ARCHITECTURE & IDENTITY

REDEFINING THE TAXI INDUSTRY

Thanks

I would like to thank my friends, family and mentors for all the support and guidance they have bestowed upon me through out the course of this year. Most importantly, I would like to thank my parents for all the support through this arduous knowledge-gathering trip I have been on for the past couple of years.

ARCHITECTURE & IDENTITY

REDEFINING THE TAXI INDUSTRY

USING ARCHITECTURE AS THE CATALITIC METHOD OF FORMULATING IDENTITY

FIG I

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

-BY: TEBOGO MPYE

STUDY LEADER: RUDOLF VAN RENSBURG

COURSE COORDINATOR: ARTHUR BARKER

SUBMITTED IN FULFILMENT OF PART OF THE REQUIREMENTS OF THE DEGREE IN MAGISTER IN ARCHITECTURE (PROFESSIONAL) DEPARTMENT OF ARCHITECTURE IN THE FACULTY OF ENGINEERING, BUILT ENVIRONMENT AND INFORMATION TECHNOLOGY, UNIVERSITY OF PRETORIA, SOUTH AFRICA, MAY 2010

FIG II

FIG III

FIG IV

Unlawful, renegade and detached, these are some of the metaphors that can be said to be the summation of the taxi industry. Albeit the taxi system predominantly operates as the chief transport mode, and economic enabler for its users, it still maintains a predominantly degenerate perception.

The focus of this thesis is to emphasize how through re-appropriation and re-defining of the formative and descriptive elements of the taxi industry, one can begin to articulate a logical and befitting identity for the taxi industry. The methodology utilized is based on the principals of identity formulation, and programmatically expressive architecture. The intention of which, is to devise a methodology in which architecture can be used to restructure existing systems in a manner, which enables them to obtain a compelling logic. In so doing, the premise is to illustrate how through the use of design, architecture can be molded into a contrivance for formulate identity.

ABSTRACT

FIG V

FIG VI

The theoretical point of departure of this thesis is to explore the concept of architecture as the catalytic instrument in the creation, or identification of identity. Taking into consideration the degenerate image that the taxi industry has today, and its pragmatic relevance to society, the thesis aims to formulate programmatic and spatial qualities that begin to elevate the perception of the taxi industry.

The design intention, aims to explore the measures in which architecture can be used to begin to redefine the taxi industry, through the uses of spatial articulation that represents the marriage between the public, and the taxi industry in a formal, informal and passive manner.

CONTENTS

Front Page:

www.cmt4austin.org/ SharedTaxiPublicTransit.html, 2010
http://blogs.timeslive.co.za/common-dialogue/files/2009/10/taxi-violence.jpg, 2010
Figure I-http://www.southafrica-pig.blogspot.com/ 2009/03/south-af,2010
Figure II- http://www.oryxmedia.co.za/wp-content/gallery/events/taxi/, 2010
Figure III- http://www.oryxmedia.co.za/wp-content/gallery/events/taxi%20war, 2010
Figure IV- www.jacarandafm.com/ kagiso/content/en/jacaran, 2010
Figure V- http://newmobilityagenda.blogspot.com/2009/04/transport-realities-in-south-africa.html, 2010
Figure VI- http://newmobilityagenda.blogspot.com/2009/04/transport-realities-in-south-africa.html
Figure VII- westcapenews.com/?p=412, 2010

CHAPTER 1

Figure 1- www.france24.com/en/ 20100304-taxi-signs-get-f., 2010
Figure 2- http://www.france24.com/en/files/imagecache/aef/ct/wire/image/lightbox/images, 2010
Figure 3-http://newideasforafrica.files.wordpress.com/2009/10/soweto_taxi_rank.jpg, 2010

CHAPTER 2

Figure 4-www.cape-slavery-heritage.iblog.co.za/ 2009/04/
Figure 5-www.cape-slavery-heritage.iblog.co.za/ 2009/04/
Figure 6-www.cape-slavery-heritage.iblog.co.za/ 2009/04/
Figure 7-Taxi Routes around Pretoria CBD, Author, 2010
Figure 8-www.sarocks.co.za/2007/ 03/29/catch-a-taxi/, 2010
Figure 9-www.santacotrading.co.za/,2010
Figure 10-roadsafety.co.za/2010/06/01/photos-from-taxi-crash-at-intersection-in-constantia/, 2010
Figure 11-roadsafety.co.za/2010/06/01/photos-from-taxi-crash-at-intersection-in-constantia/, 2010

CHAPTER 3

Figure 12-www.karenswhimsy.com/ ancient-roman-architecture.shtm, 2010
Figure 13- www.worldofstock.com/ closeups/TEI1183.php, 2010
Figure 14- www.ecospan.co.za/ products.htm, 2010
Figure 15- www.spanafrica.co.za/ ?industrial_commercial, 2010
Figure 16-nord taxi rank(author), 2010
Figure 17- nord taxi rank(author), 2010
Figure 18-http://www.bc.edu/bc_org/avp/cas/fnart/arch/roman/carree01.jpg, acessed 26/10/2010
Figure 19-http://www.makingthemodernworld.org.uk/learning_modules/maths/02.TU.03/img/IM.1470_zl. accessed 27/10/2010
Figure 20-http://travelerfolio.com/travelerfolio/photos/colosseum_03.jpg, acessed 27/10/201
Figure 21-http://www.chinadaily.com.cn/china/2007-07/20/xin_490704191005714317 7196.JPG
Figure 22- http://www.terragalleria.com/images/us-ca/usca35343.small.jpeg
Figure23-http://www.pxleyes.com/images/contests/modern%20churches/fullsize/modern%20churches_28837.jpg
Figure24-http://www.speedace.info/automotive_directory/bmw/bmw_images/BMW_headquarters_Munich_AG_building_Germany.jpg
Figure 25-http://www.china4auto.com/EnUpLoadFolder/2008_09_17/auto_08091709069404.jpg

CHAPTER 4

Figure 26- www.cmt4austin.org/ SharedTaxiPublicTransit.html, 2010
Figure 27- logo Santaco, www.santacotrading.co.za/,2010
Figure 28- logo Santaco, www.santacotrading.co.za/, 2010
Figure 29- logo Arive alive, http://nasp.dot.gov.za/projects/arrive/images/aralive.gif, accessed 2010
Figure 30- logo http://www.gisdevelopment.net/news/images/DOT.jpg, acceses 2010

CHAPTER 5

Figure 31- BMW welt, forgemind.5d6d.com/thread-22-1-1.html
Figure 32-BMW welt, Drawing and images by Coop Himmelb(l)au, 2007
Figure 33-BMW welt, Drawing and images by Coop Himmelb(l)au, 2007
Figure 34-BMW welt, Drawing and images by Coop Himmelb(l)au, 2007
Figure 35-BMW welt, Drawing and images by Coop Himmelb(l)au, 2007

LIST OF FIGURES

CHAPTER 6

CHAPTER 7

CHAPTER 8

Idea

The formative idea behind this thesis stems from the inspiration of using architecture as a means to formulate identity. It begins by examining the notion of identity through examining its conception, recognition and quantifiably attributes. Lastly, the intention of the thesis is to determine whether, architecture can be used to redefine or re-appropriate a groups current identity.

Subject Matter

The taxi industry is the test subject chosen by the author, because of its social relevance and its currently unfavorable perception.

Rationale

The taxi industry currently has the identity or perception of an unregulated, renegade industry with no formal regulatory or accountable body. However, it also simultaneously serves as the primary transport mode and economic enabler for most black people in South Africa to day. (SANTACO, 2008).

Pros

- Primary public transport system
- Convenience and affordability for the masses
- Its proliferation enforces its social relevance

Cons

- Little known regulatory body
- Drivers seen to not respect road rules
- Responsible for 9% of road collisions. (NDoT, 2001).
- Dilapidated infrastructure and unsafe taxis.

PROJECT INFO

Strategy

In the context of this thesis the sagacious manner in which to quantify the success of its objectives would be through the evaluation of; 1: the use of programmatic arrangements to highlight each facet of the taxi industry. 2: To have the architecture relay the narrative of the taxi industry through the use of spatial articulation. 3: Through the use and re-interpretation of architectural typologies that pertain to the transport (more over the taxi industry).

Implementation

In trying to formulated a new identity for the taxi industry, the thesis adopts a strategy in which the primary three elements of the industry, being:

1. The general public who use the taxis on a regular basis.
2. The operational element, being the taxi and drivers themselves, and
3. The regulatory body that has been set out to govern the industry

are expressed in a manner that exemplifies a progressive, conformist and approachable identity.

Conceptually the intention is to use expressive architecture, in which the public become passively involved in the daily operations of the industry, thus increasing its transparency, which invariably leads to a change in the perception/identity that the taxi industry has.

Deliverables

- Provide the formal body of the taxi industry, a public façade that the public can relate to.
- Provide the taxi industry with a building structure that interacts with its stakeholders.
- Provide the taxi industry with the facilities which enable it to better conform to regulations set out by the TRP (Taxi Recapitalization Program)

CHAPTER ONE

Sumation

INTRODUCTION

THEORETICAL INVESTIGATION

DESIGN PROBLEM

DESIGN INTENTION

FIG 1

FIG 2

FIG 3

3. CHAPTER 1- INTRODUCTION

INTRODUCTION

The birth of the public transport industry is a direct result of the industrialization period in early South Africa. This period in addition, resulted in the migration of Black South Africans from their traditional homesteads to cities in the pursuit of work (SANTACO, 2008). Due to the lack of infrastructure and state provisions, the taxi industry emerged as the preferred mode of transport for the black populace, as it offered the most economical alternative. From the onset, the industry had to compete with the subsidized bus and train systems, which in later times had a negative impact on the industry, as is made evident by its deregulation and conflict ridden nature (SANTACO, 2008).

The deregulation of the taxi industry in the 80's unleashed uncontrolled growth of the industry and provided fertile grounds for conflicts over route and ranking facilities. During the same period, the industry boomed into an economic strong hold, boasting an urban market share of 65% that soon became unmanageable in the absence of any form of regulatory framework (SANTACO, 2008).

The unity initiatives initiated before 1994 culminated in the establishment of the South African Taxi Council (Sataco). In 2001, under the watchful eye of the Independent Electoral Commission (IEC), the democratising process was completed when a National Executive Committee was elected under the presidency of Mr. Thomas Muofhe. The organisation, now called the South African National Taxi Council (SANTACO), is formally recognised by government as the legitimate industry representative. (SANTACO, 2008)

The industry today represents the most accessible mode of transport to the largest number of transport 'customers' across a variety of income and need segments. As such, taxis carry 65% of the 2,5 billion annual passenger trips in the urban environment and serve as the base-load public transport carrier, both during peak and off-peak transport times (santaco, 2008). According to the national regulation body, there currently exist approximately 130 000 vehicles operating with legal transport permits. Approximately 95 000 of these vehicles, are used for short and medium distance trips in the urban environment. The remainder of which, are used for rural and inter-city transport. More than a third of the vehicles operate in the Gauteng province alone.(Govender, R:2010)

Theoretical investigation:

Architecture is in essence, the practice of designing the world we live in; therefore, it has the innate ability of playing an important role in defining identity, and molding space in a manner that leads to the creation of social significance. According to the book "identity Theory and Social Identity Theory", by Jan E. Stets and Peter J. Burkes', when formulating identity, one has to structure the identifying elements in a manner that is indicative of the entity they are intended to represent. For this reason it is safe to assume that the most appropriate manner in which to elevate the disjointed, renegade (yet efficient) nature of the taxi industry, is through the re-appropriation and re-defining of it's formative, expressive and operational elements. .

"An architecture description is a formal description of a system, organized in a way that supports reasoning about the structural properties of the system. It defines the system components or building blocks and provides a plan from which objectives can be achieved, and systems developed, that will work together to implement the overall system" (wikipidia: 2010). With regard to the systems of the taxi industry, it is conceivable to assume, that one could use Architecture as the apt tool in re-defining and re-interpreting its systems, in a manner, which instills a sense of identity. In essence, from the afore mentioned definition, it is safe to assume that the coherent architectural articulation of the formative parts of any system, give relevance and meaning to any pragmatic system.

It can be argued, that only through the validation of ones identity, be it innate, didactic or socially warranted, that one can begin to express the qualities that enable a group to present a socially appropriate decorum. It is through the acknowledgement of identity that one can begin to express the distinctive attributes of individuals, groups or society that enable them to take their appropriate place with in society. This ideology made evident by former president Thabo Mbeki, in the prelude to the "I am an African" speech examines the role self worth plays in formulating identity.

Design problem:

- The principal problem is how to create an architectural language that gives relevance to two uncelebrated parties, who share a similar interest. The aim is to create an architectural language, that both embraces and instills the formality required for a regulatory body, but yet simultaneously acknowledges and validates the informal nature that encompasses the public transport industry.
- Secondly, how does architecture begin to redefine, re-evaluate and re-appropriate a system, which stems from policies of segregation and disempowerment?
- Thirdly, how does one architecturally create a precinct, which aims to serve as a hybrid edifice for the formal aspect of the public transport system, its operational requirements and its informal users?

Design intention:

The primary design objective extrapolated from the brief is the formulation of an architectural strategy and edifice that through its programmatic constraints methodically helps elevate the perception of the taxi industry. The intention is to do so by following a design methodology that provides the industry with the formal aura it so lacks, whilst incorporating its social informal nature. In essence, the design intention is to create a precinct that becomes the catalyst in the re-interpretation of the taxi industry.

Conceptually formulating an integrated identity for the taxi industry through the cohesive union of formal, informal and social active space

CHAPTER TWO

7. CHAPTER 2- INTERPRETATION

INTERPRETATION

HISTORICAL ORIGINS

MODERN PERCEPTION

FIG 4

FIG 5

FIG 6

9. CHAPTER 2- INTERPRETATION

BACKGROUND

The government policies of apartheid did not develop in isolation, but rather as a response to the increasing black political initiatives. “Segregation and apartheid assumed their shape, in part, as a white response to Africans’ increasing participation in the country’s economic life and their assertion of political rights” (info.gov: 2010). As a result, the government introduced legislation that legalized mass forced removals of black South Africans from economically advantageous areas of the city. The purpose of this was to further alienate the races, and additionally dis-empower the black populous. This sentiment, further compounded by the introduction of government’s regulation of the job colour bar, geared at reserving skilled work for whites, additionally denied black workers the right to organize. This intention systematically de-rated black workers to third class citizens of the work force.

This methodology of structuring the social systems was the formative principal behind the forced removal of non-whites from economically active areas of the urban realm. The resultant effect of which, was the creation of racially designed locations, located on the outskirts of the cityscape. These locations where predominantly disenfranchised areas which often in addition to physical barriers had vast spatial barriers separating them from the city and other locations. This in turn meant that there was no direct access for non-whites to areas of economic activity. The prevailing issue was then, further compounded, by “legislation, which was consolidated in the Natives (Urban Areas) Act, 1923, which entrenched urban segregation and controlled African mobility by means of pass laws” (info.gov: 2010).

The summation of the above-mentioned circumstances led to the formation of a disjointed ecology, which lacked the empirical linkages required between the job space and the un-skilled workers it needed to sustain it. Although the premise of the construction of a juxtaposed city framework, served the needs of the government, it still needed to formulate a system that would help service its operational requirements. Thus, the emergence of a need for a public transport system geared at the transportation of unskilled workers to and from the locations to the city. In order to achieve their objectives, the primary modes of transport favored by the government

where the bus and train systems. This was due to that fact that they served more than the needs of the black migrant workers. This was made evident though their continued subsidization (SANTACO.2008).These modes of transport, where how ever less effective in transporting the masses as they lacked the infrastructural capabilities needed to permeate the dense fabric of the townships.

Queue the proliferation of the taxi industry among the townships, and all transportation facets of the black populace. The endeavor was further escalated by the economical advantages the system offered the everyday users. Secondary attributes, which lead to the success of the industry as a whole, was that it was an industry solely owned, managed and used by the black population.

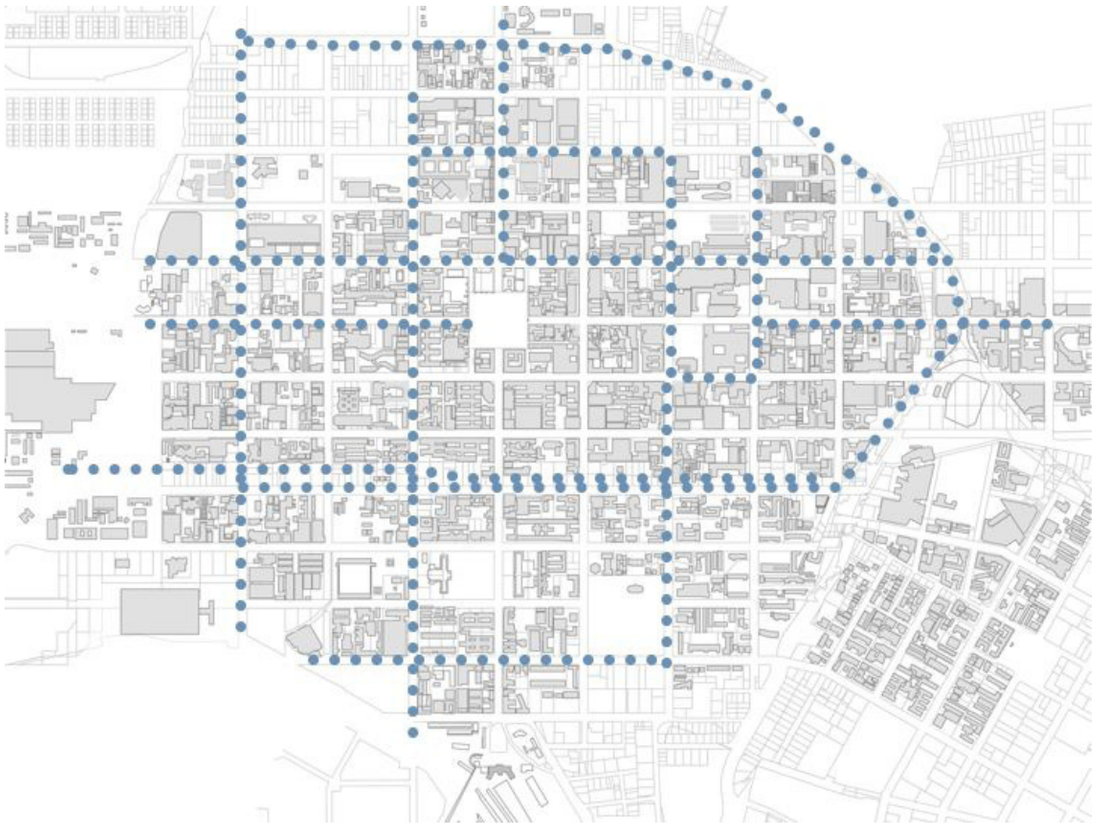


FIG 7-Taxi routes around Pretoria CBD

PRESENT VIEW

The prevailing ideology behind today's taxi industry is of one that is, immensely under regulated, operates under no higher authority, and "although it only accounts for 4.5% of the total vehicle population, is involved in 8.6% of all collisions" (NDoT, 2001). As such, taxis carry 65% of the 2,5 billion annual passenger trips in the urban environment and serve as the base-load public transport carrier, both during peak and off-peak transport times. The industries proliferation of the countries thoroughfare has led to South Africa's road's being rated among the most dangerous in the world, with accidents claiming the lives of no fewer than 10 000 people every year (Govender, Allopi, 2006: 101). This alarming stat is primarily due to the taxi industry continuation to flaunt traffic regulations, which are dually difficult to enforce due to the industry's informal nature, and the inept nature of the countries enforcement agencies.

Due to the nominated regulation councils, inability to express a prominent authoritative presence, the taxi industry has developed a renegade temperament that operates on its own terms. Unlike any other professional body or anthology of expertise, the taxi community does not rely on any unions or regulatory body in order, to civilly voice their grievances. Instead, they choose to follow a non-conformist methodology, devoid of mediatory attributes that lead to the formulation of amicable resolutions with whichever party they may be in conflict with. This in turn has led to a number of violent outbursts by the industry in which numerous civilians have been injured or killed, because of the absence of a deliberation platform. This in addition, has been made evident by the amount of in fighting within the industry for lucrative transportation routes. It is clear that some form of accountable body that has a larger public presence than SANTACO needs to be developed in order to represent the industry at grass rout level. The negation of which could lead to further bloodshed and decline in confidence in the industry as a whole. Evidence of which is seen by the recent protests the taxi industry has had with the introduction of the Bus Rapid Transit (BRT) system. This is primarily because "the Bus Rapid Transit (BRT) system would see over 500 taxis being removed from the first trunk route, to be introduced in Johannesburg between Soweto's Orlando and Coca Cola Park (Ellis Park) in central Johannesburg by June 1. (According to an SA National Taxi Council briefing on Monday)". (http://roadsafety.wordpress.com: 2009). Governments planned expansion of the BRT systems to other parts of the country, could similarly be met with the same opposition.

FIG 8

FIG 9

With the industry prominent role in South Africa's transport system, and its estimated economic value of more than R16, 5 billion annual turnover (arivealive:2010), the government has begun to recognize its magnitude and importance to the nation. As a result, the government has undertaken definitive measures to transform and restructure the industry. Of the most publicized initiatives, is the Taxi Recapitalization initiative. This policy aims to:

- The systematic introduction of safe and comfortable vehicles for taxi commuters through scrapping allowance which will be an incentive for taxi operators to hand in, on a voluntary basis, the very old vehicles for decommissioning (arivealive:2010).
- The economic empowerment of the taxi industry through a package of business opportunities that the Recapitalisation Project affords the Taxi industry to participate in nationally through the SATACO structures as well as at the level of the provincial co-operatives (arivealive:2010).

There has however been some opposition to the incentives, as was made evident by The Human Sciences Research Council. They reported that the majority of South Africans support plans to replace the current taxi fleet with new and safe vehicles. Only

FIG 10

FIG 11

28% of commuters who regularly use the service are opposed to the recapitalisation program. About 50% of those opposed to the recapitalisation plan did so in the belief that it would increase unemployment and result in higher crime levels (arivealive:2010).

Among the least known proposals is the Minibus Taxi Awards. The aim of this proposal is to encourage professionalism, safety and efficiency in this sector (arivealive:2010)

The continuation of this ominous approach to conducting their method of operating has left a repugnant taste in the mouths of all stakeholders, being the commuters who have to share the motorway with the taxi drivers and the passenger that travel with taxis on a daily basis. The fact that “65% of all commuter trips are undertaken by minibus taxis” (Govender, Allopi, 2006: 100) serves as an indication as to the prominence of the taxi industry in South African transport structures. Thus, there is a need to unsoil the image of the industry as a whole and give it the structured prominence that it so needs, but that does it in a manner that does justice to its innate social nature.

CHAPTER THREE

ARCHITECTURE & IDENTITY

FORMATION OF IDENTITY

MANIPULATION OF SPACE

TYPOLOGY

CONCLUSION

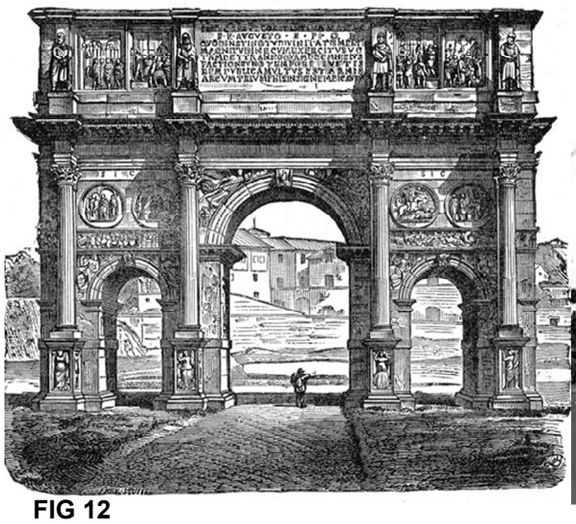


FIG 12

FIG 13

FIG 14

FIG 15

FIG 16

FIG 17

17. CHAPTER 3- IFORMULATING IDENTITY

IDENTITY CONSTRUCTS

The schools of thought regarding identity, state that: "(a) In philosophy, identity (also called sameness) is whatever makes an entity definable and recognizable, in terms of possessing a set of qualities or characteristics that distinguish it from entities of a different type (Wikipedia: 2010). (b) Social identification stems from the categorization of individuals, the distinctiveness and prestige of the group, the salience of out groups, and the factors that traditionally are associated with group formation". (Ashforth ,E, etal, Mael, F, 1989; 20). The aforementioned descriptions of identity, aim to indicate as to how the discernment, configuration and acknowledgment of identity form the cognitive rationale behind group formation and group perception. The following narrative aims to highlight how through the use of architecture, one can begin to redefine identity, by re-interpreting and re-evaluating the building blocks that led to the formulation of the initial view of identity.

Social Identity

In beginning, one has to understand the parameters that are required in the formulation of identity, as well as the manner in which to appropriately articulate those parameters to best represent identity. For the purpose of this thesis an understanding of social, individual, constructed and perceived identity has to be reached in order to present an irrefutable identity. From this stand point, one can begin to examine the doctrines stipulated in the book "Identity Theory and Social Identity Theory", which state. "When formulating identity, one has to structure the identifying elements in a manner that is indicative of the entity they are intended to represent". By this, the authors imply that the formulation of identity is the direct result of the grouping of distinguishable elements that pertain to a particular group or society. Thus from the aforementioned statement one could assume that identity theory, or social identity is created through the coherent articulation of all formative, and descriptive elements that pertain to a particular group or entity.

With an understanding of how social and individual identity, are created or metaphorically formulated, one can then commence and decipher how constructed and perceived identity are created.

Architecture and Identity

Thus in addition to identity theory the next measure in understanding identity design is to comprehend how, firstly built structures can create identity, and secondly how social perceptions help formulate identity. In continuing, the content will exam two uniquely definable architectural types that have built structures the exuberate identity. The first type is from the time of classical architecture, with particular emphasis on Roman architecture. Roman architecture derived its identity through the use of symbolisms and meaning (Grandtradition.com; 2010). The primary intention (mostly inspired by political propaganda) behind Roman architecture was to impress, instill a sense of dominance as well as perform a public function (oneonta.edu, 2010). Although originally most of the forms used to create Roman architecture spawn from Greek architecture, the forms have been modified to better represent the imperialist nature of the Romans. The sheer scale and ornamentation of their buildings became what best represented their architecture and thus what helped them define their identity. In essence, it can be argued that the Romans began creating architectural identity through the use or re-interpretation of architectural typologies. The success of which is made evident by the immediate recognition of all its architectural forms, from its churches to bridges to social spaces. In all of which, there is a unique architectural language that remains constant, and thus invariably re-enforces Roman identity.

In further examining the use of built structures, to represent identity, (in a modern context) a comparative analysis is made between two

FIG 18

FIG 19

FIG 20

FIG 21

ARCHITECTURE

FIG 22

FIG 23

FIG 24

FIG 25

modern building types, that both follow a particular typology to convey a particular identity. The first structures in comparison would be the design of modern religious structures. Of the religious typologies, nun has transformed over the ages more than the Catholic Church, this reason could be attributed to a number of controversial reason, namely the need to appeal to a larger audience. The Churches, do how ever still maintain a sense of grandeur and religious logic, which still make them readily recognizable as religious structures. Although their primary forms have changed from a cross to more elaborate modern forms, they still make use of the same symbolism to convey their identity. The symbolism and their recognition of, are further enforced by the use of re-interpreted even re-defined typology of earlier church typologies. Although other religious typologies have mad less of a drastic change over the years, they have made use of technology and modern materials to remain current. Moreover, although some designs have shifted from earlier trends, they still maintain the same form, orientation, and religious paraphernalia, which enable them to be easily identifiable as the structures they are trying to represent. In essence, religious structures although they have transformed over the years, still maintain their identity by using or re-interpreting specific typologies or symbols that are indicative of the religions they are intended to represent.

The second typology in question is the automotive industries building typology. Because the buildings have to deal with specific vehicle and exposure requirements, there tends to be a commonality found in all of them. Particular emphasis on this statement will be made in relation to BMW's headquarters building and their standard car dealerships. Looking at the BMW headquarters' building, the architect Karl Schwanzer clearly adopted the automobile as a design concept. The architect did how ever make a direct reference to motor

vehicle parts, in that the design of the cathedral is meant to resemble a wheel in a race car, and the main building is meant to represent a four spoke car cylinder (wikipedia: 2010). In relation to the question of identity, this form of architectural expression does pose a secondary notion of achieving architectural identity, in the sense that "is identity also created by adopting a "Las Vegas" type of architecture? Of which the answered can be argued both ways depending on ones views on what is appropriate architecture. However, what is undeniable about the design of the building is that it is overtly of the automotive industry, and is able to articulate that without the use of signage. It is from that view that one can begin to argue the merits of using literal representations to formulate identity, in an architectural manner. Thus in gesture further question the validity of ornamented architecture as an appropriate means of formulating overtly obvious identity.

However, for the purposes of this thesis, one also has to take into consideration the notion that buildings do not exist in isolation, and that although a building may be perfect in itself, what gives it urban credence is its relationship with its surrounding context. Thus, a metaphorical question arises in that in formulating identity architecturally, does ones intervention need to exist as itself or does it need to be a part of a whole in order to give it credence. In answering that one has to return to the primary description of the taxi industry, with the answer simply being a "public transport system" and thus through the nature of the word "public" the intervention cannot exist as its own, but needs to respect its immediate and foreign frames of reference.

Upon reflecting on the principals of both architectural types mentioned in the afore text, one does notice certain similarities, in that: both architectural typologies have an innate architectural language, which displays a tacit exemplification of their program, in that their function/identity is expressed without need or use of signage. Secondly, from an architectural point of view there exists more than one way of expressing identity, being it through the expression of construction methods to ornamentation type architecture. Architecture in itself does not provide a definitive methodology of creating identity, but rather relies on existing perceptions and commonly noticeable symbology to express identity. From that statement, one can then deduce that architecture is subservient to existing identities and perceptions, and in itself is a tool to represent those ideas and

ideals. Accordingly in relation to this thesis a notion that can be carried forward from an understanding of the above mention ideals, is that architecture as an enabler can only give credence to a particular idea, if it represents the formative aspects of that idea, and can tacitly express it within its form, program and tectonics.

Architecture and Typology

[Typology is an] approach that isolates the attributes of the architectural coherence, identifies them as characteristics, in order to then compare them with similarly abstracted attributes from other contexts and to define similarities or differences. Since Quatremère de Quincy at the latest the history of architecture has described this kind of approach by the term typology and understands it as the abstraction of formal attributes into a principle, called type, that describes the commonalities of a series of different, but historically concrete models. From the beginning, this systematic and abstracted view includes the possibilities of a guideline for action beyond literal imitation ("imitation par principe") as well as a tool for comparativearchitectural criticism (Pfeifer & Brauneck , 2008)

Identity of Place

"Social identification leads to activities that are congruent with the identity, support for institutions that embody the identity, stereotypical perceptions of self and others, and outcomes that traditionally are associated with group formation, and it reinforces the antecedents of identification. (Ashforth ,E, etal, Mael, F, 1989; 20) This statement refers to people and groups, and forms the basis as to what the implications of social identity are. In referring back to the initial concept of formulating an enriching identity for the taxi industry, one has to further explore the concept "identity of place". The context, in which any architectural intervention takes place, plays a large role in not only suggesting the architectural language, but in also how it should respond to the surrounding fabric. Therefore, in relation to the taxi industry, the intended site needs to be along a rout that has significant importance regarding the industry as a whole, and not just in terms of its modern day perception, but also with regard to its historic value.

"All urban areas have their own logic which derives from their very raison d'etre and from the needs of the people who live there" (Dewar, Uitenbogard: 11). The area around Pretoria station, and Salvakop, is predominantly zoned as a residential, historical/heritage zone and governmental precinct. It for this reason, that it is also the transportation hub of the city of Pretoria. The site chosen for investigation for this thesis is located adjacent Pretoria station, along Bosman and Jacob Mare Street. This location also affords it the proximity to other transport modes such train, bus and BRT, of which all are with in a 200m radius. The proximity to all these transport nodes leads to high pedestrian volumes that move through and around the site. This scenario allows for the manipulation of pedestrian movement through the site, in order to achieve maximum exposure of the intervention, thus enabling more of the public to experience more of the transformations the taxi industry is going through. By locating the intervention near a prominate transport interchange, it allows the taxi industry a larger platform to interact with its stakeholders.

CONCLUSION

In conclusion, the theoretical investigation explores a number of possibilities in which identity (holistically) can be created, and that architecture in itself does not offer a definitive methodology in which to purse the quest of formulating identity. Architecture does however serve as a tool in which one can express identity, so long as the architecture implored is indicative and exemplifies the formative principals that pertain to the element in which its identity its trying to represent. Thus in the context of this thesis the sagacious manner in which to achieve its objectives would be through 1: the use of programmatic arrangements to highlight each facet of the taxi industry. 2: To have the architecture relay the narrative of the taxi industry through the use of spatial articulation. 3: Through the use and re-interpretation of architectural typologies that pertain to the transport (more over the taxi industry).The adoption of this methodology should enable one to begin to formulae a quantifiable, visibly expressive identity for the taxi industry. Thus, in essence, the manifestation of an integrated structure that incorporates the industries formative elements into a structured logic, which embody all aspects of the industry, from its social constraints to its architectural manifestation, should sever as the attestation of the strategy adopted.

CHAPTER FOUR

PROBLEM PHILOSOPHY

NORMATIVE STANCE

DESIGN PROBLEM

DESIGN INTENTION

PROGRAM

CLIENT

FIG 26-Taxi protest

NORMATIVE STANCE

Unlike most professional bodies, or regulatory institutions, which predominantly exist within themselves, and serve as their own validation, the conception of a body to govern the public transport industry would have to follow completely contrary notions of existence. This is because unlike most established associations (e.g. SACAP which are formed through government policies aimed at the protection of architectural rights and the regulation of tariffs and fees) the public transport industry is, primarily geared at the continued, satisfactory delivery of services to the public. It is from this premise that one can deduce that the public transport industry is one that needs to incorporate all stakeholders within its structures in order for it fully reach fruition as a holistic representative body. Further more due to the industries informal, socially orientated nature, it would seem inconceivable for one to separate the general public from the taxi associations in defining the public transport industry as a singular edifice.

In using architecture to formulate an identity, one has to take into consideration the actual and perceived nature of the subject in question, and thus has to engage and fully understand the public transport system. With regard to the taxi industry, the actions of a few are predominantly, judged in the wider context of the industry itself, and thus the actions of few cannot be divorced from the perception of the whole. The creation of identity instills a sense of integrity, respect and generally elevates the perception of the subject as an entity. It is in consequence that one would however; have to incorporate the image of the public (taxi users) with the image of the taxi industry in order to formulate a single, cohesive, symbiotic identity that validates both parties.

Any edifice that is meant to represent the identity of a singular body or organization is socially viewed like the roman domus, in the sense that “its simultaneously home, place of entertainment, business office and lobbying platform” (Hales, S, 2003, 2). From the aforementioned standpoint, it is evident that whatever architectural structure designed to elucidate the social necessity of the taxi industry, would have to consist of all aspect pertaining to the industry as a whole. From this point of view, one can therefore begin to articulate a type of architectural language that can begin to address the lack of formality in the taxi industry.

Design Problem:

The main intention or design problem that the extrapolated brief aims to address, is what philosophical and design consideration have to be taken in order to formulate an architectural language that gives relevance and identity to two uncelebrated parties, who share a similar interest. In so doing, the intention is to create a building typology that both embraces and instills the formality required for a regulatory body, and yet simultaneously acknowledges and validates the informal nature that encompasses the public transport industry

The second intention or problem would be how does one through, the use of architecture, re-define and re-appropriate a system, which stems from policies of segregation and disempowerment. Thirdly would be the design of a building hybrid that has both functional qualities of formal and informal spatial usage.

Finally, the last problematic aspect of the brief is the context of the intended site. The site is located on the periphery of marabastad, which Due to forced removals and other historic occurrences the area has been left in a derelict, fragmented state. The problem would come in, when trying to conceive a single structure that should have the ability to spark rehabilitation and upliftment of the area as a whole.

Design Intention:

The design intention is to create a precinct, which systematically helps elevate the perception of the public transport industry, by providing it with the structure and formality it so lacks. The objective is to concurrently achieve this in a manner that incorporates its informal social, character with its less known formal body (SANTACO) commissioned to represent it. The method intended to achieve this is centered along the principals of using architecture as a tool to manipulate the systemic process of the taxi industry. The aim is to do so through the provision of an architectural edifice that incorporates the industries formal sector with the programmatic requirements that will enable it to operate at a legally appropriate manner. By introducing operational systems that act in tandem with the informal social aspects of the industry, the design could begin to create a precinct that has the notable formality of a professional institution, but simultaneously has a programmatic tone, that makes it relevant to the public in general.

- The creation of a building typology that aims to house the legislative body of the informal transport industry.
- The design of a building that respects the genius loci of the industry by; staying true to the underlying fundamentals that define the industry.
- The formulation of an architectural discourse that creates identity and credibility for the industry.
- Providing a building that enables the transport system to exist with its stakeholders in a manners that creates a symbiotic relationship
- Improving the efficiency of the taxi industry, through automation and centralized exchanger points

Client

The chief client identified for the daily running of the development would be SANTACO. Santaco would use its capacity, as the recognized regulatory body to manage, gather and guide the other Pretoria taxi associations from this node. As the building is, intended to represent a formal aspect of governance, there would also be input from governmental institutions such as the department of trade and industry, and the city of Tshwane. In order to help facilitate the commercial aspects of the development, further subsidies would, be received from the department f trade and industry, along with other government bodies geared at poverty eradication through social empowerment.

Secondly, all nominated suppliers of taxies by the taxi recapitalization program would also have a stake in the building, as it would also provide them with a platform to market their products.

Other members that would use the building include:

All stakeholders of the Pretoria public transport systems, this would include:

- Menlyn Taxi association
- Boschkop Taxi association
- Mabopane Taxi association
- Attregvile Taxi association
- Privately owned taxis

TAXI REGUATORY BODY

FIG 27, SANTACO logo

FIG 28 SANTACO logo

FIG 29, logo

Program

The regulatory body of the taxi Industry, namely SANTACO. including:

- Offices
- Boardrooms
- Public debate platform
- Seminar rooms
- Inspection garages

The public interface between the public and the regulatory body

- Public Liaison offices
- Training facilities
- Retail & Informal markets
- Public open square

Transport interchange precinct

- Hotel accomodation
- Taxi service centre
- Taxi parking zone
- Taxi rental
- Taxi wash points

FIG 30, Department of transport logo

CHAPTER FIVE

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

PRECEDENCE STUDY

BMW WELT

BRITISH AIRWAYS HEAD QUARTERS

Architect: Coop Himmelblau Wolf D. Prix/ W. Dreibholz & Partner ZT GmbH Coop Himmelb(l)au arcspace feature
Completed: 2007
Munich Germany

FIG 31 BMW Welt

"Ever since Le Corbusier liberated the roof of the Unité as a landscape from its singular significance and function as a mere protective element, and ever since Oscar Niemeyer completed the design of his single-family dwelling Casa das Canoas near Rio de Janeiro, we have understood that the roof of a building need not necessarily follow its basic layout and structure. Rather, the "roof" has taken on a new meaning, new significance in modern architecture." Wolf D. Prix

The design of the building complex enables all of the structures, to take the form of a walk-through sculpture in an urban landscape that is overarched by the virtually free-floating roof that originates out of the Double Cone and further differentiates the space into various sub-areas.

The most prominent elements of the brand experience and automobile delivery center BMW Welt are the roof and the Double Cone. The roof landscape of 16,000 square meters, supported by only 11 columns, not only forms the space-enclosing upper limit of the building, but also forms a functional, structural, and above all formally independent structure, in conjunction with the Double Cone.

The Double Cone visualizes the soaring dynamics of the building with its continuous transition into the seemingly floating roof. It takes the form of two leaning truncated cones with a rounded transition between them.
The building is sustainable through innovative climatic concepts which result in an

BMW WELT

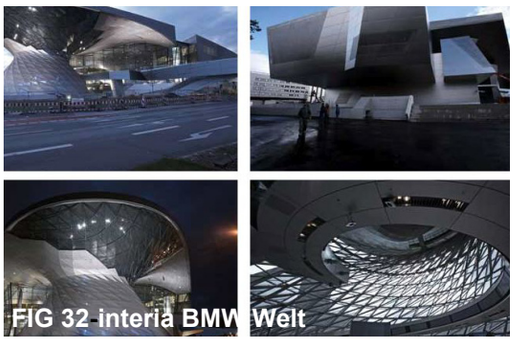


FIG 32 interia BMW Welt

FIG 33 Concept images

FIG 34 Arieal View

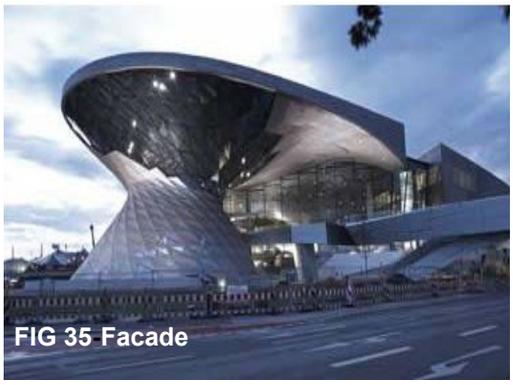


FIG 35 Facade

estimated 30 percent energy savings. Included in these ideas are the naturally ventilated hall with facade construction that may be heated or cooled as well as the photovoltaic roof panels which provide energy. But not only is the climatic concept sustainable; the form is sustainable as well.

At the heart of BMW Welt is vehicle delivery, which forms both the spatial hub and the functional backbone of the building, and the processes connected with this function extend over almost all levels.

The new vehicles are delivered to the lower floors via their own loading yard. Here there are car washes, mechanic's workshops, final paint inspection sites and final cleaning sites as well as a one-day storage facility, an automatic high-rise storage unit with a capacity for 250 cars. This corresponds to the maximum daily capacity of the vehicle delivery process. The delivery and end-finish process takes place hidden from customers and visitors on an underground stage. The vehicles are then transported in transparent glass elevators to the actual delivery stage, dubbed "Premiere," which is at the center of BMW Welt, visible from all other areas. This area is also known as the "Marina" since the vehicles are handed over to customers on rotating platforms, from where they can drive out of the building via a generously sized ramp.

Although BMW Welt is basically a public building, certain areas are open exclusively to those picking up new vehicles. For example, at the main entrances to BMW Welt customers can check into a hotel and enjoy exclusive use of two Lounge levels.

The "Lounge" is integrated into the roof and thus virtually suspended over the delivery area, supported only by the utility service shafts and a column. The necessary formalities

for vehicle hand-over are taken care of in the Lounge, which also contains common areas where guests who have arrived from far away can withdraw and rest. Via a gradually descending stairway connecting the Lounge to the Marina, the customer is guided by a customer service representative to the actual hand-over point. In this process the melding of interior and exterior space or suspension of the usual separation between them also becomes tangible on the functional level

The "Forum," located in the north wing of the building, represents another key function of BMW Welt, this section embodies in a particularly striking way the concept of spatial and visual integration coupled with the highest degree of functional independence. The "Tower" in the southwest, looking toward the Olympia Park, represents a multifunctional area in the fullest sense of the term. Just like the Forum, it offers both encapsulated interior rooms with sight lines out into the Hall and toward the Olympia Park as well as walk-through surfaces and terraces both indoors and outdoors.

Inside BMW Welt, all publicly accessible areas, such as the Forum, Tower and Double Cone, are connected by a lightweight, sweeping bridge structure. In order to eliminate columns in the interior, the bridge was hung from the ceiling instead. At defined panorama points, curving bulges in the bridge invite guests to pause and take in the scene.

The functional and formal concept of the bridge is extended out over Lerchenauerstrasse and thus to BMW areas situated on the opposite side of the street (administration headquarters and museum), so there is no intersection with the vehicle traffic down below.

Special attention was paid to the underground networking of the various structures, so that it is possible to provide catering and supplies to the entire building from all restaurant units. The four-story underground base of BMW Welt also contains two public parking levels with up to 600 parking spaces. Access to the Hall is gained decentrally via 16 elevator groups.

FIG 36 Plan

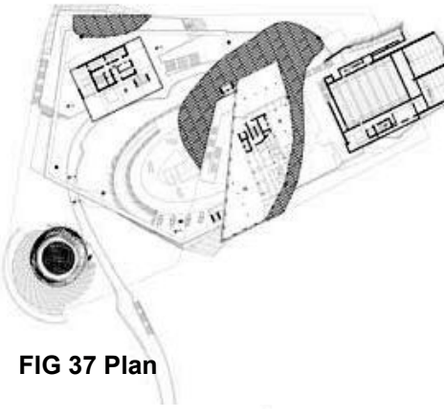


FIG 37 Plan

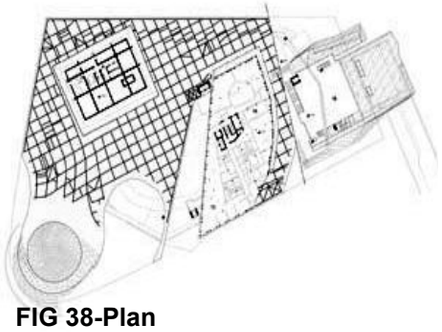


FIG 38-Plan

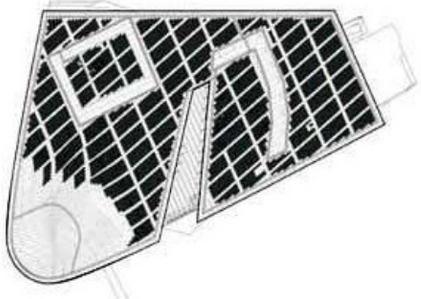


FIG 39-Roof Plan

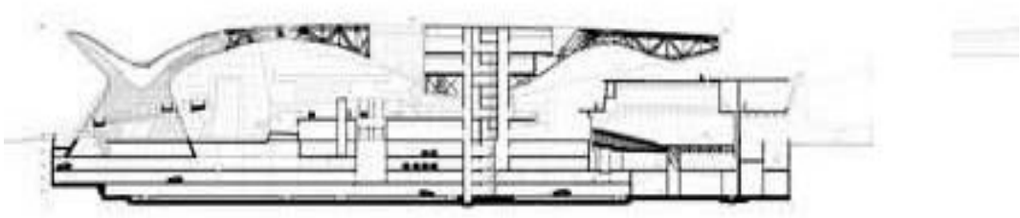


FIG 40-Section

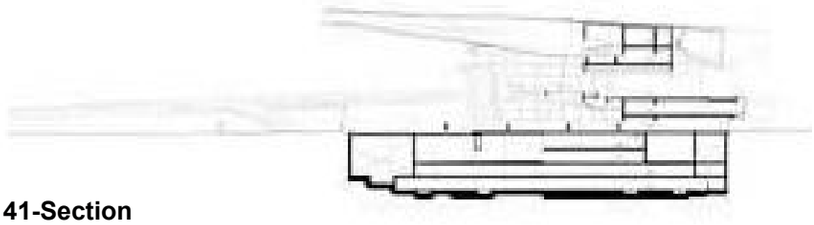


FIG 41-Section

FIG 42-Exterior View

FIG 43-Exterior View

FIG 44-interior Ramp

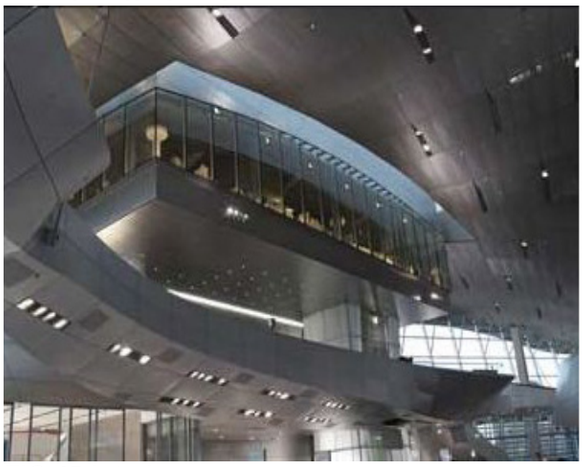


FIG 45-Interio ramp

Architect: Niels Torp and Øyvind Neslein
Completed: 2007
Parkland Heathrow

FIG 46 entrance elevation

When British Airways had the opportunity to build their corperate headquarters in parkland near Heathrow Airport they seized the chance to make a quantum leap forwards, to a new way of working. The building needed to house over three thousand employees and be the physical launch pad for business success well into the twenty first century. One of the objectives of this building was to create a base from which people can better team work using flexible workspaces and the latest communications. To help achieve this British Airway identified feng shui as one of the ideologies that could be incorporated into the design process. The building itself had to support new ways of working together and more effective communication. To achieve this and provide maximum flexibility, the workspaces are all open plan. Even Bob Ailing, then chairperson, worked in an open plan environment. BA found that humans work most effectively in teams of four to eight people. Therefor the open plan areas were set up to work in teams of six to eight people. The chief architects' Niels Torp and Øyvind Neslein had begun to design the building in way that incorporated many of the fundamental feng shui principles. Coming from Norway where sun light is particularly important during the dark winters, they had carefully considered how each part of the building would benefit from natural light. They created the idea of building twelve separate houses connected by a main street so that each part of building receives plenty of natural light along with beautiful

BRITISH AIRWAYS

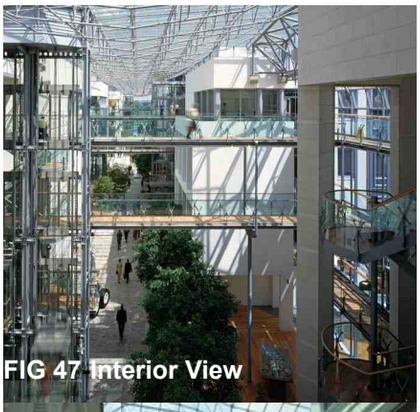


FIG 47-Interior View

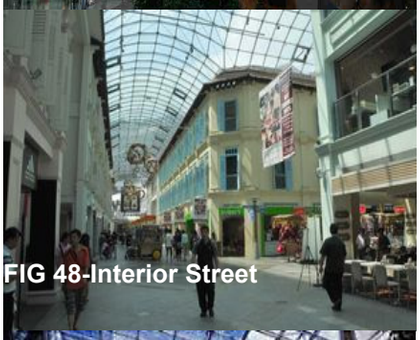


FIG 48-Interior Street

FIG 49-Roof

views of the parkland. Every part of the building has a bright sunny atmosphere. The Street that connects the twelve main office spaces is a wide pedestrian walkway covered by a glass roof. In the street are cafes, restaurants, bank, shops, meeting rooms, library and main reception area. All this is surrounded by parkland with lakes, trees and paths.

The following are positive Feng Shui features of the British Airways Waterside building. FENG SHUI AND LOCATION Not in the shadow of another building. The site is fortunate in that the building is not in the shadow of any other taller buildings which would lead to a deficiency of energy as the sunlight would be denied to the part of the building in the shadow. The whole building has good exposure to natural light and is therefor charged by all the different kinds of energy generated by the sun as it moves through the sky. FENG SHUI AND PARKLAND Surrounded by more natural healthy energy. The parkland surrounding the Waterside building will generate its own energy. The trees, bushes and grass will radiate a natural, organic energy which will drift through the Waterside building. This helps maintain a more natural healthy energy in peoples own bodies. Research in hospitals has shown that there is an advantage to being in bed close to a window with view of a natural landscape. There appears to be a psychological benefit to being able to see the kind of landscape that has the air, water and food we need for life. The Waterside building has been cleverly designed to ensure that everyone has views of the parkland or the courtyards between the houses.

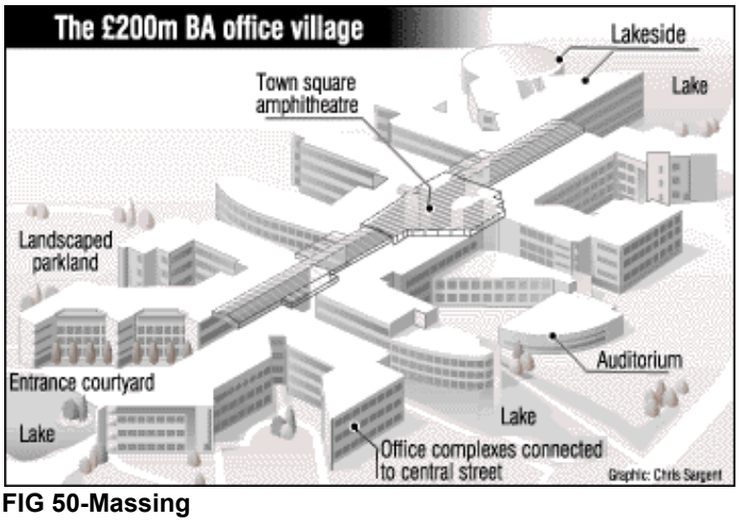


FIG 50-Massing

Architect: Urban Solutions
Completed: 2003- 2005
Braamfontain

FIG 51-Metro mall

The Bree station, or metro mall taxi rank was commissioned to cater for a transport and trader terminal in a people-friendly way, by providing spaces to traders which allow them to maximise the passing trade. It is known as the only shopping centre in Joburg without car parking, but with several floors of minibus taxis. Approximately 150,000 people pass through here per day on their way to and from the city centre from Soweto and the suburbs.

The building has been created to be hardwearing and low maintenance, using robust materials like red face brick and concrete finishes. The building is three stories tall, and is designed to accommodate 25 buses serving 35 different routes, with holding facilities for 2 000 taxis, servicing an estimated 100 000 commuters.

FIG 52-Metro mall

METRO MALL RANK

FIG 53-Metro mall

FIG 54-Metro mall


FIG 55-Metro mall


FIG 56-Metro mall

There is space for some 800 traders, inside the building and along the ground floor exterior in Bree and Sauer streets.

The buildings double volume entrances, which are decorated by local artists in mosaic and tall wooden sculptures, act as “collection baskets” to draw people into its interior. With this building, the architects strove to create a mixed use structure that blends with city buildings in the vicinity, allowing easy access and freedom of movement inside the building. The building has also turned a rapidly deteriorating side of the city into a vibrant, people place, at the same time providing a formal home for both taxis and traders.


FIG 57-Metro mall

BMW WELTS

Interpretation of identity through image and branding

The BMW welts building, from a programmatic and iconic point is an appropriate precedence in the sense that in light of the afore mentioned theoretical component of this thesis, the building incorporates all facets of the automotive process into a single structure. This notion has particular significance in relation to identity formulation and recognition. Secondly, the design of the building dramatically uses imagery and branding in order to further convey the notion of identity for the BMW brand. In light of the principals of identity design, the architects have followed both methodologies recommended for the creation of a structure that tacitly conveys identity.

BRITISH AIRWAYS

Expression of institutional ehtos through architecture

The brief of the B.A building was to create a building that not only managed to house the 3000 employees, but also simultaneously embody the institutional ethos of the B.A brand. The design had to be the enabler of the organizations operational requirements from its daily running to its organizational psychology. In essence, the building had to be the manifestation of the company's identity, not from a marketing view, but from an operational view. Thus in relation to this thesis, this design serves as an example of how architecture can be used to represent the ethos or defining culture of an organization. It further explains how identity does not only need to be created through imagery or branding, but can also be expressed through spatial and cultural articulation.

INTERPRETATION

METRO MALL

Programme and expression of urban transport architecture

Metro mall taxi precinct along with Bara taxi rank, serve as a new building typology for transport architecture in the new South Africa. The two buildings for the first time display a direct intent from the designers and commissioners to incorporate and align the informal economy with that of the public transport systems. There designs show the realization of the interdependence between the commuter public and the transport systems they utilise. In essence, it can be argued that their presence indicates an emergence of new definition of a “home”(SouthAfricainfo.co.za, Davie, 2005) for the public transport systems, namely taxis and busses. Thus, it can also be said that the designs of theses buildings represent an acknowledgement of the importance of the informal economy as well as the taxi industry. For the purposes of this thesis the metro mall precinct was examined dues to its city context. The building’s relevance as precedence is, further highlighted as the building also elucidates as to how the programmatic and urban transport architecture should be expressed.

CHAPTER SIX

CONTEXT ANALYSIS

CONTEXT

CITY

FRAMEWORK

SITE ANALYSIS

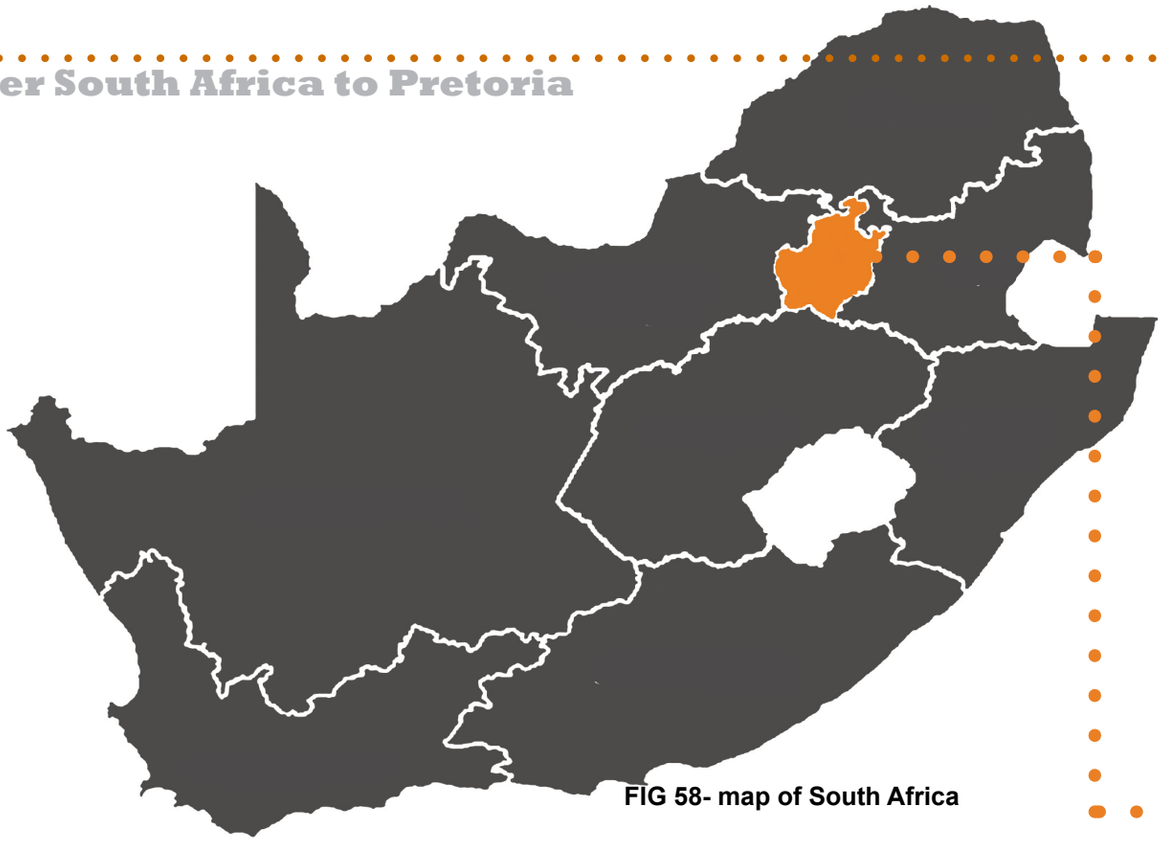


FIG 58- map of South Africa

Context:

Pretoria city is, predominantly viewed as a rigid, historically relevant, governmental city. Due to the fragmented nature of its growth of late, the city has also become synonymous with descriptions such as historic centre of commerce, low cost housing and transportation routes. This view disenables the city from fully taking advantage of its central character, as it only caters for the formal, mundane aspirations of its users. In order for the city to become a complete centre for sustained human settlement, it has to engage with all the needs of man including his marginal and experiential pursuits. By exploring, the capricious nature of man in conjunction with his more stringent aspiration, one could begin formulating the underlying principals needed to create a central zone geared at fostering social interaction and racial integration.

Systematically the city can make great steps in curbing the fragmented nature of the growing Tshwane, through the creation of a social realm within the city, which is designed to simultaneously address both formal and informal pursuits of the user. In so doing the city can become the holistic incubator, it needs to be, to redefine itself as the social nucleolus of Tshwane.

SITE LOCATION

In following suit with the capital status, that Pretoria holds, the CBD can in turn become the central transport node in which all registered and unregistered taxi associations culminate. This sentiment is, further enforced by the condition that the city currently holds as the central point from which a commuter would need to be in order to get to any other point within the greater Tshwane region.

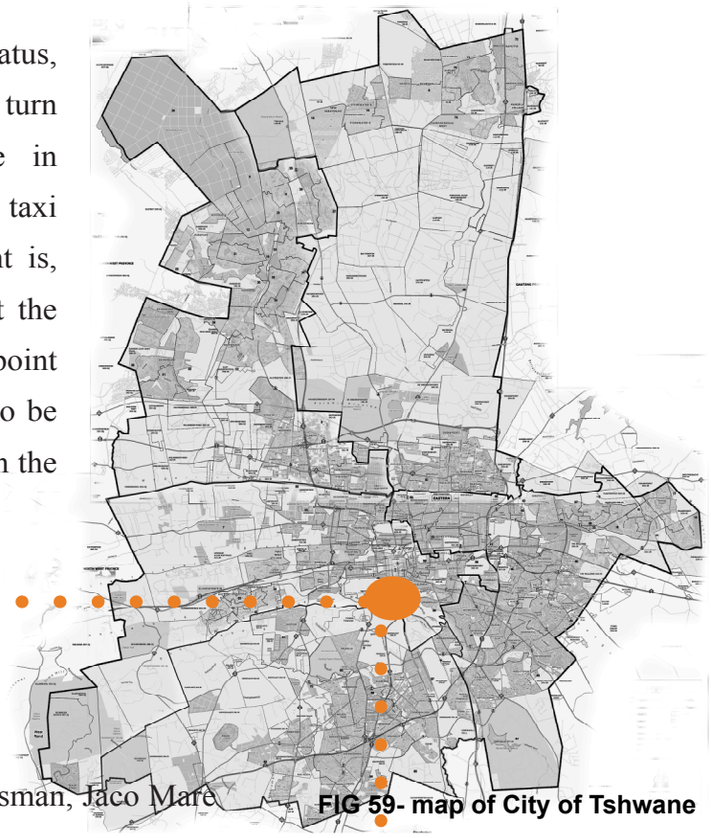


FIG 59- map of City of Tshwane

Site Address:

The site is located on the corner of Bosman, Jaco Mare and Scheiding Stree

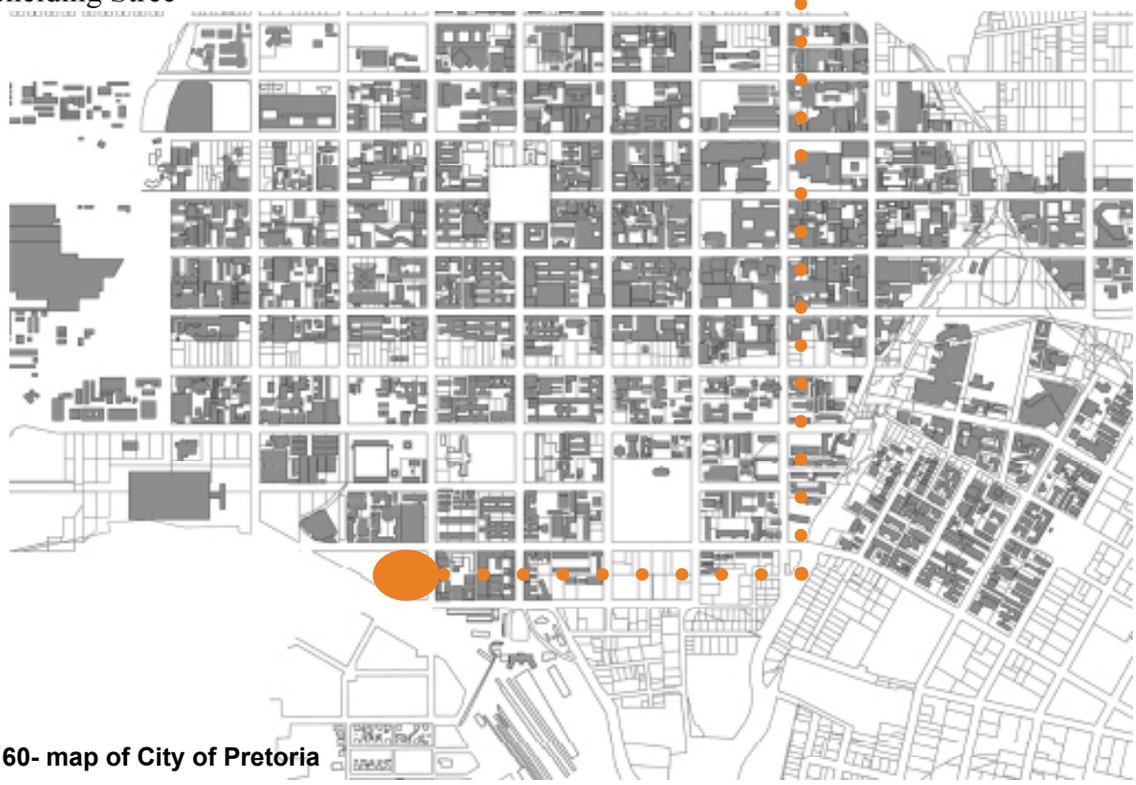
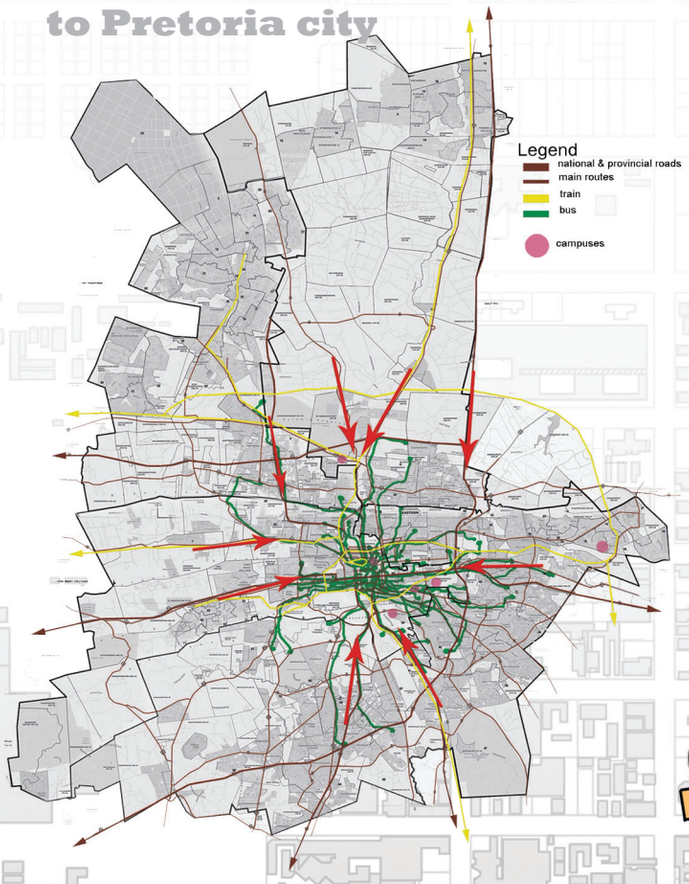


FIG 60- map of City of Pretoria

Tshwane metropolitan to Pretoria city



Public Transport and Primary Routes

FIG 61- map of City of Pretoria

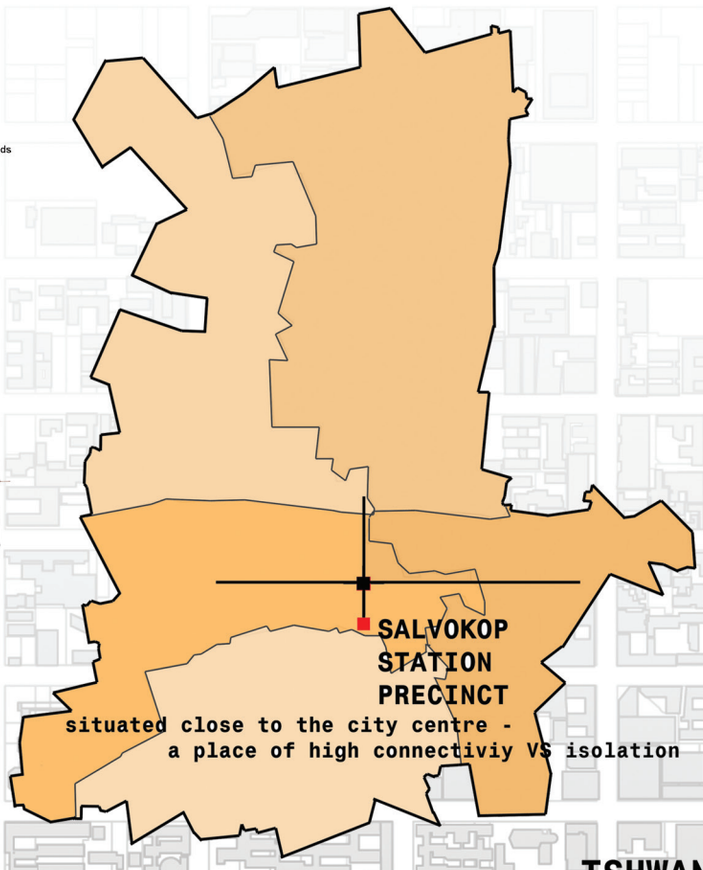


FIG 62- map of City of Pretoria

STUDY AREA

The study area of the design is located on the corner of Bosman Street and Jaco Mare Street. The area is located next to Pretoria station, the CBD, and sits adjacent to Salvakop. The situation posses a number of possibilities in the sense that directly adjacent to the site sits three different types of urban fabric. There is the City fabric, which is represented in the northern part of the study area, which has a number of high-rise buildings, with definitive street edges, then there is Salvakop, which lies to the south. This area is predominantly single story, and then there is the transport precinct (Bus, taxi and train), which surrounds the site. The design of the building would need to respond to all these conditions in a manner that gives credence to the scheme as a whole. The size of the site is also important, as there will be a need to further partition the site and zone new buildings that will compliment the scheme as a whole. The scale of the scheme will have to act as the buffer zone, or transition space between the three contrary fabrics of the CBD, Salvakop, and the transport nodes.

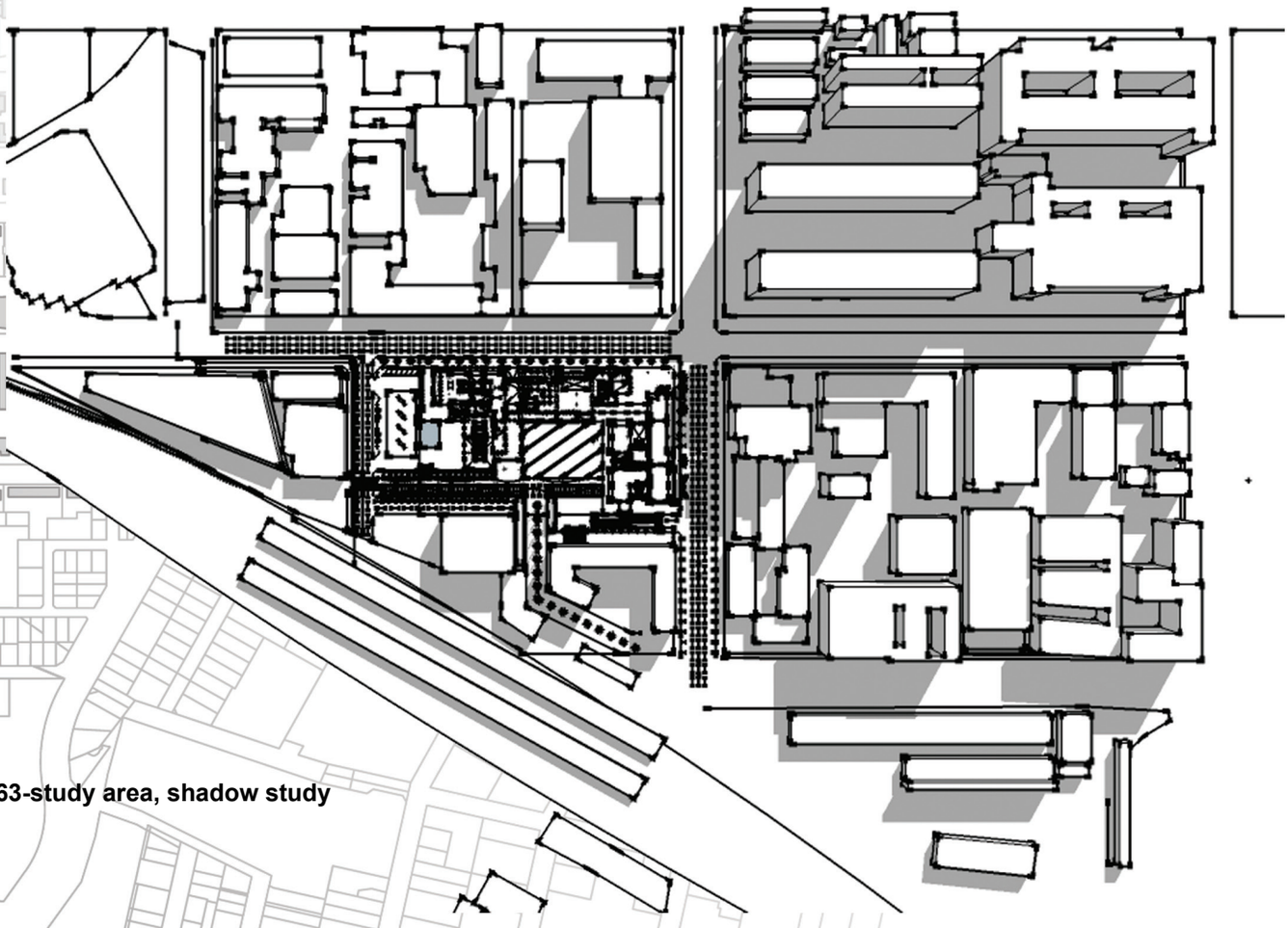


FIG 63-study area, shadow study

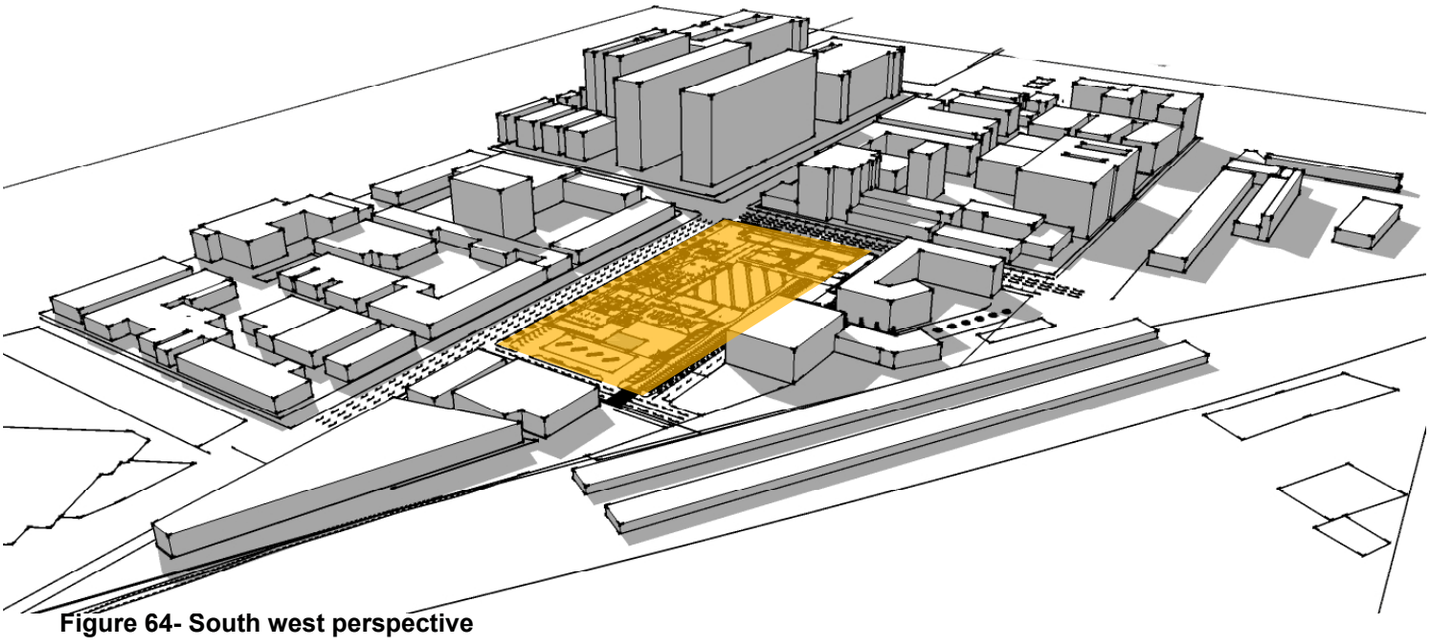


Figure 64- South west perspective

The following images represent the view from the northwest and southwest perspective of the site. The image indicates the shadow study in the morning periods, as well as the massing of the buildings that fall within the study area.

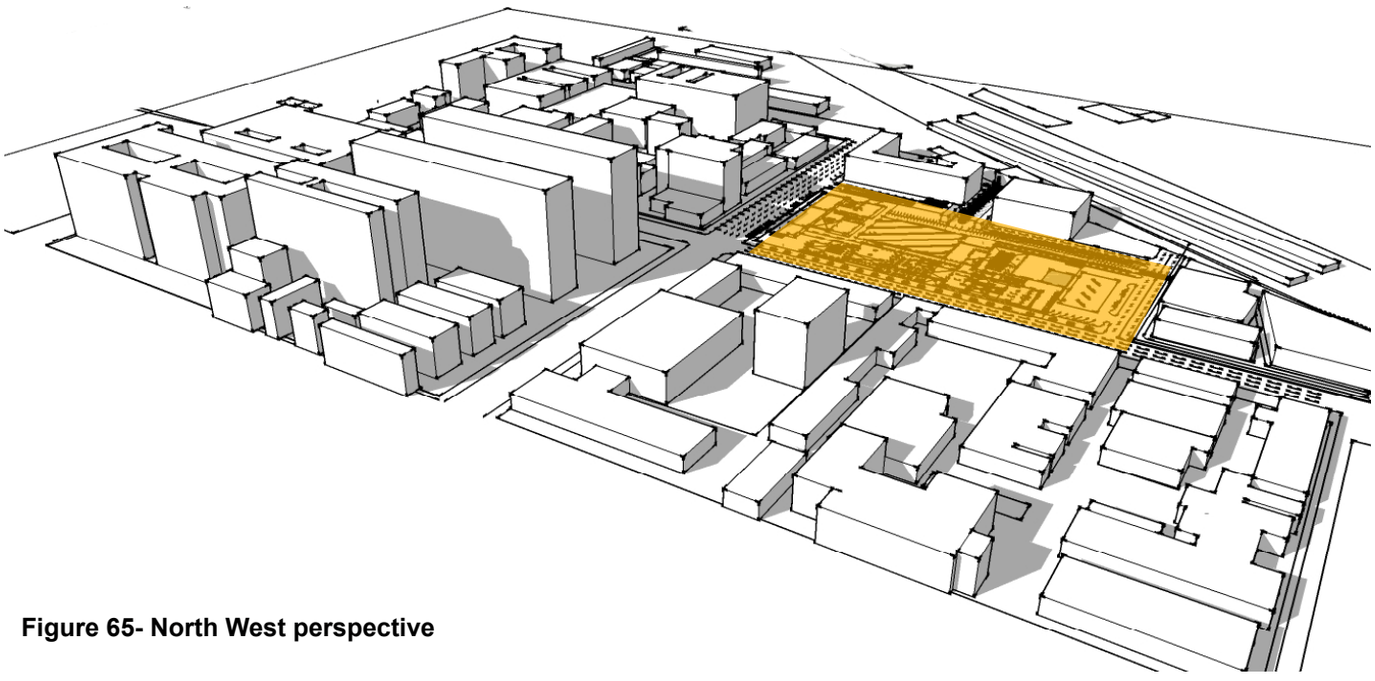


Figure 65- North West perspective

STUDY AREA

WEATHER CONDITIONS

Pretoria is located in the northern edge of the Gauteng province, approximately 1 370 meters above sea level. The city is further firmly nestled within the valleys of the Magaliesburg mountain range. This location, lends it to the following conditions.

RAINFALL:

Like most of Northern South Africa, Pretoria has experiences summer rainfall patterns, with a majority of its rainstorms occurring in the afternoon periods. The winter seasons are primarily moderately cold yet with sunny skies.

The city receives an estimated 700mm of rainfall per annum.

TEMPERATURES:

The average summer temperatures range from 15°C - 28°C.

The average winter temperatures from 6°C - 23°C

WIND:

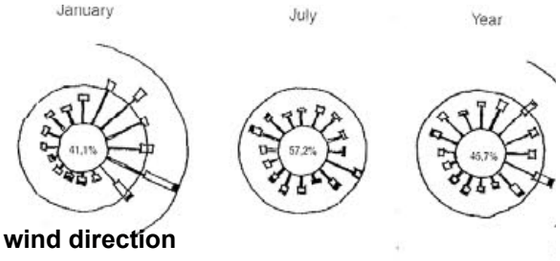


FIG 66- Annual wind direction

The predominant wind directions are as follows

Summer: East-North to East-South-Easterly

Winter: South Westerly

MONTH	TEMPERATURES		RAINFALL	
	Average daily maximum	Average daily minimum	Average monthly (mm)	Average number of days >= 1mm
January	29	18	136	14
February	28	17	75	11
March	27	16	82	10
April	24	12	51	7
May	22	8	13	3
June	19	5	7	1
July	20	5	3	1
August	22	8	6	2
September	26	12	22	3
October	27	14	71	9
November	27	16	98	12
December	28	17	110	15
Year	25	12	647	87

FIG 67- Annual rainfall patterns

City of Pretoria Transport nodes
Pedestrian and Vehicular movement

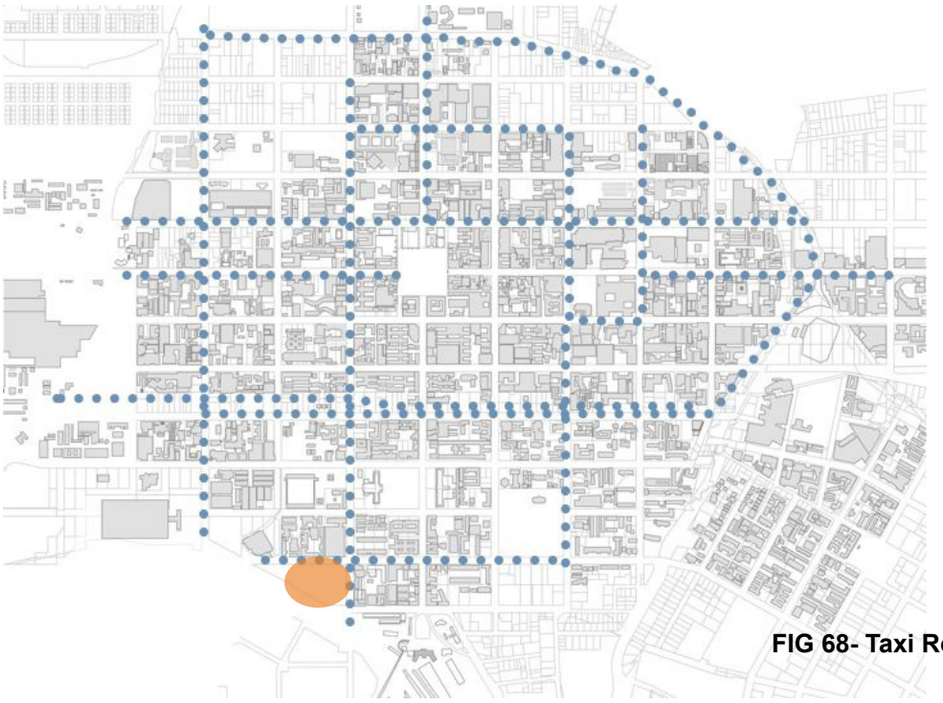


FIG 68- Taxi Routes through city

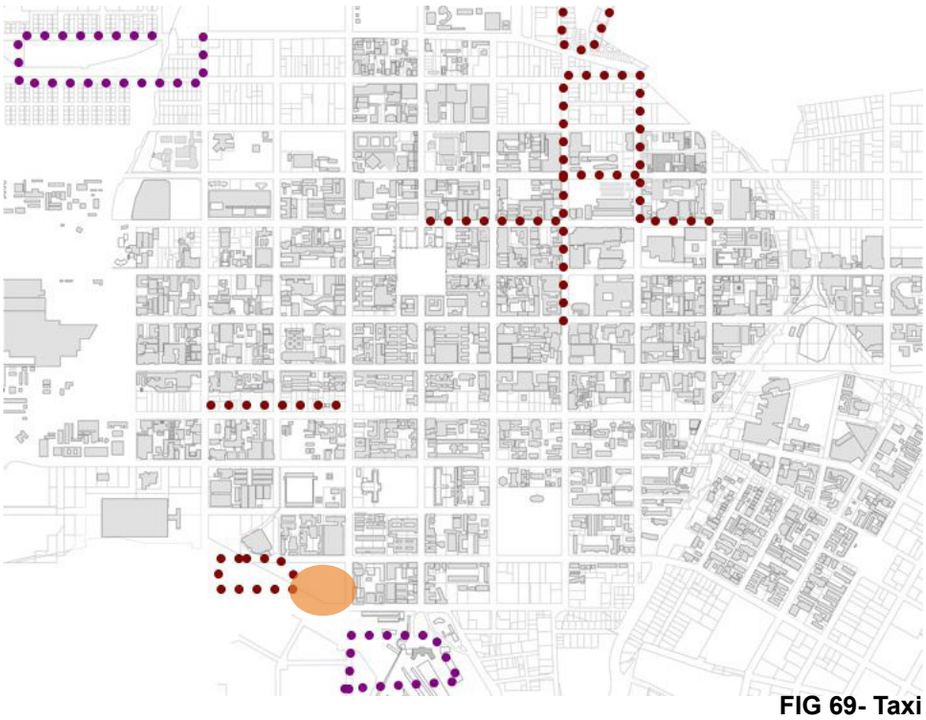


FIG 69- Taxi Ranks in city

CITY ANALYSIS

FIG 70- Pedestrian movement

FIG 71- Bus stops

Pretoria Station and Salvakop Link Framework

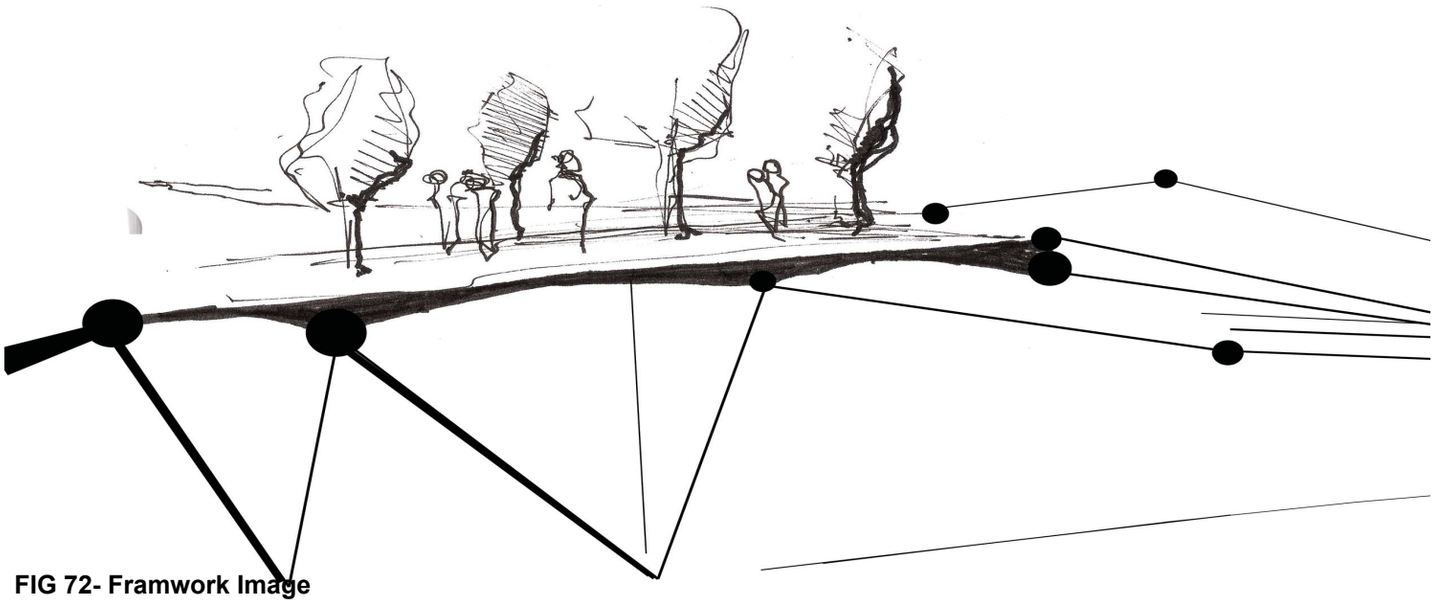


FIG 72- Framwork Image

Focus Area

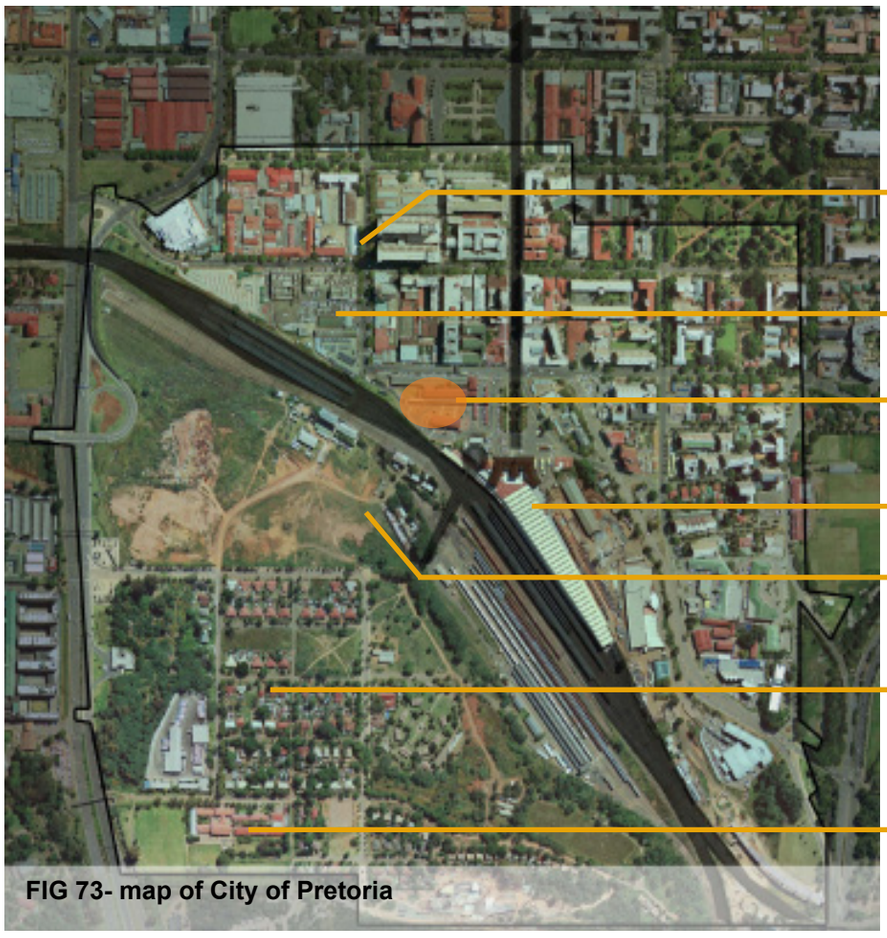
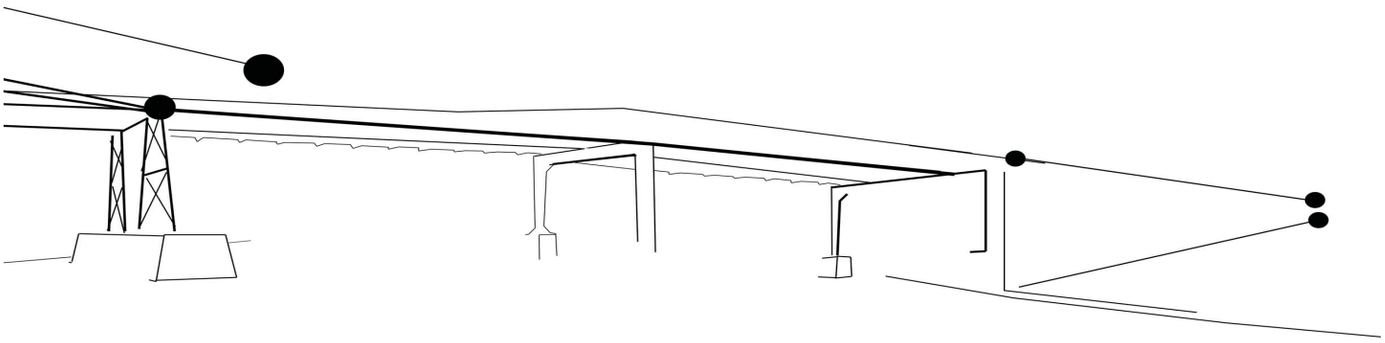


FIG 73- map of City of Pretoria

FRAMEWORK

LINK

framework linking Salvokop with the city



Functional Mapping

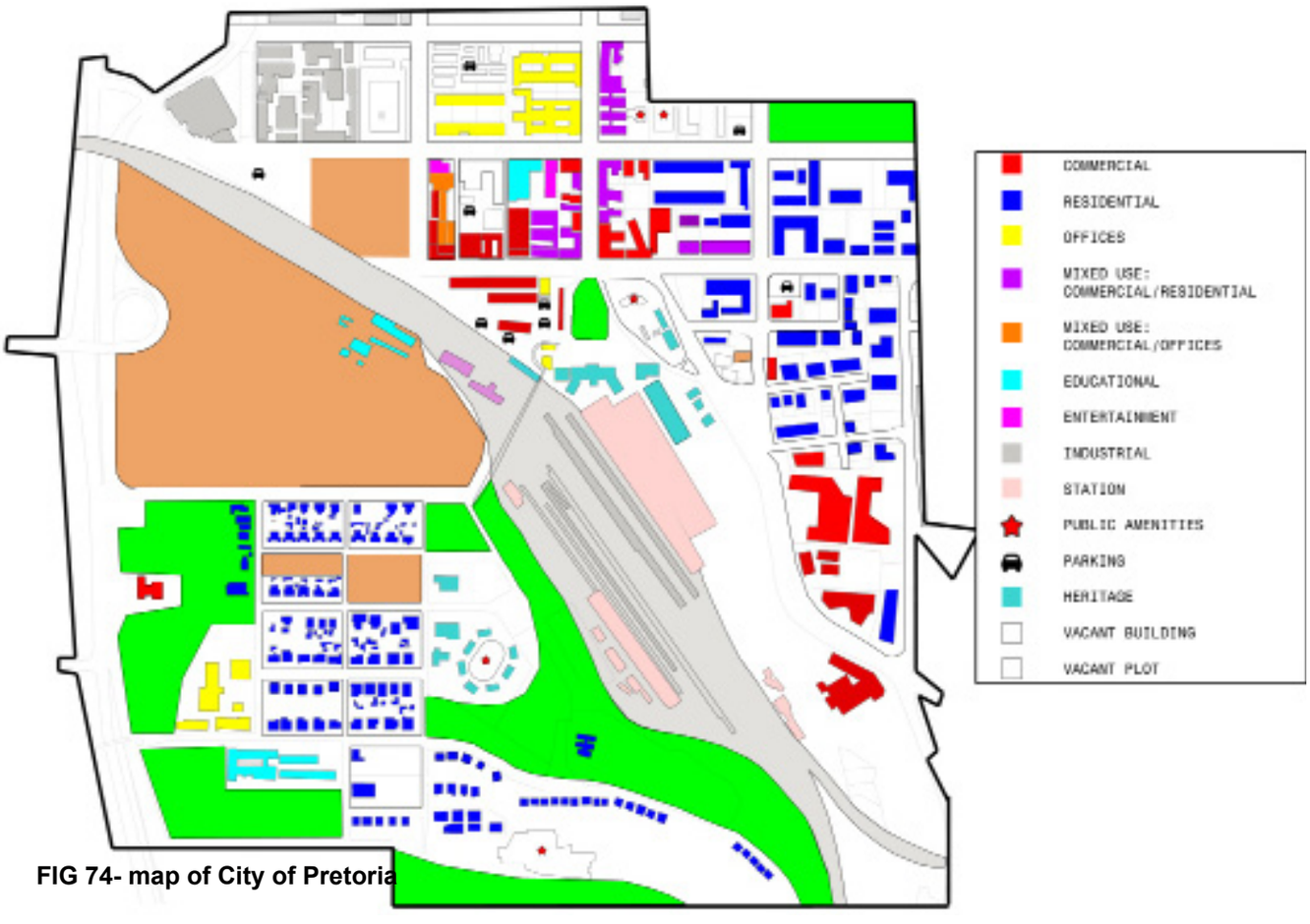


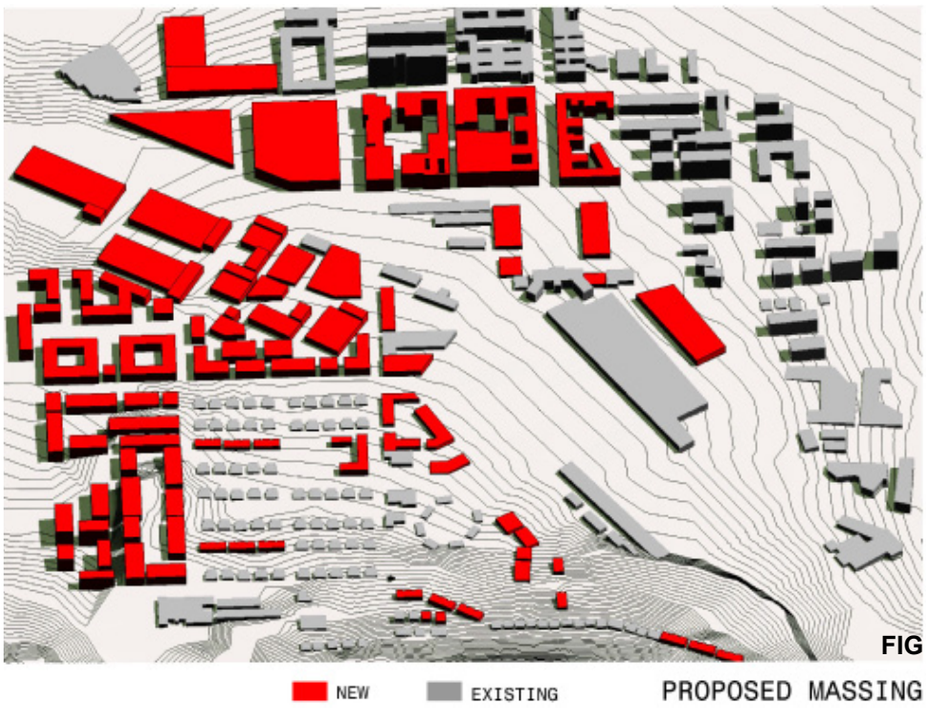
FIG 74- map of City of Pretoria

Green Edges

The introduction of green areas along the intervention area, increases pedestrian comfort, thus further pedestrianising the streets.

FIG 75- Framework, objectives

Massing



The intention of the framework, is to increase the density of the city scape. By increasing the density, the city allows for greater access to amenities, and for the better use of services.

FIG 76- Framework, objectives

FRAMEWORK

Objectives

- Densification of open unused land along the train station periphery
- Create links over the train tracks, to improve connection between town and Salvakop
- Activate the edges along the train track, by introducing activities along the perimeter of the tracks
- Establish special relations, between transport hubs, and pedestrians
- Increase parking area
- Activate small alleys
- Focus area to become gate way between town and Salvakop
- Address the backs of buildings

FIG 77-Framework, objectives

FIG 78- Panoramic View of site

FIG 79- Ariel View of Site

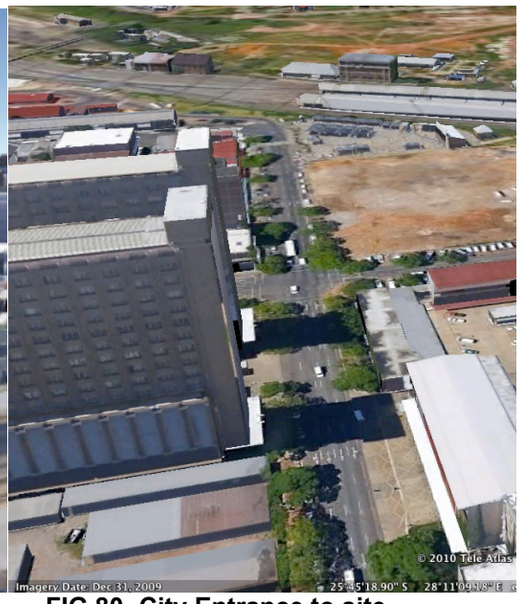


FIG 80- City Entrance to site

SITE IMAGES

FIG 81- Corner View of Site

COUNCIL PROVIDED SITE INFORMATION, & CLIMATICS

CONSOLIDATED TITLE DIAGRAM

SIDES metres		ANGLES	
AB	97,63	A	90.00.00
BC	110,56	B	90.41.30
CD	79,46	C	157.20.20
DE	152,82	D	174.52.00
EA	319,58	E	27.06.10

S.G.No. A
Approved
7279/89
for SURVEYOR-GENERAL

ORD. No. 15/1988
Section 96
Certificate

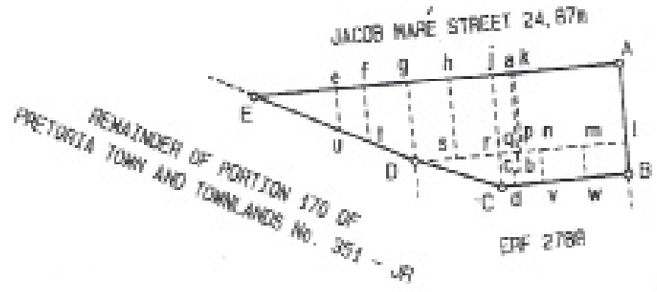
BEACONS REPLACED
0
SR. No. 2162/88

DESCRIPTION OF BEACONS :

A . . . . . 12mm Iron peg
B . . . . . 12mm Iron peg in concrete
C . . . . . 15mm x 1,35m Iron peg in concrete block
D . . . . . 12mm Round iron peg

COMPONENTS :

1. The figure aABdcba represents Erf 2833.
   Vide Diagram S.G.No. A 1857/69. Deed of Transfer No. T 24599/1969.
2. The figure EabcdCDE represents Erf 2991.
   Vide Diagram S.G.No. A 2338/66. Deed of Transfer No. T 40762/1967.



SCALE : 1/5 000

The figure A B C D E A
represents 2,1748 hectares of land being

ERF 3366 in the township of
PRETORIA

and comprises components 1 and 2 as tabulated above

Province of Transvaal
Compiled in May 1989 by me

J L WILLIAMS
Land Surveyor

This diagram is annexed to
No. T 13609/1990
d.d.
i.f.o.
Registrar of Deeds

The original diagrams are as tabulated above

File
S.G.No.
G.P. TP 637
Comp. JR-7A-4/81

SURVEYSRAFIX - Tel. (012) 667-0150

EXAMINATION FEES PAID
for SURVEYOR-GENERAL

CITY OF TSHWANE
CITY PLANNING
2010 -05- 18
GEOMATICS
METROPOLITAN MUNICIPALITY

FIG 82- Council site information

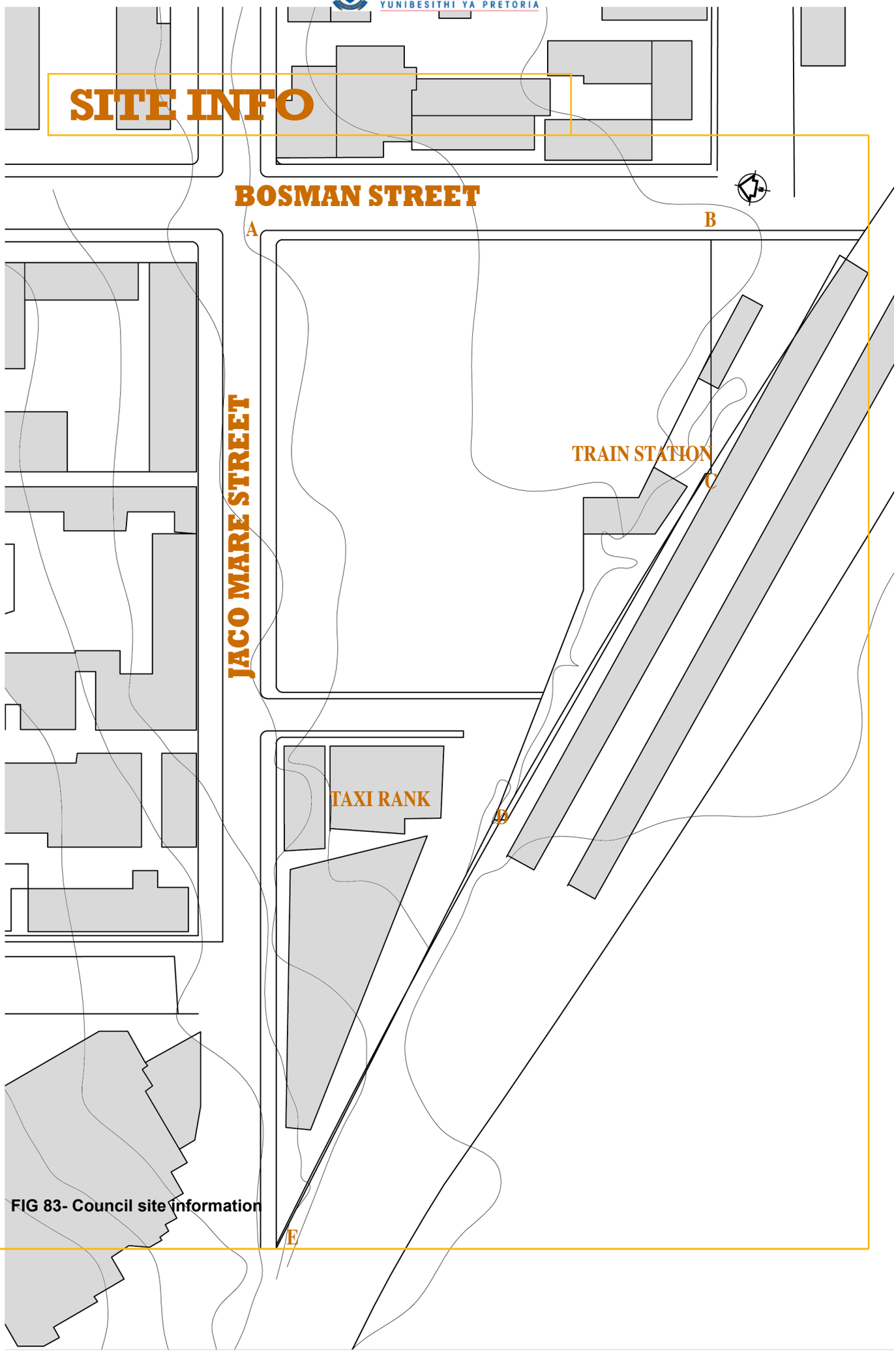


FIG 83- Council site information

Existing Conditions, and Proposed Additions based on analysis

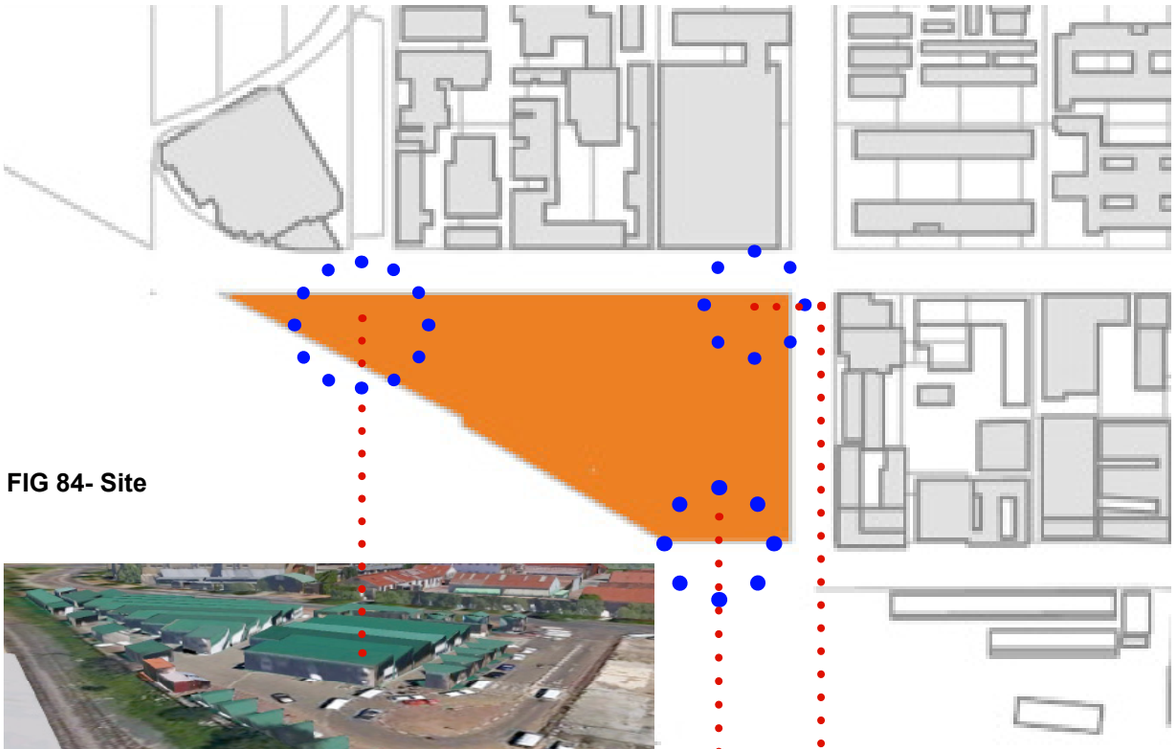


FIG 84- Site

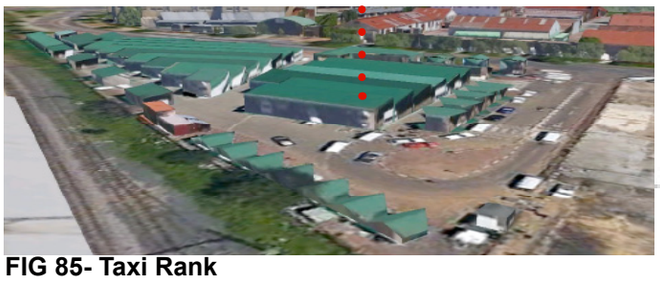


FIG 85- Taxi Rank

FIG 86- Train Station entrance

FIG 87- Entrance to the City

The Site, has three prominant nodes, the first is the north corner, which is the first contact point for people comming from the city.
The second is the train station end, which is the entry and exit point for commuters coming in and out of the city via train.
and lastly, is the taxi rank end, whic is the contact point for commuters who use taxis to come in and out of town

SITE ANALYSIS

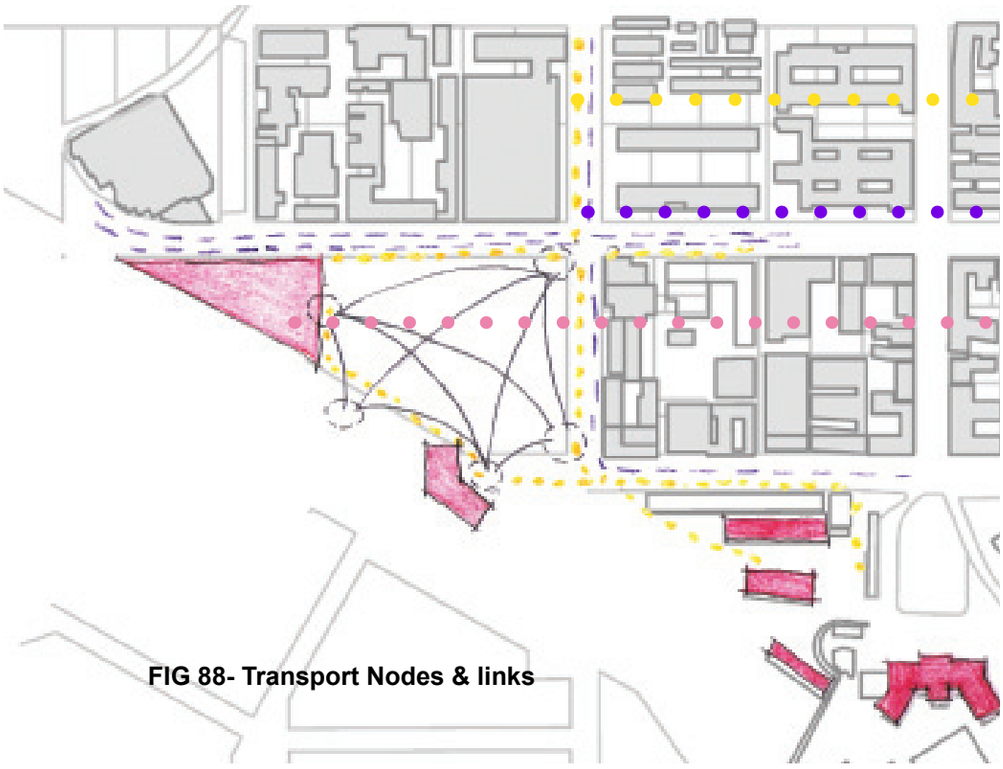


FIG 88- Transport Nodes & links

the images shows, the major transport nodes around the site, and their respective entrance and exist. the image further depicts how pedestrians move to and between the different transport modes

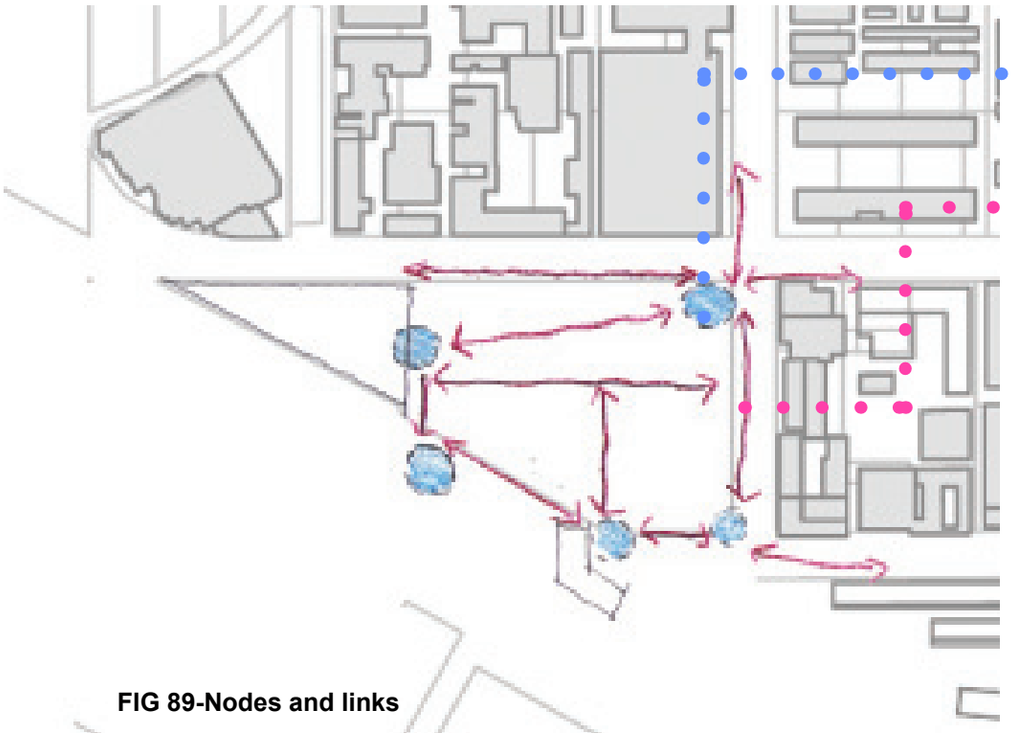


FIG 89-Nodes and links

the images shows, the major transport nodes around the site, and their respective entrance and exist. the image further depicts how pedestrians move to and between the different transport modes

CHAPTER SEVEN

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

DESIGN DEVELOPMENT

CONCEPT

DESIGN DEVELOPMENT

SITE FRAMEWORK

CONCEPT FORMULATION

When formulating a concept, which is intended to instill upon the taxi industry, a new identity, the first course of action would be to decipher exactly what the taxi industry was and meant to its daily users, and stakeholders. The manner in which to do this would be to follow a qualitative research methodology where by strategic questions would be asked to all pertinent parties involved in the industry. Once a tangible conclusion was reached from that, the next course of action was to follow the prescription of the theoretical research, in defining what methodologies one should use in formulating identity. In so doing, one would have both the tangible, metaphorical, and pragmatic meaning of the industry in conjunction with the theoretical backdrop of identity formulation. Both of which, when used simltaneously can be used to conceive a coherent inclusive identit

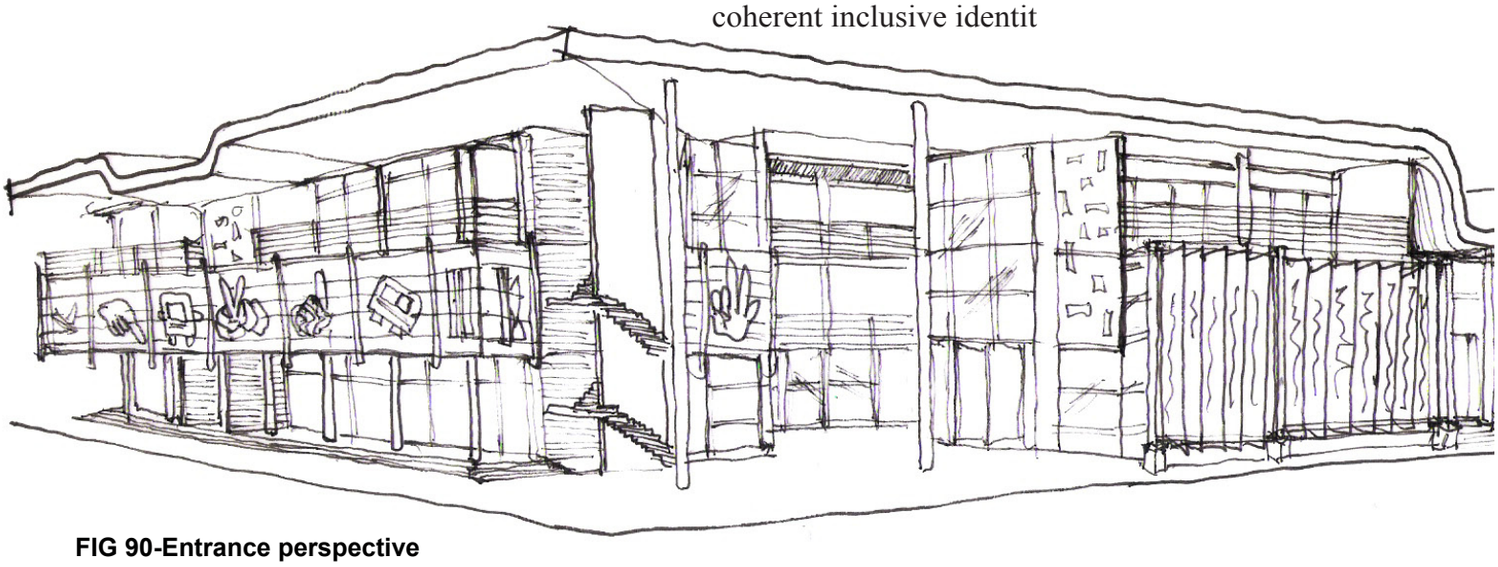


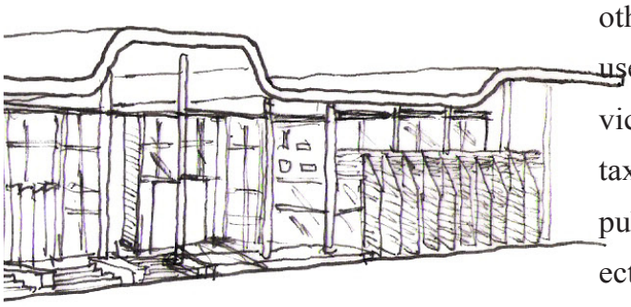
FIG 90-Entrance perspective

DESIGN CONCEPTS

CONCEPT GENERATOR 1

In beginning to understand what the taxi industry is, one has to negate its current one-dimensional perception, of it primarily being a renegade public transport system. Instead, one has to adopt a holistic approach, which incorporates not only its current perception, but also its allegorical meaning. In essence, one would have to find a meaning, which would still hold true, if all taxis where to conform to operational norm, and taxi drivers where to obey road rules with in a day. It is only once one has this un-wavering, meaning, can one then begin to formulate a new identity for the industry.

To begin one has to look at who the taxi industry primarily caters for, and what significance the industry has to that segments life. The first impression one would have is that it serves as the primary transport mode, but to attribute mean to that one would have to understand what having that transportation means to its users. Being that the taxi industry principally caters for the lower income bracket/ working class members of society, its is feasible to assume that the industry also serves as an economic enabler to that demographic. So other than just a transport mode, it is also what enables its users to move from their private lives to the public lives and vice versa. From that analogy, one can then deduce that the taxi industry represents the journey one has to undertake from public to private, disenfranchisement to economic opportunity ect. Thus, in conclusion from this correlation the formulation of identity of the taxi industry would have to represent its inherent meaning of journey.



CONCEPT GENERATOR 2

The second approach in formulating an interconnected concept for formulating identity would be to follow the prescriptions dictated by the theoretical research done earlier on in the document. Because this thesis primarily deals with attributing meaning to a social construct, one has to follow a method that incorporates both social identity theory, and architectural typology. The resultant ideology should then be the summation of the two doctrines, and should clearly be able to illustrate how architecture can be used to formulate, quantify and even articulate identity.

As stated in the theoretical component of this document, the method in which to formulate identity is to structure the identifying elements in a manner that is indicative of the entity they are intended to represent. In the case of the taxi industry the modus operandi to implement in formulating identity is through the re-appropriation and re-defining of its formative, expressive and operational elements.

In order to give credence to the concept and the theoretical response, one has to express the resultant product in an architecturally expressive manner. The manner in which architecture could give meaning or identity to the industry is in three ways. Firstly, it is through a programmatic response that exemplifies the factions of the industry. Secondly, the architecture would have to express the narrative of the taxi industry. Finally, the architecture would have to represent the re-appropriation if the current typologies associated with the taxi industry. In so doing one can immediately begin to associate the structure with the industry, as it will comprise of all the attributes of the industry, thus formulating a new identity.

DESIGN CONCEPT

FACET INTERACTION

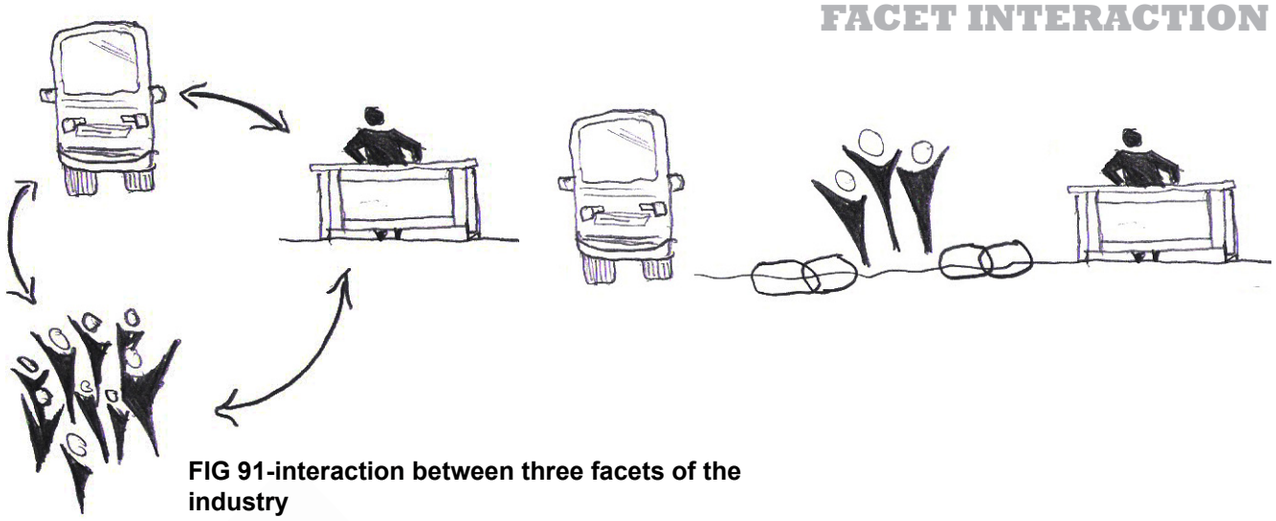


FIG 91-interaction between three facets of the industry

SOCIAL CONNECTION

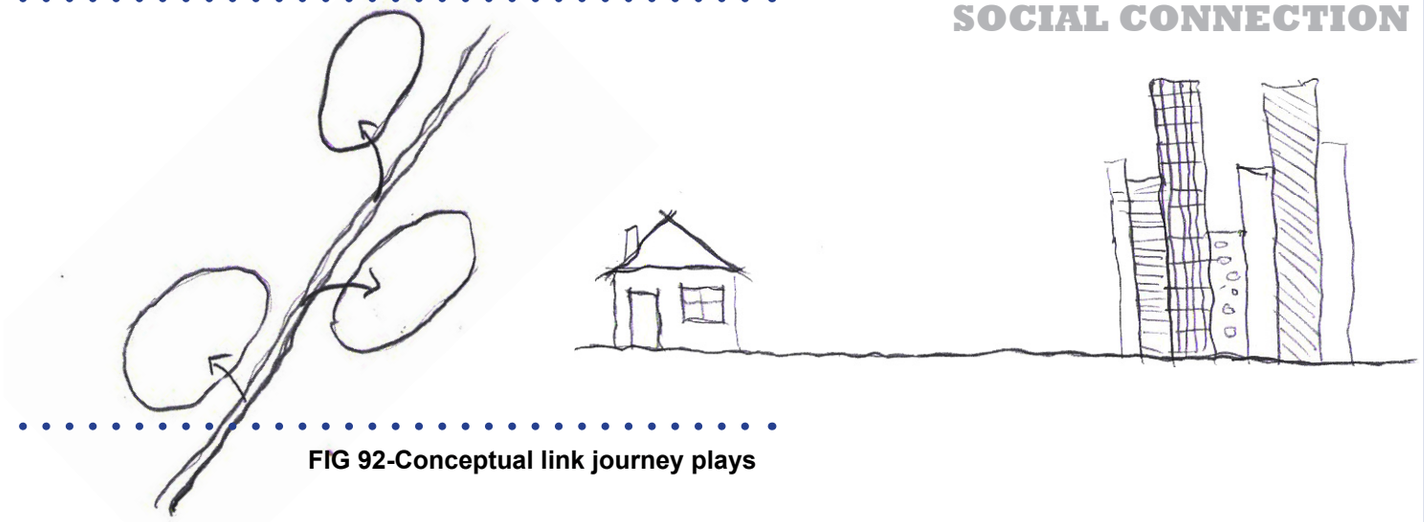


FIG 92-Conceptual link journey plays

TYPOLOGY RE-APPROPRIATION

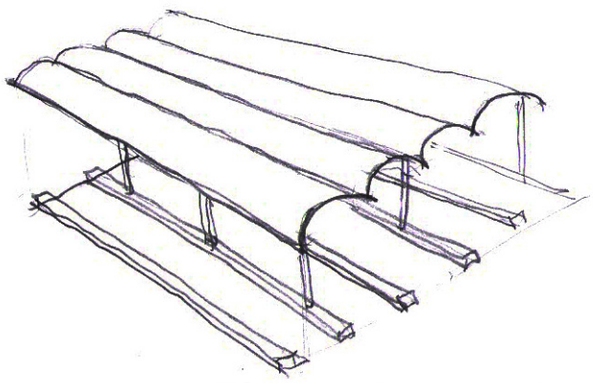


FIG 93- re- using typology in order to formulate identity

DESIGN GENERATORS

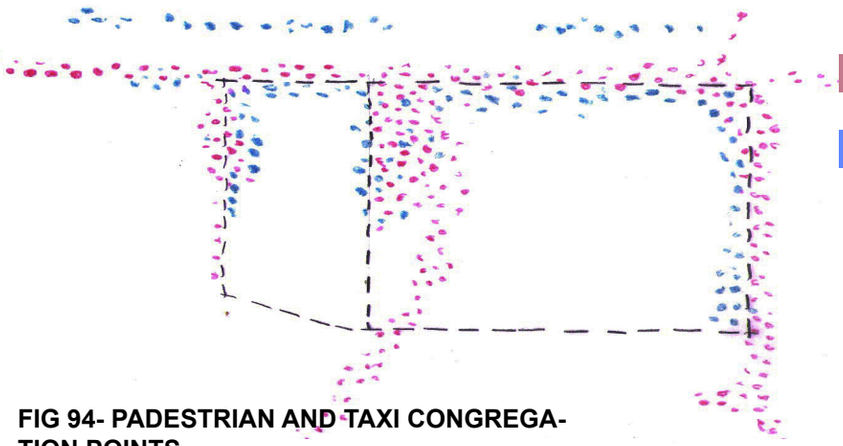


FIG 94- PADESTRIAN AND TAXI CONGREGATION POINTS

LOCATION OF MASS GATHERINGS

Padestrain Gathering

Taxi Gatherings

Image indicates where along the site, padestrians and Taxis ongregate

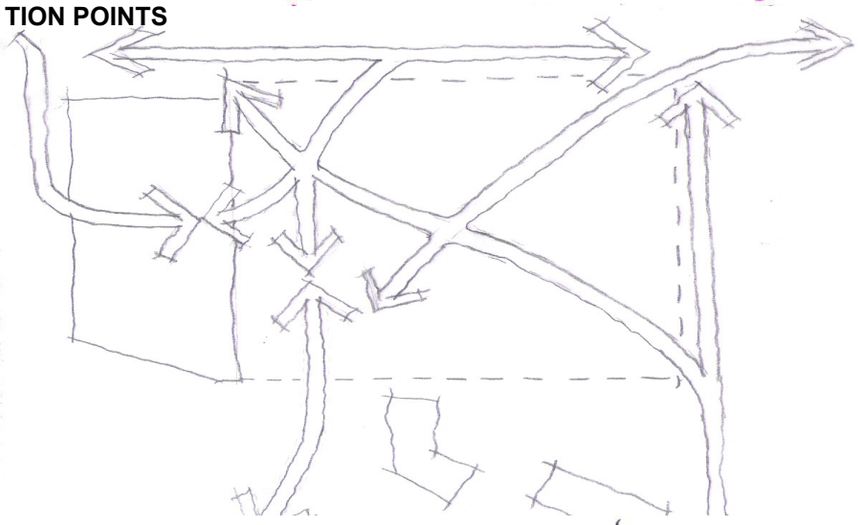


FIG 95- PEDESTRIAN MOVEMENT

PEDESTRIAN MOVEMENT

Image indicates the conceptual movement of padestrians befor the site had been fenced off

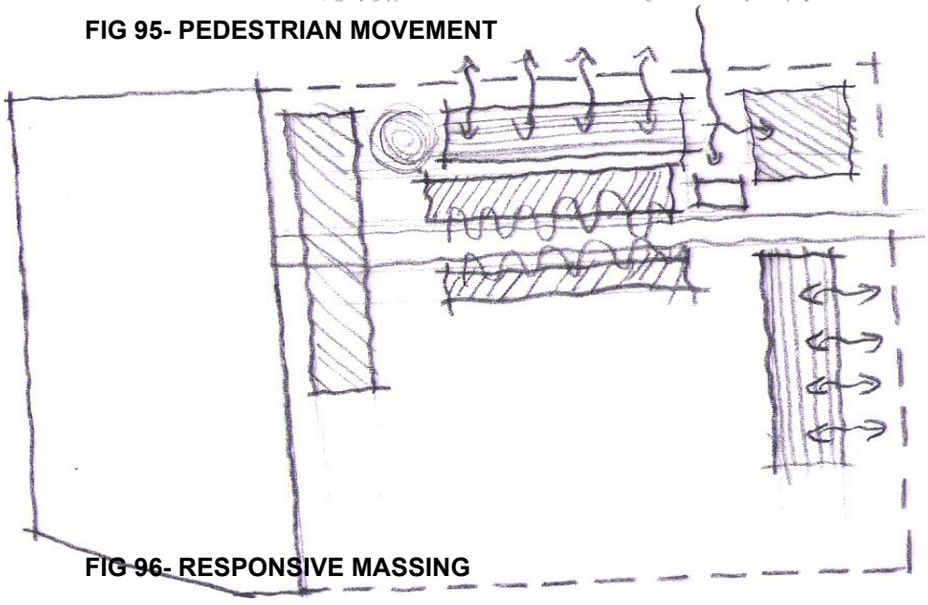


FIG 96- RESPONSIVE MASSING

CONCEPTUAL MASSING

Image indicates the conceptual Massing of what the intervention might be, if it had to respond to the current urban fabric

DESIGN GENERATORS

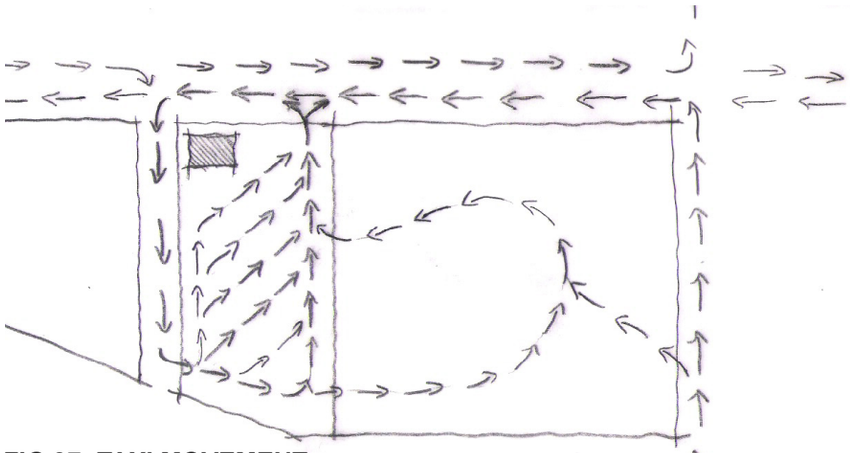


FIG 97- TAXI MOVEMENT

TAXI MOVEMENT

Image indicates the conceptual movement of taxis, as they would be required to interact with the site. the movement represents the conceptual notion of having the taxis be programmaticly part of the building

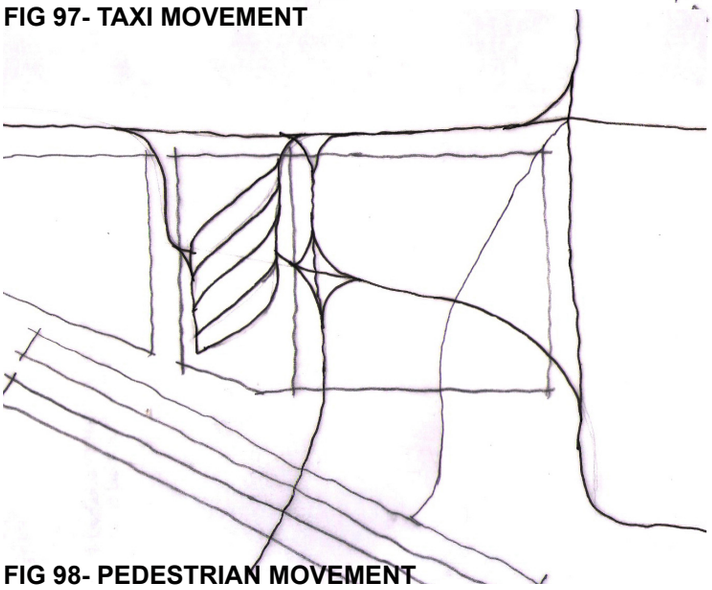


FIG 98- PEDESTRIAN MOVEMENT

PEDESTRIAN MOVEMENT

Image indicates the conceptual movement of pedestrian befor the site had been fenced off. The image also represent how they pedestrians move through the adjacent taxi rank

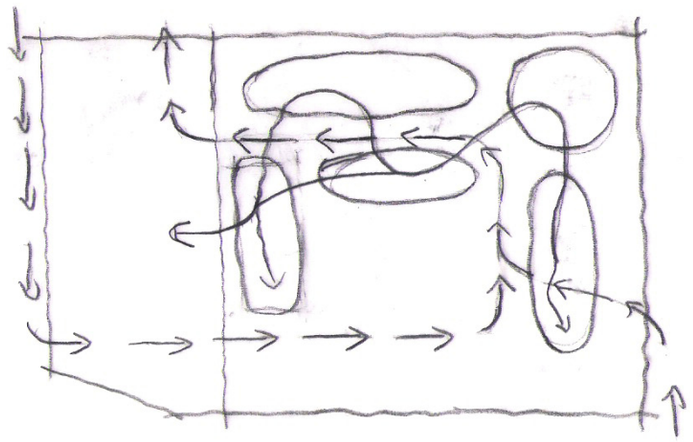


FIG 99- TAXI AND PEDESTRIAN MOVEMENT ON SITE

CONCEPTUAL MOVEMENT

Image indicates the conceptual movement of people between the suggested massing. the movement would represent an interactive program

Movement, massing and interactions between programatic spaces

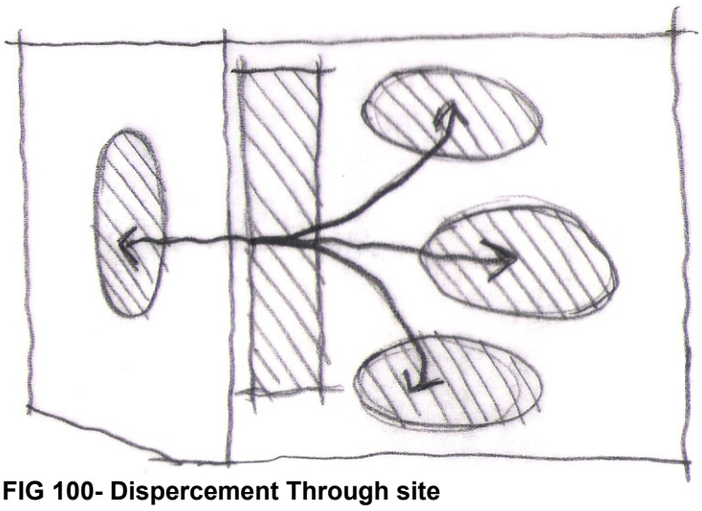


FIG 100- Dispercement Through site

DISPLACEMENT THROUGH SITE

The following image indicates the conceptual displacement of padestrians from the taxi rank into the site. By spreading the program, one can activate the whole site.

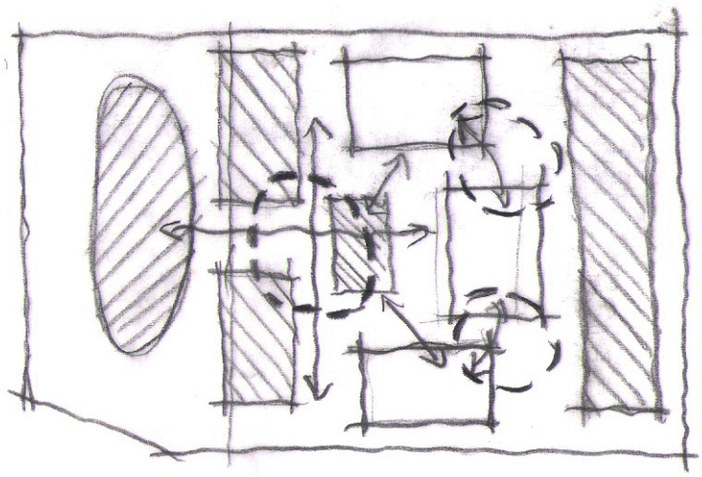


FIG 101-Activation of Nodes

SPATIAL ARTICULATION AROUND NODES

The image represents the need to activate nodes and buffer zones between primary programatic areas. In so doing one gives credence to all left over spaces.

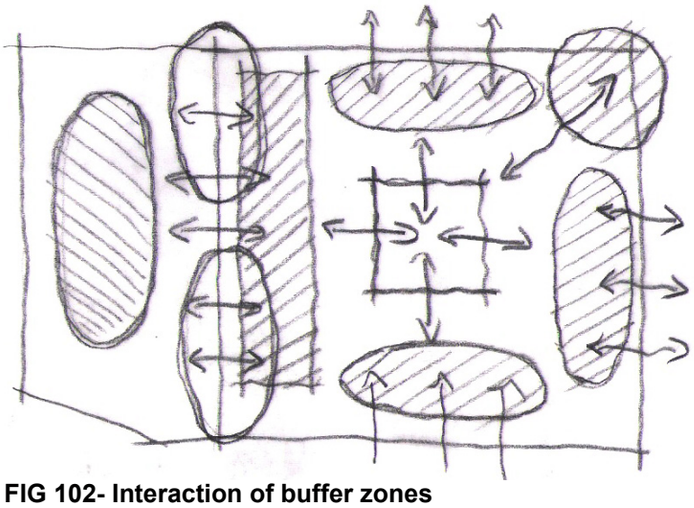


FIG 102- Interaction of buffer zones

INTERACTION BETWEEN BUFFER ZONES

Image represents the intention of having programitc activites along major edges on the site. The intention is to improve social interaction be tween the site and its surrounding context. buffer zones would be used to active intermediate spaces.

DESIGN CONCEPTS

CONCEPT 1

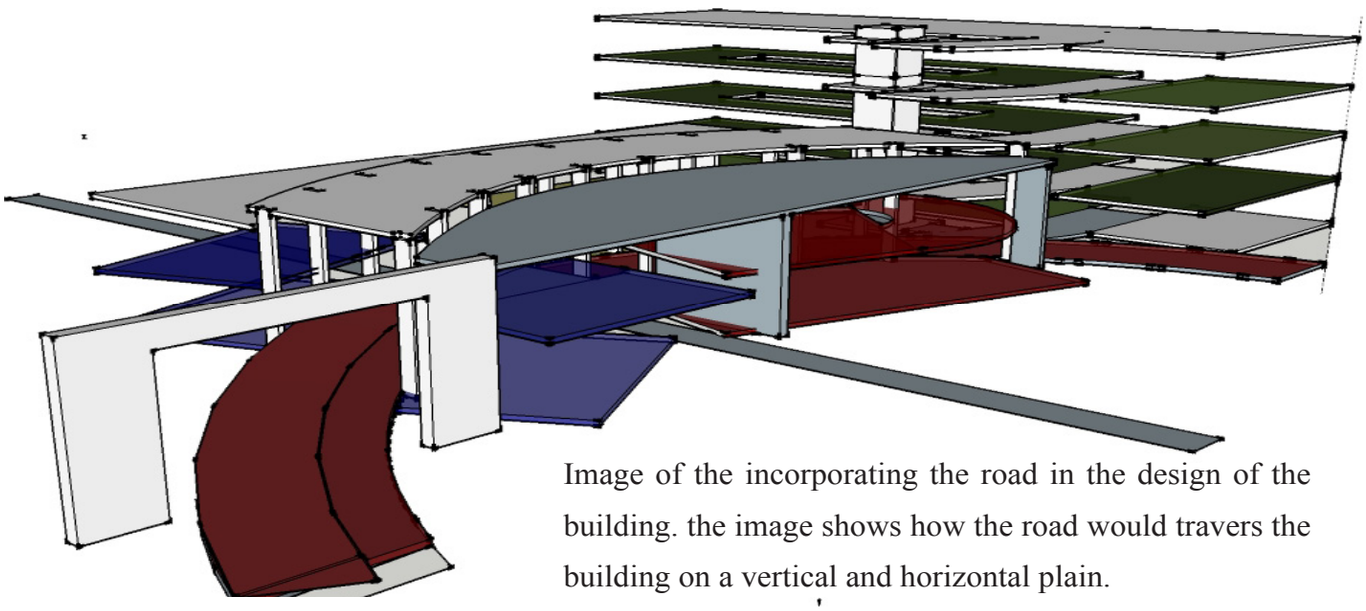


Image of the incorporating the road in the design of the building. the image shows how the road would travers the building on a vertical and horizontal plain.

FIG 103- Concept Model 1

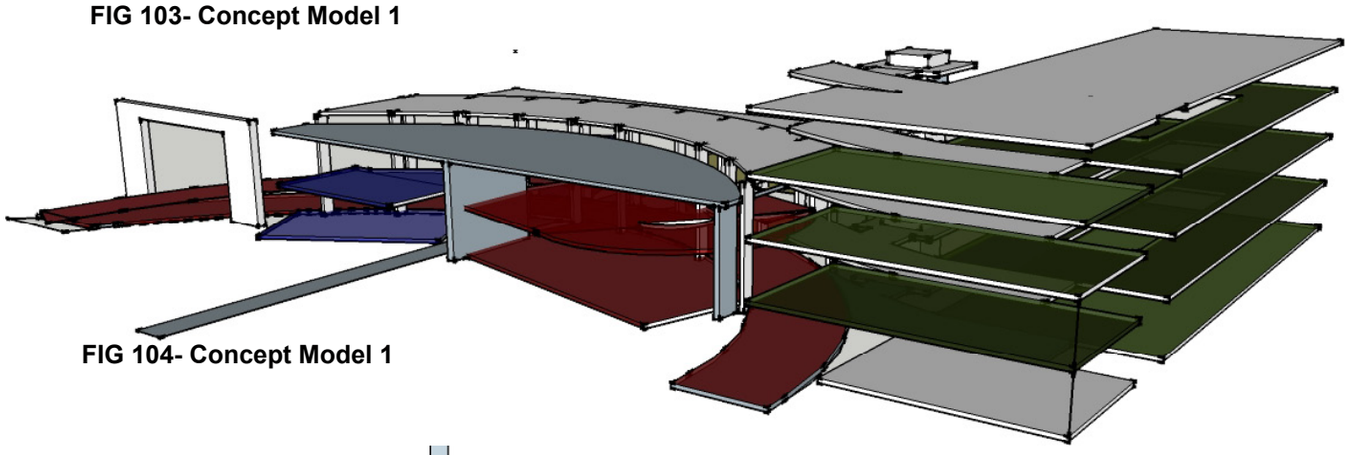


FIG 104- Concept Model 1

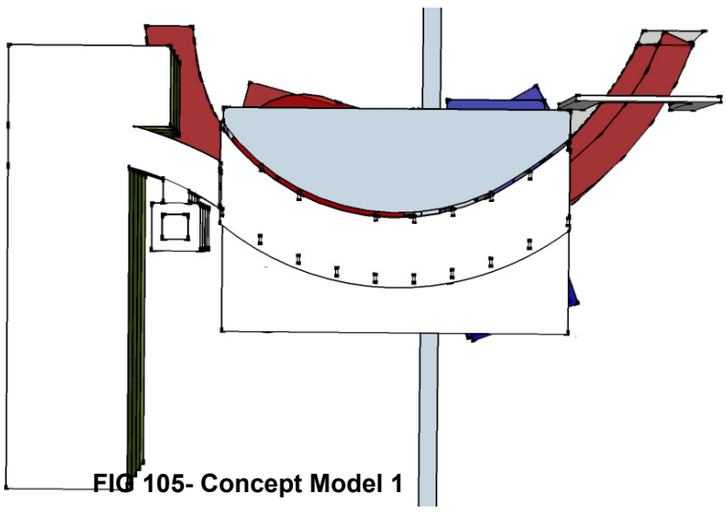


FIG 105- Concept Model 1

The initial concept originates around the idea of incorporating the taxis metaphorical home (being the road) and including it in the design of the building. The intention was to allow the taxis to become part of the program of the building, and since the idea was to instill identity for them, allowing them full access to the building would do this.

Movement, massing and interactions between programatic spaces

CONCEPT 2

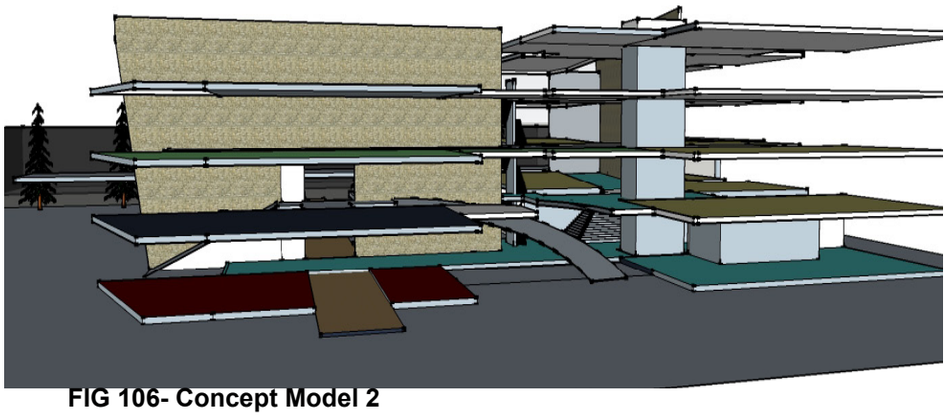


FIG 106- Concept Model 2

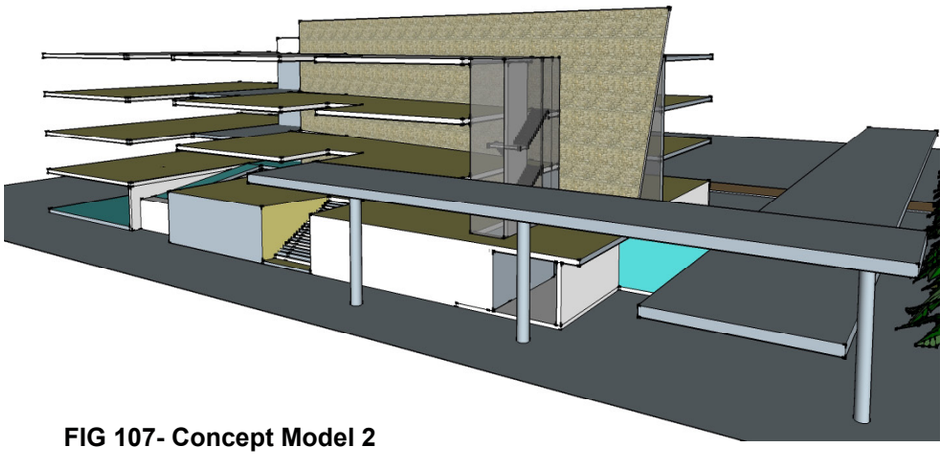


FIG 107- Concept Model 2

The second concept was centered around two conceptual ideas, the first was to emphasize the notion of the taxi being the primary user of the building, thus enabling taxis to move vertically and horizontally through the building, the second was to increase the general public's passive involvement in the ongoing of the taxi industry. The scheme's flaw was that it did not spatially link the formal aspect of the industry with the informal aspect. The third concept followed the same principals, but lacked the identifying elements or architectural gestures that would give the building the sense of identity. In essence the building did not represent the industry, but rather could house any program.

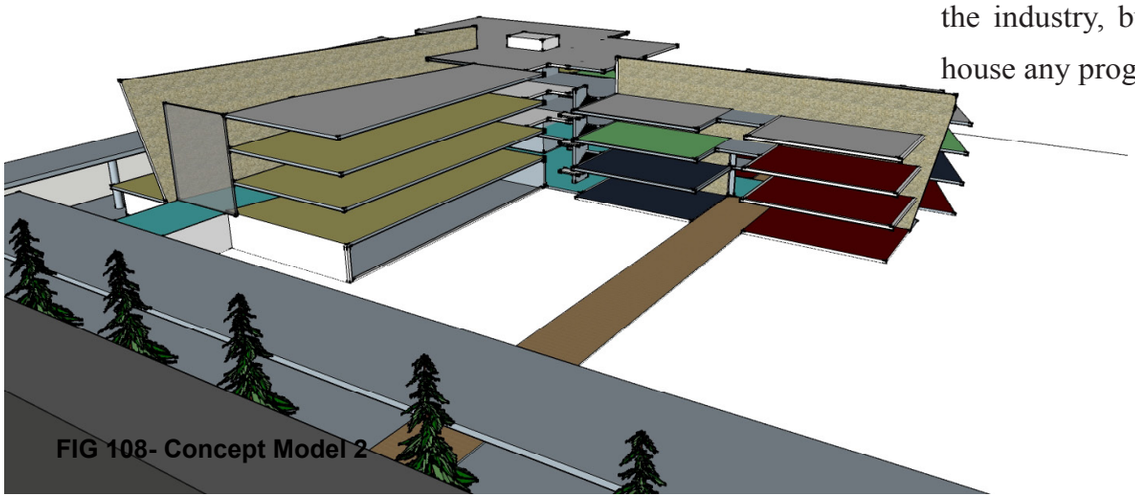


FIG 108- Concept Model 2

DESIGN CONCEPTS

CONCEPT 3

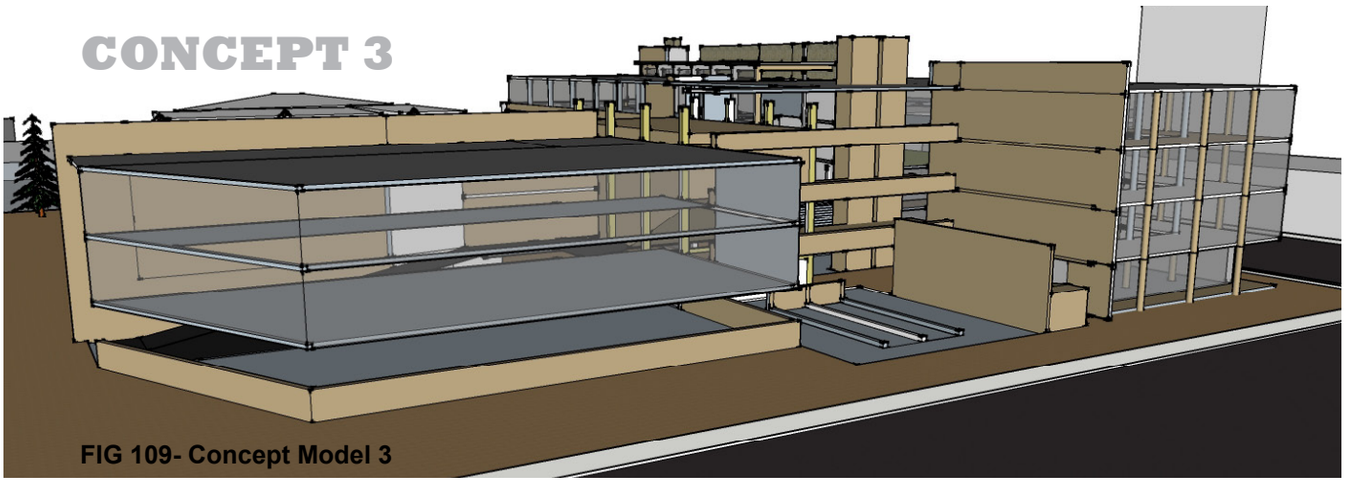


FIG 109- Concept Model 3

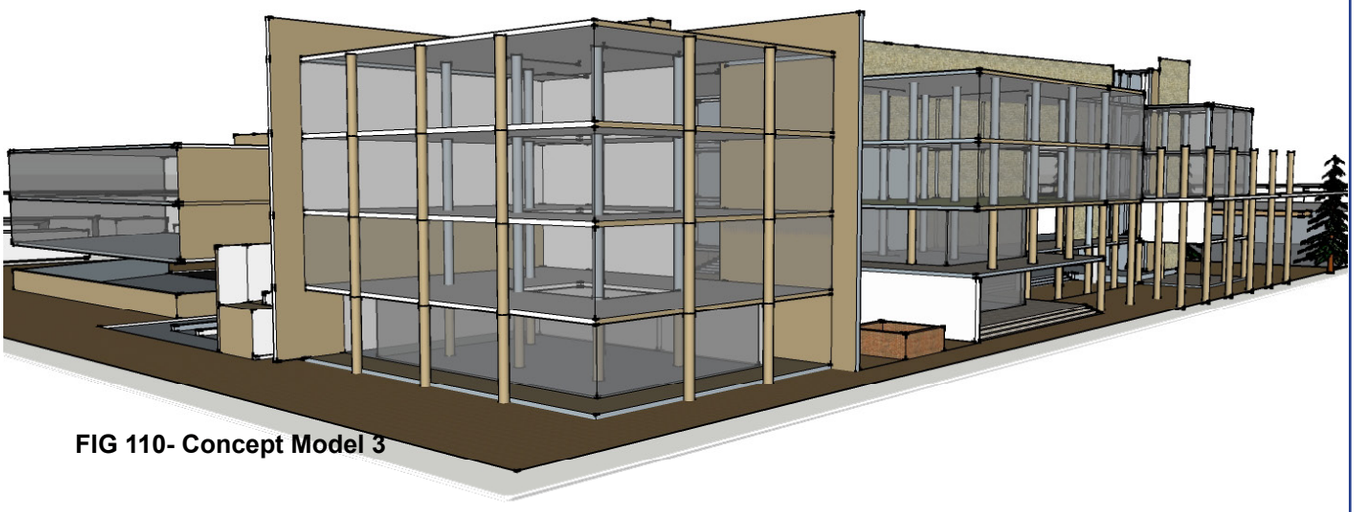


FIG 110- Concept Model 3

FIG 111- Concept Model 3

FAILURES, SUCCESSES

In the beginning the entire design process from concept generation to initial design, was completely computer generated. The process had the following positive and negative aspects

Process

Successes:

- Efficiency in time management in relation to work input and out put.
- Computer generated images allowed for easier 3D representation of scheme

Failures:

- Lacked the design fluidity of hand drawings
- Led to the design process being rushed
- Critical conceptual stages where missed

Design Orientated

The positives that could be drawn from the digital investigation, was that in order to better achieve the goals set out in the design brief, is that the design would need to articulate the three facets of the industry better. There would have to be a more coherent articulation of the programmatic spaces, in order to give credence to the design as a whole. Further, more the idea of identity needed to be explored more through the articulation of not only the programme, but also through the architectural expression. The design of the building would need to Implicitly represent the taxi industry and not just serve as a building that could in all certainty serve any programme. The digital experience led to a new investigation of how the building should not only respond to the brief, but also its context. The greatest differentiation between the digital process and the proceeding design process was the architectural language response to the brief.

DESIGN CONCEPTS

CONCEPT 4

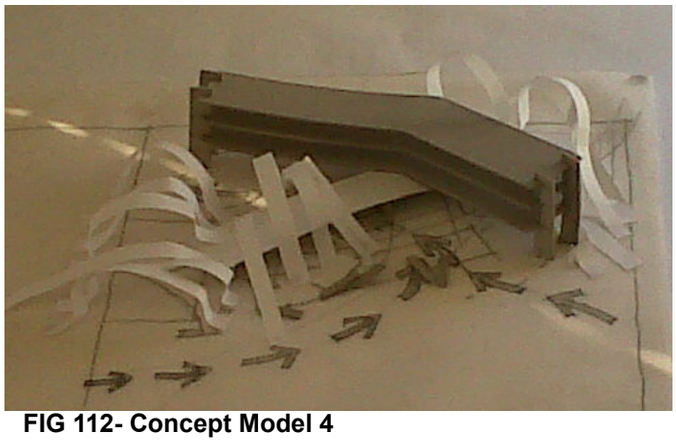


FIG 112- Concept Model 4

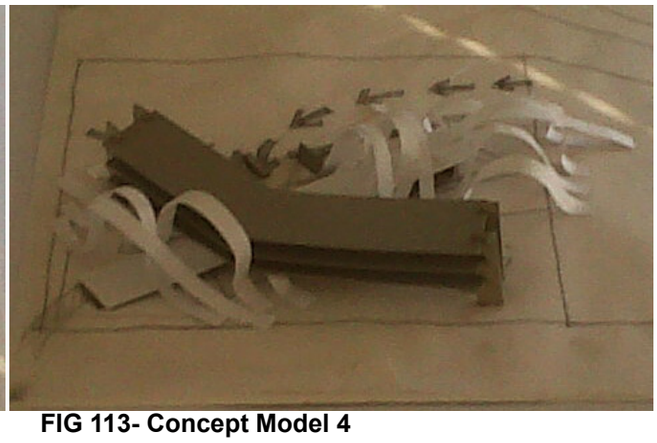


FIG 113- Concept Model 4

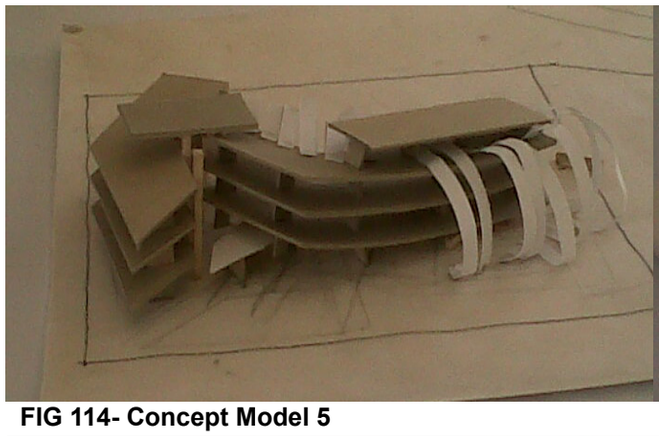


FIG 114- Concept Model 5

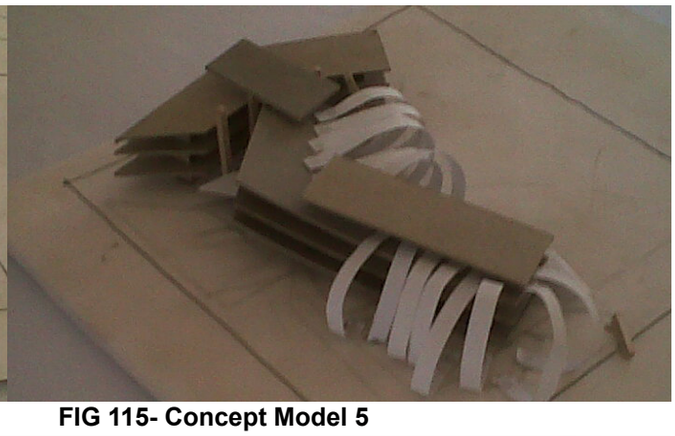


FIG 115- Concept Model 5

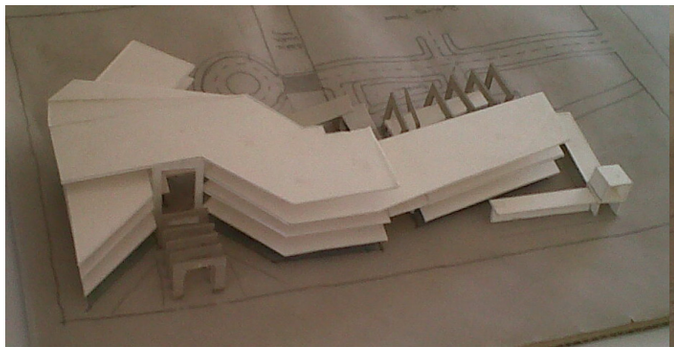


FIG 116- Concept Model 6

FIG 117- Concept Model 6

The above represented models represent the design investigation after the digital period of the design development. The building's form is intended to signify a move from the previously rigid and orthodox form of the previous design. The change of from is symbolic of the fluid nature of the taxi industry, is meant to highlight the main primary social spaces, and the linkages between them

SITE FRAMEWORK 2

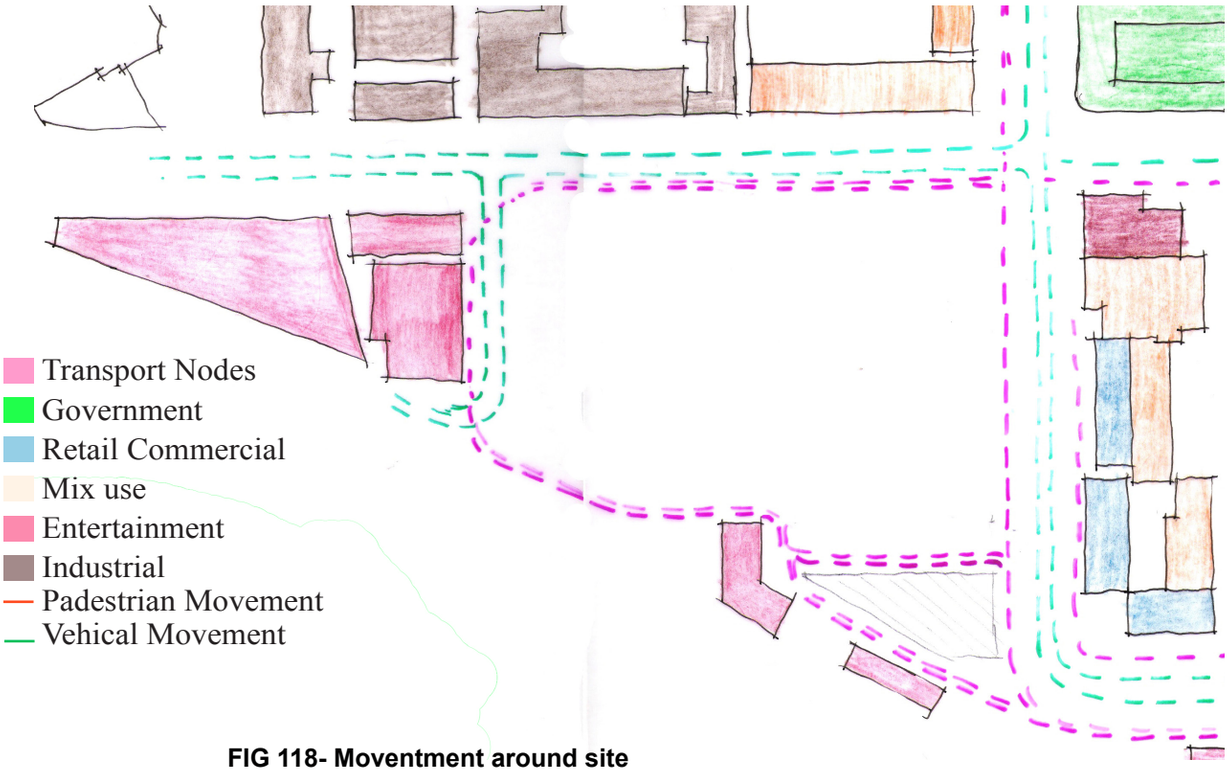


FIG 118- Moventment around site

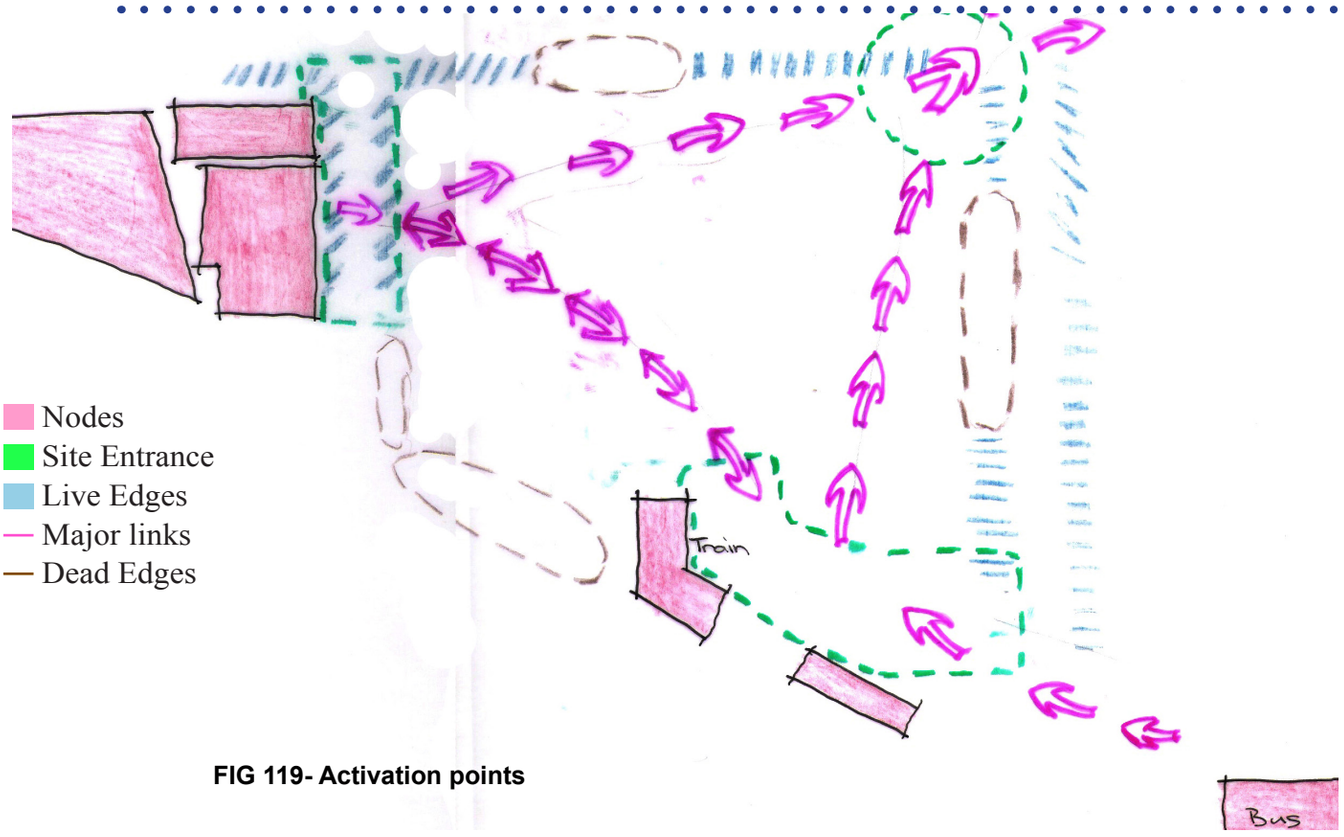
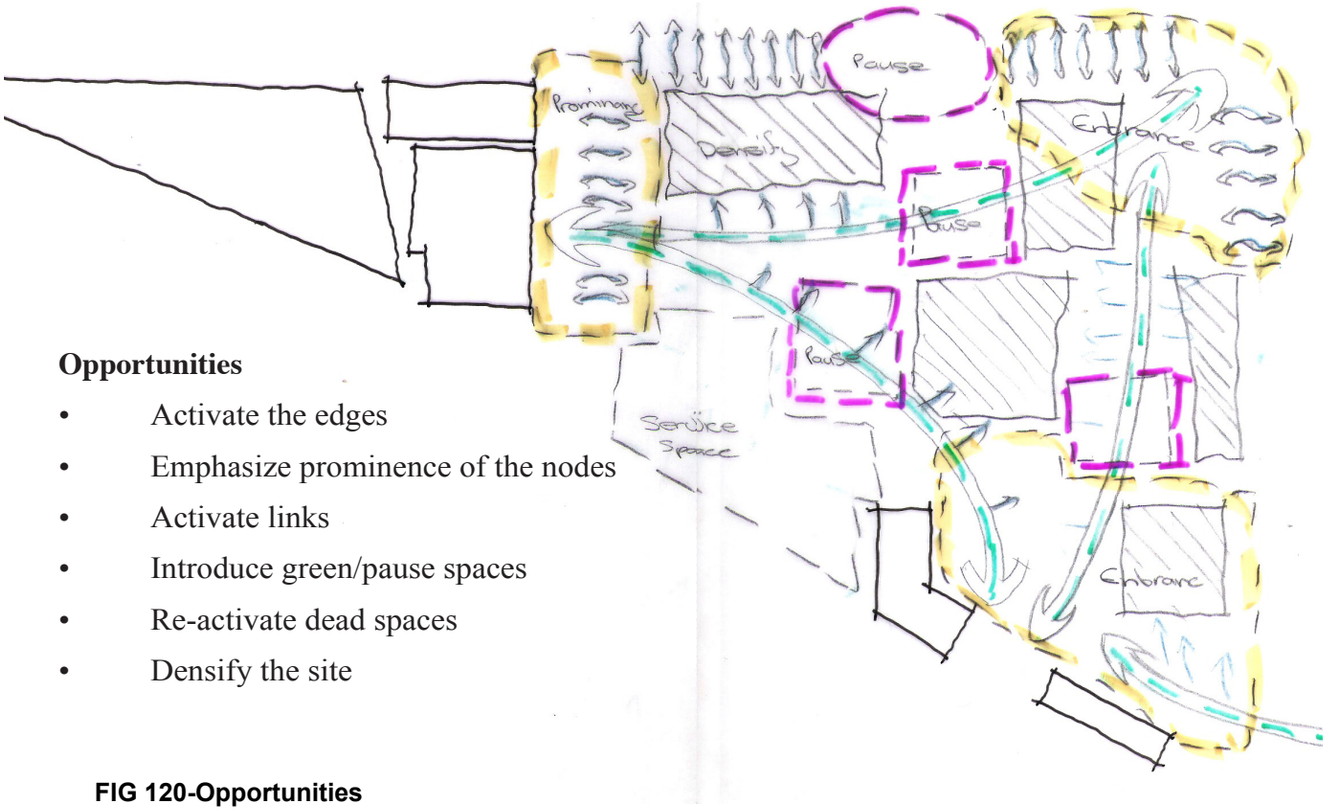


FIG 119- Activation points

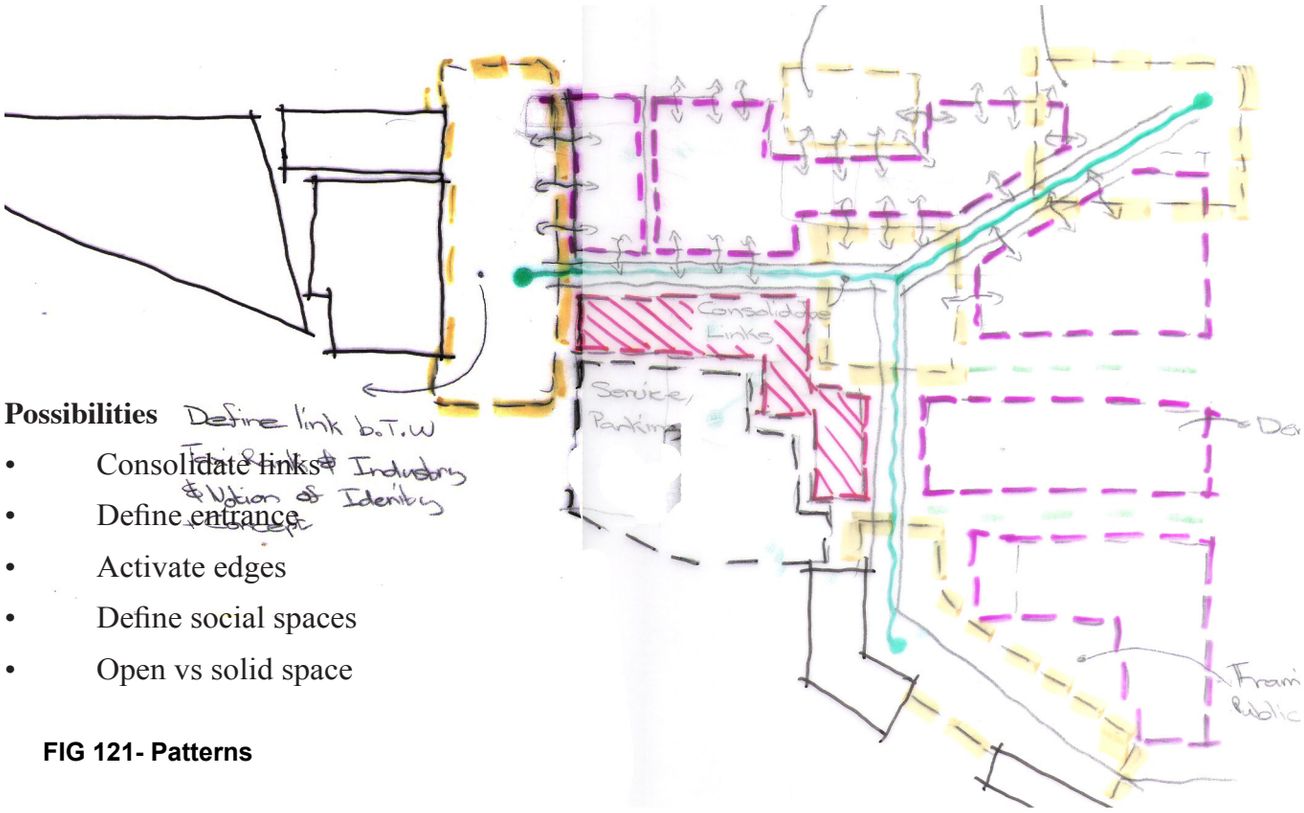
SITE DESIGN, stage 2



Opportunities

- Activate the edges
- Emphasize prominence of the nodes
- Activate links
- Introduce green/pause spaces
- Re-activate dead spaces
- Densify the site

FIG 120-Opportunities



Possibilities

- Consolidate links
- Define entrance
- Activate edges
- Define social spaces
- Open vs solid space

FIG 121- Patterns

Massing and Interactions

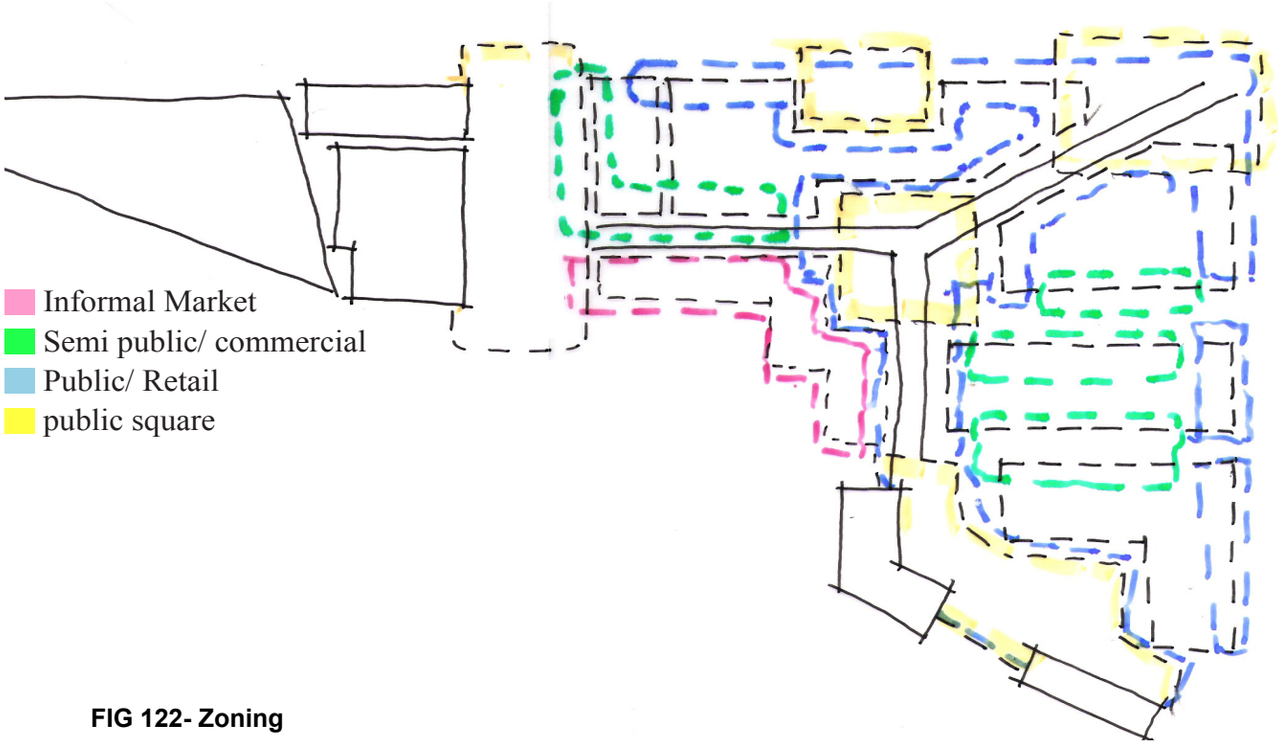


FIG 122- Zoning

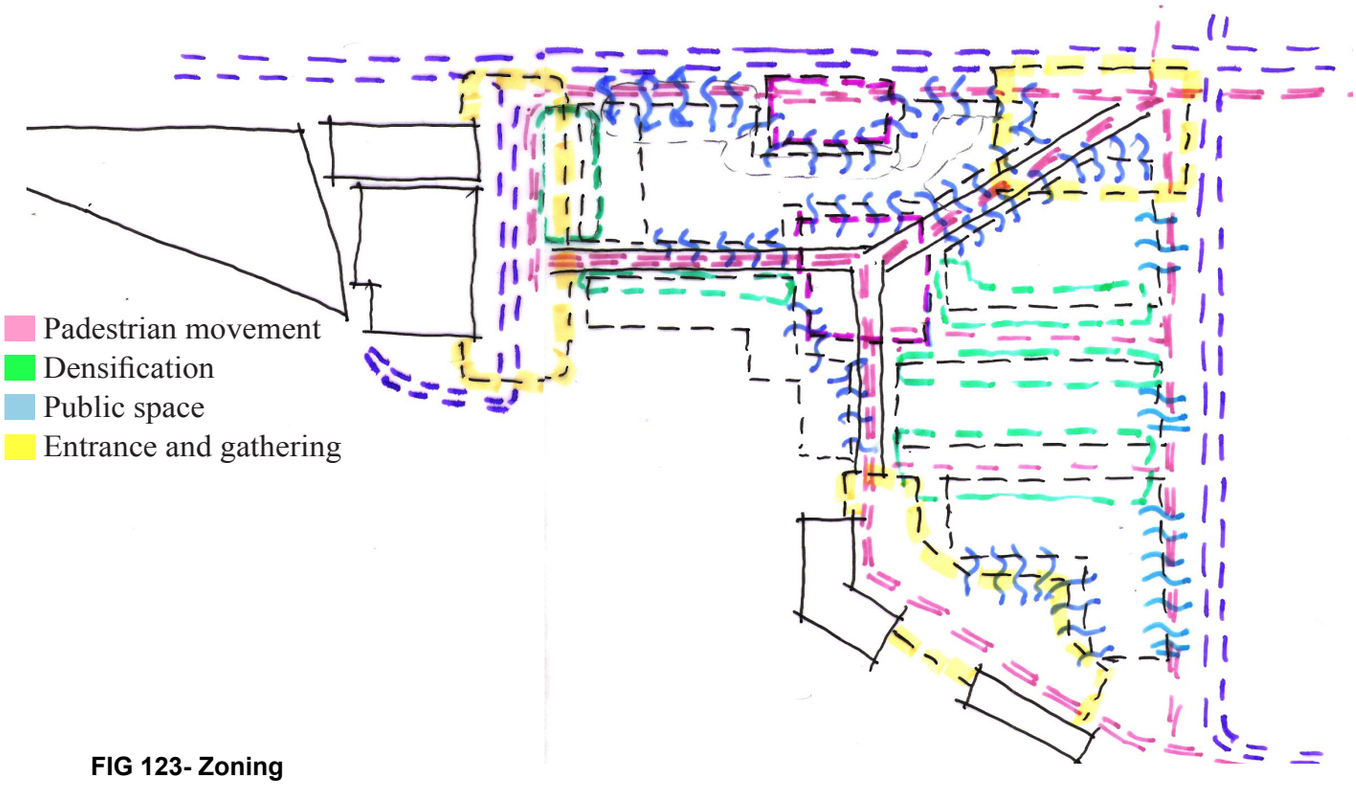


FIG 123- Zoning

SITE DESIGN

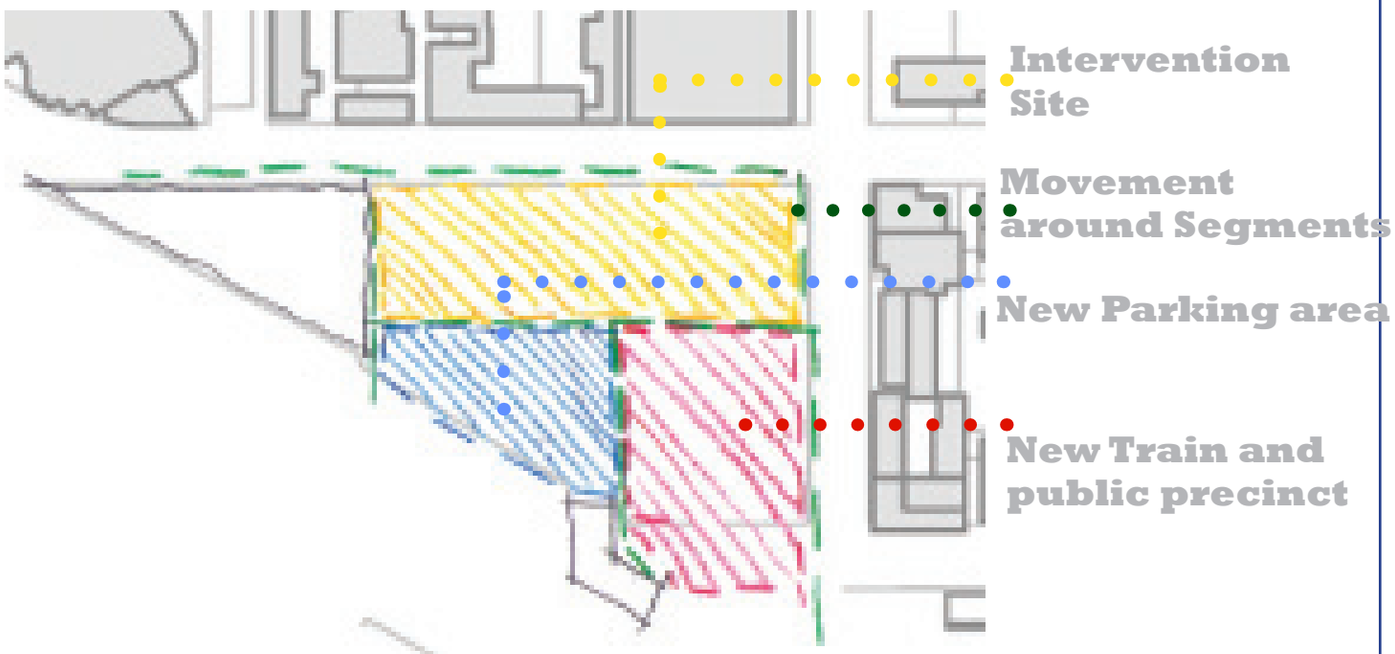


FIG 124-site partitioning

The creation of buffer zones, and links between transition spaces, allows for better interaction between the segmented spaces

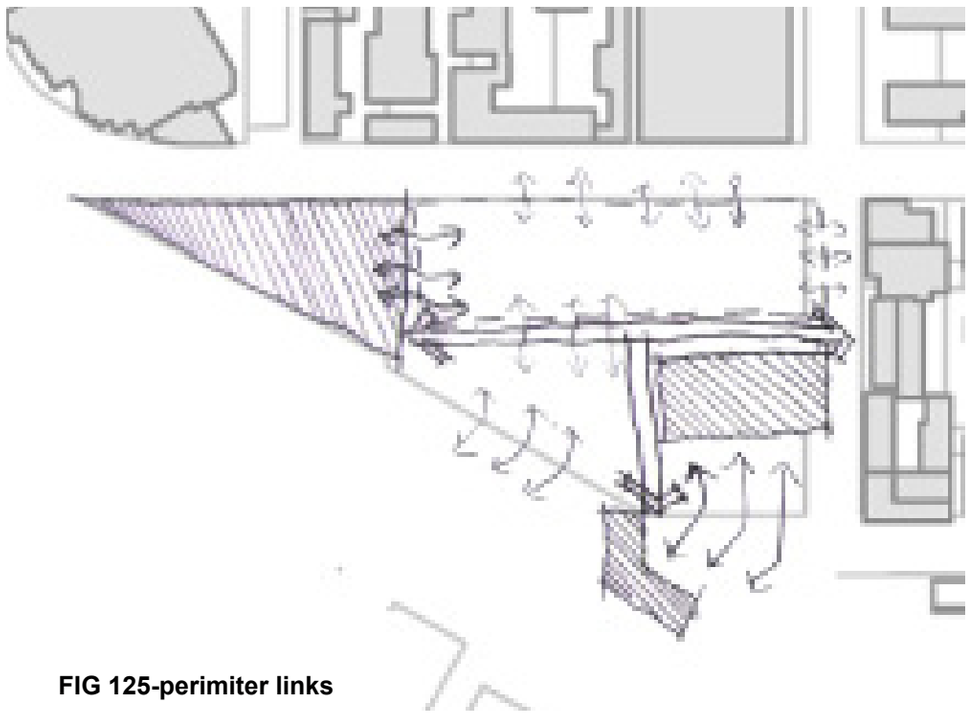


FIG 125-perimiter links

The site has been devided ino three segments, all of which deal whith its surrounding context. A new walk way and road has been introduced to bisect the site, to allow for better accesibility, and permiability through the site. The site and the new proposed buildings, are arranged in a manner that allows for the creation of public squares, and interaction points.

Design Response to secondary Site framework

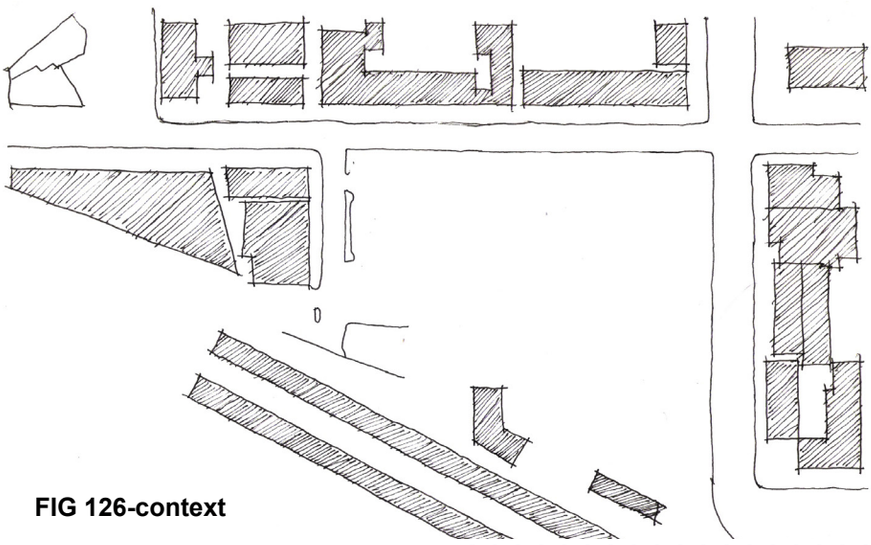


FIG 126-context

In beginning the new site layout, the first course of action was to look at the surrounding context. The intention of which was to have a building that responded to its surroundings in terms of scale and language. The challenge was finding the median between the left flank of the site, which is single story, and the right flank, which are 3 to 8 stories high.

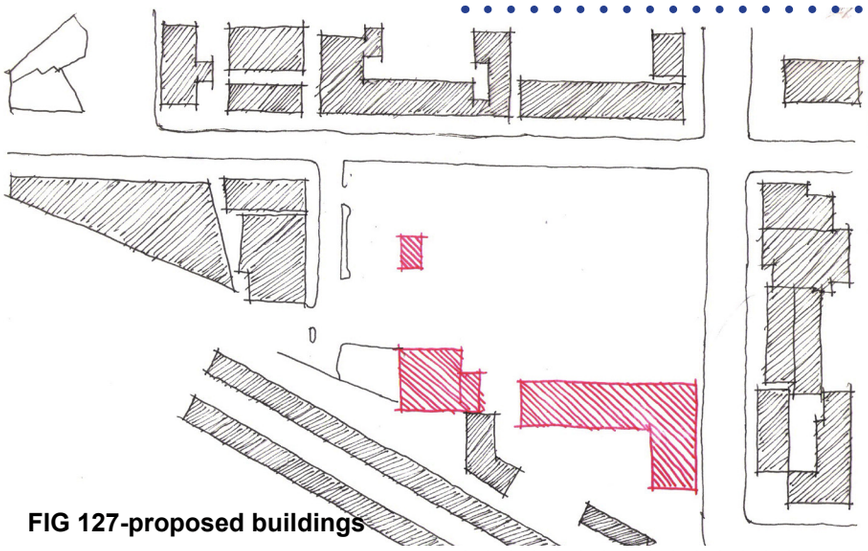


FIG 127-proposed buildings

The buildings represented in red, are intended to be supplementary buildings that emphasize the site as a taxi precinct. Their program would be a taxi wash bays, and parking bays, as well as accommodation. To the north west corner is a service station, which serves the adjacent taxi rank.

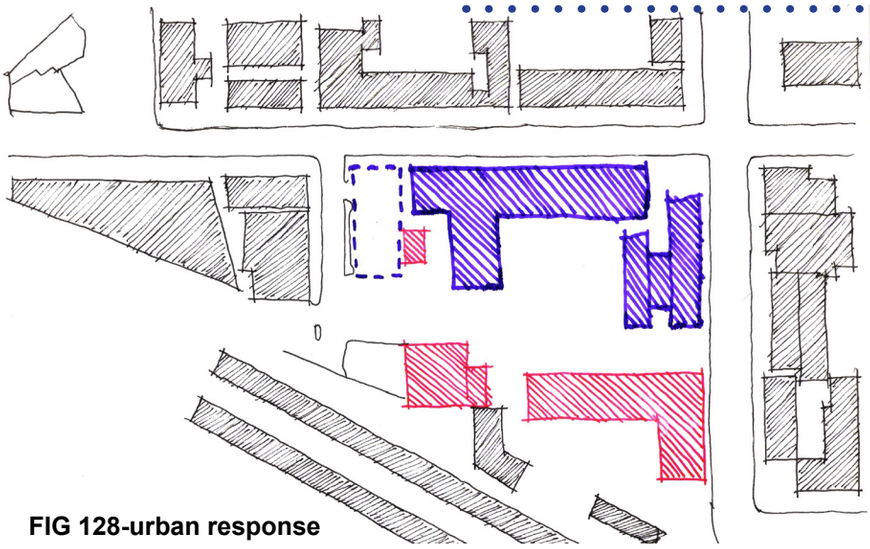


FIG 128-urban response

The buildings in purple represent the form of the design intention. The form is primarily derived from a need to maintain the urban city language and to frame the site. The form allows for maximum interaction with the street edge, thus further enabling the buildings social program

SKETCH PLAN

The orange dash, dotted line represents the primary pedestrian movement along and through the site. The movement is derived from the linkage of primary transport nodes, ease of movement, and existing pedestrian movement. The design responds to the movement patterns

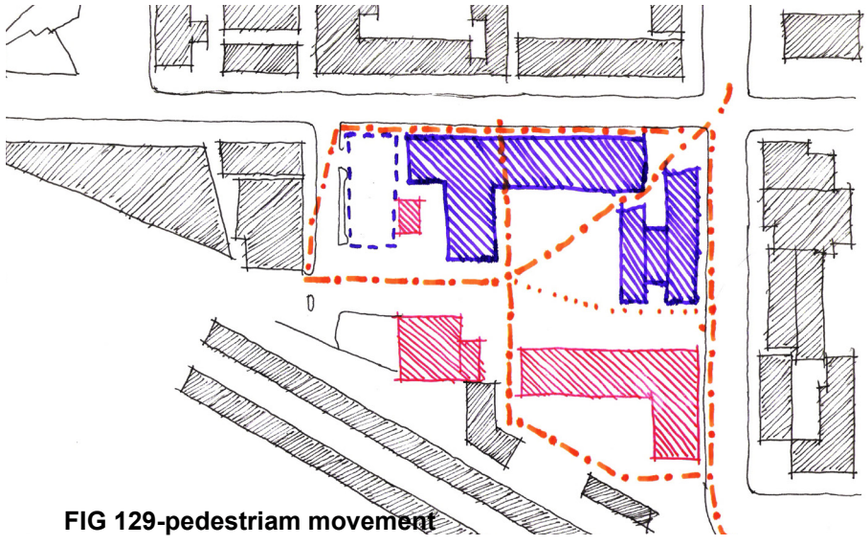


FIG 129-pedestriam movement

The blue line represents the existing taxi movement past and into the site. A secondary route has been proposed at the rear of the design, to allow it access to parking and service bays. The pink bars represent market areas which have been located along the major movement areas

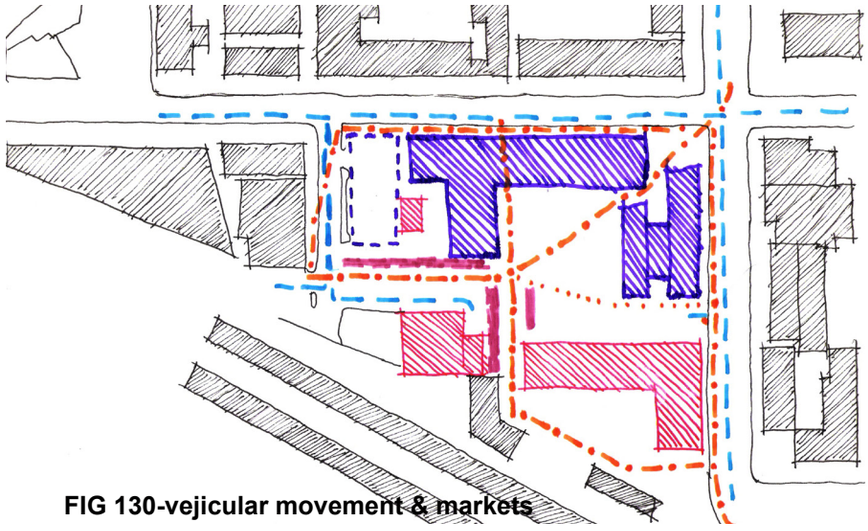


FIG 130-vejicular movement & markets

The last image represents the culmination of all the design intentions that have been considered. The remaining space on the site is intended to serve as a public spill out or quart yard space. The space links all the programmatic facilities on the site, and acts as the major public collection space.

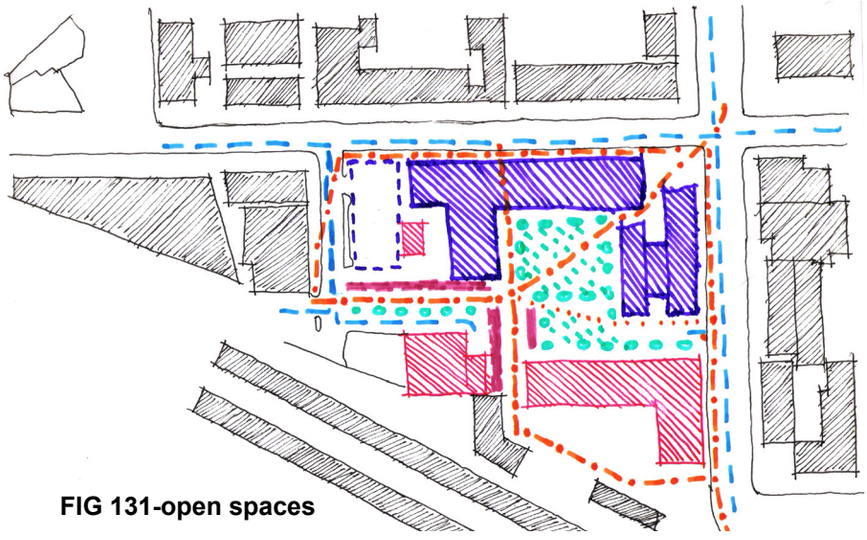


FIG 131-open spaces

Design Response to existing conditions around the site

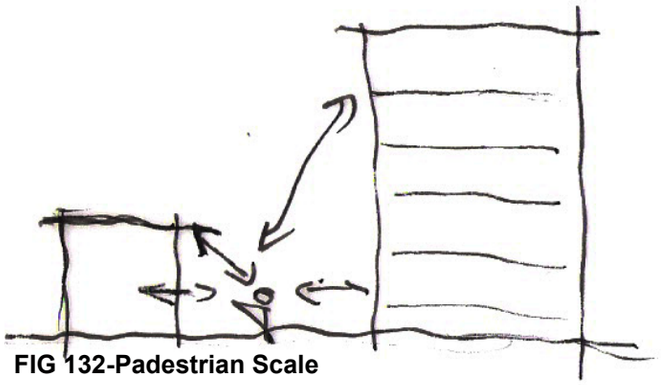


FIG 132-Padestrian Scale

PADESTRIAN SCALE

The design takes into consideration the human scale, in relation to its surrounding, the concept was to create a space that acted as a transition space between the different fabrics around the site

STREET CLARITY

FIG 133-Street section

The conceptual idea was to create a visually transparent building, in which all its activity's could be passively vied by the public. The intention was to create an inviting building

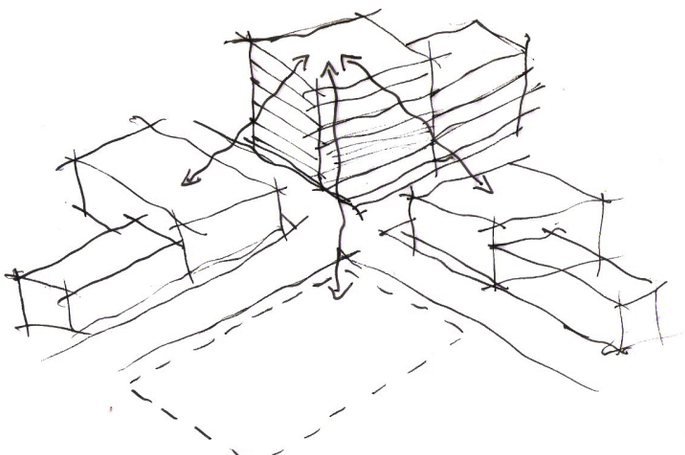


FIG 134-Building Heights

GATEWAY RESPONSE

The building acts as both a gateway/ transition building between the city and the major transport nodes around the site. Secondly, its form is intended to respond to its surrounding context

DESIGN INTENTIONS

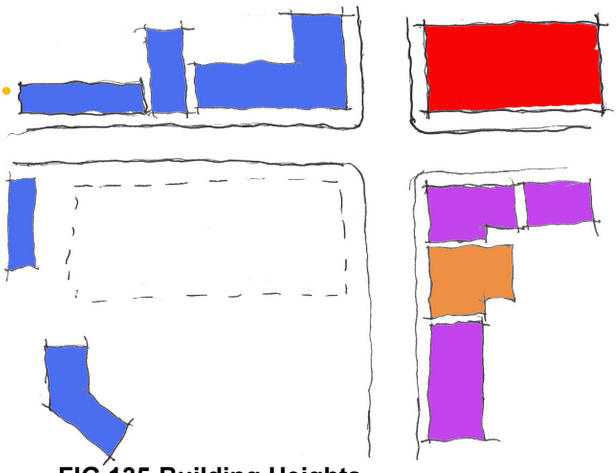


FIG 135-Building Heights

BUILDING HEIGHTS

The site is surrounded by a disparity of building heights. On the north west corner the site needs to respond to building heights of up to 18 stories, where as the surround buildings do not exceed two stories.

FORM RESPONSE

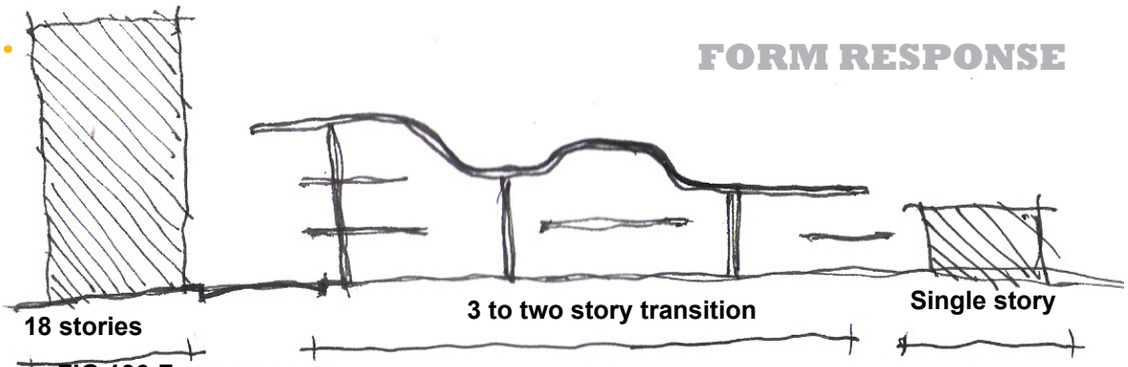


FIG 136-Form response

Conceptually the buildings is meant to respond to its context as well as maintaining its own logic derived from the principals of formulating identity

PROMINENCE OF ROOF AND FLOOR

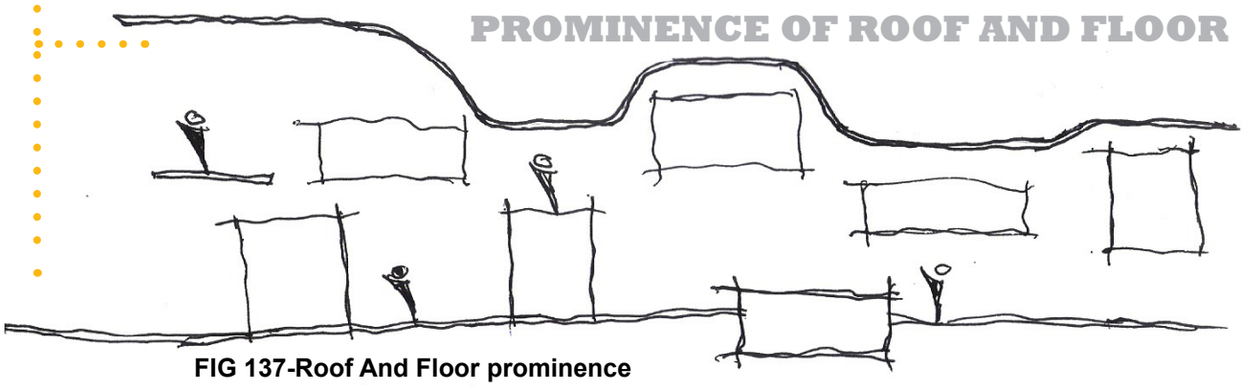


FIG 137-Roof And Floor prominence

In following the principals of transport architecture, and re-defining existing typologies pertaining to the taxi industry, the conceptual form is derived out of a need to emphasize the prominence of the floor and roof plains. The floor determines where programmatic constraints occur, while the roof acts as en encapsulating member which houses them all, with out being influenced by the program

Design Response to secondary Site framework

FIG 138-concept model-5

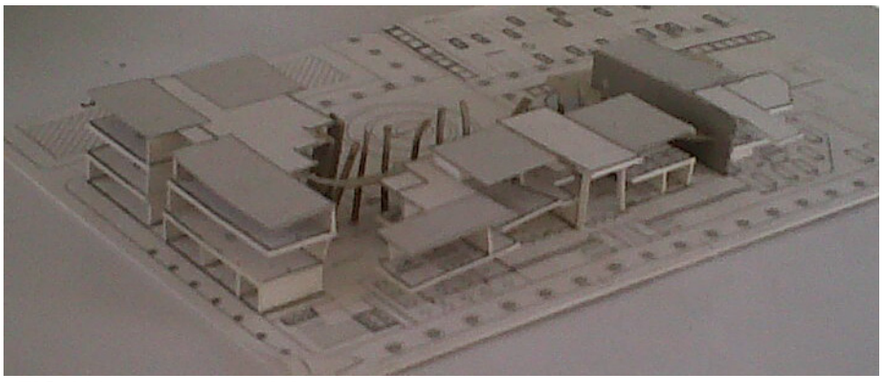


FIG 139-concept model-5

CONCEPT 5

The design of the fifth concept begins to address the city fabric, by aligning its programmes along or near major movement routs. This articulation does formalize the form of the building, and acknowledges the stipulations of urban design. The building does begin to bring together the facets of the industry, being the formal, informal, and user. The design does revert to the initial idea of having the taxi being able to enter the building.

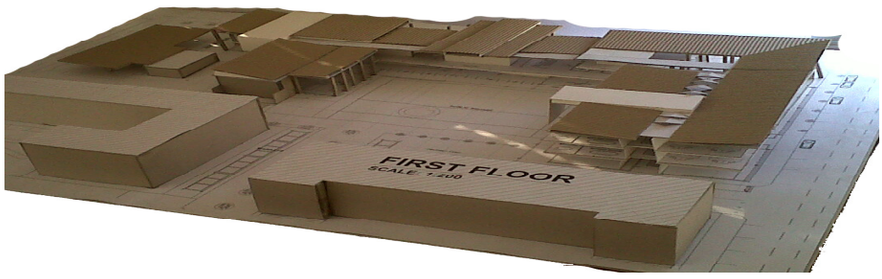


FIG 140-concept model-6

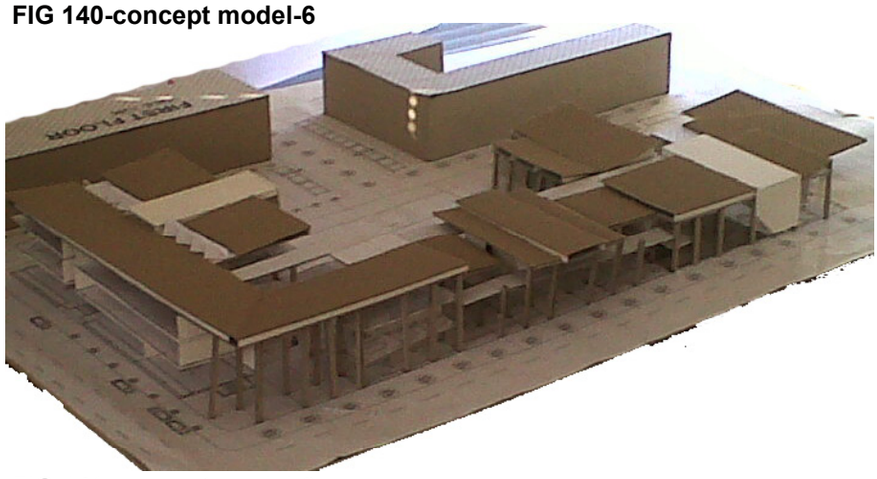


FIG 141-concept model-6

CONCEPT 6

The sixth concept expands upon the fifth concept by further refining the programmatic articulation, and further defining the social spaces. The design rethinks the idea of having the taxis being able to penetrate the building, as well as the idea of having a taxi show room. The design does however develop the idea of representing the taxi history through the introduction of a memorial space, which exhibits the history of the

DESIGN PROGRESSION

FIG 142-concept model-6

industry. The biggest flaw of this design and previous concepts is that it does not have a singular architectural structure that physically links all the facets of the industry. Furthermore the roof structure was to fragmented and could not represent a unified identity.

CONCEPT 7

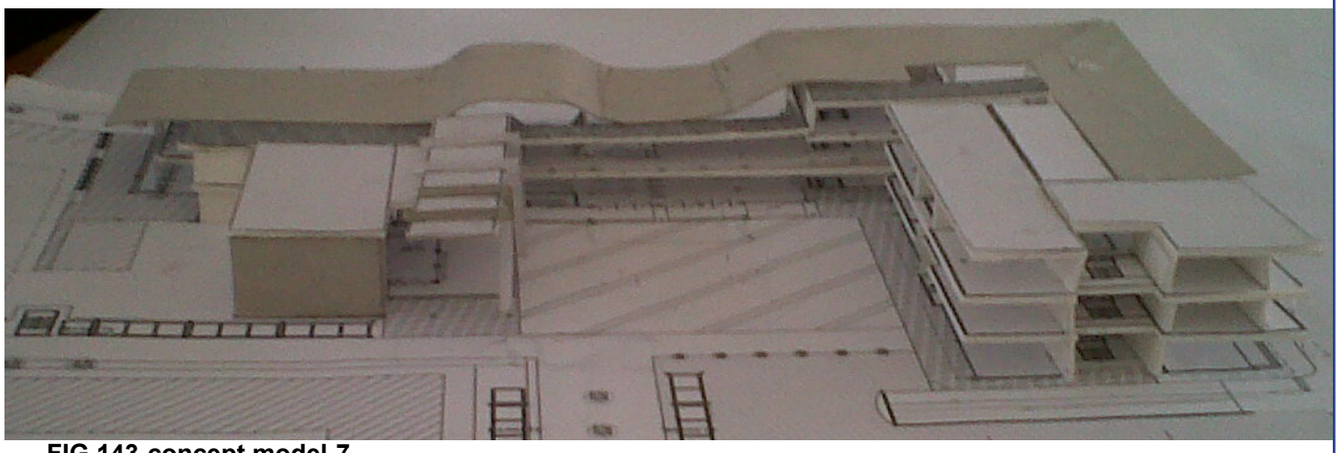


FIG 143-concept model-7

FIG 144-concept model-7

The seventh concept expands upon the six by introducing a roof structure that covers the building as a whole; the roof structure serves as the unifying element that links all aspects of the design, and its form is intended to represent a re-interpretation of transport architecture. Conceptually the design represents transport architecture in the sense that it has a roofscape that allows all functions to happen freely underneath it. The ground plane articulates the movement independent of the roof, and allows for the prominence of certain social spaces.

Conceptual 3D representation of the final design progression

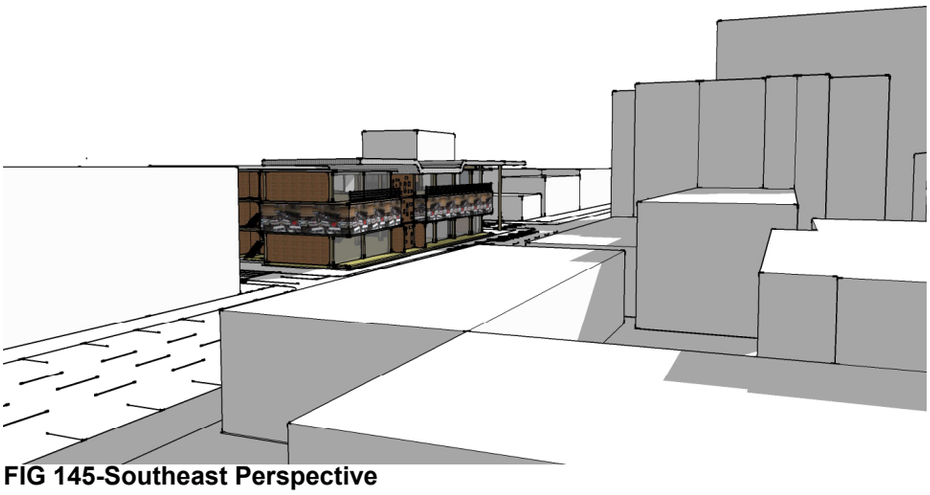


FIG 145-Southeast Perspective

FIG 146-Southwest perspective

FIG 147-North elevation

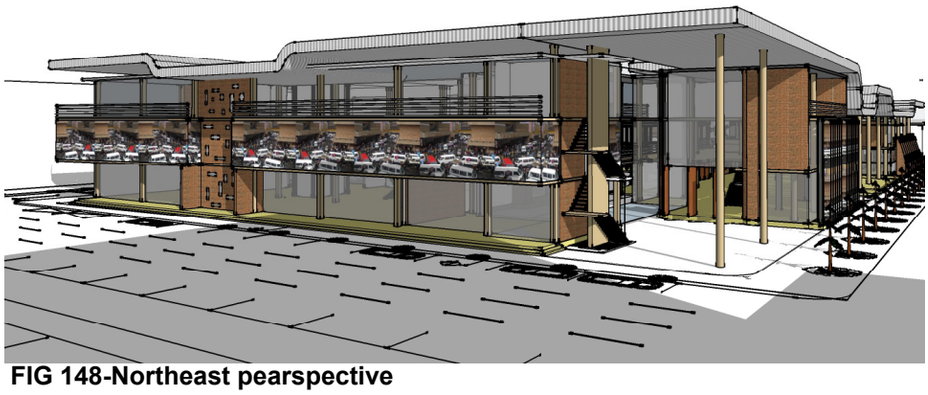


FIG 148-Northeast pearspective

3D CONCEPT MODEL

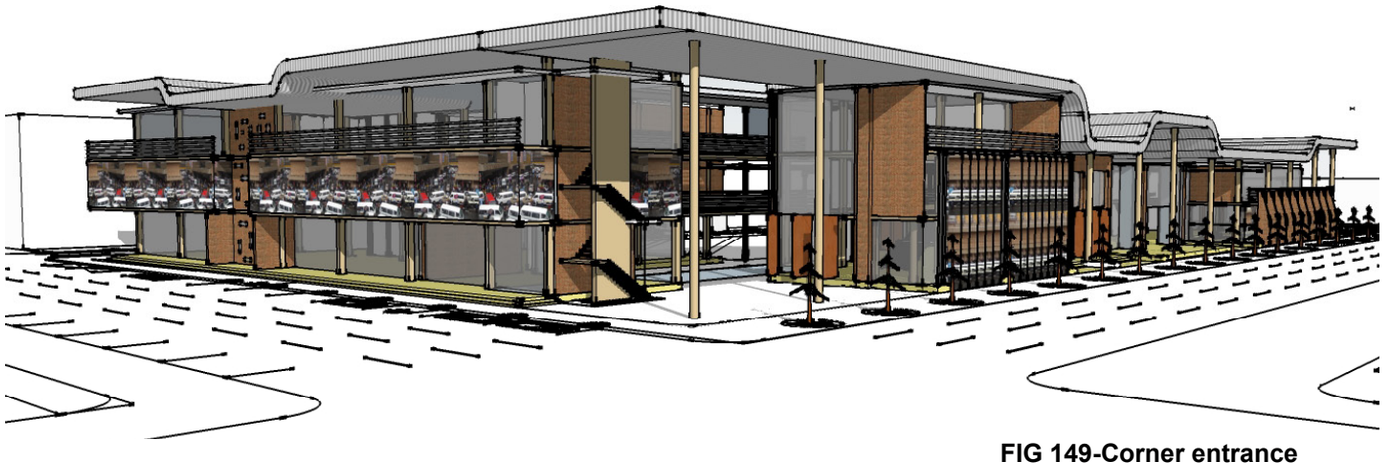


FIG 149-Corner entrance

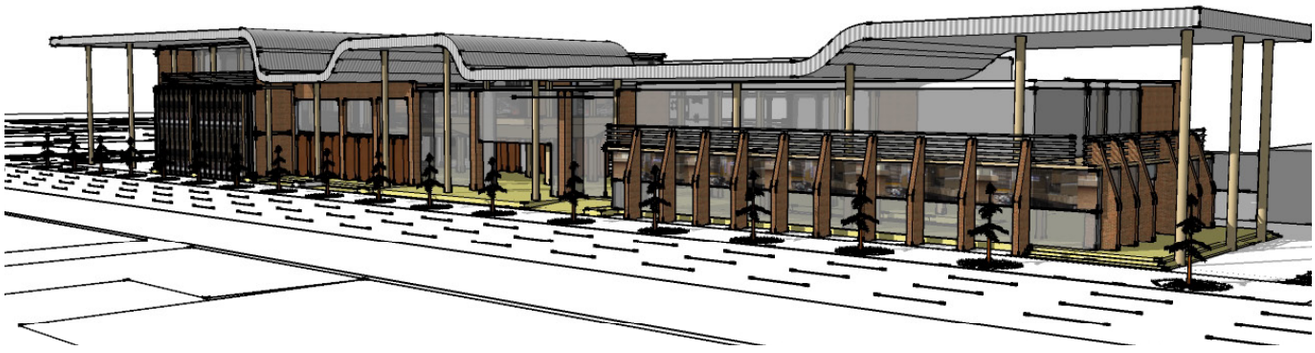


FIG 150-Northwest perspective

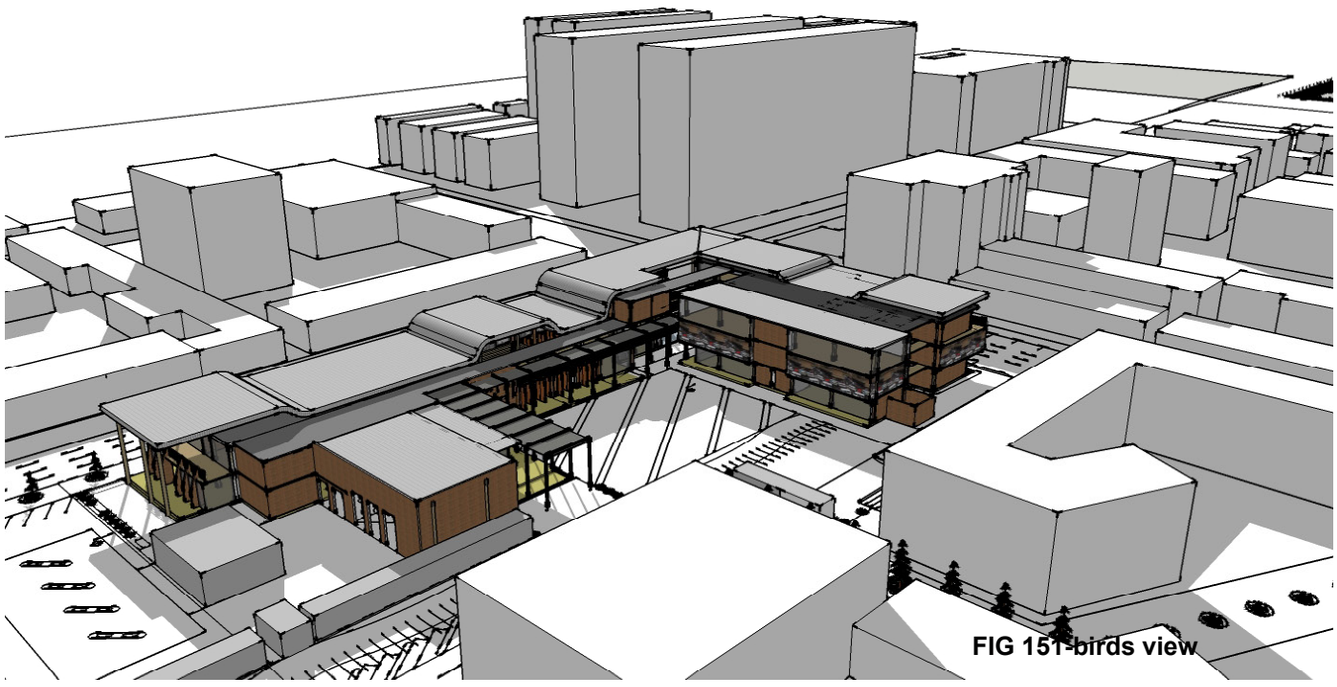


FIG 151-birds view

CHAPTER EIGHT

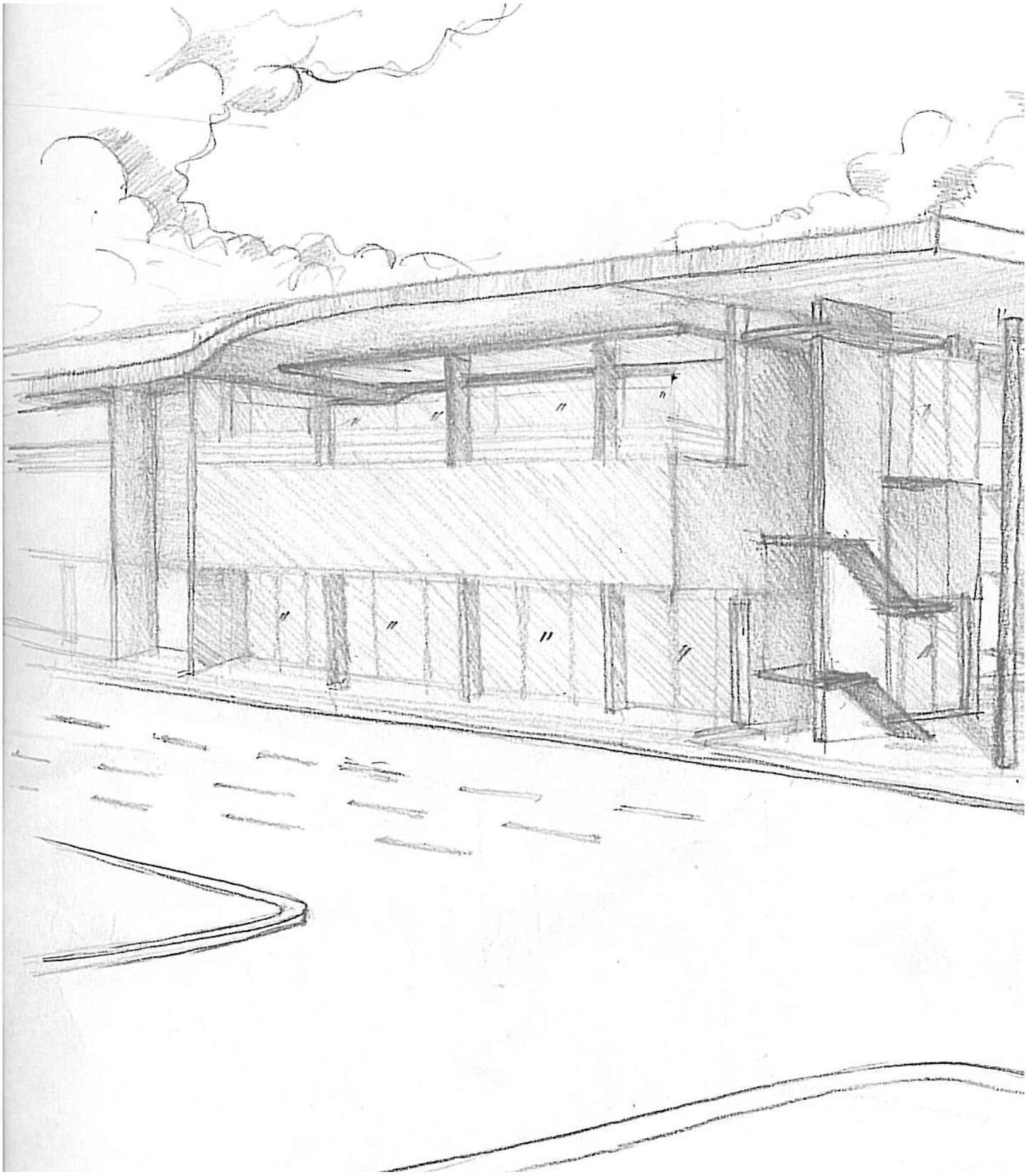
UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

TECHNICAL INVESTIGATION

DESIGN SYSTEMS

PASSIVE SYSTEMS

MATERIAL STUDY



DESIGN SYSTEMS

Services, Circulation, Ducts and floor area

FIG152-Basement Plan

1 2 10 20

BASEMENT LEVEL

Floor Area
Service Rooms
Foyer Space
Water Storage/ catchment
Vertical Circulation
Service Ducts

FIG 153- Ground Floor

GROUND FLOOR

DESIGN SYSTEMS

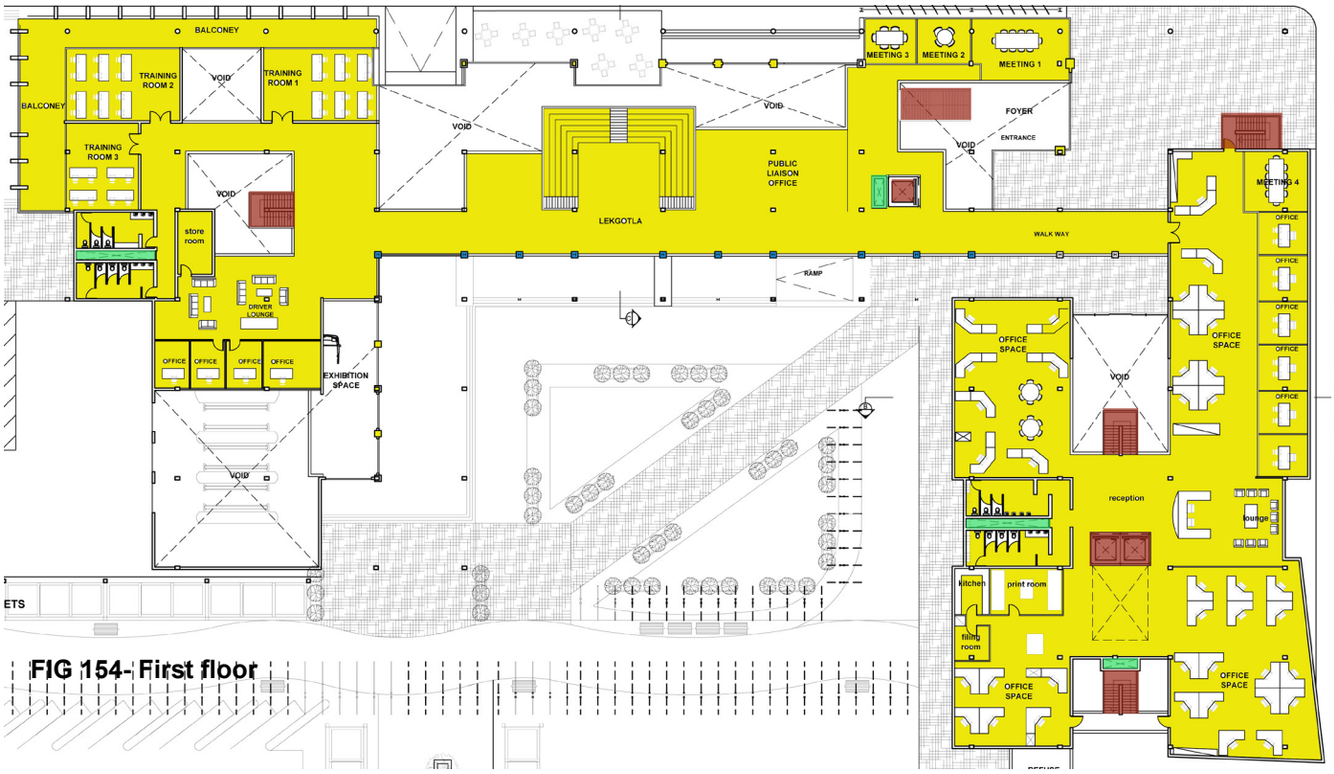


FIG 154- First floor

FIRST FLOOR

FIG 155-Thrid Floor

SECOND FLOOR

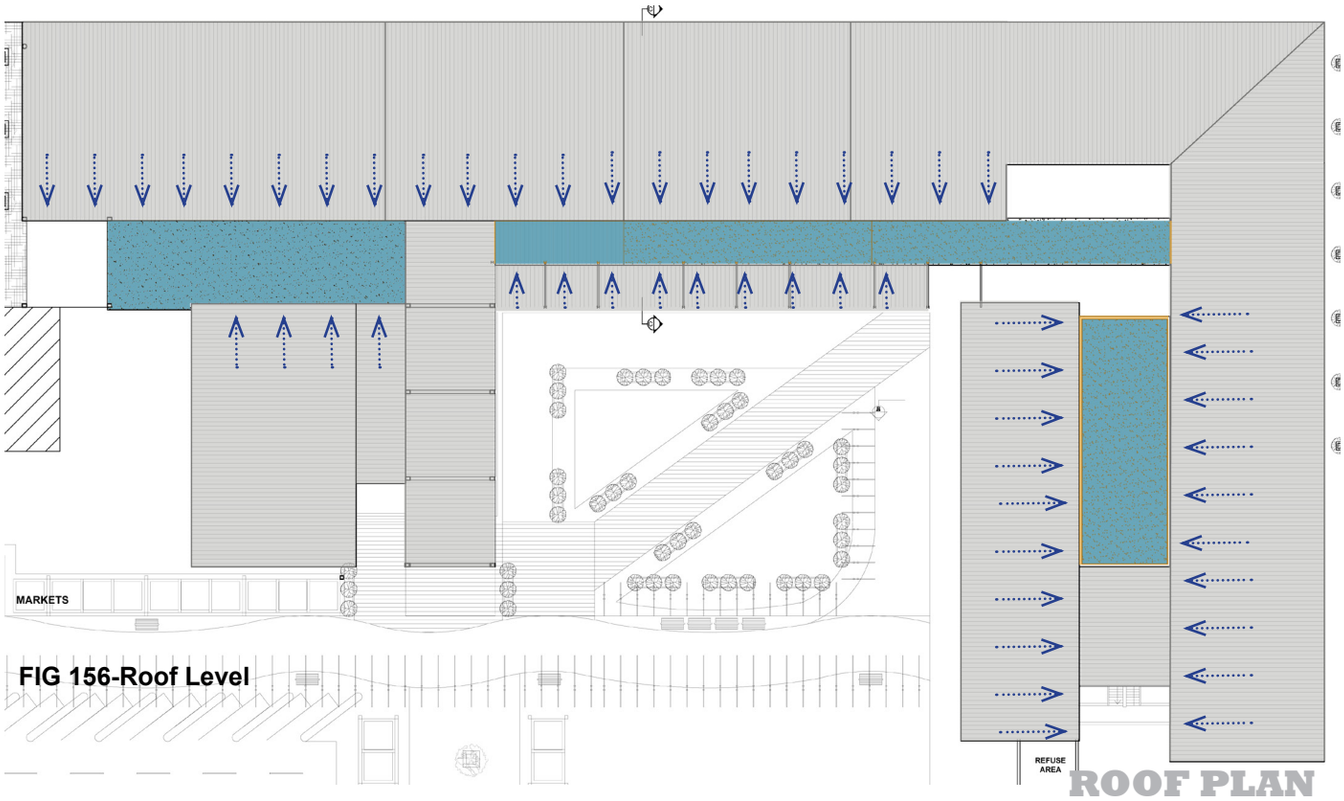


FIG 156-Roof Level

ROOF PLAN

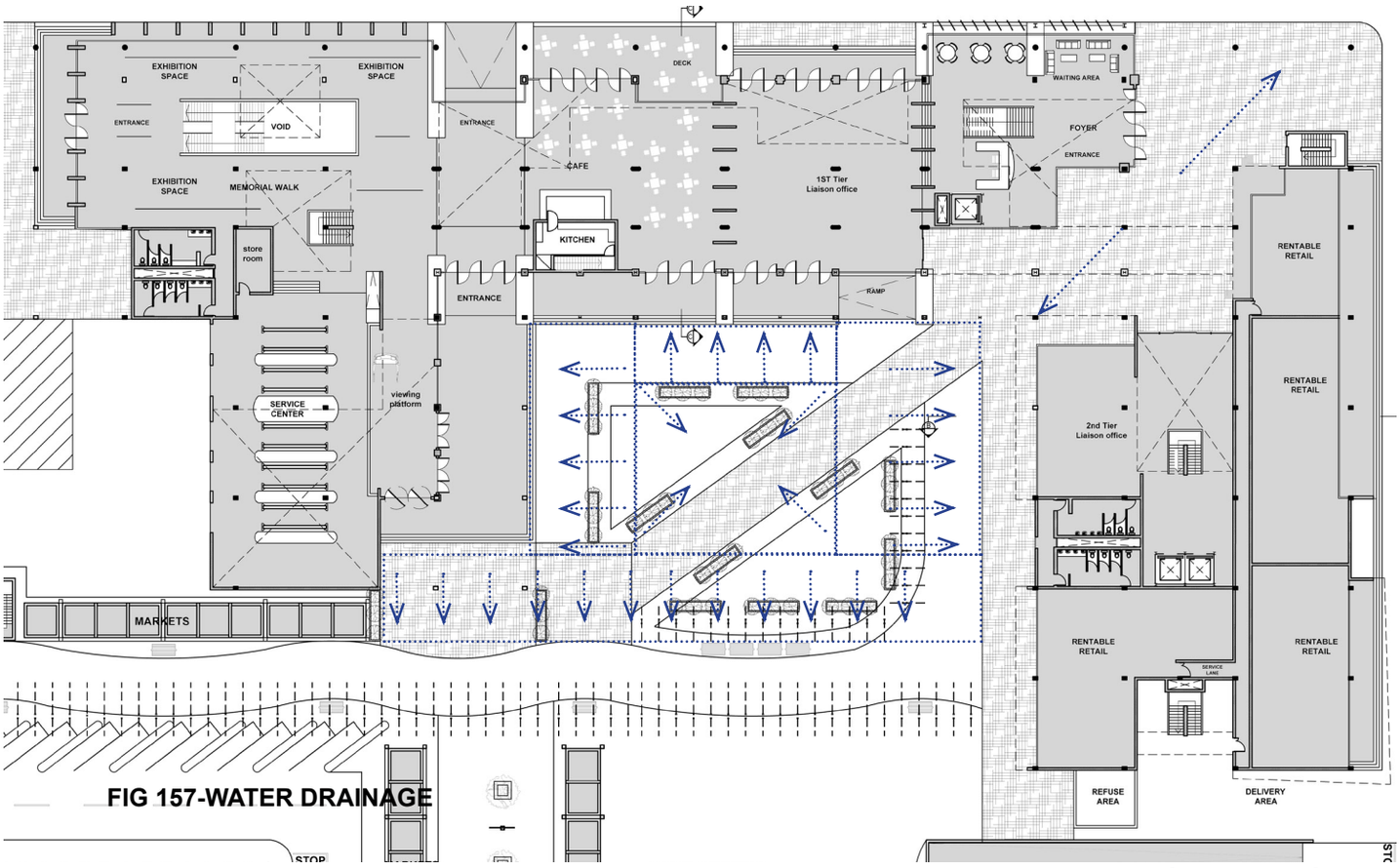


FIG 157-WATER DRAINAGE

WATER DRAINAGE LAYOUT

WATER SYSTEMS

Rainwater harvesting

Output: Roof Area X average rainfall

= 4615m2 X 0.674m (Weathersa, 2009)

=3110.5m3

Comments: The basement structure is fitted with two water storage compartments which are attached to a pump system, thus the collected water could be used for two purposes.

1). The water could be pumped to a filtration system and used in the ablution facilities

- Dual flush system uses 3l (light setting) or 6l (heavier setting)
- Conventional toilets use 11-15l per flush

2).The unfiltered water could further be used to irrigate the site and adjacent buildings in time of plenty.

Water Storage

The water harvested from the roof will be stored in two storage rooms in the basement. The storage tanks (hydrodynamics nel range) will be joined together by un underground gravity pipe, in order to regulate the levels of both tanks. The tanks will further have a pump system, attached to a filtration systems, that will pump the water to the needed areas, (ablutions, irrigation).

Rainwater harvesting

Capacity	Type	Diameter	Height
14 000 L	Water	2525mm	3180

Estimated usage

Average hot water consumption:

Hand basin 1 liters

Kitchen sink (per wash-up) 6 liters

Dishwasher 14 liters

1 person + household 120l

Washing of floors/sores: 50l

Toilet: 8L per flush.

Showers: 36l per person

Building usage

Toilets/ urinals: 8L/ per flush X 37 toilets/urinals X 8 uses/D

= 2368L

=71040 L/ month

1mm of rain x 1m2 of roof surface

= 1 liter

4615m2 X 674mm (weather SA)

=3,110,510 L (potential collection/ year)

3,110,510/ 12 months

=259,209 L/month

The basement has sufficient space to hold 12 14000L storage tanks, with total storage capacity of 168000 L per month.

Radiant cooling

Radian cooling systems are energy and material efficient systems (Cunniff, G, 2009). Compared with air systems, radiant-cooling hydronic systems use approximately half the horsepower and materials to move heating and cooling energy within a building. The system consists of Low-flow injection-pumps, which deliver heating and cooling energy to terminal units.

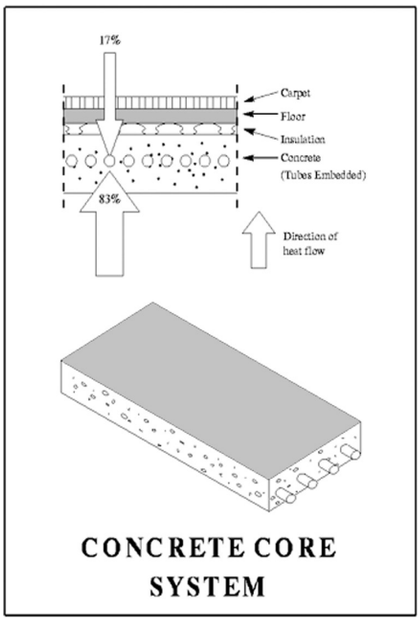


FIG 158-Radiant system

Pros:

- Radiant chilled ceilings consist of metal panels with hydronic tubing attached, where chilled water is circulated through the panels to produce radiant and convective cooling. (Cunniff, G, 2009).
- Approximately 50 to 60 percent of the heat transfer from a radiant chilled panel is radiant, while 40 to 50 percent is convective.

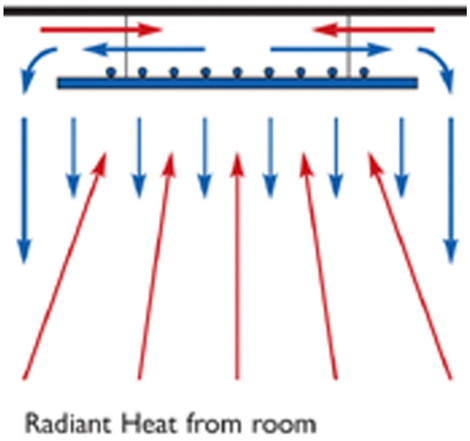


FIG 159-Radiant system

COOLING

From a central pump system, cold water is pumped through coils to the top of the ceiling panel. The underside of the ceiling panel is cooled which in turn cools the air against it. The panels then absorb the heat, which radiates from the room. The air above the panel is cooled and cool air moves around the edges to the rest of the room

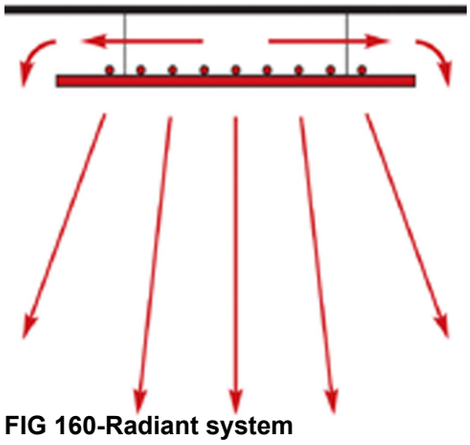


FIG 160-Radiant system

HEATING

The warm water that is pumped through copper coils to the top of the ceiling panels enables the ceiling sail to act as a radiant heater. The panels heat the air above and below the panels, and circulate it around the room. The system is very effective over large areas, and thus reduces heating and cooling energy consumption.

RADIANT COOLING

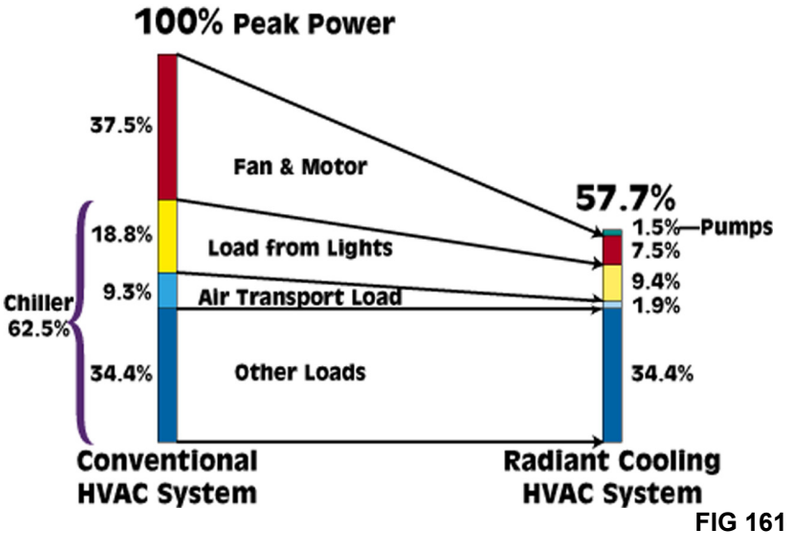


FIG 161-Radiant system

Sun Control

The building uses a series of cantilevers from the roof, to the slab, in order to minimize direct sun penetration in to the building. Recessing the building facades on the lower floors compounds this system, as it takes into consideration the sun angles during summer monthes.

FIG 162-GKD mesh

FIG 163-GKD mesh

GKD steel mesh is used in the exterior and interior of the building for a number of reasons. These include: its excellent corrosion resistance, long-term durability, high fire resistance, and low maintenance. The material also works well as a sunscreen device as it is able to keep out harmful UV rays depending on the density of its weave. While keeping out harmful rays, it also enables an unhindered view out of the building

PASSIVE SYSTEMS

The public component of the building uses passive heating, cooling, and ventilation systems to regulate its climate. The following principals are adopted in the design.

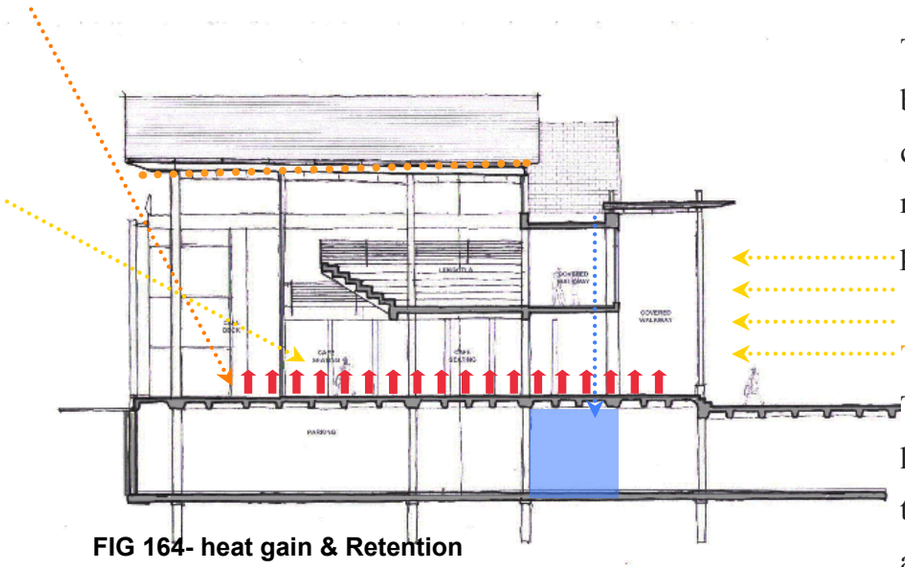


FIG 164- heat gain & Retention

Thermal mass:

The building design exposes the hard mass of its structure in order to increase heat gain during the day, and radiate it off during winter, and at night.

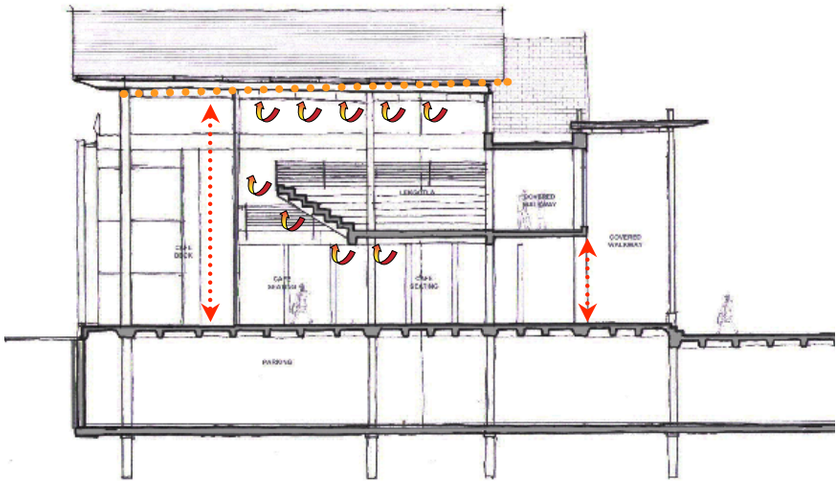


FIG 165- Radiant cooling system

Recessed façade:

The faced sits under an extended roofline, in order to protect it against harsh north light, but allows for heat penetration in winter due to its lower angle of entry

Natural ventilation:

The south façade is open to the courtyard where wind is able to permeate and move through the building

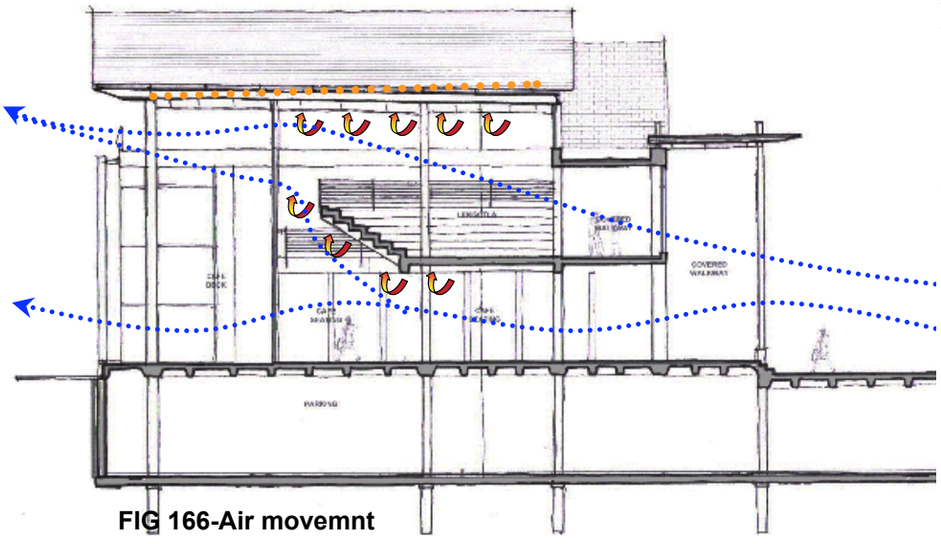


FIG 166-Air movemnt

High floors:

The design uses high floor to ceiling ratios, in order to allow all the warm air to collect above head hight, and thus disperse through openings

Insulation:

The building envelope is insulated to reduce drastic heat gain and loss

FIG 122- Roof Plan

CLIMATIC SYSTEMS

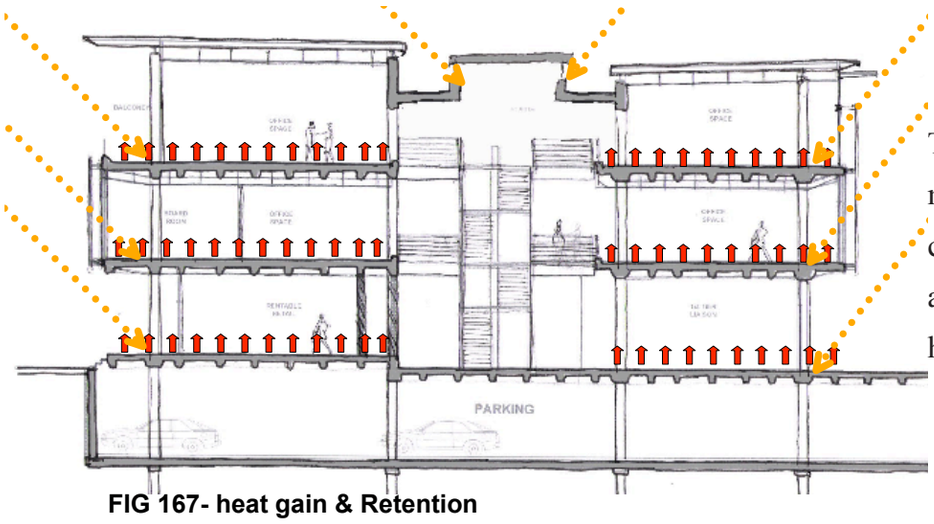


FIG 167- heat gain & Retention

THERMAL MASS

The building uses thermal mass to radiate off heat on cold winter days, the depth and thickness of the slab help in heat retention

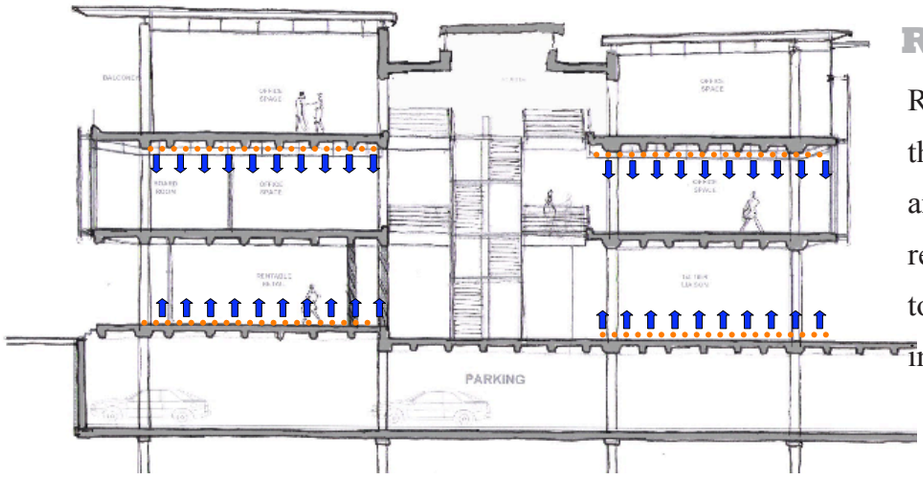


FIG 168- Radiant cooling system

RADIANT COOLING

Radiant cooling is used in the ceilings of the office areas and in the floors of the rentable offices. It is used to cool down the building instead of the air

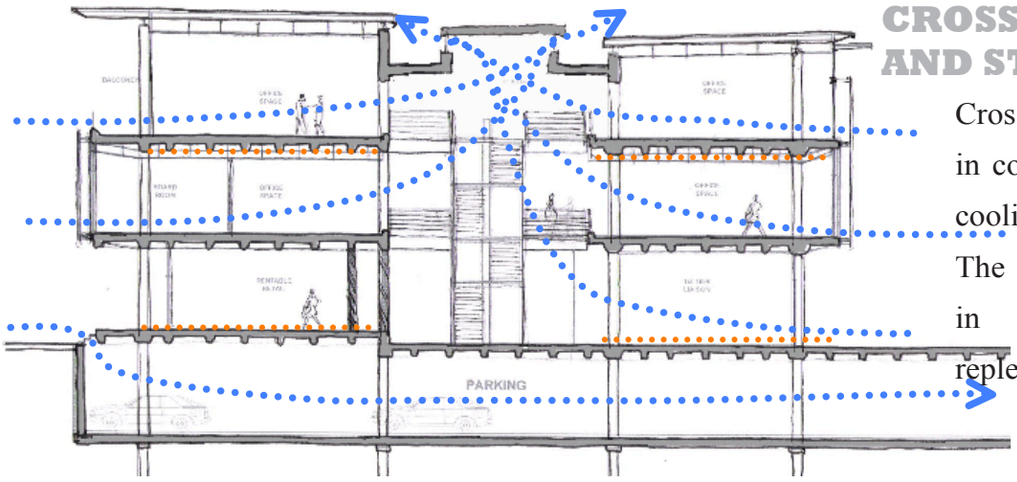


FIG 169-Air movemnt

CROSS VENTILATION AND STACK EFFECT

Cross ventilation is used in conjunction with radiant cooling for climate control. The stack effect also helps in air circulation and replenishment.

In light of the precedence and typology, study conducted through out the body of this thesis, the materiality of the building should not only be indicative of the taxi industry, it should also be adaptable enough to express all three facets of the industry. In consequence, to the identity of the industry being formulated by the articulation of both formal and informal attributes of the industry, there is a need for the use of a combination of materials. This will ensure that both parties receive their thermal, acoustic and durability requirements. The intention however is not to create a cacophony of materiality, but rather to have base materials that are expressive of the industry which are in part complimented by a second layer of materials that supplement their function

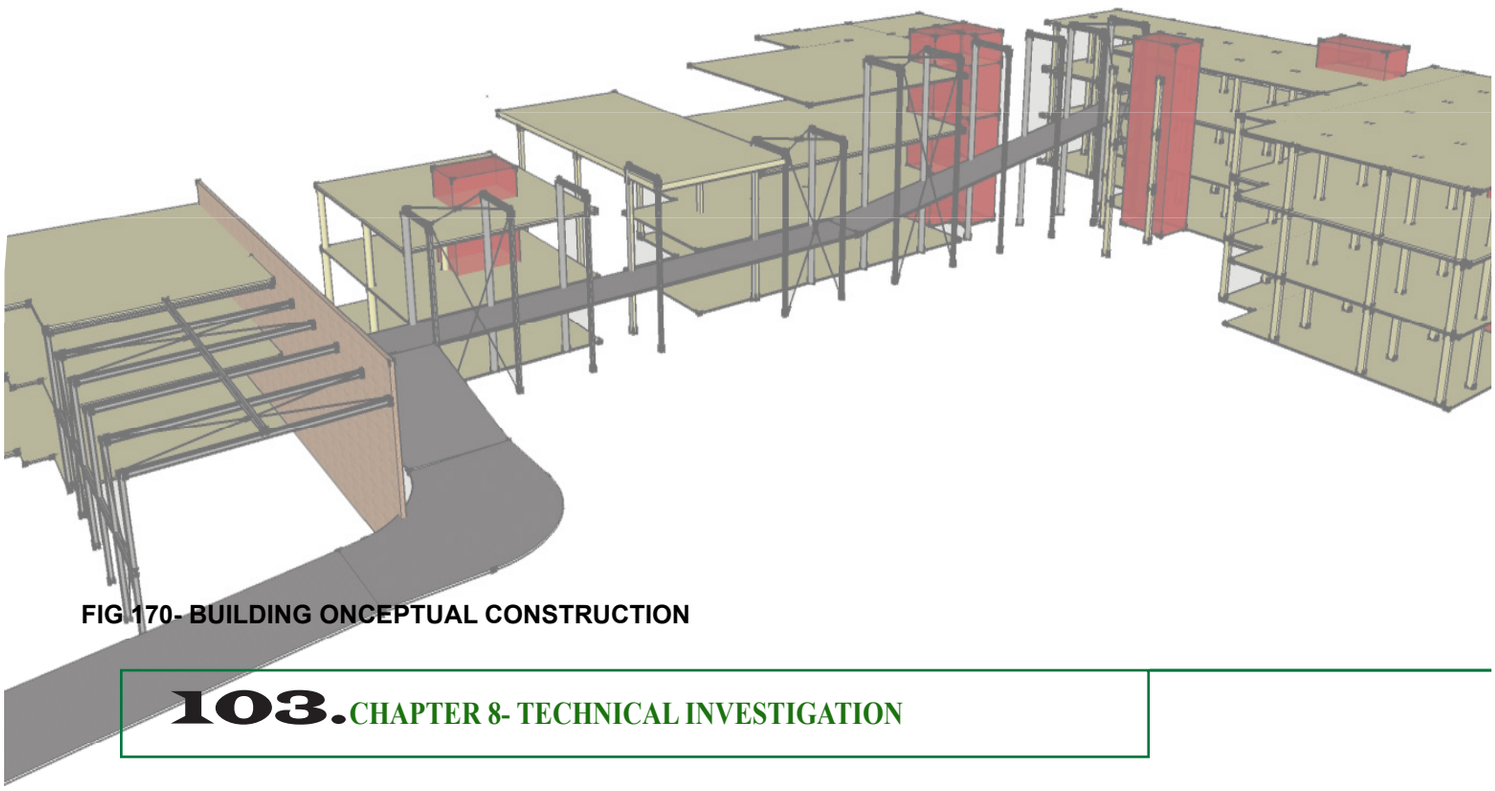


FIG 170- BUILDING ONCEPTUAL CONSTRUCTION

MATERIAL STUDY

STRUCTURE

In light of existing typologies associated with the taxi industry, the base structure will compromise primarily of concrete columns, beams and composite concrete floors. Secondly and in response to the conceptual notion of transport architecture being articulated as primarily roof and floor architecture, the roof structure will also be part of the primary structure. The material to be used for this will primarily be constructed of steel, with steel support structures.

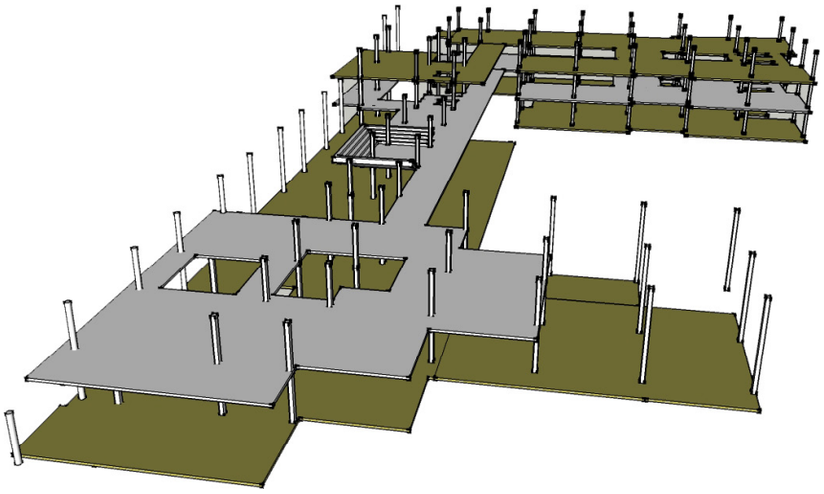


FIG 171- Slab & colum

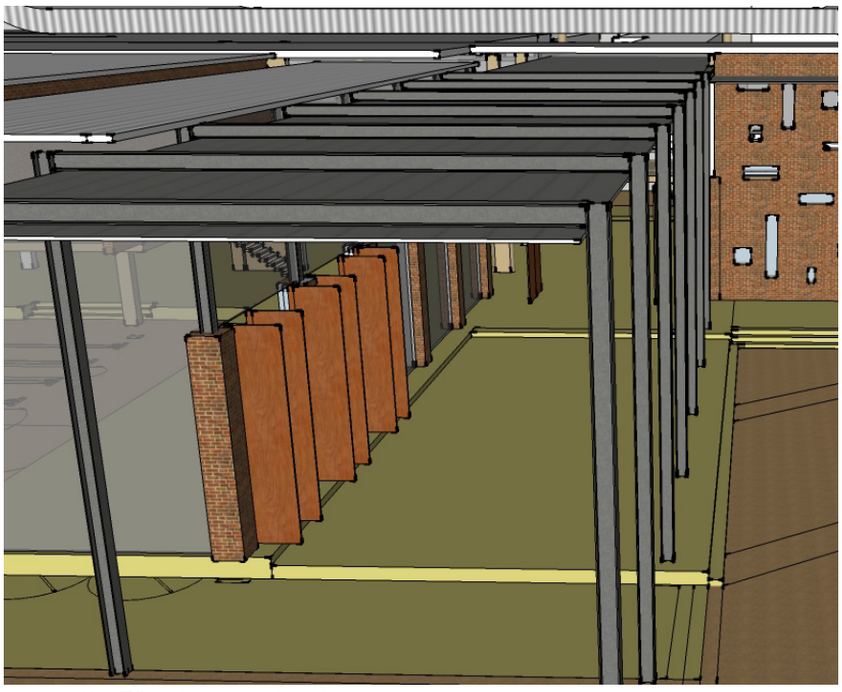


FIG 172- steel joint detail

A steel frame structure will be attached on to the base concrete structure, and will serve as the secondary structural system. This system is indented to represent the fluidity and lightweight nature of the public facet of the industry. The incorporation of both systems is intended to further represent the existing typologies, thus further instill the sense of identity. A third layer of materials will be used in the office component of the structure, and in order to respect, the formal conditions need to run an office appropriately.

PRIMARY STRUCUTRE

Slab and column

In light of existing typologies associated with the taxi industry, the base structure will compromise primarily of concrete columns, beams and composite concrete floors. Secondly and in response to the conceptual notion of transport architecture being articulated as primarily roof and floor architecture, the roof structure will also be part of the primary structure. The material to be used for this will primarily be constructed of steel, with steel support structures.

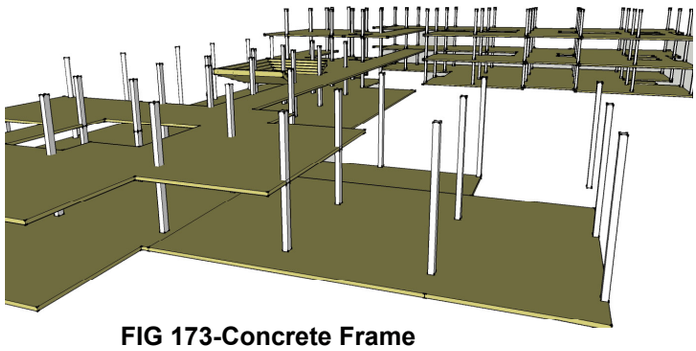


FIG 173-Concrete Frame

Slab and column

Concrete with a screed finish is commonly used in the construction of most transport structures, for its durability and low maintenance properties. It is for this reason that the material will be used in the construction of this structure. It will form part of the primary structure as to further enforce the notion of typology and thus play into the creation of identity. By in large the concrete will be exposed, as a truth to materiality is an important facet to maintaining the perception of fluid architecture.

FIG 174- Concrete Structure

Structural infill

In Staying, true the concept of truth to materiality, exposed brick, or face brick will also be used in the construction of the building. The fact that no plaster or paint is required to finish of the product also adds to its sustainability and low construction costs. Other advantages include: low water absorption, naturally fire-resistant, excellent acoustic properties, superior thermal insulation, Environmentally friendly, (low carbon footprint), (www.ocon.co.za: 2010)

FIG 175- Colonial Red

Specification

Brick Strength	Average 30 MPa
Water Absorption	Approximately 11%
Efflorescence	Nil to slight
Dimensions	220mm x 100mm x 70mm
Mass	Average 2.6 kg

MATERIAL STUDY

Steel

A steel frame structure will be attached on to the base concrete structure, and will serve as the secondary structural system. This system is indented to represent the fluidity and lightweight nature of the public facet of the industry. The incorporation of both systems is intended to further represent the existing typologies, thus further instill the sense of identity. A third layer of materials will be used in the office component of the structure, and in order to respect, the formal conditions need to run an office appropriately.

Steel I sections are used in the construction of the walkways and pergola areas; they are also compliment by GKD mesh, which is used as a screening device, as well as a media screen. As the usage is primarily in the square area, the device could be used to supplement the income of the building. The I beams are coated with a fire proof paint, and further with a dark grey paint, as to reduce heat gain.

In parts of the design, steel is used as floor covering and as a shading device. For this purpose, steel grating is used, in order to give of the sense of a floating lighter structure. Other advantages are that the it is permeable allowing for visual, air and light penetration. Because it only allows partial light in, it can also be used as a screening device

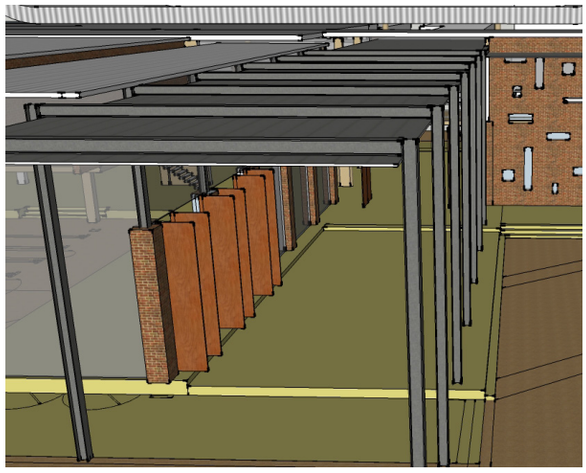


FIG 176- Steel Grating

FIG 177- Steel I-sections

FIG 178- GKD stell mesh

INTERIOR MATERIALS

Metal mesh

Not only will the mess be used out side due to its sun shading - reducing heat load, cooling requirements and ultimately energy consumption. But will also be used in the interior of the building. The mesh will be used as cladding on the walls and as part of the ceiling. The aim is to create a robust industrial feel, which is synonymous with the transport industry

Cmabridge Solucent metal fabrics deliver striking visual appeal, increased comfort, and most importantly, energy savings. (Archiexpo, 2010)

FIG 179- GKD stell mesh

Polished screed

Benefits:

- Smooth finish
- Durable material
- Thermal properties

FIG 180- Polished Screed

UV RESISTANT GLASS

Smartglass Solarshield is a glass with a metallic coating and a clear or tinted PVB (polyvinyl butyral) interlayer that is designed to reduce solar heat gain. This glass type also prevents up to 99% of harmful UV radiation from entering the building. Solarshield is a laminated safety glass that is widely used in sky/ roof-light applications.

Its U-value is 5.8 in all available colours. Heat gain can be further prevented by applying a white perforated film layer to the glass, which allows light to permeate through the penetrations while reflecting the rest of the light.

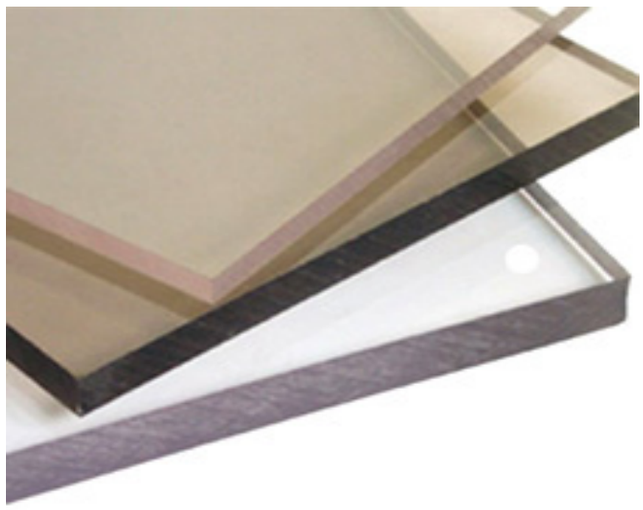


FIG 181-UV GLASS

MATERIAL STUDY

FIG 182-GRANITE FLOORS

Granite finish

Granite will be used in the courtyard area, due to its durable nature.

Standard Sizes: 600x300, 800x400, 900x450, 400x400

Standard Thicknesses: From 15 to 80 depending on requirements

Finishes: Sawn, Flamed, Honed, Bush Hammered, Antique, Polished, Split

FIG 183- IRB roof sheeting

IBR sheet metal roofing is the primary material used as roof covering. This is due to its flexible and lightweight nature. The material enables the design to manifest its concept of having a lightweight structure flowing over the building, unifying all elements of the building.

Pitch 1,5 degrees

Made of zincalume or Calvanised coated steel

Klip lock porfile

FIG 184- Sandblasted Concrete

SANDBLASTED CONCRETE

Sand blasted concrete is also used in the out door spaces, for ts decorative and durable properties.

CHAPTER NINE

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

TECHNICAL DOCUMENTATION

PLANS

SECTIONS

ELEVATIONS

DETAILS

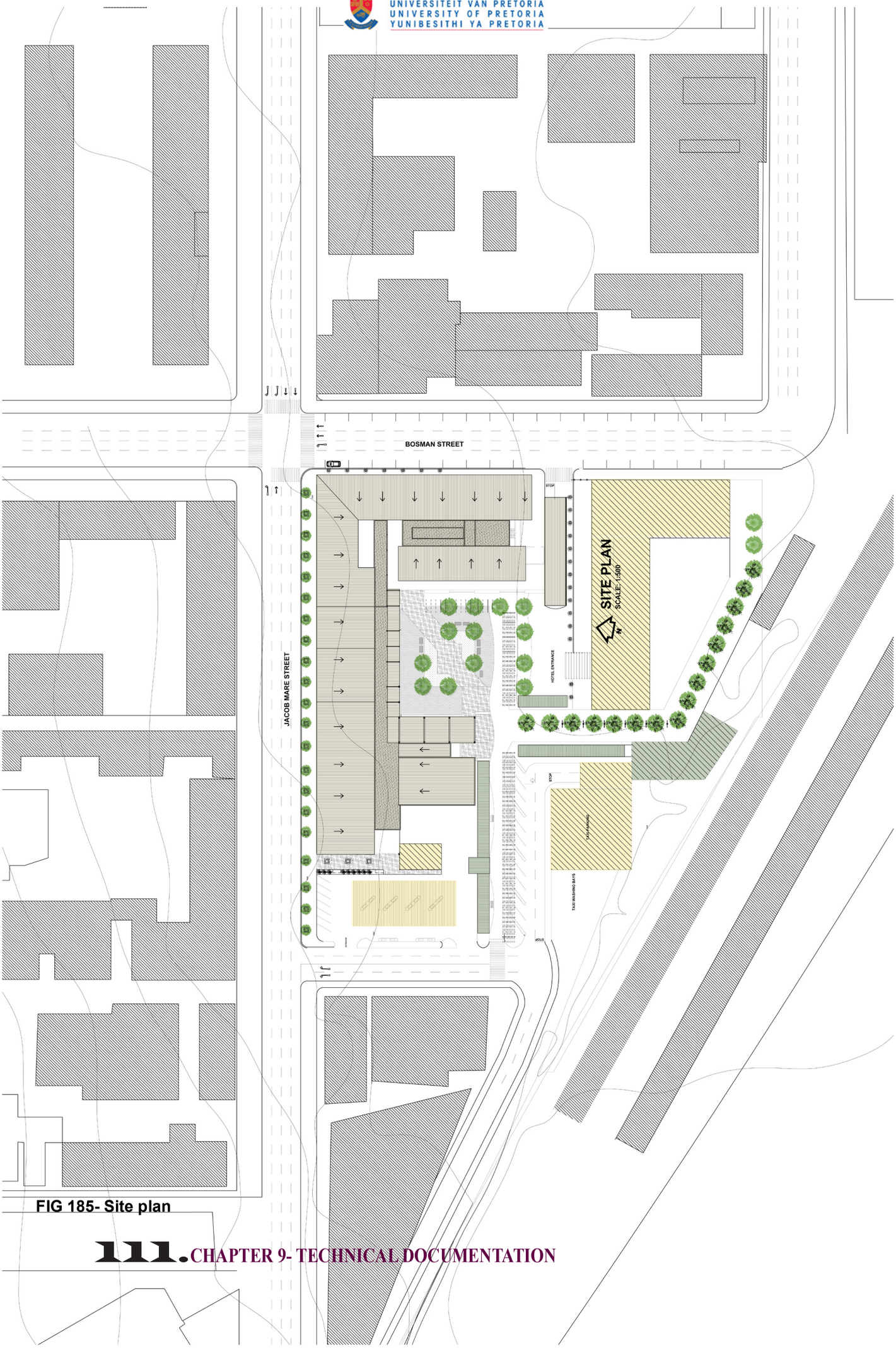


FIG 185- Site plan

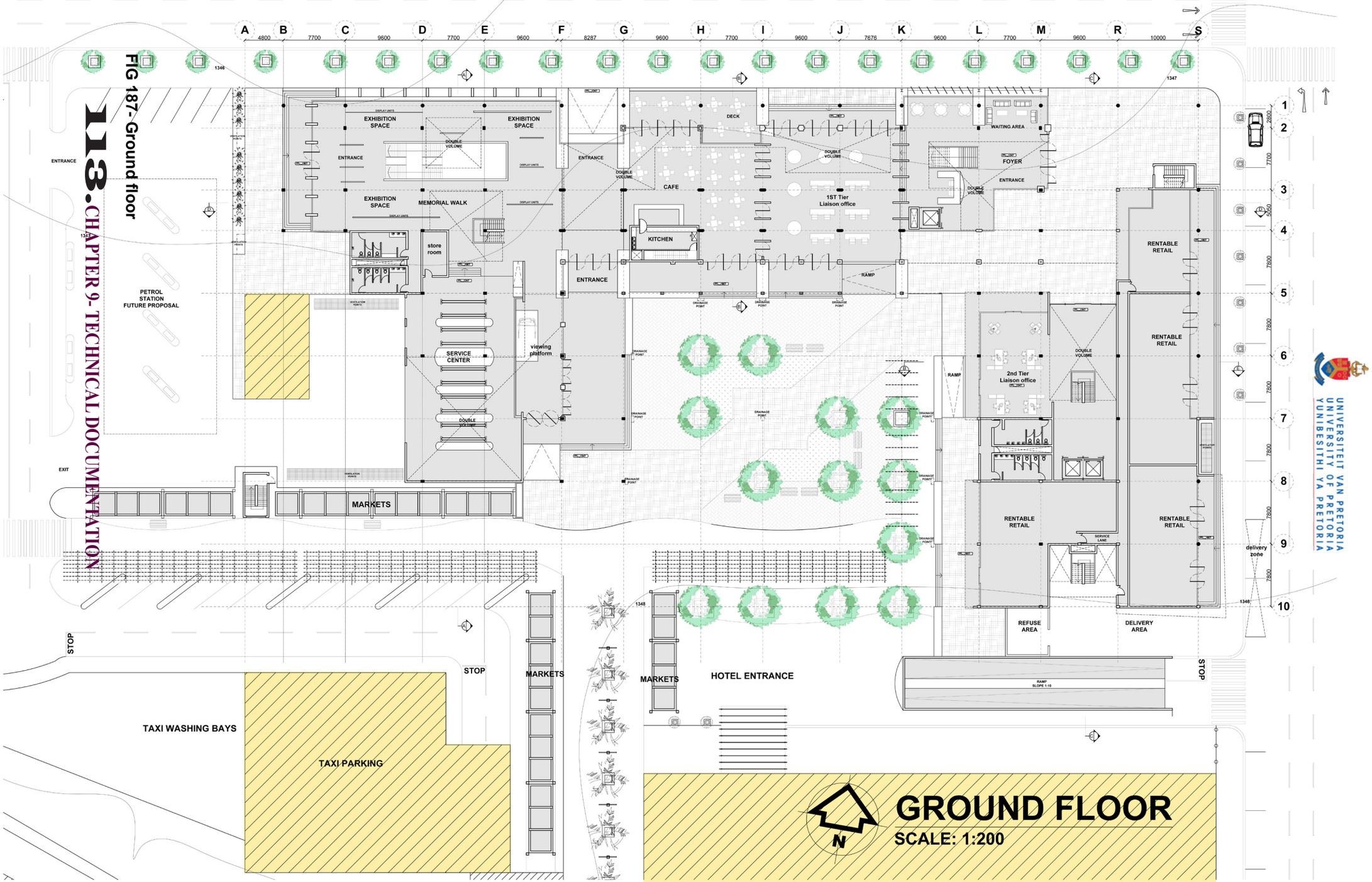
FIG 186- Basement plan

BASEMENT LEVEL

SCALE: 1:200

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

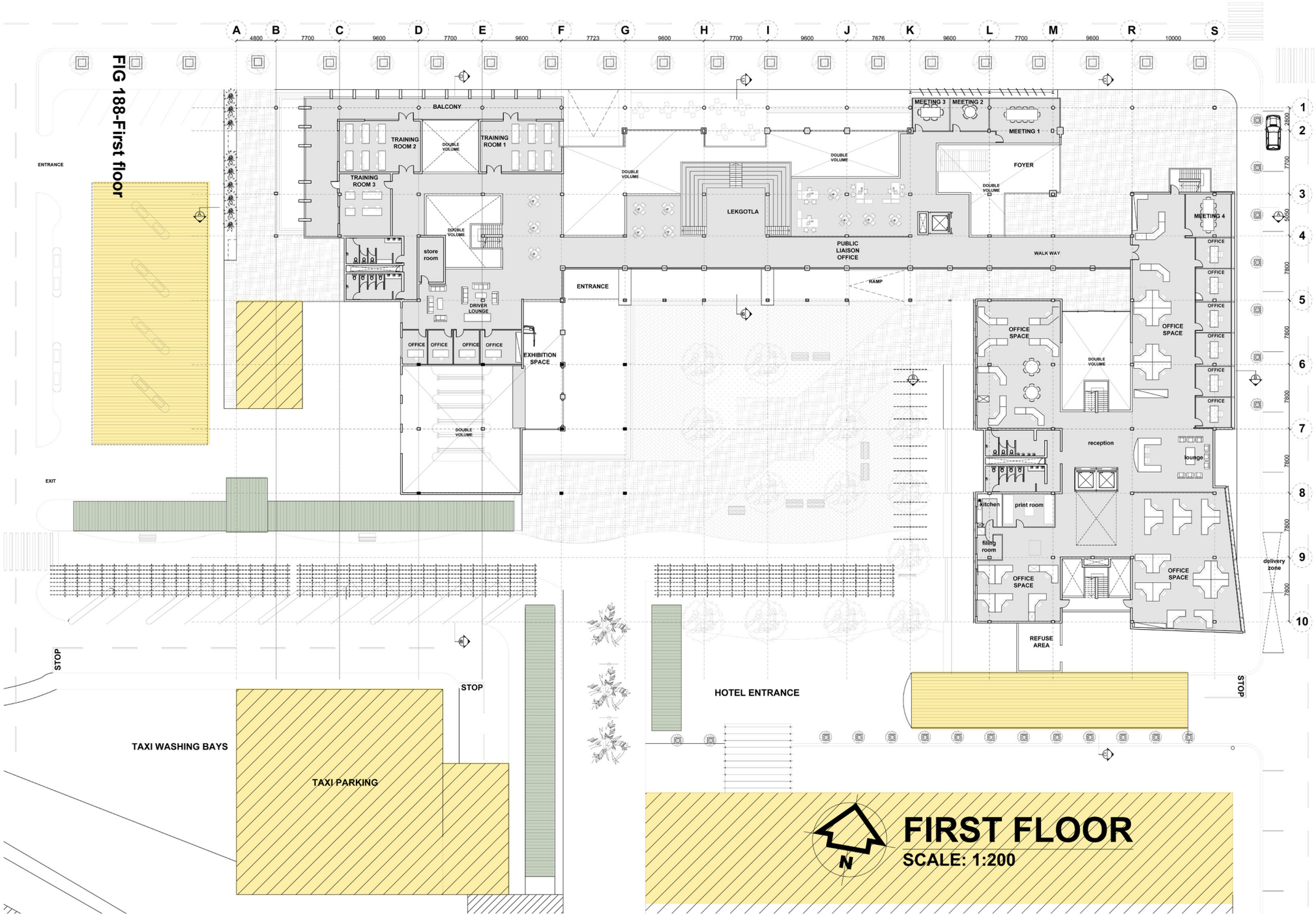
FIG 187- Ground floor



GROUND FLOOR

SCALE: 1:200

FIG 188-First floor



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

FIG 189- Second floor

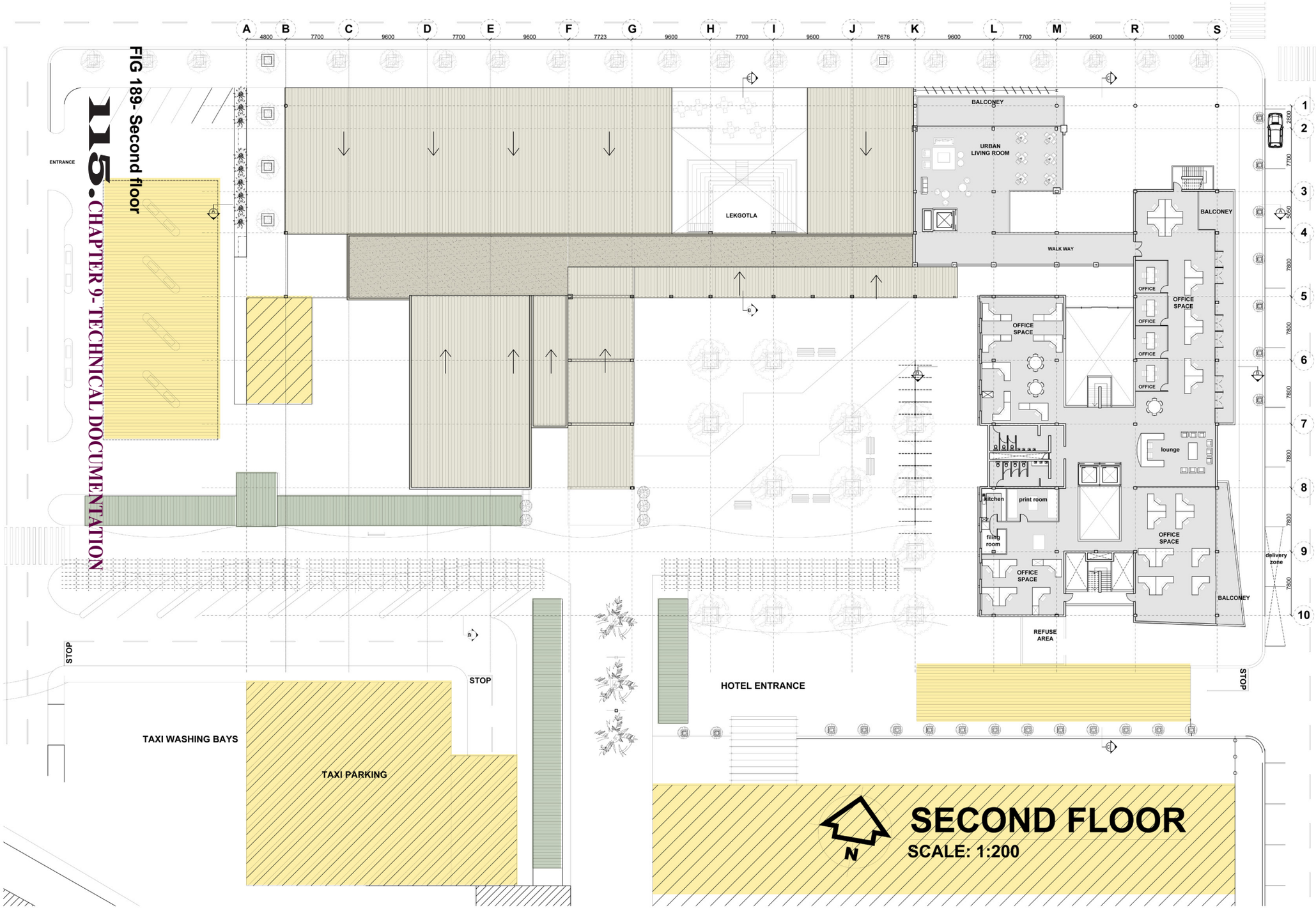
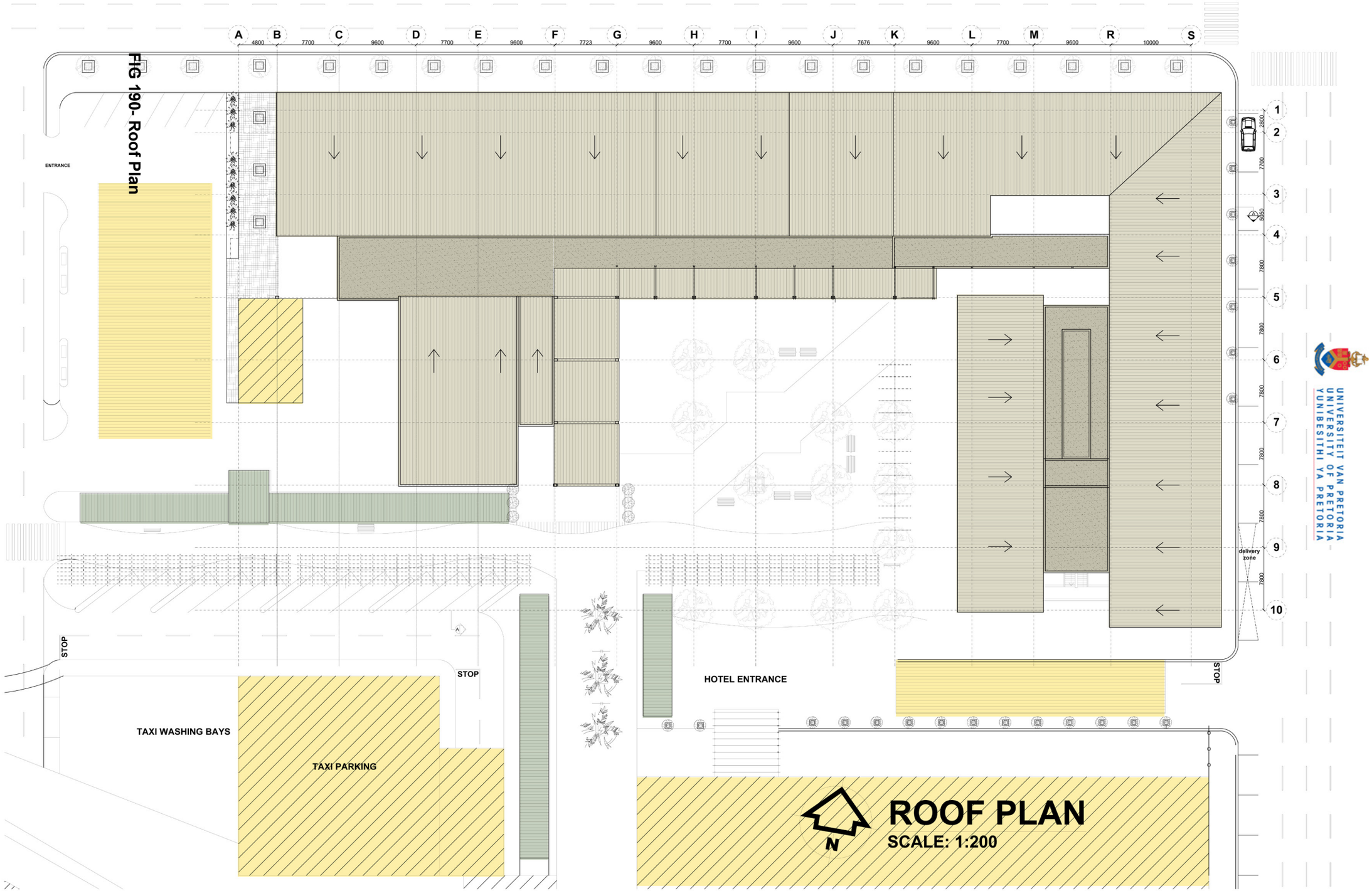


FIG 190- Roof Plan



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

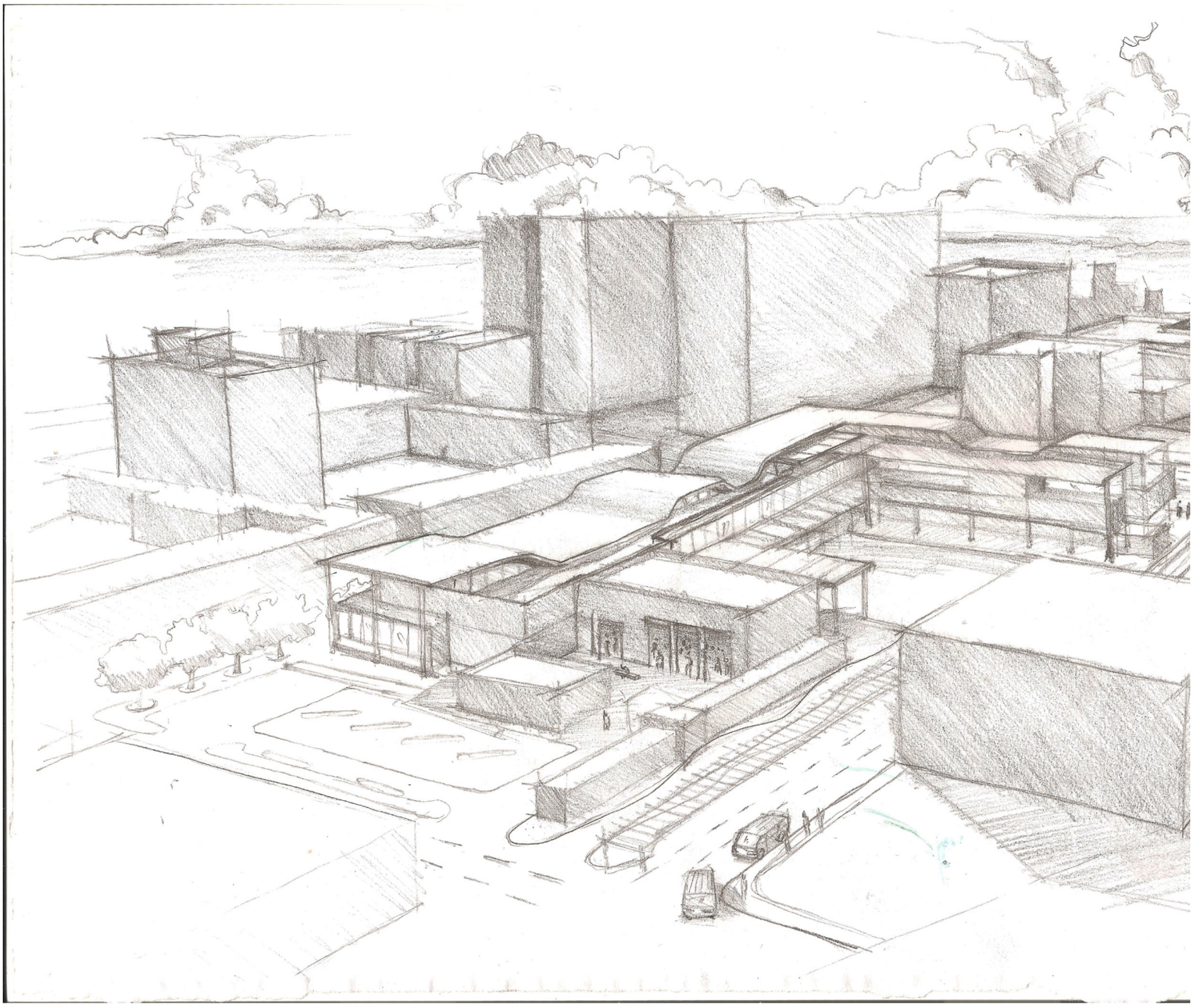
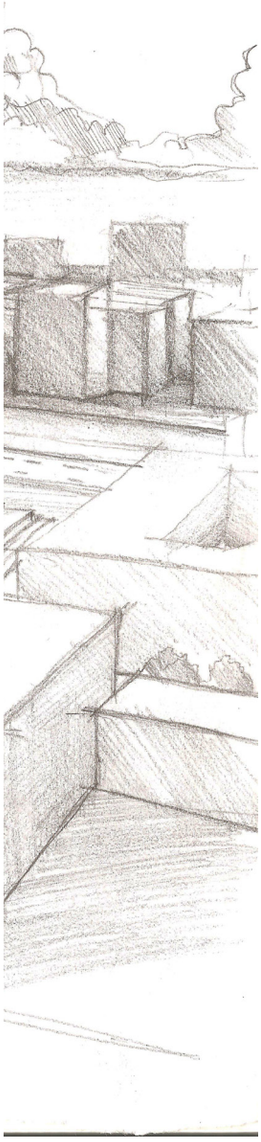


FIG 190- Perspective

CONCLUSION

With its inception originating from the arrival of the industrialisation period to its prominence stirred by government policies of the apartied regime (primarily the forced removals act, and colour bar), the taxi industry has been a system run by the people for the people. Its relevance and importance to the working class community is unprecedented and arguably unrivaled.

However, since its beginnings, the industry has been marked by in violence, a lack of accountability, and the recognition of a higher authority. These circumstances have led to the industry developing a reputation of an ungovernable, renegade industry with self-serving ideologies.



The theoretical point of departure informing this thesis is to investigate the correlations between architecture and identity. In so doing the thesis aims to discover a methodology in which architecture could be used to quantify, re-define and formulate identity. After extensive research, the methodology adopted in the thesis stipulates that the erudite manner in which to formulate identity, is to: one; use programmatic arrangements/ functions which highlight each facet of the taxi industry. Two: To have the architecture relay the narrative of the taxi industry through the use of spatial articulation. Three: Through the use and re-interpretation of architectural typologies that pertain to transport, (more over the taxi industry) architecture. Finally the intention is to do so in a manner which foster integration between all stakeholders of the industry (the general public, the taxi drivers, and the regulatory body)

The final architectural product produced within this thesis is the culmination of a mythology in which the three stipulated identity formulation methods are strategically assimilated into a cohesive architectural edifice. The building represents the taxi industry through its incorporation of all facets of the industry, its architectural re-interpretation of transport architecture, and its ability to programmatically address the needs of the industry.

References

Blake E. Ashforth, Fred Mael, Social Identity Theory and the Organization, The Academy of Management Review, Vol. 14, No. 1 (Jan., 1989), pp. 20-39, Published by: Academy of Management, accessed URL: http://www.jstor.org/stable/258189

Cote, James E.; Levine, Charles (2002). Identity Formation, Agency, and Culture. New Jersey: Lawrence Erlbaum Associates.

D Dewar, R.S Uytenbogaart: South African Cities: A manifesto for change. 1991

Editor: D Burger, 27 October 2009 11:31:25.Government Communication and Information System Source: South Africa Yearbook 2008/09, (http://www.info.gov.za/aboutsa/history.htm), March 4, 2010

O'Coill, Carl and Watt, Kathleen (2008) The politics of culture and the problem of tradition: re-evaluating regionalist interpretations of the architecture of Geoffrey Bawa. In: Architecture and identity. Lit Verlag, Berlin, pp. 483-494. ISBN 9783825810887, (http://eprints.lincoln.ac.uk/1823/), March 4, 2010

Govender, R., Allopi, D., Towards safer minibus taxi industry on South Africa, Department of Civil Engineering & Surveying, Durban Institute of Technology, (https://www.up.ac.za/dspace/bitstream/2263/6052/1/022.pdf) March 4, 2010

Günter Pfeifer and Per Brauneck, 2008, A Housing Typology, Courtyard Houses, Part 1, 8-17, DOI:10.1007/978-3-7643-7924-7_1accesed http://www.springerlink.com/content/t0457293521w1660/, 2010.

Hales, S; 2003, The Roman House And Social Identity, Cambridge University Press, Accessed: http://www.jstor.org/pss/2786123

History of the Taxi Industry, (2008), Santaco ,
Accessed 15/03/2010, http://www.santaco.co.za/index.php/santaco-history.html;

Jan E. Stets and Peter J. Burke Identity Theory and Social Identity Theory, Social Psychology Quarterly, Vol. 63, No. 3 (Sep., 2000), pp. 224-237 (article consists of 14 pages), Published by: American Sociological Association accessed http://www.jstor.org/stable/2695870

National Department of Transport (South Africa). Annual Transport Statistics 2001. Available: www.transport.gov.za [Accessed march 03, 2010]

(http://roadsafety.wordpress.com/2009/03/24/concern-about-taxi-violence-in-south-africa/) accessed: 4 March 2010.

http://en.wikipedia.org/wiki/Architecture; accesed 21/03/2010

Social Identity Theory: cognitive and motivational basis of intergroup differentiation. Universiteit Twente (2004).

Social Identity Theory: cognitive and motivational basis of intergroup differentiation. Universiteit Twente (2004).

Internet

Arc space, “Coop Himmelb(l)au BMW Welt Munich, Germany”, 2007, available http://www.arcspace.com/architects/coop_himmelblau/bmw_welt/bmw_welt.html accessed 20/05/2010

Arrive alive, “Mini bus taxi and road safety” available, http://en.wikipedia.org/wiki/Marabastad,_Pretoria, accessed 21/03/2010

Archiexpo, “Cambriidge architectural”, availablehttp, ://www.archiexpo.com/prod/cambridge-architectural, accesed 01/11/2010

British, Airways, “business fengshui”, 2008, available, http://www.businessfengshui.co.uk/portfolio/britishairways.html accessed 20/05/2010, accessed 20/05/2010

Grandtradition, “Classical architecture”, available, www.grandtradition.net/introduction-classical-architecture) accessed 21/03/2010

Greg, Cunniff, Radiant cooling, PE Taco Inc, Cranston, Ri, 2009, accessed http://hpac.com/plumbing-piping-pumping/highefficiency_radiant_cooling/, 01/11/2010

http://en.wikipedia.org/wiki/Marabastad,_Pretoria, accese 21/03/2010

Lucky Sindane, “Metro mall reopened” Joburg news, 2004, available, http://www.joburgnews.co.za/2004/june/june8_metro.stm, accessed 22/09/2010

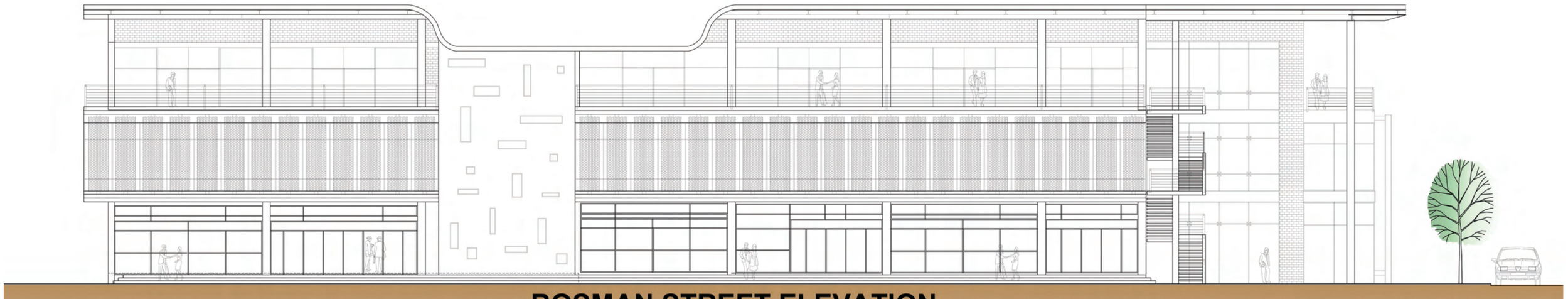
Lucille Davie, “Joburg’s freedom architecture”, South Africa.info, 2005, available http://www.southafrica.info/about/arts/architecture-230805.htm#metro, accessed 22/09/2010

http://en.wikipedia.org/wiki/Architecture_of_ancient_Rome, accesed 59/09/2010

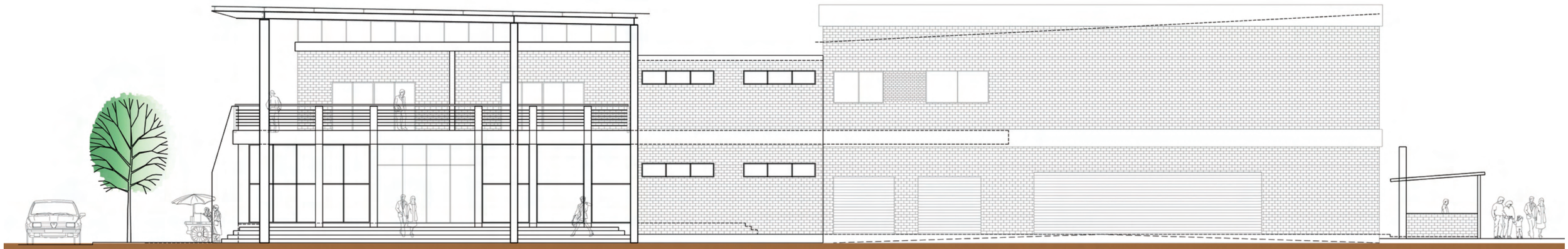
Social Identity Theory: cognitive and motivational basis of intergroup differentiation. Universiteit Twente (2004).

State University of NY, Roman aarchitecture, College or Oneonta, available, www.employees.oneonta.edu/farberas/arth/arth200/politics/roman_architecture.html, accesed 59/09/2010

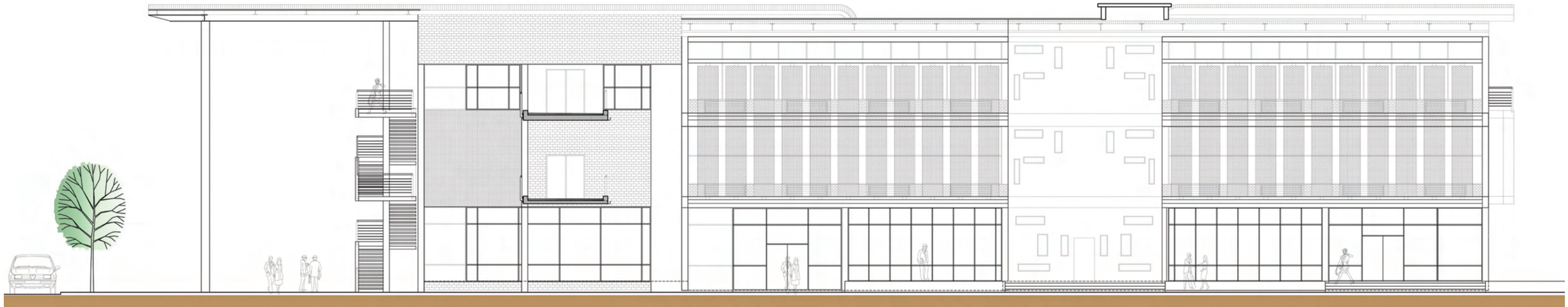
http://en.wikipedia.org/wiki/BMW_Headquarters, accesed 59/09/2010



BOSMAN STREET ELEVATION

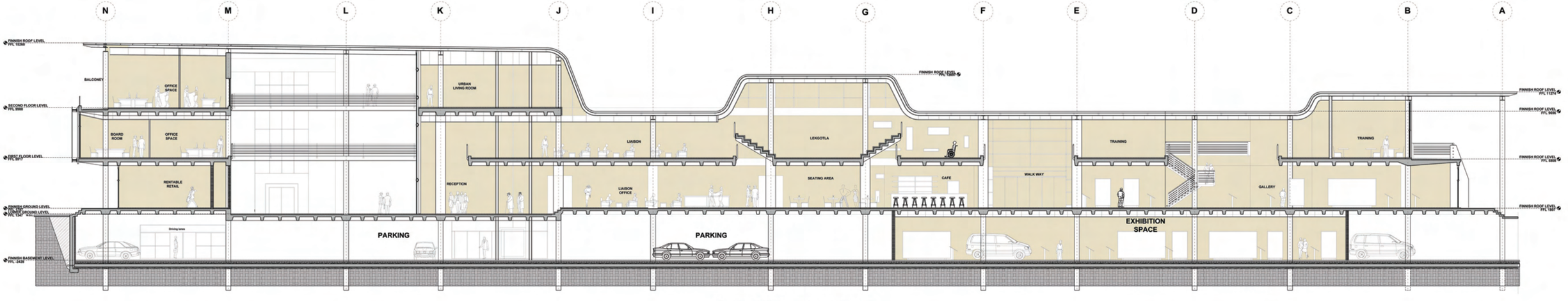


EAST/ SERVICE CENTER ELEVATION



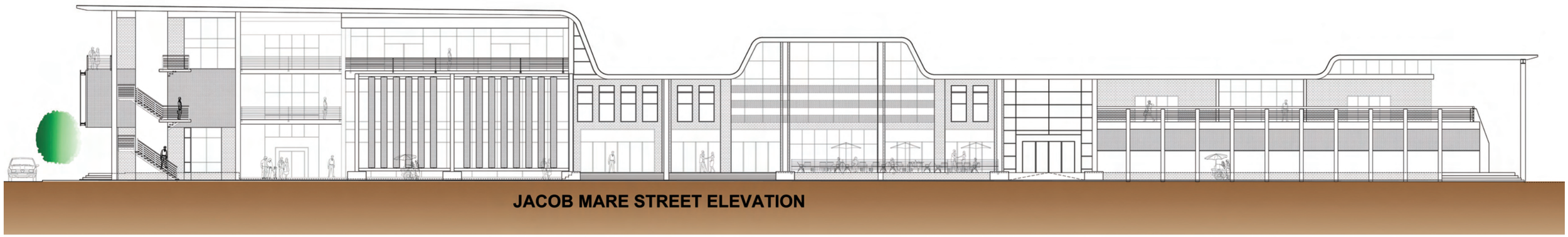
WEST COURTYARD ELEVATION

JACOB MARE STREET ELEVATION

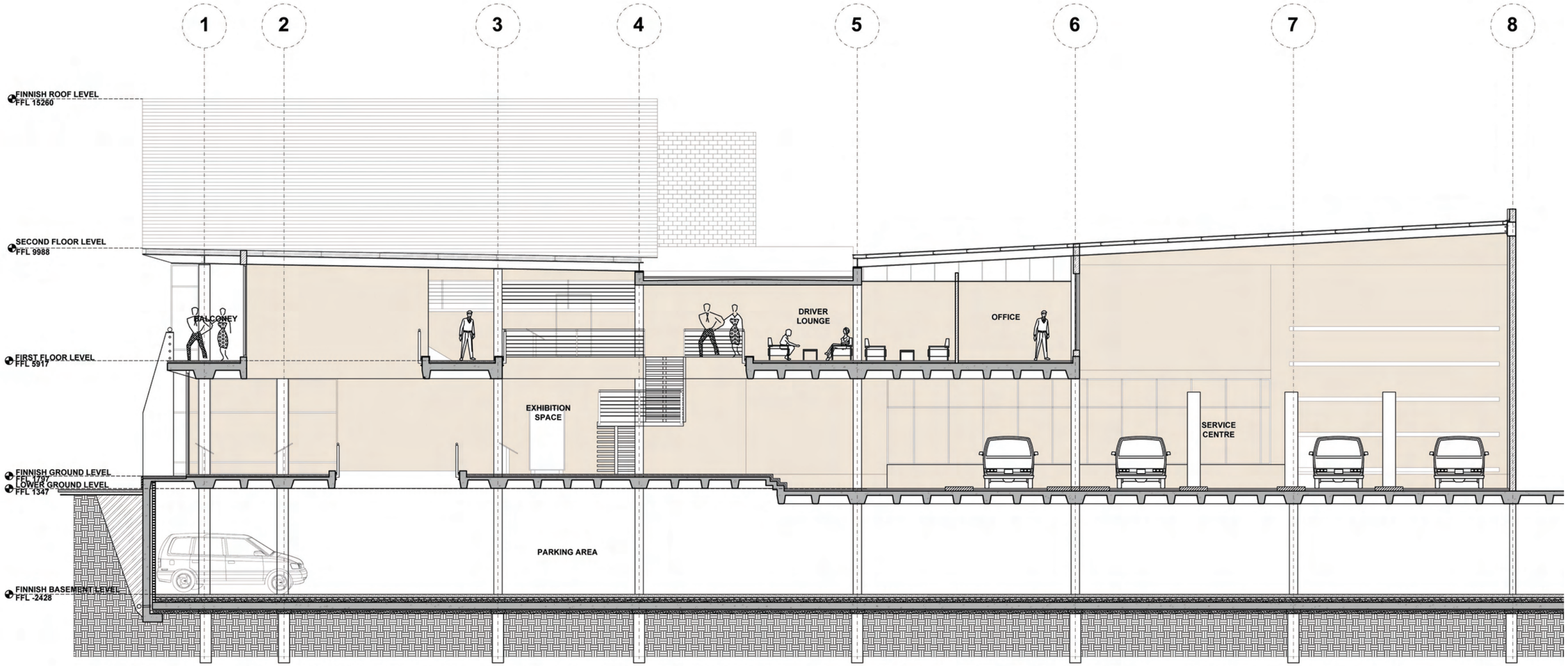


SECTION D-D

SCALE: 1:100

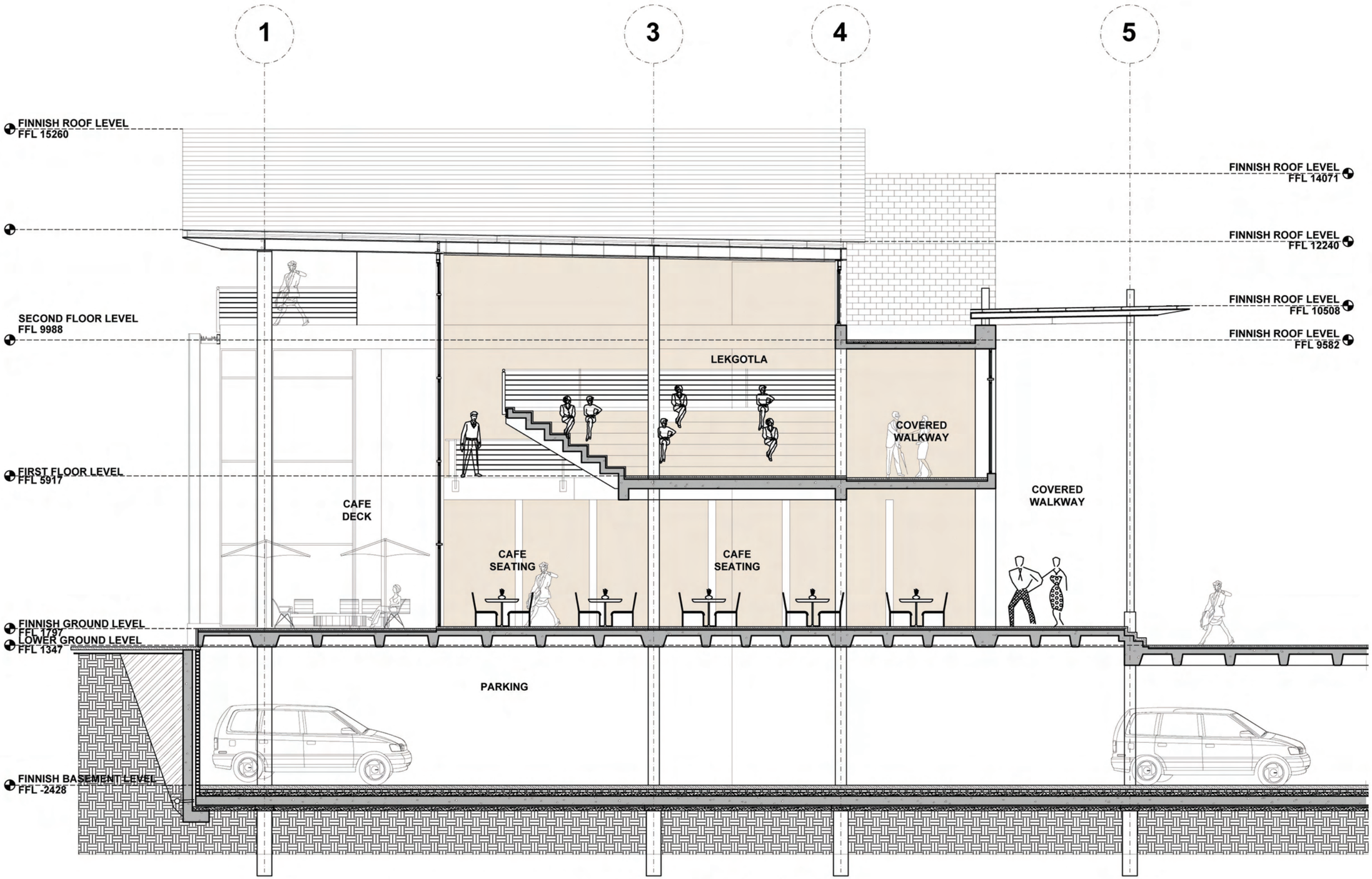


JACOB MARE STREET ELEVATION



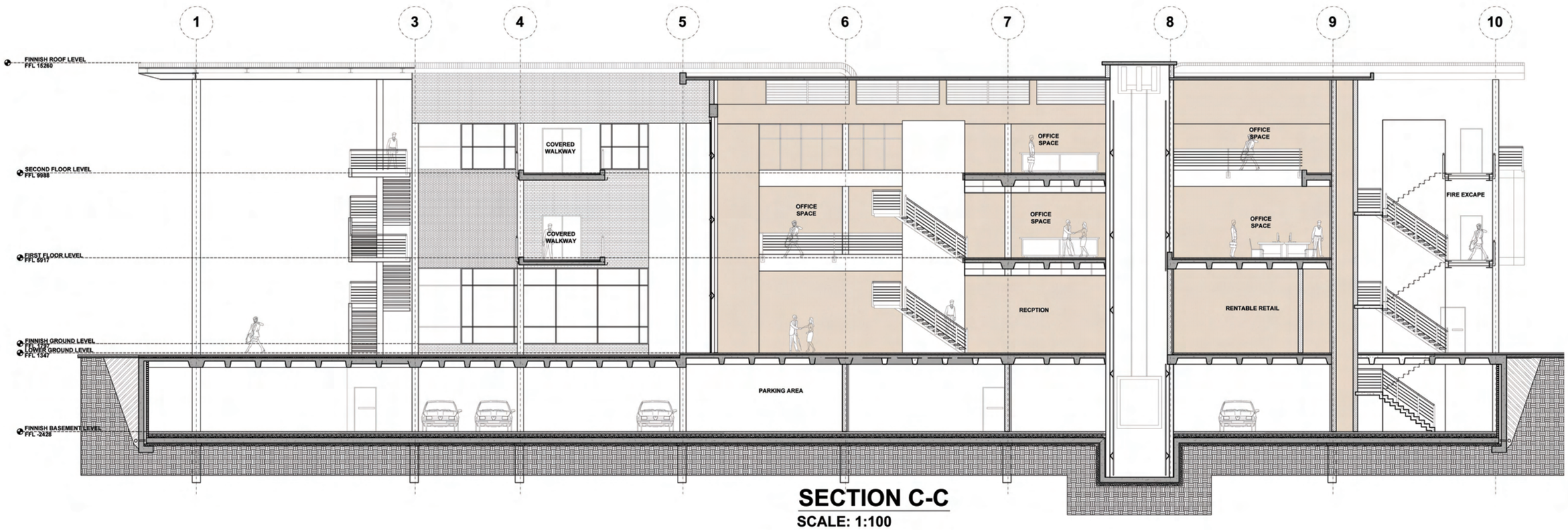
SECTION A-A

SCALE: 1:100



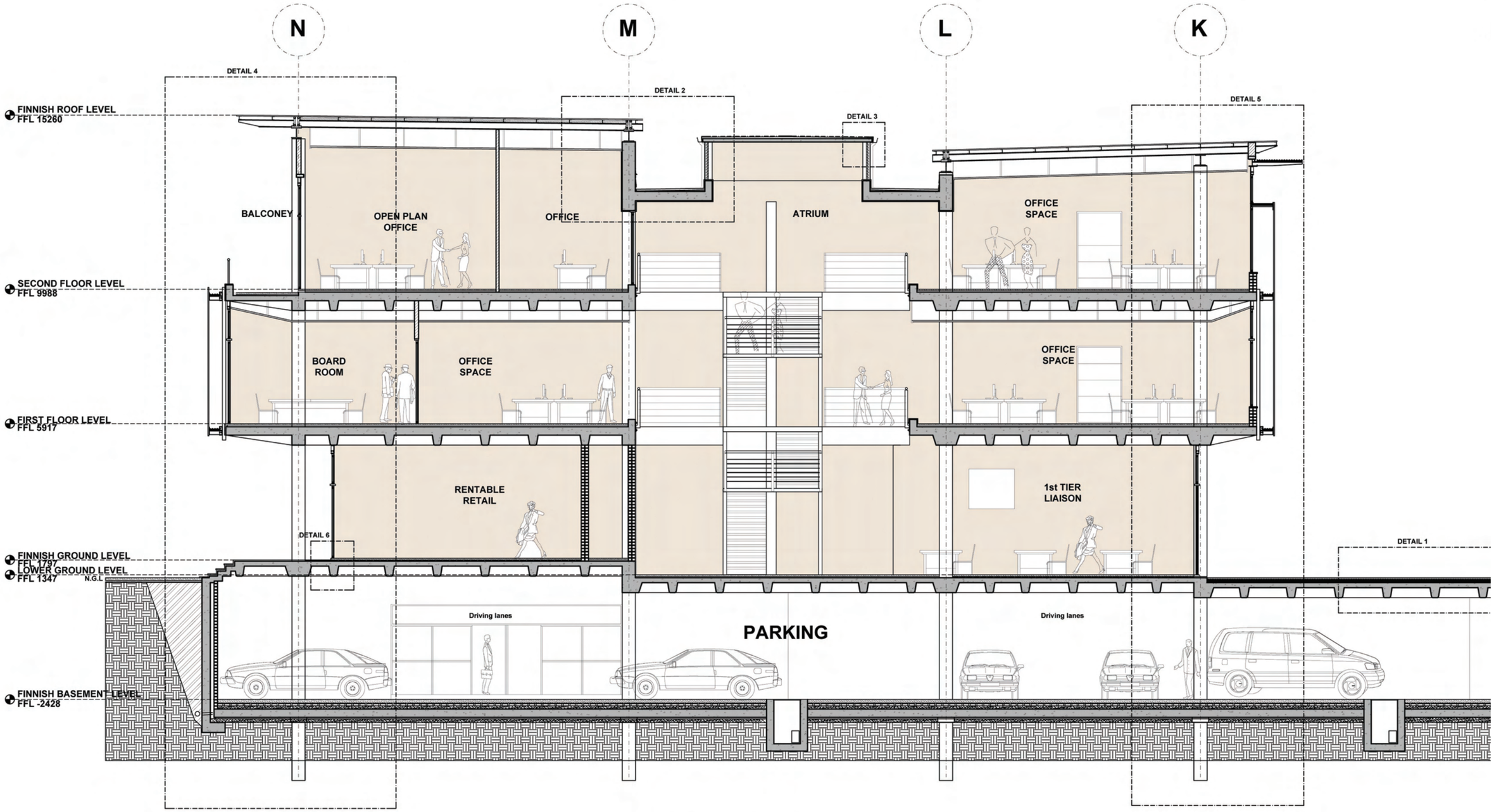
SECTION B-B

SCALE: 1:100



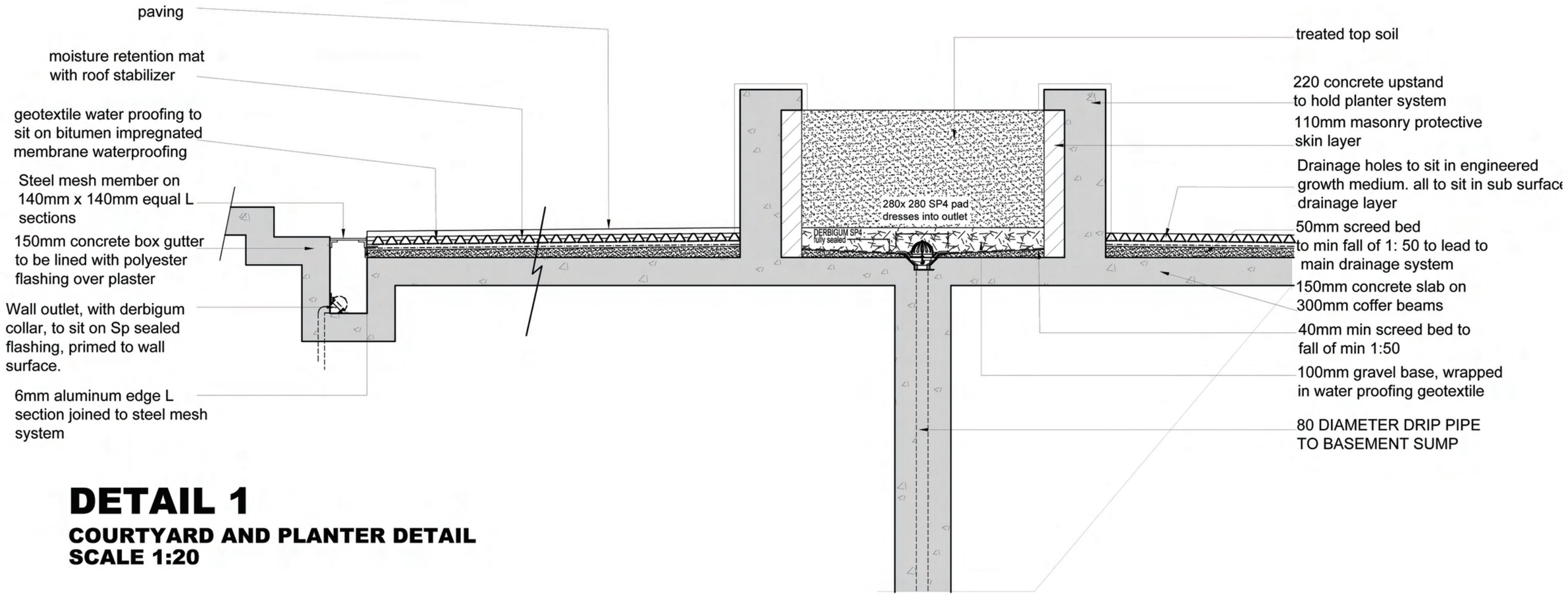
SECTION C-C

SCALE: 1:100



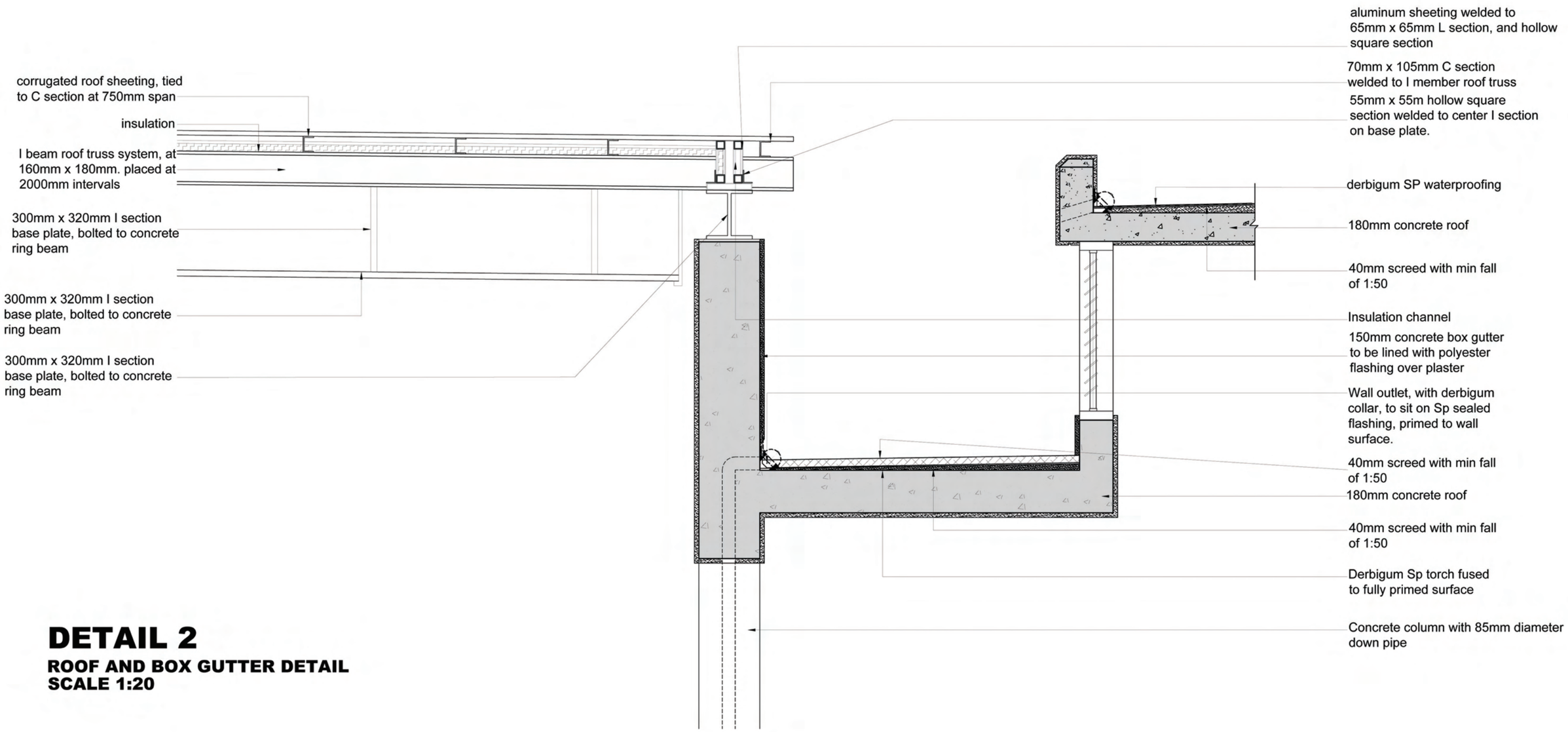
SECTION E-E

SCALE: 1:50



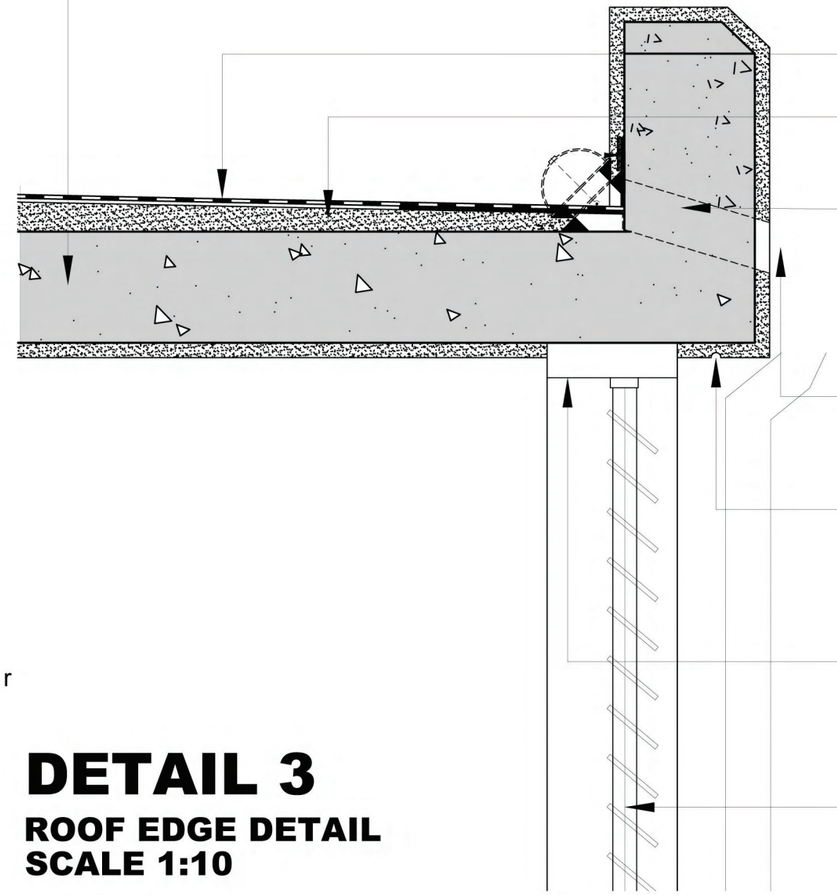
DETAIL 1

COURTYARD AND PLANTER DETAIL
SCALE 1:20



DETAIL 2

ROOF AND BOX GUTTER DETAIL
SCALE 1:20



180mm concrete roof

derbigum SP waterproofing
40mm screed with min fall
of 1:50
Terminating edges sealed for
a min, width of 500mm to the edge

turndown sealed to galvanized edge
edge strip extending into gutter

drip hole

steel window frame, to encase
mechanical window openings

center pivoting, steel framed window
openings

r

DETAIL 3

ROOF EDGE DETAIL
SCALE 1:10

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

220mm x 180mm I section cross beam at 2m intervals, welded to steel I section ring beam

300mm x 320mm Ring beam I section bolted to steel base plate

300mm x 20mm steel base plate bolted with expansion bolts to concrete ring beam, with steel I beam above

220mm x 85mm precast concrete ring beam lintel, on I section ring beam

250mm x 90mm steel C section welded to aluminum window frame bolted to cleats with concealed bolts

fixed anodised aluminium window frame with 7 mm diameter dust filter rubber rings panel to control passive exhaust air

galvanised mild steel balustrade to manufactures detail

floated screed Finnish with ceramic tile covering

min 50mm screed to fall of min 1:50 to drainage gutter

purpose mad galvanized steel gutter with perforated steel mesh above, to 1:60 fall to outlet pipe

1195mm x 585mm Everdeck fissured suspended acoustic ceiling, held up by 6mm steel rod bolted to concrete slab

ceiling mounted steel radiant cooling pipes at 300mm intervals attached to hvac system in basement

BALCONEY

OPEN PLAN OFFICE

BOARD ROOM

OFFICE SPACE

RENTABLE RETAIL

polished screed finish, with fall to edge

non sip rubber mat placed on top of screed Finnish

2000mm x 2500mm concrete street pavement, with expansion joints at 25m spacing

sub surface drainage above geotextile and bitumen impregnated membrane water proofing

N.G.L

treated soil filling compacted in layers off 150mm

reinforced concrete retaining wall to engineers detail

115 cavity

110mm masonrey cavity wall with plaster

Geo pipe on cast in situ reinforced concrete footing for water pressure

110mm power floated concrete surface bed to engineers specs

290mm x 140mm x 90mm concrete bricks with 30mm joints for water drainage with geotexile DPM membrain above

150 mm diameter perforated PVC geo pipe with 1:125 slope covered with stone and geotextile water proofing

250mm no fines cast in situ concrete floor slab at 1:50 fall to sump

reinforced concrete slab

sub slab drainage layer at 1:150 fall to sump

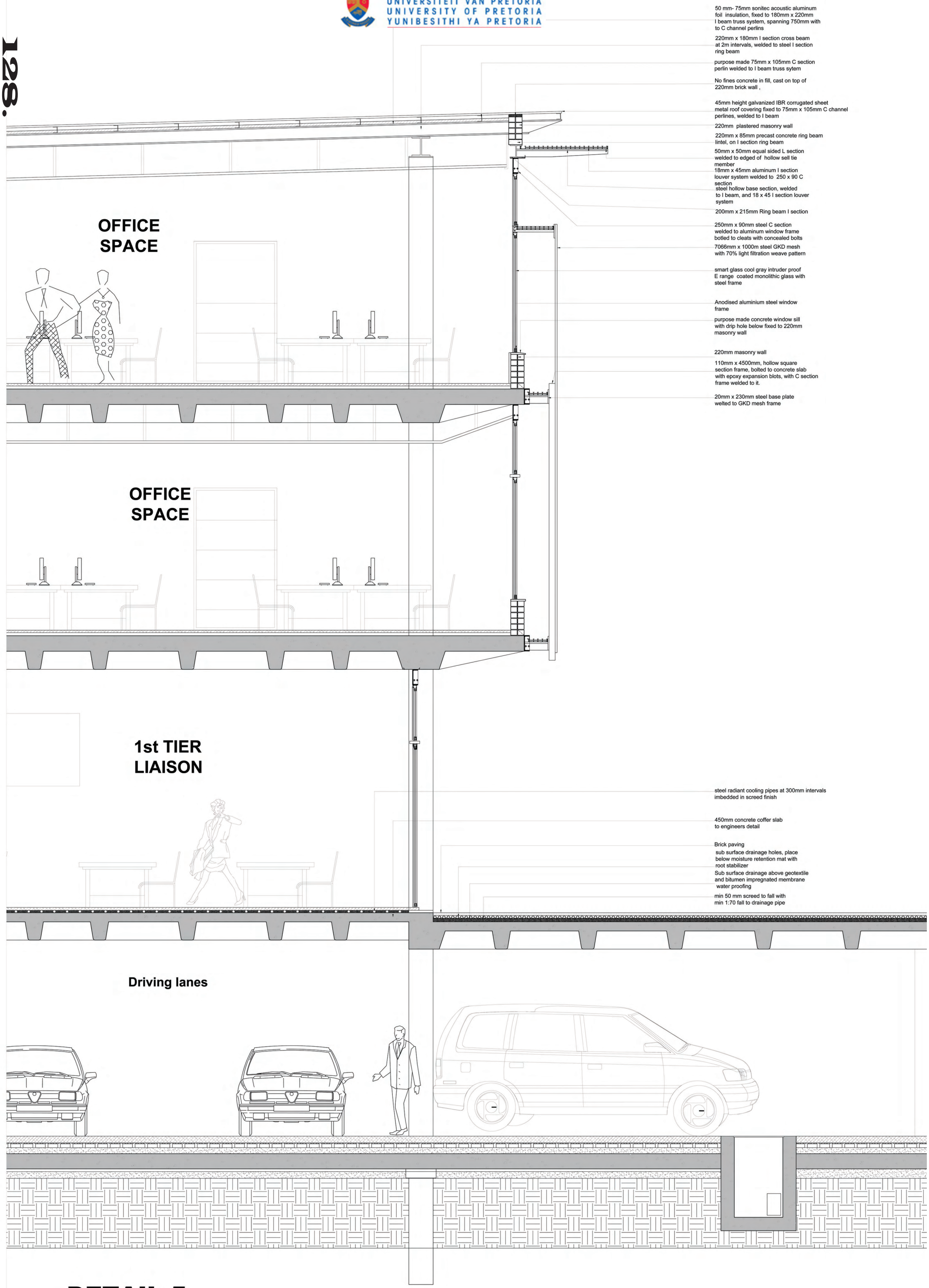
compact screed with 1:50 fall to sump

Driving lan

DETAIL 4

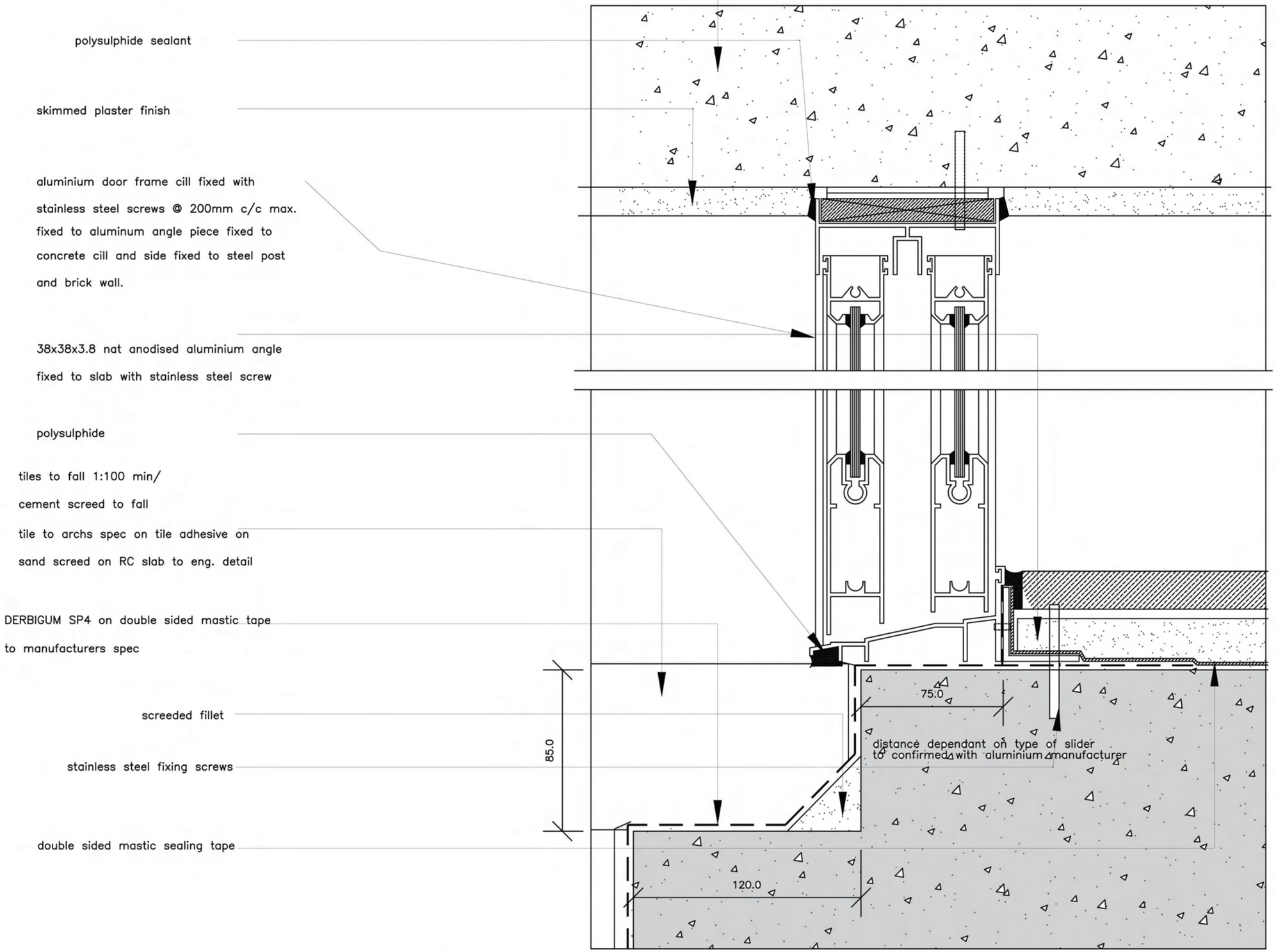
STRIP SECTION
SCALE 1:20

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA



DETAIL 5

STRIP SECTION
SCALE 1:20



DETAIL 6

THRESHOLD DETAIL
SCALE 1:2