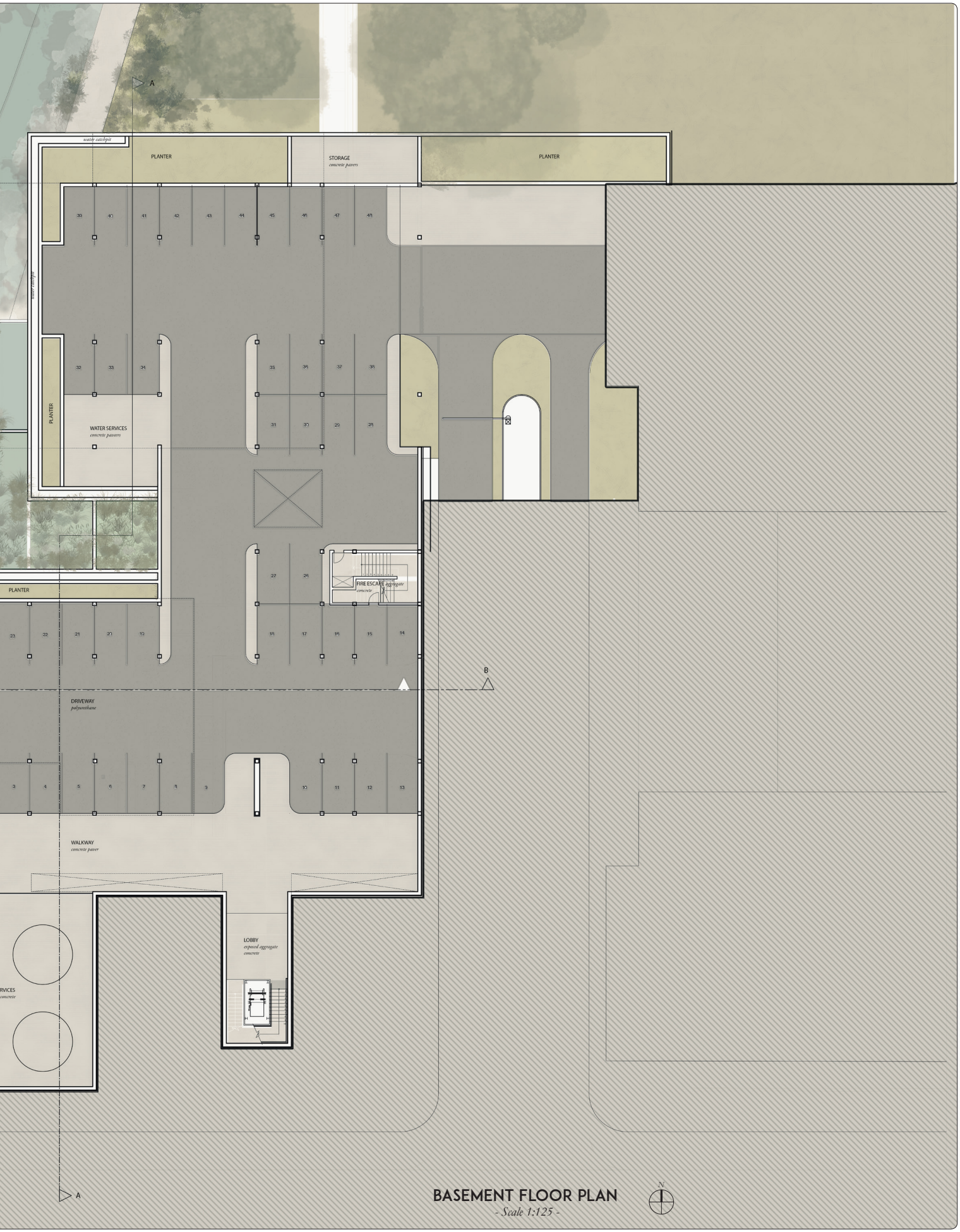




Figure 7.78: Final Basement plan (Author 2019)

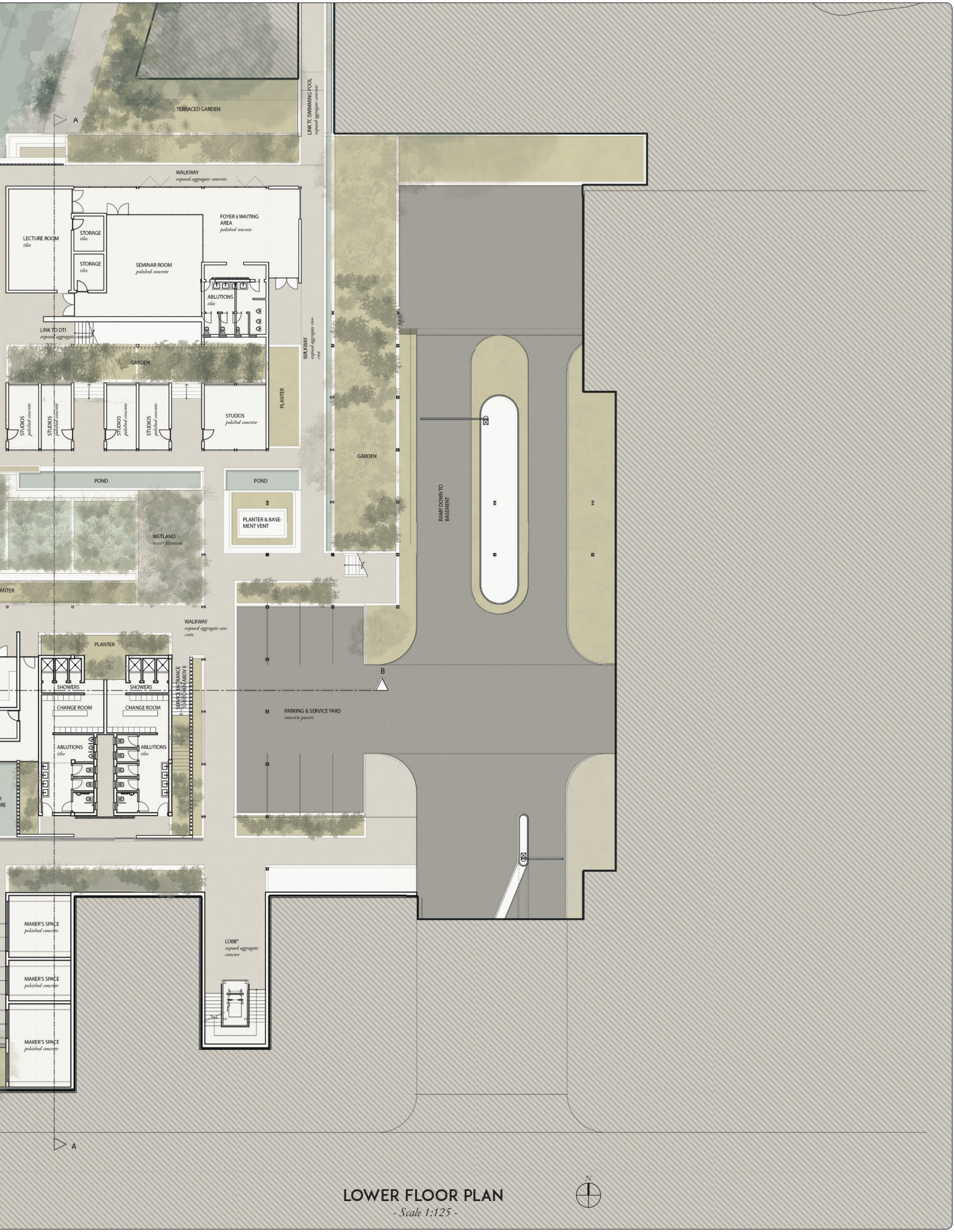


BASEMENT FLOOR PLAN

- Scale 1:125 -



Figure 7.79: Final Lower floor plan (Author 2019)



LOWER FLOOR PLAN

- Scale 1:125 -

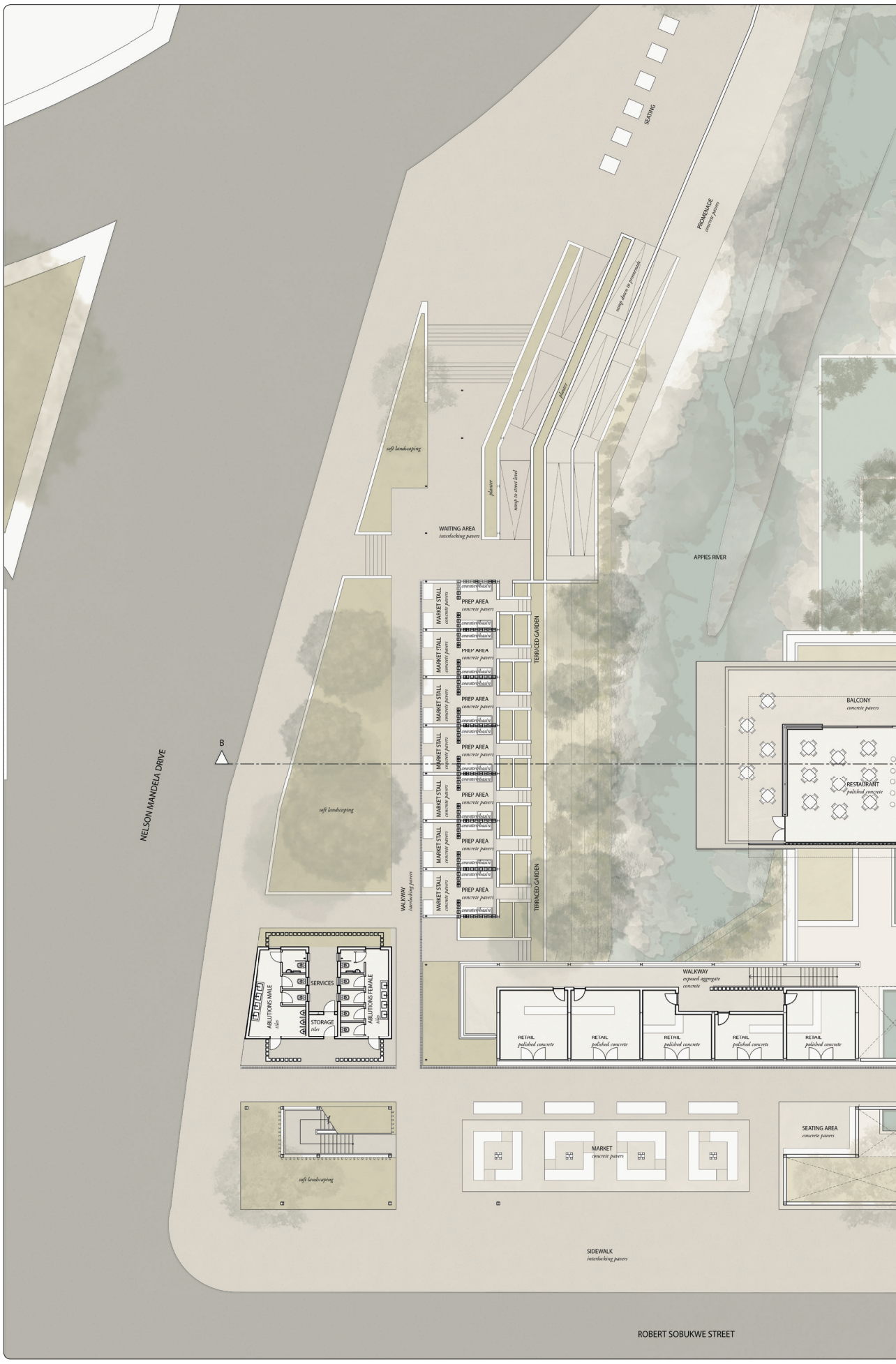
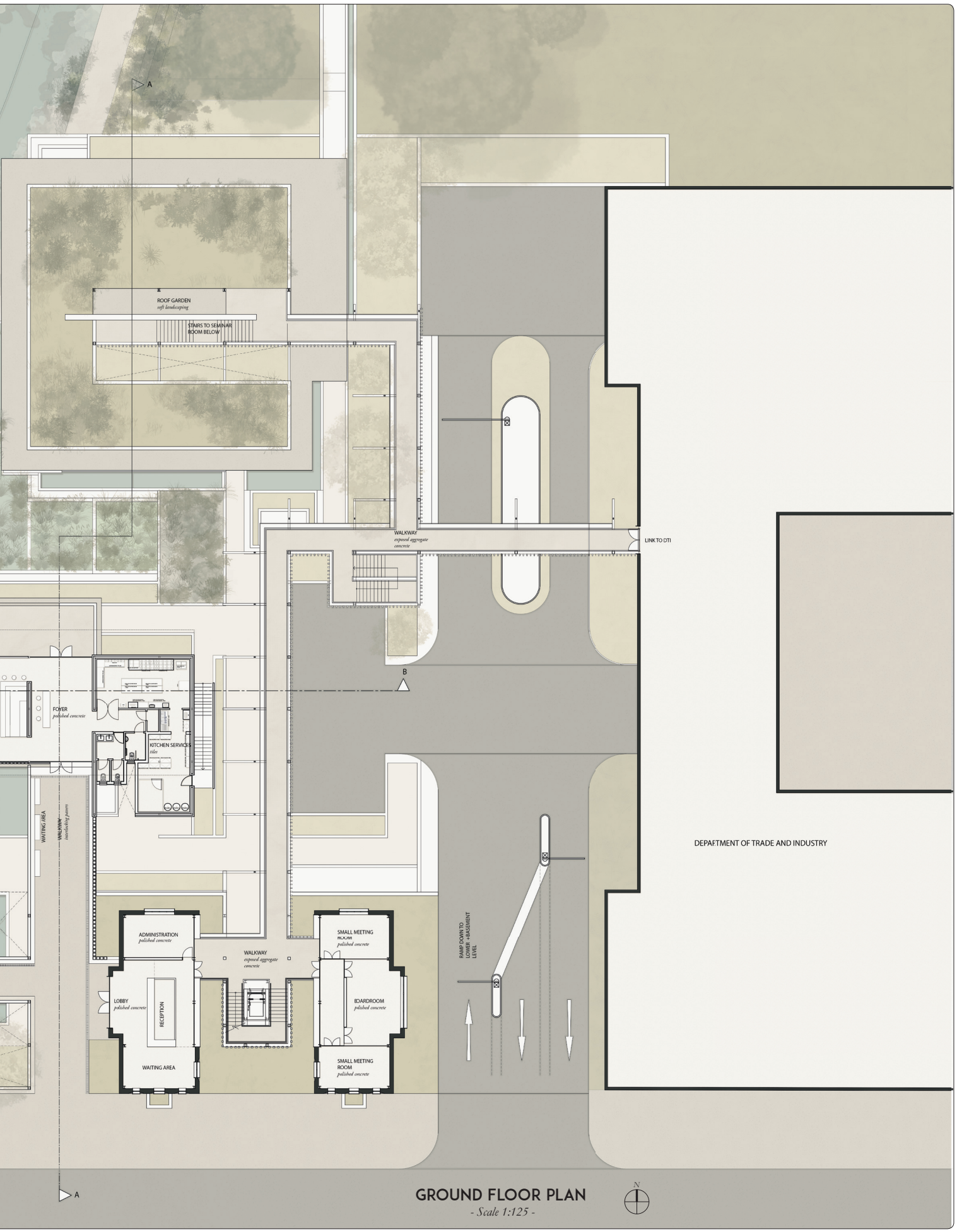


Figure 7.80: Final Ground floor plan (Author 2019)



GROUND FLOOR PLAN

- Scale 1:125 -

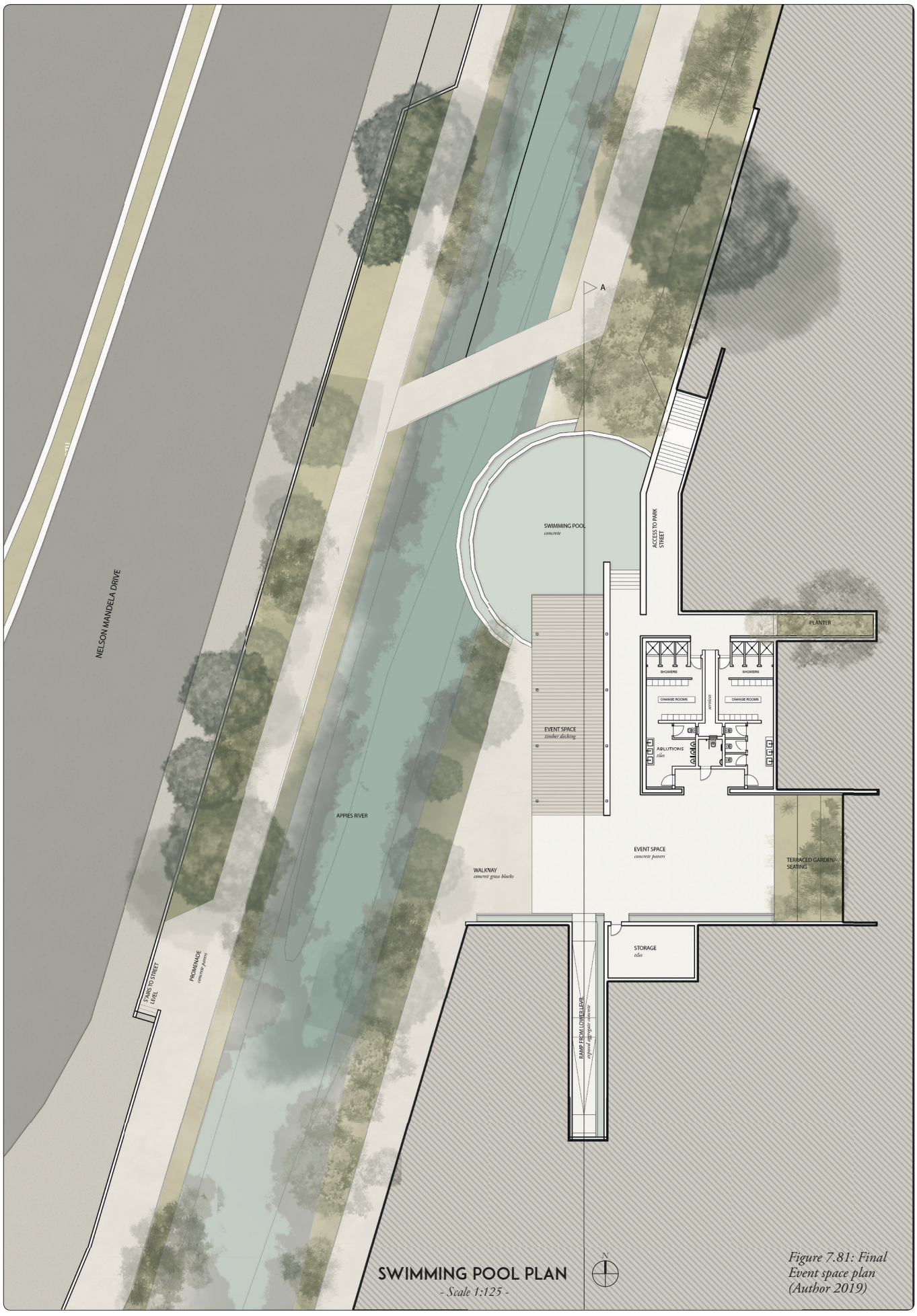


Figure 7.81: Final Event space plan (Author 2019)



Figure 7.82: Aerial view of site (Author 2019)

AERIAL VIEW FROM ROBERT SOBUKWE STREET

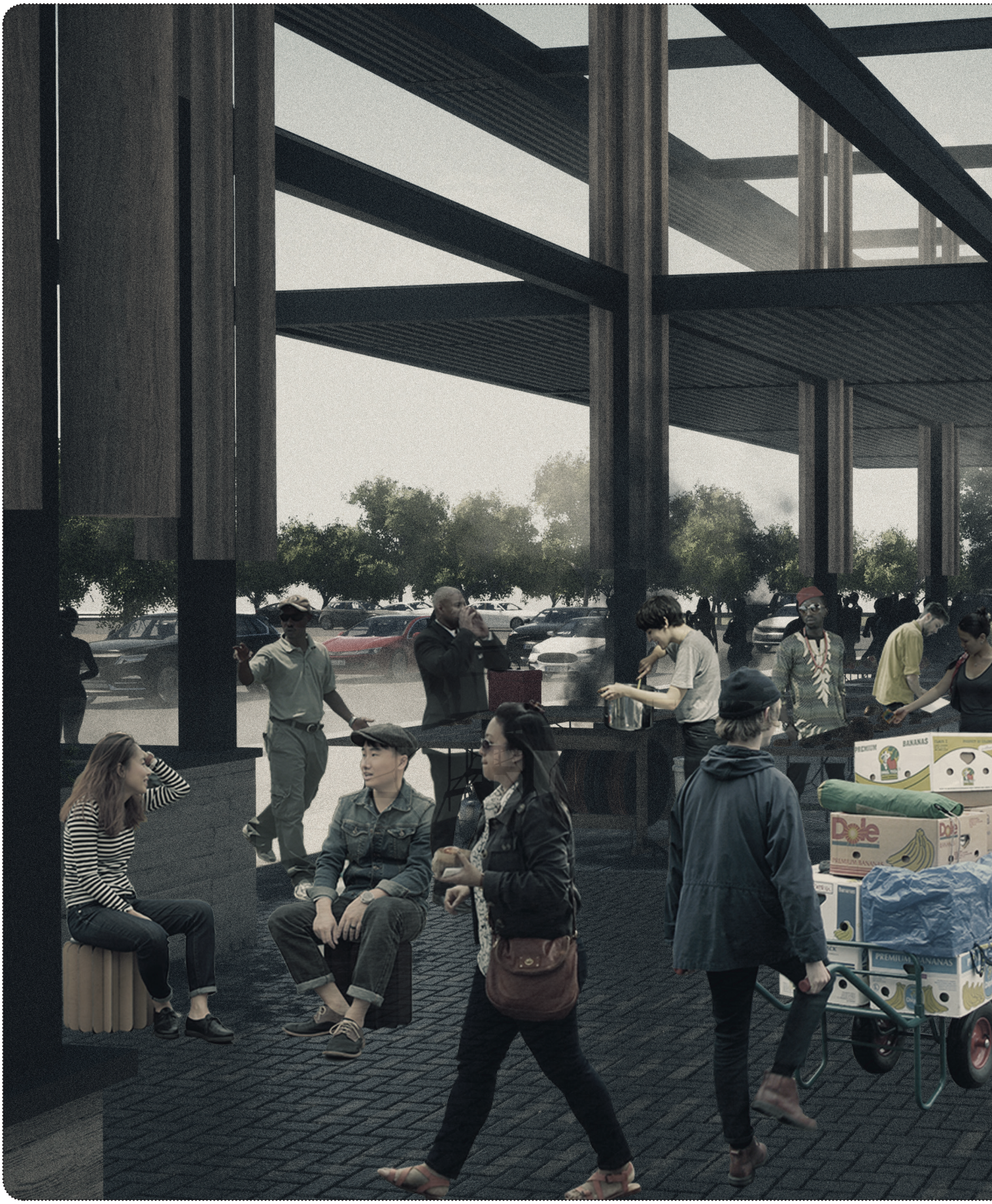


Figure 7.83: View A
(Author 2019)



VIEW OF MARKET SPACE

- View A -

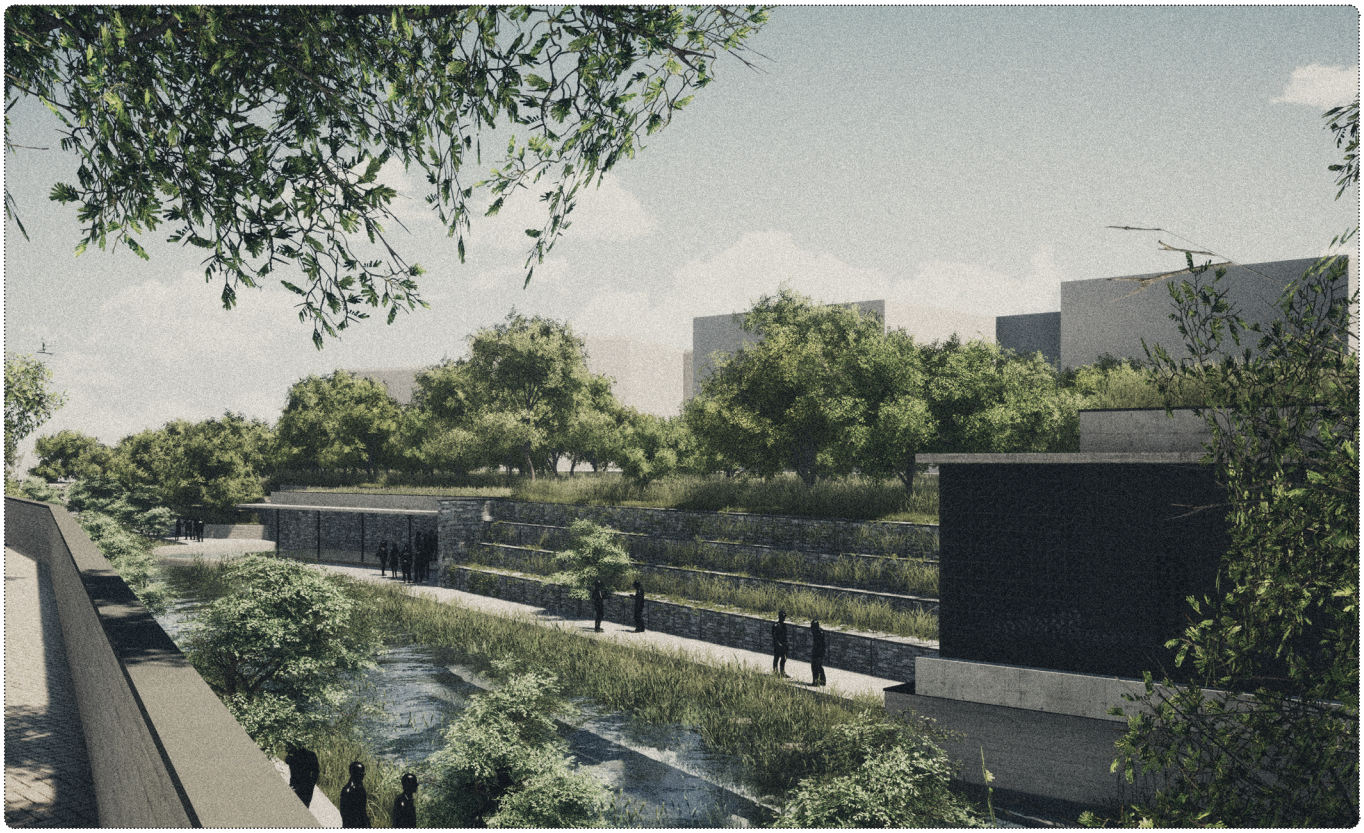


Figure 7.84: View B
(Author 2019)



VIEW OF TRADING STALLS

- View B -

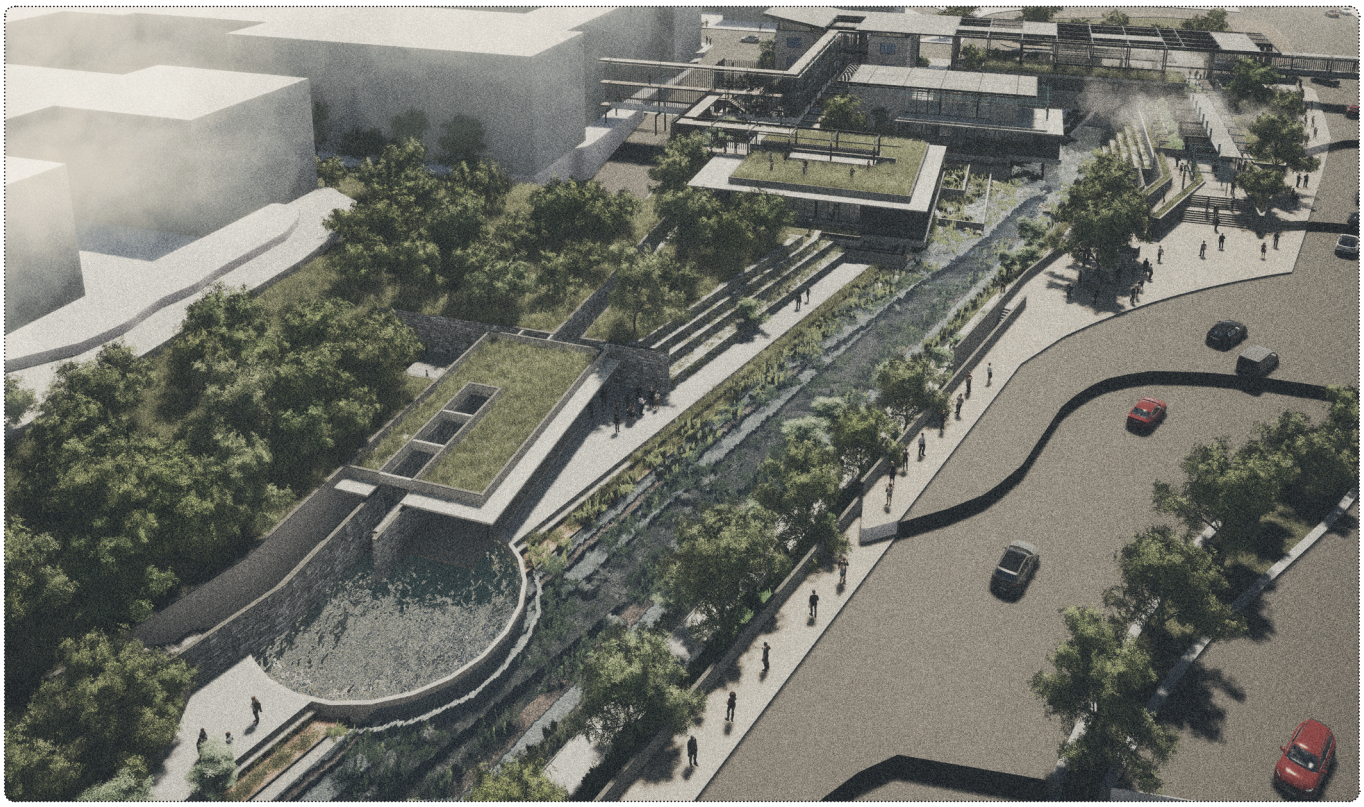


APIES PROMENADE

- View C: view of the Apies river -

Figure 7.85: Top: View C (Author 2019)

Figure 7.86: Bottom: View D (Author 2019)



EMBEDDED WITHIN THE LANDSCAPE

- View D: Aerial view from Nelson Mandela drive -

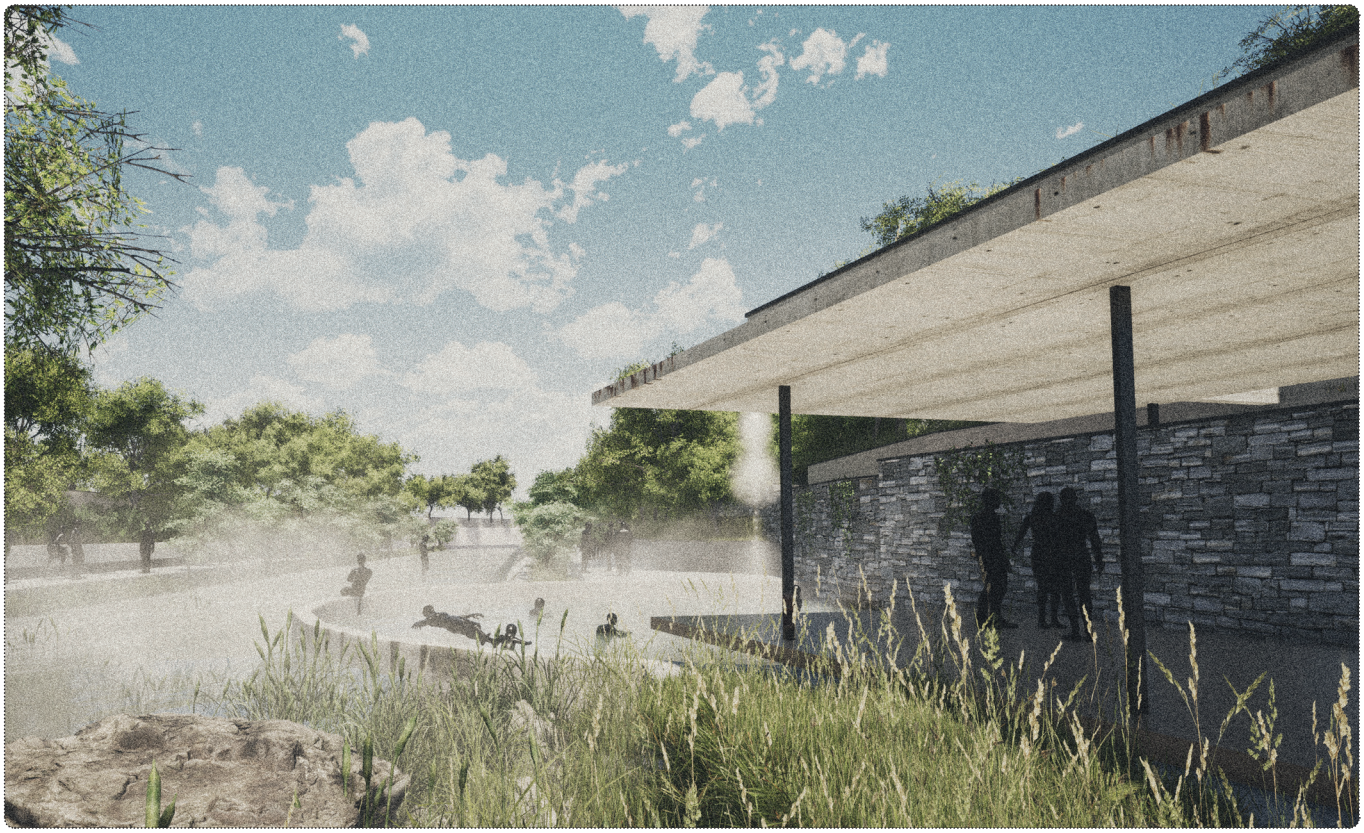
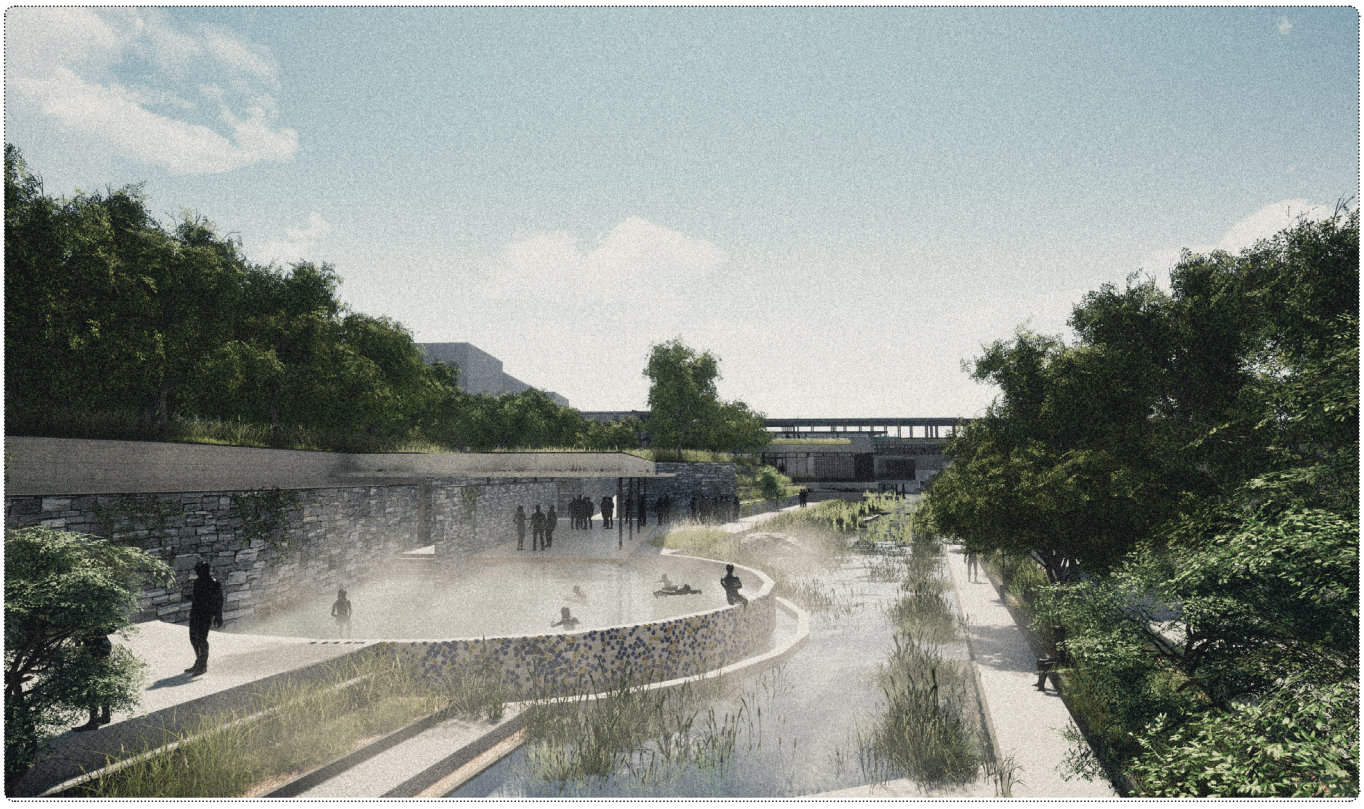


Figure 7.87: Top: View E (Author 2019)

Figure 7.88: Bottom: View F (Author 2019)

EVENT SPACE AND SWIMMING POOL

- View E: view towards swimming pool-



EMBEDDED WITHIN THE LANDSCAPE

- View F: view towards event space -

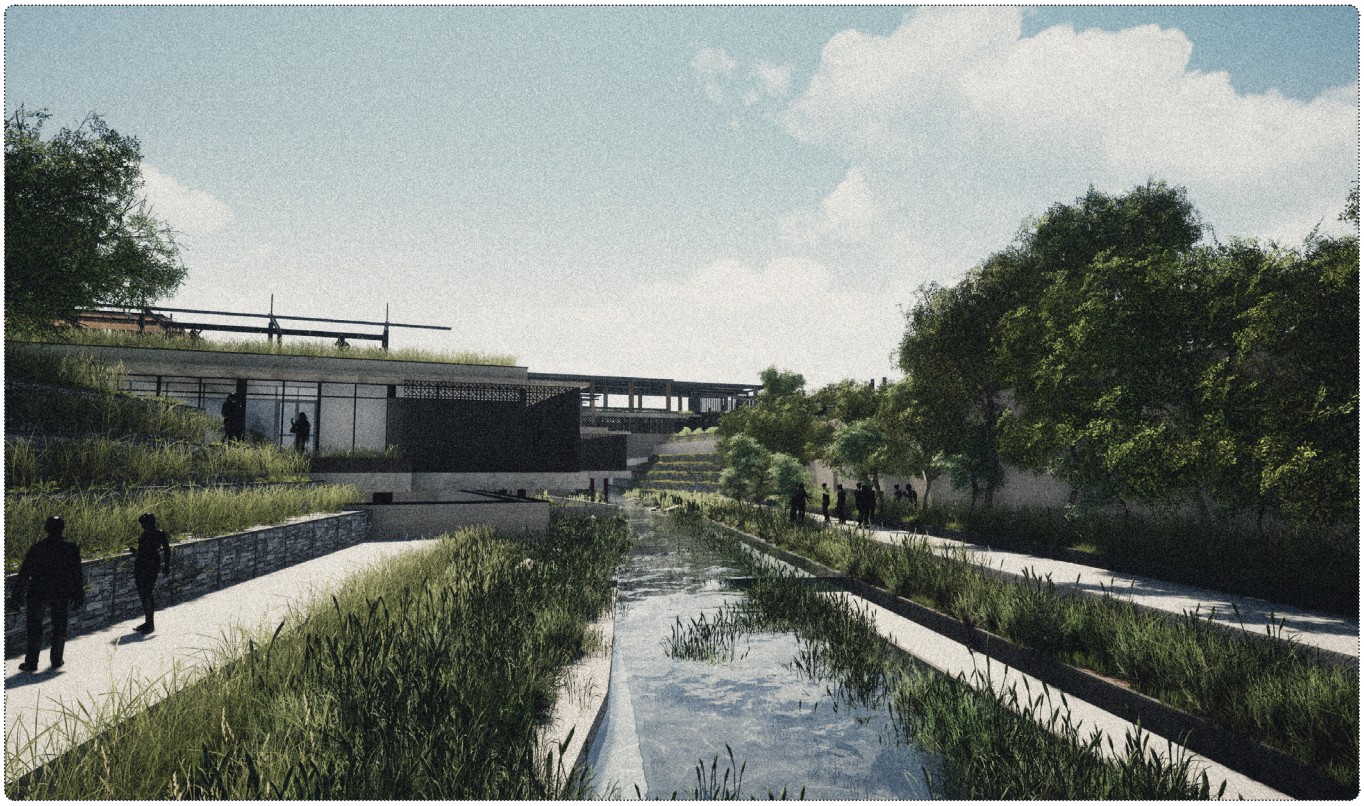


Figure 7.89: Top: View G (Author 2019)

WETLAND

- View G: wetland and Apies river -

Figure 7.90: Bottom: View H (Author 2019)



VIEW FROM EVENT SPACE

- View H: Promenade from event space -

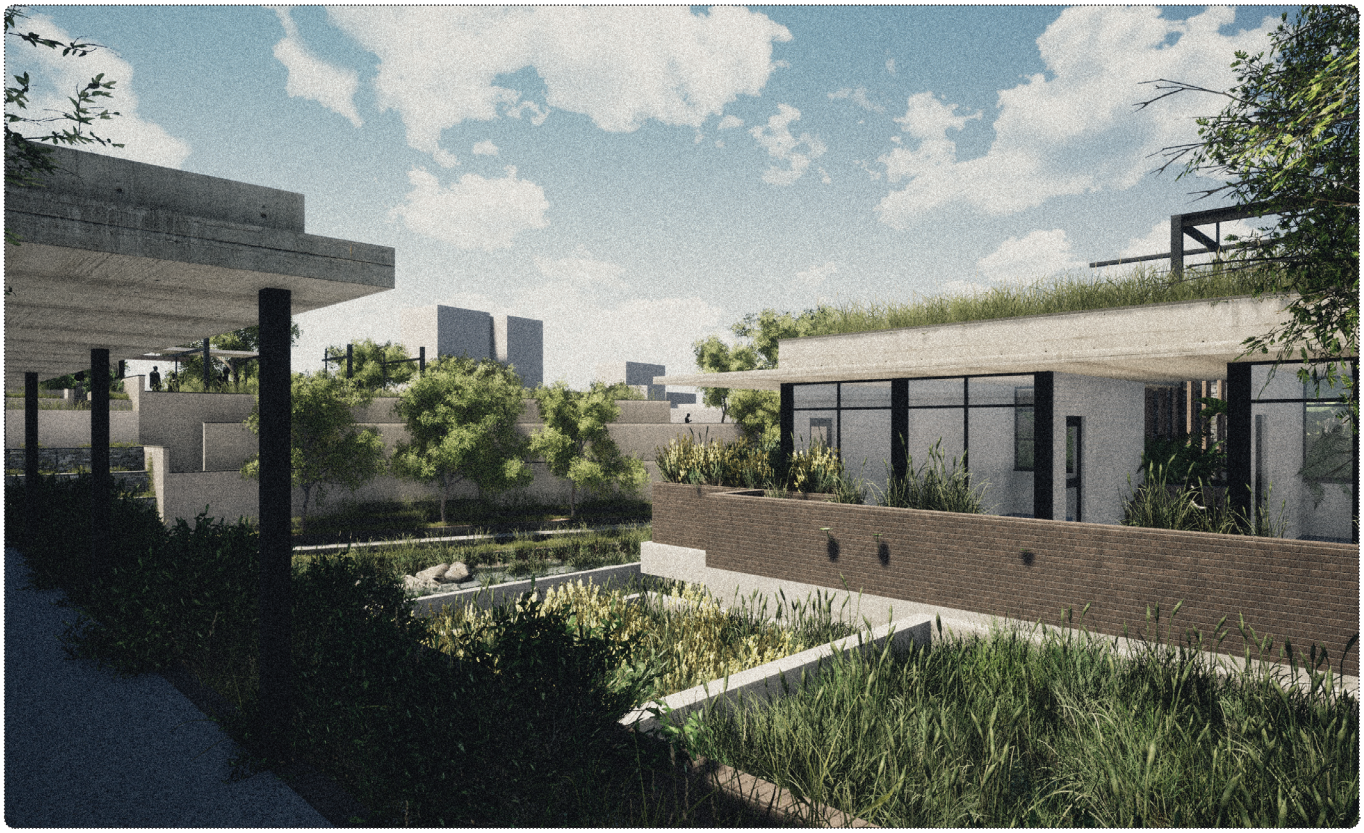
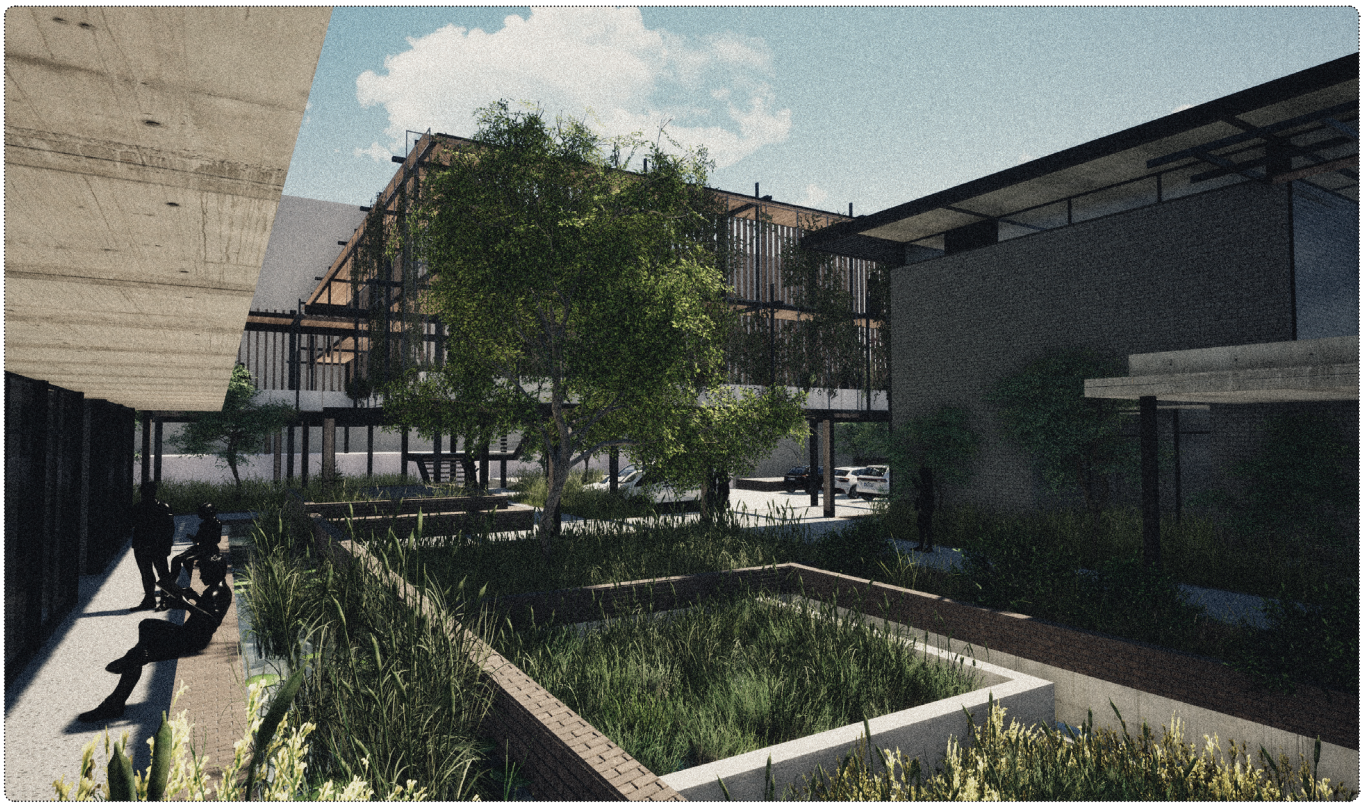


Figure 7.91: Top: View J
(Author 2019)

Figure 7.92: Bottom: View K
(Author 2019)

STUDIOS
- View J: View of studios from workshop -



COURTYARD
- View K: View of courtyard from studios -

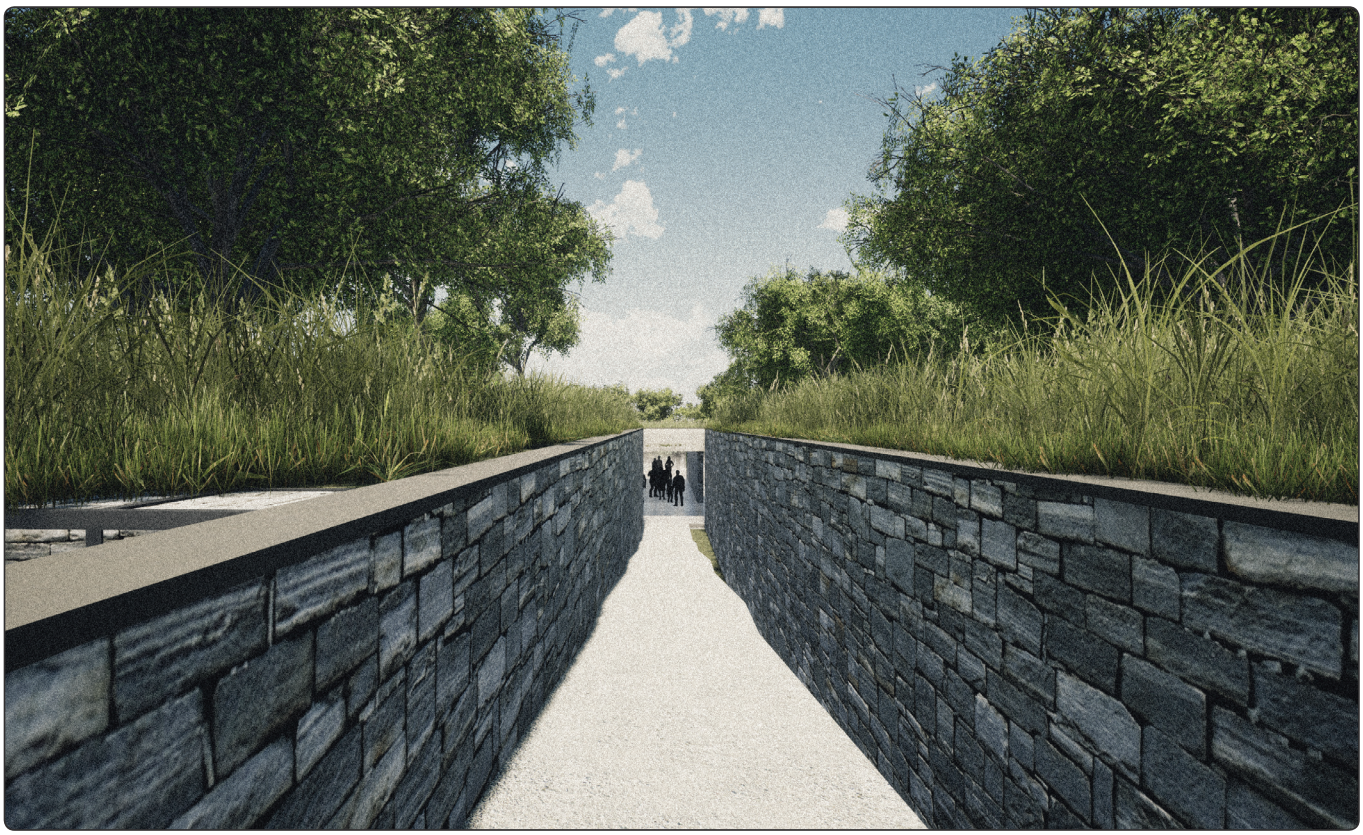


Figure 7.93: Top: View L
(Author 2019)

SUBMERSION
- View L: View towards event sapce -

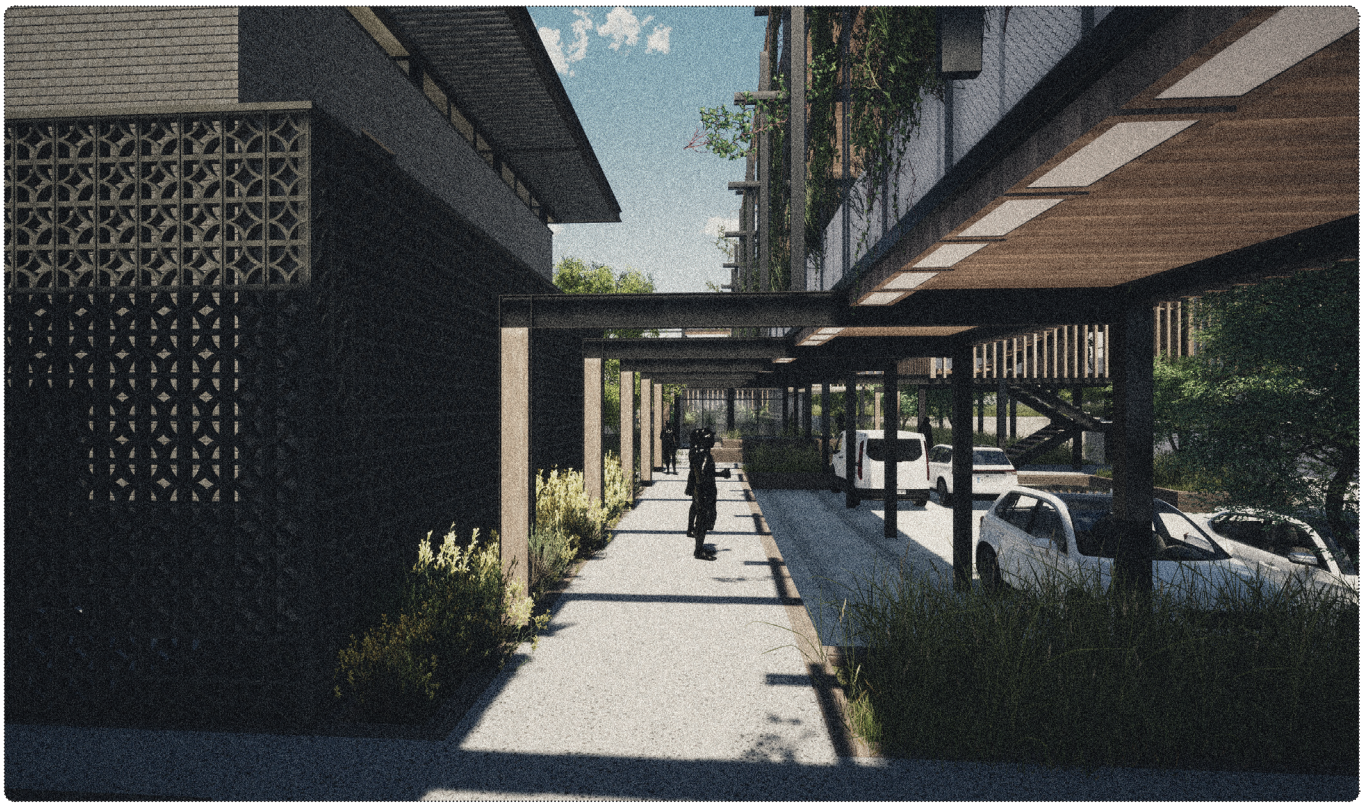


Figure 7.94: Bottom: View M
(Author 2019)

CIRCULATION
- View M: View of walkway from entrance -

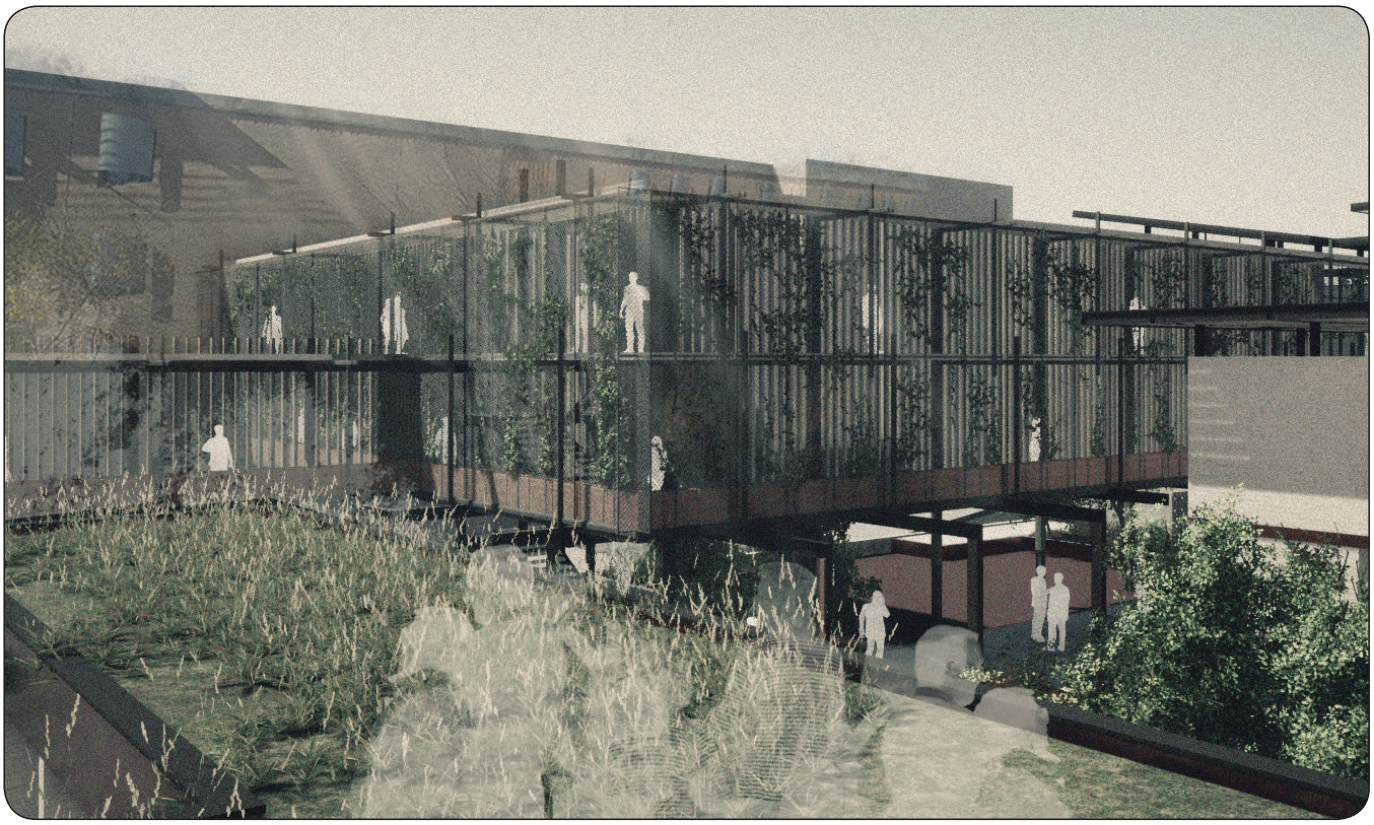


Figure 7.95: Top: View N
(Author 2019)

Figure 7.96: Bottom: View O
(Author 2019)

SUBMERSION
- View N: View of DTI link -



SUBMERSION
- View O: View of seminar room + outdoor space -

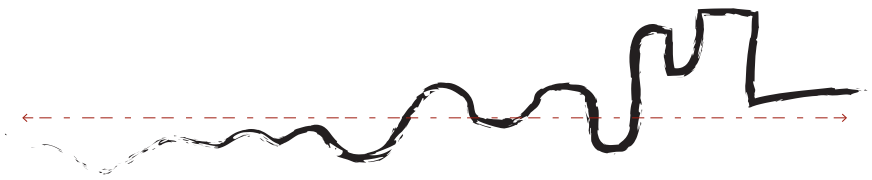
Tectonic



Stereotomic

Figure 8.1: Top: Tectonic concept (Author 2019)

Figure 8.2: Bottom: Technical transitions (Author 2019)



Natural cite' *fosters* *Man-made ville*

Configure built environment to allow for better lived experiences

Techne’
08

Technical concept

Natural transition
As a result of the current disconnect between man and the Apies river, a new approach to building is required that will foster spiritual or productive connections with the natural landscape.

The concept of transconfiguration as a complete change in form or appearance into a more beautiful or spiritual state, has been implemented in the design as well as the technification of this project.

In conjunction with the three place-making design strategies, the intervention seeks to reconnect man with the Apies river by becoming a transitionary medium that facilitates a progression of man-made to natural, interactions with the landscape. As the users interact and move through the site, interactions with the natural landscape become more frequent and finally reaches a point where the user is completely immersed within the landscape - the structure, material palette, aesthetics and systems are used to achieve this.

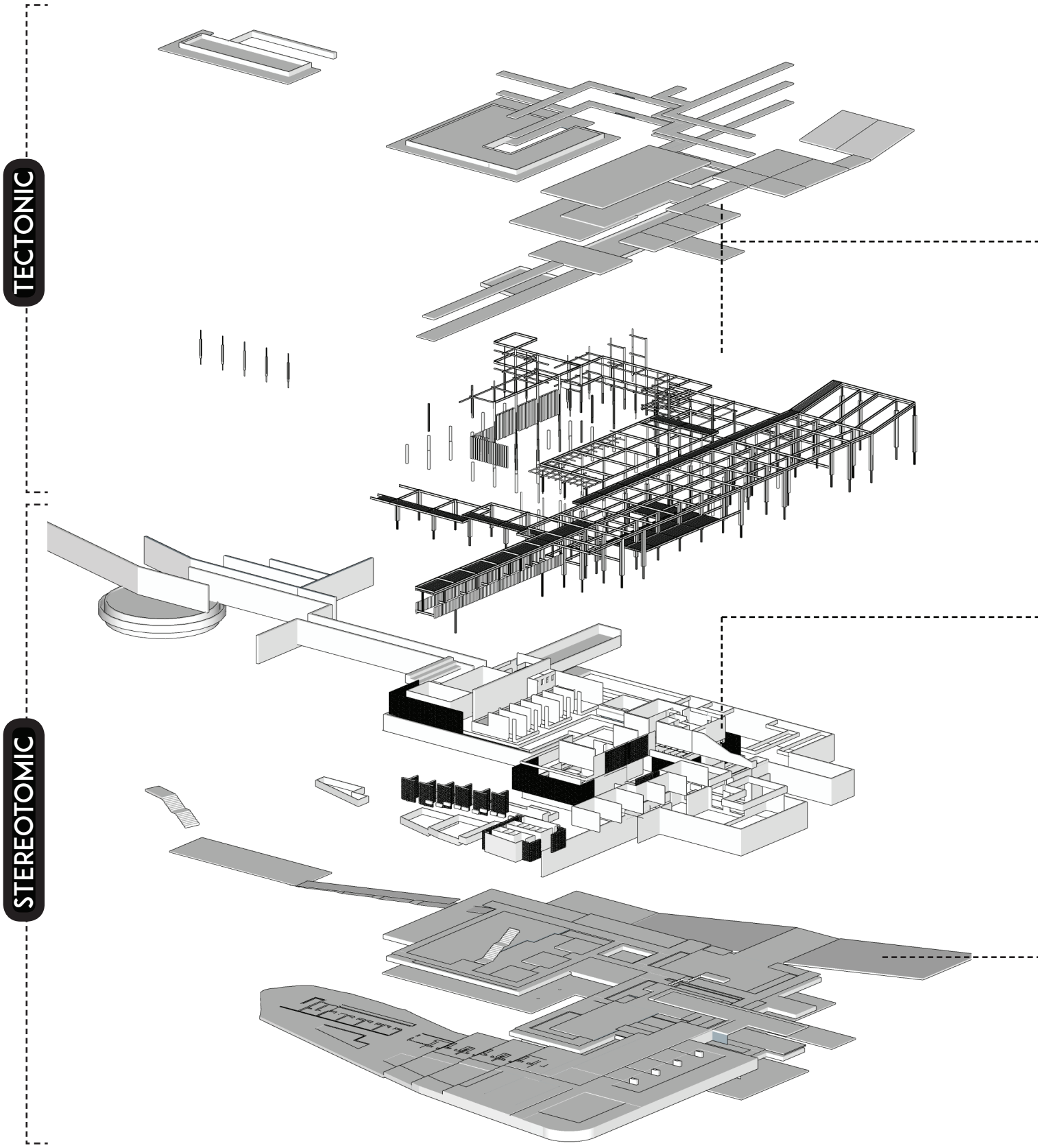
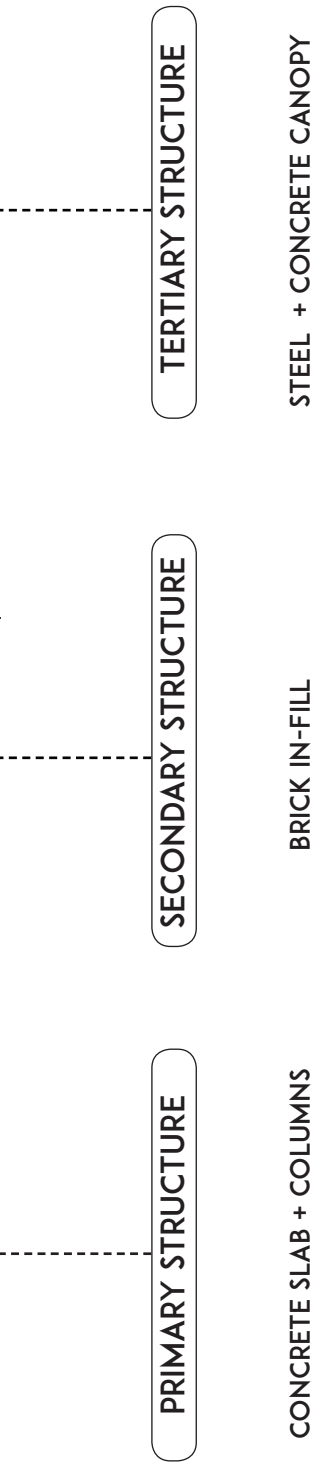


Figure 8.3: Structural concept (Author 2019)



Structure – Stereotomic/tectonic

In order to reconnect man and nature on a productive and spiritual level, the structure needs to be robust enough to allow for appropriation by both parties. A combination of stereotomic (concrete and brick) and tectonic (steel and timber) structures will be used to accommodate the everyday public activities whilst also allowing nature to appropriate the structure by becoming infrastructure for the plants to grow on, in and against.

The market space, situated on the periphery of the site, adopts a more stereotomic aesthetic as this area needs to be robust enough for the appropriation of humans and their everyday rituals relating to preparing and selling of food. It is also here where the stereotomics are more visible. There is a regression in the stereotomic visibility as one moves into the site towards the recreation space. This regression in visibility allows the structure of the building to adopt a more supporting role as infrastructure for the landscape. This reinforces the concept of transconfiguration as it allows the ville (built environment) to transform into a more spiritual state and re-establishes man's connection to nature and thus creating better lived experiences (cité).

The tectonic steel structure becomes lighter and assumes a more natural aesthetic as one moves from the market space towards the recreational space. The tectonic steel elements used in the market space is heavier and relates more to the stereotomic mass that surrounds it, but as you move closer to the recreational space the steel is cladded with wood to merge with the rest of the natural material pallet and eventually convey the idea that man is being completely immersed in the landscape.

Material & Aesthetics

Natural transition and change over time

The material choices also respond to the concept of natural transitions by progressively taking on more natural qualities as they are embedded deeper within the landscape and thus creating richer experiences. The figure below illustrates how materials such as brick or concrete can be altered to achieve the natural progression. The use of steel and timber is also welcomed as their properties that change over time (weathering or decaying), strengthens the concept.

This transition can best be illustrated through the use of more man-made materials such as concrete and steel in the market space and as one moves deeper within the site the material palette changes into more natural materials such as wood and stone. These transitions towards the natural, speak not only of the new relationship between building and landscape, but also creates a stronger connection between man and nature. The permeability of these materials increases as part of this transition which allows more natural daylighting and the opportunity of natural ventilation to occur.

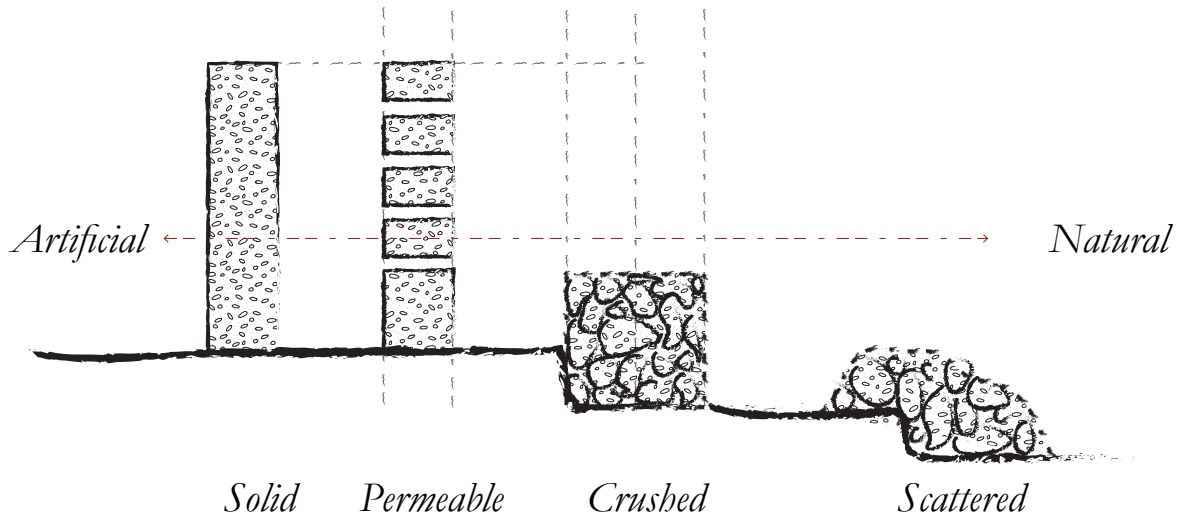


Figure 8.4: Material concept (Author 2019)

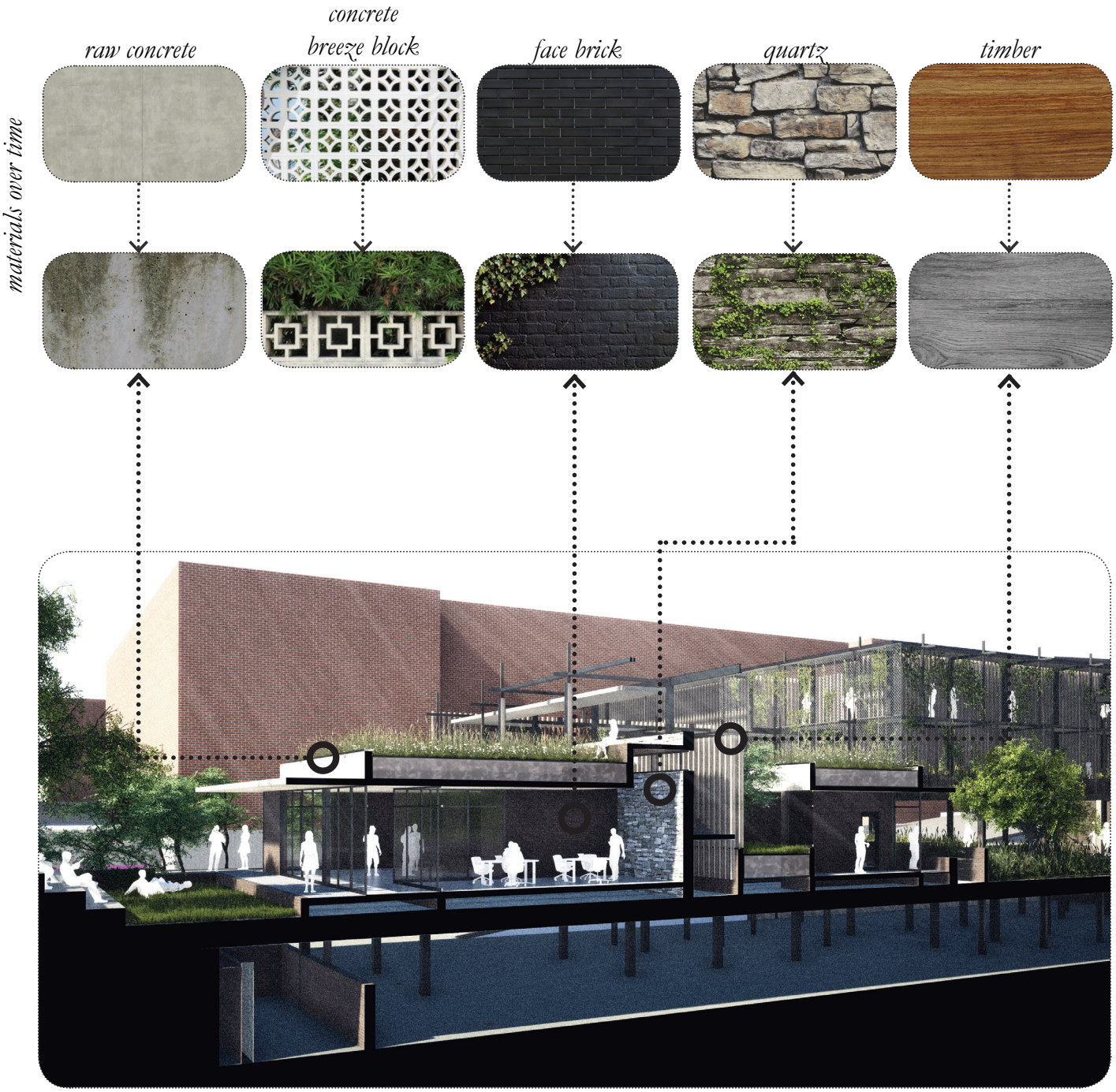


Figure 8.5: Top: Material palette (Author 2019)

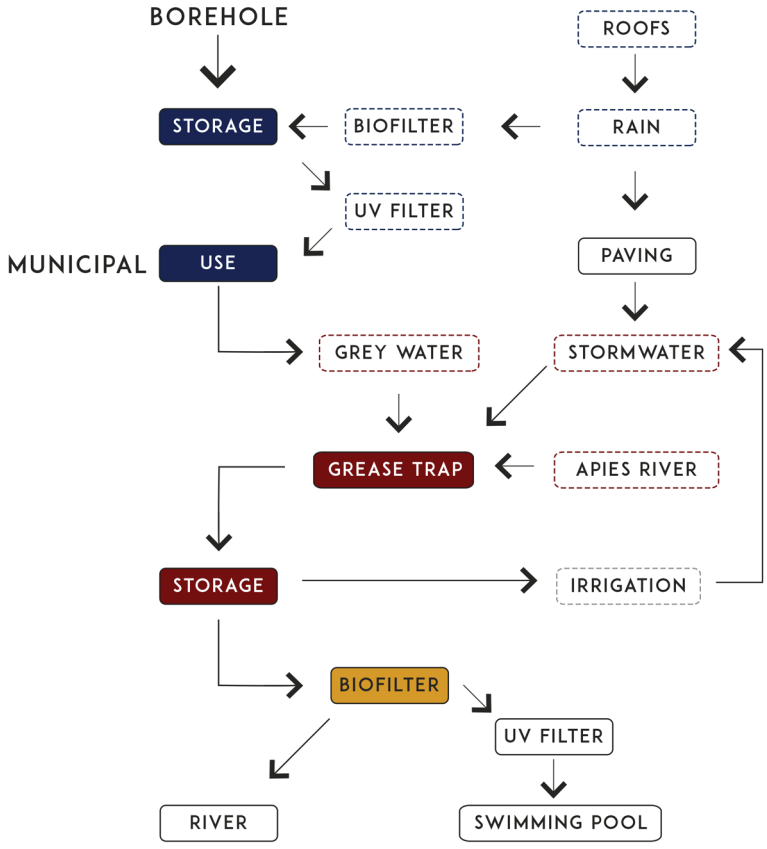
Figure 8.6: Bottom: Section D (Author 2019)

Water harvesting and treatment systems

As described in the programme chapter, water is a resource that needs to be conserved. For this project to be sensitive to the current environmental condition, water will be harvested, treated, stored, reused as well as redistributed back into the city through the Apies river.

For water to be safely treated, storm and grey water will be harvested and treated separately from rain water. Storm water will be collected from surface runoff, stored in underground tanks together with greywater, then after it will be filtered and used for irrigation and flushing toilets. To successfully remove contaminants from wastewater, a five step process is necessary. The first step is to remove any floating debris from the storm water before it is enters the channels, this is done by simply covering the storm water channel with a mentis grid. The second and third step requires any suspended solids (heavier than water) and colloidal particles (lighter than water) to be removed. By running the wastewater (at this point it is both storm and grey water) through a grease trap, the sediments will fall to the bottom of the tank and the oils will stay at the top allowing clear affluent to pass through into a storage tank.

Figure 8.7: Water treatment process (Author 2019)



At this stage, the wastewater has a high nutrient level and can directly be used for the irrigation of plants but if not, the water will pass through a biofilter (in the form of a tiered wetland) where the substances are stripped by the microorganism within the filter as well aerated which turns the dissolved substances into a gas that escapes the water.

After the filtration process, the some of the water is stored to flush toilets but the rest is discharged back into the river and used for recreation purposes. The last step in the purification process is to remove any pathogens that are present through the use of a uv filter. Although the wastewater won't be made potable to an extend where it is consumed by people, it is recommend to run the water through a uv filter before it is used in the swimming pool.

The process to treat rainwater is simpler. The rainwater is collected from roofs, where it is then treated for dissolved substances through a biofilter. After filtration water is stored and pumped a pressure vessel when needed. Before the water reaches the tap, it goes through a UV filter, killing pathogens and making int potable.

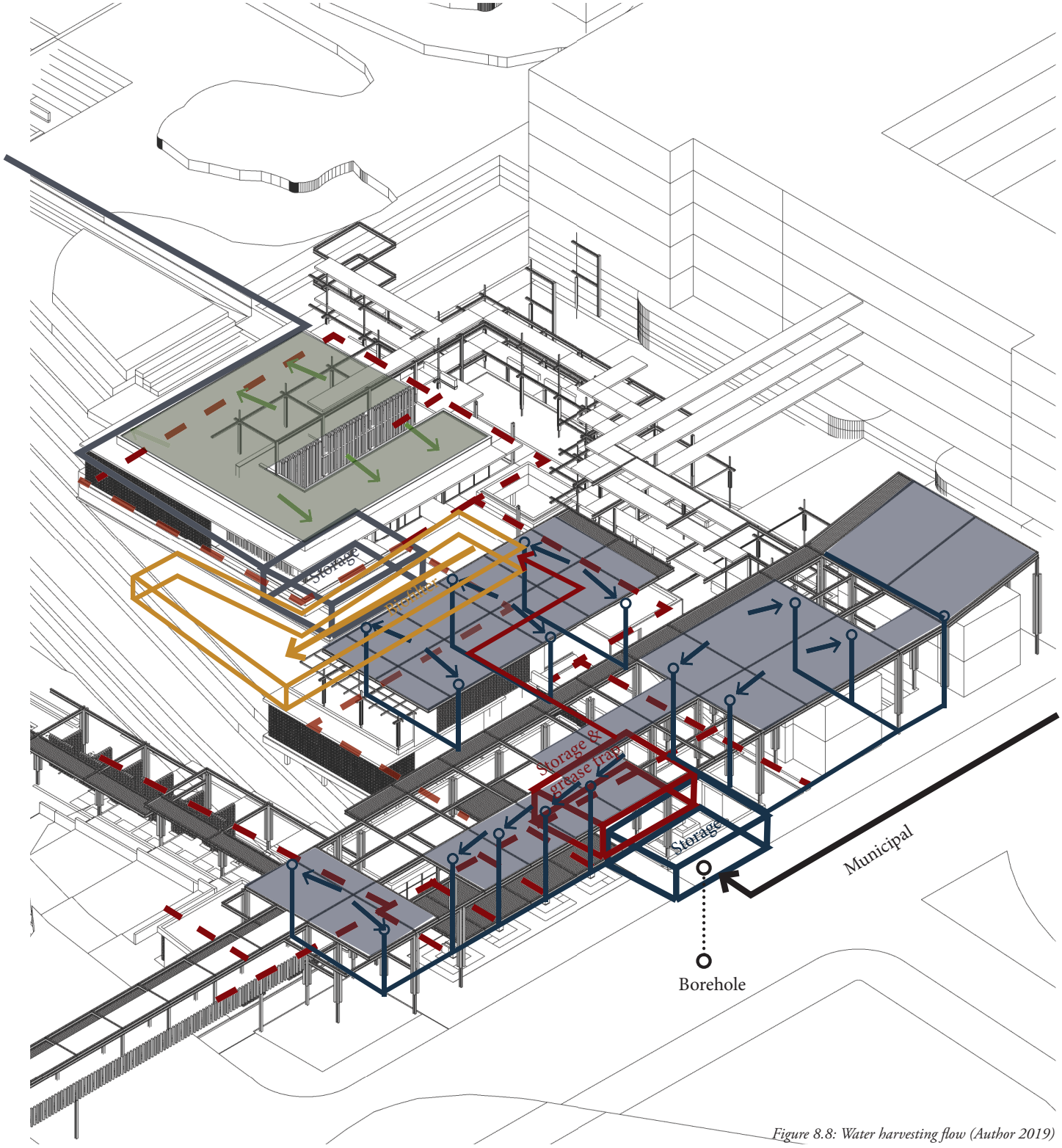
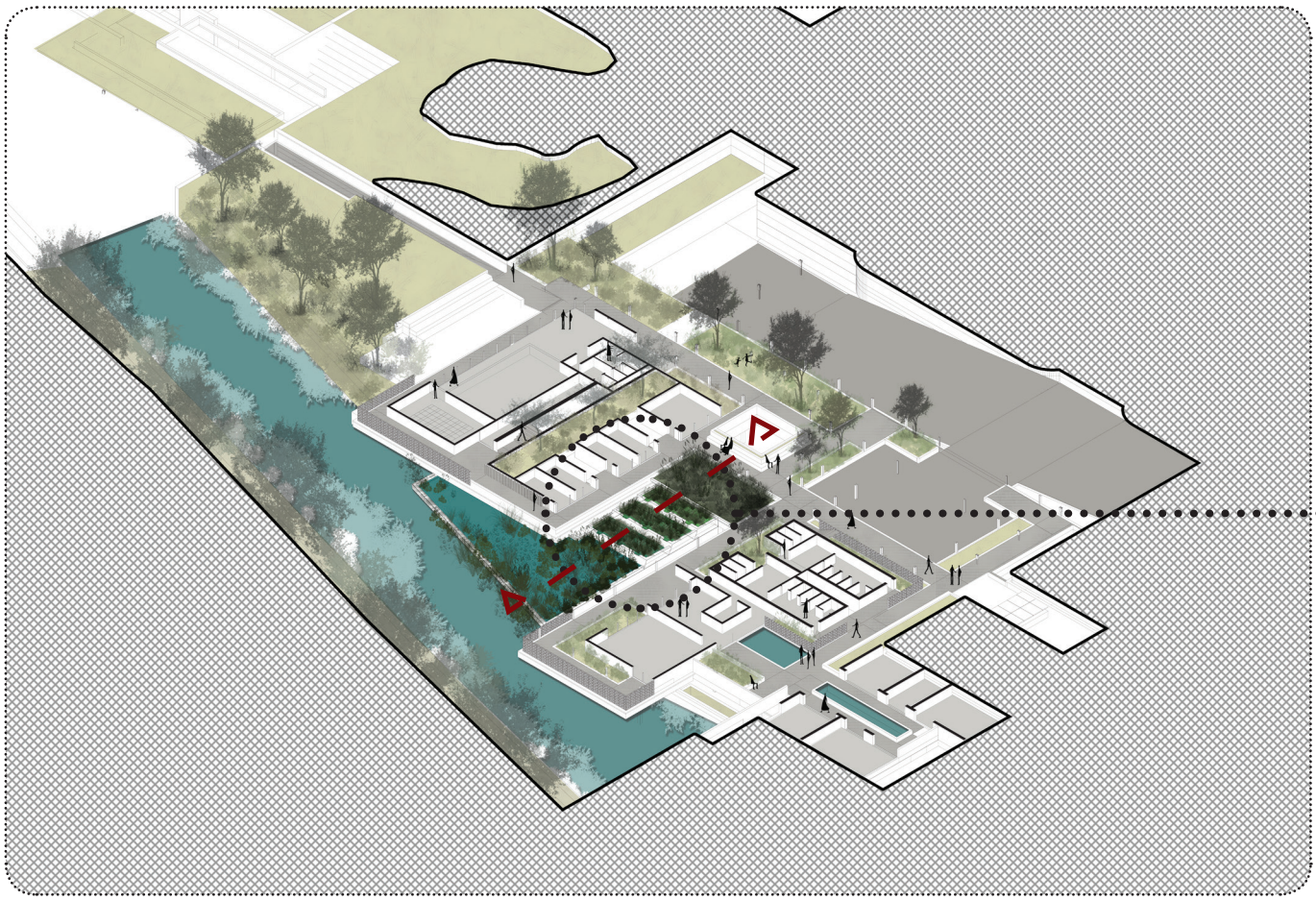
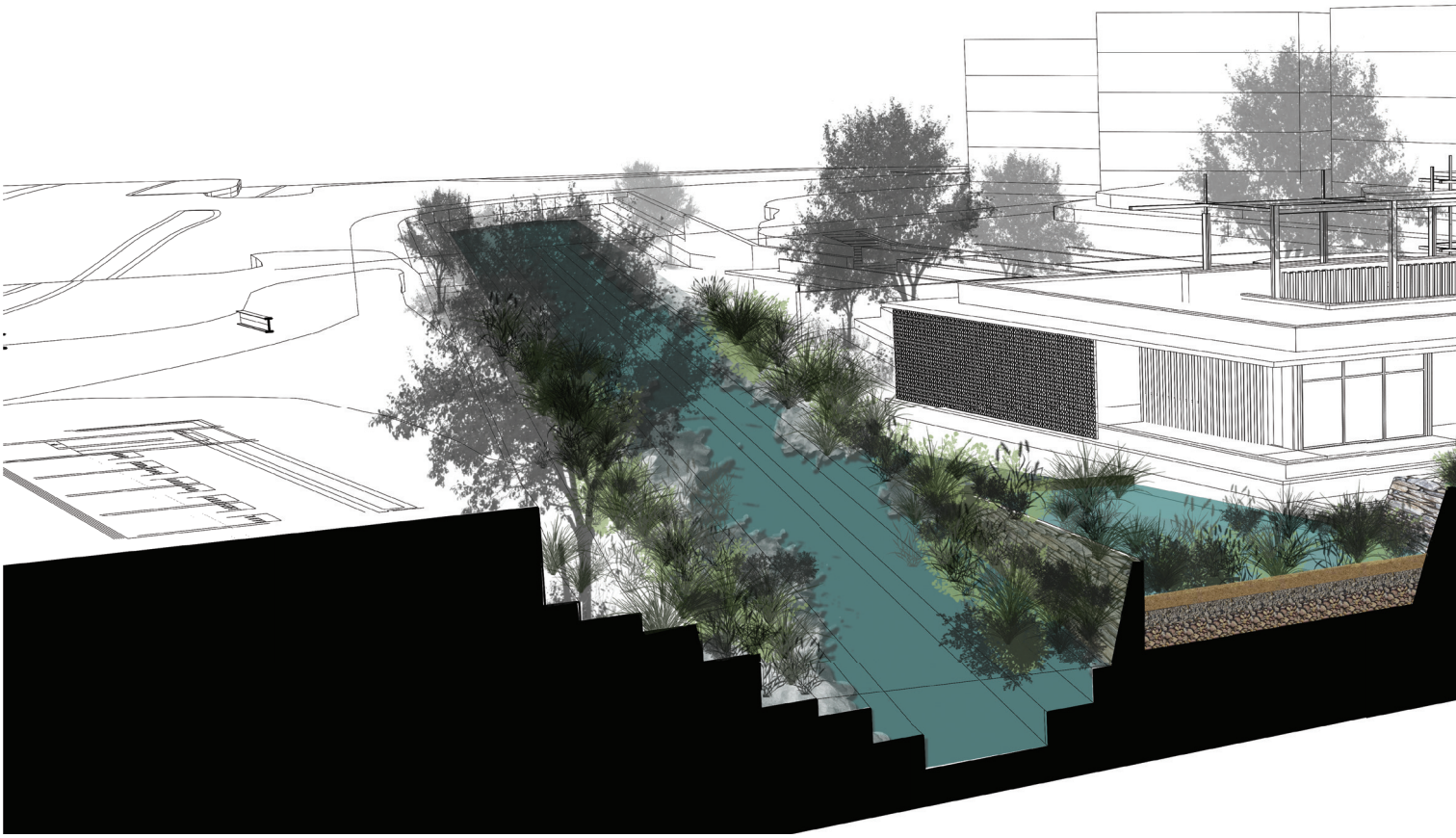


Figure 8.8: Water harvesting flow (Author 2019)





Constructed wetland - Wastewater treatment

The decision to use a tiered constructed wetland to treat wastewater is threefold, one it is a relatively low cost infrastructure (Pruned 2009), two it contributes towards the regenration of the Apies river and three is reinforces a visual and physical connection between man and the natural environment.

The wetland is step number four in the wastewater treatment process. After the wastewater has gone through the grease trap to remove any soaps or oils, the water is pumped to a trickle filter where the water will be gravity-fed and filtered through the wetland. To combat any bad odors, the water flow will not be on the surface but rather directed below a layer of gravel. Within the layers of sand and stone, microorganism extract the contaminants from the water. To further enhance the power of the biofiltration process, plants with phytoremediating qualities, will also be used to clean contaminates from the water (Pruned 2009). After the water has be treated, it is stored and used for either the flushing of toilets or recreation at the swimming pool.

Figure 8.9: Top left: Wetland section position (Author 2019)

Figure 8.10: Bottom: Section E - Wetland (Author 2019)



3. DEMAND (IRRIGATION AND DOMESTIC)

IRRIGATION DEMAND

	PLANTING AREA (M^2)	IRRIGATION DEPTH PER WEEK (M)	IRRIGATION DEPTH PER MONTH (M)	IRRIGATION DEMAND (M^3)
JANUARY	1 972 M^2	0,040 M	0,177 M	349 M^3
FEBRUARY	1 972 M^2	0,040 M	0,160 M	316 M^3
MARCH	1 972 M^2	0,040 M	0,177 M	349 M^3
APRIL	1 972 M^2	0,030 M	0,129 M	254 M^3
MAY	1 972 M^2	0,020 M	0,089 M	175 M^3
JUNE	1 972 M^2	0,020 M	0,086 M	169 M^3
JULY	1 972 M^2	0,020 M	0,086 M	169 M^3
AUGUST	1 972 M^2	0,020 M	0,089 M	175 M^3
SEPTEMBER	1 972 M^2	0,030 M	0,129 M	254 M^3
OCTOBER	1 972 M^2	0,040 M	0,177 M	349 M^3
NOVEMBER	1 972 M^2	0,040 M	0,171 M	338 M^3
DECEMBER	1 972 M^2	0,040 M	0,177 M	349 M^3
YEAR	**1 972 M^2 (AVERAGE)**	**0,032 M (AVERAGE)**	**1,646 M (TOTAL)**	**3 245 M^3 (TOTAL)**

DOMESTIC DEMAND

	NUMBER OF INDIVIDUALS	WATER / CAPITA / DAY (LITRES)	TOTAL WATER / MONTH (LITERS)	DOMESTIC DEMAND (M^3)
JANUARY	0	6 852 L	212 406 L	212 M^3
FEBRUARY	0	6 852 L	212 406 L	212 M^3
MARCH	0	6 852 L	212 406 L	212 M^3
APRIL	0	6 852 L	212 406 L	212 M^3
MAY	0	6 852 L	212 406 L	212 M^3
JUNE	0	6 852 L	212 406 L	212 M^3
JULY	0	6 852 L	212 406 L	212 M^3
AUGUST	0	6 852 L	212 406 L	212 M^3
SEPTEMBER	0	6 852 L	212 406 L	212 M^3
OCTOBER	0	6 852 L	212 406 L	212 M^3
NOVEMBER	0	6 852 L	212 406 L	212 M^3
DECEMBER	0	6 852 L	212 406 L	212 M^3
YEAR	**0 (AVERAGE)**	**40 L (AVERAGE)**	**212 406 L (TOTAL)**	**2 549 M^3 (TOTAL)**

434 PEOPLE PER DAY - 142 PERSONNEL ; 292 PUBLIC OCCUPANTS.

PUBLIC PEOPLE	APPLIANCES	LITRES/DAY /PERSON SERVED	TOTAL DEMAND PER DAY (LTR)
434	HANDWASHING: SPRAY TAPS	1	434
434	URINAL FLUSHING 8H DAY	3,7	1605,8
434	WC FLUSHING	5	2170
30	SHOWER WORKERS	34	1020
434	DRINKING	3	1302
64	FOOD PREP AND COOKING	5	320
	TOTAL LITERS PER DAY		6851,8
	TOTAL LITRES PERPERSON PER DAY		40

INCUBATOR OCCUPANTS	108
CAFÉ OCCUPANTS	83
MARKET OCCUPANTS	243

Figure 8.11: Water calculations (Author 2019)

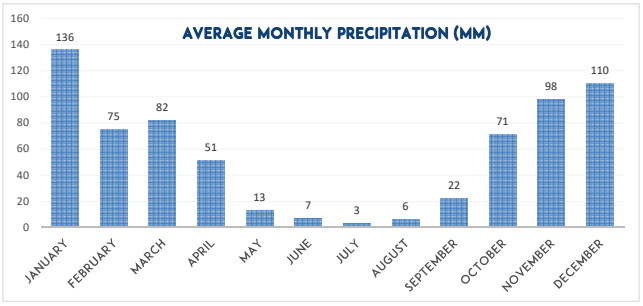
1. Climate Data

Place: Pretoria

Position: 26°11'S, 28°1'E
Height: 1330m
Period: 1961-1990

Descriptive text

	MONTH	Temperature				Precipitation		
		Highest Recorded	Average Daily maximum	Average Daily Minimum	Lowest Recorded	Average Monthly (mm)	Average number of Days >== 1mm	Highest 24hr rainfall (mm)
1.	January	36	29	18	8	136	14	160
2.	February	36	28	17	11	75	11	95
3.	March	35	27	16	6	82	10	84
4.	April	33	24	12	3	51	7	72
5.	May	29	22	8	-1	13	3	40
6.	June	25	19	5	-6	7	1	32
7.	July	26	20	5	-4	3	1	18
8.	August	31	22	8	-1	6	2	15
9.	September	34	26	12	2	22	3	43
10.	October	36	27	14	4	71	9	108
11.	November	36	27	16	7	98	12	67
12.	December	35	28	17	7	110	15	50
	YEAR	**36**	**25**	**12**	**-6**	**674**	**88**	**160**

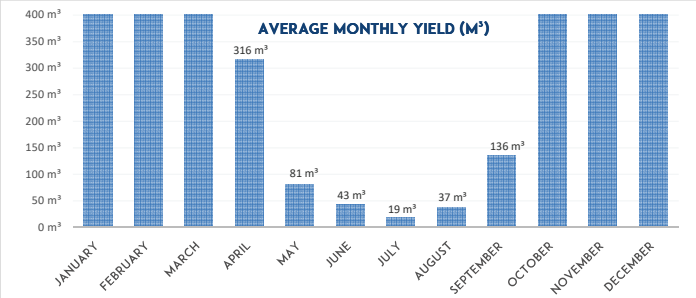


2. YIELD

YIELD (M^3) = P X A X C (WHERE P=PRECIPITATION (M), A=AREA (M^2), AND C=RUN-OFF COEFFICIENT)

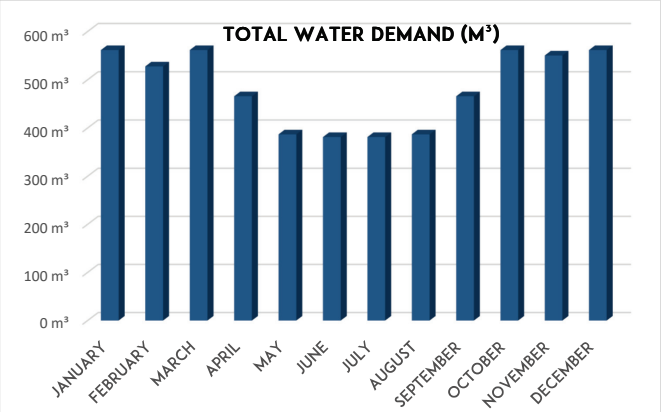
PER SURFACE (PER SURFACE)	AREA (M^2)	RUN-OFF COEFFICIENT
ROOF MARKET	1 434,00 M^2	0,9
ROOF CAFÉ	367,00 M^2	0,9
ROOF WALKWAY	552,00 M^2	0,9
PAVING	3 661,00 M^2	0,9
GREEN ROOF	522,00 M^2	0,4
LANDSCAPED AREA	1 450,00 M^2	0,4
APIES RIVER		
TOTAL:	**7 986,00 M^2**	0,78

	MONTH	PRECIPITATION AVERAGE MONTHLY (MM)	AREA	RUN-OFF COEFFICIENT	YIELD P(M) X A(M^2) X C
1.	JANUARY	136 MM	7 986 M^2	0,78	843 M^3
2.	FEBRUARY	75 MM	7 986 M^2	0,78	465 M^3
3.	MARCH	82 MM	7 986 M^2	0,78	509 M^3
4.	APRIL	51 MM	7 986 M^2	0,78	316 M^3
5.	MAY	13 MM	7 986 M^2	0,78	81 M^3
6.	JUNE	7 MM	7 986 M^2	0,78	43 M^3
7.	JULY	3 MM	7 986 M^2	0,78	19 M^3
8.	AUGUST	6 MM	7 986 M^2	0,78	37 M^3
9.	SEPTEMBER	22 MM	7 986 M^2	0,78	136 M^3
10.	OCTOBER	71 MM	7 986 M^2	0,78	440 M^3
11.	NOVEMBER	98 MM	7 986 M^2	0,78	608 M^3
12.	DECEMBER	110 MM	7 986 M^2	0,78	682 M^3
	YEAR	674 MM	7 986 M^2	0,78	4 180 M^3



3. TOTAL DEMAND

	IRRIGATION DEMAND (M^3)	DOMESTIC DEMAND (M^3)	TOTAL WATER DEMAND
JANUARY	349 M^3	212 M^3	**562 M^3**
FEBRUARY	316 M^3	212 M^3	**528 M^3**
MARCH	349 M^3	212 M^3	**562 M^3**
APRIL	254 M^3	212 M^3	**466 M^3**
MAY	175 M^3	212 M^3	**387 M^3**
JUNE	169 M^3	212 M^3	**381 M^3**
JULY	169 M^3	212 M^3	**381 M^3**
AUGUST	175 M^3	212 M^3	**387 M^3**
SEPTEMBER	254 M^3	212 M^3	**466 M^3**
OCTOBER	349 M^3	212 M^3	**562 M^3**
NOVEMBER	338 M^3	212 M^3	**550 M^3**
DECEMBER	349 M^3	212 M^3	**562 M^3**
YEAR	3 245 M^3 (TOTAL)	2 549 M^3 (TOTAL)	**5 794 M^3 (TOTAL)**

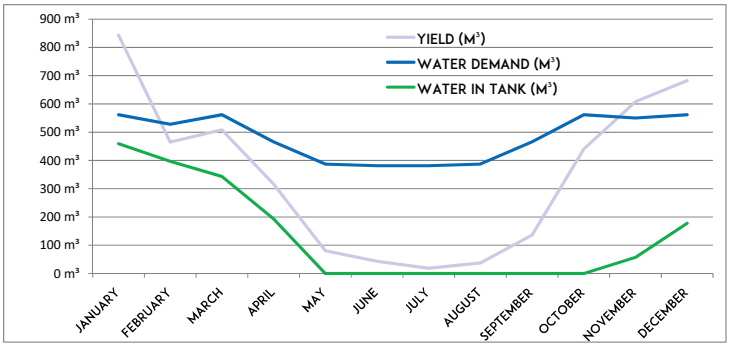


4. WATER BUDGET EXERCISE + SAFETY FACTOR + NUMBER OF TANKS NEEDED

	YIELD FROM ONSITE RUNOFF (M^3)	DEMAND TOTAL ONSITE WATER DEMAND (M^3)	MONTHLY BALANCE	WATER IN TANK/RESERVOIR (M^3)
JANUARY	843 M^3	562 M^3	282 M^3	**459 M^3**
FEBRUARY	465 M^3	528 M^3	- 63 M^3	**397 M^3**
MARCH	509 M^3	562 M^3	- 53 M^3	**343 M^3**
APRIL	316 M^3	466 M^3	-1 50 M^3	**194 M^3**
MAY	81 M^3	387 M^3	-3 06 M^3	**0 M^3**
JUNE	43 M^3	381 M^3	-3 38 M^3	**0 M^3**
JULY	19 M^3	381 M^3	-3 63 M^3	**0 M^3**
AUGUST	37 M^3	387 M^3	-3 50 M^3	**0 M^3**
SEPTEMBER	136 M^3	466 M^3	-3 30 M^3	**0 M^3**
OCTOBER	440 M^3	562 M^3	-1 21 M^3	**0 M^3**
NOVEMBER	608 M^3	550 M^3	57 M^3	**57 M^3**
DECEMBER	682 M^3	562 M^3	120 M^3	**178 M^3**
YEAR	**9 974 M^3 (TOTAL)**	**5 794 M^3 (TOTAL)**	16 14 M^3	

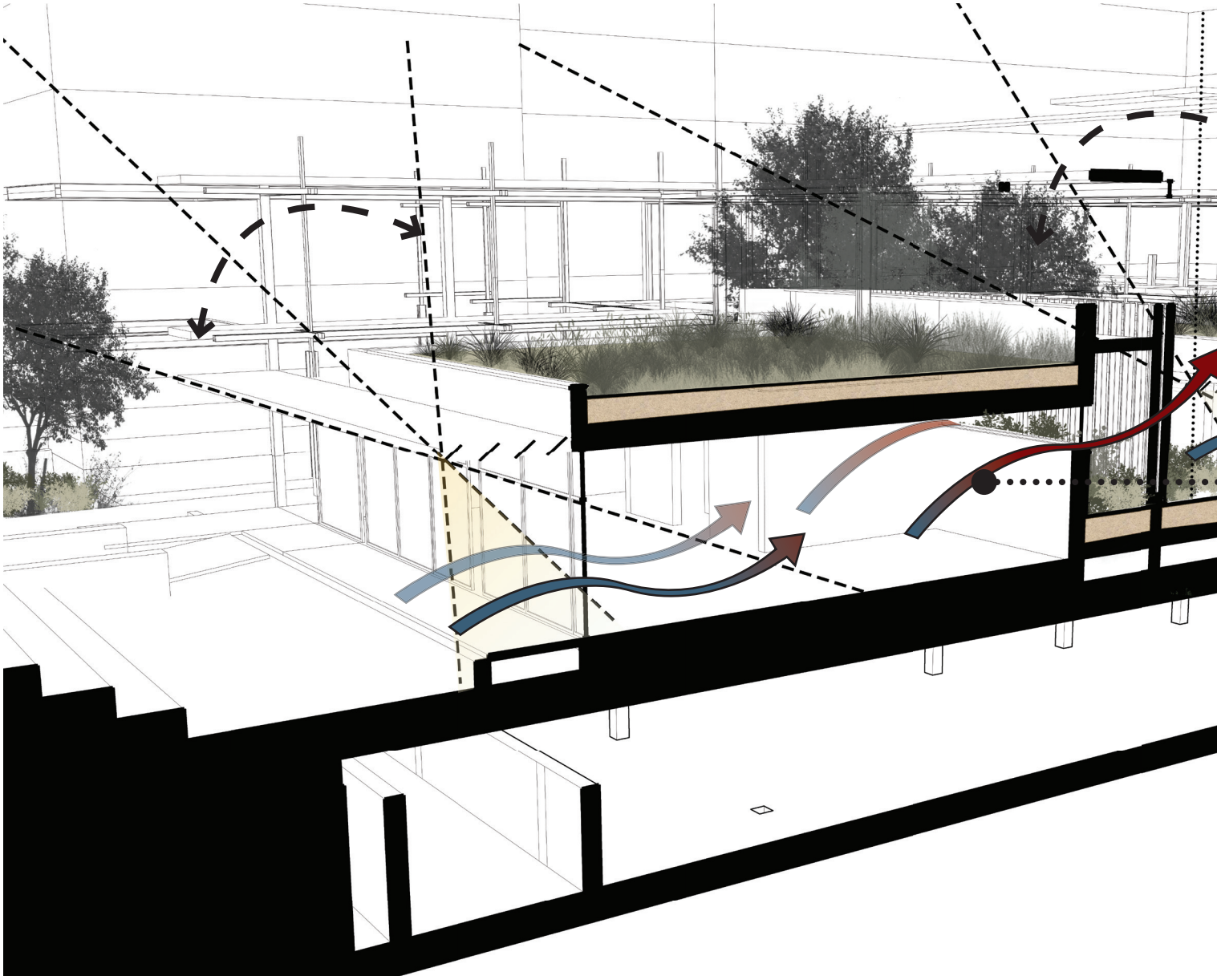
GREATEST VOLUME OF WATER IN TANK/RESERVOIR AT ANY TIME IS THE MINIMUM CAPACITY OF THE TANK	**459 M^3**

SAFETY FACTOR:	**1,5**	**FINAL TANK/RESERVOIR**	**689 M^3**
PROPRIETORY TANK VOLUME: (E.G. JOJO TANKS)	**1 000 L 1 M^3**	**NUMBER OF TANKS NEEDED**	**690**



Environment – Daylighting

As a response to optimise daylighting in all the spaces, all buidlings have been rotated to a north-south orientation. In the entrepreneurial training building, the depth of the spaces became an issue as they were too deep for natural light to penetrate. The floorplate had to be divided up with a courtyard to allow soft southern light to illuminate the seminar room. In both the seminar and studio spaces, overhangs and louvres are used to block harsh and direct sunlight. Through the use of the courtyard, the connection with the natural landscape is further enhanced by planting plants.



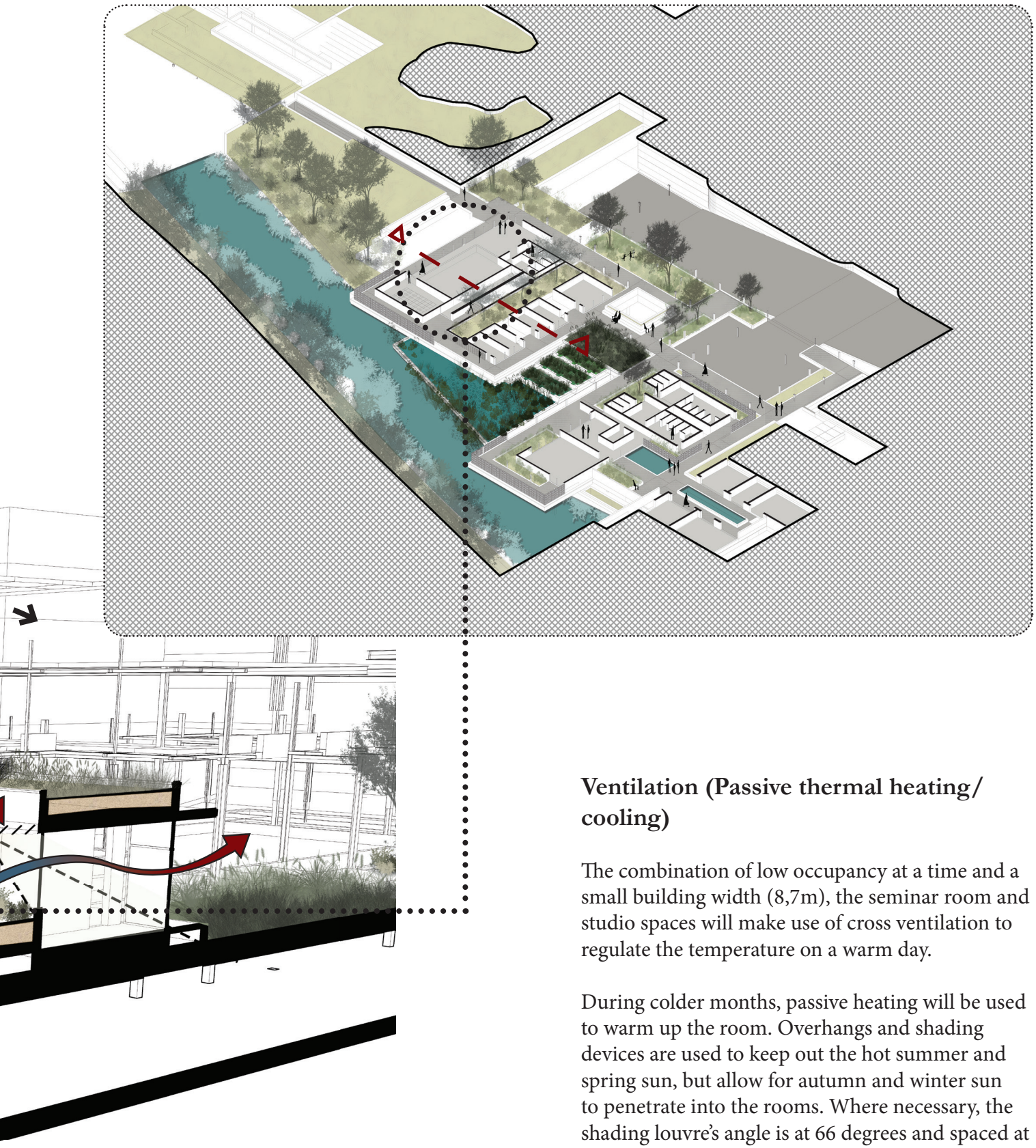


Figure 8.12: Top right: daylighting section position (Author 2019)

Figure 8.13: Bottom left: Section F - daylighting (Author 2019)

Ventilation (Passive thermal heating/ cooling)

The combination of low occupancy at a time and a small building width (8,7m), the seminar room and studio spaces will make use of cross ventilation to regulate the temperature on a warm day.

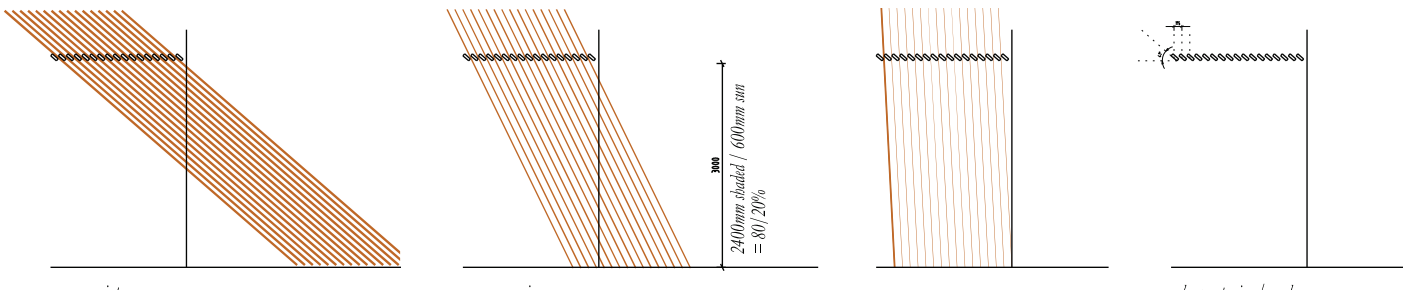
During colder months, passive heating will be used to warm up the room. Overhangs and shading devices are used to keep out the hot summer and spring sun, but allow for autumn and winter sun to penetrate into the rooms. Where necessary, the shading louvre's angle is at 66 degrees and spaced at an interval to allow for optimum sun in the colder months.

Where the building is exposed to harsh western sun, a brise soleil brick and concrete screens are used to block most direct sunlight out.



Figure 8.14: Top: Sectional perspective of studio louvers (Author 2019)

Figure 8.15: Bottom: Louvre design diagramme (Author 2019)



winter
sun azimuth @ 12:00 = 41deg.

equinox.
sun azimuth @ 12:00 = 64deg.

summer
sun azimuth @ 12:00 = 87deg.

louvre spacing / angle

***requirement: 80 % shaded equinox - summer equinox.*

Seminar room

Iteration 1

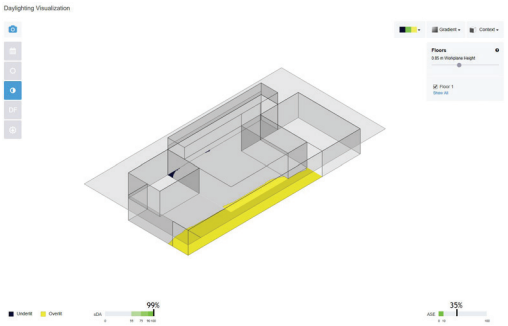


Figure 8.16: Seminar sDA iteration 1

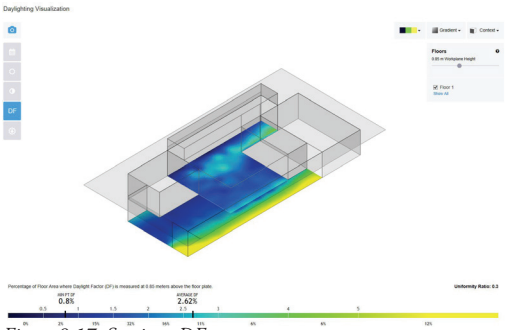


Figure 8.17: Seminar DF iteration 1

Iteration 2

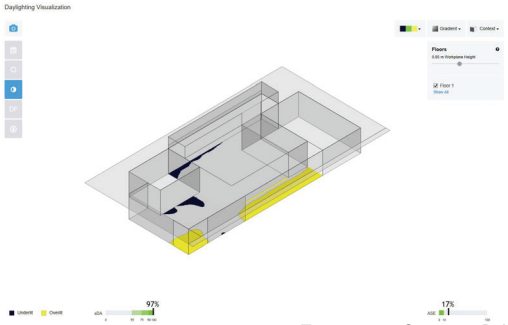


Figure 8.18: Seminar sDA iteration 2

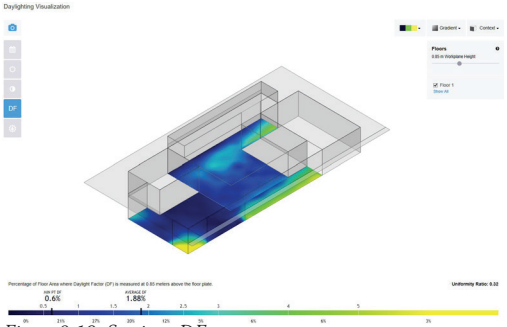


Figure 8.19: Seminar DF iteration 2

Iteration 3

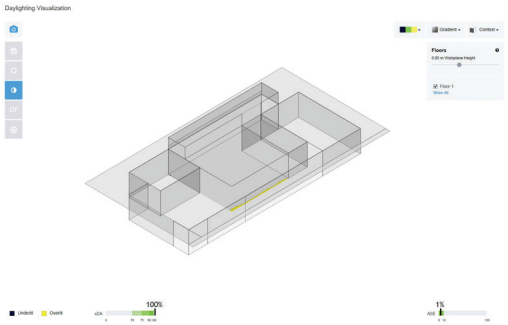


Figure 8.20: Seminar sDA iteration 3

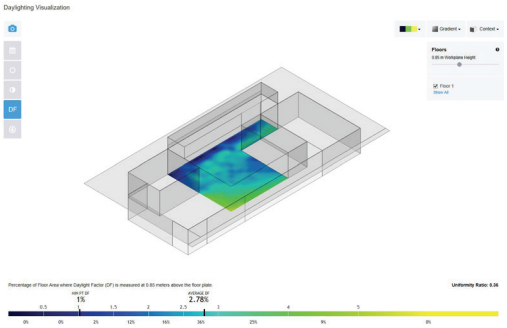


Figure 8.21: Seminar DF iteration 3

Studios

Iteration 1



Figure 8.22: Studios sDA iteration 1

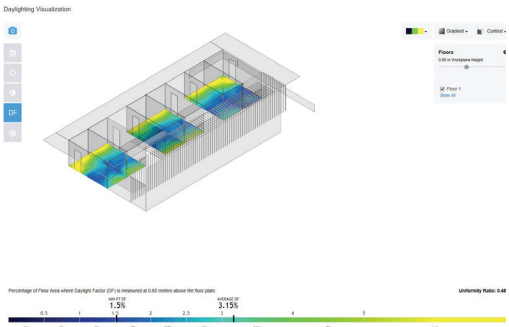


Figure 8.23: Studios DF iteration 1

Iteration 2

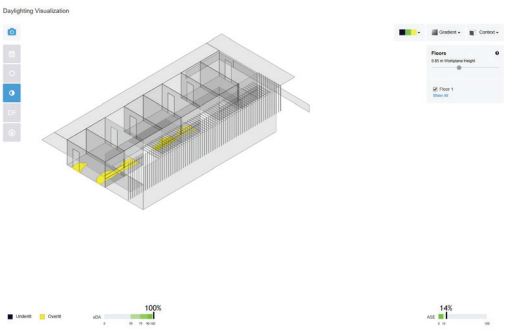


Figure 8.24: Studios sDA iteration 2

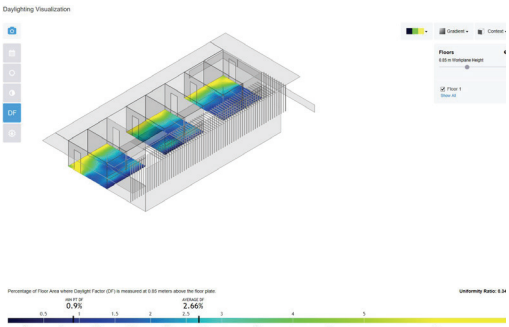
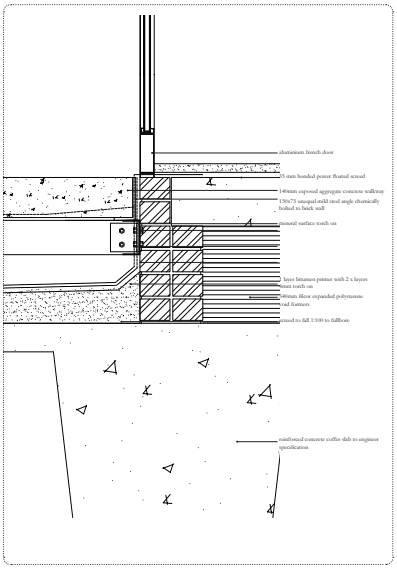


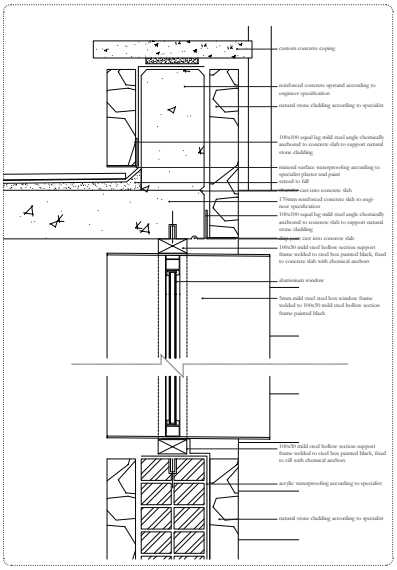
Figure 8.25: Studios DF iteration 2



DETAIL A - FLOOR
- Scale 1:5 -

Figure 8.26: Detail A - Floor (Author 2019)

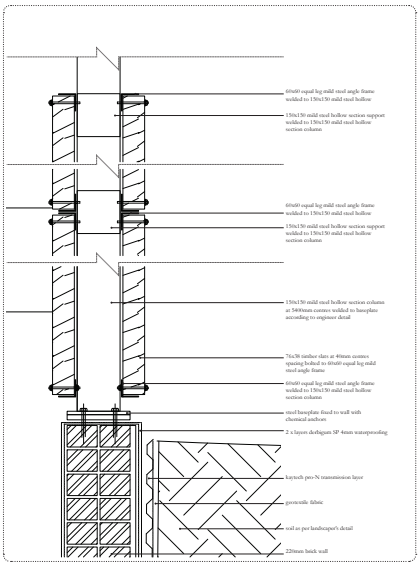
Figure 8.30: Bottom: Section C - 1:20 (Author 2019)



DETAIL B - WINDOW
- Scale 1:5 -

Figure 8.27: Detail B - Window (Author 2019)





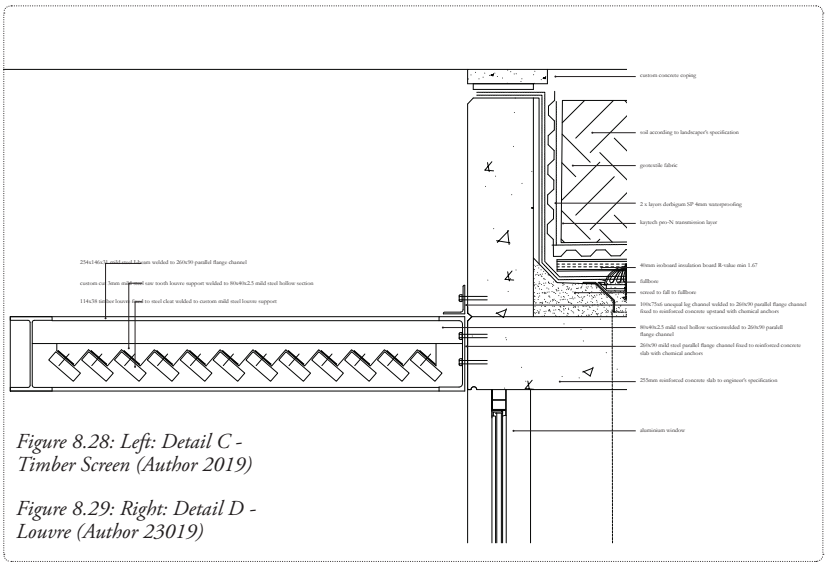


Figure 8.28: Left: Detail C - Timber Screen (Author 2019)

Figure 8.29: Right: Detail D - Louvre (Author 23019)

DETAIL C - BALUSTRADE + SCREEN
- Scale 1:5 -

DETAIL D - LOUVRE + TYPICAL GREEN ROOF
- Scale 1:5 -

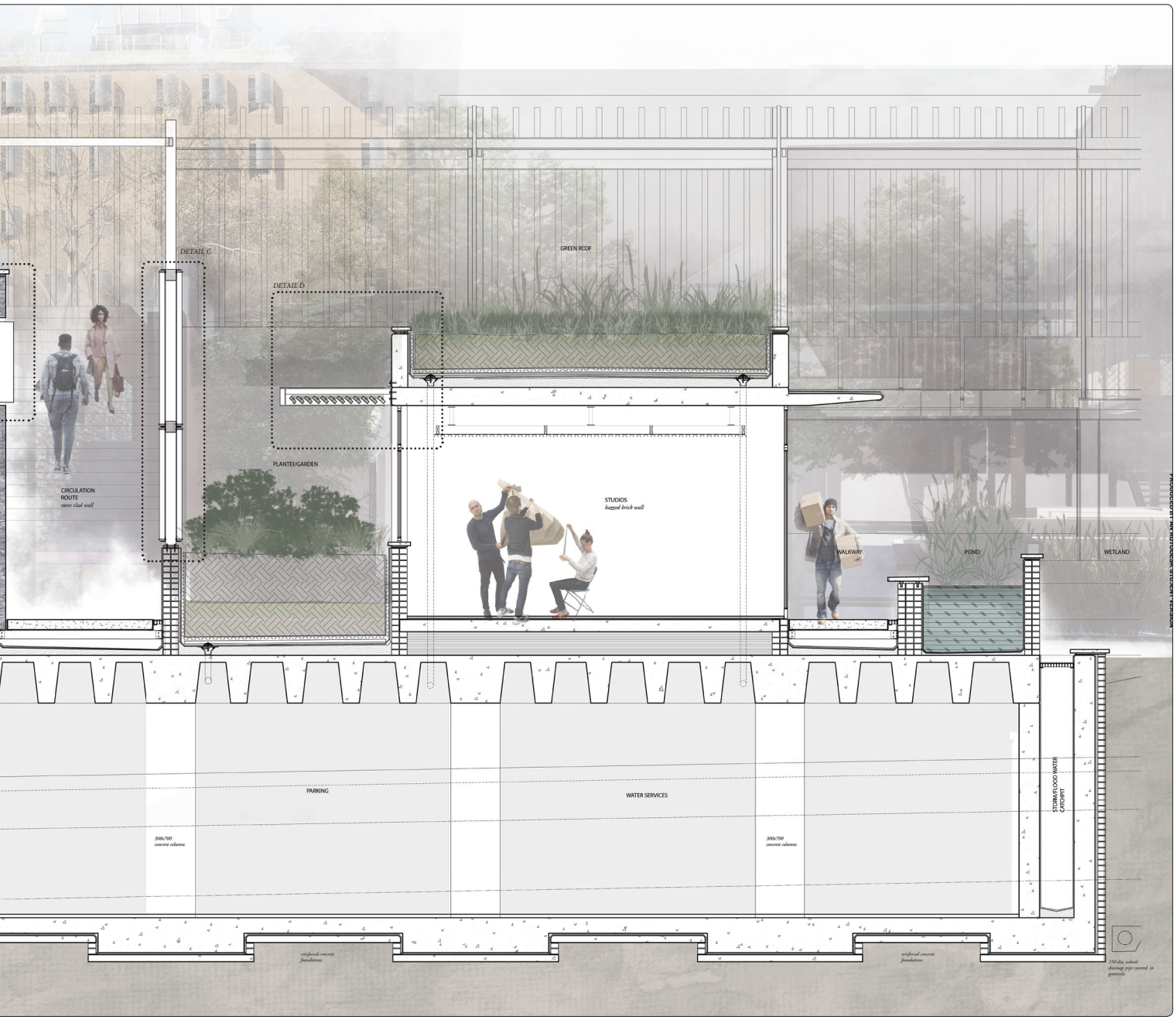
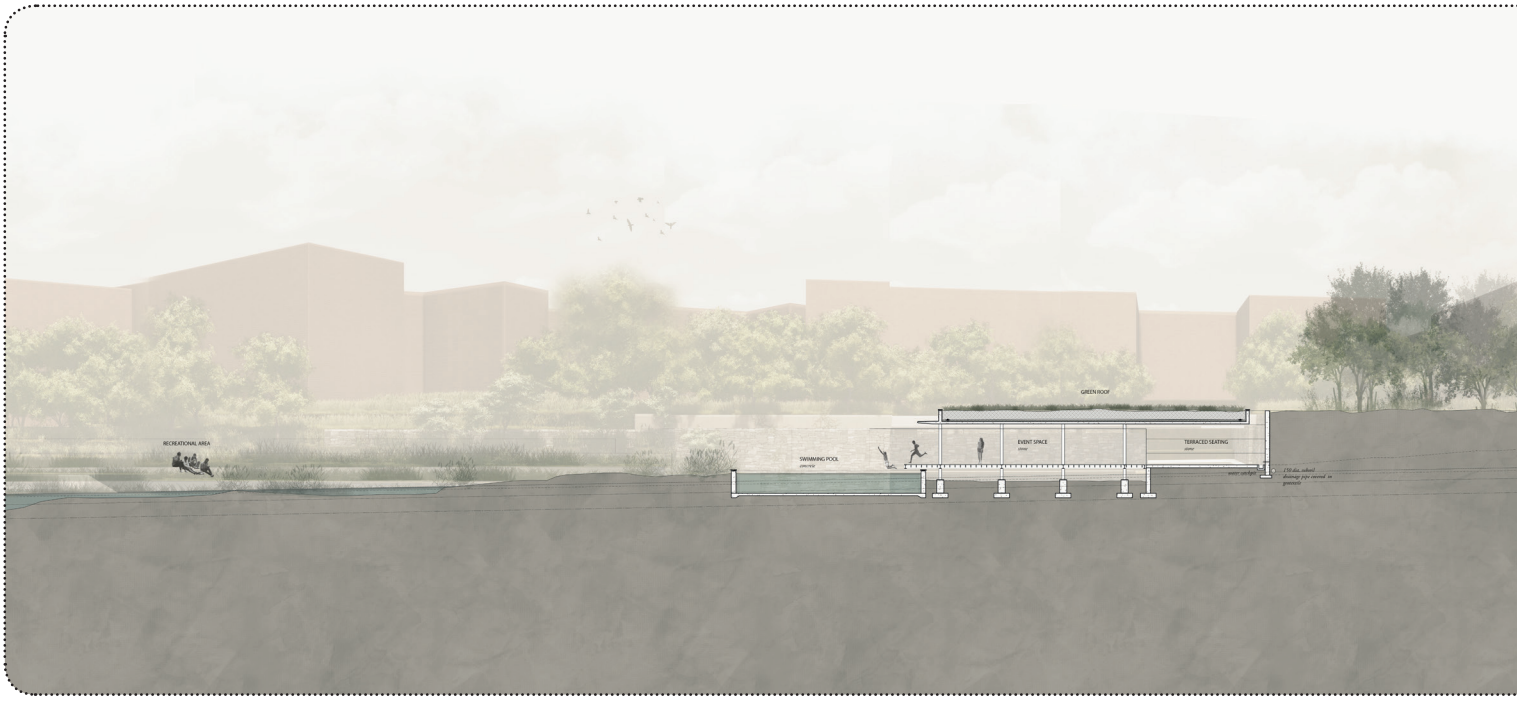
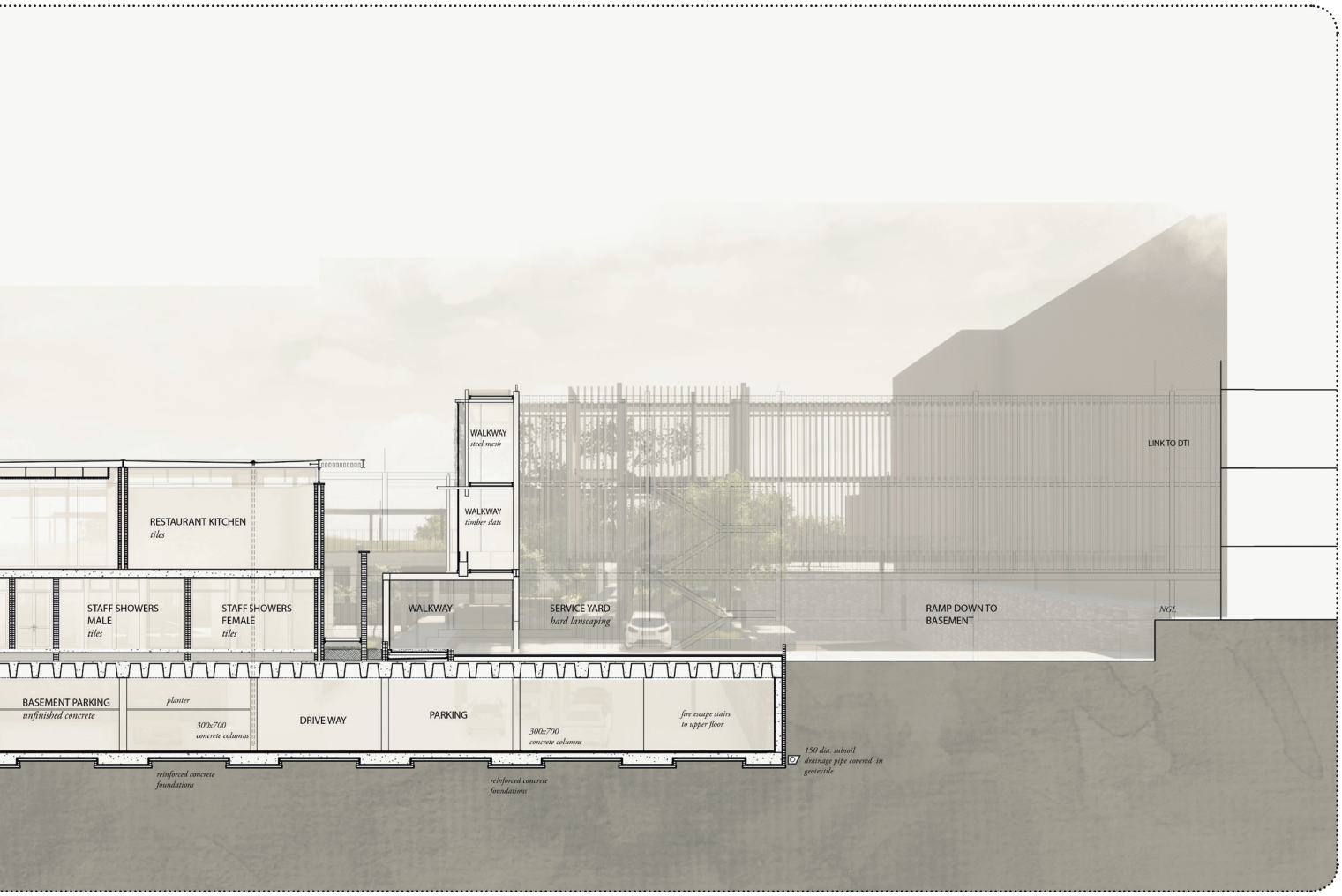




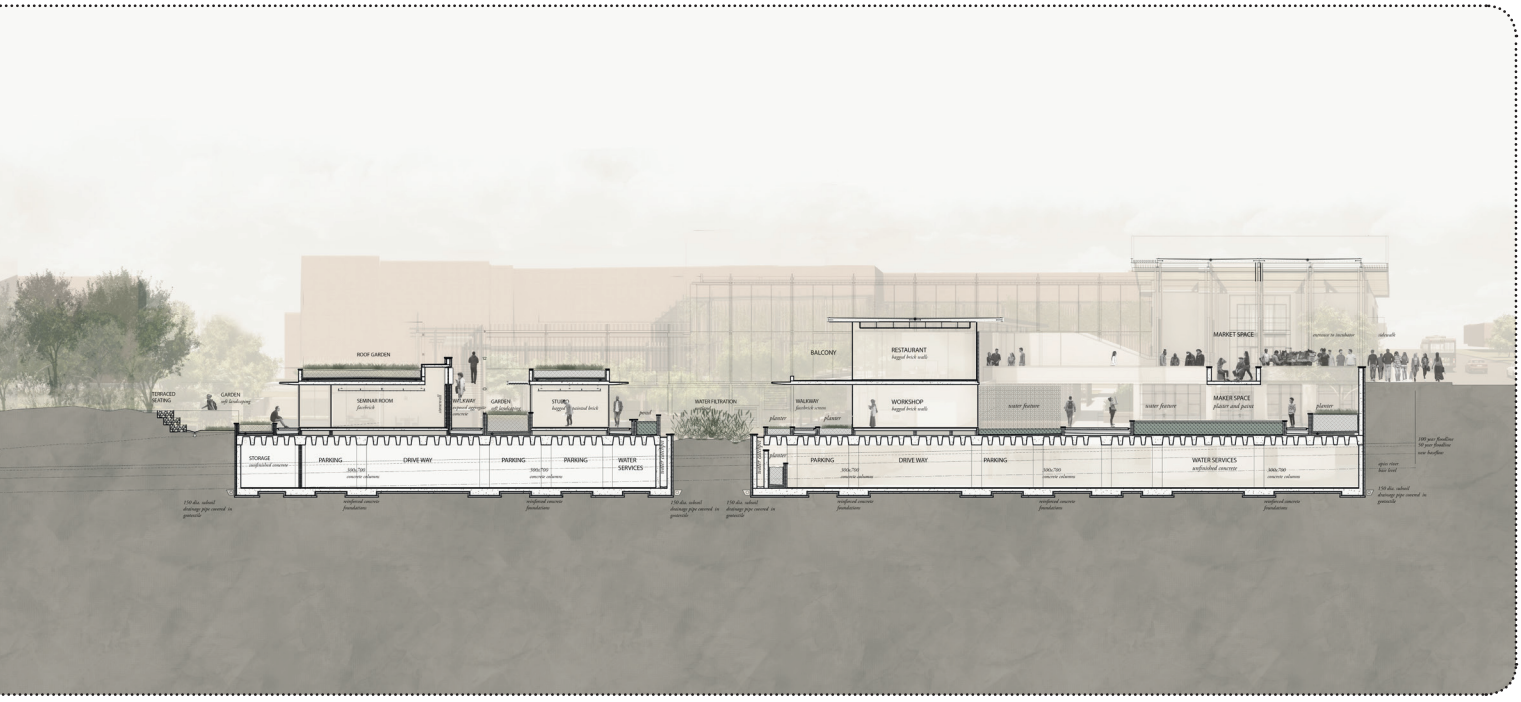
Figure 8.31: Top: Section B - 1:100 (Author 2019)

Figure 8.32: Bottom: Section A - 1:100 (Author 2019)





LATERAL SECTION BB - NTS



LONGITUDINAL SECTION AA - NTS

Final Model

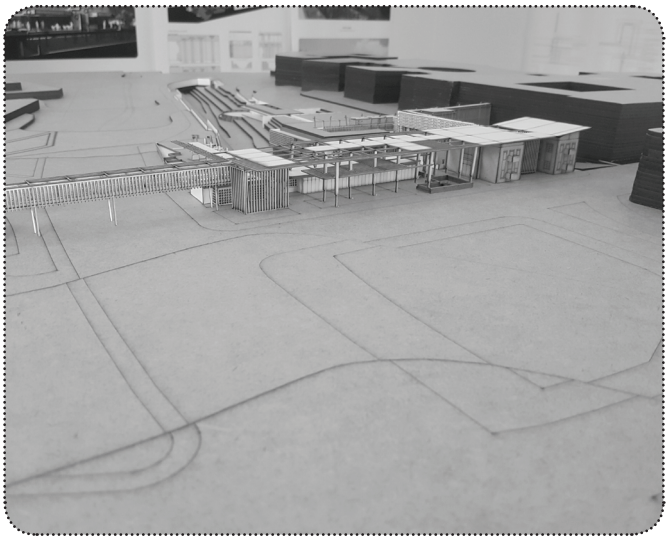
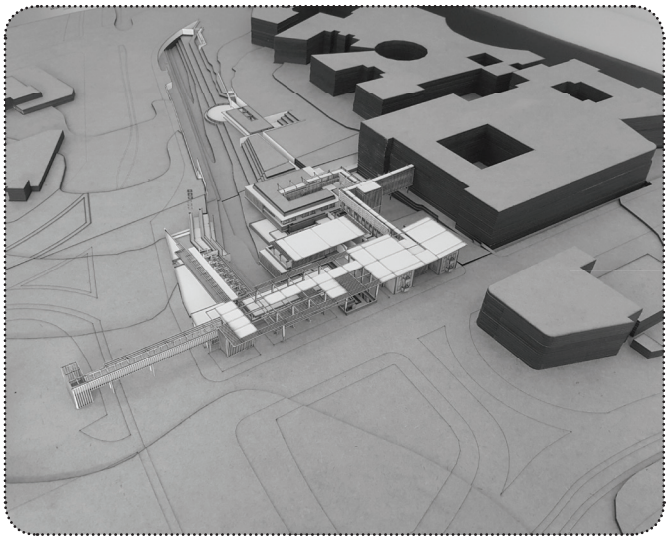
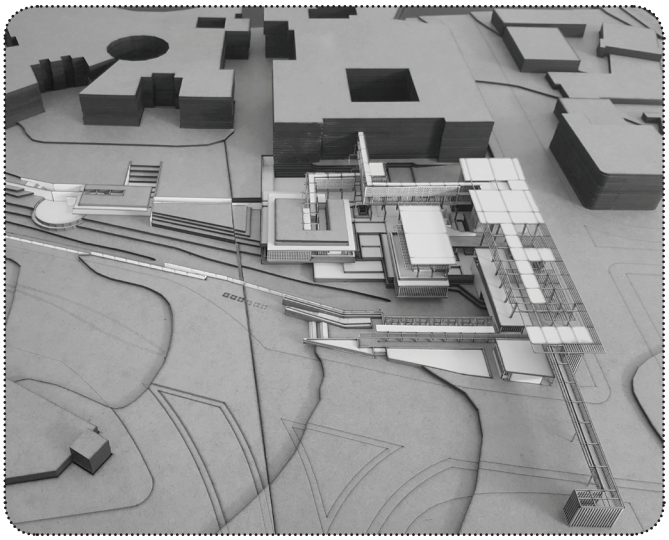
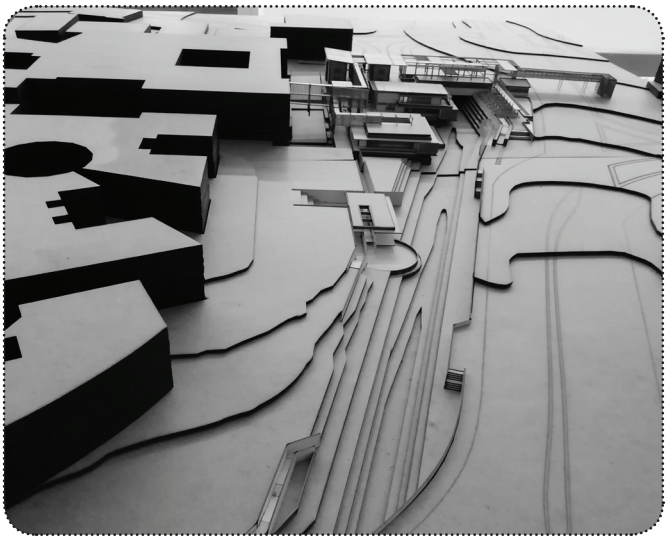
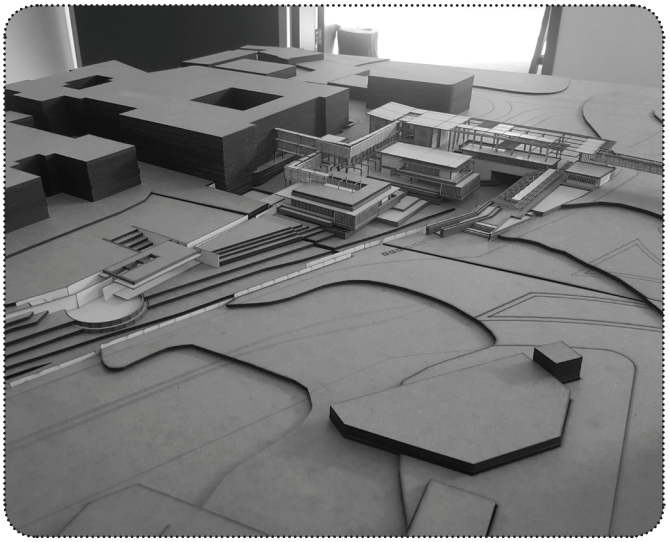
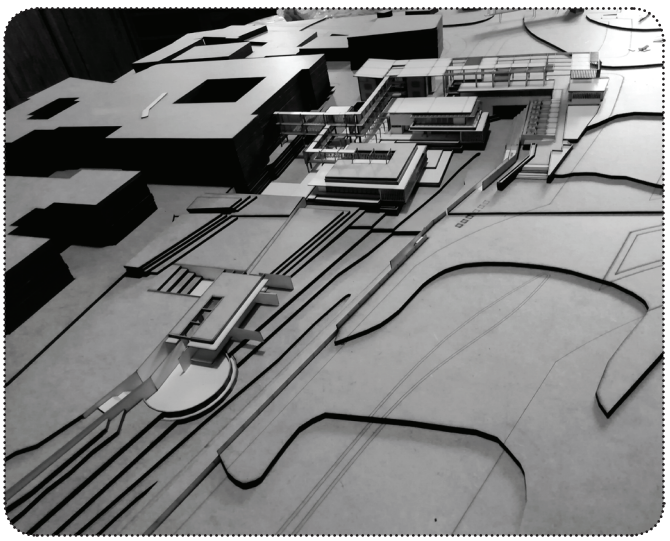







Figure 8.33: Photos by R Minnaar (edited by Author 2019)



Figure 8.34: Photos by R Minnaar (edited by Author 2019)

Conclusion
09

This dissertation was challenged with finding ways in which the built environment (ville) could be used in more innovative ways in order to improve lived experiences (cite') in the city of Pretoria. Aligned with the city of Tshwane's regenerative vision, to restore the lost character of Pretoria - a city once part of the natural landscape, this project identified ways in which this lost character of place could be restored and subsequently celebrated.

Three place-making strategies were identified to improve the cite' (lived experiences) in Pretoria and assist in realizing the latent potential of the lost character of place caused by positivist development planning.

The first strategy was to create a sense of place by identifying and designing for the everyday rituals and activities that were already taking place on site. It is these everyday rituals that produce social space and contribute to a sense of place and belonging within a city. The architecture therefore needed to become a facilitator for these everyday rituals without formalizing and restricting their functions. Informal trading was identified as one of the everyday rituals contributing to the sense of place in Travenna. Instead of attempting to contain the production of space through very restrictive formalized spaces, the architecture rather became a platform that could support these rituals, by providing areas where the vendors could prepare their food and at the same time have access to skills sharing initiatives provided by the business incubator. By designing a platform for these rituals to take place freely rather than restricting it formally, opened up the possibility for

future appropriation and thus improving the socio-economic resilience of the city.

The second strategy focused on designing for phenomenological experiences in order to allow a user to experience deeply and in so doing converting a physical location into a place. The concept of atmosphere consisting of a combination of physical space and perceptual impression, was used to stimulate the senses and allow for these phenomenological experiences to take place. The proposed architecture attempted to evoke these experiences through the new relationship created between the building and the landscape. Immersing the user in the landscape and restoring their spiritual and productive relationship to the river, allowed for interactions between, body, environment and imagination.

The final strategy was to create a sense of place through a strong connection with nature. The place-making opportunities identified in Tshwane's regenerative vision, was focused on areas with a confluence of nature and city as these areas would celebrate Pretoria's lost sense of place as a city - part of the natural landscape. This rediscovery of place was identified as an opportunity for unifying man and nature. Inherent biophilic design principles were used in the architecture to elevate the relationship between man and nature form superficial to deeply authentic, thus assuming a role as mediator as it re-establishes man's connection with the natural landscape.

Due to the qualitative and theoretical nature of this project the success will always be difficult to quantify. However, this project aimed to prove that by applying the above mentioned principles when designing our cities and thinking differently about the built environments we create, some insight could be provided into the opportunities for better lived experiences and subsequent 'healthier' cities.

In the end, this dissertation aimed to mend the fracture between cite' and ville by fostering a sense of place through architecture that could evoke phenomenological experiences, celebrate rituals of the everyday and re-establish man's connection with nature.

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Appendices
10

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Engineering, Built Environment and Information Technology

Fakulteit Ingenieurswese, Bou-omgewing en Inligtingtegnologie / Lefapha la Boetšenere, Tikologo ya Kago le Theknolotši ya Tshedimošo

Reference number: EBIT/E11/2019 25 April 2019

Prof A Barker, Mr JN Prinsloo & Ms C Karusseit
Department Architecture
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Pretoria
0028

Dear All

FACULTY COMMITTEE FOR RESEARCH ETHICS AND INTEGRITY

Your recent application to the EBIT Research Ethics Committee refers.

Approval is granted for the application with reference number that appears above.

1. This means that the research project entitled "*Masters professional dissertation in architecture, landscape architecture and interior architecture*" has been approved as submitted. It is important to note what approval implies. This is expanded on in the points that follow.

2. This approval does not imply that the researcher, student or lecturer is relieved of any accountability in terms of the Code of Ethics for Scholarly Activities of the University of Pretoria, or the Policy and Procedures for Responsible Research of the University of Pretoria. These documents are available on the website of the EBIT Research Ethics Committee.

3. If action is taken beyond the approved application, approval is withdrawn automatically.

4. According to the regulations, any relevant problem arising from the study or research methodology as well as any amendments or changes, must be brought to the attention of the EBIT Research Ethics Office.

5. The Committee must be notified on completion of the project.

The Committee wishes you every success with the research project.

Prof JJ Hanekom
Chair: Faculty Committee for Research Ethics and Integrity
FACULTY OF ENGINEERING, BUILT ENVIRONMENT AND INFORMATION TECHNOLOGY

Pieter Minnaar

Place-making ...

Place-making to improve the lived experiences within the city of Pretoria.

Fig. 01. Above; Image name or title (Author, 2017)

INTRODUCTION

It is difficult to imagine the notion of growth as negative, but what if the means to achieve such growth has negative consequences? Despite warning signs of modernisation as an unsustainable development, from the 19th century onwards, our cities have been preoccupied with maintaining an accelerated rate of economic growth to the detriment of its people's well-being (Amin 1997:70).

According to Lorenzo Fioramonti, the global issue of 'growth-at-all-costs' is especially evident in our cities today, where the conceptualisation of growth and modernity is most visible. The nature of 'growth-at-all-costs' i.e., modernisation has not only resulted in poverty and inequality, but also affected the material city through constant friction between the natural landscape and the emergent built environment (Highmore 2005:14). Godfrey (2012:1) states that a city's greed for growth is anthropocentric and has demoted nature as an object to overcome and exploit, contributing to the subjugation of nature within our cities (Highmore 2005:150).Fioramonti (Mtongana 2017) argues that the only way to maintain and preserve our social and ecological assets and create a sustainable future for humanity, is to place the well-being of man, nature and their relationship with each other, at the centre of development.

To better understand the consequences of modernity within cities today, the complexity of a city needs to be unpacked. Sennett (2018:2) conceptualises a city as a combination of *cite'* and *ville*, where *cite'* refers to the consciousness of place through its lived experiences and *ville* to the built environment. Ever since the Industrial Revolution, urban theorists have failed to successfully plan cities where *ville*, the built environment, and *cite'*, the lived experiences, seamlessly fit together (Sennett 2018:84). The remnants of this fracture between the knowledge of building i.e., *ville*, and the knowledge of living ie., *cite'* is especially visible in the city of Pretoria. Biljon (1993:42) argues that as a result of modernity and its preoccupation with growth, the city of Pretoria's

development focused mainly on developing *ville* through positivist planning schemes and as a result neglected *cite'*, and in so doing 'lost' the initial sense/character of place, of the city.

This article will attempt to find ways in which architecture, through place-making, can improve the lived experiences of Pretoria's citizens, in order to establish new relationships that are able to mend the fracture between *cite'* and *ville*. By situating the investigation within Trevenna, adjacent to the Apies river, this scheme is able to adopt the city of Tshwane's regenerative vision, which encourages place-making as a means to celebrate the 'lost' character of Pretoria as a city that is part of the natural landscape.

A CITY'S DUALITY

Dating back to early Christianity, Christian philosopher St. Augustine Hippo, presented the notion of the city as a metaphor for God's design of faith. There was a clear distinction between the physical realm i.e., the earthly city, and the spiritual realm i.e., the city of God. Although the Christian metaphor vanished, this dualism between the physical and the metaphysical remained (Sennett 2018:1). It wasn't until the early 18th century that the French translated the concepts into *cite'* [chi-the] and *ville* [vil-h] where *cite'* referred to the consciousness of place through its lived experiences which equates to dwelling and *ville* to building or built environment (overall city) (Sennett 2018:2).

If cities were built exactly how people wanted to live, then fitting *cite'* and *ville* together seamlessly would've been an easy task, but unfortunately the reality of a city, is that experiences are seldom seamless, but rather filled with contradictions (Sennett 2018:3).

FORCED MARRIAGE

During the 19th century (the engineers' rational thinking where better infrastructure meant better living practices were adopted in an attempt to use *ville* as a tool to change *cite'*), attempts were made by Baron Hausmann's boulevards in Paris, Ildefons Cerda's new city block grid in Barcelona and Frederick Olmsted's 'artificial' park in New York, to reconcile this dualism through the transformation of the *ville* in order to improve and shape *cite'* (Sennett 2018:31,37,43), but each attempt was met with unmanageable behaviour of people in the city. Georg Simmel (Sennett

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2018:55) argues that it is exactly this forceful reshaping of the *ville* in our cities that affects our behaviour and lived experiences i.e., *cite'*, either by being socially unresponsive, socially responsive or by adopting certain behaviours brought about through peer pressure or a mob mentality.

A FRACTURED CITY

Following the failures of the great generation and its attempt to fit together the *cite'* and *ville*, architects, sociologists and urban planners of the 20th century let go of the idea and as such finalised its divorce by specifically focussing on either *cite'* or *ville*. From the 1890's, the Chicago school of thought focused on the *cite'* and stressed the importance of the social structure of a city (Sennett 2018:68,80) and neglected the quality of the built environment i.e., *ville*, whereas in Paris in the early 1920's, Le Corbusier's view was that of a functional city, with efficiency and speed a primary design driver to the detriment of its *cite'* (Sennett 2018:70).

On the other end of the spectrum, was postmodernist Jane Jacobs', who argued against the conception of a city as a functional system with her view of a city being shaped by its numerous small-scale lived experiences and interactions (Sennett 2018:78,80). Lewis Mumford criticised Jane Jacob's approach as it was unable to address the bigger picture of opening up the city i.e., the *ville*. Mumford envisioned a new planned metropolis, where (through formal ways) the *ville* should facilitate social reformation. Through his approach he believed the built environment could gradually lead a city's people and lived experiences to be better aligned with what the community really wants, but his top-down approach also had its flaws by favouring development of one part of the city over the other (Sennett 2018:83-84).

Following the thinking of Lewis Mumford and the technological advances of the 21st century, 'smart cities' such as Songdo in South Korea and Masdar in Abu Dhabi were developed with urban technologies, aimed at creating, cleaner and more user-friendly cities (Sennett 2018:159). The current problem found with these 'smart cities' are that they are too prescriptive and fear change. Every element of how the city should function and the elements of living have been laid out precisely, in built form. According to Sennett (2018:161) this has resulted in a too-tight fit between function and form, hindering spontaneous *cite'* encounters.

If this investigation has made only one thing clear about our cities, is that there is no generally accepted approach. The city is fractured between the knowledge of building i.e., *ville*, and living ie., *cite'*. Before this paper can begin to mend the relationship between *cite'* and *ville*, an understanding of the city of Pretoria's development is needed.

ORIGIN

Pretoria's character and sense of place is derived from its natural landscape consisting of ridges and rivers. According to Jeppe (1906:7) during the early years of the town's establishment, the Apies river did not just provide the people of Pretoria with healthy freshwater and productive food systems, but it was also a place of social and spiritual fulfilment. It is exactly these natural features, providing protection and a source of life, which prompted the Voortrekkers to settle in 1839, and establish the town of Pretoria by the 1850's with its functional pioneering town planning grid overlaid over the natural landscape (Biljon, 1993:38).

This first planning transition from natural to functional resulted in a harmonious marriage between man and the natural order/landscape as a sensitivity to place and social nature of people was still present (Biljon 1993:39), but it didn't last long. In 1903 the first democratic council of Pretoria was elected and soon after more water management infrastructural development started rolling out (Haarhoff *et al*. 2012:781). At that time, a major change affected Pretoria's sense of place as the Apies river was channelised. This modification, although functional in use, completely disregarding the river's former natural state (Goodman 1992).

DEVELOPMENT OF PRETORIA

Up until the 1940's, Pretoria's development was mostly governed

by building and health regulations as it had no clear framework for development, but as the city grew larger, a strict development plan had to be formulated. The council appointed William Holford in 1948 to formulate a proposal for the city's development. His proposal had two components; one was to strengthen the image of Pretoria as the administrative capital through implementing a strict blueprint planning scheme indicating building heights, setbacks and densities, and the other infrastructural component was to physically define the CBD with a limited access ring road which would also accommodate more vehicular traffic through the city (Biljon 1993:41). It is clear that the first development framework undermined the sense and character of place, defined by the natural landscape, through enforcing a rigid blueprint planning scheme, as well as to undermining the social nature of the city's people by favouring vehicular infrastructure development.

Numerous iterations of the original ring road proposal was made in an attempt to scale down on the size of the intervention. It wasn't until 1992 that the southern leg of the proposed road ring road was implemented. In order to execute the vision, land had to be expropriated and buildings demolished for road-building purposes (Biljon 1993:41). The expropriation of land for road-building resulted in fragmented public space, a spatial disconnection of the public environment, coined by Transik (1986:2-6) as 'lost' space. Through the fragmentation of public space, the social nature of the city's people was forced to change and as a result influenced lived experiences.

In 1973 the Pretoria city council decided to formulate a two-phase master plan for the whole city that would regulate any future planning. According to Biljon (1993:42), the first phase, Policy plan, was very functionalist, comprehensive and blueprint-like with strong underlying garden-city-thinking. The second phase, the Structure plan, intended to optimise vehicular movement within the city as well as to minimise conflict between land uses (Biljon 1993:42).

The next major step in the city's planning and development framework was the conception of the Greater Pretoria Guide Plan by the Pretoria City Council in 1984, which instated

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statutory guidelines for all town planning schemes to adhere to. This 'guide' claimed to be process-driven, but was also blueprint-like and functionalist at its core. Following the inception of the Greater Guide Plan, the Structure plan for Pretoria was revised in 1992 to be more accepting of the new South Africa, but with its blueprint structure, it still failed to address challenges of sustainability, inequality, poverty and informality within the city (Biljon 1993:43).

The development of Pretoria started out slow and conservative, with an understanding of place and the social nature of the city's people, but as the city grew, the scale of interventions also grew larger and started to change the character of place as well as the social nature of people. According to Biljon (1993:42), the city's planning and development rationality was positivist and not normative and focused predominantly on infrastructural development and not on addressing the needs of the people. It dealt only with the issue of 'things' rather than with people.

NORMATIVE TRANSITION

With the governance of the new government after 1994, the city council's attention shifted from just developing rigid planning schemes, to focusing on inner-city regeneration strategies and visions that celebrates our heritage and the country's diverse cultures (City of Tshwane 2005). The Tshwane Open Spaces Framework proposal of 2005, aimed to identify place-making opportunities in areas with a confluence of nature and city in order to redefine the 'lost' character of the city of Pretoria, a city that is part of the natural landscape (City of Tshwane 2005). The spatial framework's normative approach (opposing the development frameworks' positivist approach) hinged on the spatial dualism of the African context as it emphasises the importance of a spiritual and productive connection to nature. The Apies river was identified as a natural asset with such importance and therefore its regeneration and upgradation were highlighted as central themes within the framework and a key target for the city's 2030 vision (City of Tshwane 2013).

In 2013, the City of Tshwane renewal project was initiated to focus on the city's economic growth. One major infrastructural development was the implementation of the Bus Rapid Transit System as part of its movement strategy to improve circulation not only within, but also to and from the city. The implementation of the BRT system meant that public space and land had to be expropriated to build the new roads for the required bus lanes and stations (City of Tshwane 2013).

REGENERATIVE VISION

The Tshwane Open Space Framework's vision statement is to create a network of interconnected ecologies and systems that facilitates economic, social and environmental upliftment (City of Tshwane 2005). Thus, identifying the regeneration of open spaces within the city as an important strategy for providing socio-economic and ecological place-making opportunities. These places have the power to enhance community integration, generate and facilitate economic activity and stimulate growth (City of Tshwane 2013).

The Tshwane inner city Regeneration strategy of 2015 and vision for 2055 envisages a city where its people have access to social and economic opportunities in order to improve their quality of life (City of Tshwane 2015). The regeneration framework has identified various projects of regeneration within the city, with one of these being the Nelson Mandela Green Corridor development. This project focuses on the rezoning and spatially restructuring the urban fabric through design interventions on both sides of Nelson Mandela drive, as well as upgrading the Apies river into a promenade with public access and circulation which interacts with the river itself (City of Tshwane 2015). According to Fourie (2001), the construction of the Department of Trade and Industry was the first attempt in realising the Nelson Mandela Green Corridor vision as it started out with great ideals of being inclusive but ended up being closed off due to its private functions. The purpose and outcome of the inner-city regeneration is to create a more resource efficient and resilient city, to sustainably grow an inclusive economy and to foster social cohesion, happiness and encourage healthy citizens.

It is very clear that the city of Pretoria's planning and development frameworks are very functional and prescriptive whereas the visions provided throughout the years have all been focused on the well-being of people and nature. This positivist development favoured the *ville* and has had negative spatial and cultural consequences on the lived experiences of the city. As a result, space has become physically and socially fragmented and 'lost'. For years there has been a disconnect between the city of Pretoria's vision's goals and their frameworks' and planning schemes' ability to measure its development success. Pretoria's sense of place has been lost due to the continual blueprint planning schemes, the city's positivist development prioritisation and the city's negligence towards the cultural and social health of its people.

SITE JUSTIFICATION

To address the disconnect between the city of Pretoria's past development and their regenerative development goals, the investigation will situate itself within Tshwane's 2055 vision for the city. The area designated as 'Kopanong' or the gathering space, located in Trevenna adjacent to the Apies river, have been identified as a hub for social, economic and environmental enablement and growth. As mentioned in the Tshwane Open Space Framework, regenerating the Apies river and establishing a spiritual and productive connection with the natural landscape is a central focus in order to redefine the lost sense of place of the city of Pretoria. As this project aims to improve the sense of place and bridge the divide between *cite'* and *ville* (lived experiences and the built environment) in the city of Pretoria, the chosen site has the best opportunity to reconcile *cite'* and *ville* through an architecture that supports place-making.

The site is situated between the Apies river, to the west, and the Department of Trade and Industry to its east, and Nelson Mandela drive, the site is a busy thoroughfare for pedestrians travelling to and from Sunnyside to Pretoria's CBD. The city's positivist development focus has had a significant impact on the site's lived experiences, with the three biggest issues being the channelisation of the Apies river, public space being expropriated for road-building purposes and the privatisation and mono-functional development of the Department of Trade and Industry.

In contradiction to the initial conceptualisation of the *cite'* and *ville*, today it refers to something much grimmer. Ville refers to abandoned and lost spaces which has lost its initial and/or planned value and *cite'* reflects the negative connotations of everyday lived experiences of those forgotten locales (Sennett 2018:3). Relph (1976:142-3) affirms that a positive relationship to place isn't the only lived experience one can have, but as one explicitly distances oneself, the relationship becomes one of alienation or 'outsiderness' and thus affects the lived experience negatively.

The question then becomes how architecture can mend this fracture between *cite'* and *ville* by creating better lived experiences that foster an enriched sense of place and belonging within the city? How can architecture change the emergent *ville* to produce instead of consume experiential qualities and enhance the sense of place? In order to establish a sense of place, strategies that facilitate place-making will be investigates.

"The existential purpose of architecture is therefore to make a site become a place, that is, to uncover the meanings potentially present in the given moment" – Norberg-Schultz 1979:18

PRODUCTION OF SPACE

Place-making can be defined as the creation of environments with a unique sense of place that is sensitive to and reveals the unique nature of its cultural and natural context (Behrens & Watson, 1996:10-11). According to Cavallaro (2001:3) place and meaning are inseparable. In the same way as humans are necessary to ascribe meaning to any physical location or feature, so is human activity for necessary for place-making. Lehtovuori (2010:80) argues the primacy of place-making should move from physical location or features to that of meaning given through human activity. Lehtovuori echoes Cavallaro's thoughts by saying that places don't exist apart from human beings, but that they are produced, rather than found, through their interactions (Lehtovuori 2010:80).

According to Van Rensburg and Da Costa (2008), urban space is a vehicle for social participation as well as the expression of identity. Lehtovuori (2010:49) states that public urban space is open and diverse and must be reconceived to allow for appropriation of the everyday. In contrary to the conception of a building, which dominates, possibly sterilises and closes space, the production of space through appropriation of everyday rituals opens up opportunities and has the potential to contribute greatly towards public place-making within a city, as it generates meaning. Therefore, it is important to carefully investigate the way in which spaces are appropriated and produced.

In order to understand the impact the production of space has and the opportunity it provides for place-making, the elements of space need to be understood. Theorists Henri Lefebvre (1994:33) and Edward Soja (1996:69-70) developed the spatial triad, to facilitate ways in which we think about space. The three spaces are; the perceived or physical space, conceived or mental space and lived or social space. In reality, when interacting with space, these three conceptualisations of space do not appear separately, but are only brought forth through analysis (Lehtovuori 2010:55).

The French philosopher, Henry Lefebvre (1994) states just how valuable the practice of everyday rituals are within the production of urban space. With reference to Lefebvre's (1994) spatial triad, the practice of everyday rituals falls within the "lived space" and plays an important role in the conceptualisation of space as a whole. It is within this lived space where a person or community can establish an identity which has the potential to contribute greatly towards a sense of belonging within a city. Friedmann and Cresswell beliefs that place-making is an event, open and flexible, brought into life by its social practices (Friedmann 2010:154, Cresswell 2004:39).

Compared to the 'power' that is required to actualise a new building and the possibility of it becoming obsolete, Lehtovuori (2010:54) supports place-making through appropriation as it doesn't require much to realise and is constantly remade; It is ephemeral and thus has the ability to change over time. Lethovuori (2010:103) refers to these ephemeral or momentary articulations as 'weak places' and believes those momentary places are the seeds of the production of social space.

COMPLEXITY OF PRODUCTION OF SPACE

Knowing the potential for place-making through the production of space is one thing, but designing for appropriation is another. According to Lehtovuori (2010:103) the 'spatial' foundation for weak places (which will allow for more appropriation) are sometimes those which are less prescriptive and underdefined. Before this investigation can attempt to generate design guidelines, a better understanding of our current view on the production of space is needed.

Laura Lutizo (2016:6-7) argues that within a city's lived space there is a dichotomy between how spaces were conceived to be used and how spaces are being appropriated, not only because of the current *ville*'s inefficiency to facilitate appropriation, but also due to the traditional lenses through which cities are being viewed. These traditional perspectives portray appropriation within cities as untidy, unregulated and an inefficient use of space which is in direct contrast with how the conceived use of space is perceived; namely tidy and regulated (Lutizo 2016:7).

This antithetical approach impedes the opportunity for interaction and exchanges between these two spheres on an economic, social and spatial level. Lutizo (2016:9) argues that the above mentioned dichotomous relationship focuses too much on the differences between the conceived and the appropriated rather than seeing the potential for integration. However, Lutzoni believes that instead of separating the two spatial practices, architecture should seeks to create a liminal space where exchange can happen. By embracing both spatial practices, the spatial dichotomy is transcended, enabling architecture to become a platform for interactions, yielding richer lived experiences.

Kretz and Salewski (2014:174) supports this change and states that for a city to successfully develop, it must move away from its own rigidity. This shift will result in new and better relationship potentials between the parties involved.

In his essay, “Space for Encounters”, Rieniets (2014:181) writes that public space is a key component in the development of relationships. It connects and integrates seemingly different people without eliminating their differences. It can therefore be assumed that public spaces can act as liminal space, as it encourages exchanges between parties that are unlikely to interact otherwise.

Appropriation plays a vital role in the production of social space within a city, however the answer for integration lies not within the formalisation, but rather using architecture as a platform to facilitate spatial exchanges. Through the use of architectural design, existing infrastructure such as streets, sidewalks and parks can become weak places where encounters can take place. By facilitating the production of space through appropriation, architecture has the potential to create better lived experiences and an improved sense of place.

Place isn’t just a location or `container’ for an event, but it plays a dynamic and relational role in the conception of space. Relph (1976:141) argues that the three aspects of space, activity (lived), physical features (perceived) and projected meaning (conceived) isn’t quite enough to create or define a place, but only being ‘inside’ of space and experiencing deeply will distinguish it from space. This is called the *‘moment of signification’* (Lehtovuori 2010:77).

The fact that space’s physical features, meanings ascribed to it and social activities produced within it, is not enough to define a place, and without deeper experiences, it will weaken over time. It is important to give attention to the design of experiences that evoke emotions, as it will ultimately result in a stronger places (Lehtovuori 2010:88). According to Relph (1976:145), phenomenology can provide a way for revealing emotions or symbolism and translating that into deeper experiences.

In order to improve the *cite’*, a shift in how *ville* is conceptualised is required. It must move away from conceiving space as just visual representations to create place through, as momentarily as it may be, experiences (Lehtovuori 2010:103).

PHENOMENOLOGICAL EXPERIENCES

Alan Gussow’s (1971:26) believes that place is established when feelings take hold of an environment. He argues that ‘deep experiences’ are catalysts that convert any physical space or environment into a place. A traditional phenomenological understanding of place recognises that within a delimited physical space, there will always be numerous lived experiences (Merleau-Ponty 1945:337), but according to Lehtovuori (2010:97) phenomenological place cannot be understood as just the physical location, container of objects, people or their network of activities, it has to be viewed as an event that binds those elements together (Lehtovuori, 2010:97).

Lehtovuori (2010:88) takes the argument of place-making a bit further by arguing that not any human experience will create place, but the constant process of *‘throwing meaning’* over phenomenological/sensory experiences in relation to physical space will. Jacobs (1961:8), in her book *The Death and Life of Great American Cities*, states the importance of the sensorial when interacting with

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places. She believes that all our human senses should be considered when making place. Day (2002:158-159) adds that place communicates through the experience of smell, sound, colour, light, form and space and that a place experience is strongest when the different senses are integrated. This amalgamation of experiences, through design, is what Pallasmaa (2014) calls the *'experiential atmosphere'*.

An atmosphere unifies and encompasses the perceptual and emotive impression as well as the physical and social situation of space. It is neither just the material object or the symbolic subject, but is suspended in between. Through the notion of atmospheres the necessity and contribution of architecture is realised (Sayegh *et al* 2016:2). Lehtovuori agrees with Sayegh and Bȍhme that the concept of atmospheres have a key role to play in designing for phenomenological experiences (Lehtovuouri 2008). Atmospheres are not something relational but the relation between object and subject itself. It is *'spatial and to an extent material'* (Lehtovuori 2010:129).

Apart from the physical location and atmosphere of a place, Day (2002:158-159), states the movement through a space allows for interaction which makes experience possible. As mentioned above, the positivist development of Pretoria has favoured vehicular movement and has had a negative effect on how both the pedestrian and driver experience the city. In terms of experiencing place, a driver loses his ability to experience place, instead he moves through space (Sennett 2018:163). Travelling in a moving vehicle at around 80km per hour results in a narrowed consciousness, restricting the viewer's focus to one specific object (Sennet 2018:184-5). However, walking enables objects to become 'round', resulting in more curious observation of the object's context and contours as opposed to the speedy observation of a flat images when driving in a car.

Sennet (2018:184-5) believes that walking encourages '*deep lateral consciousness'*, an unattainable consciousness when moving at high speeds. According to Sennett (2018:163) the positivist mentality was that faster movement meant freedom, resulting in sidewalks becoming less important than roads. So much focus is put into the development of vehicular circulation that walking has lost its value. The irony is that by focussing on the vehicular realm, the value of pedestrians and their ability to experience, are taken away (Highmore 2005:69).

Exemplified through the investigation of the chosen site in Trevenna above, as a result of the socio-spatial condition, a negative lived experience is also possible when the relationship with place become that of 'outsiderness' (Lehtovuori 2010:87). In order for us to truly experience a place, Richard Kearney (1986:74) argues that '*through our bodies as living centres'* we interact and experience the world. The experience of 'outsiderness' cripples our ability and hinders any for potential interactions between our body, environment and imagination (Pallasmaa 1996:41), that is why it is important to be immersed in the space rather than just viewing it from the outside (Cloke & Jones 2000:663).

CONNECTION TO NATURE

Relph (1976:45) believes that before a contribution to the restoration or maintenance of place can be made, an understanding of its significance to humans is needed. Without this understanding it would be impossible to know why a place is special or how to mend it.

Modernisation has resulted in the homogenisation of the Earth's lush cultural and biological diversity, destroying the very place we call home (Mang 2007:2). The notion that nature is an obstacle that needs to be conquered, has resulted in the subjugation of nature for the purposes of humanity (Dobson 2000:51). Oliver (2000:229) believes Modernity is at the heart of man's disciplinary attitude towards nature, in an attempt to satisfy man's needs and to represent modern society.

This view is prevalent in the development of Pretoria, specifically in the subjugation of the Apies river to controlled processes, in an attempt to contribute towards one specific need of modern society without considering the repercussions beyond its monofunctionality (Oliver 2000:229).

According to Mang (2007:46-7), our anthropocentric worldview has caused us to undermine the socioecological diversity of the places we inhabit, robbing these places of richness. This disconnection with nature has not only resulted in cities robbed of spiritual and material richness, but also degraded cities' ecological and biological place (Mang 2007:2).

An increasing amount of people have taken a stand against homogenisation and are encouraging others to rediscover place, by understanding the massive contribution these places make to our quality of life. This call aims to encourage people to rediscover the true meaning of being native to place, and amidst a rapidly evolving world, developing roots and building community (Mang 2007:3).

This rediscovery of place comes hand in hand with the unification of man's relationship with the ecological patterns of place and at the same time building strong communities to support regional patterns, yielding authentically unique *'cultures of place'* (Mang 2007:47). This change can only occur once we re-establish intimate contact with the natural environment that envelopes us. Nature is not abstract, it is omnipresent, invaluable and unique in its diversity of place (Mang 2007:47).

Cloke & Jones' (2000:663) perspective on dwelling involves man being part of the landscape, as he moves through it time and time again, as part of his everyday life. By moving through and becoming part of the landscape, we gain a different perspective from someone who merely gazes upon it from an external position. Mang (2007:47-48) believes that by re-embodying the places we inhabit, the possibility arises to become more in tune with a place's rhythms and in so doing, awakening the spirit of place.

This very idea of man as part of nature motivated the development of Pretoria and contributed greatly to its character of place. Unfortunately, due to positivist planning schemes man's relationship to the river has become weaker and has resulted in a perspective of gazing down on instead of becoming part of the natural landscape. The architectural challenge lies in discovering ways of re-establishing a physical and spiritual connection between man and nature and in so doing, awakening Trevenna's

dormant spirit of place. Design strategies in the form of biophilic design can be implemented to elevate the relationship between man and nature from a superficial to a deeply authentic relationship.

REFLECTION

This article explored how architecture can create a sense of place and improve the lived experiences in the city of Pretoria. Aligned with the city of Tshwane's regenerative vision, where the lost character of Pretoria, as a city that is part of the natural landscape should be celebrated. In order to create a sense of place that will ultimately improve the *cite'*(lived experiences) of the city, three place-making strategies have been identified to realise that potential.

The first strategy to create a sense of place is the production of social space through the everyday rituals and activities. The everyday rituals produce social space and has the potential to contribute towards a sense of place and belonging within the city. The architecture has to become a facilitator for the everyday rituals without formalising and restricting their function. Instead of trying to shape/contain the production of space, a platform should be created which supports/enable the rituals as well as allow for future appropriations thus improves the socio-economic resilience of the city.

The second strategy is to design for phenomenological experiences: The process of experiencing deeply, converts physical location into place. The concept of atmospheres, utilises a combination of physical/material space and perceptual impression to stimulate sense and allow for phenomenological experiences. Apart from the atmosphere of a place, movement through space allows for interactions and deepens the experiences. In order for us to truly experience a place, we have to be immersed within the landscape as the potential for interactions between our body, environment and imagination is highest.

The last strategy is to create a sense of place through our connection with nature. As stated in Tshwane's regenerative vision, place-making opportunities have been identified where there is a confluence of nature and city, as this will celebrate Pretoria's lost sense of place, as a city that is part of the natural landscape. This rediscovery of place comes hand in hand with the unification of man and nature. Design strategies in the form of biophilic design can be implemented to elevate the relationship between man and nature from a superficial to a deeply authentic relationship, then architecture will become a platform(mediator) to re-establish man's connection with the natural landscape.

In the end, the paper aimed to mend the fracture between *cite'* and *ville* by fostering a sense of place through architecture that evokes phenomenological experiences, celebrates rituals of the everyday and re-establishes man's connection with nature.

Fig. 05. Left; Image name or title (Author, 2017)
Fig. 06. Opposite Top Right; Image name or title (Author, 2017)
Fig. 07. Opposite Bottom Right; Image name or title (Author, 2017)

Endnotes

1. insert here

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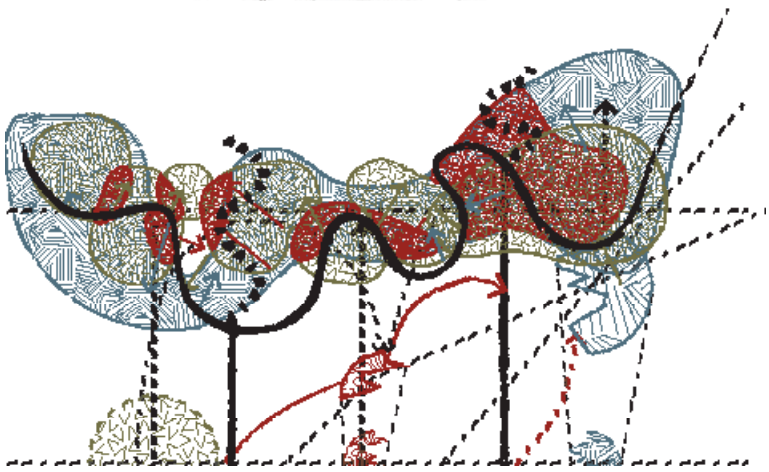
BUILDING LANDSCAPES

An urban architecture for the 21st century



Enabling new relationships between man, the built and natural environment to foster a resilient city of Pretoria.

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Site

Situated next to the Apies river, between The Department of Trade and Industry and Nelson Mandela Drive, Trevenna

Client

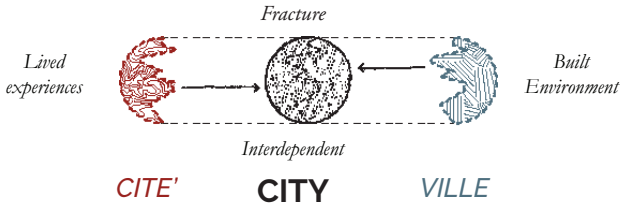
The City of Tshwane
The Department of Trade and Indiustry

Programme

Entrepreneurship: Business Incubator

Introduction - A city's duality

The dissertation was challenged with finding ways in which the built environment (*ville*) could be used in more innovative ways in order to improve lived experiences (*cite'*) in the city of Pretoria. Aligned with the city of Tshwane's Regenerative vision, to restore the lost character of Pretoria, a city once part of the natural landscape, this project identified ways in which his lost character could be restored and subsequently celebrated.



Research Issues

Urban issue

The fractured city - Pretoria's positivst city development favourd the build environment (*ville*) and has had negative spatial and cultural consequences on the lived experiences (*cite'*) of the city. As a result, space has become physically and socially fragmented and 'lost'.

Architectural issue

Placelessness - The lost sense of place of the city of Pretoria caused by the fracture between *cite'* and *ville*.

Architectural intention

The intention of the project is to mend the fracture between cite' and ville by re-establishing Pretoria's lost sense of place and to create a social, economic and environmental resilient city whilst being sensitive to the history of place.

Theoretical premise

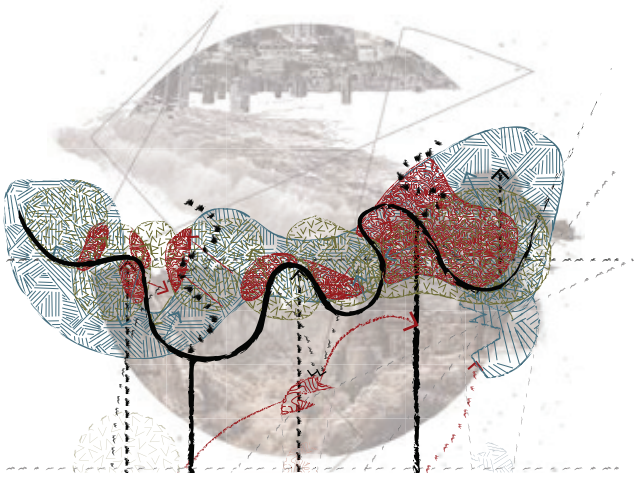
Place-making as a tool to mend the fracture:
Three place-making strategies were used to improve the cite' in Pretoria and assist in realising the latent potential of the lost character of place caused by Pretoria's positivist planning. The three strategies are:

- To celebrate the everyday rituals
- Reconnect with nature
- Use phenomenological experiences

Through fostering a new sense of place through architecture that could evoke phenomenological experiences, celebrate rituals of the everyday and re-establish man's connection with nature, the architecture was able to mend the fracture between the *cite'* and *ville* on the chosen site in Trevenna, Pretoria.

BUILDING LANDSCAPES

Natural transitions in an urban condition



Enabling flexible relationships between man, the built and natural environment to foster a resilient city of Pretoria.

Pieter Minnaar *10025384*

Site
Situated next to the Apies river, between The Department of Trade and Industry and Nelson Mandela Drive, Trevenna
Client
Department of Trade and Industry
The City of Tshwane
Programme
Entrepreneurship: Business Incubator

Background

During the settlement of the town of Pretoria, the Apies river played an important part in the daily lives of its people. The river was not only a physical source for freshwater and productive food systems, but also a place of spiritual and social fulfillment (Jeppe 1906:7). As the city of Pretoria developed, it focused mainly on developing the built environment through positivist planning schemes and as a result neglected its lived experiences, and in the process 'lost' the initial sense of place of the city (Biljon 1993:42).

The Apies river had been modified to such an extent that today it is unrecognisable as a river that once had such a strong spiritual and productive affinity (Goodman 1992). Due to this change, the citizens of Pretoria are physically detached from the Apies, unable to connect with the river on a spiritual or productive level.

Intention

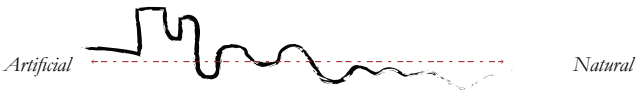
The architectural challenge lies in discovering ways of re-establishing a physical and spiritual connection between man and nature and in so doing, awakening the city's dormant spirit of place.

This dissertation attempts to find ways in which architecture, through place-making, can improve the lived experiences of Pretoria's citizens, in order to establish new relationships that are able to mend the fracture between the built environment and the citizen's lived experiences. By situating the investigation within Trevenna, adjacent to the Apies river, this scheme is able to adopt the city of Tshwane's regenerative framework (City of Tshwane 2015), which encourages place-making as a means to celebrate the 'lost' character of Pretoria as a city that was part of the natural landscape, on both a spiritual and productive level.

Tectonic concept

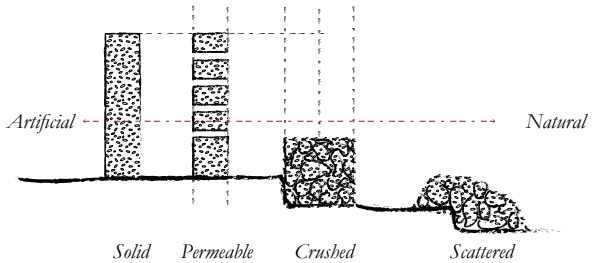
Natural transition
As a result of the current disconnect between man and the Apies river, a new approach to building is required that will foster spiritual or productive connections with the natural landscape.

In conjunction with the three place-making design strategies, the intervention seeks to reconnect man with the Apies river by becoming a transitionary medium that facilitates progressive, man-made to natural, interactions with the landscape. As the users interact and move through the site, the intervention fosters more and more natural interactions and is released at a point where the user is completely immersed within the landscape.



Material concept

Natural transition and change over time
The material choices also respond to the concept of natural transitions by progressively taking on more natural qualities as they are embedded deeper within the landscape and thus creating richer experiences. The figure below illustrates how material such a brick or concrete can be altered to achieve the natural progression. The use of steel and timber is also welcomed as their properties to change with time (weathering or decaying) strengthens the concept.



Structure

Infrastructure for appropriation
In order to reconnect man and nature on a productive and spiritual level, the structure needs to be robust enough to allow for appropriation by both parties. A combination of stereotomic (concrete and brick) and tectonic (steel and timber) structures will be used to accommodate the everyday public activities whilst also allowing nature to appropriate the structure by becoming infrastructure for the plants to grow on, in and against.