

WINDHOEK

← HUB OF

ARRIVAL →

A long-distance transport hub that explores the embodiment and nostalgia of travel through architectural layering

LUKE KOEGELENBERG

Master's Design Dissertation | MArch



This dissertation is submitted in partial fulfilment for the degree M.Arch.(Prof).

I, Luke Nicholas Koegelenberg, the author of this dissertation, declare that the work contained in this document - either of written text or graphical illustration - is work done by myself, unless where otherwise acknowledged and due reference is made.

**Department of Architecture, Faculty of Natural and Agricultural Sciences,
University of the Free State.**

Luke Nicholas Koegelenberg - 2016091247 - lukekoegelenberg7@gmail.com

A handwritten signature in black ink, appearing to read 'Luke Koegelenberg', written over a horizontal line.

Supervisors:

Prof. Jan & Petria Smit, Mr Zack Wessels and Ms Annemarie Wagener

Date of Submission:

29 October 2019

Acknowledgement of editing and proof-reading:

Mr Zack Wessels, Ms Wanda Verster and Mrs Monique Swart

“The way that we perceive the world is as a place to move from point A to point B in; and then if the place that we are in, facilitates that movement, then we are happy to be there.”



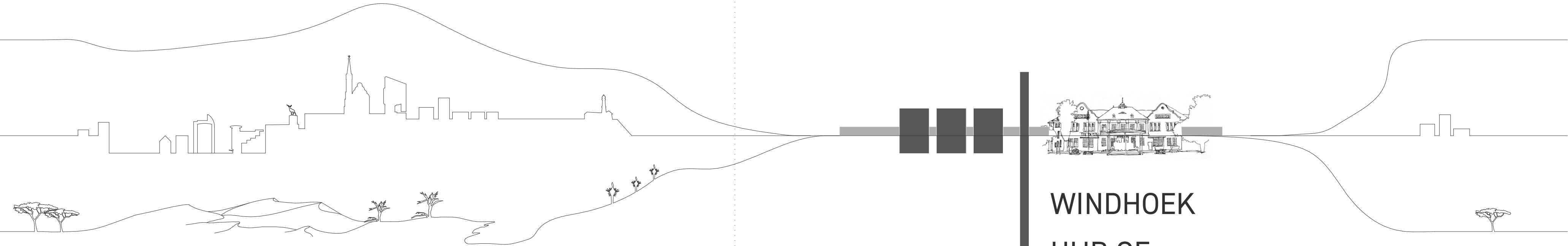
Dr Jordan B Peterson

(Bite-sized Philosophy, 2017, 00:02:28)

Heritage

Urban

Nature



WINDHOEK
HUB OF
ARRIVAL

PREAMBLE

This dissertation proposes a long-distance transport hub on the periphery of the Windhoek Central Business District. It will function as a hub of arrival for local and international travellers with the intention to travel through the rest of Namibia. The project is designed adjacent to the existing railway station and re-adapts an historic building in the centre of the site.

The project consists of three main components:

- 1) The extension of the commuter railway station facilities adjacent to the existing historic station building while retaining the existing one as a luxury train railway station facility.
- 2) The re-purpose of the adjacent historic building to accommodate retail space and an over-night/transit hotel component.
- 3) The design an additional long-distance bus terminal and 4x4 rental facilities as well as a tourist information centre.

The proposal aims to be pedestrian focused to be seamlessly integrated into the urban fabric of the city, in order for the traveller's experience to be the focus of the urban and architectural experience.

The proposal stems from my own experience travelling through the country as a Namibian and encountering the frustrations that international tourists experience as they arrive in Windhoek.

The research in this document explores how architecture can create a unique experience on arrival in the city. This experience can create a future-oriented nostalgia that stems from the character of the urban and natural environment of Windhoek. The exploration also engages with the practicalities linked to the efficient experience of a traveller.

By identifying the fundamental challenges and goals of the proposal associated with the typology, topology, morphology and tectonics, the conceptual and theoretical underpinning of the scheme can be determined. The qualitative and quantitative research explored can be used to synthesize a design methodology. The final design process will be illustrated in order to understand the final proposal that remains in the form of architectural drawings as a means of expression of the outcome of the research proposal. The document is concluded with a critical evaluation and reflection of the research and design process.

CONTENTS

INTRODUCTION	12
DOCUMENT STRUCTURE	20
RESEARCH METHODOLOGY	21

PART 1

PROJECT PARAMETERS	22
1.1 Client & Brief	25
1.2 Problem & Aims	28
1.3 Case Studies	37

PART 2

URBAN FIT	
2.1 Historic Context	54
2.2 Macro Context	61
2.3 Meso Context	64
2.4 Urban Concepts	74

PART 3

SITE INVESTIGATION	
3.1 Micro Context	82

PART 4

THEORETICAL DISCOURSE	
4.1 Discussion Outline	89
4.2 Argument Exposition	92

PART 5

THEORETICAL APPLICATION	
5.1 Touchstone	108
5.2 Concept 1	110
5.3 Concept 2	112

PART 6

DESIGN DEVELOPMENT	
6.1 Phase 1 - Model 1	116
6.2 Phase 2 - Model 2	118
6.3 Phase 3 - Model 3	120
6.4 Towards a Final Design	126

PART 7

TECHNICAL REPORT	146
REFLECTION & EVALUATION	172
REFERENCES	

INTRODUCTION

Namibia is a sparsely populated country where the towns and cities are located far from each other, with vast open spaces between them. This creates a unique travel experience that is highly reliant on modes of transport that effectively cover long distances. Most international travellers start and end their journey in Windhoek, which is geographically located in the centre of the country and is the most well connected city via road, rail and air, hosting the country's largest international airport. For this reason, Windhoek is the capital city and the business and travel hub of the country.

Even though Windhoek is the travel hub of the country, the infrastructure within the city does not reflect this. The available facilities required for tourists (local and international) to travel with ease are scattered throughout the city centre, making it difficult for tourists to access the information and transport required to travel through the city or the country. My proposal aims to integrate all the basic needs of the traveller on one site within the city centre.

It is vital to Namibia's economy that an enabling environment is created for local and international tourists to travel within the country. Tourism is an important driver of economic growth and can play a major role in reducing unemployment and increasing the country's GDP.

33.4%
of Namibians were
unemployed in 2018

(Namibia Statistics Agency, 2019: 78)

ONE JOB IS CREATED
for every **TWELVE**
foreign tourist arrivals

(Department of Environmental Affairs and Tourism, 2009: 111)

Tourism will contribute
11.7%
to Namibia's GDP by 2020

(Namibia Tourism Board, 2016: 5)

Namibia has become a world leader in nature conservation and preservation. With its unique natural landscapes and accompanying fauna and flora, the country is a mecca for nature explorers, photographers, scientists, researchers, and extreme sport enthusiasts.

The country also boasts architecture that is unique to the region. The German architectural buildings that were uniquely adapted to the Namibian climate, built in the early 20th century, are prominent features in Windhoek and Swakopmund and are well-preserved.

These natural and urban tourist offerings, as well as the Namibian cultural experiences, are the reason that hundreds of thousands of tourists flock to the country every year, but there is significant room for growth if the infrastructure is in place to offer travellers the most convenient way to travel through the country.

A transport hub is synonymous with inclusivity, connectivity and fluidity. Windhoek's urban fabric is in many ways still segregated, which is in contrast to the ideas of inclusivity, connectivity and fluidity.

This segregated urban form has been largely influenced by the country's German colonial past as well as the Group Areas Act that was introduced under the South African Apartheid regime in the 1960's. This influenced urban planning up to 1990 when Namibia gained independence. The city has to date not made major improvements to public transport and urban planning, and therefore the city's racial and social demographic remains largely segregated.

Architecture plays a role in the reintegration of society through an urban form that stitches together the buffers created by previous urban policies.

For the purpose of this dissertation, the project rationale and proposal are specifically focused on a transport hub and how it can improve the travellers' experience on arrival and departure from Windhoek. This is done through integration with the urban fabric and architecture that promotes inclusiveness and embodies the country's urban and natural landscape. I will also investigate the existing heritage buildings on the site, as well as contemporary architecture, specifically designed for the Namibian environment.

Travelling Through Namibia

Tourists on average, stay in Namibia for 19 days. A large amount of time is spent travelling by car, train or aeroplane through the vast country. The car/4x4 is the preferred mode of travel, as this gives them the freedom to travel where they please, and it allows them to be closer to the fauna & flora and wildlife en-route to different locations.

On arrival by aeroplane, tourists take a shuttle to Windhoek. Windhoek airport is 44km from the CBD. Windhoek is their base for about one or two days to receive their car and supplies before they continue their journey. The most popular destinations are found west of the country (Swakopmund) or the North (Etosha National Park).

The problem that most tourists encounter on arrival in Windhoek is that they are unsure and disorientated, in terms of where to arrive in the city in order to take the necessary public transport to their places of interest such as a tourist information centre, tour bus facility, car/4x4 rental, travel supplies and accommodation. Many of these facilities are spread throughout the city centre, making it a tedious process to start their holiday or business trip.

A central location where all or most of these facilities can be located will go a long way to improve the traveller's experience on arrival to the city. They will have more time to explore the city, and will be more likely to spend more time and money if they are well-connected and informed about what the city can offer.

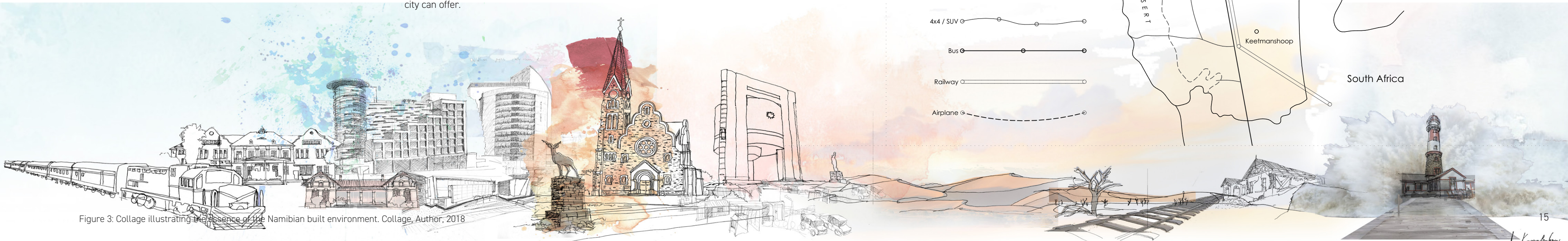
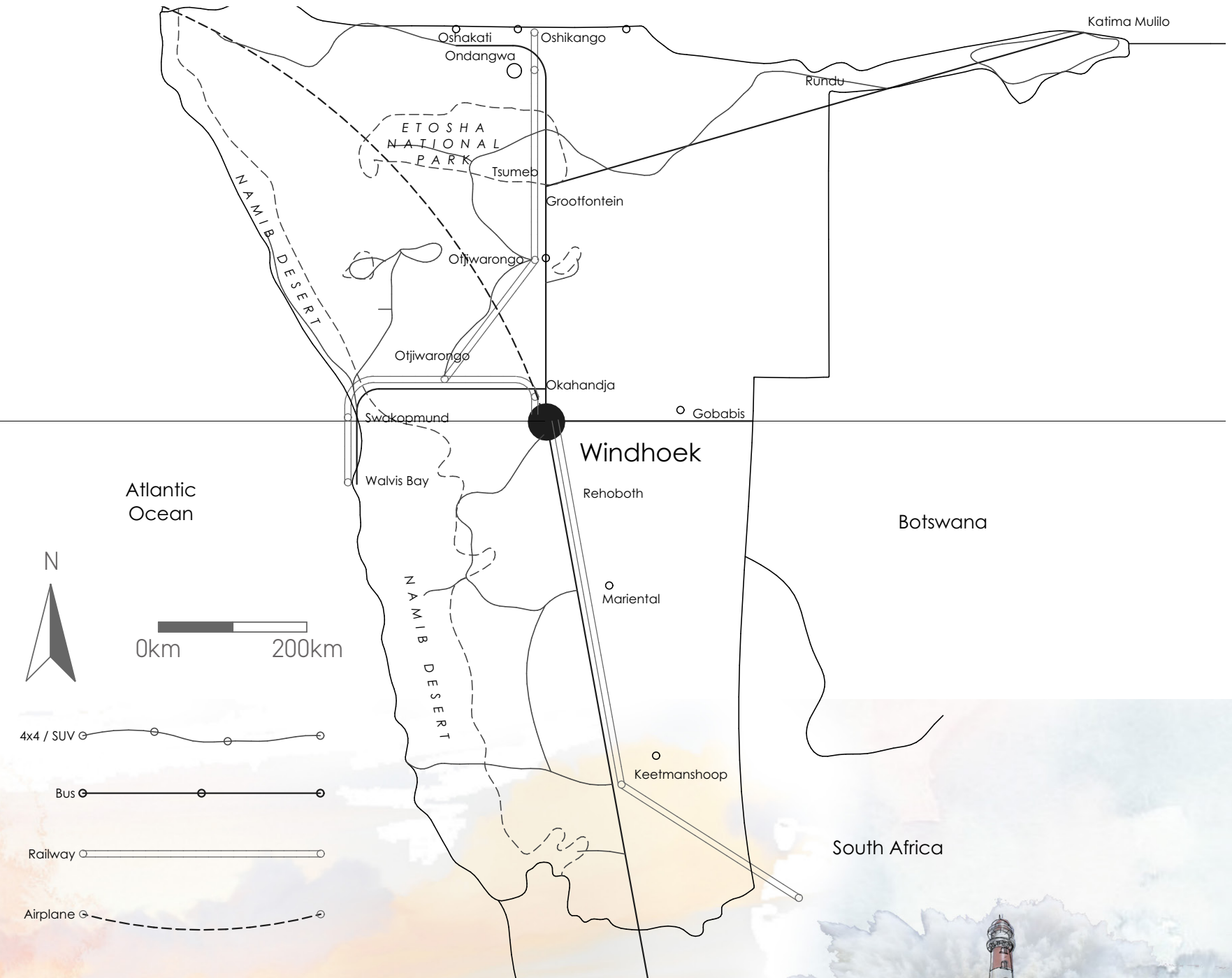


Figure 3: Collage illustrating the essence of the Namibian built environment. Collage, Author, 2018

Taxi Rank Commuter Busstop **PROPOSED SITE** Existing Railway Station built in 1912 Zoo Park Railway Yard Independence Avenue (Main Commercial Street)



The proposed site's status quo is a highly visible, yet low-lying unmaintained tract of land along the railway line. The site has become an activity dead zone on the periphery of Windhoek's CBD despite its civic importance as the only railway station in the city.



PROJECT PROPOSAL

The proposed project is a long-distance transport hub, consisting of buildings aligned along an open-air pedestrian promenade, that seamlessly connects the site to the urban fabric of Windhoek.

The site becomes an extension of the city. The architecture aims to promote transparency and rhythm through its structure and materiality. It also aims to preserve the heritage of the existing site, by lightly touching one building, and infiltrating another.

The proposal aims to establish a new nostalgia for travelling in Namibia and create an additional narrative for the site, to add new voices to the single language the historic buildings currently portray.

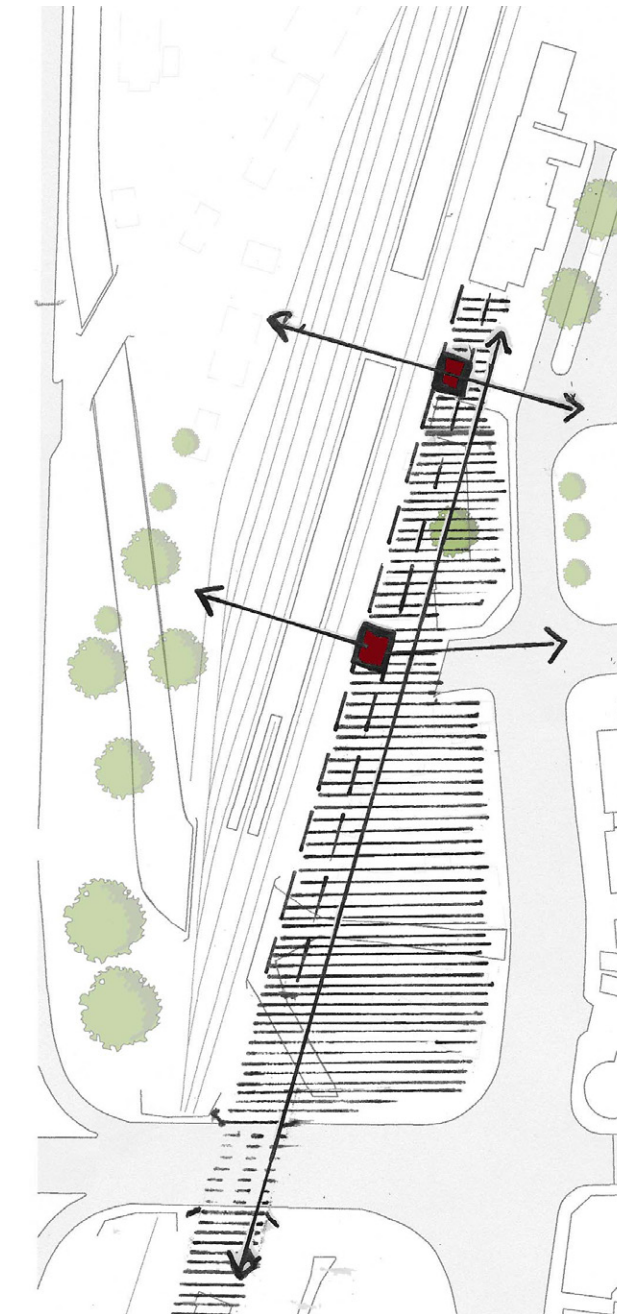
- Existing Railway Station built in 1912 (To be fully preserved)
- Existing Unoccupied building built in 1930, core to be demolished (Eastern Facade to remain)
- Existing Railway lines & Platforms to remain as is
- Existing Low-rise buildings to be demolished (no heritage status)



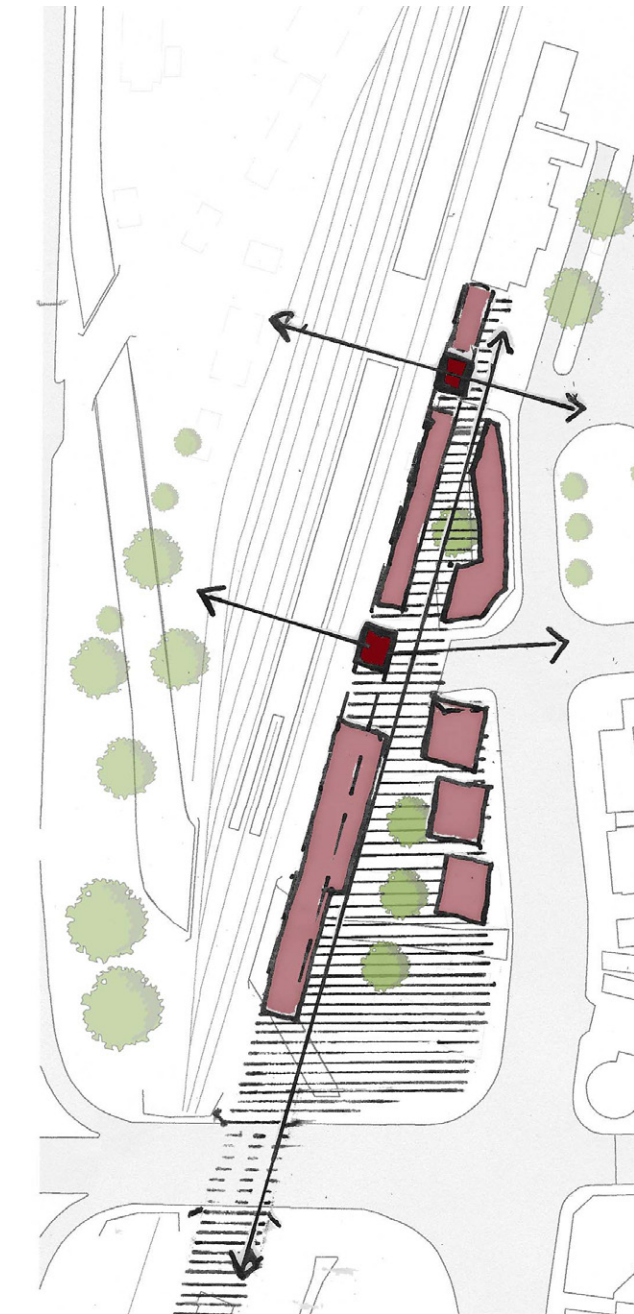
CURRENT SITUATION
The built form consists of an existing railway station, completed in 1912, adjacent to an inaccessible historic building and memorial park that is surrounded by large tracts of land occupied by low-rise buildings for private use.



MAKING WAY FOR THE NEW
By demolishing under-utilized structures, the site is left bare for the opportunity to redevelop it as a vibrant pedestrian space within the urban context.



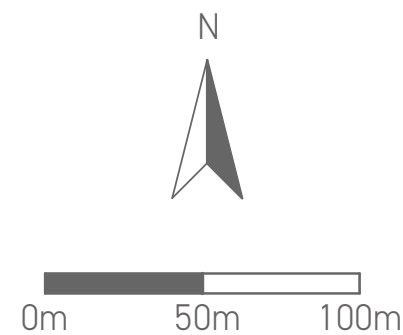
PRIORITISING THE PEDESTRIAN
By Establishing a pedestrian spine, the site is cemented as a public node within the greater pedestrian network of the city centre.



URBAN SPACE CREATING A NEW NARRATIVE
Aligning the architectural intervention between the railway line and pedestrian promenade supports a structural rhythm that guides the traveller along a path that initiates movement and exploration that extends beyond the site.

RESEARCH QUESTION

How can architectural embodiment stimulate the nostalgia of a true Namibian travel experience through a transport hub in Windhoek?



DOCUMENT STRUCTURE

This dissertation proposes a reaction, in the form of an architectural design intervention, to the problem experienced in Windhoek. This is done through investigation, exploration and design. The document consists of seven parts. The application of each part to the design proposal will be illustrated at the end of each section. The problems and proposals outlined in the introduction, will form the basis of the document and will be explored in the following ways:

The first part of the dissertation sets out to briefly describe the problems and aims associated with the typology (type of building and users), topology (where it is located), morphology (what influences the form) and tectonics (how is it constructed). Precedent studies will assist the understanding of how the project program, circulation and technical requirements of similar projects work in reality.

The second part analyses the urban context of the city of Windhoek in its historic and current forms, and how this influences the proposed scheme, in order to fit into the macro context of the city.

The third part deals with the investigation of the site and its immediate surroundings. This part explores the spatial constraints as well as the architectural informants that dictate the height,

length and structure of the proposal and how it relates to the existing heritage buildings on site.

In part four, the initial conceptual ideas of the proposal are explored. The fundamental essence of the proposal is expressed in the Touchstone. This is followed by two concepts in the form of collages that drive the idea upon which much of the proposal's site-specific design is based.

In addition to analysis and ideas generated in parts one to four, it is necessary to formulate a constructive, project-specific theoretical underpinning in part five. The theory should support the design development of the transport hub in Windhoek. Architectural examples are explored in order to ground the theory within the literal scope of architecture.

Part six illustrates the design development of the proposal and its synthesis with construction towards a final design.

The technical report in Part 7 deals with the technical resolutions of the proposal in terms of construction, materiality and technical requirements. Finally, the design process will be evaluated and reflected on in its entirety.

RESEARCH METHODOLOGY

A dissertation in architecture is primarily a document of qualitative research. It relies on concepts, metaphors and intended meanings that cannot be quantified, because it is a proposal and cannot yet be measured, unless it is realized. For the purpose of this dissertation, the sources of knowledge are diverse, in order to gain a holistic understanding of the proposal. The typology, topology, morphology and tectonics are explored in the following ways:

CASE STUDIES

Four case studies of completed and well-functioning buildings are studied in depth to provide a model for the proposed project. They include transport interchanges, railway stations as well as one transport hub. Three case studies are based in South Africa and the other in the Netherlands.

PRECEDENT STUDIES

In addition, a few precedent studies of buildings recently completed in Namibia are studied in depth to provide an idea of materiality, scale and character of the proposal. These precedents are not transport facility related, but rather design oriented.

TOUCHSTONE

This is an abstract model or visual artwork created to represent the essence of the proposed scheme in a cognitive and subjective manner.

SITE ANALYSIS

A thorough analysis of the city, site and its context done through both a cognitive and a quantitative lens, will lead to an understanding of the topology and character of space present in and around the proposed site. The natural and urban barriers will guide the circulation and morphology of the design.

CONCEPTUAL FRAMEWORK

This is a site appropriate idea on which most of the design ideas are based. The framework is formed by theoretical influences as well as a reaction to the existing architecture found on the site.

THEORETICAL LITERATURE

The review, analysis and creative interpretation of literature published on subjects related to the proposal will assist in developing a deeply rooted and meaningful design methodology.

PROJECT PARAMETERS

What Is a Transport Hub

Transport hubs solve the problems of speed and comfort of travel, both in cities and surrounding areas. Usually different transport types are united by one type of building - that of the typology linked to stations. Stations can take many forms, but the key function remains the same.

According to Winter University (Transport Interchange as city centres of activity, 2015), the definition of a transport hub – is a node element of planning of urban systems for transport and social function. It is not only an interchange between different urban public transport types and area transport, but it also accommodates services of passengers and residents through social infrastructure.

The changing from one transportation method to another one is a characteristic of inter-modal transport system. In accordance with this definition – the stop station is named inter-modal transport. Whereas the transport hub includes a lot of other functions, not only linked to transport, but also to retail.

The transport function is the most basic concern for the hub, but not the main determinant for the spaces. There are other functions such as communication, commercial, social, economic, and aesthetic functions.

The proposed Long-Distance Transport Hub is of regional and national importance for Windhoek, the Khomas region and Namibia. It is not merely a transport interchange serving the urban centre of Windhoek, but more for the Khomas region and the country at large, because the transport facilities are geared towards the tourists and locals who travel long distances to towns and cities outside of the city of Windhoek.

DEMOLITION

Existing Railway Station Heritage To be Preserved

Historic Building to be partially Demolished Facade to be preserved

Single Storey buildings to be demolished

PROPOSAL

Existing Railway Station Heritage To be Preserved

New Railway Station with new overpasses and platform roofs

Ground floor market & Cafes First Floor Accommodation

Tourism Centre

4x4 Car Rental with basement parking

Long-distance Bus stop

EXISTING STRUCTURES

The site was selected for its extensive existing infrastructure such as the railway lines and platforms that can be upgraded if required, without the need to build too many new structures in terms of railway infrastructure.

Retaining the facade of the existing building

1.1 CLIENT & BRIEF

The proposal is a joint venture between the City of Windhoek's transport authority (Move Windhoek), the Ministry of Environment & Tourism and the railway authority, TransNamib.

The brief is to design a transport and tourism hub in central Windhoek that facilitates local and international tourists to easily embark on their travels to locations throughout the country. In this way, the process of receiving information and goods before embarking on their preferred modes of transport, both occurring within the same site is streamlined.

The Occupants Include:

- Starline passenger rail services
- Blue Train Luxury train operators
- Desert Express Luxury train operators
- Intercape Bus Liners
- Greyhound Bus Liners
- Namibian Tourism Board (Info Centre)
- Hotel operator
- Restaurant & Coffee shop owners
- SME Stall owners

The Users Include:

- Regional railway passengers
- Tourist railway passengers
- Long-distance bus passengers
- Local & residentail tourists
- International tourists

First, the existing railway station building must be preserved internally and externally as it, because of its national architectural heritage status, but should only accommodate passengers embarking on luxury trains as the building already facilities the functions required for this niche market of train travel.

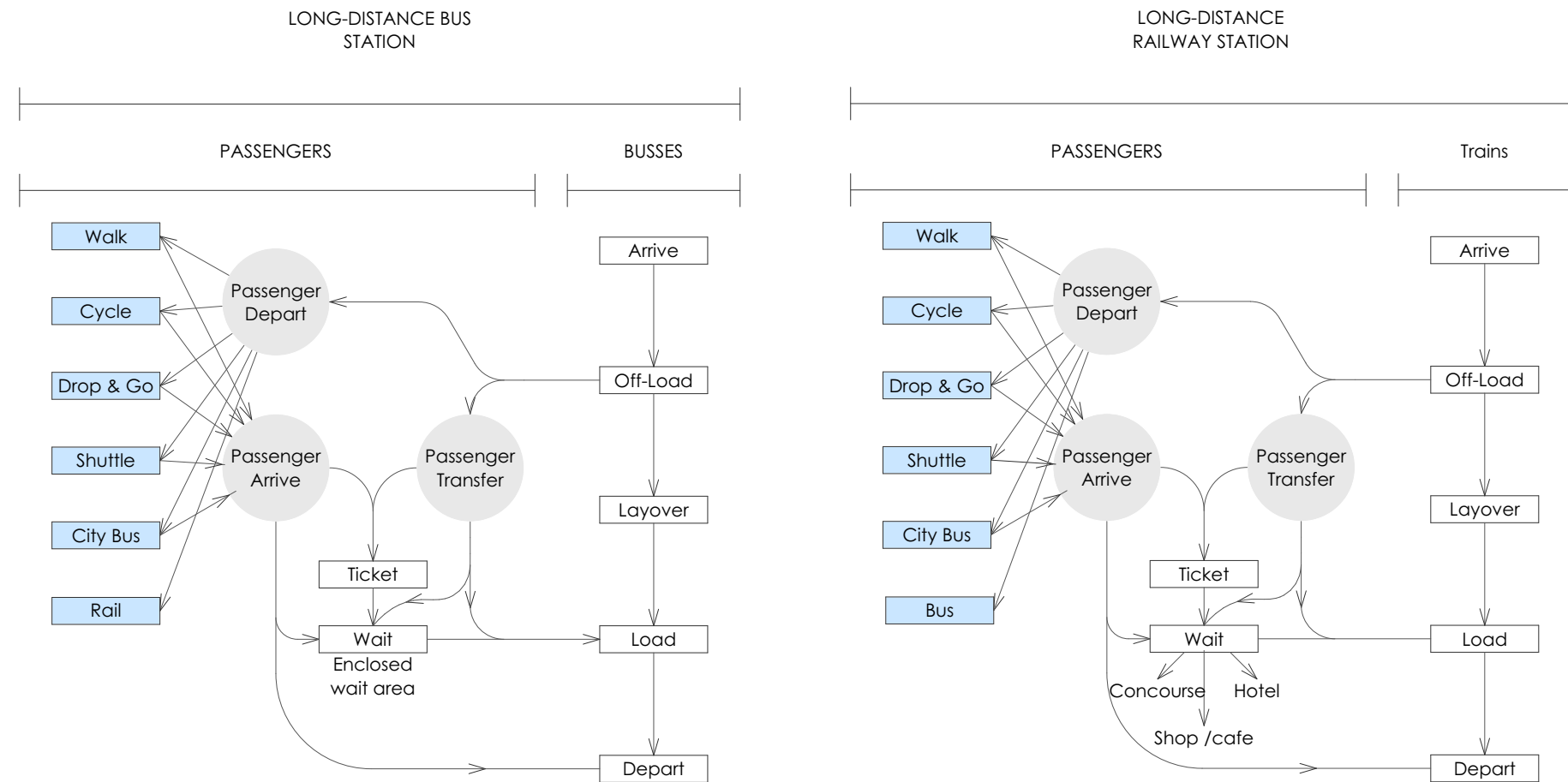
Second, a new commuter railway station should be designed adjacent to the existing station building while utilising the existing railway lines and platforms. This additional station facilities will cater for the commuter trains travelling to cities and towns outside of Windhoek.

Third, a long-distance bus terminal should accommodate the growing need for long-distance bus passenger trips locally and internationally.

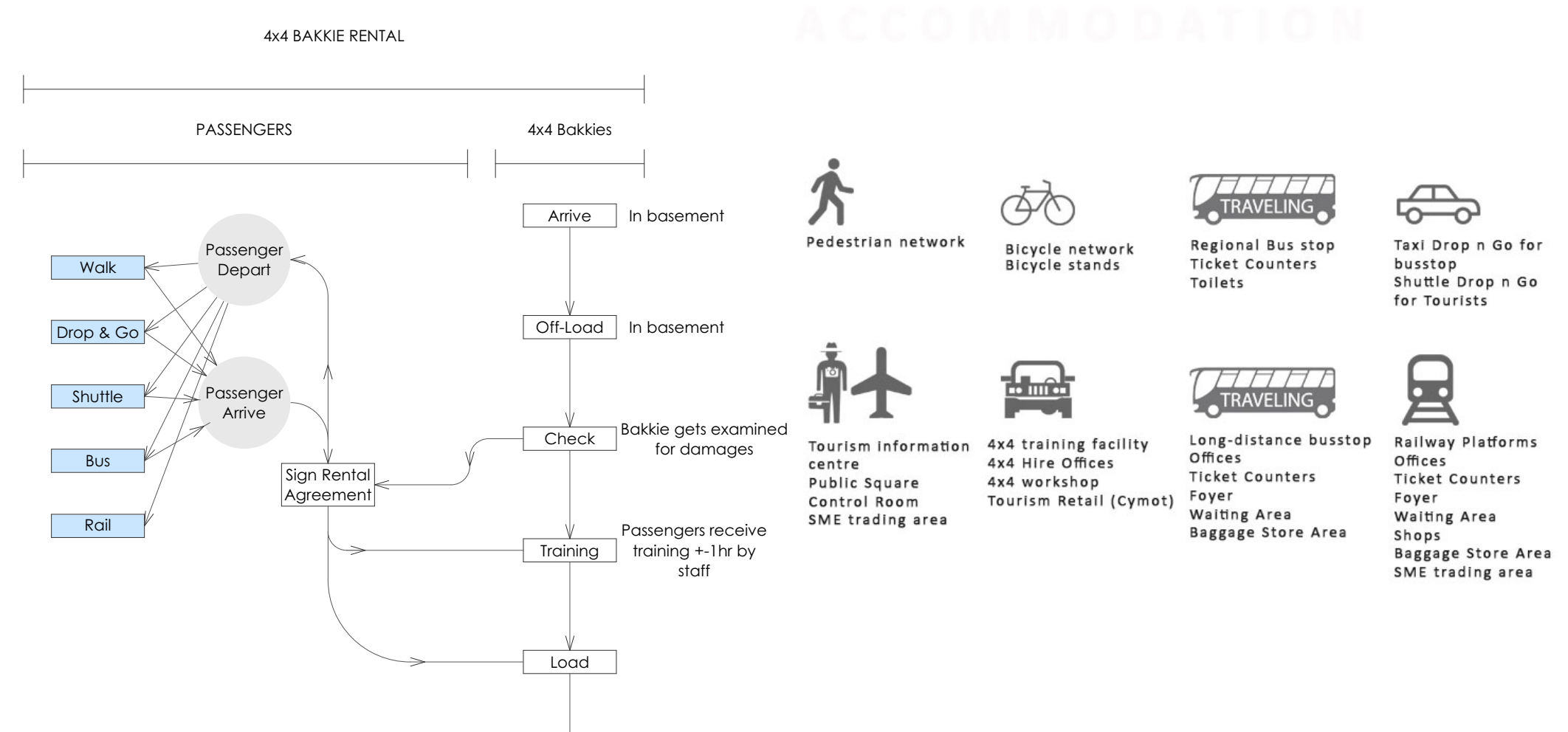
Fourth, a tourism information centre should be centrally located within the site and have high visibility from most access points to the site.

Finally, a retail, transit hotel and restaurant component must increase the permanent foot traffic through the site. Specific attention must be given to the pedestrian experience. The architectural solution should preserve the heritage of the site as well as create an atmosphere that celebrates the unique character of Namibia's urban and natural environments.

Passenger Logistic



Accommodation



1.2 PROBLEMS & AIMS

- | 1 Typology
- | 2 Topology
- | 3 Morphology
- | 4 Tectonics

The problem statements & aims explores the fundamentals of a transport hub on the periphery of Windhoek's central business district.

By understanding the problems and aims with regard to the type of building, typology of the landscape, elements that inform the morphology and the tectonics, one is able to understanding the core elements that influence the overall design. In this way, the challenges can be addressed at the early stages of design development

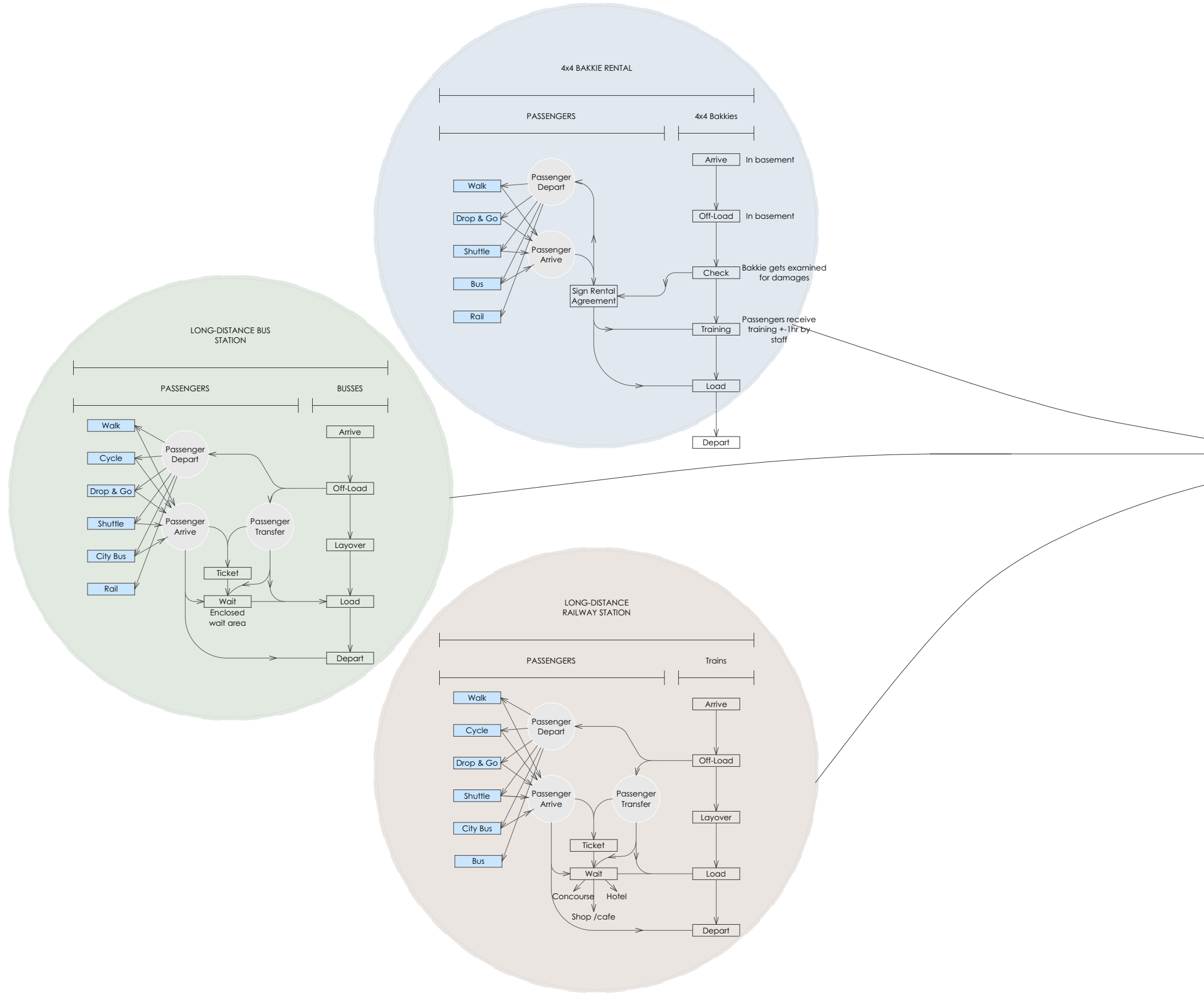
Typology

PROBLEM STATEMENT

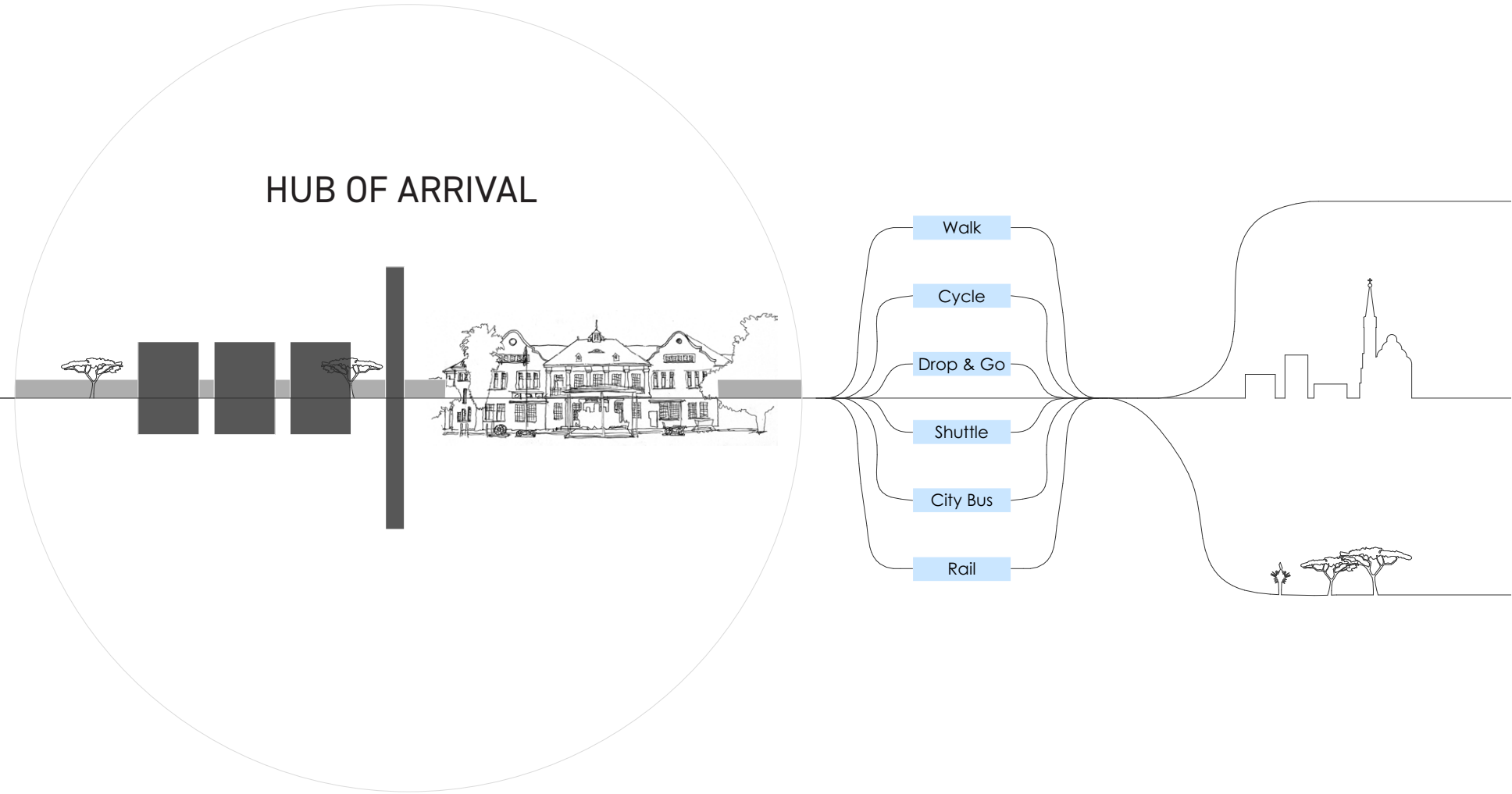
- The typology of a transport hub deals with the transfer of passengers from one mode of transport to another, therefore a lot of over circulation networks overlap. The passenger & vehicular circulation must be considered as it is fundamental to the success of a transport hub.
- Each mode of transport require analysis of its own logistics and pragmatic requirements. The hub must be able to process and accommodate their specific requirements, all within a single design.
- The amount of people as well as their possible frequency of movement must be considered to understand where 'slow spaces and 'fast spaces are required.

AIMS

- The transportation infrastructure should be flexible enough to cater for the influx of private and public transportation alike.
- The design should minimise the need for directional signage, by creating clear lines of sight that serves to orientate the user.
- The type of building needs to accommodate a growing number of passengers and therefore it should be considered to be a more flexible structure of a grid that can be repeated or its elements removed.



HUB OF ARRIVAL



Topology

PROBLEM STATEMENT

- The proposed site lies on the periphery of the city centre, a well connected and high density area, yet there is very little pedestrian and commercial activity in the site at the moment. The architecture and urban spaces do not encourage high volumes of people at the moment.
- The site lies next to an old river (that has since been channelled underground) and is the lowest part of the city centre. The low-lying topology has ensured that the site is unnoticed by most residents.
- The vast tracts of underutilised and industrial land to the north and south of the site has contributed to the site being void of people and commercial activity.

AIMS

- The architectural intervention should aim to integrate the site with the city centre as well as attract people to the area. The site is well positioned to become a new node in the city centres pedestrian network. The heritage architecture also creates a unique character in the area.
- In order for the site to become a recognisable space within the city, an elevated structure should be considered to increase the visibility of the low-lying space.



Morphology

PROBLEM STATEMENT

- **Size:** The shape and size of the building is in most cases determined by the volume of passengers and the size of the mode of transport. For example, The length of a platform of a railway station, determined by the length of the trains, would require a long building or coverings along the platform, especially in the case of a through station. The spacial requirement of the mode of transport must be considered to determine the spacial requirements of the architecture.
- **CONTEXT:** The architectural language of the existing buildings in and around the proposed site will determine how the architectural intervention relates to its surroundings.
- **Civic:** Due to the public nature of the typology, the the architectural spaces need to be considered in terms of contributing to the public realm as well as being a marker that is easily recognisable.
- **Volume:** High volumes of people dictate the need for large open spaces with high ceilings and large column-free spans.

AIMS

- **Size:** The intervention should take advantage of the length of the site and the existing platform by creating a rhythmic structure along the platform that mimics the structure of the railway tracks. Along with resting spaces, the platform becomes a playful space that does not feel tirelessly long.
- **CONTEXT:** The architecture should not compete with or mimic the existing German architecture, but rather speak of an inclusive space that is permeable and transparent. It should speak a new language that reflects contemporary Namibia.
- **Civic:** The structure should architecturally enhance the public environment by establishing itself as a new landmark within the city centre.
- **Volume:** In order to avoid an airport-like space that is overwhelmingly large, the circulation spaces could rather become outdoor public spaces that take advantage of the pleasant Namibian climate.



Tectonics

PROBLEM STATEMENT

- The existing station and adjacent building has a clear symmetrical facade that has become synonymous with railway stations throughout the country, yet this is not adequate for a modern station. The monolithic structure is uninviting and inflexible.

AIMS

- Consideration must be given to the new structure in order to open the site up to the public, becoming a transparent threshold between the city and the railway platform.
- The structure of the proposal should aim to be as transparent as possible in order to ease navigation through the spaces. The users must be able to see beyond the space they are in, in order to minimise the need for directional signage.
- The building should be both practical and easily maintained, while implementing sustainable methods and technology.



1.3 CASE STUDIES

Numerous transport interchanges have been studied in order to understand how they function in terms of pedestrian flow and public space as well as bus or vehicular circulation and points of access. These case studies include the following:

Cape Town Station

Cape Town city centre, South Africa
2010
Archstation Joint Venture

Kuyasa North Public Transport Interchange

Khayalitsha, Cape Town, South Africa
2010
Meyer + Forster Architects & Urban Designers

Baragwanath Public Transport Interchange and Traders Market

Soweto, Johannesburg, South Africa
2006
Urban Solutions Architects & Urban Designers

Alkmaar Railway Station Extension

Alkmaar, Netherlands
2015
VenhoevenCS Architects



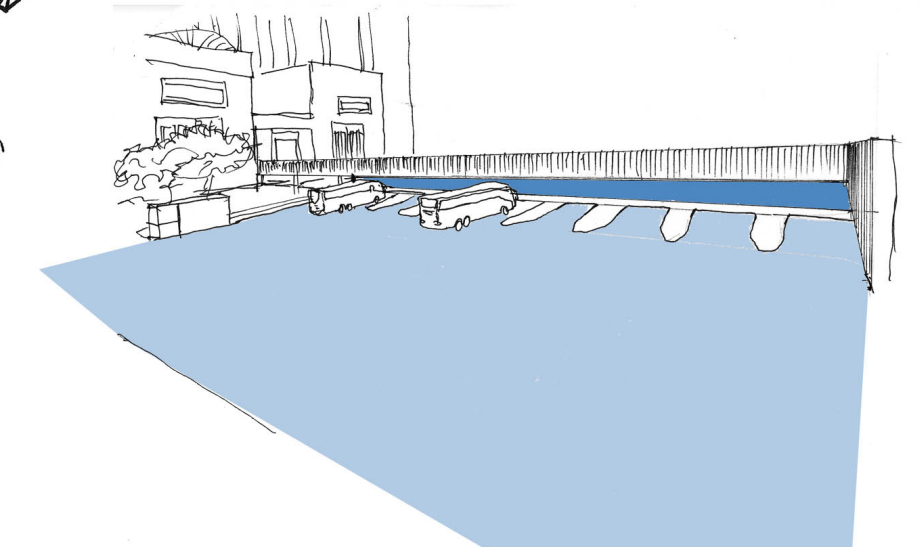
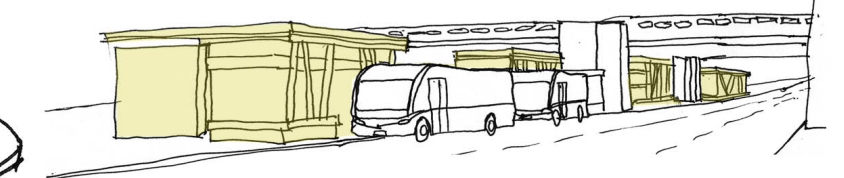
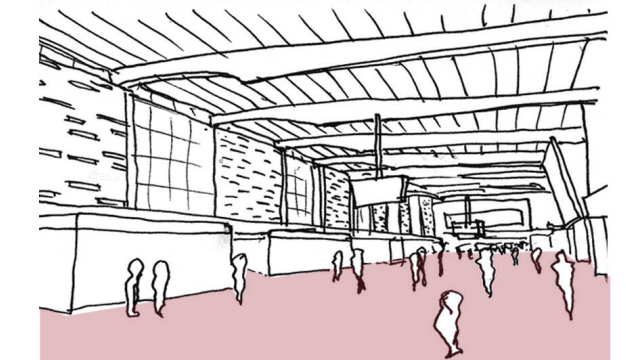
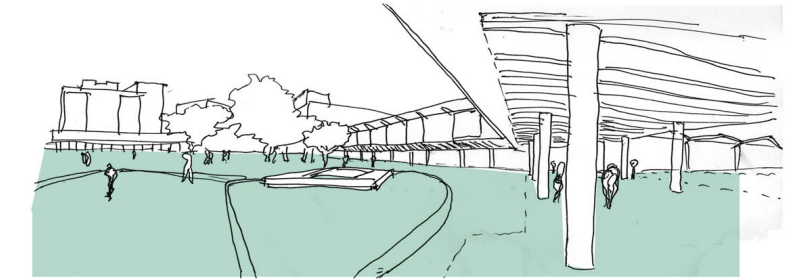
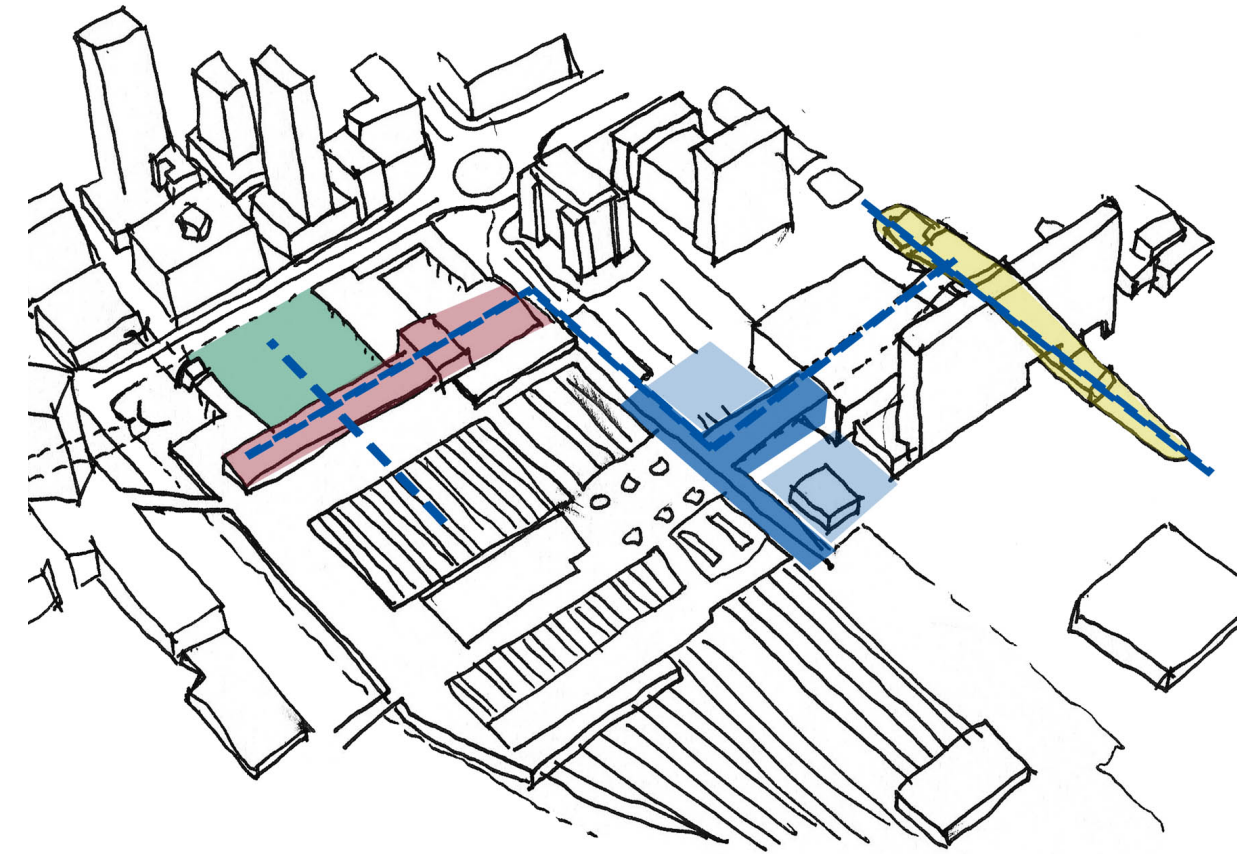
CAPE TOWN STATION

Location: Cape Town City Centre, Cape Town, South Africa
Architects: Archstation Joint Venture
Year Completed: 2010
Typology: Regional Inter-modal Transport hub. Originally an end railway station, the site was expanded to accommodate a long-distance bus stop, taxi-rank, traders market and a bus rapid transit station

The Cape Town station is a critical anchor point for the movement and transfer of people within the region of the city itself as well as the country. The building as it largely appears today was first constructed in 1962 as an example of modernist-inspired apartheid-planning. Its first major renovation and extension occurred after apartheid laws on the separation of races were abolished and facilities were arranged for the sharing of spaces by all races.

In preparation of the Fifa World Cup hosted by the country in 2010, the facility played a vital role in the public transport network. The building allows for a seamless transfer of people from one mode of transport to the other.

The design is largely successful, but the low-rise building has a large footprint that unfortunately forces the users to walk long distances in an enclosed space in order to transfer to other modes of transport.

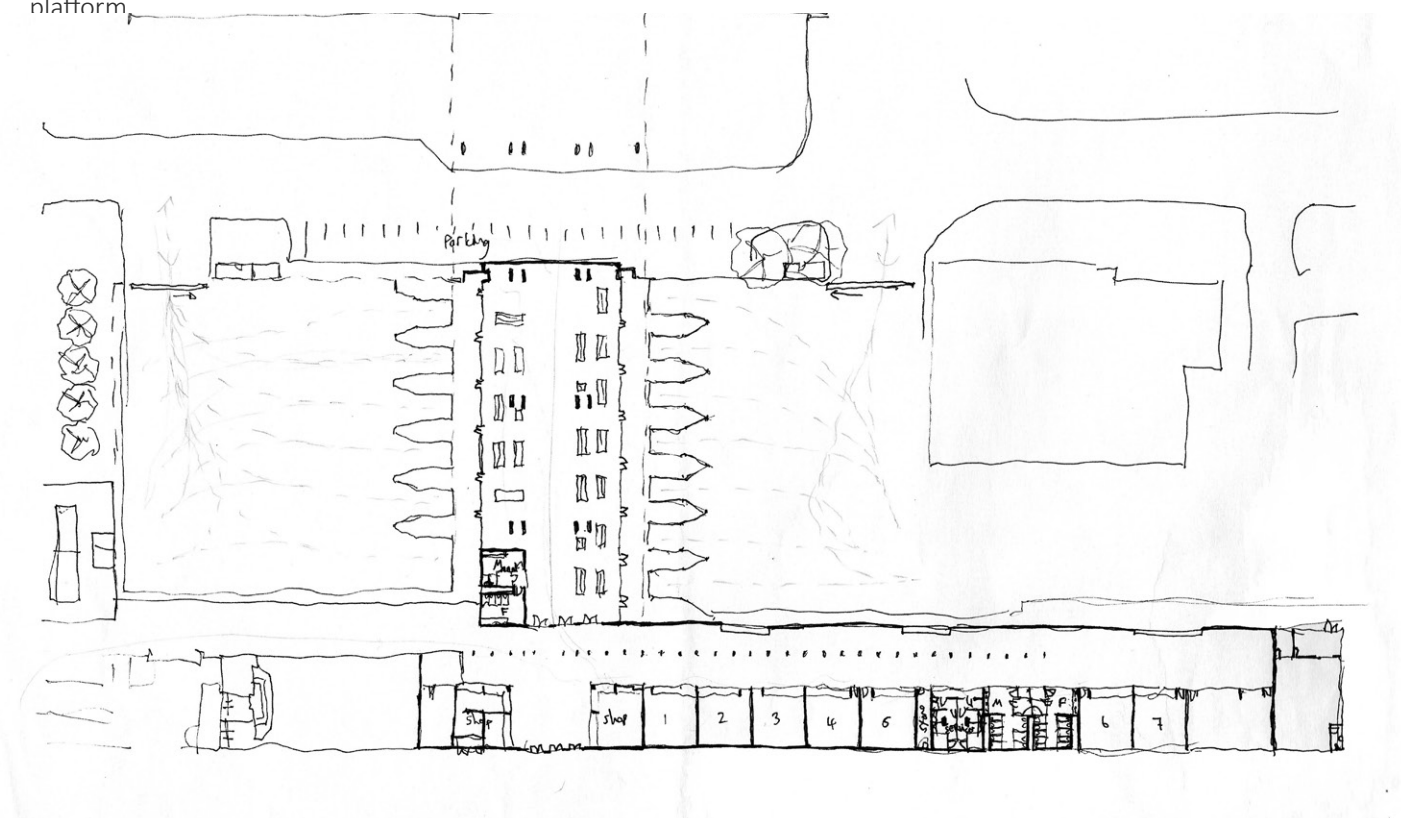


The long-distance bus facility, previously adjacent to the station forecourt, has been relocated to Old Marine Drive under the existing civic centre pedestrian bridge. It provides a secure and waiting and meet-and-greet space for commuters and travellers alike.

There is indirect covered access to the bus station from the railway station concourse and a adjacent drop & go facility. There is space for seven ticket cubicles that service the various long-distance bus operators.

Once passengers have received their tickets, they can wait for their bus in a secure open-plan waiting area with seating and clear signage at their allocated platform.

The facility is entered from Old Marine Drive and allows the buses to park perpendicularly against the waiting area. This allows direct access and visibility for the seated passengers. The buses are exposed to the wind and rain while passengers embark and load their own luggage. This creates an uncomfortable experience that could be avoided by a covered area at the bus parking spaces.



KUYASA PUBLIC TRANSPORT INTERCHANGE

Location: Khayalitsha, Cape Town, South Africa
Architects: Meyer + Forster Architects & Urban Designers
Completed: 2010
Typology: Local Intermodal Transport hub with railway station, taxi rank and traders market facilities

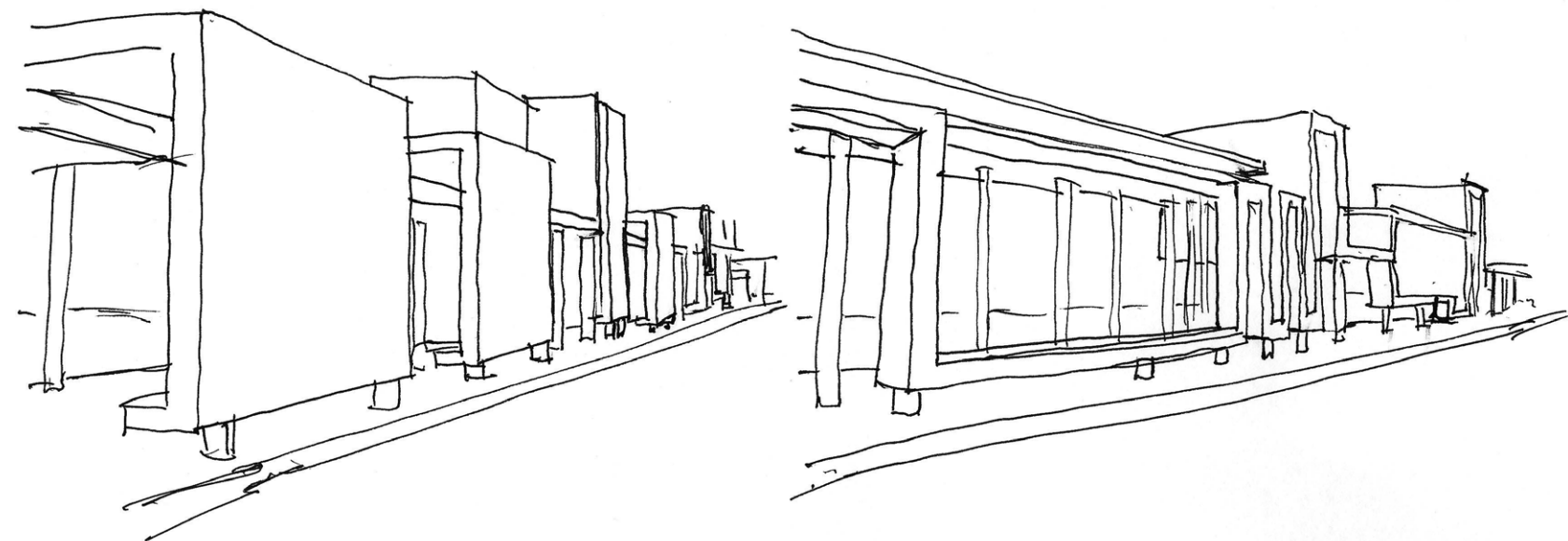
The entire facility has been designed as an initial phase of public investment, therefore the architecture and urban design had to facilitate future development within and adjacent to the site.

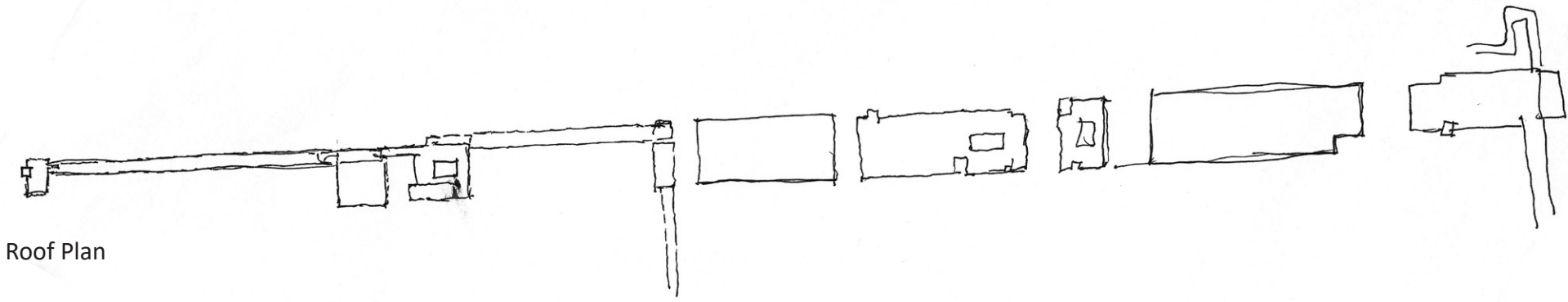
The architecture is designed around a public square that is directly linked to the taxi rank and railway station. The architectural solution introduces a human scale that is playful, yet robust in materiality in order to ensure the longevity of the buildings in anticipation of a high-traffic space.



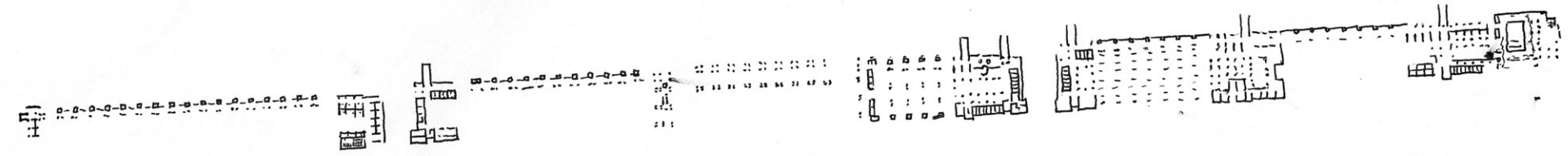
BARAGWANATH PUBLIC TRANSPORT INTERCHANGE & TRADERS MARKET

Location: Soweto, Gauteng, South Africa
Architects: Urban Solutions Architects & Urban Designers
Completed: 2006
Typology: Taxi rank, bus rank, long-distance taxi rank and trader market facilities

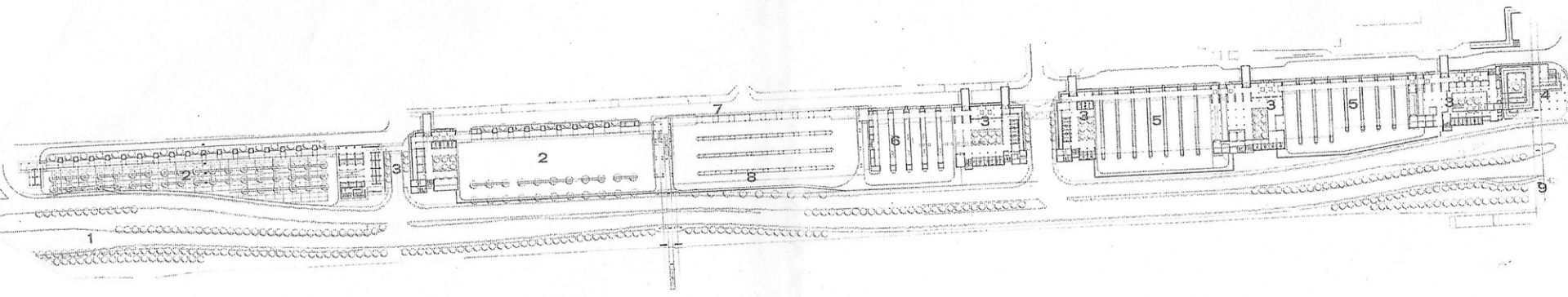




Roof Plan



Column and wall structure Plan



Site Plan

ALKMAAR RAILWAY STATION

Location: Alkmaar, Netherlands, Europe
Architects: VenhoevenCS Architects
Completed: 2015
Typology: Railway station, bicycle parking and bus stop

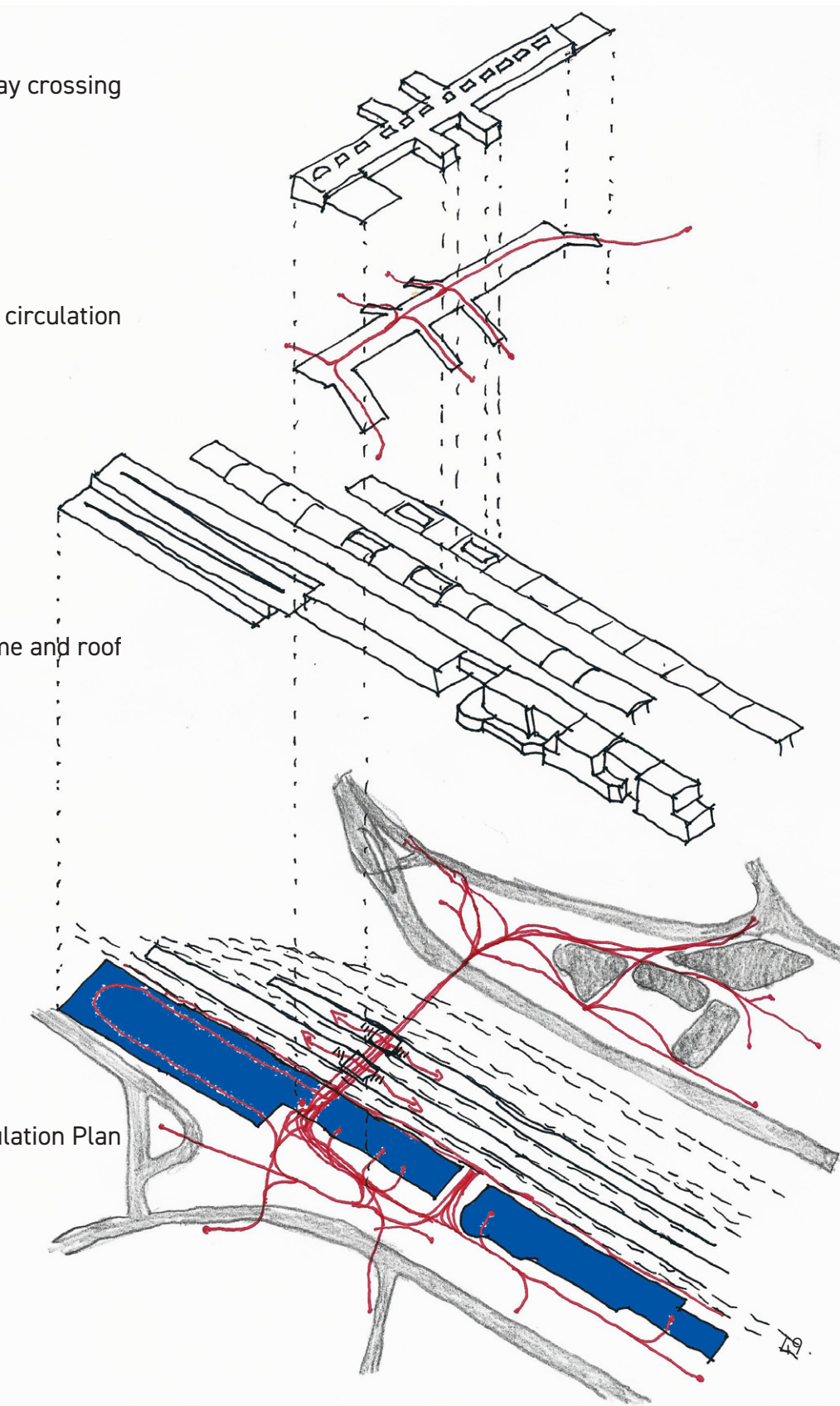


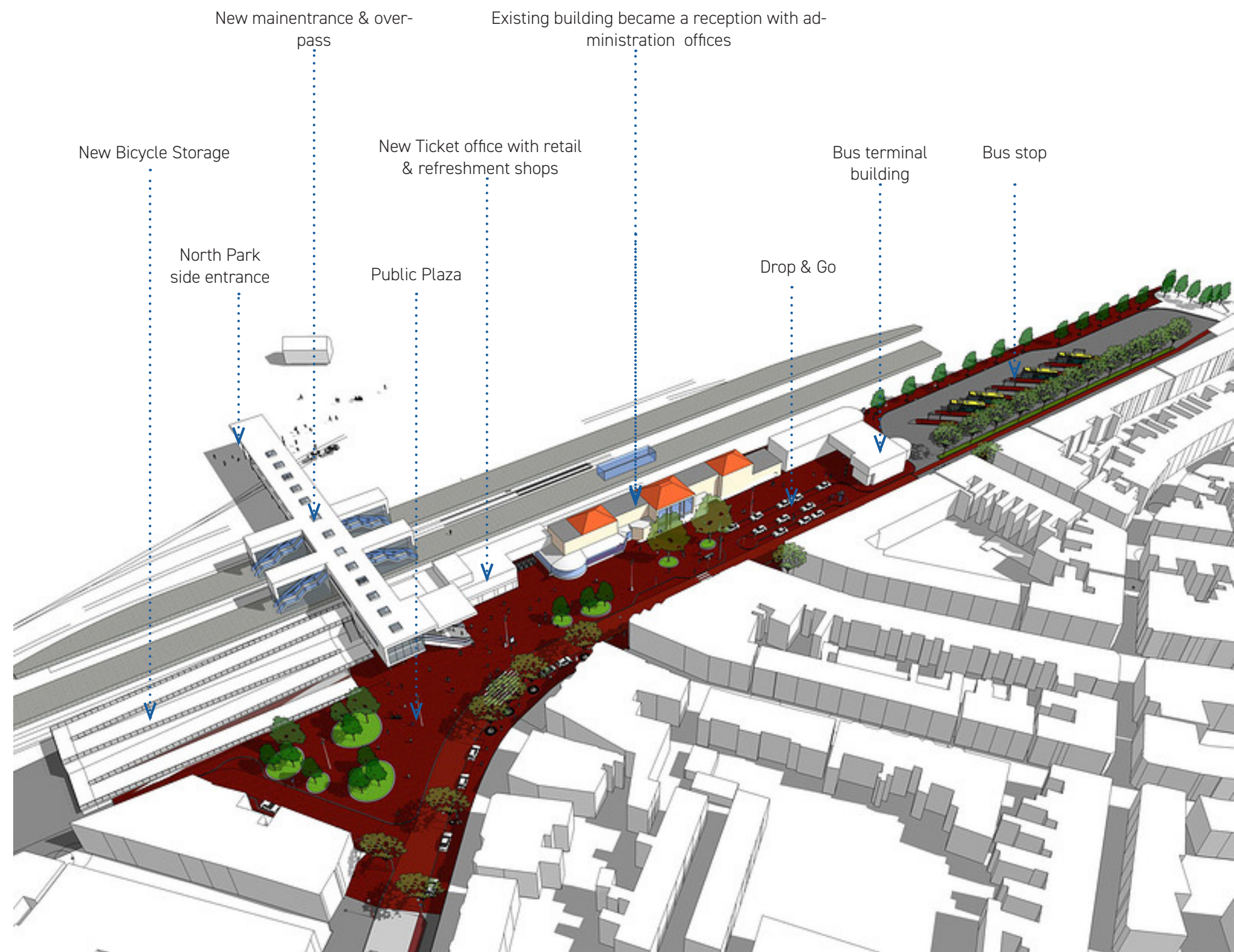
Volume of Railway crossing

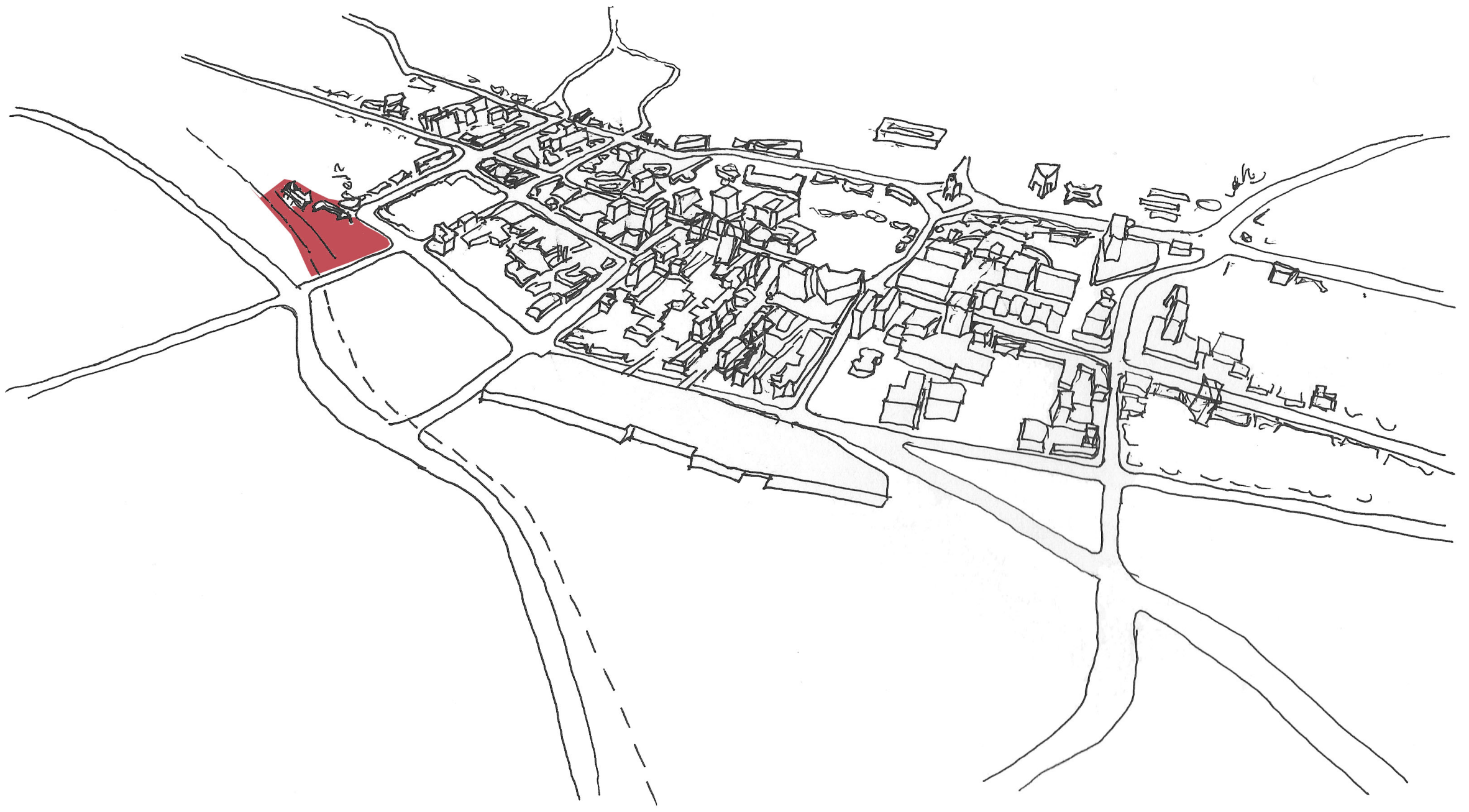
Railway crossing circulation

Building volume and roof

Circulation Plan







- | 2.1 History of Windhoek's Urban Development
- | 2.2 Macro context -Windhoek
- | 2.3 Meso context - Central Business District
- | 2.4 Urban concepts explored

2.1 HISTORIC CONTEXT

NOTABLE
INFRASTRUCTURE

NOTABLE
EVENTS

NOTABLE
INFRASTRUCTURE

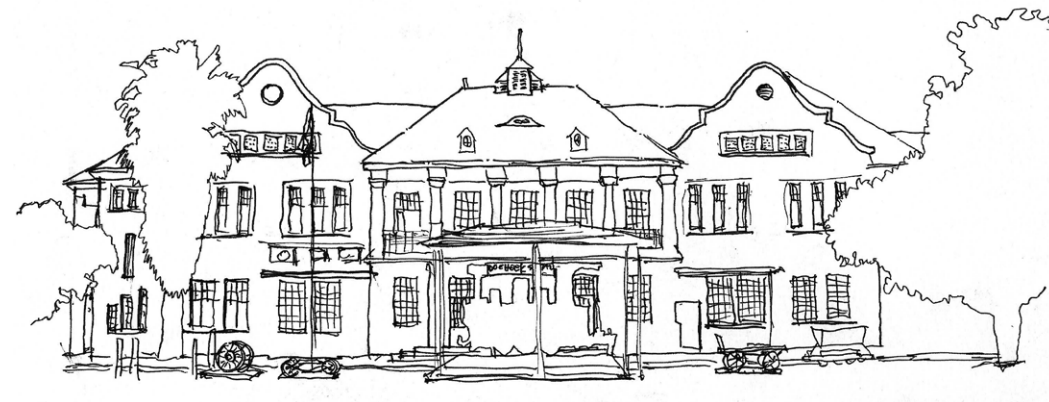
PRE-COLONIAL ERA

Namibia Became a
German Colony

1884

GERMAN COLONIAL RULE

Infrastructure that established urban
centres through establishment of
transport infrastructuretransport

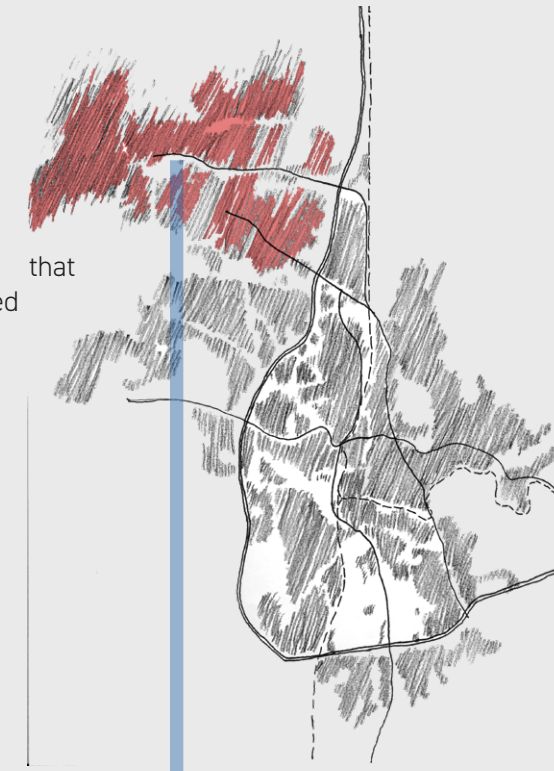


Namibia Under
South African Rule
(as a protectorate)

1915

SOUTH AFRICAN RULE

Infrastructure
that
segregated

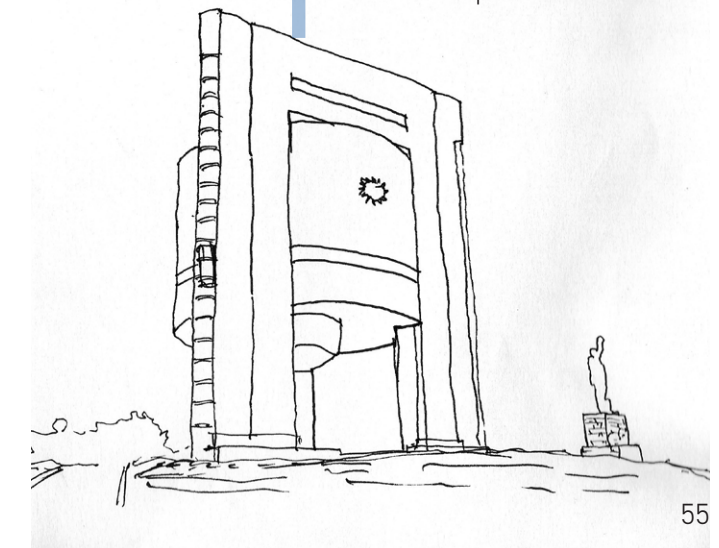


Namibia Gained
Independence from
South Africa

1990

INDEPENDENCE

Infrastructure that celebrates in-
dependence



The theoretical approaches that are explored in this dissertation were derived from the historic structure and character of the city and the nostalgia linked to it. Windhoek was first established in 1840 by Jonker Afrikaner, a native to southern Africa, due to the abundant natural springs in the area. With the arrival of German colonists in 1884, came the establishment of Windhoek as a town located in the central area of Namibia (then South-West Africa). (Dewulf and Maritz, 2016: 15). The natural springs became an ideal location to establish a town where agricultural activities could take place in a country with a harsh climate. In 1902, the first railway line and station were completed, linking Windhoek to the coastal town of Swakopmund.

The city of Windhoek has changed drastically over the last century and a significant change is that the city is no longer centered on people. It is rather car-centred and this leaves many uninhabitable spaces and buffer zones void of social activity throughout the city. It has now become an environment that is isolating, where the observer and stroller are left dissatisfied with nowhere to explore and no streets to freely play the game of life in.



Fig. 24: Photograph of Windhoek taken in 1900 by Unknown. (Travelnewsnamibia, 2018: Online)

The image of Windhoek in 1900 (above), by an unknown photographer, illustrates the way the city has been built by utilising the topology to centre the church at the top of the slope. The church became the beacon of the city, whereas the other low-rise structures humbly sit along the slopes. The city was scaled for the pedestrian. This was very possible within a small population at that time. The scale and typology of the city has changed significantly from the early 1900's as illustrated in images 25-27.



Fig. 25: Google Image of Windhoek in 2018.



Fig. 26: Map of Windhoek in 1912 indicating the Staatsbahn (old station) in red and main activity street edges in Black.



Fig. 27: Overlaid Plan of Windhoek in 1912 indicating the Staatsbahn in red and the main activity street edge in black which is now Independence Avenue.

Public and private transport (horse driven) & non-motorized transport was the only way to move through the city since 1902 when the "Staatsbahn" (Town Rail) was built along Kaiserstrasse (now Independence Avenue) which was the commercial hub of Windhoek at that time. The first railway station was directly linked to the "Staatsbahn" as indicated in red in Figure 28. Figure 29 indicates the two main gathering spaces in Windhoek in green and the Staatsbahn that connects the two spaces at each end of Kaiserstrasse. The Staatsbahn cemented Kaiserstrasse as the main commercial street in Windhoek due to the convenience it added to movement of people and goods through the street. Kaiserstrasse, now Independence Avenue, remains the commercial hub of Windhoek. Zoo park and a number of historic buildings where pavements remain wide, remain till today, indicating the importance that these spaces in the modern city.

Walking was one of the only options to travel through Windhoek, the street was wide and lined with shops. Collonades created shaded pavements while trees provided spaces to rest. There was ample space for pedestrians and the Flâneur to wander and observe. A Flâneur, according to Zygmunt Bauman, is "the travelling player" who makes the world a play and the people around him, players. (Tester, 1994) The city becomes the place of exploration and observation, but just as a nomad, the person is not really seen observing and doesn't become part of society, but part of a moment in play. Play is the aim of the flâneur and freedom to play is the requirement.

The city and the urban environment embodied the natural environment through its urban design and infrastructure. The linear city's main roads were constructed in a clear north-south axis along the slopes of the hills surrounding the city. The commercial and residential buildings were concentrated along and around Kaiserstrasse (Kaiser Street) for easy access and mobility (see Figure 30). A few buildings were scattered on the hillsides with the Christuskirche perched above the hill as a marker for the residents and a symbol of the town's Christian heritage seen in Figure 24. There is a timeless character to the city of 1900. It is a place where the wanderer, the Flâneur can observe in harmony. There is a sense of freedom within this place that seems to have been lost in time. There seemed to be freedom to wander and explore, with few boundaries.

The city's residents did not excavate into or flatten any hills, but rather built along the slopes. They built north-south facing buildings with louvres over windows and small porches overlooking the town. Streets were gravel road, therefore pedestrians could feel the soil, smell the natural vegetation and feel the contours of the city as they moved along it. They were always made aware of the natural environment and the topology throughout the urban spaces, although good to be so closely linked to nature, there are problems associated with this, that modern planning attempted to solve, such as health, safety, speed, etc.

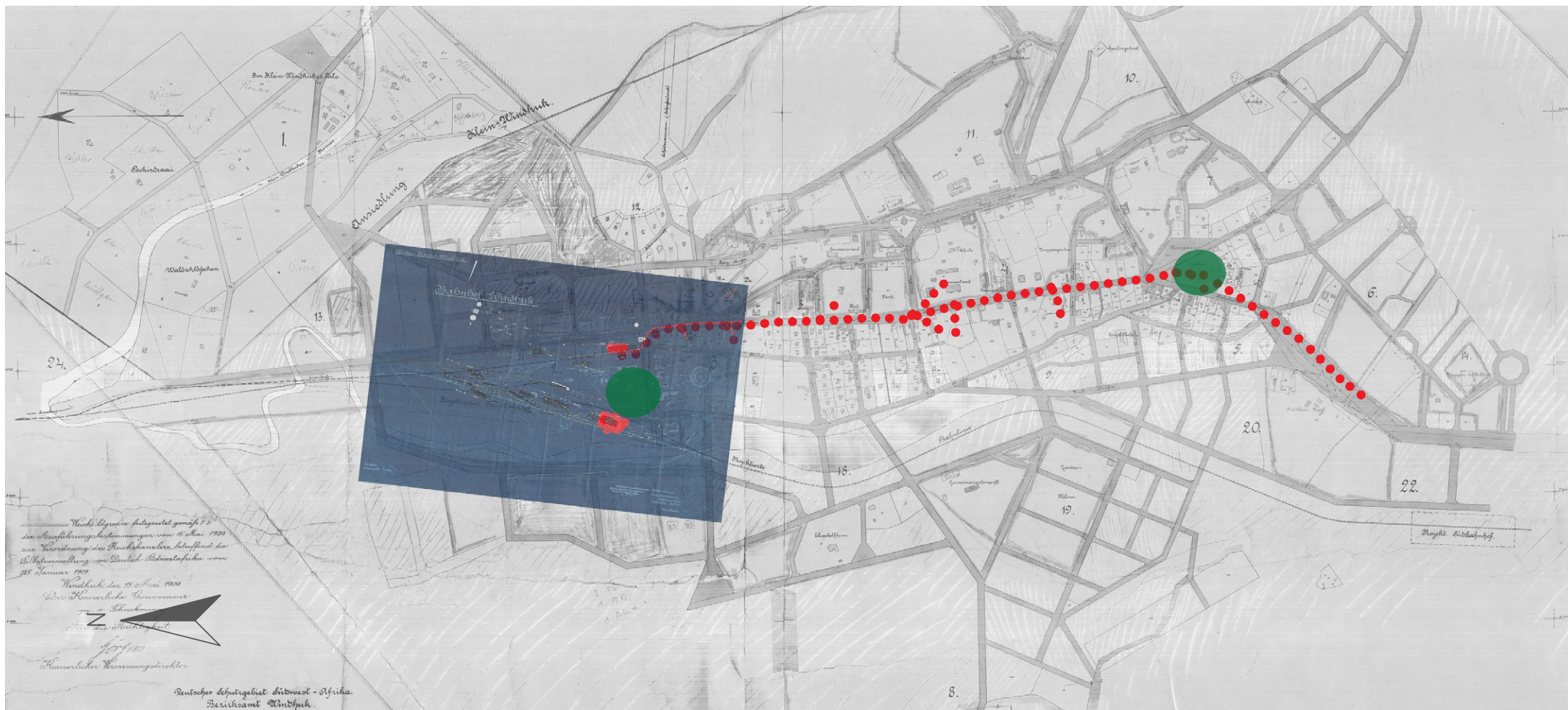
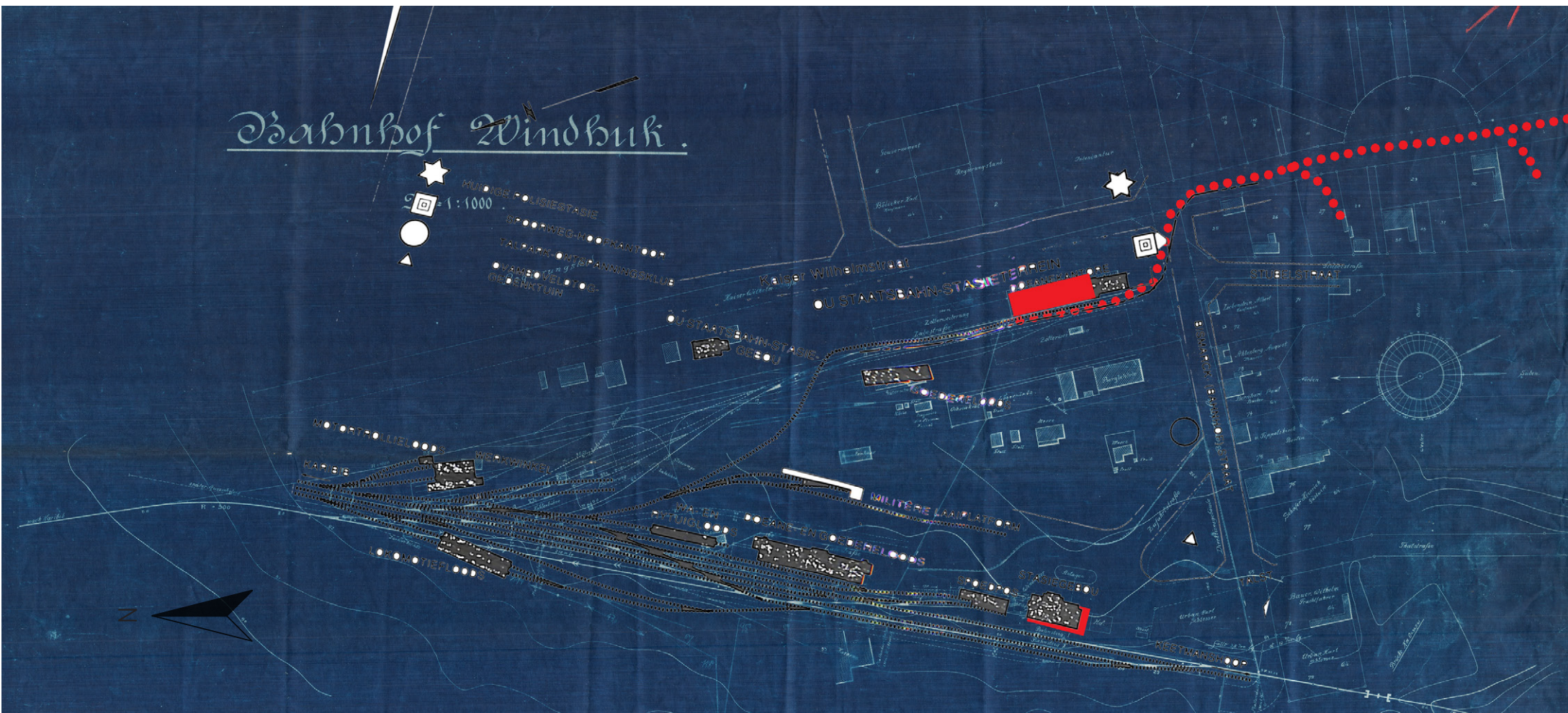


Fig. 28: Bahnhof Windhuk, 27 August 1910, Map, National Archives of Namibia, 2018.

Fig. 29: Overlaid Plan of Windhoek in 1912 indicating the Staatsbahn, National Archives of Namibia, 2018.

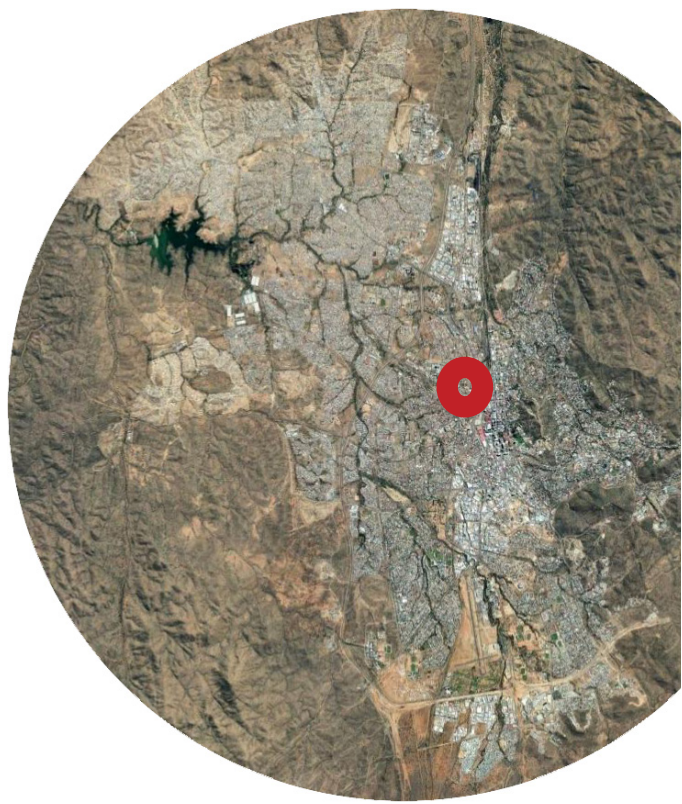


2.2 MACRO CONTEXT

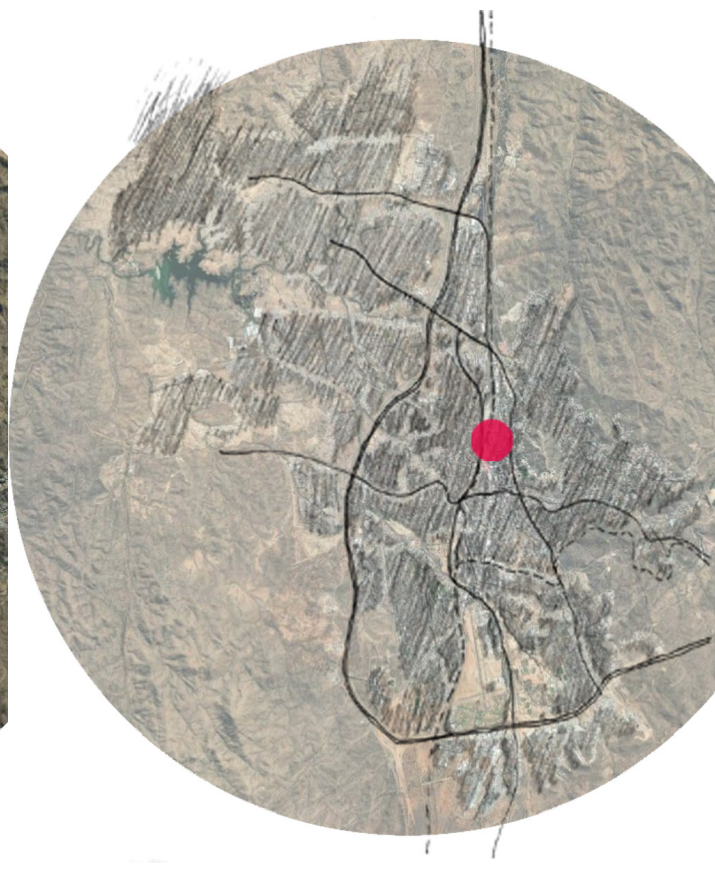
CITY OF WINDHOEK



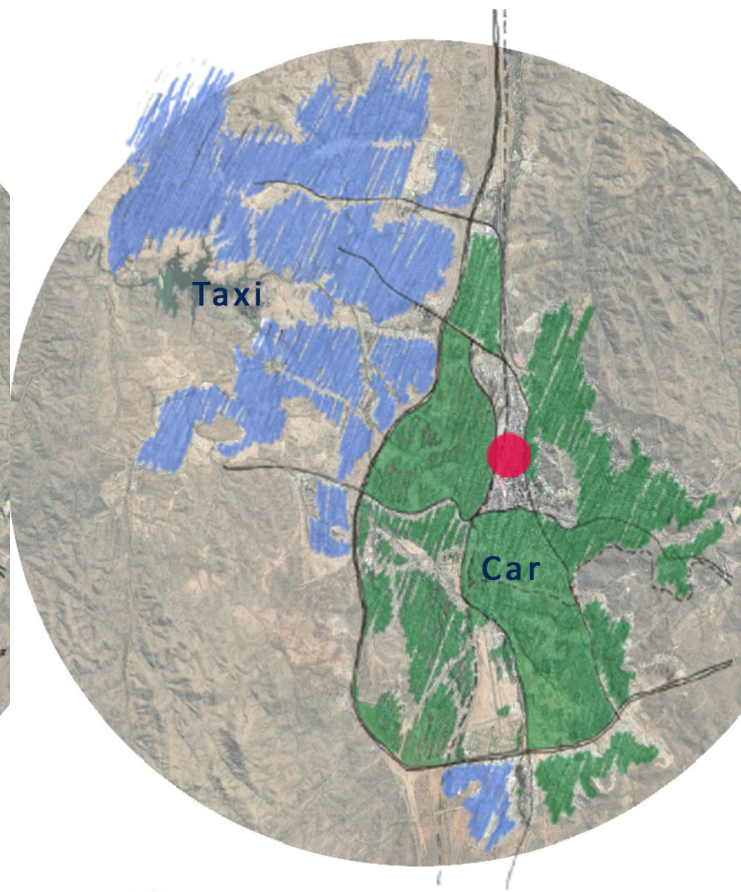
Fig. 5. Illustration showing the location of the site. (Author, 2018)



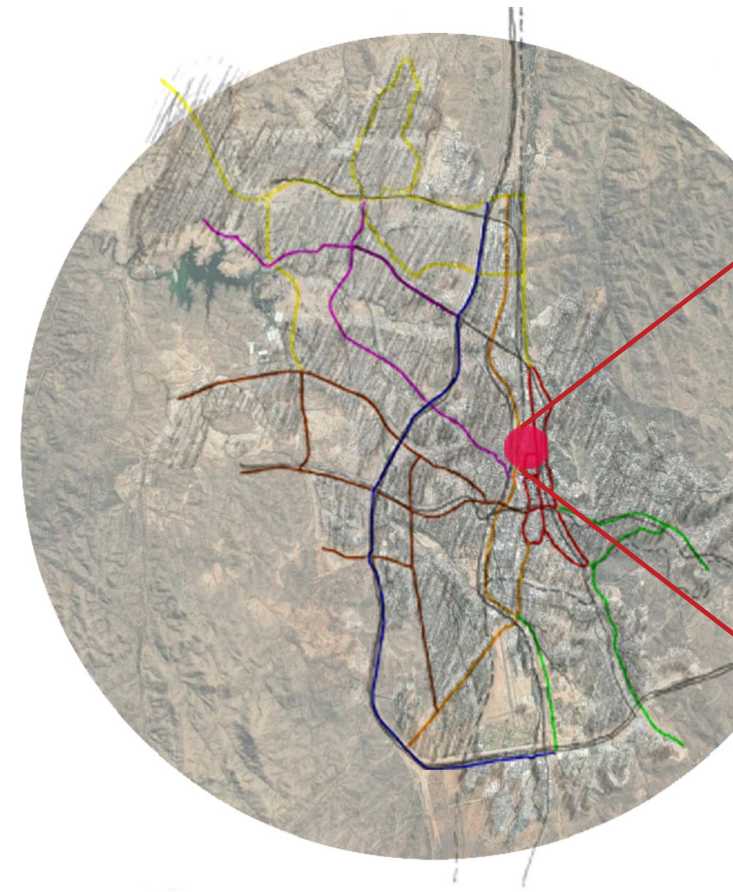
Current:
Satellite image of Windhoek



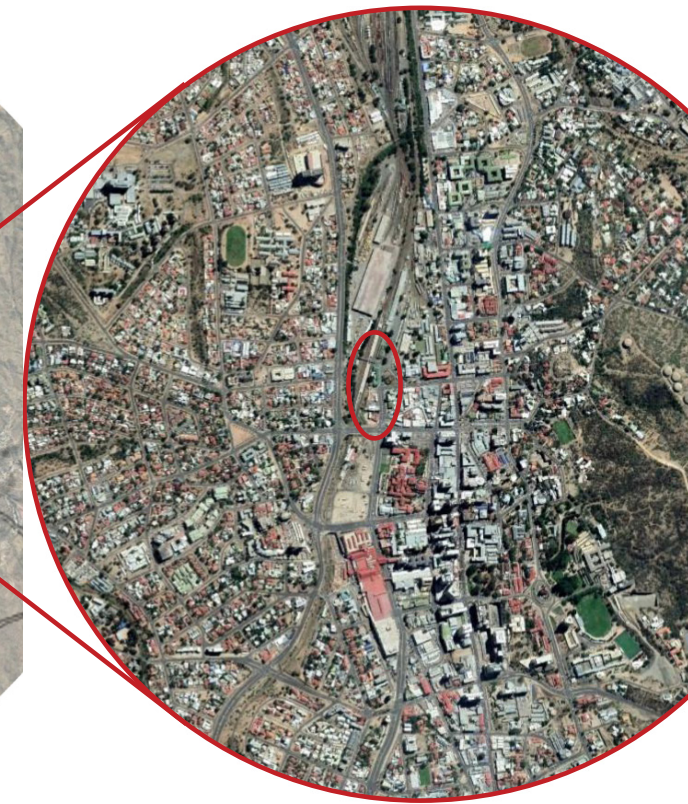
Current:
City segregated by highways and barren open spaces



Current:
Means of transport used by locals
(Move Windhoek, 2013: 29)



Future:
Proposed Bus Rapid Transport route
masterplan for Windhoek to be fully implemented
by 2032
(Move Windhoek, 2013: 152)



Current:
Windhoek City Centre



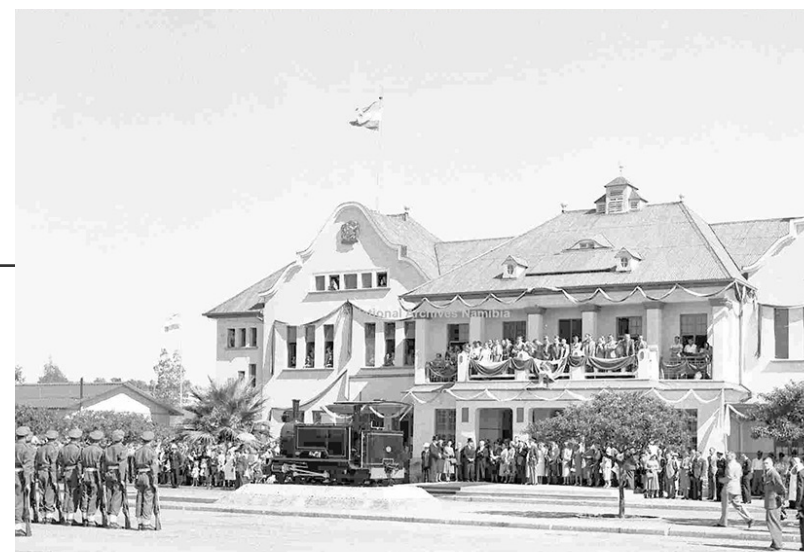
Current:
Arterial roads leading to the proposed site

2.3 MESO CONTEXT

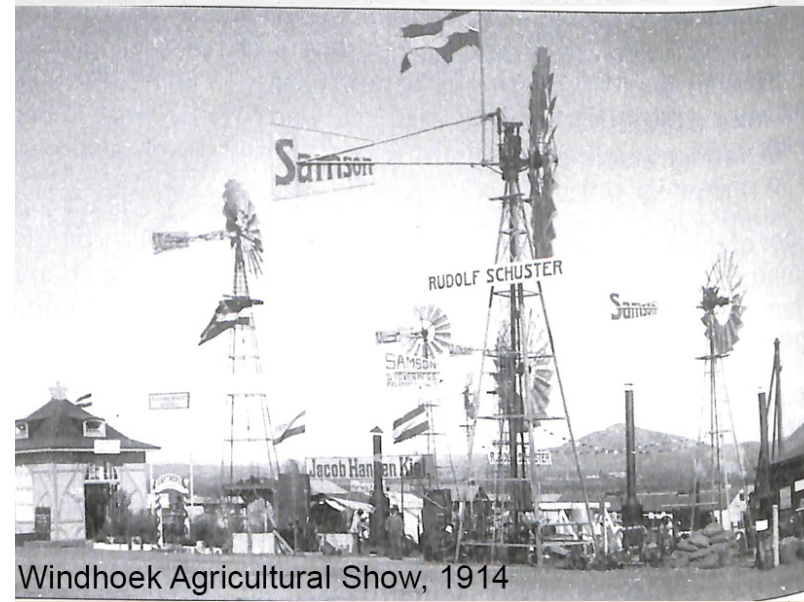
Central Business District

The urban context has vastly changed since the beginning of the 1900's. The introduction of cars onto the city's roads has left the streets empty of people and have caused the public open spaces to be less utilized and most have been redeveloped into parking lots. The existing railway station completed in 1912 was the last and largest investment into public transport. The streets are now crowded with private cars and taxis and not people. The country (previously South-West Africa) was under control of the South African government between 1915 and 1990. Apartheid town planning co-opted international modernist town-planning principles and the racial segregation of settlements by South Africa's 1950 Group Areas Act had a profound impact on Windhoek. (Dewulf and Maritz, 2016: 18) The non-white residents were forcedly moved to the North-western outskirts of the city during the 1960's.

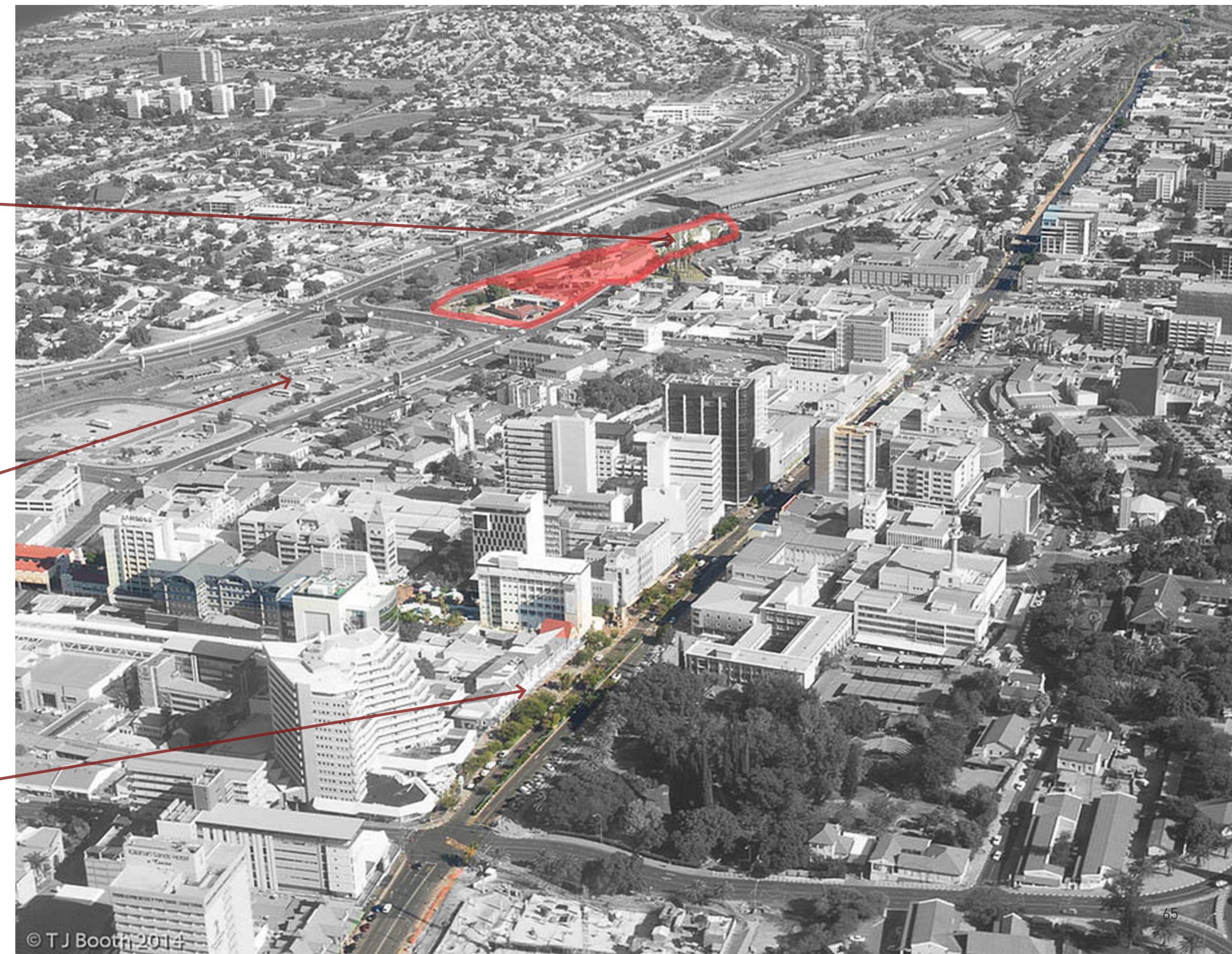
Since then, the city has robustly built large highways and roads, spurring the development of residential and commercial properties away from the city centre and creating the urban area that is reliant on private vehicles and taxis. The urban result of this is understood by many Namibian residents and architects such as Wim Dewulf and Nina Maritz as evident in the following quote.

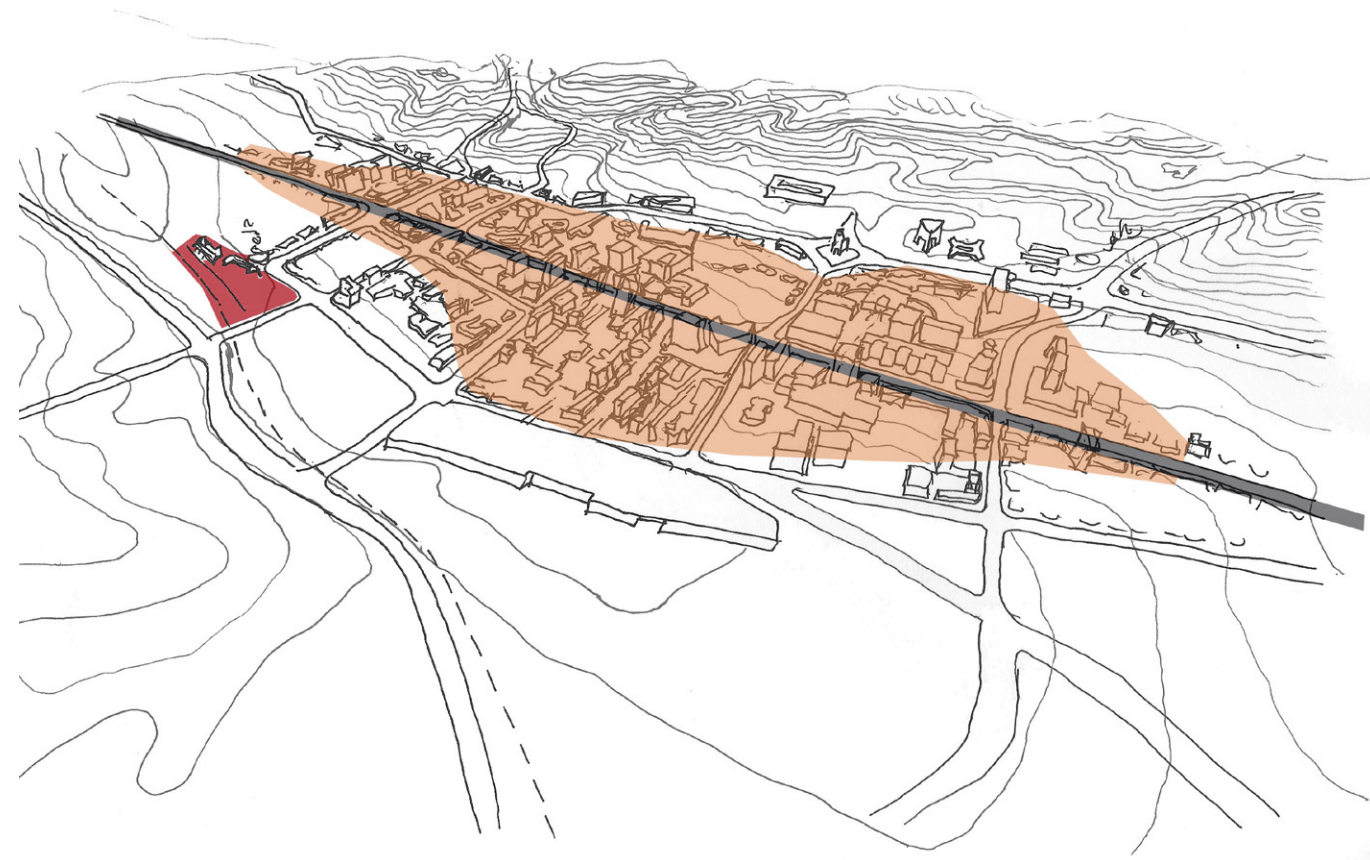


Windhoek Railway Station, 1953

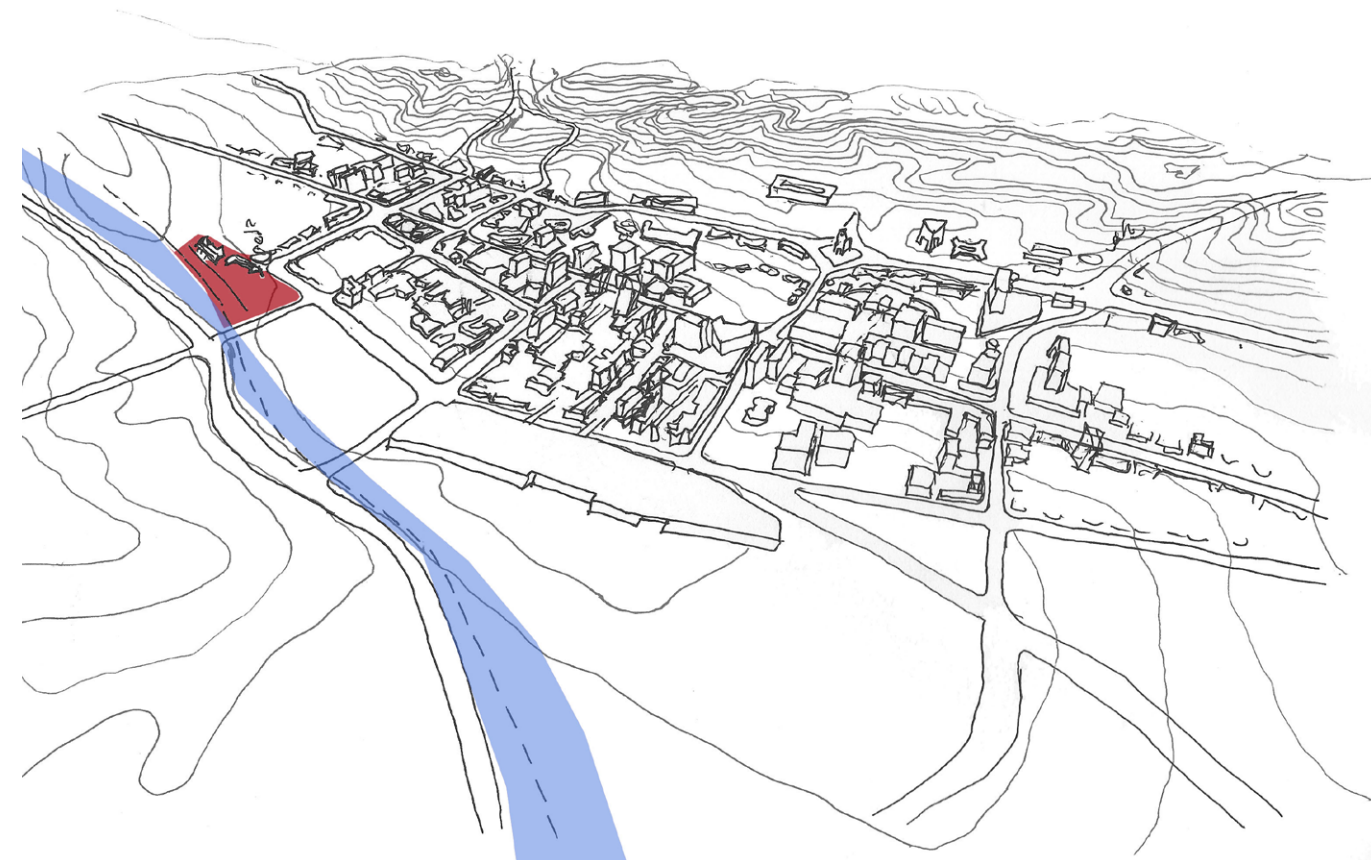


Windhoek Agricultural Show, 1914





Linear City. High density city centre developed along Independence Avenue



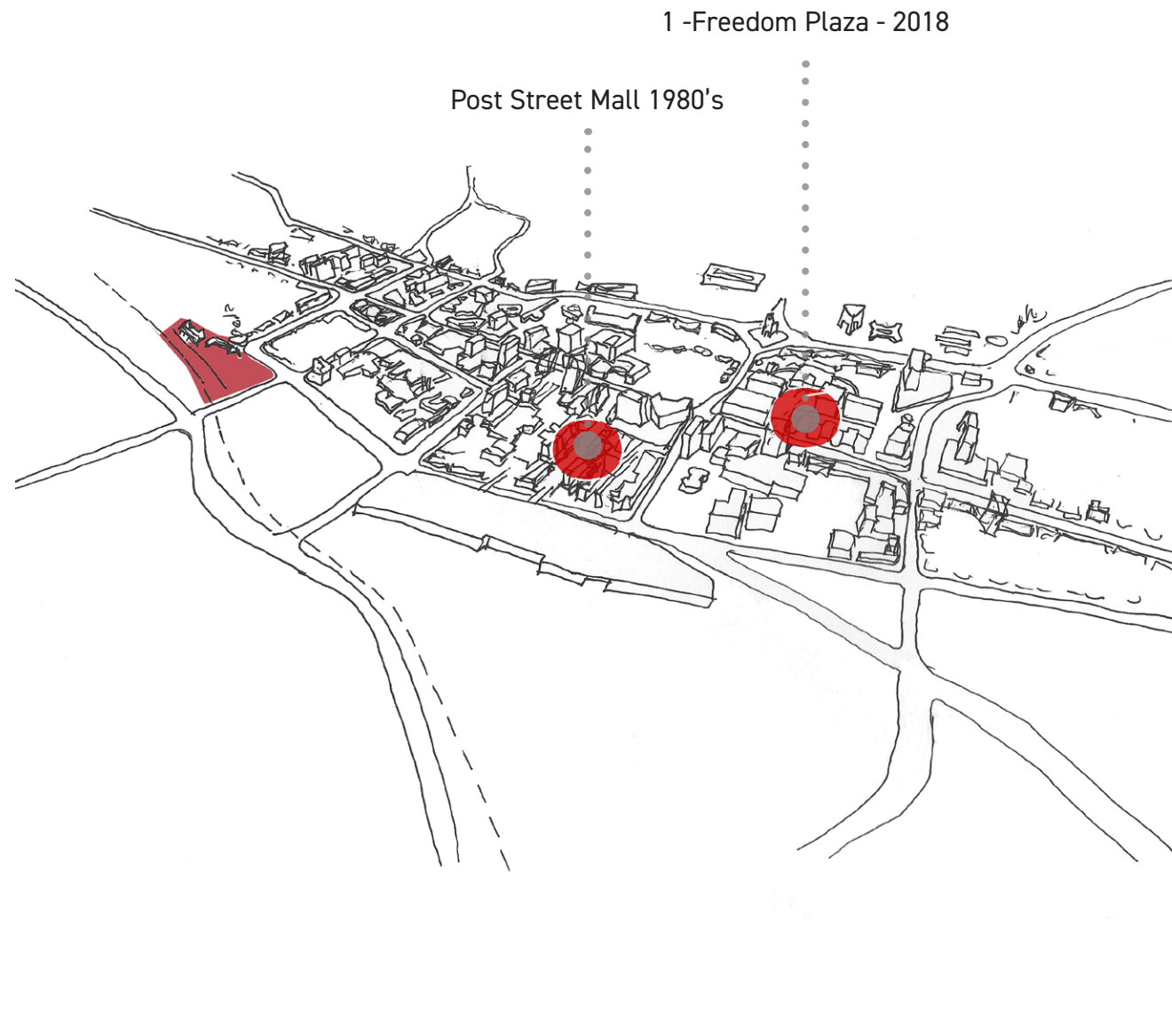
Lowest lying area of the city centre was a river (now channelled) runs along the proposed site.



Underutilised land on the periphery of the CBD. This creates an activity dead-zone within the city centre even though the area is well-connected by roads with high traffic volumes and high visibility.

"Apartheid town planning has been physically, institutionally and psychologically so deeply entrenched that it is virtually impossible to address the resulting inequalities in any meaningful way. Low-density suburban sprawl, large arterial roads and monofunctional zoning characterize the current city layout." (Dewulf and Maritz, 2016: 40)

The street, road or highway is the killer of public life within cities. This urban phenomenon spurred my proposal for a transport hub that could motivate residents to once again use public transport and especially, non-motorized means of transport. Roads and streets are not all bad as they do create corridors that separate buildings from each other and allows the pedestrian views through the city. It is unfortunately also a dangerous place that constantly needs to be crossed to reach the opposite safe grounds of the pavement. Windhoek has very few pedestrian crossings and the time given by the signaling system to cross the road is some mere seconds. The street is uninhabitable, yet it takes up the majority of the livable space in the city. Architecture can provide secure spaces for pedestrians to wander freely, as illustrated in the only two examples of dedicated pedestrian spaces within windhoeks city centre.



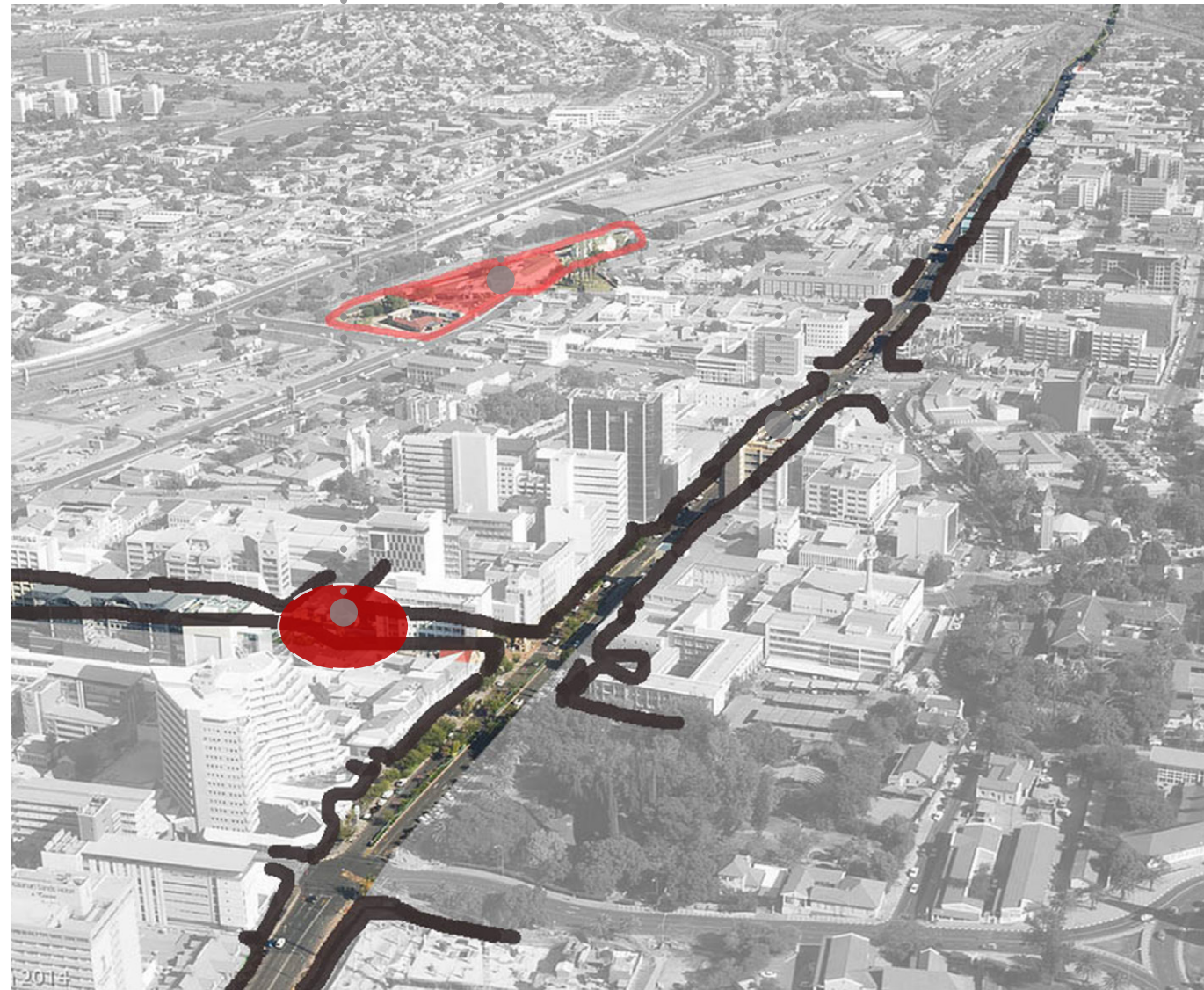
1 -Freedom Plaza - 2018



Freedom Plaza pedestrian space (shaded) when fully complete



Proposed Site
 1 -Post Street Mall
 Independence Avenue

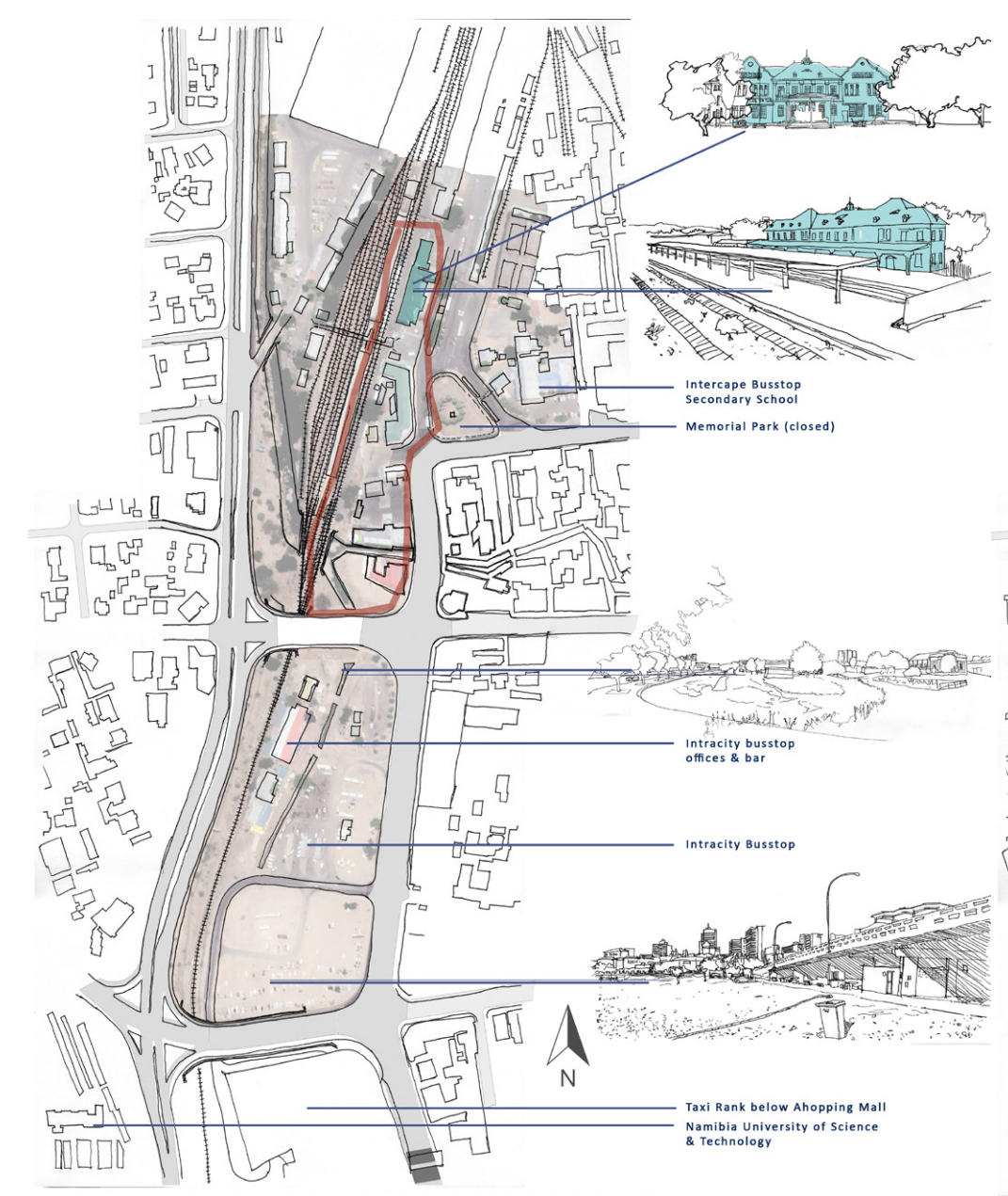
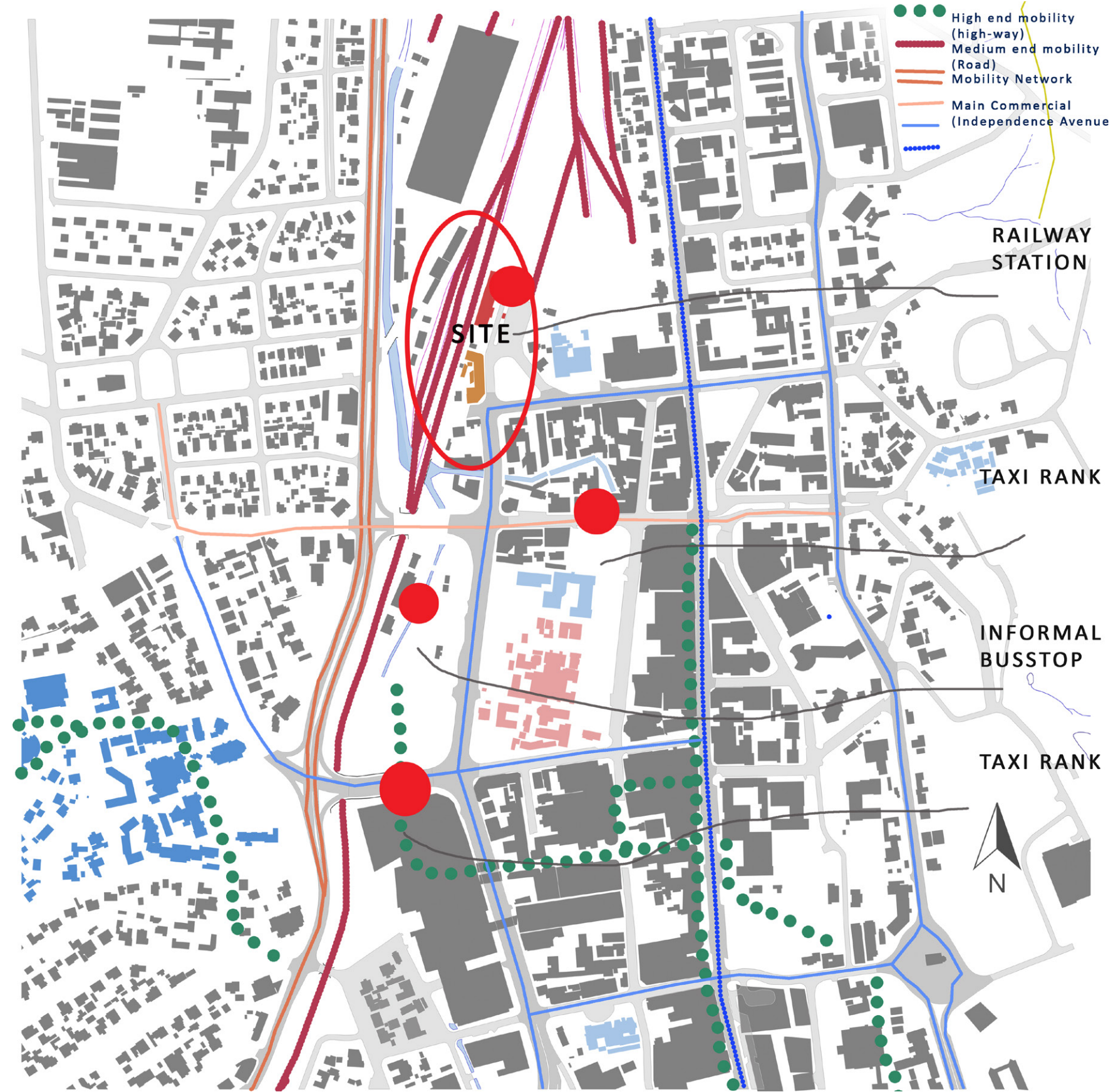


2 - Post Street Mall - 2019

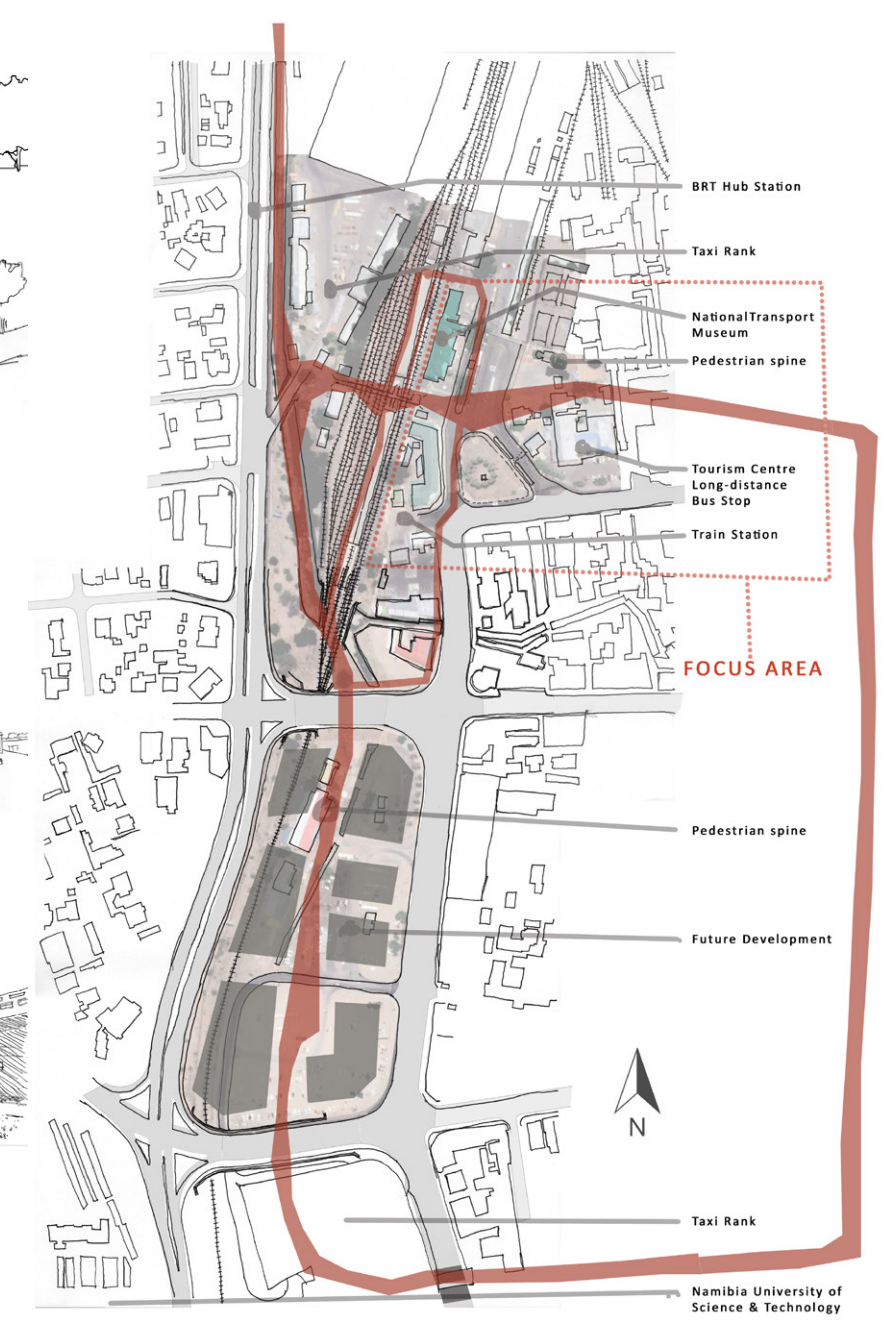


Post Street Mall pedestrian space (shaded) after the street was diverted below ground in the 1980s





2019:
Site location in periphery of Windhoek CBD



Future:
Proposed Urban framework and pedestrian loop

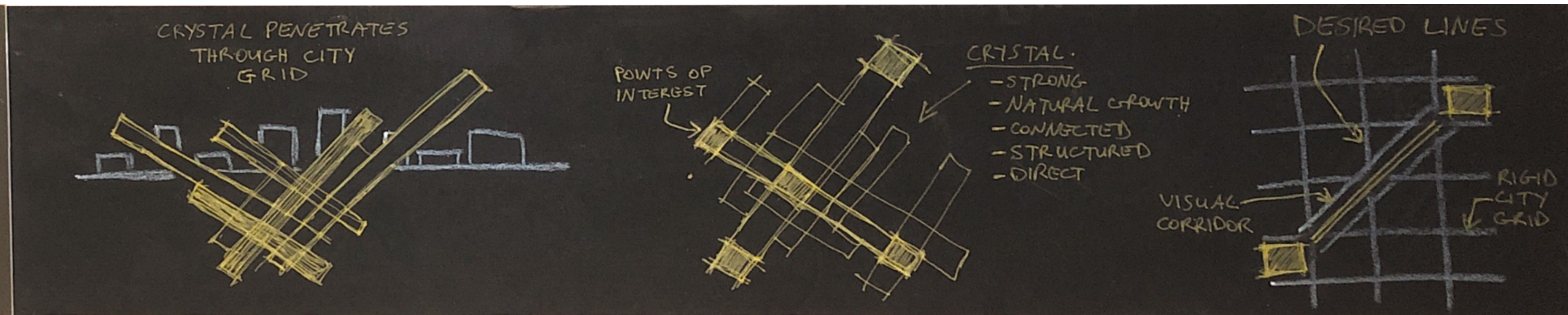
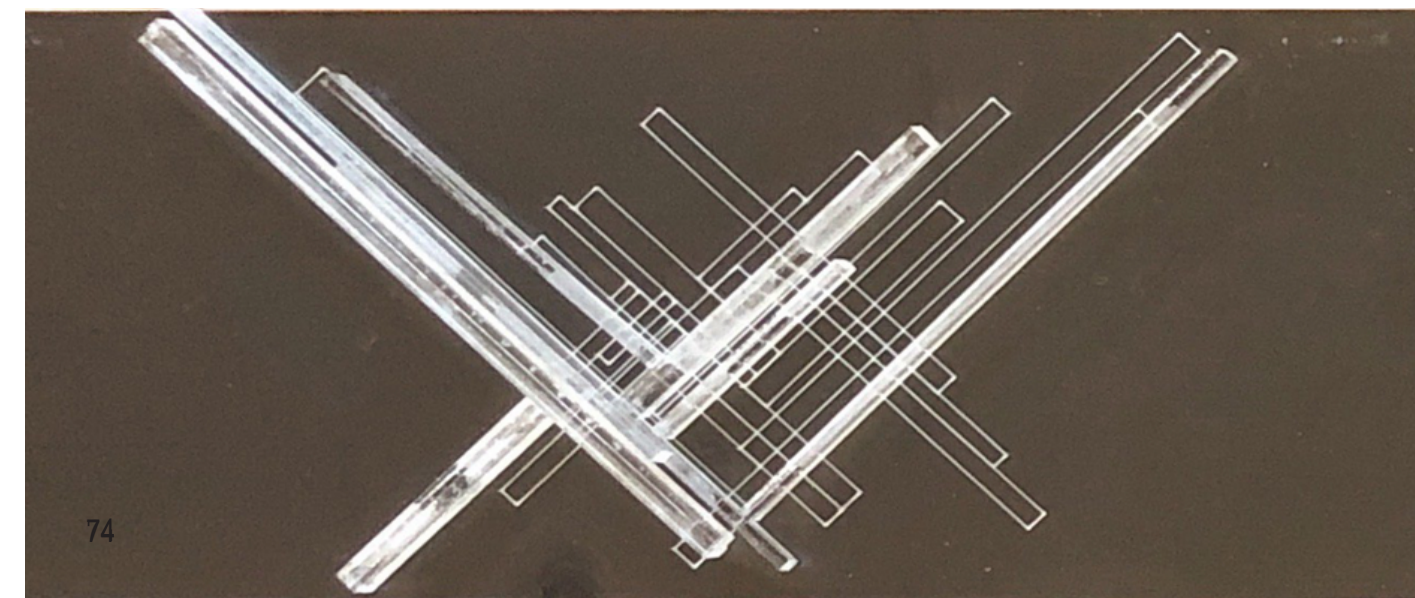
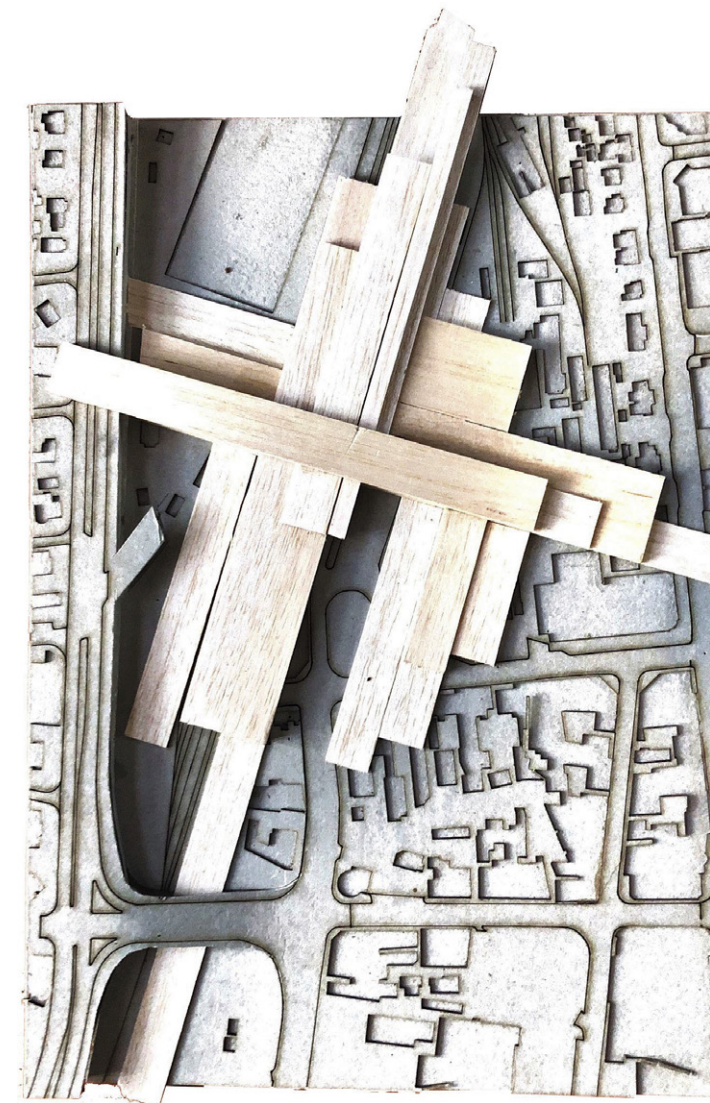
2.4 URBAN CONCEPTS EXPLORED

Urban Concept #1

CRYSTALLIZING THE URBAN MOBILITY

CRYSTALLIZATION OF PEOPLE-CENTRED MOVEMENT THAT BRIDGES PHYSICAL AND CULTURAL DIVIDES.

The crystal shatters through the city, unapologetically fragmenting the city grid and breaking barriers in its path.
Desired lines of path create new urban connections.



Urban Concept #2

HORIZON

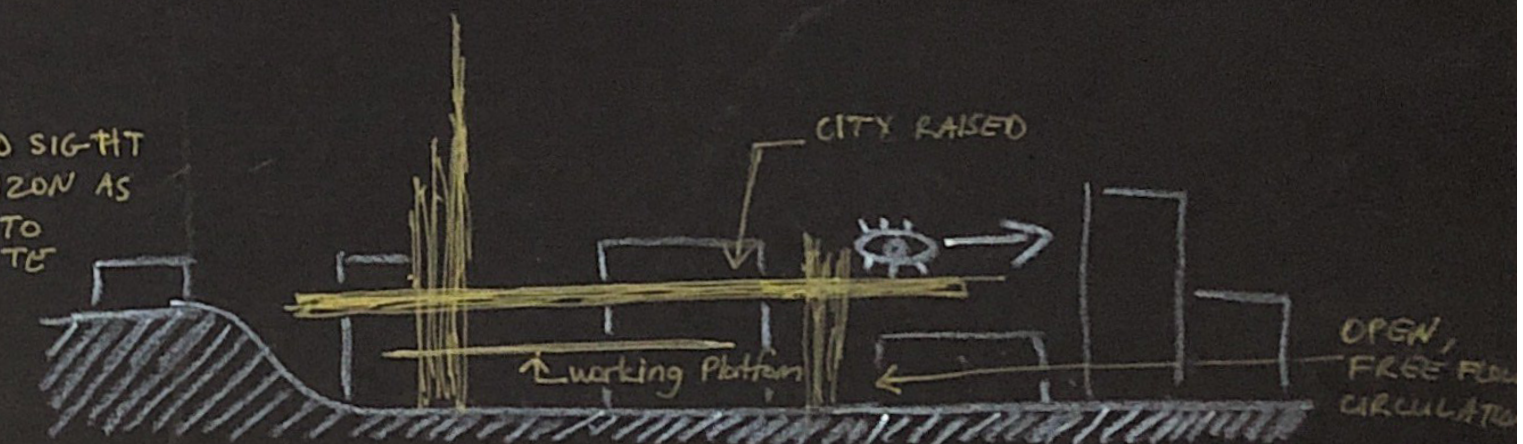
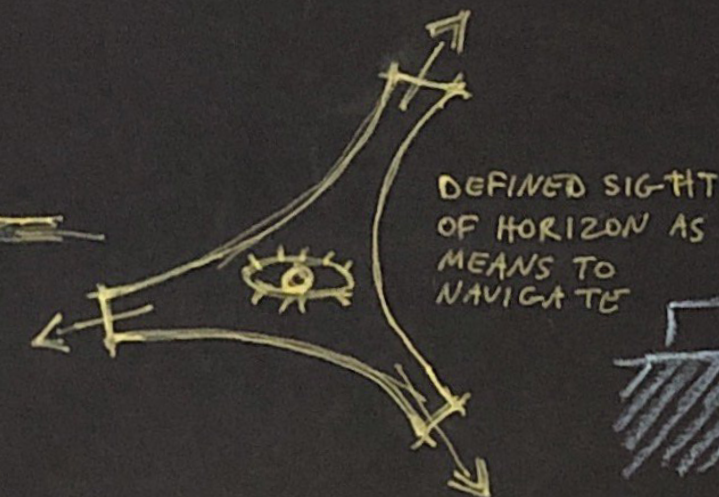
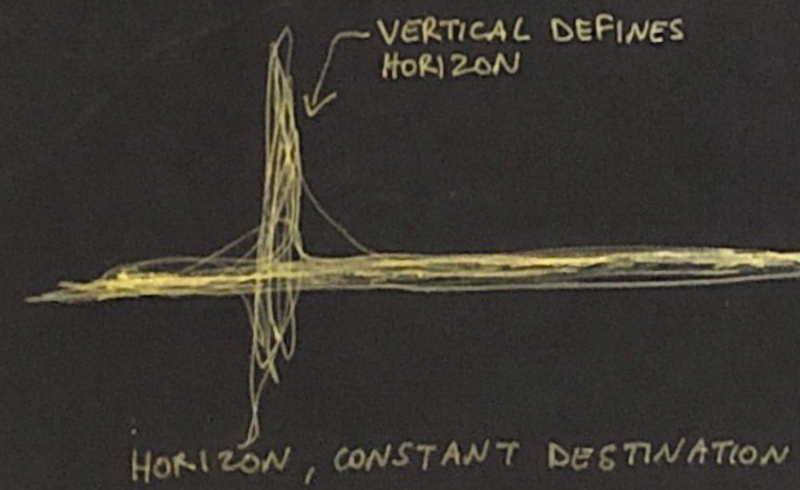
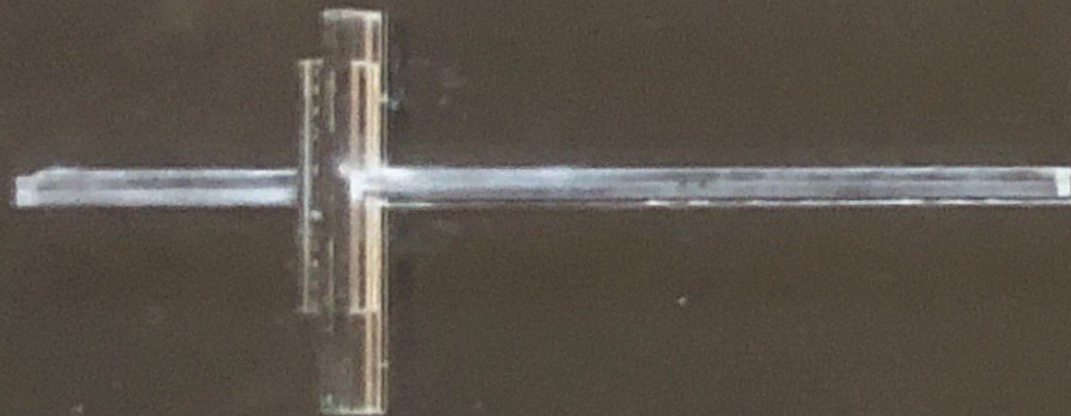
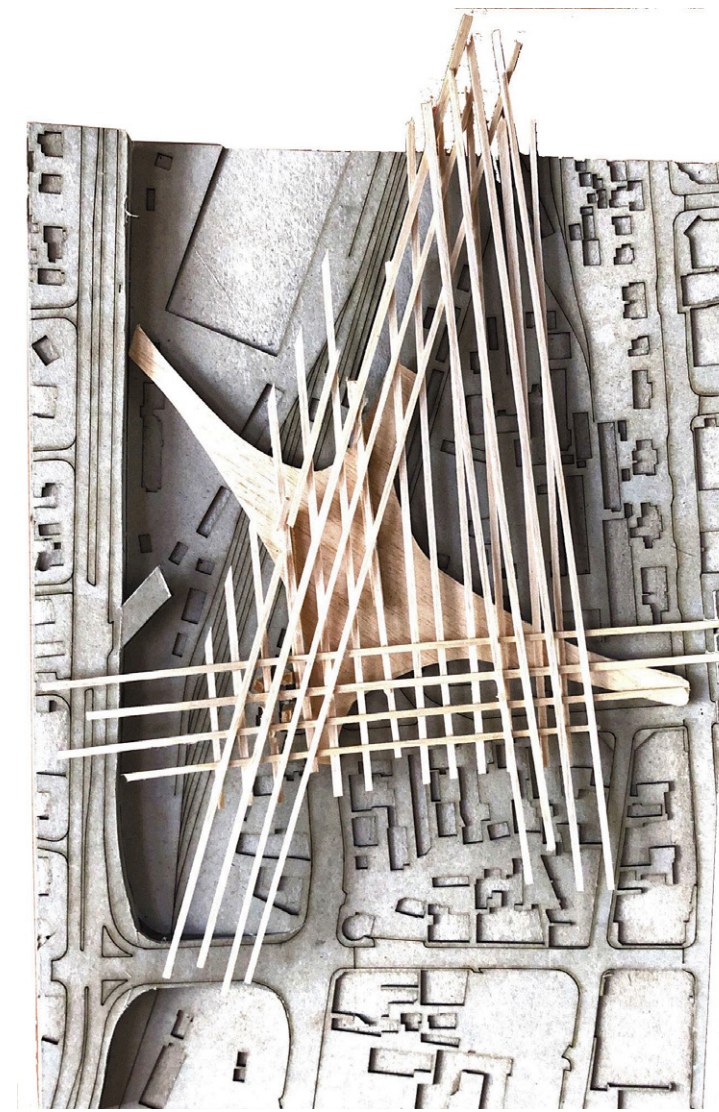
THE HORIZON AS A MEANS OF NAVIGATION WITHIN THE CITY.

Rediscovering the horizon as a destination in itself, perceived to be unreachable yet open, free-flowing and mystical.

The horizon becomes an elevated platform within the city that redefines how the city is viewed as a means to navigate from the horizon as well as towards it.

The vertical defines the horizontal

The streets are funnels to view the horizon, therefore horizons in themselves.



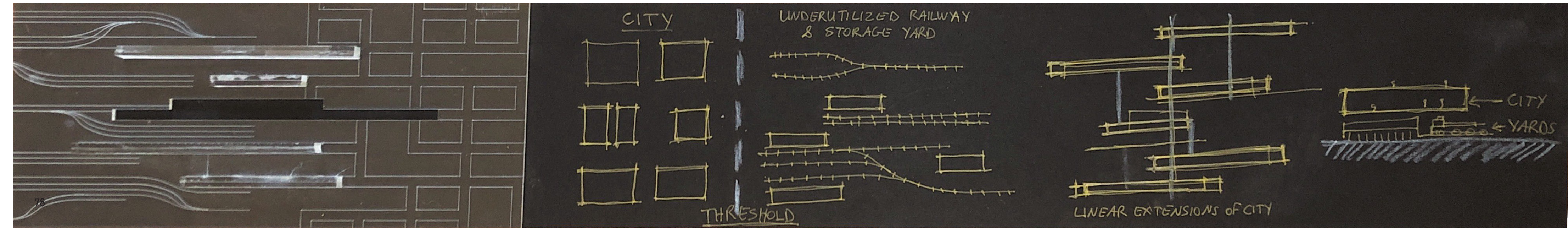
Urban Concept #3

THRESHOLD

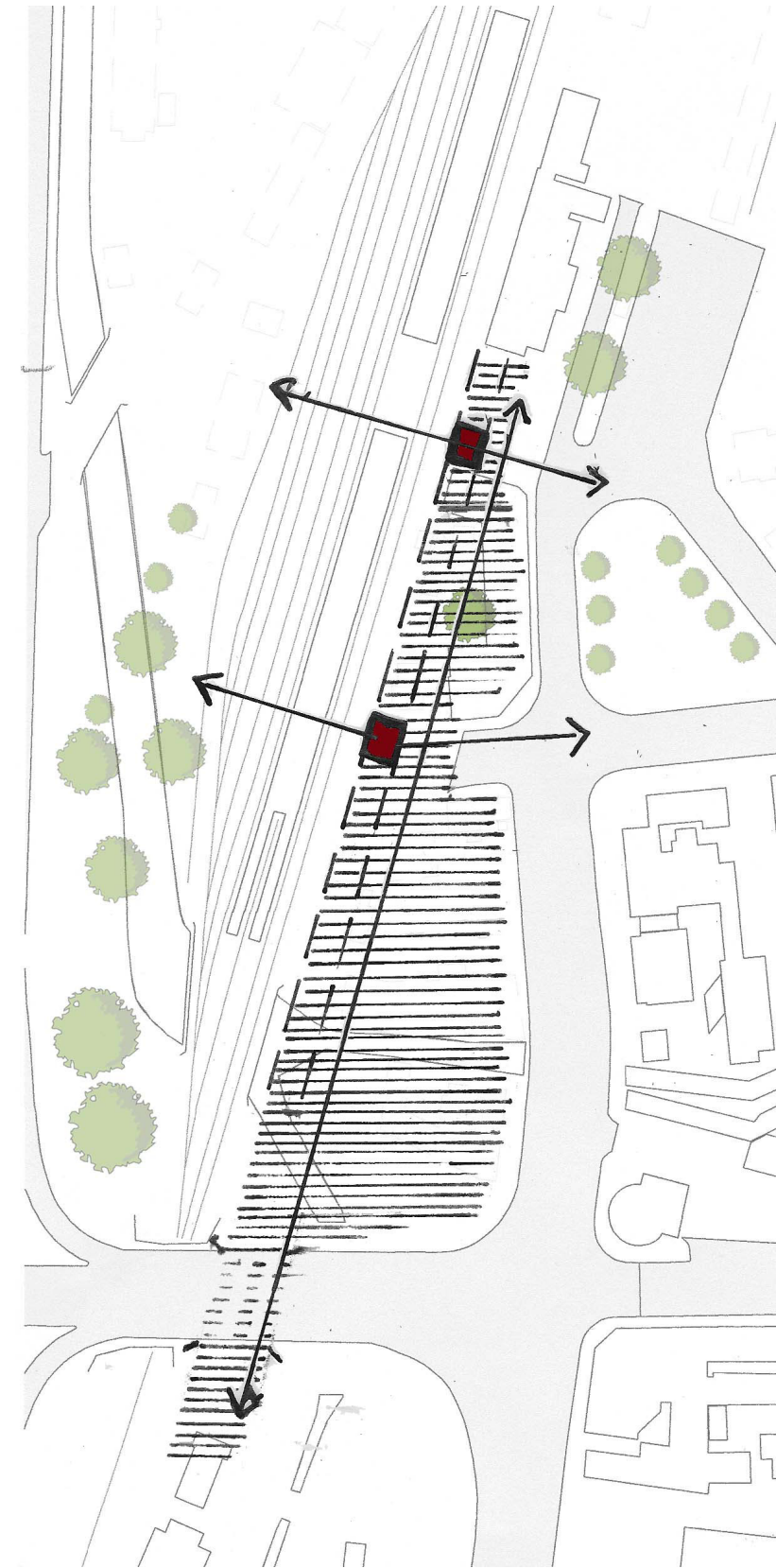
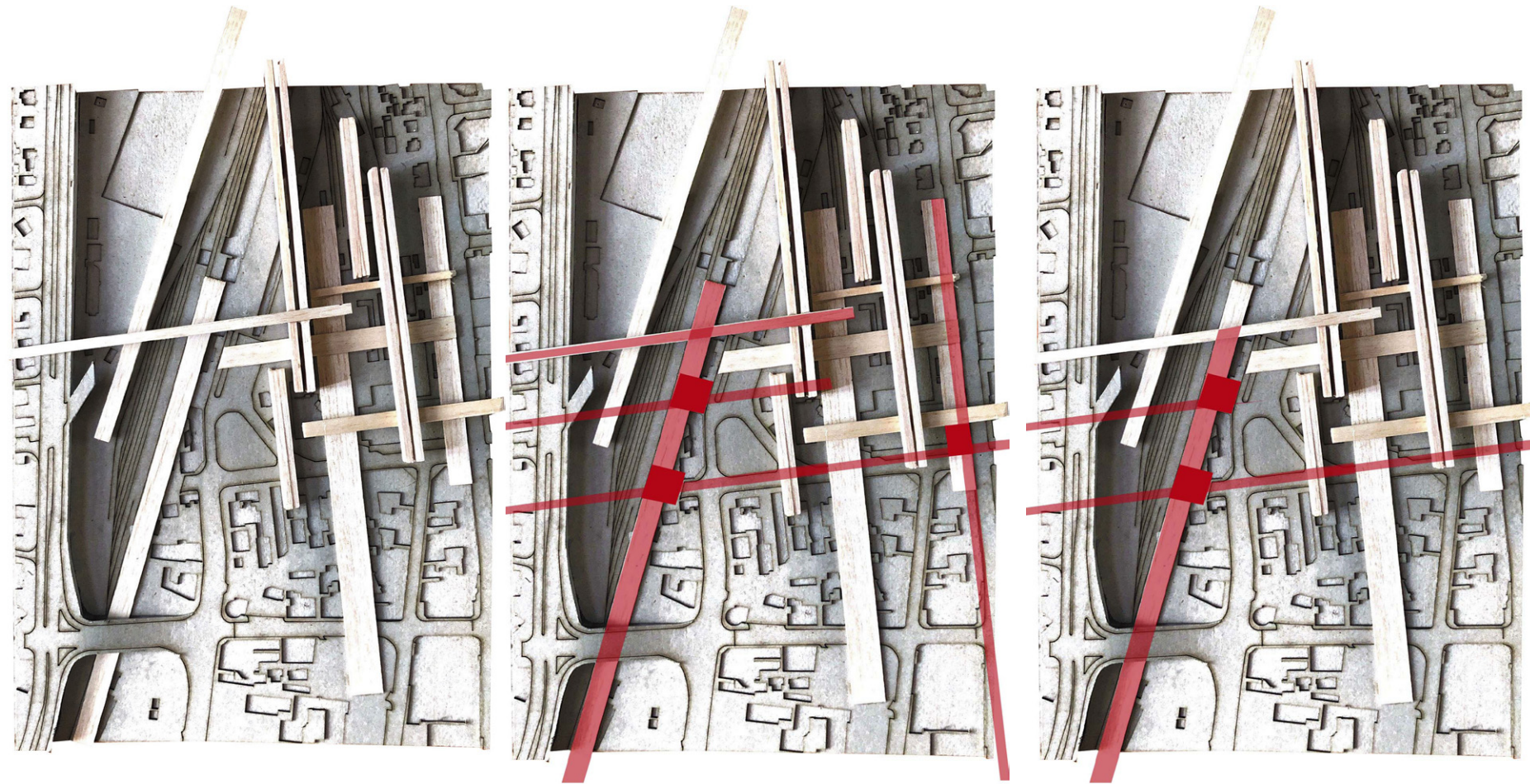
A LINEAR EXTENSION OF THE CITY FABRIC

From the underutilized railway yard, creating a new urban space that reconnects people to the city's backyard.

Investigating the potential of a seamless connection between the daily rituals of travellers and residents with the industrial programme of the city's storage yard. The transport hub acts as the threshold between industry and the city.



Concept Developed: THRESHOLD



PRIORITISING THE PEDESTRIAN

Two circulation towers, acting as folies that signal a circulation junction where the north-south and east-west circulation meet. They act as beacons and folies of activity generators for the site.

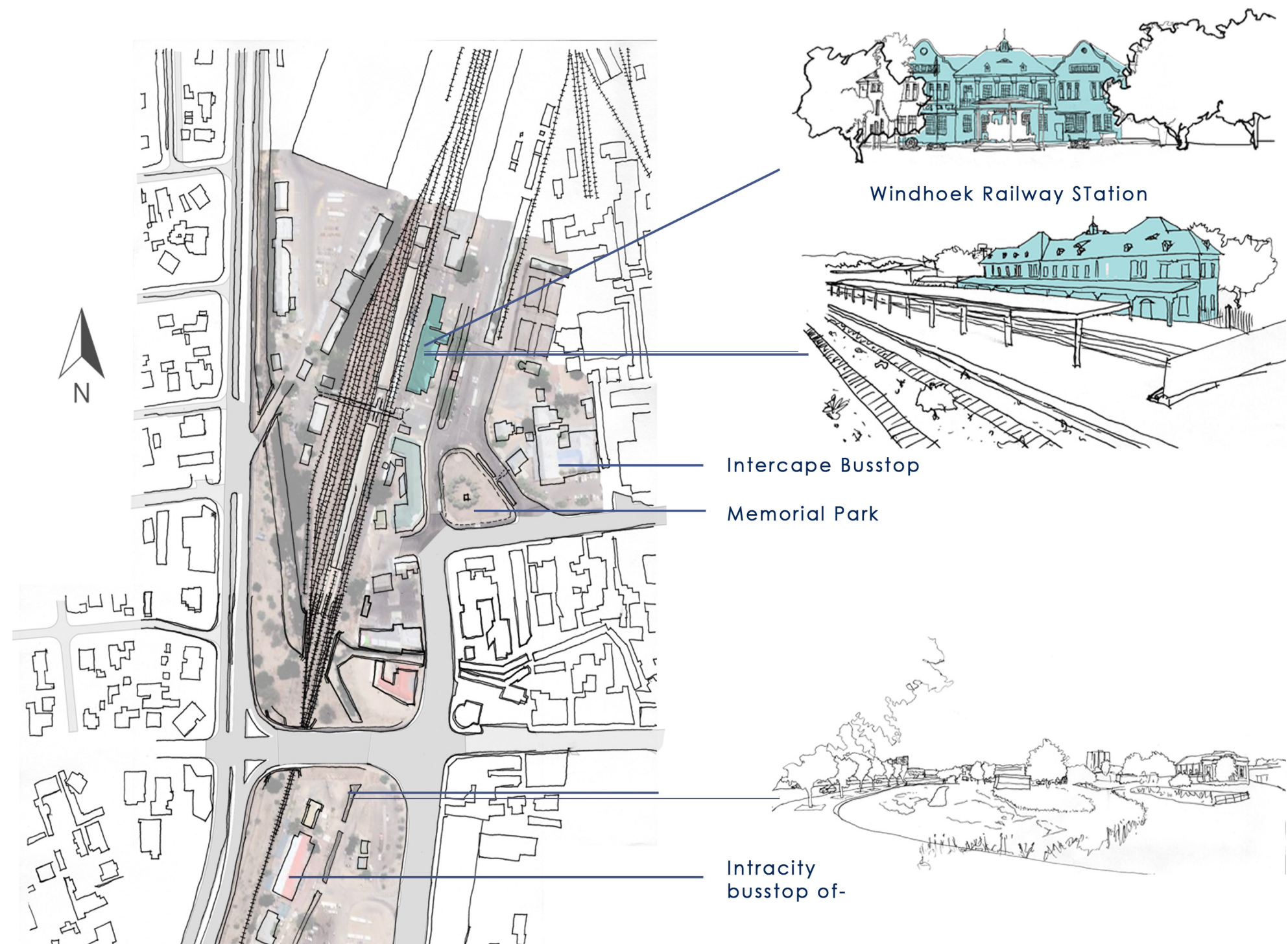
SITE INVESTIGATION

PART 03



3.1 MICRO CONTEXT

WINDHOEK RAILWAY STATION



Windhoek Railway Station



Intercape Busstop

Memorial Park



Intracity busstop of-

Historic buildings and character of site and surrounds

SITE

The site is situated on the edge of the CBD of Windhoek. It is the location of the first and only railway station in Windhoek, completed in 1912, that is still in used today. It forms the threshold between the city centre and the TransNamib train yard, a large tract of underutilized industrial land in the centre of Windhoek. Lying in the lowest part of the city centre, the site is somewhat hidden between the elevated road of Hosea Kutako drive to the west and the semi-densely developed city to the south and east.

The under-utilized site is centred around two historic buildings that are bordered by a railway line behind and open parking lot at their entrance. The site was chosen for its historic significance as a railway station and meeting space, large tracts of underutilized land and strategic location on the periphery of the CBD. The site allows the proposal not to consume a new open space and in that way create potentially new "junkspace" but rather use the existing underutilized space in and around the station. It is surrounded by arterial roads, on three sides, that directly connect it to the rest of the city. It allows space for architecture that embraces and re-introduces the natural contours of the site and freedom of movement characterized by the vast Namibian landscape.



Existing Platform & Station Building



Existing station entrance



Existing underutilised building completed in 1930



Commercial building preserving character of the area



Eastern view of site from Bahnhofstrasse



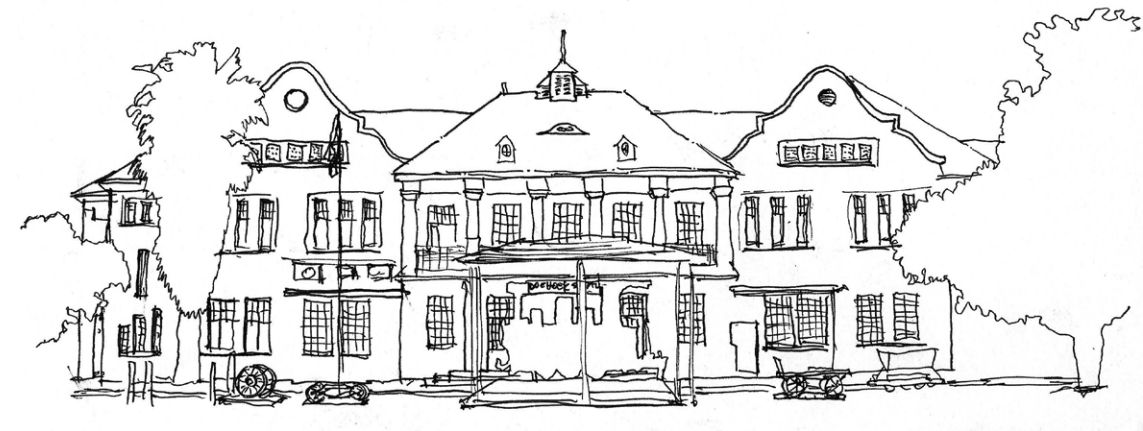
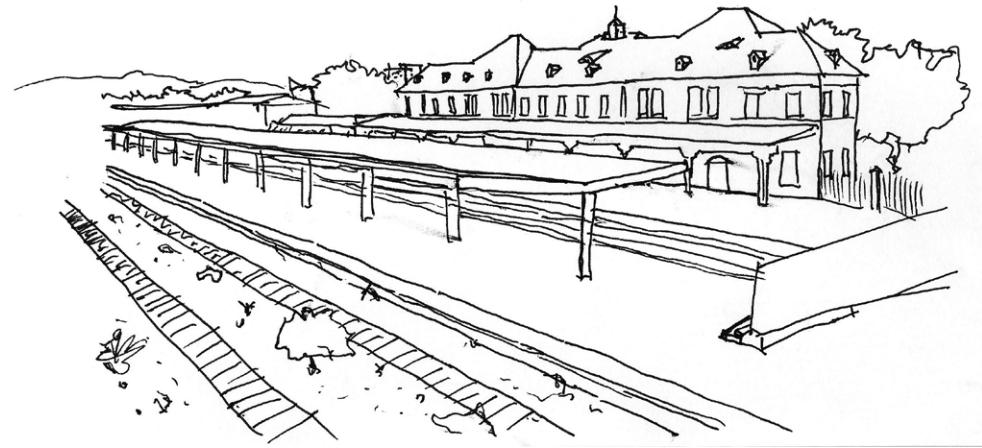
Existing railway platforms



Southern View of Site from residential tower



Owambo memorial monum85t





THEORETICAL DISCOURSE

PART 04

4.1 DISCUSSION OUTLINE

1

A transport hub is the first encounter that travellers have with their environment. They are identified as places of arrival as well as departure and are inherently not seen as destinations on their own and should therefore be extensions of their direct environment.

2

A hub of arrival must reflect its core identity as a connecting space and the first encounter with the city, whilst being a platform to conveniently depart to destinations in the rest of the country.

3

The architecture of the existing railway station and adjacent building is rigid in form and unadaptable in its spatial constraints. The site is alienated from the city, therefore it is not demonstrative of a transport facility that symbolizes diversity and connectivity, but rather, it is a facade with an inhibiting interior.

4

Both buildings represent a single example of the western Meta-narrative and it does not represent the essence of Namibian travel, but only its restrictive and oppressive past, although the buildings are now synonymous with railway stations throughout the country.

5

The existing buildings' structural language and style has little to no representation of inclusiveness or transparency with no active street edge towards the public spaces, which undermines its civic responsibility as an enabler of movement and progression.

6

The analysis of the theoretical literature and its application to Namibian precedents, informs the synthesis of architectural design principles that guide the development of the scheme.

THEORETICAL LITERATURE

1 EMBODIMENT

Maurice Merleau-Ponty
Eye and Mind
(1993)

Embodiment is the representation of an idea, concept or feeling through a physical or sensible entity. The lived experience is the embodiment of our own thoughts. According to Merleau-Ponty, embodiment is the "Ongoing birth of perception", sensing and the lived experience being relived. The phenomenological embodiment is driven by emotions and perceptions thereof. Architectural spaces play a large role in how we experience embodiment.



2 NOSTALGIA & MEMORY

M. Mike Nawas & Jerome J. Platt
A Future-Oriented Theory of Nostalgia

We experience spaces through our senses that trigger a nostalgia of the past which is perceived either as a negative or a positive longing of the past. A more recent idea of nostalgia is a future-oriented nostalgia that suggests a positive transition of phases of experience which then creates a forward-looking perception of a new destination. The theory will investigate the relationship between the nostalgia experienced by travellers and the way that architecture can stimulate a new nostalgia for a place yet to be experienced.



3 JUNKSPACE

Rem Koolhaas,
Junkspace
(2002)

In *Junkspace*, Koolhaas explains how contemporary shopping malls and business centres devalue architecture and its contexts. It numbs the consumers from the true nature of their surroundings through disconnection and false spaces. They are good examples of how modern spaces overstimulate the senses and give a false sense of nostalgia and isolate the body from the urban environment around it.

4.2 ARGUMENT EXPOSITION

In a general sense, transport hubs and tourist car rental facilities are analogous in that they are both categorized as transport and travel facilities. From a more theoretical stance, their similarities are even more evident when you consider both types of buildings fundamentally deal with transportation of people, whether it be for local commuter or international tourist purposes. Transport hubs and tourist facilities essentially collect and disperse people for the purpose of travel. One could say that the facilities host national and international people who are each very different, yet they facilitate for a single purpose; traveling within the country. Essentially, therefore, transport hubs and tourist facilities have an overlapping obligation to facilitate exploration of the city and country and represent its natural and urban form as best possible.

One can therefore argue that the architecture of such buildings needs to narrate the diverse history and culture of the country and also represent the urban and natural environment that travellers will come across in their journey. But as this building is not a museum that is on display, one questions whether it should rather only represent the urban and natural environments in some way, rather than the people and cultures of the country.

After all, it is the natural and urban spaces that the act of travelling occurs in.

The transport infrastructure is in place to support travellers to navigate the country through trains, cars, buses and aeroplanes, but the buildings and architecture do not yet merge the traveller with the existing infrastructure. The facilities available are dispersed throughout the city, making the traveller unaware of the possibilities of using different modes of transport to achieve certain experiences.

Currently, however, none of the transport facilities available are representative of the architecture of inclusiveness or diversity and this contradicts their core identity. There are two main reasons for this.

First and foremost, the existing railway station building was completed in 1912 and a small extension completed in 1929 when the population of the city was estimated at 10,000 people and the country's population was estimated at 300,000 people. Since then, the city has grown to approximately 400,000 people and no additions have been made to the railway station.

The building's architecture represents a structure that is spatially limiting as well as culturally authoritative of a German-colonial past. In addition - and regardless of the building's direct connotation to an oppressive past, the structure and its surrounding open spaces do little to create civiness and openness through activating their façades and street edges. The building is not well integrated into the city's urban fabric. It 'hides' away as if ashamed of its shortcomings.

The building creates a nostalgia for a time long past and this may be interesting for tourists to see that the building and surrounding spaces are virtually unchanged since its completion, but the space is undeserving of its core identity as a connecting hub.

There is an opportunity in architecture today to design a new intervention where it promotes feelings that stimulate a nostalgia grounded in a contemporary Namibian context that is culturally accepting, spatially integrated and conscious of its natural environment.

The existing architectural language of the building and the surrounding structures are not symbolic of the independent status of the country and its rich cultural and natural offering. Therefore, in order to synthesize a conceptual underpinning that aids the design of a new structure that remedies this problem, it is necessary to explore relevant literary texts. The next part of this section examines selected works by Maurice Marleau-Ponty (1993), Mike Nawas & Jerome Platt (1965) and Rem Koolhaas (2006).

RESEARCH QUESTION

How can architectural embodiment stimulate the nostalgia of a true Namibian travel experience through a transport hub in Windhoek?

EMBODIMENT

In the beginning of the 20th century, Windhoek was certainly a place where the Flâneur could thrive. The wide streets were the pedestrians' playground while the covered walkways were their urban trees, protecting them from the harsh Namibian sun. There, as well as in zoo park, the Flâneur could observe his surroundings comfortably. The ease of travelling was due to the fact that the city was compact and had a small population. The absence of the motor vehicle made the whole city a pedestrian environment. What was also unique at that time was the same urban environment that enabled the Flâneur, was also an environment that took cognizance of the natural landscape that it was built in. Although there were natural springs, the landscape was still rather arid savannah scattered with trees on rolling hills. The architecture and urban design, imported from Germany, was adapted to suit the topology, and climate.

This is evident when one looks at Image 8, The photograph, overlaid by lines, illustrated the way that the sparsely populated town of Windhoek in 1900 was designed in a way that the residents embodied the city in a phenomenological sense.

Embodiment is the representation of an idea, concept or feeling through a physical or sensible entity. The lived experience is the embodiment of our own thoughts. How people make sense of their experience of a place is not only through what they see around them, but also their body's interaction with the environment around them. An environment always exists, but it is through bodily interaction with it, that we are able to experience it.

Our body and the world is one. The world and the body co-exist, each fuelling experiences through our senses. Our senses of sight, smell and feel enhance our engagement with the city and it is with this that Merleau-Ponty suggests that our body is never isolated in its activity.

According to Merleau-Ponty, embodiment is the "Ongoing birth of perception", sensing and the lived experience being relived. (Merleau-Ponty, 1993: 121) The phenomenological embodiment is driven by emotions and perceptions thereof.

Contemporary architectural design is predominantly designed for the sense of sight; therefore buildings may be visually striking and at times overbearing within a skyline of bold buildings. This architecture gives a false sense of the world around us.

Merleau-Ponty's depiction of Paul Cezanne's aim in painting is that the artist lends his body to the world and in that, the artist changes the world into paintings. (Merleau-Ponty, 1993: 123) He believes that the painter does not simply paint what he sees, but rather paints how he sees the world. He paints his experience of the thing he sees. It is like his mind is painting and his mind lends his body to paint.

Pallasmaa, in *The Eyes of the Skin: Architecture and the Senses*, refers to Merleau-Ponty's depiction of Paul Cezanne's painting to argue that the architectural task is "to make visible how the world touches us" (Pallasmaa, 2005: 46). Architecture is, therefore, a mediation between the world and our minds.

The architecture that this manifests might be buildings that embody metaphors that structure our being in the world and this can be achieved through the play of light, texture, scale, rhythm and natural elements such as water and landscaping. When one can see the material of a building, one can comprehend the scale and notices that the building is the sum of its parts, while a plastered and painted wall with small windows feels solid and heavy and private.

There is a transparency, an (integrity) to exposed materials. We can feel with our eyes the roughness of the brick or the heaviness of the steel.

In his paper on Merleau-Ponty, *Perception, Environment Embodiment: Implications for Architectural Environmental Studies*, David Seamon considers how qualities of the physical and designable world – for example, materiality, form, and spatiality – contribute to the lived body's experiences of and actions in the world (Seamon, 2010: 1). He notes that the world is perceived through continuous immersion, awareness, and actions of the body.

The perception of the city, by the residents, was created through their sense of touch, sight and emotion. Their body could in no way be separate from the built environment as they strolled along the gravel roads and rested under trees for shade. The roads and buildings were not carved out of the landscape or built over valleys as much of the roads now do. They were flattened gently onto the slopes, making any pedestrian aware of the steep slope of the hills. The buildings were built with stones found nearby, constantly mimicking the texture of the land.

The heat of the sun was felt in any open spaces while a few trees created the much-needed shade outside and the louvres and covered porches shaded residents inside. One's body and emotions could always confirm what the eyes saw. The experience of place was honest and pure in expression.

Our experience of the city today is much different than in the early 1900s. The city is embodied in a Cartesian fashion, as explained by Merleau-Ponty. "Cartesian model comes after the sense of touch."- (Merleau-Ponty, 1993)

The Body and object (outside) are separate. Outside is known through sight and scale. This is the embodied experience that is being applied today and is so drastically different from the 1900's. The car and air-conditioned interior environments have isolated us from the real city outside. People drive through the city in their cars and only experience what their eyes see. Their bodies are separate, yet they are within the city. This leaves only images of the city and its scale in our memories. This experience is superficial and short-lived.

A lasting memory is one where the sense of touch, smell and sight are engaged in. This can only occur when the urban environment is people-centred and allows the pedestrian to move easily throughout the city. Namibians are social people who like to sit outdoors and gather around a fire or under a tree. Yet, the urban environment does not reflect this. There are a few successful markets in Katutura that sell kapana (Namibian braaied meat cuisine) with fresh fruit and vegetables as well as a bi-weekly wine and dine market in the upper-middle class area of Eros, but the city centre is void of any such activities. The city centre should be the epicentre of social and commercial activities within the city, but it lacks the public spaces that support it.

The illustration below is a digital artwork overlaid by sketches drawn by the author and it strives to embody the juxtaposition of the urban environment over the vast and dramatic landscape that changes colour and texture as one moves through the city and the country.

The theory of embodiment guides the study and the design of the proposed transport hub so that the residents and tourists can embody the city through the architecture and urban spaces on arrival, even before they explore the city. The transport hub cannot simply be another Junkspace that is overripe with signs, flashy lights and marble tiles. Architecture and urban design must be enablers that leave a lasting memory of the city through one's senses.



Fig 1: Collage illustrating the essence of the namibian built environment. Collage, Author, 2018

NOSTALGIA

The term Nostalgia was only coined in 1688 by Johannes Hofer in his medical dissertation in 1688, but the word "nostalgia" has Greek roots. It is made up of the words *nóstos*, meaning "return home," and *álgos*, meaning "longing."

Nostalgia is a psychological term that, at many times, is triggered through experiences and architecture. Travelers are all inherently, to some degree, Flâneurs. A Flâneur, according to Zygmunt Bauman, is "the travelling player" who makes the world a play and the people around him, players. (Tester, 1994: 145) He is a wanderer, an observer.

A traveller experiences nostalgia while visiting a certain place. This nostalgic feeling is not derived from a longing of a past they once had, but rather a romantic longing of a past they wish they had experienced. It is a romantic placing of themselves in a time when life seemed beautiful and peaceful. They want Athens minus the slavery, as mentioned by Sean Scanlan, (2004: 3), in his introduction to Nostalgia. One feels Saudade about the ancient architecture that is beautiful in its symmetry and human scaled design, knowing that it cannot simply be replicated now and appreciated as much as its appreciated now. There is much historic and cultural significance that cannot be created in an instant.

In Namibia, travellers experience nostalgia predominantly in two environments. Firstly, within the romantic natural environment of the savannah and the desert. Here they long for the simplicity of humans being hunter gatherers where the sun and moon determined the working day and the trees became shelters. Secondly, in the historic buildings, the reminiscence of a German colonial past. The popular Kolmanskop, outside the town of Lüderitz, is one of the few places in Namibia where these two environments merge. Tourists are in awe of how the colonists overcame the harsh landscape and were able to forge a European lifestyle within a barren African landscape.

Windhoek is a city steeped in historic structures that naturally evoke nostalgia of a recent past. The structures received heritage status in order to preserve the narrative of the county's recent past. "Often, however, heritage is the relic of previous or past regimes. It is also true that The cultural heritage of each is the cultural heritage of all. While this may be true in a wide sense, this is rationally relevant only with respect to heritage of great(er) significance and with particular kinds of significances – for example, heritage resources of great historical, scientific and/or artistic significance, where the primary attribute authenticity is a 'documentary' one as 'historical evidence'." (Townsend, 2017: 11)

Mike Nawas and Jerome Platt, 1965, state that there are two current theories of nostalgia that have been proposed over the past few decades, which are, past-oriented and present-oriented theories. They also argue that there is a need for a new perspective on the theory of nostalgia, which is a future-oriented theory of nostalgia. (Nawas and Platt, 1965: 54) This theory is based on our successful adaptation of change in his current circumstances that evoke a positive perception of the future.

Architectural spaces can ease users into their experience of a new place and create anticipation for the future experience of the place. A comfortable, associated and navigable space can prepare the user for the anticipated journey ahead.

The architectural question remains: What if an architecture can create nostalgia that is neither reflective of a certain past or a future, but rather of what has always been and will possibly always be? The one thing that has always been and will possibly always be is the natural environment and the way we perceive and experience it.



JUNKSPACE

Modernism and consumerism is believed to have overexerted itself in many buildings now coined as Junkspace. Junkspace is referred to by Norman Foster as an, "overripe and under-nourishing (space) at the same time" (Koolhaas, 2002: 176). Modernism has brought along with it the highways, suburbs far from the city centre and malls as shopping paradises. "Junkspace is what remains after modernization has run its course." (Koolhaas, 2002: 175)

Junkspaces are over-commercialized spaces that want to preempt all your emotions and desires through advertising, flamboyancy and directed movement, all in the name of comfort and pleasure that is forced upon the user. They are controlled spaces that persuade the user in believing that the space is designed for their entertainment and freedom, yet they are controlled spaces excluding people from experiencing the world around them. These spaces are all around us in the form of shopping malls, airports, railway stations and museums and soon to be workspaces. Junkspace pretends to connect and unite but it separates the users' experience from real life.

The traveller wants to explore spaces with authenticity and freedom, but junkspace does not allow him this freedom. The average person might not realize that these junk spaces have robbed them of their day-to-day acts of play and exploration. People all over the world marvel about popular tourist destinations such as Paris, because they fall in love with the architecture and the street life. Tourists visit Paris so that the streets can be wandered along and the arcades can be seen because the city can be a place of exploration. Contrary to Paris, Windhoek only has a small portion of the central city and one pedestrian promenade that can comfortably be experienced on foot and this area dates back to the first decade of the 20th century.

Today, the streets of Windhoek are filled with cars and narrow sidewalks as evident in the image of Independence Avenue taken in March 2018 (below).



Before the 1980s the city and neighbourhoods were places that people could truly live in and be wanderers and explorers while they stroll through their neighbourhoods because people lived onto the streets and shopped and worked along them. In the 1990s the shopping mall and town-houses became popular consumerist items.

In time, we tended to perceive each as a secluded new place of personal exploration, a new world where we thought we could explore ourselves in, but the real Flâneur could soon see that these spaces were places of forced play and that the city left little for them to explore and forced play is not the play that the Flâneur wants to partake in. These spaces were closed at night and the city centre and streets were also left abandoned as these malls preceded them in human activity. The flaneur was left with days where the free act of play was not allowed.



The only space within the CBD that was intentionally designed for pedestrian and social interaction is post-street mall in the previous image, yet it is being surpassed in popularity by Wernhill mall at the end of the pedestrian promenade. This mall has become a "Junkspace" that forms the end to a vibrant pedestrian centred place where people can gather under trees while shopping along the promenade.

The shopping wall swallows all the pedestrians, only to spit them out, leaving them full of consumerism and lacking any appreciation for the state of the city around them. While the mall is a closed box at the end of the promenade and has left the urban area around it void of any activity, there is still opportunity to link the pedestrian promenade through the mall and all the way through to the proposed site, creating a pedestrian loop within the CBD.

The city currently fails to accommodate the inherent flâneur found in all of us. The monotonous city block development is a large cause of this. Connected and playful spaces bring people closer to the environment around them. If the city regains its street for people and not for cars, only then can the tourists and residents embody the city and find appreciation for its unique topology and natural landscapes.

Due to the morphology of large transport infrastructure buildings such as railway stations and airports, many of them have potentially become 'junkspaces'. They do not relate to their immediate context, besides being accessible from major transport nodes, and therefore they could have been built in any city in the world. It is important to understand the impact that these junk spaces have on communities and the built-environment in order to ensure that the same mistakes are not repeated, especially in large spaces such as railway stations.

It is important to have a certain transparency within the building so that the commuter is able to see what is beyond the space that they are in. This aids the commuter to anticipate where he/she should go next. This minimizes the need to direct people with signage. Large windows or openings also allow the user to see landmarks or markers outside of the station that will orientate them within the city. They can also immediately see what the weather is like and this prepares them for their journey into the city.

Penn station in New York is an example of a station that used to be open, transparent and easy to navigate. The current Penn station is enclosed with narrow directed pathways, low ceilings and plenty of directional signage and advertisement. It is difficult to orientate oneself within the city and to understand where to go next.



The original Penn Station in New York City when it opened in 1910.

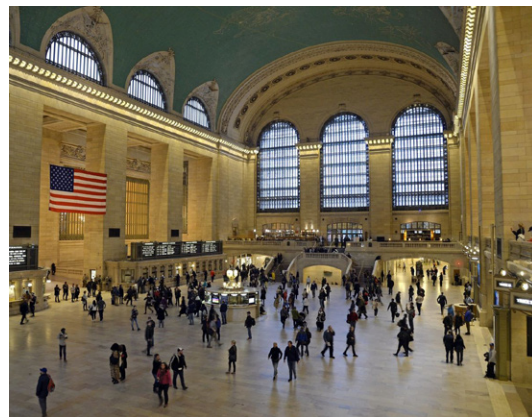


Penn Station today is a station that is difficult to navigate, therefore, a lot of directional signage is necessary.

OPEN TRANSIT DESIGN

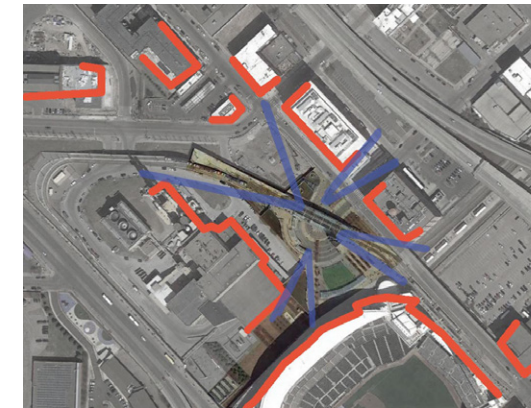
New approaches to transport hubs include open-transit design which puts public open space and an outward focus onto the city as the core to efficient orientation for the user. The Grand Central Terminal in New York is an example of a transport hub that is focused on the interior environment. It is a square building that utilizes optimum efficiency but isolates the user from its surroundings. The users are unaware of where to go when they leave the station.

Figure 50 illustrates the visual boundaries (in red) that the pedestrian encounters when directly exiting the terminal building. This disorients the pedestrians and forces them to navigate the city using a map as soon as they exit the building



The Interchange in Minneapolis, USA, by EE&K a Perkins Eastman Company, on the other hand, focuses outward, allowing the user to experience the city as the building and spaces focus outward onto the city. The Minneapolis station has a more dynamic design that is transparent and inviting. The public spaces allow visual guidance to the rest of the city as well as gathering spaces.

The open spaces and transparent architecture make the users aware of the weather and scale of the urban spaces they are about to enter whilst still being inside the building.

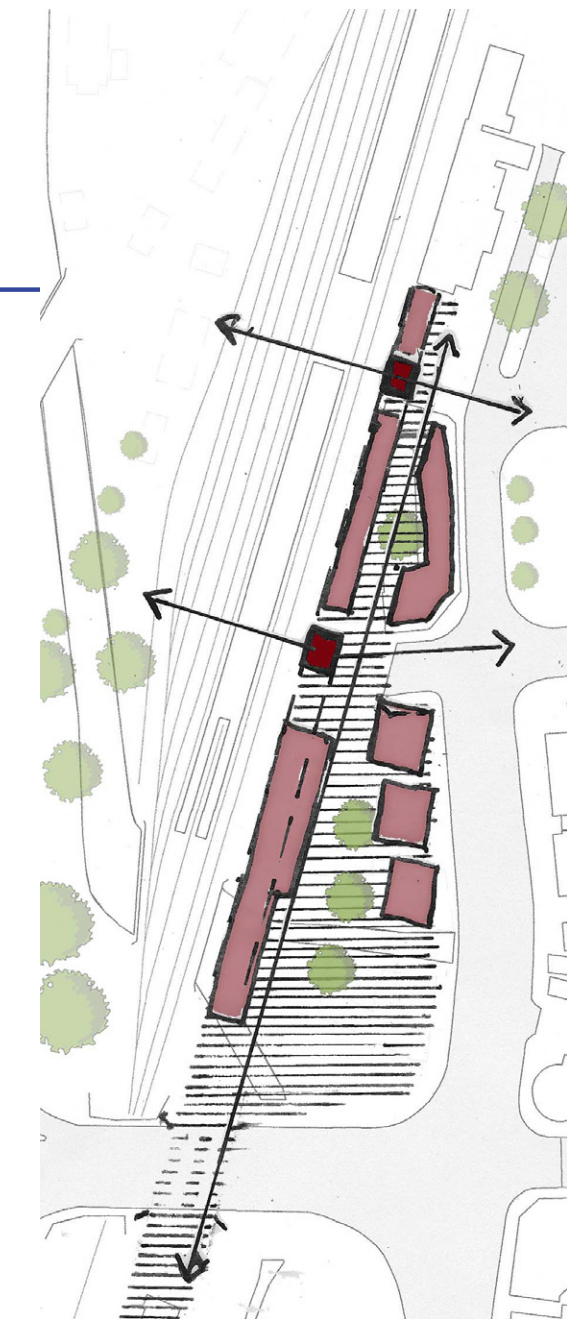


Interchange in Minneapolis



Interchange in Minneapolis

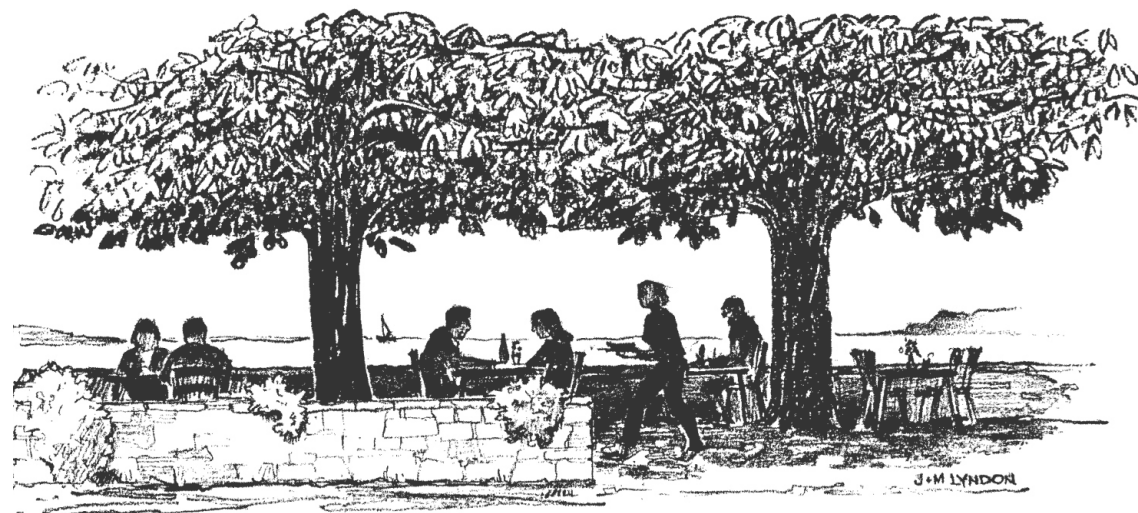
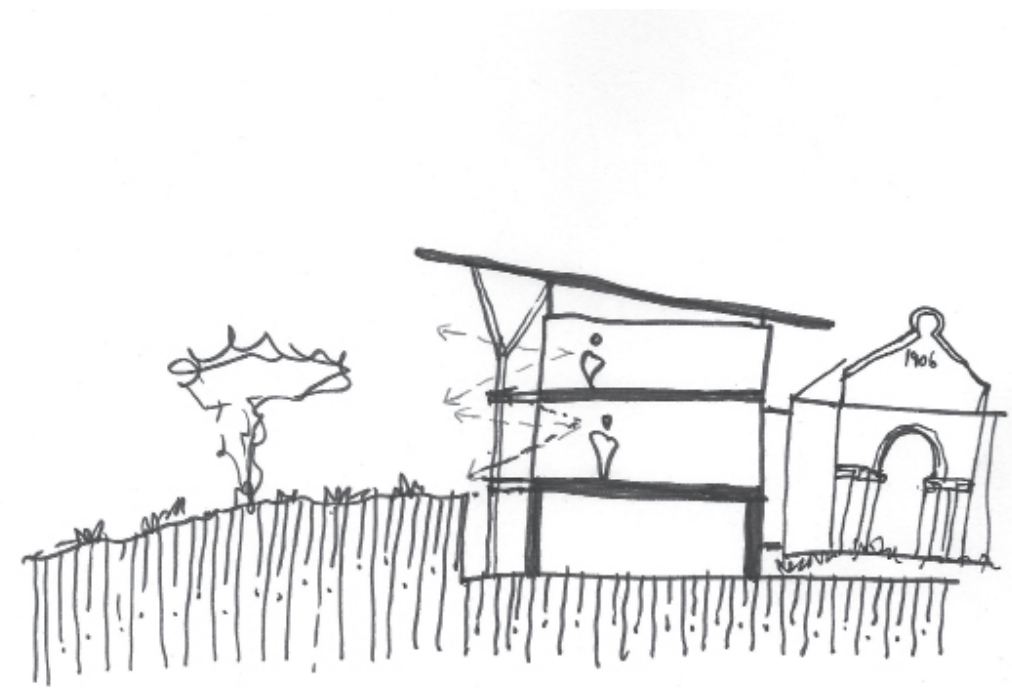
The local and tourist should not merely move from one place to another but be able to be Flâneurs throughout their journey in the city. Exploration of the city starts through enabling environments where play and exploration is encouraged. The proposed Inter-modal Transport Hub would encourage passengers to be Flâneurs who experience the city through the sense of touch, smell and sight while they embark or disembark on their journey through the city and the country.



URBAN SPACE CREATING A NEW NARRATIVE

Aligning the architectural intervention between the railway line and pedestrian promenade supports a structural rhythm that guides the traveller along a path that initiates movement and exploration that extends beyond the site.





THEORETICAL APPLICATION

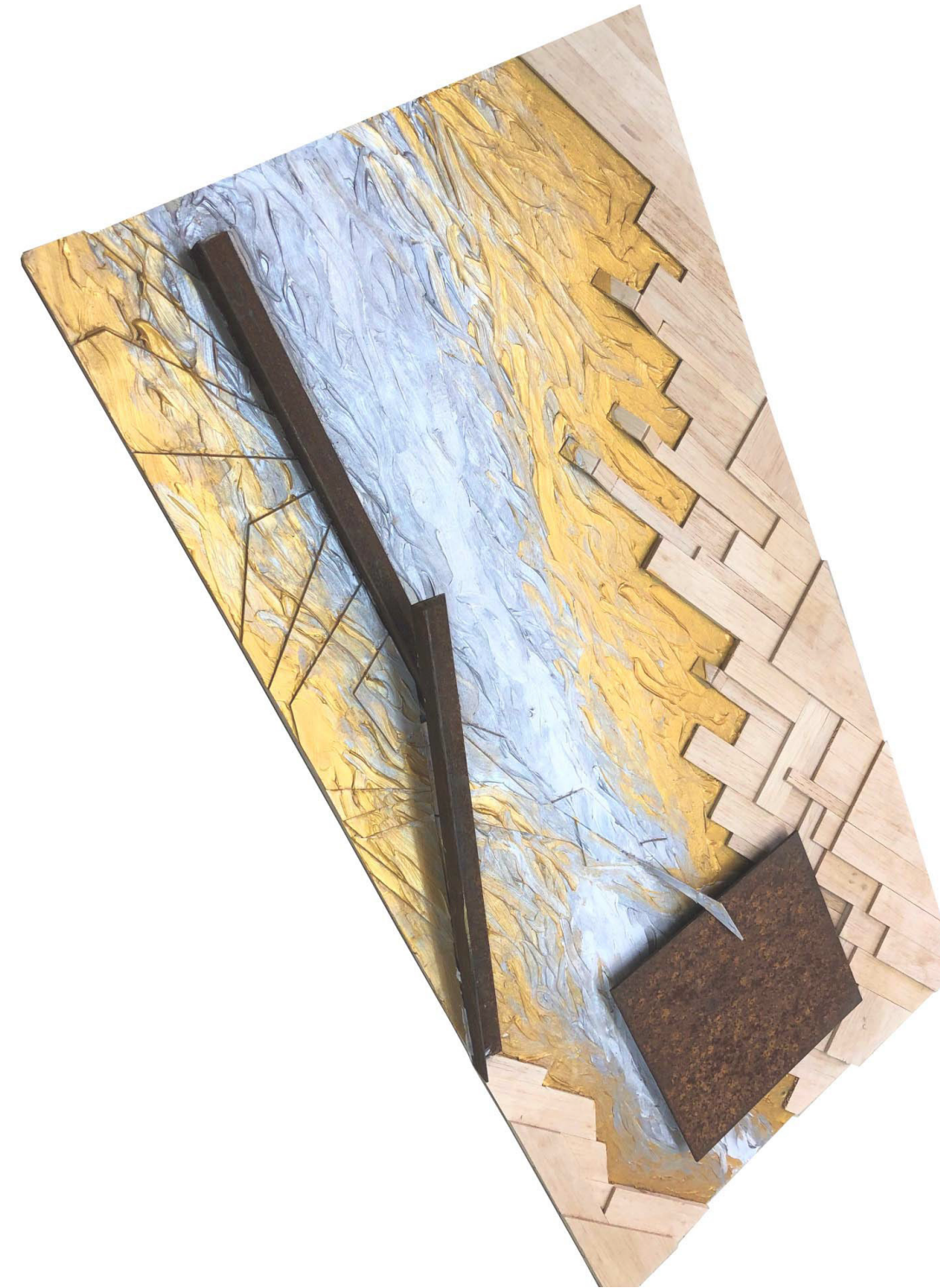
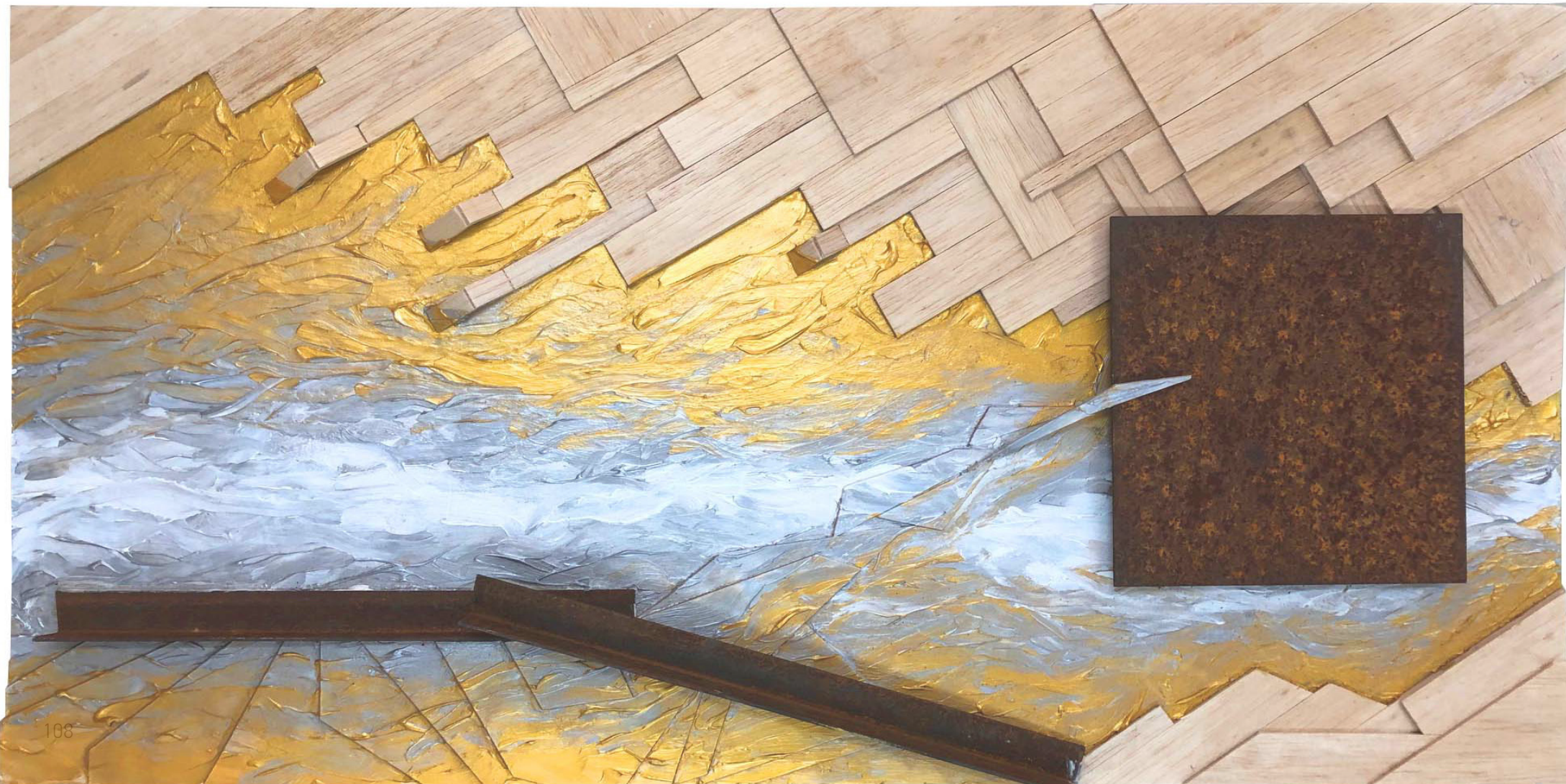
PART 05

CORRECTED
SIGHT

- 5.1 Touchstone
- 5.2 Concept 1 - Fragmentation
- 5.3 Concept 2 - Architectural Layering

5.1 TOUCHSTONE

The touchstone represents the tension of the current urban landscape (wood), the colonial heritage buildings (rusted steel panels) and the new urban form (painted brush strokes) that seems to fight its way through the existing, whilst only lightly touching the heritage.



5.2 CONCEPT 1

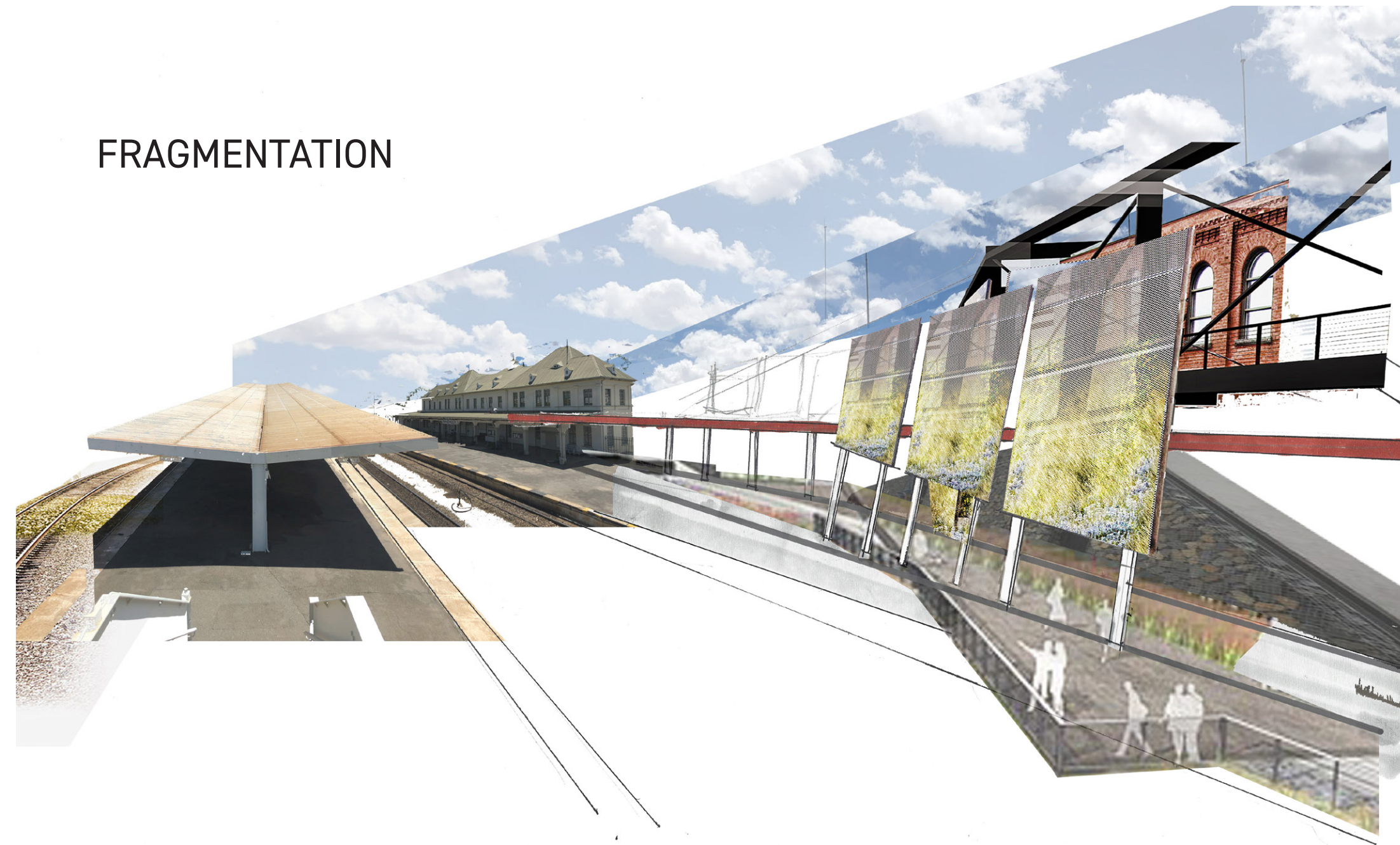
Fragmentation is a counter-reaction to the frigidness displayed by the existing architecture of the German Colonial buildings that suffer under the stigma of oppression. A healthy and productive civic society rests on a foundation of trust and openness among citizens, government, and private organizations. As we experience massive demographic changes, Architecture can represent a transparent and honest society by fragmenting what is solid and hidden away, revealing what is true.

The materials create a transparency that allows the exploration of a rich interplay between architectural design and civic life. The structure, through fragmentation, is able to show what is behind it, blurring the lines between public and private.

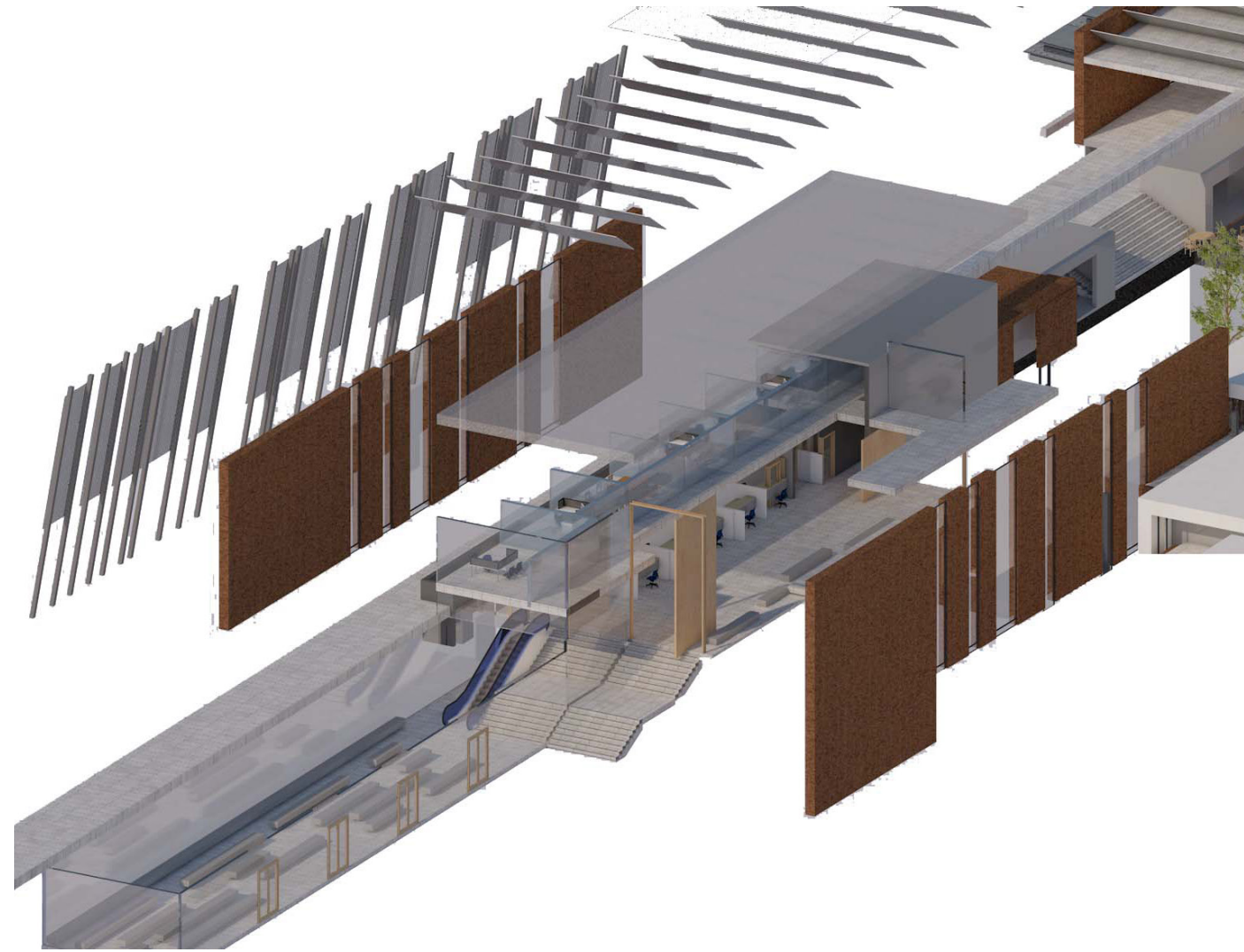
She responded with a quiet insertion that strikes a balance between engaging its urban surroundings while maintaining a private, secure inner realm. From outside, the almost cubic, two-story structure – clad in metal that echoes the industrial setting – may appear deceptively simple. But on the inside, this courtyard building reveals itself as an architecture of layered veils.

The proposal aims to allow one can see through the structure, so that the public is able to see what is going on inside the building or know the type of use of the building. Privacy is limited in public buildings such as transport hubs, yet safety and shading from the sun is not compromised. This creates a welcoming atmosphere for pedestrians, even though the internal spaces are semi-private.

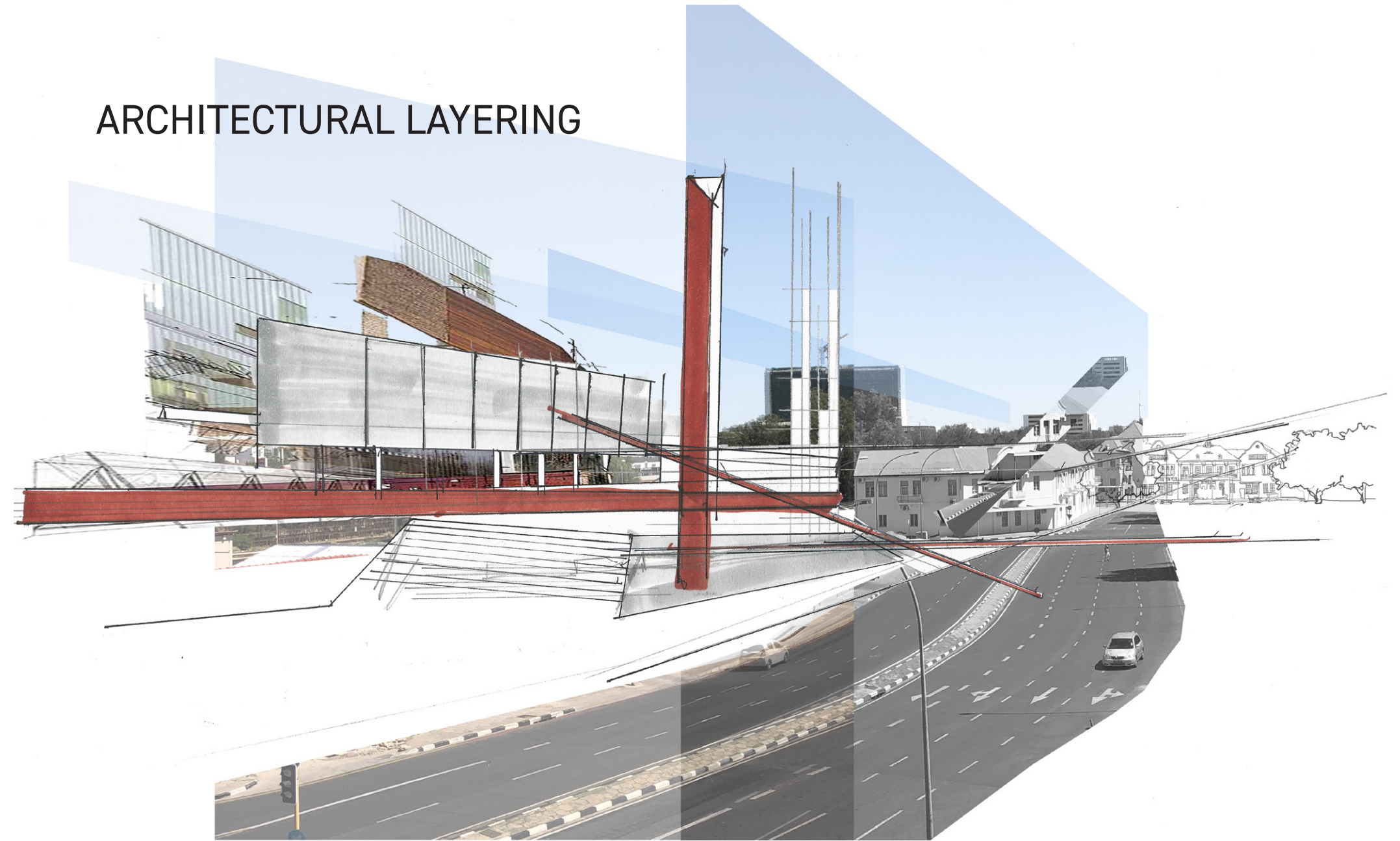
FRAGMENTATION



5.3 CONCEPT 2



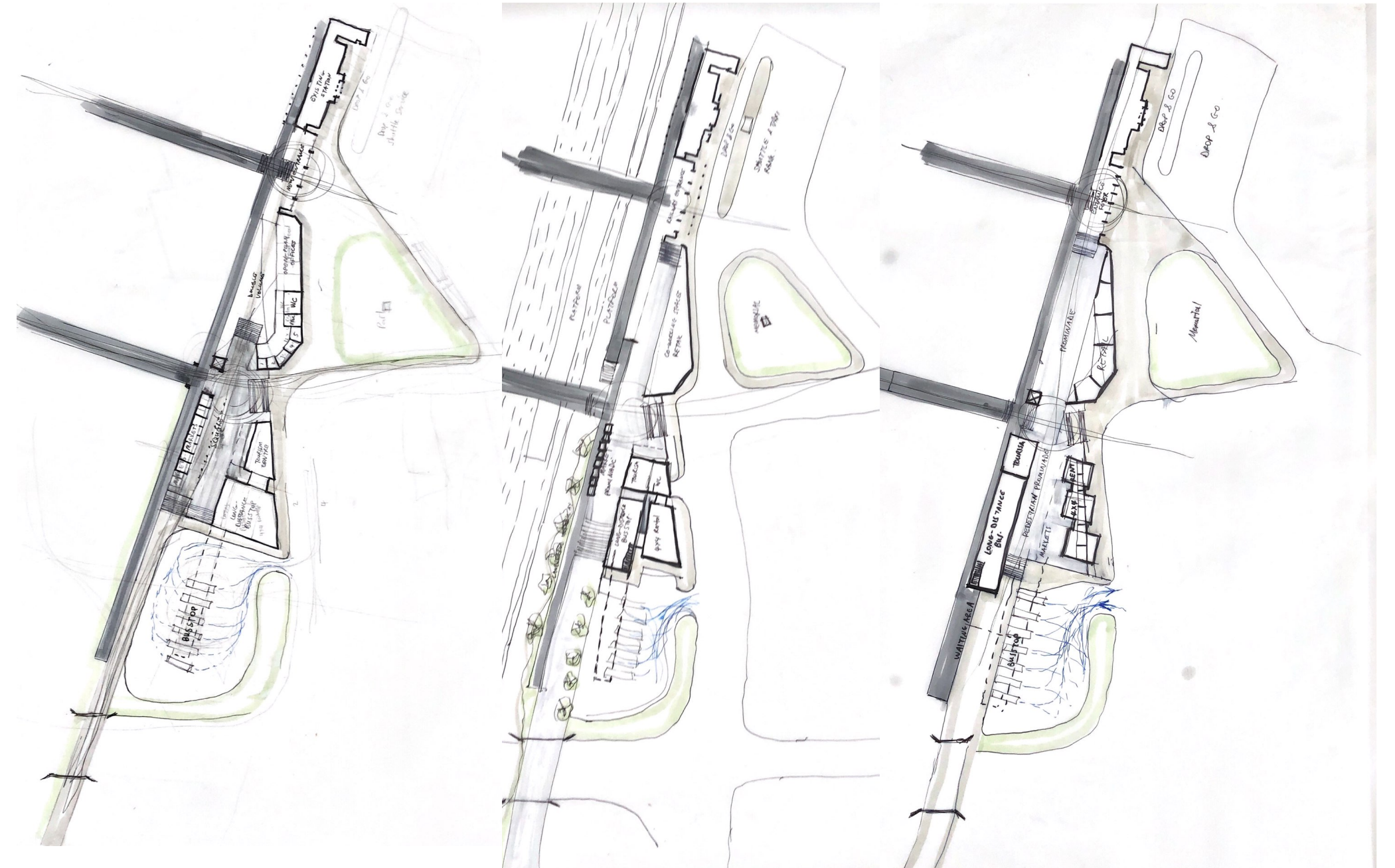
ARCHITECTURAL LAYERING



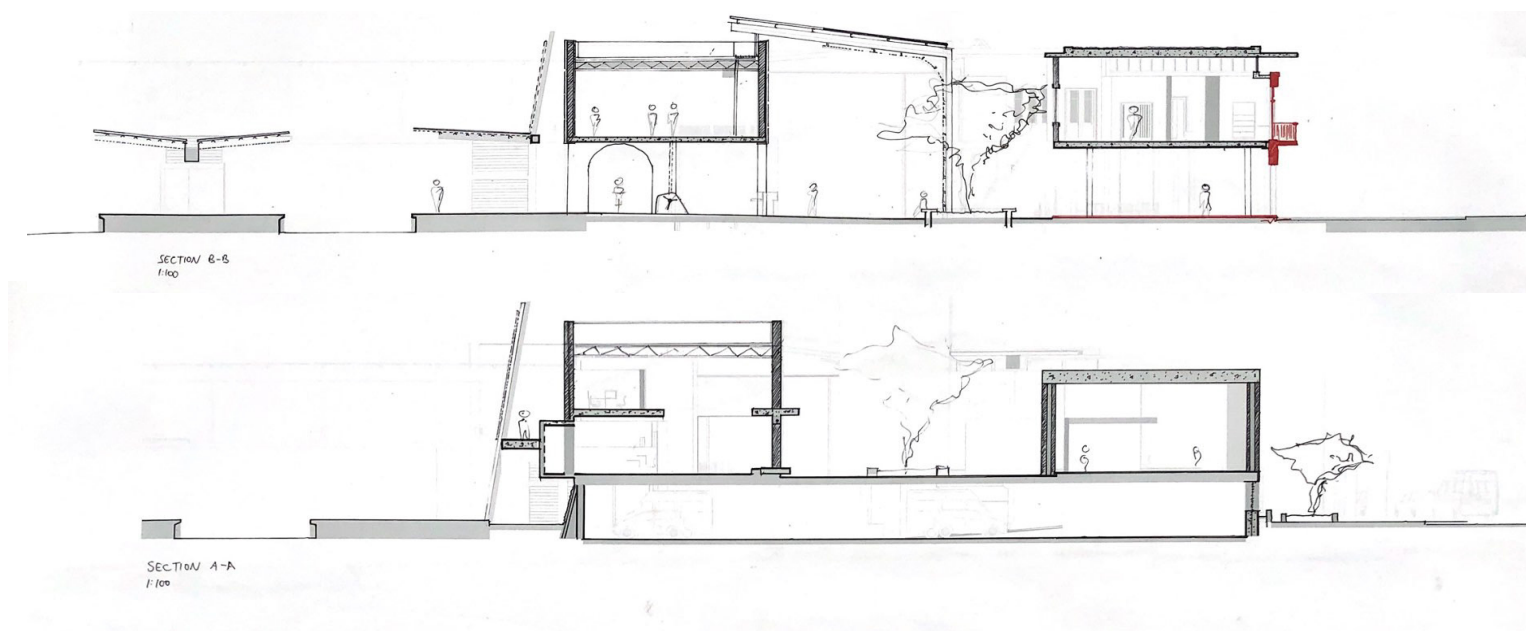
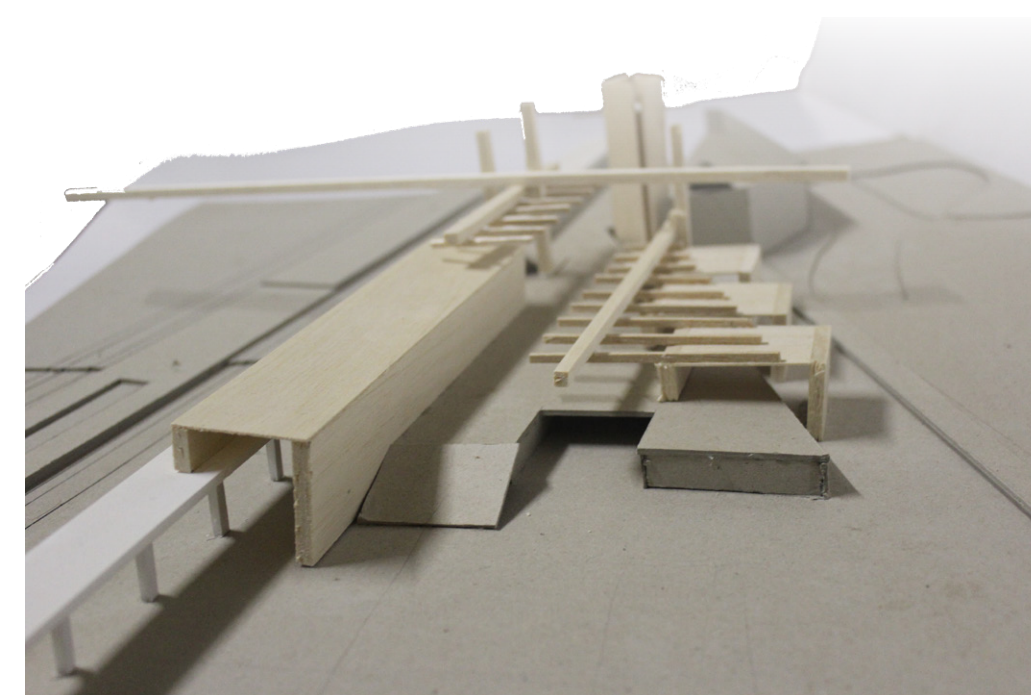
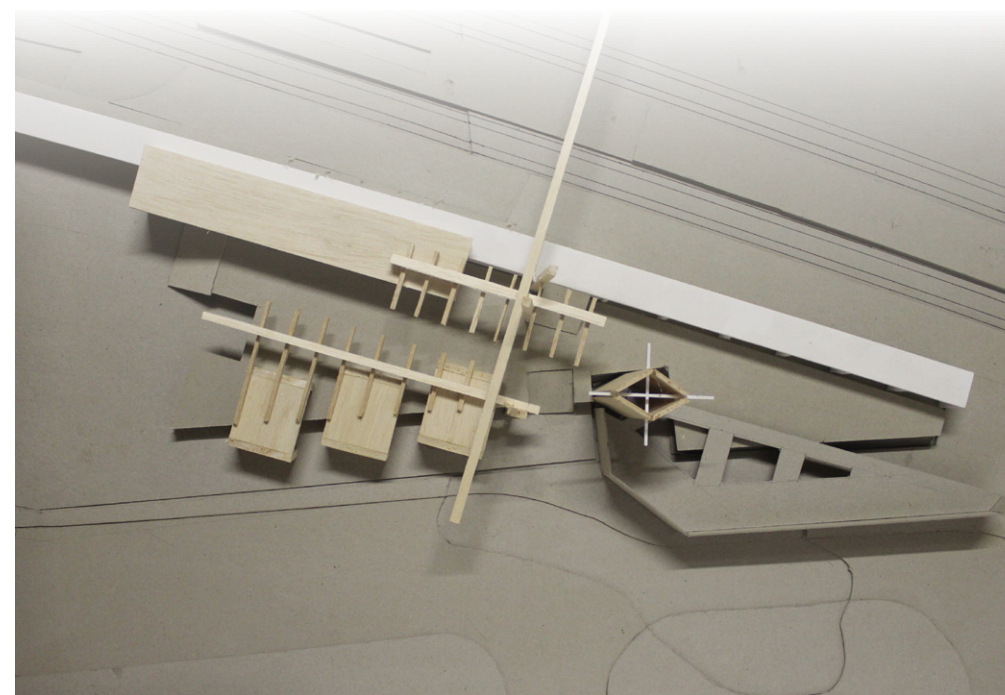
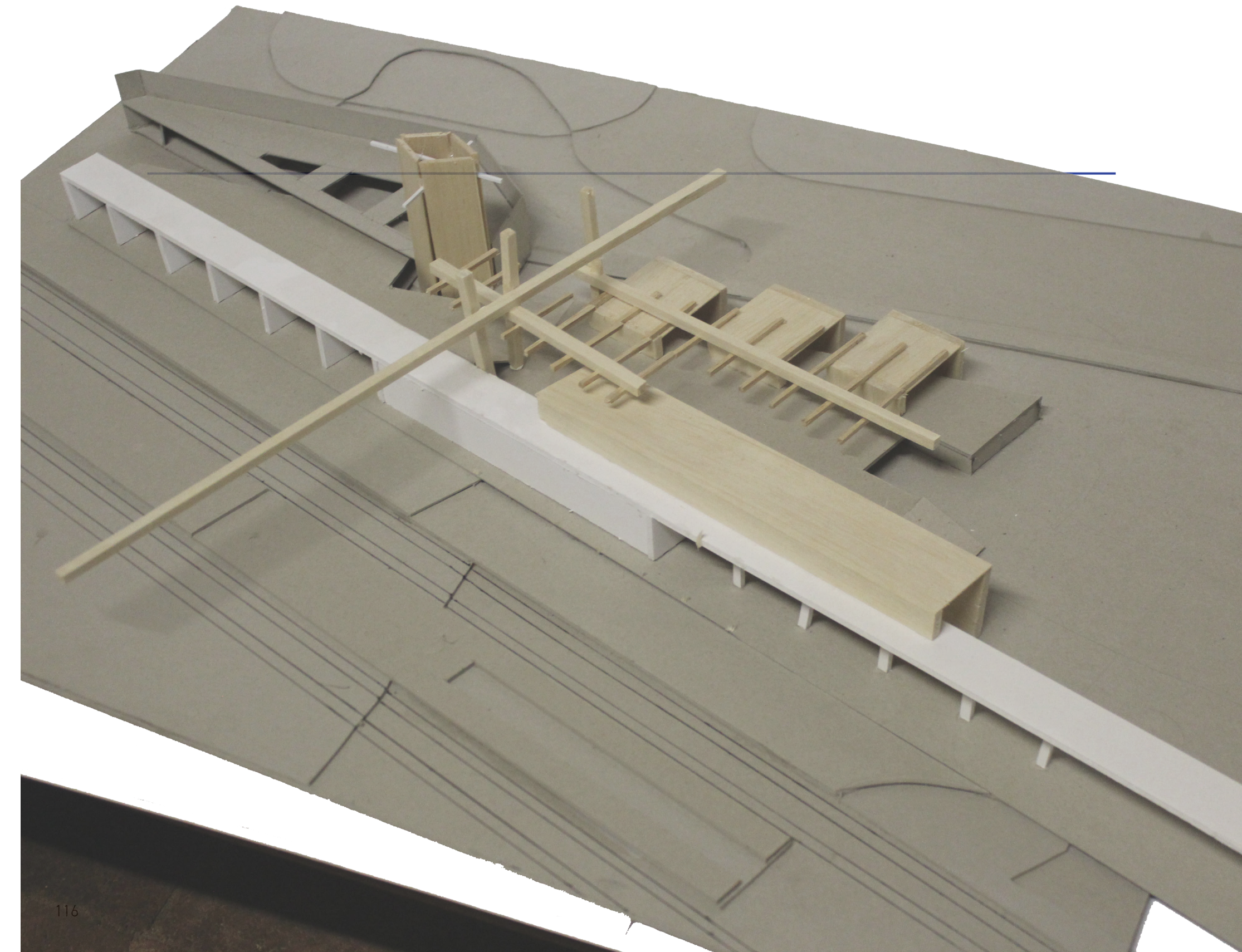
PART 06

DESIGN DEVELOPMENT

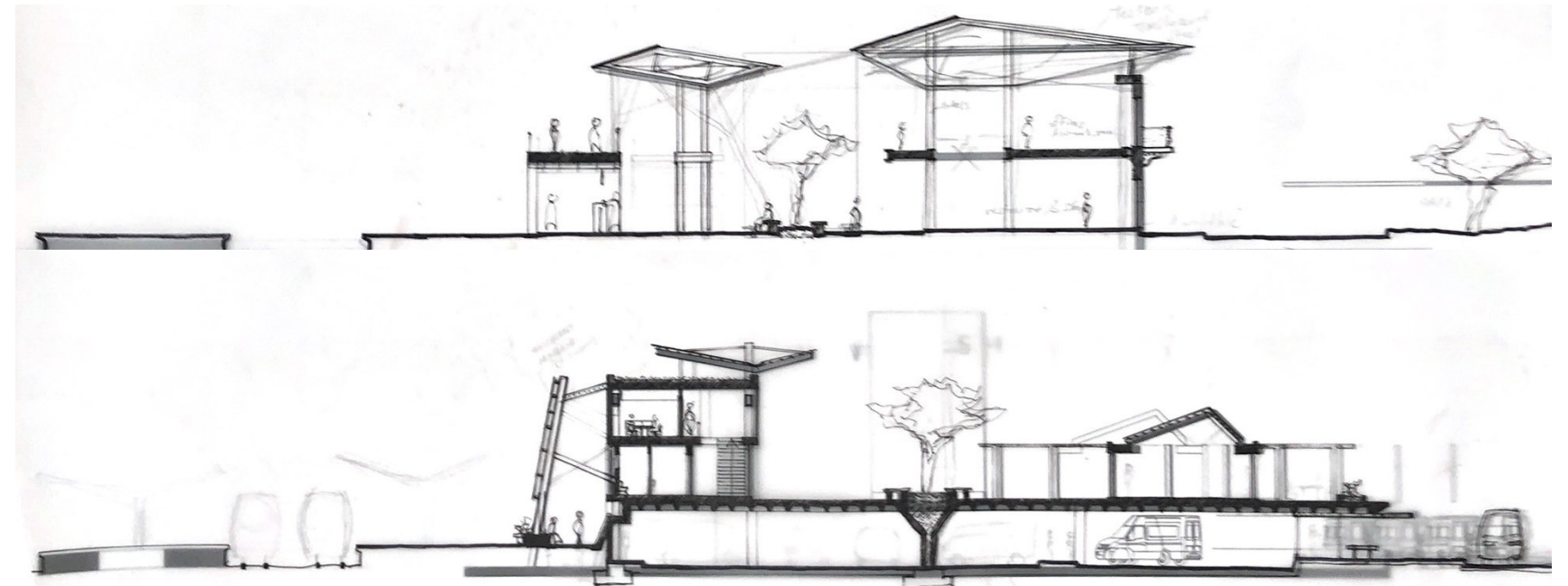
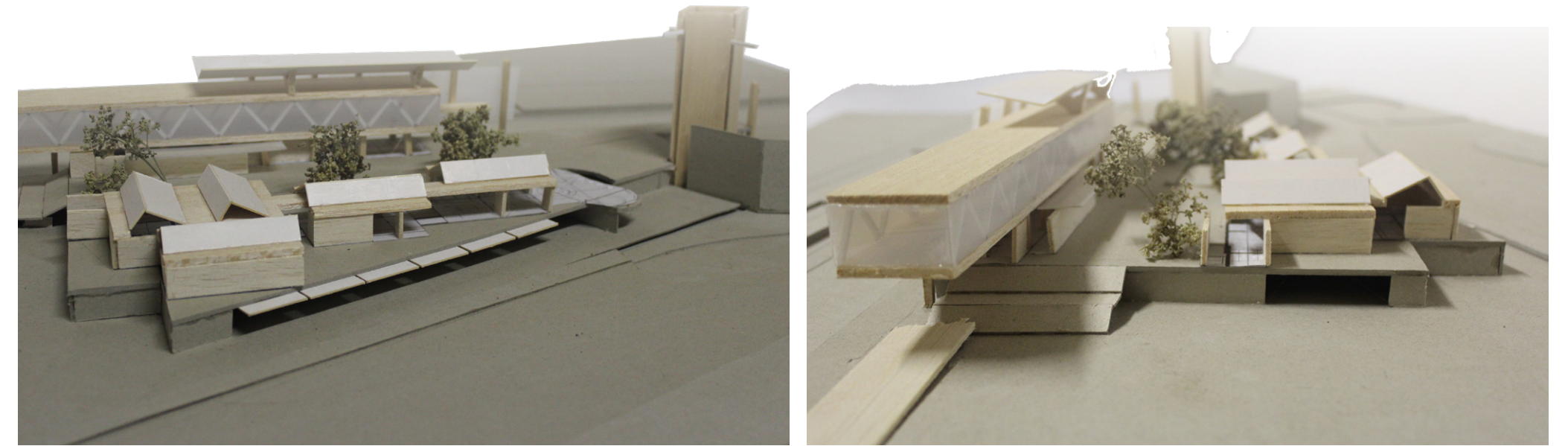
- 6.1 Phase 1 - Model 1
- 6.2 Phase 2 - Model 1
- 6.3 Phase 3 - Model 2
- 6.4 Phase 4 - Towards a Final Design



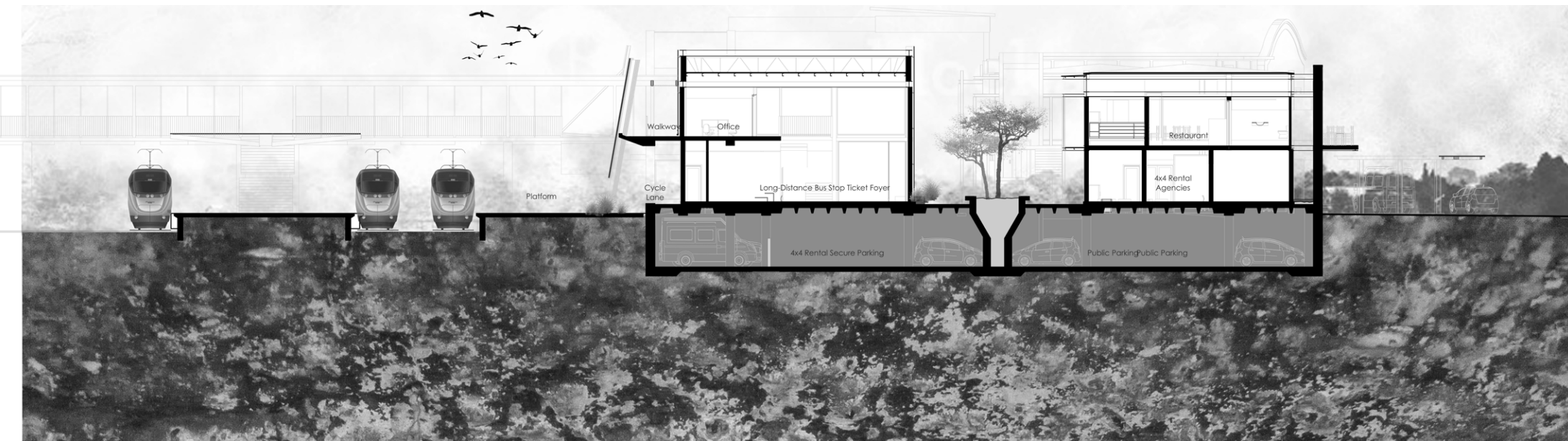
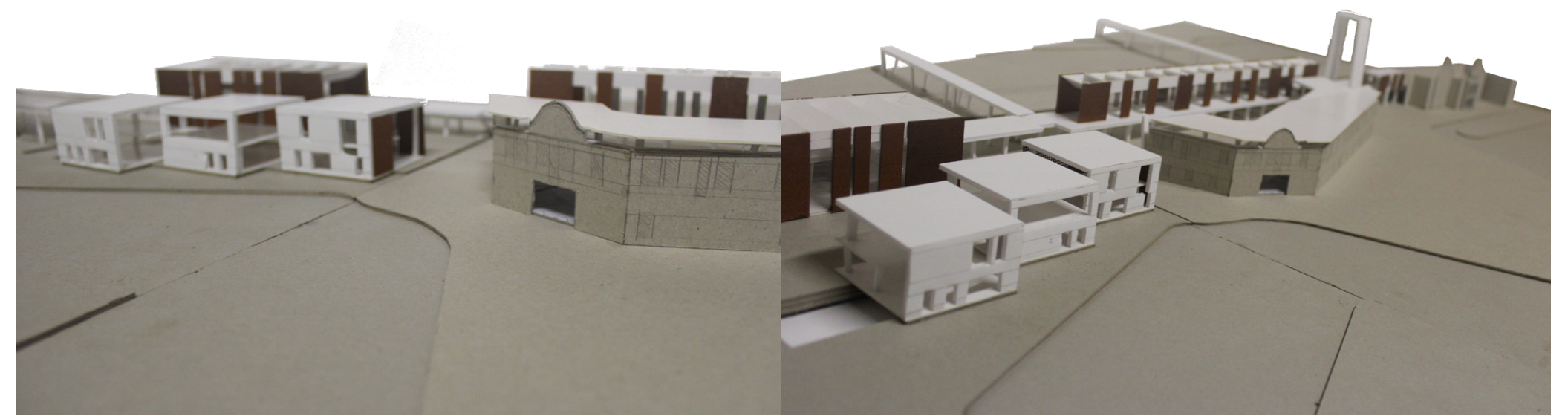
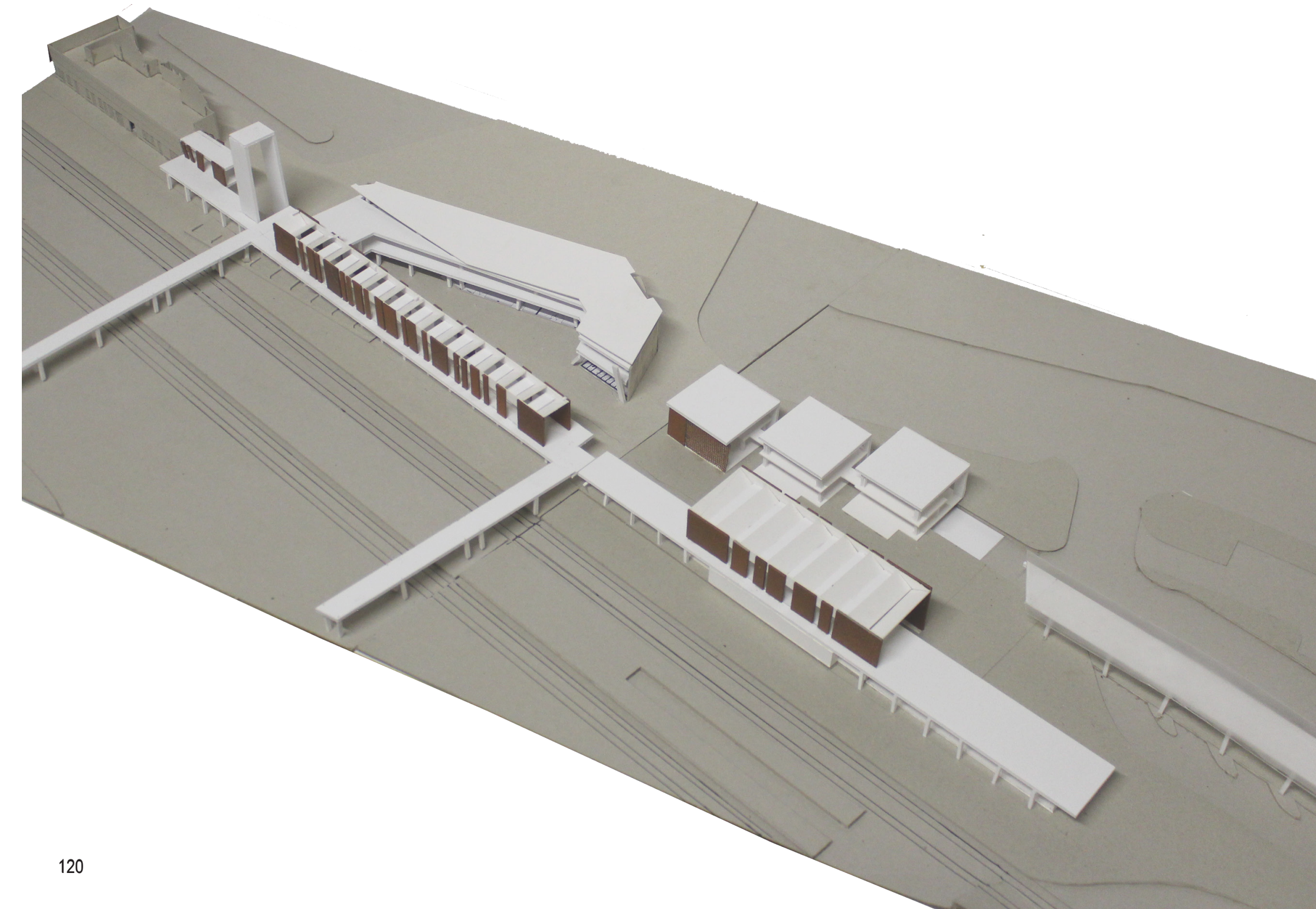
6.1 Phase 1 - Model 1

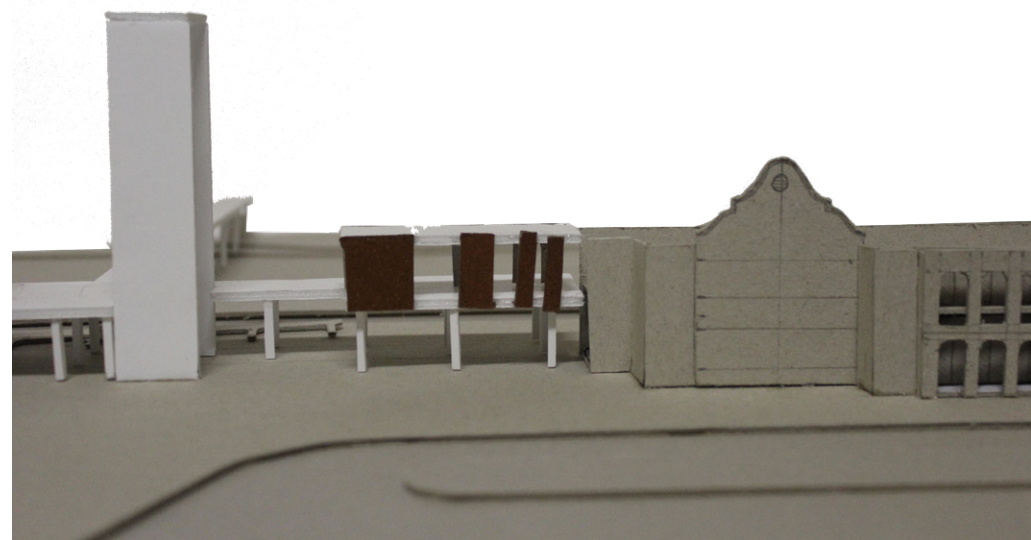
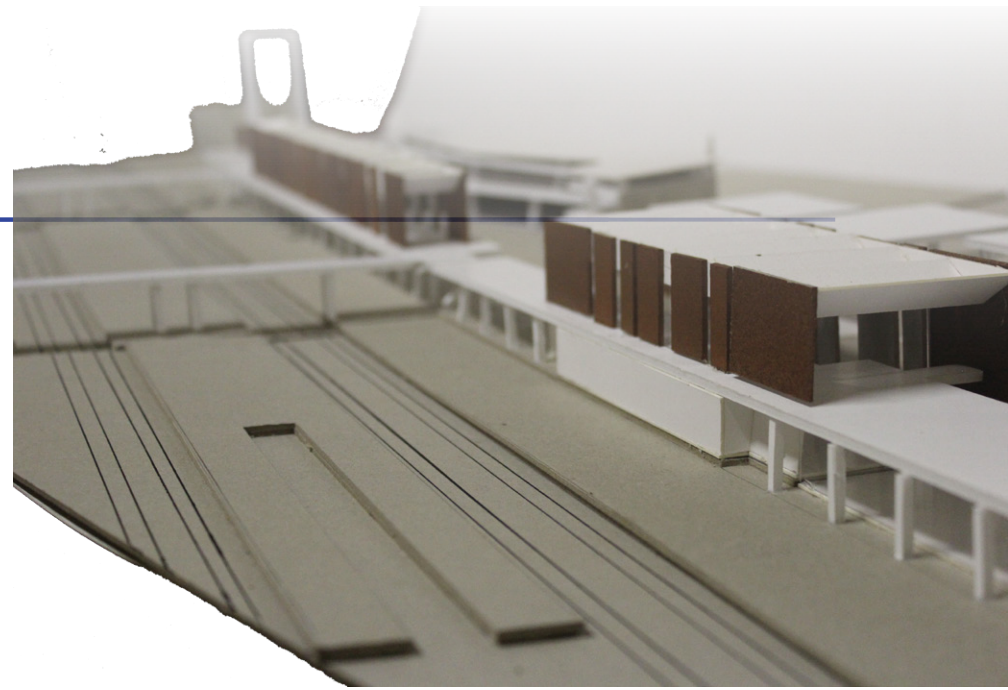
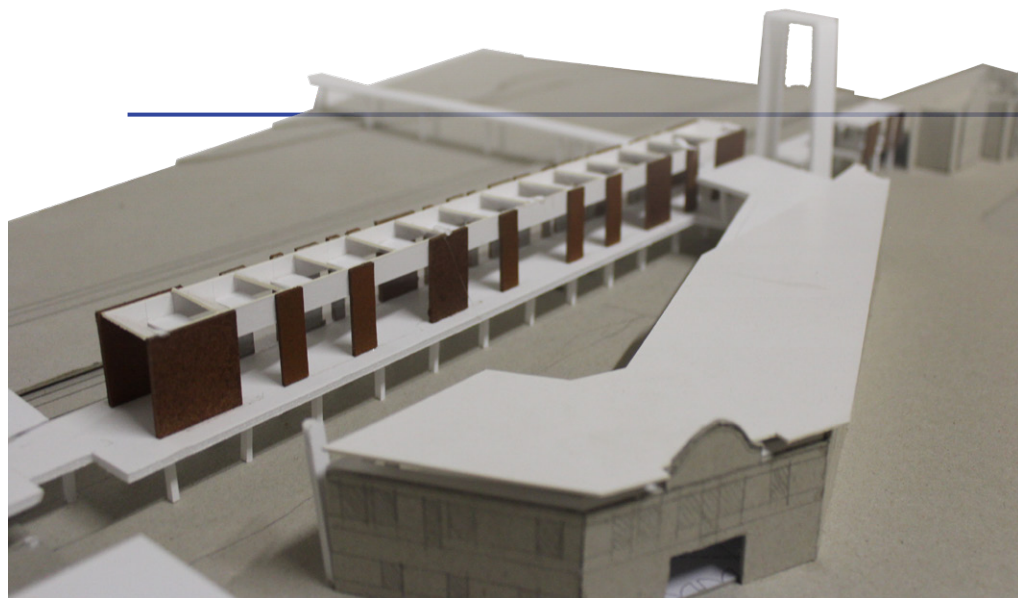


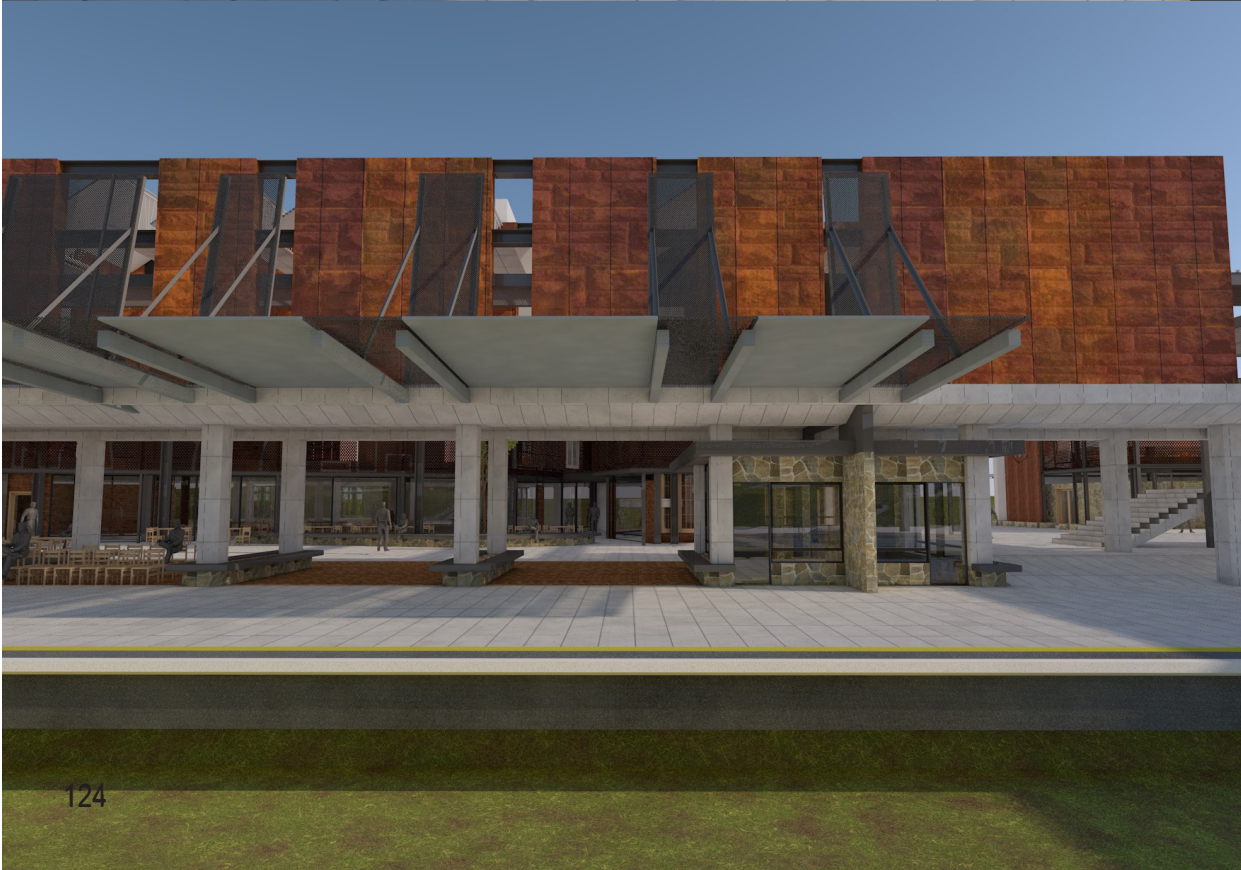
6.2 Phase 2 - Model 2



6.3 Phase 3 - Model 3







6.4 Phase 4 - Towards a Final Design

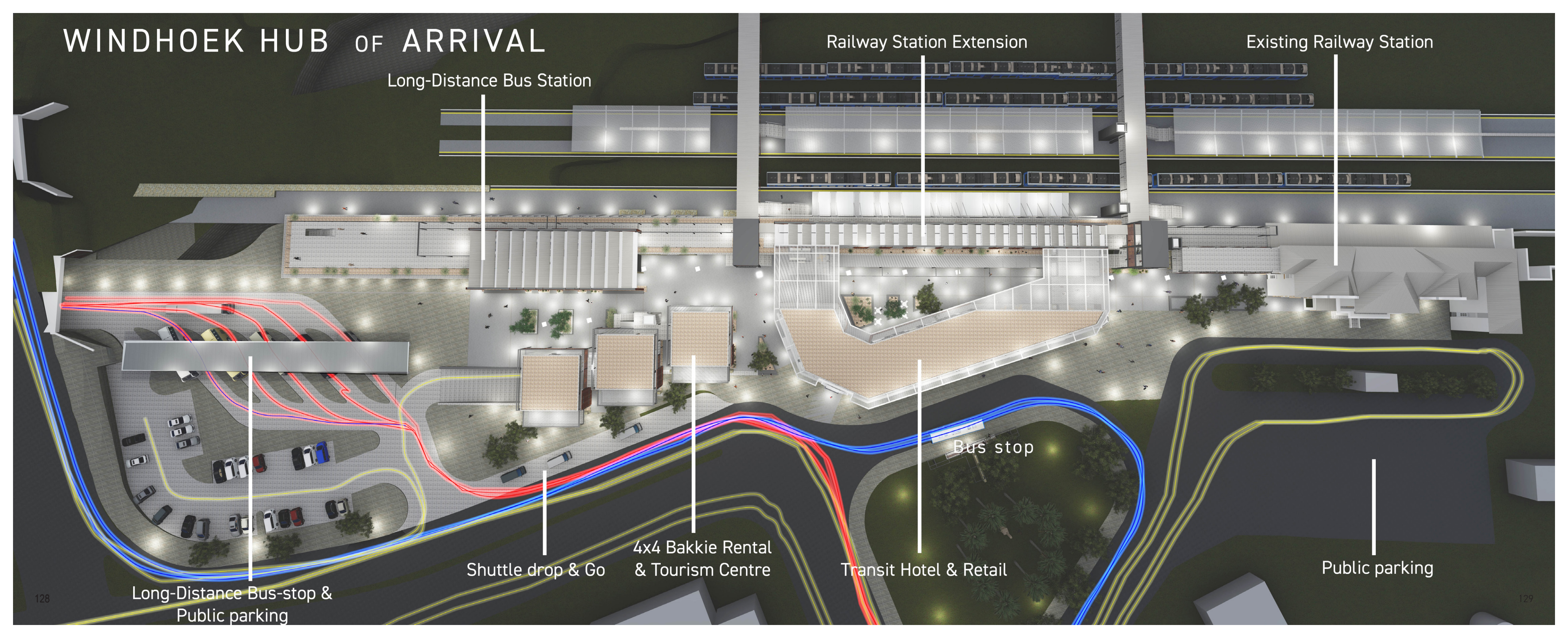


WINDHOEK HUB OF ARRIVAL

Long-Distance Bus Station

Railway Station Extension

Existing Railway Station



Bus stop

Shuttle drop & Go

4x4 Bakkie Rental
& Tourism Centre

Transit Hotel & Retail

Public parking

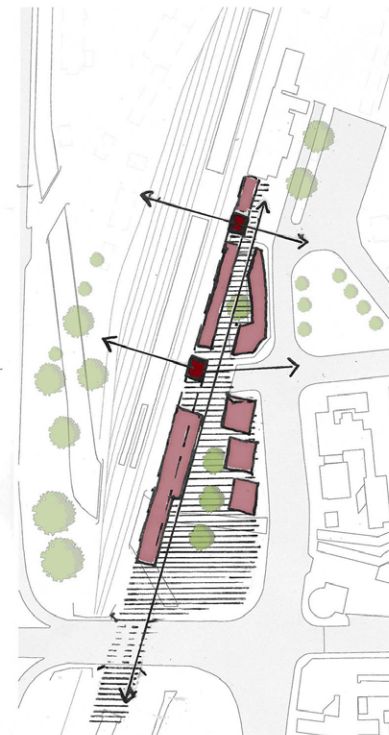
Long-Distance Bus-stop &
Public parking



EXISTING



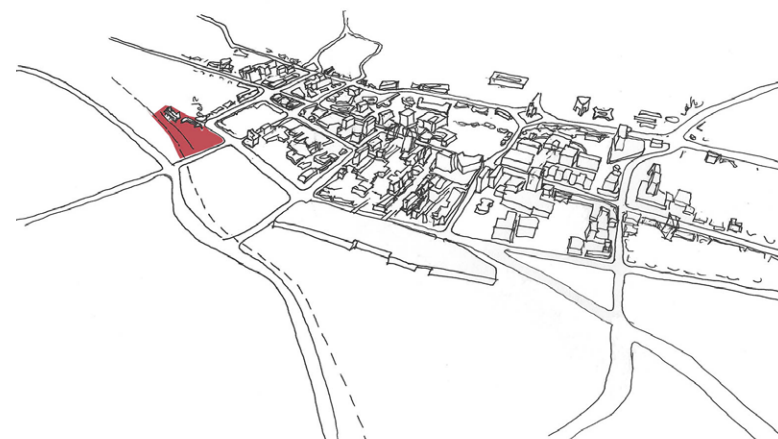
Buildings demolished to make way for new



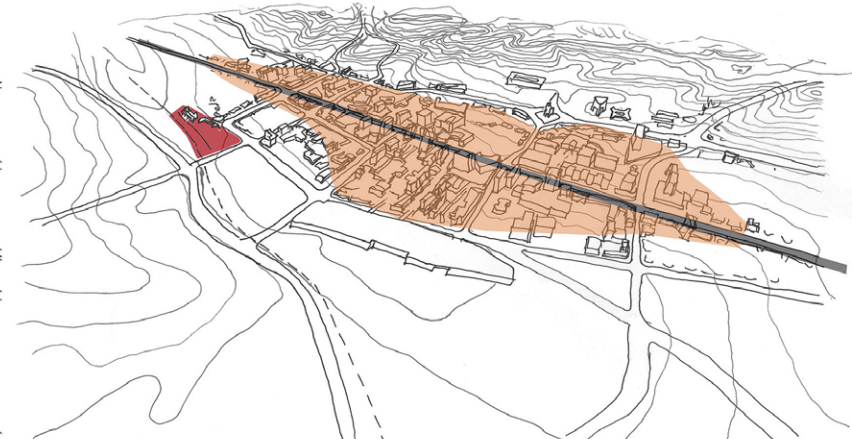
Proposal aligned along new pedestrian promenade



PROPOSAL



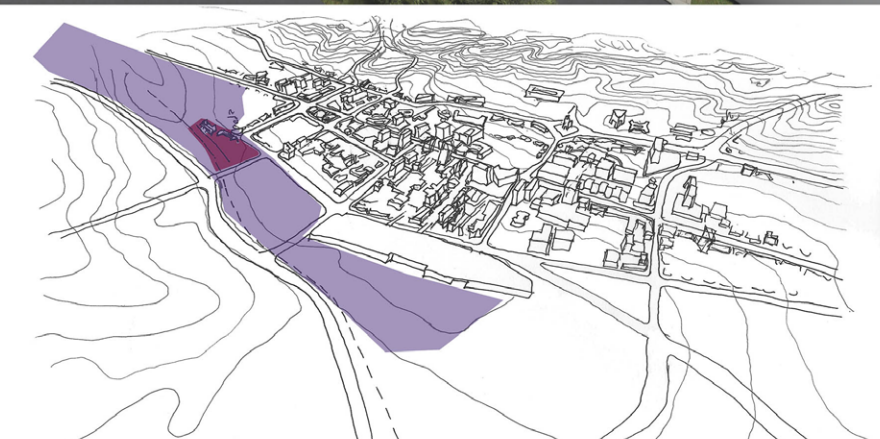
SITE LOCATION ON PERIPHERY OF WINDHOEK CBD



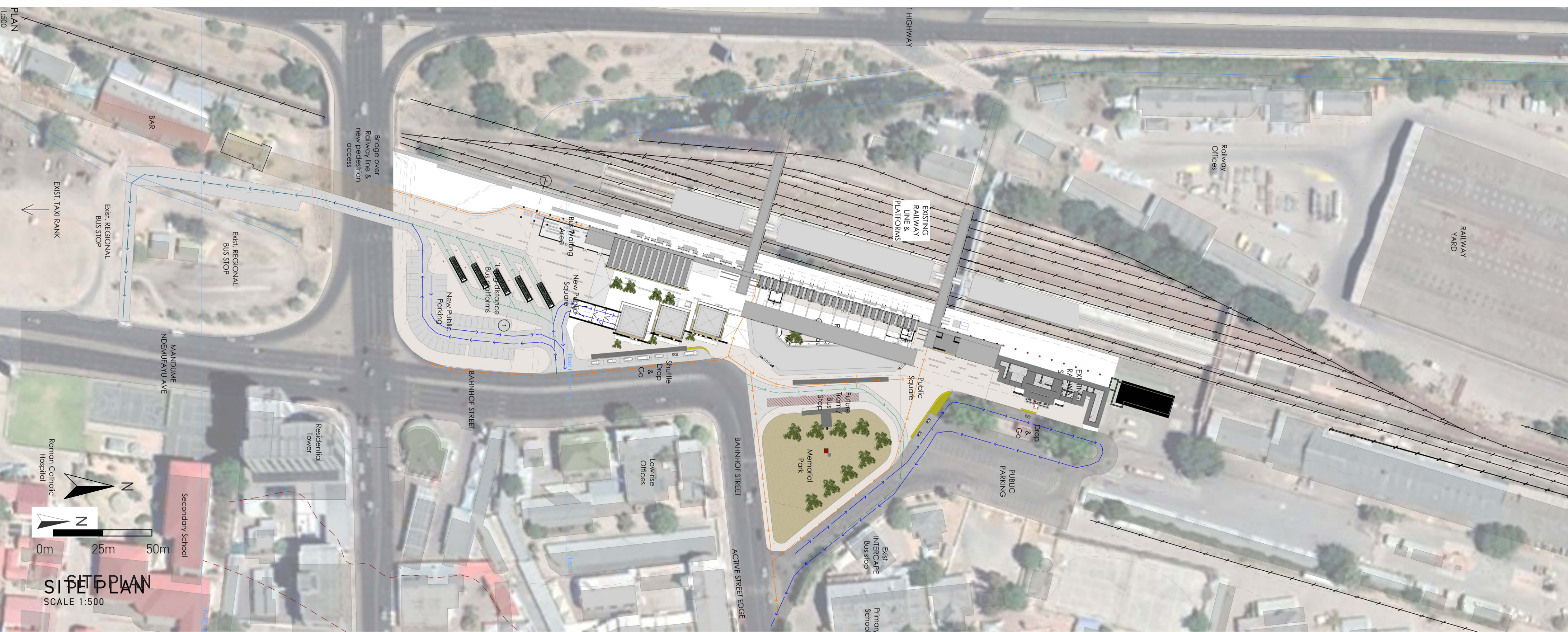
LINEAR CITY DEVELOPMENT ALONG INDEPENDENCE AVENUE



RAILWAY LINE ALONG CONTOURS OF HISTORIC RIVER



SITE LOCATED ALONG UNDERUTILIZED AND INDUSTRIAL BELT THAT DIVIDES THE CITY



PLAN
1:500

EXIST. TAXI RANK

EXIST. REGIONAL
BUS STOP

EXIST. REGIONAL
BUS STOP

MANDUME
NDEWUFAYU AVE

Secondary School

Residential
Tower

BAHNHOF STREET

Low-rise
Offices

BAHNHOF STREET

ACTIVE STREET EDGE

Memorial
Park

EXIST.
INTERCAPLE
BUS STOP

Prinon
School

Public
Square

PUBLIC
PARKING

Drop
& Go

EXISTING
RAILWAY
LINE &
PLATFORMS

Railway
Offices

RAILWAY
YARD

Bridge over
Railway line &
new pedestrian
access

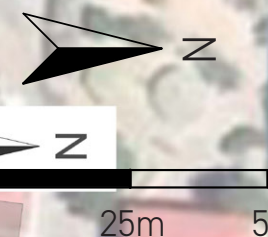
New Public
Square

Road Pedestrian (1)

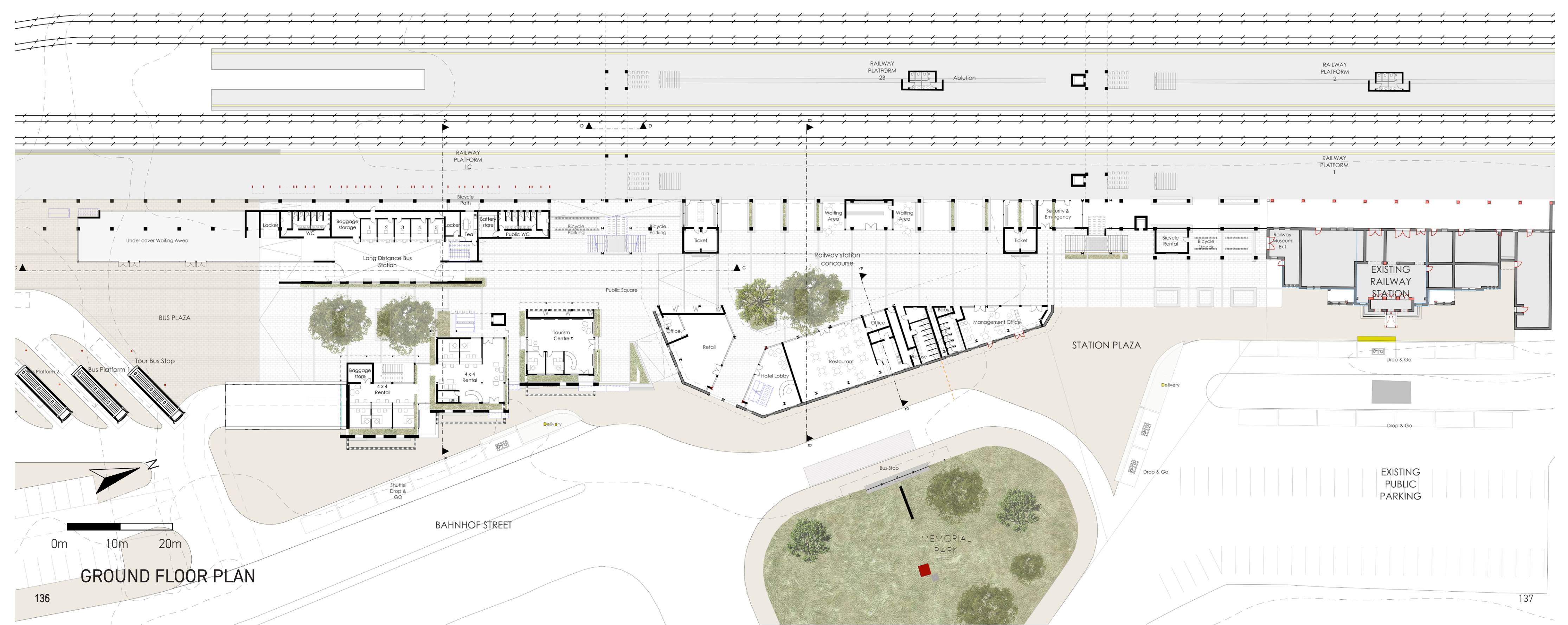
Short-Duration
Bus Platforms

Bus Waiting
Area

Shuttle
Drop
&
Go



SITE PLAN
SCALE 1:500



RAILWAY PLATFORM 2B
Ablution

RAILWAY PLATFORM 2

RAILWAY PLATFORM 1C

RAILWAY PLATFORM 1

Under cover Waiting Area

Long Distance Bus Station

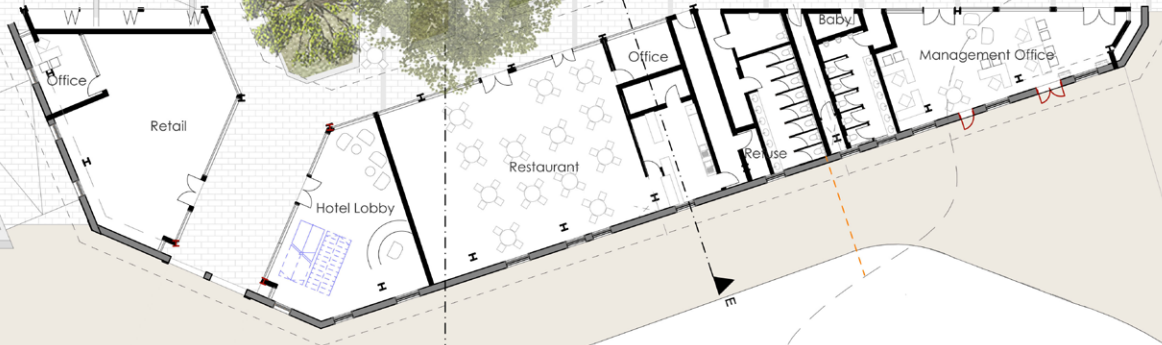
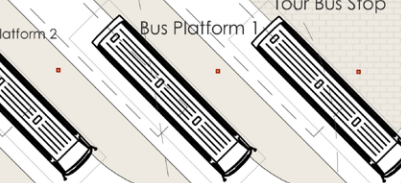
Railway station concourse

EXISTING RAILWAY STATION

BUS PLAZA

Public Square

STATION PLAZA

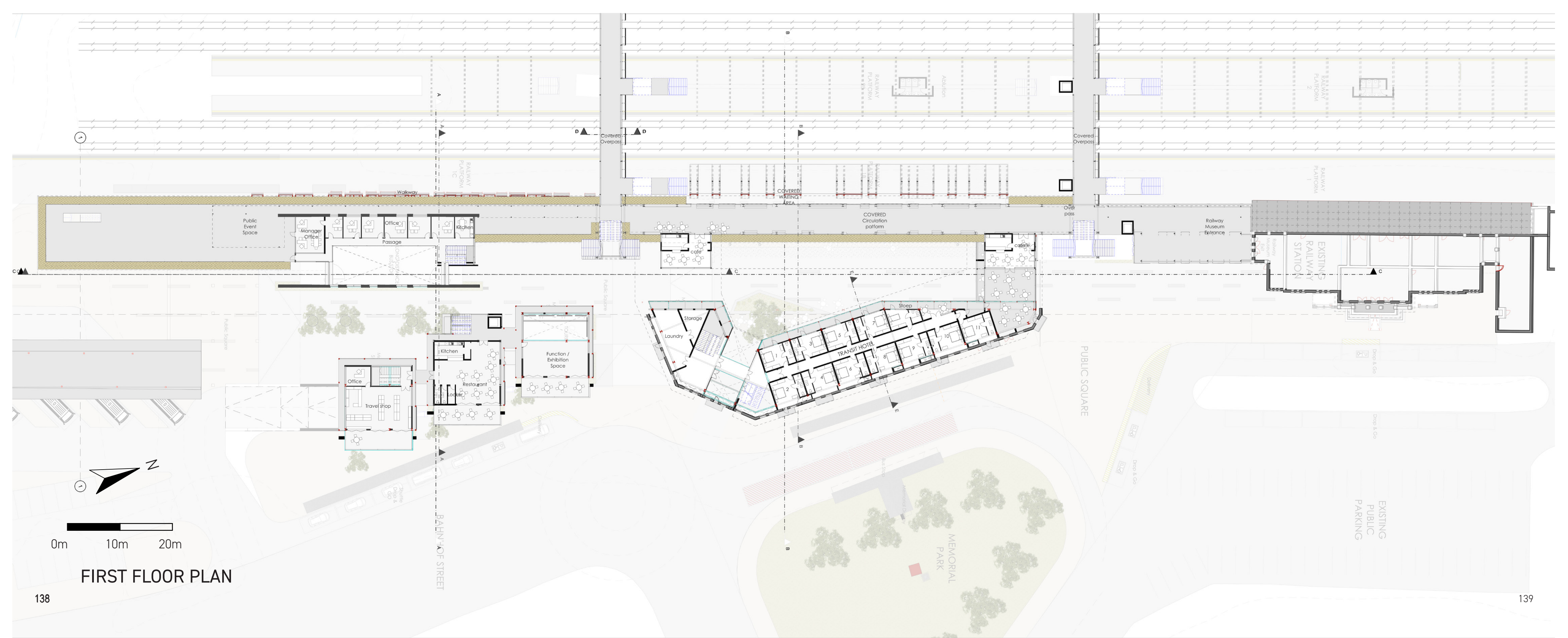


BAHNHOF STREET

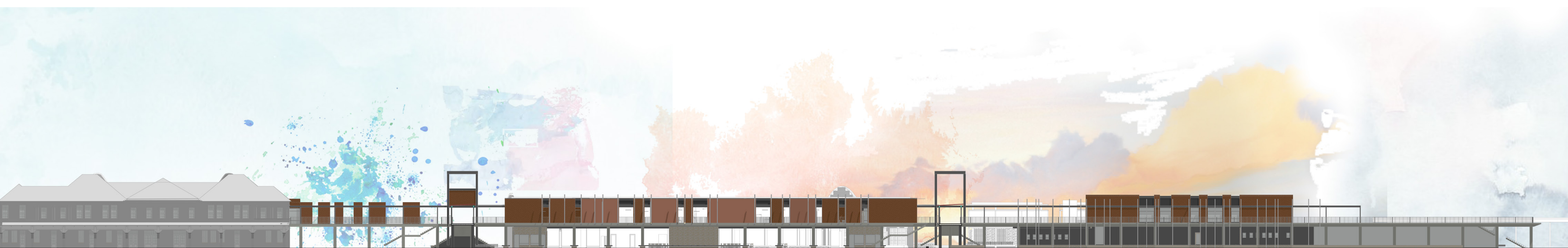
MEMORIAL PARK

EXISTING PUBLIC PARKING

GROUND FLOOR PLAN



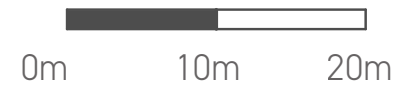
FIRST FLOOR PLAN

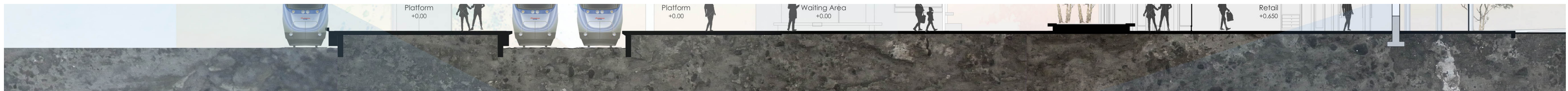


WEST ELEVATION



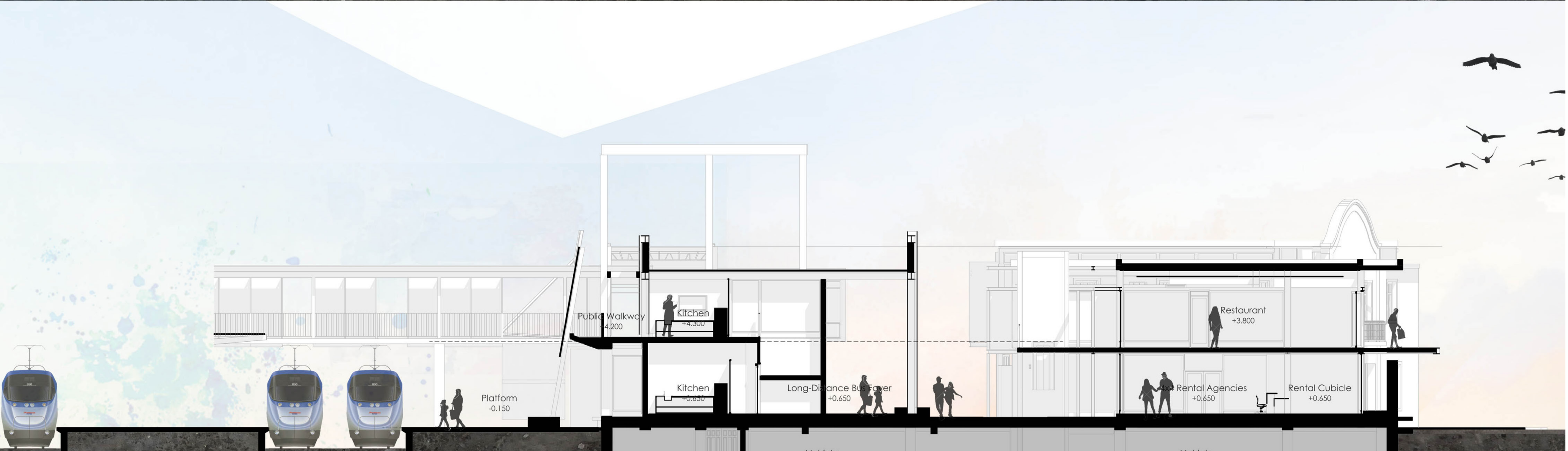
EAST ELEVATION





SECTION B-B

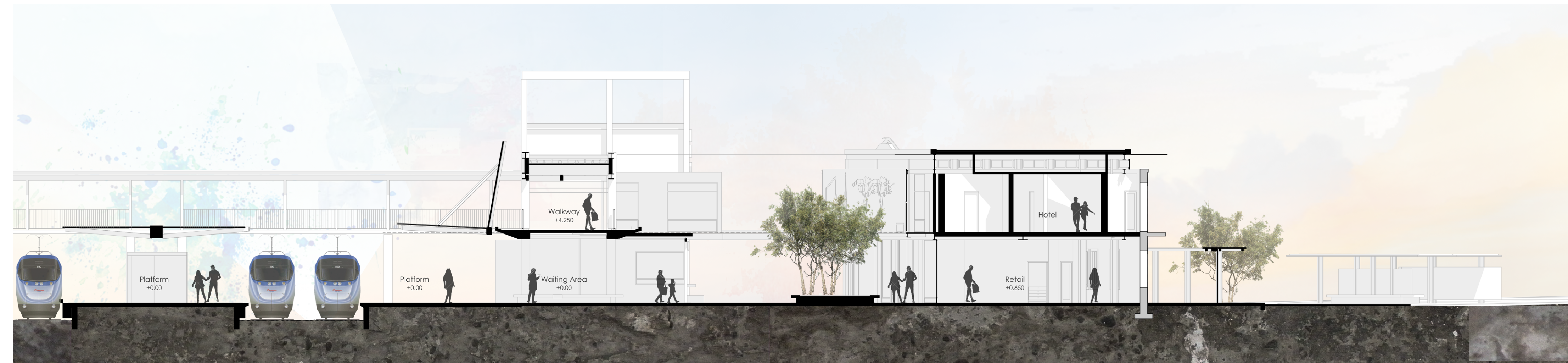
SCALE 1:100

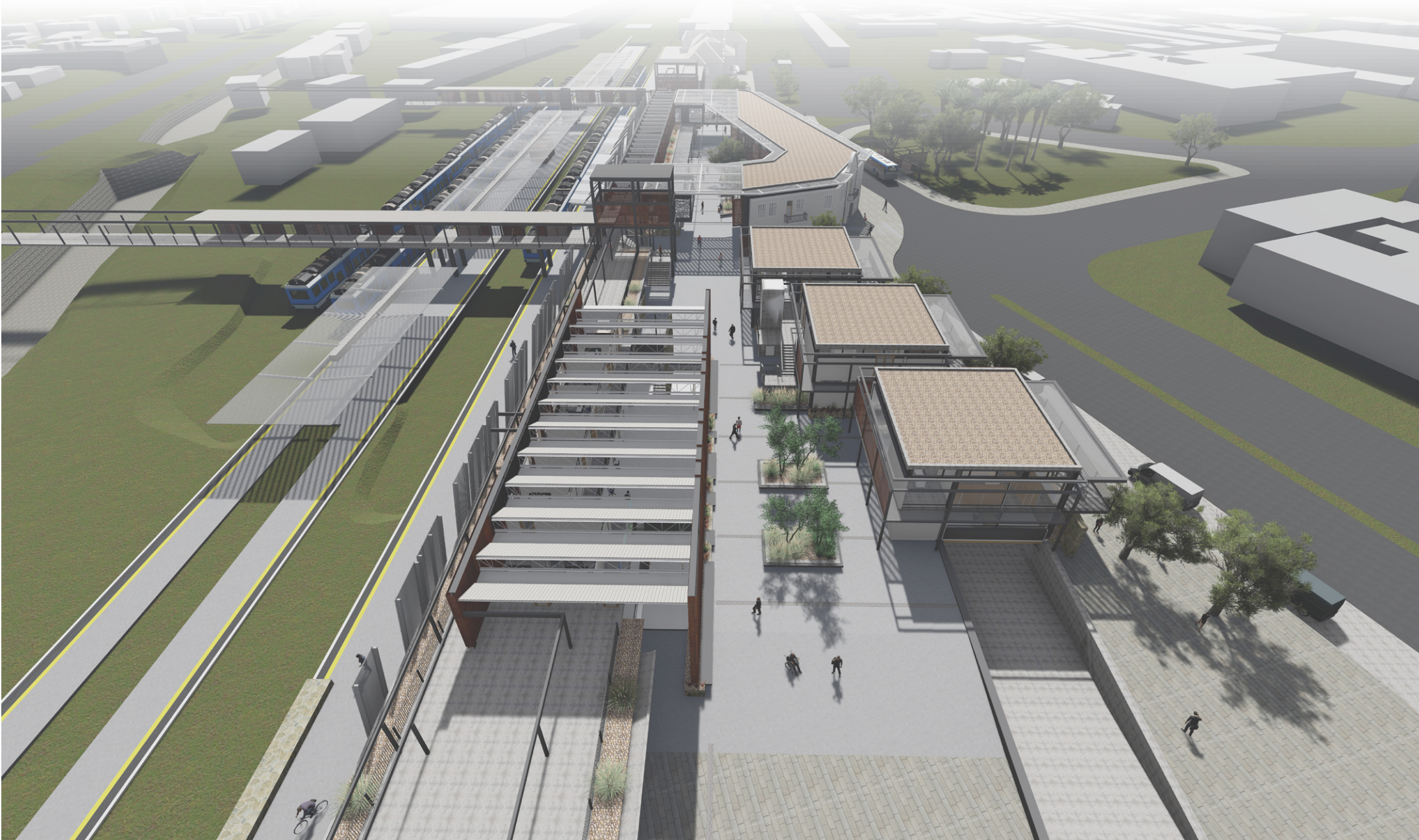


SECTION A-A

SCALE 1:100







PROPOSAL ALIGNED ALONG NEW PEDESTRIAN PROMENADE



NEW RAILWAY CONCOURSE



MUSEUM & ENTRANCE TOWER AS THRESHOLD BETWEEN OLD & NEW



NEW RAILWAY STATION ENTRANCE PLAZA



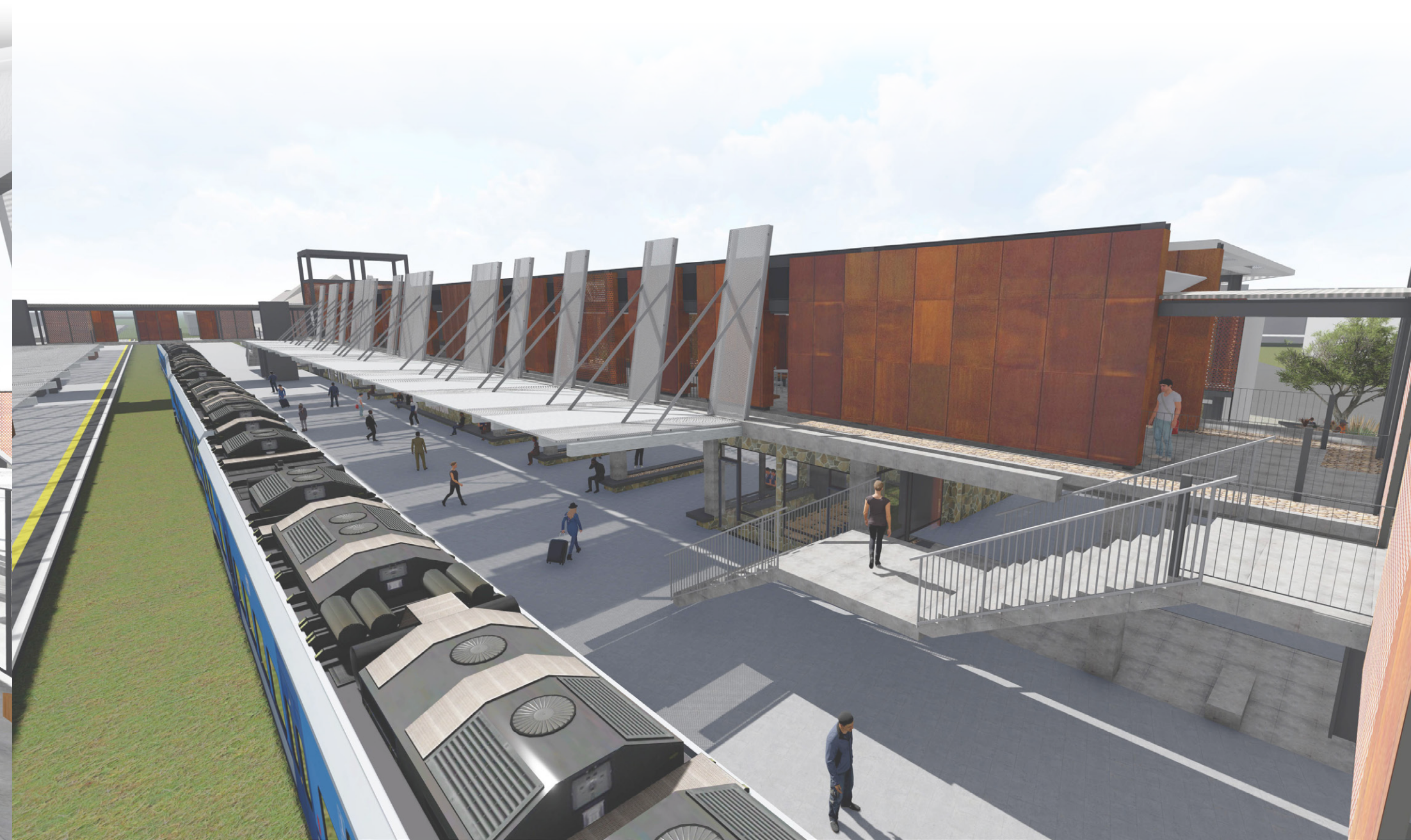
RAILWAY CONCOURSE FROM ABOVE



RAILWAY CONCOURSE



ELEVATED COVERED WALKWAY



VIEW OF RAILWAY PLATFORM FROM OVERPASS



RAILWAY PLATFORM



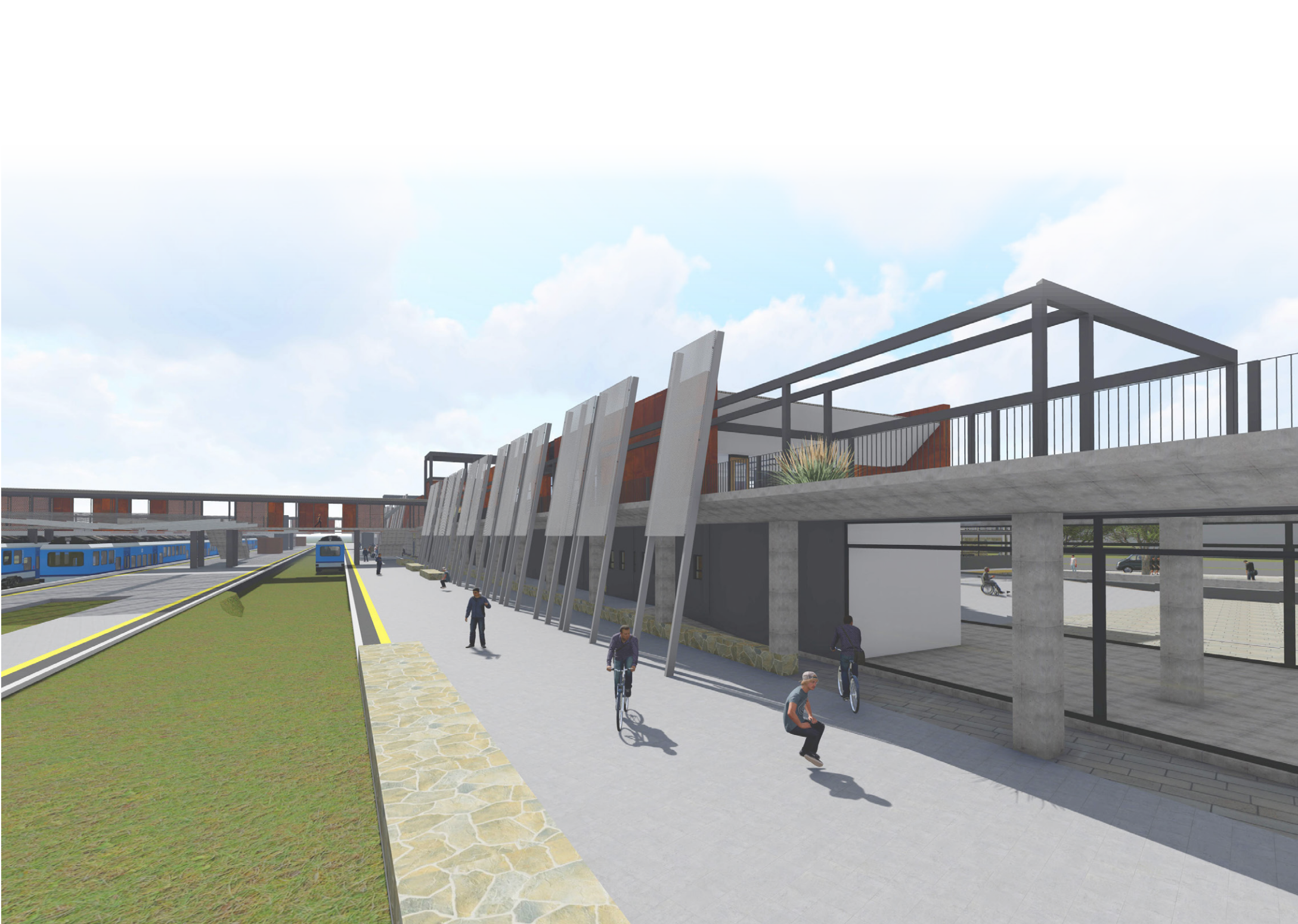
BIRD'S-EYE VIEW OF 4X4 RENTAL & TOURISM CENTRE



HOTEL & RETAIL WITHIN FACADE OF EXISTING BUILDING



TOURISM INFORMATION CENTRE



LONG-DISTANCE BUS STATION ALONG EDGE OF RAILWAY PLATFORM



LONG-DISTANCE BUS STATION (left) & 4X4 RENTAL (right)



CENTRAN COURTYARD OF LONG-DISTANCE BUS STATION (left) & 4X4 RENTAL (right)

TECHNICAL REPORT

PART 07

7.1	Introduction	152
7.2	Location Plan	156
7.3	Site Demolition Plan	157
7.4	Site Analysis	158
7.5	Climate Considerations	161
7.6	Analysis of Existing Structure	162
7.7	Proposed Steel Frame Structures	165
7.8	Proposed Hub Components	166
7.9	Structural Typology	168
7.10	Structural Development	169
7.11	Materiality	174
7.12	Sustainability	178
7.13	Services	180
7.14	Transport Specifications for Design Consideration	182

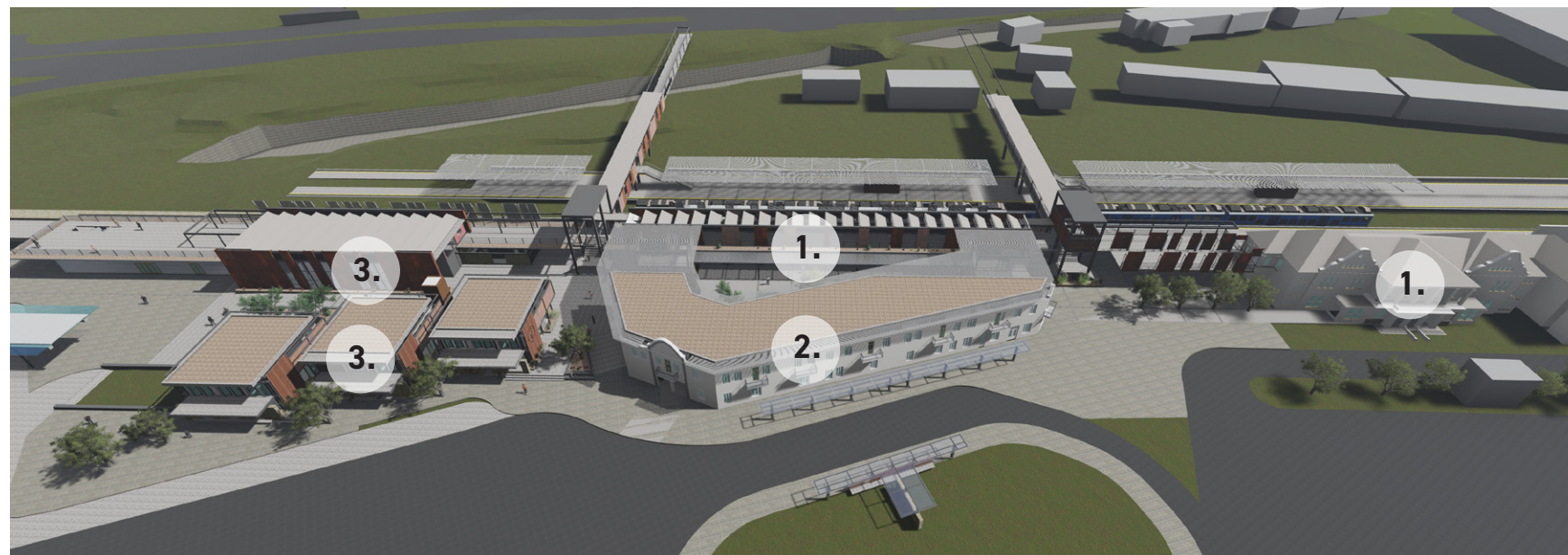
7.1 INTRODUCTION

THEORY: EMBODIMENT

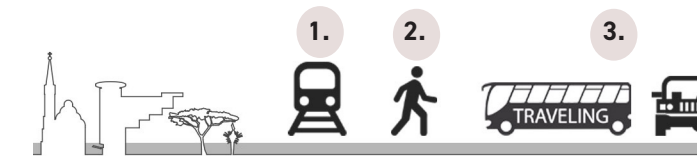
This section of the dissertation aims to briefly explain the basic structural typology within the proposed scheme and the reasoning for the suggested materials. Sustainability encompasses the materiality, construction and the lived experience of the building.

The theoretical discourse influences the design of the building spatially and materially. The physical experience of the user relates to the person's bodily experiences and what they see. The smell, touch, sound and sight of the lived experience through the building will determine the scale and materiality of the building. The typological influence of the railway station and the bus stop will inherently have a design language that speaks of large civic spaces that can accommodate hundreds of people and stretch the length of the site due to the lengths of spaces required for such facilities.

The architecture of the proposed building as a hub of arrival and departure is designed around a public walkway that is directly linked to the existing adjacent taxi rank, new long-distance bus stop and extended railway station. The architectural style introduces a human scale that is playful, yet robust in materiality in order to ensure the longevity of the buildings in anticipation of a high-traffic space.



The building, through its materiality and services, aims to have a low carbon footprint. The type of building encourages the use of non-motorized transport through the city.



The project consists of three main components:

1. The **extension of the commuter railway station** facilities adjacent to the existing historic station building (1912) while retaining the existing one as a luxury train railway station facility.
2. The re-purpose of another **historic building (1930) to accommodate retail** space and an over-night/transit hotel component in the centre of the site.
3. The design an additional **long-distance bus terminal and 4x4 rental facilities** as well as a tourist information centre.



The proposal is designed along the existing railway platforms, extending the platform waiting areas and roof coverings as well as footbridges over the platforms. Each building functions independently, but is connected through a new pedestrian promenade that runs through the centre of the site. The promenade unites the heritage of the site with the new architectural narrative and becomes the circulation spine which spills out between buildings toward the south and east of the city.

How can embodiment in architecture stimulate the nostalgia of a true Namibian travel experience through a transport hub in Windhoek?

The architectural spaces, based on open-transit design principles, aims to create a permeable and light steel structure that allows users to visually orientate themselves throughout the site. The open spaces and perforated surfaces are inspired by the freedom of movement and visual permeability of the Namibian landscape, and in contrast to the monolithic colonial buildings that are currently on site.



DEMOLITION

Existing Railway Station Heritage To be Preserved

Historic Building to be partially Demolished Facade to be preserved

Single Storey buildings to be demolished



PROPOSAL

Existing Railway Station Heritage To be Preserved

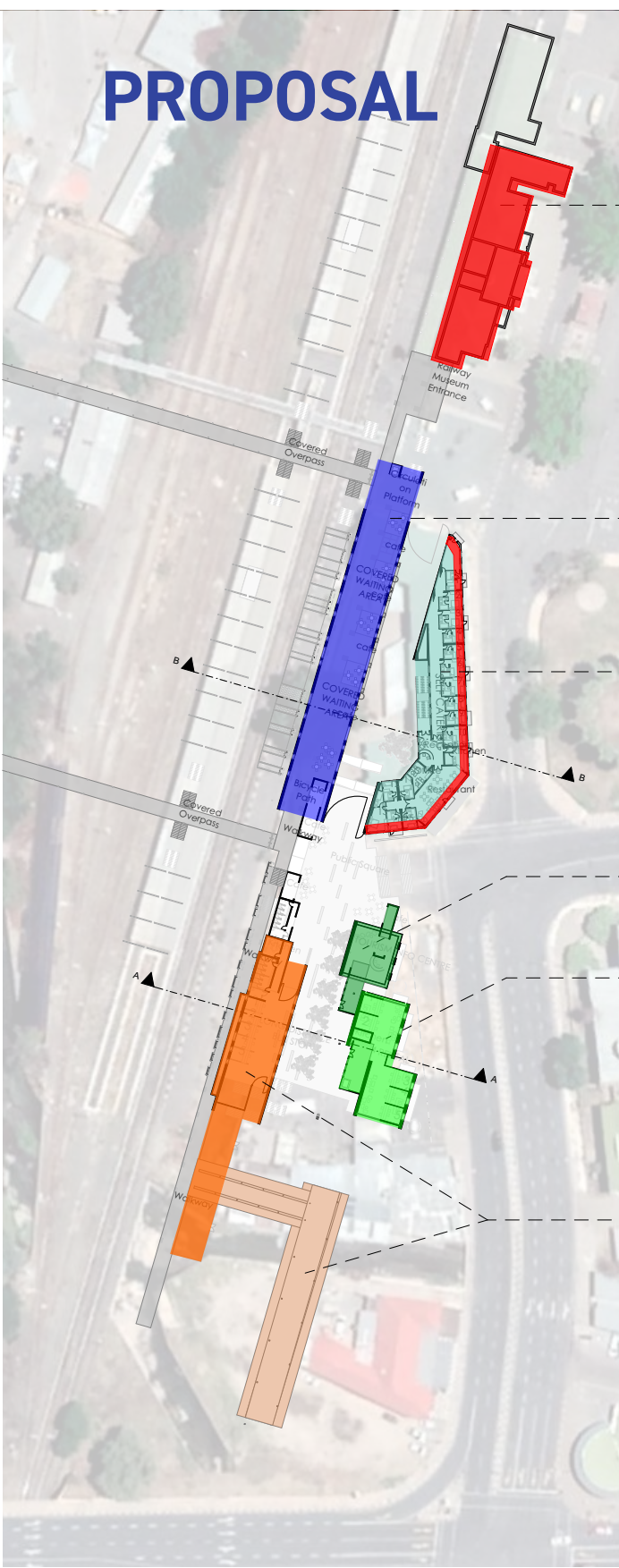
New Railway Station with new overpasses and platform roofs

Ground floor market & Cafes First Floor Accommodation

Tourism Centre

4x4 Car Rental with basement parking

Long-distance Bus stop



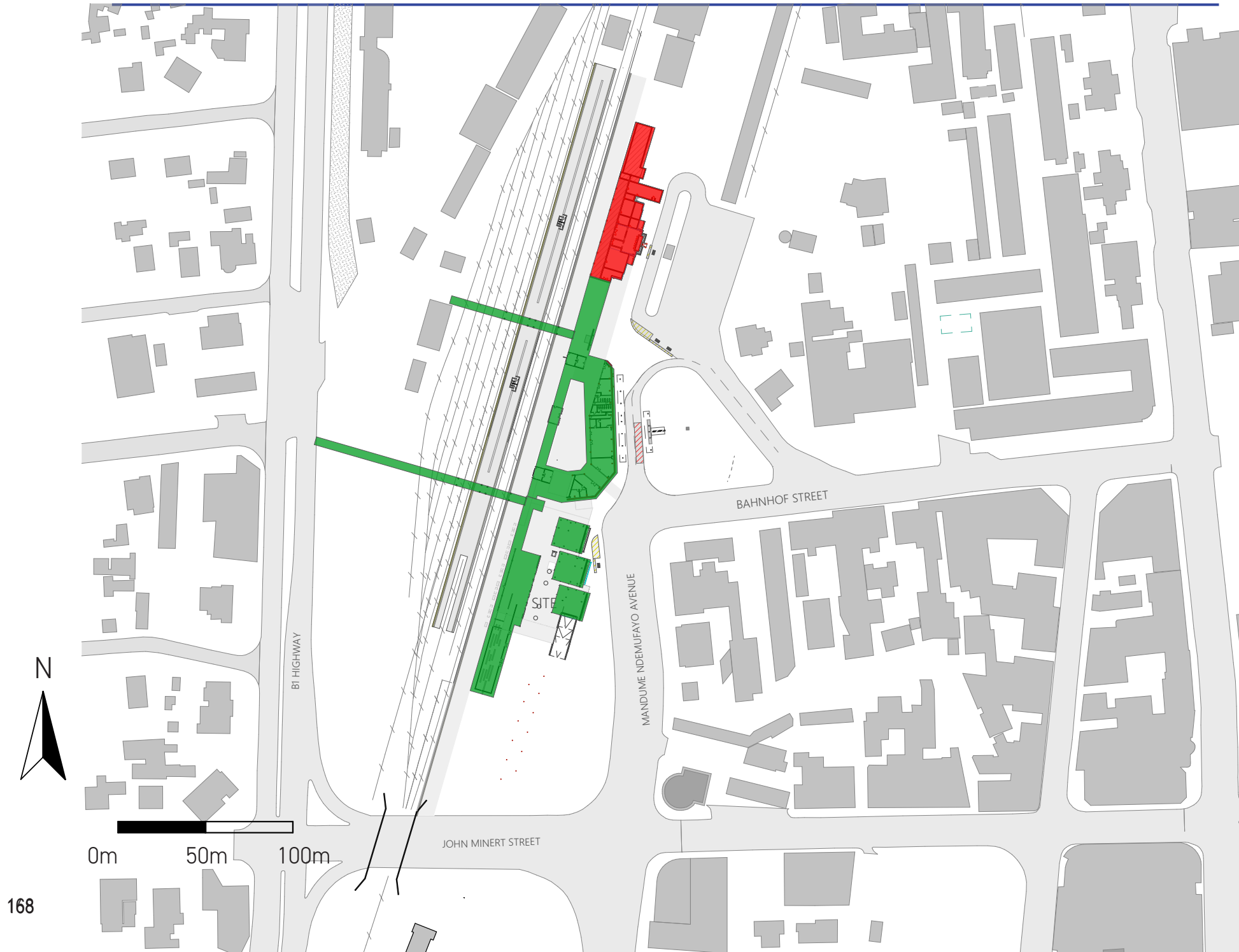
EXISTING



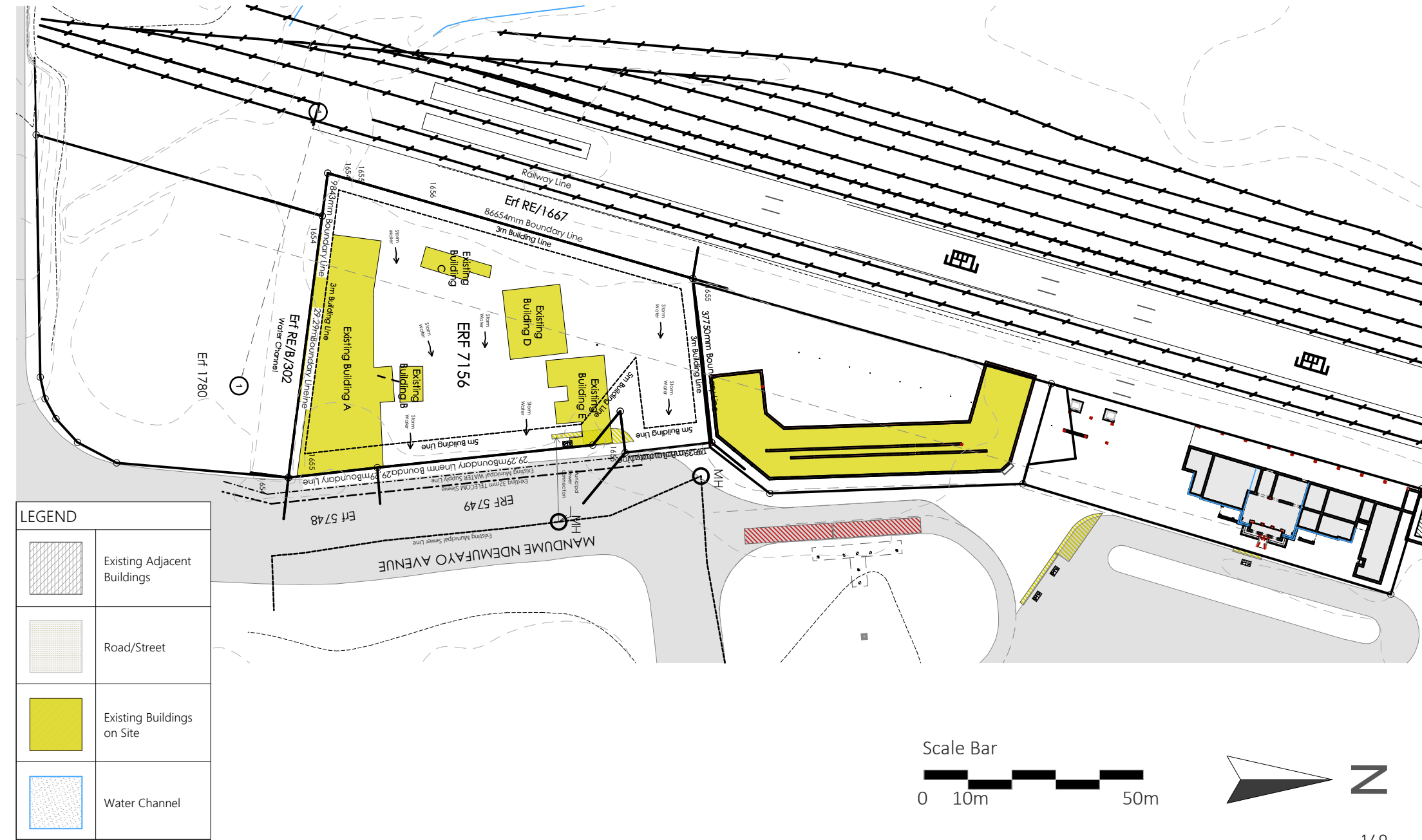
PROPOSAL



7.2 LOCATION PLAN



7.3 SITE DEMOLITION PLAN



7.4 SITE ANALYSIS

HISTORIC PRESERVATION

The design challenge includes retaining the existing railway station building (completed in 1912) and adjacent memorial park and expanding the railway station facilities for a growing population and accommodate a new long-distance bus terminal as well as a 4x4 rental facility, while enhancing the existing character of the historic site.

The railway station building has National Heritage status and will therefore be preserved as it is. The adjacent office building is also a heritage building but with no national or regional significance. For that reason, only the facade of the building will remain and the structure behind the facade as well as the roof will be demolished.



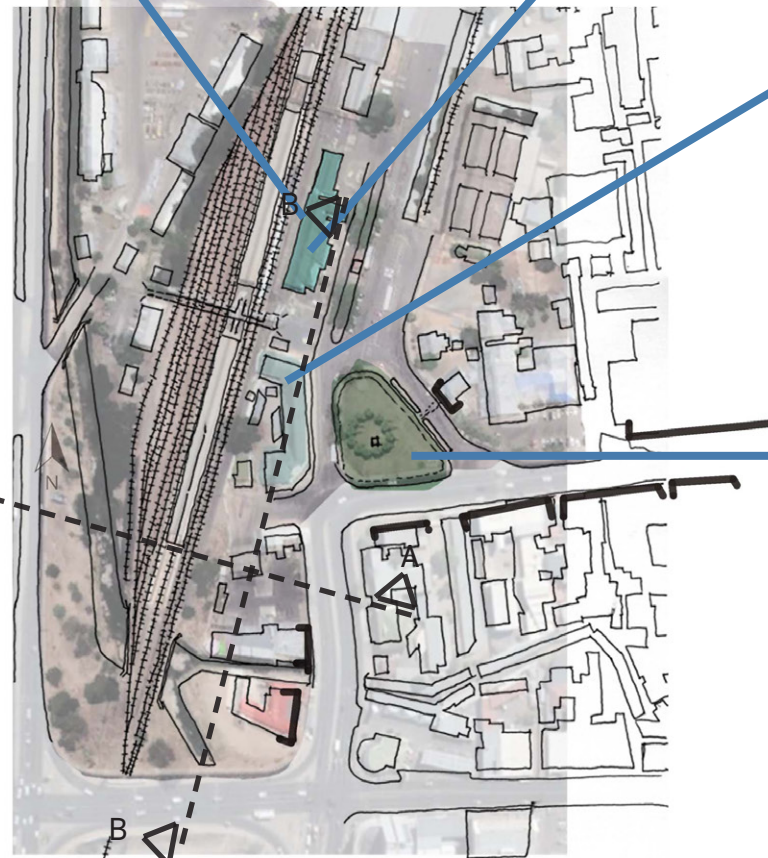
Existing Platform & Station Building



Existing station entrance

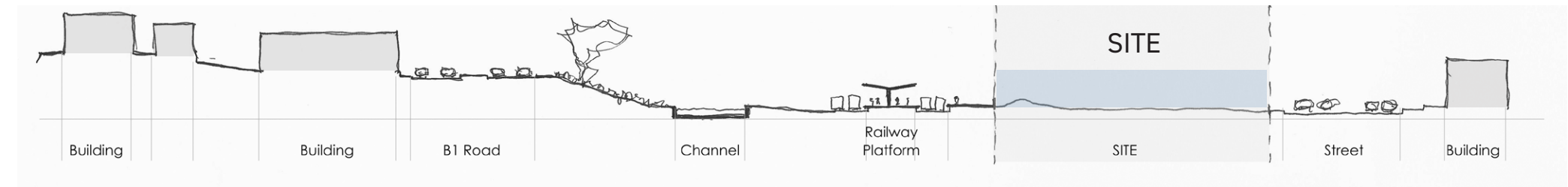


Existing under-utilised building completed in 1930



Owambo memorial monument

Topographical Sections

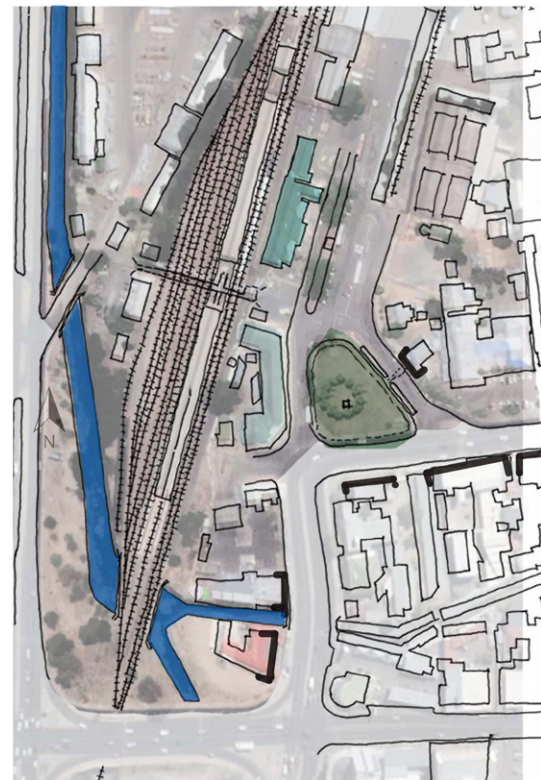


The topographical section through site and surrounds illustrating the low-lying site and the height of surrounding buildings. This



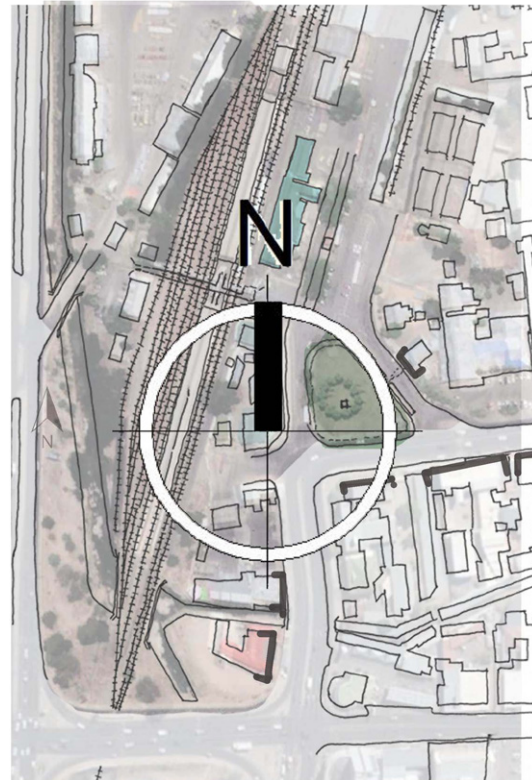
CHANNELLED RIVER

A river now channelled in an exposed concrete water channel runs through the southern corner of the site. The channel must be covered in concreted to allow vehicles and buses to cross over it. The proposed basement parking space will be designed to end before the water channel in order for the channel not to be redirected.



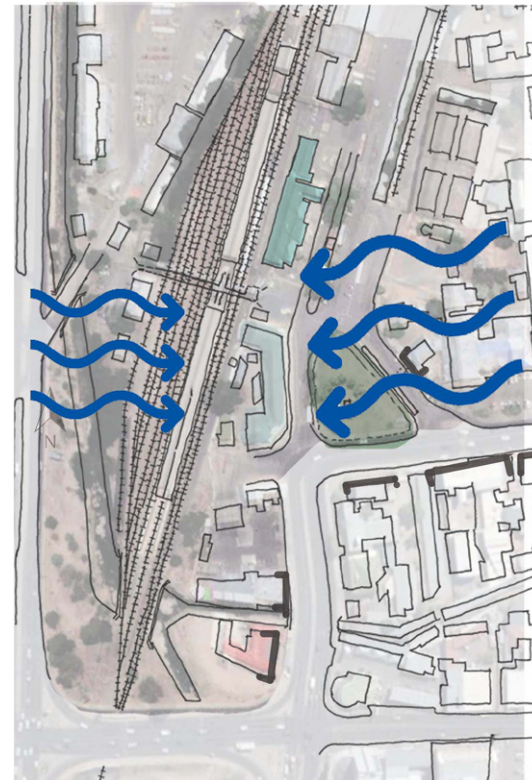
ORIENTATION & SOLAR RADIATION

Namibia has some of the highest solar radiation in the world. This must be considered as an advantage and a disadvantage. The solar gain can be used for generation of electricity through north-facing solar panels. The materiality, shaded spaces and vegetation must be considered when factoring in a high solar radiation region such as Windhoek in the height of the winter when there is very low cloud cover.



WIND DIRECTION

The prevailing winds come from the east and west direction. This must be considered when planning the location of the new buildings in order to create wind barrier areas and minimise the wind tunnel effect created by many inner-city buildings.



7.5 CLIMATE CONSIDERATION

AREA & POPULATION

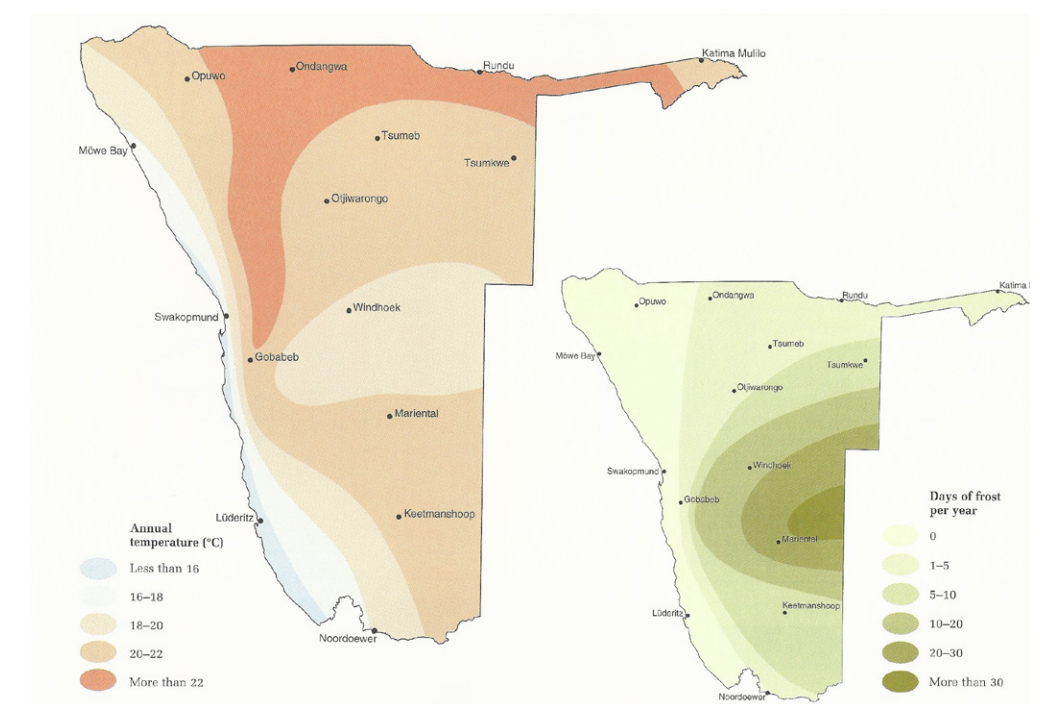
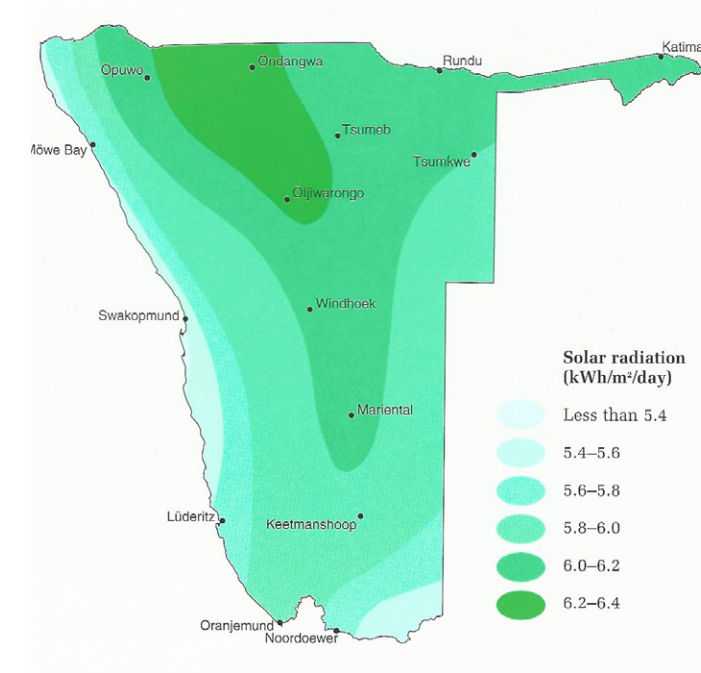
Namibia is considered one of the most arid and driest countries in Southern Africa, covering a surface area of 825,418 km². It borders South Africa, Angola and Botswana. It is the second most sparsely populated country in the world, with only 2.1 million residents of which approximately 400,000 reside in the capital of Windhoek. (NPCC, 2010)

CLIMATE

Namibian Climate is typically hot and dry with sparse and erratic rainfall. Windhoek receives most rainfall in the summer months of November - March. In Windhoek average minimum and maximum temperatures range from 6°C to 20°C in July (winter) to 17°C to 29°C in January (summer). (NPCC, 2010)

WIND

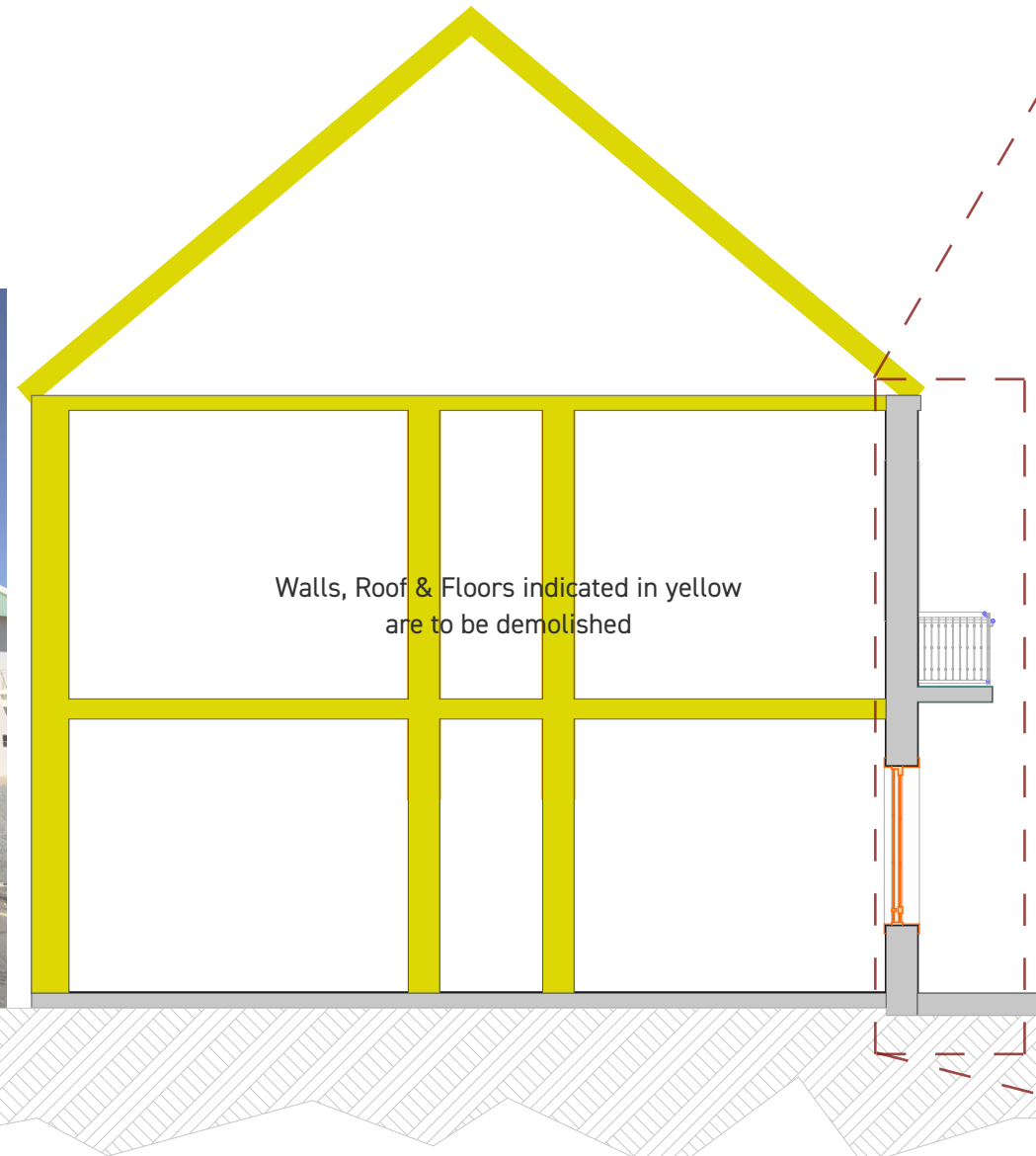
Windhoek's wind predominantly comes from the East and averages between 2km/h and 10km/h throughout the year. (Mendelsohn, 2009)



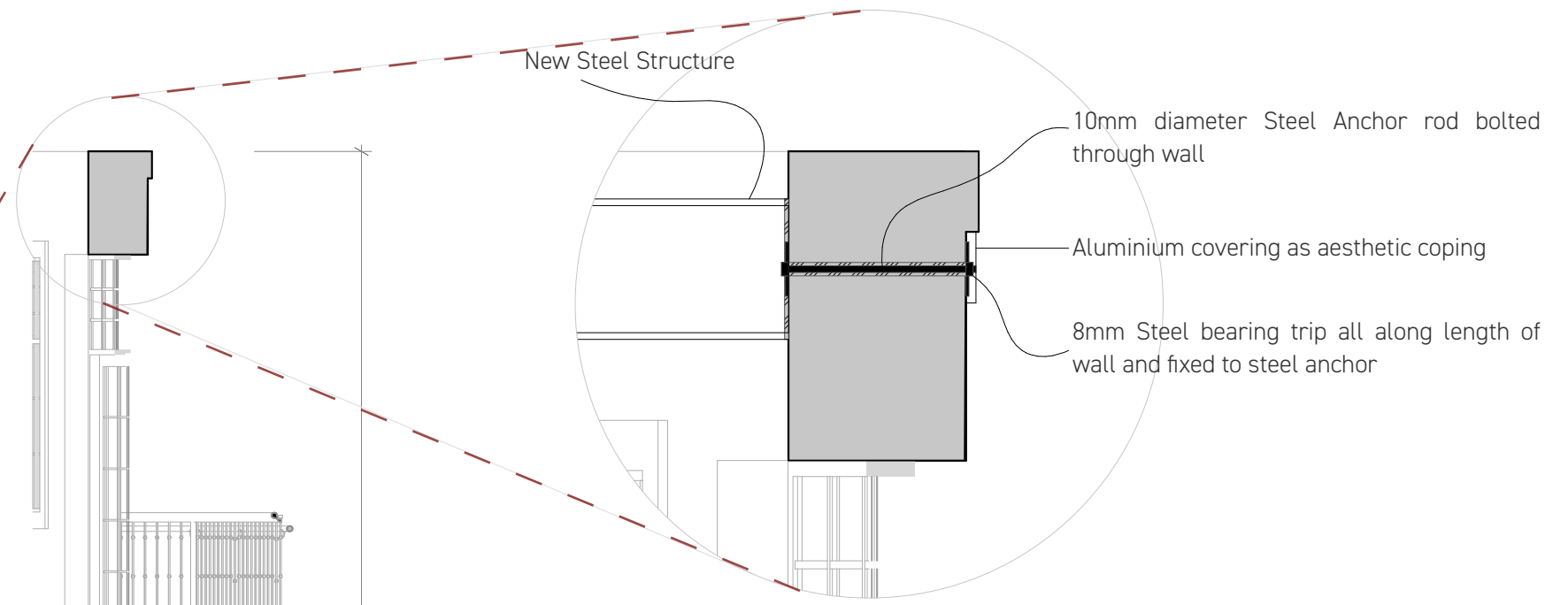
7.6 ANALYSIS OF EXISTING STRUCTURE - Largely Demolished



photograph of Existing Building with the wall indicated in red dashed line to be preserved. (Author 2018)



Existing building section
Scale: 1:100



Proposed Detail of New Anchor Rod and Bracing strip.
Scale: 1:25

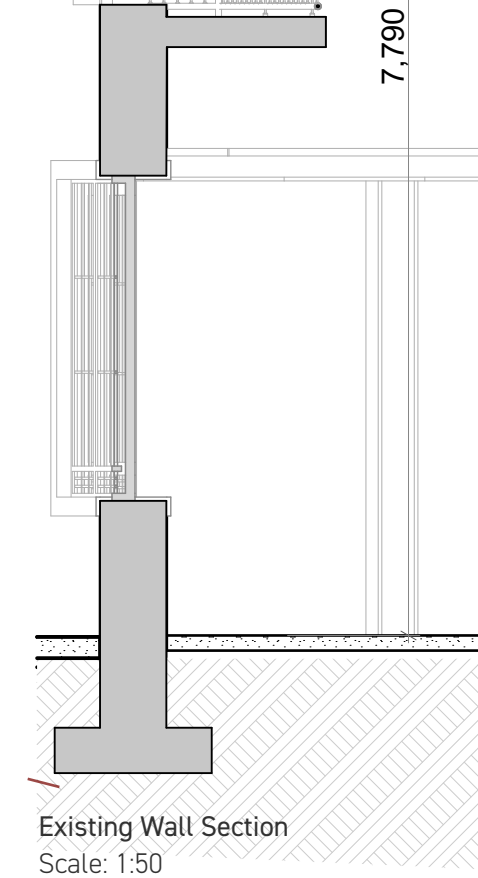
EXISTING WALL

The 420mm thick walls are constructed with cement bricks and are plastered and painted on both sides.

Due to the uncertainty of the stability of the wall once the floors and roof are demolished, temporary bracing will be required during demolition and construction.

STABILIZING THE WALL

The unreinforced masonry walls must be tied to the roof and floors to increase their stability. To anchor the existing wall to the new steel structure, a structural element that transmits lateral loads to the vertical resisting elements of a structure needs to be constructed. Through bolting with large bearing plates on the exterior and interior of the wall, combined with epoxy adhesive, will provide tensile and shear resistance for the wall anchor. (Hensen, 2019)



Existing Wall Section
Scale: 1:50

Existing site with wall to be retained in red dotted lines



7.7 PROPOSED STEEL FRAME STRUCTURES - within existing space parameters



7.8 PROPOSED HUB COMPONENTS

ROOF & SHADING STRUCTURES

The Platform & public circulation roofs are a combination of solid and translucent sheeting. The roofs of the Long-distance bus station and first floor railway station walkway are both covered in north-facing solar panels and adjoining steel support structure.

FIRST FLOOR AND OVERPASS CIRCULATION PLATFORM

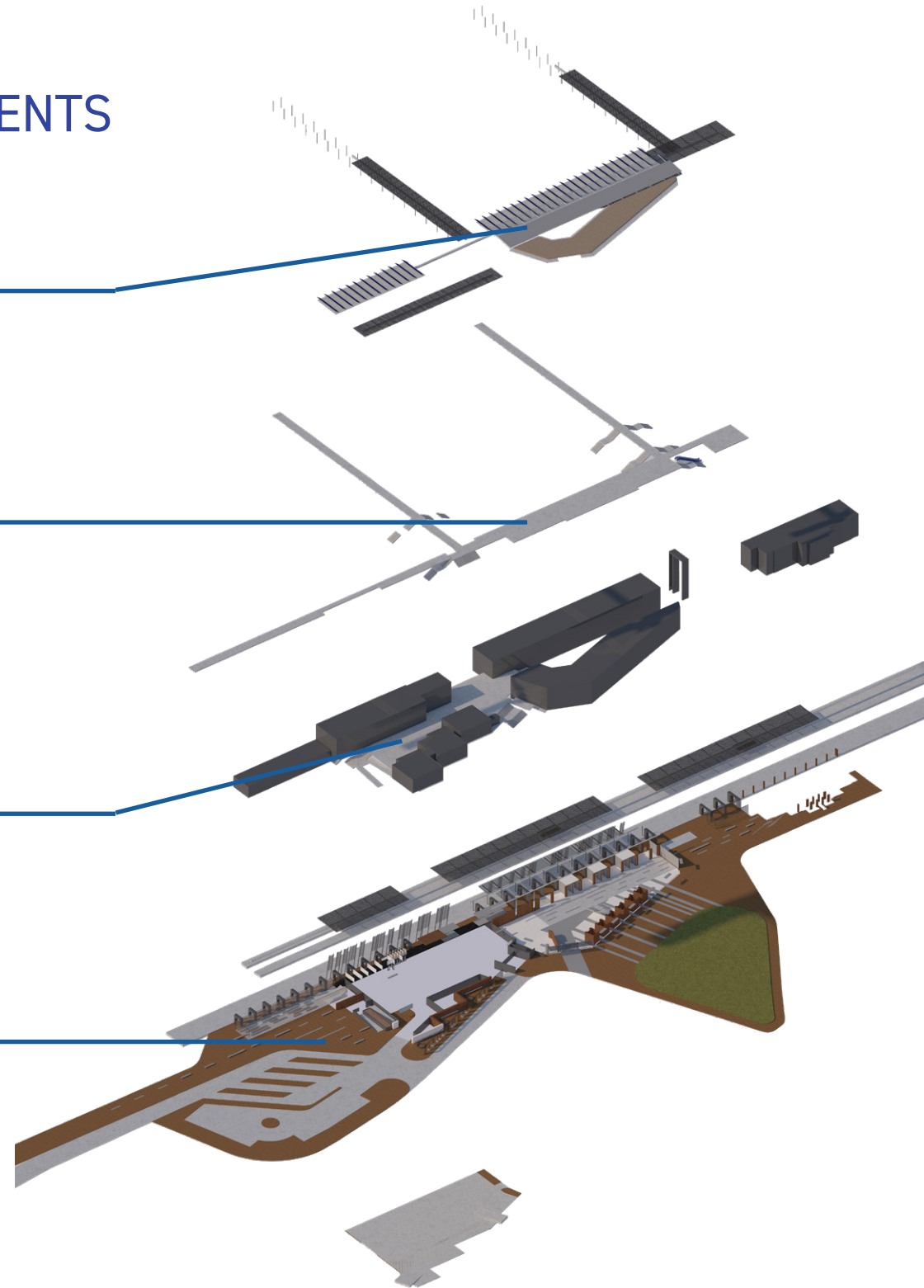
This concrete platform connects all the buildings through the site at 4500mm level above ground level. It acts as a circulation spine along the railway platform.

BUILDING VOLUMES

The building morphology was determined by the linear axis of the pedestrian promenade along the through-station platforms. The height of the structures relate to the existing structures that are one story above ground level.

SITE LANDSCAPING & VEHICULAR CIRCULATION

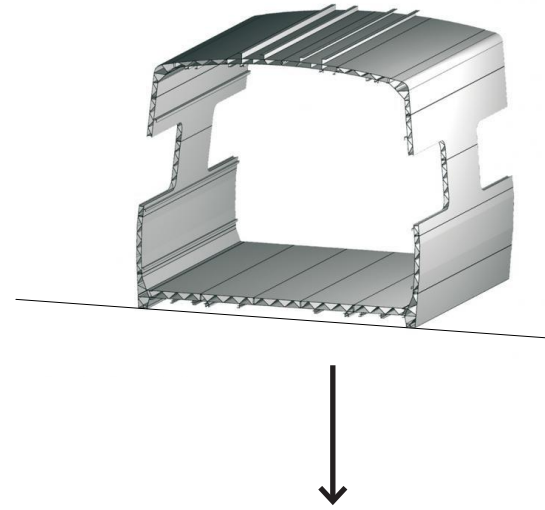
Large areas have been dedicated to public space due to the potential high foot traffic of the site as well as the station acting as a new civic structure that is accompanied by a new public square for the city. By placing the pedestrian promenade between the buildings and in the centre of the site, the pedestrian movement is not interrupted by the vehicular traffic.



7.9 STRUCTURAL TYPOLOGY

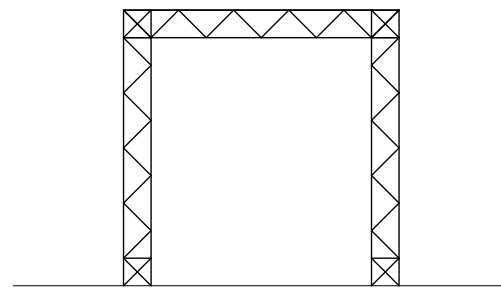
TRAIN CARRIAGE (MONOCOQUE)

The monocoque structure of a railway carriage was initially analysed based on its purpose as a compact vessel of transportation with a rigid form. During the design development, the implementation of this type of structure was abandoned and a portal frame was investigated. The portal frame is appropriate as a building structure because it is better suited for the scale of the design.



PORTAL FRAME STRUCTURE

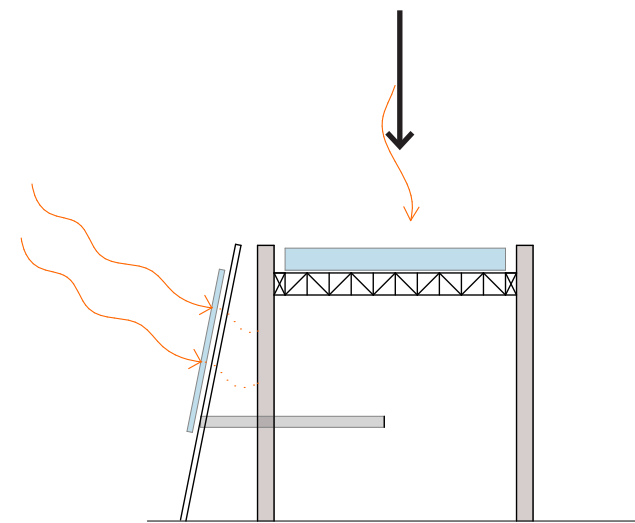
This structural typology was used based on its simple form that relates to the symmetry and rhythm the columns allow, much like the railway carriage. The repetition and structural expression reminds one of the industrial past of railway transport. This structure allows for less steel and larger spans than a monocoque structure of the same scale.



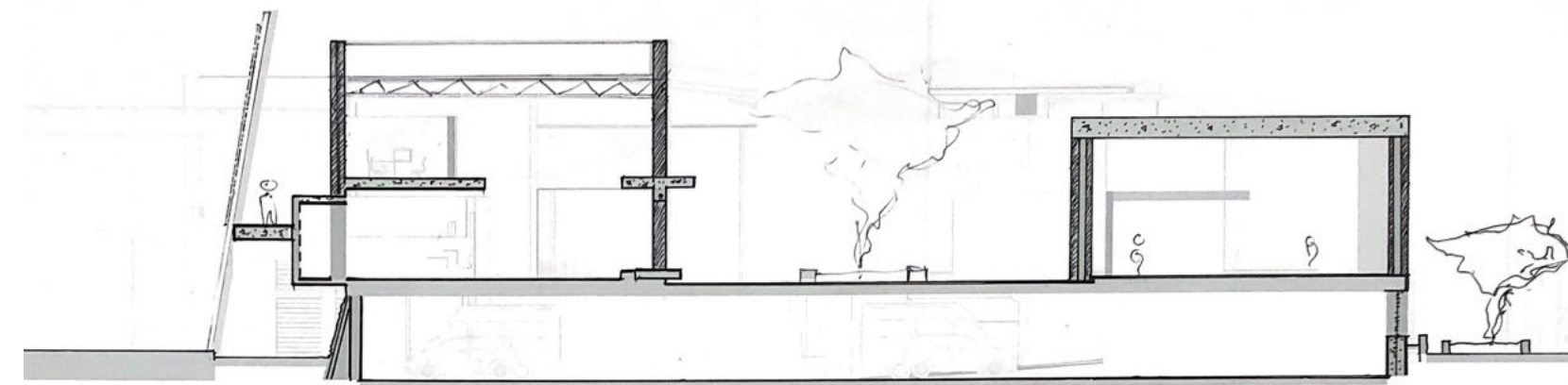
PORTAL FRAME STRUCTURE TO BEAM & WALL

The final morphological transformation of the structure retains its basic shape, with insulated infill panels that enclose the building, whilst the roof remained a girder truss with solar panels above it.

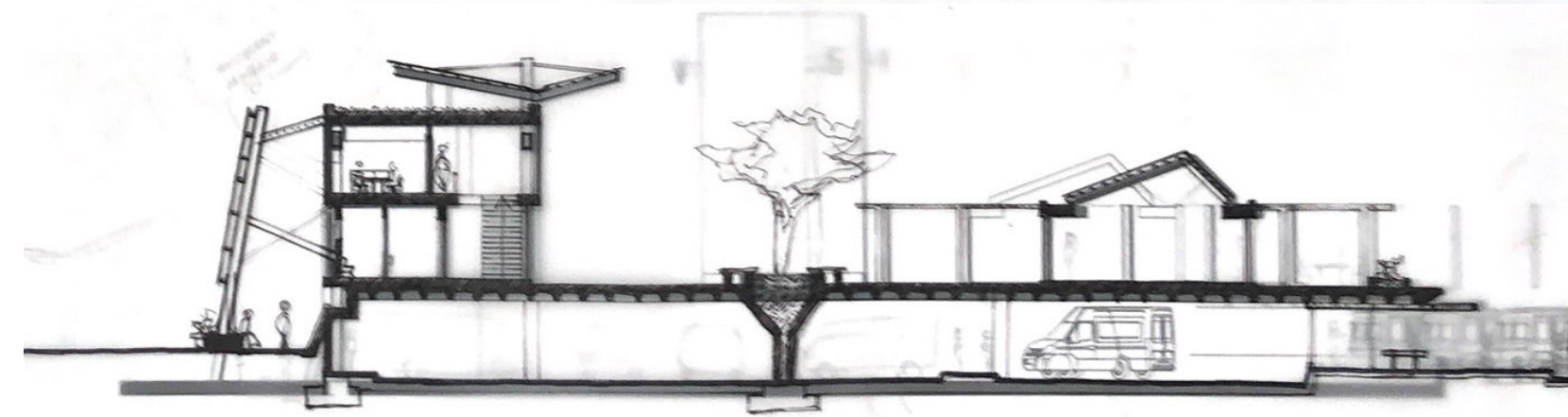
Solar shading panels on the western facade of the structure minimise the solar radiation from the afternoon sun, while creating a colonnade to walk along on ground level.



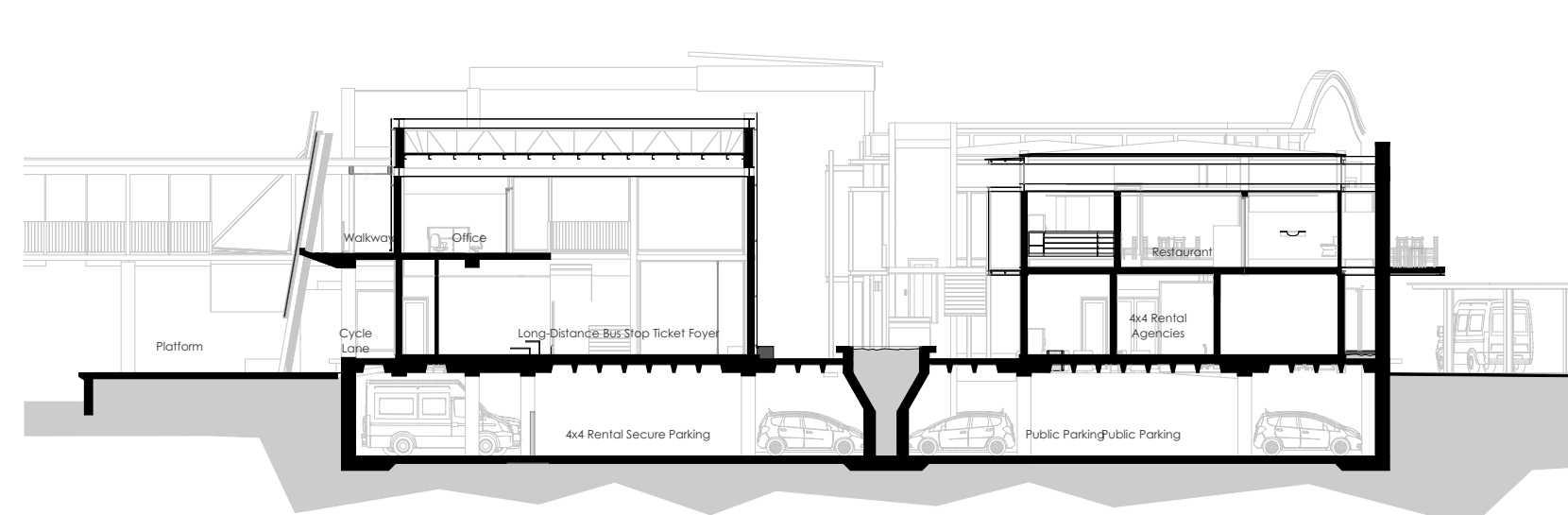
7.10 STRUCTURAL DEVELOPMENT



Development Section 1
The initial sections expressed the height and scale. The architectural expression was simplified to box frames and flat roofs. The walls were exposed clay masonry and corten steel clad masonry walls.



Development Section 2
In this phase of the development the basement parking was on ground level and the predominant structure was concrete beam and columns.



Development Section 3
At the final development stages, the structure consisted of steel portal frame structures that related to the concept of fragmentation. The steel structure allowed the architecture to express its tectonic nature.

Proposed railway concourse

Proposed railway concourse area illustrating the steel and concrete structure

The steel portal frame structure acts as an independent structure from the existing exterior wall of heritage building. The steel structure supports the wall, but appears to be totally separate, like a new body within an old skin, giving new life to the old.

The steel portal frame structure covers the first floor waiting and circulation area. It is derived from the industrial buildings on the adjacent site. The structure is visually permeable and can easily be dismantled when demolished.

Solar panels cover the roof area at a 30 degree angle while the clerestories allow indirect sunlight into the space

New concrete slab on 500x500mm square concrete columns spaced at 6m intervals. This grid collonade allows flexible space below it that can change in time when the passenger demand allows it.

Proposed Long-Distance bus Station & 4x4 Rental Facilities

Proposed Steel and concrete structure of Long-Distance bus Station & 4x4 Rental Facilities

Long-Distance Bus Station

4x4 Rental Facilities as well as travel shop, reastarant and tourism centre

4x4 Rental The steel portal frame structure.

Long-Distance Bus Station's steel portal frame structure. The structure is light in appearance and when clad in vertical cor-ten steel panels, allows for long vertical windows between cor-ten panels. The 6m grid structure can easily be expanded in its length and dismantled when demolished.

New concrete slab on 500x500mm square concrete columns spaced at 6m intervals. This concrete slab provides the roof for the waiting area as well as the slab of the first floor offices above the ticket area.

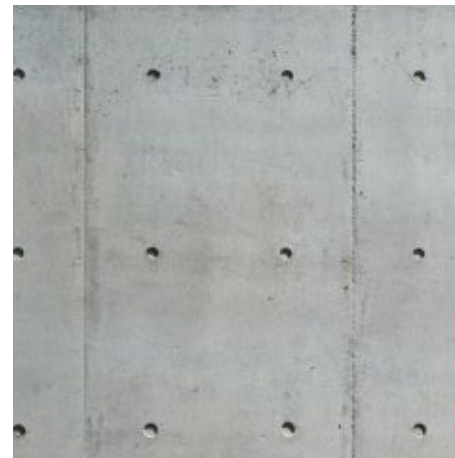
7.11 MATERIALITY

CLAY BRICKS

Uis Clay Bricks are locally produced bricks that could withstand the harsh weather of the Namibian Climate.

The clay is extract clay from old mine slime dams and use the proceeds to rehabilitate the mwine and at the same time produce high strength brick.

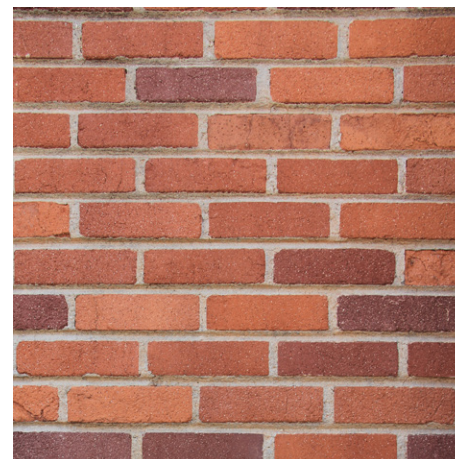
Properties:
 Fireproof.
 Regulate temperature due to thermal mass.
 Reduced maintenance.
 Clay Bricks naturally absorb and release moisture.



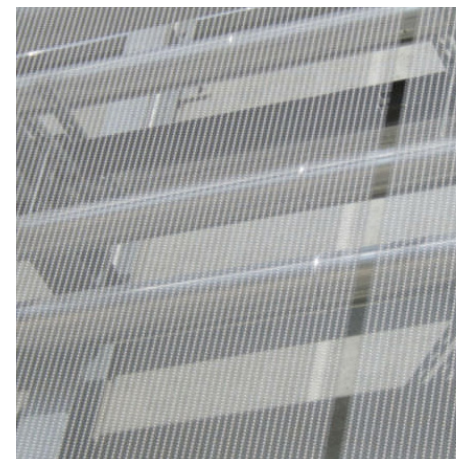
OFF-SHUTTER CONCRETE



CORTEN STEEL CLADDING



CLAY MASONRY WALLS



STEEL WIRE MESH SHADING DEVICES

Cor-ten Steel Investigation

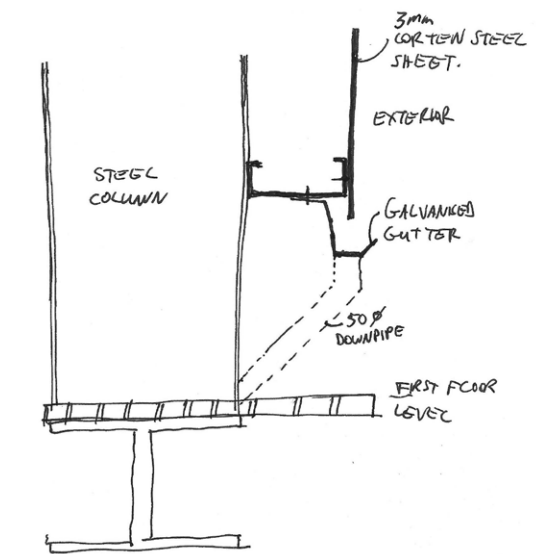
PROPERTIES

This weathering steel is a structural steel that has been Alloyed with copper, silicon, manganese, chromium and phosphorus. The alloying makes the naturally forming rust adhere to the surface, preventing further lbreakdown of the steel particles. (Lyons, 2010)

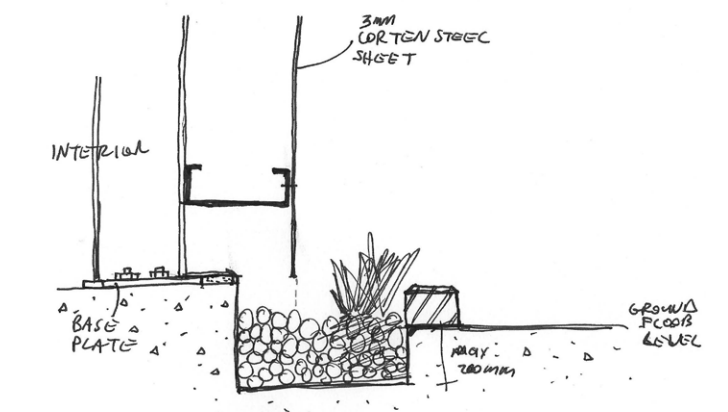
The steel is allowed to rust in order to form the protective coating, but careful attention needs to be made to ensure that the rust run-off from the corten sheets do not get in contact with concrete as it will stain the surface.

ADVANTAGES

- Steel reforms after abrasions
- High structural strength
- High recycled content
- 100% recyclable
- Low solar reflectivity
- Flashings and fabrications are available in the same material.



Small galvanised gutter catches rust run-off from perforated corten steel on first floor.



Pebble planter below corten steel cladding to avoid rust from dripping walkway.

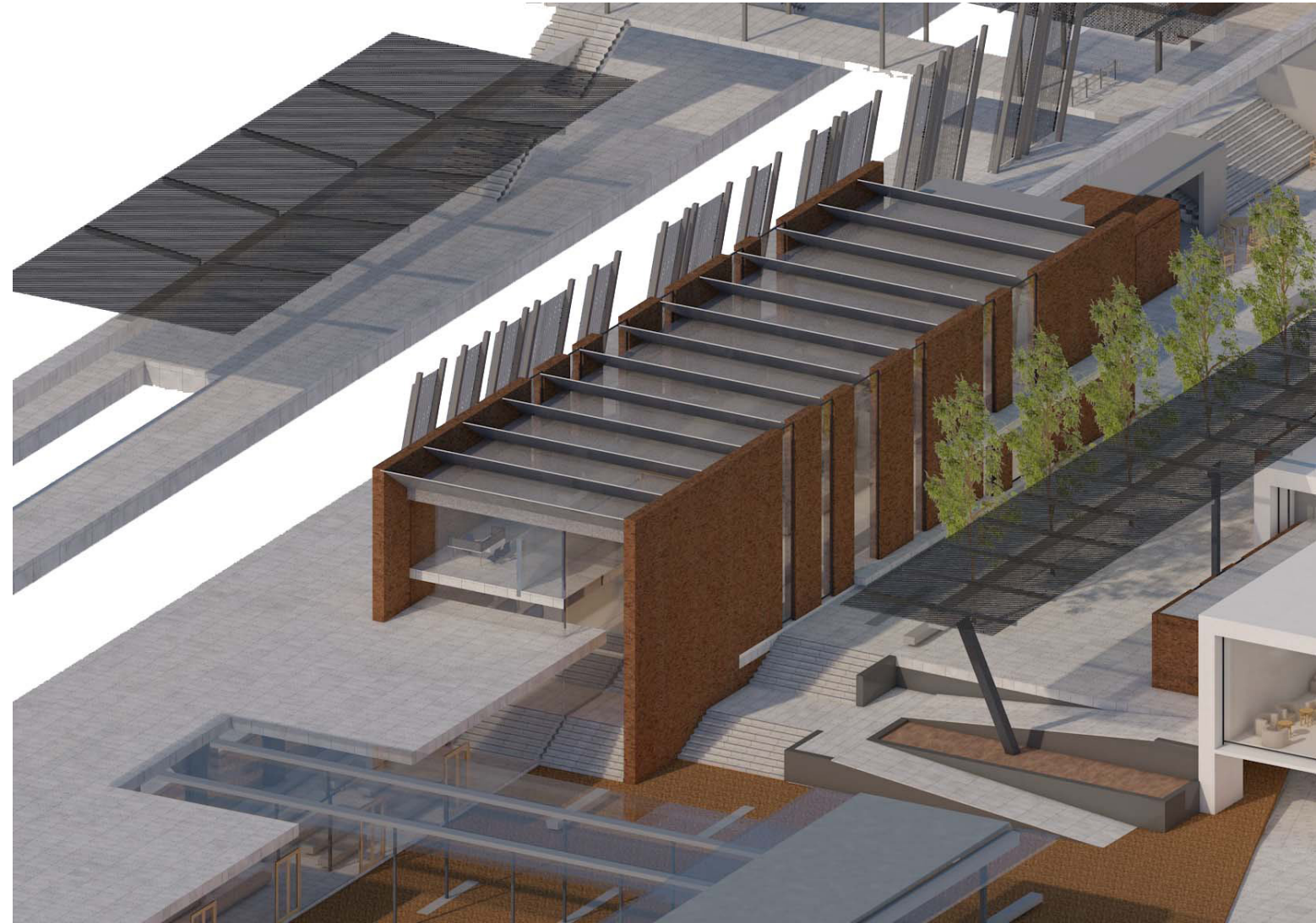
REASON FOR CHOSEN MATERIALITY

The materials were chosen for their inherent robust character and their ability to withstand the harsh solar radiation in Windhoek.

External finishes are robust: face-brick, off-shutter concrete and rusted steel which make for low maintenance.

These materials also speak of the natural occurrence of large rocks and iron-rich stones in the Namibian landscape. The building and its material must reflect the textured, hard and durable landscape that surrounds it.

Fenestration is largely limited to the north and south façades. Substantial western sun shades, provide sufficient passive sun control. Equally robust, internal finishes follow a limited colour palette.

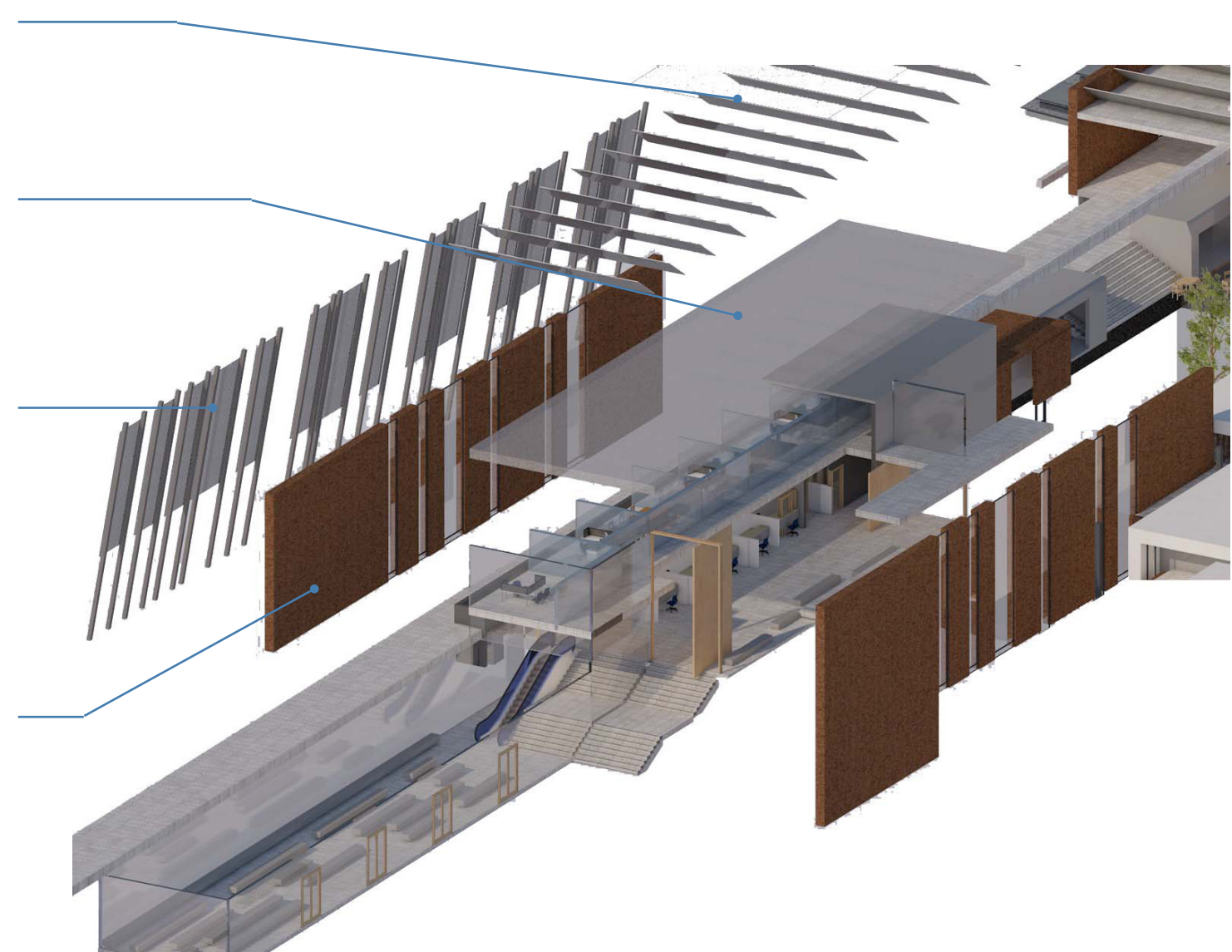


SOLAR PANELS

STEEL GIRDER TRUSS ROOF STRUCTURE
The translucent roof sheeting allows the area below to be lit throughout the day while reducing the heat gain inside the building. The sheets are fixed to the steel roof structure that also carries the load of the solar panels.

STEEL WIRE MESH SUN SHADE

COR-TEN STEEL CLADDING



7.12 SUSTAINABILITY

SITE SELECTION

The site was selected in order to minimise the need to build brand new infrastructure and rather re-use what is available. The railway lines and platforms are still in a good condition and therefore it can be used without major renovation required.

The site is also well connected by three major roads that connect it directly to the north, south, east and western suburbs of the city as well as the national roads.

It is located adjacent to the city centre's current informal, but proposed formal bus rapid transport hub and taxi rank, making it easy for long-distance passengers to transfer to the city's transport network. This reduces the need for private vehicle use once disembarking from the proposed Hub.

MATERIALS

Materials that require less maintenance such as corten steel, concrete and face brick will be used for the construction. These materials can all be sourced and produced locally.

Uis Clay Bricks are locally produced bricks that could withstand the harsh weather of the Namibian Climate.

The clay is extract clay from old mine slime dams and use the proceeds to rehabilitate the mine and at the same time produce high strength brick.

The cement used for the concrete construction can be sourced at a site in northern Namibia, reducing the need to import cement.

SOCIAL SUSTAINABILITY

The urban context has vastly changed since the beginning of the 1900's. The introduction of cars onto the city's roads has left the streets empty of people and have caused the public open spaces to be less utilized and most have been redeveloped into parking lots. The lack of public transport investment until now, have left the city's streets crowded with private cars and taxis and not people. My proposal will re-introduce the street as a place for people to interact and sell goods and services.

Market stalls owned and run by locals will line the pedestrian walkways, allowing local products to be sold to tourists while they walk through the site. This will stimulate the small business economy of the area.

By upgrading the railway station and creating a pedestrian friendly environment, the building aims to encourage pedestrians and locals to use public transport, non-motorized transport and car-sharing to minimize the dependence on cars as the only means of transport through the city and the country. The use of public transport will lessen the air pollution within the city centre.

SERVICES

I will investigate the use of solar panels to reduce the need for electricity from the city's grid of non-renewable sourced electricity.

Storm water within the site can also be channelled and captured and filtered for use in irrigation.

Energy saving light bulbs and equipment can reduce the electricity demand of the buildings.

ECOLOGICAL SUSTAINABILITY

The environmental considerations will include the planting of indigenous trees and grass in areas along pedestrian routes and public landscaping. This will increase the natural vegetation of the site significantly, as it is currently void of any indigenous trees and vegetation. The whole site is currently paved. The landscaping and shading via trees would mitigate the heat gain of concrete pavements currently experienced on site.

7.13 SERVICES

FIRE SAFETY:

ACCORDING TO SANS 10400 PART T:

Fire escape routes to be indicated and a central gathering space or exit to the street must be indicated.

Category H1 for the hotel component:

Escape routes to be a minimum of 1500mm wide

Fire hydrants: 1 per 1000 sqm

Fire Hose Reel of 30m long: 1 per 500 sqm

Dry Chemical Powder Portable Fire Extinguisher: 1 per 200 sqm.

Railway Station:

Escape routes to be a minimum of 1500mm wide

Fire hydrants: 1 per 1000 sqm

Fire Hose Reel of 30m long: 1 per 500 sqm

Retail (smaller than 250sqm):

Dry Chemical Powder Portable Fire Extinguisher: 1 per 200 sqm.

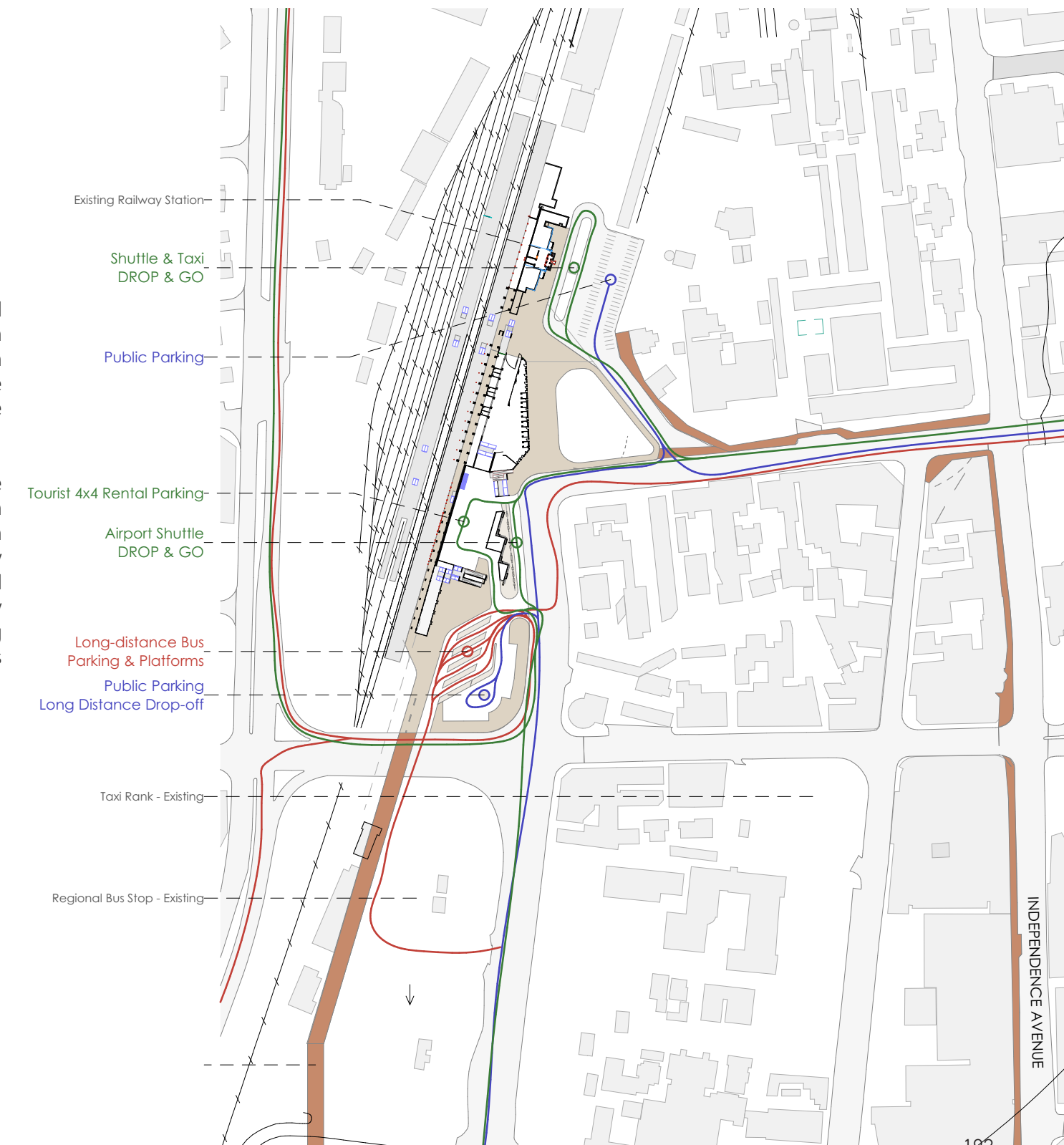
CIRCULATION

The vehicular movement has been organised in a way that it rarely coincides with pedestrian movement. The 4x4 rental cars have been placed in a basement parking to allow for more pedestrian movement at ground level, above the basement.

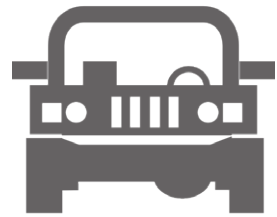
Long-Distance buses can be viewed from the waiting area and no bus has to reverse or turn more than 60 degrees while passing through the site. The drop & Go parking is conveniently placed next to the road and the 4x4 rental and tourism centre. The Drop & Go for the railway station is located adjacent to its entrance, making access to the buildings from the parking spaces very easy and accessible.

PARKING BAYS PROVIDED:

4x4 Rental (Basement):	30
Public Parking (Basement):	15
Public Parking (Above ground):	90
Coach Bus stops	5
Shuttle Drop & GO:	10
TOTAL:	129



7.14 TRANSPORT SPECIFICATIONS FOR DESIGN CONSIDERATION



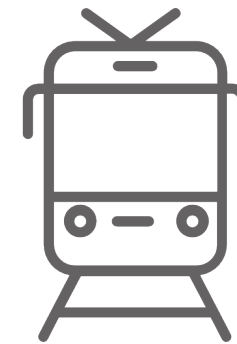
4x4 RENTAL TECHNICAL REQUIREMENTS

- 3m head-space in the basement parking as a result of the height of the cars and the camping and storage equipment packed on their roofs.
- Bakkie Length: 4m
- Bakkie Height: 1.98m
- Min Height of Roof above: 2.9m
- Proposed Parking Dimension: 3m x 6m
- Proposed min. Space between Cars: 0.5m



LONG-DISTANCE BUS STOP TECHNICAL REQUIREMENTS

- Length of Bus: 14m
- Height of Bus: 4.2m
- Turning Circle: 23m radius
- Min Height of Roof above: 5m
- Parking Dimension: 18m x 3.2m
- Platform space between coaches: 3m



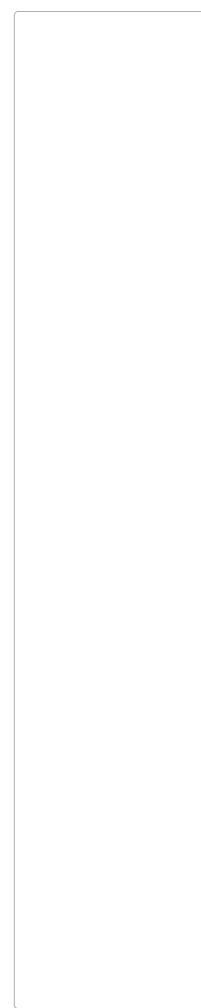
TRAIN (PLATFORM)

- 5.2m minimum space clear above railway track.
- Train length (6car train): 131m
- Platform Height: 1.07m
- Min Height of Roof above: 2.9m
- Carriage width: 2.75m
- Track Gauge: 1,067mm
- Train Speed: 120-160km/h
- Min horizontal curve radius: 90m radius



Minimum 4200mm

All dimensions to be checked on site before any work is put in hand. This drawing to be used in conjunction with the approved drawings and specifications. Any deviation and modification to this drawing to be required by architect. Dimensions not to be scaled. Copyright reserved.



UNIVERSITY OF THE FREE STATE
UNIVERSITEIT VAN OOR
UNIVERSITÄT FRIESTAT
UNIVERSITÄT JA
FRIESTATA

UFS
UV

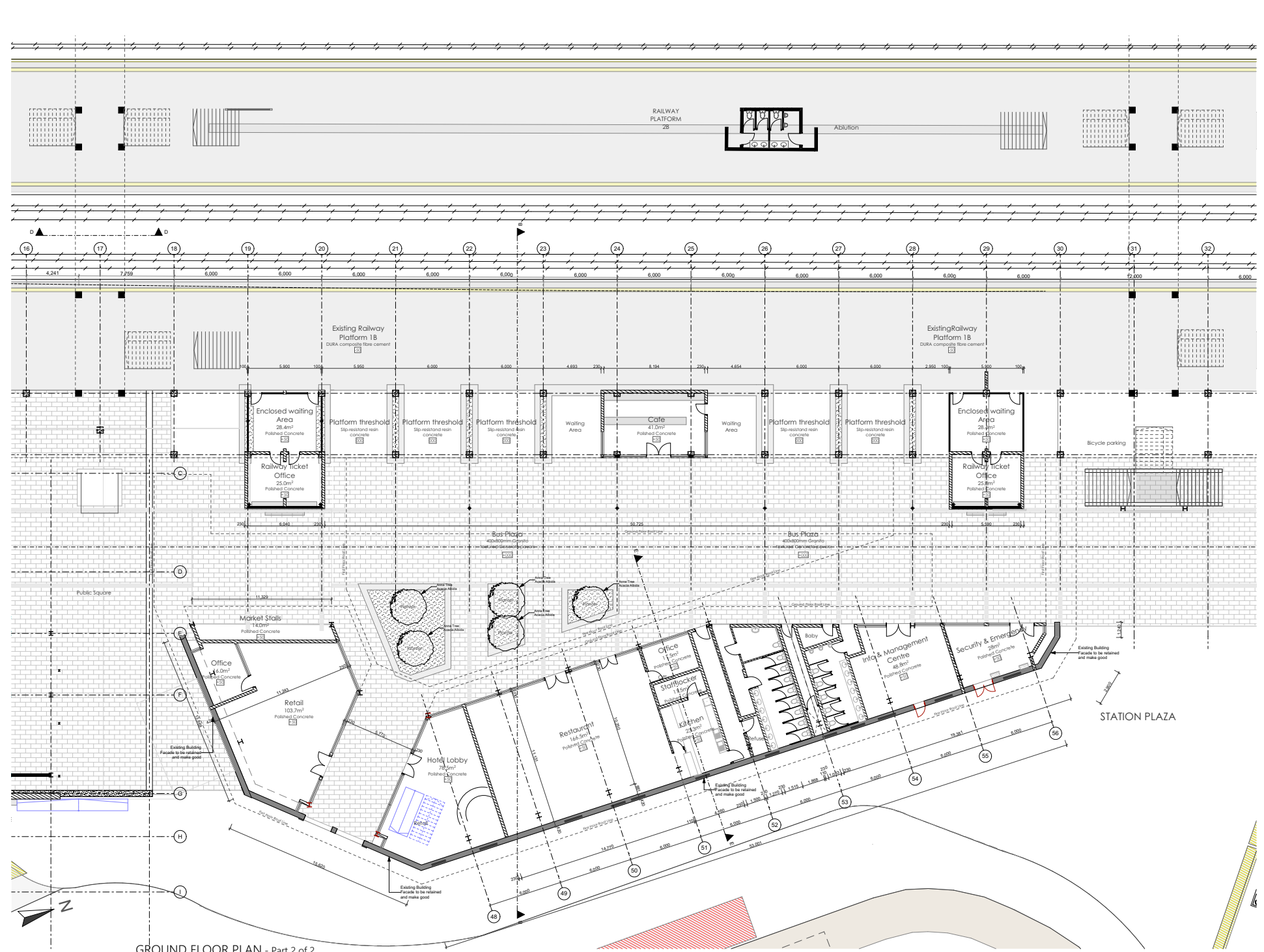
LK DESIGN STUDIO

TRANSNAMIB

WINDHOEK HUB OF ARRIVAL ON ERF
1645, WINDHOEK, NAMIBIA

GROUND FLOOR PLAN
Part 1 of 2

Date:	As Shown	Project No:	001	Revision No:	3/101
Drawn:	Oct 2019	Author:	LK	Checked:	LK



UNIVERSITY OF THE FREE STATE
UNIVERSITEIT VAN OOR
UNIVERSITÄT FRIESTAT
UNIVERSITÄT JA
FRIESTATA

UFS
UV

LK DESIGN STUDIO

TRANSNAMIB

WINDHOEK HUB OF ARRIVAL ON ERF
1645, WINDHOEK, NAMIBIA

GROUND FLOOR PLAN
Part 2 of 2

Date:	As Shown	Project No:	001	Revision No:	3/102
Drawn:	Oct 2019	Author:	LK	Checked:	LK

All dimensions to be checked on site before any work is put in hand. This drawing to be used in conjunction with the approved drawings and specifications. Any deviation and modification to this drawing to be required by architect. Dimensions not to be scaled. Copyright reserved.



UNIVERSITY OF THE FREE STATE
UNIVERSITEIT VAN OOR
UNIVERSITÄT FRIESTAT
UNIVERSITÄT JA
FRIESTATA

UFS
UV

LK DESIGN STUDIO

TRANSNAMIB

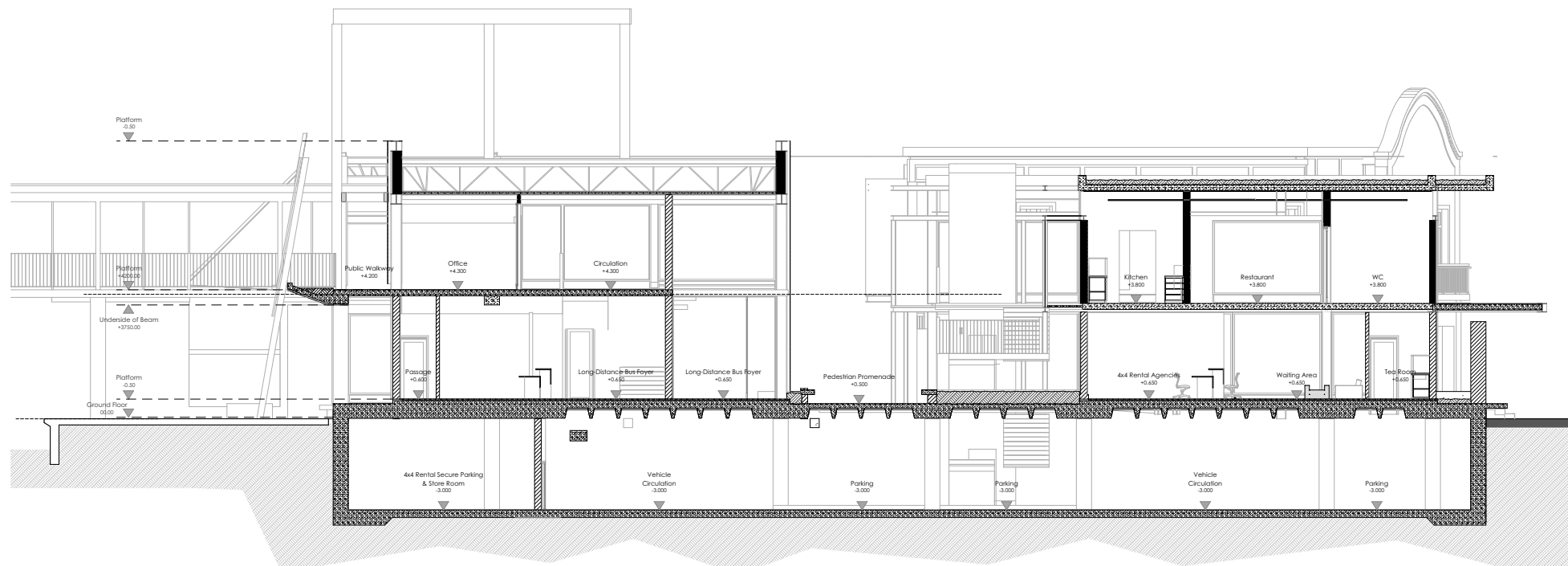
WINDHOEK HUB OF ARRIVAL ON ERF
1645, WINDHOEK, NAMIBIA

GROUND FLOOR PLAN
Part 2 of 2

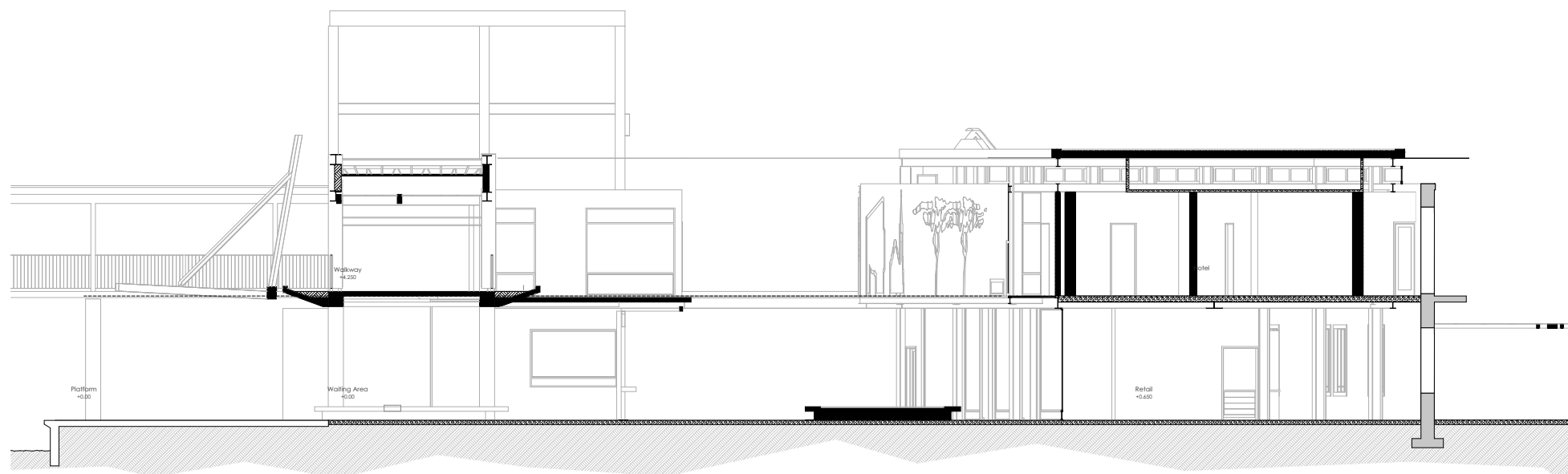
Date:	As Shown	Project No:	001	Revision No:	3/102
Drawn:	Oct 2019	Author:	LK	Checked:	LK

GROUND FLOOR PLAN - Part 1 of 2
SCALE 1:100

GROUND FLOOR PLAN - Part 2 of 2
SCALE 1:100



SECTION A-A
SCALE 1:50



SECTION B-B
SCALE 1:50

All dimensions to be checked on site before any work is put in hand. Any drawings to be made in conjunction with this drawing shall be subject to the approval of the architect. All dimensions to be checked on site before any work is put in hand. Any drawings to be made in conjunction with this drawing shall be subject to the approval of the architect. All dimensions to be checked on site before any work is put in hand. Any drawings to be made in conjunction with this drawing shall be subject to the approval of the architect.

No.	Date	Description

No.	Date	Description

UNIVERSITY OF THE FREE STATE
UNIVERSITEIT VAN DIE VRYSTAAT
UNIVERSITÄT FRIESTAAT

UFS UV

LK DESIGN STUDIO

Client: **TRANSNAMIB**

Project: **WINDHOEK HUB OF ARRIVAL ON ERF 1645, WINDHOEK, NAMIBIA**

Section: **SECTION A-A & B-B**

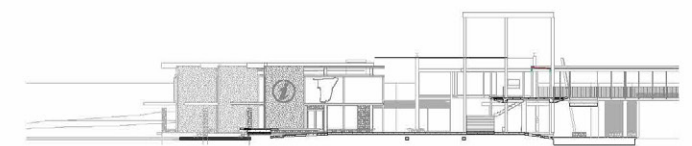
Scale: 1:50	Project No: 001	Drawing No: 3/201
Date: Oct 2019		
Drawn: LUKAS K.		



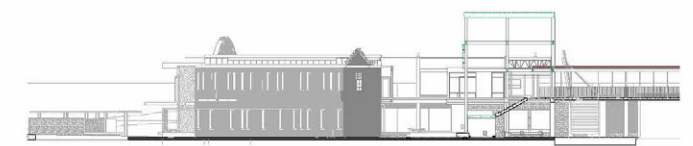
WEST ELEVATION
SCALE 1:200



EAST ELEVATION
SCALE 1:200



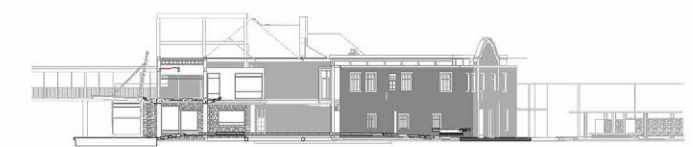
SOUTH ELEVATION 1
SCALE 1:200



SOUTH ELEVATION 2
SCALE 1:200



NORTH ELEVATION 1
SCALE 1:200



NORTH ELEVATION 2
SCALE 1:200

All dimensions to be checked on site before any work is put in hand. Any drawings to be made in conjunction with this drawing shall be subject to the approval of the architect. All dimensions to be checked on site before any work is put in hand. Any drawings to be made in conjunction with this drawing shall be subject to the approval of the architect.

No.	Date	Description

No.	Date	Description

UNIVERSITY OF THE FREE STATE
UNIVERSITEIT VAN DIE VRYSTAAT
UNIVERSITÄT FRIESTAAT

UFS UV

LK DESIGN STUDIO

Client: **TRANSNAMIB**

Project: **WINDHOEK HUB OF ARRIVAL ON ERF 1645, WINDHOEK, NAMIBIA**

Section: **ELEVATIONS**

Scale: 1:200	Project No: 001	Drawing No: 3/301
Date: Oct 2019		
Drawn: LUKAS K.		

REFLECTION & EVALUATION

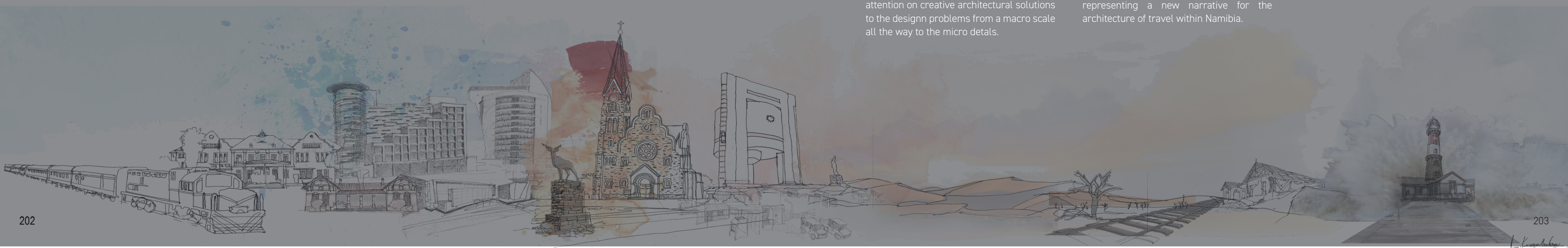
The document structure served as a reminder of the different aspects of the research and design process within architecture. This dissertation challenged me to document and present all of my ideas within a holistic, structured document. This made it easy to reflect on my work throughout the year and i was able to pinpoint the areas that lacked certail research and other areas that were well documented.

The proposal has certainly been the largest in scale and program that i have undertaken to design. I did find the scale of the project to be too large at times and I believe I should rather have focused on a certain area of the proposal as opposed to the whole scheme. This would have allowed me to focus my attention on creative architectural solutions to the designn problems from a macro scale all the way to the micro details.

It was a challenge to revitalise an area within the city centre that has been an under developed area for decades. I believe I was able to connest the site to the rest of the city centre by creating urban corridors through the site, but it is difficult to reflect on the use of building structure and materiality to connect and revitalize the area.

I believe that the research and design exploration within the theoretical framework of this document has enabled me to approach the architecture with more depth and richness than simply applying design principles based on concepts and technical requirements. This has created an architectural expression that reflects a nostalgia of the heritage buildings whilst representing a new narrative for the architecture of travel within Namibia.

Within the context of a transportation hub, I believe that this dissertation was able to explore types of architectural spaces that creates a new narrative for the site, without disregarding the historic significance of the existing structures. It is my hope that it reflects Namibian architecture, not in style, but in the experience of space through travel.



REFERENCES

- Dewulf, W. and Maritz, N. (2016). *Namibia Archaeology of the Future*. Rome: Architetti Roma Edizioni, p.15, 18, 40.
- Koolhaas, R. (2002). *Junkspace*. October, 100, pp.175-190.
- Merleau-Ponty, M., (1993.). Eye and Mind. In: G. Johnson & M. Smith, eds. *The Merleau-Ponty Aesthetics Reader: Philosophy and Painting*. Evanston: Northwest University Press, pp. 121-131.
- Tester, K. ed., (1994). *The Flâneur*. London: Routledge, pp.139-155.
- Walker, J. (2009). *Arrival by Train: How End-Stations Differ from Through-Stations*. [Blog] Available at: <https://humantransit.org/2009/10/arrival-by-train-how-endstations-differ-from-throughstations.html> [Accessed 23 Nov. 2018].
- Townsend, S. (2017). *A Manifesto for the Conservation of the Built Environment*. Architecture SA, (83), pp.11-12.
- Bite-sized Philosophy. (2017). *Jordan Peterson – Why You Should Make Your Room Beautiful and Set it Up Properly*. [You Tube Video] Available at: https://www.youtube.com/watch?v=vR6-c3j0K_Y (Accessed: 10 July 2019)
- Pallasmaa, J. (2005). *The Eyes of the Skin: Architecture and the senses*. London: Wiley, p.46.
- Nawas, M. and Platt, J. (1965). *A Future-Oriented Theory of Nostalgia*. Journal of Individual Psychology, 21(1), pp.51-57.
- Seamon, D. (2010). Merleau-Ponty, Perception, Environment Embodiment: Implications for Architectural Environmental Studies. *Carnal Echoes: Merleau-Ponty and the Flesh of Architecture*. pp.1-5.
- Namibia Statistics Agency (2019). *The Namibia Labour Force Survey 2018 Report*. Windhoek: Namibia Statistics Agency, p.78.
- Namibia Tourism Board (2016). *Namibia Tourism Satellite Account*. Namibia Tourism Satellite Account 5th Edition. [online] Windhoek, p.5. Available at: <https://www.hannamibia.com/blog/tsa-report-5th-edition> [Accessed 18 Sep. 2019].
- Department of Environmental Affairs and Tourism (2009). *15 YEARS A review of the Department of Environmental Affairs and Tourism*. Pretoria: Communications Department of Environmental Affairs and Tourism, p.111.
- Transport Interchange as city centres of activity. (2015).

- Hensen, S. (2019). *Unreinforced Masonry (URM) Buildings: Seismic Retrofit*. [online] Structural Engineering Blog. Available at: <https://seblog.strongtie.com/2013/04/seismic-retrofit-of-unreinforced-masonry-urm-buildings/> [Accessed 20 Sep. 2019].
- Lyons, A. (2010). *Materials for Architects & Builders*. 3rd ed. Oxford: Elsevier, p.181.
- Mendelsohn, J., Jarvis, A., Roberts, C. and Robertson, T. (2009). *Atlas of Namibia*. 3rd ed. Cape Town: David Philip Publishers, pp.76, 78.
- Ministry of Environment & Tourism (2010). *National Policy on Climate Change for Namibia*. Windhoek, p.9.
- Move Windhoek (2013). *Sustainable Urban Transport Master Plan*. Windhoek: Move Windhoek, pp.29, 152.
- Scanlan, S. (2004). *Introduction: Nostalgia*. Iowa Journal of Cultural Studies, 5(1), pp.3-8.

