

INHABITING THE RUIN

By Juliette Hart

Study Leader: Carin Combrinck
Course Co-ordinator: Jacques Laubscher

SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE MASTER OF ARCHITECTURE (PROFESSIONAL), DEPARTMENT OF ARCHITECTURE, FACULTY OF ENGINEERING, BUILT ENVIRONMENT AND INFORMATION TECHNOLOGY, UNIVERSITY OF PRETORIA. PRETORIA, 2011

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

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

Juliette Hart

PROJECT TITLE: Inhabiting the Ruin

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DEGREE: Master of Architecture (Professional)

FACULTY: Faculty of Engineering, Built Environment and Information Technology

UNIVERSITY: University of Pretoria

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DEPARTMENT: Department of Architecture

project summary_

PROGRAMME: Culinary school and facilitated kitchen

SITE DESCRIPTION: The project is located within the shell of the Prédio Potts building located in Maputo, Mozambique.

CLIENT: The University of Eduardo Mondlane and Slow Food © Maputo

SITE LOCATION: Erf 154, Maputo, Mozambique

ADDRESS: Corner Avenue 25 Septembre and Avenue Samora Machel, Maputo, Mozambique

GPS CO-ORDINATES: 25E 58' 21.88" 32E 34' 15.47"

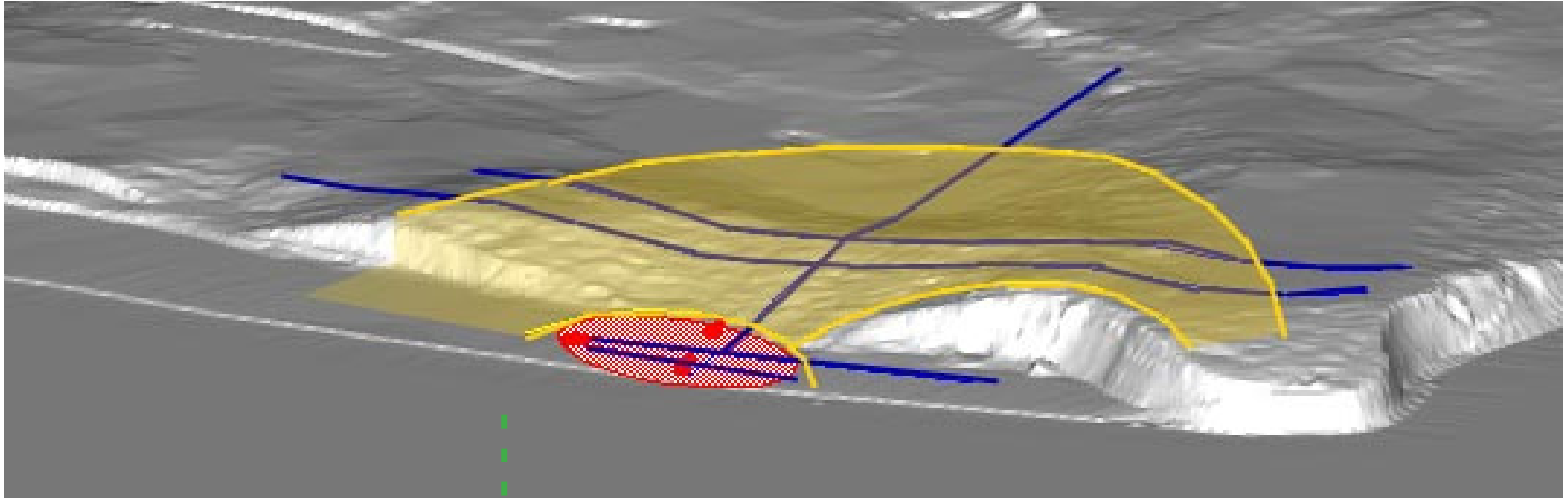
ARCHITECTURAL THEORETICAL PREMISE: The role of heritage architecture within an urban environment and its' ability to be

ARCHITECTURAL APPROACH: The re-intergration of a ruined and derelict early 20th century monument into the built urban fabric of the Maputo baixa as a site of public interaction.

RESEARCH FIELD: Heritage and Cultural landscapes



ILLUS. 1 Aerial view of Maputo (Perez, 2010; [1])



ILLUS. 2 Topographical view of Baixa (Perez, 2010; [3])

abstract_

The dissertation addresses the loss of definition of public spaces within urban environments, due in large part to increased privatisation. Using the Baixa of the city of Maputo, Mozambique as its laboratory, the alienated and abandoned spaces within the urban fabric which result in these voids will be explored. Drawing on critical theory relating to the manner in which we appropriate and define spaces within

our urban environment, the dissertation will seek to establish a connection between the architectural realm and its surrounding public landscape and explore the series of thresholds that the interaction between the two afford. Specifically, through the adaptive re-use of an historically significant landmark within the urban core, an architecture which explores the reconnection of place to space will be sought.

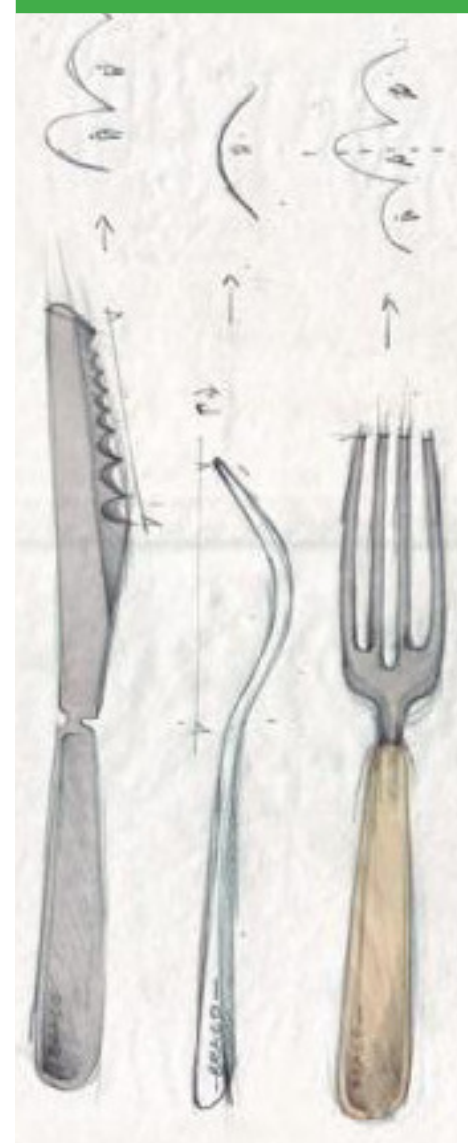


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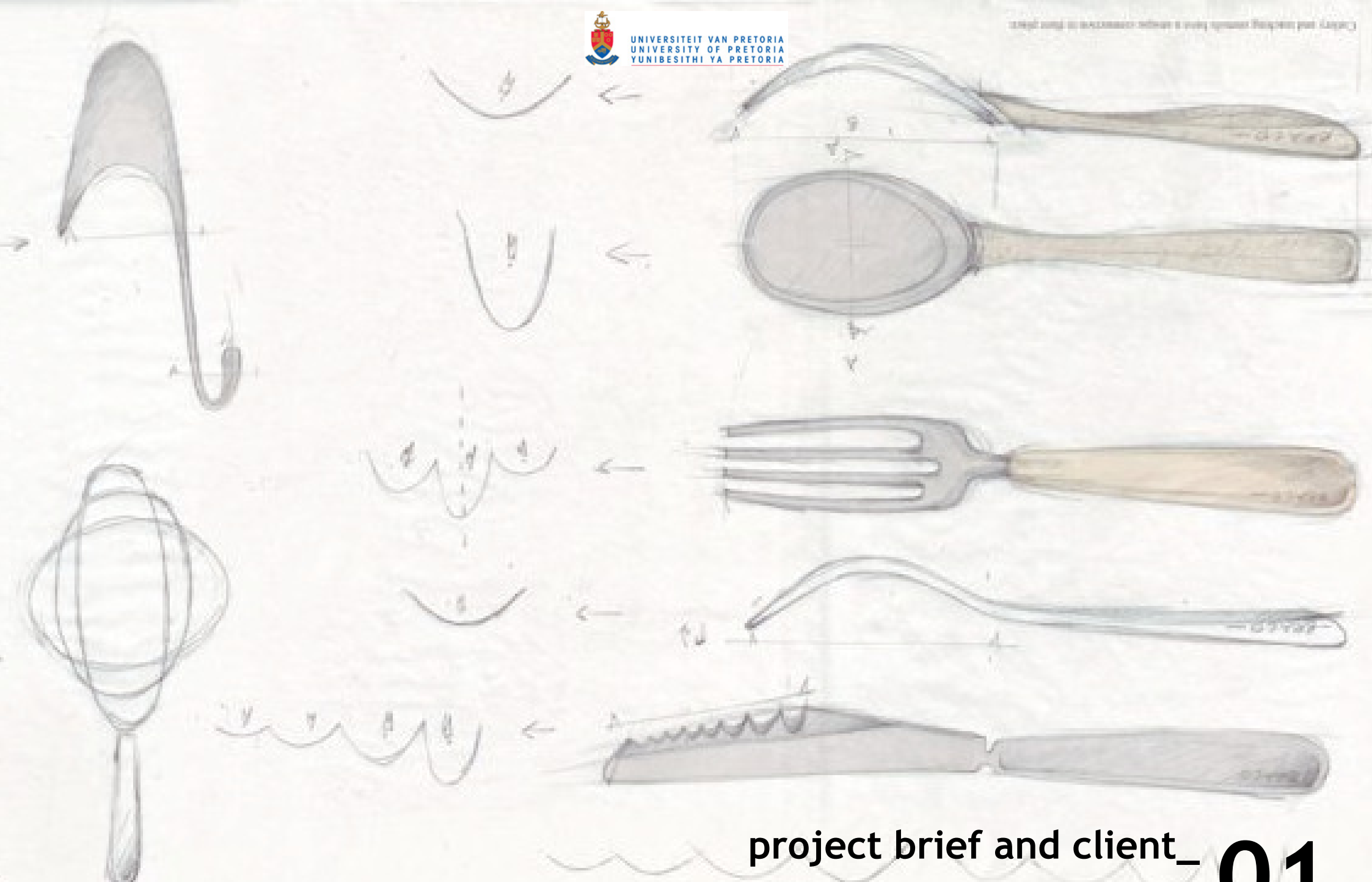
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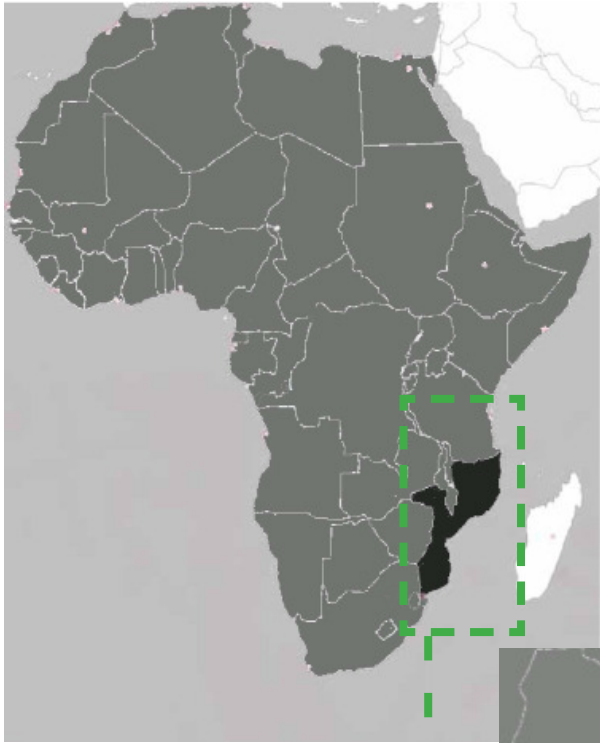
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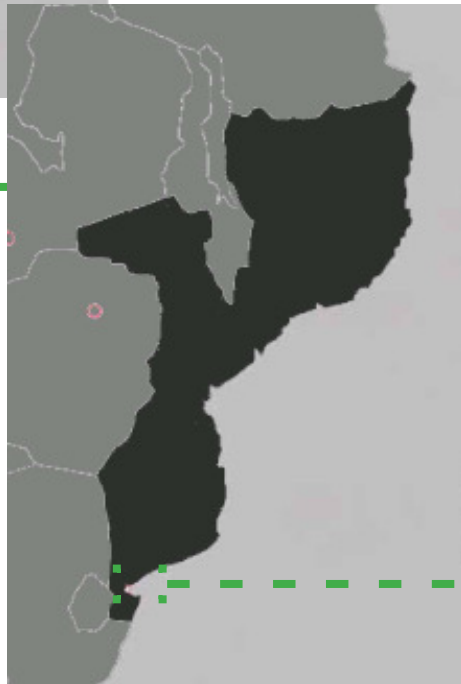
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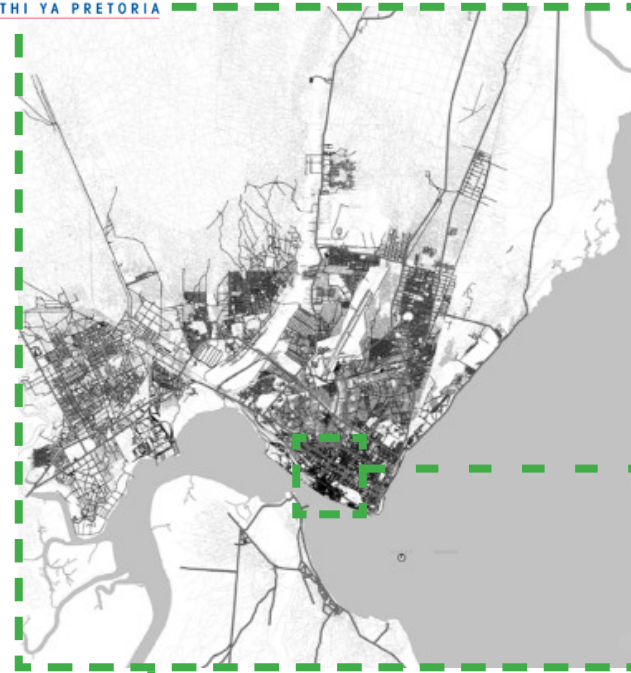
project brief and client_01



africa_



mozambique_



maputo_ capital city



introduction_



The Baixa, literally translated as lower city, forms an integral part of the city of Maputo. It teems with people who make the long journey into the city in search of economic opportunities. Once the historic core of the citadel, the lower lying parcel of land, was separated from the mainland by marshlands, with only a narrow connection between the two bodies of land. While in later years the citadel grew and gradually reclaimed land between itself and the mainland, it has maintained its unique identity in part due to its topographical deference, but largely due to its distinctly compact urban form and cultural vibrancy. As the entrance portal to the larger Maputo urban centre, the Baixa becomes an important threshold space through which thousands of people move each day. It is a place bustling with people and chaos, in which the economic pursuits of both formal and informal traders are lived out in the streets and on the pavements. It becomes a place of transient opportunity, set within a historic background of built and cultural heritage.

Dense urban environments provide not only opportunities for advancement but also opportunities to interact with spaces and built fabric which can be vastly different to the more sprawled and rural areas known by the multitude of users within the Baixa. As such, the compact streets and constant

street edge need to be balanced by open public spaces which allow for pause and repose.

Serving as recreational areas for residents of the city, these areas provide a vital injection of vegetation and life into the rigidity of the built environment. A result of increased privatisation is that the legibility of the built environment becomes less pronounced. Following this the definition of the public realm, traditionally at street level, becomes vague and eventually void of richness (Trancik, 1986; 22).

Changing functions, political flux and change in ownership within the area have allowed for pockets of land and built fabric to be abandoned, resulting in derelict spaces which begin to corrode the once tight knit urban fabric of the Baixa. These areas detrimentally impact the relationship between buildings and users and often become sources of unease and perceived danger, thus becoming isolating elements within the consistency of the built fabric.

The dissertation will explore the importance of an architecture which begins to address the definition of the void created in the urban, public realm and the ability of architecture to explore and address the thresholds between public landscape and architectural intervention.

baixa_

aims_

The aims of the dissertation are threefold. Firstly it will explore the various levels of threshold conditions which exist between historical, social, architectural and urban environments. Secondly it will explore an architecture which serves to form a bridge between architecture and the landscape of the urban realm. Thirdly it will critically assess the viability of the redevelopment of heritage architecture within the urban environment and its potential role as a catalytic developmental generator.

problem statement_

Dereliction and increasing vacancy resulting from changing functions within the area results in degrading urban fabric. These abandoned spaces are gradually neglected to the point where they become detrimental to the overall functionality of the urban fabric and eventually lead to illegibility in the urban form.

The current method of redevelopment of abandoned built fabric within the city favours demolition, at

the cost of a large amount of wasted embodied energy.

The exploration of an architecture which seeks to re-appropriate and reclaim abandoned fabric within the urban realm, with specific reference to the adaptive reuse of heritage architecture, will be made in an attempt to question the current status quo with regards to dilapidated built fabric.

delimitations and assumptions_

1. The exploration of food and eating as a means of expression within the architectural intervention will not be explored in the body of this dissertation.
2. The use of vertical gardens and urban agriculture as a support mechanism for the program of culinary school will not be explored in terms of its viability and social responsibility. As such it will be assumed that the benefits of the practice remain limited to the use for the school and not for the surrounding community.
3. The existing structure of the building is assumed to have been analysed by a structural engineer

and assumed to be sound.

4. The proposed urban intervention will be placed within the greater Maputo development strategy and all proposals shall be accepted unless stated otherwise

research questions_

1. How can architecture redefine lost and abandoned spaces within an urban context to re connect urban fabric with the reuse of heritage fabric as a major design driver.
2. How can the palimpsest of historical, urban and architectural layers of the building and city through time be translated into a built intervention
3. What determines the thresholds between space and occupation of space by the user and what potential role can architecture play in the definition thereof.
4. How can the adaptive re-use of historical buildings be used as a means for the enhancement of cultural identity.

ILLUS. 3 Aerial view of Predio Pott. (Hart, 2011)



The chosen site, the Prédio Potts building, which lies on an important axis linking the Baixa to the mainland Maputo, once played an active role in the economic and cultural enrichment of the area. However, following a fire in the early 1990's, it has steadily degraded into ruin.

Although physically littered with waste and crumbling debris, the building has been re-appropriated by both nature and informal residents filling the void created by this abandoned shell.

Inherent in this reclamation of the private, in favour of the public realm, is the creation of an opportunity for the space to become re-defined in a manner which not only reflects the monumental historic and cultural significance of the site but also contributes to the creation of usable urban space within the city.

The prominence of the site, as well as its link to the proposed pedestrian boulevard, “las ramblas”, facilitates a programme which combines both economic generators and the creation of public space.



program/brief_

A large part of both the formal and informal trade in the area is based around the sale of food. Many of these traders travel large distances daily, with bags packed full of homemade bread and baggia's to sell on the pavements. As such the food workshop is seen as a site of facilitation, an area in which local people can be given opportunities to develop and grow their small businesses as well as contribute to the cultural flair of the area. It is envisaged as a place which could serve as both temporary cooking facilities to be used by the local traders, as well as a place of skills interchange and improvement affording the users of the building opportunities to learn from local and international leaders in the culinary feild. With the *Merçado central* (fresh produce market) as well as the more informal fish market both being located within walking distance of the site, it is perfectly situated to make use of locally sourced and locally based economies and resources allowing for future sustainability.

The incorporation of a restaurant/ deli facility that will be managed and staffed by "students" of the food workshop will allow for economic generation. In addition to this, a small portion of the building will remain residential for temporary accommodation or tenancy.



CLOCKWISE FROM TOP RIGHT:
ILLUS. 4 Mercado Central (Hart, 2011), ILLUS. 5 Nerina Trojan Restaurant ambiance (Hart, 2011), ILLUS. 6 Restaurant ambiance (Hart, 2011), ILLUS. 7 Freshly caught prawns (Hart, 2011), ILLUS. 8 Fish market traders (Hart, 2011)

research methodology_

Through an empirical analysis of the site and context to establish urban patterns and a theoretical investigation into the idea of architecture as threshold, a liminal space between the public and private realms and social and cultural significance of the site and context, this dissertation will aim to establish a relevant architectural intervention and expression for the Baixa area.

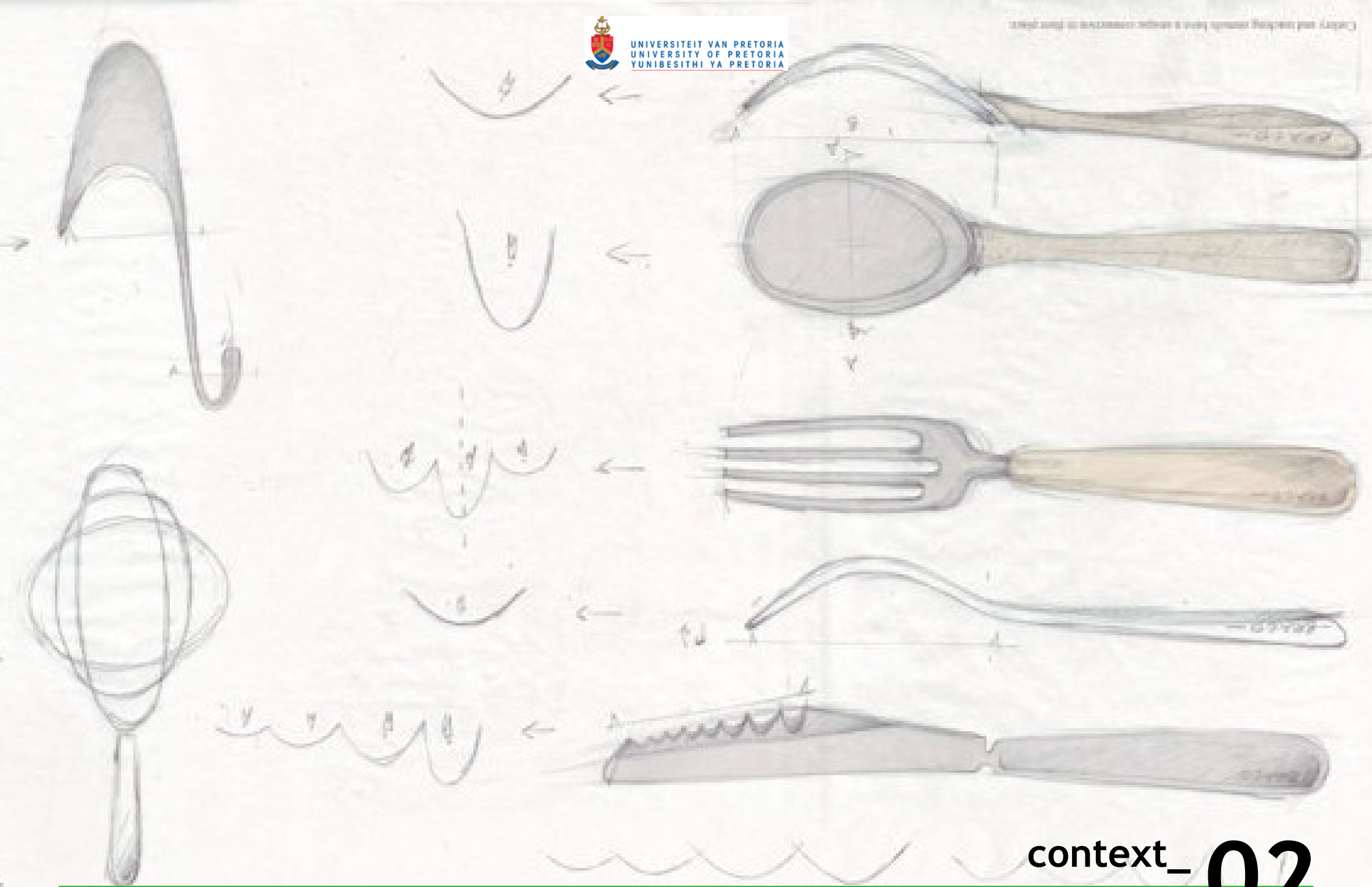
Key concepts as explored by theorists Lefebvre, Pallasmaa, Lynch and Trancik will be included in an attempt to establish an understanding of the definition of space. This will be done on both a physical and social level.

Conclusions can be drawn from which an architectural palette may be formed so as to best inform an appropriate intervention within this complex cultural landscape.

outline of document_

The dissertation will seek to analyse the contextual and historical significance of the area and will draw upon relevant precedent studies and theoretical approaches to establish a course of architectural intervention suitable to the building and programmatic function.

The interpretation of this analysis will then be taken forward into design informants for the proposed intervention and developed from conceptual formation up until the point of technical documentation.



context_02

historical analysis_

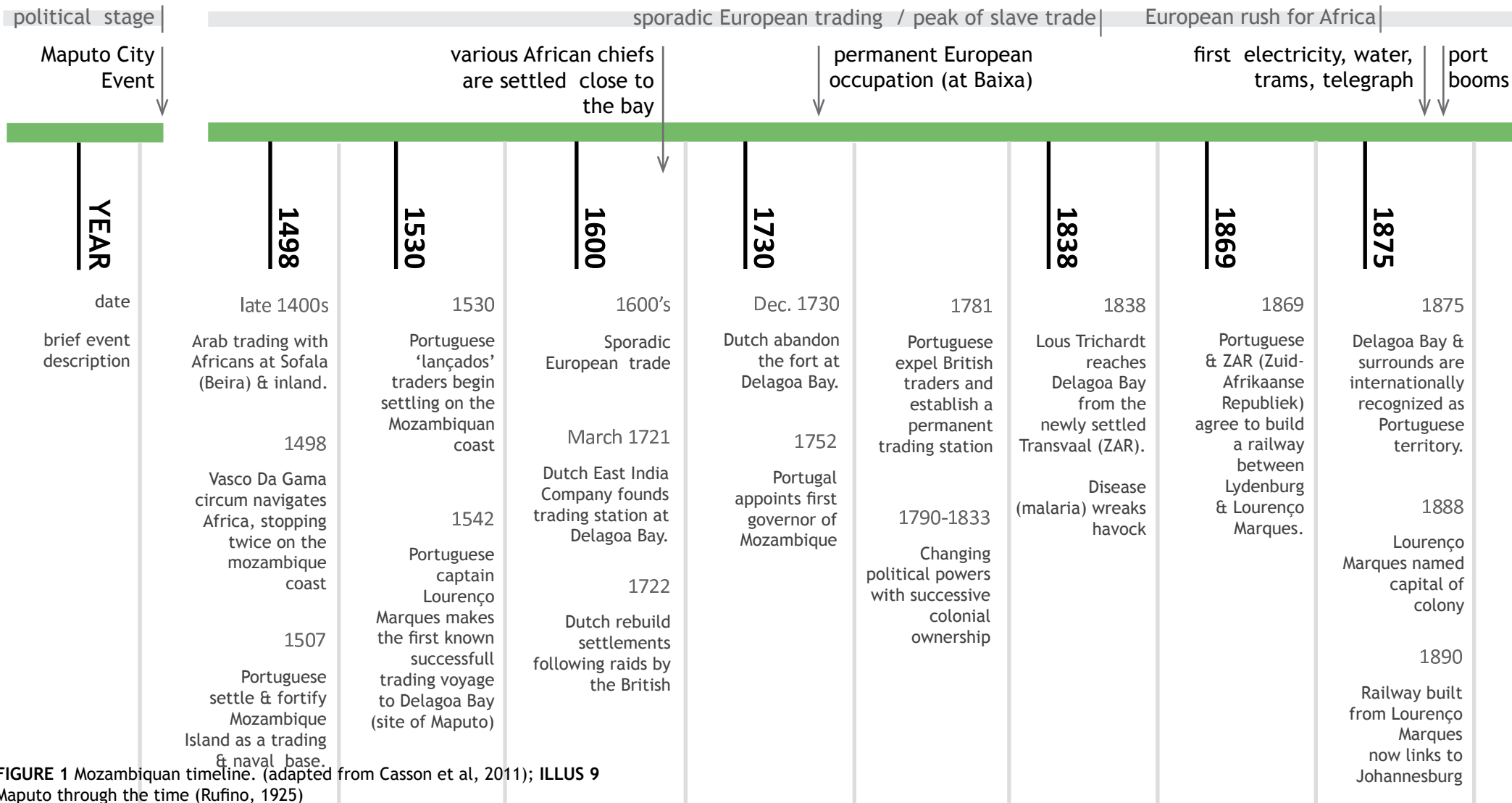
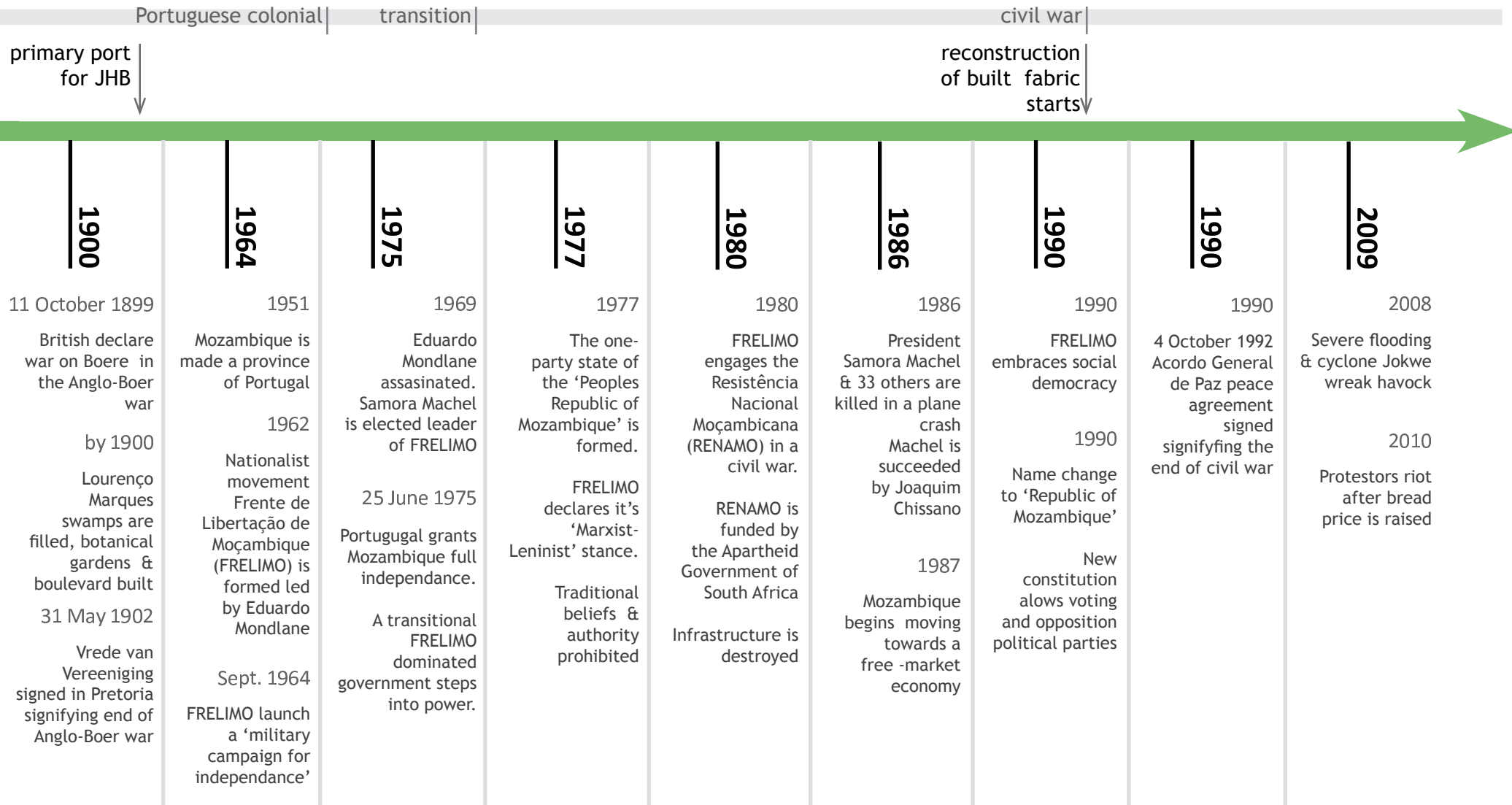


FIGURE 1 Mozambiquan timeline. (adapted from Casson et al, 2011); ILLUS 9 Maputo through the time (Rufino, 1925)

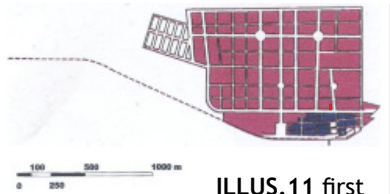




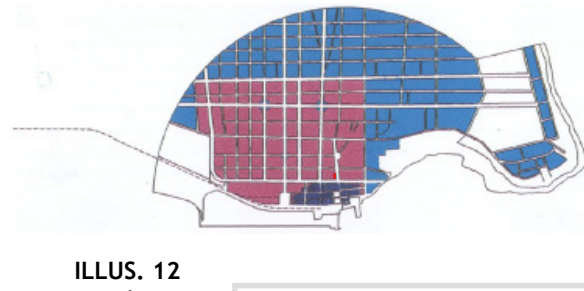
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 commentary



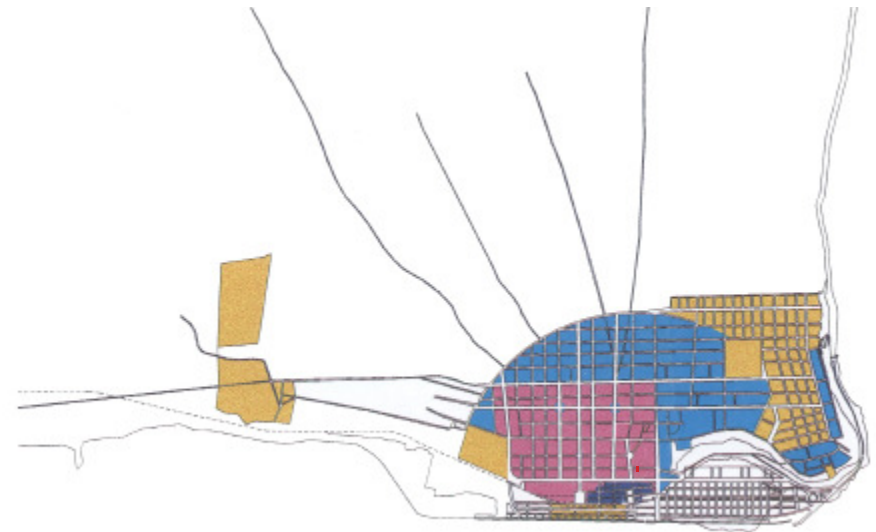
ILLUS. 10 the
 Fort & trading
 settlement on
 an island in a
 swamp



ILLUS.11 first
 phase of swamp
 reclamation &
 layout of formal
 street grid



ILLUS. 12
 circular
 demarcation
 of city limits
 & extension
 of street grid



ILLUS. 13 second
 phase of swamp
 reclamation &
 extension

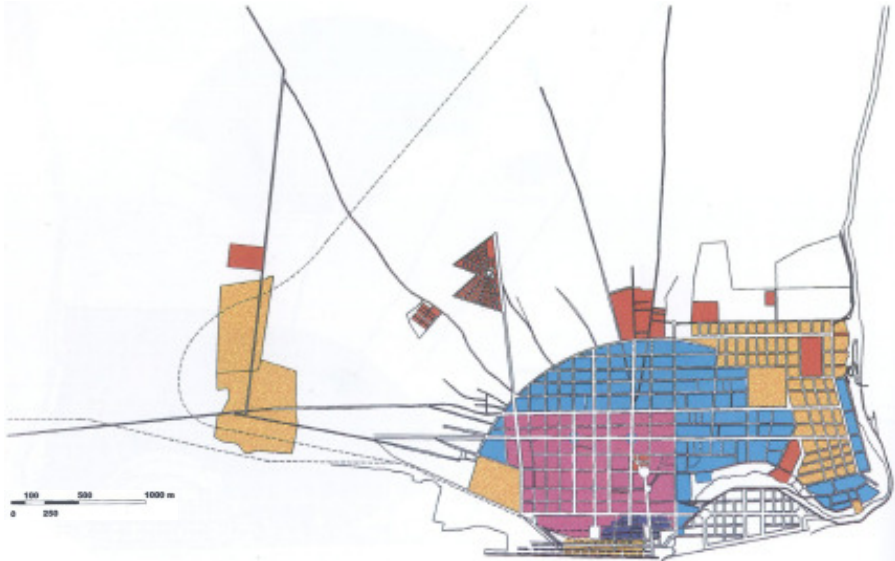
YEAR

1876

1877

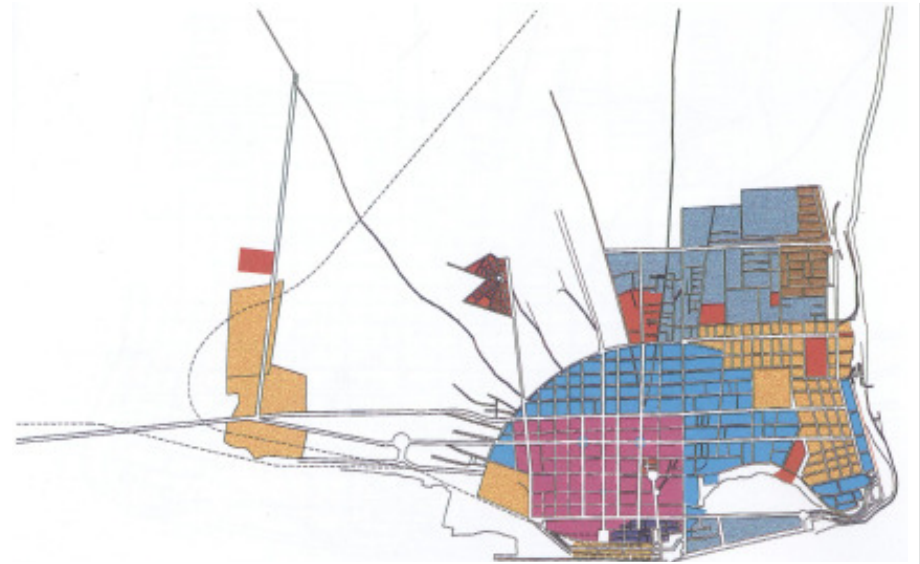
1900

1915



ILLUS. 14 organic extension.
consolidation of erfs in second
phase swamp reclamation

1940



ILLUS. 15 extension
to the North

1975

historical context_

The city of Maputo, formerly known as Lourenço Marques by Portuguese colonists, is the capital of Mozambique. It was once a small trading town established on the northern edge of an estuary. Since its early beginnings it has been a place of trade, with its nomadic origins being replaced by more permanent settlement from the 15th century, with the exchanges in power by the British, Dutch, French and finally Portuguese colonists who sought to establish a trade outpost. It was primarily a centre for trade in natural products such as ivory with the small settlement which was located on the island, then separated from the mainland by swamps (Jenkins, 2009; [2]).

With the ever-present threat of invasion from inland tribes and other colonial powers, much of the built fabric was based around the opportunity for defence, with access to the island being limited to one road linking to the mainland as well as a large fortress and praça (central square) to allow for public gathering and lines of sight (see Illus. 10). The historic citadel of Lourenço Marques can be clearly identified from the surrounding areas by its tight knit urban fabric featuring smaller block sizes

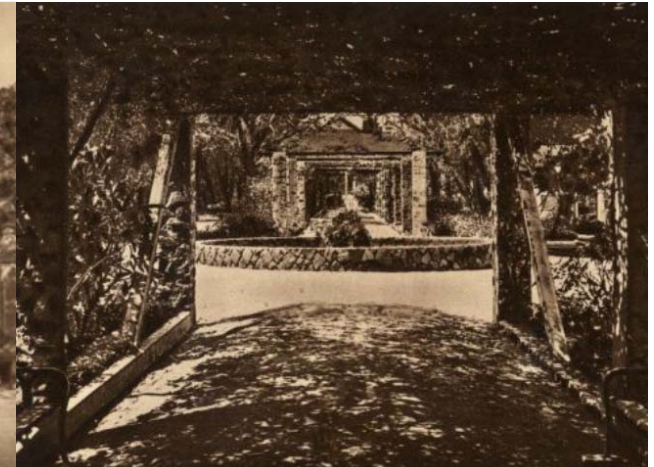
divided by narrow streets.

Following the discovery of gold in Lydenburg in the late 19th century (ibid; [4]) a connecting road was built to allow for a port link between the Republic of Transvaal and Lourenço Marques. The subsequent economic boom led to an expansion over the swamps to the higher lying mainland as well as a new dock to accommodate the increased steamship activity. Land reclamation of the dividing swamp lands began in the late 1880's in a two-phased procedure, eventually linking the lower lying Baixa area to the higher lying and rapidly expanding city. Urban plans from both 1903 and 1940's propose large scale development for the rapidly expanding city. The distinction between the finer grained historic citadel and the grid-like upper urban pattern, with a two kilometre radius from the historic praça is clearly evident in Illustration 12 and 13. This radial development can be seen to define a barrier between the formal "cement city" (ibid; [10]) and the informal residential housing lying to the North of the city.

By the late 1960's industrial activity began decentralising itself from the commercial Baixa

district due to lack of space and land prices and migrated towards Matola, to the west of Lourenço Marques. The increased foreign investment resulting from the growing port activities resulted in rapid development and improvement of areas within the inner ring of the city. The subsequent building boom resulted in a number of high rise apartment buildings and private sector developments (ibid; [13]).

This development was cut short after the 1974 revolution after which a rapid de-colonisation of the city began as power shifted away from the Portuguese colonial government. Following independence, the decreased foreign investment led to state intervention in which unfinished buildings became state owned and developed. Increased populations on the outer extents of the city, now known as Maputo, saw rapid development in the peri-urban sector to the North (ibid; [14]). State development was focused in the unfinished sites in the "cement city" resulting in "the previous bustling and rapidly verticalising central business district 'Baixa', with its major associated entertainment and commercial infrastructure, [beginning] to 'hollow out' as food



became channelled through state ration shops throughout the city” (ibid; [15]).

The civil war in the late 1980’s however, resulted in a significant influx of residents into both the Baixa and higher lying ‘cement city’ seeking safety from the war-ravaged rural areas, resulting in a rapid densification of residential areas.

The last 20 years has seen resurgence in development aided by increased foreign investment, particularly from the Republic of China. High rise developments along the reclaimed land to the east of the Baixa and a general lack of municipal control over development have allowed a new threat of gentrification and insensitive development to be placed upon the historic fabric.

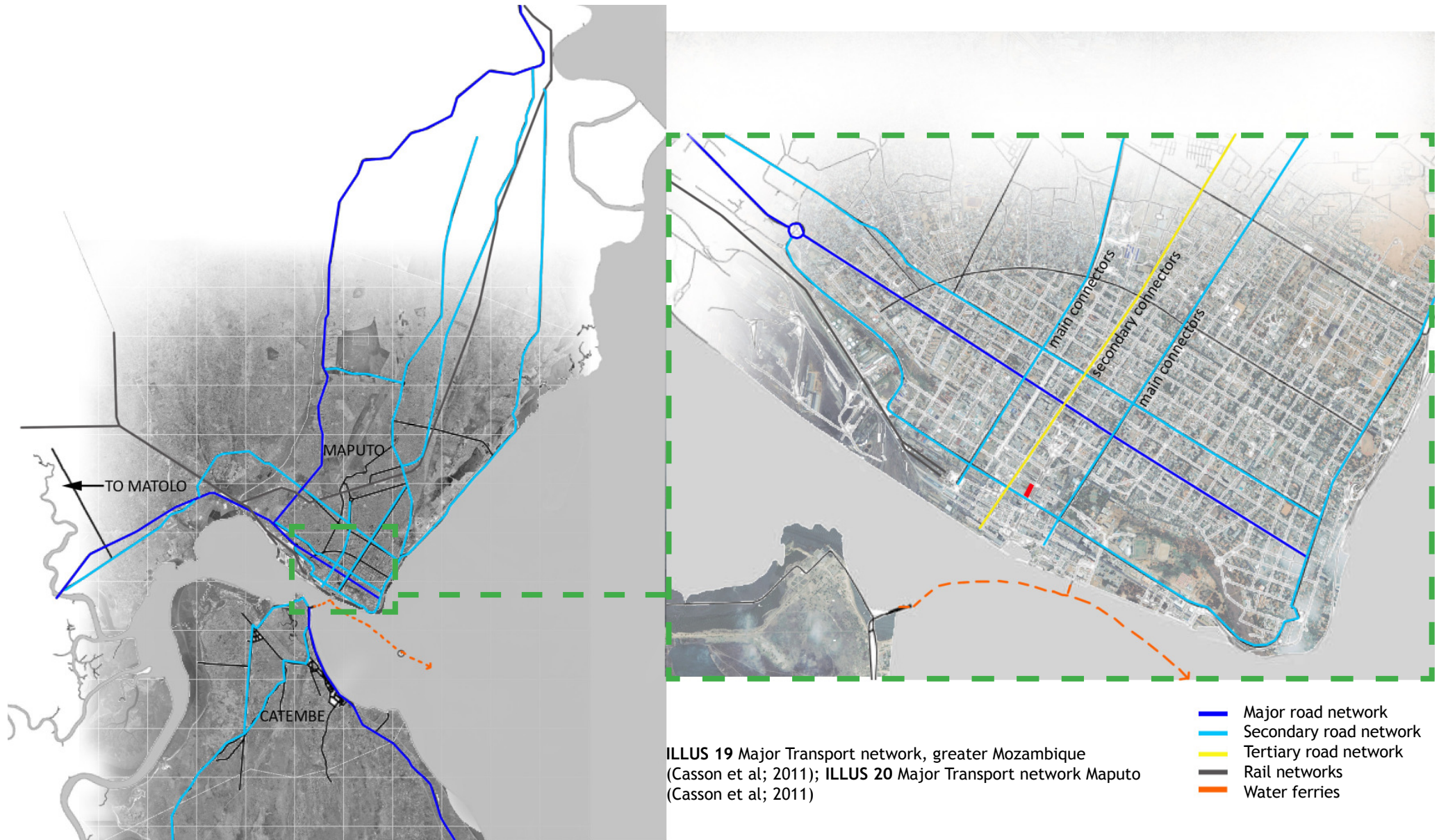
This is the current context in which this dissertation will be based. As such the subsequent intervention must seek to play the role of intermediary between the historical layers of cultural heritage and the developing multi-national character that will be characterised in future developments for Maputo.

CLOCKWISE FRONT TOP RIGHT:
ILLUS. 16 Entrance to Botanical
Gardens (Rufino, 1925), ILLUS. 17
Botanical gardens (Rufino, 1925),
ILLUS. 18 Tram on Avenue Agiar
(Rufino, 1925)

macro_scale

meso_scale

micro_scale



macro_scale
meso_scale
micro_scale



Map showing Maputo_greenescapes
(unspecified scale)

- natural vegetation
- parks & gardens

macro_scale
meso_scale
micro_scale

observations_

- High levels of movement clustered around transport nodes
- High density at Mercado Central
- Strong pedestrian links up main connector streets North- South
- Strong North-South transport connections
- Avenue 25 de Setembro main vehicular artery
- Main Chapa routes along North-South connections to greater Maputo

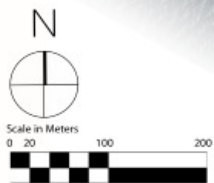


ILLUS. 21 Transport networks(Casson et al, 2011)

macro_scale
meso_scale
micro_scale

observations_

- Limited green spaces within urban centre - mostly under utilised and poorly maintained
- Large portion of land blocking seafront from urban fabric
- Areas of vacant land and parking lots can become part of greater green network
- Pockets of lost and abandoned space within fabric
- Large pocket of vacant land forming inconsistency in urban fabric
- Potential for block at corner of 25 de Septembre and Ave Samora Machel to be re-developed



- green open spaces
- hard open spaces
- ruins
- vacant buildings

ILLUS. 22 Green networks
(Casson et al, 2011)

macro_scale
meso_scale
micro_scale

observations_

- Informal retail clustered around transport interchnages and markets
- Large portion of informal trade is not fixed
- Fixed informal usually related to formal retail function within building



ILLUS. 23 Formal and Informal trade (Casson et al, 2011)

macro_scale
meso_scale
micro_scale

observations_

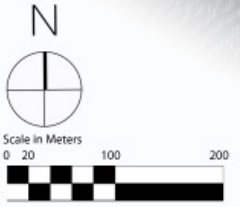
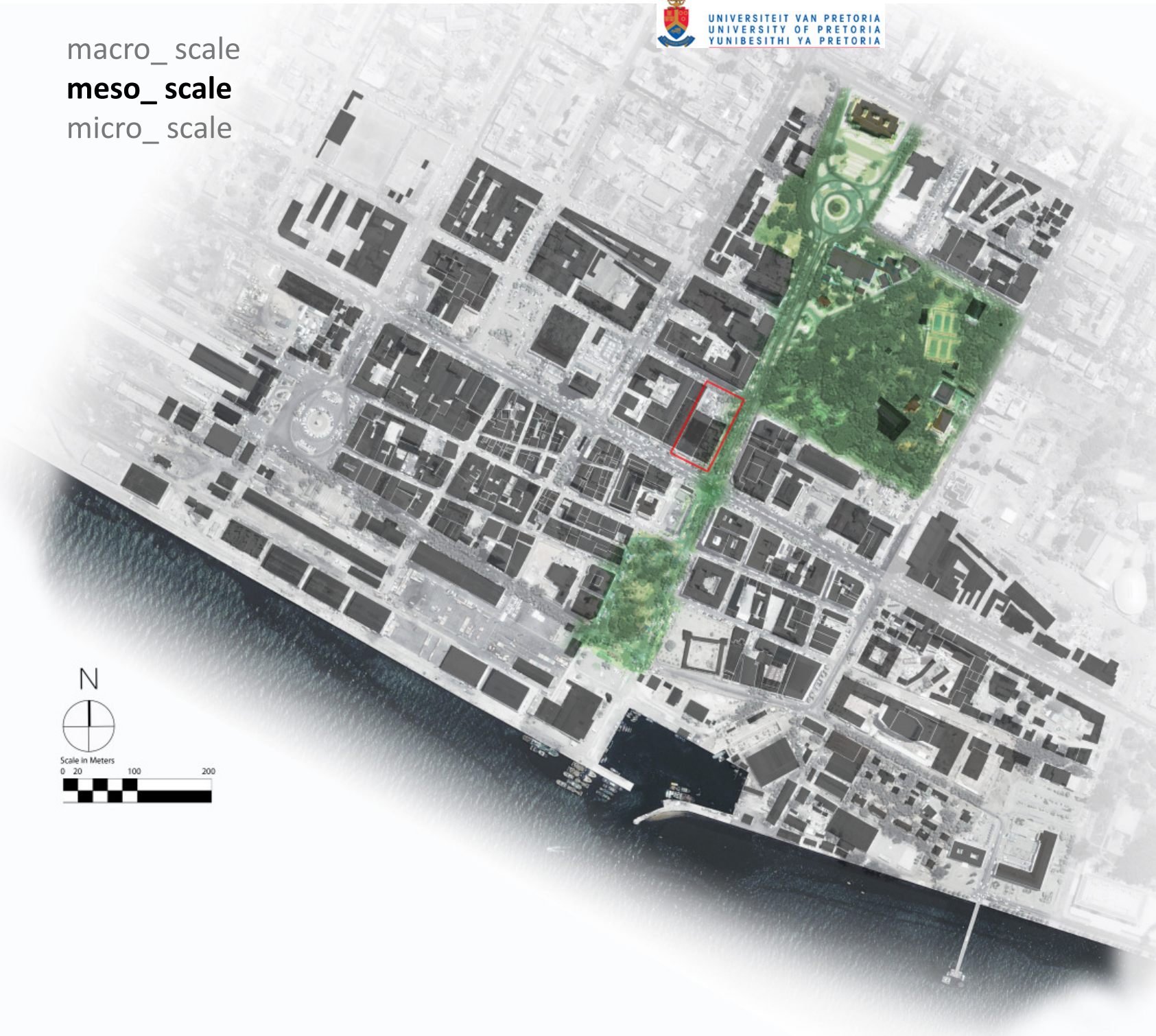
- Highest density of movement around transport interchanges
- Informal trade clustered along pedestrian routes
- Heavy pedestrian movement along pavements needs to be accommodated



ILLUS. 24 Combined analysis
(Casson et al, 2011)



macro_scale
meso_scale
micro_scale

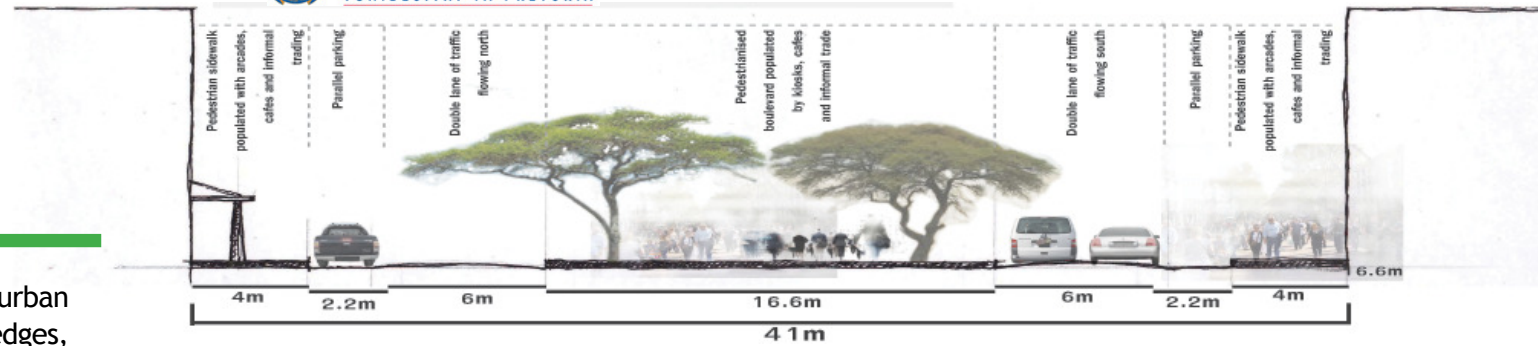


green open spaces_

Lynch categorises the five elements of urban environments as consisting of nodes, paths, edges, districts and landmarks. These elements, whether in singular form or as a combination of linking elements, begin to define urban areas and create positive urban environments and spaces.

Within the Baixa context multiple linkages consisting of paths connecting spaces of interest can be found. The most significant of which can be found along Samora Machel Avenue and the proposed Las Ramblas project (based largely on the Spanish Las Ramblas of Barcelona) (Forjaz, 2011). This pedestrian boulevard will serve to link a newly created municipal precinct, complete with amphitheatre and parking facilities as designed by local architect Jose Forjaz, and the proposed water terminal linking the Baixa to both national and international inhabitants (Maputo workshop, 2011). It will also serve as a uniting element linking the two large open green lungs within the Baixa area, namely the *Jardim tudura* (botanical gardens) and *praca 25 Junho*. The Ramblas also becomes a critical orientating device for visitors to the city.

ILLUS. 25 Open space network (Casson et al, 2011); ILLUS. 26 Municipal buildings Maputo (Hart, 2011); ILLUS. 27 Proposed municipal precinct development (Forjaz, 2010); ILLUS. 28 Las Ramblas, Barcelona (Hart, 2010); ILLUS. 29 View down Avenue Samora Machel (Hart, 2011); ILLUS. 30 Proposed street section through Las ramblas (Casson et al, 2011); ILLUS. 31 Proposed las Ramblas atmosphere (Hart, 2011)

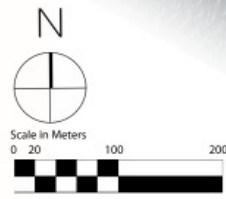


macro_scale

meso_scale

micro_scale

- 1 _CONSELHO MUNICIPAL (City Council)
_ 1903-1905
- 2 _CATEDRAL (Catherdral of our lady)
_ Construction commenced 1936
_ inaugurated 14 August 1944
_ gothic style
- 3 _ RADIO MOZAMBIQUE
_ Constructed 1948
_ Modern style
_ Tropical climate response, brise soleil
- 4 _TELECOMMUNICATIONS OF MOZAMBIQUE
_ 1946-1948
_ Art Deco style
- 5 _CENTRO CULTURAL FRANCO MOCAMBIQUE
_ Construction began 30 June 1898
_ Colonial style with large balconies
- 6 _ CASA DE FERRO (Iron House)
_ Rediscovered 1960
_ Prefabricated Iron & Steel
_ Respresentation of capabilities of material
- 7 _ STATUE SAMORA MOSES MACHEL
_ Inaugurated 1989
_ Reinforced concrete, marble, bronze
- 8 _ TRIBUNAL SUPREMO (Supreme Court)
1890
_ Colonial style
- 9 _MERCADO CENTRALE (Central Market)
_ 1901-1903
_ manifestation of Industrial Revolution
_ Iron construction, dome
- 10 _ Predio Pott
_ 1891-1905
_ steel frame construction
_ built for late consul to Transvaal
- 11 _CORREIOS DE MOCAMBIQUE (Central post office)
_ 1903
- 12 _IMPrensa NACIONAL (National Press)
_ 1857
- 13 _ MUSEU DE MOEDA (Museum of Money)
_ 1873 Portuguese Government Building
_ 1964 proclaimed historical monument
- 14 _CAMINHOS DE FERRO DE MOCAMBIQUE
(Central Station)
_ 1908-1910
_ Manifestation of Industrial Revolution
- 15 _MONUMENTO A PRIMEIRA GUERRA MUNDIAL
(WW1 Monument)
_ inaugurated 1935
- 16 _CASA DOS AZULEIJOS (House of Tiles)
_ 1879
- 17 _FORTALEZA DE MAPUTO
_ Between 1851-1867
_ Site of old fort circa 1780-1796



- Recognised heritage buildings
- Other notable buildings
- 18 _GIL VICENTE CINEMA
_ 1925-1927
- 19 _MILLENIUM BIM Bank of Mozambique
- 20 _ MINISTRY OF FINANCE
_ Pancho Guedes building
- 21 _PASTELARIA SCALA AND CINEMA SCALA
_ built 1931
- 22 _ MCELL TOWER
_ tallest building within the baixa at 33 floors
- 23 _ ESTACAO NACIONAL (Central Post office)



1 Mercado Centrale



then



now

2 Praca la Trabalhadores (formerly Mac Mahone)



then



now

historical character:

- _vibrancy of open space
- _narrow street
- _character with colonades
- _multiple transport modes create bustling street spaces

current character:

- _derelict green spaces
- _congestion and parking on pavements and plaza's
- _privatised sea edge
- _juxtaposition of formal and informal activities

3 Harbour edge



then



now

4 Praca 24 de Junho



then



now

5 fishing harbour



then



now

macro_scale
meso_scale
micro_scale

ILLUS. 32 (OPPOSITE) heritage buildings (Casson et al, 2011);
ILLUS. 33 Character of Baixa (Casson et al, 2011);

7 botanical gardens



then



now

6 Avenue Signori Pedrosa



then

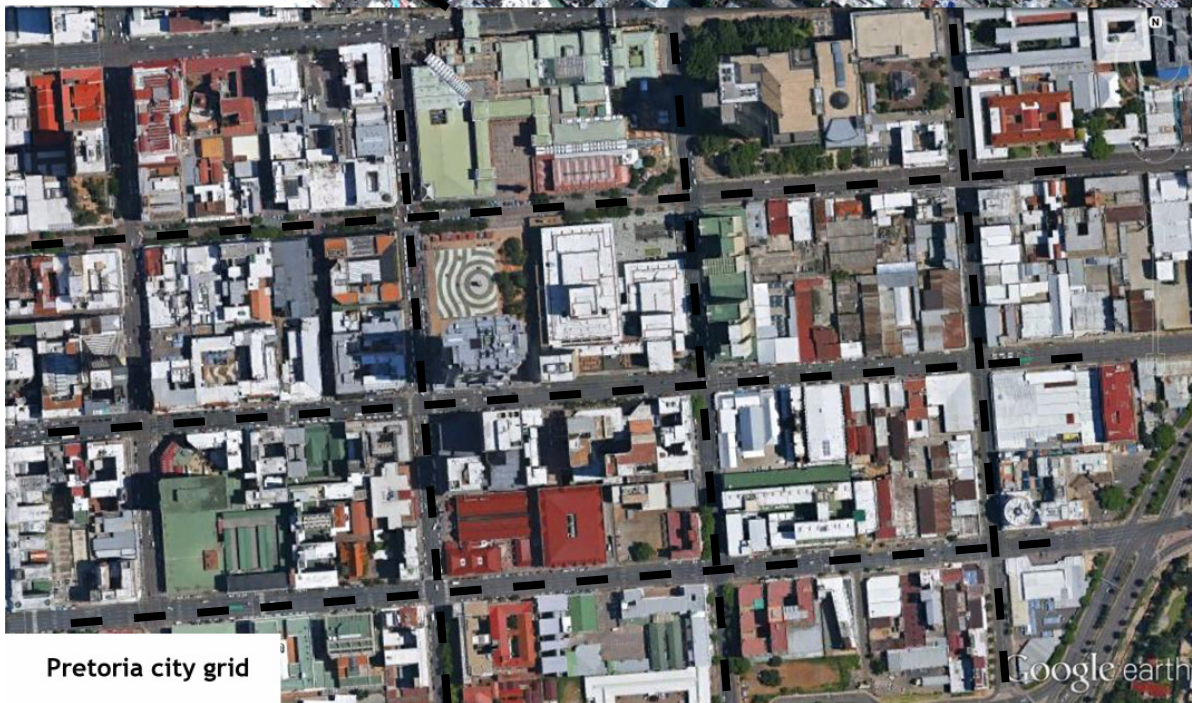


now

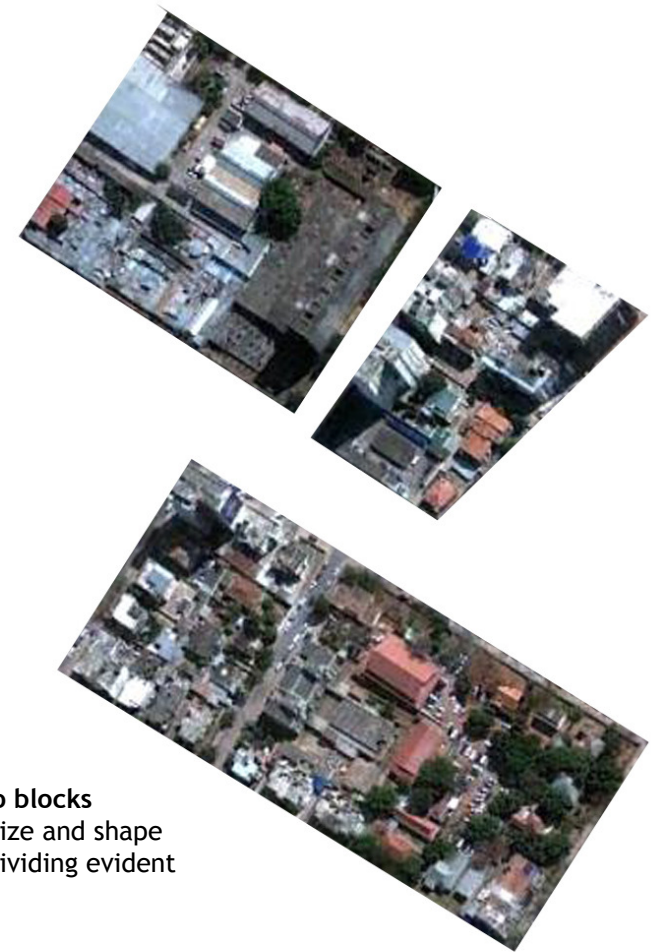
macro_scale
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Maputo city grid



Pretoria city grid



typical Maputo blocks

- irregular in size and shape
- organic subdividing evident



typical Pretoria block

- regular in size and shape
- 230x 150 m

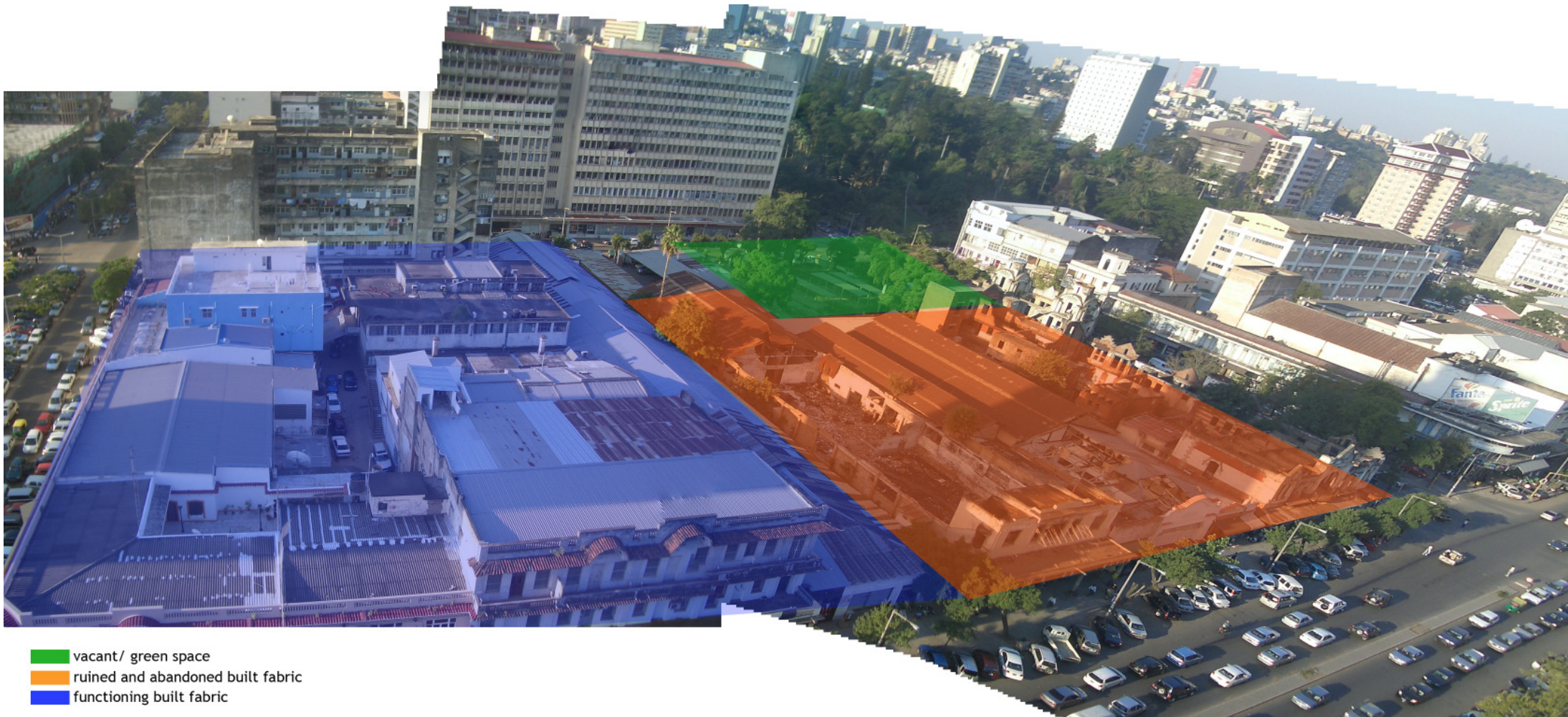
The Maputo grid system was largely introduced in 1881 during the implementation of the urban plan designed by the military leader Araujo It was largely based on grid systems found in many western cities (Perez, 2011; 2). While the urban plan was never realised, many elements including the suburb divisions and semi circular linking road dividing fromal and informal housing areas have been adopted.

Roads in Maputo do not follow the largely regulated *cardo* (north south axes)- *decumanus* (east-west orientators) lines which can clearly be seen in the Pretoria urban layout. Maputo roads often vary in orientation creating an irregular grid shape. In addition, the organic subdivision of larger thinner blocks by smaller informal roads which become permanent allows for a grid pattern with great diversity.

macro_scale
meso_scale
micro_scale

block development_

ILLUS. 34 (OPPOSITE) Grid analysis (Google earth, 2011);
ILLUS. 35 Block analysis (Hart, 2011);



macro_scale
meso_scale
micro_scale



ILLUS. 36 Maputo
city textures (all
by Hart, 2011)

macro_scale
meso_scale
micro_scale



ILLUS. 37
Predio Potts
Introductory
Images (all by
Hart, 2011)

Predio Potts history_

The Predio Pott building was built in 1891, for the then consul to the Transvaal Province, Gerrard Pott. Originally it consisted of a single story building on the southern corner of the site located on the corner *Avenida Aguiar* (now Avenue Samora Machel) and *Avenida D Carlos* (now Avenue 25 September). The façade was altered in late 1894 with the extension along Avenue Samora Machel. In 1903 the upper stories were added to the current building footprint (Perez, 2011; [11]).

Built by a Durban based architectural firm ING & Anderson, the building, was erected during the height of the political excitement in Laurenço Marques that followed its classification as a city.

The 1877 expedition of engineers invited by the mayor, General Joaquim Jose Machado, brought with them new construction techniques and materials. (ibid, [7]) The adoption of the Victorian style of building as well as the use of new materials such as cast iron and cement have a large influence on the subsequent construction method employed.

Revolutionary for its time, the building consists of concrete and plaster clad steel columns supporting steel I sections onto which the upper floors and walls were supported. The steel work used within the building was imported from the Glengarnock

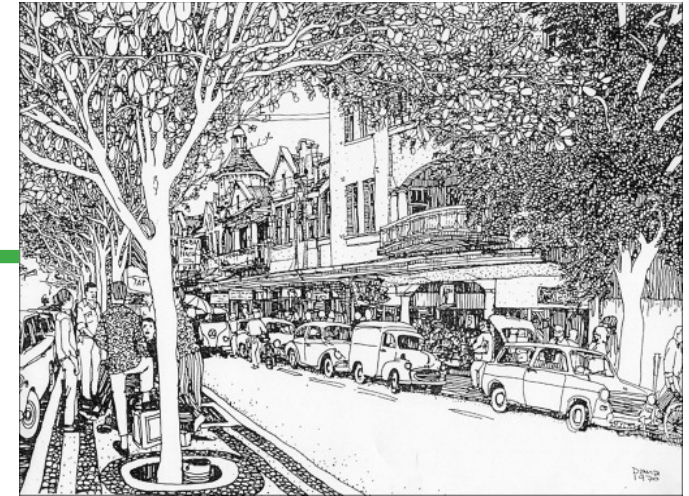
Steel Works in Scotland. This mill was a pioneer in the rolling of structural steel members which in its day “acquired a high reputation among structural engineers” (Findlay, [2009], np) and due to its competitive price in comparison to other manufacturing works in Europe, allowed it to become widely exported. The punched company name can still be seen on many of the structural members within the building.

The early mixed use typology of the building consisted of retail on ground level, residential of level one and commercial studios on the second floor.

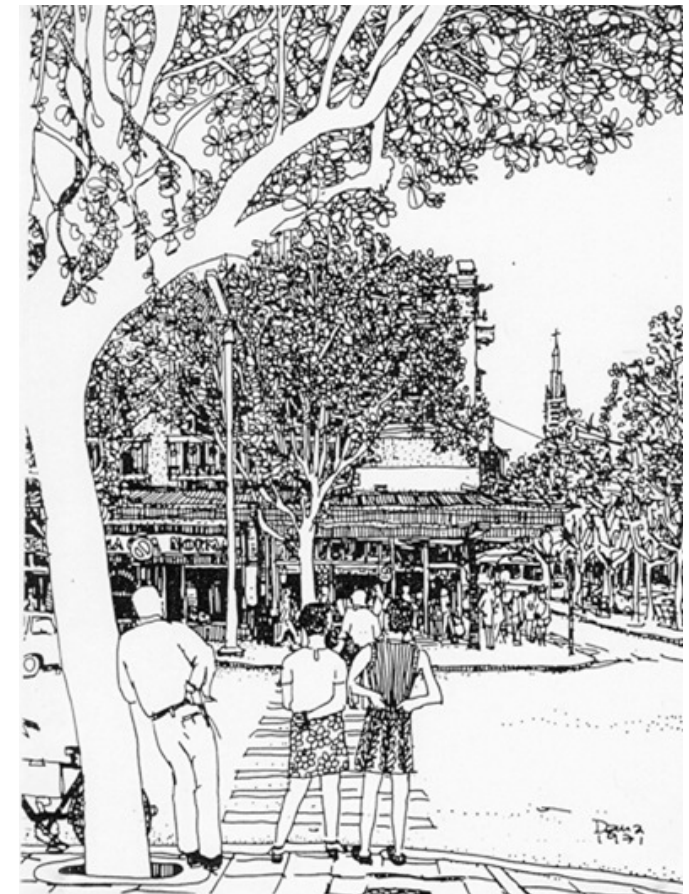
On the 12th December 1990 the building was devastated by a fire which remained un-extinguished for several days due in large part to a lack of fire fighting equipment and water as well as poor response times from the fire department (ibid, [12]).

Many of the residents living in the building at the time were refugees of war-ridden rural areas who had sought refuge in the building. 17 families lost their homes in the blaze (ibid, [7]).

While planning permission to restore the building was sought by the owners, to date, no restoration efforts have been made.

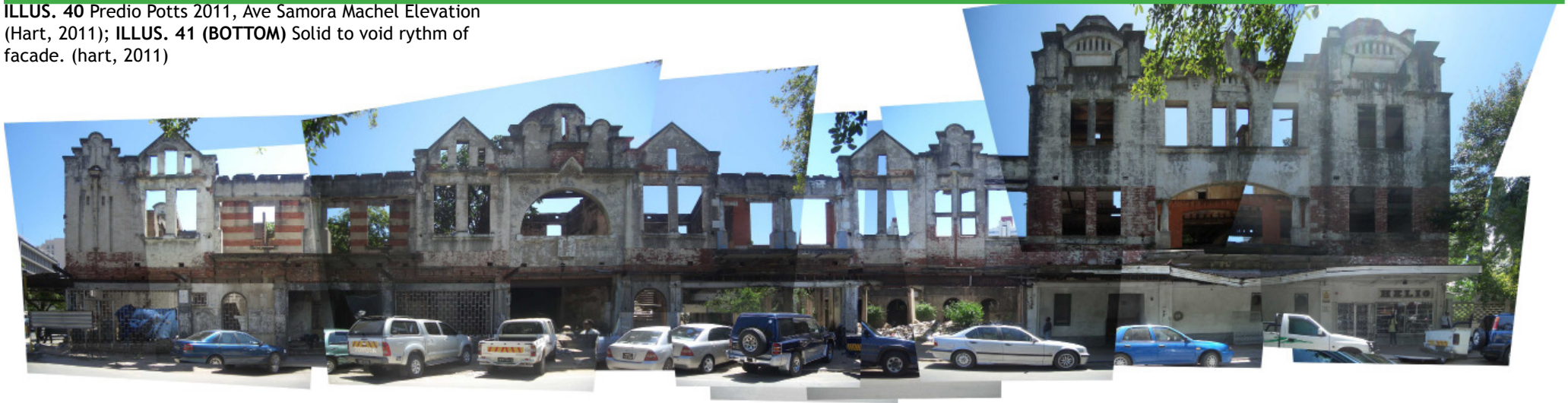


ILLUS. 38 Artists impression of Predio Potts Ave D Carlos (Dana, 1972); ILLUS. 39 (BELOW) Artists impression of Predio Potts Ave Aguiar (Dana, 1972)



building analysis_

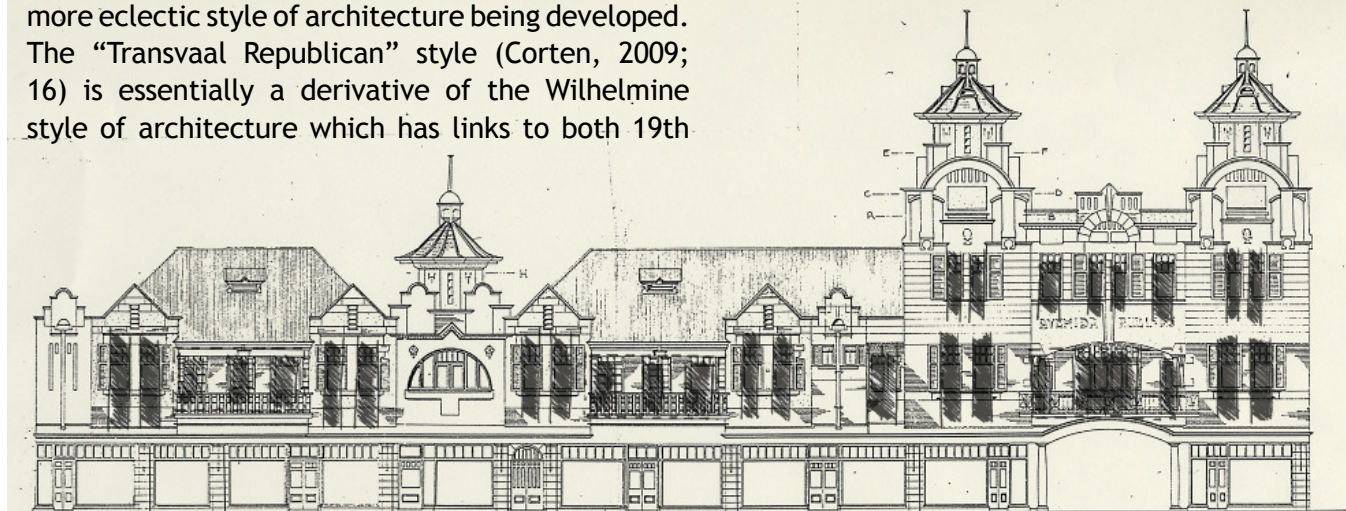
ILLUS. 40 Predio Potts 2011, Ave Samora Machel Elevation (Hart, 2011); ILLUS. 41 (BOTTOM) Solid to void rythm of facade. (hart, 2011)

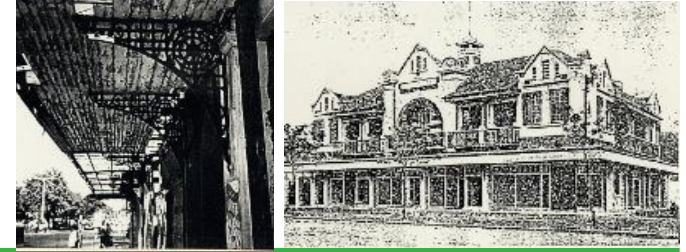


form_

The eclectic style found within the building originates largely as a result of a varied range of influences within the building's history. Following the appointment of Dutch architect Sytse W. Wierda as the head of the Transvaal department of public works by President Kruger in 1877 (Corten, 2009; 16), a number of buildings commissioned through the department show distinct stylistic references to Dutch architecture of the time. The Ou Raadsaal (1889-1902) and Palace of Justice (1897), were largely designed by Dutch trained architects, a number of whom had strong working ties to Transvaal Republic. In contrast to the popular Victorian style of architecture, seen used during this time period internationally, the influence of the Dutch as

opposed to the colonial British architects, led to a more eclectic style of architecture being developed. The "Transvaal Republican" style (Corten, 2009; 16) is essentially a derivative of the Wilhelmine style of architecture which has links to both 19th





Century German and Dutch architecture. As former consul to the republic of Transvaal (Perez, 2011,5), Gerrard Pott would have undoubtedly been familiar with governmental architecture of the time which may have been influential on the subsequent design of the Prédio Potts.

In addition, the architectural practice responsible for the design of the building, based at the time in Durban, South Africa, would also have had a large influence on the eclectic style of the building. FJ Ing of the firm ING and WELLS (later ING and ANDERSON), a British trained architect, had been working in Johannesburg during the 1880's, until such time as he and then partner EP Wells, were awarded the contract to build the Durban Club in 1898 (ref here). When examining buildings designed and built in a similar time period within the Durban context such as the Town Hall (see illus **) one can see clear stylistic references such as the incorporation of Corinthian capitols, plaster-banding and decorative , almost byzantine style towers.

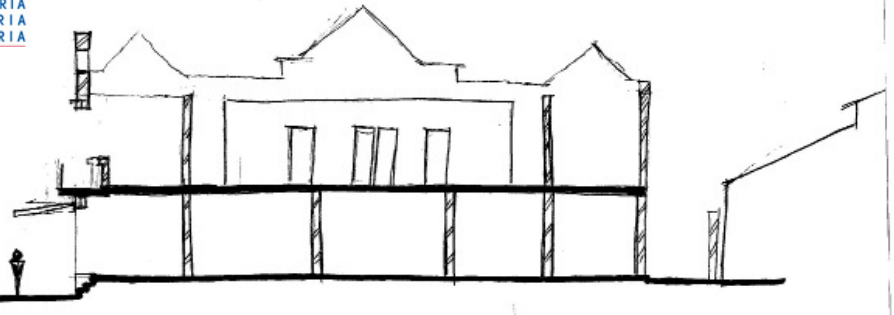
With the outbreak of the Anglo-Boer war in 1899, work and building materials within South Africa became a scarcity. In this time, the firm were commissioned by Pott, to design the primarily commercial building in the city of Lourenco Marques.

Steel shortages in South Africa due to the war, as well as the proximity of the Maputo Port, facilitated the large amount of imported building materials within the building.

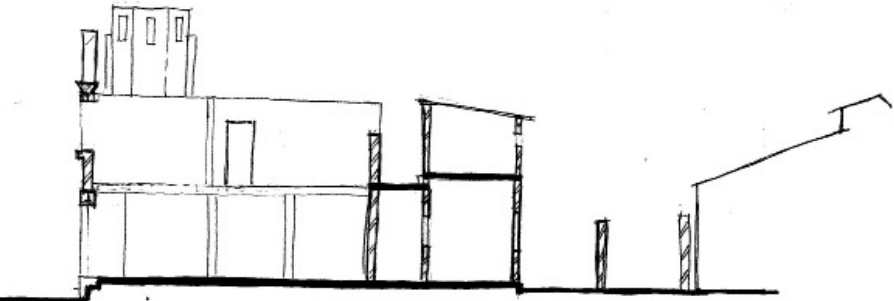
Largely built as a steel framed warehouse typology, the building incorporated large ground floor openings for retail purposes, and smaller residential units (added at a later stage) on the level above. Predominantly two storeys in height, the northern portion on Avenue Samora Machel is the only three storey portion on the site with the tall tower structures raised above this level. Roofs would have originally been constructed with corrugated iron roof sheeting on double pitched, timber roof truss construction. Cast iron decorative fretwork and balustrading was used, some of which can still be seen in portions of the building. Internal rooms on ground floor are relatively large due to column structure, whilst on the upper levels smaller roughly square partitioned rooms, suitable to the residential function can be found.

The building in both style and materiality can be clearly identified as completely foreign to its surrounding context (Hart, 2011). It is this unique architectural quality, as well as its cultural connection to political powers based in Lourenco Marques at the time, that give this building such an important historical identity with the Baixa context.

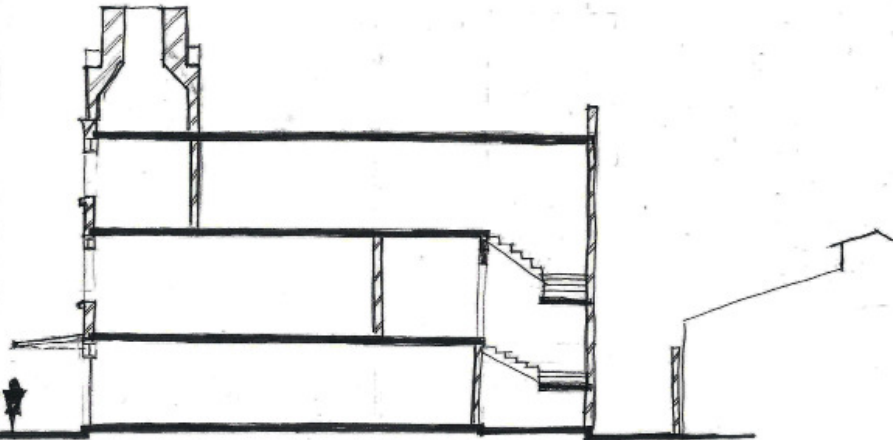




ILLUS. 49 Predio Pott, East-West Section A (Hart, 2011)



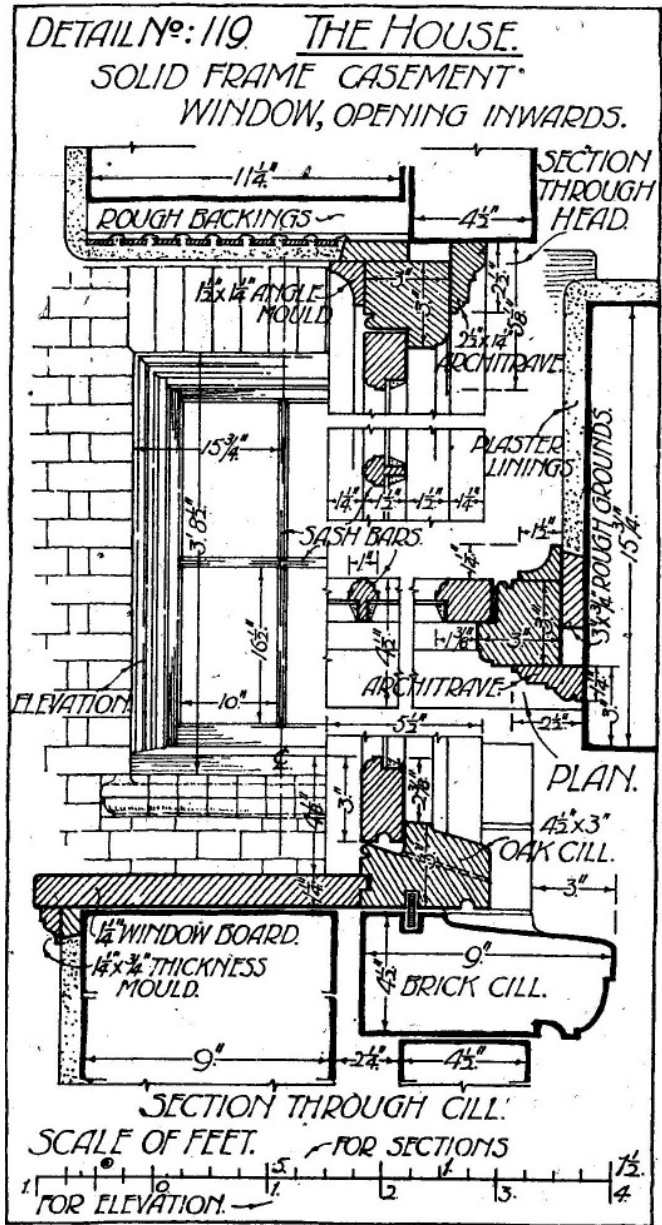
ILLUS. 50 Predio Pott, East-West Section B (Hart, 2011)



ILLUS. 51 Predio Pott, East-West Section C (Hart, 2011)



ILLUS. 42 (ABOVE FROM LEFT) Cast iron fretwork (Perez, 2011)
; ILLUS. 43 artistic impression Predio Potts circa 1948 (Perez,
2011); ILLUS. 44 Durban Town Hall 1883-1910 (Unknown, 2011);
ILLUS. 46 original turret with roof, Predio Potts circa 1990
(Perez, 2011); ILLUS. 46 facade detail Predio Potts, 2011 (Hart,
2011); ILLUS. 47 Dutch influenced tulip plaster detail (hart,
2011); ILLUS. 48 Turret in current condition (Hart, 2011)



steel frame buildings and fire_

When heated, steel expands and elongates. When this elongation is restrained at its ends by walls or by connections to other structural members it can result in deformation of the structural member in the forms of twisting or buckling. One predominant method of increasing fire resistance thus reducing the subsequent spread of fire within a steel frame building is the encasement of the steel member within concrete. If the steel member then becomes heated, this expansion causes the concrete casing to “pop” off in a process known as spalling. The steel member is thus then exposed to direct heat which can result in loss of strength of the structural member.

At a temperature of between 550 to 600°C, steel undergoes a physical change and realignment in its atomic bonds. This can result in a lowered yield stress of up to 40% (Milke, 2002; 5) as can be seen in the stress strain graph. The yield strength of steel at room temperature (20°C) after being heated to 600°C is roughly half that of the original yield strength of the member. Temperatures reached within building fires vary depending on material type, ventilation conditions etc. and can be estimated to reach approximately 1200°C (Milke, 2002: 4).

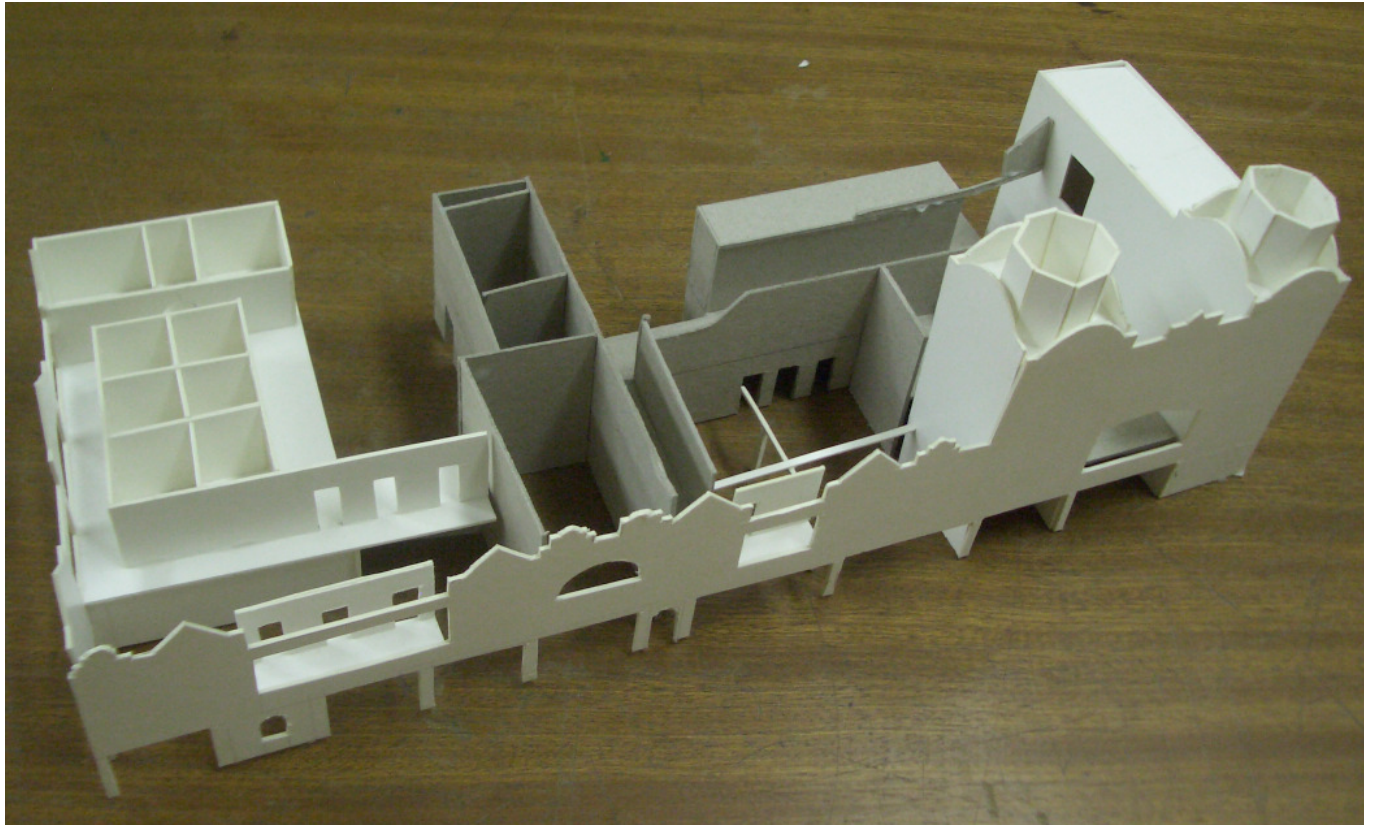
Given the deformation range of steel above the 600 °C mark, hot rolled steel members can be deemed structurally sound should they exhibit no form of deformation such as twisting or warping (Tata steel, 2011) following a fire as the member is assumed to have not reached a temperature in excess of this. If the load exerted on the structure was less than the design load for the intended structural member however, this may result in an inaccurate visual assessment of the member (Tata steel, 2011). This necessitates the implementation of hardness tests to deem any steel work structurally sound. While structural members within the building do not show signs of deformation such as warping or twisting, it is plausible, given the construction knowledge of the time that the structural members may have been overdesigned for the actual loading. Thus it is assumed that all members within close proximity to the source of ignition of the fire, which appear, in the present day state, to be exposed to potential fire damage, to be unfit for any additional structural loading by any future building.

In addition, the typical method of extinguishing fires is with the use of water. As such, when the relatively cooler water comes into contact with

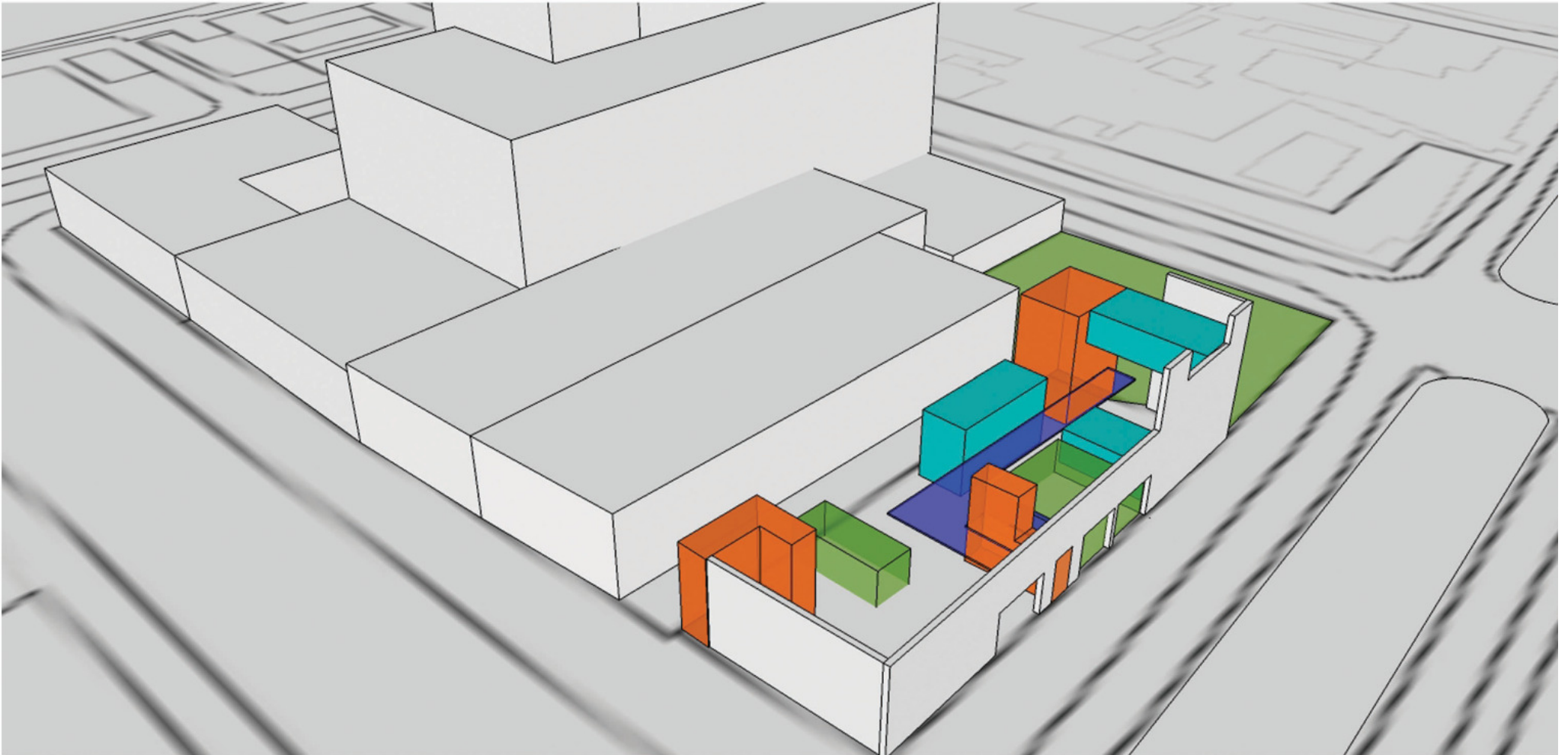
the super-heated steel member, a rapid cooling known as quenching occurs. This process is often used in the making of steel products as the rapid crystallisation of particles during cooling to create a hard and durable surface. This process can however increase the brittleness of the steel resulting in compromised structural integrity.

When examining historic accounts of the 1990's fire within the Predio Potts building, it is noted that the fire was not completely extinguished due in large part to a lack of water and fire fighting equipment. While this could have allowed for a gradual reduction in temperature of the steel members as opposed to the quenching of the steel when exposed to water, the assumption has been made that all exposed steel members within the building could potentially have been subject to quenching and are thus assumed to be not structurally sound.

ILLUS. 55 Plaster encased steel members (Hart, 2011);
ILLUS. 56 Model showing structural vs unstable built fabric (Hart, 2011)



current building function_

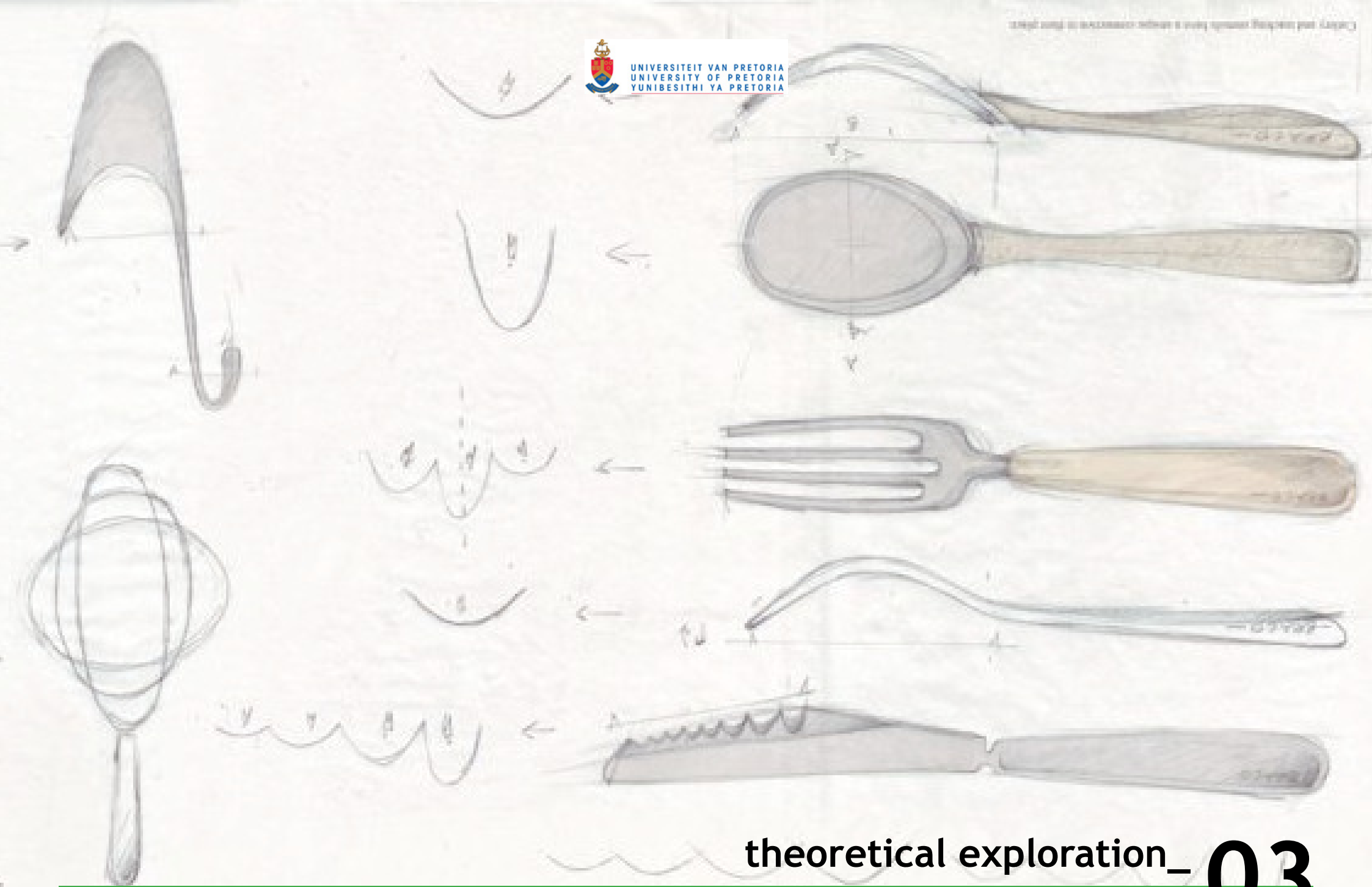




Current observations of the building function (based on site visits made in February and June 2011) can be summarised as follows:

- The facade creates a boundary edge around the site - containing the space behind it.
- Vegetation has begun to repossess the spaces within the ruin, gaining footholds in now vacant shops which have resulted in the creation of green areas within the built fabric.
- An informal residential component towards the rear of the site on both the upper and lower levels has occurred.
- A central linking circulation spine (shown in blue in illus opposite) can be established along which residential activities are clustered
- The beginnings of threshold between existing spaces have been allowed due in large part to the degree of ruination of structural elements. The absence of the elements begins to blur edge conditions

ILLUS. 57 Found structural analysis (Hart, 2011); ILLUS. 58 Predio Potts February 2011 (Hart, 2011); ILLUS. 59 Plaster informal housing in ruin (Hart, 2011)



theoretical exploration_03

theoretical exploration_

lost and abandoned space_

The traditional role of the street is one of public interface, with a variety of uses which serve to form part of a network of spaces defined on their edges by built fabric. Historical urban patterns formed dense, tightly knit fabric which then formed a collection of a series of spaces such as streets, parks and commons - voids defined by the solid nature of the built fabric. Opening up onto this network were a series of lobbies and entrances on ground floor which served as transition spaces between the public street and the layering of private functions as one moves away from it. As defined by Trançik (1986; 4), lost urban spaces are generally made up of leftover and unstructured spaces within the urban environment, commonly including parking lots, edges of freeways, sunken plaza's and vacated sites resulting from change in land use and functions within an urban environment. This results in the creation of "anti-space" (Trançik, 1986; 4) and results in spaces which have no contribution to the creation of positive urban spaces within the city.

Due to an increased privatisation of the built environment as well as continuous change in functions of buildings and spaces, many of

these threshold spaces become lost to the public realm. This results in a lack of continuity between external and internalised spaces and has gradually resulted in the illegibility of public space.

This lack of layered environments often results in secondary abandonment of public space as buildings fail to take ownership of the street frontage. As part of this dissertation, the ability to reincorporate these lost pockets of space back into the public realm so as to strengthen existing paths and nodes to recreate legibility in the built environment will be explored.

weak versus strong architecture_

Lefebvre defines space on three levels: as practised, conceived and lived spaces (1991, 39) all of which play a role in the definition and subsequent occupation of space. The first deals largely with material and functional reproduction of a city, the everyday habits and rituals of users as they make use of a space. The second being the perceived language of the space and the way in which one sees their role within it, while the third relates to a sensual understanding of the world in which the way we appropriate and seek to change its character is limited only by the imagination

(Van Rensburg, 2007; 4).

The role of the built environment is to create a series of rooms which the user can inhabit, the formation of a backdrop or frame around which the public will carry out their lives. Theorists such as Jonathan Hill and Juhani Pallasmaa have suggested that, given the tendency for contemporary lifestyles to be largely ocular-centric, there has been a subsequent limitation in the ability of the user to inhabit space. Pallasmaa (2005; 20) cites the ocular-centric nature of contemporary life as one of the main departures from an architecture of sensuality and meaning. He breaks down the experience of architecture and space into two categories; That of the peripheral unfocused vision, which allows one to become submerged in the world around us, and a more tactile experience, a "hapticity" (Pallasmaa, 2005; 15) which in his opinion is paramount to the true architectural experience.

Pallasmaa further defines architecture as being able to be measured in sense and scale by the eye, ear, nose, tongue, skeleton and muscle (2005, 70), the latter of which have become secondary thus resulting in an architecture of the eye, a strong image-based product which becomes

graphic qualities of “strong” vs “weak” image in architecture_

consistent in form and therefore limited in terms of future adaptability.

Gianni Vattimo, a theorist synonymous with “deep ecology” (a holistic approach to ecological thinking) proposes the idea of “fragile architecture” (2005, 63), an architecture of weak image which is largely contextual and responsive in nature. Vattimo suggests that the architectural image can further be weakened through weathering and ruination, which allows for the ability for the architecture to engage with time and memory in a way in which it is argued that architecture of the image cannot.

In an attempt to connect with materiality, the search for architecture beyond that of the mere image as promoted by the modernist architects has been explored by architects such as Alvar Aalto, Sigurd Lewerentz and Carlos Scarpa. Selected precedent explorations will be undertaken later in this dissertation in an attempt to critically analyse and establish a subsequent architectural language to inform the design development.



ILLUS. 60 Walt Disney Auditorium by Frank Gehry (arcspace, 2011) (available at <http://www.arcspace.com/architects/gehry/disney2/>)



ILLUS. 61 Säynätsalo town hall by Alvar Aalto (Britannica online, 2011) (available at <http://www.britannica.com/EBchecked/media/34845/Saynatsalo-town-hall-group-Finland-designed-by-Alvar-Aalto-1950>)



ILLUS. 62 Olympic Aquatic Hall by Zaha Hadid (Zaha Hadid Architects, 2011) (available at http://www.tate.org.uk/40artists40days/zaha_hadid.html)



ILLUS. 63 Brion cemetery by Carlos Scarpa (Oames, 2009) (available at <http://layeredtraces.blogspot.com/2009/02/carlo-scarpa.html>)

historical charters_



ILLUS. 65 Heritage conservation area (Google earth, 2011).
ILLUS. 66 site location (Google earth, 2011)

introduction_

Mozambique legislation states that any building built before 1920 falls under the protection of the historical heritage act. In addition, any building falling within the designated historical area as illustrated in figure ##### is subject to application for permission for any alterations or demolitions to be undertaken. A specially convened panel of both local and international heritage experts, architects and government officials must approve all proposals for works which fall within the above mentioned criteria (Perez, 2011).

While this differs from the South African heritage Resources Act of 1999 which protects all built structures older than 60 years, there are many guidelines that can be drawn from both local and international heritage charters that can inform the design intervention. Three main sources of reference have been identified from which a set of design principles will be drawn to take forward into the design process.

the Burra charter_

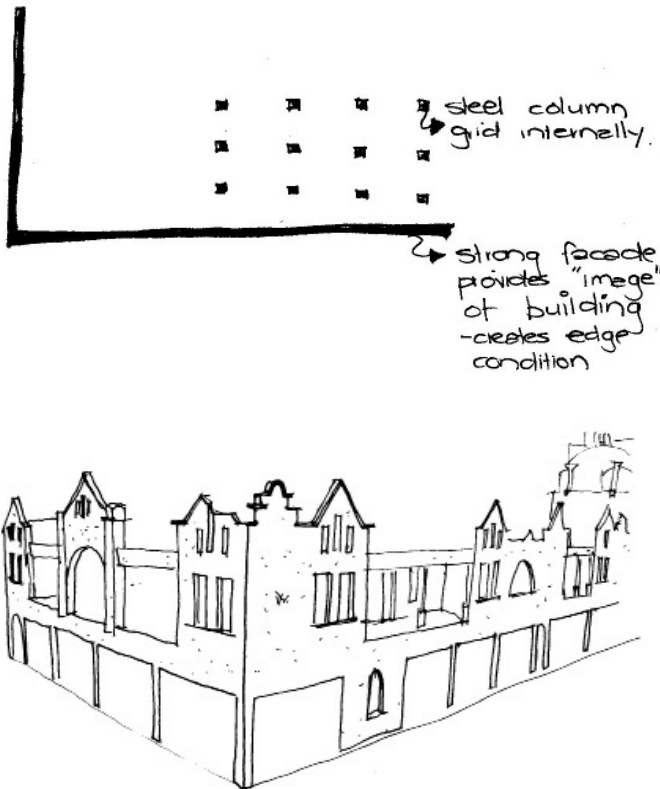
The Australia ICOMOS charter for places of Cultural Significance (1999)

The Burra Charter, adopted in Burra, Australia in 1999, is largely concerned with maintaining the cultural significance and links to both community and landscape which forms a large part of the cultural

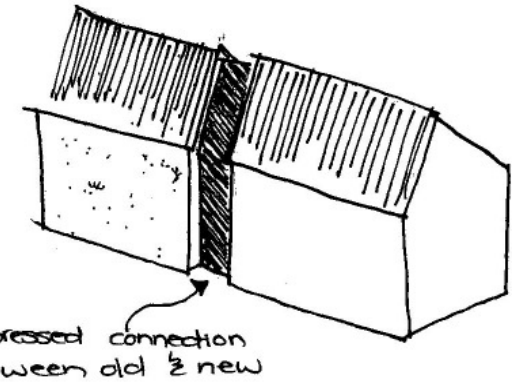
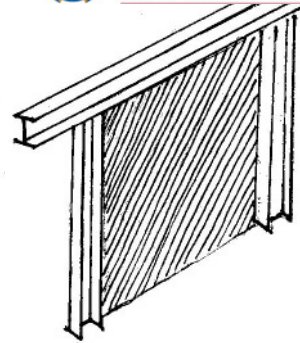
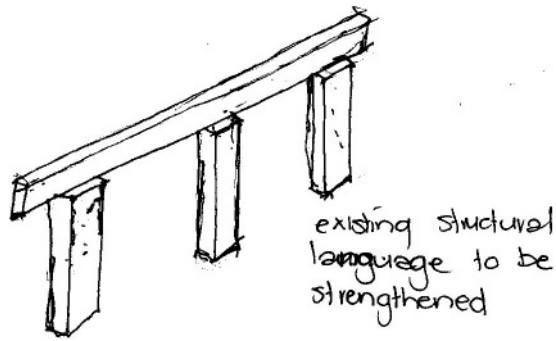
heritage of a site and the surrounding inhabitants. Outlining procedures which can be followed through the conservation process, the charter aims to facilitate the holistic research, design and management process so as to ensure that sites retain their cultural significance. The motto “do as much as necessary to care for the place and to make it useable but change it as little as possible” (ICOMOS a, 1999; [3]) is highlighted in the meticulously detailed process which can be followed from project inception until completion.

The process involves the identification of the values and significances inherent in the site from which a plan can be established which takes into consideration future needs, current resources, physical condition etc. Where appropriate, the charter encourages the use of the building to be maintained where significant and for the visual and physical setting as well as associated relationships to the surrounding context to be maintained. In addition, the encouragement of local participation is stressed so as to involve the community in both the reconstruction and future management of the resource.

The charter makes a clear distinction between restoration and reconstruction. The former describes original materials and construction techniques are used with no distinction between old and new. The latter implies a restoration to its original state but with the introduction of new materials which can be identified as such (ibid, 1999; [5]).



ILLUS. 67 Diagram of building significance (Hart, 2011);
ILLUS. 68 Historical facade element (Hart, 2011)



ICOMOS Charter- Principles for the Analysis, Conservation and Structural Restoration of Architectural Heritage Act (2003)_

The charter aims to establish a set of guiding principles and recommendations to ensure that rational methods of analysis and subsequent conservation measures can be established which are appropriate to the specific cultural context in which the building is found. Encouraging a multi-disciplinary approach, the charter emphasises the importance of not merely the outward appearance of the monument, but also the integrity of the components, building techniques and materials of the time in an attempt to prevent the implementation of 'facadism' whereby the external skin of the building is maintained as a superficial layer to a new development which is totally removed from the original significance of the structure.

The approach requires a comprehensive understanding of the structure and material characteristics in both original and altered states, including an investigation into the safety of such built fabric so that a picture of the significance

can be drawn. As such, the choice of the use of traditional methods and materials as opposed to the use of new and innovative methods and materials is largely based upon the most compatible approach in line with the significances established before. "Restoration of the structure in Architecture Heritage is not an end in itself but a means to an end, which is the building as a whole." (ICOMOS b, 2003; [2]) Critically, where possible, any new alterations or additions to the structure should be removable to the greatest extent possible or, failing this, not limit any further intervention (ibid, 2003; [3]). In addition, any distinguishing qualities of the surrounding environment or structure should as far as possible be maintained, with deterioration being repaired as opposed to replaced. In this way the imperfections occurring over time become layers of history over the structure, allowing the structure to act as a palimpsest of its historical past.

The Norms of Quito (1967)_

This charter, adopted in Uruguay in 1967, proposes that conservation measures for objects of historic and artistic value should include not only the object, but to a large extent the space and place surrounding the object from which it draws its

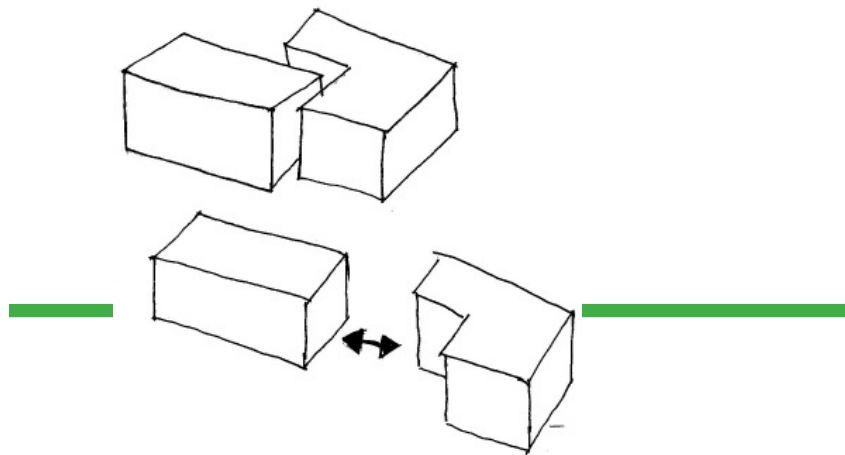
significance. In addition, the charter explores the possible effects that this conservation and its subsequent tourism value can serve as an economic generator for the communities within which these monuments lie.

The charter places the onus on the declaration of significance on the government, as well as holding the view that as a national monument, the function housed within should be of a social nature. As such, the declaration of the monument and the space around it which contributes towards the significances of the building should then be defined as a precinct to which restrictions must be applied. The integration of an object of significance as well as the interests of the surrounding environment is of paramount concern in the subsequent development of urban conditions within this newly established precinct.

Thus the creation of a set of guiding principles, which control development with lowering levels of compliance as one moves outwards from the sphere of influence, have been suggested. This set of guidelines established through thorough research, will make provisions for maintenances and future management of the monument so



ILLUS. 69 Representative structural system (Hart, 2011),
 ILLUS. 70 Connections between new and old fabric (Hart,
 2011), ILLUS. 71 Removability of intervention Images (Hart,
 2011), ILLUS. 72 layered components Images (Hart, 2011)



as to ensure the ultimate sustainability of the resource.

The ability of monuments to provide opportunities for growth of the tourism industry was identified during a study, undertaken by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) and the Union of Official Tourist Travel Agencies. The study found that “tourist traffic deriving from the suitable restoration of the value of the monument ensures rapid recovery of the capital invested for that purpose [and that] tourist activity resulting from adequate presentation from a monument that would disappear without such activity entails profound economic transformation of the region in which the monument is set (sic)” (ICOMOS c, 1967; [6]).

To a large extent developing countries caught up in the “fever of progress” (*ibid*; [7]) perceive historical fabric as not belonging to the new vision of a modern city. This often leads to an indifference towards the object as well as the increased vandalism of the structure. Through participation in the conservation process, it is proposed that communities will begin to identify with and take ownership of the monument as well as reap any benefits of

potential tourist activity which may be generated. Every project is unique in nature and thus requires a unique solution (*ibid*; [11]). With interdisciplinary collaborations as well as a thorough investigation and recording of historical significances, this will allow for an appropriate and culturally integrated resource to the benefit of the surrounding community.

The importance of legislation which protects both the monument and the surrounding environment is stressed. In addition, the inclusion of conservation policy into national development strategies is highlighted, with the opportunity and subsequent responsibility of the department of tourism to incorporate such monuments into strategic plans and budgets being encouraged. Suggestions of re-strengthening ex-colonial links as a form of shared heritage are raised as a possible generator of foreign interest and investment.

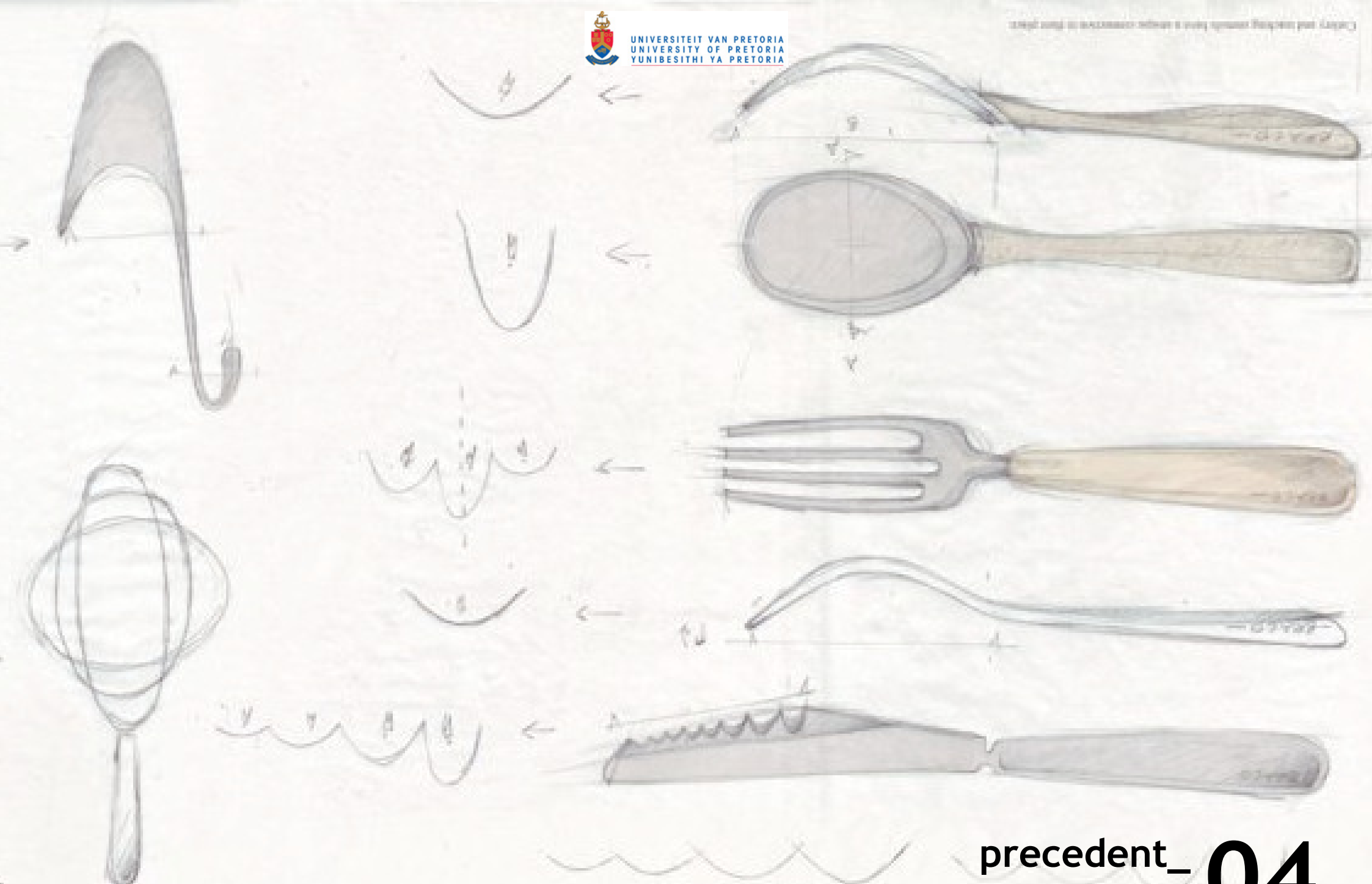
conclusion_

It is evident from the charters that there are many possible manners of dealing with an adaptive re-use development. Given the nature of the structure of the building as discussed earlier in this dissertation,

a possible approach to the proposed intervention would be one of reconstruction, with the expression of contemporary elements being visible within the building. An element of stabilisation of the existing structure will be required. This approach may provide opportunities for the proposed intervention to be expressed in a manner which can imply both the permanent and impermanent elements of the design.

When analysing the three charters, it becomes evident that a thorough analysis and understanding of the existing building and context needs to be undertaken. This needs to be evaluated on a number of differing scales so as to ensure the specific details within the building as well as within the urban space as a room, are correctly addressed.

One recurring factor in the charters is the encouragement of the use of local participation in not only the restoration, but also maintenance and management of the building. This encourages identification with the structure and cultural significance thereof and will ultimately lead to a more sustainable urban intervention. This interaction can be possibly be drawn into the programmatic elements of the building.



precedent_04



Women's Jail Precinct, Constitution Hill_

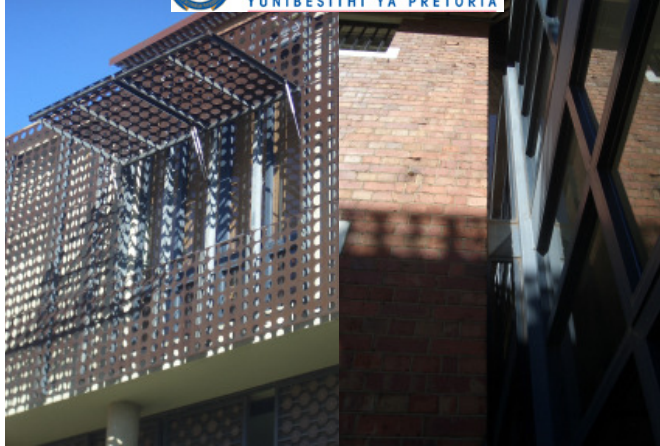
PROJECT DETAILS

- **Primary Function** Living Memorial and Commission of Gender Equality Offices
- **Location** Johannesburg, South Africa
- **Climate** Warm, Highveld
- **Architects** Kate Otten Architects
- **Completed in** 2005

PROJECT DESCRIPTION

The imposing 1909, red bricked wall of the former women's jail forms part of the Constitution Hill precinct located in Braamfontein Johannesburg. Its classical symmetry and elaborate detailing belie its positioning behind the tall impenetrable walls which used to symbolise captivity and pain. In this poignant restoration and addition, the new insertion has been forced to not only maintain many of the historic senses of symmetry and order, but has also broken the strict sense of captivity by allowing the new insertion to form a bridge over the old in an attempt to re-establish connections with the new precinct beyond the walls of the jail. (Joubert (ed), 2009; 120)

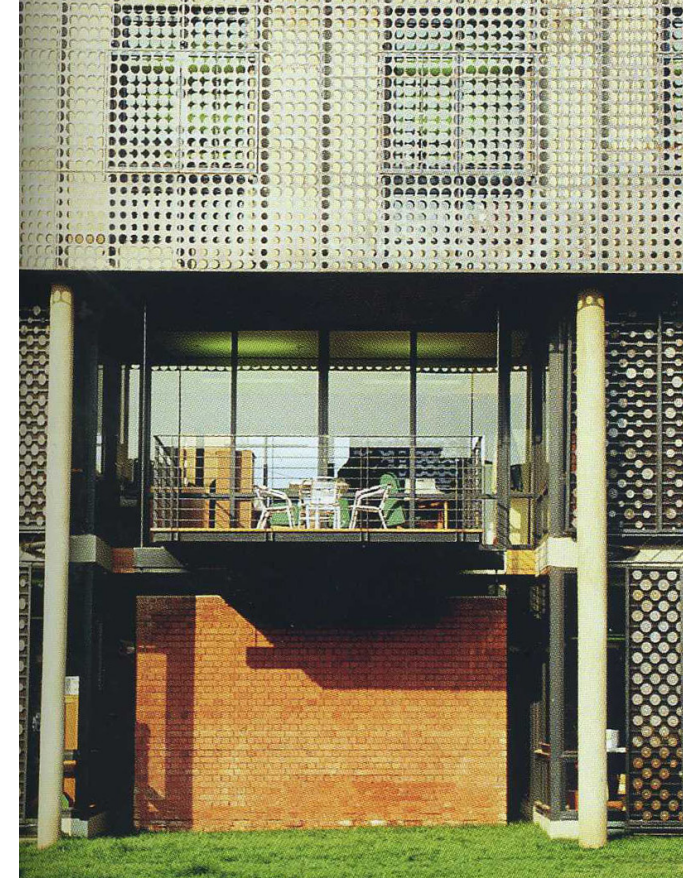
The scale and solidity of the existing building has been reinterpreted, with the use of Cor-Ten screens allowing for a high level of lighting flexibility within the office space in contrast to the dimly lit, confining walls of the jail block. In addition the increased



layering afforded by the screen speaks to the layers of confinement and seclusion once experienced by the prisoners within. The new office block, although maintaining the imposing height offered by the prison walls, extends beyond the confines of the wall, with the building being perched over the edge symbolising the new found freedom within the complex (Joubert (ed), 2009; 121).

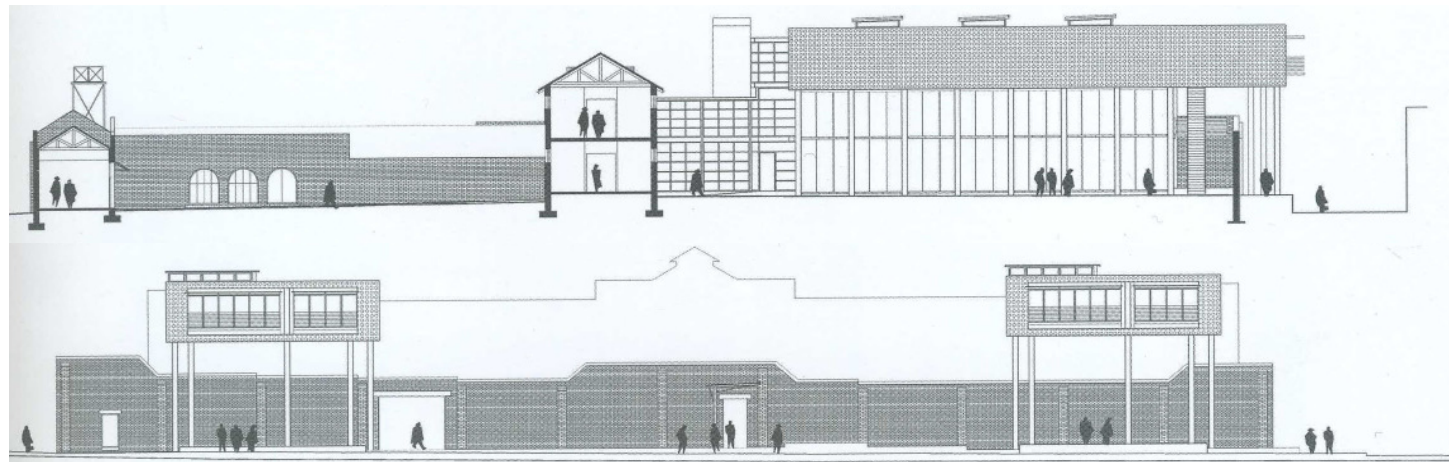
The connection between the old and the new have been optically separated with the inclusion of a negative space between old and new materials, achieved by recessing the connection from the main plane of the building façade. Connecting corridors, smaller in scale than the office wings, are transparent. This old awaiting trial cell block within the eastern office is juxtaposed with a large balcony space directly above illustrative of its new found freedom.

ILLUS 73 (OPPOSITE) Gender Equality Commission Offices (Hart, 2011), **ILLUS 74** Cor-Ten screens (Hart 2011), **ILLUS 75** Negative connection to existing (Hart,2011), **ILLUS 76** Balcony above awaiting trial block (Joubert (editor), 2009), **ILLUS 77** Section through existing cell block (Joubert (editor), 2009), **ILLUS 78** Section through new offices (Joubert (editor), 2009)



PROJECT RELEVANCE

The manner in which the symbolism of the old has been reinterpreted and contrasted in the design of the new allows for a layered narrative within the space. The use of design informants such as scale, solidity and emotive response within the addition give both layers added character and meaning. The use of Cor-Ten steel in the screens on the façade adds an additional hapticity to the building, allowing the materials to age and change as the complex itself has changed and will continue to change and re-interpret itself in the future.





Turbine Hall and Boiler House_

PROJECT DETAILS

- **Primary Function** Event space and head offices for AngloGold Ashanti
- **Location** Newtown Johannesburg
- **Climate** Warm Highveld
- **Architects** TPSP Architects
- **Completed** in 2008

PROJECT DESCRIPTION

The project is the former home to the Jeppe Street Power Station built in 1927 and one of the three largest steam fired power stations in Newtown, which once supplied power to the city of Johannesburg until it was decommissioned in the 1960's. The building subsequently remained largely vacant with informal housing and vandalism gradually deteriorating the shell of the building and the image of the surrounding environment. Designed in collaboration with the heritage authority of the City of Johannesburg, the restoration of this historically significant site, part of the Newtown development precinct, as the AngloGold Ashanti Head offices and Event space, has generated a welcomed commercial investment into the area. The intentionally modest external expression of the intervention has not been extended into the internal spaces. Here celebrated multi-volume spaces have been created, each with a distinct identity and appeal. Using the principle of building

a “box within a box” (Joubert (ed), 2009; 134), the large 14000m² office insertions for the Ashanti head offices comprises of a completely independent inner structural system within the historic shell of the power station. The inserted steel structure within the Boiler house interior borrows its tectonic language from the large raking beams and remnant generator equipment within the shell, allowing layered narrative of past and present functions within the building.

The large volume spaces within the original building allowed for a large scope of possible architectural interventions. The new office insertion maintains the integrity of the existing structure while allowing for a flexibility of uses within the new. As such the use of a steel structure not only marries the new with the old steel structures once housed within the building, but also allows for the intervention to read as a light and temporary addition to the older shell. Interesting spatial qualities have been achieved in the basement levels of the Forum with the provision of break-out seating spaces in the bases which once supported the large brass turbines, as well as the enhancement of the textured concrete walls and complimentary artworks, which add to the dramatic industrial feel within the space.

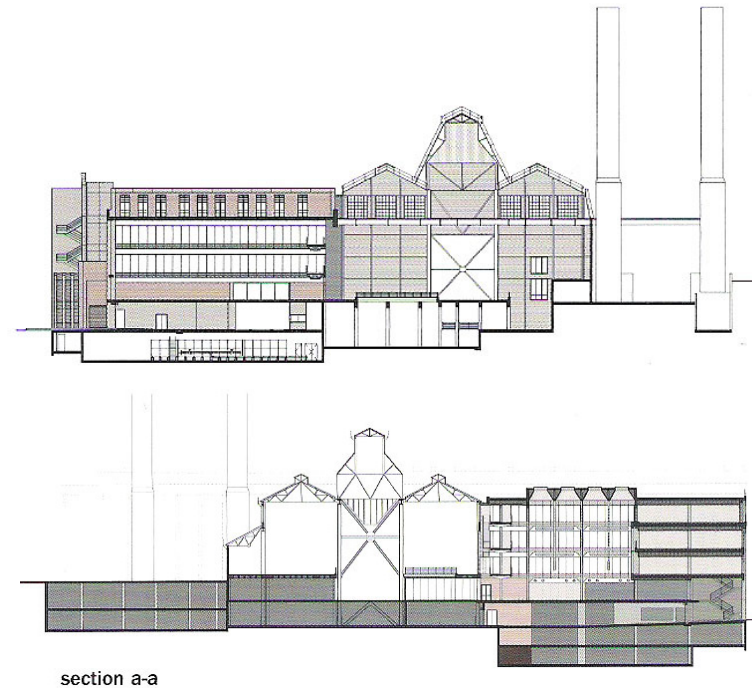
PROJECT RELEVANCE

The stratification of architectural elements is one of contrasting materiality. The industrial materiality of the space has been maintained with the use of

exposed concrete and brick work contrasted with highly polished interior finishes, in an attempt to keep the expression of old and new materials honest. For the expression of the inner box within the historic shell, the steel framed insertion has been clearly pulled away from the existing. The poor treatment of threshold space in parts between the two however, has left superfluous voids preventing the old and new from becoming completely integrated. These threshold spaces can become opportunities to manipulate scale and juxtaposition of old and existing tectonics, becoming layering elements to the expressed narrative within the scheme and will be integral to the ultimate success of an adaptive reuse project.

While juxtaposition between old and new has been achieved in parts, the new insertion feels somewhat removed from the existing. The access to the site is completely removed from the pedestrian, with only two vehicular entrance gates serving as the only access points to both buildings and courtyard. While the project has given rise to a revived regeneration of the area, it contributes fairly little to the creation of positive public spaces within the greater Newtown context (Hart, 2011).

ILLUS 80 (OPPOSITE) Turbine Hall, east entrance (Hart, 2011), **ILLUS 81** New gallery space within existing structure (Hart 2011), **ILLUS 82** Threshold space between new and existing shell (Hart, 2011), **ILLUS 83** Section through new offices (Louw (editor), 2008; 84), **ILLUS 84** Section through new offices (Joubert (editor), 2009)





Selexys Bookstore_

PROJECT DETAILS

- Primary Function Retail.
- Location Maastricht, Netherlands
- Climate Cool climate
- Architects Merckx & Girod
- Completed 2007

PROJECT DESCRIPTION

While the architects have been involved in a number of historic adaptive re-use projects within the Netherlands such as the van Gogh and Rijksmuseum in Amsterdam, the design within the 13th century gothic Dominican church is one of immense elegance and sensitivity. The project scope involves the insertion of a multi-level, black, walk-in steel framed bookcase in the historic town of Maastricht in the Netherlands. The church has housed numerous functions since the Dominican people were driven out by Napoleon in the late 18th century, including a parish, a warehouse and archive as well as a large scale bicycle store, before being turned into the newest in the Selexys bookstore chain. The instalment of the 1200m² shopping zone within a space which only allowed for a 750m² footprint resulted in the intervention becoming vertical in opposition to the traditional horizontal retail surface. (Pham, 2011)

PROJECT RELEVANCE

The expression of narrative was achieved by



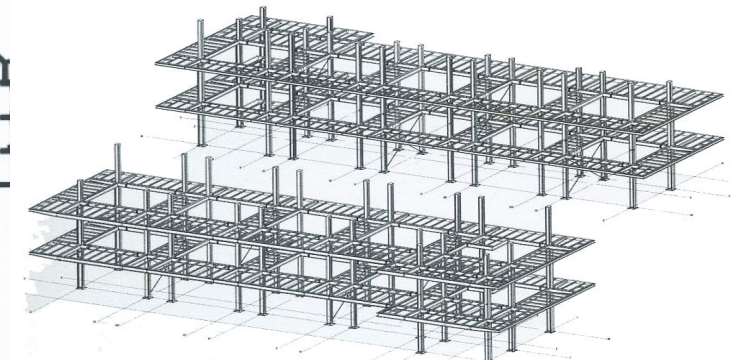
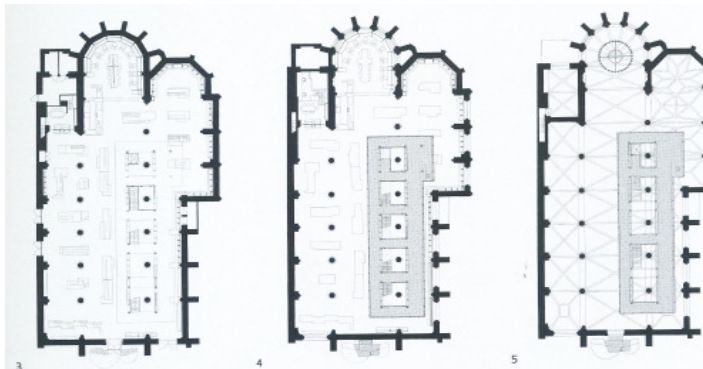
offsetting the structure from the traditional nave axis of the church, thus allowing the architectural significance of the church to remain unaltered. Café spaces within the apse of the church draw on religious motifs, perhaps somewhat too literally, and the steel materiality of the new insertion speaks to a more industrial function once held within the building.

As expressed within historical guidelines such as the Burra charter, the expression of the insertion is one of a completely separate and removable object within the church. Integrated design elements such as hidden services and recessed lighting panels within the bookshelf structure have been used to create stratified tectonic components repeated throughout the insertion. This stratification of materials has also been used within the furniture design of smaller loose fitting display tables.



ILLUS 85 (OPPOSITE): Selexys book store (Pham, 2011), **ILLUS 86** New retail space within existing structure(Pham, 2011), **ILLUS 87** interaction between new and existing shell(Pham, 2011), **ILLUS 88** Cafe space in apse of church (Pham, 2011), **ILLUS 89:** Plan and axonometric of intervention (Pham, 2011)

In addition, the expression of distance between old and new as well as the interplay in floor levels has allowed for unique spaces of interaction with the elaborately vaulted roof space. This facilitates the understanding of the existing structure from a previously un-obtainable perspective by the user. This play on perspective has again been used in combination with a perforated steel structure allowing the insertion to appeal lightweight and unimposing within the heavy stereotomic church structure.





Castelvecchio_

PROJECT DETAILS

- Primary Function Art Gallery
- Location Verona, Italy.
- Climate Cool, Medeteranian
- Architects Carlos Scarpa
- Completed in 1958-64 and 1967-73

PROJECT DESCRIPTION

There have been four major alterations to the complex since its initial construction in the 12th century as part of the commune town of Verona. The Scala family made additions to the complex between 1354 and 56, with the inclusion of the bridge and commune wall into the complex as a separator between the residential component and the fortress, built to protect against the residents of the city. The building was again expanded by the French who gave it the name Castelvecchio instead of Castello di San Martino after the church which once stood in the inner courtyard before being demolished in 1806 to accommodate the widened entrance road (Schultz, 2010; 78). The addition of military barracks along the northern and eastern walls to house Napoleon's troops, a connecting staircase to the fortress walls, as well as the demolition of five of the original castle towers occurred during this time. In the early 20th century the building underwent a large restoration undertaken by architect Ferdinando Forlatti and museum director Antonia Avena in order to facilitate the housing of the city's painting collection (ibid).

At this time there was a series of additions to the facades of the barracks as well as the reconstruction of the castle towers. Interiors were altered from their basic military furnishings into lavish classical drawing rooms full of embellishment (Coombs, 1992; 5). The central courtyard was landscaped in an Italian Garden style leaving no trace of the former French influence on the complex.

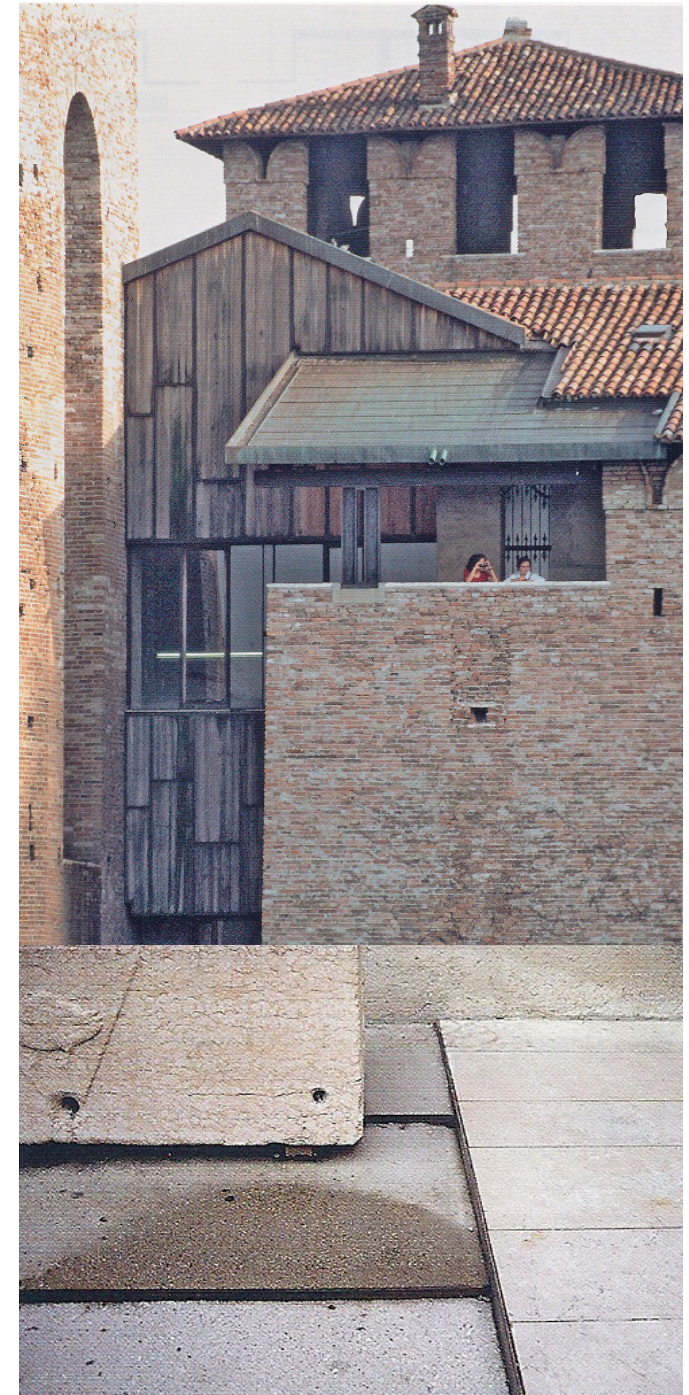
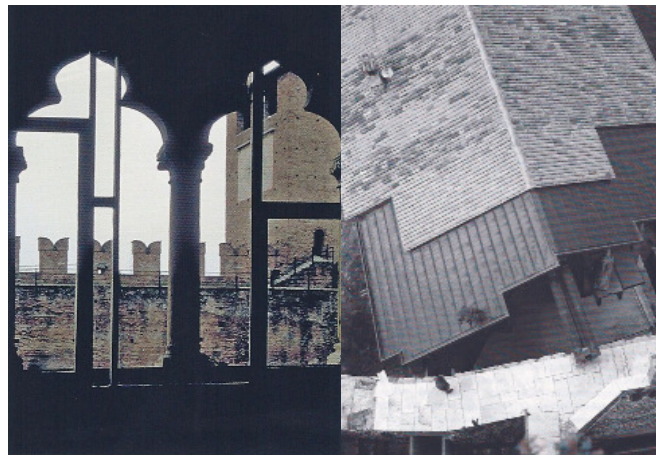
ARCHITECTURAL ANALYSIS

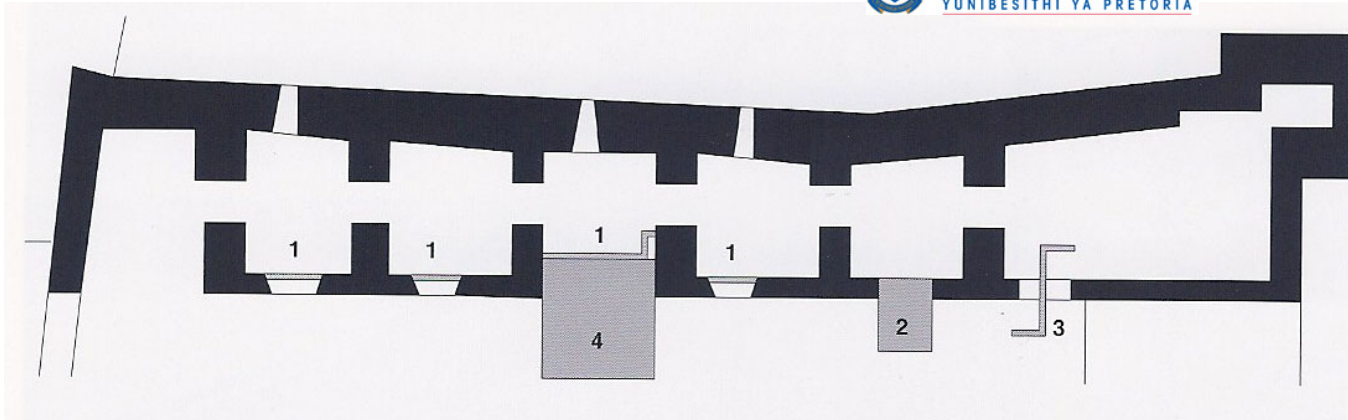
Scarpa's interpretation of the historic narrative of the complex as a collection of fragments which had been continuously altered greatly influenced the approach to his architectural intervention. To reinstate the importance of the commune wall, Scarpa removed the Napoleonic staircase as well as a portion of the walls of the barracks (Schultz, 2010; 77). The roof plane is allowed to continue above in a form of memory to its historic volume, but its layers gradually removed to expose its construction and gradually reduce the once heavier physical connection with the wall.

Gothic windows and doors added by Forlatti are undermined with the placement of secondary window frames with contrasting modern mullions (Coombs, 1992; 7). This is a prime example of layering within a component to add to the narrative of the element which has been used by Scarpa in many of his architectural interventions as an expression of two distinct historical layers, being combined into one integral to the structure.

The separation of wall, floor and roof plane, is used to enhance understanding of spatial dimensions and becomes paramount to the successful use of the layered tectonic. Scarpa's visual separation of elements is used throughout the intervention, with the creation of negative seams between the floor and wall planes, reminiscent of the historic moats which would once have surrounded the commune walls. The addition of horizontal and vertical planes allows Scarpa to manipulate the scale and proportions of the building to suit the work to be displayed as well as creating transition spaces between rooms in

ILLUS 90 (OPPOSITE): Castelvecchio gallery space (Schultz, 2010), ILLUS 91 connection to commune wall (Schultz, 2010), ILLUS 92 adaption of gothic windows (Schultz, 2010), ILLUS 93 Stripped back roof element (Schultz, 2010), ILLUS 94 Layering of modular floor finishes (Schultz, 2010)





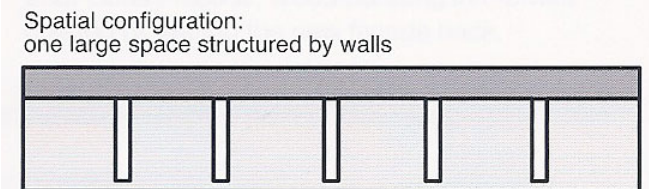
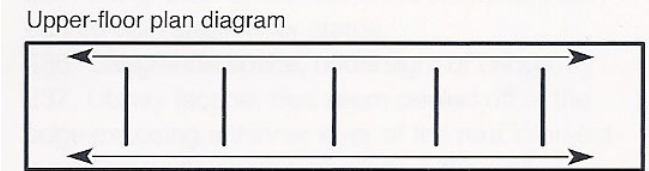
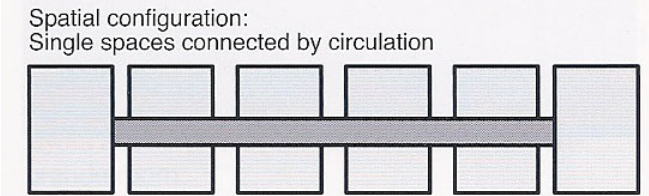
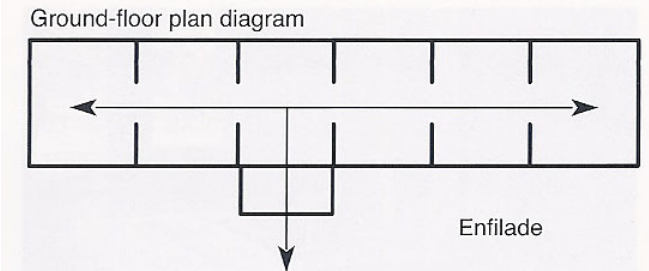
the buildings (*ibid*, 6). A large section of the wall is removed and replaced with wooden panelling, which is reminiscent of the materiality and original configuration once found within the complex.

Scarpa uses the floor surfaces to define spatial zones such as the harder stone flooring as trafficable areas, with display areas having a “carpet consisting of regular terracotta” (Schultz, 2010; 82).

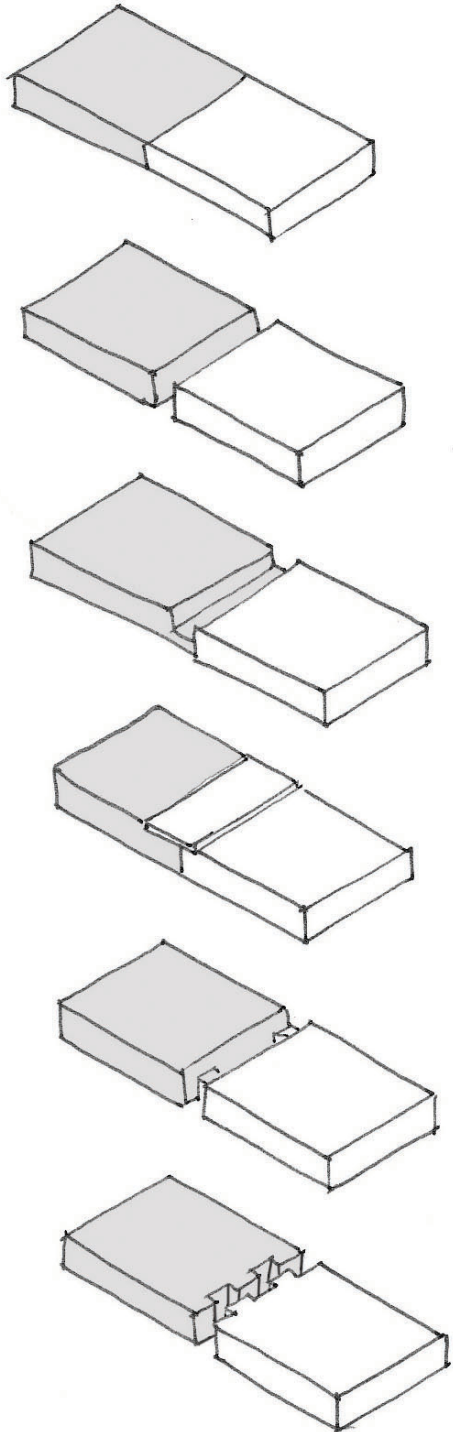
The juxtaposition of old and new is used to express a complex historical narrative of the site and buildings. In contrast to popular historic preservation of the time, this approach to complex factors such as the social and political conversations, to be expressed as a palimpsest upon the built fabric of the building. The conscious separation of planes and materials allows for the abstraction of planes and elements while still allowing for the relationship between the layers to be understood both as an individual part and as a whole.

Scarpa’s use of stratification in architecture is a manner through which he conveys the many layers of meaning and history expressed within a single architectural entity (Hart, 2011). He employs a

multitude of methods to achieve this layering the first being one of straight juxtaposition of differing materials situated adjacent to each other. Secondly, one of distance, which can again be separated into two categories dependant on the size of separation, as one of ‘gap’ (small distances) and another of “threshold” whereby the separation of planes serves to begin to form threshold spaces between each other. Lastly, the use of visual layering, also employed by architects such as Adolf Loos, by which the visual layering of space is achieved through the allowance of visual linkages in a building, such that spaces beyond can be linked, if only visually, on a common axes. The use of the layering in the form of a ‘gap’ or small distance, whether achieved physically or merely visually, can be achieved with the treatment of the two layers as remaining distinct or of one of the creation of a layered component. In the latter, the understanding of the individual draws heavily upon the product of the two elements as a product. To do this Scarpa uses a series of frames and edges which allow for differentiation as well as creating a system of references between the two materials in juxtaposition thus allowing the imposed layer to gain meaning in itself (Schultz, 2010; 153)



ILLUS 95 stratification of space (Schultz, 2010), ILLUS 96 Movement through gallery (Schultz, 2010), ILLUS 97 (OPPOSITE) layered connections (Hart, 2011), ILLUS 98 Layering of elements expressed in detailing (Schultz, 2010),



direct connection
change in material



connection with gap



recessed connection



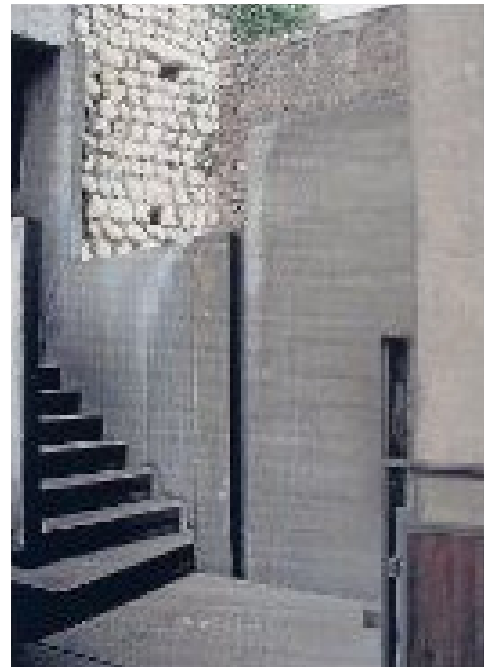
covered seam



pinned connection



notched connection





Banca Popolare: a contemporary interpretation of historical layering

In order to greater understand the use of layering employed by Scarpa, the brief analysis of his design intervention of the Banca Popolare in Verona, Italy, constructed between 1970 and 1980, and completed by architect, Arrigo Rudi following Scarpa's death in 1978 (Schultz, 2010, 112) will be undertaken.

The completely new intervention adjoining the historic building fabric created by the bank can be seen as a freestanding façade which gains its contemporary architectural expression through an understanding of the layered historic fabric in its immediate context. Reference to the classic "tripartite façade form" (Schultz, 2010; 112) characterised by the distinction of levels into base, middle-part and roof is clearly evident in the architectural language of the intervention.

Scarpa uses cladding techniques on the lower two sections to enhance the stereotomic nature of the building. The base, with its local Botticini marble is intricately detailed with stepped friezework, with the differing wall planes introducing shadows and depth to the applied façade. The middle portion, while treated with a plastered rendering, as typically found on Venetian buildings in the immediate surroundings, has been treated with large projecting box windows or recessed circular voids, which break the plane of the new façade and express the screens' connectivity to a structural system behind.

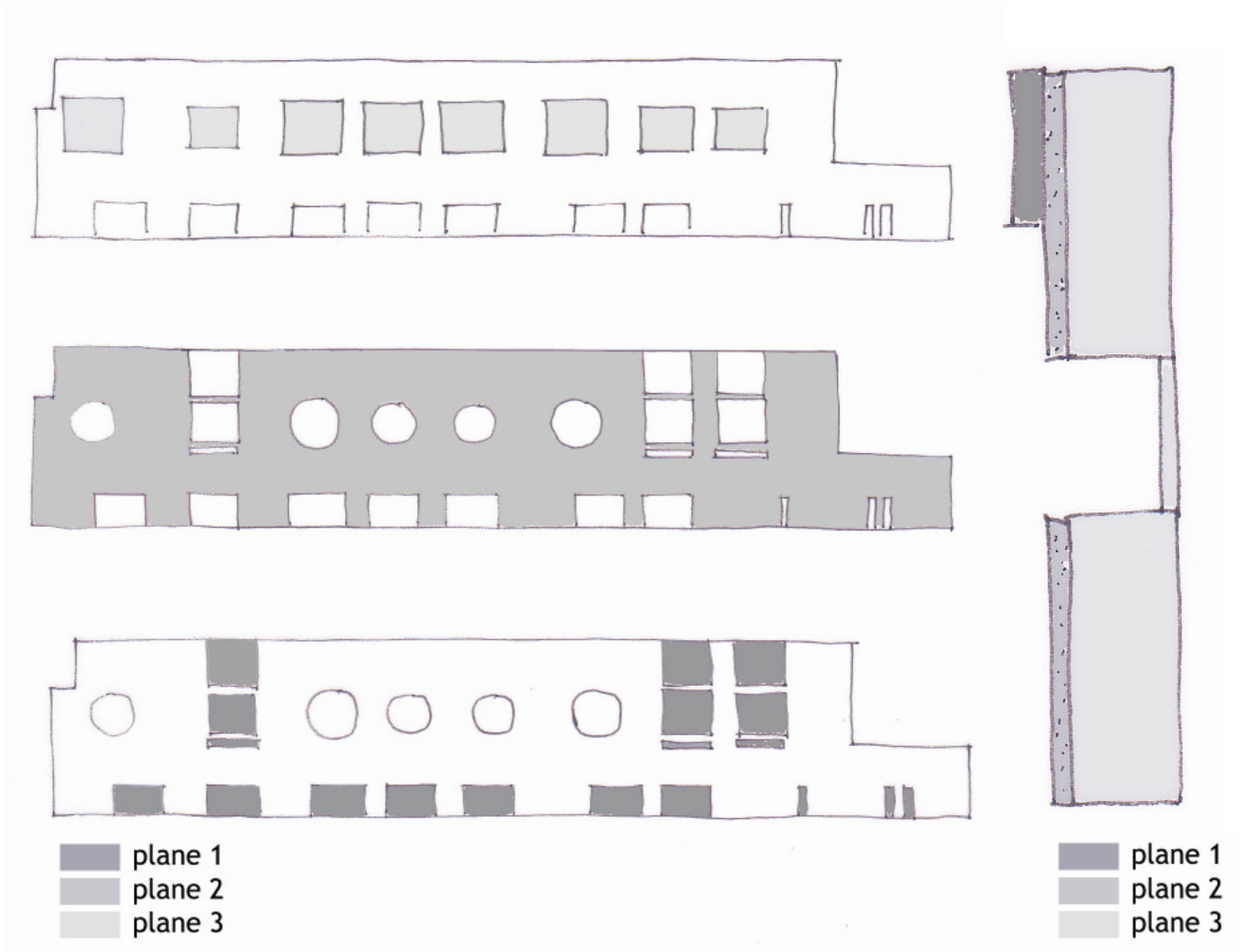
The change in position of the glass panel facilitates the materials' vastly differing textural qualities, with the transformation from reflective planes, to dark expanses. As seen in Castelvecchio, the glazing system employed does not relate the alignment of mullions and openings, hinting at the applied nature of the layered component.

In addition, the middle plastered portion is pulled down at the connections to the existing neighbouring buildings, extending the upper roof layer downwards as if to capture the applied façade. The roof section or loggia, is formed with steel superimposed column and beam system and a recessed, completely glazed façade. The light and tectonic nature of the structural expression results from the roof planes' suggested linkage to sky.

ARCHITECTURAL SIGNIFICANCE

The stratification employed by Scarpa, notably in contrast to his work in Castelvecchio, is one of a multi-layered component, as opposed to simple juxtaposition of materials and connections with the stratification of adjacent objects. The creation of the façade is determined by the interplay between the changing planes of materials which afford the user understanding of the structure through the ability to mask or reveal layers beyond itself.

While this project is primarily a new build, the historic setting within the city of Verona requires an intricate play between contemporary architectural techniques and historic styles and textures.



ILLUS 99 (OPPOSITE): Banca Popolare (Schultz, 2010), ILLUS 100 Planar layering of facade elements (adapted from Schultz, 2010)



Pigsty Showroom_

PROJECT DETAILS

- Primary Function Gallery
- Location Pfalz, Germany
- Climate Cool European
- Architects FNP Architekten
- Completed in 2005

PROJECT DESCRIPTION:

Originally constructed in the 18th century as a pig barn, the building was partially destroyed during the Second World War. Given the crumbling state of the building, FNP Architekten inserted a new, timber frame structure into the historic shell, which is structurally independent from the existing structure. A new roof element and overhang affords the historic walls a level of protection from the elements. In addition, care was taken to align new window openings with existing openings within the historic shell. (Finch, 2005; 46)

PROJECT RELEVANCE

The sensitive approach to restoration of an historic building, in which the history of the structure and its deterioration is celebrated by being allowed to continue to remain in “ruin” whilst still being able to be reprogrammed into a useable and provocative space, is one that can be of great inspiration to the treatment of the Predio Potts building. Tectonically the layering of materiality of the façade between the romantic shell, and the newer slicker, timber box enhances the contrasting nature of old and new. The historic skin becomes a mask for the new



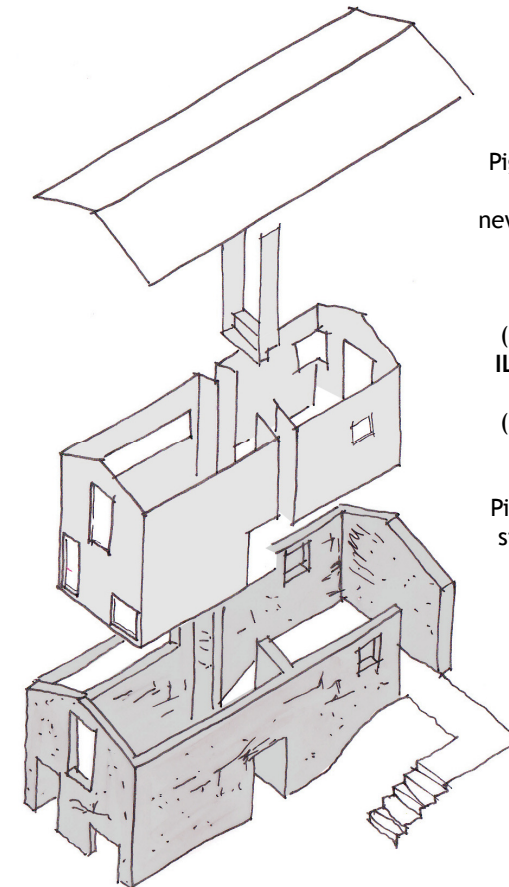
insertion and allows for the juxtaposition of old and new histories within the building.

A similar style of architectural intervention which was completed in England in 2010 also draws upon this architectural language of insertion. The Dovecoat Studio project by London-based architect studio Hawthorn Tompkins is an addition to a music college set in the Suffolk countryside. Similar to the pigsty showroom project, the intervention takes place in the form of an inserted box within the ruins of a Victorian outhouse. The higher degree of exposure to the elements seen here due in large part to the extension of the studio space above the single story walls of the ruin, informed the use of a completely prefabricated Cor-ten box allowing the inserted building to be water tight. In addition, the materiality of the Cor-ten sheeting allows the new intervention to blend harmoniously with its surroundings as well as to tell a tale of a potential historic narrative of the future as the material gradually deteriorates and shows its age.

In both schemes the relation of old to new is emphasised with distance which is bridged only when openings occur. While in the showroom, the existing openings within the structure informed the placement and size of those in the insertion, there is little attempt for the new opening to be expressed as a stratified narrative upon the existing as can be seen in Scarpa's architecture. Save for the hovering roof-plane above the studio, one might not be aware of the newer inner core. The design approach here is one of mirroring the historic

volume and form. In contrast, the new volume within the studio intervention has been vertically expressed with a volume perhaps more derived from a historic Victorian building typology, as opposed to the original volumetric proportion of the building.

Critically, the treatment of the new plane of intervention in relation with the existing can be seen in contrasting degrees. The Pigsty showroom is one of an intervention that, while separated from the old, relies to a certain degree on the existing to give it meaning. In projecting the roof element above the plane of the existing walls, the new and old shells become spatially connected as a layered component. In addition the protection from the elements provided by the existing to the new shell perhaps somewhat limit the degree to which the continued ruination will be allowed to occur. In contrast, the Dovecoat studio intervention is visually and physically separated from the existing layer. The lack of intersecting planes and visually distinct openings allows the intervention to be read as two separate layers. Thus while one may be seen through the other in a form of visual transparency, it does not rely upon the other to give it meaning or allow understanding of the varying tectonics.



ILLUS 101 (OPPOSITE): Pigsty Showroom , insertion of new box (Bennes, 2010), **ILLUS 102** Dovecoat Studio, Suffolk (Bennes, 2010), **ILLUS 103** Pigsty showroom (Bennes, 2010), **ILLUS 104** layering of Pigsty showroom structure (Hart, 2011)



The Institute of Culinary Arts. (ICA)_

PROJECT DETAILS

- Primary Function Culinary School
- Location Bankoek, Stellenbosch. Western Cape

PROJECT DESCRIPTION

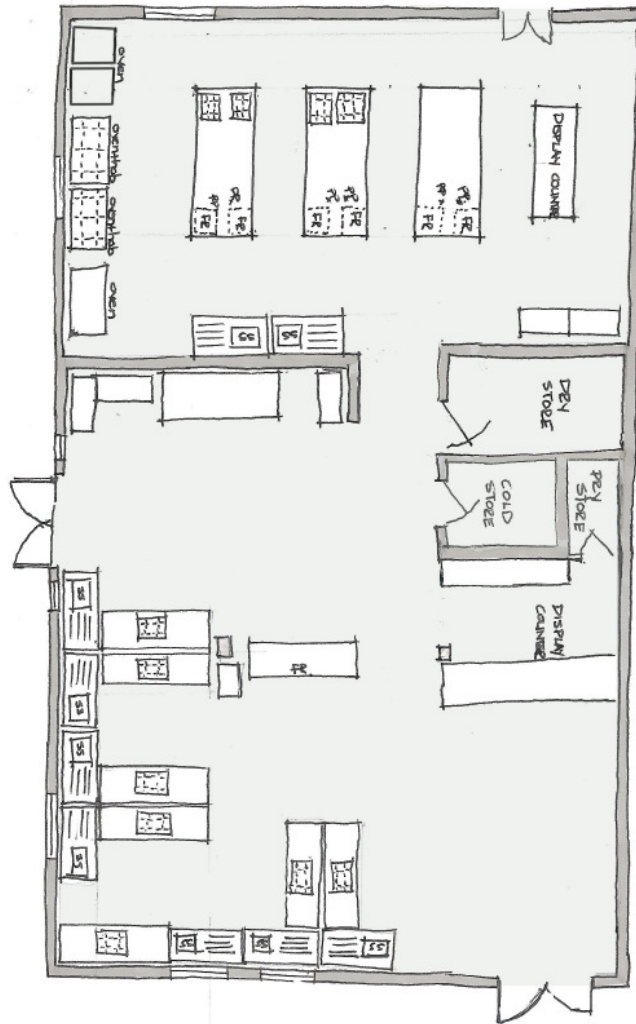
Founded in 1995, the school, set in the Franschhoek valley in the Western Cape in the heart of the winelands, offers a range of comprehensive 1-3 year culinary courses which breathe inspiration and passion into the world of food (ICA, 2011; 1).

The school caters for a maximum of 28 students in each year with a total of 70 students across all degree programs so as to maintain a maximum lecturer to student ratio of 1:10. With a course breakdown which comprises of 60% practical and 40% theory, the school requires cooking workspaces as well as the traditional lecture room spaces. The kitchen spaces are again divided into a patisserie or pastry section and a general section into which the class is split during practical's to allow for smaller groups of 14 at a time. As part of the course curriculum, the students each spend an 8 week rotation working within the "living classroom", The Apprentice Restaurant, situated in the historic Stellenbosch town centre. Owned by the ICA, the restaurant is almost exclusively staffed by students who will be given a chance to interact with all facets of the restaurant industry from food service and menu design to food production and design. This allows the students invaluable work experience as well

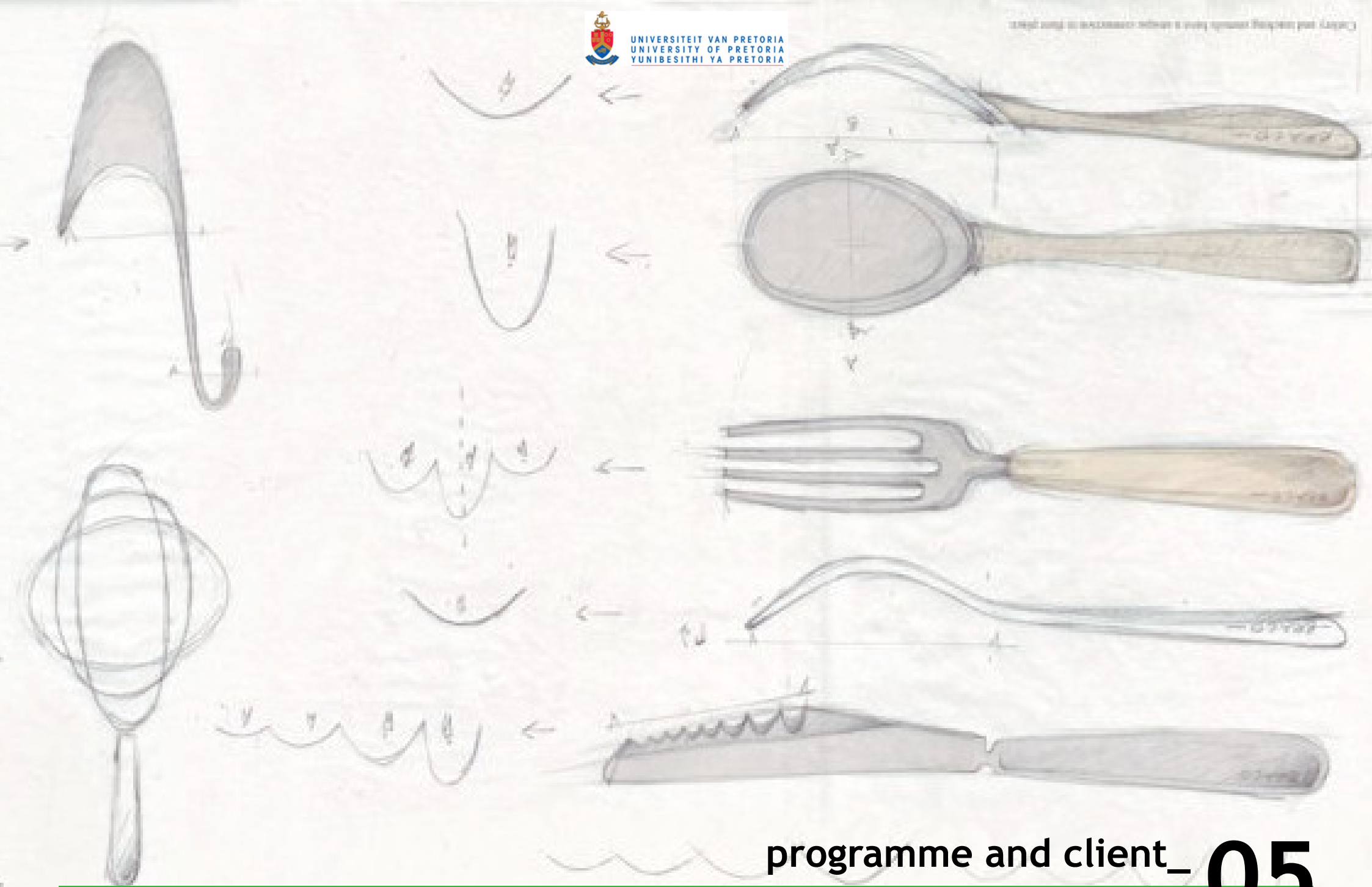
as creating a unique eating experience for patrons. The layout of the kitchen allows for two students to work at a workstation, sharing an oven and gas hob and sink. In each kitchen sector there is a display counter from which the initial cooking demonstration is done. This desk has large mirrors above to ensure the students have a good view of the process. All ingredients are stored in either the dry ingredients store or the cold storage rooms. However as much of the fresh produce are brought daily from local farms or grown in the adjacent vegetable garden, the requirement for the cold store is relatively small (Hart, 2011).

There is active waste recycling program within the school, with separation into plastics glass and organic waste. Organic waste is used for composting within the vegetable gardens. There is no grey water recycling within the building as the oils within the waste water make it unsuitable for recycling. Gas is used primarily for the hobs given its instantaneous heat which is suitable for cooking. In contrast the ovens remain electrically powered. Each workstation is fitted with a plug point for auxiliary equipment such as hand mixers etc.

The loose fit of all equipment within the kitchen allows for ease of cleaning after each practical and for the complete removal and sterilisation at the end of every week. This also facilitates the modulation of workspaces allowing for a number of differing furniture layouts.



ILLUS.105 (OPPOSITE) ICA cullinary school main building (Hart, 2011), ILLUS 106 Floor plan (Hart , 2011), ILLUS.107 Vegetable garden for fresh produce and herbs (Hart, 2011); ILLUS 108 Modular kitchen furniture (Hart , 2011)



programme and client_05



programme and client_

Recent years have seen an increase in awareness in the source and quality of the food one buys and consumes. In reaction to the commercialised, multinational styled “fast food” which has become an ever present part of urban lifestyles, the Slow Food Movement was founded in 1986 and has gained steady support internationally. The focus of Slow Food embraces a process which is “good”, “clean” and “fair” (Slow Food: 2011). Seasonal and fresh food, integral to the culture and community is produced in a manner which does not compromise the environment while remaining accessible to both patrons and producers. With over 100 000 members in 123 countries (*ibid*) localised groupings known as convivium, unique to each culture, people, food and traditions, are formed, ensuring the cultural sustainability of the region is maintained. It is within this greater principle that the building programme will be based, with a proposed culinary school and associated vegetated landscape, creating the public face for Slow Food Maputo.

The culinary school will form the majority of the building programme with spaces required for practical cooking areas, lecture facilities, recreational space and office space for the administration and teaching

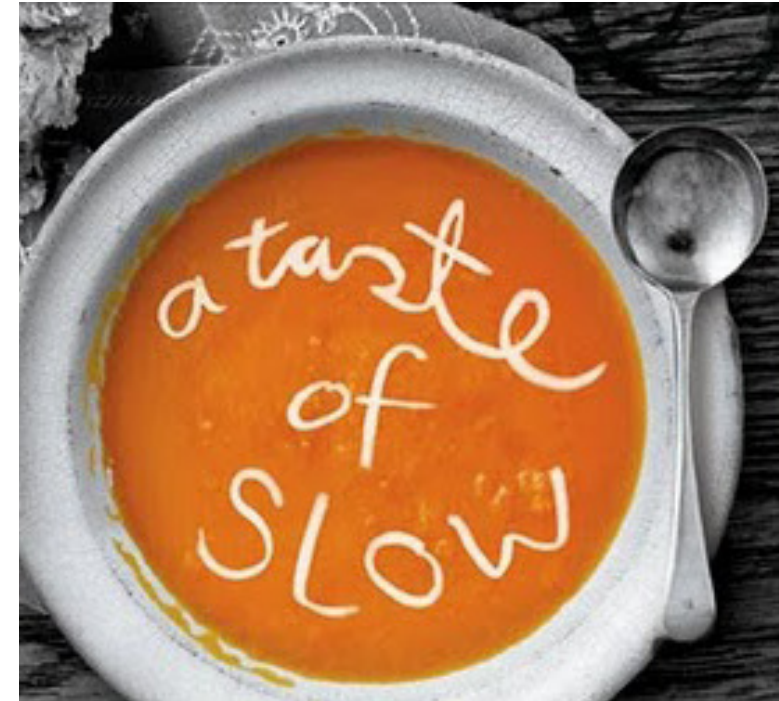
ILLUS. 109(OPPOSITE) Bread at the market (Dores, 2009)
ILLUS 110 A taste of slow (Slow Food , 2009), ILLUS.111
restaurant view mazzo restaurant New York (Brand, 2010)

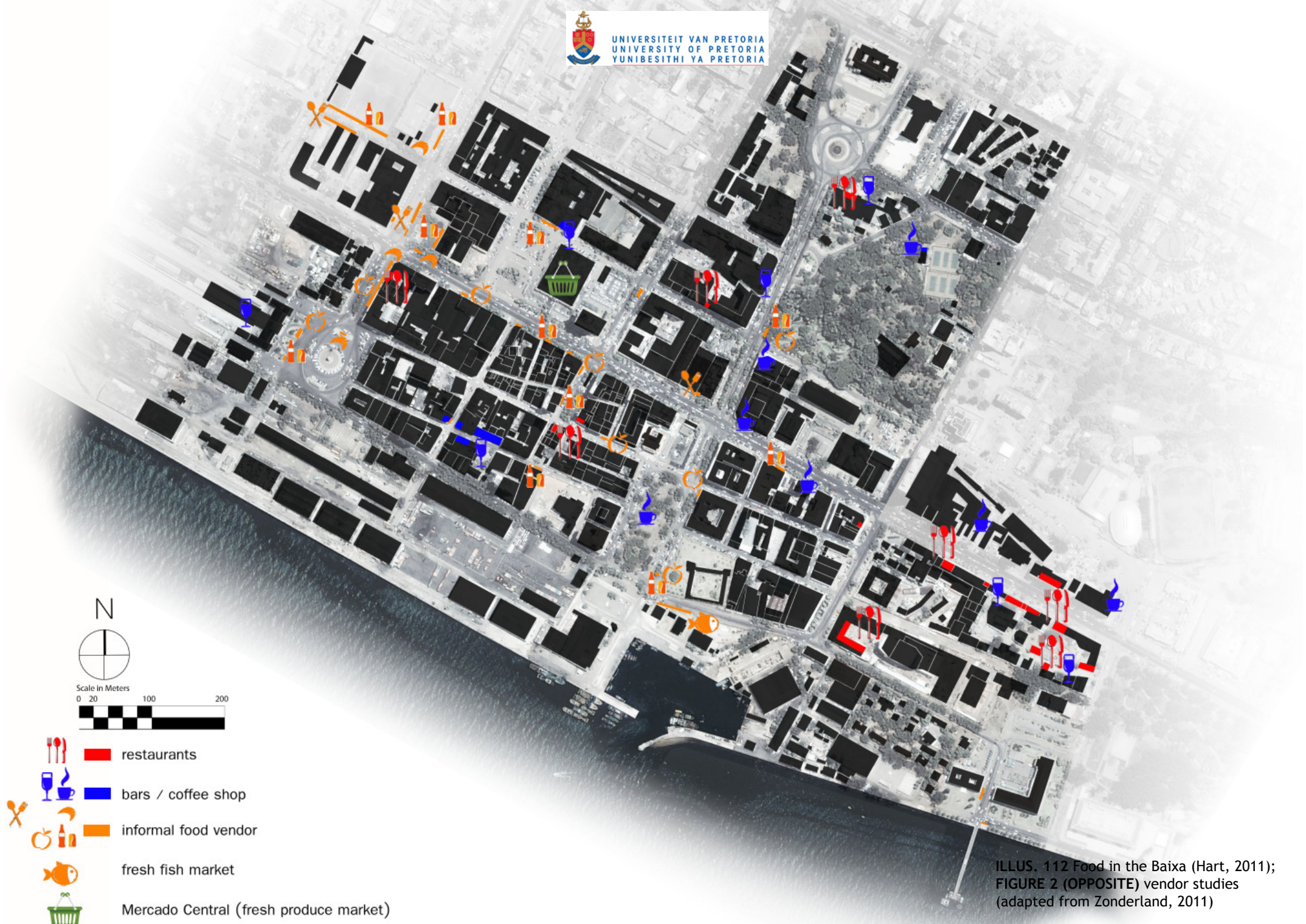
staff. A restaurant and deli will be located along Avenue 25 September within the upper levels of the existing structure. While this facility will have its own dedicated kitchen and storage areas, the associated restaurant will be integral to the culinary school, with the staff comprising almost entirely of students. Students are hereby given the opportunity to interact with real challenges within the food services industry as well as serving to increase the commercial viability of the school within its prime location in the urban centre.

In addition to the school, a facilitated kitchen will be provided for local food vendors selling within the Baixa area. Currently, the majority of vendors transport food items made at home each morning to be sold in the city. An example of the typically occurring vendor types and their products can be seen in figure 2 (page 72). Many of these vendors travel large distances from the surrounding suburban areas of Boane, Catembe and Matola (Dores, 2011) with a number of plastic containers and bags packed with home-made bread and baggia's to be sold informally on street corners and busy pavements. The facilitated kitchen will form an alternative to this, eliminating the need for costly transportation as well

as providing storage facilities for the additional stall equipment required for day to day business. As such the food workshop is seen as a site of facilitation, affording opportunities for interaction with other actors in the food industry, the exchange of skills and ideas from the formal and informal sectors as well as the contribution to the cultural flair of the area.

Embracing the slow food principal, a vegetated landscape will surround and envelop the building allowing much of the fresh produce and herbs used within the kitchen spaces to be grown on site. Given the proximity of both the fresh fish market (at the bottom of Avenue Samora Machel) as well as the historic fresh produce market in to the west along Avenue 25 September (see figure **), the food production within the workshop will ensure that what little is not grown on site can be sourced within a 100km radius. The gardens will be maintained by students of the school as well as community members living and working in the area as a joint public private food production project. Aside from the envisaged educational exchange, the garden serves to be important in forging ties between school and community.





ILLUS. 112 Food in the Baixa (Hart, 2011);
 FIGURE 2 (OPPOSITE) vendor studies
 (adapted from Zonderland, 2011)

	fruit seller	peanut curry lady	pão seller	sugar-cane juicer	mobile pie seller
vendor setup					
tools					
products					

functional informants_

Given the highly-serviced nature of the kitchens and auxiliary spaces, a number of fixed design informants can be identified. These vary in nature from sizes of circulation, positions and type of storage as well as material usage and finishes to be incorporated into the final design.

anthropometric data_

Illustrations 113-117 indicates anthropometrical restraints critical within the kitchen design such as circulation sizes, optimal heights and comfortable reaching distances.

storage_

The separation of storage into cold storage and dry storage is of paramount importance within the kitchen setup (Kazarian, 1989, 254). The cold storage, required for fresh produce, requires strict climatic control, necessitating the aid of air-conditioning units and insulated internal finishes. In many kitchens, cold storage can be further separated into vegetables, fish, red meat and chicken. However it is envisaged that due in large part to the daily sourcing of fresh produce from the surrounding markets and gardens, that the storage requirements for such produce would be minimal. This allows for large and bulky stores to be eliminated from the cooking school kitchens, in favour of a more integrated storage approach.

finishes_

The importance of hygiene within the kitchen environment is of paramount importance.

Floors:

Floor finishes must be hard wearing and easily cleaned. The high traffic volumes and variable equipment loading suits surfaces such as epoxy coated cement screeds or tiled finishes. Ceramic quarry tiles provide excellent resistance to abrasion and moisture (Kazarian, 1989; 214) and offer a good alternative to a concrete floor finish with higher initial costs being balance a longer lasting finish. Grouting between tiles however, does require special scrubbing to prevent the build-up of grease and soil. The use of vinyl tiling, which has excellent resistance to grease and oil, is also recommended for cooking areas, however it's lower resistance to foot traffic make it more suitable in low volume kitchens.

Importantly, to facilitate cleaning, slopes within the screeds to strategic floor drains should be incorporated. The regular cleaning of the associated grease traps within these drains must be facilitated with the provision of removable access points within the drainage system.

Walls:

Walls within the kitchen area need to be impact resistant and hard wearing. Materials such as concrete, concrete block or ceramic tiles are frequently used materials (Kazarian, 1989; 217) with

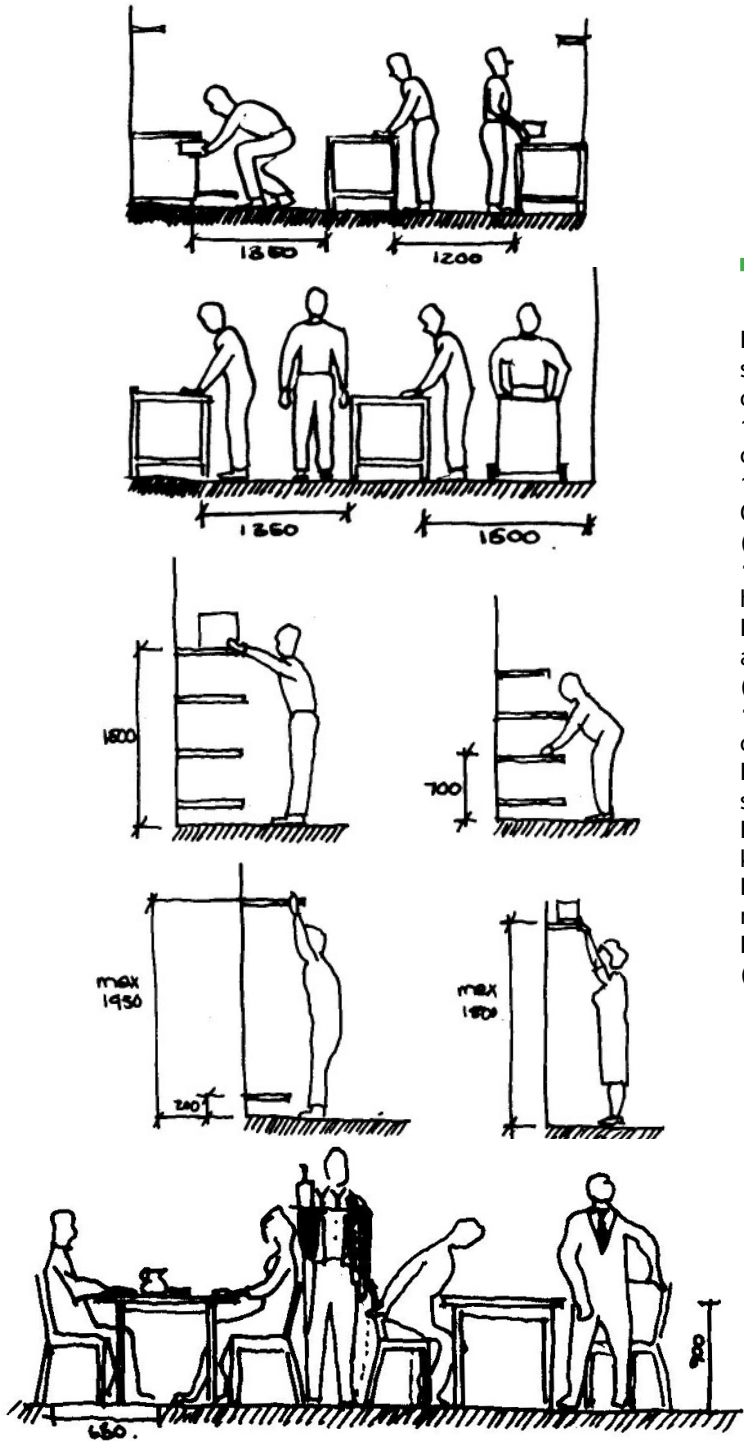
the use of gypsum board with sealed connections also being acceptable in lower volume kitchen spaces. It is recommended that surfaces up to 1,8m above floor level, be treated with finishes which are non-stick, non-porous in nature, such as ceramics or metals. Surfaces such as concrete are generally painted to provide an ease of cleaning as well as ensure sanitary conditions within the kitchen can be maintained.

Ceilings:

Ceiling elements within the kitchen area can be plastered or painted or a panel type construction. The reduction of noise within the environment can be greatly reduced with the introduction of acoustic panelling. Materials which are easily cleaned are preferable, however with an adequate extraction system, ceilings need only be cleaned twice every year. (Kazarian, 1989; 234)

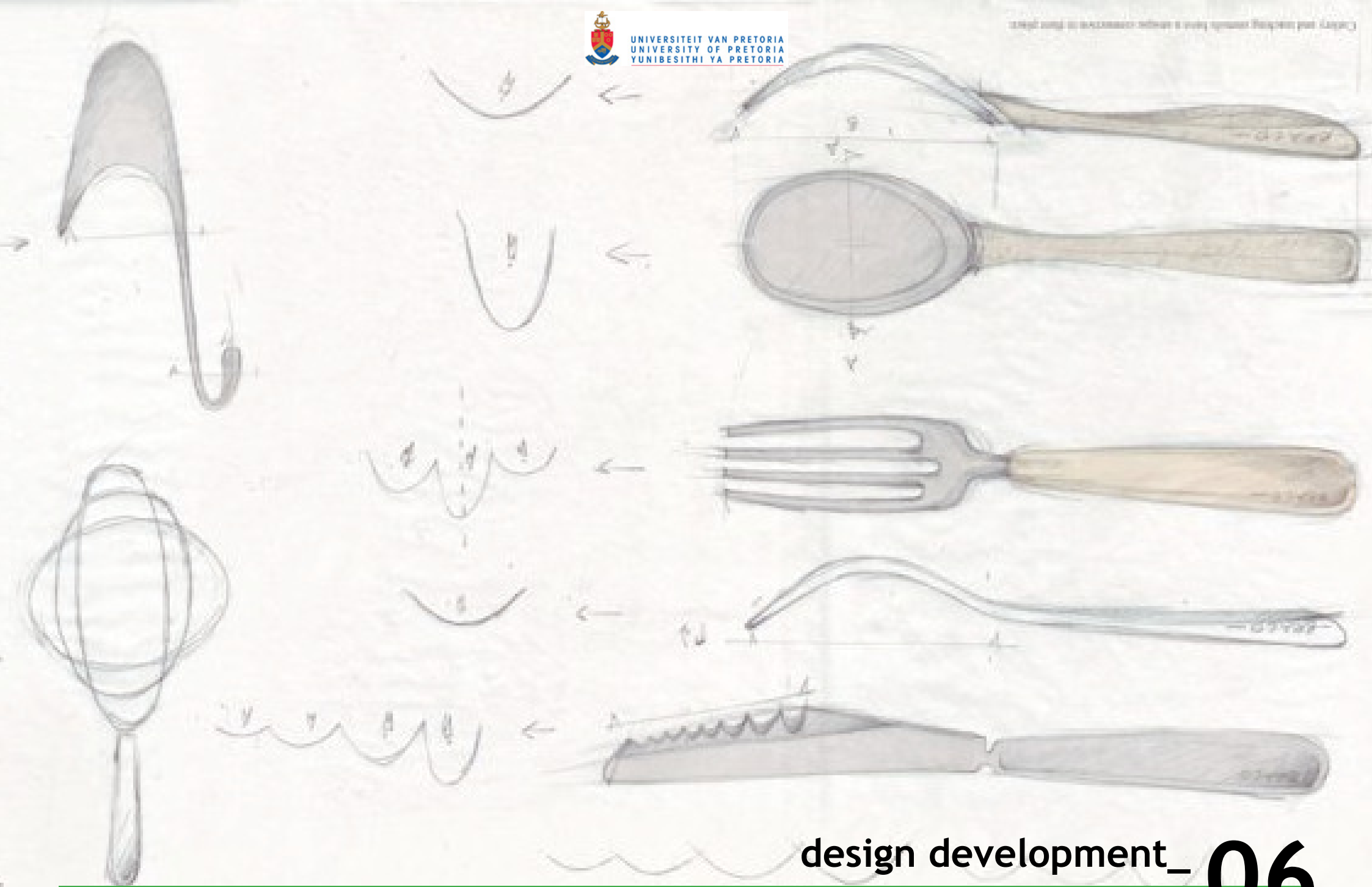
Fire:

Most kitchens require spot cleaning throughout the day with a thorough cleaning and equipment sterilisation once a week. The importance of this cleanliness is also due in large part to the possible fire-risk that built up fats and grease (Kazarian, 1989; 235). Strict fire regulations advise that all materials within the immediate vicinity of cooking surfaces must be fire retardant and of such a nature that they do not chip or peel. Ventilation systems within the kitchen are particularly vulnerable to fire. Weekly cleaning of filters as well as a minimum 6 month cleaning for medium flow kitchens is recommended.



ILLUS. 113 Movement spaces between countertops (Neufort, 1995), ILLUS 114 circulation space (Neufort, 1995, ILLUS. 115 Comfortable reach heights (Neufort, 1995), ILLUS. 116 Maximum reaching heights (Neufort, 1995), ILLUS. 117 Movement analysis in restaurant (Hart, 2011), ILLUS (LEFT) 118 removable cooking counters (Hart, 2011), ILLUS. 119 Bakery pan storage (Hart, 2011), ILLUS. 120 Hygiene in kitchen (Hart, 2011), ILLUS. 121 Mazzoo restaurant (Brand, 2010), ILLUS 122 Patisserie table (Hart, 2011)





design development_06



massing_

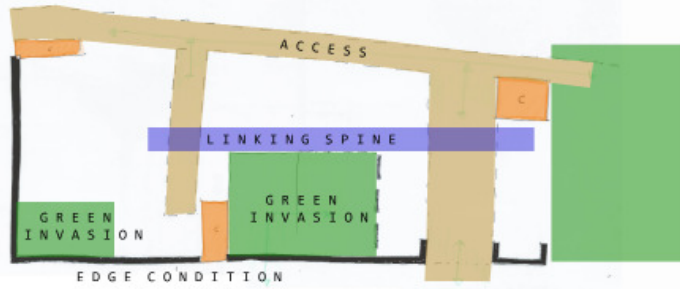
The current state of the Prędio Pott building, reminiscent of a romantic folly, with rambling overgrown vegetation amongst crumbling walls, provides for very striking and powerful architectural imagery. Initial design responses were largely based around the found structural analysis of the site which identified specific zones of the site which became informal courtyard spaces filled overgrown with vegetation. Initial massing exercises which aimed to establish rough bulking of the site were carried out as seen in illustration 120 (left). These incorporated the existing green courtyard spaces as found in the ruin as a means to focus new built fabric insertions.

The façade of the building is important to the historical significance of the site. In addition, the façade becomes a critical element within the patina of aging which as described by Vattimo, suggests at the fragility of the architecture (2005; 60). By respecting the façade as a defining edge to the site, the initial massing ideas concentrates on the introduction of built fabric from the adjacent

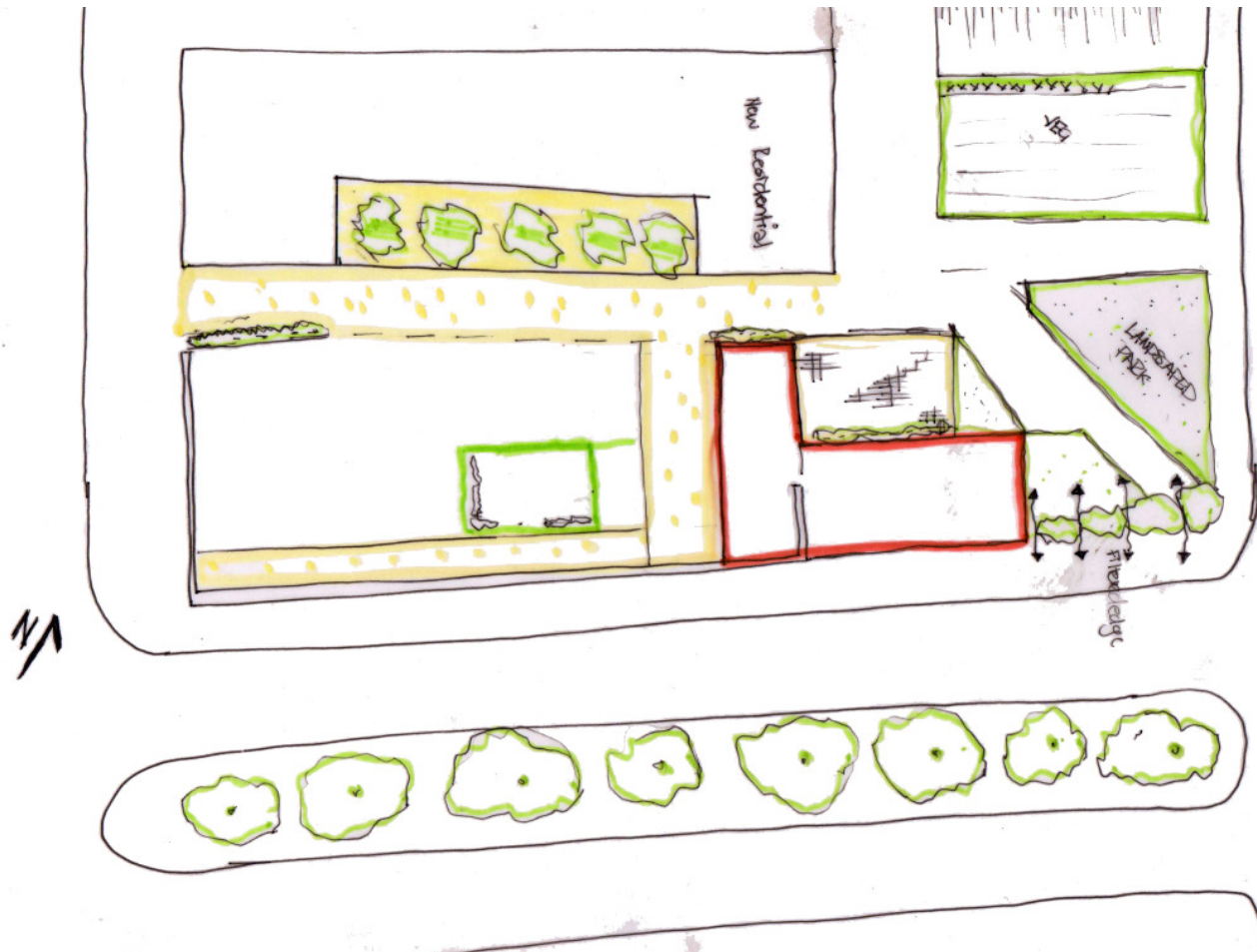
site, allowing for interaction between new and existing functions within the building while still maintaining the prominence of the facade. The new intervention then can be expressed as an additional layered element within the building patina.

The north eastern section of the Prędio Potts building, with its distinctive tower elements, becomes the knuckle between existing building and the new bulk. The re-use of existing vertical circulation routes (shown in orange in illustration 123) allows for an integrated connection between proposed and existing fabric. A large commercial component (red) is inserted in response to the prominence of the street corner.

The vacant site behind the building is largely left open to serve as ground based gardening areas for the culinary school. A massing responding to Avenue Samora Machel is used to create a continuous street interface along the proposed pedestrian boulevard.



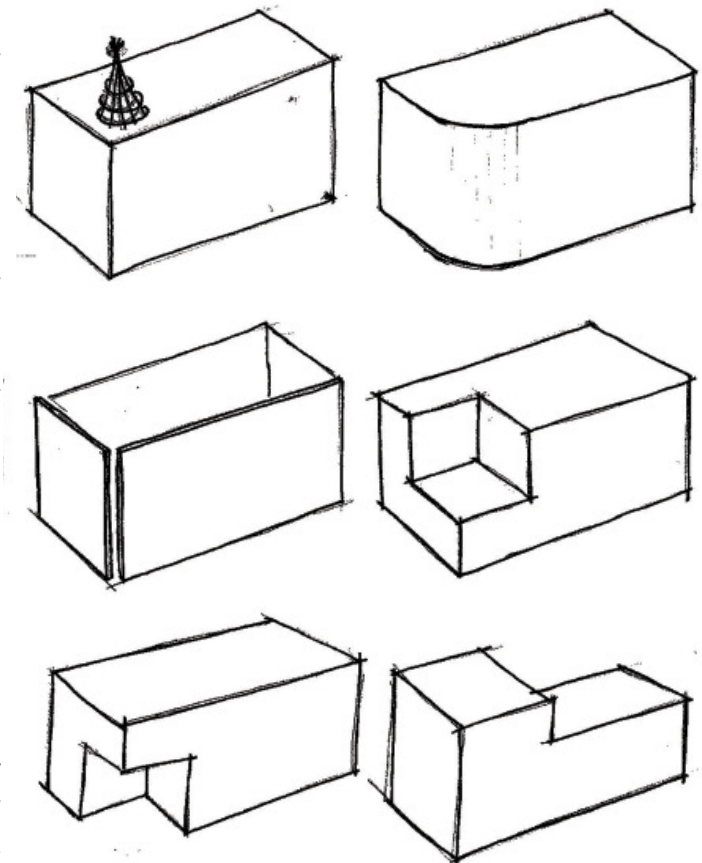
ILLUS. 123 (OPPOSITE) Initial massing views (Hart, 2011), ILLUS 124 Diagram of found structural analysis (Hart, 2011), ILLUS. 125 (LEFT OF PAGE) conceptual planning (Hart, 2011), ILLUS. 126 Initial functional massing (Hart, 2011),



corner treatments_



The location of the site within the Baixa, at the intersection of the main East-West vehicular artery (Avenue 25 September) and the North-South pedestrian spine along Avenue Samora Machel, create an important corner aspect within the building. The construction of the Predio Potts building occurred as a number of phases, with the portion immediately adjacent to the corner being the first to be completed. The construction of the later addition along avenue Samora Machel is somewhat more expressive with the two larger towers, flanking each side of the original arcade, giving the building a much more imposing massing. This draws emphasis away from the corner façade detail which traditionally would have been expressed as more prominent within the scheme. Methods of responding to the corner were explored as shown in illustration 128 to explore methods of addressing the southern façade corner. As seen in the massing examples, the traditional manner of expressing the importance of a corner relies on the manipulation of its massing, whether additively, in the form of a raised component added to the mass, or subtractive, with the removal of bulk to form a negative void increasing the volume of space occupied by the corner. Examples of methods of corner treatments within the Baixa area can be seen in illus 124-127.



ILLUS. 127 Central Printers, Maputo (Hart, 2011), ILLUS 128 Chamfered corner detail, Maputo (Hart, 2011), ILLUS. 129 Office building diagonally opposite Predio Potts (Hart, 2011), ILLUS. 130 Predio and Achri building, Maputo (Hart, 2011); ILLUS. 131 (ABOVE) corner massing treatments (Ching, 2007)

access road_



proposed demolition for new vehicular access

The culinary school and kitchen areas require associated service areas for the delivery of goods and equipment as well as the allowance for services such as gas deliveries and refuse collection. The busy nature of avenue 25 September, as well as the general parking congestion within the Baixa area make street delivery difficult. This necessitates the provision of a dedicated service alley allowing access to the site and facilities. The original arcade entrance to the Prędio Potts building from avenue Samora Machel, while allowing for access to the site, creates a convoluted route through the site, which would be unsuitable for large delivery vehicles. Looking at the larger block context, the large proportion of ruined and abandoned

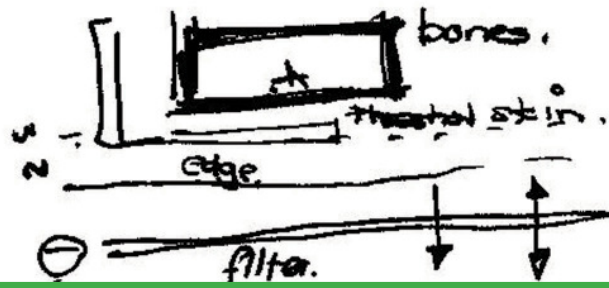
warehouse space as well as the pre-existing organic subdivision of blocks seen within the Maputo city grid provides an opportunity for an access road to be introduced running parallel to avenue Samora Machel, between avenue 25 September and avenue Zediquias Manganhela.

An analysis of existing street facades (illustration 132) was completed. Facades seen as contributing towards the heritage value of the urban block where maintained, with a small, single story warehouse being identified as a possible point of breakage. The building, seen in illustration 133, is largely abandoned with much of its building material having been removed following the 1990's fire.

ILLUS. 132 (TOP) Street elevation Avenue 25 September (Hart, 2011), ILLUS 133 Proposed demolition of building (Hart, 2011)

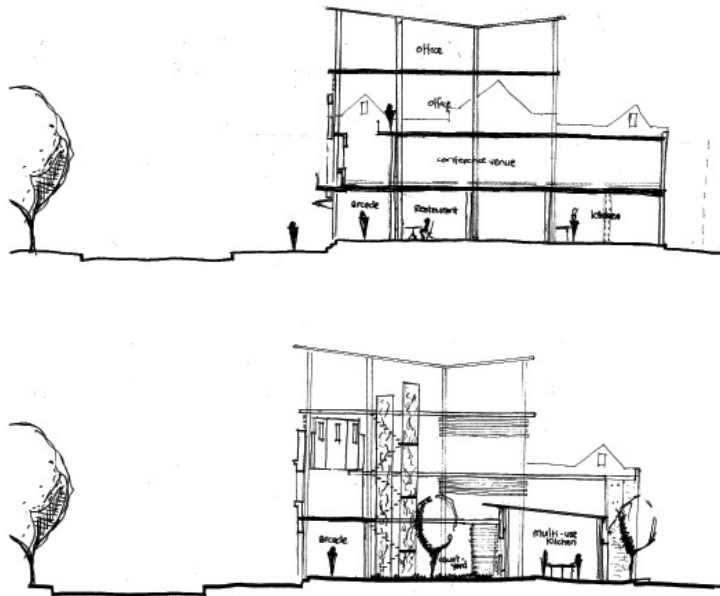
threshold exploration_





“A building cannot be a human building unless it is a complex of still smaller buildings or smaller parts which manifest its own internal social facts”

(Alexander, 1977; 469)



ILLUS. 134 (OPPOSITE) Threshold 1 from las Ramblas (Hart, 2011); ILLUS. 135 (OPPOSITE) Threshold 2 - historic shell (Hart, 2011); ILLUS. 136 (OPPOSITE) Threshold 3 - new intervention (Hart, 2011); ILLUS. 137 (OPPOSITE) Parti diagram (Hart, 2011); ILLUS. 138 Section A-A (Hart, 2011); ILLUS. 139 Section B-B (Hart, 2011)

The building is experienced from multiple angles within the Baixa, but perhaps the most important, is the experiencing of the building from the proposed pedestrian boulevard - las Ramblas. As a pedestrian moving along this green spine, a series of threshold spaces will be experienced, the first of which being the trees, which begin to act as a filter to the façade (illustration 134). As one moves off the boulevard, the experience of the historic façade becomes the second threshold of the building (illustration 135) and then finally as one moves through the edge created by the façade one experiences the new architectural insertion (illustration 136).

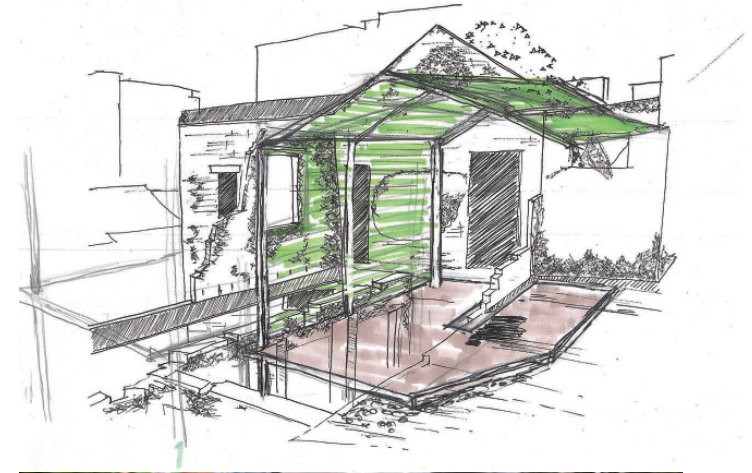
An analysis of heritage charters undertaken in chapter three of this dissertation established a set of guiding principles with regards to a new intervention within the ruin. It is the author’s opinion that the heritage significance lies in the method of construction as well as the stylistic importance of the façade of the building as an integral element within the Baixa urban fabric. As an object in the city, it is in strict juxtaposition with its surrounding contextual architectural styles and as such becomes a landmark building within the area. This juxtaposition of materials and styles will be re-interpreted into the conceptual development of the building.

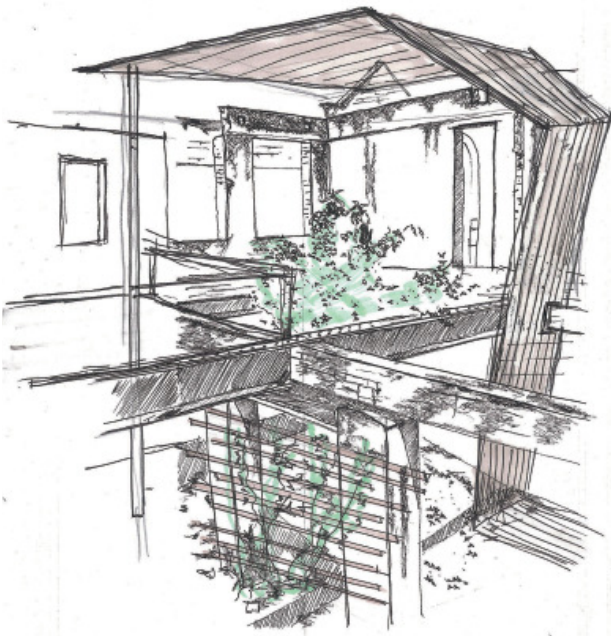
An interpretation of the existing building structure is expressed in the proposed steel framed, light weight insertion. This also facilitates the removability of the structure as outlined in the Burra charter.

The response to the emphasis of the corner was one of increased mass, to balance out the existing height created by the towers. The proposed 4 storey commercial element is therefore positioned at the most economically viable location of the site.

“A building cannot be a human building unless it is a complex of still smaller buildings or smaller parts which manifest its own internal social facts” (Alexander, 1977; 469) The creation of smaller pavilion like buildings within the greater whole of the ruin is a response not only to the exiting structural limitations of the site, but also in response to the intended inclusion of greened courtyard spaces as can presently be found within the building. The breaking up of internal spaces within the site, whether as built or natural rooms allows for the creation varying interactive spaces which can begin to suggest functions within the building as a complex. Alexander further states that positive outdoor spaces rely on a degree of enclosure in order to provide the occupant with a sense of security (1977, 522). In order to define the greened courtyard space within the proposed development as well as creating a more consistent edge to las ramblas boulevard, proposed bulk is also expanded to the north of the site into the open site. This height and language of this new intervention will be gained through an understanding of proportion and scale used within the Prédio Potts building. While a suggested massing for this addition can be seen in illustration 145, the final design has not been dealt with within the scope of this dissertation.

vegetated landscape_





“In a healthy town every family can grow vegetables for itself... it is a fundamental part of human life” (Alexander, 1977; 819). The envisaged gardens within the culinary school as well as the existing vegetation which has gradually overtaken the ruin play a large role in the conceptual development of the building. The Slow food movement embraces a principle using locally produced, seasonal and fresh produce within the kitchen environment. As urban dwellers become increasingly reliant on store brought food for survival, (Alexander, 1977, 820) the separation between food and its productivity has been amplified.

As a means of re-establishing this link, the vegetated gardens are envisaged as not only an educational tool, but also as a much needed greened urban retreat within the confines of the urban environment. In an urban environment the limited productive land available encourages the use of vertical planting to maximise the density of production.

The creation of a hard urban edge responding to the ramblas is offset with the introduction of greened courtyard space to the west of the building. This creates tension between the organic natures of the

ILLUS. 140 (OPPOSITE) Urban edge condition (Hart, 2011), ILLUS 141 (OPPOSITE) Salad bar (Velazquez, 2010), ILLUS. 142 (OPPOSITE) Vegetated walls (Velazquez, 2010), ILLUS. 143 Conceptual diagrams (Hart, 2011), ILLUS. 144 Conceptual diagrams (Hart, 2011), ILLUS. 145 Proposed addition to create urban edge along Samora Machel (Hart, 2011)

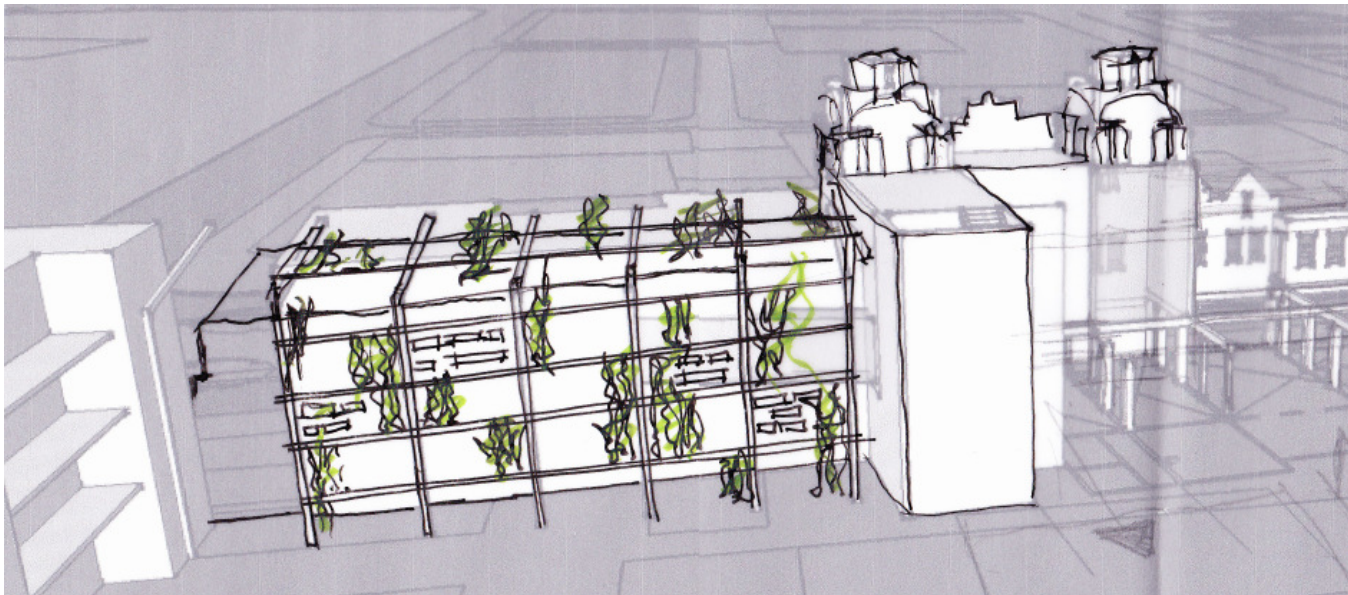




vegetated in juxtaposition to the rigid geometry of the building and began to allow for the introduction of planted screens in and around the building and site onto which the vertical planting elements can be attached.

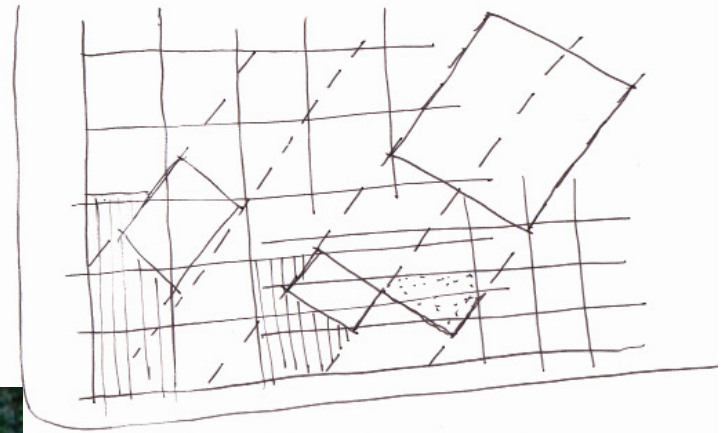
The initial, very freeform and organic nature of these elements which twisted and pierced through the ruin, became distilled into simpler, more controlled screening elements and productive areas.

ILLUS. 146 (OPPOSITE): artistic impression Predio Potts (Hart, 2011), **ILLUS 147** Greened planting element (Hart, 2011), **ILLUS. 148** Vegetated walls (Velazquez, 2010), **ILLUS. 149 (OPPOSITE)** Conceptual design September 2011 (Hart, 2011),





grid juxtaposition_

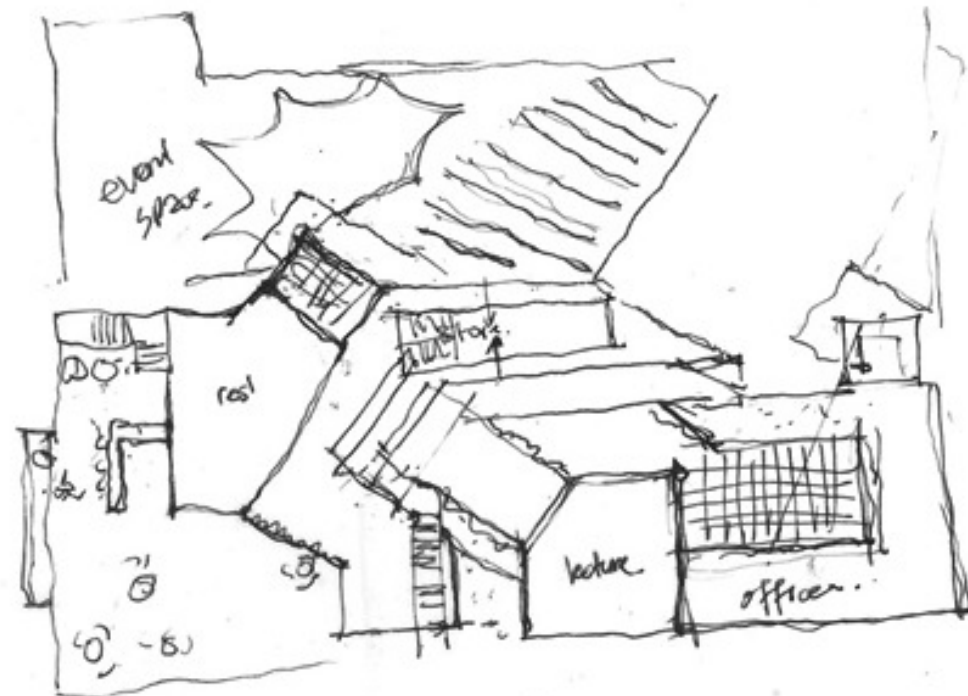
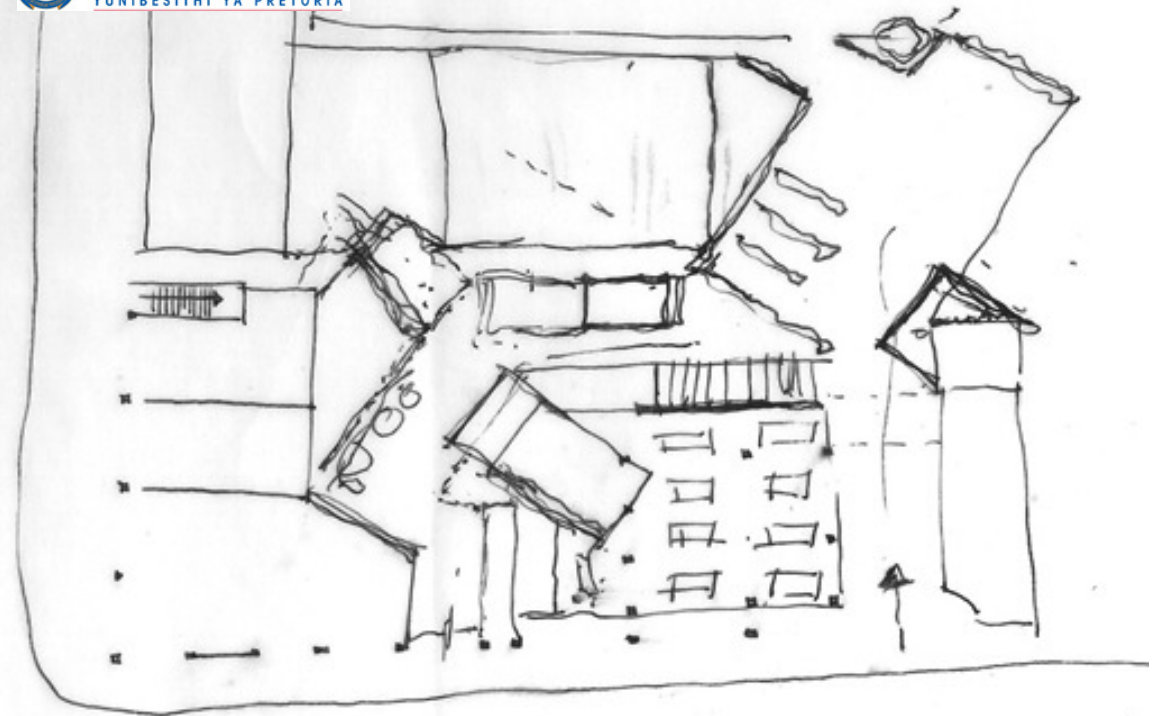


In order to maximise the efficiency of the productive spaces, solar orientation is taken into consideration. The Baixa city grid lies at an angle of 30° east of north. In order to best utilise the site for productive landscapes, a shift in the orientation of the vegetated spaces was made so that these areas could take advantage of northern light. In order to accommodate the two contrasting geometries a series of grids was introduced. One conforms to urban street patterns, and one, in juxtaposition, aligning to optimum planting orientation. This facilitates the introduction of productive courtyards which can begin to respond to the shift in grid by carving out space between the building masses.

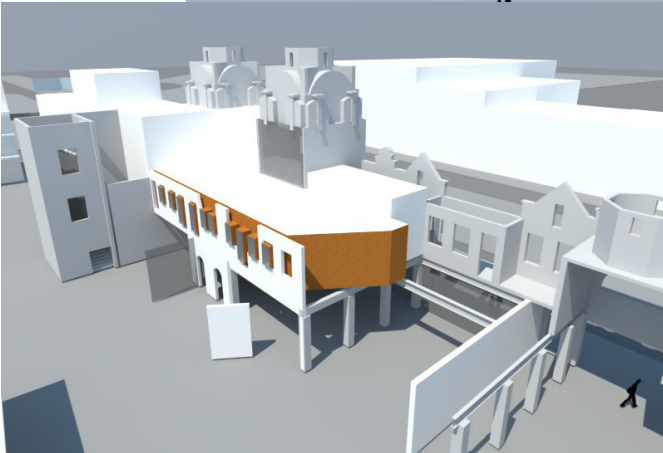
While the introduction of vertical planting facilitates the connection between internal functions and external vegetation, two major horizontal productive vegetated areas can be found defining themselves within the site. The ground floor area, being the central linking square between culinary school and

the proposed housing and commercial element located on the northern edge of the block. The floor plane is broken up into a series of smaller courtyards which can begin to introduce linking social spaces between the kitchens. The central courtyard, which will house the more productive vegetable growing areas, can be closed off at night to ensure security of the produce, with the smaller courtyards being planted with herbs and spices. The secondary productive vegetated area is located on the roof of the main cooking kitchen, on the western edge of the site. This building is the only completely new addition within the site development and as such the vegetated roof serves to offset the loss of ground floor plantable area. A series of planters with drip irrigation systems will be housed on the roof in which fresh produce from within the building can be grown.

ILLUS. 150 (OPPOSITE) System of grids (Hart, 2011), ILLUS 151 (OPPOSITE) Carving out of building mass (Hart, 2011), ILLUS. 152 Ground floor conceptual diagram (Hart, 2011), ILLUS. 153 First floor conceptual diagram (Hart, 2011),



architecture as insertion_



ILLUS. 154 (OPPOSITE) conceptual language of insertion flat roof (Hart, 2011), **ILLUS. 155 (OPPOSITE)** conceptual language of insertion asymmetric pitch roof (Hart, 2011), **ILLUS. 156 (OPPOSITE)** conceptual language of insertion concrete flat roof (Hart, 2011), **ILLUS. 157 (OPPOSITE)** Impression of architectural insertion (Hart, 2011), **ILLUS. 158** conceptual rendering of new insertion (Hart, 2011), **ILLUS. 159** expression of differing functional boxes within ruin (Hart, 2011).



Building within the remains of the Prédio Potts building has allowed the expression of the new intervention to be one of an insertion within the historic shell. The application of the heritage charter principles, the premise of removability where possible, as well as the physical built fabric remaining on site, has allowed for the creation of smaller insertions which are positioned around the remaining structural members.

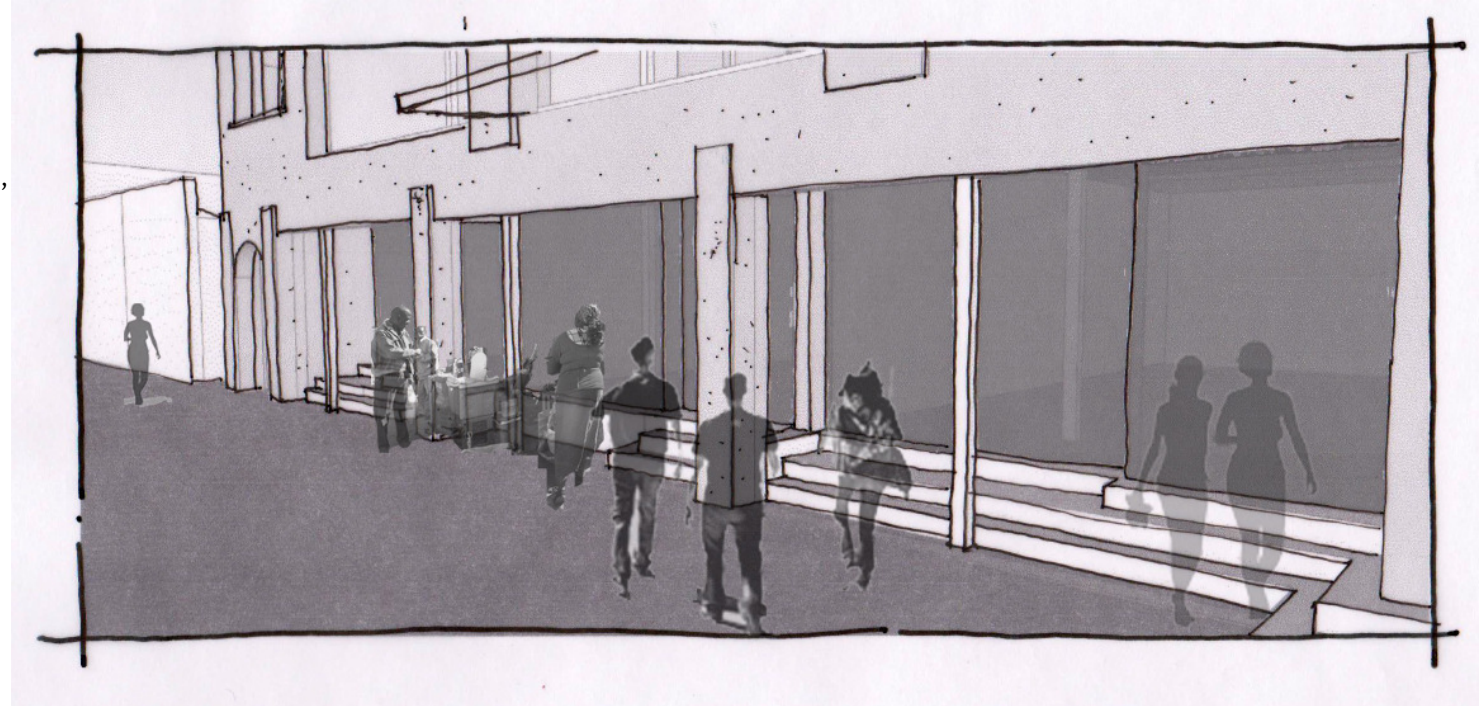
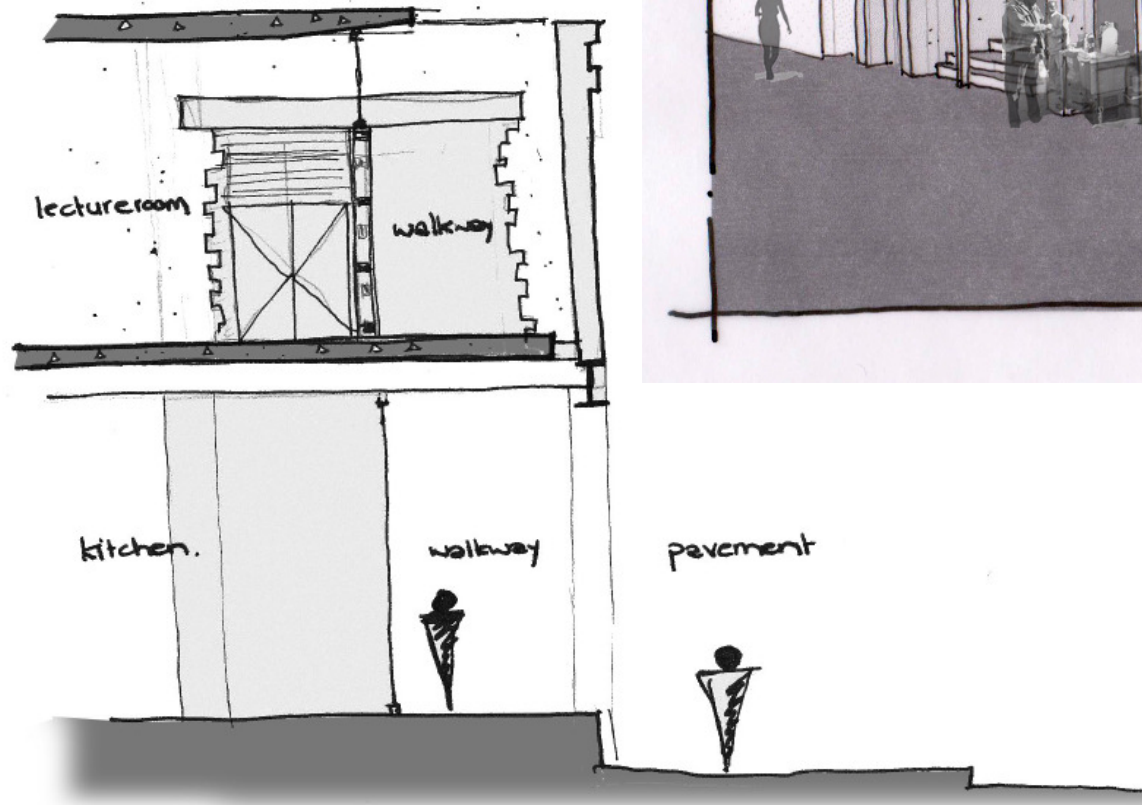


As part of the expression of materiality, the degradation and natural aging of the ruin becomes integral to the increasing fragility of the architecture. The notion of allowing for the ruin to continue degrading around the new intervention to a large degree is strengthened with the allowance for the proposed intervention to have a completely independent structural system. The structure will become a series of boxes which begin to interact with the historical structure and express an interpretation of massing that would once have been present in the building.

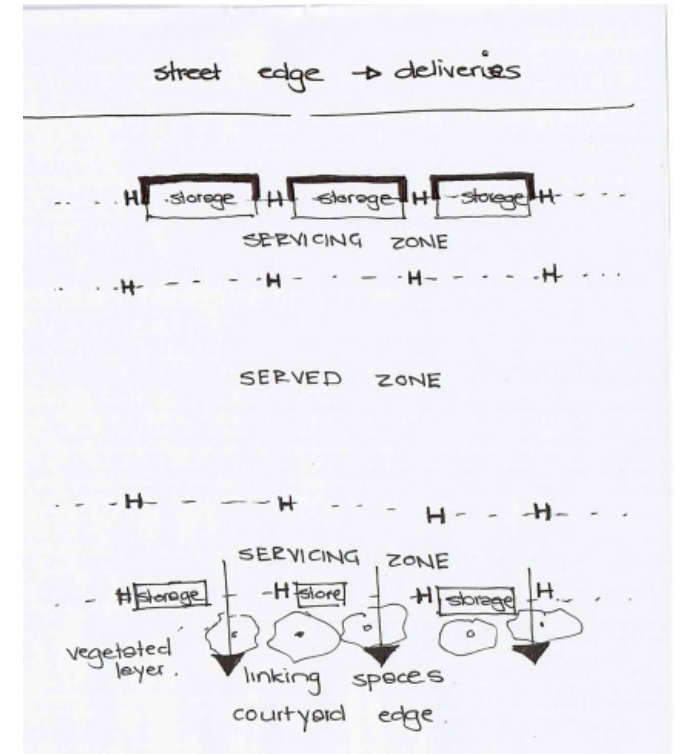
As seen in the interventions analysed within the Castelvécchio and Banca Popolare projects (see chapter 5), Scarpa's use of layering of materials, using both a direct material layering and the creation of layered components will allow for the juxtaposition of old and new elements within the building. The re-interpretation of materiality and spatial qualities once present in the building as well as the expression of old and new as separate layers upon the historical fabric of the building will allow the narrative of the building to be expressed.

street interfaces_

ILLUS. 160 Threshold exploration (Hart, 2011), ILLUS. 161 Population of street thresholds (Hart, 2011), ILLUS. 162 (OPPOSITE) Street elevation of proposed cooking Kitchen (Hart, 2011), ILLUS. 163 (OPPOSITE) Diagrammatic layout of major cooking kitchen (Hart, 2011),

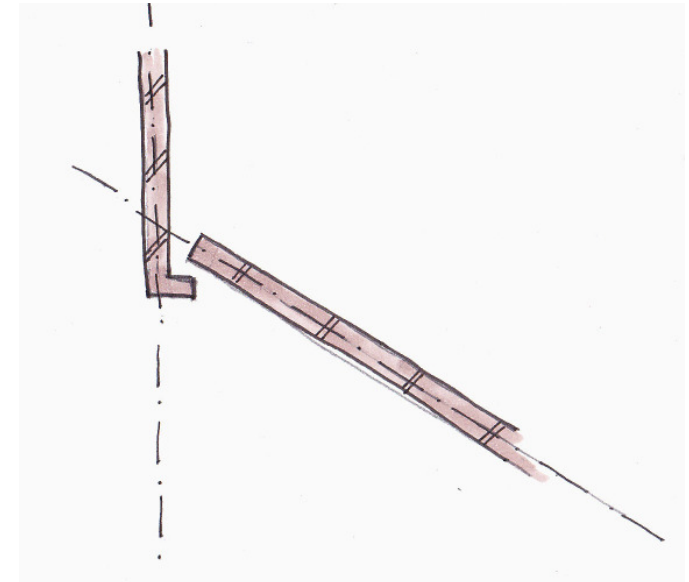
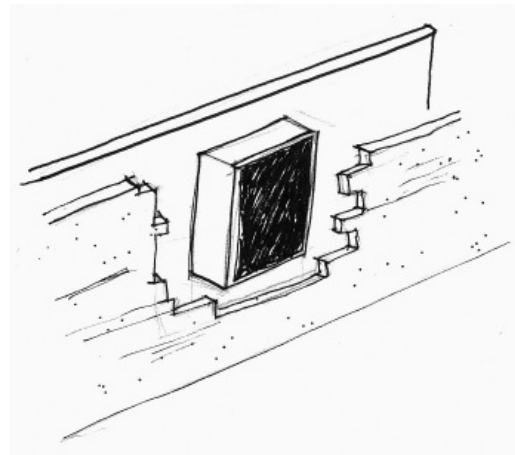
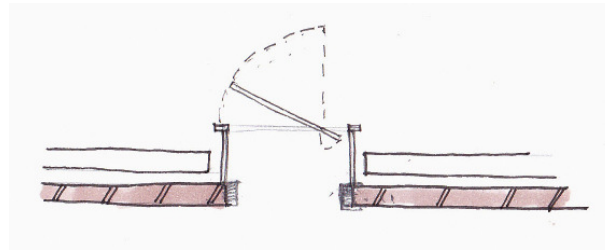
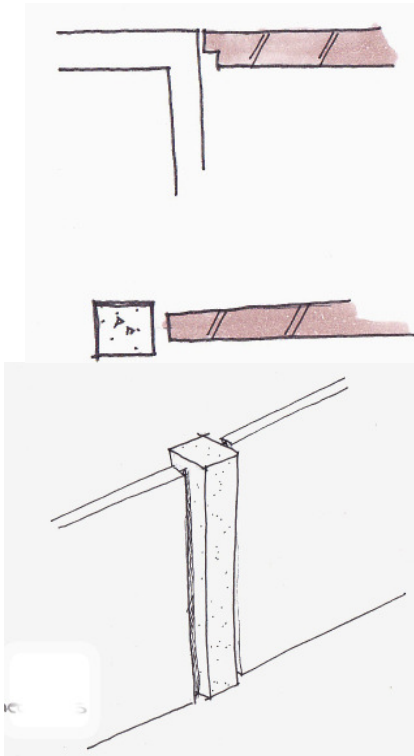


The strong informal trade within the Baixa area creates a vibrant and chaotic pavement culture (Hart, 2011). The strong link between formal and informal retail provides the unique opportunity for the layering of formalities between street and shop. As a manner of increasing the threshold levels between the street and building, the new shop fronts are pulled away from the strong historical façade element. Stepped threshold spaces become areas for informal vendors or urban users to occupy.



The proposed kitchen on the western edge of the site, re-interprets the language of threshold developed in the intervention within the existing building. The street edge requires a more stereotomic language due to security and storage requirements. The walls have been expressed as thick recessed masses, which break up the exterior street façade, while the large clerestory windows above allow important north lighting into the building. The separation of served and servant spaces is made to allow for circulation and storage areas separated from cooking surfaces. The gradual change in tectonic from the stereotomic nature at the street edge to a lighter tectonic relating to the inner vegetated courtyards allows for the introduction of planter boxes and screen elements into the courtyard façade.

design guidelines_



material connections_

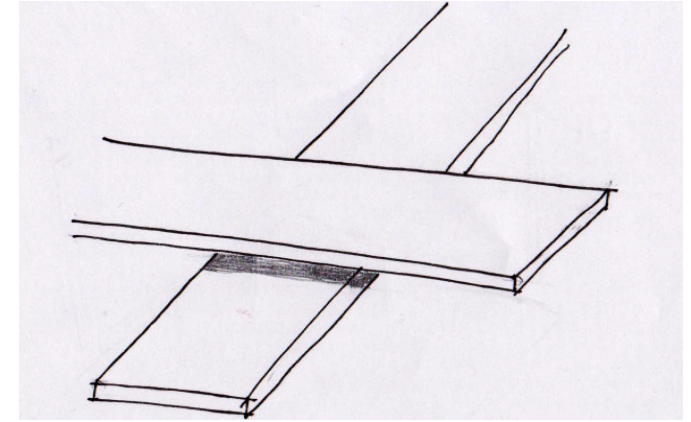
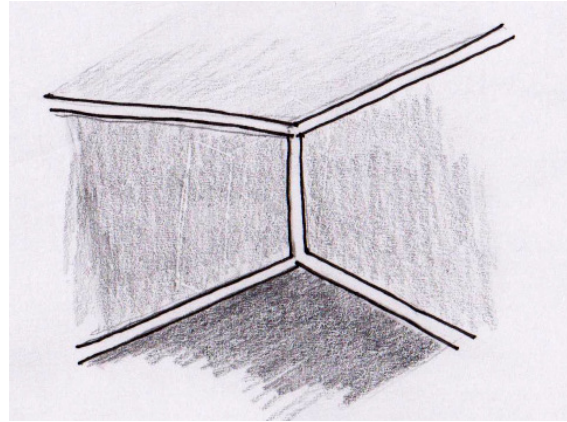
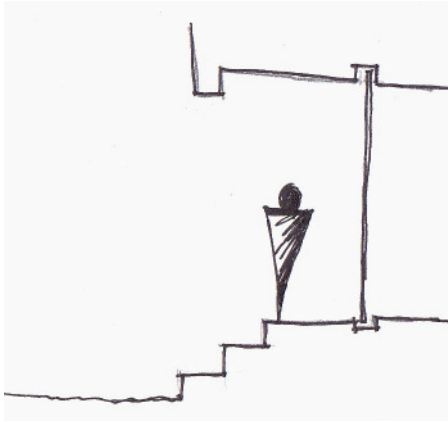
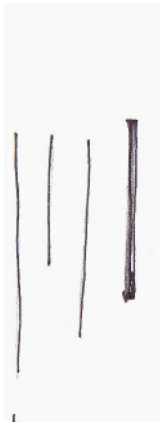
separation of materials at connections by means of a gap.

projecting components_

old and new layers separated in plane, with elements which bridge the gap between and become integral to each others understanding as a single component.

intersection grid structures_

connections at points of intersection become expressed.



layered thresholds_

facade edge is pulled away from existing providing for informal retail opportunities and places of repose in stepped arcades.

seperation of floor, wall and roof planes_

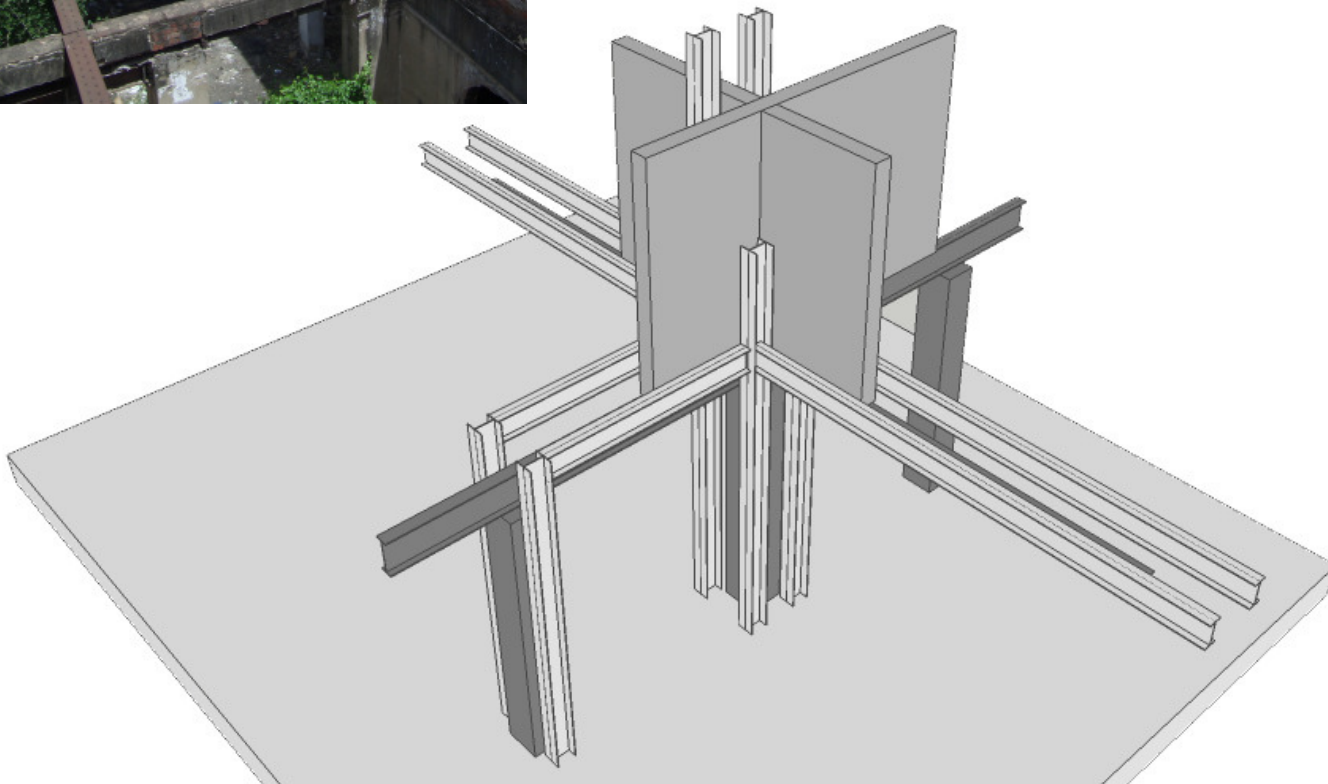
seperation of planes allows for the expression of materiality as well as the manipulation of scale and proportion.

overlapping planes_

intersection horizontal planes are expressed on differing layers to form a spatial heirachy.



structural additions_



As stated earlier in this dissertation, the exposed steel structural members within the building have been assumed not to be structurally sound. While the members do not show deformation following the fire, the new structure will have a completely independent structural system. With the majority of existing structure being kept as an object of significance within the building narrative, the new structure must thus be built around the old. This is achieved with the placement of steel H-sections on either side of the existing columns, with the new I beams being run over the top of the existing structure (see illustration 124). The slight separation of the elements allows for the understanding of the stratification of structural narratives.

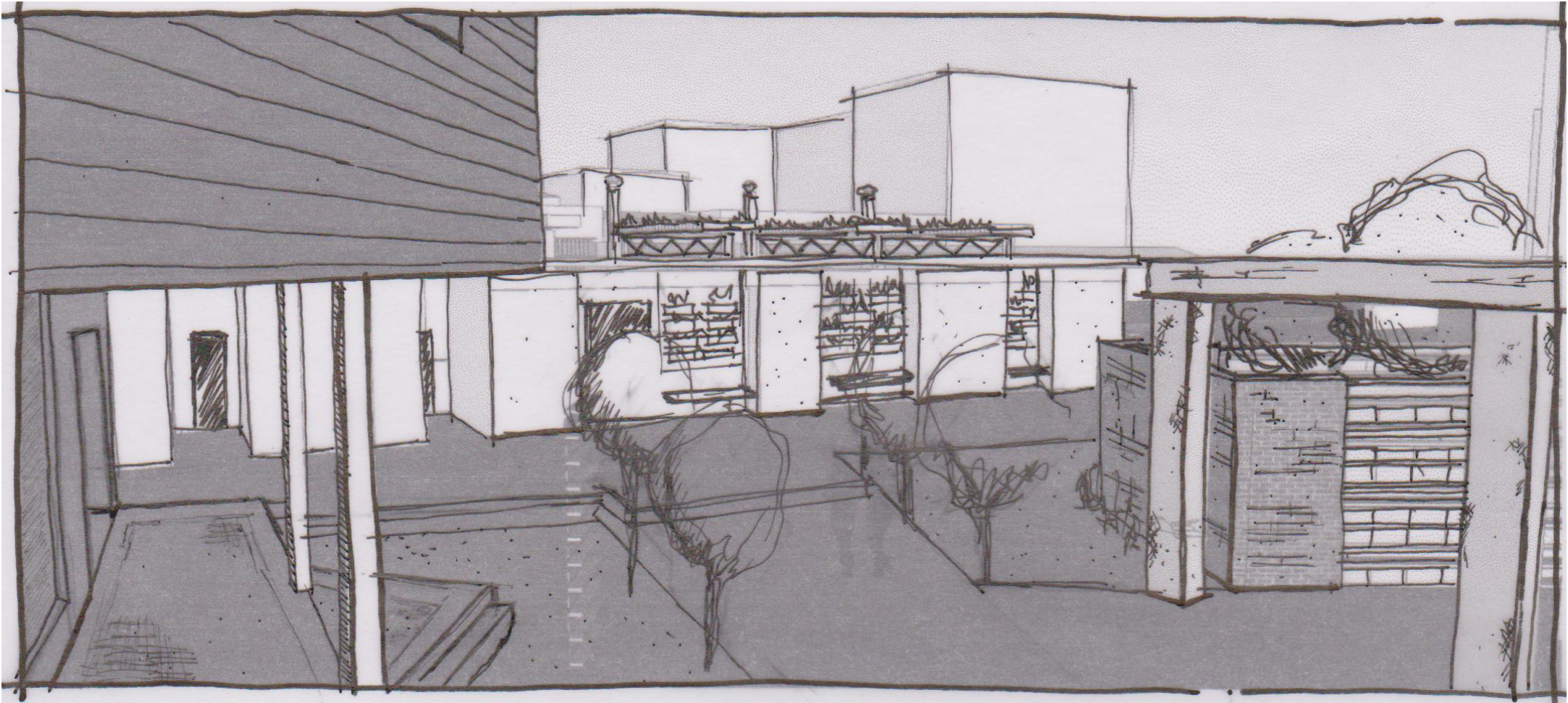
vegetated roof detail_

In order to achieve an uninterrupted floor area within the served areas of the kitchen, the steel H-columns are placed on the outside of the space. This increased span necessitates the increase in member size of the roof structure. In addition, the services required to run in the ceiling void such as extractions systems become displaced below the roof structure to accommodate for the spanning beams in each direction. In order to accommodate the overhead services better as well as facilitate the use of the roof terrace for a productive area, a girder truss system is employed, with the composite steel deck flooring system being suspended below. This accommodates not only the span and services required inside the building, but also becomes the primary structure for the planter boxes to be placed on roof level.

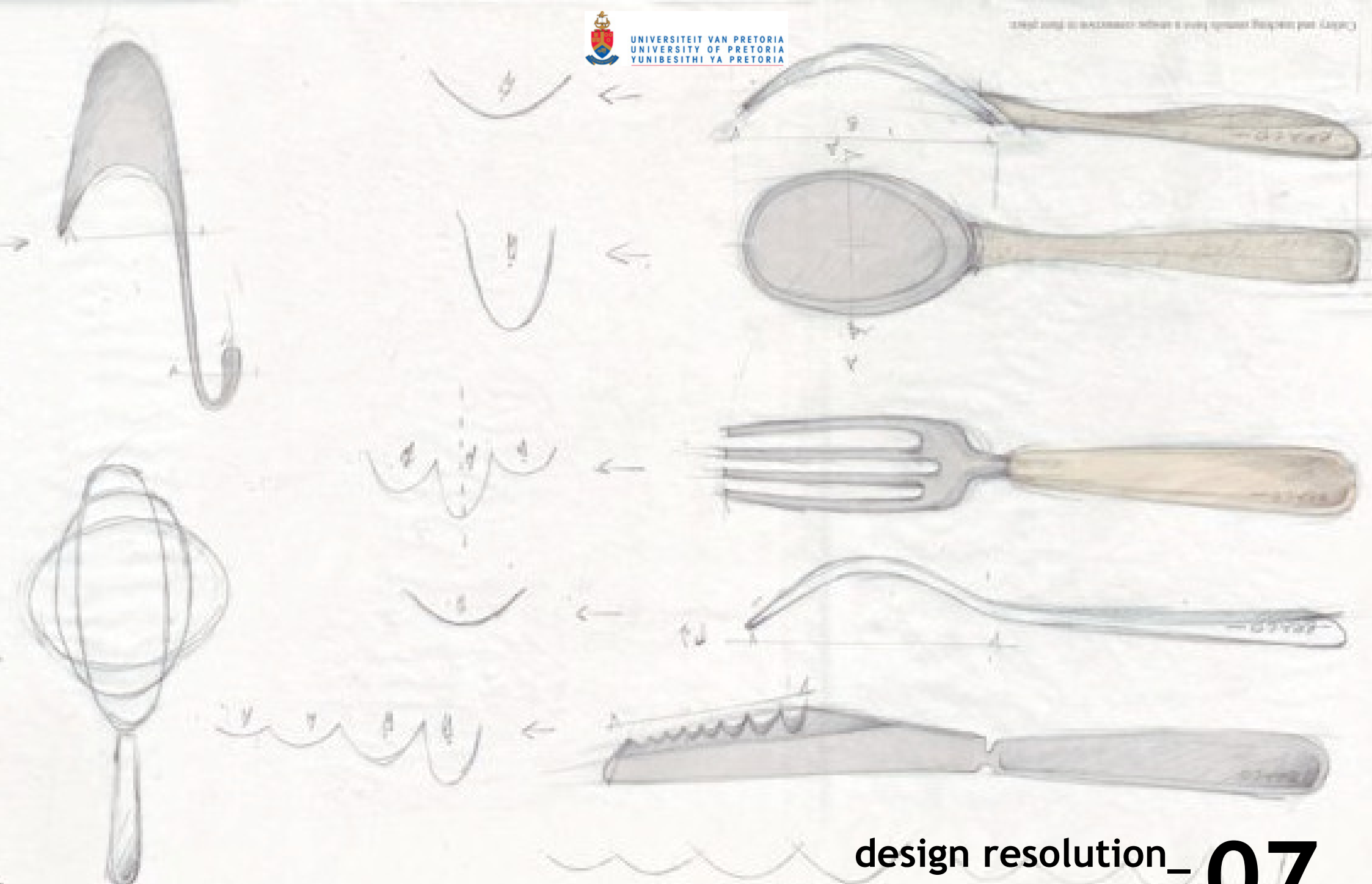
Fibre cement planter boxes are supported above the truss on a secondary frame consisting of 70x70x6mm steel angles and supporting struts.



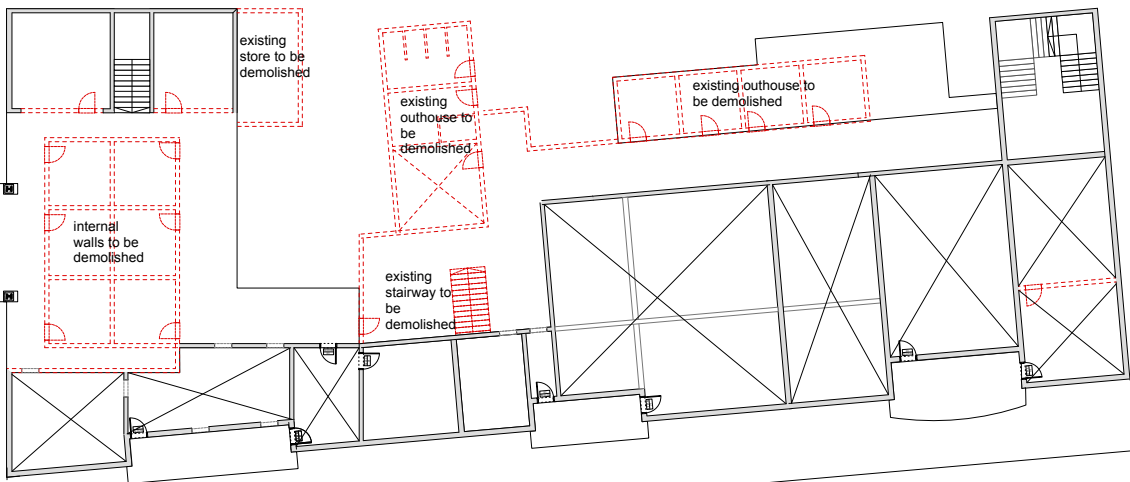
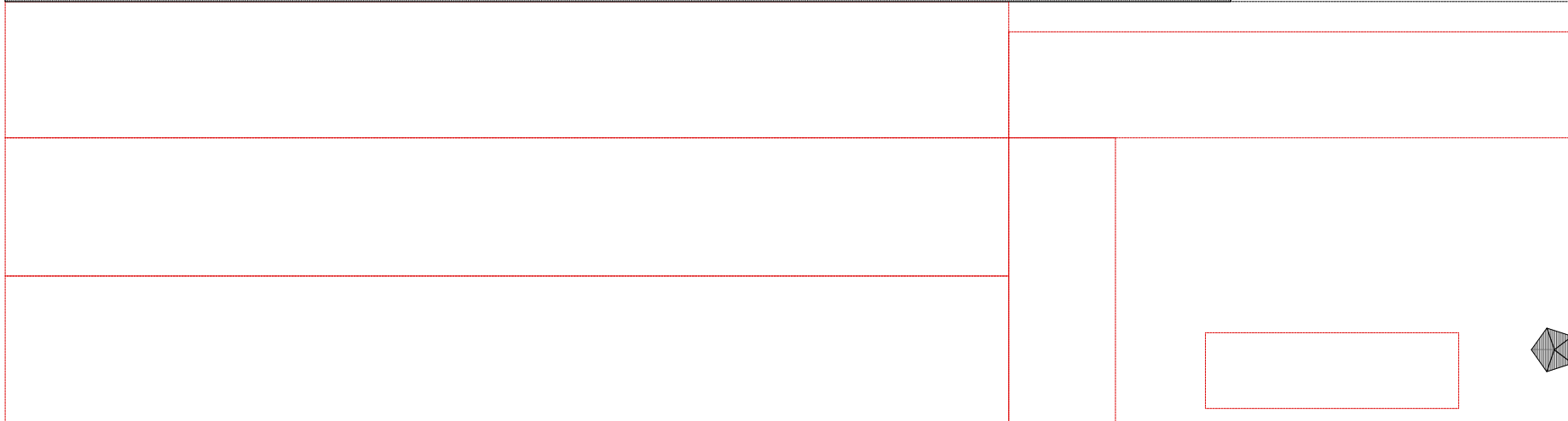
design perspectives_



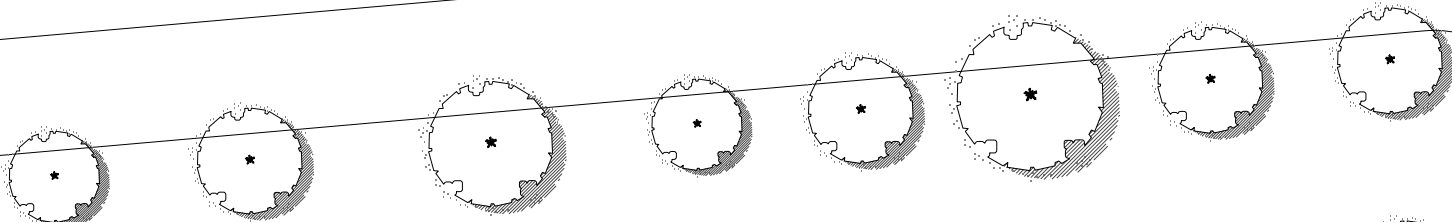


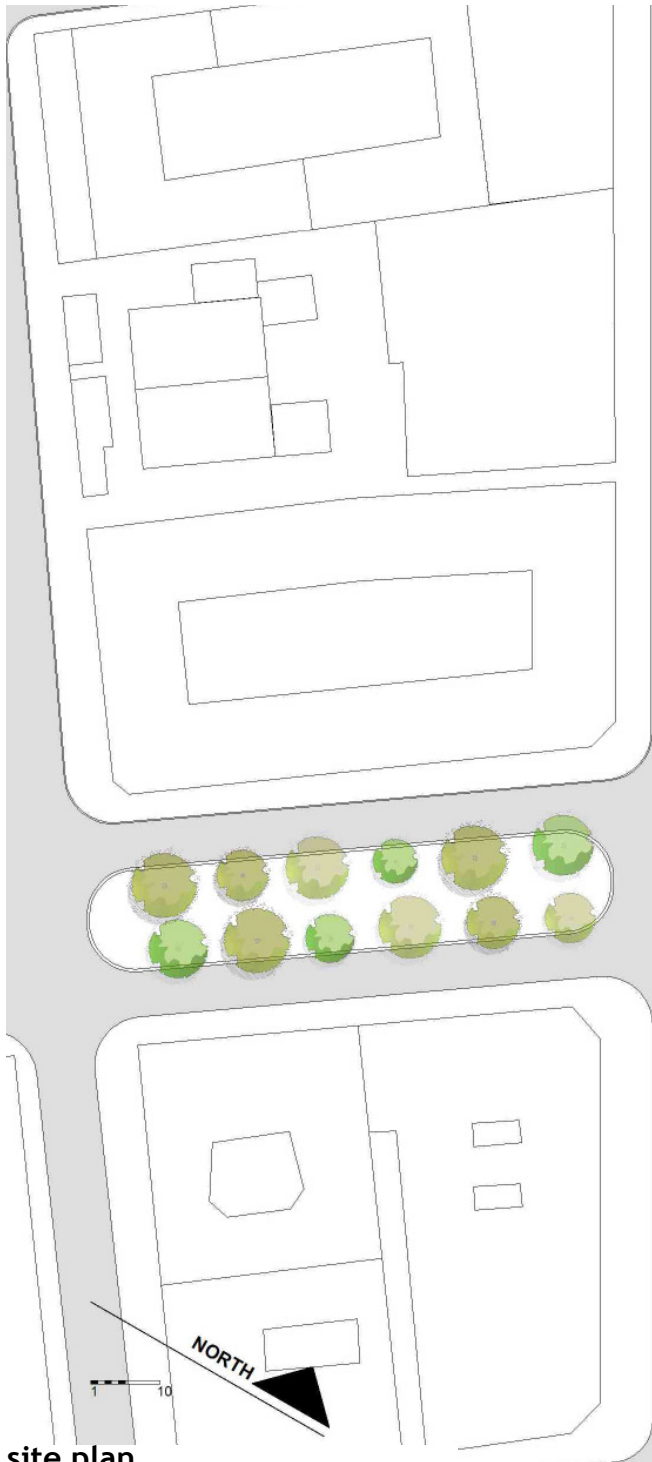


design resolution_07



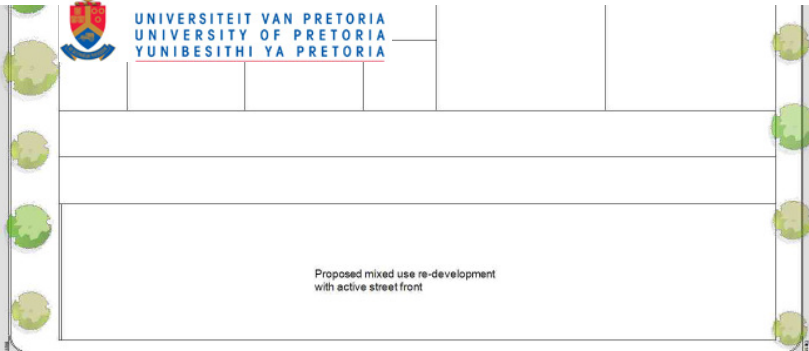
demolition plan first floor_





AVENUE 25TH SEPTEMBER

AVENUE 25TH SEPTEMBER



Proposed mixed use re-development with active street front

PROPOSED INTERBLOCK CONNECTING ROAD

LOADING BAY

9 PARKING

16 PARKING



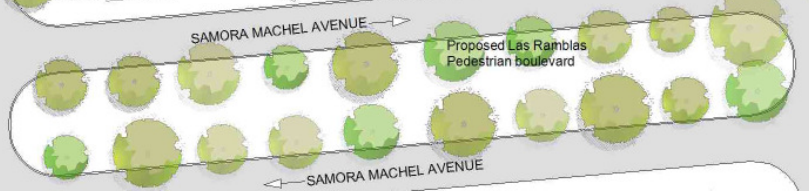
Proposed Food Workshop

Proposed mixed use residential

Proposed mixed use commercial

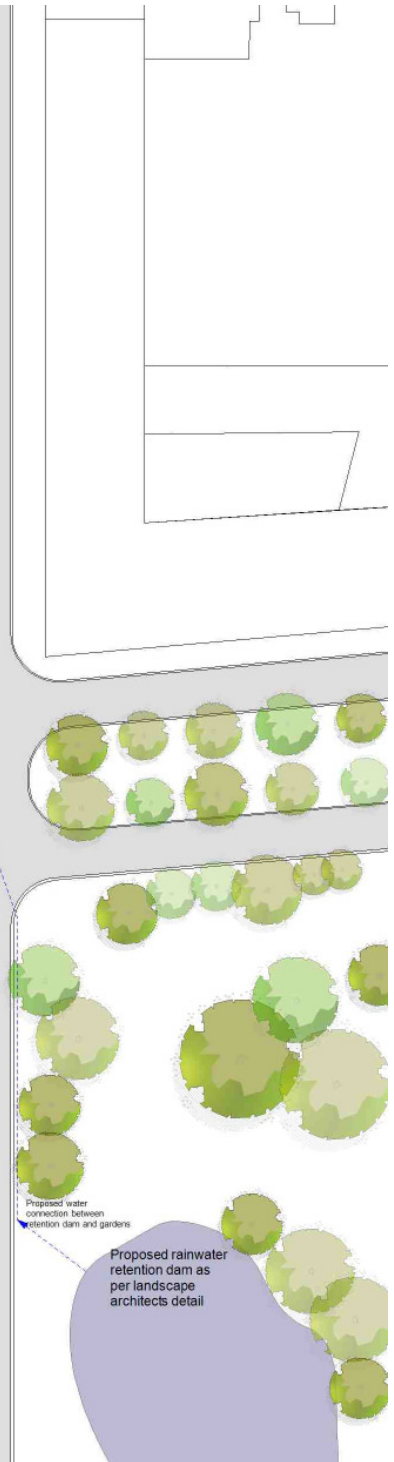
SAMORA MACHEL AVENUE

SAMORA MACHEL AVENUE



Proposed Las Ramblas Pedestrian boulevard

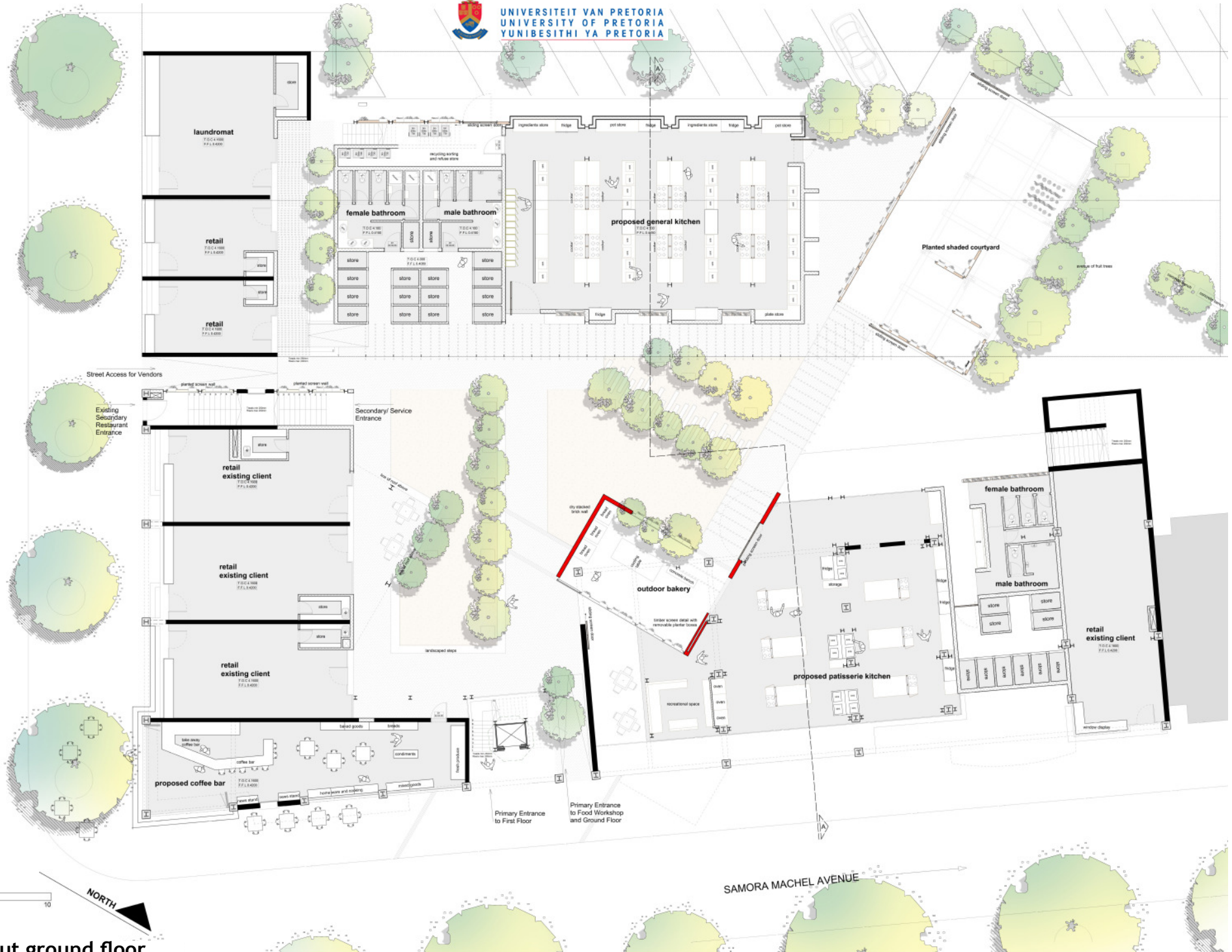
AVENUE ZEDIQUIAS MANGANHELA



Proposed water connection between retention dam and gardens

Proposed rainwater retention dam as per landscape architects detail



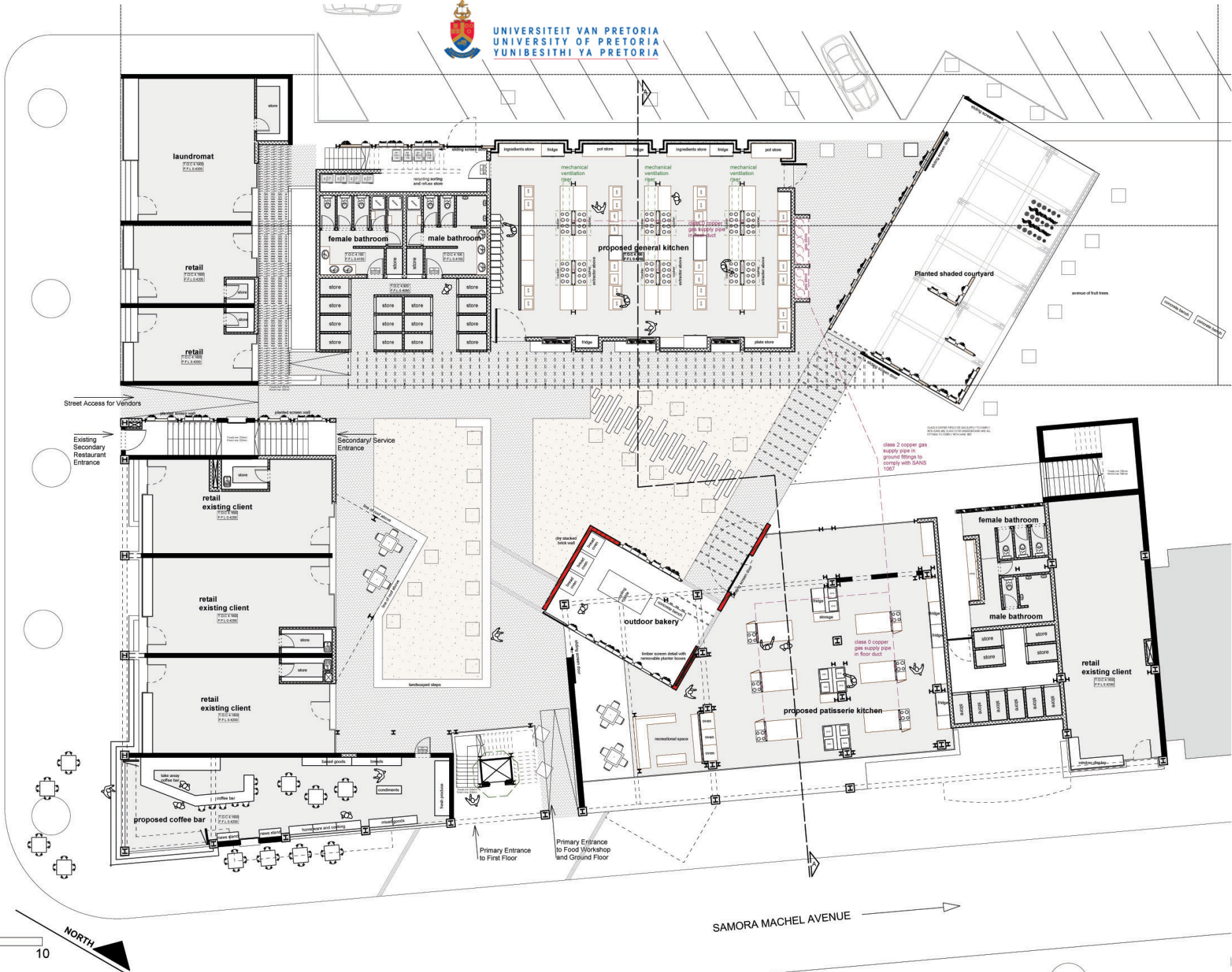


AVENUE 25TH SEPTEMBER

SAMORA MACHEL AVENUE



design layout ground floor_



AVENUE 25TH SEPTEMBER

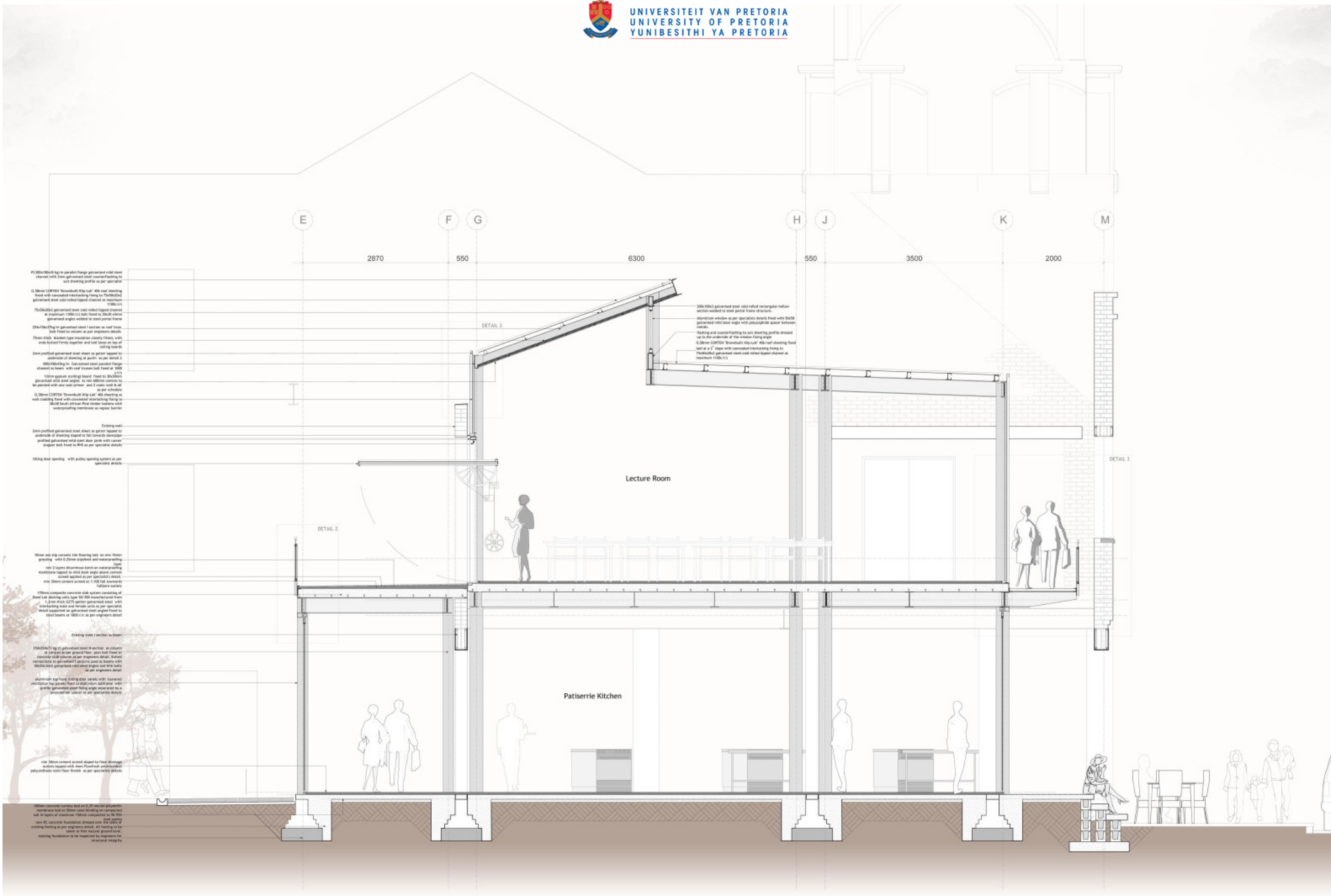
SAMORA MACHEL AVENUE



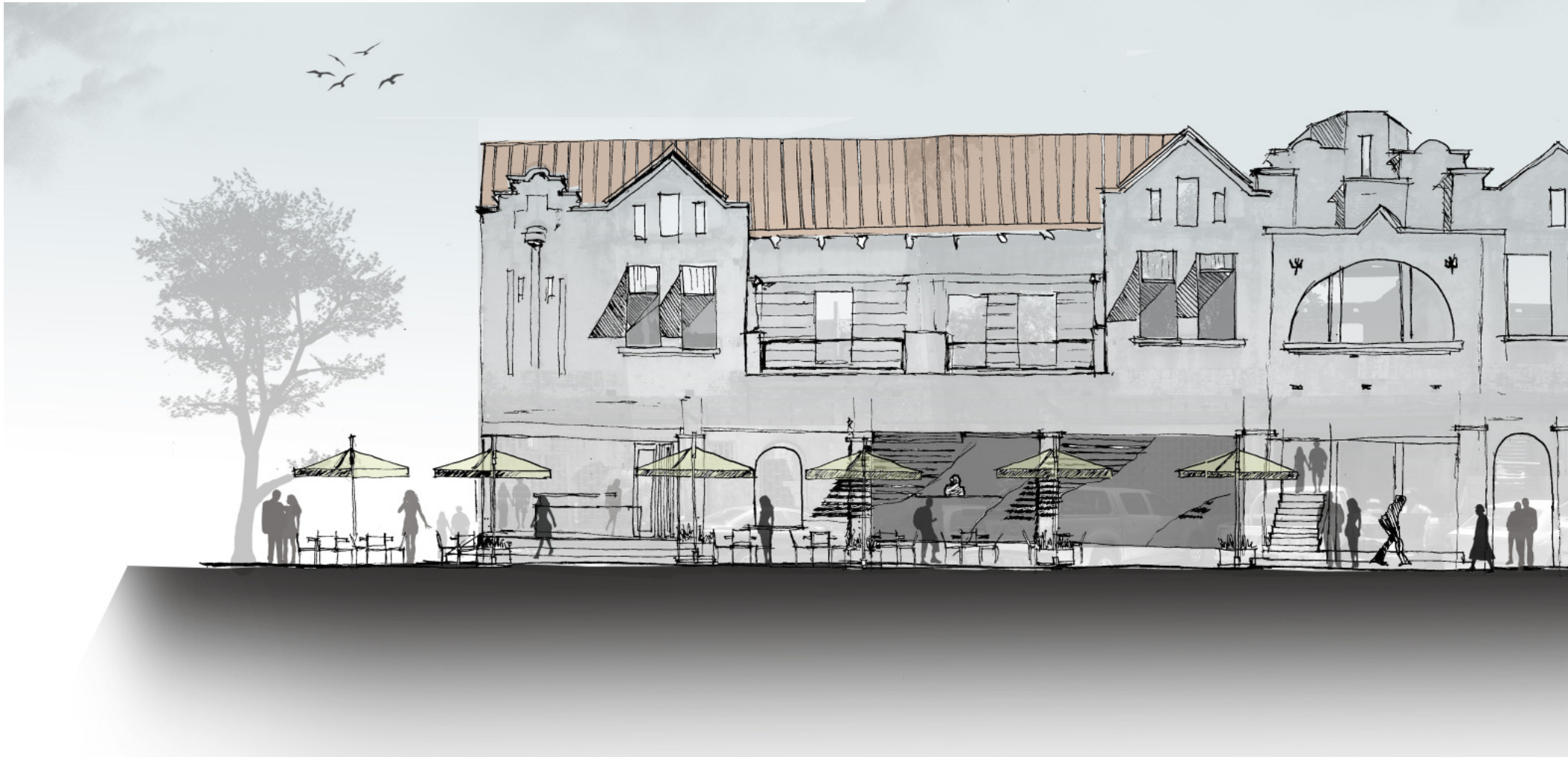
services layout ground floor_



design layout first floor_



section A-A (page 2)_



Samora Machel Avenue elevation_
109







- 0,58mm CORTEN "Brownbuilt Klip-Lok" 406 sheeting as wall cladding fixed with concealed interlocking
- 38x38 South African Pine timber battens as carrier structure for cladding
- 0.375 polyolefin waterproofing membrane as vapour barrier to be lapped under galvanised steel gutter detail
- 12.5mm fibre cement board fixed as per specialist details
- 22mm internal plywood board fixed with clout nails to supporting framework. All timber to be treated with min two coats internal grade sealant as per finishing schedule
- 76x38 Galvanised mild steel channel as edge detail
- 120x60x3x8kg/m galvanised rectangular hollow section supporting window opening welded to vertical support members
- Aluminium window frame fixed with 30x30x3 angle. All metals to be separated with polysulphide separators

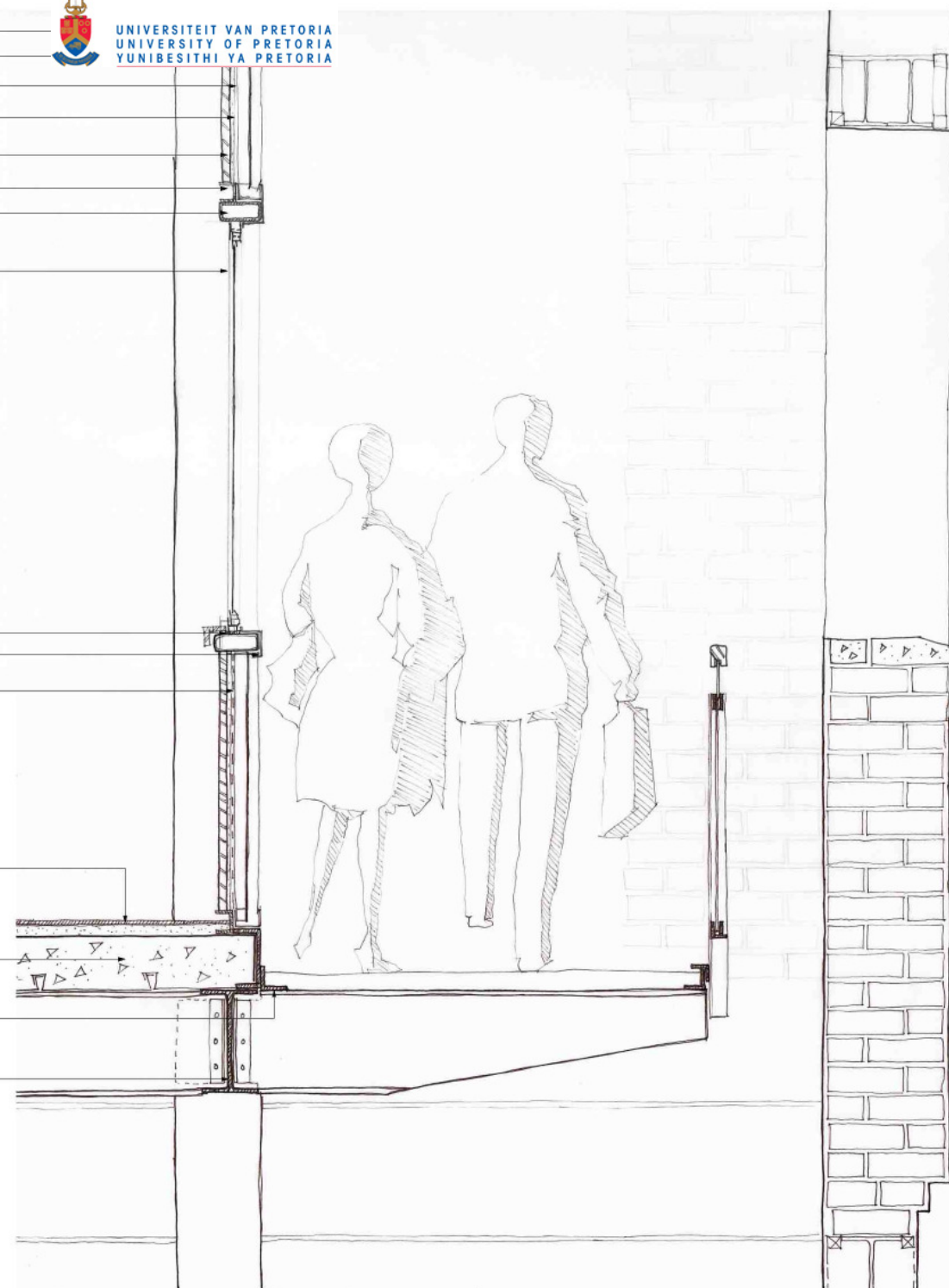
- 120x60x3x8.3kg/m RHS as window sill
- 2mm galvanised steel profiled flashing to be taken up and dressed to edge of window frame.
- 0.25 mm polyolefin waterproofing membrane to be dressed up to underside of window frame

- 4mm carpet tile laid on min 30mm cement screed with adhesive as per specialist details

- 170mm composite concrete slab system consisting of Bond Lok decking units type 50/300 manufactured from 1,2mm thick G275 spelter galvanised steel with interlocking male and female units as per specialist detail supported on galvanised steel angled fixed to steel beams at 1800 c/c as per engineers detail

- 70x70x4mm galvanised steel angle welded to steel channel to support walkway metal floor

- 305x165x40kg/m Galvanised steel I section at 1800c/c's bolt fixed to 254x254x73 H sections as per engineers detail. Cantilevered steel beam to be tapered at edge as per engineers detail

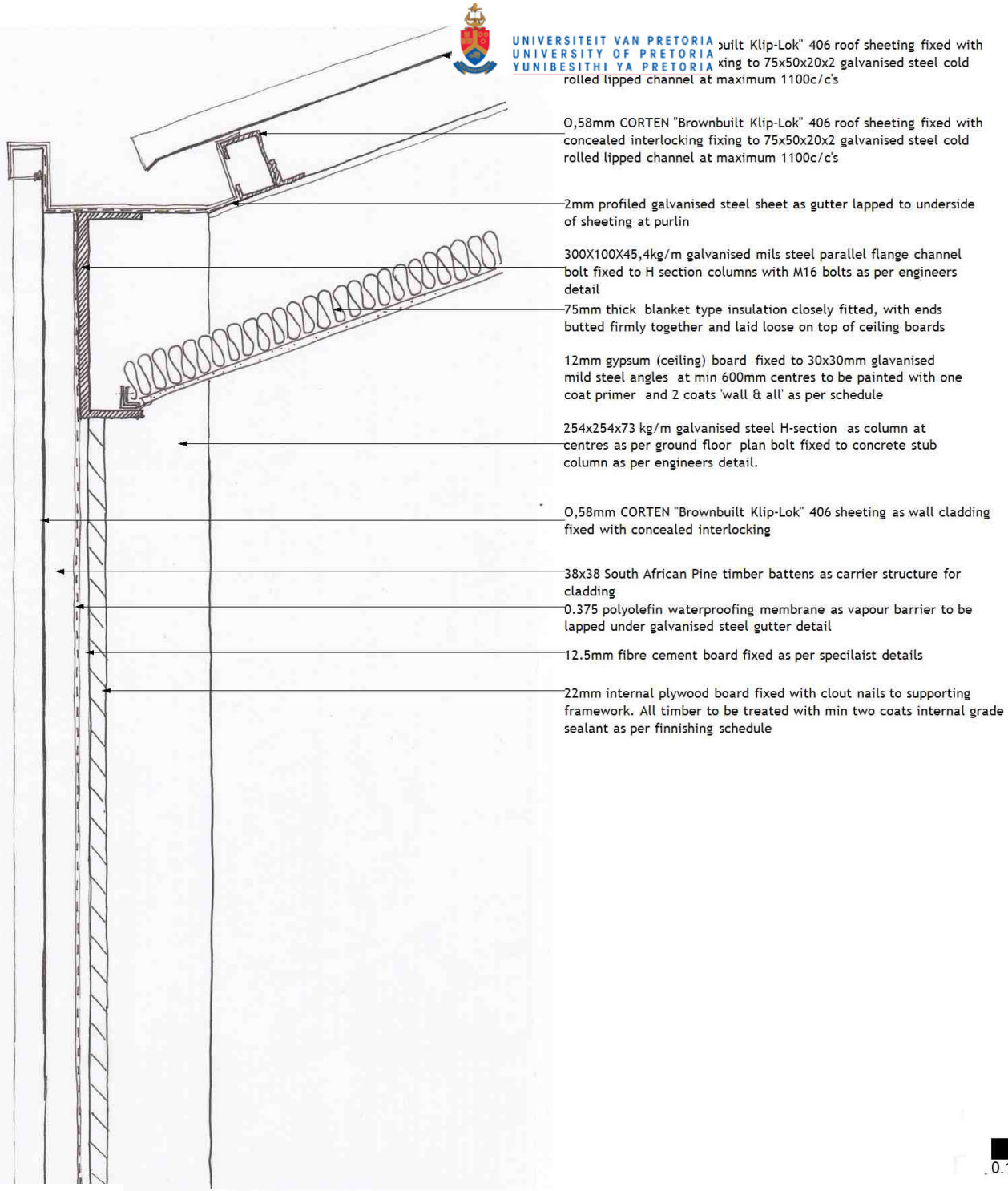


walkway detail_





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0,58mm CORTEN "Brownbuilt Klip-Lok" 406 roof sheeting fixed with concealed interlocking fixing to 75x50x20x2 galvanised steel cold rolled lipped channel at maximum 1100c/c's

2mm profiled galvanised steel sheet as gutter lapped to underside of sheeting at purlin

300X100X45,4kg/m galvanised mild steel parallel flange channel bolt fixed to H section columns with M16 bolts as per engineers detail

75mm thick blanket type insulation closely fitted, with ends butted firmly together and laid loose on top of ceiling boards

12mm gypsum (ceiling) board fixed to 30x30mm galvanised mild steel angles at min 600mm centres to be painted with one coat primer and 2 coats 'wall & all' as per schedule

254x254x73 kg/m galvanised steel H-section as column at centres as per ground floor plan bolt fixed to concrete stub column as per engineers detail.

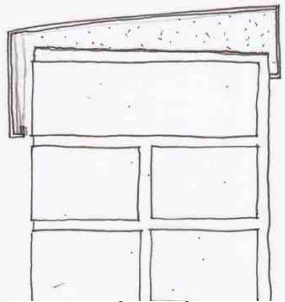
0,58mm CORTEN "Brownbuilt Klip-Lok" 406 sheeting as wall cladding fixed with concealed interlocking

38x38 South African Pine timber battens as carrier structure for cladding

0.375 polyolefin waterproofing membrane as vapour barrier to be lapped under galvanised steel gutter detail

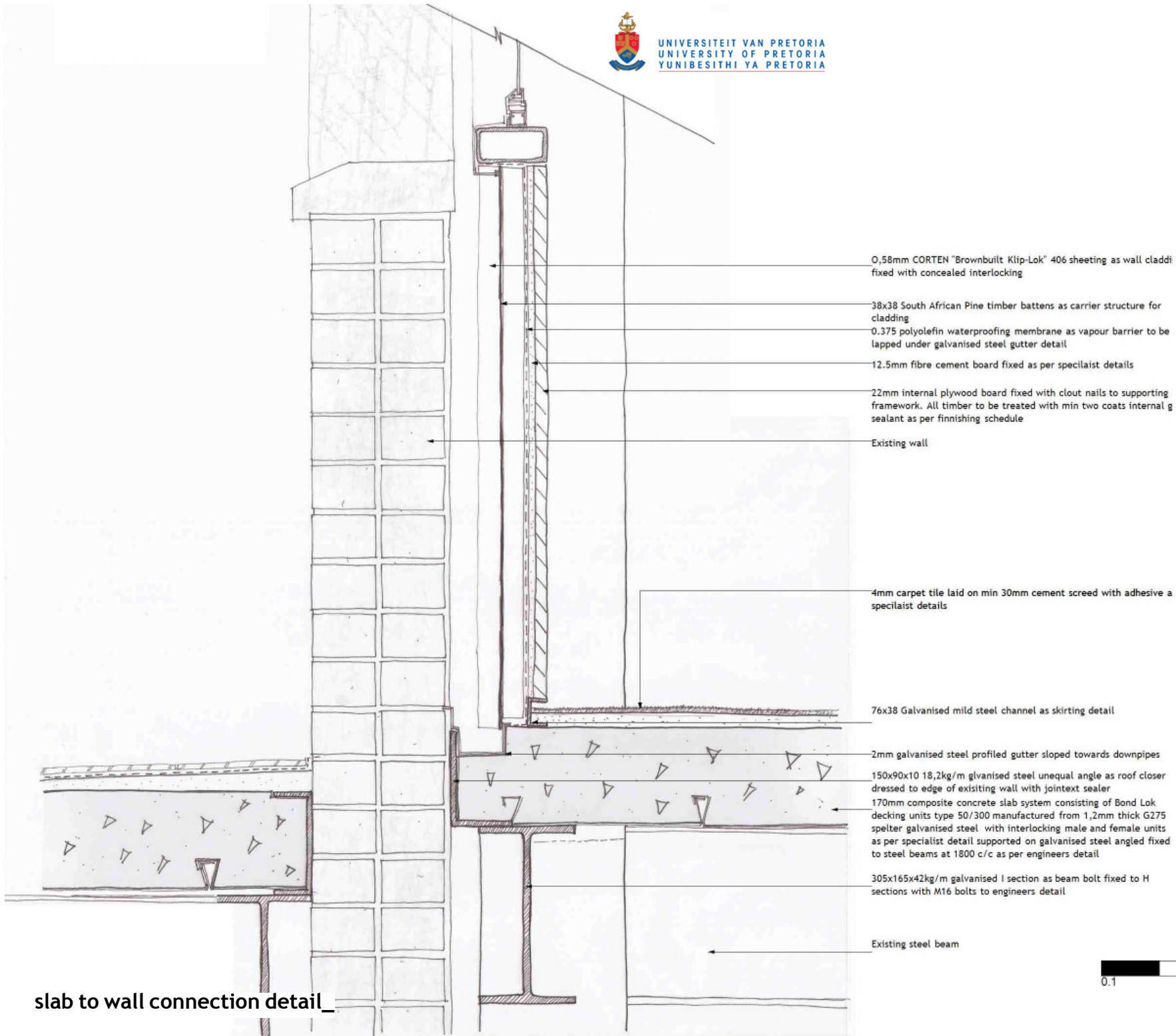
12.5mm fibre cement board fixed as per specialist details

22mm internal plywood board fixed with clout nails to supporting framework. All timber to be treated with min two coats internal grade sealant as per finishing schedule



eaves detail_





0,58mm CORTEN "Brownbuilt Klip-Lok" 406 sheeting as wall cladding fixed with concealed interlocking

38x38 South African Pine timber battens as carrier structure for cladding

0,375 polyolefin waterproofing membrane as vapour barrier to be lapped under galvanised steel gutter detail

12,5mm fibre cement board fixed as per specialist details

22mm internal plywood board fixed with clout nails to supporting framework. All timber to be treated with min two coats internal g sealant as per finishing schedule

Existing wall

4mm carpet tile laid on min 30mm cement screed with adhesive as per specialist details

76x38 Galvanised mild steel channel as skirting detail

2mm galvanised steel profiled gutter sloped towards downpipes

150x90x10 18,2kg/m galvanised steel unequal angle as roof closer dressed to edge of existing wall with jointtext sealer

170mm composite concrete slab system consisting of Bond Lok decking units type 50/300 manufactured from 1,2mm thick G275 spelter galvanised steel with interlocking male and female units as per specialist detail supported on galvanised steel angled fixed to steel beams at 1800 c/c as per engineers detail

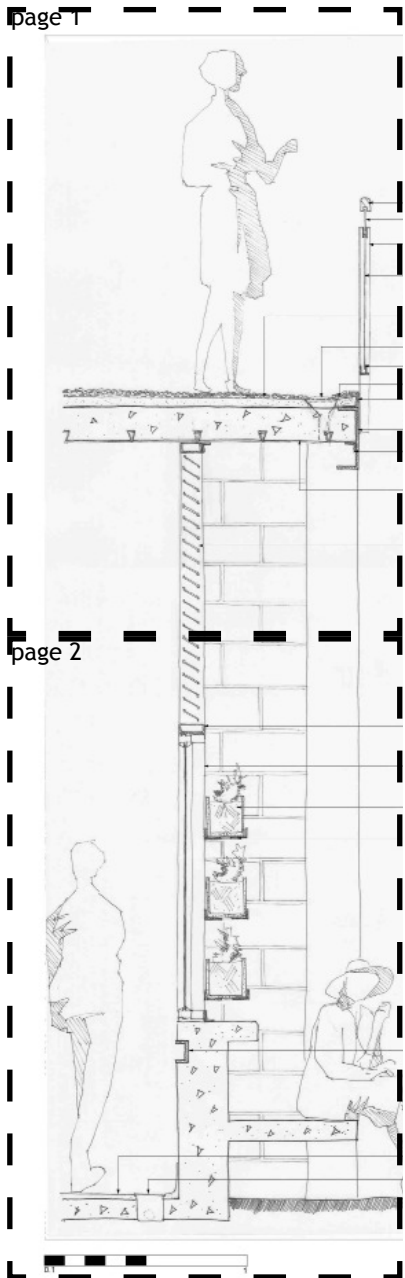
305x165x42kg/m galvanised I section as beam bolt fixed to H sections with M16 bolts to engineers detail

Existing steel beam

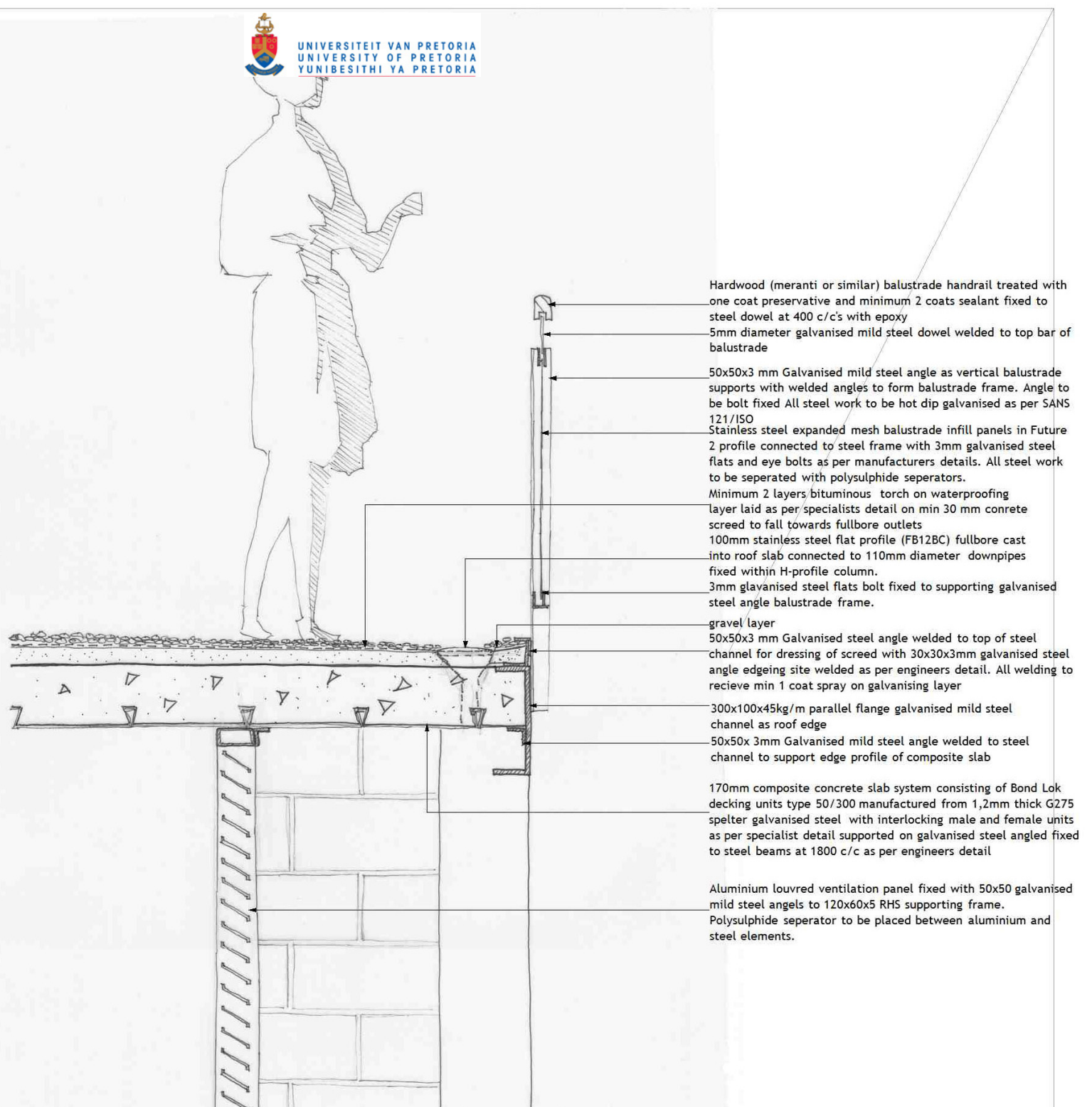


slab to wall connection detail_

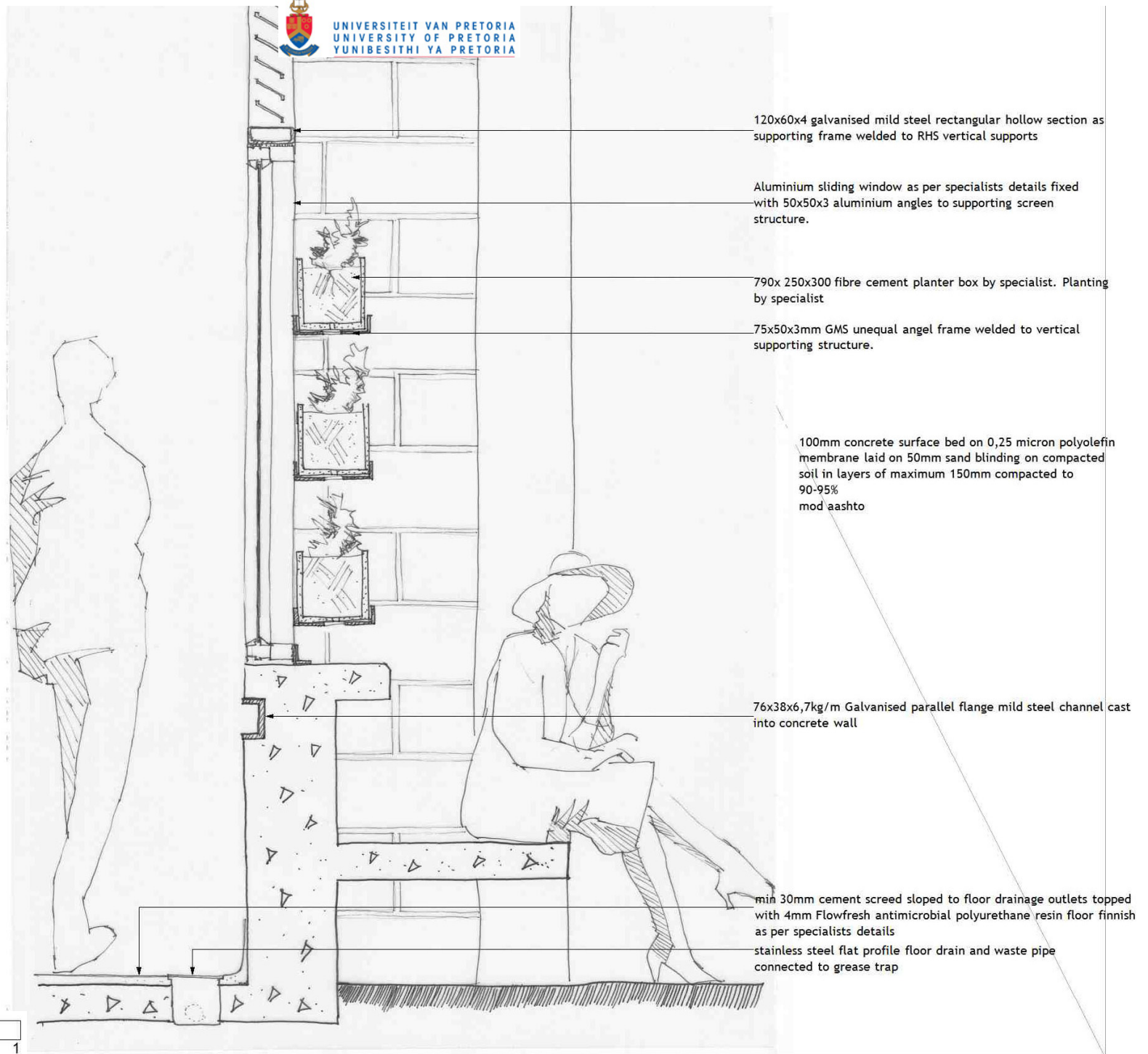
page 1



page 2



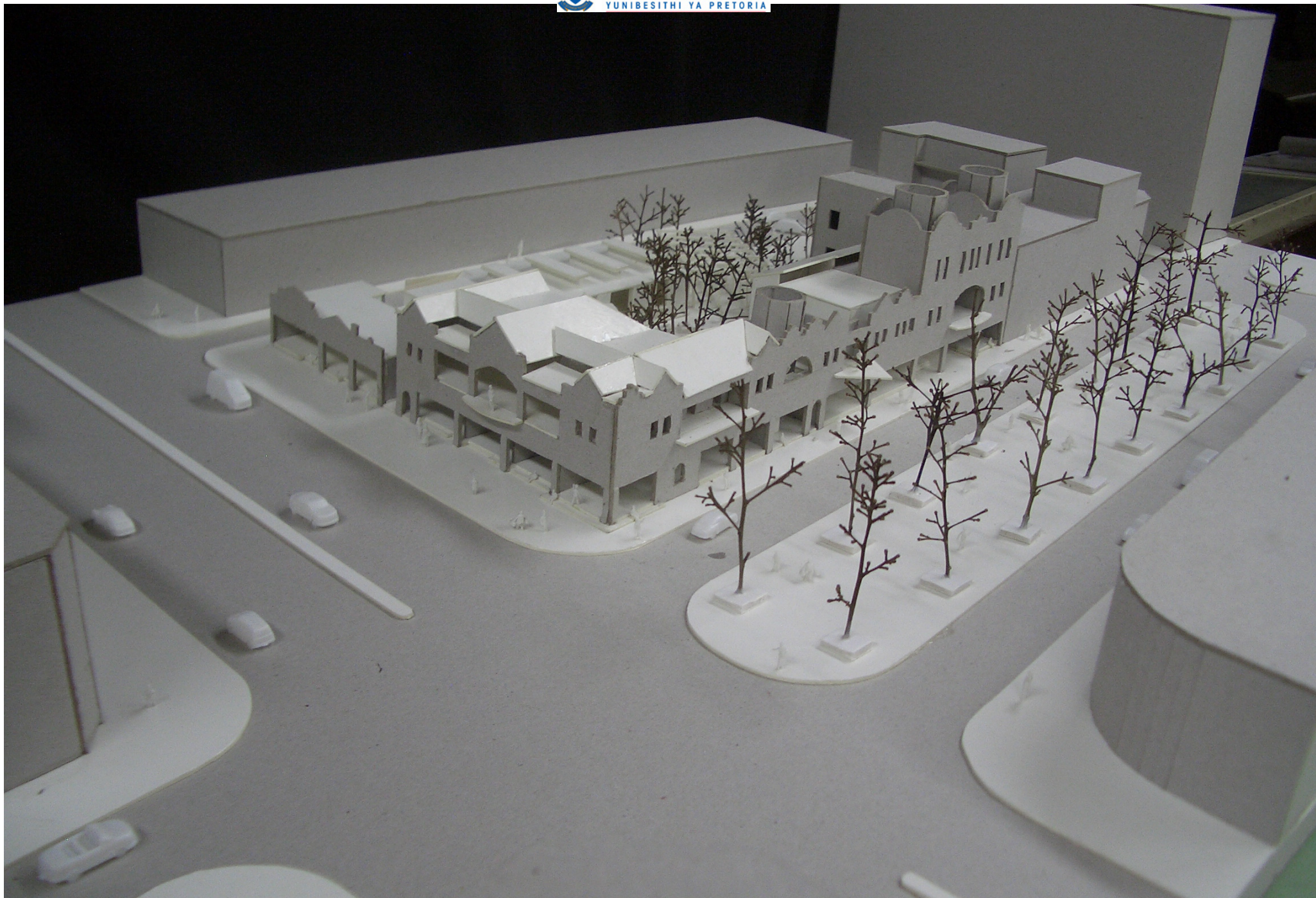
strip planter wall detail (page 1)_



0.1

1

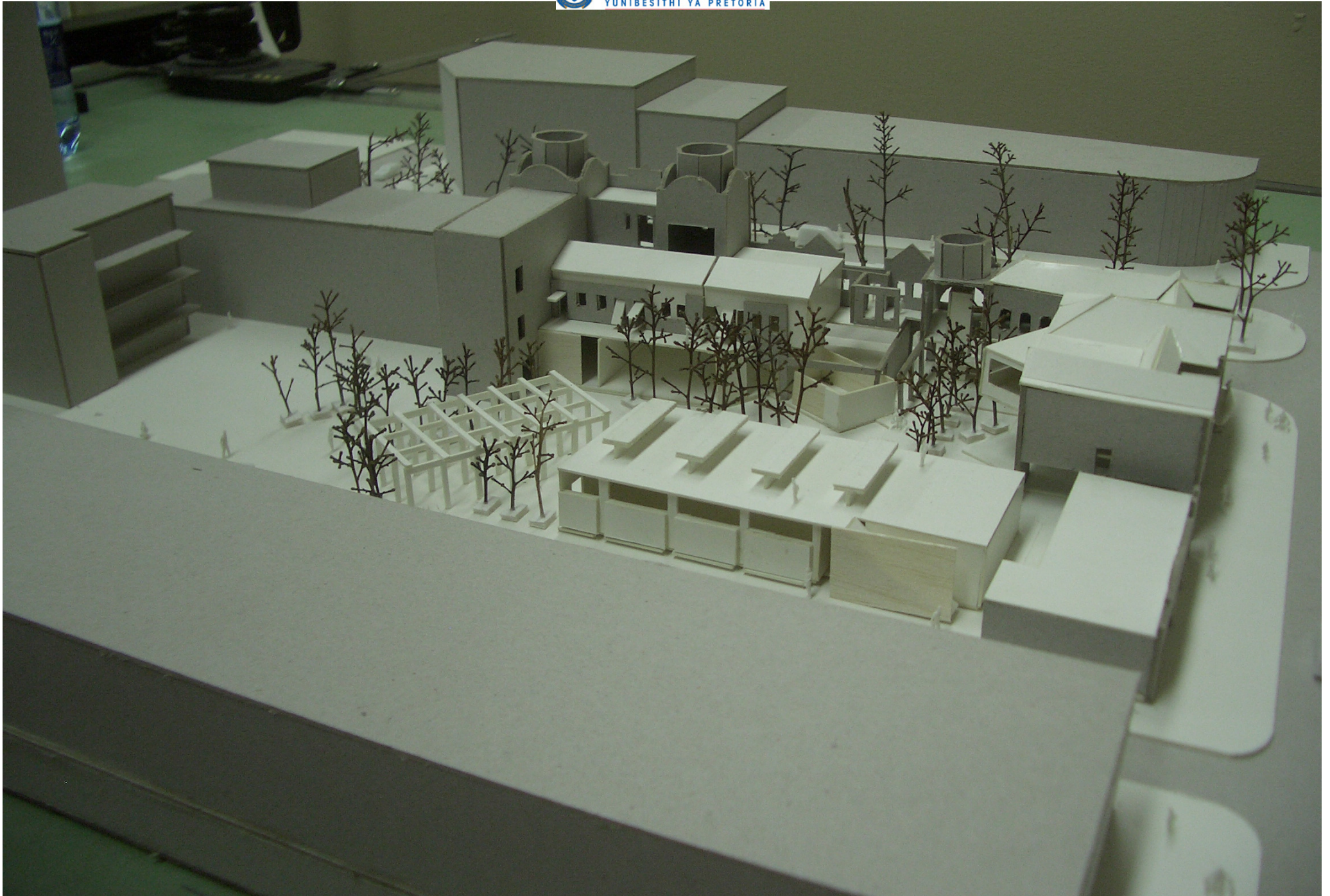
strip planter wall detail (page 2)_



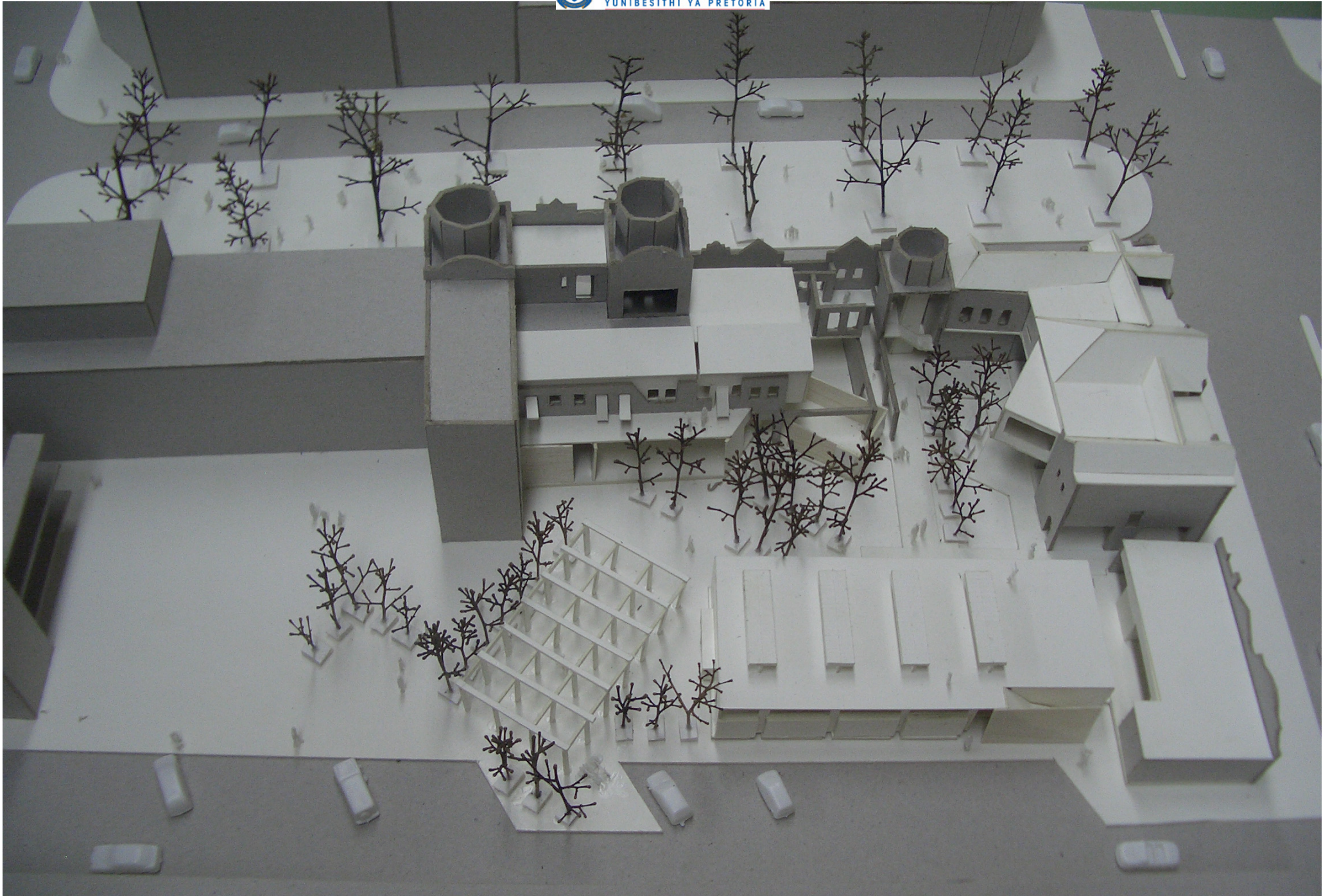
model perspectives cnr Avenue 25 September and Samaora Machel Avenue_



model perspective Samora Machel Avenue_



model perspective rear courtyard_



model perspective birds eye view of design intervention_

bibliography_

Allison, P (editor). (2006). David Adjaye. Making Public Buildings. Specificity, Customisation, Imbrication. London: Thames and Hudson

Alexander, C, Ishikawa, S & Silverstein, M. (1977) A Pattern Language. Towns, Buildings, Construction. New York : Oxford University Press.

Bennes, C (2010). The Dovecoat Studio. Available at <http://www.architectsjournal.co.uk/small-projects-2010/the-dovecote-studio-snape-maltings-suffolk-by-haworth-tompkins/5213067>. article (accessed 25 August 2011)

Coombs, T. (1992) Scarpa's Castelvecchio: a critical rehabilitation. University of California: Berkeley. Available at <http://www.escholarship.org/uc/item/6ws3f5zn> (accessed 10th June 2011)

Finch, P. (December 2005). The artist within: from pigsty to showroom. Architectural Review. 217(1306), pp 46-47

Hill, J. (2006) Immaterial Architecture. London: Routledge

Kazarian, EA. (1989) Foodservice Facilities Planning. New York: Van Nostrand Reinhold.

Lefebvre, H. (1991) The production of space. Oxford: Blackwell Publishers

Milke, J. (2002) A Overview of Fire Protection in Buildings. Available at http://www.fema.gov/pdf/library/fema403_apa.pdf (Accessed 27th June 2011)

Pallasmaa, J. (2005). The eyes of the skin. London: TJ International Ltd

Pham, D. (2011) Ancient Dominican church renovated into modern bookstore: inhabitat online magazine. Available at <http://inhabitat.com/gorgeous-church-renovated-into-modern-bookstore/> (accessed 10th June)

ICOMOS a. (1999) The Burra charter: the Australian ICOMOS charter for places of cultural significance. Available at <http://australia.org/burra.html> (accessed 15 April 2011)

ICOMOS b. (2003) ICOMOS charter- principles for the analysis, conservation and structural restoration of architectural heritage act. Available at http://icomos.org/charters/structures_e.htm (accessed 10 April 2011)

ICOMOS c. (1967) Norms De Quito. Available at <http://www.international.icomos.org/charters/quito.htm> (accessed 17 April 2011)

Schultz, A. (2010) Carlo Scarpa layers. Edition Axel Menges: -London

Tata steel. (2011). The reuse of fire damaged steel available at http://www.tatasteelconstruction.com/en/design_guidance/structural_design/fire/fire_damage_assessment/re_use_of_fire_damage_buildings/ (accessed 11 October 2011)

Trancik, R. (1986) Finding lost space: theories of urban design. New York: Van Nostrand Reinhold Company

Van Rensburg, R. (2007) Design 310 class hand out: architectural ideology. Pretoria: University of Pretoria. p 3

Velazquez, L. (2010) Learning about green walls available at <http://www.greenroofs.com/blog/2010/07/> (accessed 14 June 2011)