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CAN YOU SEE THE MUSIC?

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Submitted in fulfilment of the requirements for the Degree of Magister in Architecture [Professional]
in the Faculty of Engineering, Built Environment + Information Technology
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South Africa

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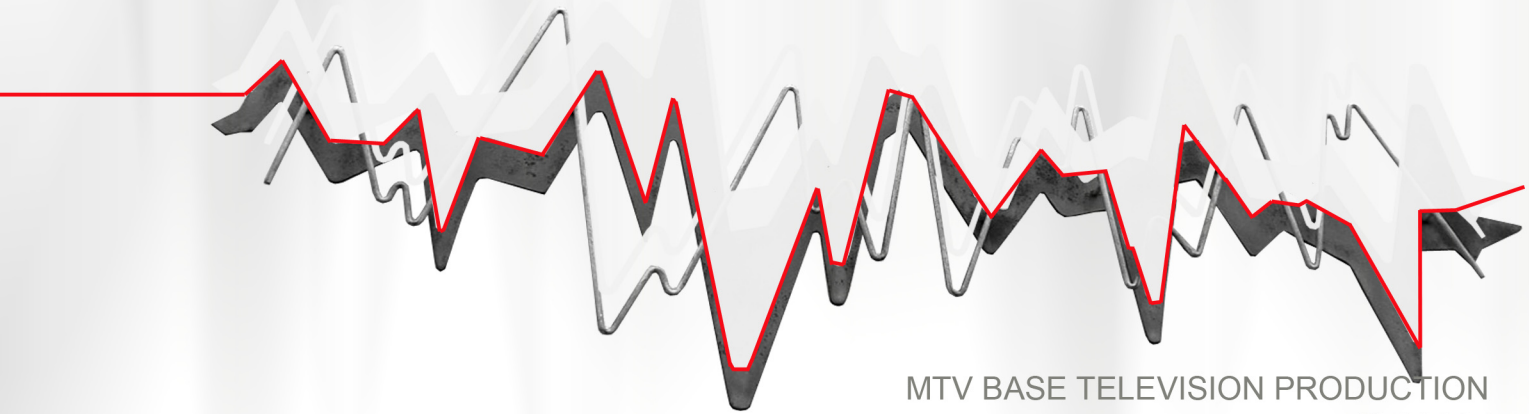

MTV BASE TELEVISION PRODUCTION CENTRE

This dissertation is the result of an interest in the progression of media-technologies within the urban context. Large media billboards scattered along major vehicular routes which display advertisements and information on the facades of buildings, have become synonymous with the urban fabric.

The intent of this dissertation is to determine the relationship between media-technologies and the social organisations of the city. Can one consider these technologies as generators for social interaction and the broadening of the urban cultural content? Media-technologies are becoming increasingly popular in the use of public spaces, signifying the ability and opportunity for these systems to create an interactive relationship with the user.

The theme of the discourse is the creation of a Music Television production centre in Prinshof, a neglected part of the Pretoria inner city. Establishing an entertainment based development in this already vibrant area, might contribute to the systematic rejuvenation of this lower to middle-income community. The design proposal aims at becoming a social tool, encouraging the development and sustainment of the local cultural identity whilst realising the potential of media/interaction technologies within the African context.

PROLOGUE

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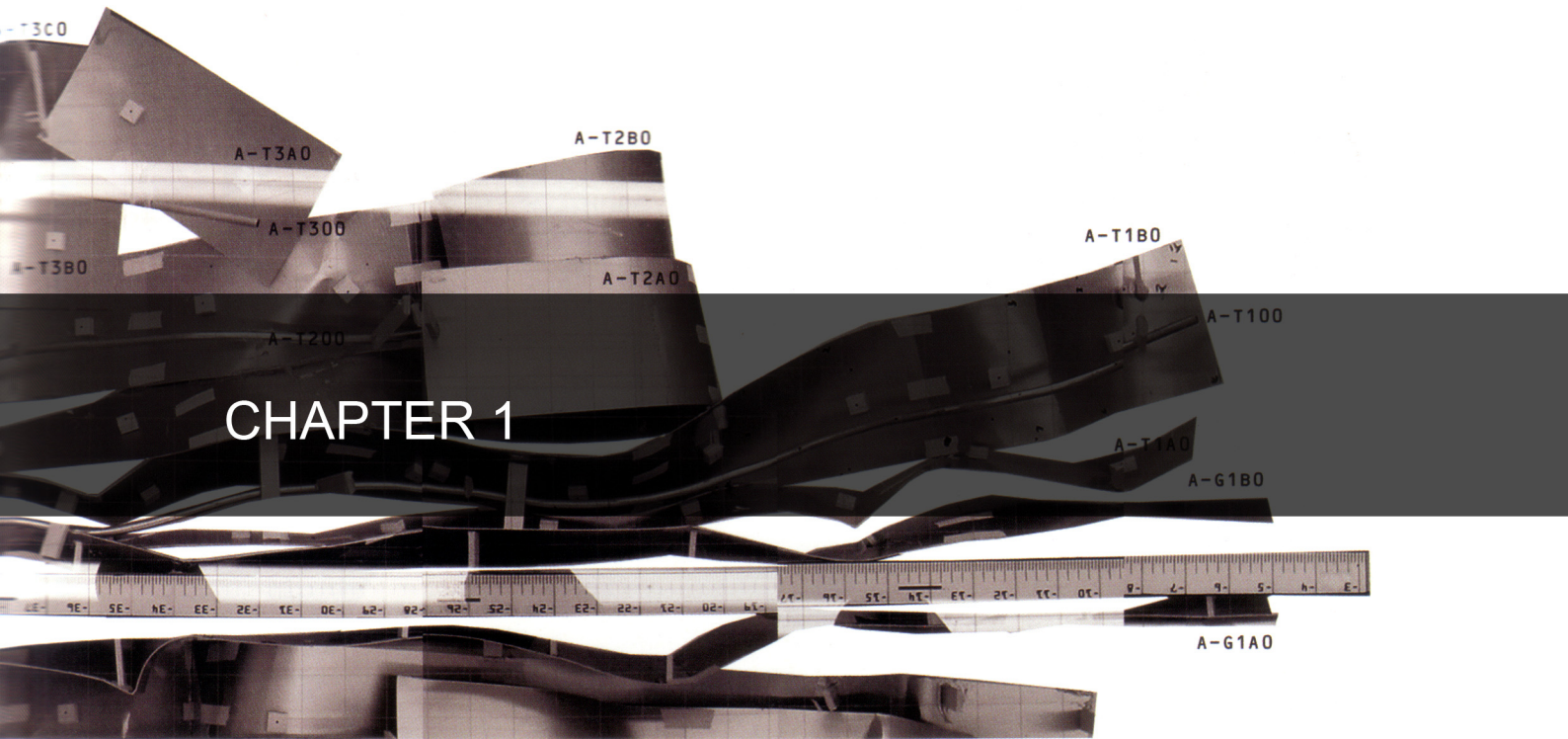
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A-G1A0

CHAPTER 1

CONTEXT STUDY

1.1 Introduction

The formation of urban settlements can be considered as one of man's greatest achievements. The complex nature of its structuring and layers of activities creates an energetic organism that is crucial for its own survival.

Architecture can be described as the physical building blocks of such a city, but it is the social interaction between its inhabitants and the architecture that creates the city's character. It is this human element that is so often neglected, which is vital for the existence of the city.

A large majority of buildings are erected for capital gain. They become empty shells of modular monotony, waiting to be filled by occupants and specific functions in order to achieve optimum profitability. Instead buildings can be so much more. They can become enablers of social interaction, movement, orientation and a better way of urban life.

Architecture should not only be symbols of status, but rather be platforms for human activity which is generated by its surroundings. To define the character of a city one has to go beyond the physical features of such a settlement. Physicality is a feature that fades during time, buildings will be demolished or altered and changes will occur to keep up with contemporary paradigms.

The true genius loci cannot be defined by something tangible, but rather by the spirits of its inhabitants.

Fig. 1.1 ABSA Tower

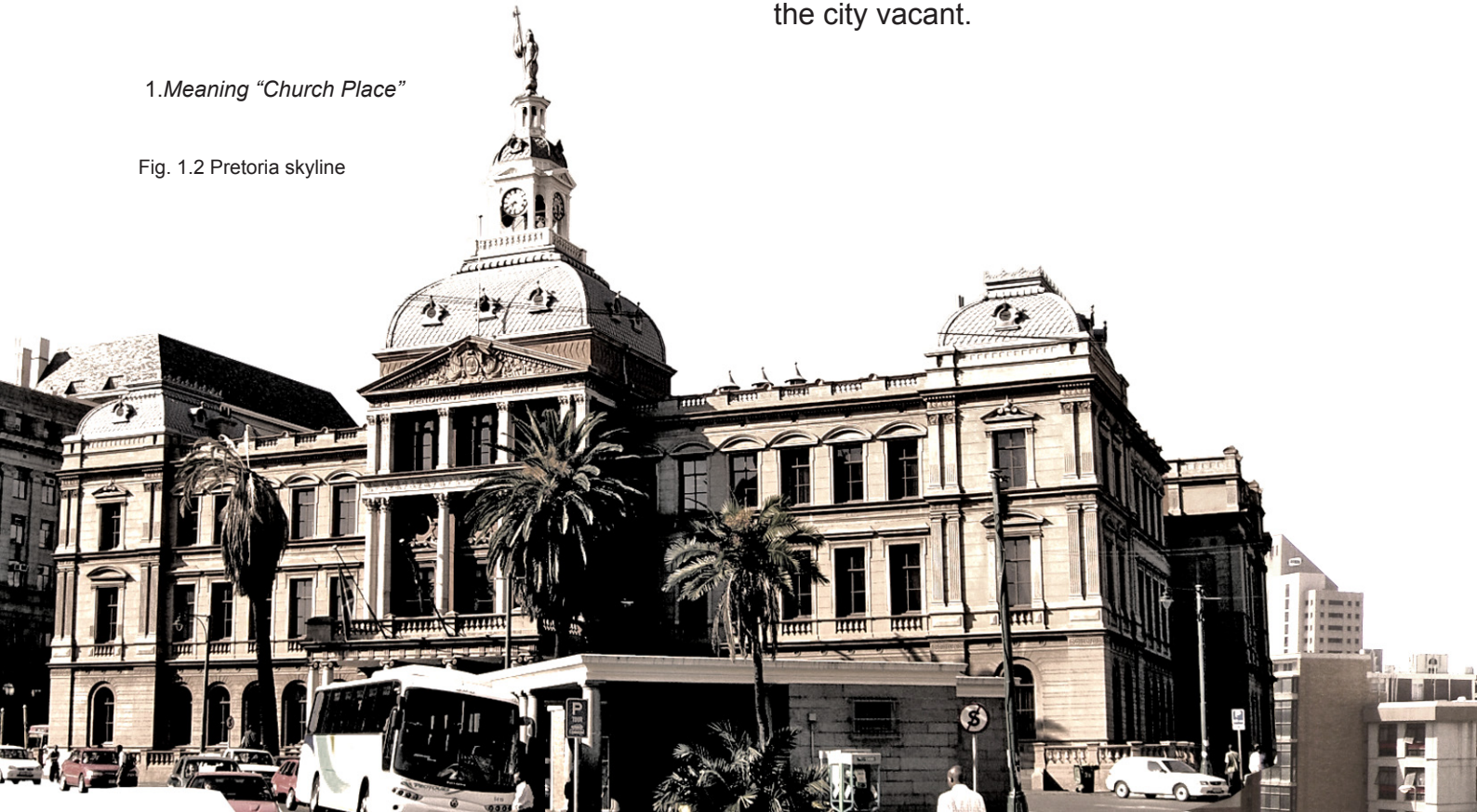
1.2 City Context

Pretoria was founded in 1855 by Marthinus Wessel Pretorius and served as a centralising *Kerkplaats*[1] until the 1880's when it became the capital of the ZAR. (Holm, 1998:59) Since then, the influence of the Government had a strong effect on the image of Pretoria - old stately buildings from the ZAR era stand side by side with towering commercial skyscrapers, emphasising the complex diversity present in the city.

Like most third world cities, Pretoria functions on two levels, namely the formal- and informal level. Due to years of neglect, crime and social decay, the formal sector dissipated towards the peripheries of the city, with most of the government institutions still residing in the Central Business District. This unpopularity of the inner-city has resulted in most of the major businesses migrating towards the eastern suburbs, leaving countless buildings within the city vacant.

1.*Meaning "Church Place"*

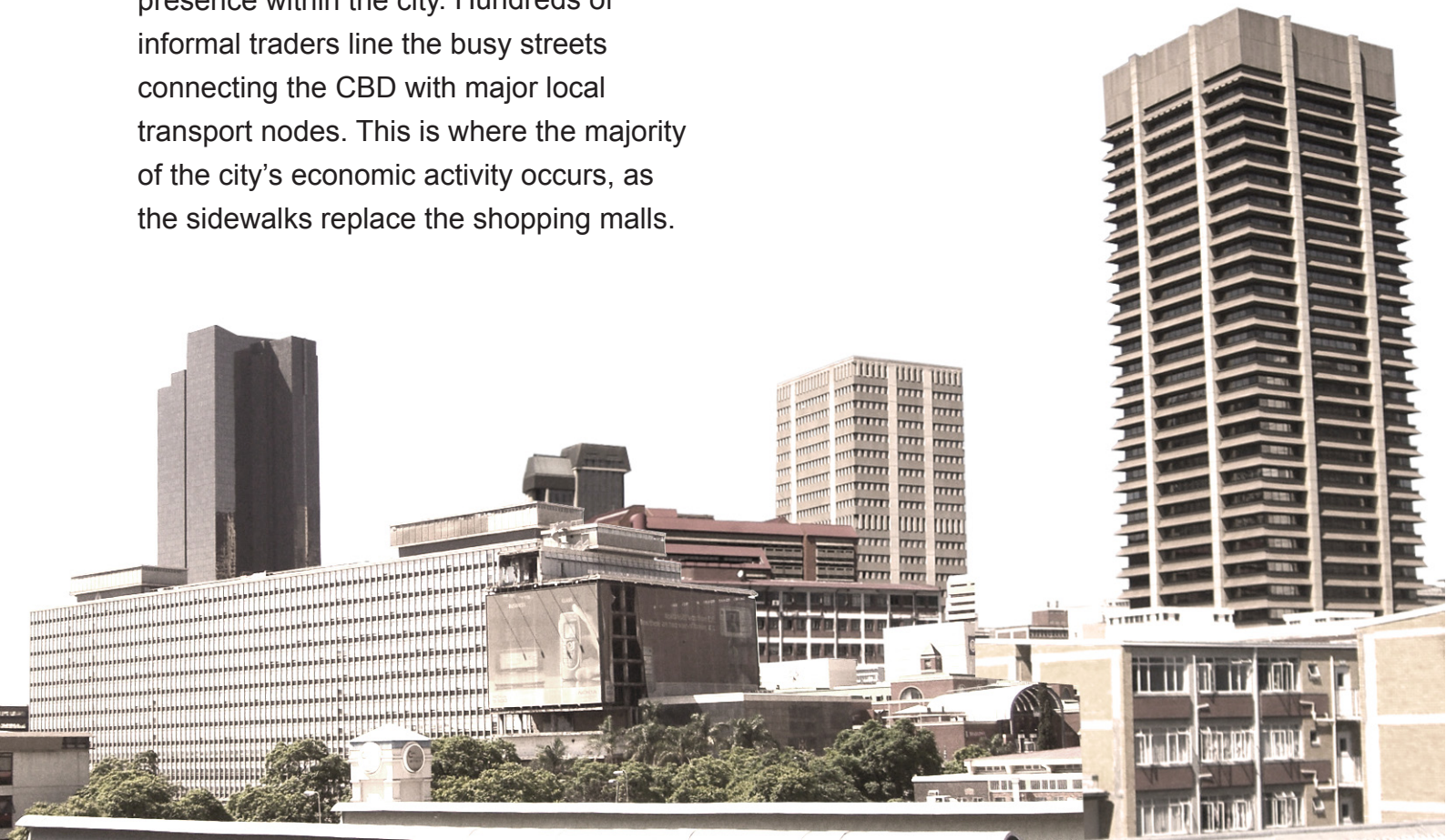
Fig. 1.2 Pretoria skyline



This eastward sprawl also had an enormous influence on the growth of the city -eastern residential areas had to accommodate inner-city commercial centers, resulting in inefficient and congested infrastructures and a fragmented economic backbone.

In contrast with the formal sector, the informal sectors have increased their presence within the city. Hundreds of informal traders line the busy streets connecting the CBD with major local transport nodes. This is where the majority of the city's economic activity occurs, as the sidewalks replace the shopping malls.

In the Western paradigm the city has become sterile, monofunctional and unprofitable, but in an African sense the city is a bustle of movement, a congregation of different cultures and a platform for chance happenings.



These contradicting views put Pretoria in a complicated position. On the one hand it is necessary to provide a city that is structured, rational and economically sustainable, i.e. an organised system that can be regulated. But on the other hand, a city will always be chaotic, unpredictable and unprogrammed.

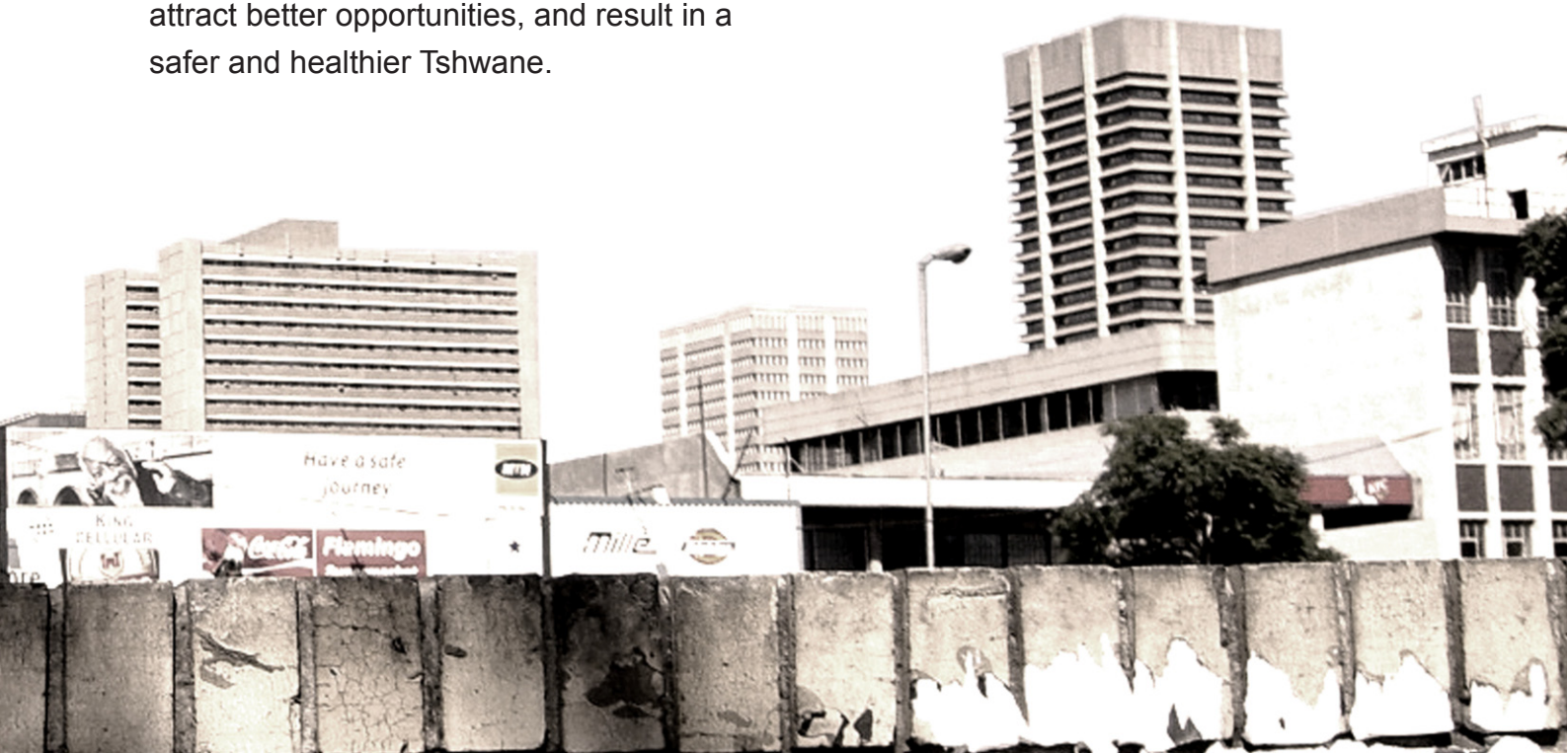
The Tshwane City Vision "…is to become the leading African capital city of excellence that empowers the community to prosper in a safe and healthy environment."

(Tshwane ICDRS, 2005)

Fig 1.3

It is paramount that a coherent vision is established for Pretoria's inner-city in order to achieve these objectives. Peripheral developments should be reduced and consolidated within the CBD.

This will encourage urban regeneration on a broader scale, encouraging better job opportunities. The rejuvenation and transformation of the city should be the priority of government, as well as the city's designers and residents. A revived inner-city may become the catalyst needed to attract better opportunities, and result in a safer and healthier Tshwane.



1.3 Geographical

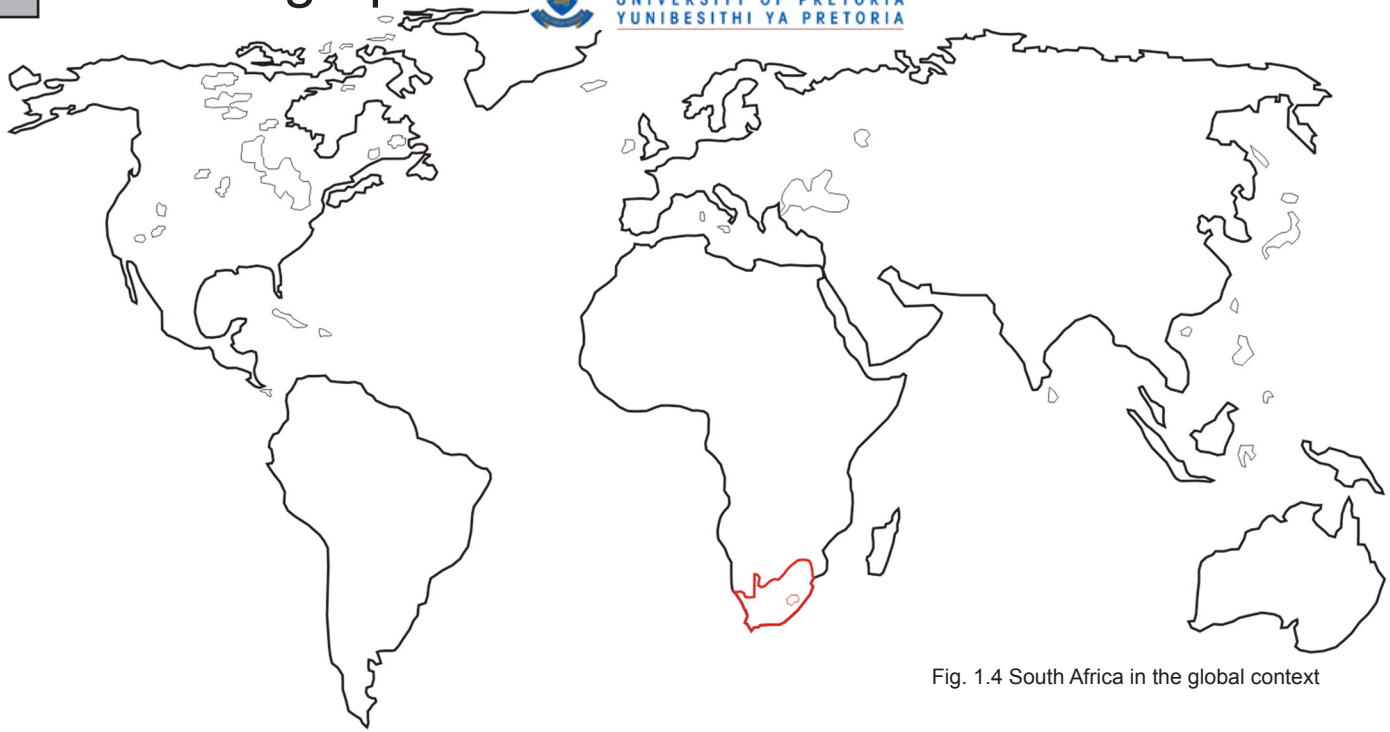


Fig. 1.4 South Africa in the global context

Fig 1.5 Gauteng in relationship with the other provinces of South Africa

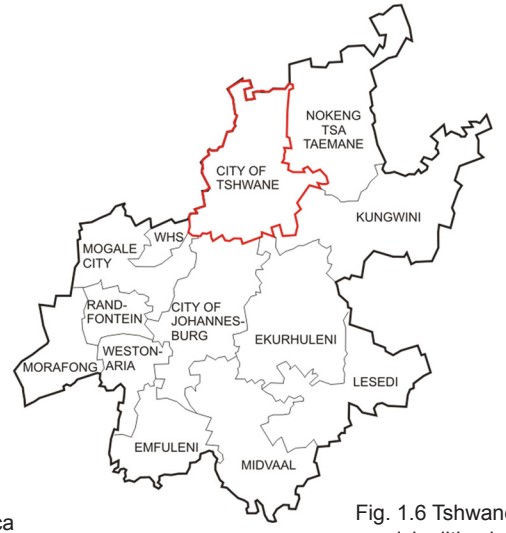


Fig. 1.6 Tshwane and other municipalities in Gauteng

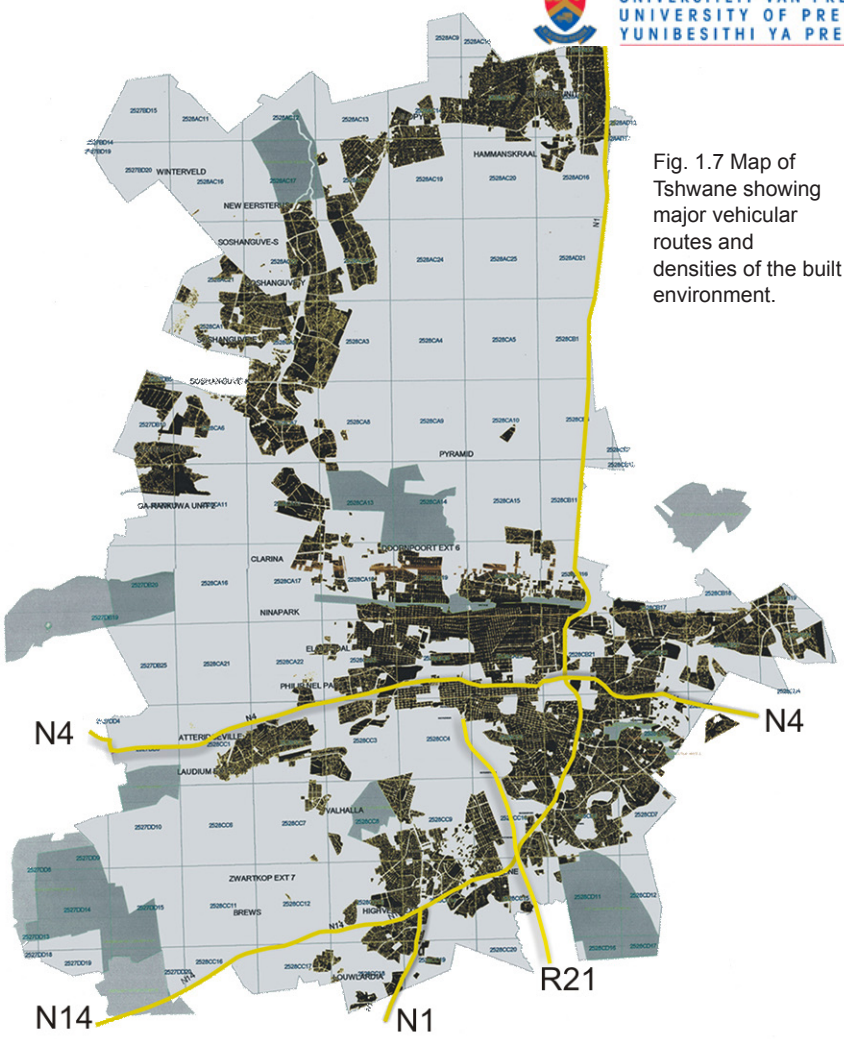
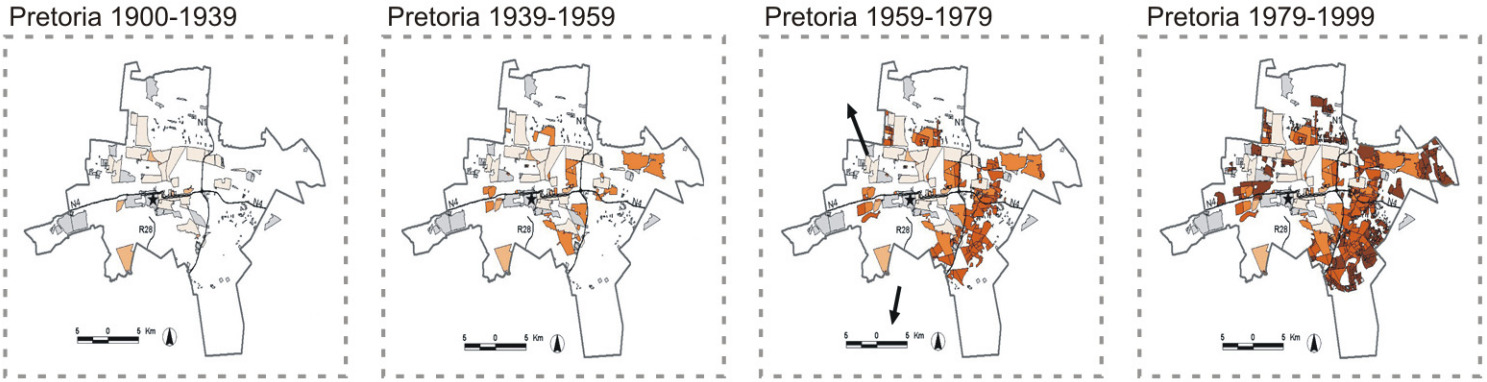


Fig. 1.7 Map of Tshwane showing major vehicular routes and densities of the built environment.

Tshwane is the administrative capital of South Africa with a population of just under one million. The city is situated in the valleys of the Magaliesberg, Daspoort and Schurweberg mountain ranges. With the Apies river, Steenhoven- and Walkerspruit converging in this area, it was considered the ideal location to establish a settlement as there was enough water to grow crops, and the natural features of the ridges protected the settlement against enemy attacks.

Because of these natural features, the north-south axis of development was hampered and most of Tshwane's development occurred in an east-west direction.

Fig. 1.8 Growth of Pretoria Inner city



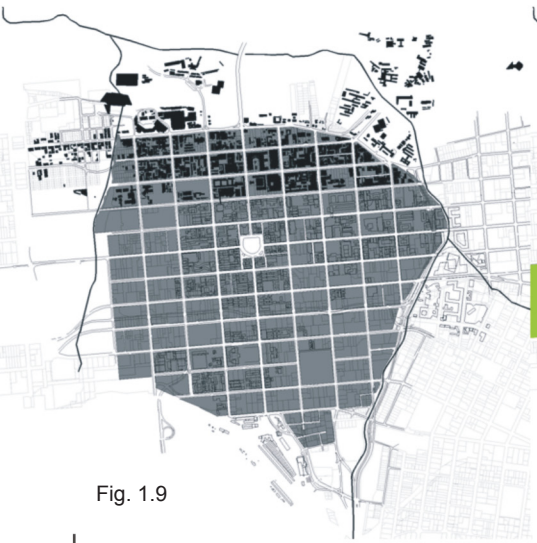


Fig. 1.9

Fig. 1.10

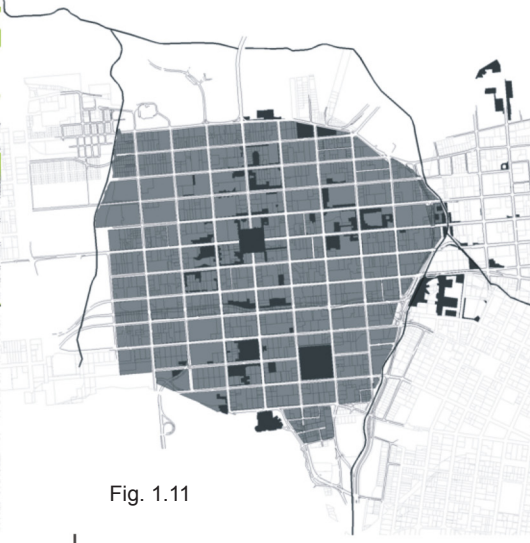


Fig. 1.11

NOLLI MAP

OPEN SPACES

PUBLIC SPACES

Tshwane's close proximity to major highways makes it easily accessible to the rest of the country. The N1 serves as the primary north-south connector, linking Tshwane and Cape Town to the south and Polokwane to the north.

The N4 becomes the primary east-west connector, which creates an important trading route between Gauteng and Maputo in Mozambique. The R21 is also a very integral connector as it links Tshwane with O.R Thambo International Airport.

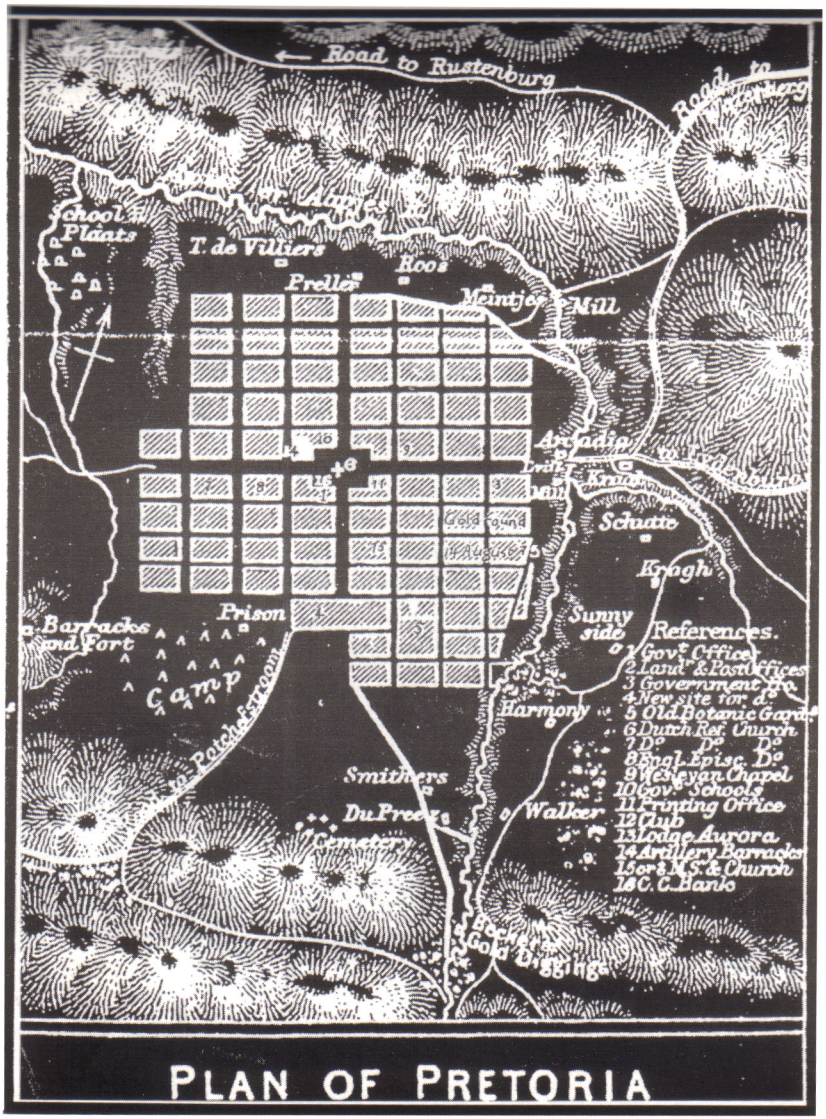


Fig. 1.12 Early map of Pretoria, 1887.

According to Holm (1998:59) Pretoria, like many other South African cities, was set out in a Westernised grid pattern. The Voortrekkers were structured people which preferred to conduct their church services and political affairs in an orderly and regulated way. Without exception they followed the same ideals in planning their settlements. These settlements were usually designed according to regular grid patterns - a model which was easily understood by both planners and users.

Pretoria was defined with the Apies River to the east and the Steenhovenspruit to the west as the natural boundaries of the settlement. These rivers encircled the town and acted much like a medieval town wall would. The centre of the town was defined by a church (hence the name Church Square) with the Roman principle of *urbs quadrata* applied in the layout of Pretoria.

This implies that the town is quartered by the intersecting cross of the *kardo*[2] and *decumanus* . It is at this intersecting point where the central church has been positioned. Two streets radiated from this position: Paul Kruger Street and Church Street ending at the four gateways of Pretoria. The urban grid was ordered around this central position and relates to the cosmic path of the sun as well as the entrances created by the “poorte” (entrances, openings).

According to a class discussion with Morné Pienaar the reason for the arbitrary deviation of the grid in Sunnyside is that this area was used as farmland during the formative years of the settlement. With the absence of a piped water supply, farmers had to resort to an open water channel system to irrigate their crops. These water channels were positioned perpendicular to the Walkerspruit and Apies River, resulting in the deviation of the grid.

2. The antiquated spelling of kardo with the letter k is an indication of its ancient origin. The word refers to the cosmic north-south axis. This was originally understood to be the main street, crossed at right angles by the decumanus running east-west. The crossing, designated by a + or x sign, standing for the figure ten or decem in Latin, hence decumanus.)
(Holm, 1998:62)

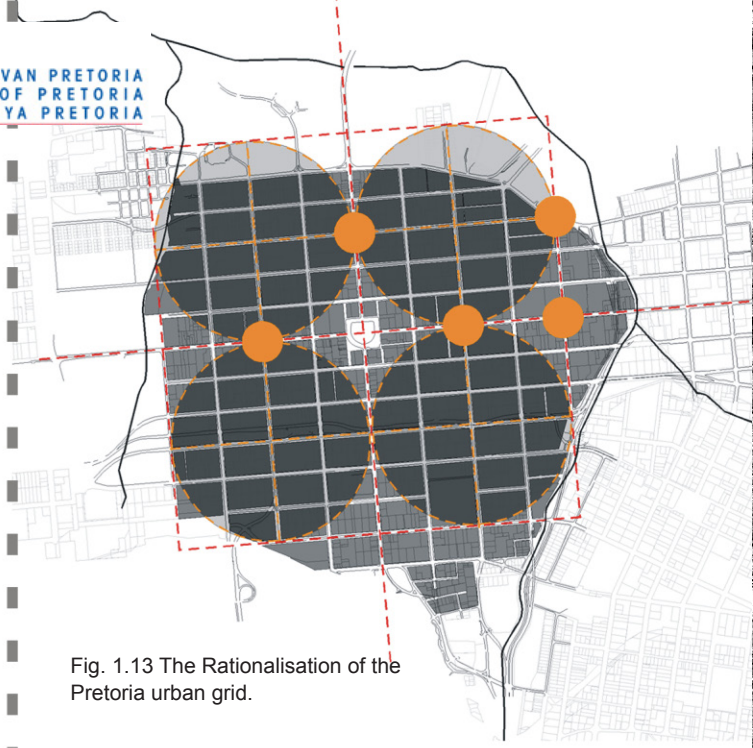
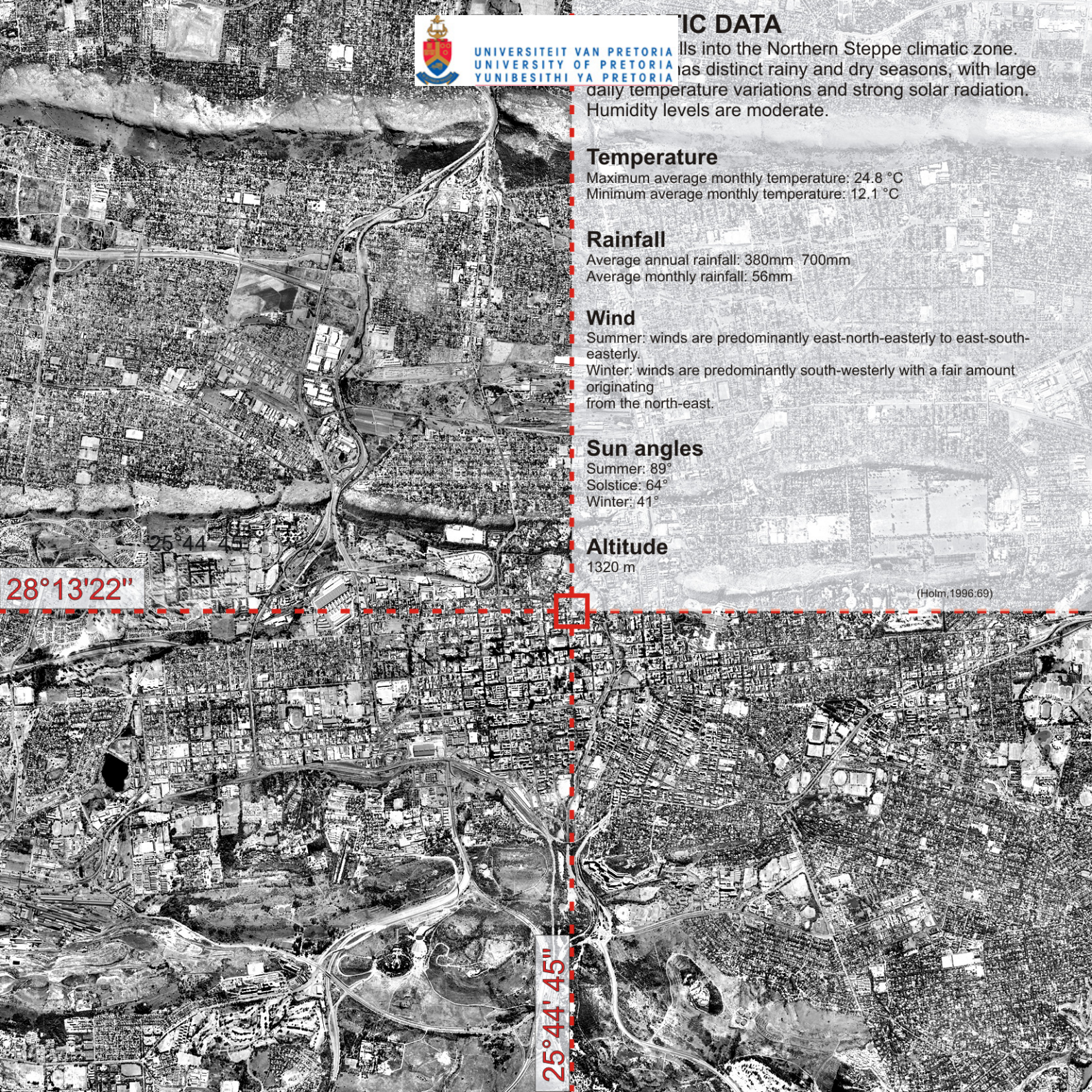


Fig. 1.13 The Rationalisation of the Pretoria urban grid.

Interestingly, if one divide Pretoria into four quarters using the *kardo* and *decumanus* that intersect in Church square, these quarters are roughly large enough to fit 1 km diameter circles within them. Where these circles touch each other and the quartered sections that it is placed within, are the locations of important Pretoria landmarks. Some of these landmarks include Church Square, the Lion bridge, Paul Kruger house, Strydom Square and the Old Synagogue. The location of the proposed site is also located on one of these intersections.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IC DATA
lls into the Northern Steppe climatic zone.
as distinct rainy and dry seasons, with large
daily temperature variations and strong solar radiation.
Humidity levels are moderate.
Temperature
Maximum average monthly temperature: 24.8 °C
Minimum average monthly temperature: 12.1 °C
Rainfall
Average annual rainfall: 380mm 700mm
Average monthly rainfall: 56mm
Wind
Summer: winds are predominantly east-north-easterly to east-south-easterly.
Winter: winds are predominantly south-westerly with a fair amount originating
from the north-east.
Sun angles
Summer: 89°
Solstice: 64°
Winter: 41°
Altitude
1320 m
(Holm,1996:69)
25°44' 45"
28°13'22"
25°44' 45"

1.5 Site Location

The proposed site is situated in Prinshof, which is in the northern section of Pretoria's CBD. This study area is defined by Nelson Mandela drive and the Apies river in the east, Proes street in the south, Boom street in the north and D.F Malan drive in the west. Areas of interest within the study area include Belle Ombre station, the Pretoria Zoo, Marabastad, the Old Synagogue, Tshwane University of Technology, the new National Library and other civic institutions.

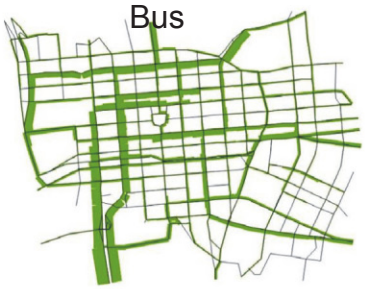
Through many years of neglect Prinshof has been troubled with crime, unemployment and social decay. A vast majority of businesses have moved out of this area leaving countless buildings unoccupied. A primary element defining this quarter of the city is its unstructured nature - one will find a surgery next to a motor spares dealer that is situated next to a fast food store etc.

Although this specific site is still within the densely built area of the CBD, the height of the buildings from the heart of the CBD decrease drastically from 10-15 storeys to approx. 4 storeys at the periphery. This results in the area losing some of its urban qualities - it starts to feel more like an industrial neighborhood. Businesses in Prinshof comprise of vehicular repair workshops, motor spares dealers, second hand furniture stores, bargain clothing stores and small corner café's.

The informal sector within Prinshof is lively and vibrant, with most of the informal traders lining the streets running in a north-south direction (Prinsloo, van der Walt, Andries and Paul Kruger). These streets are the ones connecting the CBD with the local transport nodes, such as the Bloed street taxi rank and Belle Ombre train station.

Fig. 1.14
Pretoria Inner city showing the designated study area and important vehicular routes.

Fig. 1.15 Indicating the volume of public transport using the inner city roads



ENTRANCE GATEWAYS

MAIN VEHICULAR ROUTES

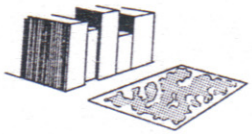
STUDY AREA

NELSON MANDELA DEVELOPMENT CORRIDOR

PATHS

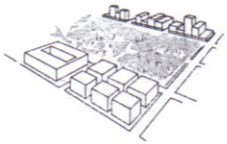
...els along which the observer customarily, ...or potentially moves. They may be streets, walkways, transit lines, canals, railroads. For many people, these are the predominant elements in their image. People observe the city while moving through it."

EDGES



"...linear elements not used or considered as paths by the observer. They are the boundaries between two phases, linear breaks in continuity... Such edges may be barriers, more or less penetrable, which close on region of from another."

DISTRICTS

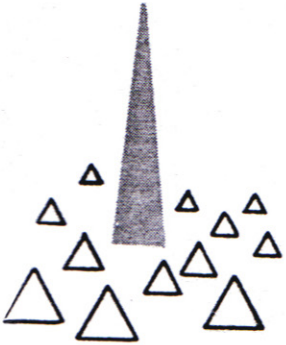


"...medium-to-large sections of the city, conceived of as having two-dimensional extent, which the observer mentally enters "inside of", and which are recognizable as having some common , identifying character."

NODES

"...strategic spots in a city into which an observer can enter, and which are the intensive foci to and from which he is traveling. They may be primarily junctions, places of a break in transportation, a crossing or convergence of paths, moments of shift from one structure to another."

LANDMARKS

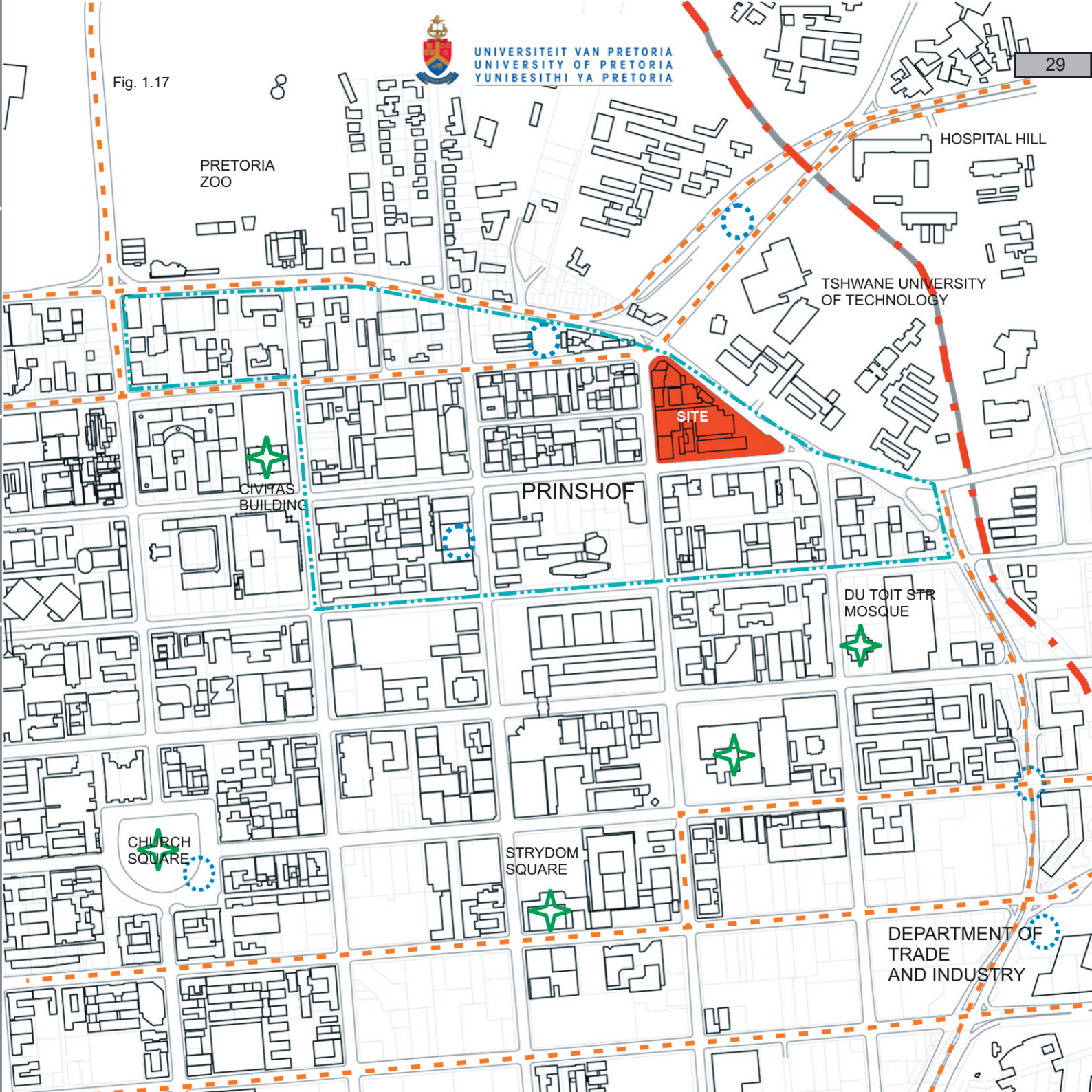


"...another type of point-reference, but in this case the observer does not enter within them, they are external. They are usually a rather simply defined physical object: building, sign, store or mountain. Their use involves the singling out of one element from a host of possibilities."

Fig. 1.16

(Lynch, 1960:46-49)

Fig. 1.17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SITE
CIVITAS BUILDING
PRINSHOF
DU TOIT STR MOSQUE
CHURCH SQUARE
STRYDOM SQUARE
DEPARTMENT OF TRADE AND INDUSTRY

Site

The selected site for this dissertation is situated at the busy intersection of Boom street, Bloed street, Du Toit street, Prinsloo street and Dr. Savage road. This triangular site is defined by Du Toit street to the east, Prinsloo street to the west and Struben street to the south. The site also forms part of the edge of the CBD (defined by Nelson Mandela drive and the Apies River). The site is one of the first sites that commuters come in contact with when entering the city from Mamelodi, Bronkhorstspruit and Cullinan, thus being an important gateway into Pretoria's CBD.

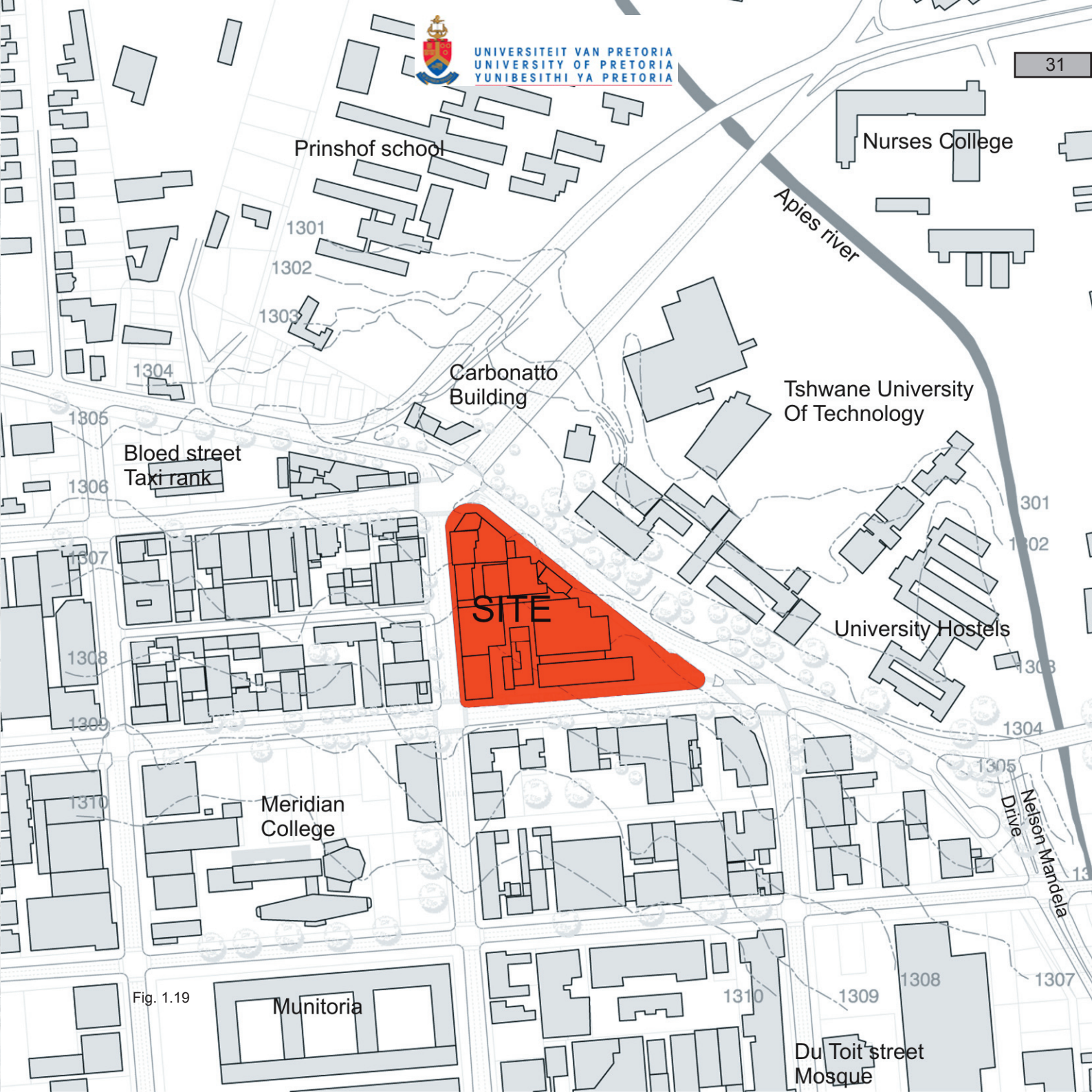
Building density and height within the CBD starts to fragment as it moves closer to the periphery. It is therefore important that the scale and proportions of new developments within this area correlate better with the existing structures towards the central CBD.

This will ensure a gradual increase in scale as one move towards the CBD. It will also promote a better visual connection between the CBD and its surrounding areas.

Close proximity to the Bloed street taxi rank and the Tshwane University of Technology (TUT) is vital for an entertainment based development. This ensures that an efficient amount of pedestrian movement will occur around the site, in order to create the preferred interaction.

Fig. 1.18 Aerial photograph of the proposed site and its general surroundings

Fig. 1.19 Map of site location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31
Prinshof school
Nurses College
Apies river
1301
1302
1303
1304
Carbonatto Building
Tshwane University Of Technology
1305
Bloed street Taxi rank
1306
1307
SITE
University Hostels
1308
1309
1304
1305
1310
Meridian College
Nelson Mandela Drive
1310
1309
1308
1307
Munitoria
Du Toit street Mosque

Fig. 1.19

Site Accessibility

The proposed site is easily accessible to both private and public transportation.
Important vehicular access routes to the site are:
- Nelson Mandela drive (an extension of the R21) connects the site with O.R Thambo International Airport.

- Boom street accommodates commuters from the western parts of Pretoria and Soshanguwe. Boom and Bloed street are the connectors between the site and Belle Ombre train station.

- Dr. Savage road is the incoming connector to Mamelodi, while Soutpansberg drive is the outgoing connector.

PUBLIC TRANSPORT
The site is located within 50m of the Bloed street taxi rank, making it extremely accessible to local and long-distance commuters. A vast amount of taxis pass through this area on any given day, resulting in activity levels commencing in the early morning hours and only subsiding during the evening.

In August 2007, the Bloed street taxi rank was temporarily moved to Paul Kruger street to start construction of a new transportation hub (similar to the Metro Mall in Johannesburg) on the present site. This will have great benefits for this dissertation's design proposal, as it will ensure an increase in the number of commuters traveling through this area. With the completion of the "Metro Mall" it is almost certain that the Bloed street taxi rank will become one of the most important transport nodes in Tshwane.

Bus stops are situated along Prinsloo street connecting the site with Church Square. The site is approximately 2 km from the Belle Ombre train station which feeds the northern suburbs as well as Soshanguwe.

Because most of the public transport operates during office hours, diurnal access to the site becomes difficult. This results in the area becoming extremely busy during the day, but dies down completely during the night.

PEDESTRIAN MOVEMENTS
Most of the streets running in a north-south direction within Prinshof are important pedestrian links, as they connect the Bloed street taxi rank with the heart of the CBD. Van der Walt street is the main pedestrian connection, which is evident when comparing the amount of street trading to those on other streets. Pedestrian numbers decline from Van der Walt street to the streets toward the east and west - these east-west pedestrian movements occur mainly on Bloed street. This can directly be attributed towards the activities relating to the taxi rank. A large amount of street trading also occurs along Bloed street, due to the number of pedestrians passing by.

Fig. 1.20 Pedestrian and vehicular movements around the site

Fig. 1.20

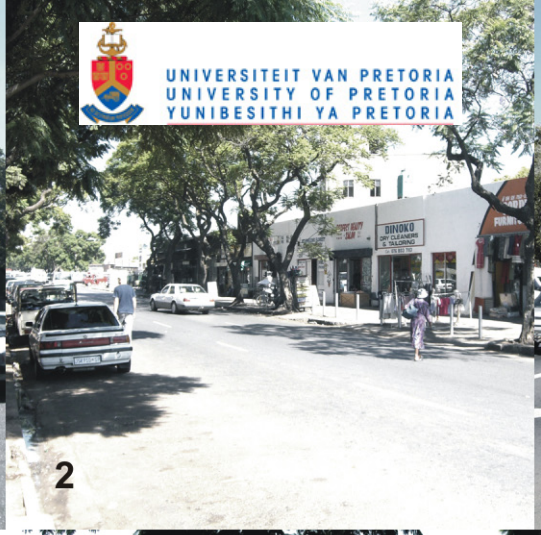
PEDESTRIAN MOVEMENT

PROPOSED SITE

TRANSPORT NODES

VEHICULAR ACCESS ROUTES


1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EXCHANGE BUREAU


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AMLAC
Oil
CHAMPION
SABAT
TV2
SPARES
TEL 323 9736


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7


8

Fig. 1.21 Photographs of the site and its surroundings

Fig. 1.22 Key map of photographs

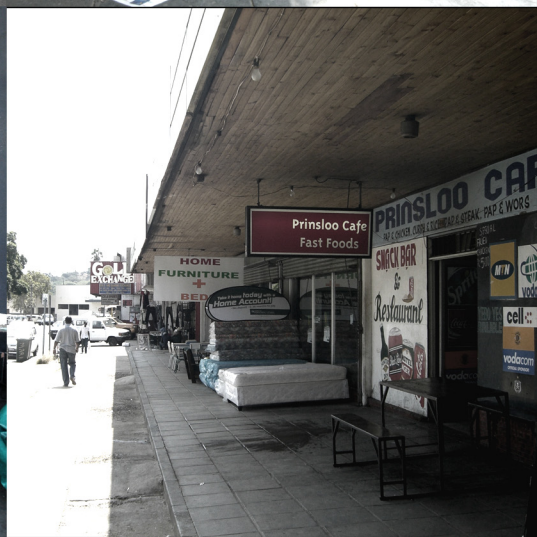
Fig. 1.23 Panoramic view of the site and the intersection. This image explains the visual importance the site already has through the display of large merchandise boards on the corner of the existing building

Fig. 1.24 Panoramic view of the site from Du Toit street

Fig. 1.25 Panoramic view of site from Boom street.

Fig.1.26

SITE ACTIVITIES



AUTOZONE BUILDING
TYPOLOGY: Double storey Light-industrial warehouse building
MATERIALS: Plastered brick structure, painted, corrugated iron roof, reflective glasing. Pre-cast concrete gutters
CONDITION: Good
FUNCTION: Automotive spares retailer and workshop
OCCUPATION: 100% Occupied

- this is a truly beautiful street, lined with lush old London Plane trees. However, this image is tarnished by vehicles lining the sidewalks waiting to be repaired. Spare parts are scattered across the sidewalks while motor-oil seeps into the ground, completely discouraging any pedestrians to walk past.

TV 2 MOTOR SPARES
TYPOLOGY: Double storey Commercial building
MATERIALS: Plastered brick structure, corrugated iron roof, Glazing covered with advertisements
CONDITION: Fair
FUNCTION: Automotive spares retailer
OCCUPATION: 100% Occupied

TYPOLOGY: Single storey Commercial building
MATERIALS: Plastered brick structure, corrugated iron roof, glazing covered with advertisements
CONDITION: Fair
FUNCTION: Retail shops
OCCUPATION: 100% Occupied

- retail occurs mostly along Prinsloo Street. This is emphasised by the large amount of merchandise signage on the corner of the TV2 spares store. Due to the lack of sufficient buying power caused by the lower-income community, these stores have become increasingly rundown.

TV 2 WAREHOUSE
TYPOLOGY: Single storey Light-industrial warehouse building
MATERIALS: Plastered brick structure, painted, corrugated iron roof, metal roller garage doors
CONDITION: Fair
FUNCTION: Automotive spares warehouse
OCCUPATION: Unoccupied

Fig. 1.27 Elevation of Du Toit street showing the state of the buildings and activites happening in the street.

The Tshwane University of Technology's art campus is situated in Du Toit street. The campus currently accommodates ± 1 800 students, and presents courses ranging from Fine Arts and Performance Art to Film and Photography.

To accommodate the large amount of long-distance taxi drivers waiting in this area, local street vendors line Du Toit street preparing meals. These vending stalls stand next to the oil-drenched soil created by the repaired vehicles. This is an extremely unhygienic situation and provision should be made to accommodate them somewhere else.

TYPOLOGY: Single storey Commercial building
MATERIALS: Plastered brick structure, corrugated iron roof, glazed shopfront
CONDITION: Fair
FUNCTION: Retail shops
OCCUPATION: 100% Occupied

TYPOLOGY: Single storey Commercial building
MATERIALS: Plastered brick structure, corrugated iron roof, Glazed shopfront, covered sidewalk
CONDITION: Poor
FUNCTION: Retail shops
OCCUPATION: 90% Occupied

Fig. 1.28 Elevation of Prinsloo street and its activities.

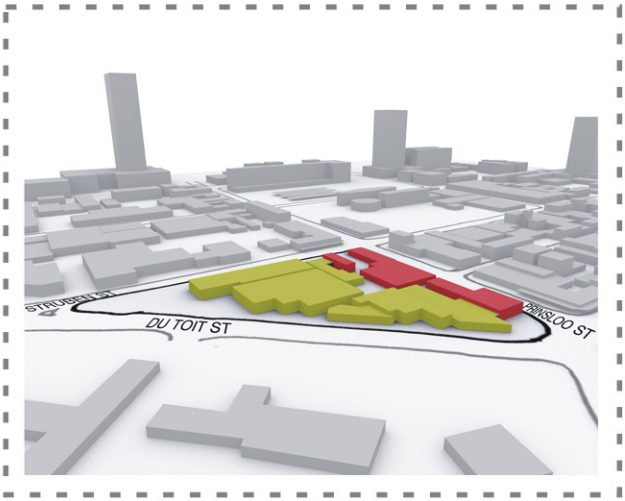
TYPOLOGY: Single storey Commercial building
MATERIALS: Plastered brick structure, corrugated iron roof, glazed shopfront, covered sidewalk
CONDITION: Poor
FUNCTION: Retail shops
OCCUPATION: 90% Occupied

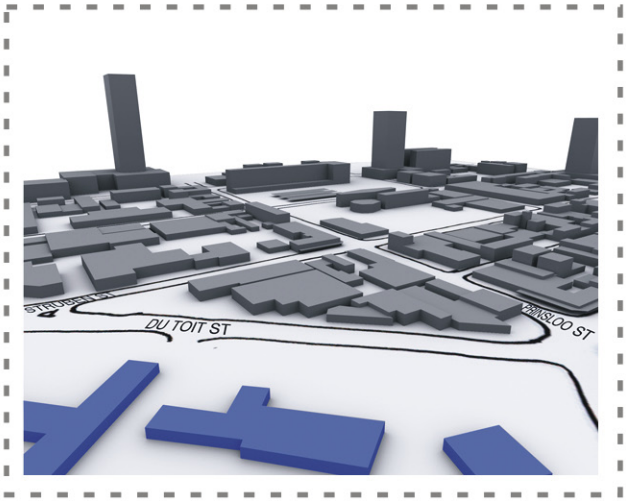
TYPOLOGY: Single storey Commercial building
MATERIALS: Concrete frame structure with brick infill, corrugated iron roof, painted glazing
CONDITION: Poor
FUNCTION: Restaurant and sports bar
OCCUPATION: 100% Occupied

OZ AUTOBODY AND MECHANICS
TYPOLOGY: Single storey Light-Industrial building
MATERIALS: Brick building, corrugated iron roof, glazed shopfront
CONDITION: Poor
FUNCTION: Automotive Mechanics
OCCUPATION: 100% Occupied

- Struben street is relatively quiet compared to the other two streets. The reason for this calm environment is the lack of attractions, as some street vending activities occur closer towards Prinsloo street. Vehicle repairs are however also present in Struben Street.

LAND USE





AUTOZONE BUILDING
TYPOLOGY: Double storey Light-industrial warehouse building
MATERIALS: Plastered brick structure, painted, corrugated iron roof, reflective glasing, pre-cast concrete gutters
CONDITION: Good
FUNCTION: Automotive spares retailer and workshop
OCCUPATION: 100% Occupied

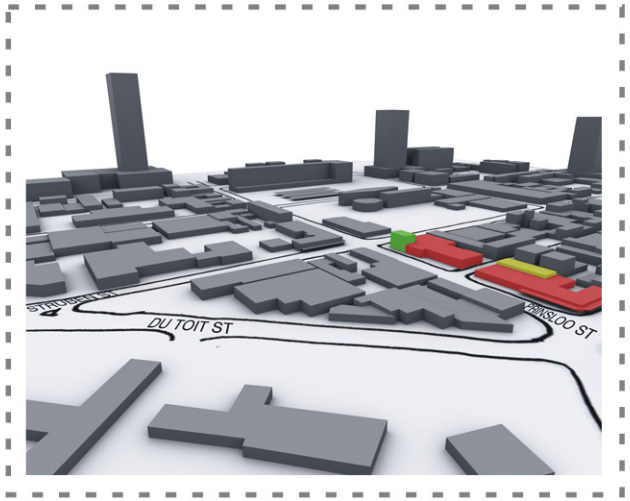
Fig. 1.29 Elevation of Struben street

Institutional

Industrial

Commercial

Residential



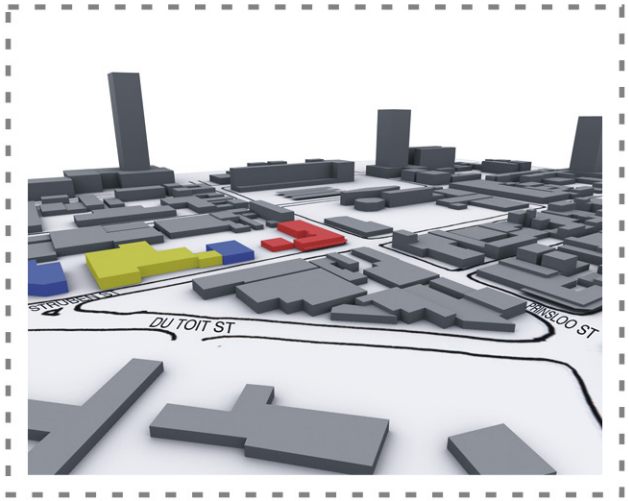


Fig. 1.30 Current land use of the site

1.6 Site Opportunities and Constraints

Opportunities
- Creating public spaces
- Integration of formal and informal trading
- Diversification of activities within the area
- Increasing the permeability of city blocks
- Densification of the Prinshof area
- Increase residential densities
- Increased economic activity due to the increase in taxi commuters

Constraints
- Scarce public green spaces
- Security low due to poor police coverage
- Low-income community
- Illegal trading
- Low maintenance of infrastructure and services
- High investment risk

Fig. 1.31 Aerial photograph of the proposed site in the 1950's

CHAPTER 2

Fig. 2.1

CLIENT PROFILE

Fig. 2.2

2. MTV Networks

MTV (an acronym for Music Television) is an American cable television network based in New York City. Launched on 1 August 1981, the original purpose of the network was to explore a new dimension in music – the music video. Since its inception MTV has revolutionised the music industry, becoming one of the icons of Popular culture in the 80's and 90's. MTV is a dedicated video-based outlet for music and acts as a central location for music events, news and promotions, which could be used by fans and artists alike.

Appropriately, the first music video shown on MTV was "Video killed the Radio Star" by The Buggles. This also gave rise to the new concept of VJ's (video jockey) that played on the acronym DJ (disk jockey) used in radio.

Early music videos on MTV were often promotional or concert clips (whatever could be found) as the whole idea of Music Television was still controversial.

Fig. 2.3

The popularity of MTV rose considerably, and record companies started to realise the potential of music videos as a medium to gain recognition and publicity. This resulted in record companies increasing the quality of clips specifically for the network. It also had a positive influence on the short film industry and several well known film directors started of by creating music videos.

A large number of artists became regular household names through their introduction by MTV, such as The Police, Culture Club, Def Leppard, Duran Duran, Bon Jovi and Madonna. Notably one of the favorites was Michael Jackson. Launching his solo career, he became the first black artist to feature on the channel, and help put the then struggling music channel on the map.
(MTV,2007)

MTV's influence on Popular culture was so overwhelming that a whole generation was named after it -
"The term MTV Generation is used to define a generation of teenagers and young adults influenced by fashion trends, music, and slang terms shown in music videos on the newly created cable channel MTV. MTV Generation has often been associated as a neologism for Generation X."
(MTV Generation,2007).

Today, MTV has channels in numerous countries around the world, making it the global icon in music television.

MTV Base Africa

MTV Base Africa is MTV Networks' first venture into the African continent. The aim is to establish a Pan African music channel dedicated to developing and encouraging grassroots' African music talent. MTV Base Africa is a music channel that becomes part of the fabric of African youth culture, which will use the common language of music to go beyond political boundaries and unite fans from different backgrounds and cultures.

At its launch on 22 February 2005, MTV Base was provided with 1.3 million viewers through dedicated pay TV platforms such as the South African based MultiChoice DSTV, Pan African, Nigerian based CTL, FSTV and Trend TV.

Simon Guild, CEO of MTV Networks Europe reckons that they "…are not satisfied with a million-plus pay TV subscribers. We want a broadly distributed TV channel, in lots of countries and to lots of audiences. We want to evolve advertising driven models, in many formats, and this will include terrestrial broadcasters."
(MTV Launch,2005)

Fig. 2.5 Percussion drummers performing at the Oppikoppi "The way of the Dassie" Festival in Northam.

CHAPTER 3

PRECEDENT STUDIES

3.1 Zaragoza Digital Mile

Zaragoza, Spain
2006 (not built)
MIT Media Lab

The aim of the project is to introduce the ancient city of Zaragoza to the Digital Information age. It proposes to incorporate the use of digital media into everyday aspects of life, using it to create places that are responsive towards their users, change according to their activities, information or services that are required, and becoming meaningful to the locals.

Being the host city of the 2008 International Expo and acquiring a new high-speed railway station on the western edge of town, the old train station as well as some of the railway tracks has been demolished, making a mile long strip of valuable urban land available.

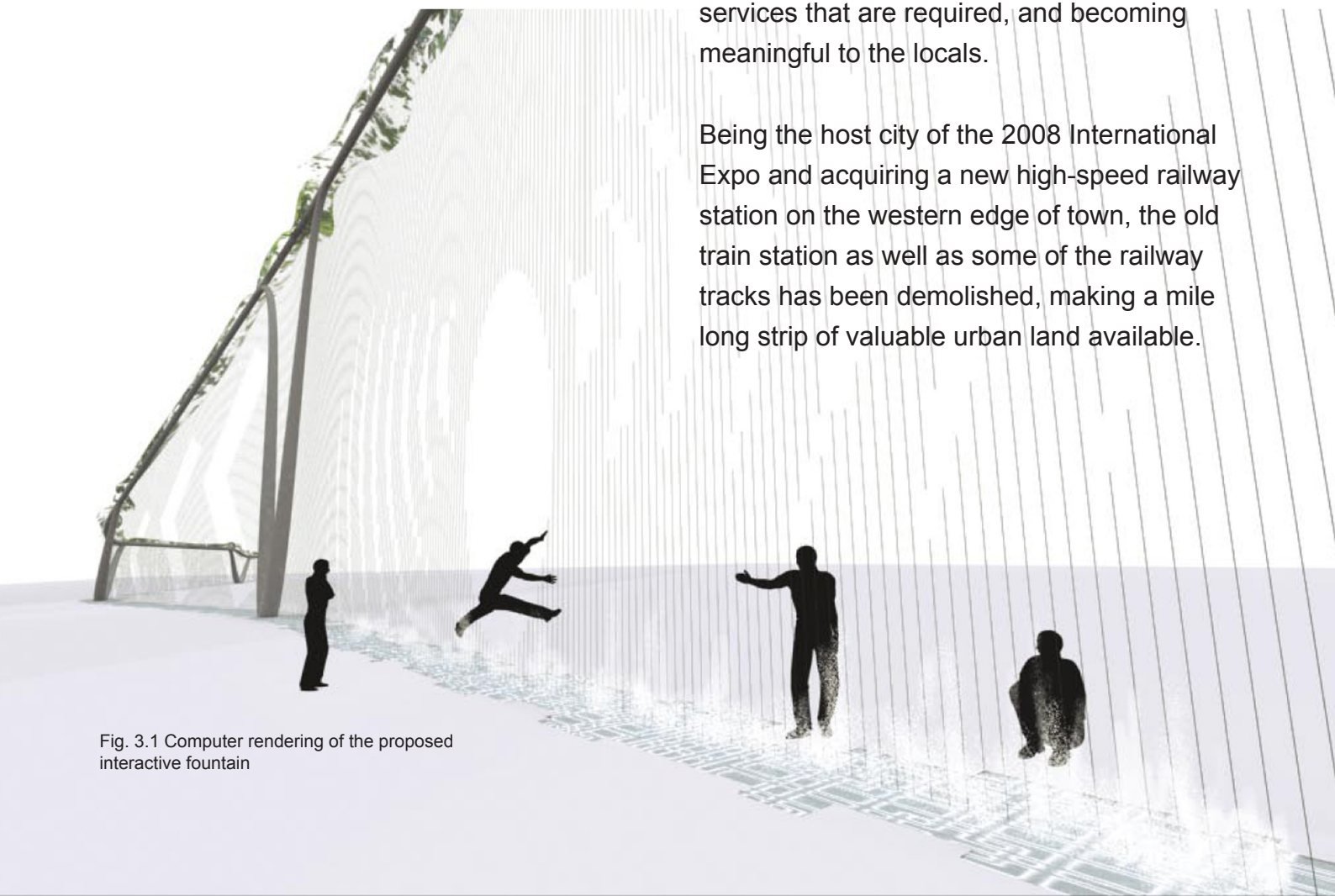


Fig. 3.1 Computer rendering of the proposed interactive fountain

The concept of the design was focused on the potential of media technology and advanced communications within the public realm.
With many examples of digital media in public squares, the designers had to come up with something new and exciting.
The idea was to create physical forms that are able to change and respond to its environment and the people within it. These elements are something during the day and something completely different during the evening. Enabling users to shape their environment to their needs, resulting in a more dynamic *"open-source"*[1] environment.

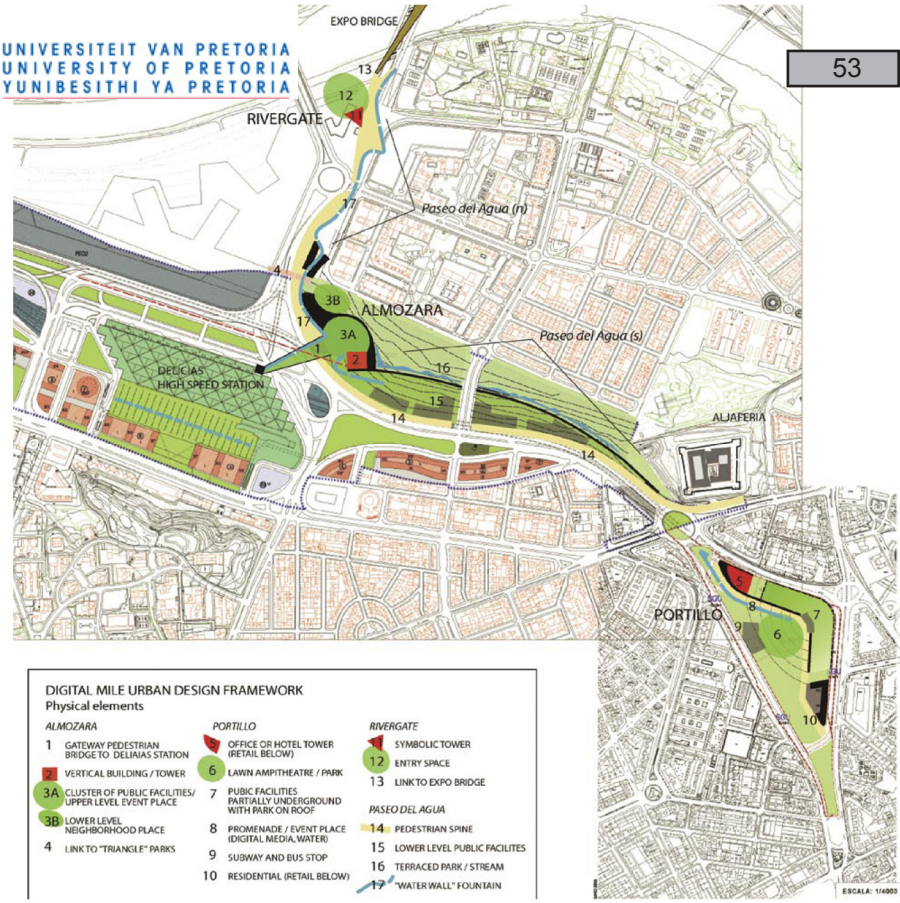


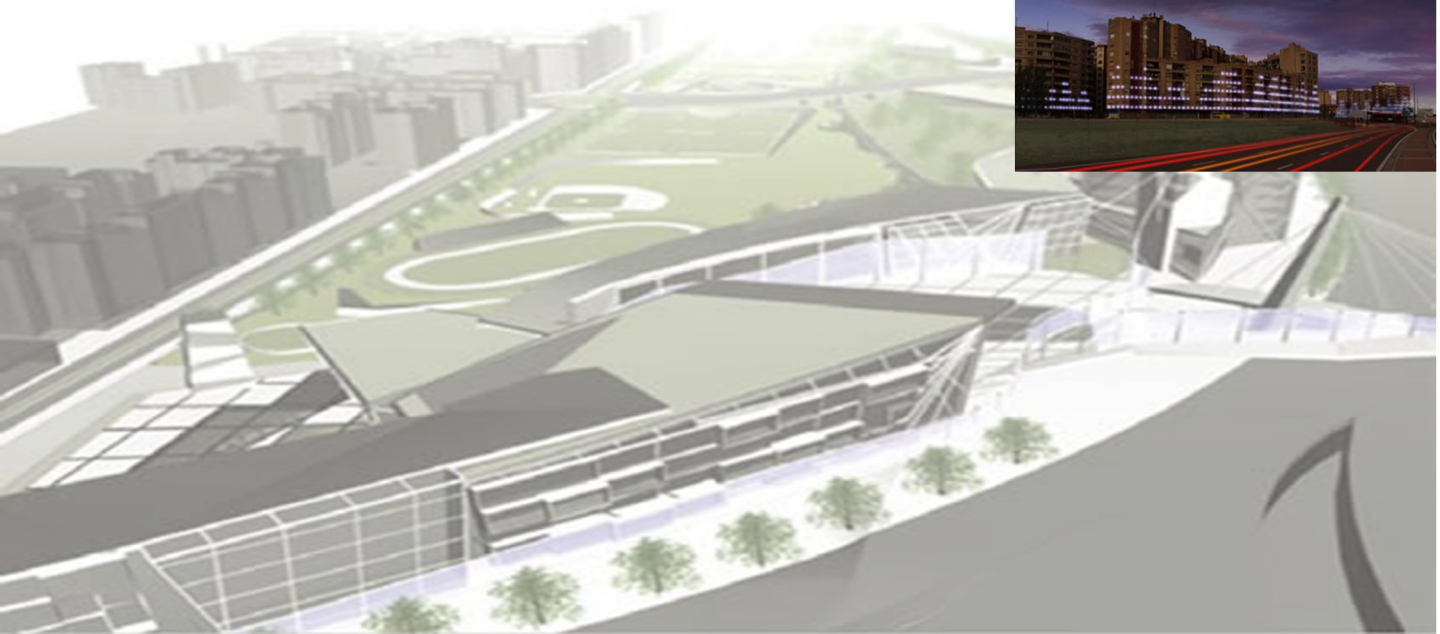
Fig. 3.2 Location plan and aerial photograph of the proposed development and its location

1.The concept of open-source comes from the field of computer programming. It stipulates that anyone can modify and re-organise the source code for a piece of software. Through people's adjustments and improvements, software thus evolves to better respond to users' needs.

The effective aim of the responsive nature of the project is to promote the sense of ownership for Zaragoza's residents.

The demolition of the old station resulted in Zaragoza being separated into two parts, the old and the new. The proposal aims to knit these two parts back together with a network of community and educational facilities, public spaces that serve multiple users, and digital features.

Fig. 3.3 Collection of images showing the intent of this digital intervention.



3.2 Velocity Films

Film Production offices
Johannesburg, South Africa
1996
Jo Noero Architects

“We believe architecture is practical and not a fine art and it is the question of use which distinguishes architecture from the other arts”

– Jo Noero

Fig. 3.4 Photo of the production offices

Due to the client's requirements, the building had to accommodate specific functions, such as film production studios, video libraries and recording rooms.
The building had to reflect the creative nature of the company, as well as being able to change and adapt, like a film set, to the future needs of the client.

The working spaces within the building were reduced to a minimum, while creating generous common areas where chance encounters can lead to stimulating creative ideas. What makes the design of the building successful is the clever way in which the internal spaces were laid out.
All the working spaces have been placed in the northern section of the building in order to enjoy the advantage of generous sunlight. Areas serving the working areas have been kept to the southern section.
Joining these two areas is a double volume internal street running the entire length of the building.
The reason for this internal street is to bring natural lighting into the building from both sides, and also to assist in achieving adequate cross ventilation.

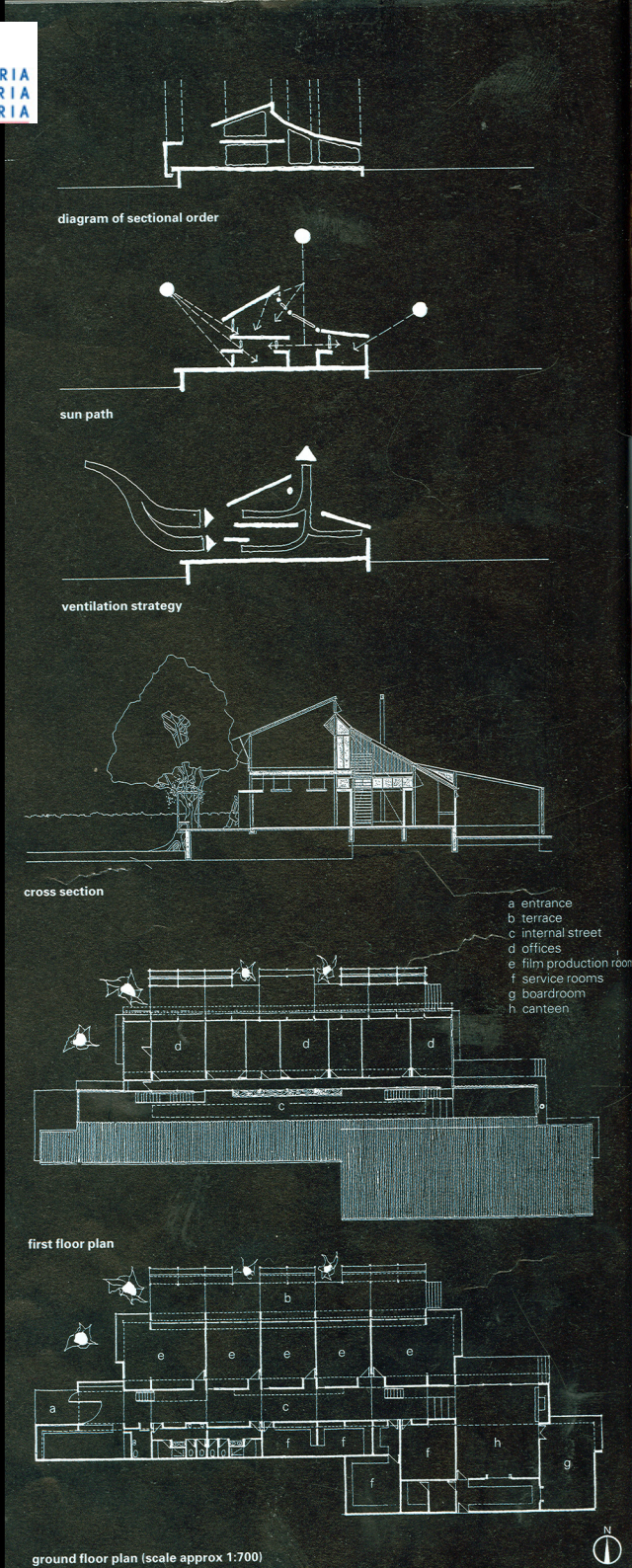


Fig 3.5

Fig. 3.6

Fig. 3.7

Fig. 3.8

Fig. 3.9

Fig. 3.10

The material selection emphasises the industrial nature of the building, whilst still giving it a contemporary South African feel. Steel and concrete was used as the main structural elements, while brick, timber and corrugated sheeting were used as infill. All materials were left unfinished where possible to emphasise the building's rugged qualities.

Fig 3.5 Architects drawings explaining the spatial qualities of the project.

Fig 3.6 The use of materials give the building an industrial character

Fig 3.7 The internal "street" connecting the working spaces with the service spaces

Fig 3.8 Outside terrace

Fig 3.9 Northern terrace with large Jacaranda trees

Fig 3.10 Entrance to production offices

3.3 Sony Centre

Berlin, Germany

Murphy/Jahn Architects, Chicago

Commissioned in 1992

In the early 20th century Potsdamer Platz was one of Europe's busiest and most vital crossroads, until it was tarnished by World War II and left divided by the Berlin Wall.

In an attempt to rejuvenate the once thriving area one of Europe's largest private –sector developments rose on the site.

In spite its typical commercial appearance; the Sony Center expresses its technological bravery in an elliptical shaped umbrella. State of the art cable, membrane and glass technology, the roof is able to protect the people against most of the harsh outdoor elements.

The Sony Centre caters for numerous businesses, film houses, restaurants, shops and apartments, making it a versatile urban environment.

Most of the buildings are pushed the street edge, in order to create an inviting and protective internalised courtyard which becomes a fluid space energised by the city. The development is focused on entertainment and manages through its mix of uses to create an urban atmosphere of life and activity within the space, without becoming artificial.

Fig. 3.13

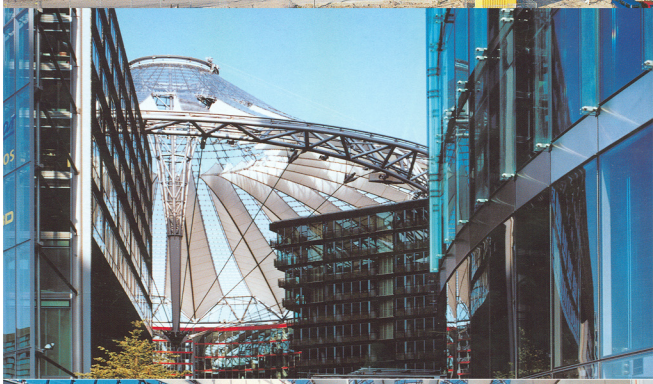


Fig. 3.11 Roof structure
Fig. 3.12 Site plan of the Sony Centre Development
Fig. 3.13 Images of the Sony Centre

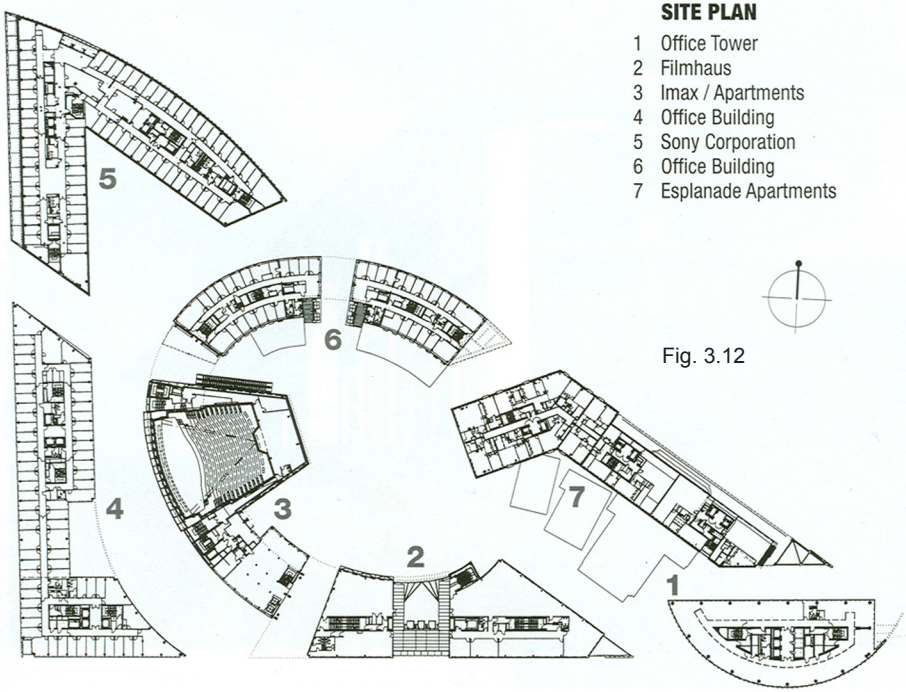


Fig. 3.12

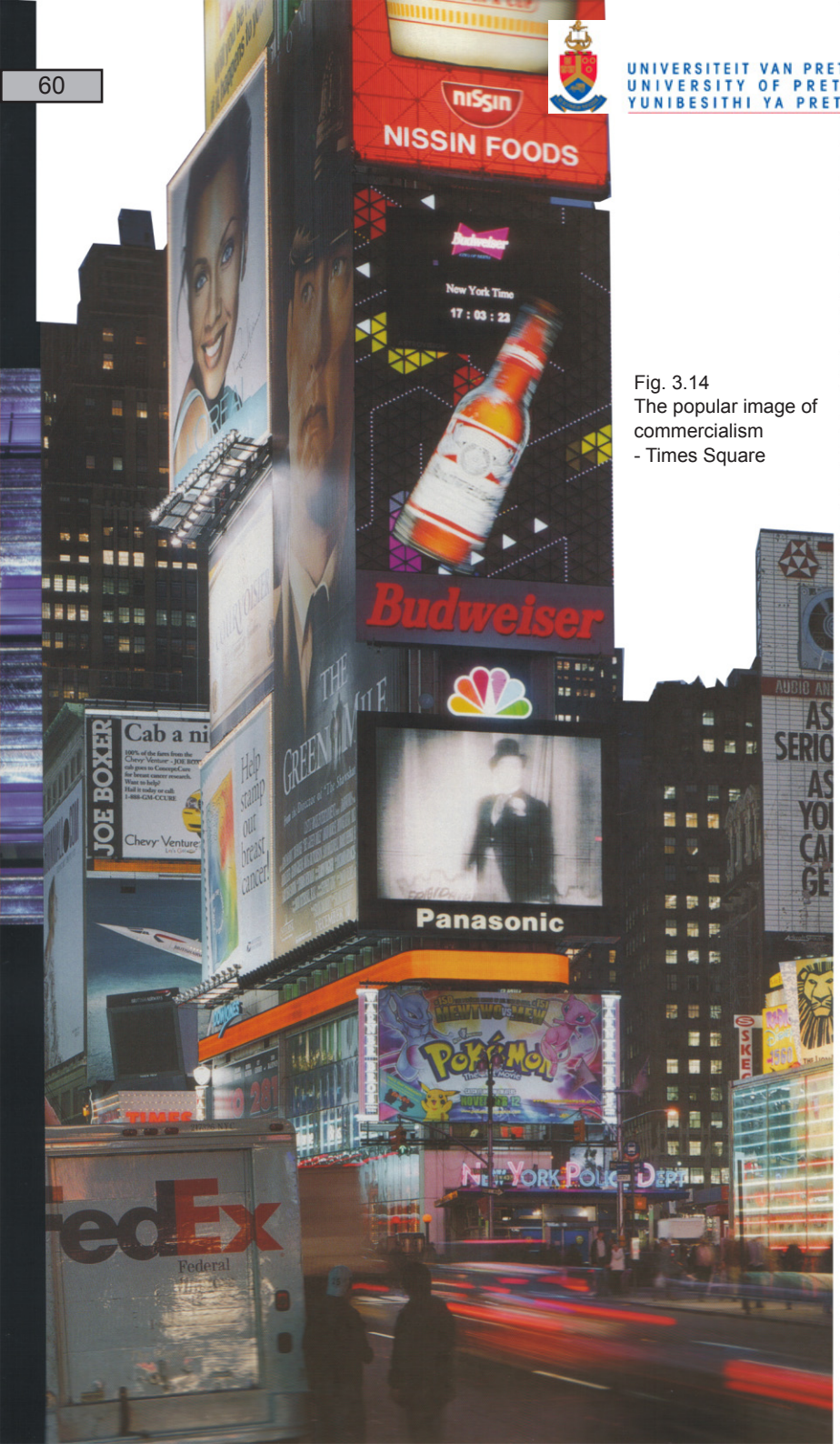


Fig. 3.14
The popular image of commercialism
- Times Square

3.4 Times Square

New York City, USA

One of the most iconic and celebrated public spaces in the world, New York's Times Square started of as farmland in the years following the American Revolution, but with the rapid growth of New York City soon became engulfed by hotels and other real estate.

In the early 1900's, the newspaper The New York Times moved their offices into a Skyscraper on Longacre Square, which was renamed Times Square on the 8th April 1904, and soon afterwards the first electrified advertisements appeared.

As the growth of New York City continued, Times Square quickly grew into the cultural and consumerist hub it is today. The eclectic nature and never-ending levels of activity, with hundreds of advertisements screaming for attention, ensures that this intersection offers more to consumers than any other place on earth. Featuring in movies, literature, television and music videos, Times Square is one of New York's enduring Landmarks. It is also home to numerous theaters, music halls, and countless global businesses like, MTV Networks; Ernst and Young; Reuters; etc.

Fig 3.15 Plan of Times Square

1.The Millennium celebrations on the 31 December 1999 in Times Square, reported approximately 2 million people attending the New Year's celebration.

(Times Square, 2007.)

New Media public spaces, like Times Square and Piccadilly Circus in London, have become modern day society's equivalent to the ancient Greek Agora. A meeting place where people gather in order to accumulate information or to celebrate great tidings. This is evident with the amount of people that overflow these squares during New Years celebrations.[1]

Even though Times Square might come under a lot of criticism, due to the fact of its consumerist exploitation, this space typifies what an urban public space is. A space which is able to accommodate and communicate to the multiple layers of the urban landscape and engage them in mutual participation.

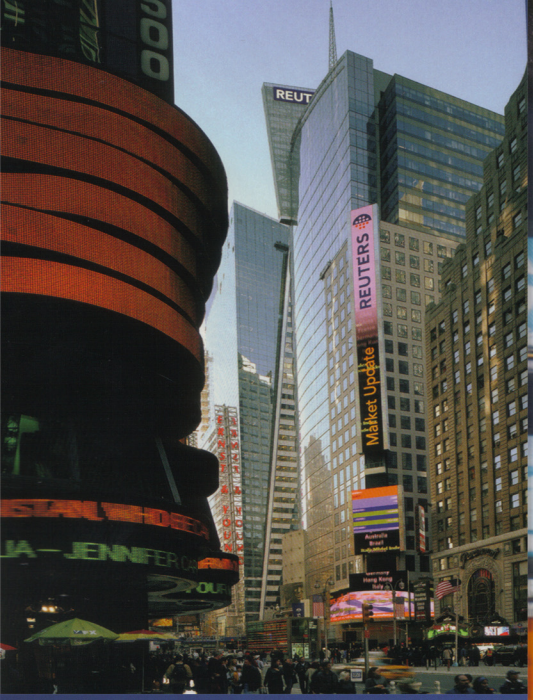
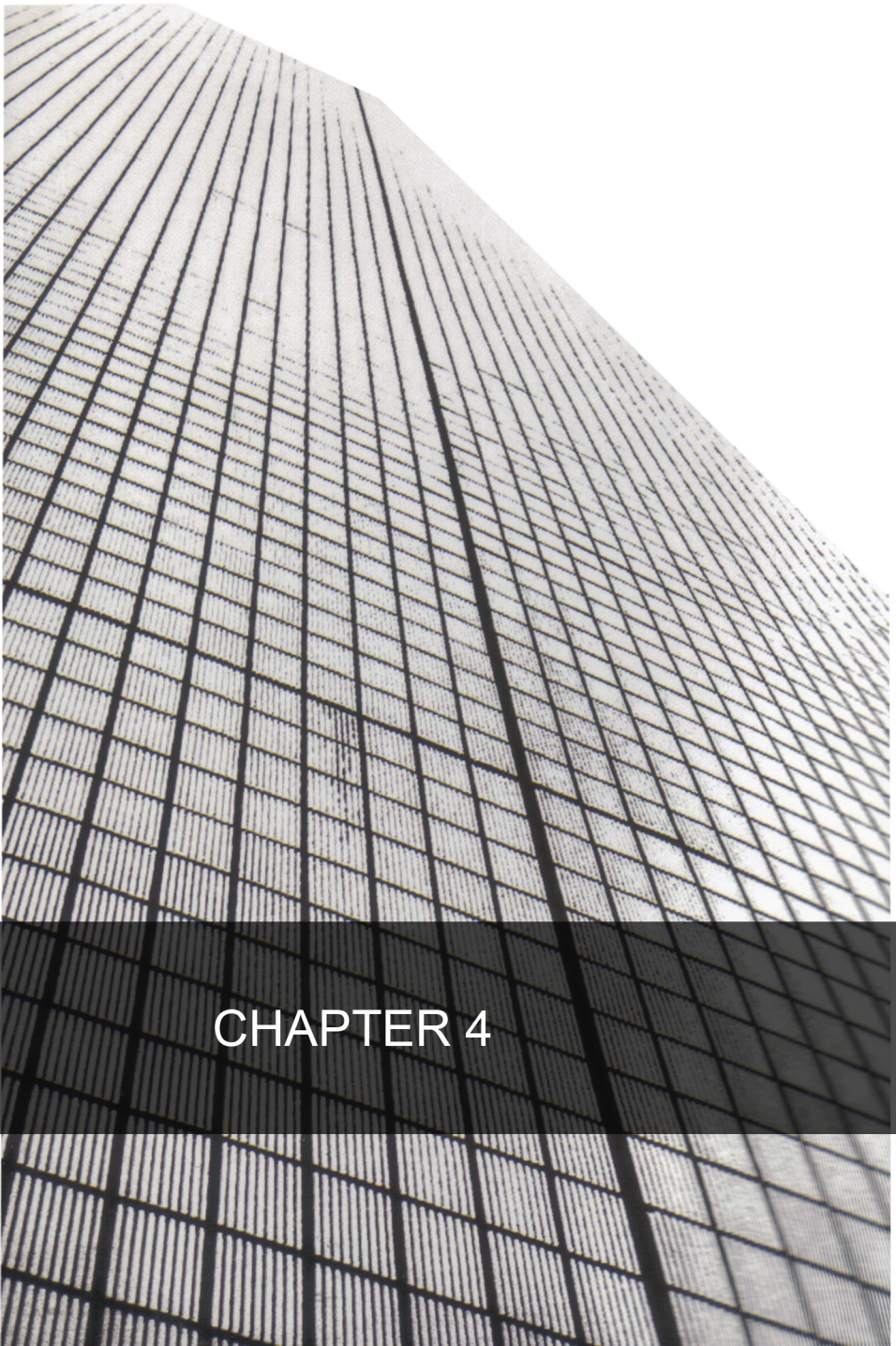


Fig 3.16 Images of Times Square showing its visual popularity.

Fig. 3.17 Artist's impression of the activities surrounding Times Square



CHAPTER 4

DESIGN APPROACH

4. Design approa
Digital technology in the urban environment

The relationship and role that digital technology and iconology have with contemporary urban environments, was an important investigation for the proposal of a Music Television production studio.

The aim is to rejuvenate a neglected part of the city through the use of entertainment within a public environment, whilst investigating whether technology is able to enhance public use and enjoyment. Will the use of technology make a public space more productive and meaningful, compared to conventional public spaces? Can it create a public realm that is flexible and adjustable to different activities, users and moods? How would technology affect the local spirit of place? These aspects form part of the discussion in this chapter.

Fig. 4.1 Advertising billboards within the urban environment

As we are living in a technological era, we get bombarded with new inventions and technologies everyday. These technologies are designed to help us get through our daily routines faster and more efficiently. However, this is seldom the case as improved technology also puts strain on the user who constantly has to upgrade and learn new software. All these gadgets and technologies that interact and respond to people might unnerve them and seem completely unnatural.

From a different point of view, technology can be seen as human beings' means of adaptation within their living environment. Technology have long since been there in order to assist man's ability to sustain himself - this is evident in the use of the Archimedes screw which early Egyptians used to draw water from the Nile to irrigate their crops. At later stages in history technology was also introduced in countless quests to conquer continents, always present in building settlements, assisted in protection and generally simplifying life.

Therefore technology can be seen as a natural element.

The real question is not whether technology is natural, but whether it is well adapted within our environment.

> "The sustainability of our species depends on the appropriateness of our adaptation."
> (McCullough, 2004:211)

Rejecting technology is not an option, as humans have become too reliant on it. We should rather rethink the way we use technology and make it more susceptible to all elements involved. The response of technology towards place becomes the most realistic adaptation approach.

Society is functioning at an extraordinary fast pace. Commercialism has fostered a culture set on obtaining and dispersing information as quickly as humanly (technologically) possible. People have become more stressed, impatient and are losing all sense of identity within this mad rat race. Laptops, cellphones, PDA's and iPods have become society's accessories, encouraging and increasing mobility as almost everything today can be done on the run. These extreme levels of mobility have altered man's concept of belonging.

To an extend modern society identify themselves more with branding, logos, commercial advertising and signage than they do with place.

Interaction design:

"Interaction design is the discipline of defining and creating the behavior of technical, biological, environmental and organisational systems. Examples of these systems are software products, mobile devices, environments, services, wearables and even organisations themselves. Interaction design defines the behavior (the "interaction") of an artifact or system in response to its users over time. Interaction designers are typically informed by user research, design with an emphasis on behavior as well as form, and evaluate design in terms of usability and emotional factors."

(Interaction design, 2006).

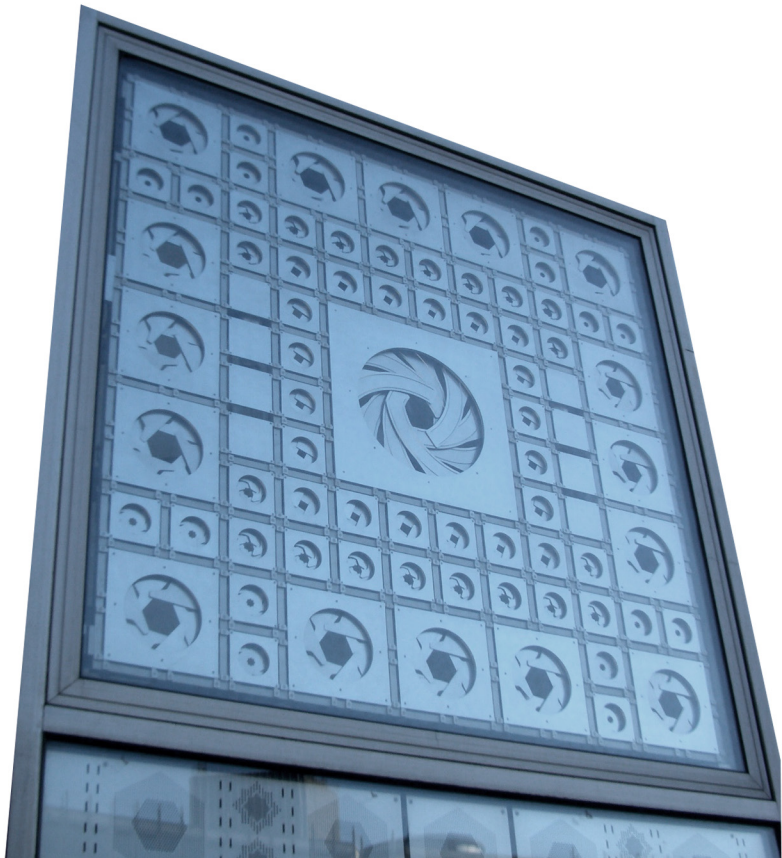
McCullough (2004:157) says the following about the identities of interactive design and new-media technologies:

"…as computing becomes pervasive, the identity of these systems goes beyond the appearance of screens. New forms of ambient, haptic and multi-user interfaces promote the shift from objects to experiences. Instead of emphasising the visual identity of an object, under these circumstances we need to address the process of identifying with an experience…The more that factors external to computers per se become a design consideration, the more the design focus shifts from things to experiences."

It is these experiential qualities of materials, buildings and places that is vital for a responsive environment - taking the mundane and creating something truly extraordinary.

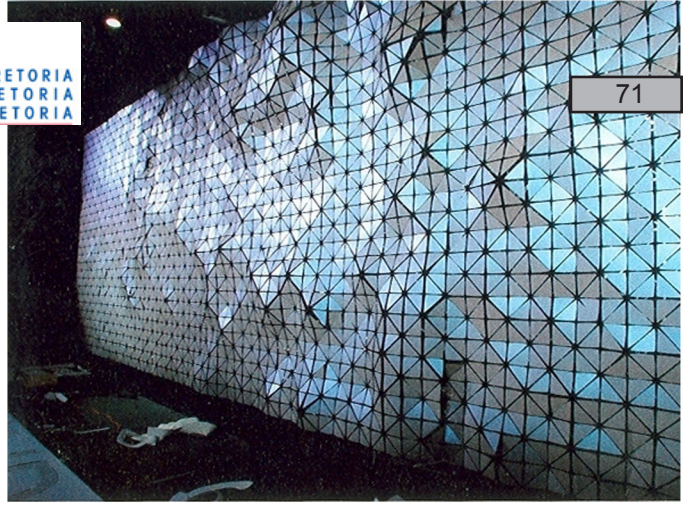
Fig 4.2 Institute du Monde Arab, Paris. 1987
by Jean Nouvel

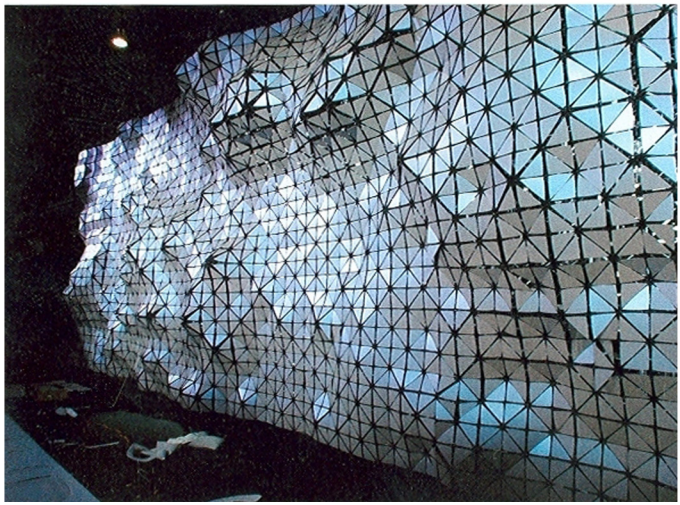
The mechanical shutters expand and contract according to the light intensity outside. This enables the building to regulate the amount of daylighting inside the building.



A good example of this is the Aegis Hyposurface (pictured right). This is a kinetic wall developed by the American firm, dECOi Architects. The wall consists of a number of pneumatic reactive actuators that were built into a basic structural frame. These actuators are then mechanically connected to a surface made up of rows of diagonally divided moveable tiles on the outside of the structure.

The wall reacts to various stimuli such as light, sound and movement. Special software causes the surface to change spatially. The spontaneous movements of the tiles give an almost natural looking simulation of moving waves, among other effects.
(Ritter, A.2007)





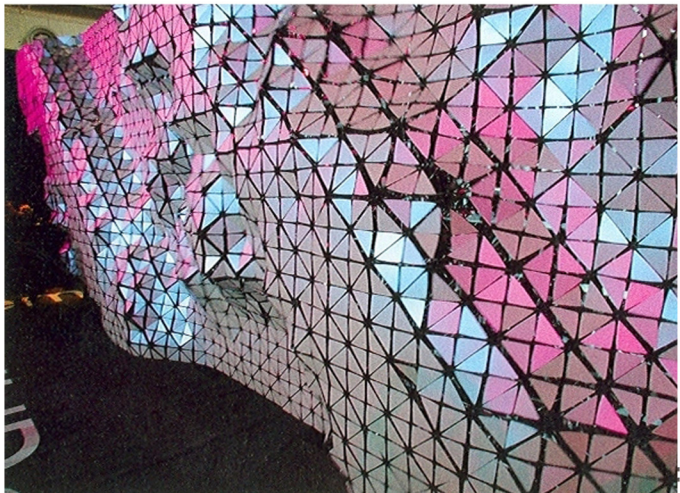


Fig. 4.3 The Aegis Hyposurface in action

Fig. 4.4

“One does not interact with an ordinary sidewalk, of course – one simply walks on it. Only when that surface deliberately responds to you can the relationship be described as interaction.”

(McCullough, 2004: 174)

The interesting attributes of the previous examples is the fact that the experiences created promotes satisfaction. The only way this satisfaction can be achieved is through the unpredicted nature of the system. People are skeptical about having experiences pre-determined for them (like a theme park), and the user should rather be encouraged to determine the outcome of his/her own experience.

The line between proposing something and imposing something is a thin one and the correct balance between them is vital. Also, if one allows for unpredicted activities within interaction design, it might have the potential to lead to cultural expression.

Fig. 4.5

Fig. 4.6

ARCHITECTURE AND TECHNOLOGY

“Appropriate design sets the stage for human experience. Like a great building, it reflects our aspirations, assists our daily rounds, carries collective memories, and provides a repository for many nonfiscal kinds of value.

(McCullough, 2004:164)

In its extensive history, architecture has always functioned as the social organisational elements within the city.

On the other hand, computing took the opposite role. At first it started out as operational equipment and only recently (through the introduction of the Internet and new-media technologies) approached the social organisational aspect.

Fig. 4.5 Interactive elements in public spaces
LED screen next to a busy road.

Fig. 4.6 Crown Fountain, Millenium Park, Chicago.

New-media have introduced an extra layer of activity/ expression within the city, as feature films like The Fifth Element and Blade Runner introduced us to the possibility of media facades as part of a futuristic ideal. However, digital displays are currently being incorporated into buildings across the globe's most influential cities.

These media displays form part of the buildings – not as signs, but as integral elements of the architecture. The technologies that are utilised bring new forms of dynamics into the urban environments. They allow the visual surfaces of the urban environment to change using patterns and colours and through carrying messages or even displaying television. The really interesting aspects of new-media technologies are not just the functions it can be used for, but the fact that the mood, content and quality of the surrounding spaces can be altered, depending on the time of day, season, activities or the individual desires of the users.

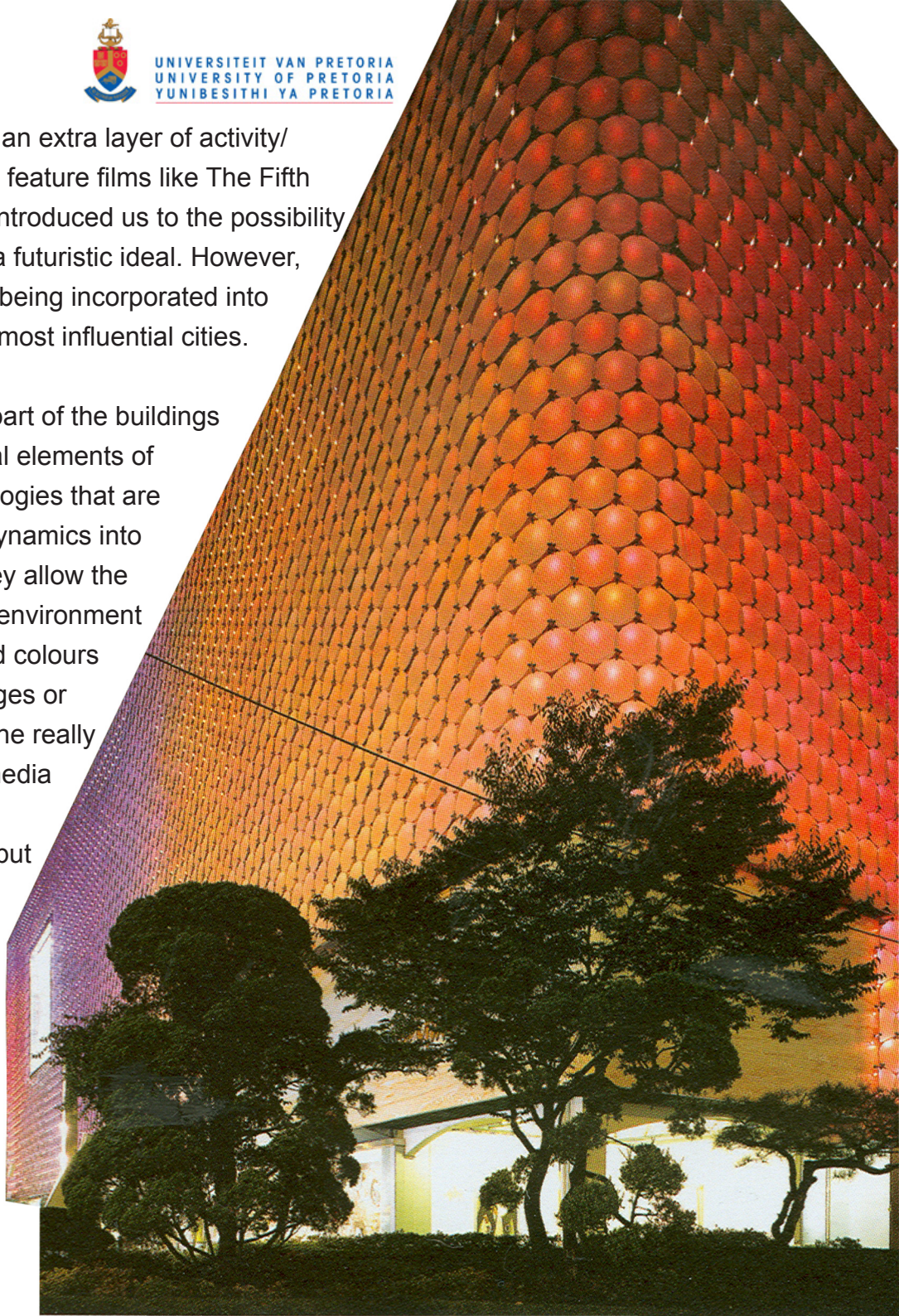


Fig. 4.7 Galleria shopping mall, Seoul, Korea. This effect is achieved through the use of Dichroic filters with LED's. each individual disk acts like a pixel on a giant screen

"…the complex programs and settings require complex combinations of media beyond the purer architectural triad of structure, form and light, at the service of space. They suggest an architecture of bold communication rather than one of subtle expression."

(Venturi,1977:9)

Architecture and technology have always shared a close connection with each other, as architects found design inspiration in the new technologies, like the steel framed train stations during the Industrial Revolution and Modernism.

The integrated nature of technology within architecture today has shifted some of the emphasis from the individual buildings to the interconnections between them. These interconnections enhanced the fact that cities can no longer be viewed as single entities, but rather as networked systems that could have a large impact on the local character/culture. This means that through the role of globalisation, cities on opposite sides of the world can now be connected through technology. Local content can be produced and displayed in London, New York or Sydney through the use of media displays, creating a globalised urban environment without political boundaries.

This creates countless opportunities for cities to be able to express themselves on a global stage. But with these opportunities also comes constraints, one of them being the loss of identity within this globalised community.

The success of these networks - and that of the public spaces that accompany them - lies at their social capabilities. Good public spaces should be able to facilitate cultural expression, public and personal communications and the exchange of information and ideas. This will result in the public space being enriched with meaning for the cities they are located in. The public space can become a place that provides a means through which people could construct and express stories about the city's culture, history and inner functioning through the use of visuals.

Derived from Robert Venturi's book, "Learning from Las Vegas", the tradition of iconology was always experienced through hieroglyphics, sculpture, mosaics and archetypal inscriptions within architecture. Discarded by Modern Architecture as forms of decoration, it lost its relevance. This form of story telling and affirmation of culture on buildings is now re-introduced through new-media technology. (Venturi, 1977:9)

The use of interaction design can facilitate our desire to connect with our surroundings, as described by Malcolm McCullough:

Fig. 4.8 Commercial advertising in Piccadilly Circus, London.

“Practical place-centered design must seek a middle way between a universal uniformity which has been typical of high technology, and a local desire for completely belonging to one place, which has typically been antitechnology. Philosophically, this reflects a profound shift from using technology to overcome environmental limitations toward using it to understand and live more effectively within them.”
(McCullough, 2004:173)

Media Architecture Conference

Fig. 4.9 Advertisement of the Media Architect

The contemporary nature of the above discussion in architectural thought is emphasised by the Media Architecture Conference on interaction design held on the 11th and 12th of September 2007 in London. The main focus of this event was forward thinking discussions on the relationships between architecture, New-media technologies, media-content design and the possibilities that these sectors have to create interactive environments. One of the main discussions was how the use of media-technologies can have a social impact and how urban environments have been able to deal with these technologies entering public spaces. Increased use in public spaces has created a broadening of cultural content within these spaces.

**“We want to network and [illegible] parties for the possibilities of using the digital infrastructure for contributing to a lively urban society, binding the screens more to the communal context of the space and therefore creating local identity and engagement.
The integration of the current information technologies supports the development of a new integrated digital layer of the city in a complex merge of material and immaterial space that redefine the function of this growing infrastructure.”**

– Mirjam Struppek (www.interactivearchitecture.org)

The popularity of these technologies in public spaces have increased due to the fact that it have become cheaper and the technology is also more stable and manageable. City users have also become more media literate
Emphasis was placed on the importance of the integration of media-technologies with the architecture and should become part of the emotional experience. These skins should not cover up the buildings but should instead be incorporated into the buildings form from the start. For the optimum result media-systems should be an integral part of the architecture and should be so constructed as to engage with the building throughout its life.

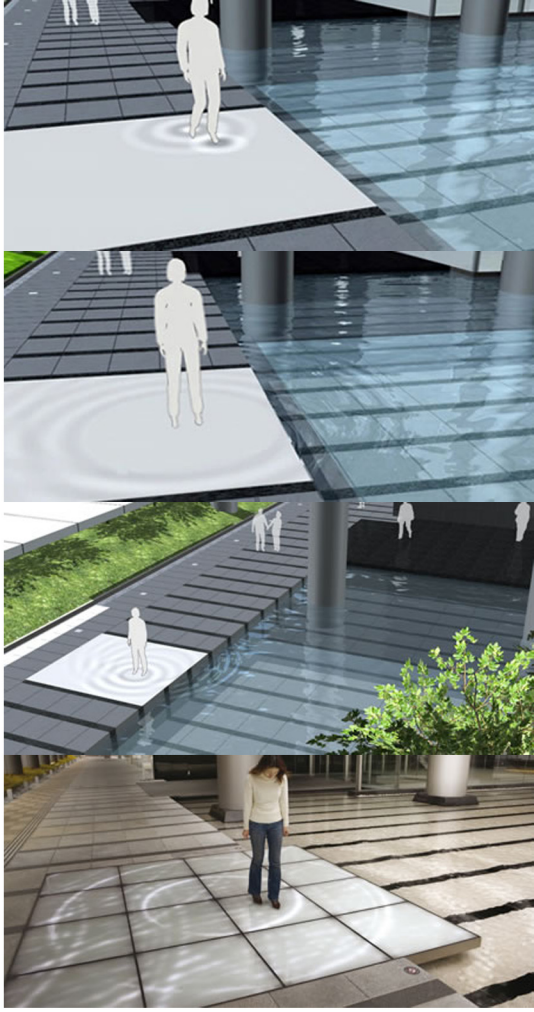


Fig. 4.10 ART+COM’s “Duality” project, Osaka, Japan

Pedestrians walk over a 6 x 6 meters large LED plane, installed right on the edge of the water. The LEDs are covered with translucent glass diffusing their light. With their steps, the passers-by provoke virtual waves on the LED plane, computed in real-time. When these waves hit the edge of the pond, they are extended into the water as real ripples. (www.interactivearchitecture.org)

CHRONOS CHROMOS CONCRETE

Chronos chromos concrete is concrete with thermocromic pigments, which makes it possible to use concrete as a display surface. Graphics and Alphanumerical characters are created on the surface through the use of electrical current. This is achieved through using thermochromic inks to the concrete and applying heat directly by current-carrying nickel-chromium wires. Local colour changes are then produced on the surface in the form of dots, lines or patches depending on the placement of the wires.
An alternative can also be colour changes produced by indirect heating. This technology can be used in applications such as swimming pools.
Other suggestions was that the chronos chromos concrete be used in high pedestrian traffic areas. Colour changes will occur through heat given off by the people standing still or moving around.

(Ritter, A.2007:88)

Fig. 4.11 Chronos chromos concrete applied to architectural surfaces.

CHAPTER 5

DESIGN INFLUENCE

5.1 Pretoria Mode

After a visit to House Jooste (designed by the architect Karl Jooste in 1967) an interest was formed in the influence that modernism (Brazilian Modernism in particular) had on the architecture of Pretoria. Aesthetic similarities between the proposed design of the dissertation and the Brazilian Modern principles have resulted in a brief study of its relevance in Pretoria and the particular works of Norman Eaton.

According to Gus Gerneke in *The Architecture of the Transvaal*, the similarities in climatic conditions of South Africa to South America gave rise to a more profound following of the Brazilian Movement, as the apparent impracticality (flat roofs were difficult to waterproof in the Transvaal thunderstorms, large windows were inappropriate without overhangs in the Highveld sun) of the austere International style became obvious. Brazilian Modernism became acceptable to patrons and the general public alike.

Fig. 5.1 Brick detail of the Little Theatre

This trend started with a talented bunch of young students at the Witwatersrand School of Architecture. Refusing to conform to the conventional principles they were taught, they strived to put the Transvaal on the international architectural map.

One of the breakthroughs of this Transvaal Group was their publication of *zero hour* on 1 April 1933. This publication affirmed the presence of Modernism in the Transvaal.

NORMAN EATON

One of the pioneering Pretoria architects of the 1940's and 1950's was Norman Eaton. His designs followed noticeably the elements of the International Style - rounded edges, strip and corner windows and elements like staircases clearly articulated – but with a more regionalist approach. He preferred eaved roofs and protective cantilevers over openings, while using natural materials and traditional craftsmanship.

The Ministry of Transport Building, Pretoria

Norman Eaton was commissioned in 1944 to design the Ministry of Transport Building. This immense complex in Pretoria would have housed more than a thousand workers, with facilities like recreation halls for 400 people, a restaurant and a roof garden with a swimming pool. It was during this time that Eaton went to the Americas in order to study new developments in office block design.

The design of the Ministry of Transport Building was to be the first Modern Civic building in South Africa and also the first which was directly influenced by the new Brazilian architecture, owing much to the Rio de Janeiro Ministry of Health and Education.
Evident in the juxtaposition of the wings, the façades with fins on a grid and adjustable *brise soleil*, sculptured lift towers and the introduction of dry "moveable" partition walls providing flexible office space.

Pretoria Netherlands Bank

Designed in 1953 the Netherlands bank was a summary of the Brazilian notions used in the Ministry of Transport building. Vertical hardwood louvers were used on the western façade of the building as solar shading towards the harsh afternoon sun. On his travels to Brazil, Eaton met with Roberto Burle Marx (acclaimed Brazilian landscape architect) who inspired him to make use of a roof garden. Eaton also took exemplary care in his projects to have exterior space compliment the building.

Fig. 5.2 Netherlands Bank, Pretoria

Also the Pretoria Wachthuis (police administration building) owes much to the Brazilian Influence - the use of an arcade paved in marble mosaic murals that are linked by a sweeping double stairway to the upper level, the introduction of *brise soleil* on the façade and elegant steel helical stairs in the double volumes of the ground level shops.

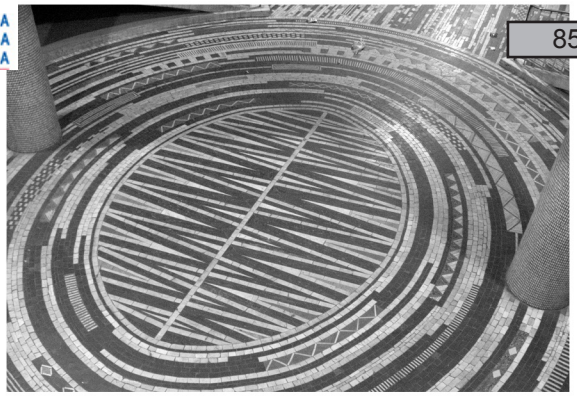


Fig. 5.4 Mosaic floor detail in Polley's Arcade

Fig. 5.3 The Wachthuis

The reason why the Brazilian influence was so dominant in Pretoria, is explained by Gerneke (1998:215):

“Afrikaners, on gaining political power, espoused the avant-garde to proclaim their achievements. This was most evident in ecclesiastical buildings; while English churches were generally safely traditional in the fifties, Afrikaans congregations championed daring buildings, often with crude results. Most likely the young Pretoria architects simply rejected the traditionalists. What is more, the Transvaal Group had broken fallow land a decade earlier, rating a seedbed for new design, which later led to a Transvaal mutation of the Modern Movement via an affinity with the bold Brazilian school.”

With the commissioning of other civic buildings (Meat Board Building by Helmut Stauch and the Transvaal Provincial Administration Building by Meiring and Naudé with Moerdyk and Watson) the popularity of the Brazilian influence grew. New buildings on the University of Pretoria’s campus were by now an evident manifestation of the Brazil-Pretoria architectural axis, flaunting *brise soleil*, pilotis and glazed tiles.

Fig 5.5 Horizontal Brise Soleil of the Transvaal Provincial Administration Building

House Jooste 1967

Karl Jooste

Fig. 5.6

Little Theatre 1940

Norman Eaton

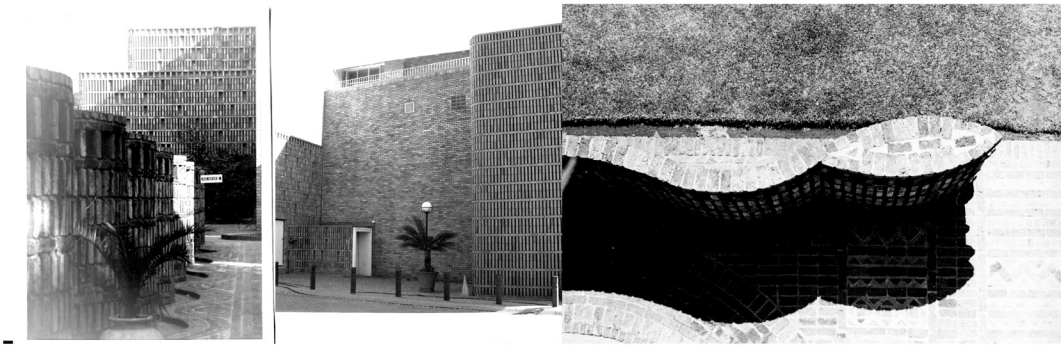


Fig. 5.7

Barclays Bank

Norman Eaton

Fig. 5.8

Polley's Arcade

Norman Eaton

Fig. 5.9

Netherlands Bank

1953

Norman Eaton

Fig. 5.10

Pretoria Technical College - Eastern Block

1967

Eaton & Louw

Fig. 5.11

Meat Board Building 1950

Hellmut Stauch

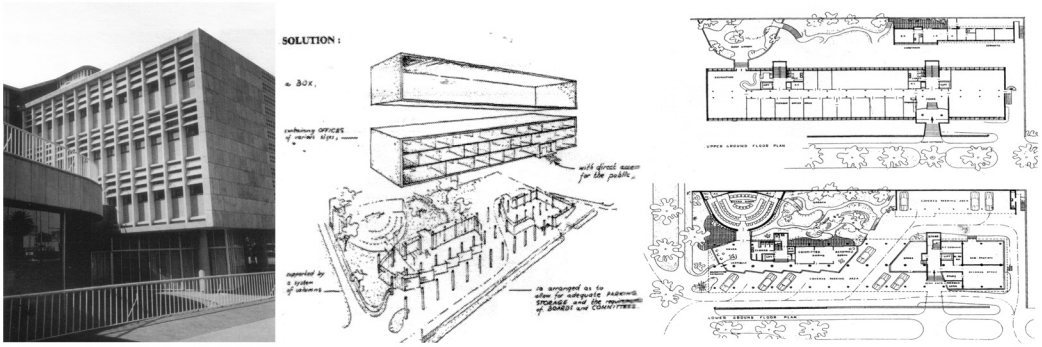


Fig. 5.12

Transvaal Provincial Administration Building

1962

Meiring & Naude,Moerdyk & Watson

Fig. 5.13


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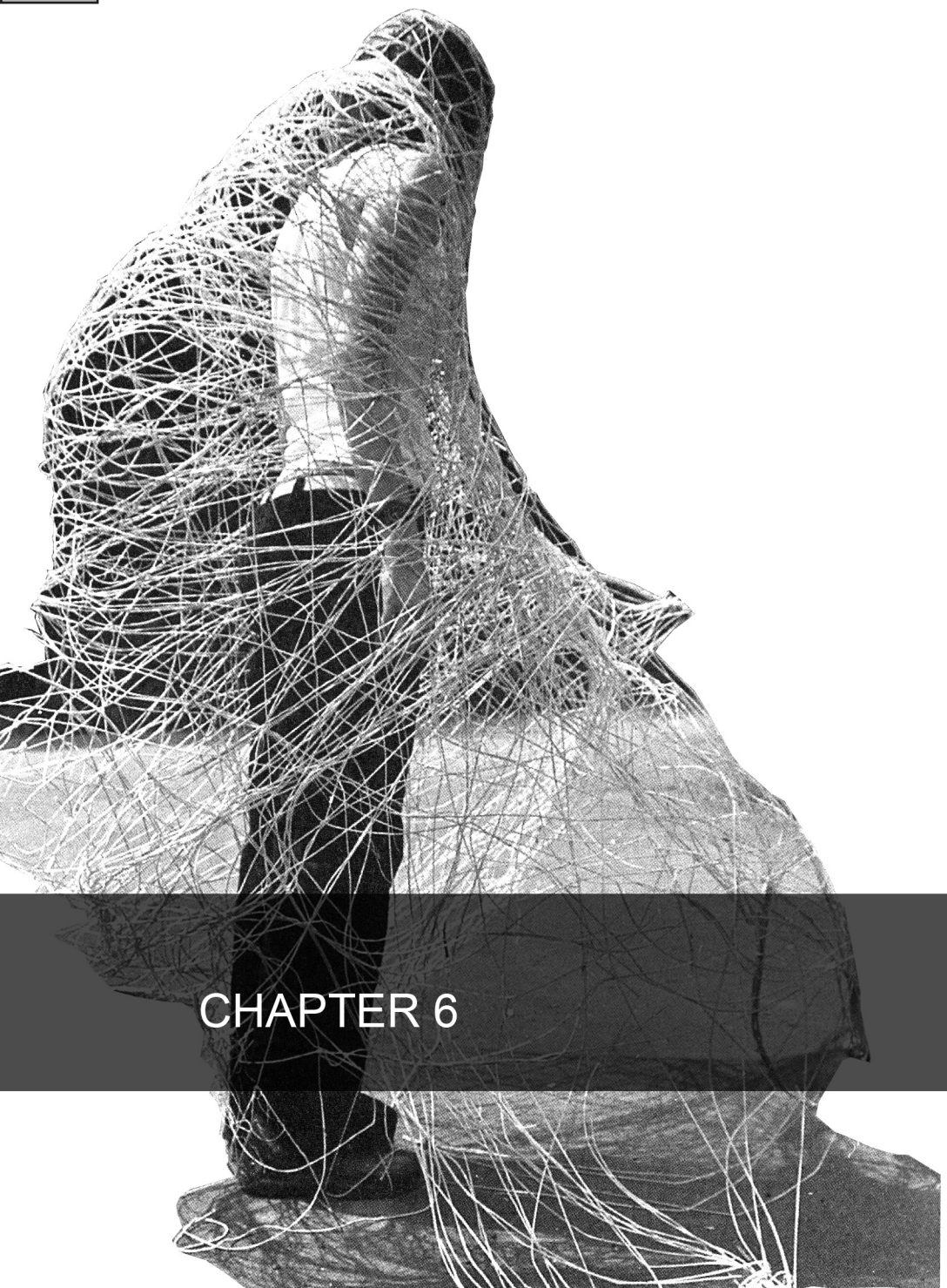
Fig. 5.14



CHAPTER 6

DESIGN DEVELOPMENT

6.1 Urban Design Development

This chapter discusses the development of the project. Essential to the project was establishing important design issues within the urban environment. Resolving these issues and realising the qualities and character of the site and its surroundings, helps to establish a firm foundation for a responsive design proposal.

PEDESTRIAN ARCADE SYSTEM

One of the aspects that emphasise the success of an urban environment is its ease of accessibility. It is with this idea of increased accessibility that the pedestrian arcade system was proposed for the Prinshof area. Pedestrian arcades are not a foreign feature to Pretoria. Many of them are found within the heart of the CBD and are used to dissect large city blocks in a north-south direction.

The positioning of the Prinshof arcade system will be through the middle of the city blocks in an east-west direction. This correlates, at some city blocks, with informal pedestrian paths and will help facilitate pedestrian movement within Prinshof.

Besides creating more pedestrian friendly routes, the arcades also give an added layer to the urban fabric. A pedestrian orientated arcade running through a city block will help to establish a more community based spine. This spine will run parallel with the busy city streets, resulting in contrasting activity spaces. Large retail stores and general public amenities will be located on the street edge, while more community based facilities like, nurseries, doctors and smaller retail stores will be located within the arcades.

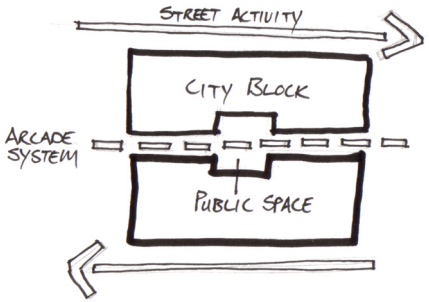


Fig. 6.1 Diagram illustrating the intentions of creating two levels of activities within a city block. Public based facilities on the street edge, and community facilities located within the arcades

Fig. 6.2 Map of Prinshof showing the urban design intensions.

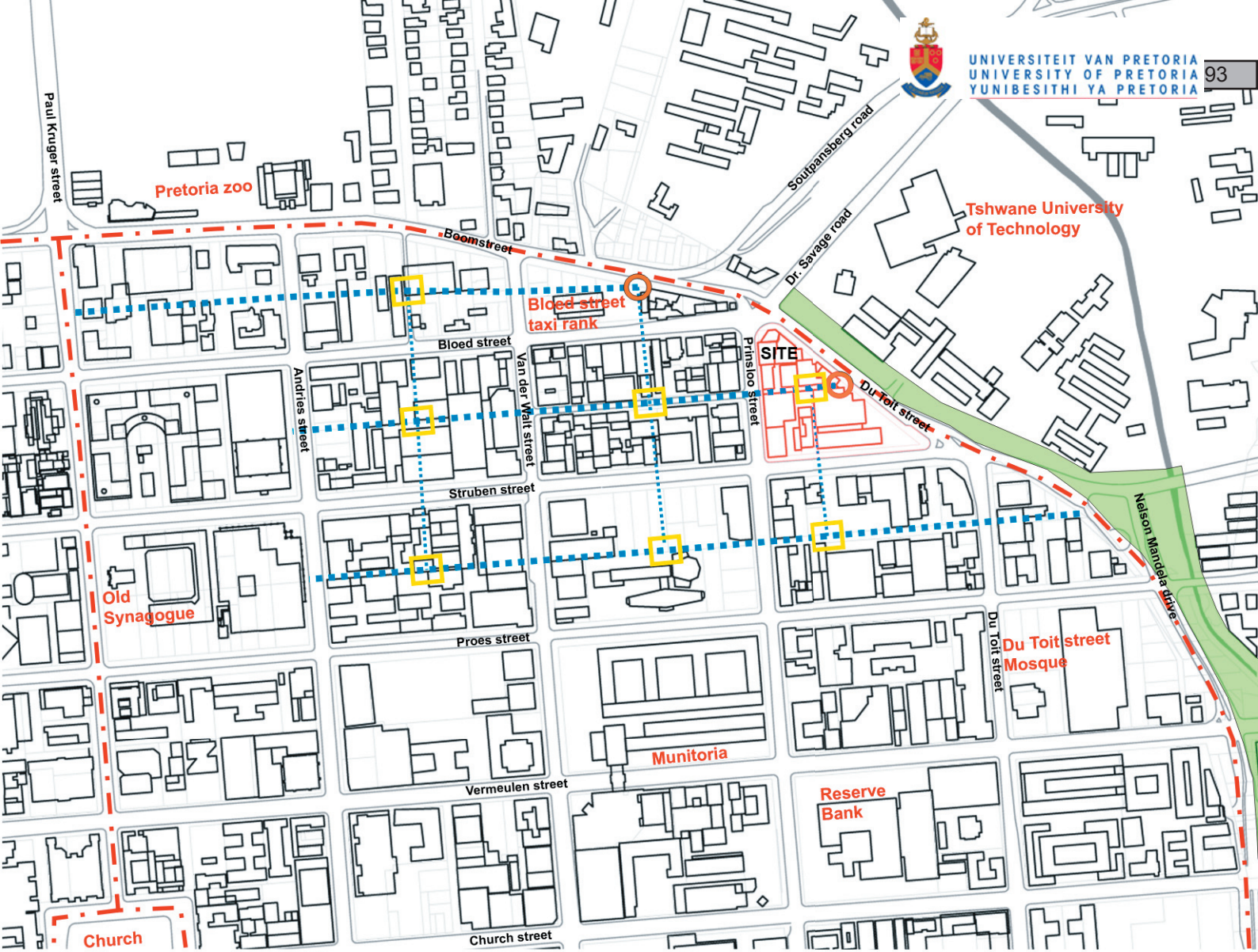


Fig. 6.2

The arcades will also act as a monitored entrance to future residential developments on upper floors of the city block. Some of the arcades will eventually culminate within a public space, creating a relaxed community atmosphere within the confines of the urban environment.

TRAM SYSTEM

Affirming the idea of greater mobility might also mean refusing vehicular access to some parts of the city. The idea is not to allow private vehicles as well as taxis within the CBD. Large transport nodes will be established on the CBD's periphery with parking facilities. These nodes will facilitate the transition, as private and taxi commuters are encouraged to used the inner city transportation (trams and busses).

Implementing such a system will result in less traffic within the CBD, encouraging a more pedestrian friendly environment. In Prinshof, transport transition points (tram stops) will be located at the intersections of the tram routes and the pedestrian arcades.

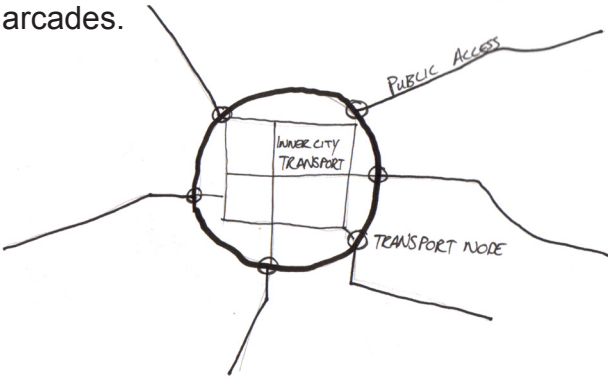


Fig. 6.3

INTERSECTION

To the north of the proposed site is the intersection where Bloed, Boom, Prinsloo, Du Toit and Dr. Savage converge. This busy intersection is situated at one of the gateways into Pretoria CBD and it is therefore crucial that this space be celebrated as a entrance.

In close proximity to the Bloed street taxi rank, the intersection is currently a chaotic conglomeration of pedestrian and vehicle alike. Consequently, the decision is to slow down the pace of movement through the intersection. A rough texture will be created by using cobblestone pavers on the road surface, and the level of the road, for the designated area, will also be raised. This will help to decelerate this space and create a more homogenous pace of movement through the intersection. With minimal vehicular activities during the evening (Bloed street taxi rank closes at 8pm, the intersection can be closed for vehicular access and used as a public space.

Fig. 6.3 Diagram of proposed Public transport intensions

Fig. 6.4 Aerial photo explaining urban design proposal


STREET VENDORS
TRAM ROUTE
ARCADE SYSTEM
NELSON MANDELA CORRIDOR EXTENSION
PROPOSED DEVELOPMENTS
SLOW DOWN AREA
Boom street
Proposed colour exploration centre
New Bloed street Metro Mall
Bloed street
Proposed Community Mixed use development
SITE
Brown street
Du Toit street
NEW MEDIA ART CENTRE
DIGITAL AWARENESS CENTRE
Edmond street
Struben street
Prinsloo street
Du Toit street
Proposed Housing Development
Proposed community recreation centre
Proposed Brewery
Proes street

Fig. 6.4

STREET VENDORS

Because of the uneconomical factors of returning to their destination during the day, most long distance taxi drivers remain within the confines of Prinshof, until they have to return with their commuters in the afternoon. As a result a lot of informal activities occur within the surrounding areas of the Bloed street taxi rank.
The informal activities help create a more vibrant setting and affirm the idea that economic interactions should not necessarily be confined to glass boxes lining the street façade. It should be able to spill into the streets, into the realm of the pedestrian.

The wide sidewalks of Du Toit street have become popular with vendors serving lunch to the taxi drivers. The vendors pay a monthly fee towards the local municipality in order to hire equipment to prepare food. Meat and vegetables are bought from the local butcher and green grocer and prepared on site.
Currently these vendors do not have storage facilities available to them. Most of the equipment are stored at local retail stores during the night and then recollected early in the mornings. The vendors are also forced to share Du Toit street with the informal vehicle repair activities lining the street. This results in an unhygienic atmosphere as food is prepared next to the spot where a vehicle's motor oil had been drained the previous day.

It is essential to incorporate these vendors into the design proposal and equip them with suitable storage and food preparation facilities.

Fig. 6.5 Current state of street vending facilities along Du Toit street.

Fig. 6.6 Street traders and the unhygienic state of the surrounding area

Fig. 6.6

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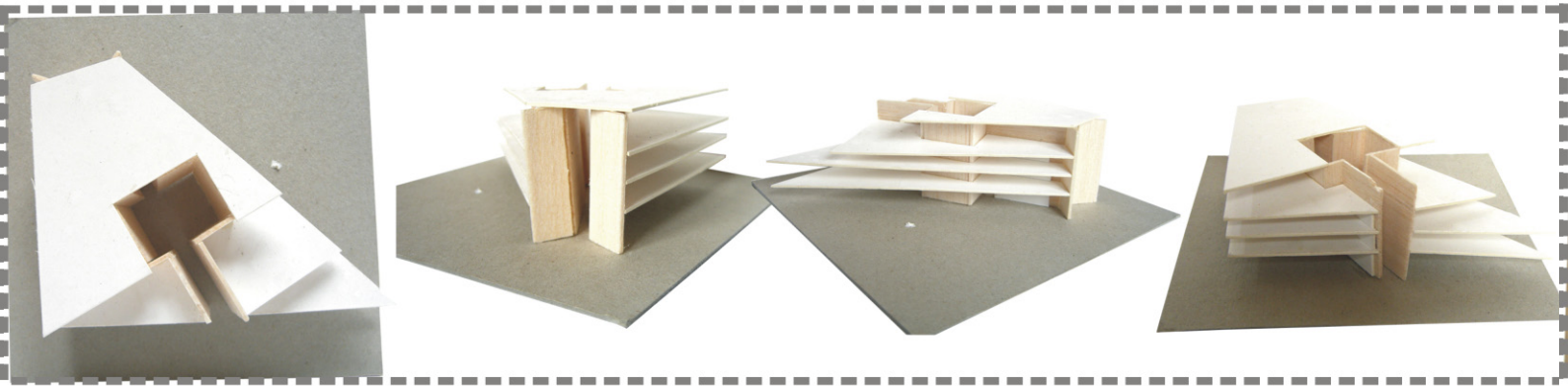

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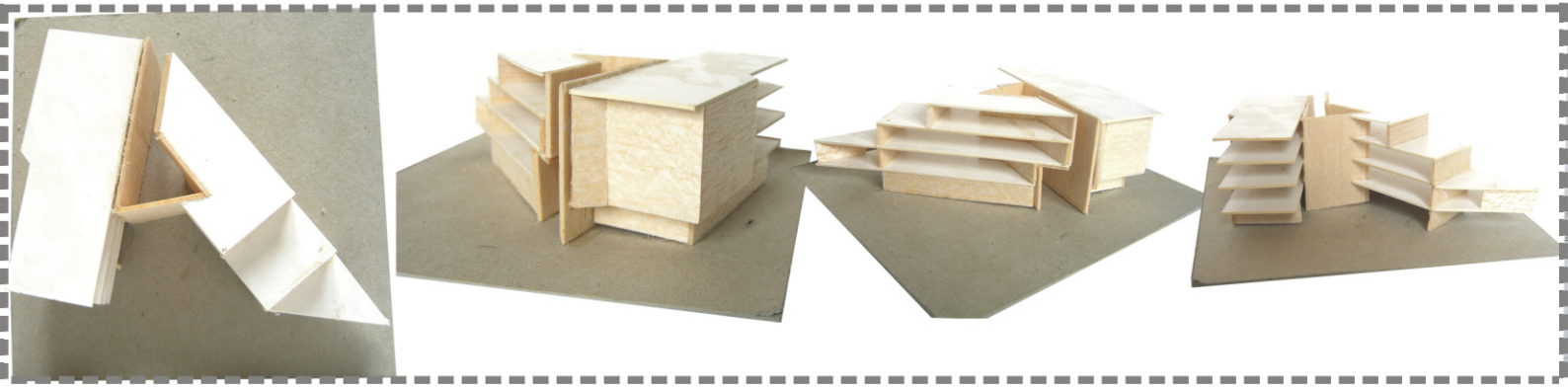

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Fig. 6.7

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_ model 4

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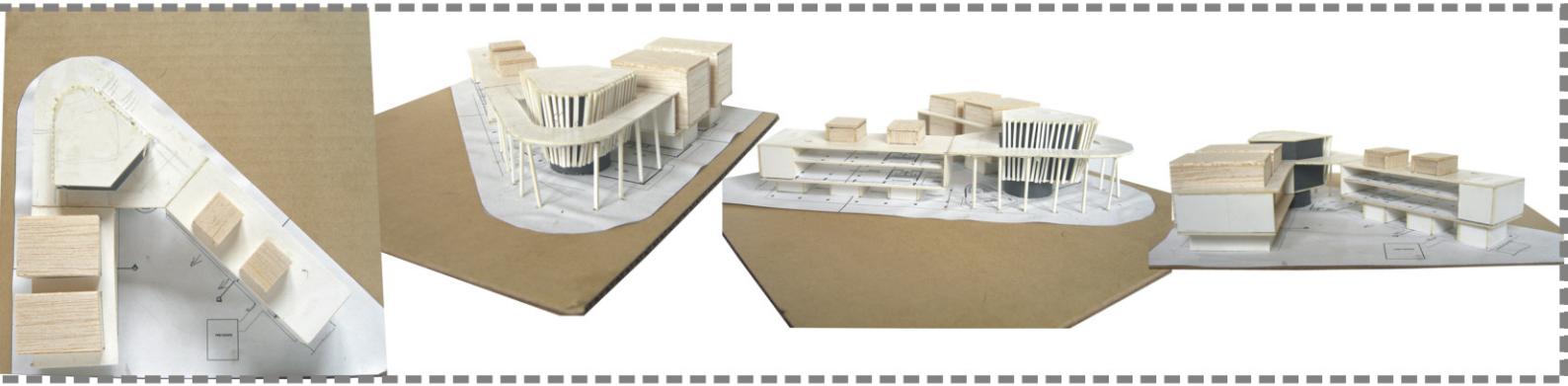

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_ model 6

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Fig. 6.8

6.2 Building development

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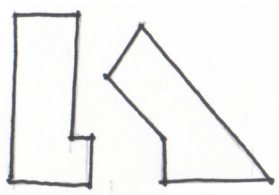
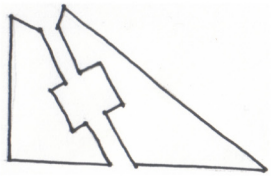
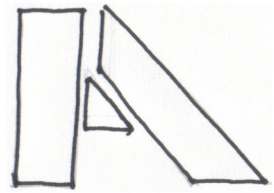
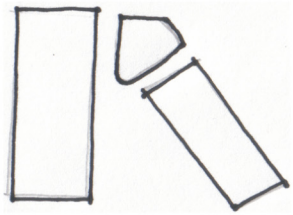
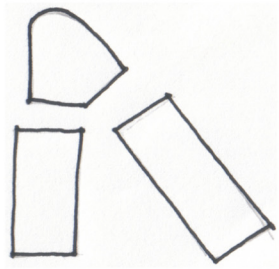
Fig. 6.9











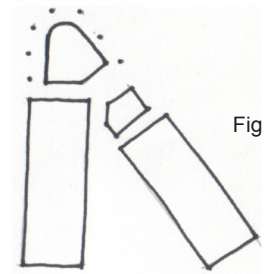


Fig. 6.10

6.2.1 FORM GIVING

As explained earlier in this chapter the pedestrian arcades form an integral part of the design proposal. Situated along one of these pedestrian arcades and in close proximity to the Tshwane University of Technology (TUT) it became evident that the establishment of a public square is needed (due to the extreme lack within the vicinity). Owing to the nature of the TUT Art campus and the taxi rank nearby, the public square will be emphasised as a cultural gathering point within Prinshof. The buildings surrounding the square should be able to support this ideal.

From the initial outset of the design, the intent was to frame the public square with the building. This creates a sense of enclosure towards the surrounding streets (fig. 6.10). The building is pushed towards the site boundaries, forming a definite urban street edge. Activities, such as retail stores and food vendors, are situated along this street edge to encourage and facilitate pedestrian movement along the site. The intent on forming a solid street edge by the building is not to discourage pedestrians away from the public space created, but rather giving them selected entrances to filter through. Once one enters the public square the emphasis changes from the movement created by the street edge, to a calm and relaxing nature. People will be able to use this space as a break-away from the busy activities created by the city.
Like the ancient Roman Forum, the public square will be used as an intellectual as well as a social gathering point within the city. Information about local cultural events, trends, news, art exhibitions, popular culture and issues relating to the community can be displayed on media screens within the square. The intention is also to open up towards the TUT Art campus as a social facility that can accommodate the students during the day and become a backboard for their creative expressions.

The intersection towards the north of the square also becomes a crucial aspect of the design. The visual importance of the northern corner of the site is evident in the current use of large merchandise signs (fig. 1.22). This corner will act as a visual attraction for people towards the site and should be evident as one approaches the development. The response of the building towards the intersection is of utmost importance and will be discussed later in this chapter.

One of the obvious aspects of designing television production facilities is the difference in requirements between production and post-production spaces. Production spaces (recording studios, control rooms and storage facilities) are usually associated with large, static structures and bulky equipment. Most of them are devoid of natural light and sound. Post-production spaces on the other side of the spectrum are usually smaller adaptable spaces, which can be grouped into small individual cubicles or can open up into a larger multi-use space.

This led to the decision of separating the building into two halves. The production facilities situated to the western portion of the site and the post-production facilities to the eastern portion.

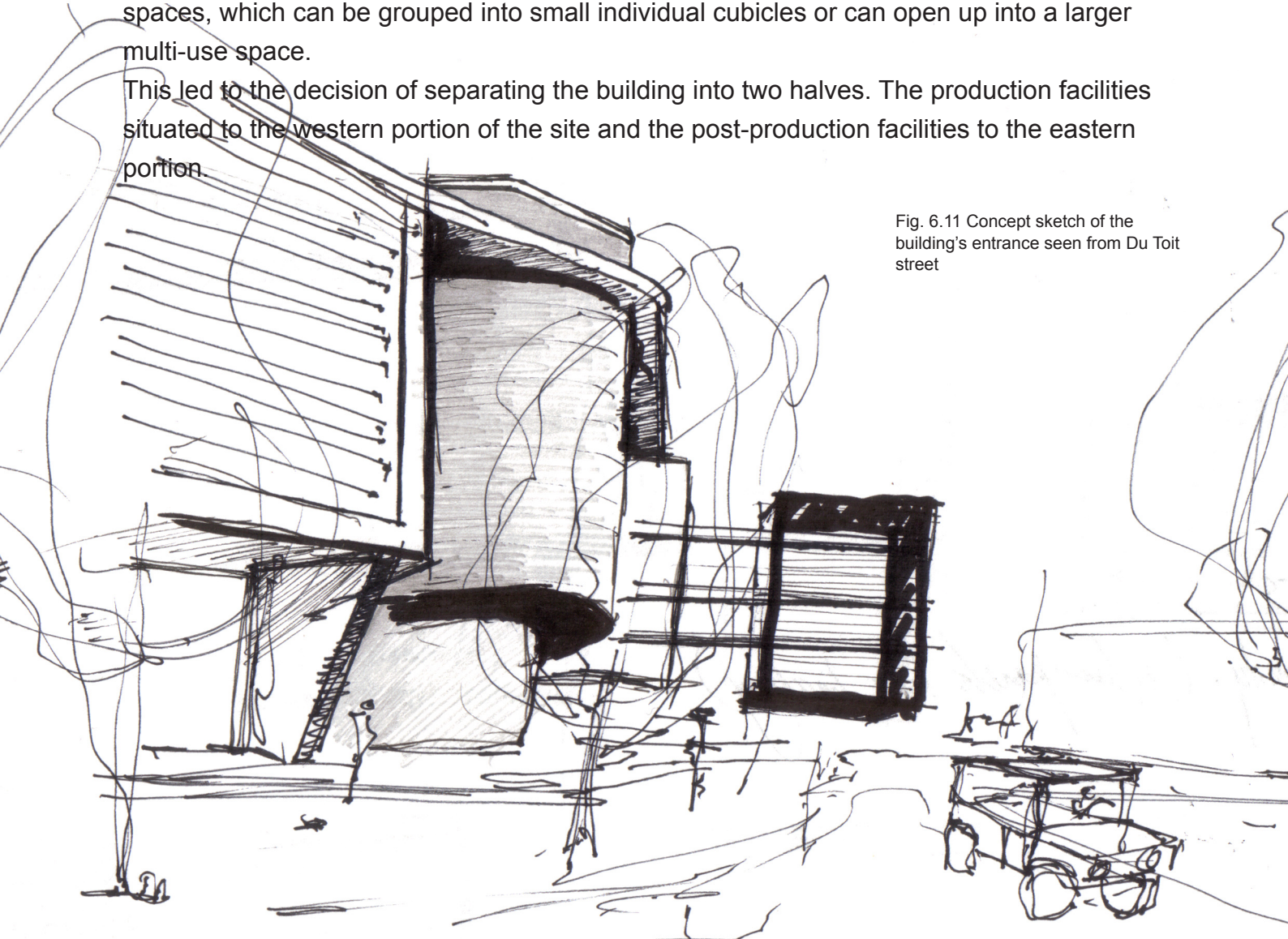


Fig. 6.11 Concept sketch of the building's entrance seen from Du Toit street

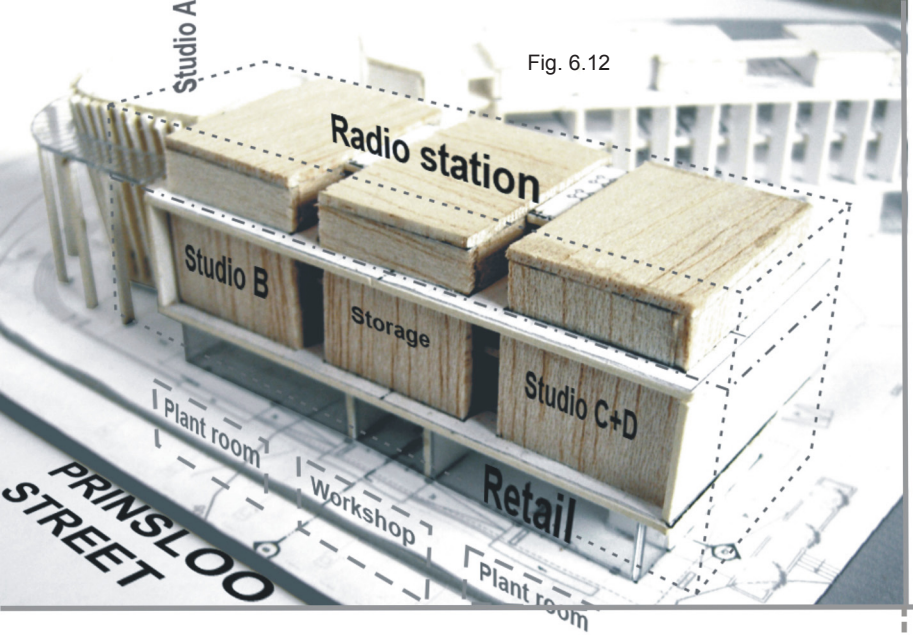


Fig. 6.12

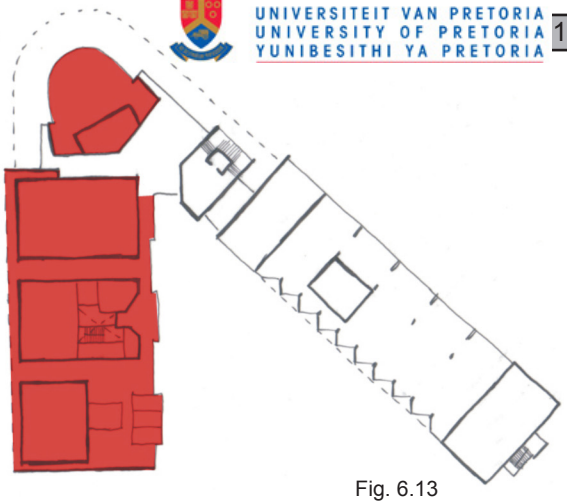


Fig. 6.13

Production facilities

Because a significant proportion of the production facilities require light and sound exclusion, the production section of the building was positioned towards the western side of the site. Thus the large solid volumes on this façade shade the rest of the building against the harsh western sun during the afternoons.

Due to the amount of pedestrian movement on Prinsloo street towards the CBD, retail facilities were incorporated at ground floor level. The raised sidewalk facilitates the shoppers and also encourages the movement of the pedestrians to filter through the building. The ground floor of the building is public based and should be accessible to all. A dedicated presenter/staff entrance is situated towards the public square which makes it easier to access the production facilities from the square as well as the basement.

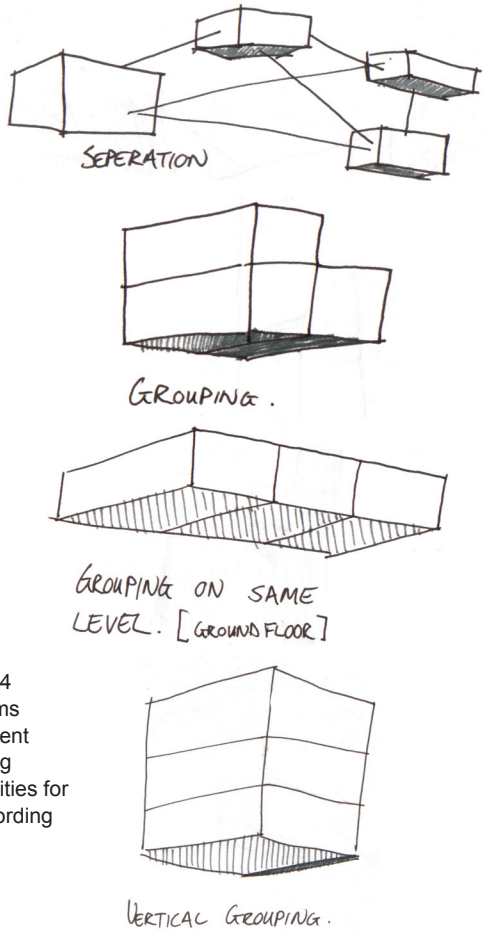


Fig. 6.14
Diagrams of different grouping possibilities for the recording studios

All the production facilities are situated on the first and second floors. The reason for placing them on these floors is to allow the ground floor to be used by the public in their daily activities. The production facilities comprise of recording studios; set and equipment storage spaces and presenter areas (make-up, dressing rooms, wardrobe storage and toilets)

The production section is categorized by three oversized cubes placed on the western façade. Two of these cubes (those at the ends) house the television recording studios while the cube in the middle facilitates the storage spaces allocated to these studios.

There are four recording studios ranging in size. Studio B, which is the largest of the four, will be used for the making of in-studio music videos as well as larger format set programs. Studio C and D will be used for smaller format programs, like talk shows, with a green screen (used as a projection surface for a digital background) incorporated into Studio D. Studio A is exclusively a live audience studio, with seating for 120 audience members. This studio is one of the primary features of the building and is situated opposite the intersection (fig. 6.21). This gives the corner studio a constant visual connection with its surroundings and also gives passers-by the opportunity to experience the activities within the studio. This studio will be

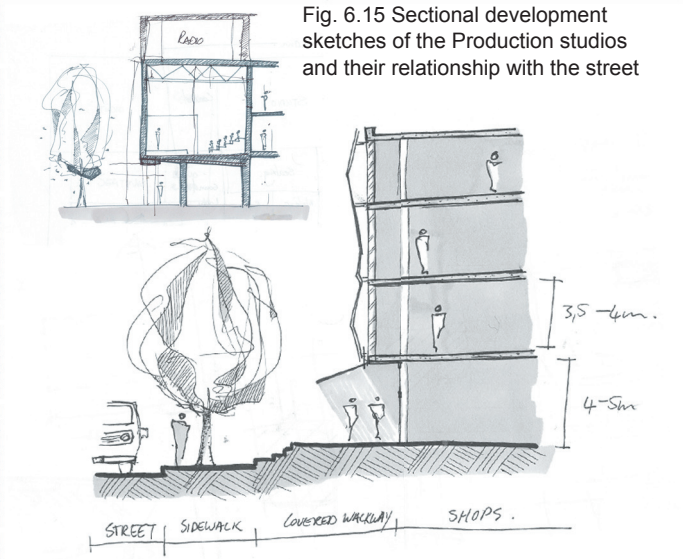


Fig. 6.15 Sectional development sketches of the Production studios and their relationship with the street

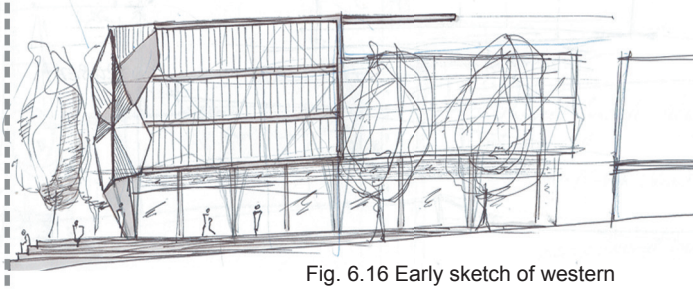


Fig. 6.16 Early sketch of western facade

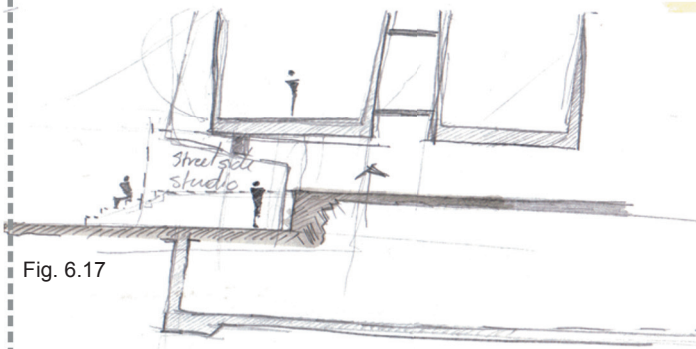


Fig. 6.17

used to host interactive shows with audience members and local musicians at selected times of the day (usually during peak-hours and lunchtime as this will ensure that more pedestrians can be attracted to the show). The pedestrians and the activities of the intersection will form an appropriate background for the television programme.
Both Studio A and B will have production control rooms available to them. Due to the sizes of both Studio C and D the use of portable production control equipment would be sufficient.
Programme feeds from the production control rooms will be sent to the Master Control room for final editing before being broadcasted.
Radio broadcasting station and administration offices are situated on the third floor. The radio station is dedicated to bringing local music to people who do not own a television set or to the thousands of commuters traveling into the city everyday.

All the Production facilities are vertically serviced by the basement. The studios are vertically serviced by mechanical ventilation plantrooms, while the storage facilities are serviced by a set-building workshop.

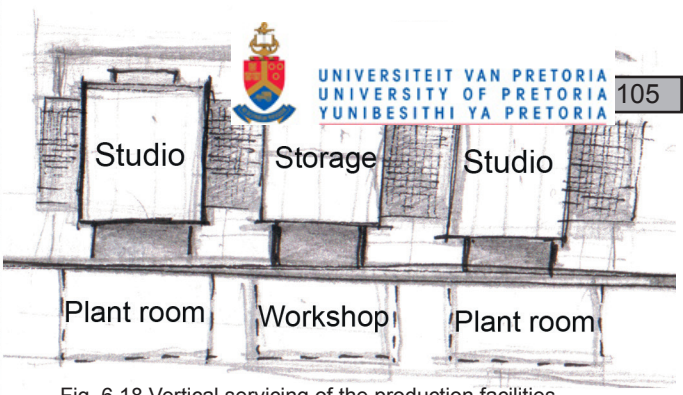


Fig. 6.18 Vertical servicing of the production facilities

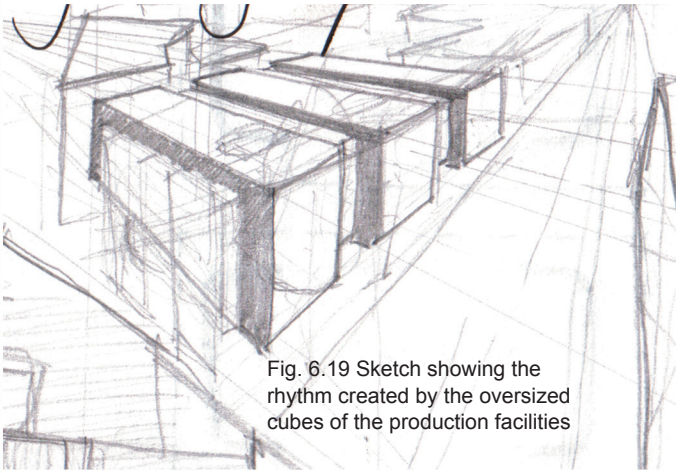


Fig. 6.19 Sketch showing the rhythm created by the oversized cubes of the production facilities

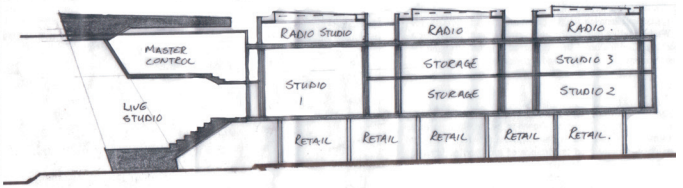


Fig. 6.20 Sectional sketch of the western portion of the building.

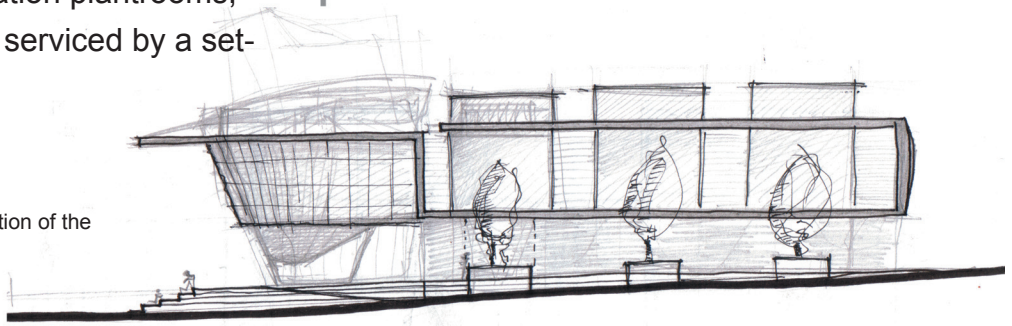
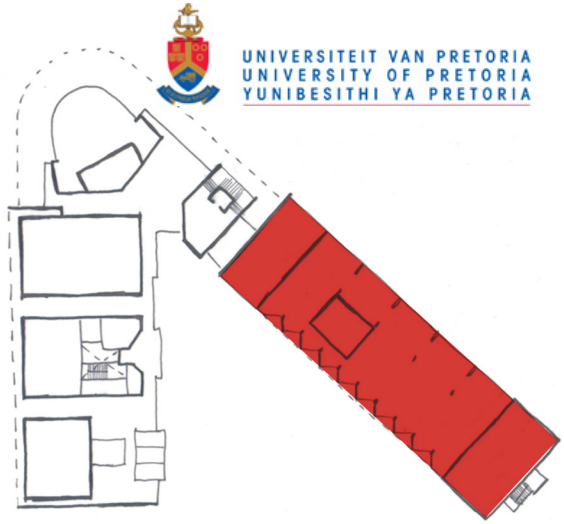


Fig. 6.21
Elevational sketch of the western portion of the building

Fig. 6.22



Post-production facilities

The post-production section of the building houses the majority of the development's habitable spaces (offices and restaurants) and therefore it is required as a prerequisite to have a northern aspect for these spaces. The placement of the post-production facilities on the eastern section of the site accommodates most of the spaces with desired northern sunlight. Because of the harshness of this northern sunlight, a horizontal louvre system is applied to the large glazed façade of the post-production office spaces (fig 6.24). Deciduous London Plane trees lining Du Toit street add to some of the solar protection during the summer months and lets in light during the winter (fig 6.23).

The atmosphere created by these trees as well as the increased amount of activities along the broad sidewalks gives a distinctive quality to Du Toit street. This character is emphasised in the design on the ground floor by creating lock-up facilities for food vendors. This enables them to prepare food in a

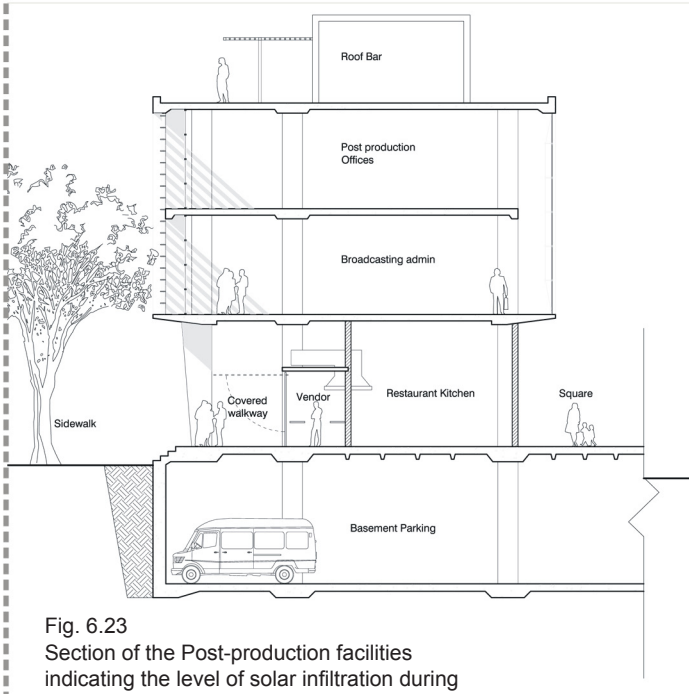


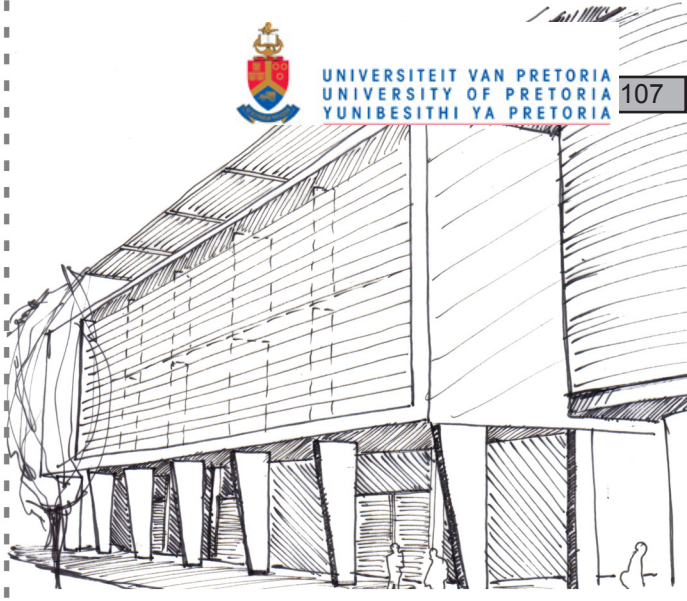
Fig. 6.23
Section of the Post-production facilities indicating the level of solar infiltration during the winter.

more hygienic environment and gives them the opportunity to lock away their equipment with relative safety. Accompanying the food vendors are small restaurants and their individual kitchens opening up to both Du Toit street and the public square. These facilities encourage the relaxing nature desired within the square.

Post-production offices are situated on the first and second floors of this portion of the building. The first floor comprises of a large open-office space used as broadcasting and production administration offices. The second floor is reserved for post-production use, which comprises of audio and visual editing facilities. These facilities are mainly grouped into individual cubicles where the editing and the finalization of the television programs occur. Supporting facilities to the post-production component are; an audio and visual library as well as a digital image archive.

The office space features large glazed facades on both the northern and southern sides, creating adequate natural lighting required for these habitable spaces.

A private roof bar takes up the entire third floor of this portion of the building. Intended primarily for presenter and staff use, this space can also be used for private functions and launch parties. The outside seating area is shaded by a timber pergola. Canvas shading devices can also be applied if needed in the summer.



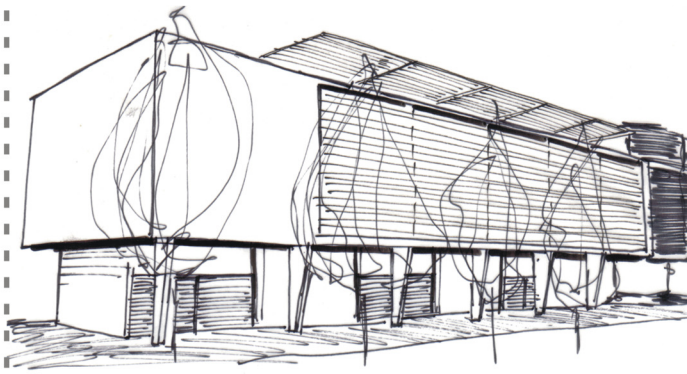
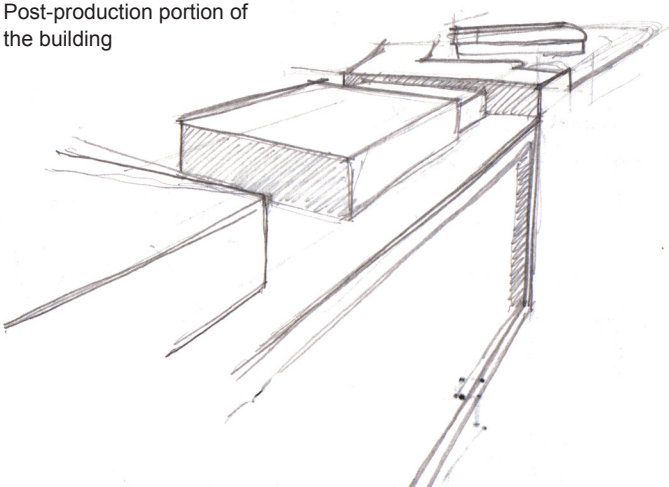


Fig. 6.24
Concept sketches of the Post-production portion of the building



Circulation

Connecting the production and post-production portions are the centralised circulation core. Access to the building is controlled on ground level by reception with stairs and a lift linking the ground floor to the rest of the building. The connection between the production and post-production facilities on the first floor also doubles up as an audience holding area for Studio A.

Public access to the building is only allowed on the ground floor, the circulation core and studio A. The rest of the building is reserved for private use and is monitored by controlled access points.

As mentioned earlier, a secondary circulation and service core is situated in the production portion of the building. This enables staff to have a dedicated entrance to the studios and presenter areas from the square and basement. A service lift, within this secondary core, enables sets and equipment to be transported from the basement to the storage facilities on the first and second floor. Lastly the circulation core is also the escape route in cases of emergency.

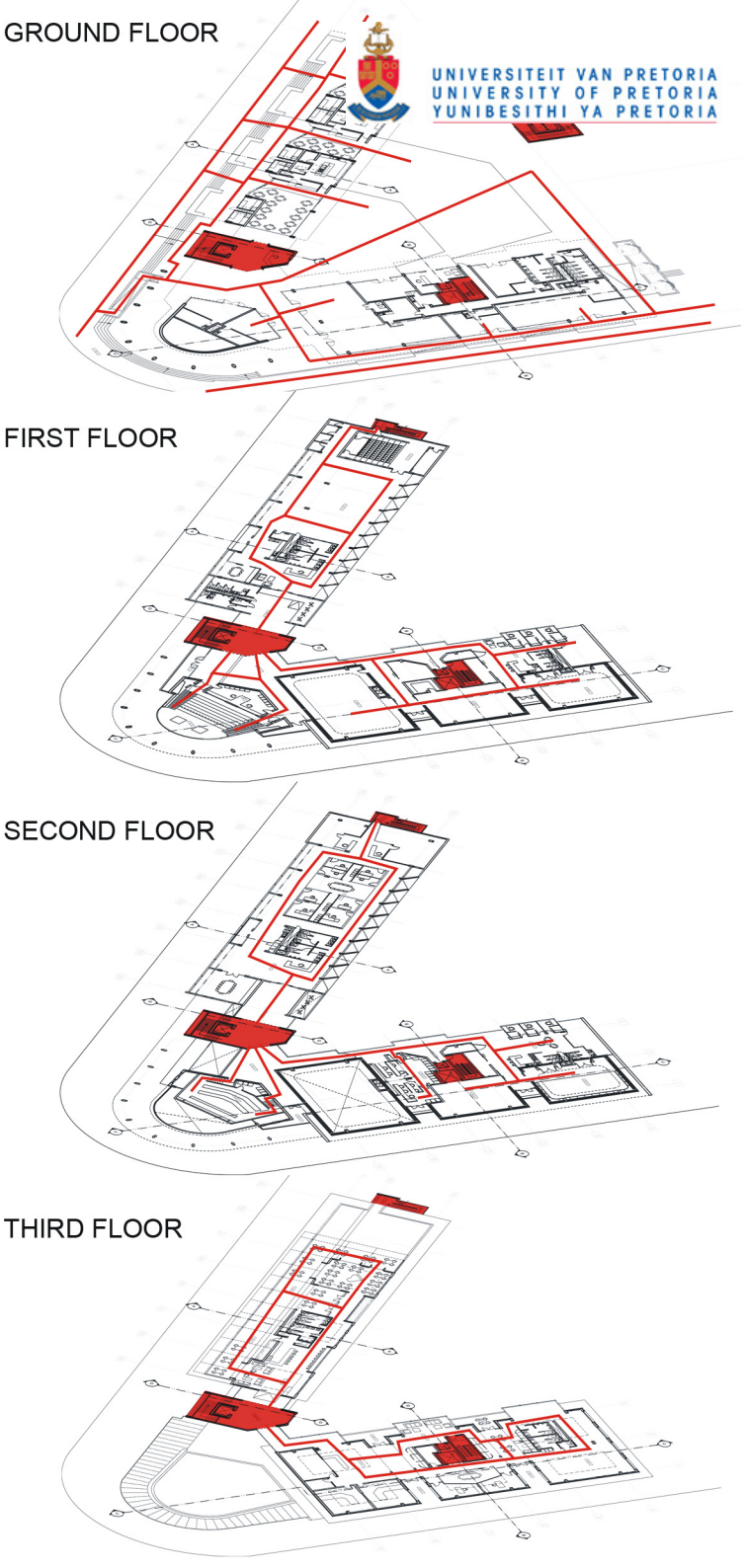
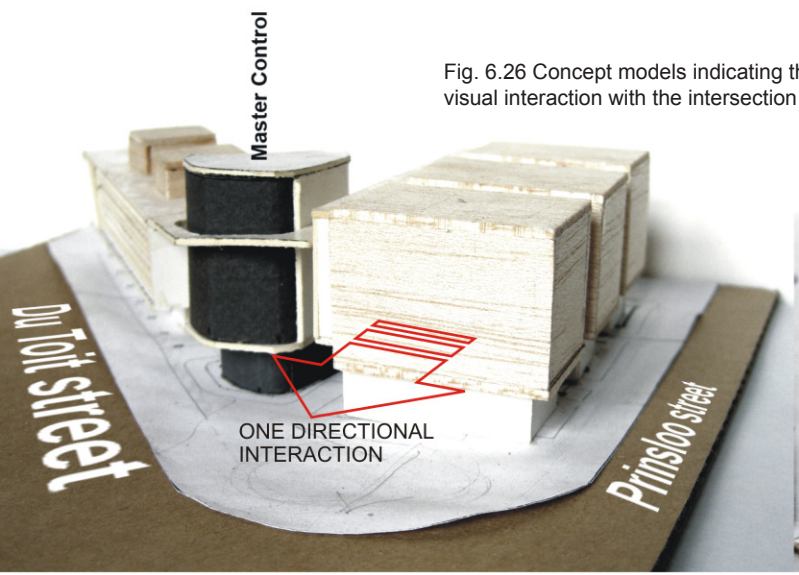


Fig. 6.25 Horizontal circulation of each floor. Coloured blocks indicating areas of vertical circulation



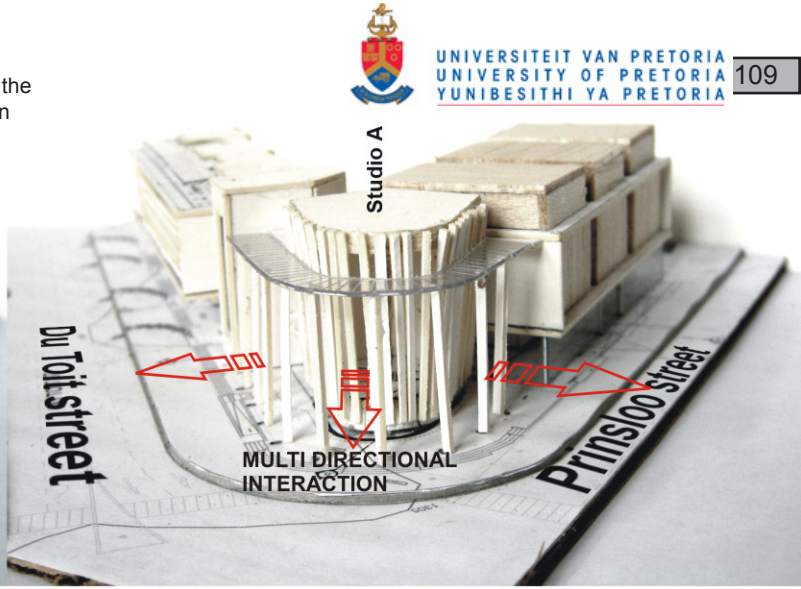


Fig. 6.26 Concept models indicating the visual interaction with the intersection

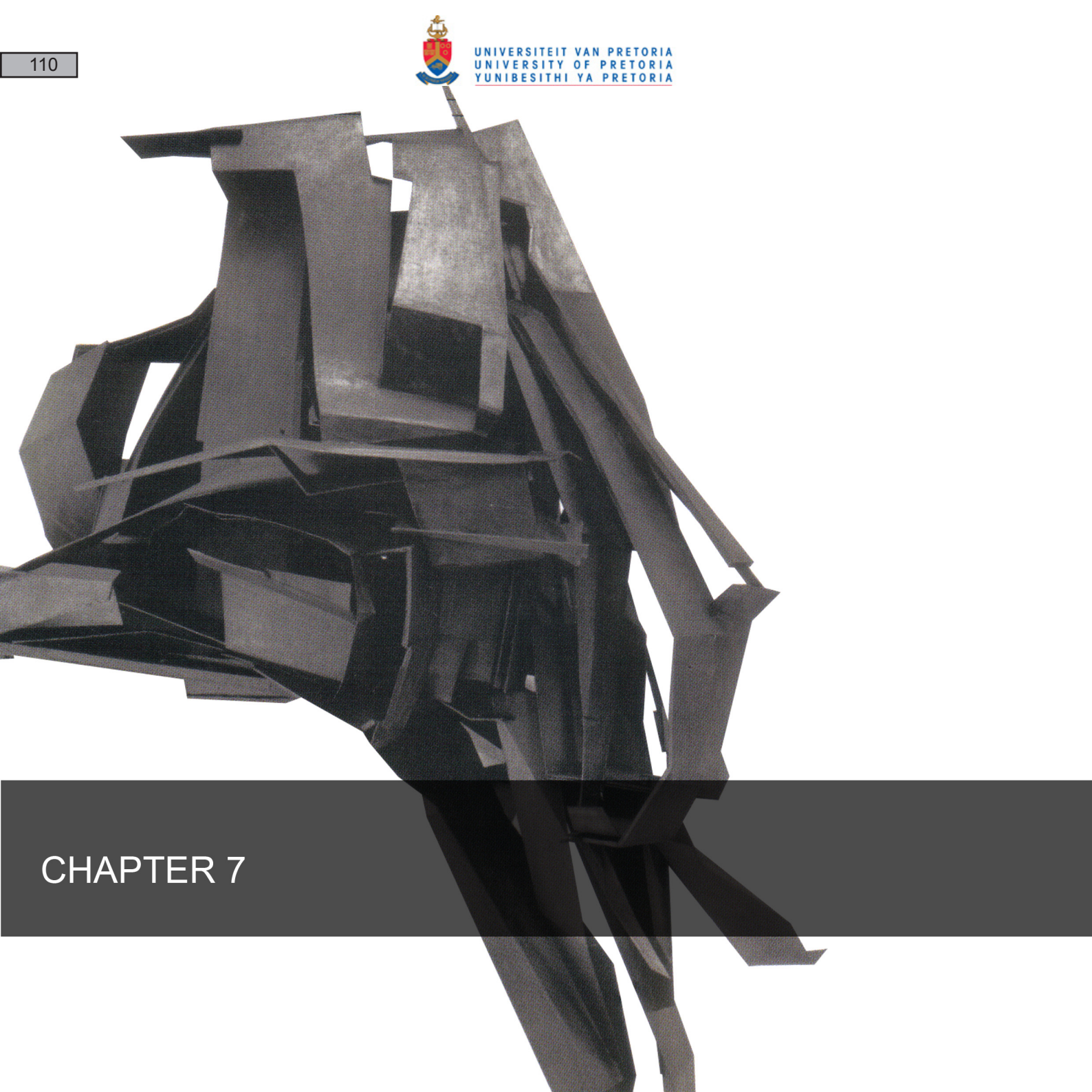
Corner development

As mentioned before, the response of the building towards the intersection is extremely important for the nature of this dissertation. Initially the building had a poor one dimensional response towards the intersection. There was absolutely no connection between the activities of the building and the activities happening on street level.

The decision was made to incorporate the live studio into the design and place it on the corner of the site. In this way it has a multi-directional response towards the intersection as well as Prinsloo and Du Toit street.

The studio, with its digital screens, becomes a bold, imposing element giving the intersection added value. The studio is placed on a pedestal, five stairs above the level of the sidewalk. Although entirely open, this creates the idea that one leaves one space (intersection) and enters another (building)

The live studio drops down from first floor level, to approximately eye level on ground floor, giving passers-by direct visual contact with the activities within the studio. The activities surrounding the intersection, as well as all the taxis driving past, makes for an interesting and truly African backdrop for the television programme.



CHAPTER 7

TECHNICAL DOCUMENTATION

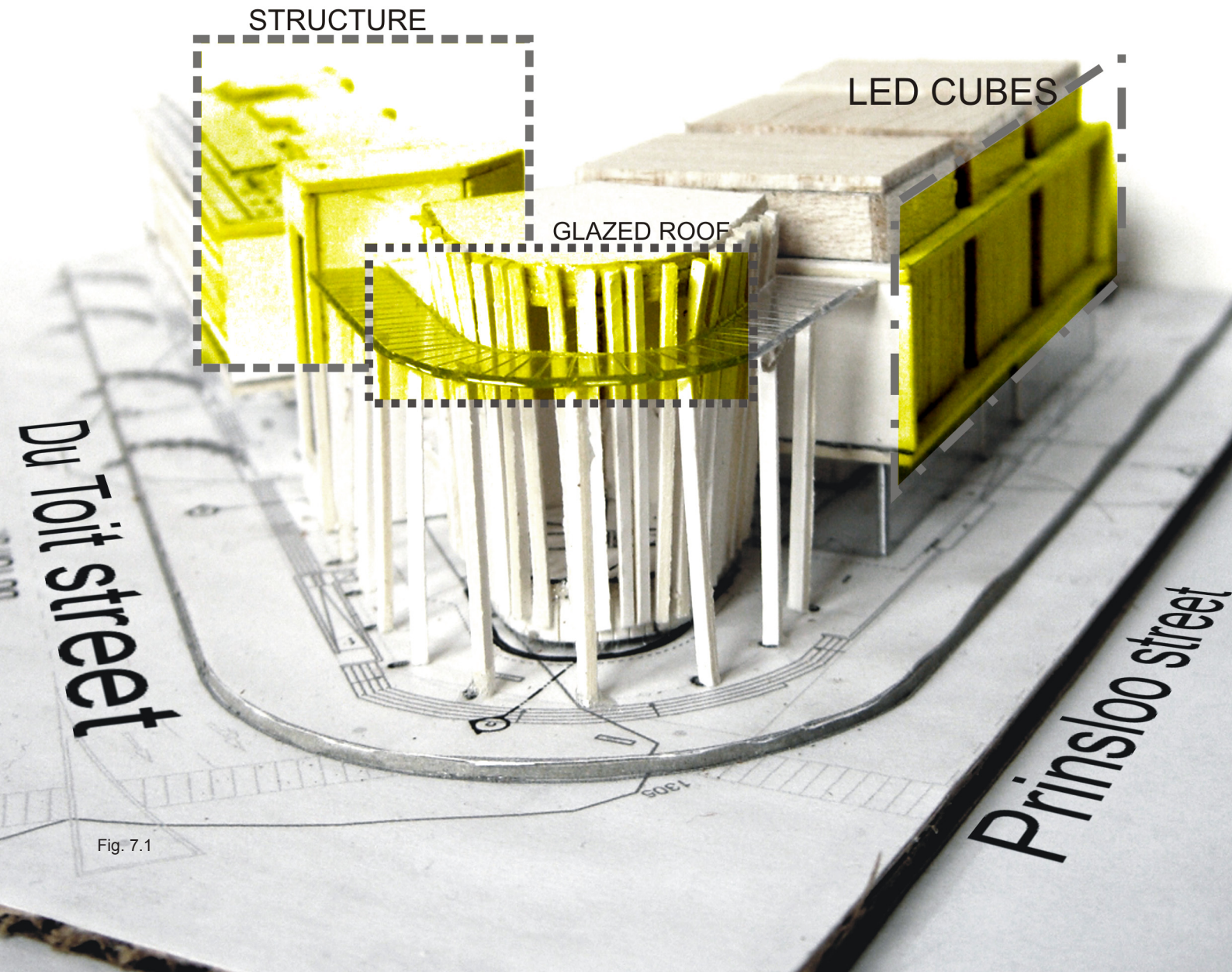

STRUCTURE
LED CUBES
GLAZED ROOF
Du Toit street
Prinsloo street

Fig. 7.1

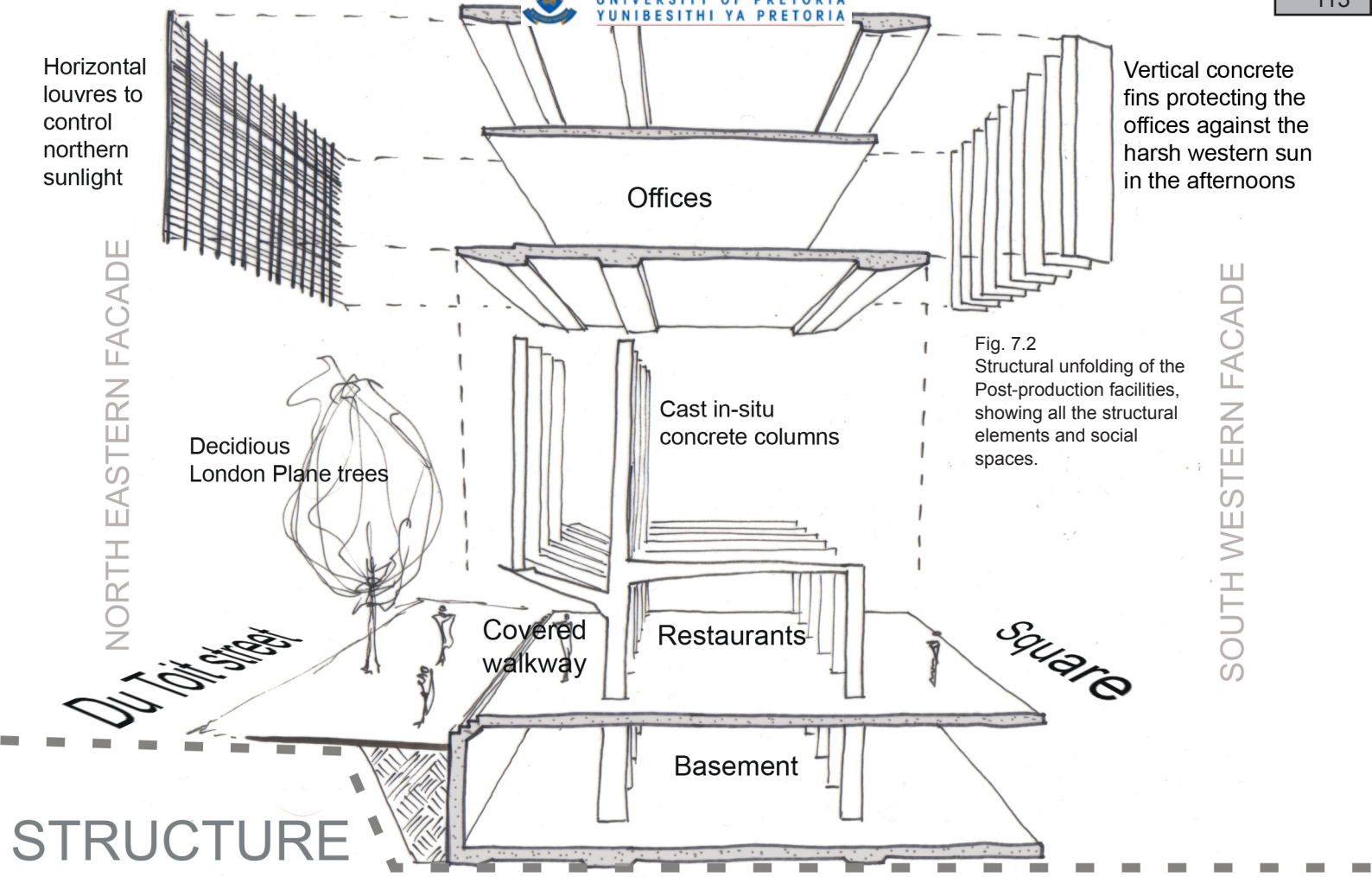


Fig. 7.2
Structural unfolding of the Post-production facilities, showing all the structural elements and social spaces.

The structure comprises mostly out of reinforced concrete floors and columns.
The use of concrete ensures that the building is rigid and capable to carry the loads imposed on it by the functions of the building. The building is structured on a grid network that is determined by the grid of the basement structure. The post-production section is supported by a primary cast in-situ concrete column. A cantilevered beam supports the northern façade and is balanced by a counter beam tying it back to the secondary columns in the grid.

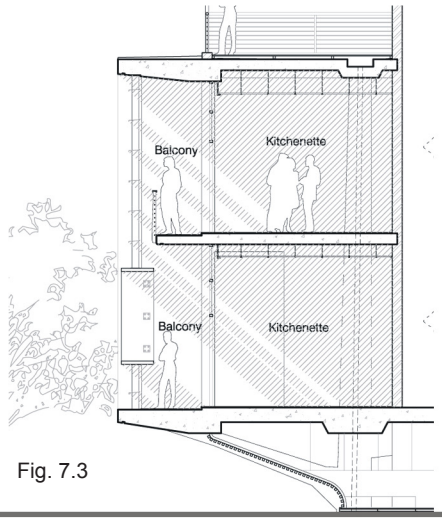


Fig. 7.3

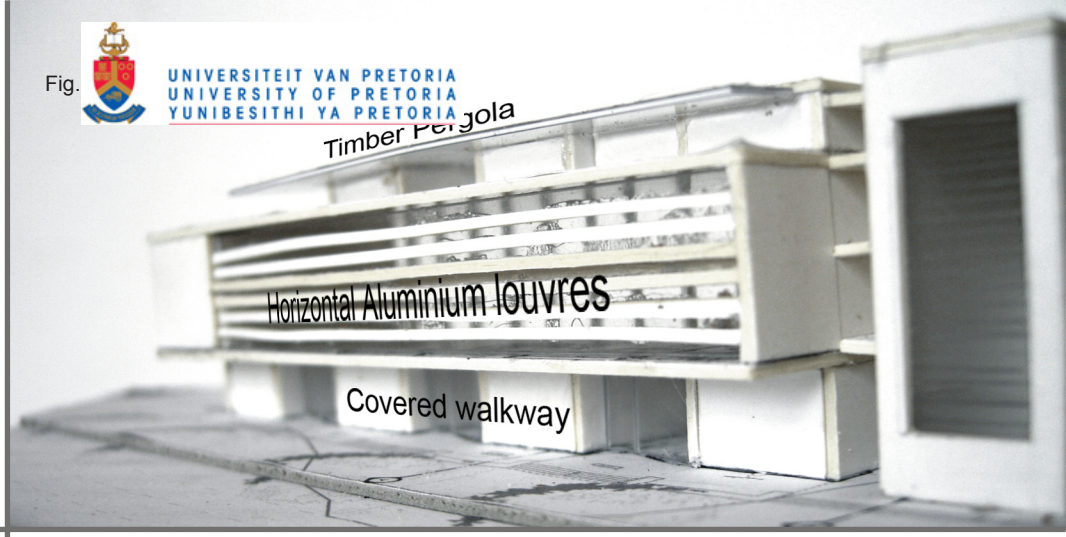


Fig.

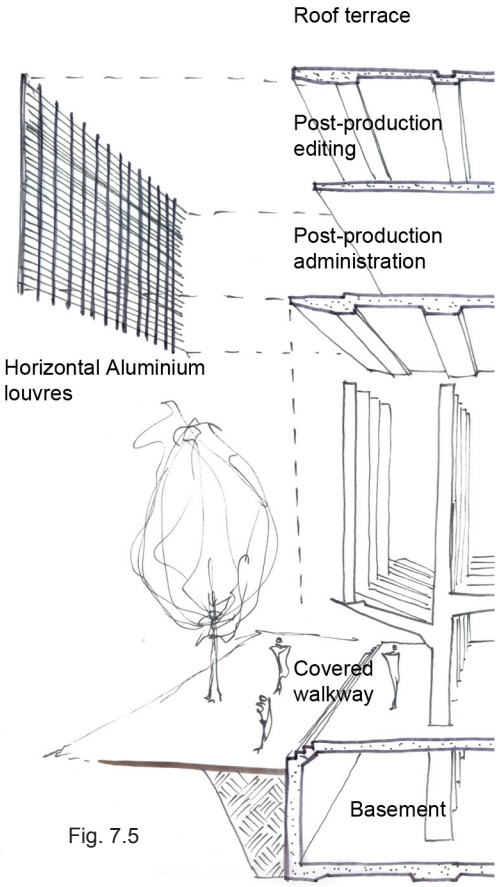


Fig. 7.5

As mentioned in the previous chapter the Post-production section of the building facilitates the majority of the habitual spaces (offices, restaurants and social spaces). It is required to keep the occupants of these spaces as comfortable as possible.

North Eastern façade

Due to the large northern aspect of this façade, it was essential to be able to regulate the amount of direct sunlight allowed into the office spaces. A fixed aluminium louvre system as well as the deep setback of the windows, prevents the harsh Highveld sunlight to penetrate the interior spaces throughout most of the year. Due to the angle of solar incidence during the winter months, sunlight is able to infiltrate the office spaces and heat it up from within.

The first and second floor cantilevers over the walkway on the ground floor, giving generous shading to the food vendors and protecting them against precipitation.

Fig. 7.3 Portion of Section A indicating the solar infiltration during the winter months.
Fig. 7.4 Concept model showing climatic features of the facade
Fig. 7.5 Structural unfolding of the north eastern facade

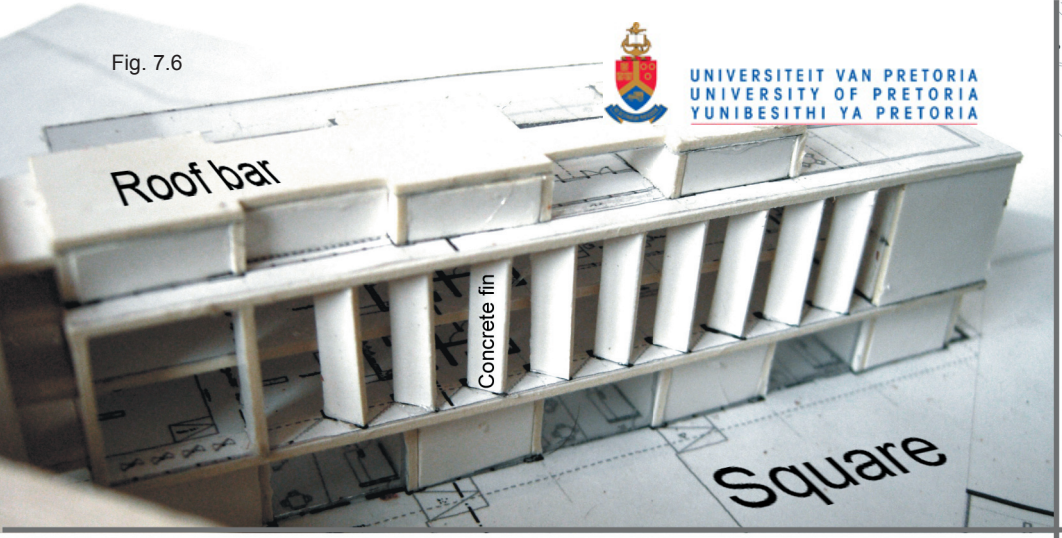


Fig. 7.6

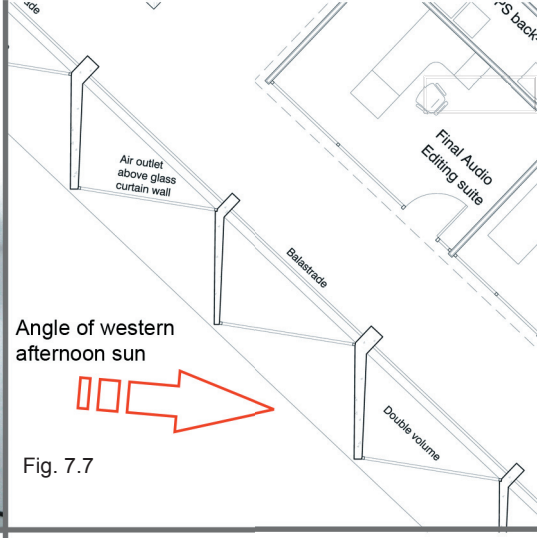


Fig. 7.7

South Western façade

This façade was originally designed with a large glass curtain wall, enabling the occupants of the office spaces to have a visual connection with the square below. Due to direct solar radiation of the western afternoon sun, these spaces (offices) would become unbearably hot.

Vertical concrete fins are proposed to keep most of the western sun out. Because of its mass, these concrete fins are able to absorb most of the harsh afternoon sunlight. Glass curtain walls are placed between these fins and faces southwards to keep the idea of a visual connection with the square. Hot air behind the concrete fins will rise against the glass curtain wall and be expelled through louvres overhead. Cold air will be drawn through louvered windows on the north eastern façade, ensuring cross-ventilation.

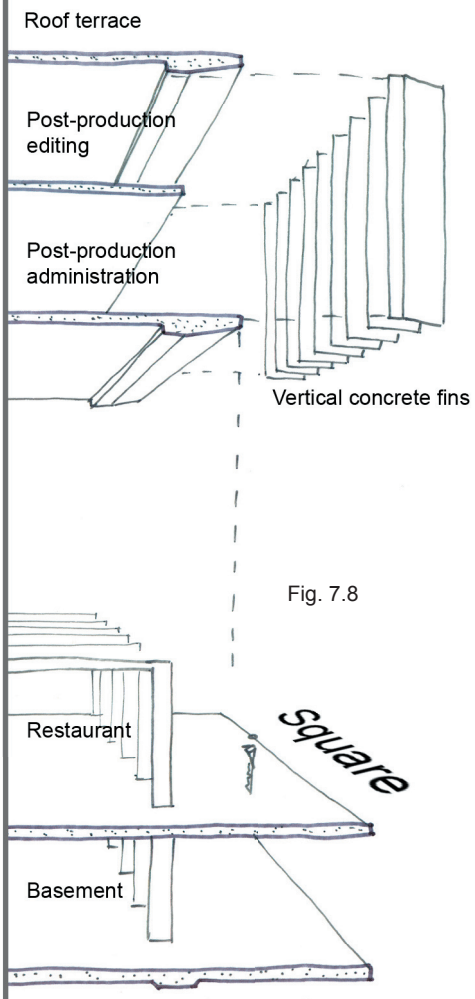


Fig. 7.8

Fig. 7.6 Concept model showing the south western facade
Fig. 7.7 Plan indicating the position of the concrete fins in relation with the angle of incidence of the western afternoon sun.
Fig. 7.8 Structural unfolding of the south western facade

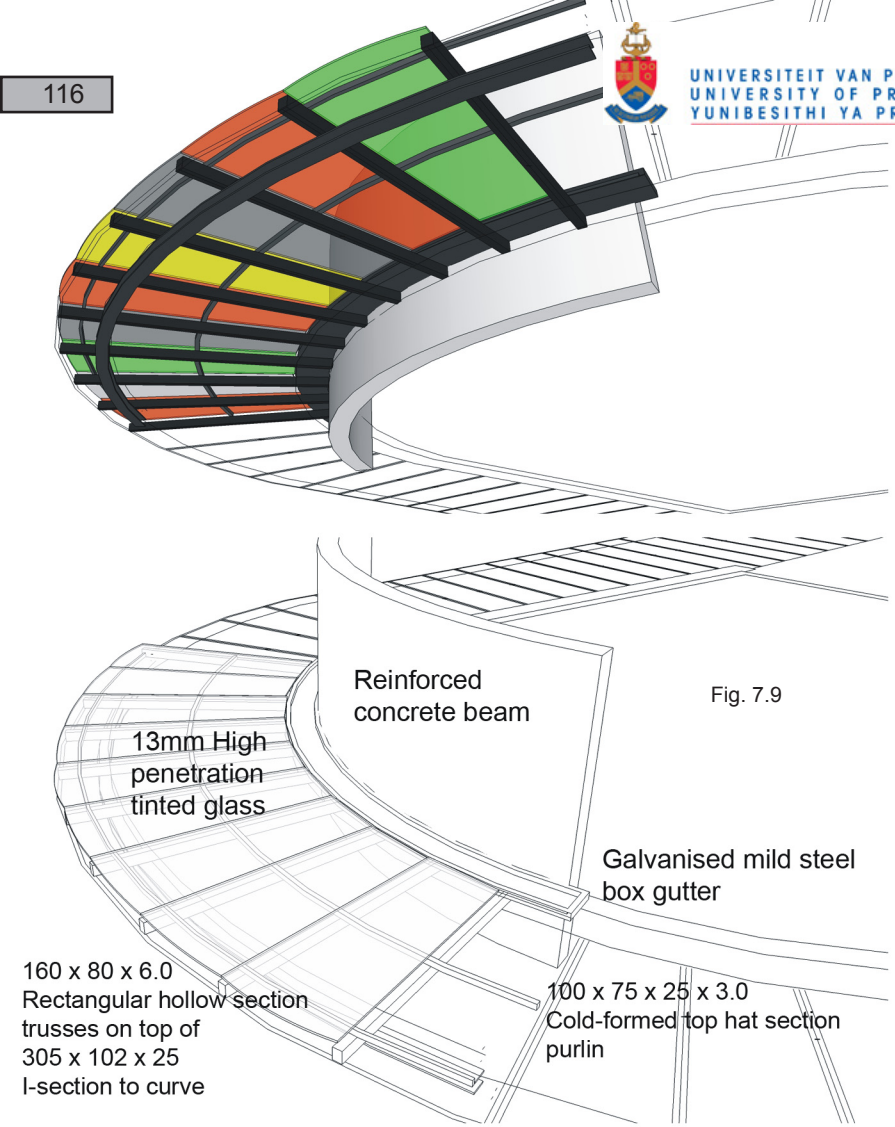


Fig. 7.9

Fig. 7.10

Fig. 7.11

Glazed Roof

The glazed roof's primary function is to protect people against the natural elements. The idea of the glazed roof is to soften the intensity of the sunlight as one enters the building. This is essential as people will not be able to experience the images displayed on the Media screen if the light contrasts are too much. Diffused coloured light patterns will fall on the pavement of the entrance to the building. This might give the idea of pixels on the floor or a television test pattern. This diffused light will make the entrance to the building more inviting to visitors and gives the building a vibrant and humoristic character.

Fig. 7.9 Detail of the tinted glass roof.

Fig. 7.10 Internal courtyard of Town Hall/Hybrid Hotel in Innsbruck, Austria by Dominic Perrault

Fig. 7.11 IDEA Store, London by David Adjaye

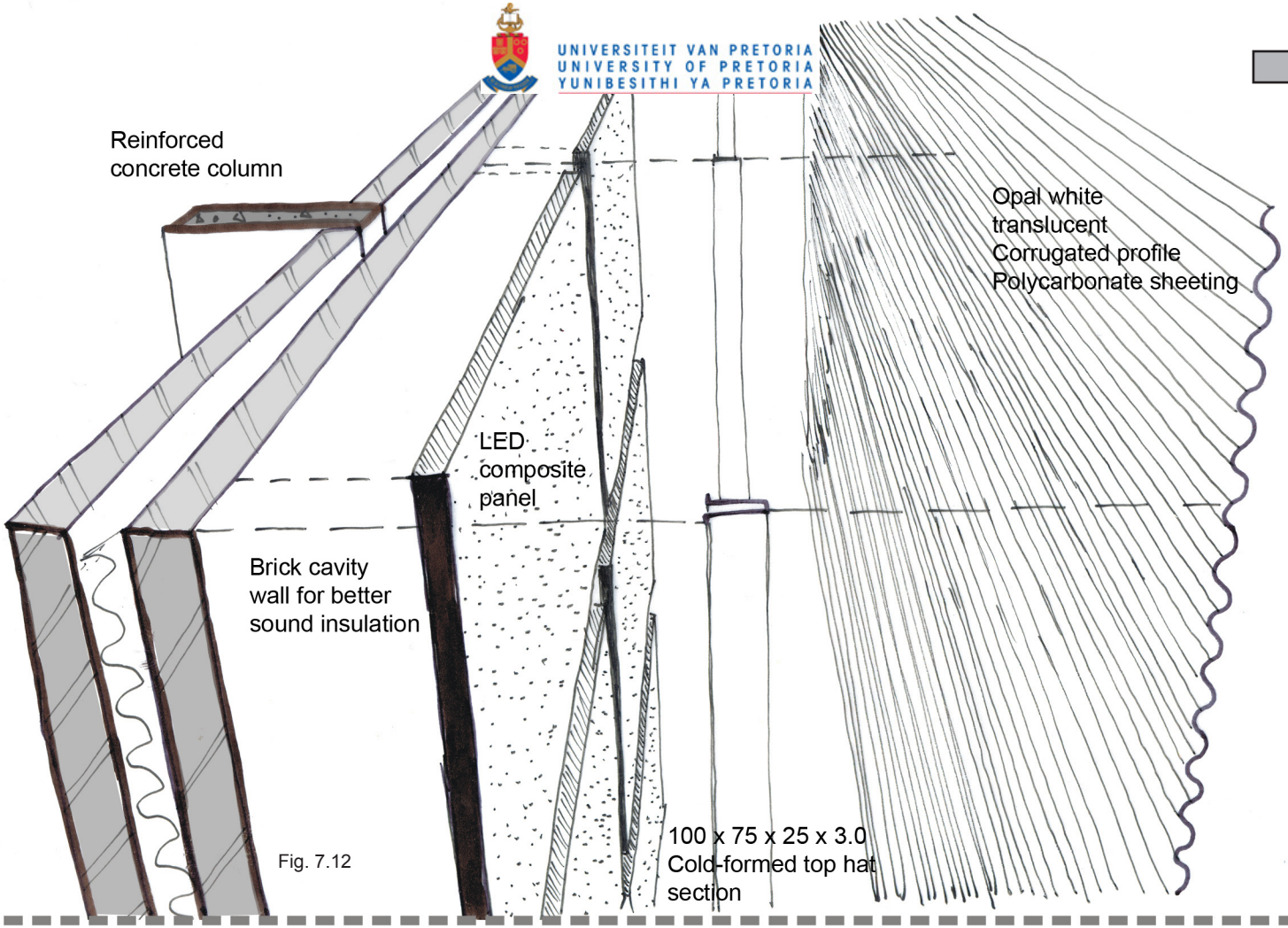
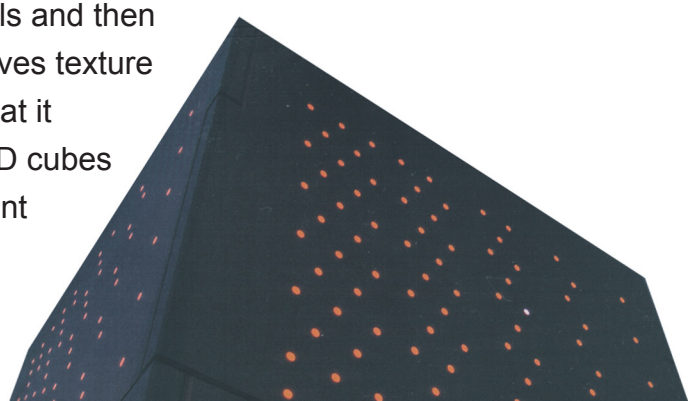


Fig. 7.12

LED Cubes

The monotonous walls of the studios are created into interactive cubes. LED composite panels are fitted to the studio walls and then cladded with translucent polycarbonate sheeting. This gives texture to the oversized cubes during the day, but it is at night that it becomes interactive. Through the use of sensors the LED cubes become pixilated information boards, indicating movement patterns, noise levels and important messages.

Fig. 7.12 Detail of LED and polycarbonate cladding to recording studios



_ Media facade

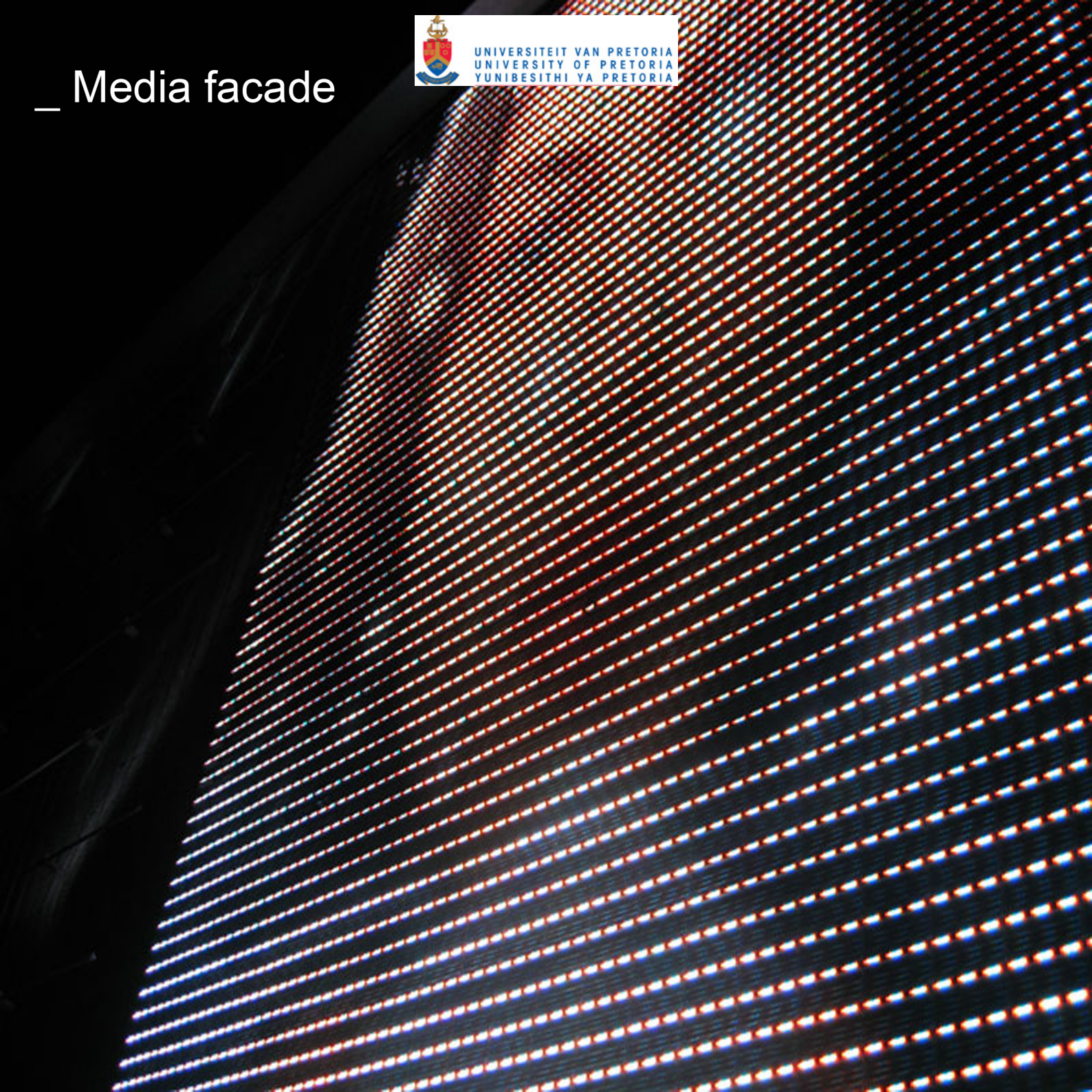
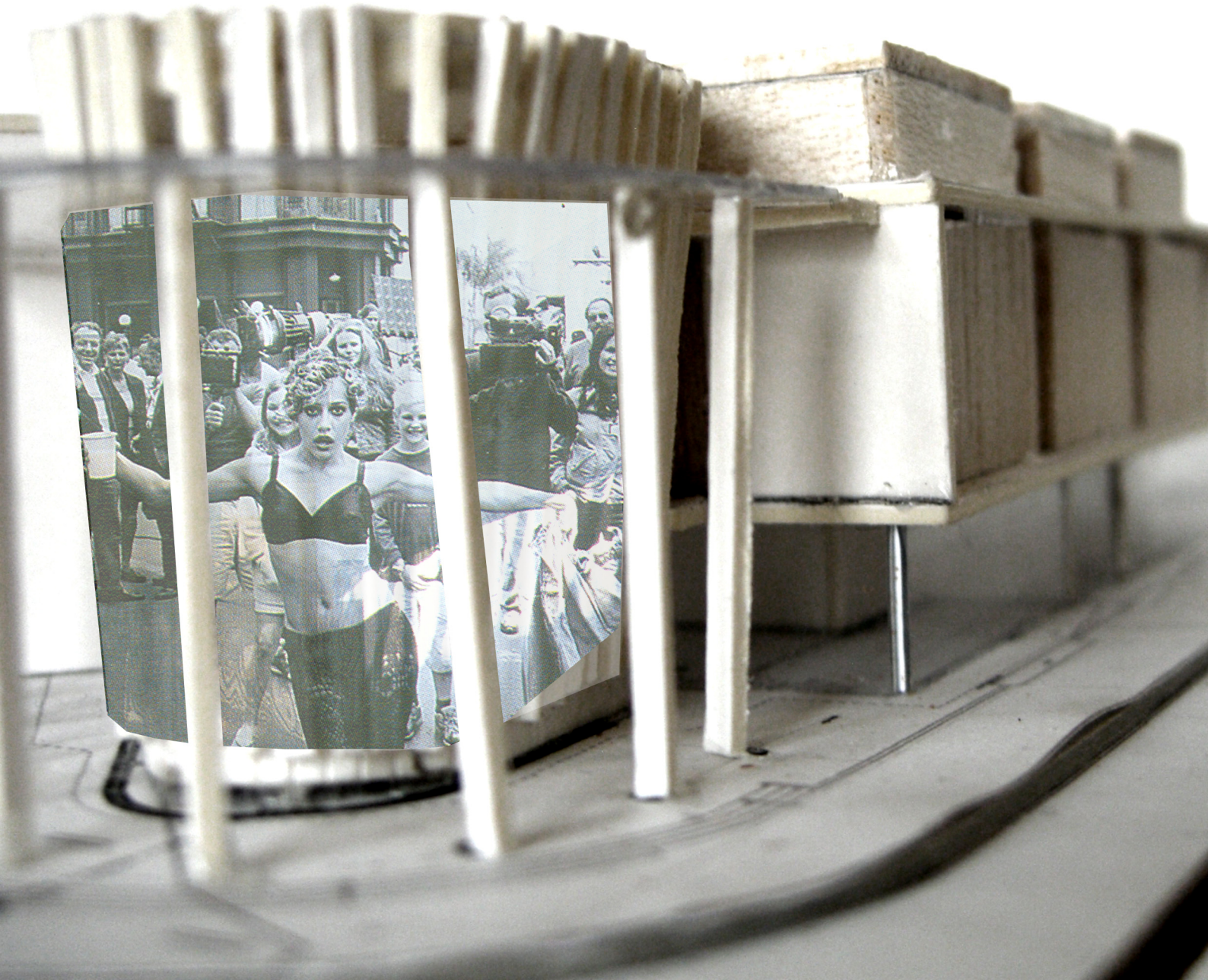


Fig. 7.13 Concept model showing the intent of the media facade



Mediamesh

The use of media facades helps contemporary architecture reflect the ideals of the communication era. It gives the architecture a dynamic appeal that is more attractive to passers-by then traditional static display systems.

The Mediamesh system is essentially a transparent media screen, which is applied to the facades of buildings. The principle of the façade is a stainless steel wire mesh with interwoven LED (Light Emitting Diodes) profiles. This system is programmed by media controls installed behind the screen. The LED's reflect images from the media controls onto the façade, enabling it to display a variety of images, text and video.
These images are created by the LED's in the colours red, blue and green. The grouping of three or five of these colour-combination LED's, creates one image pixel. The resolution of the image is dependant on the distance and density of these pixels. This is determined by the vertical distance between the lamella (stainless steel band housing the LED blocks) and the horizontal distance between the LED blocks.

Fig. 7.14 Mediamesh system applied on the facade of the T-Mobile Headquarters in Bonn, Germany

The higher the resolution, the smaller the viewing distance and higher the cost will be. A general viewing distance of 30-40 meters is adequate to view the image displayed.

Due to the transparent nature of this façade, the view from the outside into the building, as well as from the inside outwards, is still possible.
The Mediamesh façade is superior to a conventional self-contained LED board in terms of cost efficiency, size and the variety of applications. The transparent system does not close-off the façade of a building, keeping the integrity of the architectural design as it forms part of it.

Further advantages include:
- daylight capability
- pixel pitch can be chosen
- low power consumption and long service life
- very low maintenance effort
- specifically designed for the field of architecture
- aesthetically pleasing appearance

Fig. 7.15 Close-up of the Mediamesh system
Fig. 7.16 Concept facade
Fig. 7.17 Merck Serono Headquarters in Geneva

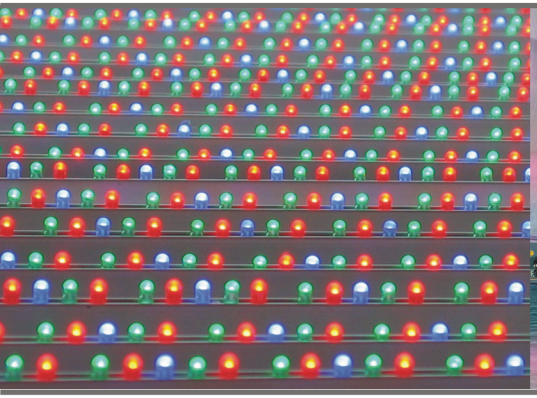


Fig. 7.15

Fig. 7.16

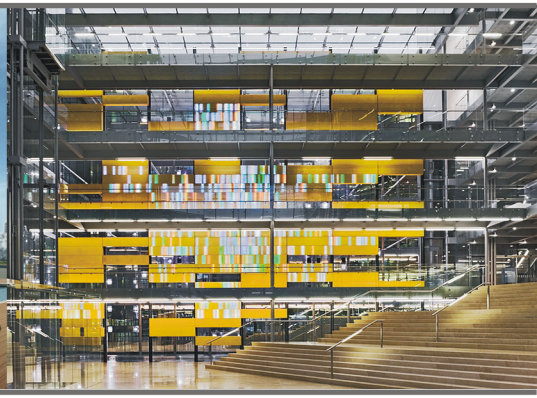


Fig. 7.17

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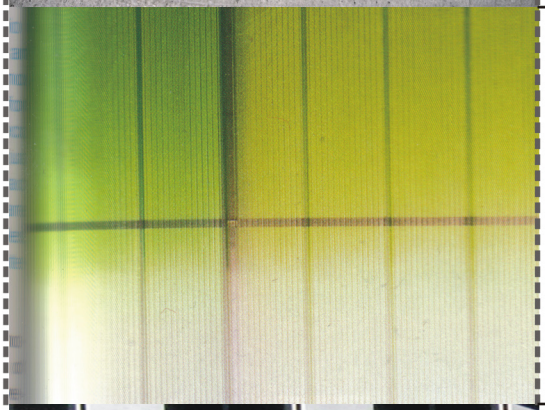
OFF SHUTTER CONCRETE

Off shutter concrete is used on all structural elements as well as external walls. Concrete was chosen as a structural material due to its ease of construction and availability. Its plasticity makes it easier to construct difficult forms. It is also a material that is synonymous with Modern architecture.



TINTED GLASS

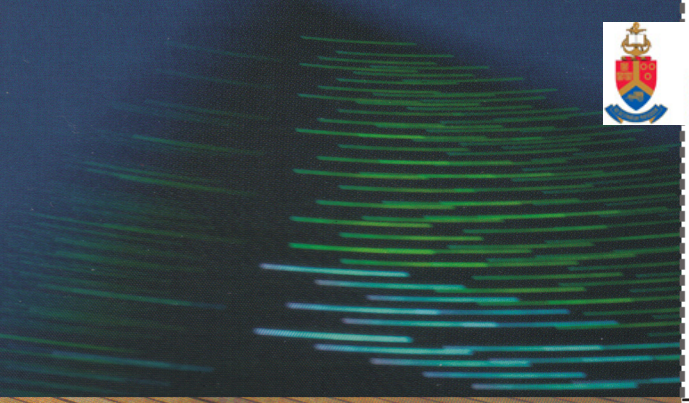
High penetration tinted glass is used for the roof covering the entrance to the development. Although it is more expensive than polycarbonate sheeting, it is more durable and is able to keep its properties during the life of the product.

ALUMINIUM LOUVRES

Aluminium louvres are applied to the northern facade of the post-production office spaces as solar control elements. The aluminium louvres are powder coated in white to allow for solar reflection into the office space, creating an optimised daylighting factor.

LED MEDIA MESH

A LED Mediamesh is applied to the glazed facade of Studio A. This enables the northern corner to act as a large media screen that responds to the intersection from a distance. The nature of the mesh also allows people close by to look through the mesh and observe the activities within the studio.

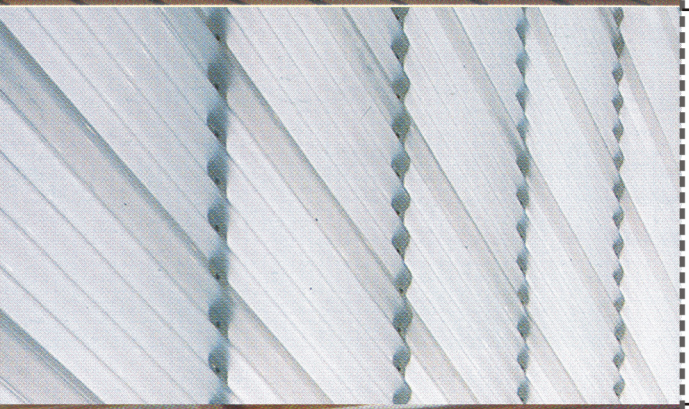


LED LIGHTS

LED lights are used for screens that do not need to display a clear image. The lights are grouped in clustered panels to give an optimum effect. The individual LED lights will then act as pixels of a large screen.

TIMBER

Timber decks are used on the roof terrace. The timber floor boards is visually pleasing and hides storm water channels running underneath. Because of the gaps between the individual boards, rainwater is still able to filter through.



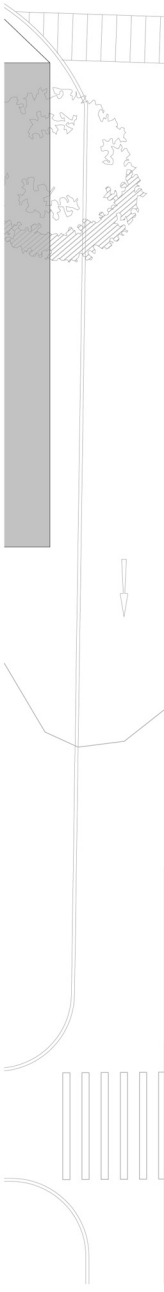
POLY-CARBONATE SHEETING

Polycarbonate sheeting will be used as cladding for the clustered LED panels. The polycarbonate will act as a projection canvas for the LED lights during the night.

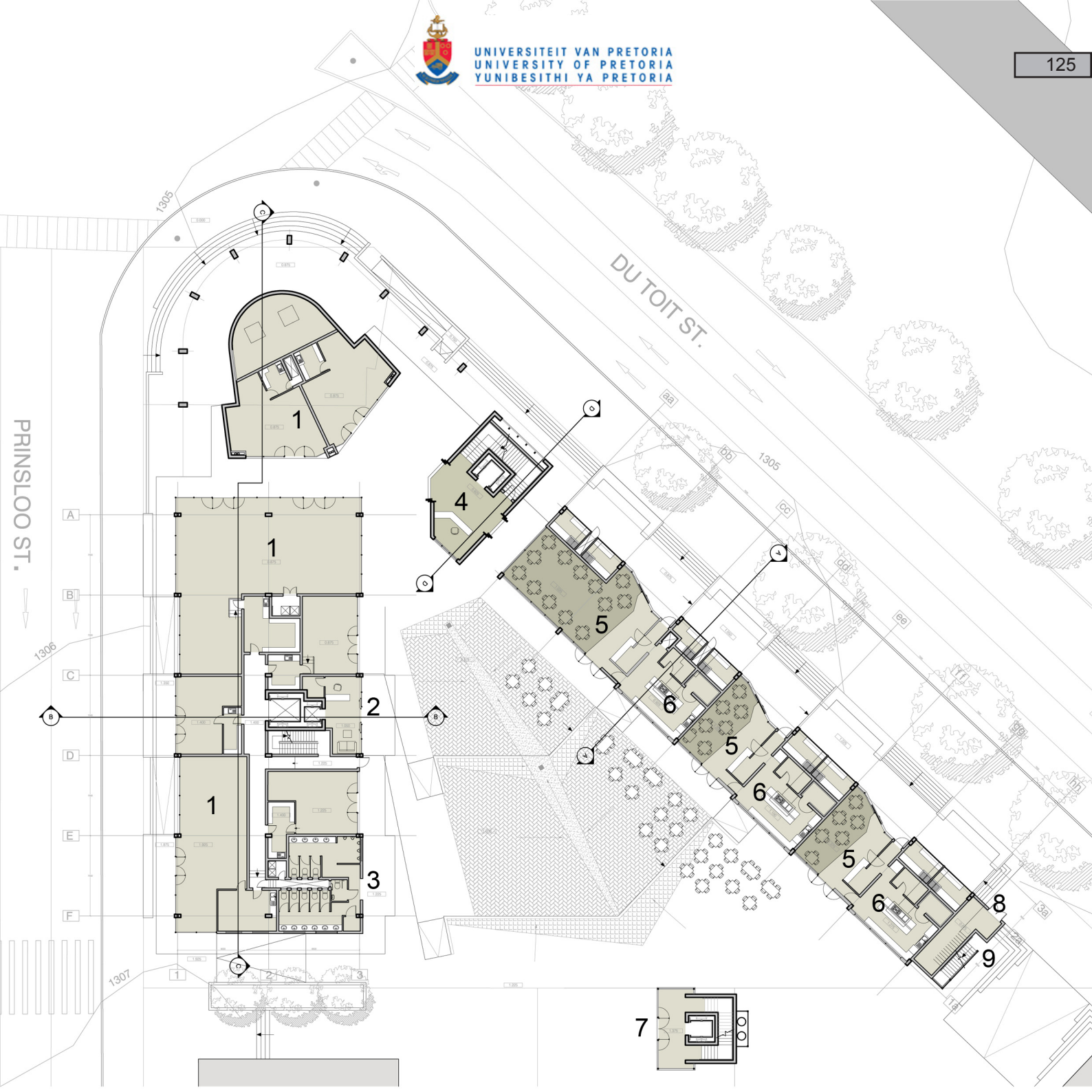
IBR METAL SHEETING

IBR sheeting is used as roof cladding to the Radio station and Roof bar. IBR sheeting is chosen for its light weight, ease of construction, and relevance to the construction industry in South Africa.

GROUND FLOOR PLAN



1. GENERAL RETAIL
2. STAFF ENTRANCE
3. PUBLIC TOILETS
4. ENTRANCE FOYER
5. RESTAURANT
6. KITCHEN
7. PUBLIC ACCESS TO BASEMENT
8. REFUSE STORAGE
9. FIRE ESCAPE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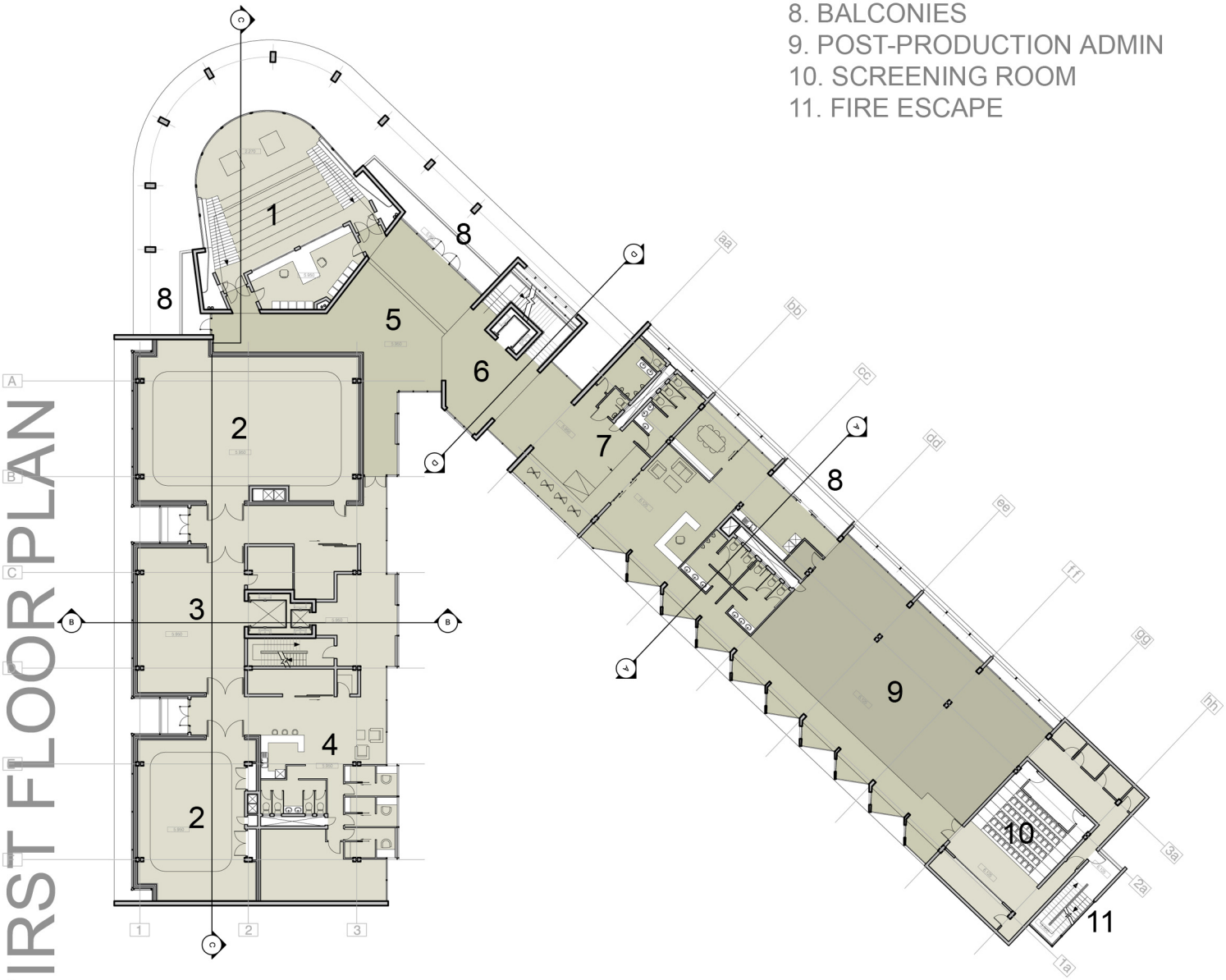
1. LIVE STUDIO
2. GENERAL STUDIO
3. STUDIO STORAGE
4. PRESENTER AREA
5. AUDIENCE HOLDING
6. CIRCULATION
7. PUBLIC TOILETS
8. BALCONIES
9. POST-PRODUCTION ADMIN
10. SCREENING ROOM
11. FIRE ESCAPE

FIRST FLOOR PLAN



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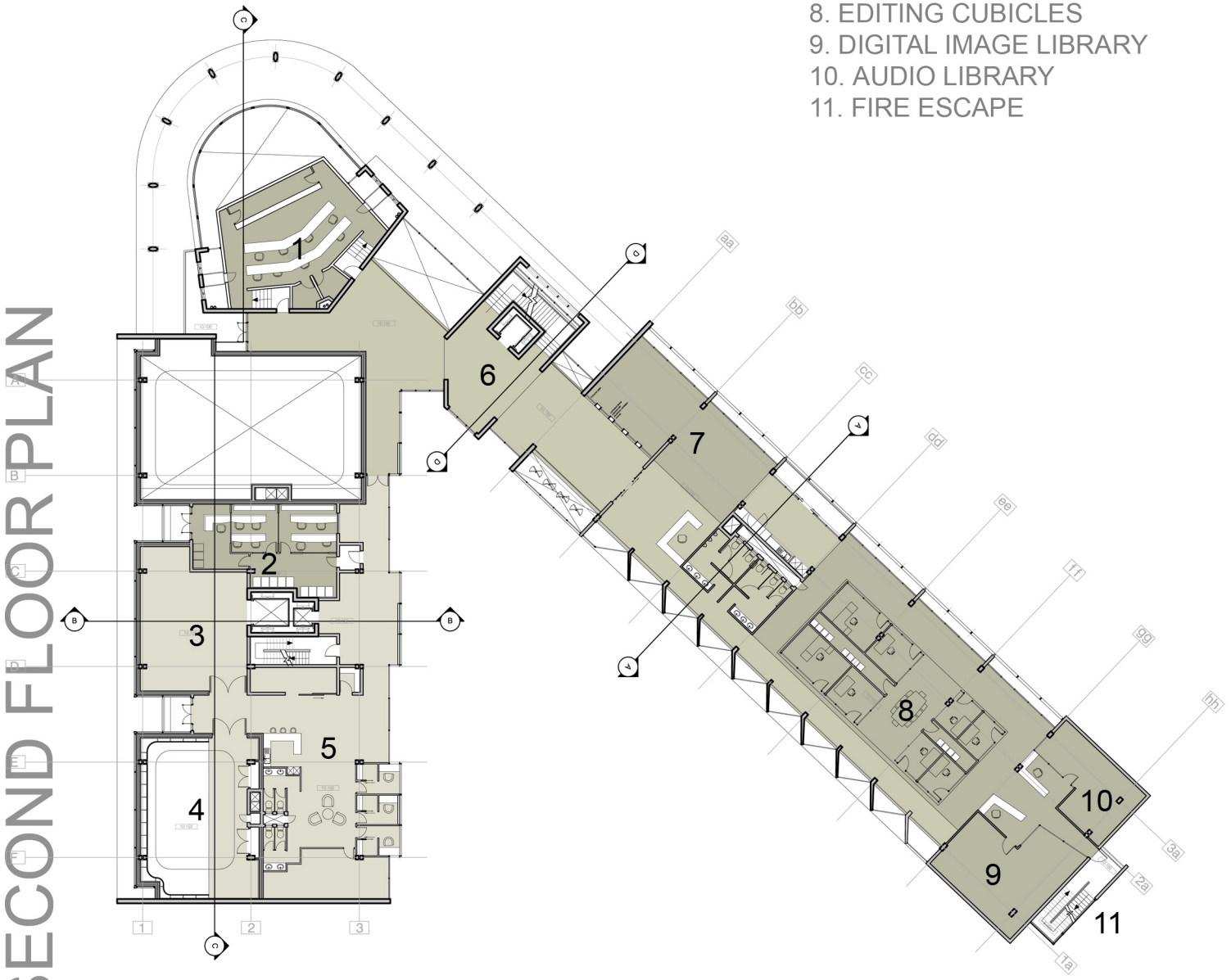
1. MASTER CONTROL ROOM
2. PRODUCTION CONTROL ROOM
3. STUDIO STORAGE
4. GENERAL STUDIO
5. PRESENTER AREA
6. CIRCULATION
7. PRODUCTION DESIGN STUDIO
8. EDITING CUBICLES
9. DIGITAL IMAGE LIBRARY
10. AUDIO LIBRARY
11. FIRE ESCAPE

SECOND FLOOR PLAN



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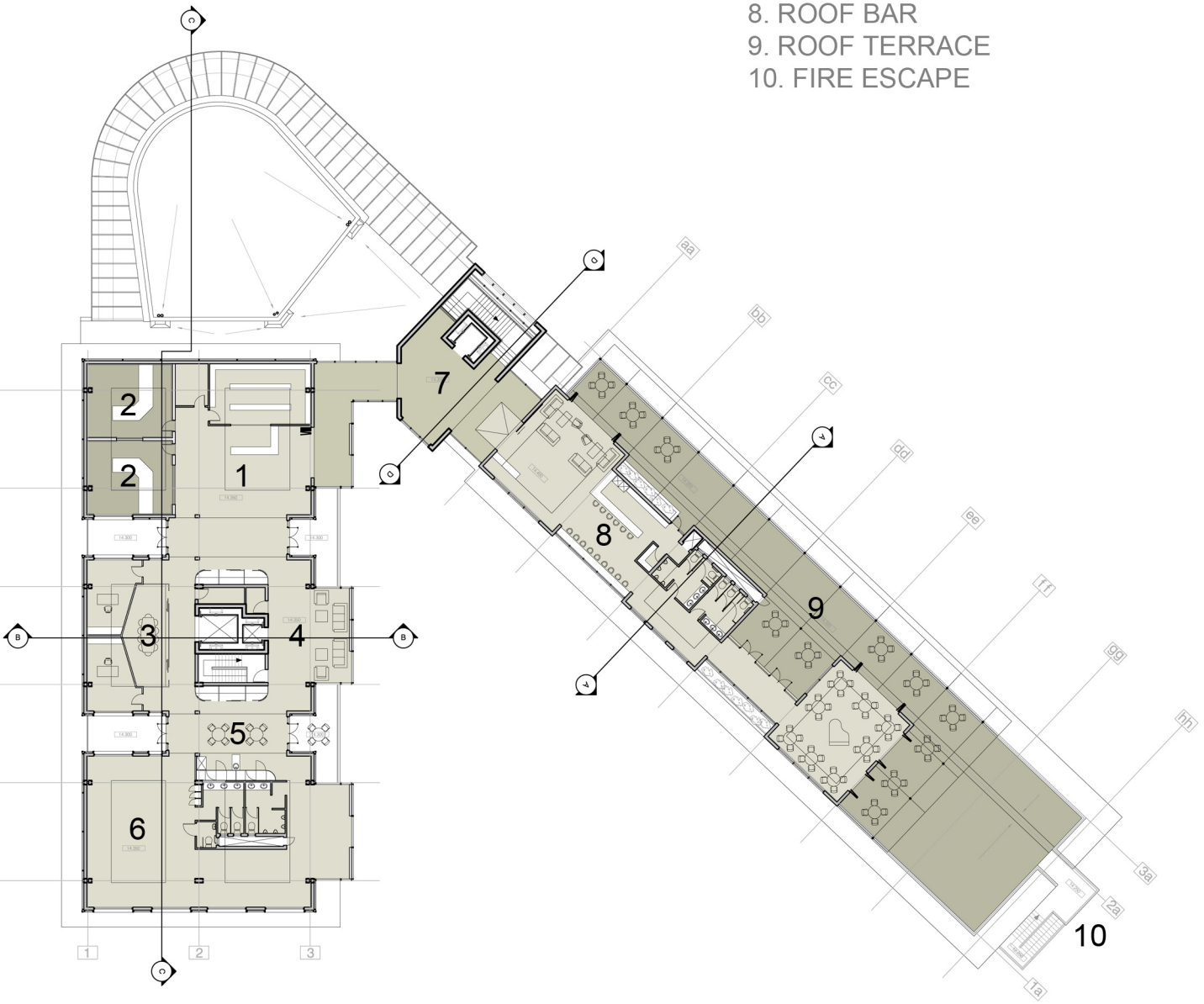
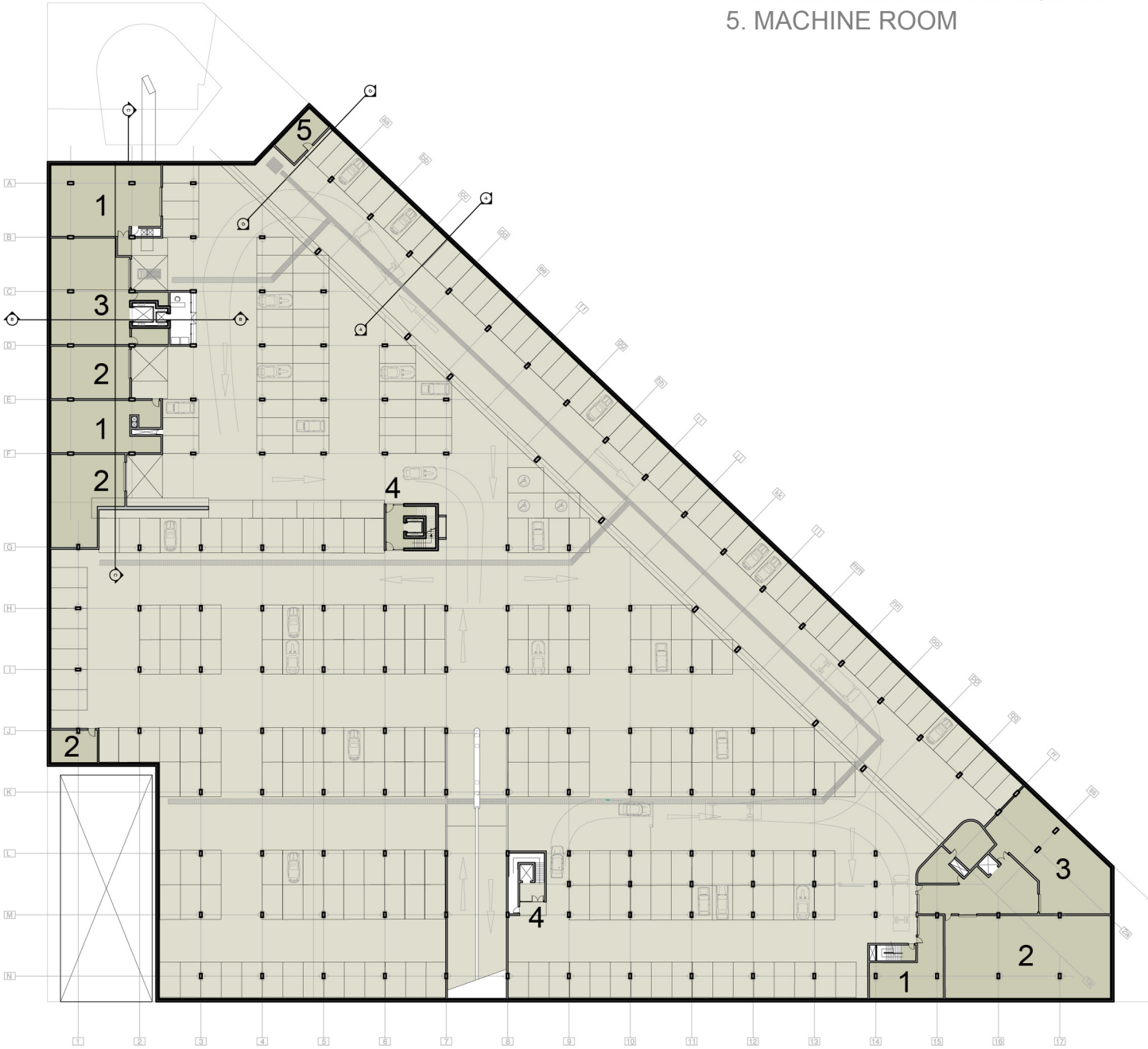
1. RADIO STATION RECEPTION
2. BROADCASTING STUDIO
3. BOARDROOM
4. STAFF LOUNGE
5. KITHENETTE
6. RADIO ADMIN OFFICE
7. CIRCULATION
8. ROOF BAR
9. ROOF TERRACE
10. FIRE ESCAPE

THIRD FLOOR PLAN



1. PLANT ROOMS
2. STORAGE
3. WORKSHOPS
4. PUBLIC ACCESS TO SQUARE
5. MACHINE ROOM

BASEMENT PLAN



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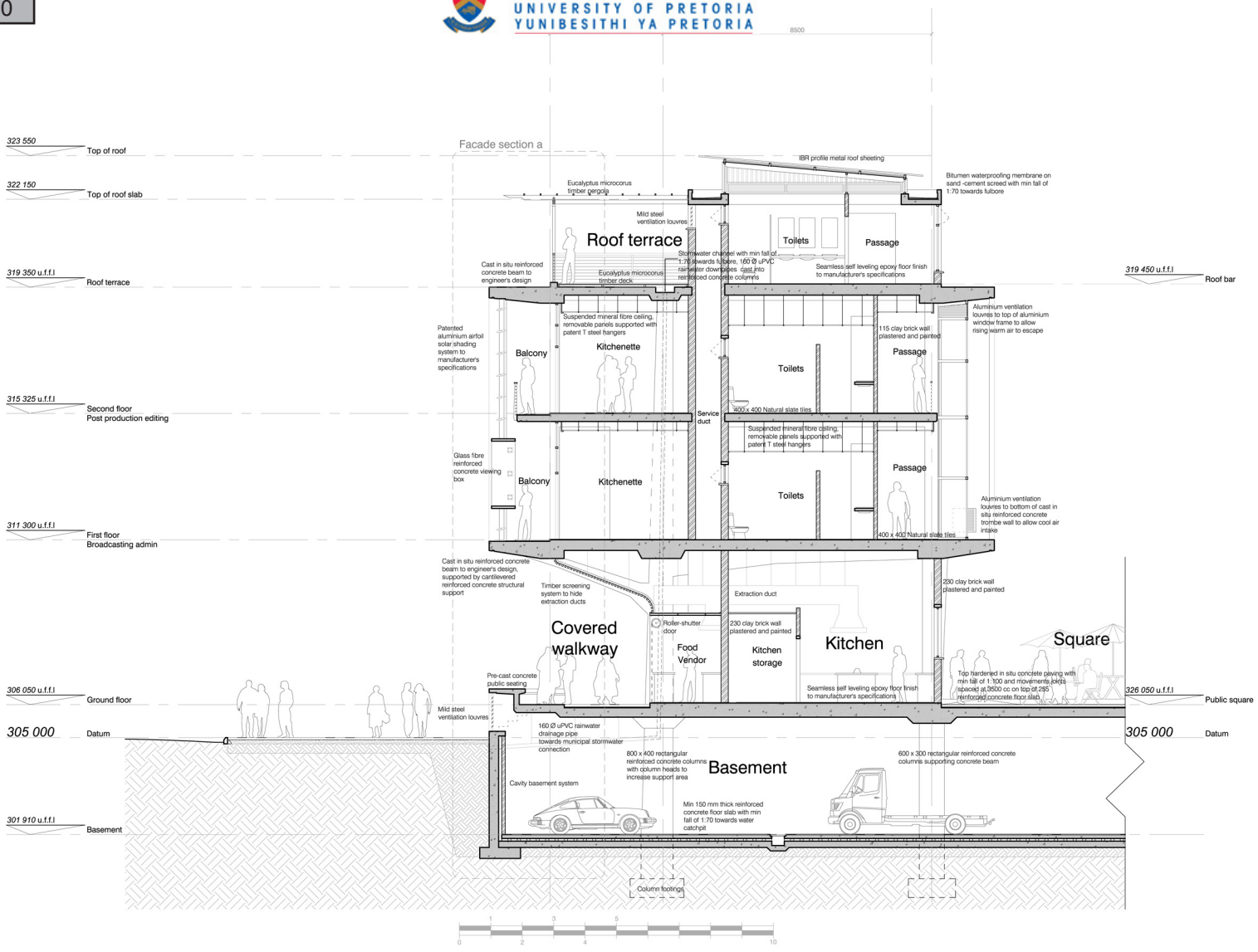
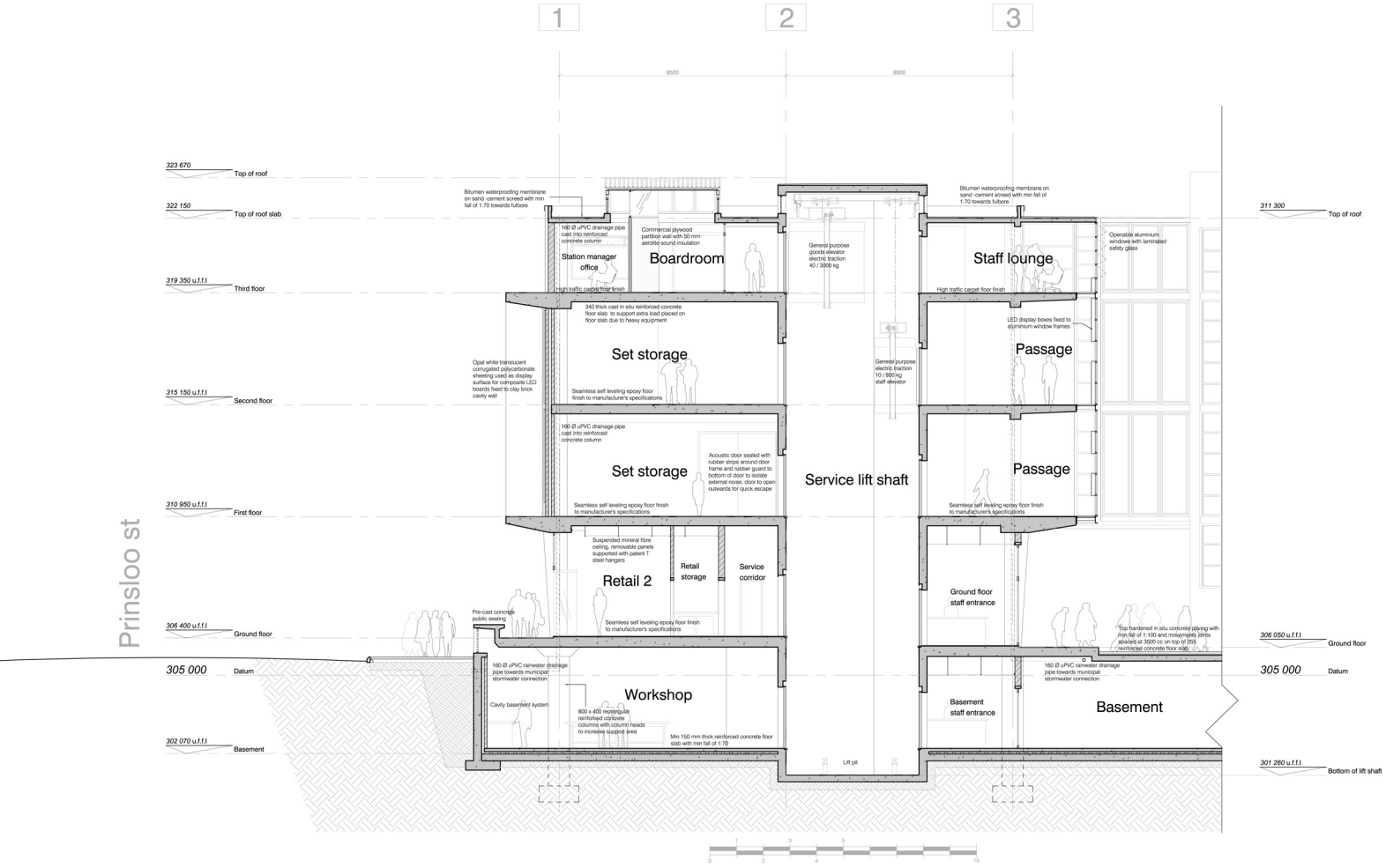
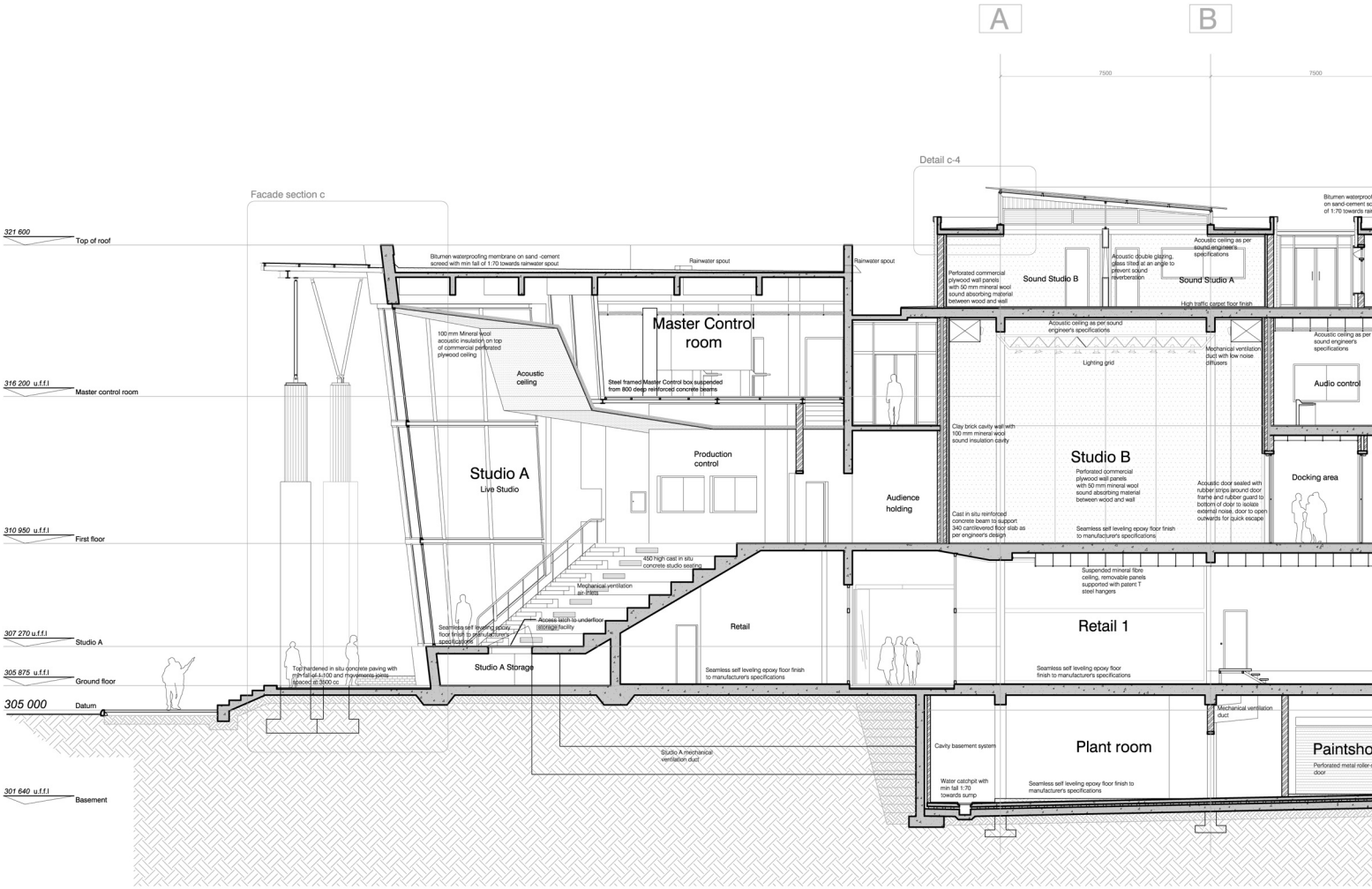


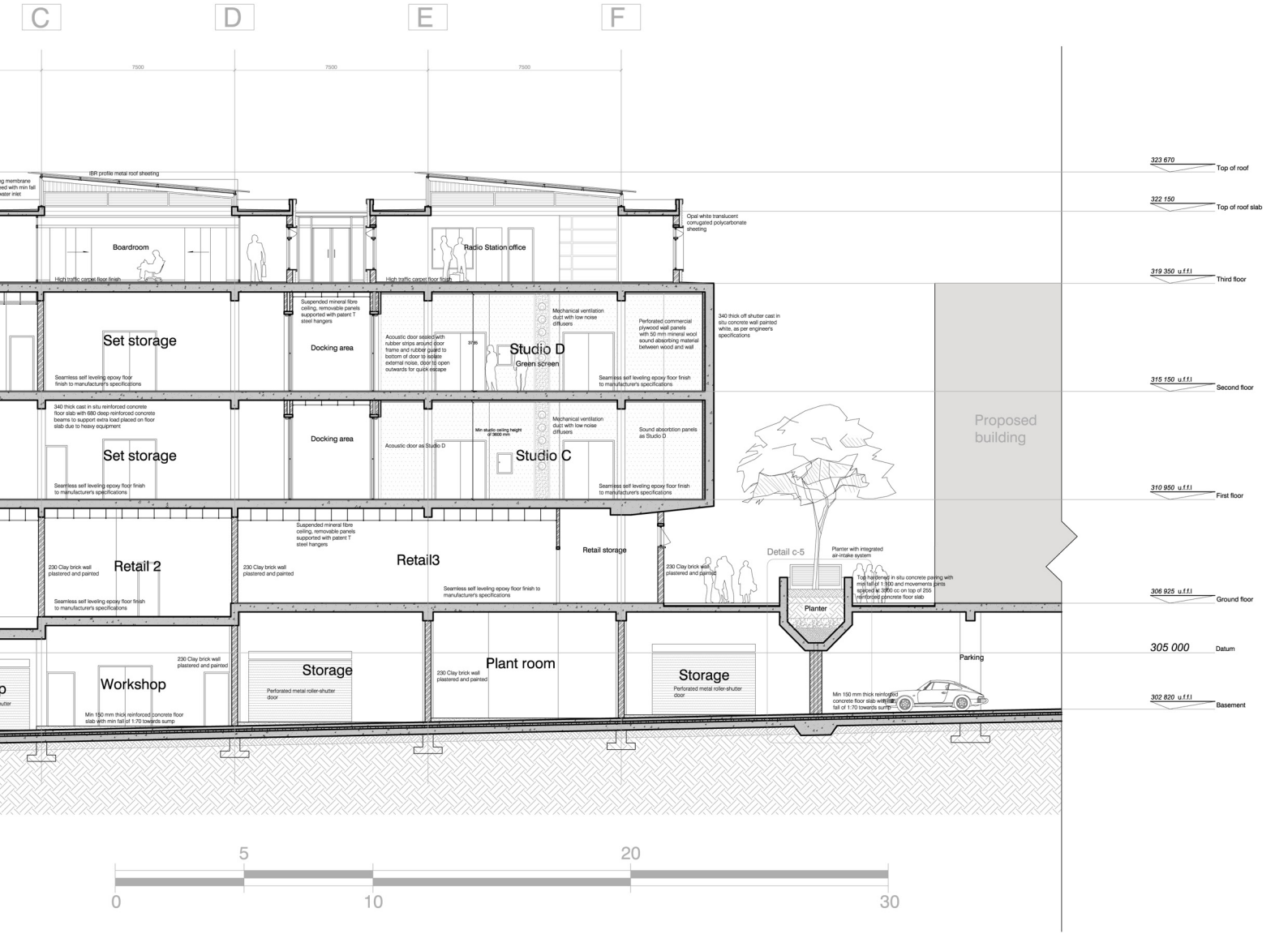
SECTION A-A


1
2
3
8500
8500
323 670
Top of roof
322 150
Top of roof slab
319 350 u.f.f.l
Third floor
315 150 u.f.f.l
Second floor
310 950 u.f.f.l
First floor
306 400 u.f.f.l
Ground floor
305 000
Datum
302 070 u.f.f.l
Basement
Prinsloo st
Bitumen waterproofing membrane on sand -cement screed with min fall of 1:70 towards fulbore
160 Ø uPVC drainage pipe cast into reinforced concrete column
Station manager office
Commercial plywood partition wall with 50 mm aerolite sound insulation
Boardroom
High traffic carpet floor finish
340 thick cast in situ reinforced concrete floor slab to support extra load placed on floor slab due to heavy equipment
Set storage
Opal white translucent corrugated polycarbonate sheeting used as display surface for composite LED boards fixed to clay brick cavity wall
Seamless self leveling epoxy floor finish to manufacturer's specifications
160 Ø uPVC drainage pipe cast into reinforced concrete column
Set storage
Acoustic door sealed with rubber strips around door frame and rubber guard to bottom of door to isolate external noise, door to open outwards for quick escape
Seamless self leveling epoxy floor finish to manufacturer's specifications
Suspended mineral fibre ceiling, removable panels supported with patent T steel hangers
Retail 2
Retail storage
Service corridor
Pre-cast concrete public seating
Seamless self leveling epoxy floor finish to manufacturer's specifications
160 Ø uPVC rainwater drainage pipe towards municipal stormwater connection
Cavity basement system
800 x 400 rectangular reinforced concrete columns with column heads to increase support area
Workshop
Min 150 mm thick reinforced concrete floor slab with min fall of 1:70
General purpose goods elevator electric traction 40 / 3000 kg
Service lift shaft
General purpose electric traction 10 / 800 kg staff elevator
Lift pit
Bitumen waterproofing membrane on sand -cement screed with min fall of 1:70 towards fulbore
Staff lounge
High traffic carpet floor finish
Openable aluminium windows with laminated safety glass
LED display boxes fixed to aluminium window frames
Passage
Passage
Seamless self leveling epoxy floor finish to manufacturer's specifications
Ground floor staff entrance
Top hardened in situ concrete paving with min fall of 1:100 and movement joints spaced at 3500 cc on top of 25Ø reinforced concrete floor slab
160 Ø uPVC rainwater drainage pipe towards municipal stormwater connection
Basement staff entrance
Basement
311 300
Top of roof
306 050 u.f.f.l
Ground floor
305 000
Datum
301 260 u.f.f.l
Bottom of lift shaft

SECTION B-B


A
B
7500
7500
Detail c-4
Facade section c
321 600
Top of roof
316 200 u.f.f.l
Master control room
310 950 u.f.f.l
First floor
307 270 u.f.f.l
Studio A
305 875 u.f.f.l
Ground floor
305 000
Datum
301 640 u.f.f.l
Basement
Bitumen waterproofing membrane on sand -cement screed with min fall of 1:70 towards rainwater spout
Rainwater spout
Rainwater spout
100 mm Mineral wool acoustic insulation on top of commercial perforated plywood ceiling
Acoustic ceiling
Master Control room
Steel framed Master Control box suspended from 800 deep reinforced concrete beams
Studio A
Live Studio
Production control
Audience holding
450 high cast in situ concrete studio seating
Mechanical ventilation air inlets
Access latch to underfloor storage facility
Seamless self leveling epoxy floor finish to manufacturer's specifications
Studio A Storage
Top hardened in situ concrete paving with min fall of 1:100 and movements joints spaced at 3600 cc
Retail
Seamless self leveling epoxy floor finish to manufacturer's specifications
Studio A mechanical ventilation duct
Perforated commercial plywood wall panels with 50 mm mineral wool sound absorbing material between wood and wall
Sound Studio B
Acoustic double glazing, glass fitted at an angle to prevent sound reverberation
Acoustic ceiling as per sound engineer's specifications
Sound Studio A
High traffic carpet floor finish
Acoustic ceiling as per sound engineer's specifications
Lighting grid
Mechanical ventilation duct with low noise diffusers
Acoustic ceiling as per sound engineer's specifications
Audio control
Clay brick cavity wall with 100 mm mineral wool sound insulation cavity
Studio B
Perforated commercial plywood wall panels with 50 mm mineral wool sound absorbing material between wood and wall
Acoustic door sealed with rubber strips around door frame and rubber guard to bottom of door to isolate external noise, door to open outwards for quick escape
Docking area
Cast in situ reinforced concrete beam to support 340 cantilevered floor slab as per engineer's design
Seamless self leveling epoxy floor finish to manufacturer's specifications
Suspended mineral fibre ceiling, removable panels supported with patent T steel hangers
Retail 1
Seamless self leveling epoxy floor finish to manufacturer's specifications
Mechanical ventilation duct
Cavity basement system
Plant room
Water catchpit with min fall 1:70 towards sump
Seamless self leveling epoxy floor finish to manufacturer's specifications
Paintsho
Perforated metal roller-s door

SECTION C-C


C
D
E
F
7500
7500
7500
IBR profile metal roof sheeting
Boardroom
High traffic carpet floor finish
Radio Station office
High traffic carpet floor finish
Opal white translucent corrugated polycarbonate sheeting
323 670
Top of roof
322 150
Top of roof slab
319 350 u.f.f.l
Third floor
315 150 u.f.f.l
Second floor
310 950 u.f.f.l
First floor
306 925 u.f.f.l
Ground floor
305 000
Datum
302 820 u.f.f.l
Basement
Set storage
Docking area
Suspended mineral fibre ceiling, removable panels supported with patent T steel hangers
Acoustic door sealed with rubber strips around door frame and rubber guard to bottom of door to isolate external noise, door to open outwards for quick escape
3795
Studio D
Green screen
Mechanical ventilation duct with low noise diffusers
Perforated commercial plywood wall panels with 50 mm mineral wool sound absorbing material between wood and wall
340 thick off shutter cast in situ concrete wall painted white, as per engineer's specifications
Seamless self leveling epoxy floor finish to manufacturer's specifications
Seamless self leveling epoxy floor finish to manufacturer's specifications
340 thick cast in situ reinforced concrete floor slab with 680 deep reinforced concrete beams to support extra load placed on floor slab due to heavy equipment
Set storage
Docking area
Min studio ceiling height of 3600 mm
Acoustic door as Studio D
Studio C
Mechanical ventilation duct with low noise diffusers
Sound absorbtion panels as Studio D
Seamless self leveling epoxy floor finish to manufacturer's specifications
Seamless self leveling epoxy floor finish to manufacturer's specifications
Proposed building
Suspended mineral fibre ceiling, removable panels supported with patent T steel hangers
Retail 2
230 Clay brick wall plastered and painted
Seamless self leveling epoxy floor finish to manufacturer's specifications
230 Clay brick wall plastered and painted
Retail3
Seamless self leveling epoxy floor finish to manufacturer's specifications
Retail storage
230 Clay brick wall plastered and painted
Detail c-5
Planter with integrated air-intake system
Top hardened in situ concrete paving with min fall of 1:100 and movements joints spaced at 3000 cc on top of 255 reinforced concrete floor slab
Planter
230 Clay brick wall plastered and painted
Workshop
Min 150 mm thick reinforced concrete floor slab with min fall of 1:70 towards sump
Storage
Perforated metal roller-shutter door
Plant room
230 Clay brick wall plastered and painted
Storage
Perforated metal roller-shutter door
Parking
Min 150 mm thick reinforced concrete floor slab with min fall of 1:70 towards sump
0
5
10
20
30

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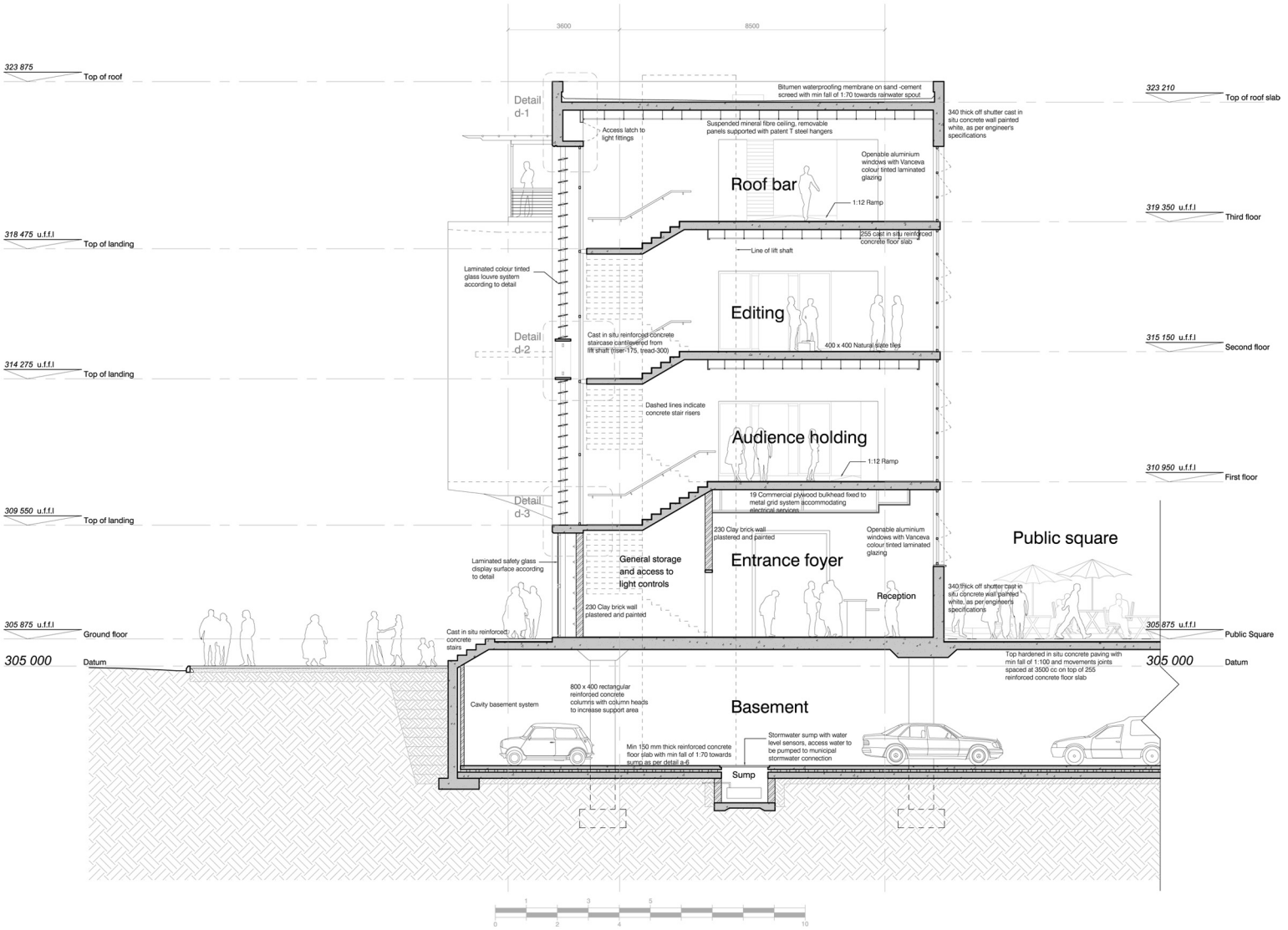
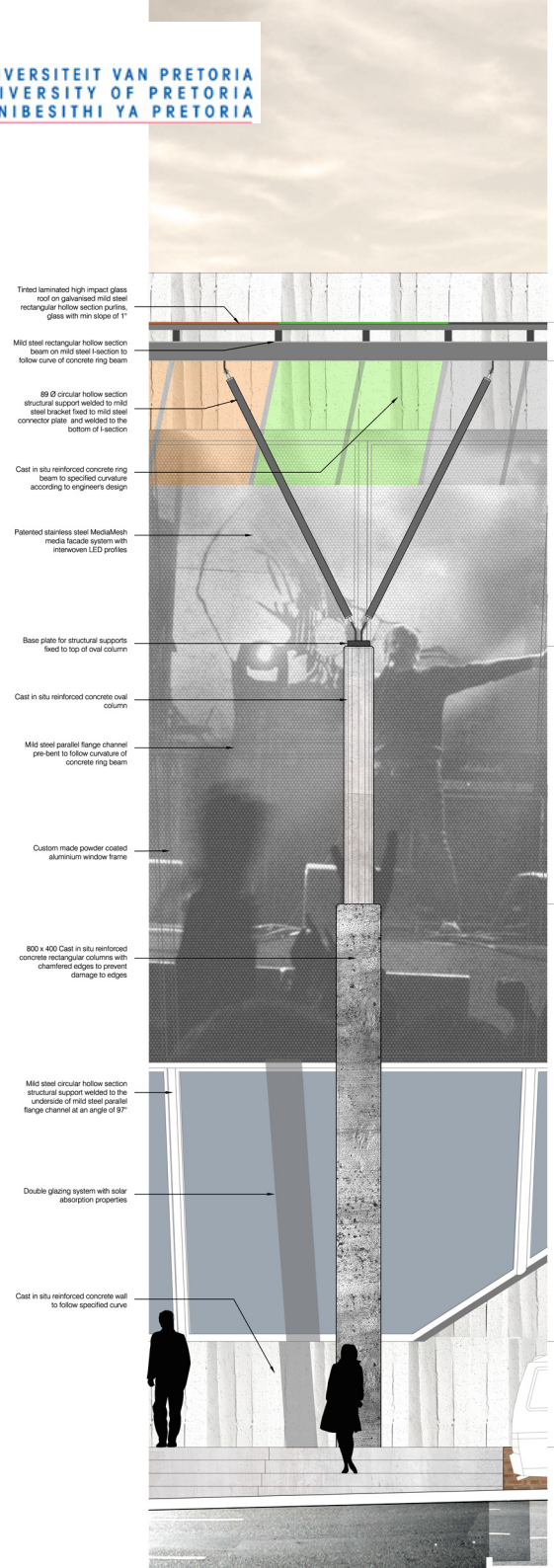
3a 2a 1a

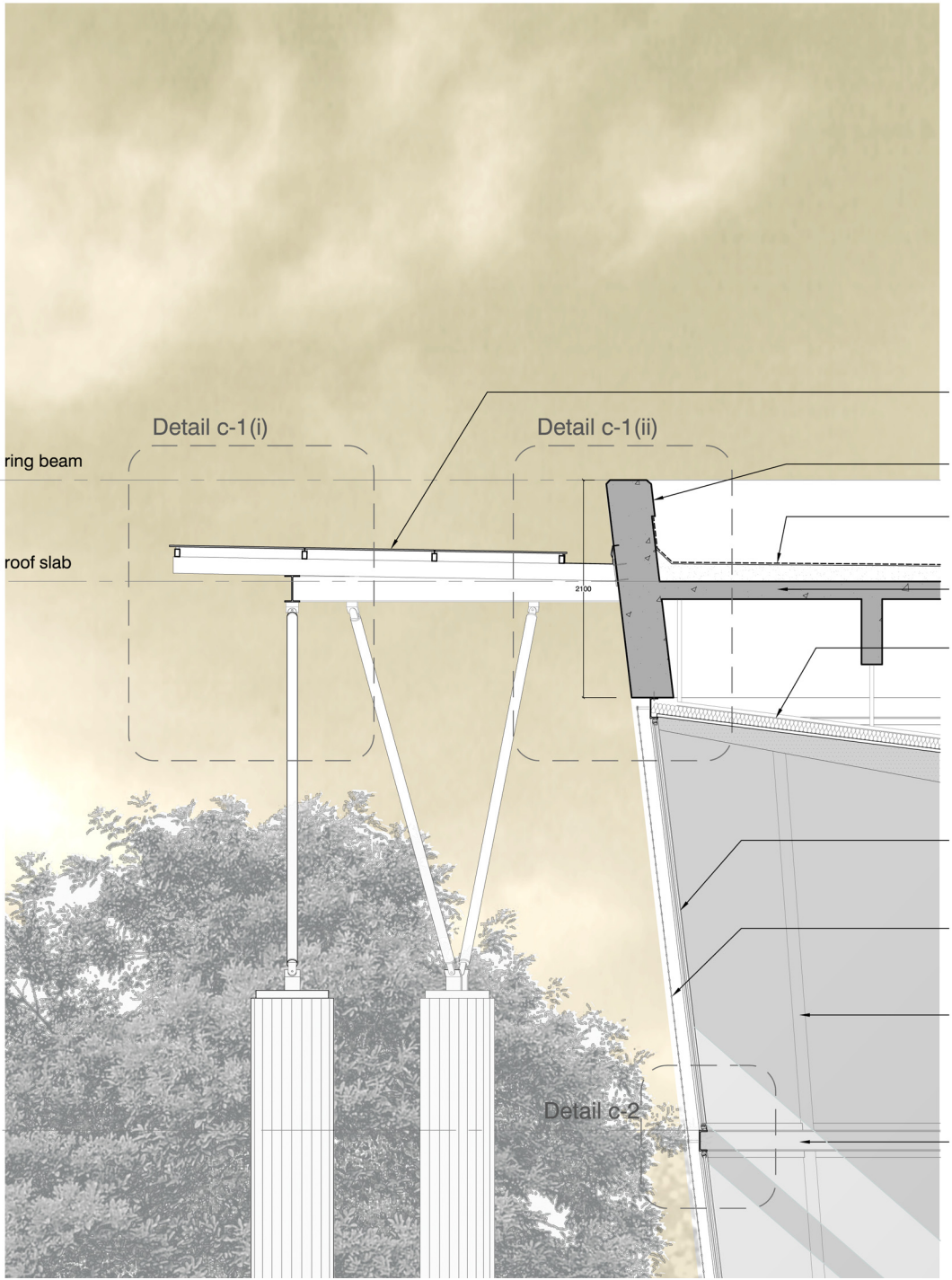


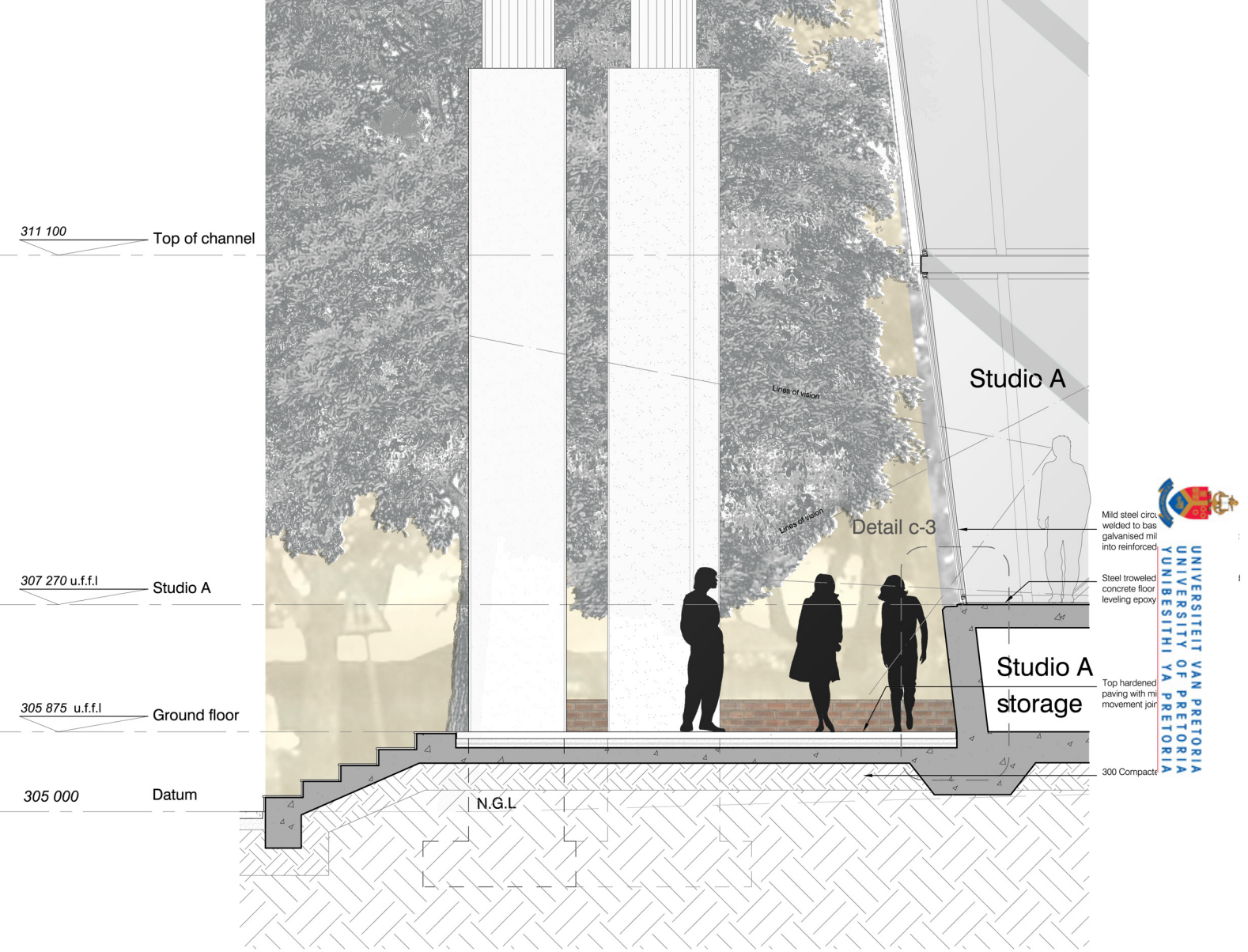
SECTION D-D

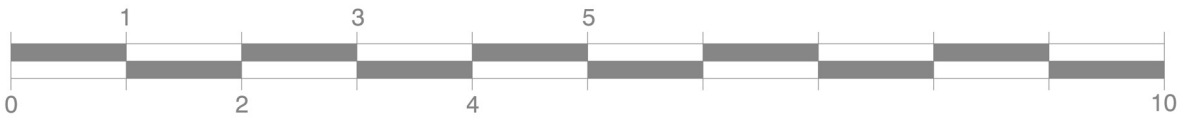
COLUMN ELEVATION



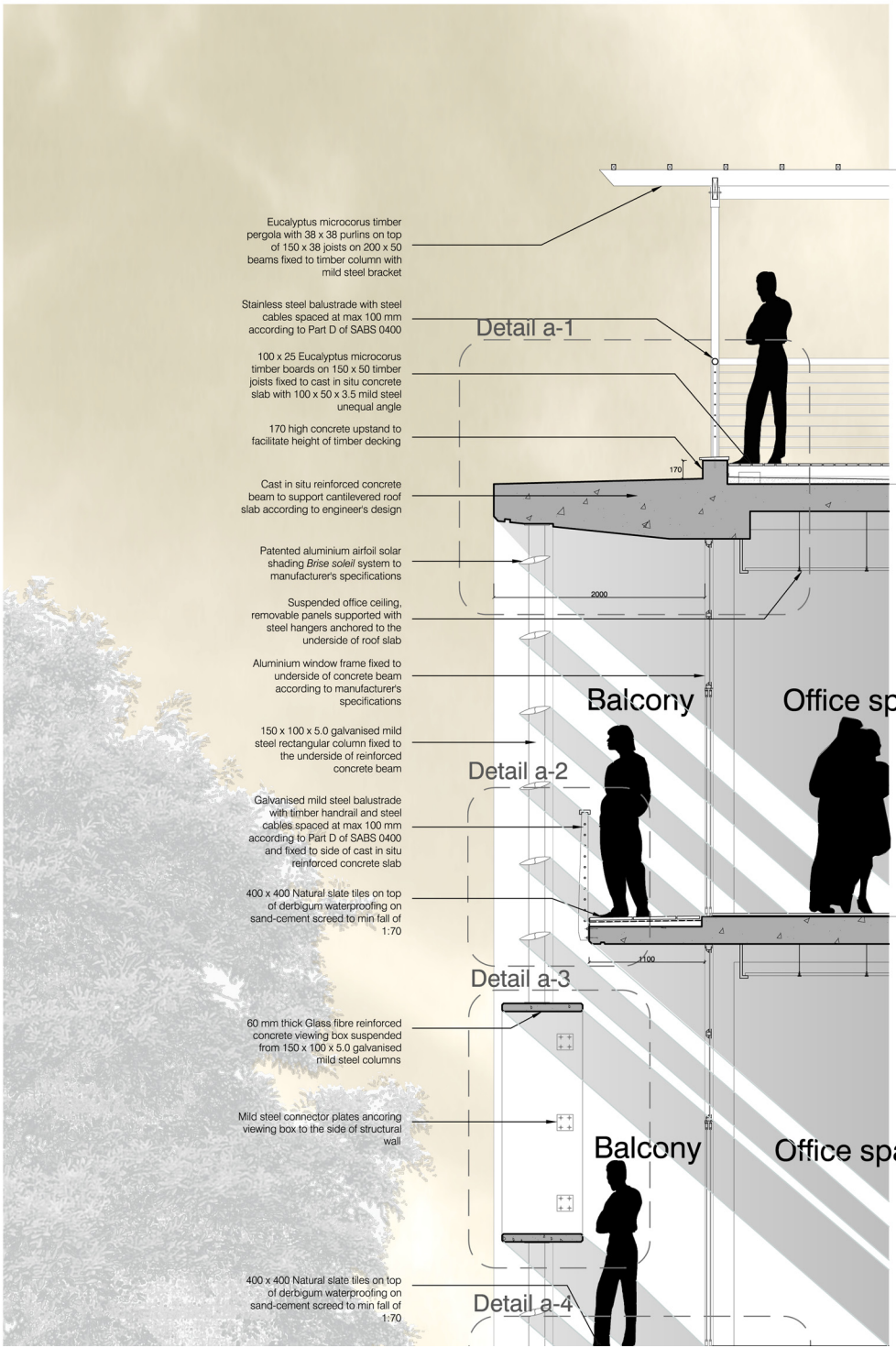
FACADE SECTION C







FACADE SECTION A



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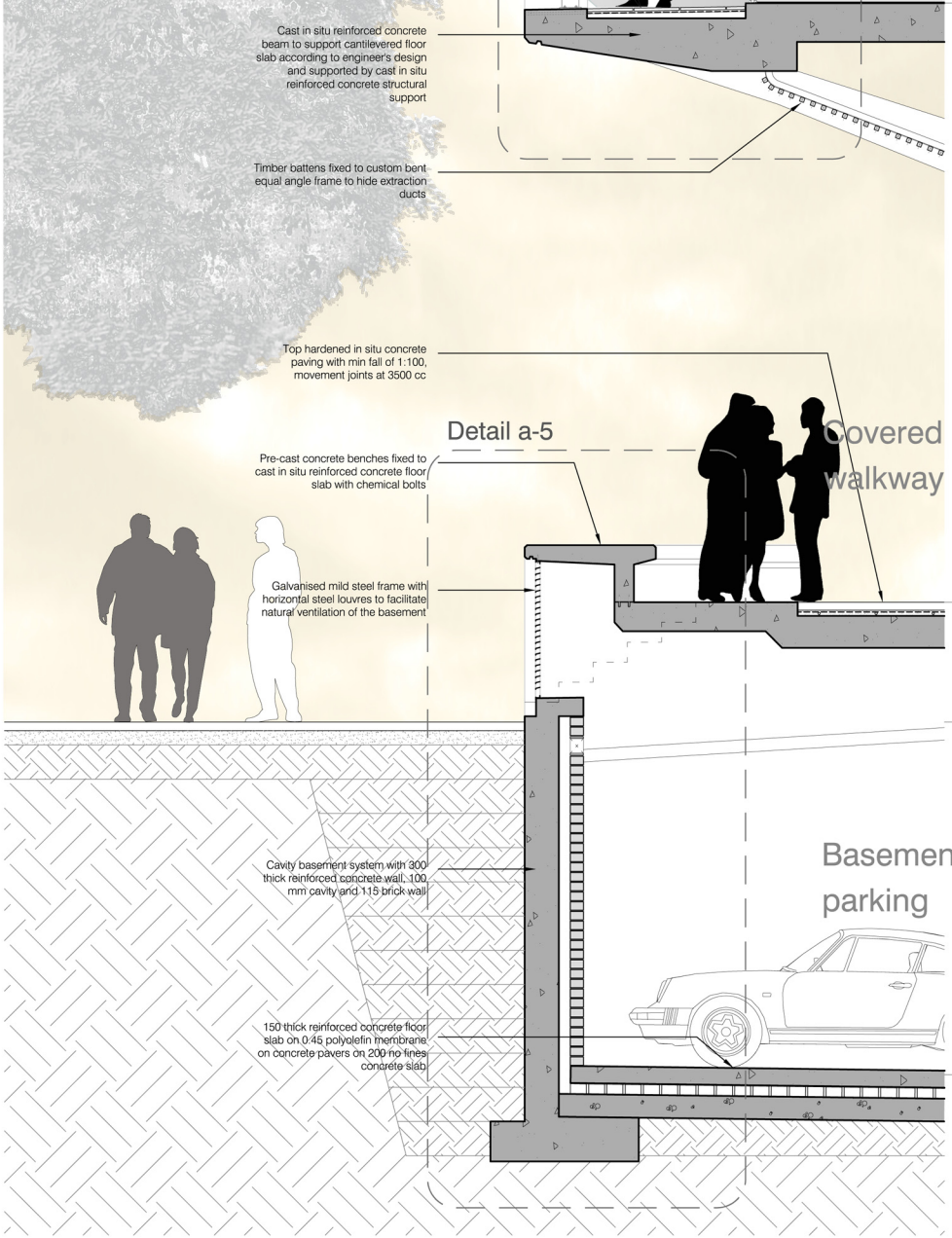
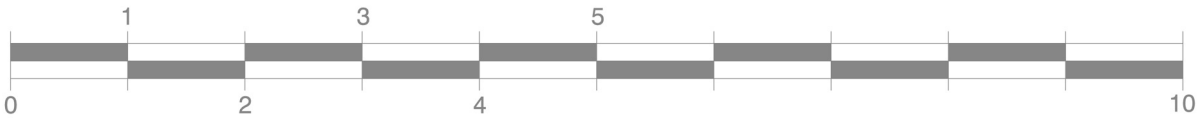
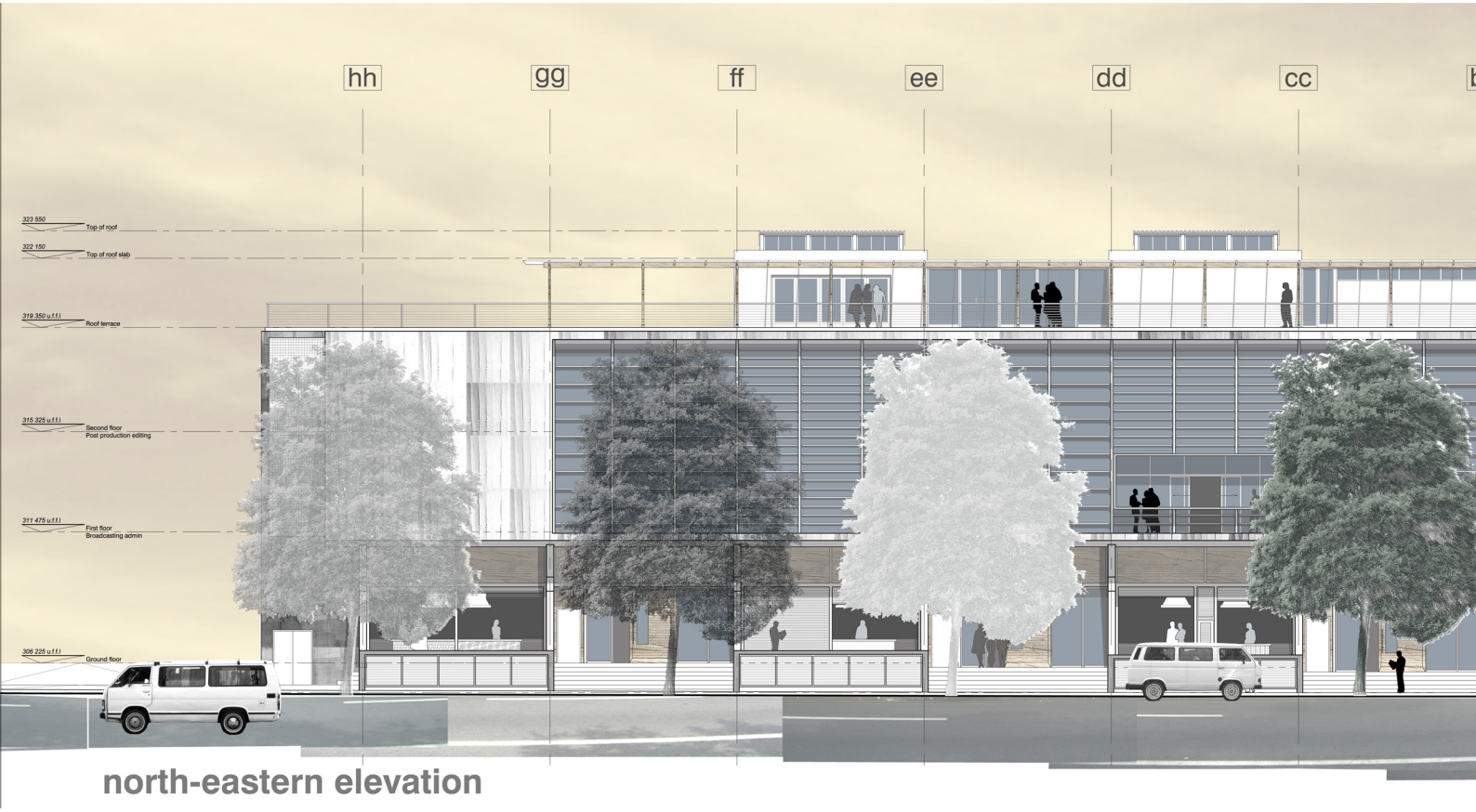


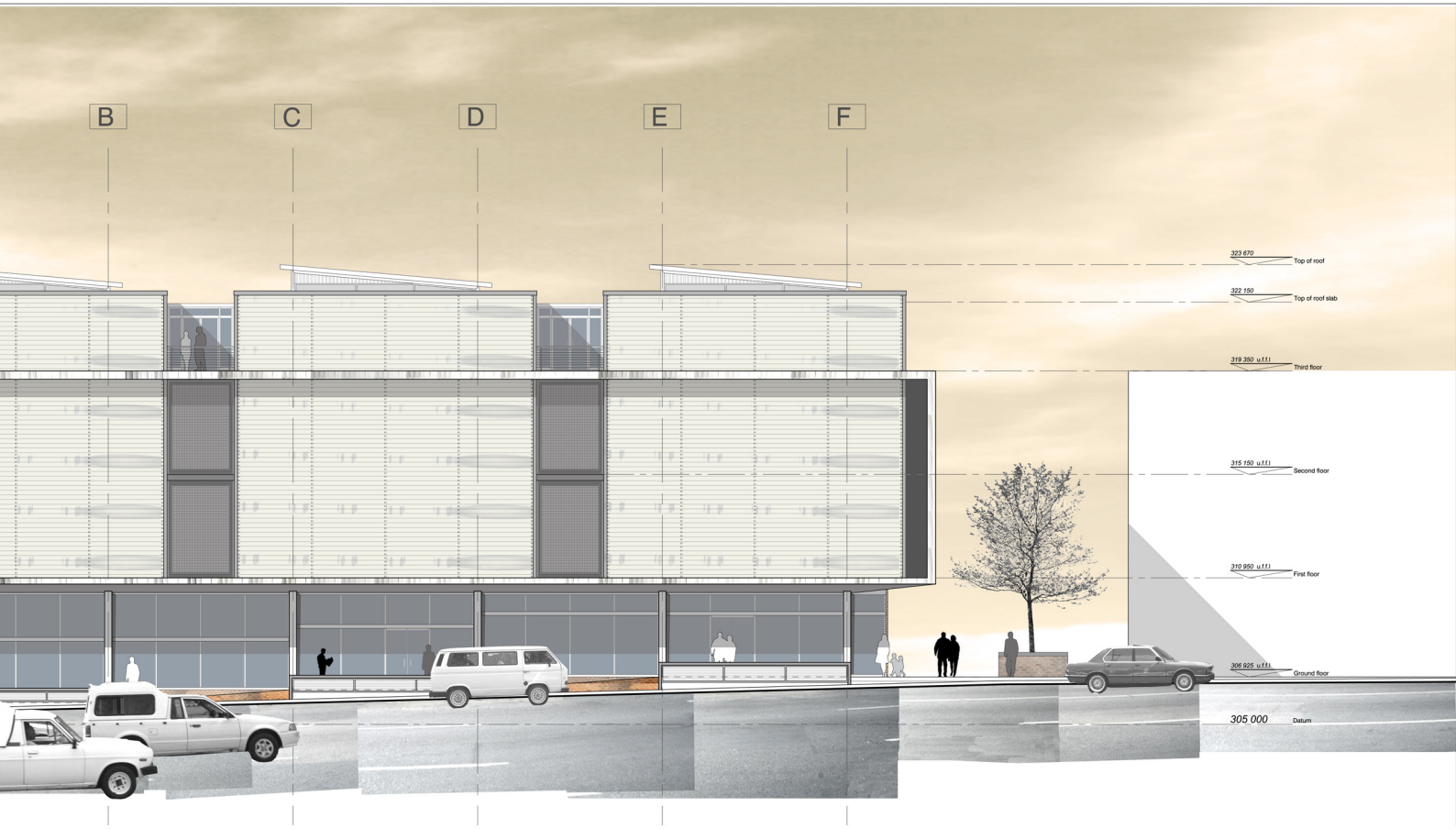


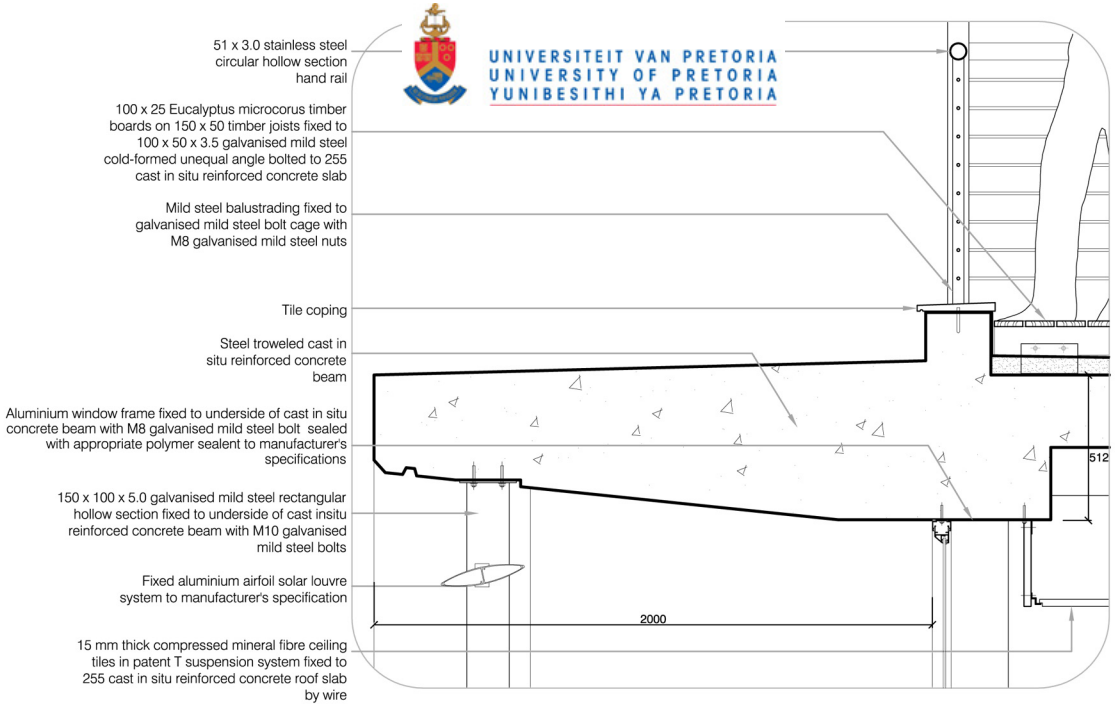


north-eastern elevation

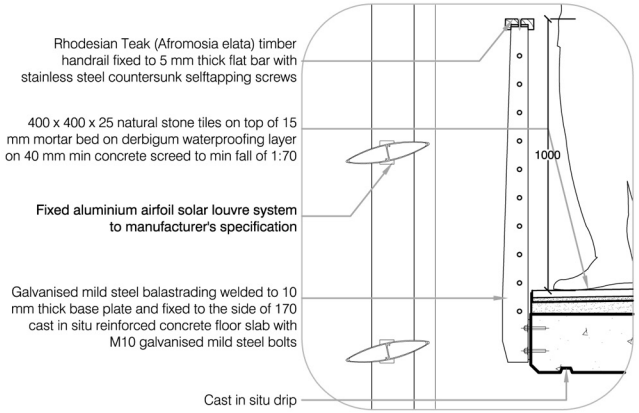

bb
aa
321 600
Top of roof
316 200 u.f.l.
Master control room
310 950 u.f.l.
First floor
MUSIC TELEVISION
TAXI RANK
BUT

western elevation

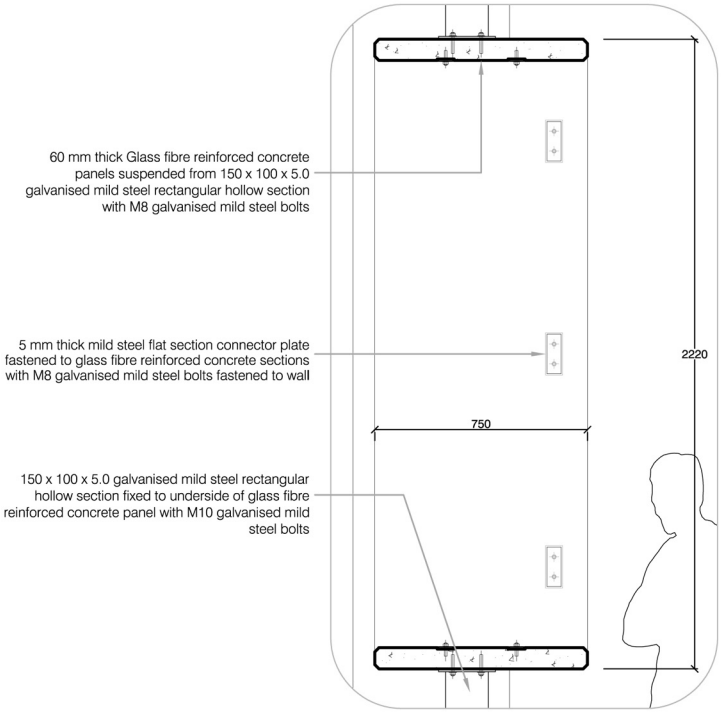

B
C
D
E
F
323 670
Top of roof
322 150
Top of roof slab
319 350 u.f.f.l
Third floor
315 150 u.f.f.l
Second floor
310 950 u.f.f.l
First floor
306 925 u.f.f.l
Ground floor
305 000
Datum



detail a-1



detail a-2



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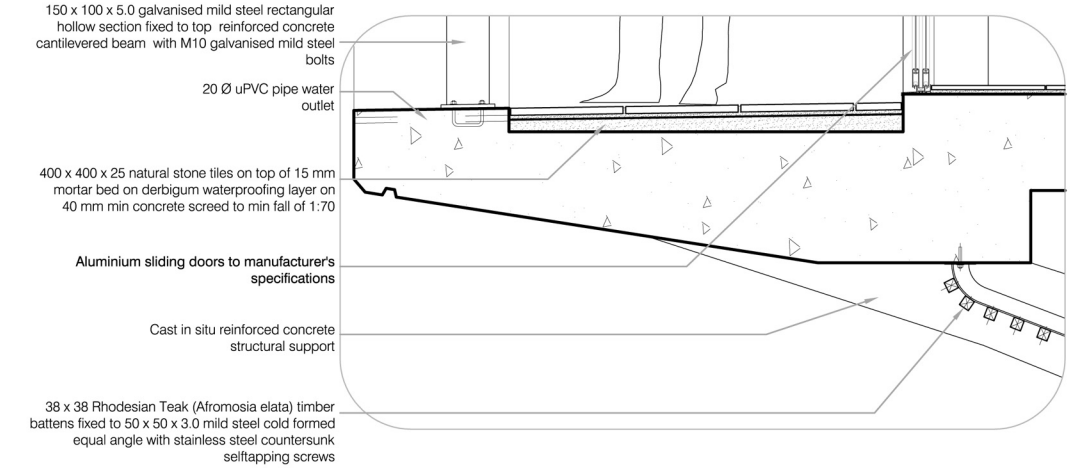
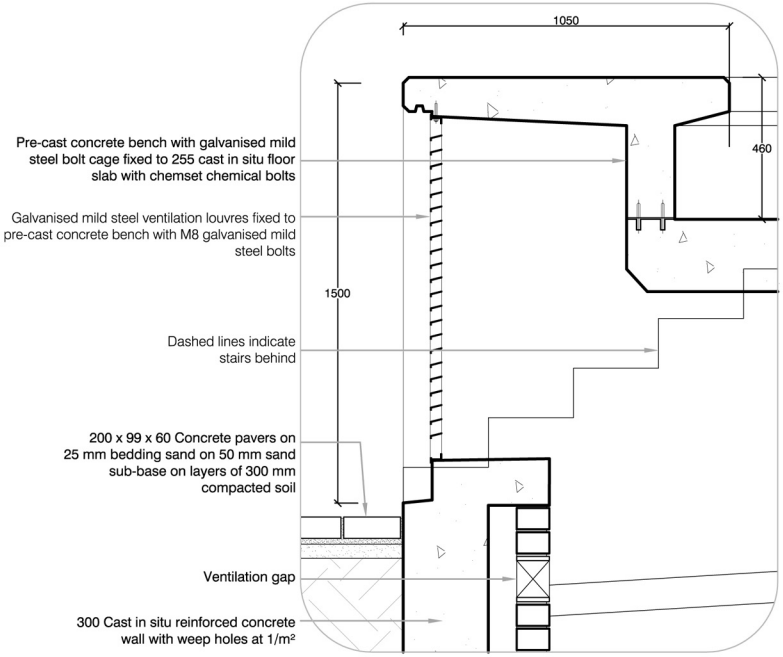
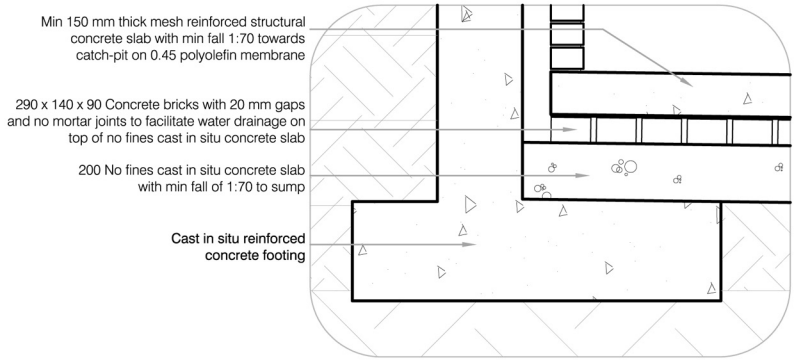


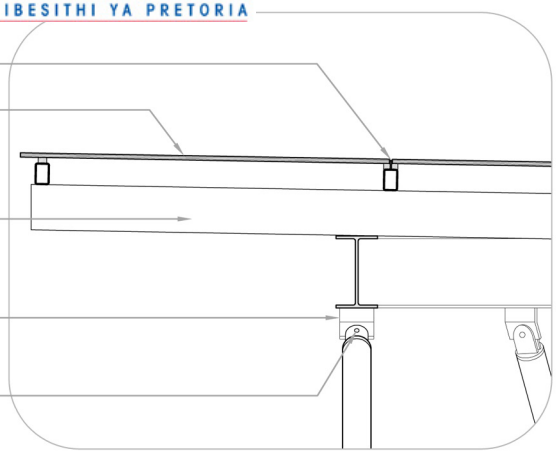
detail a-4



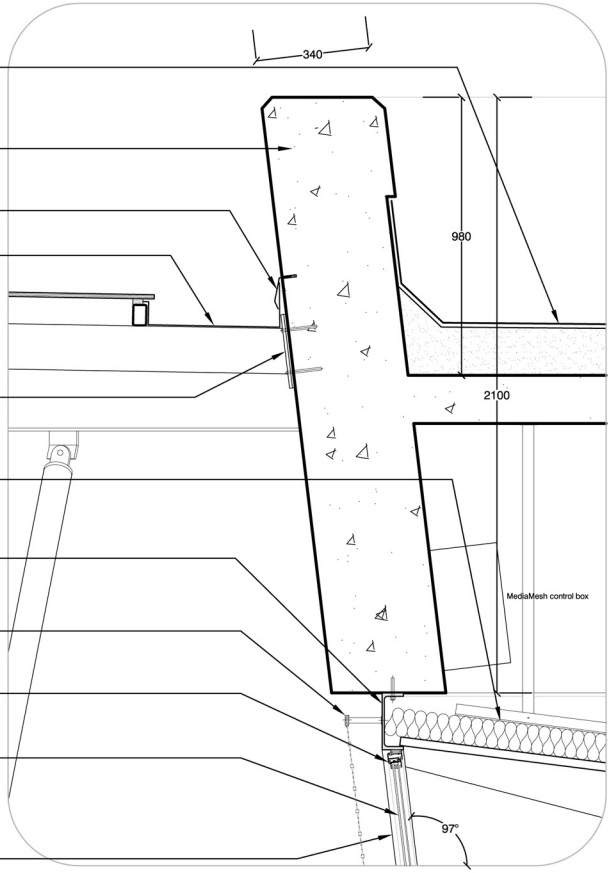
detail a-5



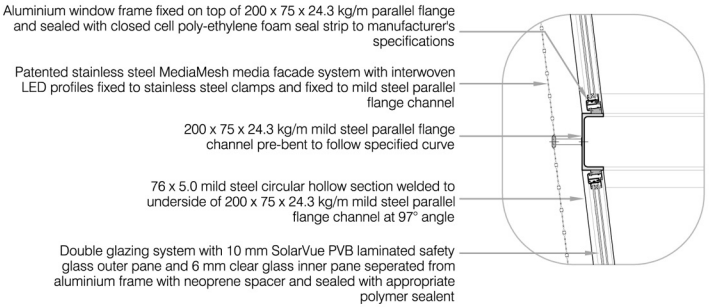
detail a-6



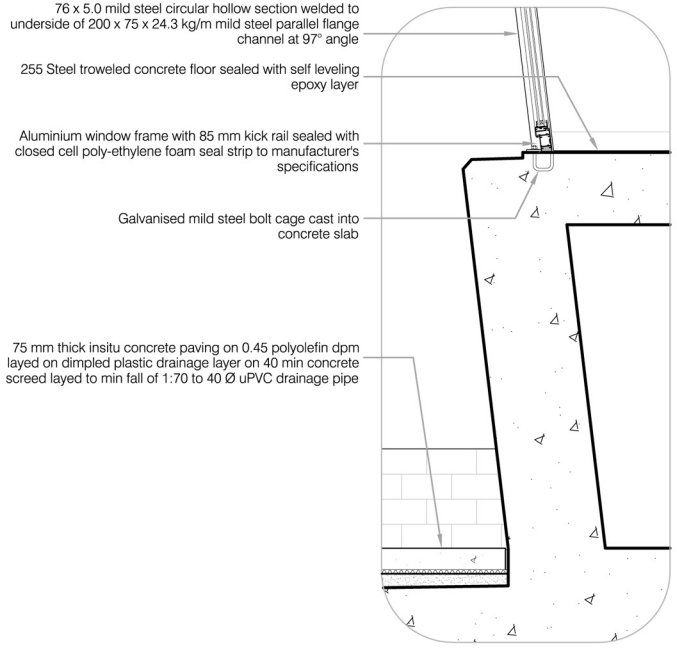
detail c-1(i)



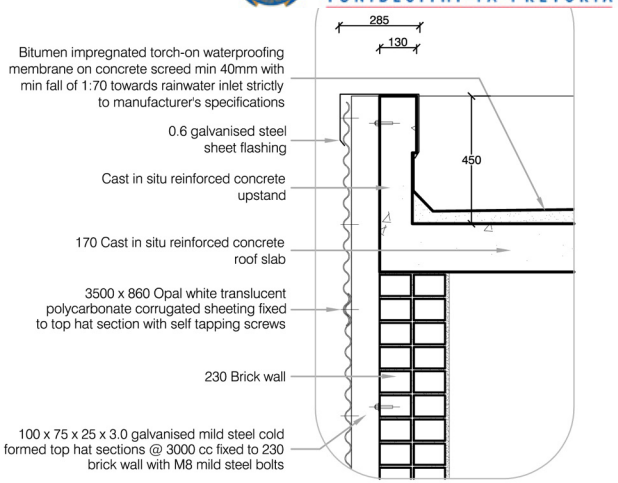
detail c-1(ii)



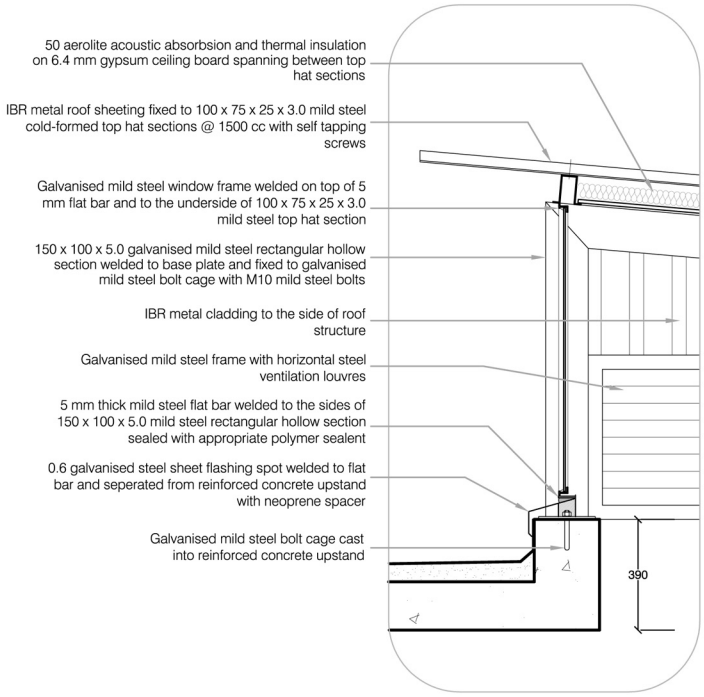
detail c-2



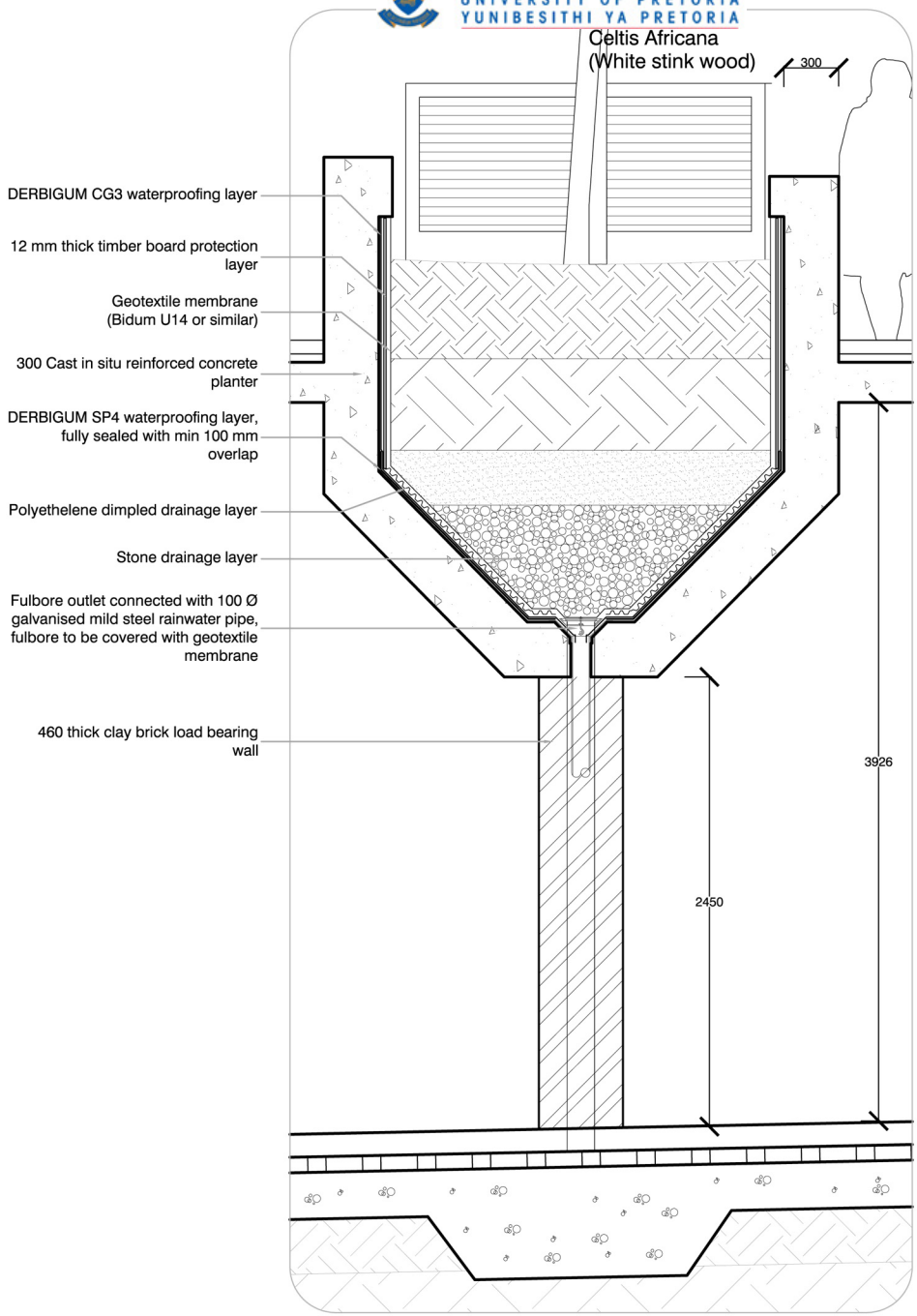
detail c-3



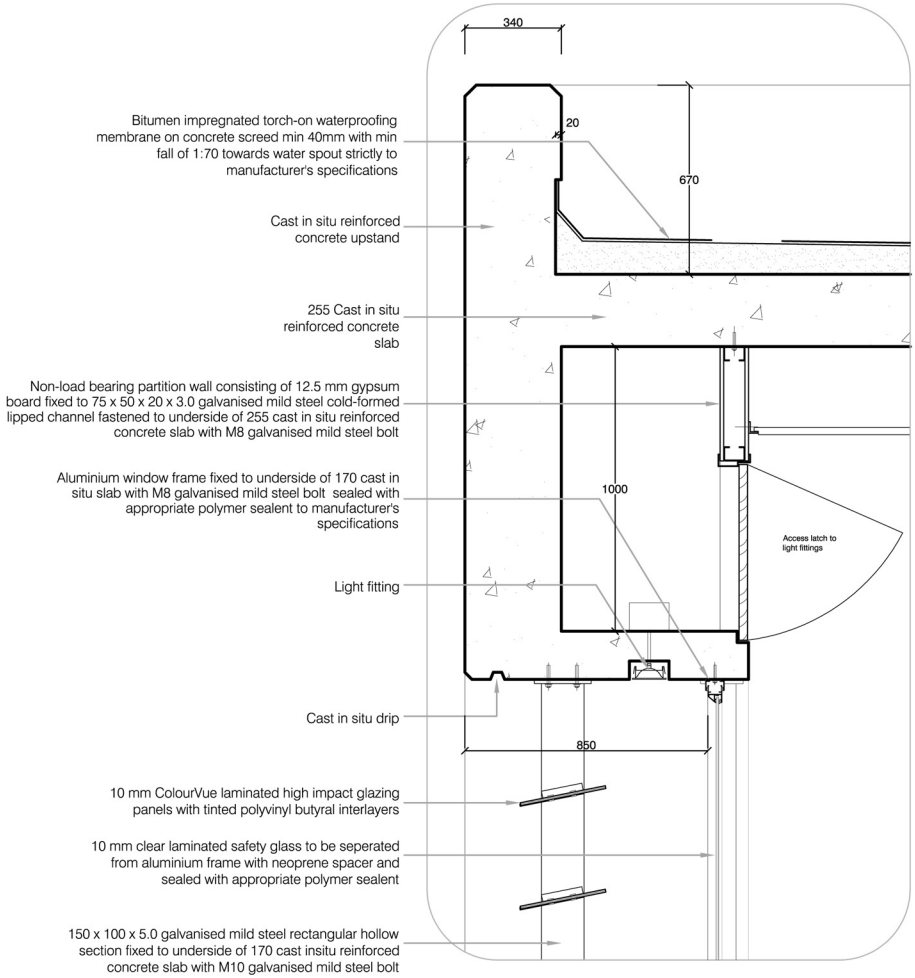
detail c-4(i)



detail c-4(ii)

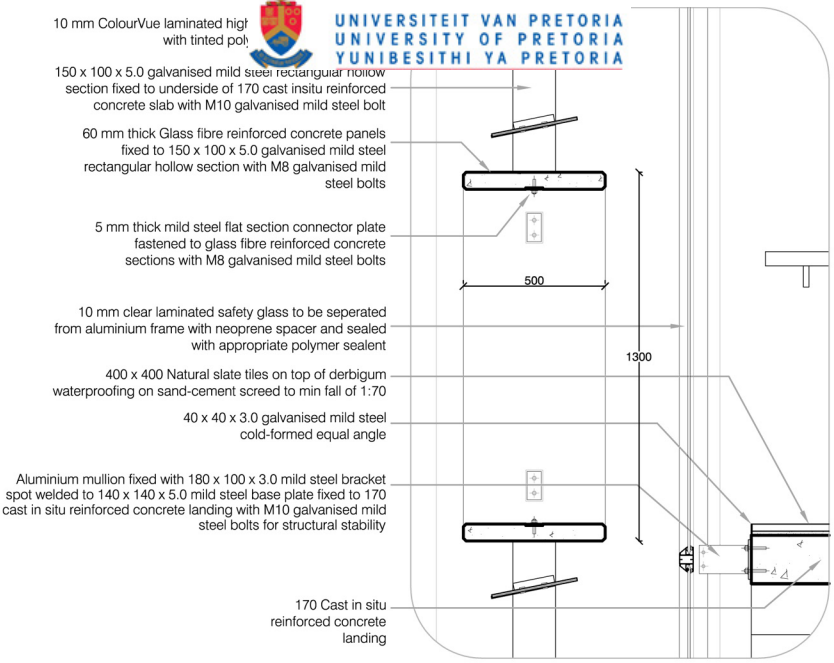

Celtis Africana
(White stink wood)
300
DERBIGUM CG3 waterproofing layer
12 mm thick timber board protection layer
Geotextile membrane (Bidum U14 or similar)
300 Cast in situ reinforced concrete planter
DERBIGUM SP4 waterproofing layer, fully sealed with min 100 mm overlap
Polyethelene dimpled drainage layer
Stone drainage layer
Fulbore outlet connected with 100 Ø galvanised mild steel rainwater pipe, fulbore to be covered with geotextile membrane
460 thick clay brick load bearing wall
3926
2450

detail c-5

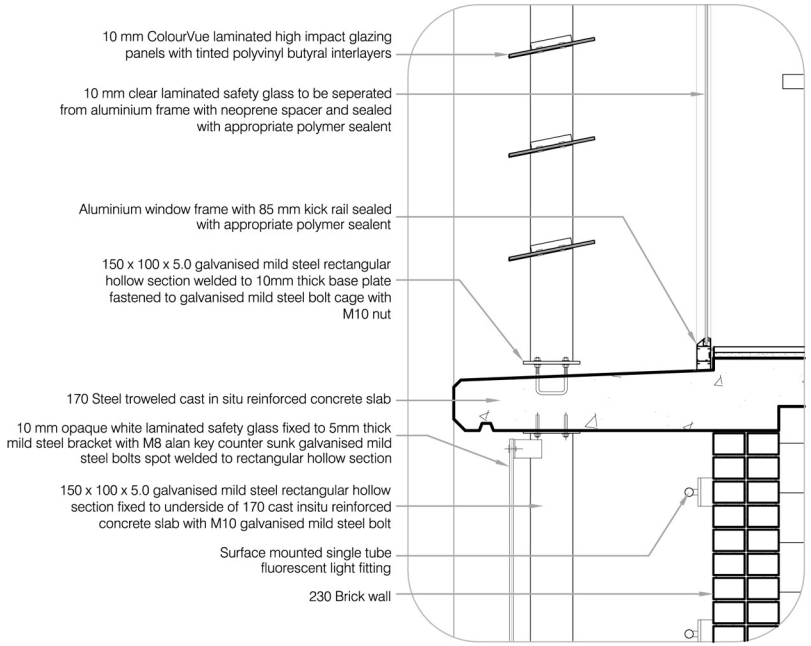

340
20
670
1000
850
Access latch to light fittings
Bitumen impregnated torch-on waterproofing membrane on concrete screed min 40mm with min fall of 1:70 towards water spout strictly to manufacturer's specifications
Cast in situ reinforced concrete upstand
255 Cast in situ reinforced concrete slab
Non-load bearing partition wall consisting of 12.5 mm gypsum board fixed to 75 x 50 x 20 x 3.0 galvanised mild steel cold-formed lipped channel fastened to underside of 255 cast in situ reinforced concrete slab with M8 galvanised mild steel bolt
Aluminium window frame fixed to underside of 170 cast in situ slab with M8 galvanised mild steel bolt sealed with appropriate polymer sealent to manufacturer's specifications
Light fitting
Cast in situ drip
10 mm ColourVue laminated high impact glazing panels with tinted polyvinyl butyral interlayers
10 mm clear laminated safety glass to be seperated from aluminium frame with neoprene spacer and sealed with appropriate polymer sealent
150 x 100 x 5.0 galvanised mild steel rectangular hollow section fixed to underside of 170 cast insitu reinforced concrete slab with M10 galvanised mild steel bolt

detail d-1

detail d-2



detail d-3



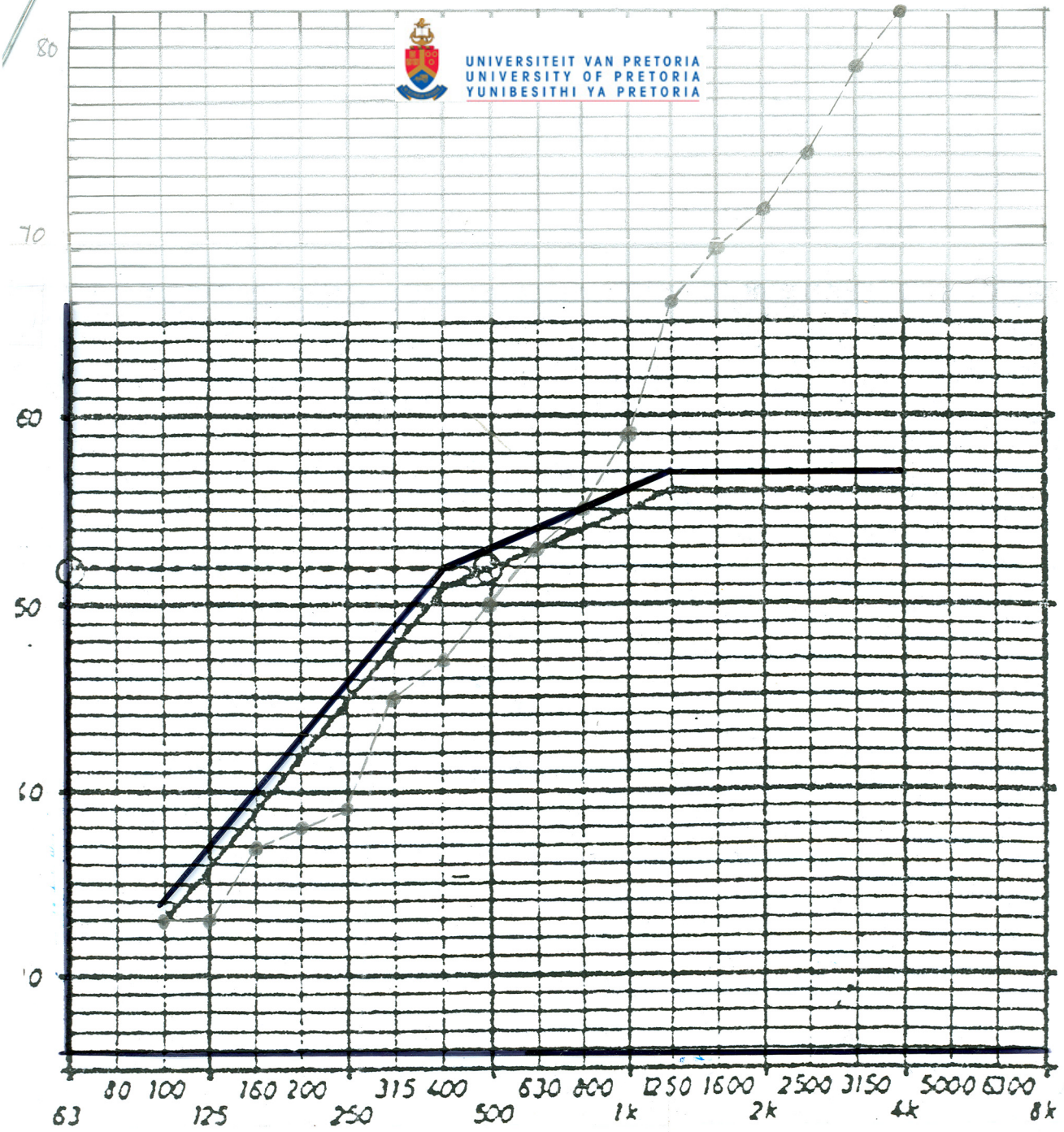
It is of crucial importance for television studios to have the desired sound levels in order to achieve the optimum quality product. Intrusive external noise as well as structure-borne sound transmissions should be kept to a minimum. This can be best achieved by creating a structurally solid structure which houses the recording studios.

The wall construction of the recording studios consist of a 330 mm brick cavity wall with a 100 mm mineral wool sound insulation cavity. This prevents the majority of external noise entering the recording studios. Fixed to the internal face of the cavity walls are 50 mm mineral wool blankets with black fabric covering; 125 x 50 x 25 x 2.5 cold-formed top hat sections are fixed to the cavity wall but isolated from the structure with neoprene seals to prevent the occurrence of structural noise; 8 x 2500 x 2000 perforated commercial plywood panels are fixed to the top hat sections, with a gap of 75 mm between the plywood and the mineral wool blankets. The perforated panels allow sound to enter the panels and dissipate between the plywood and the mineral wool blankets, giving the recording studio the desired sound absorption qualities.

The glass façade of studio A consists of a double glazing system angled at 97°to prevent the occurrence of standing waves. Double glazing is a good insulator against external noise. The cavity between the glass panes is supplied with copper sulphite in order to absorb any moisture within the cavity. Studio A is also supplied with an acoustic ceiling consisting of 8 mm thick perforated commercial plywood panels fixed to steel grid and suspended from the concrete roof slab. 100 mm mineral wool sound absorption blankets are placed on top of the perforated plywood panels.

The equipment used within the recording studios requires a level floor surface. A seamless self leveling epoxy floor finish is applied to the reinforced concrete floor structure to minimise discrepancies in floor level differences.

All studio access points have acoustic double doors with a cavity between them. The acoustic doors are sealed with 25 mm neoprene seals between the door and the doorjamb.



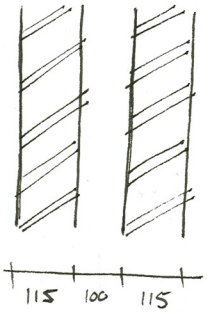
I_a-standaardkromme

Move up 1dB : average deviation = 1,94

I_a = standardised level difference

I_a = 53 dB

M_a = +1



Cavity width	Increase of $\bar{R}$ in dB
100 mm	+ 8 dB

Frequency [Hz]	100	125	160	200	250	315	400	500	630	800	1K	1250	1600	2K	2500	3150	4K
115-100-115 Plastered; with wall ties	33	33	37	38	39	45	47	50	53	55	59	66	69	71	74	79	82

	Design Rating level Lr for ambient noise dBA	Max Rating level Lr
Television Studio	25	30

	Rating level Lr for ambient noise dBA
Urban districts	60

I_a = 53 dB

$\therefore$ 60 − 53 = 7dB Intrusive external noise entering the recording studio

Noise generated by lighting and HVAC

$$Lr = 10 \log \left(10^{\frac{7}{10}} + 10^{\frac{x}{10}}\right)$$

x = noise in dB generated by lighting + HVAC.

$Lr = 25$ dB

$$Lx = 10 \log \left(10^{\frac{25}{10}} - 10^{\frac{7}{10}}\right)$$

$= 24,9$ dB

Maximum noise generated by lighting and HVAC is 24,9 dB.

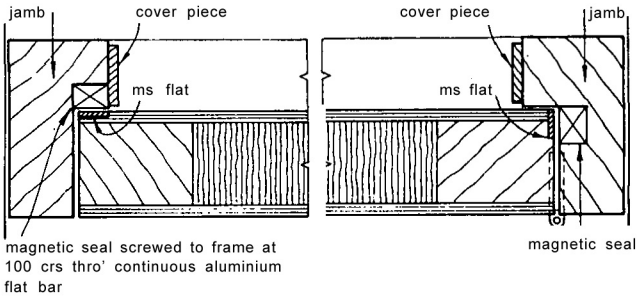
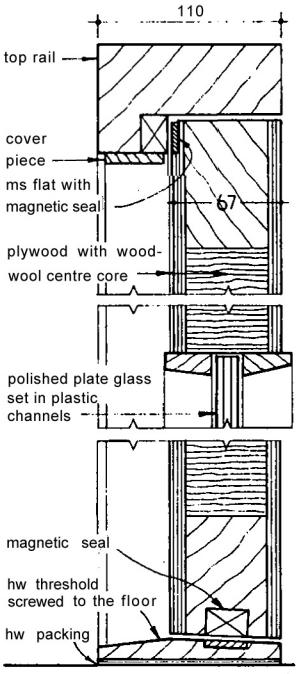


Fig. 7.18 Typical plan and section through an acoustic door



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