COMMUNITY ENGAGEMENT

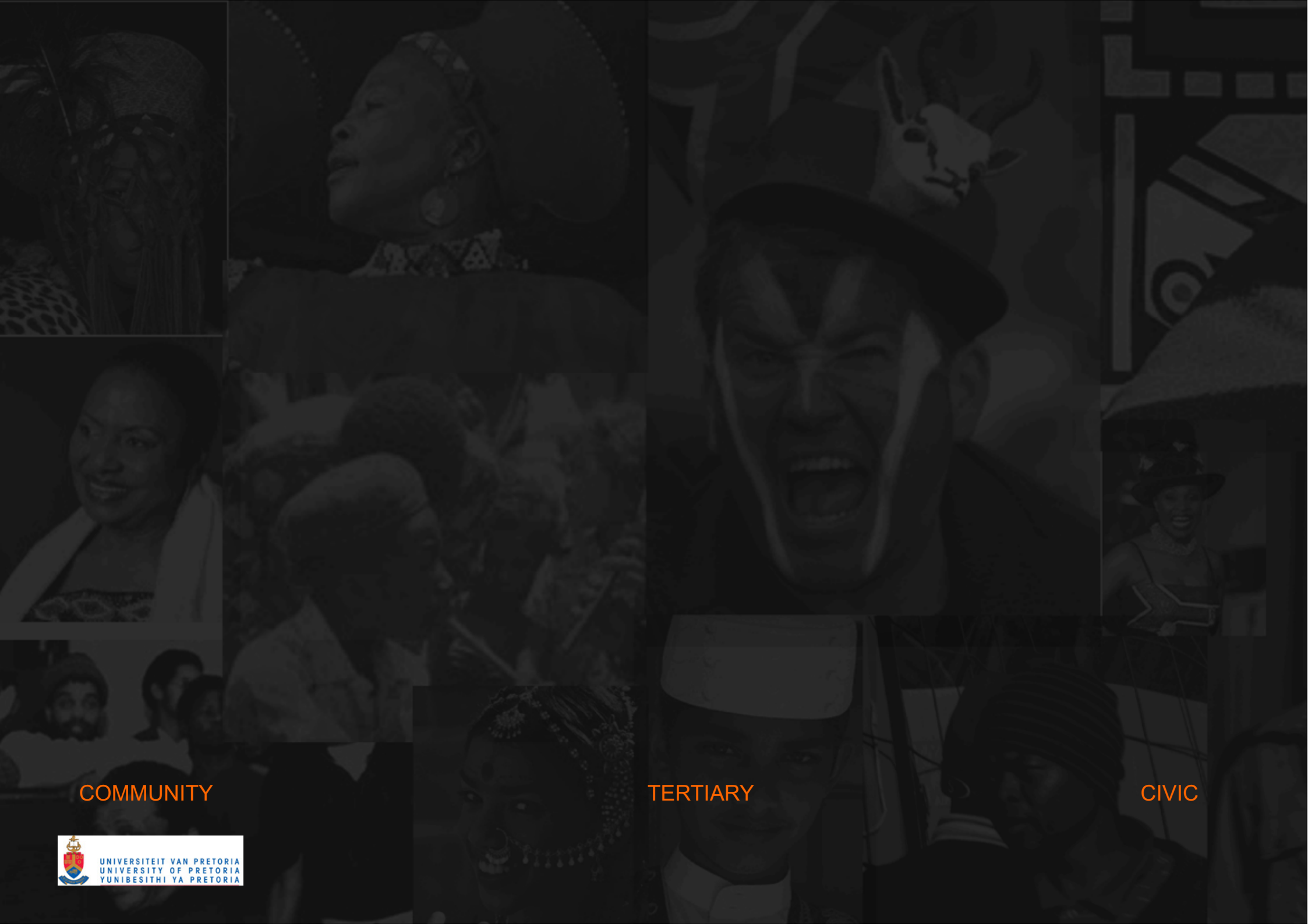
South Africa: A development in community theory and education engagement.

ARCHITECTURE A FACILITATOR

JAKO ALBERT NICE

NOVEMBER 2008

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA



COMMUNITY

TERTIARY

CIVIC

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

BY GRACE, LOVE AND MERCY _JESUS CHRIST MY LORD AND SAVIOUR. DEDICATED TO_THE NICE FAMILY AND THE PEOPLE OF MAMELODI

COMMUNITY ENGAGEMENT

A community engagement facilitator for Mamelodi East in partnership with the University of Pretoria.

SUBMITTED AS PART REQUIREMENT FOR MArch(Prof)
FACULTY OF ENGINEERING, BUILT ENVIRONMENT AND INFORMATION TECHNOLOGY
THE UNIVERSITY OF PRETORIA
SOUTH AFRICA

JAKO ALBERT NICE_ 27240755
2008

STUDY LEADER: Mr. G YOUNG
JOINT STUDY LEADER: Mr. G WHITE

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Figure. 1
Mamelodi

"CULTURE EQUALS GRAMMAR, AND THE COMMUNITY ENTERS AS THE DIALOGUE."
Poetic of people. (M. Edwards, 1991)

"BUILT FORM IS ONLY A POTENTIAL ENVIRONMENT SINCE IT SIMPLY PROVIDES POSSIBILITIES OR CLUES FOR SOCIAL BEHAVIOUR."
Planning for people. (M. Broady, 1968)

"THROUGH WISDOM A HOUSE IS BUILT, AND BY UNDERSTANDING IT IS ESTABLISHED;
BY KNOWLEDGE THE ROOMS ARE FILLED WITH ALL PLEASANT AND PRECIOUS RICHES"
NKJV Holy Bible. (Proverbs 24:3,4)

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

A F R I C A
S O U T H A F R I C A
G A U T E N G
T S H W A N E
M A M E L O D I

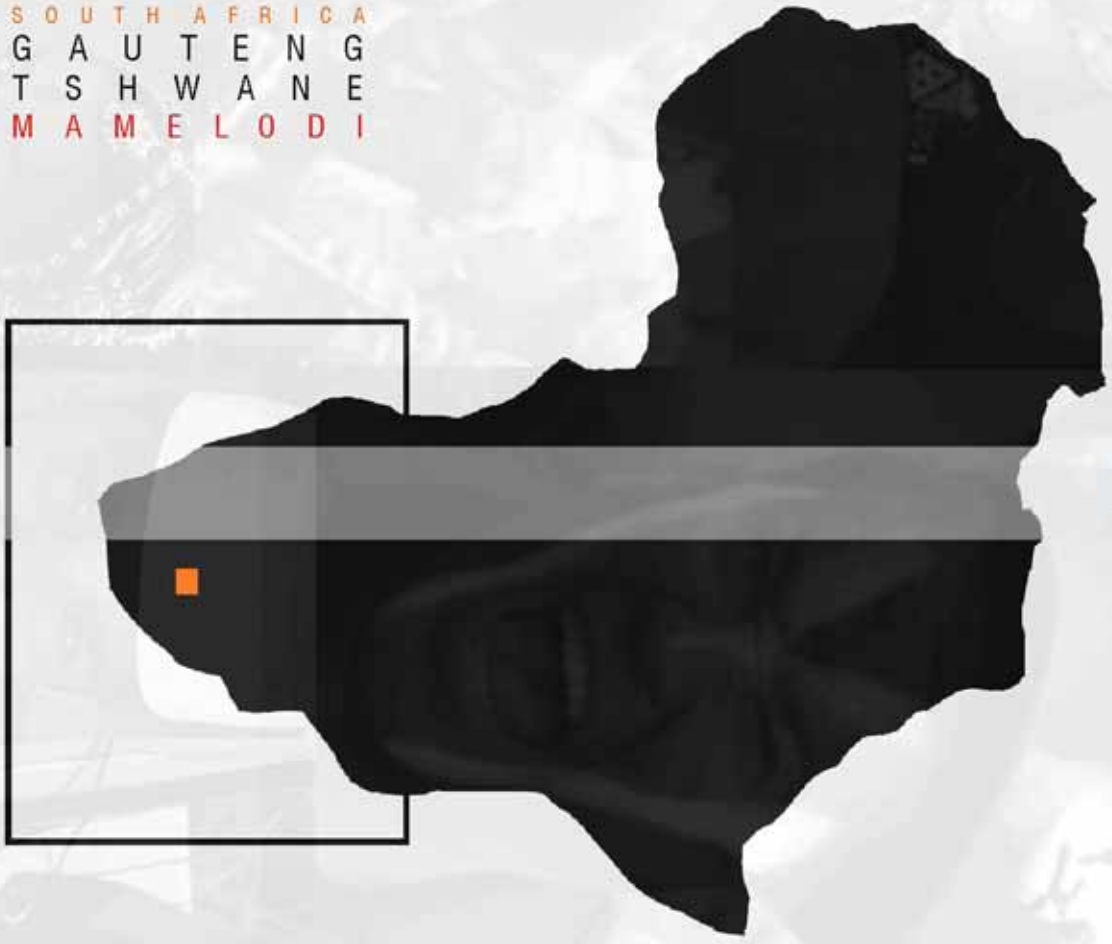


Figure 2
AFRICAN
CONTEXT

INTRODUCTION to community engagement

Community development and social intervention has been practised by most Universities, colleges, Government and NGOs' world wide, each one responding to its own context and subsequent social situation and structure.
However in recent time one finds this development to reach beyond the immediate community and its context but rather to a societal stage; meeting the need for more. It is by this thinking that the concept of community engagement is realised. As noted in a paper by the University of Western Australia:

Howard P. Butcher J_ [Community Engagement. The mutual learning benefit of long term partnership.] 2003, pg 1

"in its statement on community engagement, the university argues that engagement with the community is not just service to it through imparting knowledge about social issues and problems. Engagement is defined as a reciprocal process whereby communication and interaction effectively lead to a shared perception of social issues and concerns"

"Genuine engagement moves beyond the level of mere service and allows the opportunity for societal response to help redefine the nature of the problem itself and perhaps forge new solutions."

We as a South African people find ourselves in a context richly entangled by cultures, races, ages, ethnics and histories. We all share a country of diversity and we all deal with a full spectrum of people of all economic backgrounds and livelihoods on a daily basis.
The common denominator is education or the lack their off. The effect that this has on people and on the development of a country and communities.
To address community engagement at any level one needs to address and understand what the social boundaries and obstacles are that prevent a people to effectively live and develop together.

Community engagement allows for the merger of these two paradigms. This is realised through the use of tertiary education by involving all tiers of educated people and all tiers of economic affluence with the possibility ti deliver certain civic functions that holistically effects and develops the community.
We are all people with the same needs and same aspiration some have bigger dreams and other smaller goals living in communities and surviving as individuals, as noted by Paul Oliver

P. Oliver [Dwellings.], p56 2003

"Humankind is social, and the need to be in the company of others extends beyond safety and self-preservation. Companionship and competition, argument and appreciation, the sharing of problems and the giving of advice, and the discussion and dispute about issues of mutual concern are essential among all social groups"

" But a broadening of local knowledge and experience. The news of events, the exchange of ideas and information and the expansion of the intellect and the heart are made more possible in the social life of the village and Small Township"

University Pretoria 2008

according to its strategic plan; University of Pretoria: Inspiring the Innovation generation_ creating the future 2007 -2011:
"Promoting community engagement particularly on the Mamelodi Campus."

"Community engagement, among other things, in the form of academic service learning, will receive increased attention with the Mamelodi Campus becoming the Universities main delivery platform of these activities."

Dr. Tokwane [UP] 2003

In the words of Dr. Tokwane, head of the new faculty of Community Engagement University of Pretoria:
"Bring Mamelodi to the campus"; "Community engagement, through changing the perspective of community on University."

This dissertation will endeavour to realise the vision of the University of Pretoria of academic service learning and the vision of Dr. Tokwane head of faculty of Community Engagement; but go one step further beyond the immediate and propose a holistic effective method of engaging with the community, the Mamelodi East Community. As expressed by Howard P Butcher of the University of Western Australia

Howard P. Butcher J_. 2003 pg 1

"engagement with the community is not just service to it through imparting knowledge about social issues and problems, engagement is defined as a reciprocal process whereby communication and interaction effectively lead to a shared perception of social issues and concerns"

In summary the principle methodology aimed in this dissertation: Creating a community engaged campus and tertiary education by combining service learning, education, providing the require a civic service and developing a facilitary platform to the community, thus becoming an open door for community activity and interaction. Not just repeating the lines but actually playing the role.

M. Broady_ 1968, pg 31

"The physical and social design needs to be interlocking"

To attempt a postulated design hypothesis on community engagement one needs to firstly define the term community and the methods pertaining to engaging with this community and secondly contextualise and possibly regionalise the theme to South Africa and its people.
Only then can one effectively formulate an architectural approach to making social webbing architectural programmatic while being socially responsive to the South African and African environment.

M. Broady_ 1968, pg 23

"Architectural design like music to film is complementary to human activity it does not shape it."

CONTENTS

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

MAMELODI
MAMELODI WEST
MAMELODI EAST
FORMAL EAST
SITE_CAMPUS
TOWNSHIP EAST

Figure. 3
Mamelodi_
A housing fabric

CHAPTER 1_ A briefing in Community development.

1.1_

THE CHALLENGE_

In context of an RDP settlement characterised by both formal and informal urban housing fabric, host to 350 000+ people faced with restricted economic growth haunted by the apartheid regime spatial development policy, deprived of adequate civic and social facilities.
Faced with rapid informal unplanned sprawling to the east. See figure 3(pg5),5,6.

Shadowed by the presence of a tertiary knowledge incubator yet starved of educated people and finding itself faced with 60% illiterate, unskilled, impoverished, unemployed people.

A community left to develop in a state of lost identity and place making, stripped of culture and history. Today they bare the effect of past political segregated ideology.

C. Matheba, Silubleksa Ngaphe 1991

"Until you can rediscover your cultural identity, until you can have confidence in your own capabilities, which have been proved for certain historical epochs you will always be dominated."

Thus the challenge lies not in what the physical problems are, but it lies with the perception of the people engaging with these problems.

1.2_

A SOLUTION_

To interact with a community one needs to be a part of the community. To propose engaging with communities one needs to be both transparent and partial to all communities.
This dissertation proposes:

A transformation of perception, a re-definement of tertiary requirement in a developing township and subsequent reprogramming by integrating social, civic and education functions. The resultant:

A proposal to an African architectural design methodology and typology by cultural and social theory through community engagement that could result in a catalyst of societal transformation; aimed at community equity and sustainability.

J. Noero 1988

One must mix: "social, culture and commercial in order to create a resource base for the future".

1.3_

ATTEMPTING THE NEED_

A break down of tangible possibilities that will and could catalyse in societal and community development

The evaluation of social identity and disparate image of this identity by the users and the community of the University of Pretoria Mamelodi campus and Mamelodi.

1.3.1 Breaking the boundaries of "apartheid" architecture symbolism and social zoning still evident in the selected site but not within the context

1.3.2 Introducing new views on social and related education through introducing community engagement at both a scholarly level of research as well as at a community interaction level.

1.3.3 To change the image of tertiary education in context to its user.
Primary education _ School leaver
Secondary education_ Under graduate
Tertiary education _ Post graduate.
This aims at realising that a tertiary education is a means to assisting less educated people. Bettering oneself can not be compared to tertiary education and hence the dilemma this campus and area faces. Thus this praxis is aimed at both an urban and site approach.

1.3.4 Incorporating sustainable living and sustainable communities, Introducing green architecture and energy efficient design with resource efficient construction and living demand. Integrated to all levels of design from programming to resolution.

1.3.5 Introduce civic functions, that are urgently required for a growing community and in doing so creating a facilitatory platform for the community in partnership with the University, Government, local councils, and NGO's and business council.

1.4_

THE SUB SOLUTIONS, RESOLVING THE NEED_

1.4.1

SUB SOLUTION 1

In order to develop this engaged community one needs to cross the boundary of old to new and redefine the University of Pretoria Mamelodi campus to its context. This would require a new identity that would speak to the people of the community and the people of South Africa. Through architecture intervention this is possible.

Karel. Teige 1929

" Instead of monuments, architecture creates instruments"

1.4.2

SUB SOLUTION 2

Resolve the physical engagement of campus and community thereby transforming the perception of UP with in its local community the social shareholders thus allowing for economical benefit to all parties.

1.4.4

SUB SOLUTION 4

A silent road a silent building with no interaction leads to urban sprawl and lawless action. To incorporate the edge and that which is the boundaries of ones site allows positive social interaction and fosters positive image and engagement with the user on the inside as well as the community on the outside.

C. Alexander
[A Pattern Language]
1977

"Isolated buildings are symptoms of a disconnected sick society"

1.5.1

SUB SOLUTION 5

To accommodate nodal interchange within ones sphere of influence is to accommodate the life blood of a city, a community a township. Thus incorporating the parts that fills the whole will evolve in making the whole new again.

1.6.1

SUB SOLUTION 6

It is only by research that one can develop an informed society, it is only by engaging with the communities that make that society that one can transfer this knowledge and it is only then that one can develop a better community and South Africa for everyone. Thus it is imperative that a link is found to develop this predicament in developing Africa.

NKJV; Holy Bible
[Proverbs 24:3,4]
NA

"Through wisdom a house is built, and by understanding it is established; By knowledge the rooms are filled with all pleasant and precious riches."

Figure. 4
Tswhane developing
Township settlements

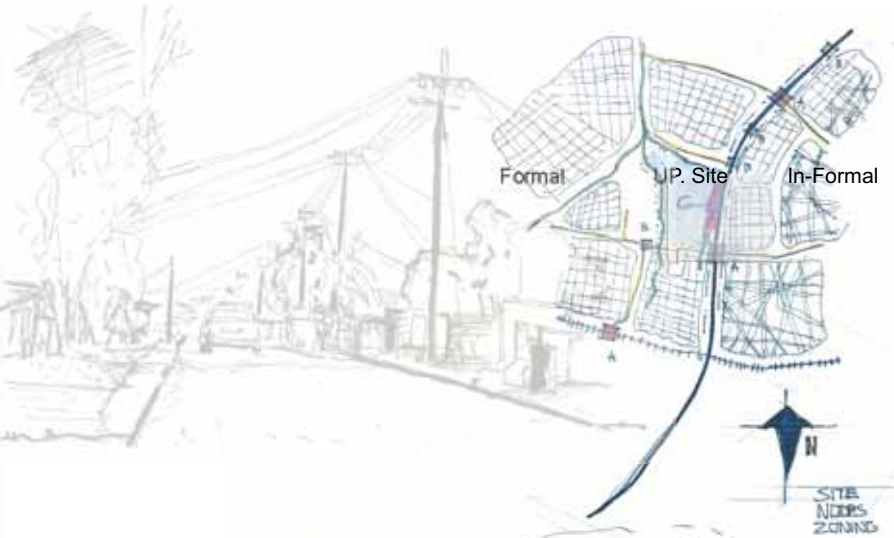


Figure 5.
Mamelodi
Formal_
In formal
context

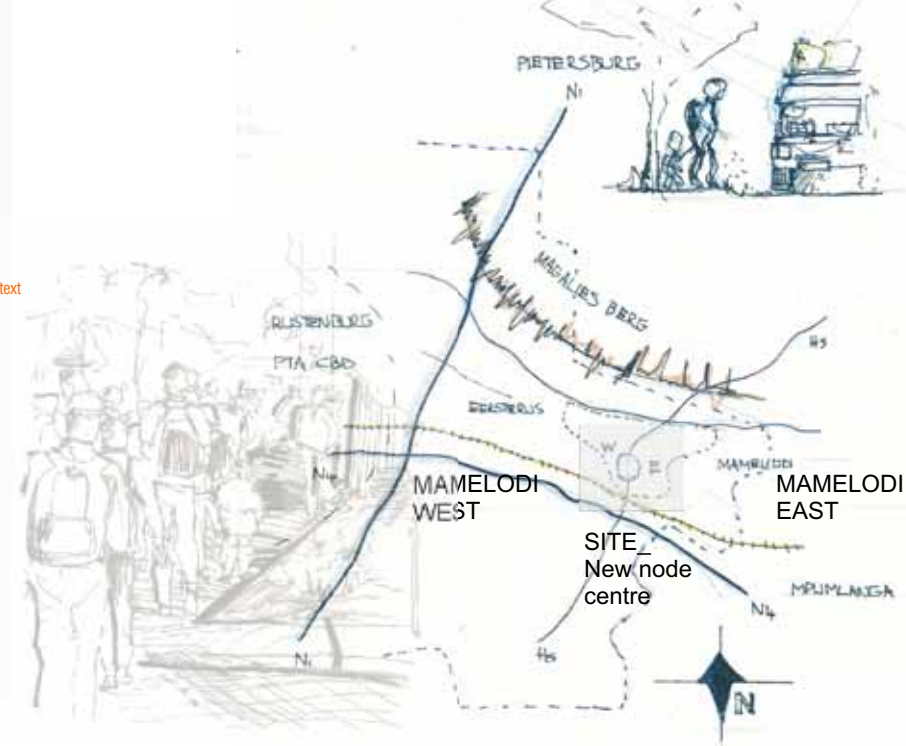


Figure. 6.
Macro context

CHAPTER 2_ Glossary of discourse terms and definitions

2.1_ TERMS

2.1.1

Permeable Architecture:
A spatial division that allows access and equitable experience of facilities and place by all people, a formal design that allows one to pass through but not restricted by formal association.

2.1.2

Social design
The Architecture of organisation of people and space

2.1.3

Cultural reproduction
is the transmission of existing cultural values and norms from generation to generation. Cultural reproduction refers to the mechanisms by which continuity of cultural experience is sustained across time. Cultural reproduction often results in social reproduction, or the process of transferring aspects of society (such as class) from generation to generation.

2.1.4
C. Hillier and Hanson 1984

Space Syntax
"A technique for description and analysis of space in settlements. It is a representation of spatial patterns or configurations in settlement and buildings, one can represent, quantified and interpret."

2.2_ DEFINITIONS

2.2.1

Community:
A body of people living in one place sharing similar interest, history, culture etc. prevalent in society or public. The body of African people living and studying in Mamelodi East, informal and formal section.

2.2.2

Engagement:
To occupy or involve. "a reciprocal process whereby communication and interaction effectively lead to a shared perception of social issues and concerns, engagement moves beyond the level of service and allows the opportunity for societal response to help redefine the nature of the problem itself and perhaps forge new solutions"

2.2.3

Sustainable:
is a characteristic of a process or state that can be maintained at a certain level indefinitely.

2.2.4

Alienation
The individual subject's estrangement from its community, society, or world.

2.2.5

Diachronic
A technical term for something happening over time.

2.2.6

Rurban
A place between rural and urban development with an identity of its own

2.2.7

Archetype
is a generic, idealized model of a person, object, or concept from which similar instances are derived, copied, patterned, or emulated. In psychology, an archetype is a model of a person, personality, or behavior.

2.2.8

Communication Coding
Refers to a framework for communication in a given speech community. As an academic discipline, it explores the manner in which groups communicate based on societal, cultural, gender, occupational or other factors.

2.2.9

Communication
Communication is defined as a process by which we assign and convey meaning in an attempt to create shared understanding. This process requires a vast repertoire of skills in intrapersonal and interpersonal processing, listening, observing, speaking, questioning, analyzing, and evaluating. Use of these processes is developmental and transfers to all areas of life: home, school, community, work, and beyond.

2.2.10

Culture
Generally refers to patterns of human activity and the symbolic structures that give such activities significance and importance. Cultures can be "understood as systems of symbols and meanings that even their creators contest, that lack fixed boundaries, that are constantly in flux, and that interact and compete with one another. most commonly use the term "culture" to refer to the universal human capacity and activities to classify, codify and communicate their experiences.

2.2.11

Gestalt
To refer to a concept of 'wholeness'.

2.2.12

Institutions
Structures and mechanisms of social order and cooperation governing the behavior of a set of individuals. Institutions are identified with a social purpose and permanence, transcending individual human lives and intentions.

2.2.13

Language
A system of visual, auditory, or tactile symbols of communication and the rules used to manipulate them. Language can also refer to the use of such systems as a general phenomena.

2.2.14

Perception
Perception is the process of attaining awareness or understanding of sensory information, Passive Perception (PP) and Active Perception (PA).

2.2.15

Socialization
The process of learning one's culture and how to live within it.


SOFT SERV
LUCKY STAR
PILCHARD
BIBO
MAYO
TAKE 5
ICE CREAM
ICE BLOCK
MAPOPOTANE

3.1_

HANS STRYDOM_ BOTH AN EDGE AND A PATHWAY

K. Lynch 1960, pg 48

“Districts are structured with nodes, defined by edges, penetrated by paths and sprinkled with landmarks.” (Lynch K, 1960).

According to Kevin Lynch, cities are characterised with certain elements, together these elements or the parts create a whole, namely: Paths, districts, edges, landmarks and nodes.
In context of this dissertation Mamelodi Township, a developing city do consist of these parts; however they are not prevalent and or hierarchical and developed enough.
For the purpose of this dissertation there will only be focus on the Mamelodi East region, the area in which the proposed intervention requires itself to be found, as seen in figure 5 & 7

As a whole Mamelodi East consists of two districts: a further developed district and node and a underdeveloped sprawling district and node.
Mamelodi East is linked and surrounded by pivotal pathways; these are: Hans Stijdom road, Tamaya road, Hinterland, N4 and the circle route railway.
The problem which is faced, comes in the form of a mass housing fabric dominating the city, see figure 7_. The lack of higher order facilities strengthen this precept and points out the subsequent lack of hierarchy nodes and districts and social civic functionality.
Mamelodi East in particular lacks civic and retail facilities, it does support the informal development of nodal interchanged and hence it leads an informal development of districts divided by edges that currently also serves as paths as noted by Kevin Lynch. The clear definition of edge and path is lost in the greater definition of a district, and one is lead to believe that Mamelodi is currently faced with the major problem of not having defined districts if one uses the definition of Lynch:

K. Lynch 1960,

“Examples of definition of districts: texture, space, form, detail, symbol, building type, activity, inhabitants etc.

Then it is apparent that there are 2 districts in Mamelodi East, they do not differ in function, but they differ in economic and social class, hence they are clearly indicated as the formal developed housing units and the informal shack housing.
Thus the roadways becomes the edges, paths and even a district with the housing fabric becoming the backdrop. See figure 7 & 8_

K. Lynch 1960

“Disorganisation of districts can been seen by divides”

This raises the concern that the lower order facilities such as housing now overpowers the higher order facilities creating this very apparent unbalanced community and township city.
Thus the statement: Hans Stydom_ Both and edge and pathway becomes more aparant.

K. Lynch 1960

“A large street could be both an edge and path, thus ambiguous intentions”.

As noted by Lynch this is not an unfamiliar situation, however he states it tends to ambiguity, this ambiguity leads to lack of identity and presence of place but more important hierarchy of areas, places and spaces.
Therefore it becomes important that the intervention and development along these paths are carefully organised and by policy appropriate decisions on high, low and middle order facilities placement are defined. Figure 8. By this it is envisioned that the Community Engagement facility could intervene and start a catalyst of development.

W.S.W. Lim 1990, pg 45

“the magnitude of urban problems are often in direct proportion to economic growth rate, population and rural density”

This will in turn develop the current undefined path into hierarchical nodes with edges defining districts and subsequently leading to distinctive spatial experiences along the edge and path. Figure 9.

W.S.W. Lim 1990

“By adding identity one avoids dehumanisation.”

Thus the plausible deduction one can make, is that the Mamelodi East town, has two districs, it is divided by a single cause way, currently dividing these to districs. However, this current seemingly negative situation emits great positive light. It allows for the development of a nodal pathway. Is has the opportunity to stitch the two districts together and provide the formal retail and civic amenities that is required for a rapid growing town. In turn if one steps out of Mamelodi East and view the entirety of Mamelodi one can then start formalising the two major districts. Each serving a nodal centre, a commerce development, see figure 9 & 11b_. Thus the thoughts of Kevin Lynch:

K. Lynch 1960, pg 66

“Districts are large areas of city that the user can mentally go into”

Hans Strydom road is earmarked for future development and economic density as per Tswhane IDP framework plan. Emphasising the future linear development and urban catalytic density resulting thereof.
The possibility for successful development does have a reality, as the two parts could provide individual identities, but more importantly they each have a centre that emanates and radiates social and economic growth.
Two centres growing towards one another. As seen in figures 11a-c,one can assume that the Hans Strydom nodal development will be the core centre for the Mamelodi East as Mamelodi East is bound by a Freeway, the N4 and the Magaliesberg mountain range and terminates into the first shopping complex in Mamelodi East. Restricting further growth.
As seen in figure 10_

Figure. 7.
Mamelodi site context

_SITE

_Roadways, development corridor

_Railway, commuter transport connection

Figure 8.
Urban development diagram

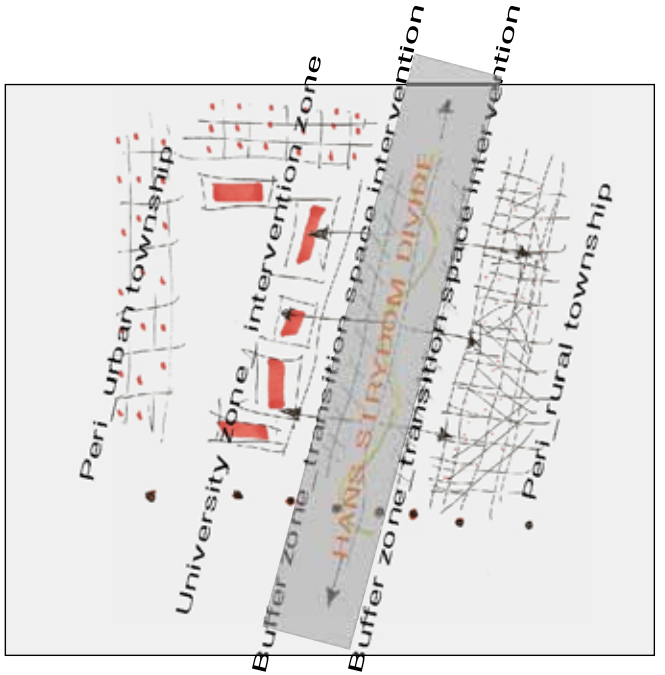


Figure. 9.
Urban Nodal Diagram

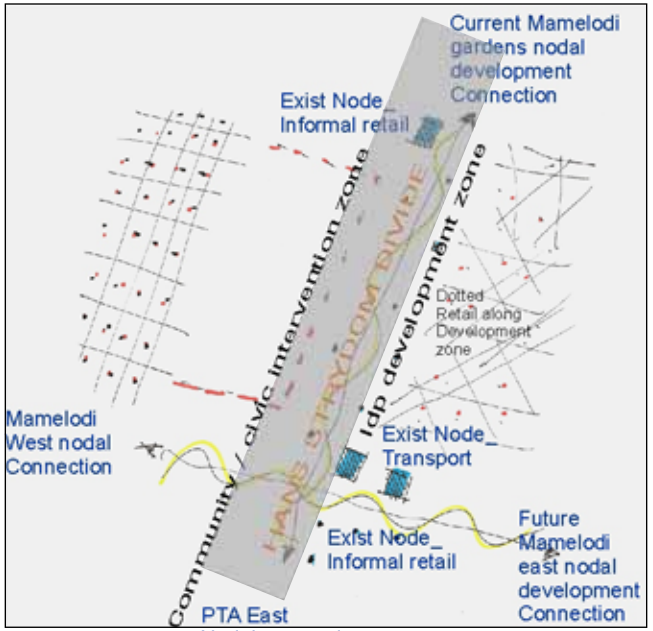
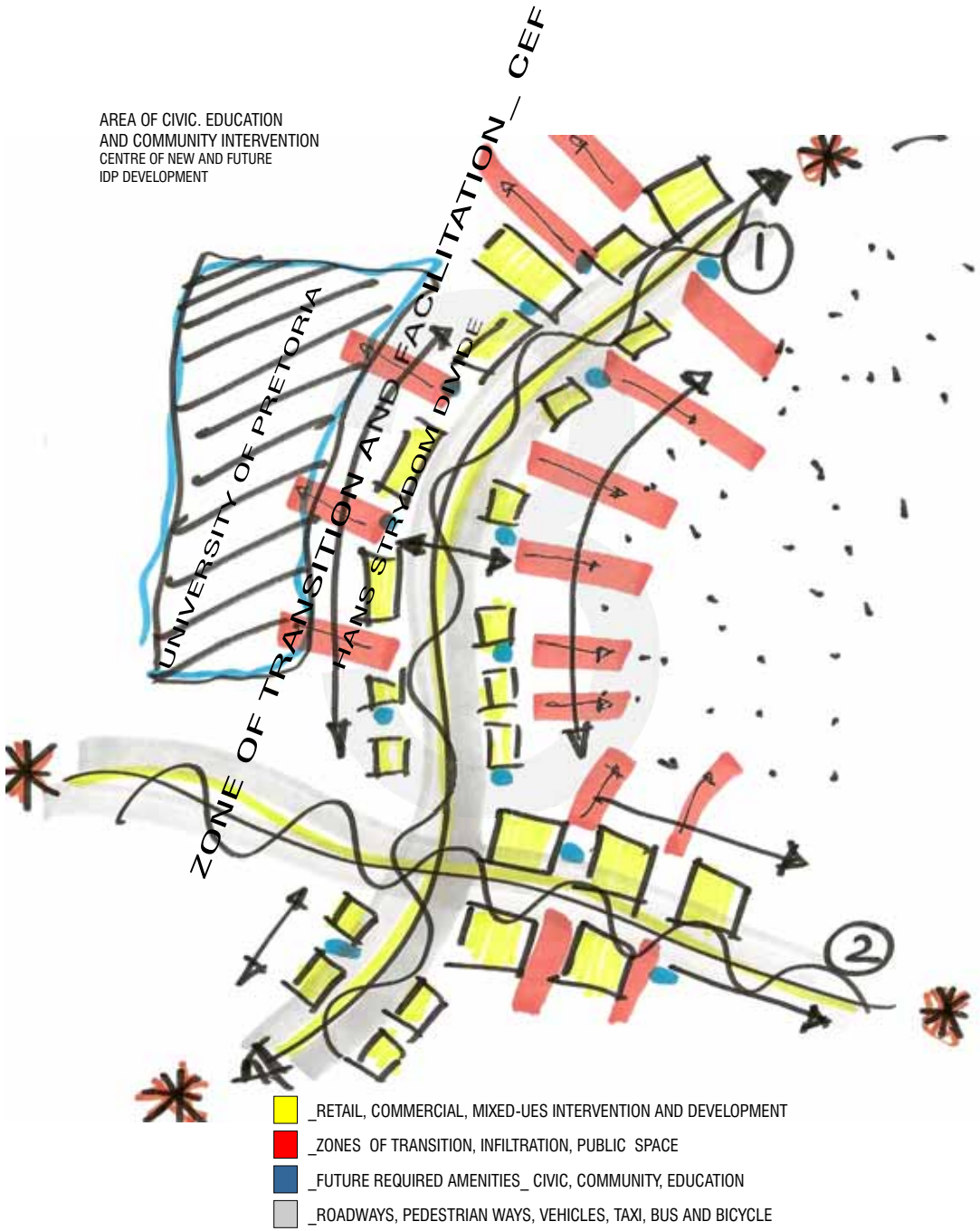


Figure 10.
Urban development

Figure 11a.
Urban minor centre development



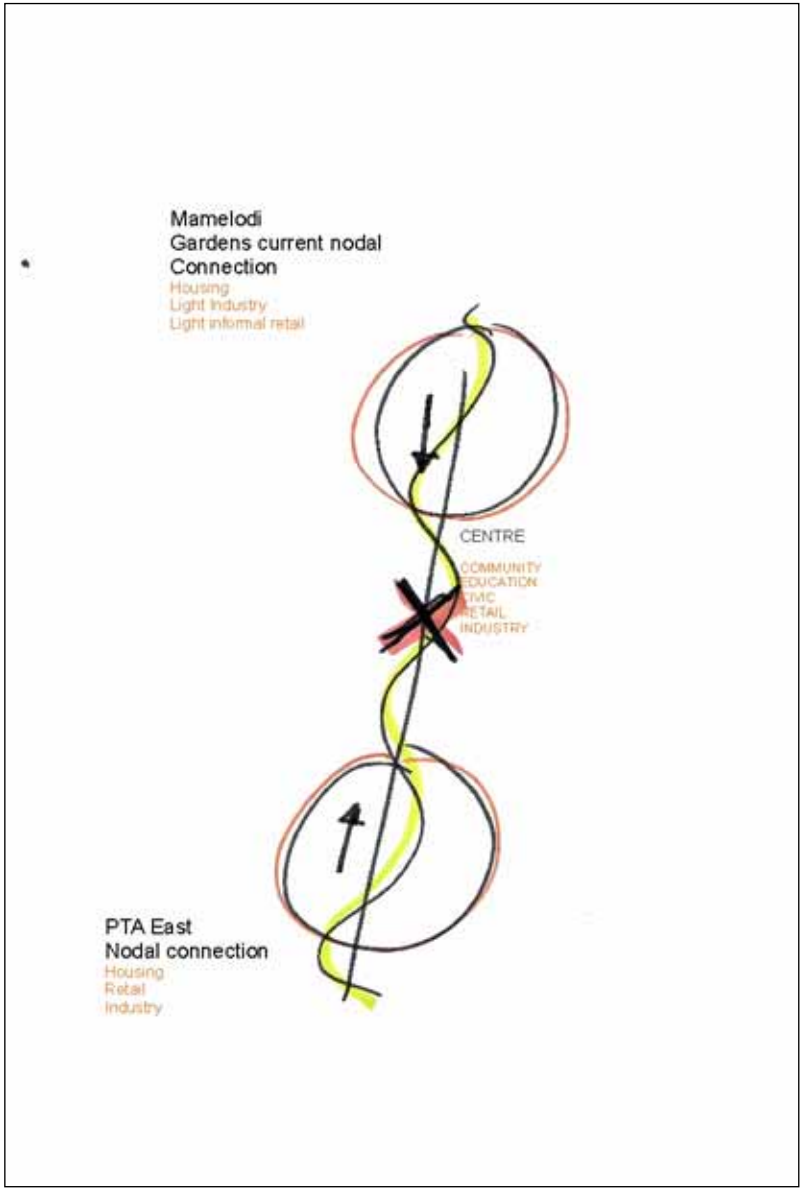


Figure 11b.
Urban major centre Development

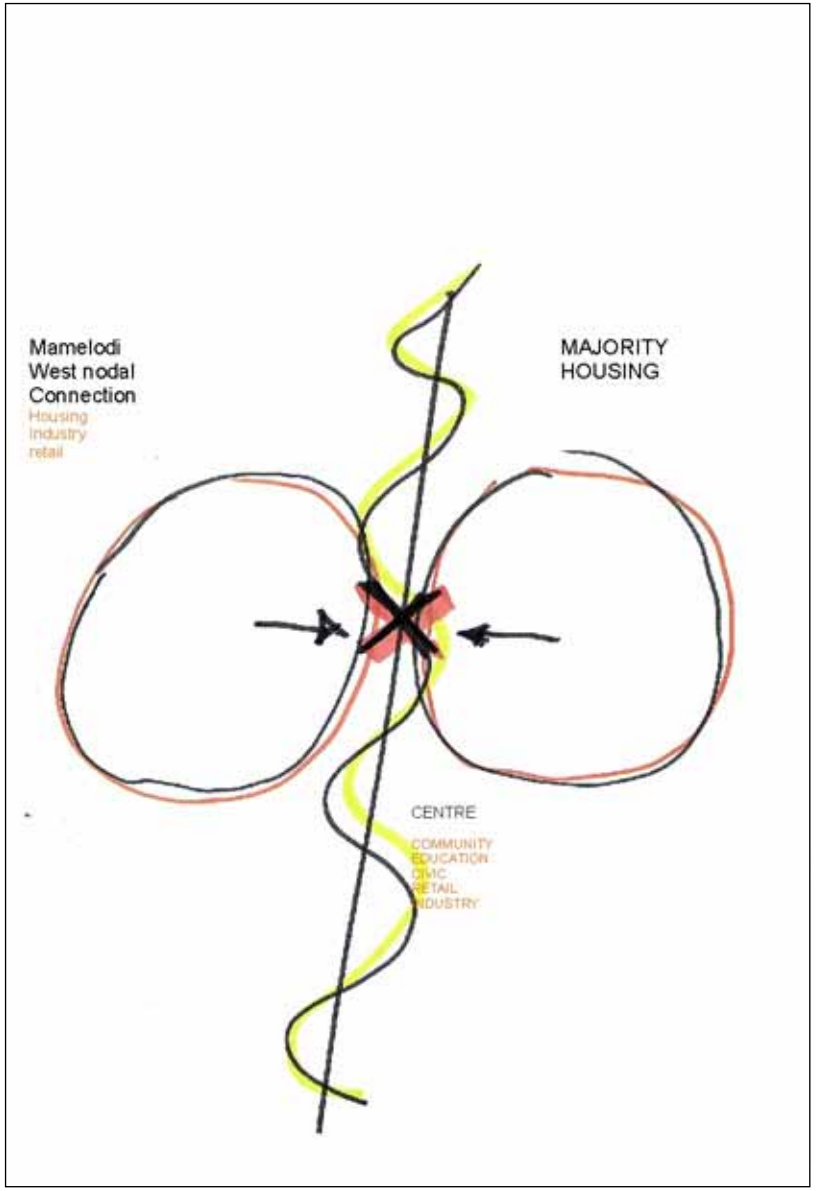
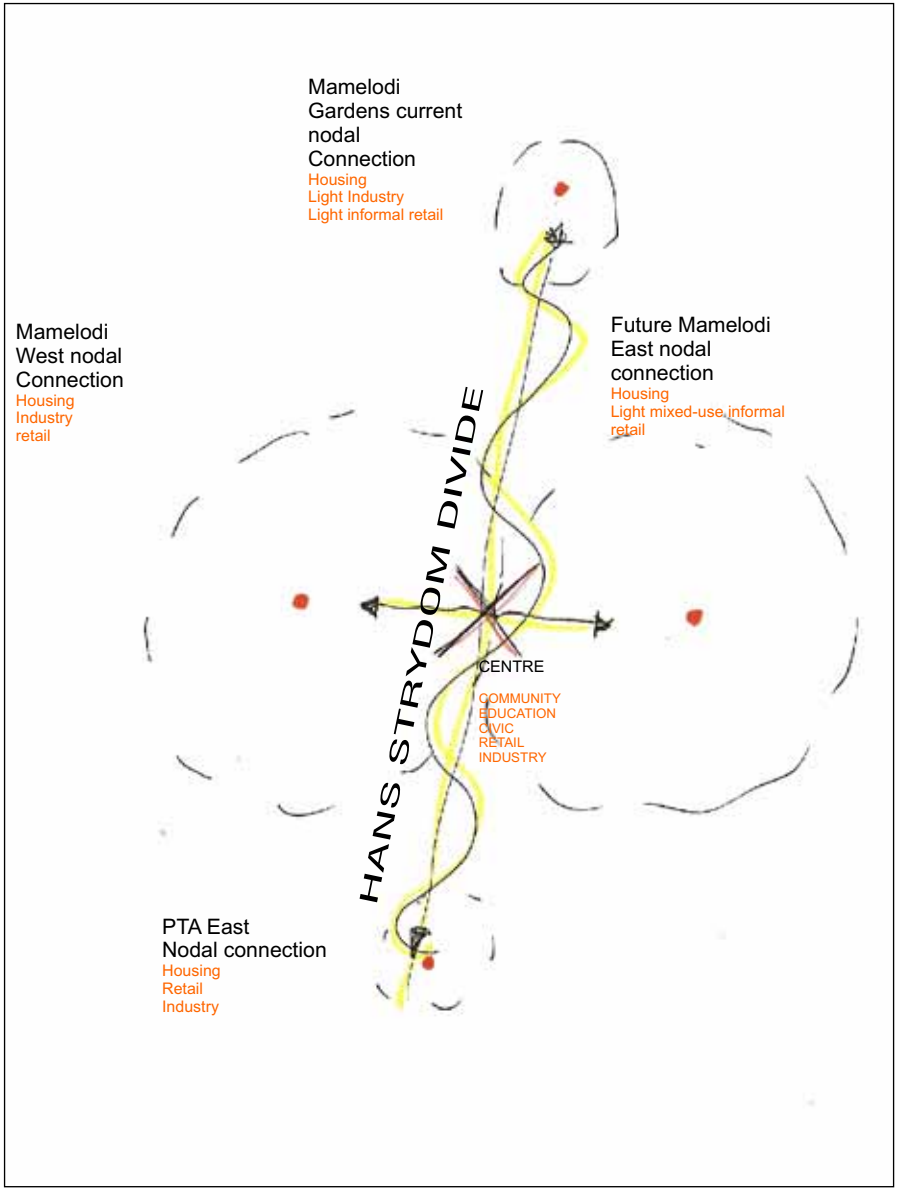


Figure 11c.
Urban total centre development



3.2_

"RURBAN"_ A PERI RURAL PERI URBAN CONCENTRATION

The term RURBAN, is coined by Professor Baker of the University of Pretoria as a place that has both urban and rural qualities This dissertation defines it is a place that finds itself in between rural and urban development with an identity of its own.
Mamelodi is believed to be a prime example of a RURBAN environment.
As noted above the focus area is Mamelodi East. A brief description of these unique rurban qualities will lead to the apparent and required intervention with a sustainable future urban vision. See figure 3 &12 .

The major transport carriage way: Hans Strijdom road seperates the developing and informal development of Mamelodi East, the rural and urban edges of Mamelodi East.
However the carriage way has been transformed into one of three of Mamelodi East major edges, pathways and nodes. The formation of cores, areas of high order facility and community activity also known as concentrated nodes, are derived out of need in a natural progression of development. In Mamelodi as a result of pAst regime policy and zoning, this natural development has been hindered and thus has not evolved. .
We find that the University of Pretoria Mamelodi Campus is and could become a concentrated node, by this I refer to a Kevin Lynches description:

K. Lynch
1960, pg 48

"Which their influence radiates and of which they stand as a symbol, "called cores"

The prominent position of the University along Hans Strijdom and Hinterland roads respectively advocates this future image. See image 11 b,c
The university is seen as core knowledge centre and only tertiary education facility in Mamelodi. It is positioned along what is currently and planned for future the major modal link between Mamelodi East, Pretoria, Northern Province and Mpumalanga. The current informal development of trading, food and other along this "Path" as expressed by Lynch, with intensified informal modal interchanges is earmarked as a major development through way.
This road connects the community with their place of work as well as their homelands to the North. Thus this possible evolution of a centre, core or concentrated node will become the link between the peri Urban and peri Rural state of Mamelodi East. Housing alone will not satisfy the need of a community, cores of development and education develops and sustains a society a community. Therefor it becomes integral that this opportunity development leads to education integration, Figure 11c

M. Broady
1968, pg 57

"That well educated man has a vital role to play as a citizen in society and not simply as a function in some economic hierarchy"
and resulting in community upliftment is realised.

M. Broady
1968 pg

"Higher education has in-fact served to provide a steadily increasing supply of active minds to the community."

3.3_

MAMELODI EAST DEVELOPMENT VISION

Attempted in group format, a phased development scheme was established to address the negative and positive possibilities of Mamelodi East. Incorporating the university and the community, in doing so pulling the community into the university through refocusing the relevant functions and spatial layouts while also pushing the university into the community by proposing future expansion and future links to the internal campus.
The vision provides a platform for development of tertiary skills training combined with the required civic and social requirements of a healthy community, figure 10.

The development earmarked for Hans Strijdom road and subsequent vibrancy and increase of people played a major part in the decision to change the universitie's main entrance from current Hinterland road to the more vibrant Hans Strydom road, making it centre on the future core as noted previously. The deduction was made that the new face of the university would be best promoted on the main archery of Mamelodi. Hans Strydom Rd.. This allows for the Principle of integrated study and living.

The proposal (Figures. 3 & 16) includes the leasing of certain portions of property on the north western edge to housing developers such as SHIFT as part of the sub visions of developing a housing development unit at the campus. Other parts of property are to be used for community park space and sport facilities. There is a small portion on the southern edge that is to be leased for multipurpose facility whiles the remaining edges on the east along Hans Strydom road and south along Hinterland road is to be sold of for retail and commercial development. See figure

It is believed that the apartheid policies of buffer zones, so evidently placed around the university needs to be demolished, re-zoned and developed.

R. Transick

"The enclosure of space determines your opinion and perception of space: called structured urban rooms"

Thus expanding the university into these zones and creating a more "structured urban rooms" of living, selling and teaching one can address the problems of the past. According to Roger Transick one needs to design the spaces between buildings not only for the public but for the people who inhabit these buildings, one requires buildings to be integrated and not stand alone post stamps. Through The images of urban space one set backgrounds that creates moods and experiences.

W.S.W. Lim
1990

"One requires a mix in space of intimacy and vibrancy"

R. Transick

" Squares result from carving of building"

Figure. 12.
Peri urban peri rural diagram

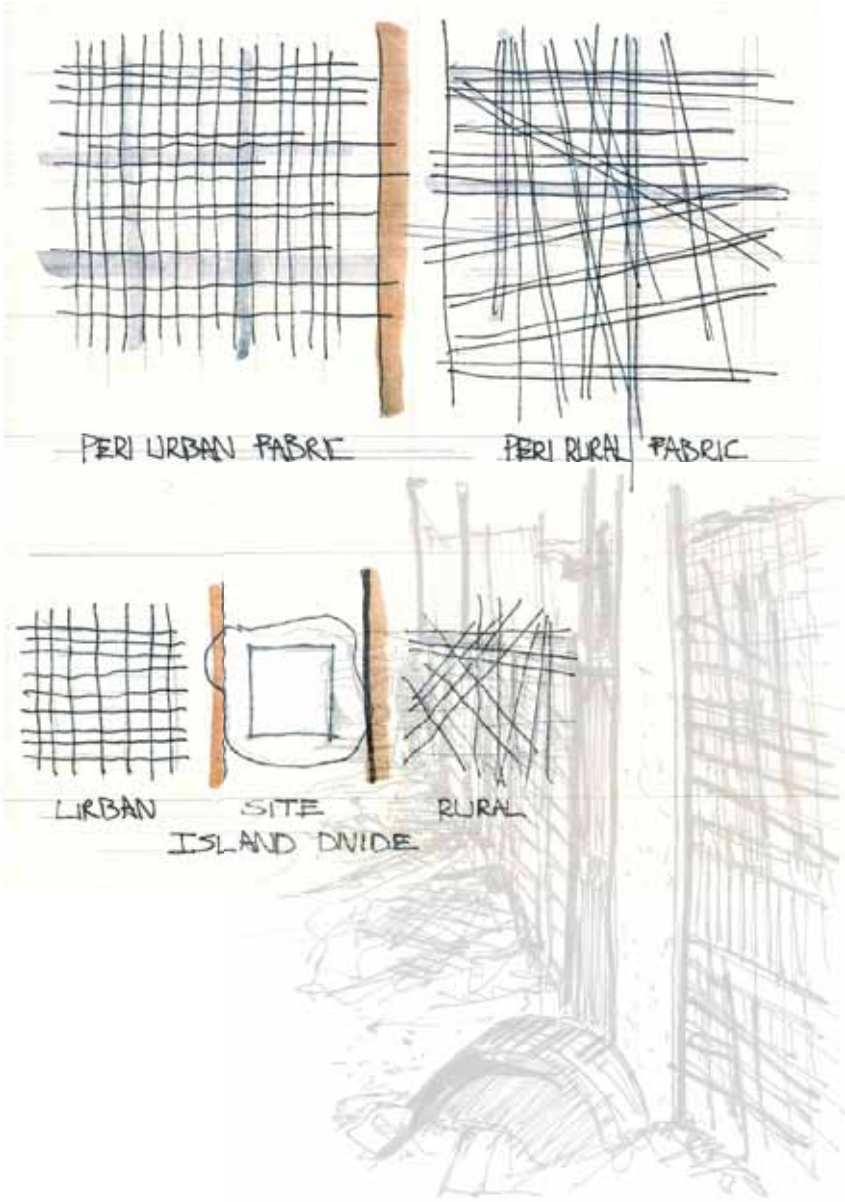


Figure. 3
Mamelodi_
A housing fabric

We do realise that this vision will not appear overnight and hence the development that is proposed under the sub-visions, will spark the increase in number of people and awareness among the people of the intension of the institution, thus increasing student numbers. The municipal IDP development plans linked to the macro Tshwane vision of new Mamelodi city aims at increasing work opportunities and social functions. As mentioned the sub-visions included intervention of 4 masters student initiatives:

- Civic, social and educational community engagement facility
- A housing development facility
- Skills teaching and mix used commercial and living development
- Integrated community educational park of public space landscape development.

See proposed urban plan figure 16.

We believe that the vision for University Pretoria Mamelodi campus needs to be for the people, bettering the people and uplifting the people, while also creating and maintaining a high level of tertiary education and research.

W.S.W. Lim 1990

According to William S W Lim, there are three cultural identities that one needs to take into account: ***"universal, ethnical and national "***
In doing so one creates a cultural sustainable society that is impartial and non ethnical.

To realise this cultural sustainable society one needs to be environmental responsive to both the urban/rural fabric and the people that inhabit this fabric, this is possible according to William S W Lim if one creates an environment that communicates subconsciously with the user through symbolism and responds to the user at human level of scale that is contextual to his own environment.

Mamelodi has a rich vibrant but also a sad history to be discussed in chapter 5, but it is our history that shapes us, it does not limit or restrict us but shapes us. The environment we live in, the people we share it with, determine the experience we receive in it. Architecture according to Roger Transic consists of these same two parts; he believes that history and environment are the two faces of architecture. Thus moving into the future we take with us the past and the people, we added the technology of today and provide for the needs of the users and the result we believe is the most appropriate architecture and urban response for Mamelodi and possibly peri-rural, peri-urban communities in South Africa._ Figure 12.

3.4_ A "RURBAN" PLACE MAKING POLICY. FIGURES 13; 14 & 15

From the proposed development vision a constraints and design principles guideline have been formulated to address and assist in making this proposal a reality. However it must be said, that for any development scheme, it is the implementation and monitoring thereof that governs the success of the scheme.

In short analysing Mamelodi East; University Pretoria Mamelodi campus interaction:

3.4.1 Vision:

University engaging with the community
Interventions must empower people as far as possible
Permeable society focussing on community interaction
Place-making, linkages and connections
Redefine the relevance of the education system in Mamelodi

3.4.2 Constraints

Education system not really appropriate…
No legibility no landmarks, fragmented
No sense of place / identity
No hierarchy of spaces and circulation patterns
University isolated, segregated acts as a buffer zone empty, under utilised spaces, sterile, barren and negative sensory perception

3.4.3 Problems:

Little provision has been made for cyclists and pedestrians along the roadways.
Unemployment (majority 17-25 year olds) due to: a lack of information and awareness of what they can do; a lack of opportunity for employment
Crime due to a lack of employment which leads to poverty, and a
Lack of passive surveillance
Lack of public interaction due to a lack of organised public space (streets are not well designed)
Lack of transport routes and designed modal interchanges
Lack of sport facilities no focus on recreational activities no student life

3.4.4 No student housing / localised residences

Principles: *(Source: guidance by principles of R. Transic, Dewar etc. And personal visions)*

Building height no more than 12m (4 storeys), for development along Hans Strydom road with a high density erf Coverage of 70%, and majority zoning : Mixed use land-use policy
Complete relaxation of the building line along the edges of the University property
University to engage in lease and share development
Utilise grey water and storm water as far as possible on site for irrigation, rejuvenation of ground water, recreation and education
Proposed length of new town blocks 20-40m with allowance for permeability, roads every 100m

Pedestrian walkways, cyclist paths and street trees (indigenous) + street furniture
Increasing Hans Strydom road to double carriage way with pedestrian crossings and centre islands
Provision for informal trading with stalls and required public ablution and service facilities
Promote passive surveillance, by the mix-use principle of high density with living and work combined
Community engagement and involvement
Public space creation
Systematic process of opening up the University to the public/community with the end goal to be completely permeable by all, students and community.
Across the board densification proposal of study area as well as the remaining development vision node including people and commercial activities
Sustainable principles: water, electricity, waste recycling (collect and separate and use on or near to site)

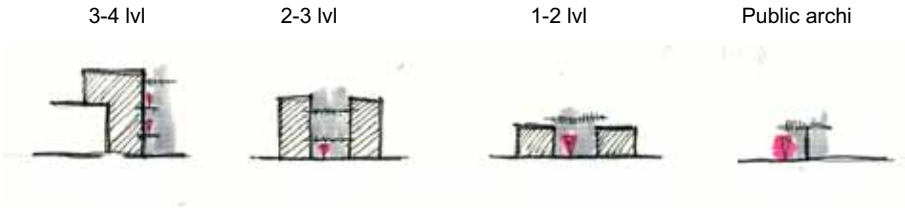


Figure. 13.
Height & scale diagrams

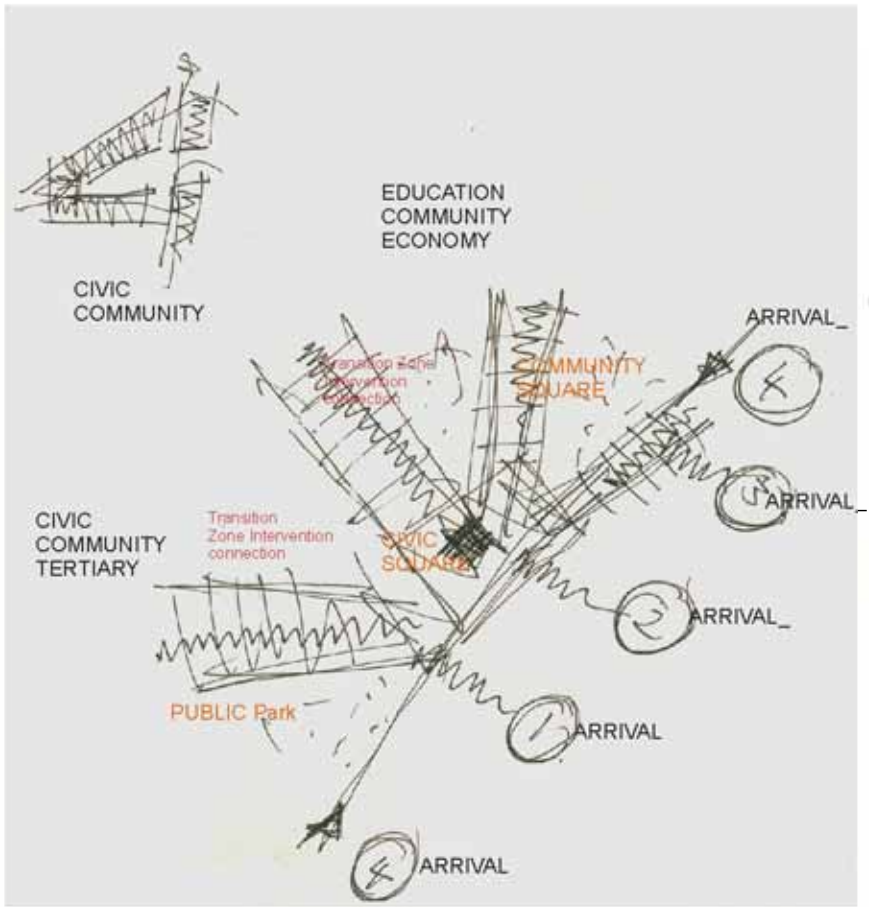


Figure. 15.
Community engagement facility site Movement diagram

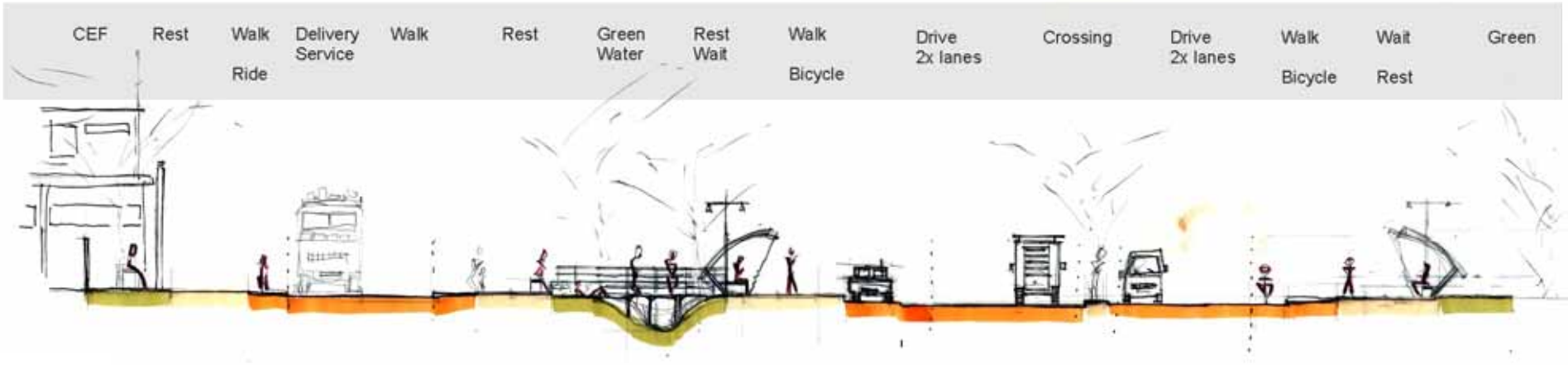


Figure. 14.
Community engagement facility site section, pedestrian
Friendly proposal

Adendum.

Group urban proposal and document to be presented and submitted prior to students' presentation.
To be added as an addendum to each students' thesis document

People of place

A social predicament an informal settlement
A melody once found now lost in r.d.p low cost
In silence I pray, I pray for that day,
that my worries can go away, my family stay

Down the bottle he looks,
for the answers of his way.
How can I judge, he only tries it's his way;
I feel resent In senseless in depend
This is me I am now,
What I feel, what I am, who I know what it brings

In time I shall find
The sweetness that grew that vine

JAKO NICE_2008

CHAPTER 4_ Development in Community space theory

4.1_

A SOCIAL SPACE THEORY

K. Frampton 1980

"I take the stand that buildings are not primarily art, technology or intervention objects but social object" (K. Frampton)

This dissertation takes the stand that buildings serve functions, functions derived from social need and hence buildings evolve as social objects.
For buildings to function they require social space.. Without space, a place for social interaction, one can not create social objects. Figure 18 social space study.
The spatial and functional programming of a building, a square, a space is social organisation. Sociologist Maurice Broady states:
.

M. Broady 1968, pg 24

"Social theory is concerned with social organisation."

From this we can derive that architecture becomes the platform of a potential environment and therefore social programming, ordering and organising is a possible result thereof.

M. Broady 1968. Pg 20-21

"Built form is only a potential environment since it simply provides possibilities or clues for social behaviour".

This dissertation is concerned with a concept of an amalgamation of principles and theories in engagement, tertiary education and adult education, of people, of amenities and services merged with the community needs of society. It aims to define the purpose and connection of these variant but current day separated subjects.

In addressing the underlying common denominator: social theory and the underlying facilitator: the community, a baseline can be determined to which information can be added and analysed. The test of the theory will be in the level of engagement achieved between all parties.

Hereby it is envisioned that higher education, civic amenities and a people can holistically and directly be engaged with, specifically in a context that lacks one or the other or both.
Architecture serving as the facilitator, houses the required amenities. Thus highly functional and clearly legible. The precept of space generated by the user with the form as facilitator.
One requires enclosures in-order to be operative, but more over one requires the correct placement and collection off function and services to realise a successful place, an appropriate space syntax in the goal of efficient socialization in a communities development.

4.2_

CULTURE. IDENTITY AND COMMUNICATION; A SOCIAL DIALOGUE

What equates to a South African identity? what is South African culture? how do we communicate as a South African people? what is the resulting dialogue that we engage in? and lastly what role can and does architecture play in this dialogue of people, community and political complexity?

In the words of the architects from " sharp CITY architects:" South Africa

Sharp CITY 2006, pg1

" Architects are free to actively seek a new sense of cultural confidence, The search remains wide open"

This implies that the architectural contexts we are faced to resolve, the underlying cultural and political epoch we find ourselves in, is not limiting and simultaneously not forgiving. It is not defined and yet it is prevalent. It is diverse but yet it is specific.
As architects, we have the words to the possible dialogues but we seem to lack the word order. As Edwards explains

E. T. Hall 1969

Culture equals grammar, and the community enters as the dialogue.

As architects we design for people, making it a social action as noted under:' A social space theory'. Maurice Broady expresses the position of architecture in any society:

M. Broady 1968. Pg 20

"Built form is only a potential environment since it simply provides possibilities or clues for social behaviour."

To look for the clues for social behaviour in South Africa, we are faced with an immense task, as we live in such a diverse country.
Sharp city Architects expresses South Africa's diversity as,

Sharp CITY 2006, pg 9

" Diversity can be lived as a positive experience only when we as individuals develop a critical understanding of who we are and where we come from. Our understanding of the past is a necessary precondition for our ability to embrace the future"

This dissertation proposes that: We are a result of our context, and a subject of our past. This culture we speak of defined by Edward T Hall is that of:

E. T. Hall 1969

"cultures inhabit different sensory worlds, the same experiences but different reactions."

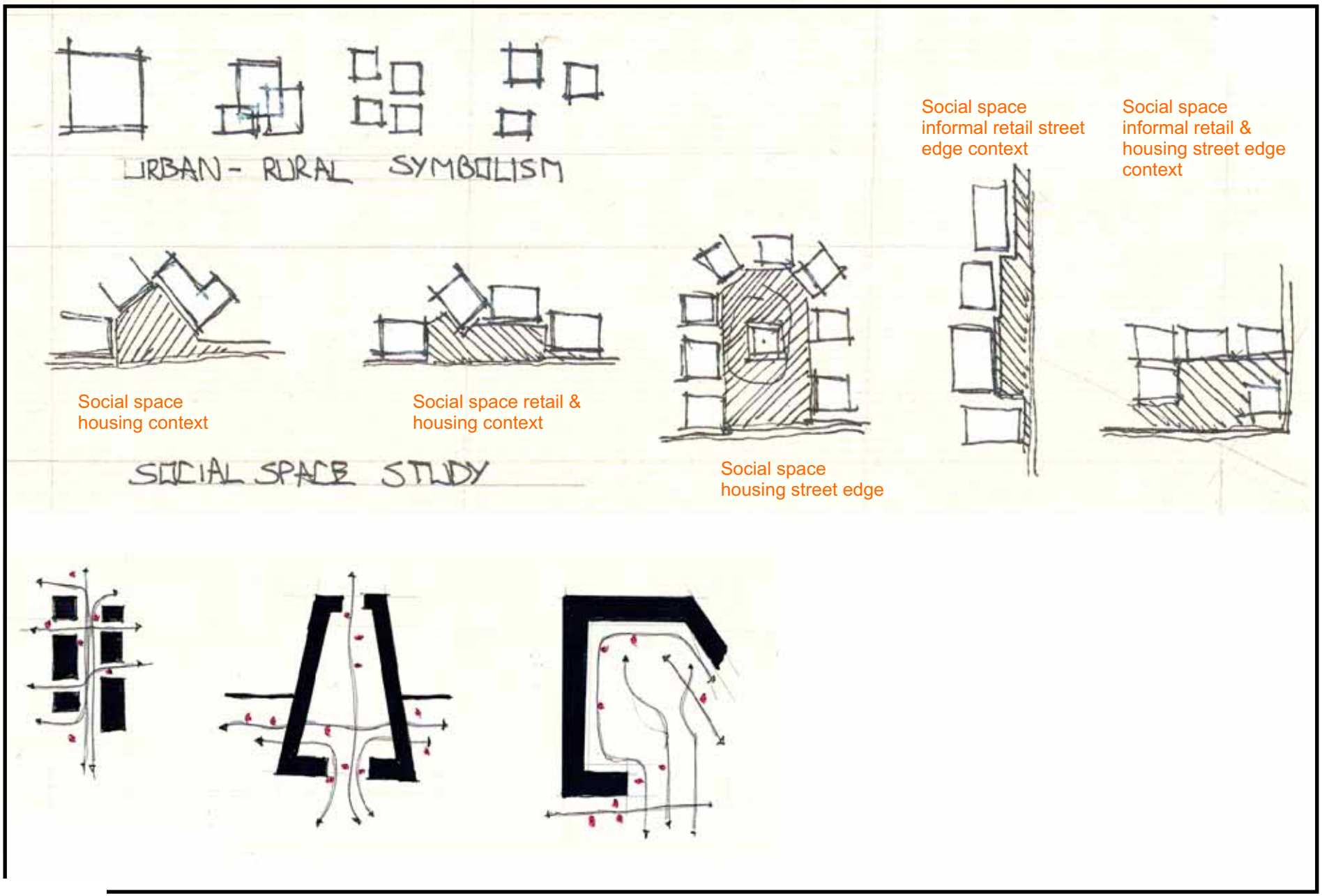


Figure. 17
Mamelodi
Urban rural symbolism

Figure. 18
Mamelodi
Social space study

Figure. 19
Mamelodi
Built form, user space
Early sketch design
Study

Figure. 20
Mamelodi the total
Environment, a sketch
pad

In South Africa we are effectively faced with multiple sensory worlds and hence even more varying reaction according to Hall, of which only eleven are officially recognised. But the experience is the same, only the reaction is different.

Noeleen Murray very effectively paints the picture that defines our context.

N. Murray
2006, pg 4

"Their work has to function in a political, physical and social landscape that is equally hybrid and diverse, a space in which multiple publics exist and compete for resources and opportunities."

Figure .21a & b Mamelodi_ social space photo-montage

In context to this dissertation, primarily focusing on social design incorporating civic, community and higher education the appropriate architecture thus lies not only in the user but also in the greater context the user finds himself in. It is believed that it is the macro political struggle and economic uncertainty that has a weighting factor.

M. Broady
1968. Pg 21

"The effective or total environment is the product of those physical patterns plus the behaviour of the people who use them, that will vary according to social back round and way of life."

Figure .20 Mamelodi_ the total environment, a sketch pad

In essence design involves people. The shape it takes is the derivative of its cultural state. The shape is the tectonic dialogue; the built environment. The built environment effectively becomes the canvas of a nation, the people should be the painter and dialogue, the architect the linguist.

L. Mhlaba
1991

The expression of a language is an expression of a people to understand to be taught.

According to Kaarsholm the: "everyday " drives and creates this social dialogue. It shapes it and forms it.

P. Kaarsholm
1991, pg 212

"The level at which the circumstances, events, conflicts of everyday life of private, politically and economic existence are given form, appropriated by consciousness and made available for social dialogue."

Social architecture implies, the tectonics we choose to use, is not derived but infact chooses us. It is derived from the everyday, it is shaped by the dialogues of sensory worlds. It is this potential environment that allows for individual reactions, sourced from built form experiences.
Reciprocally driven by South African political, physical and social landscape.

Figure. 21a Mamelodi Township Social space photo Montage

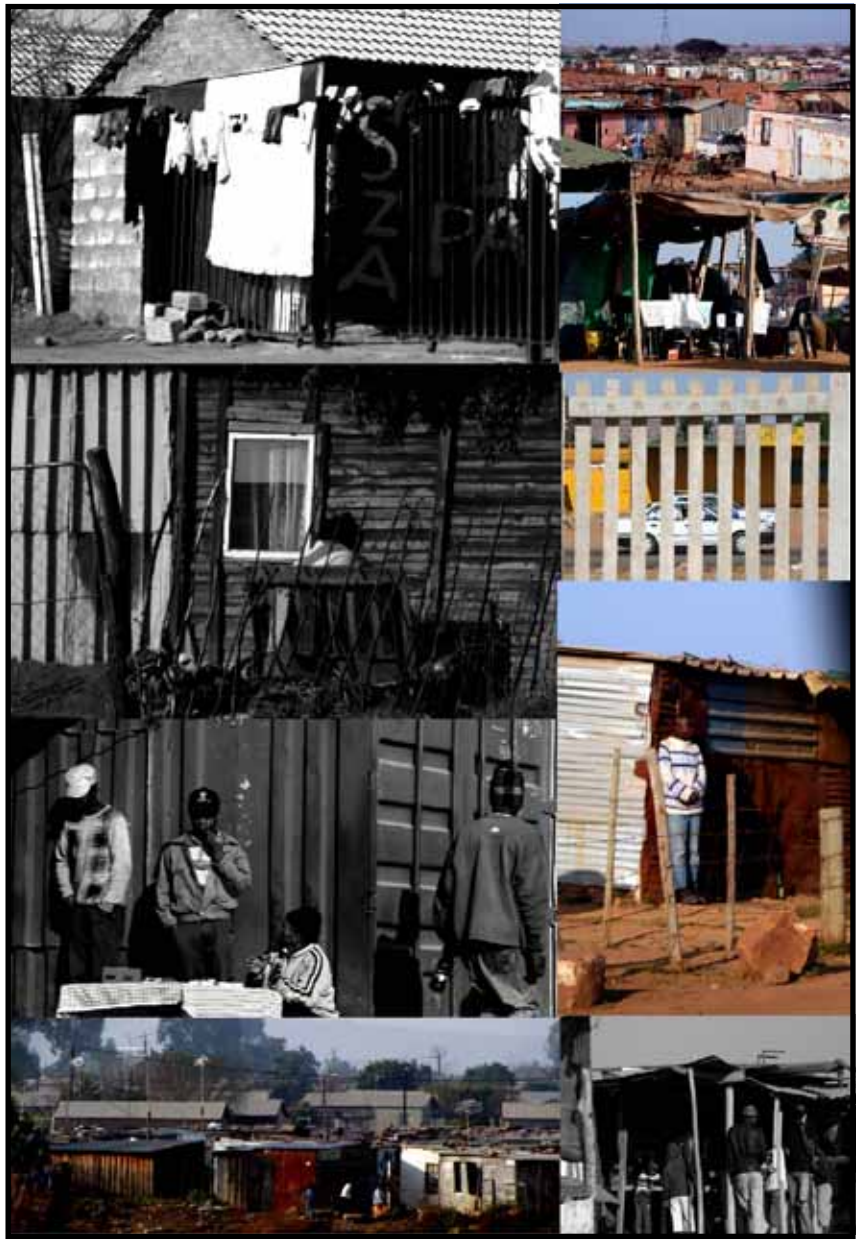


Figure. 21b
Mamelodi
UP Social space photo
Montage

Figure. 22
Mamelodi
A people
place,
Mamelodi a
social
landscape

4.3_

COMMUNITY ENGAGEMENT PRINCIPLES

In the light of this dissertation, it is imperative to clearly define that which is community, and which is defined as engagement, then one can define community engagement.

A Community:
A body of people living in one place sharing similar interest, history, culture etc. prevalent in society or public. The body of African people living and studying in Mamelodi East, informal and formal section.

Oxford Dict.11th edt. 2004
Author 2008

An Engagement:
To occupy or involve. "a reciprocal process whereby communication and interaction effectively lead to a shared perception of social issues and concerns,"

Howard P. Butcher J_ [Community Engagement. The mutual learning benefit of long term partnership.]. 2003, pg 1

Community Engagement:
"A body of people living in one place sharing similar interest, history, culture; prevalent in society or public, partaking in a reciprocal process whereby communication and interaction effectively lead to a shared perception of social issues and concerns,"

Author 2008

In short: people working together for the collective good and benefit of all, regardless of status and or level of affluence. Both these factors contribute to the benefit of the entire community allowing possibilities and opportunities to all parties within the greater community.
A community consists of sub communities, each sub community playing a vital role in the prosperity and development of the whole community. As noted, it is a reciprocal process. It becomes a symbioses of development. Each party needing the other to benefit the individual, but holistically benefiting the community.
The affluent members are needed for the economic injection into the community, whiles the lower order members require the capital for survival and opportunity.

However, to consolidate and fuel this reciprocal process a common place for sharing, partaking and knowledge offer and gain is required. As Maurice Broady states:

Adult education is vital to community building. ."

M. Broady 1968, pg 57

Without education one cannot develop and gain independence from other societies and capital ventures, resulting in a situation of capital and knowledge loss from within a community
This leads to a halt in the development of that community.

"Education as instrument for social transformation" (N. Shamuyariras, 1978)

N. Shamuyariras 1978, pg 39

In this dialogue of community building all tiers of people are needed for the survival and prosperity of all. Broady outlines the parts that fill and develop a community:

M. Broady 1968

"The everyday: the activities of individual interaction within society are complex pluralities.
Mix of people: the Focus is struggle for meanings, varying layers of workers, givers, entrepreneurs, each play variant roles in development phase and hence a role in the community."

Once a community is established, a healthy system of delivery and economic development has been achieved, it becomes pivotal that the required infrastructure: including knowledge gain, social amenities and civic function are made accessible to the members of the community. In a developing country such as South Africa these infrastructural elements are of vital importance for continuous growth and development of the individuals and the community, with an overall focus on nation building.

M. Broady 1968

"Amenities must foster a sense of community among residents, ease of access"
Focus amenities for ease of access and arrival."

This requires a built form response that does not favour any specific group or ethnic society, that does not negate the needs of a community and is impartial to all members but collectively adheres to the needs of each individual.
It is important to note that as much as the built environment has a large role to play in the success of community building; it is the community that needs to build the relationships. As noted previously, architecture is only the potential environment and it is up to the individuals to collaborate to make it a reality regardless of their culture differences. As Kaarsholm express.

P. Kaarsholm 1991

Cultural emancipation is a key concept for development"

Architecture merely allows for the same equitable quality of experiences, it is the community, the individual that delivers the reaction.

4.4_

A SUMMARY

Faced with the reality of the contextual situation with potential opportunities, and the possible theoretical reasoning in making it a working reality, this dissertation aims at providing the glue for linking the opportunities.
It is by architecture, serving as facilitator not as dominator, that we create the potential environment for the contextual situation to take place in. In doing so by default injecting the theoretical proposal, of bringing people together.

It is the basic needs that are required in Mamelodi.
It is the potential of being able to group the basic needs of service delivery, community involvement and education that leads to a much effective facilitatory platform.

Throughout our Country we find situations were one, two or all three individual platforms are missing, but what is required is the connection of these platforms that results in effective service delivery.

Mamelodi is an ideal opportunity for this investigation.
The purpose of architecture and more over the intended purpose for architecture as intervention for this dissertation is clearly and effectively explained by Christian Norberg Shutlz

"Existential space' is not a logico-mathematical term, but comprises the basic relationships between man and his environment"

C. Norberg Shutlz
1979, pg6

"The definition of architecture as a ' concretization' of existential space"

"Existential 'foothold' and 'dwelling' are synonymous, and 'dwelling', in an existential sense, is the purpose of architecture. Man dwells when he can orientate himself within and identify himself with an environment"

Dwelling therefor implies something more than 'shelter'. It implies that the spaces where life occurs are place."

"A place is a space with distinct character"

thus

' Architecture means to visualize the genius Loci"

The purpose and intent of architecture for this dissertation is to create space, to create place, to facilitate people needs, delivering not only the service but also evolving a "distinct character" of place of Mamelodi in which life can occur, people can dwell, identify, meet and grow.

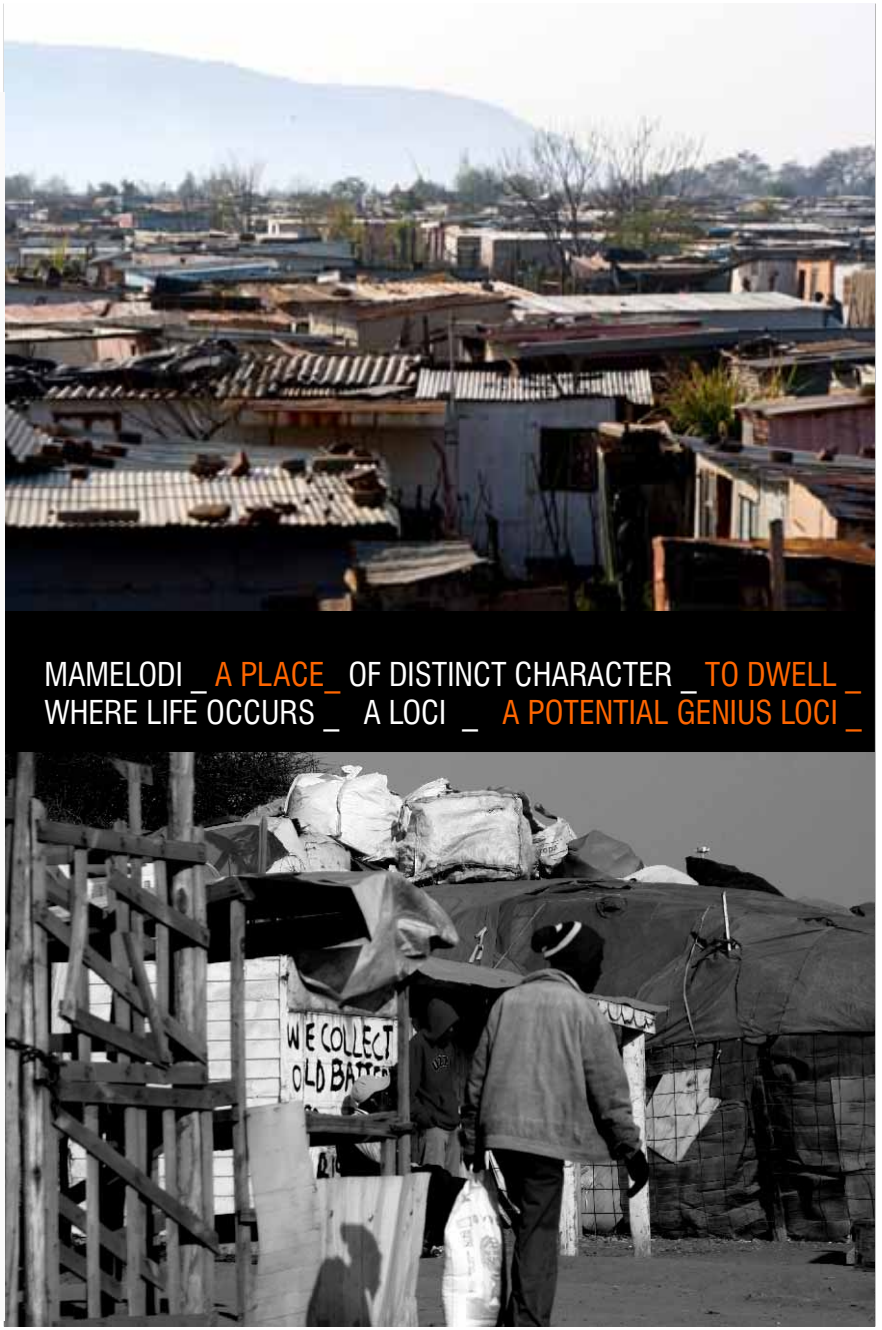


Figure. 23
Mamelodi
A Genius
Loci.

5.1_

MAMELODI HISTORIC TIMELINE

Pretoria was founded in 1855. During that time various black populations were living within the boundaries of the current city close to their employers and in their kraals or settlements.

Set against the Thaba-tsa-ga-Mogale mountain, also known as Magaliesberg. The Moretele River runs along the foot of this mountain. The first people to live on this land were native herdsman and farmers speaking either Ndebele or Tshwane.

The 2nd Anglo Boer war left its trace with reminisces of trenches found in and around the area.
Mamelodi developed on the farm Vlakfontein 329 JR. originally owned my Mr. Jansen until 1874 which was then divided into three plots. The three plots were sold off in parts from 1874 to 1949.
In 1890 the railway line: Delagoa bay line, was built to transport goods to and from Maputo, this was later connected to Pretoria station in 1894. Tsayamaya Rd, also known as (Go you are free) and previously known as Ndlazi Rd, bisect the old town. It was then and is still today a major route.
The first railway stop was at Eerste Fabriek. The first factory in the then Transvaal, and Mamelodi was the Sammy Marks Hatherly factory, a glass producer.
As a result of the railway line the council thought it appropriate to develop the then Vlakfontein farm as a “native location”.

On 30 October 1945 the Pretoria City Council bought part 2 and 3 for the development of a black urban area for the sum of 18013 pounds.
The first house was built in 1947. It was part of the first housing scheme known as the Traditional Bantu village. The houses were thatched and made in rondawels forming a lapa around the open space. This was however a disaster and the people refused to live in these houses. The scheme was abandoned. This led to the development of the CSIR and NBR councils NE51/9 and NE51/6 sub economic type housing, also known as matchbox houses or four-roomed houses.
In 1954 the Site and service scheme was introduced: it refers to the self help building scheme, owner builder. The majority of Mamelodi East developed in this manor.
The first training school was set up at Vlakfontien industrial school, to educate people in the building of houses.

In 1953 the black township was proclaimed.
Property for Mamelodi East was only acquired in 1960, as the then Mamelodi West was fully occupied and was expanding rapidly to the east.
The group areas act, (people live grouped by age and race group) was enforced and people were removed from their homes as they were re-zoned for coloured and white areas: Eesterus, Riverside, Eastwood etc.

In 1958 the majority of the people were removed from the Lady Selborne area to the then Vlakfontein farm, known as the native location.
In 1953 Vlakfontein was formally proclaimed a township. Only people working in Pretoria based on the ”dompas” law were allowed to stay in this area, others were removed. Thus making the “township“ a labour reservoir for Pretoria.
In 1954 Mamelodi was divided into areas named wards based on ethnic origin, ie: Zulu, Sotho, Tshwane etc. for political safety reasons.
By 1954, 6000 people were already living at Vlakfontien in inadequate living conditions and by 1987 an estimate of 350 000 people by census in Mamelodi.

The first squatter camp was situated in the current day Mamelodi East. These were people waiting to receive houses, it was called Mandela Village.
The first amenity administration committee was established in 1955, it served as rent collection and to listen to residence complaints.

In July 1962 the Vlakfontien / Native location / black township was officially renamed Mamelodi. The meaning of Mamelodi is not exactly known as it has two possible meanings none the less it relates to music: mother of music/joy/melody or harmony, father of whistling.

The first Mamelodi community council was founded in 1977 consisting of twelve seats: two for hostels and ten for wards. The building built in 1977, as Mamelodi was then divided into wards and hostels for living.
The establishment or rather development of the community council to the Mamelodi town council came only in 1984.

Vlakfontien was one of the only planned townships in South Africa, planned by a Mr. NT. Cooper. The layout was based on American town planning layouts.
The majority of the finance for housing and infrastructure was from the government; however the profits from the beer hall (est. 1954) were used for social needs, ie nursing home and tarred roads.
The rent in the township was based on a 30 year lease excluding water & electricity.

Figure. 24 Mamelodi layout plan
Figure. 25 Mamelodi housing
Figure. 26 The cooking brazier is the “mbaola”

Figure. 27
Vlakfontein native location

Figure. 28
Mamelodi, Situation in 1961

Figure. 29
Mamelodi, resident portrait

Figure. 30
Mamelodi, students

Figure. 31
The main street section T, 1990

5.2_

VISTA UNIVERSITY HISTORY (CURRENT UNIVERSITY OF PRETORIA)

Established in 1981, founded in 1982, as a multi disciplinary distance learning campus; institution across the country in rural, peri-urban areas, with Pretoria Mamelodi as main campus “black University” for the “urban black communities” *(J M Kabamba, VISTA Univ).*
It was however imbedded in the negative image of a historically disadvantaged university, with a lack of adequate buildings, equipment, infrastructure, materials, library resources and social amenities. “ The university was mostly concerned with “soft sciences” such as education, sociology and humanities. Lack of adequate government funding placed them under serious financial presure. The 1994 elections changed the outlook on the University and allowed for better funding and restructuring. The main focus of Vista University was on “improving academic and professional qualifications of teachers.”
Vista was focused on a certificate and diploma level of education. The change to a degree based education lead to the government decision in 2003 to merge with Universities around the country. Vista Mamelodi campus merged with the University of Pretoria.
According to Mr. Juliano M Kabamba of the University of Vista the University structure was based on distance learning, with a support tutor at the nearest campus to your residence. The campuses were in actual fact learner support centres. To note: The main campus, Pretoria hosted the main library service that distributed books to distant learners on their request.

The words of Mr Mzombazi Mboya past campus director of Mamelodi Vista University as published in the July Pretoria News 1998, Clearly expresses the sentiment and vision of the past campus.

“ We want to reposition our institution to work with and for society, and not become an ivory tower shunning the disadvantage community that has given us a home.”

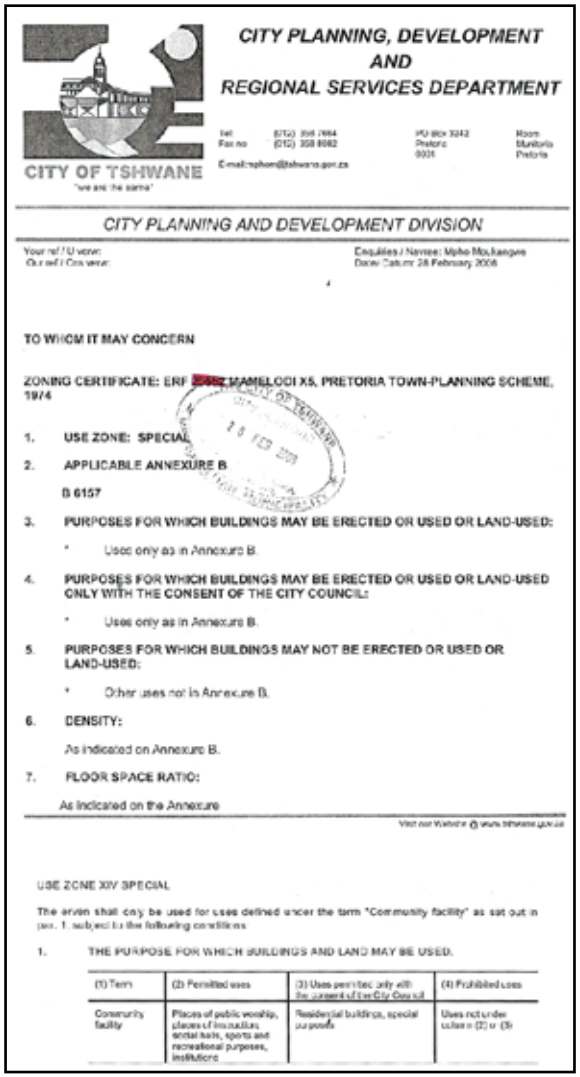
5.3__

MAMELODI EAST, A CONTEXT ANALYSIS

5.3.1 ZONING CERTIFICATE / ZONING NOTES
5.3.2 SEWER AND WATER LINE DIAGRAM
5.3.3 SITE / STORMWATER / PUBLIC GREEN SPACE / COMMUNITY EDUCATION ZONING
5.3.4 SOUTH AFRICAN WEATHER SERVICES CLIMATE STATISTICS
- WIND
- RAIN
- TEMPERATURE
- CLOUD COVER

5.3.5 VEGETATION ANALYSIS

5.3.1 ZONING CERTIFICATE



CITY OF TSHWANE

CITY PLANNING, DEVELOPMENT AND REGIONAL SERVICES DEPARTMENT

CITY PLANNING AND DEVELOPMENT DIVISION

TO WHOM IT MAY CONCERN

ZONING CERTIFICATE: ERF [redacted] MAMELODI X5, PRETORIA TOWN-PLANNING SCHEME, 1974

1. USE ZONE: SPECIAL
2. APPLICABLE ANNEXURE B
   B 6157
3. PURPOSES FOR WHICH BUILDINGS MAY BE ERECTED OR USED OR LAND-USED:
   * Uses only as in Annexure B.
4. PURPOSES FOR WHICH BUILDINGS MAY BE ERECTED OR USED OR LAND-USED ONLY WITH THE CONSENT OF THE CITY COUNCIL:
   * Uses only as in Annexure B.
5. PURPOSES FOR WHICH BUILDINGS MAY NOT BE ERECTED OR USED OR LAND-USED:
   * Other uses not in Annexure B.
6. DENSITY:
   As indicated on Annexure B.
7. FLOOR SPACE RATIO:
   As indicated on the Annexure

USE ZONE XIV SPECIAL

1. THE PURPOSE FOR WHICH BUILDINGS AND LAND MAY BE USED.

(1) Term	(2) Permitted uses	(3) Uses permitted only with the consent of the City Council	(4) Prohibited uses
Community facility	Places of public worship, places of instruction, social halls, sports and recreational purposes, institutions	Residential buildings, special purposes	Uses not under column (2) or (3)

Figure. 32 Zoning Documents

ZONING NOTES:
As per city of Tshwane planning And development division ERF:29552 Mamelodi ext x5 (1974)

1. ***USE ZONE, SPECIAL:***
COMMUNITY FACILITIES, SOCIAL HALLS, PLACES OF INSTRUCTION, INSTITUTIONS

2. ***SIDE & REAR SPACE***
Minimum free space between structures to be 1m. Permission that is granted is valid for life of building concerned

3. ***CONDITIONS OF PROPERTY***
Storm water to be drained into street or storm water channel which ever is most access able and available

Owner shall be responsible for the maintenance of the entire property

4. ***BUILDING HEIGHTS***
Building height restriction of 2 storeys, City council does have the right to allow consent for higher structures. In note of IDP development this regulation shall be granted relaxation and issued as consent.

5. ***COVERAGE***
Building not to exceed 70% of site area, council has the right to allow a 10% relaxation. of additional coverage

5.3.2

Figure. 33
Sewer and water line diagram

SEWER AND WATER LINE DIAGRAM

CURRENT SEWER LINES MAMELODI EAST, SITE AREA

CURRENT WATER LINES MAMELODI EAST, SITE AREA

TOTAL University of Pretoria MAMELODI CAMPUS SITE

DISSERTATION SITE

Note, the dissertation site seen in figure 34 (yellow), water and sewer lines run along western edge and centre of the existing Mamelodi University of Pretoria campus site, lines not seen on diagram.
The diagram issued by City of Tswhane water and sanitation division only shows main lines and not internal lines as changed, added and amended by individual owners.
As this is an existing site with infrastructure, the majority of sewer and water lines required for new structures are to be connected to existing.
However, eastern border as seen on diagram does indicate main lines, to be used for public infrastructure, toilets, taxi rank etc. As noted under space programming chapter 6

5.3.3

Figure. 34
Site / stormwater /public green space / community education zoning

SITE / STORMWATER / PUBLIC GREEN SPACE / COMMUNITY EDUCATION ZONING

SITE

University of Pretoria SITE

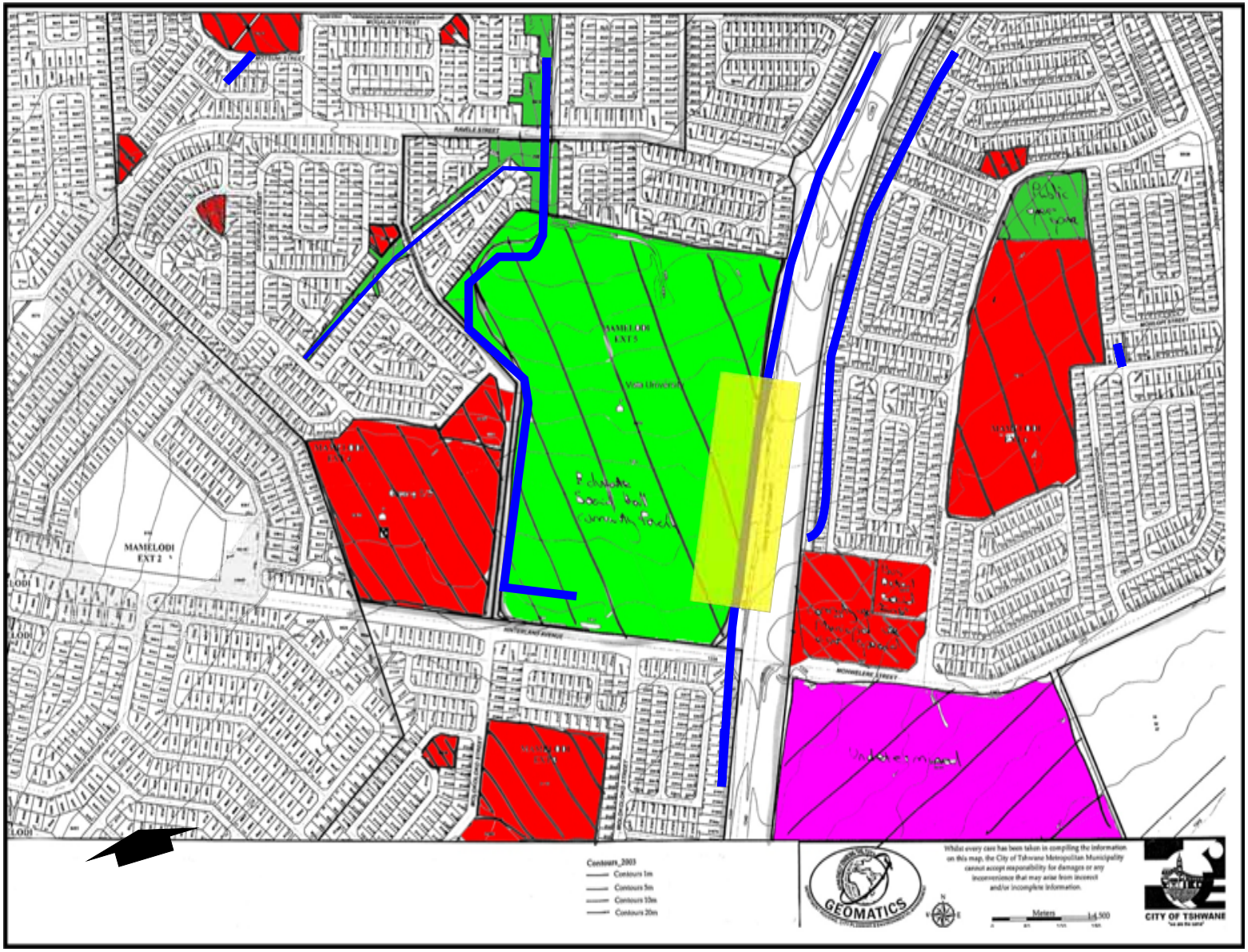
STORM WATER

GREEN SPACE

COMMUNITY ZONING EDUCATION ZONING

UNDETERMINED ZONING

Note: West side and East side of Hans Strydom road have been zoned for housing. However the west side have been developed and can be categorized ss formal developed RDP. Housing. But the east side have not been developed, it ranges from mixed developed RDP. and informal shack housing. Thus the representation of formality on this diagram, courtesy of City of Tshwane regional services Department is not accurate.
Previous chapter 3, showed a more clear and current indication of status, but not zone.



5.3.4

SOUTH AFRICAN WEATHER SERVICES CLIMATE STATISTICS

RAIN
TEMPERATURE,

Figure. 35.
Sunlight Graph

SUNLIGHT HOURS, 1993 - 2003 avg JANUARY- DECEMBER
Average Daily Sunshine (hour) Data for station [0513314C9] - PRETORIA EENDRACHT Measured at 08:00

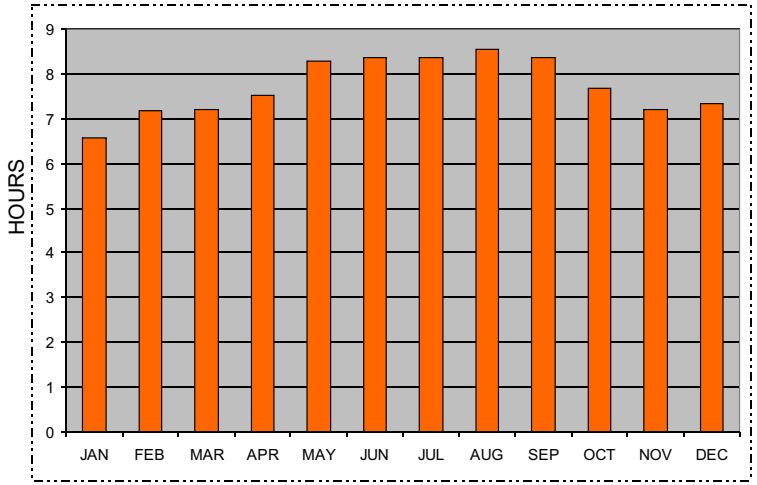
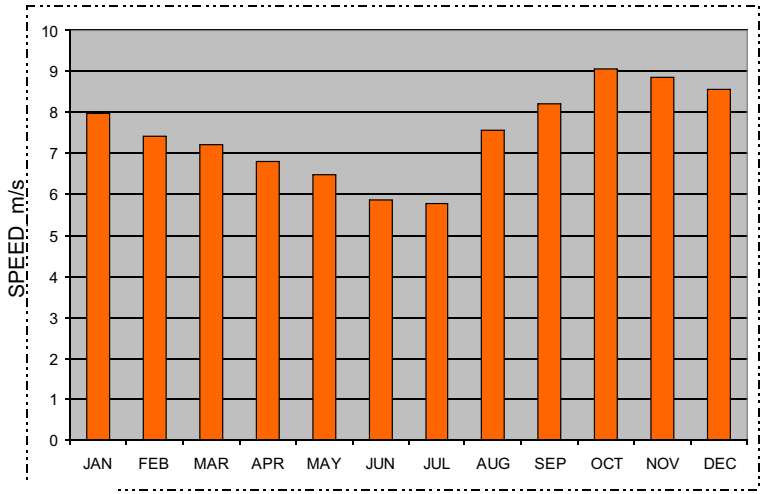


Figure. 36.
Wind speedt Graph

WIND SPEED, 1992 - 2008 avg. JANUARY - DECEMBER @
Average Wind Gust Speed (m/s) Data for station [0513314C9] - PRETORIA EENDRACHT Measured at 08:00



5.3.1

SOUTH AFRICAN WEATHER SERVICES CLIMATE STATISTICS

Figure. 37.
Rainfall graph

AVERAGE RECORDED RAINFALL, 1992 - 2003 avg JANUARY- DECEMBER
Monthly Daily Rain (mm) Data for station [0513465 1] - PRETORIA UNIV PROEFPLAAS Measured at 08:00

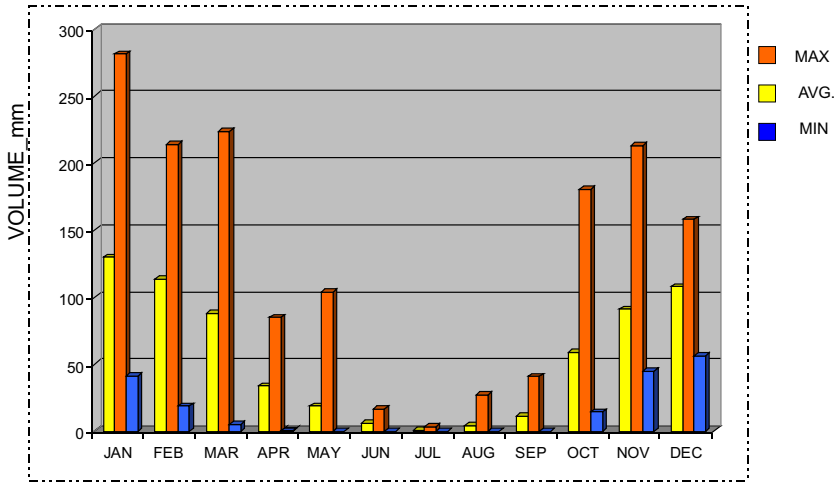
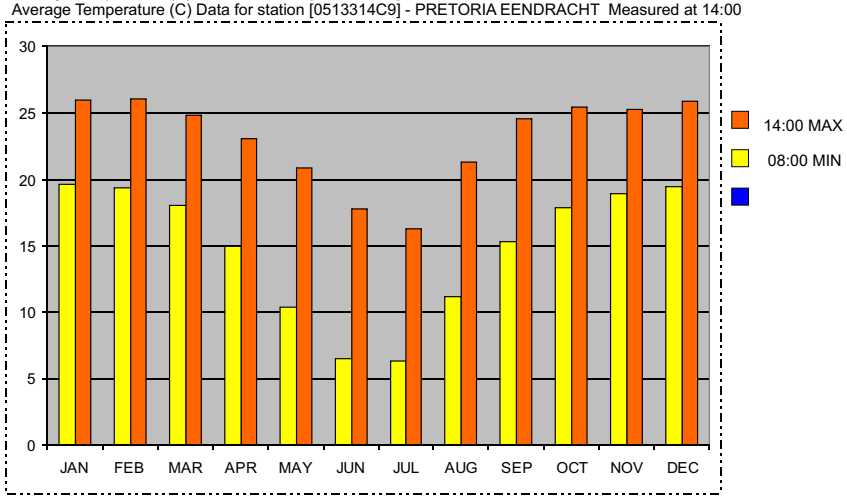


Figure. 38.
Temperature graph

TEMPERATURE, 1992 - 2008 avg. JANUARY - DECEMBER @
Average Temperature (C) Data for station [0513314C9] - PRETORIA EENDRACHT Measured at 08:00
Average Temperature (C) Data for station [0513314C9] - PRETORIA EENDRACHT Measured at 14:00



5.3.5

VEGETATION ANALYSIS

CURRENT SPECIES ON SITE

TREE1 _ HARPEPHYLLUM CAFFRUM (WILD PLUM)

TREE2_ RHUS KAREE

TREE 3_ COMBRETUM

TREE 4 _ ACACIA

SPECIE_ Grass lawns

SPECIE_ Mix small flower

Note: The proposal for future plant species are to add to the existing ecology, thus adding similiar species as noted above.
Additional trees are also required to be evergreen with less destructive root systems as they serve as shading devices for public squares and walkways in large planter boxes, as apposed to built structure, see figure 39 below.

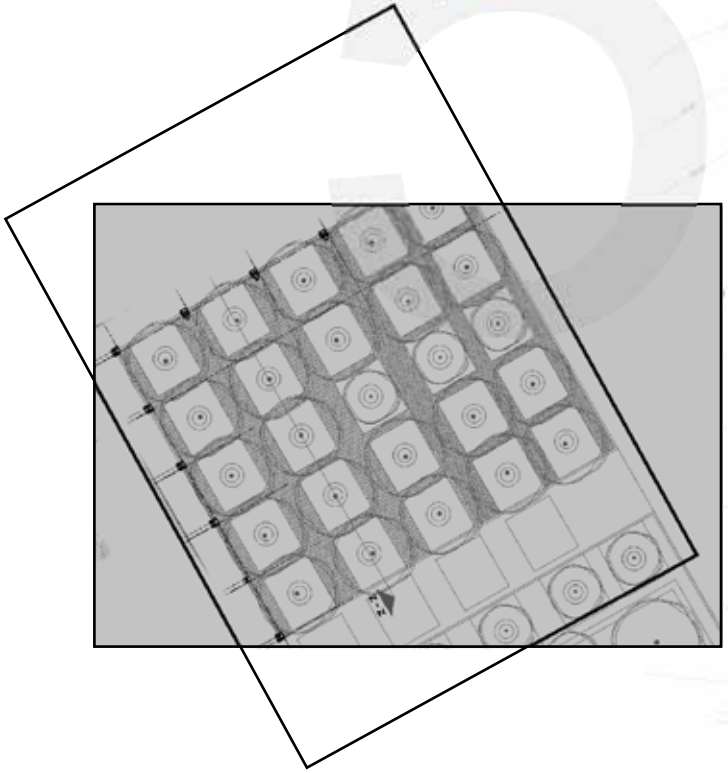


Figure. 39
Public square planter boxes

Figure. 40
Vegetation plan
Existing tree layout

5.3.6

Figure. 41
Site service diagram

Stormwater

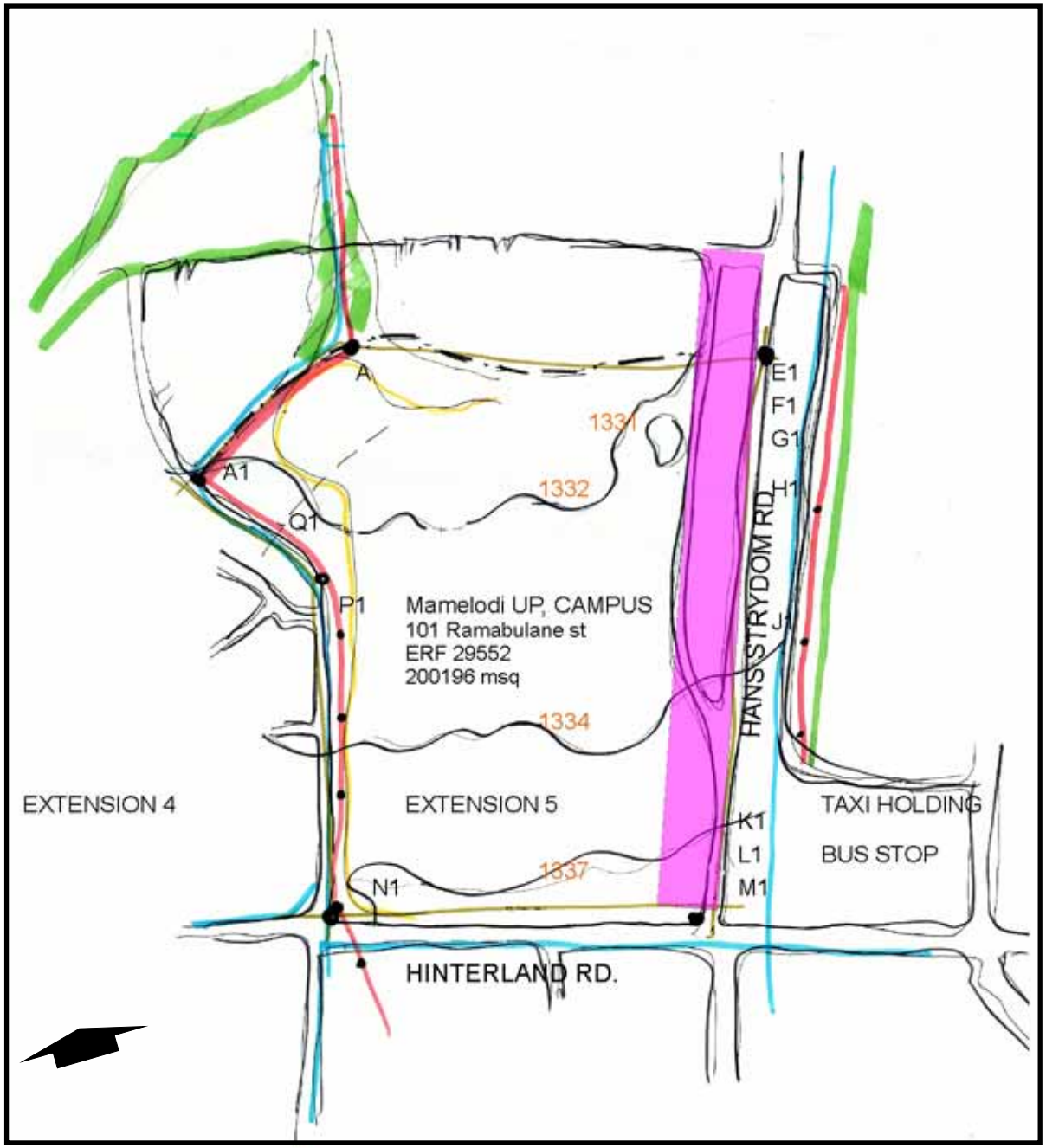
Sewer line

Water line

Servitude / Stormwater channel

Site edge

Existing green belt



6.4_

MAMELODI EAST, A SOCIAL SITE CONTEXT ANALYSIS

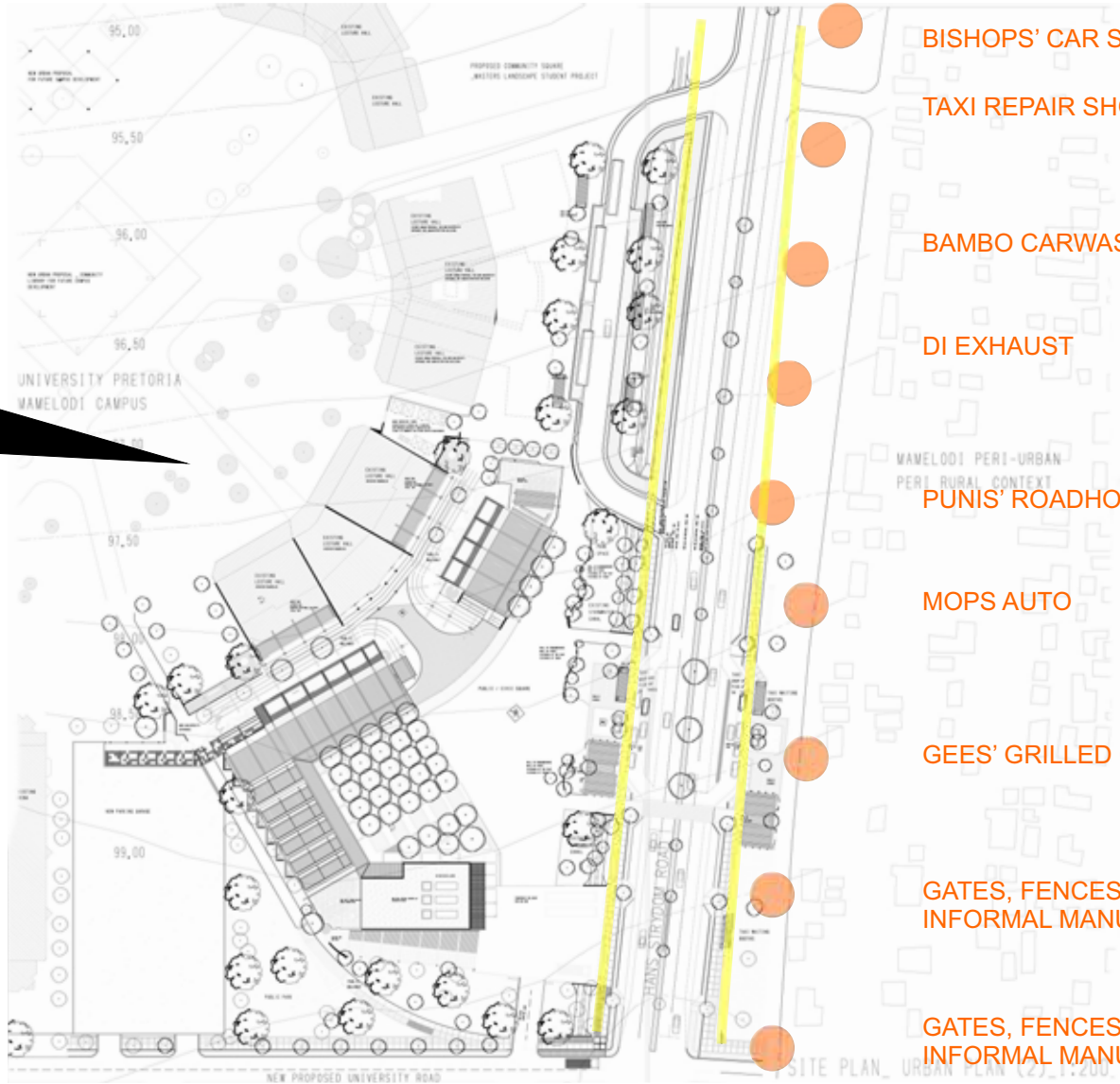
An immediate context, social analyses

Figure. 43a
Site context, current social activity spine

Pedestrian Route

Bussiness Trading

View photo elevation of figures 43b



50m UP STREET,
INFORMAL FOOD STALLS

BISHOPS' CAR SERVICE

TAXI REPAIR SHOP

BAMBO CARWASH

DI EXHAUST

PUNIS' ROADHOUSE

MOPS AUTO

GEES' GRILLED CHICKEN & RIB

GATES, FENCES' AND STEELWORK
INFORMAL MANUFACTURE

GATES, FENCES' AND STEELWORK
INFORMAL MANUFACTURE

5.4.1

Figure. 43b
Site context, current social activity spine
Images

5.5_

MAMELODI EAST, A CIVIC EVALUATION

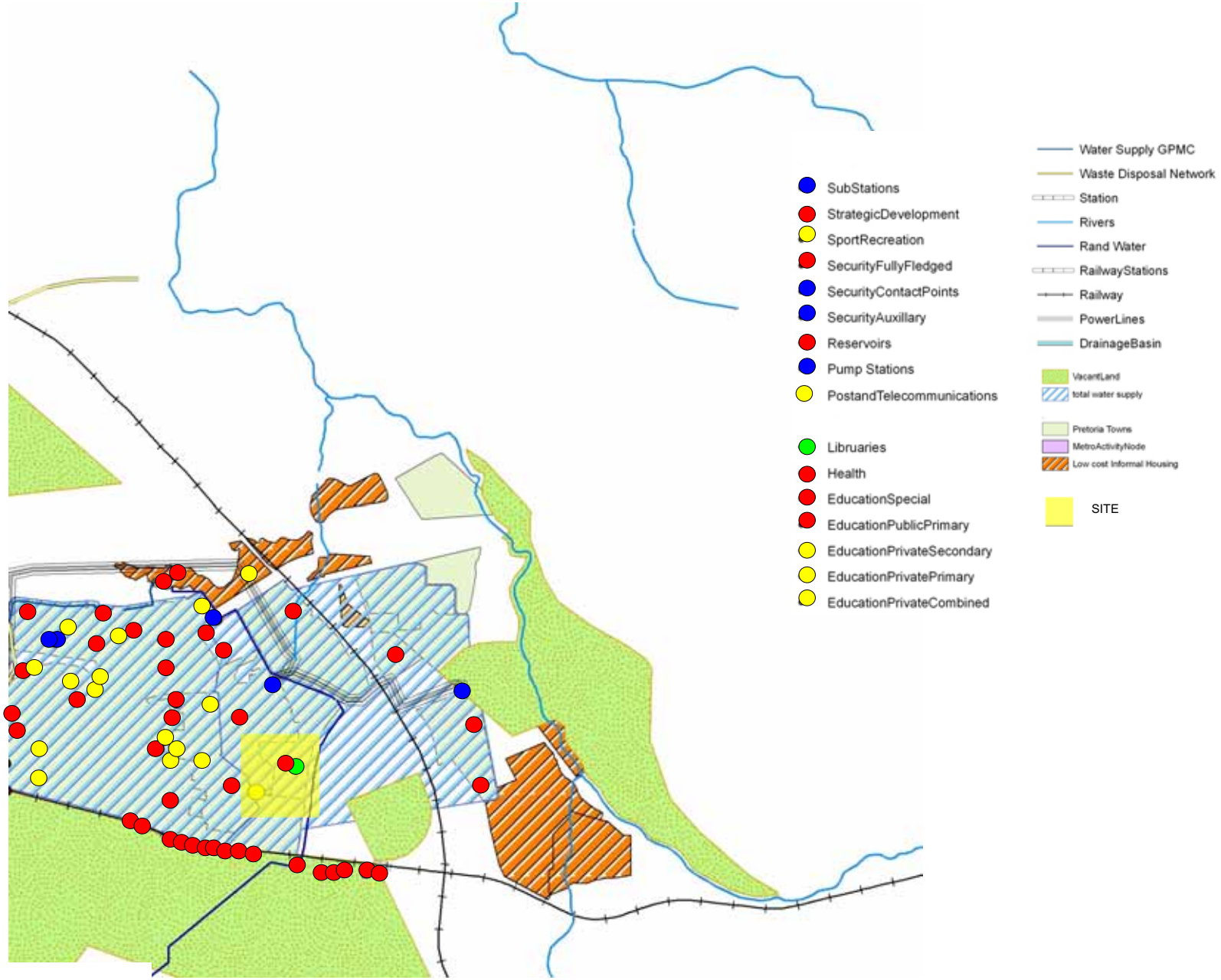
_ A BRIEF RECORDED HISTORY TO CURRENT TIME DIAGRAM _

According to the Pretoria Joint committee report by 1954 there was no recreational facilities, shops, police station, shelter etc.

- 1948 1st college: Kkolege ya Bana ba Africa (university if the north): 1st educational institution: closed in 1958, apartheid law
- 1952 1st school.
- 1953 Public library Mamelodi East.
- 1955 The first businesses were only allowed to trade, of which the majority were spaza shops.
- The first clinic: 1955. It was the size of a single house, hence already grossly undersized. It was situated outside town as per the current native law regulation of the day. It was doubled in size and by 1958 moved to another ward were it is still today.
- 1956, 1st school for blacks only: Mamelodi model school later named Gamelodi school, Mamelodi high school was opened; Eersterus community school _ the jam school_; 36 primary schools; 12 secondary schools
- 1957 Magistrate court
- During the 1950's a maternity home was built not by government but by the Vroue sendings bond.
- 1960, 1st police station
- 1962 Putco public transport, the minibus and taxi rank in 1977.
- 1st public cinema in Mamelodi built in 1964
- 1970, 1st major sport recreation facility
- 1976 The Mamelodi cripple care centre was built, the new premises was occupational in 1981 in Mamelodi East.
- 1976 the first clinic and feeding station was built in Mamelodi East.
- 1977 YMCA in Mamelodi East
- 1980 Public Library Mamelodi West.
- 1983 the first SOS children shelter village was built.
- 1983 the first Hauspice was built in Mamelodi East.
- 1983, 1st hospital.
- Two community halls, One in the east the smaller and one in the west.
- Two post offices in Mamelodi
- There are multiple churches within Mamelodi, Zion, Baptist, Anglican Nedgeref, NG church etc.

Various acts of apartheid and the oppressive treatment of black people in South Africa caused riots that played host in Mamelodi
Mamelodi East have recognition of people for place names, while Mamelodi West has numbers and digits for areas. The street names and numbers are noted but not used. The areas have connotation and memories, hence they are used more often than the digits, for example:
Ie: (Khalambazo: the place of the crying axes) fire wood and building eucalyptus.

Figure. 44
CIVIC amenities
Mamelodi
EAST



5.6_ TERTIARY EDUCATION FACTS AND FIGURES

According to Jonathan D Jansen's: *Changes and continuities in South Africa's higher education system 1994 - 2004.* the following statistics*, with regards to tertiary education and facilities in South Africa at current*

5.6.1

21 Universities - 11 institutions
15 Technikons 5 stand alone, 6 comprehensive (university +technikons merger)
150 tech colleges 50 merged tech colleges
120 colleges of education 2 college of education
306 separate institutions became 72 institution

1990 - 1994 = black universities increased by 37% (+ 28 000 people)

1990 - 1994 = White universities increased by 8% (+ 10 000 people)

1990 - 1994 = 9% black. 13%coloured. 70%white. 40%indian

5.6.2 Representation at tertiary level

- 1994 - 1999 = black increase 80% (+152 000 people)

1. black students total 59% off all students at tertiary education,
2. black students enrolment decreased by 9% at historical black universities
3. Black students enrolment has increased by 138% at historical black technikons.
4. Black students enrolment has increased by 100% at historical white English medium universities. (+ 10 000)
5. Black students enrolment has increased by 1120% at historical white Afrikaans medium universities. (+ 56 000)
6. Black students enrolment has increased by 490% at historical white technikons. (+ 49 000)
7. Distance education increased by 492% (+ 55000) 1993 - 1999

5.6.3 Based on the above figures a deduction can be made that an urgent increase in facilitating the growth of the tertiary sector is required, at both university and technikon level.

The perception of past historical black educational universities still has an impact on the number of students attending and the reduction of 9 % of attendance proves this. The Mamelodi campus of Univeristy of Pretoria, is a prime example.

Changing and reshaping this image to a community based university that verges on that of college education is real and required.
The majority of the increased student attendance are to technikons and universities. 490% and 1120% respectively.

The need for successful functioning tertiary education institutions in new towns such as Mamelodi is a real problem as is evident in the overall +-30% increase of black students across the country, now representing 59% of the total number of students in the country.
This does not presume that all black students come from disadvantage areas but statistics show that large portions do however come from those areas.

To note, the majority of people in this country is of black ethnic origin and hence it places the onus on the universities in those areas to develop appropriate education system to facilitate current and future learners.

Figure. 45
A few community Engagement affiliated Universities
Pretoria University

Rhodes University

Bristol University

Arkansas University

Bradford University

Vanderbilt and Peabody college

Australian Catholic University

5.7_

NGO PROFILES

The facility hosts Government, Municipal, community and University services. The vision of a incorporating NGO's could make this facility a centre for all needs and development in a developing township.
The concept of bringing major role players together is envisioned to bridge the gap between past segregated service delivery and future development of a community: Mamelodi
The folowing is a list of possible Non Government Organisations that could benefit in being selected and placed within this area, but more over that the Mamelodi community could benefit from.

Project Literacy
Community development resource association
The Mvula trust
POWA
Urban service group
Ditsela

5.7.1

Project Literacy_ Portfolio:

"This 33 year old business orientated non-government organisation (BONGO) with an annual budget exceeding R50 million and physical reach that includes eight regional offices, has its roots in a Pretoria church where it started out as reading group and social club for domestic workers. Since its humble beginning in 1973, Project Literacy has become the biggest adult literacy NGO in South Africa, focusing on the development of well rounded life skills for adults from disadvantaged communities.
Project Literacy has grown enormously under the tutelage of Chief Executive Officer, Andrew Miller, who's been at the helm for almost a decade and argues that to run an NGO, one needs to be driven by a strong sense of social justice.

Since inception, Project Literacy has gone through three distinct phases on its journey from a volunteer driven organisation in the 1970's to a donor dependent NGO in the 1980's to a government reliant BONGO in the 1990's. In the post-apartheid era, Project Literacy is largely tender driven and reliant on SETAs (sector education training authorities) for work."

Project Literacy's transformation mirrors changes in South African society. At the dawn of democracy, like many other NGOs, Project Literacy geared itself to work in partnership with the state and related institutional frameworks. An important feature of this transition was the purposeful professional orientation of the organisation in order to engage with SETAs and compete with the private sector.

5.7.2

Community development resource association

"Building Strong Organisations Building Strong Communities

The Community Development Resource Association (CDRA) was established in 1987. Formed at the height of the anti-Apartheid struggle to support both welfare and development initiatives, it has its roots in a progressive and humanist approach to social justice and change.

Its staff of fourteen are equally divided between development practitioners and an office based team that administers and manages the programmes and activities of the centre. Five members of this well established team have been with the organisation for over 10 years. The organisation has been in operation for more than 19 years and, in this time, it has provided services to over 500 organisations. The work of the CDRA includes organisation development consultancy, training and the facilitation of peer-learning dialogue groups as well as an action-research and publishing programme that shares its learning and thinking more broadly.

Engage with SETAs and compete with the private sector. In 2005 the CDRA re-launched as a "Centre for Developmental Practice", clinching a shift in the emphasis of its work that has been coming for some years. The shift moved the work from more narrowly focused organisation development consultancy, to supporting development practitioners, organisations, institutions and networks in improving the quality and effectiveness of their practice. The CDRA sees its major contribution its real "added value" as helping all parts of a system to see themselves and the roles they are playing and to work with these so that the capacity of the system as a whole is enlarged. Using these terms, "practice" is understood to incorporate, centrally, the particular relationships that any intervener is a part of.

The CDRA judges the success of the interventions that they facilitate not only by what has changed in clients or their environment, but also by what has changed (and grown between) them and those with whom they relate, including their donors, their clients or beneficiaries and their peers. The CDRA places itself in this system of changing relationship and reflect regularly amongst ourselves and with clients on how things are going.

The work of the organisation is guided by this new emphasis on

Practice and includes:

1. Qualitative, reflective OD consultancy that works directly with the lived organisational reality.
2. Accompaniment in the establishment of qualitative learning processes inside of organisations.
3. Training in social development practice.
4. Evaluations and other forms of social research that emphasise reflection, participation and learning with a view to clarifying strategy and improving practice."

5.7.3

The Mvula trust

“Increasing Access to Water and Sanitation Services

Since 2007, when people suddenly realised that we have reached the half-way mark for the Millennium Development Goals (MDGs), there has much discussion about whether the government will be able to meet the targets in this regard. As 2008 has been assigned as the International Year of Sanitation, it is prudent that we ask what is being done by government and civil society, in particular the Mvula Trust to meet the MDGs for water and sanitation.

The Mvula Trust, the largest water and sanitation NGO in South Africa and one that works tirelessly to ensure that South Africa does indeed meet the MDG for water and sanitation by 2015.

The Mvula Trust was established in 1993 to improve water supplies and sanitation for disadvantaged South Africans living in rural and peri-urban communities. It has met its mandate in the past 15 years by working to meet marginalised people's need for clean water and sanitation on a sustainable basis.

Since inception, it has supported the development of good practice in the water and sanitation sector by testing and advocating sustainable models for cost effective delivery and management. Mvula Trust Executive Director, Andile Mahlalutye, notes his organisation has played a very important role in assisting government to achieve its goals, in particular the MDG for water and sanitation. He states that, “By 2010, all people's needs for water and sanitation would have been met.”

However, he also notes that before this time actually arrives, “There is a lot that still has to be done for implementation to take place.”

Overcoming the Sector's Challenges

Unlike most NGOs, Mvula Trust does not rely on donors for funds as it generates its own sources of income. Mahlalutye states that, “We fund ourselves through our work.”

Community-Based Approach

Although Mvula Trust operates from a national office in Johannesburg, the organisation has seven regional offices in North West, Limpopo, KwaZulu-Natal and Eastern Cape. With a staff contingency of 80, Mahlalutye acknowledges that his organisation would not be able to have the type of reach that it currently enjoys if it did not work as closely as it does with community projects and community-based organisations (CBOs).

Mvula Trust provides funds for water and sanitation projects working to alleviate the plight of rural people in South Africa. The organisation works closely with CBOs working in the remotest parts of the country. It provides funds to projects and CBOs that assist communities in taking a lead role in mobilising, planning, designing, constructing and maintaining water supply and sanitation facilities.

However, Mvula Trust's ability to fund small communities' initiatives must not fool one into thinking that the organisation has it easer than other NGOs when it comes to generating funds.

Last year, Mvula Trust made ends meet with a budget of R150 million.”

5.7.4

People Opposing Women Abuse (POWA)

People Opposing Women Abuse (POWA) has played a vital role in the emancipation of women in South Africa since 1979. POWA has helped to bring the issue of women's rights into the mainstream public domain by highlighting the abuse of women as an issue that must be tackled by government and greater society.

Although POWA has been operational for 28 years, the organisation was only registered as a Section 21 Company in 2001. When it was first established, POWA responded to the high levels of violence against women. The organisation has always dealt with the issue both at the ground level providing support to women, as well as at the policy advocacy level.

POWA's vision is to create a safe society that does not tolerant violence against women, and where women are powerful, self- reliant, equal and respected.

At the outset, the POWA volunteers offered counselling services to women who experienced domestic violence and sexual harassment. Since then the organisation has grown substantially with the capacity of 42 staff members and 40 volunteers.

POWA has evolved much since then and currently also provides shelters to women based in Gauteng who have been the victims of abuse. It also offers legal advice and court preparation to women who have been abused or raped-, amongst other things.

The organisation confronts the challenges faced by women with the ultimate goal of eradicating violence against women on a continuous basis. To this end, POWA strives to ensure that women's voices are heard regardless of the challenges, whether big or small, that they may face.

Building Skills Capacity to further the Cause

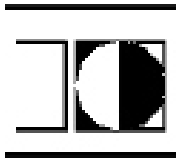
Although POWA was not the only organisation working to ensure that the complainant's voice was heard, it was one of only a few women's organisations that did make a visible stand.

POWA answers this question through its volunteer programme which equips the candidates with basic training for specialised skills ranging from clinical counselling, to education and information and research.

Due to funding challenges, POWA cannot afford to open up provincial offices. Delphine states that the organisation should ideally have regional offices. However this would require an annual budget of approximately R8 million or more as compared to the R5 million raised by POWA in 2005. As a means of correcting this situation, POWA is currently helping six women groups in Limpopo, North West, Northern Province and Mpumalanga with forming organisations that mirror POWA's mandate and philosophy. The ultimate goal is provision of access to service and justice in rural areas.

On a local scale, POWA is hoping to engage with the government more “aggressively” to ensure that all legislation relating to women's rights meets the needs of women.

5.7.5 Urban service group



" Sustainable Livelihoods in Housing Projects. Established in 1991, the Urban Services Group (USG) works in the urban housing field, providing OD (organisation development) support to local institutions rooted in poor communities in the broader PE metropolitan area. A defining feature of its work is its emphasis on social facilitation and education to enhance informed decision-making by community members.

Responding to the need for the support of grassroots social processes, the USG grew out of collaborative discussions between the Port Elizabeth (PE) Black Civics Organisation, the Kagiso Trust, Planact and a handful of progressive individuals.

Dodging Development Mercenaries to Increase Community Participation
USG's niche focus is community participation. However, the organisation goes to great lengths to ensure that it works beyond local structures to include the broader community in order to expand the general understanding and awareness of specific project issues. This strategy is based on hard earned experience that showed time and again that well placed individuals hijack legitimate public processes for personal gain. According to Felix, there is no shortage of opportunistic individuals who partake in project committees. He contends that these development mercenaries have other ideas about project funding.

Broad Based Housing Programme Doesn't Sufficiently Segment the Poor
Felix also holds the controversial view that the state should stop building houses for the poor as this is not helping them. He argues that the state should locate communities optimally in relation to social and economic opportunities, providing them with basic services and targeted support to substantially improve the quality of their lives while creating the opportunity for them to build their own houses.

Supporting Community Projects as Opposed to Owning Them
According to Felix, community projects must have developmental outcomes. Quoting their involvement in the high density Sakhasonke housing village, Felix submits that USG's role has been to focus on the soft issues, such as the livelihoods strategy of this community.

USG's experience in dealing with livelihoods matters has been extremely challenging to date. The organisation hopes to learn more as it continues to work in the Sakhasonke project. One thing is clear: the success of any livelihoods strategy is based on the formation of partnerships that can deliver wide ranging support to the community.

This also means that the organisation has a modest annual budget of R1.6 million which ensures that it can focus more on programme work and is not consumed by fundraising.

Looking into the Future: Long Term

Finally, in the longer term, USG will continue to stay in the housing sector, but with an emphasis on soft issues such as livelihood strategies. The organisation has also facilitated the establishment of a CBO platform with a number of CBO's it has worked with. The platform's purpose is to encourage peer learning and exchange."

5.7.6 Ditsela

" Workers' Education Brings Community Empowerment.
Ditsela is not at all easy to define in NGO terms. Essentially an education service provider, 'owned' by the country's major union federations, registered as a not-for-profit Section 21 company, staffed by loyal members of the labour movement - it is a complex organisation. Though, its deceptively simple mission statement, "to be an innovative succinctly and democratic learning organisation that contributes to the building of a strong labour movement" catches all of this

"Our organisation represents the poor. It is essential their voices remain strong so that we can develop organisations that are sustainable and effective. So that people can be catalysts of change and agents of their own destiny. I like that notion that it's not about waiting for government to do everything. Our government officials must strive to be servants of the people working close to and with the people," argues Govender.

Labour Education Leads as Social Investment
Importantly, Ditsela is arguing for a definition of its work that goes beyond narrow interpretations of workplace impact, and into broader society. Shop stewards or their equivalents take home their knowledge and skills, and share them with their families and communities. Any understanding of justice and rights developed in a workplace setting can be translated into other contexts for the benefit of people outside of the workplace.
Reserving the Right to Question the Hand that Feeds
Managing the long term sustainability of the organisation is no easy task. Ditsela receives the bulk of it's funding from the Department of Labour's (DoL) 'Civil Society Strengthening Fund'. Approximately 70% of funding comes from the Department of Labour, with the rest from Cosatu equivalents in the Netherlands and Germany, and a small portion from user fees.

Govender explains that Ditsela's budget, although expanding exponentially from year to year since the institute's beginnings in 1994, depends as much, or more, on how much money is available in the DoL 'Civil Society Strengthening Fund' as on government and donor support for the organisation.

Ditsela is the creation of the major trade union federations in South Africa: Cosatu and Fedusa. Its central objective is to help the labour movement build its capacity to be able to respond effectively to the challenges it faces. To achieve this Ditsela runs programmes in education and training and provides support for organisational development.
Ditsela works through 6 major interlinked pillars.
Education courses
Trade union support
Network
Research
Education Resource Centre
International support and solidarity"

CHAPTER 6_ Engagement by Architectural design

6.1_

COMMUNITY FACILITY AND AFRICAN CONTEXT PRECEDENTS

This section is not intended to promote the highlighted projects or take away any credit from the Architects criticism. It is merely intended to express noticeable commonalities in architecture and context and in doing so is not copying architecture, but learning from successful intervention and tectonic approach aimed at uplifting a society, a community and a people.

Precendent intention:

Contextual response
Tectonic response
Space programming response
Social intervention
Client, user approach
Built form sustainability
Materiality
Theoretical approach

6.1.1 **Nelson Mandela Interpretation centre.**
Alexandra, Gauteng, Peter Rich Architects

6.1.1.1 **Contextual response**
High density urban community, spatial and social history township settlement
Scale response: Domestic & civic
Resources in township effectively expressed in building

6.1.1.2 **Tectonic response**
Site constraint driven, Alexandra street space
Disabled access
Domestic scale + Civic scale by use of material and space manipulation
“Dialogue” between: rural, handmade,materal finishes and urban recycled, manufactured, waste material.
Loose fit, open air building
Cross views

6.1.1.3 **Space programming response**
Alexandra street structure, organic yard layout
Lower ground: public plaza, shops, training facilities
Food court, jazz café, internet café, workshops
Night time cinema projection

6.1.1.4 **Social intervention**
Bridge serving as structure but also a story board of the people, changing exhibitions
Expresses tactile and visually the culture of Alexandra.
Dignified response to people in the architecture.

6.1.1.5 **Client, user approach**
Community owned facility.

6.1.1.6 **Built form sustainability**
urban recycled, manufactured, waste material.

6.1.1.7 **Materiality**
“Dialogue” between: rural, handmade, materal finishes and urban recycled, manufactured, waste material.
Polycarbonate sheeting, handmade battered seating.
Use of rigid tough material

6.1.1.8 **Theoretical approach**
Tough, but dignified,
Container of stories
An armature for the stories of the people, a current day museum.

Figure. 46a N.M.I.C

Figure. 46b N.M.I.C

Figure. 46c N.M.I.C

Figure. 46d N.M.I.C

Figure. 47 Detail sketch

6.1.2

Khayelitsha Service centres and pay points

Cape Town, Western Cape, Piet Louw Architects

6.1.2.1

Contextual response

Close proximity to other community and public facilities.
Fits to place and time
On edge of city in contaminated landscape of built environment

6.1.2.2

Tectonic response

“Simple elegant and framed external space.
Strong and direct
Minimalist but tough in appearance
Robust, resilient and ambigious.
Building response to street, adds to street tectonics.
Raised ground floor
Balance between unity, proportion and rhythm.

6.1.2.3

Space programming response

Space designed to reinforce ad integrate places of civic significance
Designed to be reached by foot in close convenience to community.
Pay points for government tax and service.
Built form realises rich possibilities for people engagement

6.1.2.4

Social intervention

Contact centres, for interaction with representatives.
Close to users, the public the community

6.1.2.5

Client, user approach

Used as interface for public, civic and community, it becomes a part of the whole for amenities.

6.1.2.6

Built form sustainability

6.1.2.7

Materiality

Layered facade

6.1.2.8

Theoretical approach

Architecture as public responsibility, and role for architecture in a city/community.
Aim that architecture can create meaningful city spaces.
Buildings are instruments of public place making.
Definition between public and private

T. Deckler; A. Graupner H Rasmuss. 2008, pg 77

“ The buildings are driven by realisation that where there is no significance informing context, it becomes necessary to create one, to plant seeds that can become the beginnings of public place, through the placement of architectural elements.”

Figure. 48a
K.SC. & PP.

Figure. 48b
K.SC. & PP.

Figure. 48c
K.SC. & PP.

Figure. 49
K.SC. & PP.
Floor plan

6.1.3

Usasazo Secondary school

Cape Town, Western Cape, Noero Wolf Architects

6.1.3.1

Contextual response

Densely populated informal settlement:favela
Fragmented articulation of street façade mimics scale of informal settlement.
Central circulation space mimics the character of informal spaces.

6.1.3.2

Tectonic response

L_shape protects form strong directional wind
Double use street edge classrooms for business also.
Rooflight used for ventilation , cause heat suction

6.1.3.3

Space programming response

37 classrooms, library, computer room, hall, administration section.
Entrepreneurial education
Small foot print, difference used for sport field and agriculture use

6.1.3.4

Social intervention

Education

6.1.3.5

Client, user approach

Provincial government public works project.
Students, community

6.1.3.6

Built form sustainability

Passive ventilation and light wells.

6.1.3.7

Materiality

Concrete Block, tubular steel frame structure, and lightweight steel roof cladded with corrugated sheeting.

6.1.3.8

Theoretical approach

Architecture as urban acupuncture, to learn form the immediate environment, for educational reasons.

T. Deckler; A. Graupner H Rasmuss. 2008, pg 89

" a critical insertion into an area in need of improvement, healing and the reconciliation of competing demands and traditions"

Figure.50 U.Sz. school

Figure.51 U.Sz. school Elevation & section

Figure.52 U.Sz. school Elevation

Figure.53 U.Sz. school sectionional elevation

6.1.4

Philippi Public Transport Interchange

Cape Town, Western Cape, Architects: Du Toit and Perrin in Association

6.1.4.1

Contextual response

Developing formal / informal settlement: Philippi outside Cape Town Central
Creation of civic buildings and prominent space in an almost desolate place

6.1.4.1

Tectonic response

Linear _shape accommodates busses, taxi and quick passing form commuters
Buildings: " Urban blocks, neutral architecture"
"Celebrate the passing of time and light.

6.1.4.3

Space programming response

Public space with verandah walkways,
Varied scales of trading. FORMAL & INFORMAL
Taxi bays. bus bays & vehicle drop and pick-up bays.

6.1.4.4

Social intervention

A integrated public environment that in future could stimulate further investment.
Supporting existing hawkers and informal economies

6.1.4.5

Client, user approach

City of Cape Town Municipality, public spatial framework.
Urban commuter of Phiippi and region +- 30 000 daily
Informal economy

6.1.4.6

Built form sustainability

Low key architecture, recyclable material

6.1.4.7

Materiality

Concrete framed structures with lightweight corrugated sheet roofing.
Use of colour to show proportion and tone.
Panel modules to create human scale.

6.1.4.8

Theoretical approach

A creation of quite architecture, made on human scale with functional intention. A amenity for the user. Creating outdoor living rooms by public furniture and trees.

T. Deckler; A. Graupner H Rasmuss. 2008, pg 81

"The buildings are driven by genuine 'usefullness' and yet have sufficient gravitas and delight to make the by default almost civic buildings"

Figure. 54a Philippi PT.

Figure. 54b Philippi PT.

Figure. 54c Philippi PT.

Figure. 54d Philippi PT.

Figure. 54e Philippi PT.

Figure. 54f Philippi PT.

Figure. 55 Philippi PT. Site plan

Figure. 56

A tertiary African context

I cross a stream
I run the road
I find myself in the center of the bend,
Wrapped up in confusion over me and my ways
In confined thought I can't provoke any source of development.
Engaging does not lighten my load.
The community does not guide my flow.
On this island I find my hollow buried deep in reference and textbook.
Why am I separated if my people share my way
Why am I divided if knowledge guides my way
Is not an education to further my tomorrow day by day?

Please explain this image that killed my African way.

JAKO NICE_2008

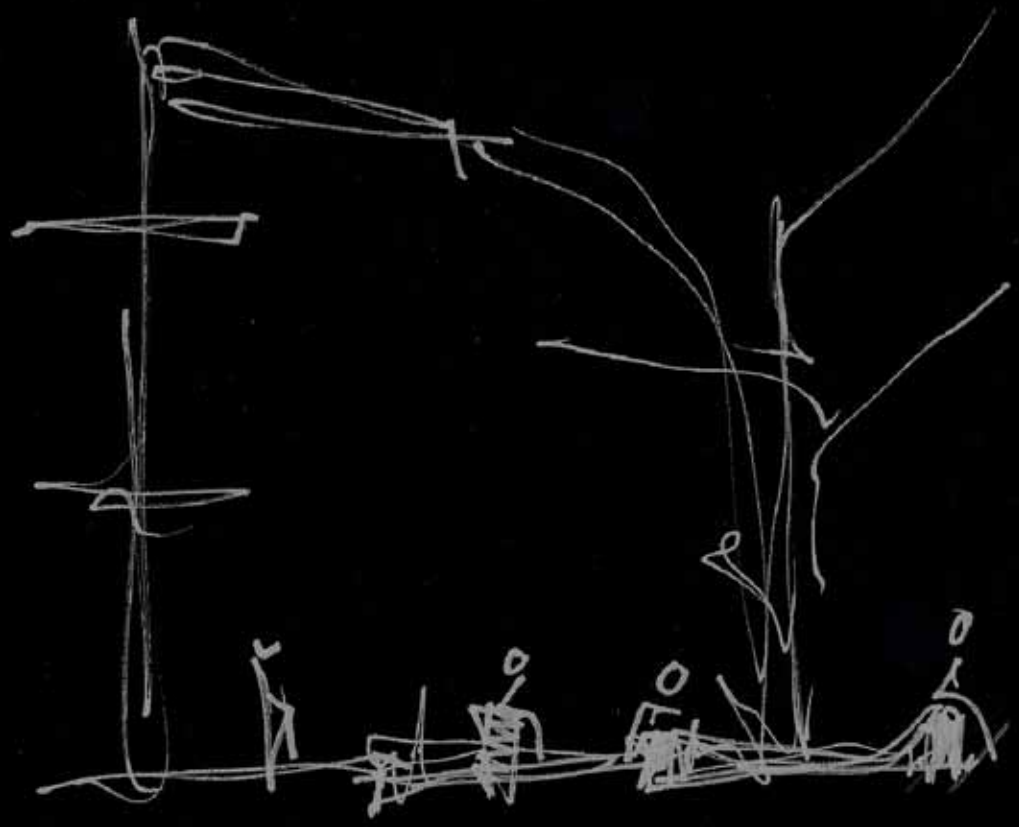


Figure. 57

Tectonic morphology

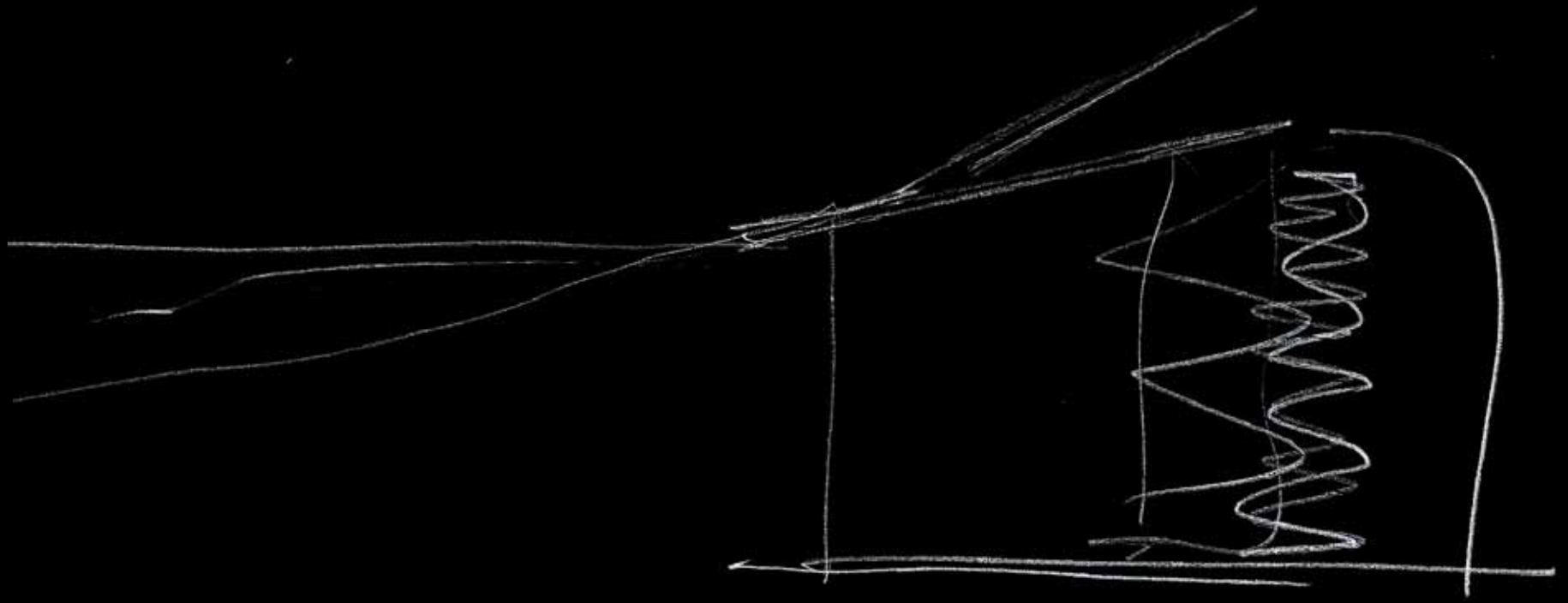


Figure. 58

6.2_

A THEORETICAL APPROACH OF BUILT FORM

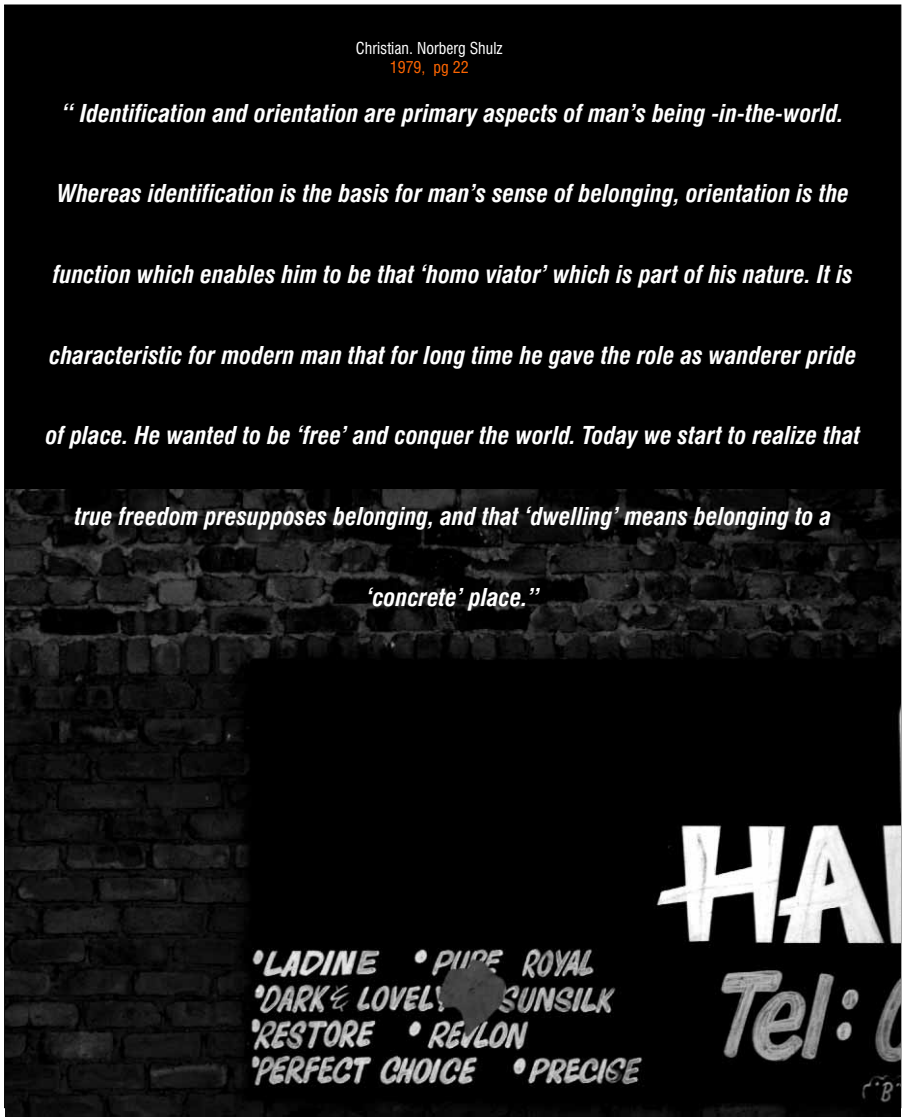


Figure. 59

C. Norberg Shultz 1979, pg 18

"The existential purpose of building (architecture) is therefor to make a site become a place that is, to uncover the meanings potentially present in the given environment"
See figure 61: typology of place_Mamelodi

The architectural response and outcome theiroff are merely products of their Environment. To be responsive to both human and nature one needs to respond to the make-up of place and this relates to the local climate, weather and people doing.

Mamelodi East, University of Pretoria Mamelodi campus. Sited in an arid climate zone, that receives cold winters and warm summers, receives avg to high rain of a +- maximum of 1600mm per year and low 0 -10 knot wind, majority of the year is clear skies, allow an average of 7 hours of sunlit daylight hours of clear skies per day, every year. With an 500mm/per 20m site slope or virtually flat. Sited within the foothills of the Magalies-berg Mountains it posses a scenic and natural beauty as seen in Chapter 5 graphs.

A town of mixed development, some rural dwellers, some urban spaces. Tarred roads and part gravel roads. Large potholes and broken sewer lines, poor storm water management and little infrastructure. A well developed and articulated urban housing sector and a rural shack development knitted together with the campus at its centre. Connected by main arterial roads and train tracks, with an exceptional well working taxi system.

But richly layered with people, people from all places across this country and other African countries. Well developed communities of groups of people but no one single community system that connects them all. Exciting and vibrant people space and living places, scattered all round.
This is the make-up of space, for future architecture to take place in. As Christian Norberg Shultz explains it: ***" dwelling means beloning to a concrete place."***

C. Norberg Shultz 1979

" The basic property of man-made places is therefor concentration and enclosure."

This dissertation engages with the architecture of new space, derived from existing space. By this it is implied that a current existing structure is revitalized and required to be given a new identity as seen in the introduction chapter of this document.
Not only the structure, but the entire University campus.

As Robert Venturi defines architecture with regards to facade and space :

R. Venturi 1967, pg 89

" The wall between the inside and the outside"

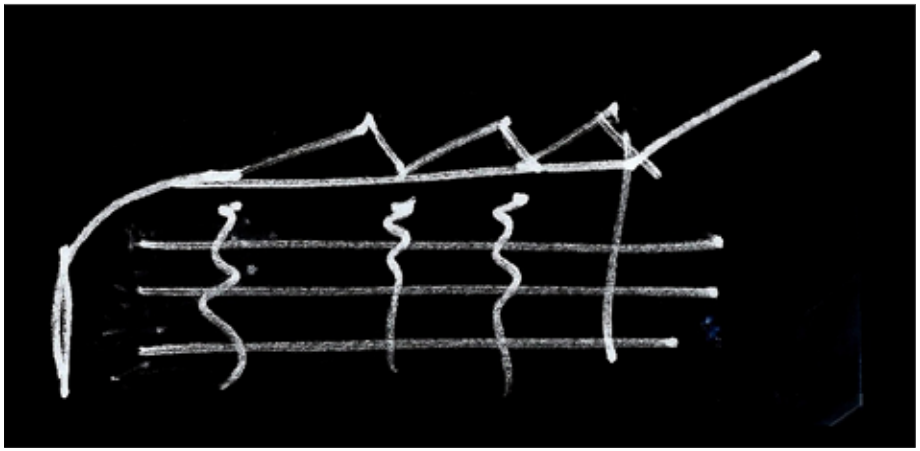
So does this "new space become the"wall between the inside of campus and the public outside. The outside architecture defines a new place. The new architecture,

the facility adds to this creation by itself becoming the wall between the public space and the built space, but the tectonic formation of the “wall” intends to blur the new and redefine it as a secondary transition space of built form and private civic function. Presenting a new character to lost architectural space.

The “new space” becomes the zone of transition between the past, the current and the future.
Not only in the sense of site and time, but also in the sense of function and new functional requirement. To be discussed in the typology chapter 7.
It is of most importance that the structure also displays this thought and becomes just as woven as the form. Only then does the theory become material and confirm the space. Hence the space is required, the architecture in context, the existing in time
And the theory becomes the potential space for interaction and experience.

. Envisioned as a tiered system, and programed in the same way.
A set of layers and phases one passes and develop into and finally become a role player and benefactor and not only a beneficiary to your community. Figure 60a&b

Figure. 62
Typology.
Roof and structure morphology.
Layers.
Dvp 2



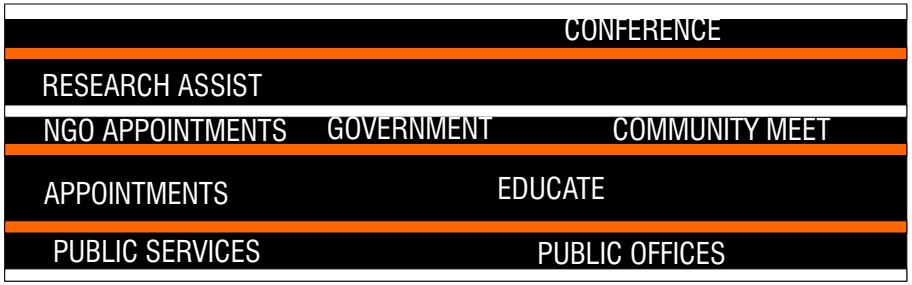


Figure. 60a
Layers , tiered levels
Of space and services
Provided_ vertical up and across facility_

Figure. 60b
Layers:
tiered levels
Of education and community engagement
Horizontal across the site

Figure. 61
Layers ,typology of place
Mamelodi community

6.3_

ANALYTICAL PROCESS OF ARCHITECTURAL REASONING

The process of design is not single fold. For any plausible architectural response a series of tests and experiments needs to be taken and critically analised. Only after this possible solution can be elected. The solution consisting of an amalgamation of various ideas and development, one influencing and developing the other.
The ideas and developments are guided by site and contextual restrictions.
Program and zoning restrictions, as well as spatial and cost restrictions.

Dr. G. Mills
1988

"The relationship between architecture, urban form and social purpose are direct Function and form are one and the same thing in sociological terms. "

This section deals with development of the Community Engagement Facilitator.

- Planning of urban site, planning of building and existing site, section and tectonic development of architectural responses and current proposed Architectural solution.

The following is a series of planning developments.

- This project has developed from loose Hybrid elements of civic and community needs; in the form of loose buildings collectively forming a typology and built form, purpose designed for interactive spaces. As seen in figure 72e
  As this dissertation proposes that it is the shared space that allows the architecture to develop.
- The architecture or built form response is merely a functional response and hence a potential environment. It is the space between that sustains the project. It is the spaces that has memory and constant changing life, not only by nature but time.
  The "shacks" scattered around Mamelodi and South Africa are prime examples hereof. They are shelter, shelter built for function, the form merely a response of need and available material at hand.
  In the same way this project intends to reflect this concept where the form follow the function. The need is derived and required, the form is an attribute there-of in the words of louis Sullivan : ***"Form follows function."***
  In the development of this principle for costing and appropriateness to housing multiple functions, a rationalised development was required:
  The form of singular structure condensed multilayered spaces were chosen, as seen in design development stages 10 - 20
- The conclusion was made that, in limiting the spacial experience to main corridors of legibility, expressing the built form as part of the spatial experience, the effective experience becomes more memorial.
  It is this principle of strong lines and set paths leading to zones of change and thought, for decisions of now and future, the spaces in between becomes the potential social interactive spaces, allowing the architecture to become the potential environment.

- While being very functional in requirement, the public space needs to be very social.
  The pragmatics of joining two such varied concepts becomes problematic.
  The solution to this predicament was to create inside - outside spaces.
  This effectively allowed the design to become public and private simultaneously.
  This was achieved by large public corridors with penetrating slab openings allowing trees and vegetation growing through at upper levels, becoming the zones of transitions between the public space and the private space.
  This was both a functional decision in separating the space and legibility as well as a spatial decision on making the building a more interactive experience.
  Seen in development 18

- Within the layers and thresholds, the users, tenants and visitors are always aware of where they can go and were activity is occurring thus adding to legibility.
  The large mass of structure required to host all the required functions evolves into a very large building. This has the negative effect of being dehumanising, an attempt was made to resolve this possible tectonic problem.

- The concept of layers - figure 63.- of modules on facade planes breaking the mass into smaller units, not only in articulation but also in material use. The use of brick work for small units, fitted into large concrete and steel frames that collectively create a large module and in finality the composition of the whole in a single morphing typology; binds the units to modules to planes to layers to a tectonic mass.Figure 58, 61, 63 & 65.
  This resulting in a humanising volume opening up onto a large square with articulated green squares of trees.

- As a civic building with an estimated 500 users per day the requirement for public access and corridor space becomes a necessity. The challenge lies in making the large walkways architectural spaces and not "dead" when not used. By carving up the public square into smaller squares specifically responsive to their immediate amenity allows for a smaller module of experience. Similarly by opening the walkway corridors and varying the experience of inside-and-outside it becomes modules of experiences, spaces of memory and not only volumes of space.
  Each plane/floor responds to its elevational context. This provides identities to facades, and memory spaces to the potential environment. This has effect not only at a personally level but also at public level.

Figure 63.
Layers

Each facade responding to its immediate context and spatial experience . For example,
public facade: open corridors,
university facade: polycarbonate sheeting
Square facade: brick detailing.

It is the parts that complete the whole, that makes the whole work.

An important aspect to consider was that although the external space are used at a human level, they also serve as images to the community, thus the choice of typology and articulations of material becomes incredibly important with regards to scale. Serving both direct contact scale as well as long distance scale. Response was attempted by adding small unit articulation that reads as single mass from afar, but detail from close, simultaneously the larger elements serving as skins from close but being the large tectonic morphology from far. Eg. The roof structure and the polycarbonate sheeting.
Figure 62

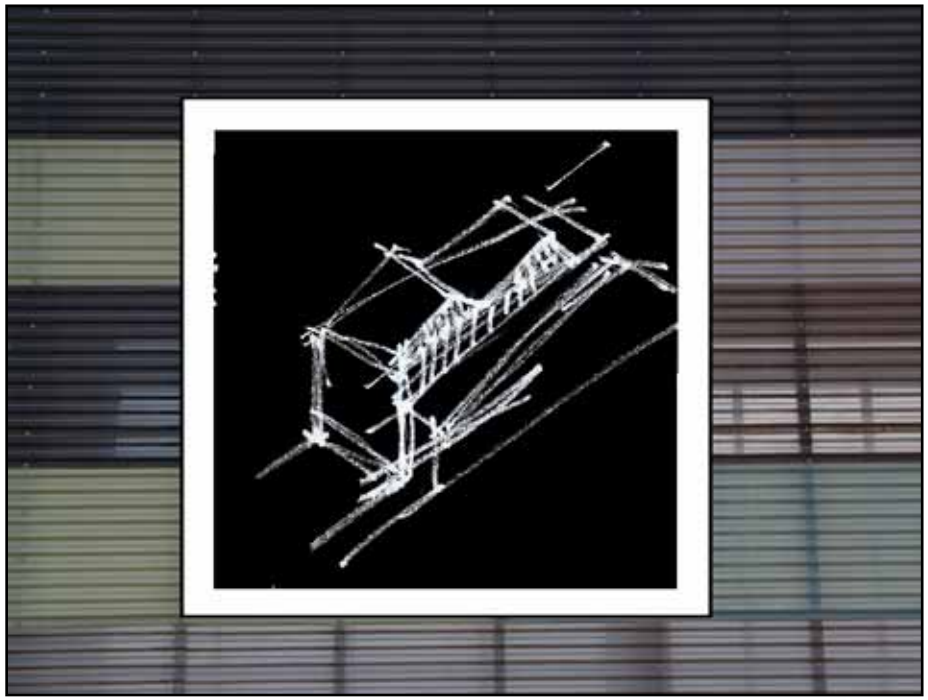


Figure. 65
Roof flank C
design
development
Layer
tectonic
Material

Figure. 64
Typology.
Roof and structure
morphology.
Layers.
Dvp 3

EXISTNG CONTEXT

Figure. 66a
Existing structures
Lecture halls
On site.

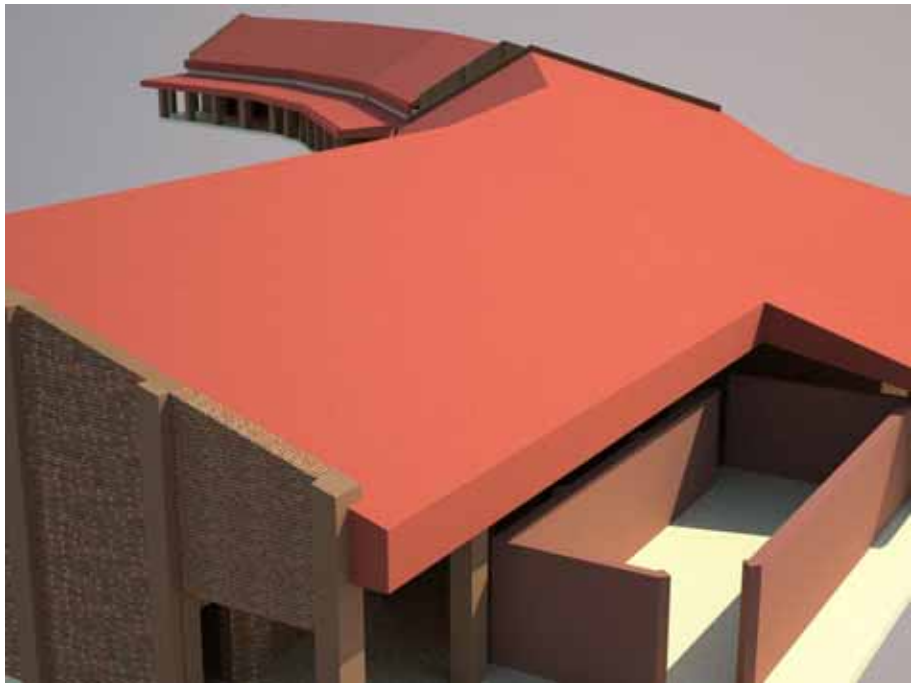


Figure. 66b
Existing
structures
Lecture halls
On site.

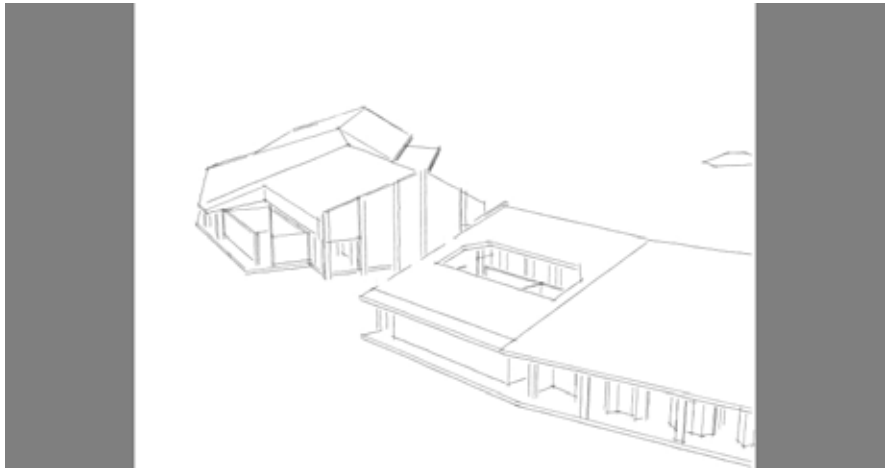
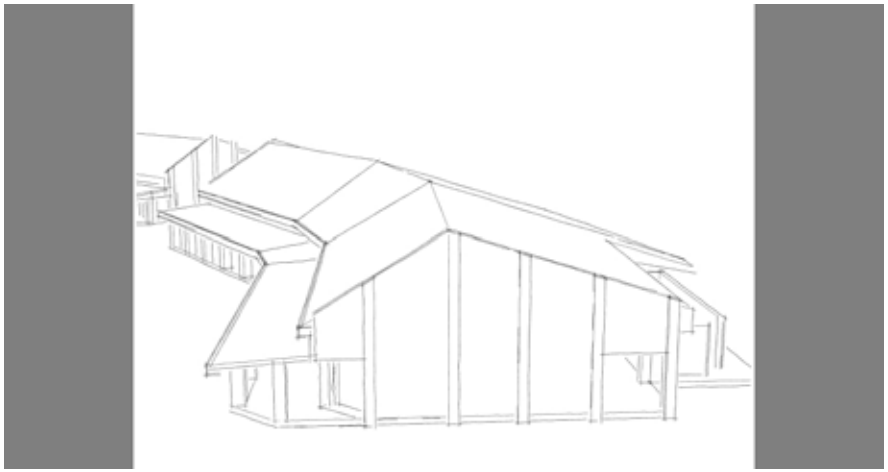


Figure. 67
a,b,c,d
Existing
material
type
On site.

Figure. 66c
Existing
structures
Lecture halls
On site.

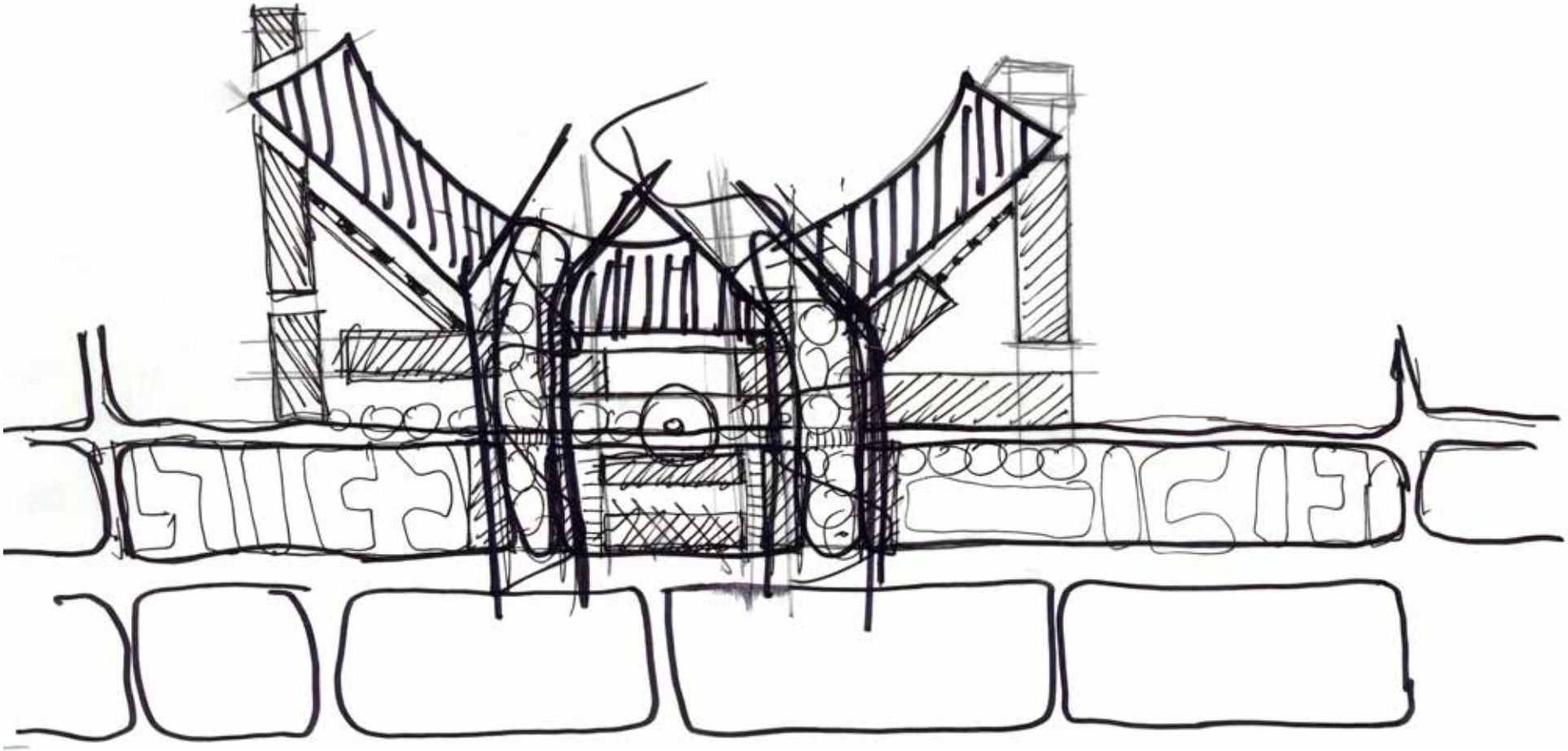


6.3.1

Figure. 68
Plan: site and program
Development 1 of 20

DEVELOPMENT 1 0F 20

- Plan and site development. Urban and site scale.
- Creation of courtyards surrounding existing buildings.
- Attempting to change the grid to respond too the street edge.
- Creating access passages to the internal of the campus, thus opening up the two segregated zones.
- The design centralised around new entrance proposal for University of Pretoria Mamelodi Campus.
- Proposing densification of retail at street edge.



However:

- The courtyards enclosed the public space and internalised the design, limiting view legibility to 2 passages. This went against the principle of creating space that allows engagement between people and function.
- The densification of space could lead to crowding and limited access. Hence requiring a design change.

6.3.2

Figure. 69
Plan: site and program
Development 2 of 20

DEVELOPMENT 2 0F 20

- Plan and site development. Urban and site scale.
- Indicating movement across the site, as noted previously: Too restrictive.
- A change in layout for the new proposed University entrance design, proposing an arc of public space and reducing the overall density on the front face of the site.
- Introducing trees and green shrub to define the facility for the passer by.
- Creating mental images and reducing noise disturbance of private squares.
- First indication of varied building mass, intending to collectively create a single complex

However:

- The same restriction still evident, but form and change of grid is kept.

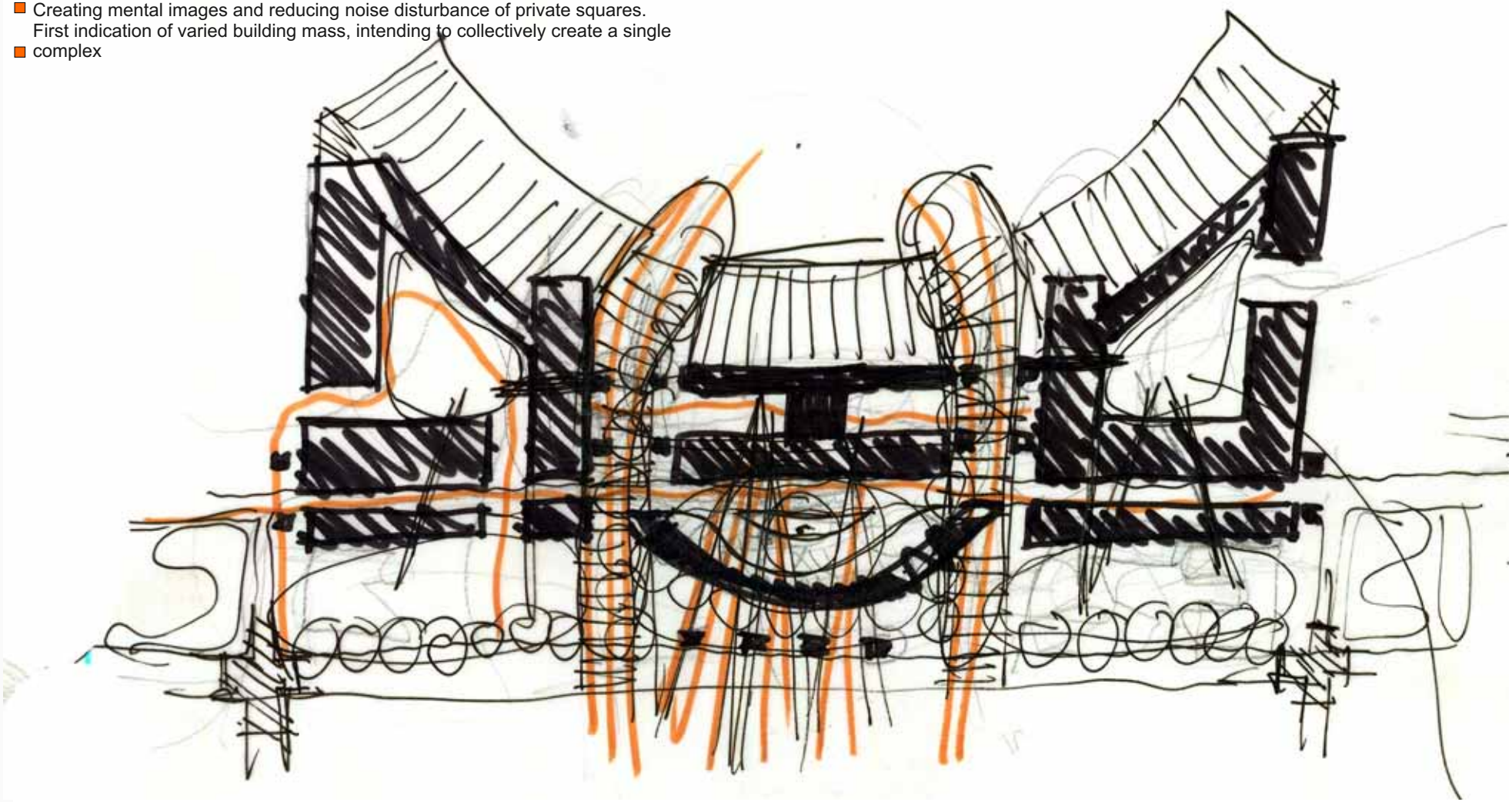


Figure. 70
Proposed loose set spatial development of Student information booths.

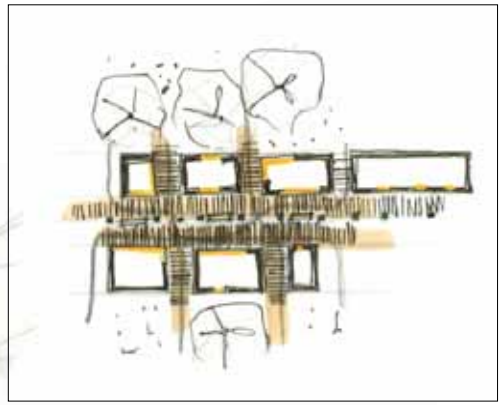
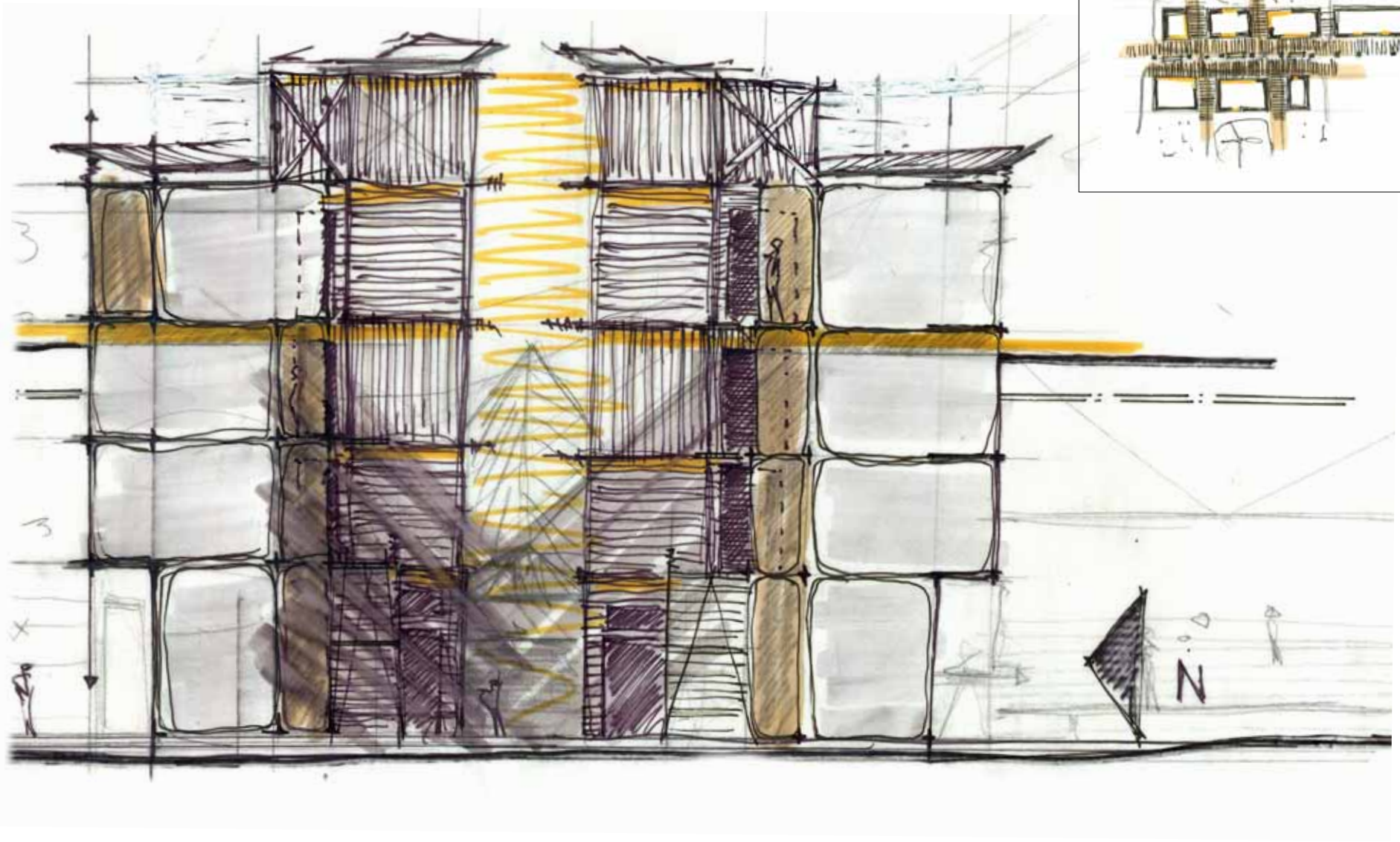


Figure. 71
New University administration design development_note urban proposal only_



6.3.3

Figure. 65 a - d_ CONCEPT DEVELOPMENT MODEL 1.

- Exploration of site and contextual response.
- The initial attempt at contextual forming of site. The built form resulting from the layout of existing buildings. This explains the reason for the multiple bends in structure.
- The site required a formation of form that responds to its layout, as this serves as principle to the design philosophy of engagement; “and space between” tieing the past and the future. Making use of existing material and structure, reinventing a new possibility of the same space use in the attempt of revitalization.
- An important principle was to include the existing context and new site, extending the campus to the street and opening up the mental image of the University Site was
- As can be seen in the model, the use of colourfull beads intends to illustrate the people and the functions of their needs, furthering the idea of varied built mass, but sinlge complex.
- The first few design stages hinged on the idea of a main structure as backbone grounding the development -where the work gets done- and a loose set of buildings articulated for movement and ease of access and experience along its edge, acting as the foreground they became the spaces of place making and were intended to be the people interactive civic amenities, ie: Home affairs, legal, aid etc.
- Also seen here is the first development of the taxi drop-off, pick-up area. Being a large civic building, a large influx of people are expected, requiring the facilities to provide and sustain it. This explains the decision for a taxi drop-off only and using the holding bays already existing, 150m down the street.
- This model also indicates the large site urban scheme of the new “face” of the university, its new administration entrance, further north off the taxi drop-off & pick-up. Also seen in figure 71
- The creation of a new service lane was introduced at this stage of the design, which intended to facilitate the service of the new”city-township” block that was created. It also served the precept of taking the people of the main busy street and making a more private safer zone at building edge.

  See chapter 3 and urban design document for macro context decision.

Figure. 72a Concept model 1. May 2008_ Site and built form development

Figure. 72b
Concept model 1.
May 2008_
Site and built form development

Figure. 72c
Concept model 1.
May 2008_
Site and built form development

Figure. 72d
Concept model 1.
May 2008_
Site and built form development

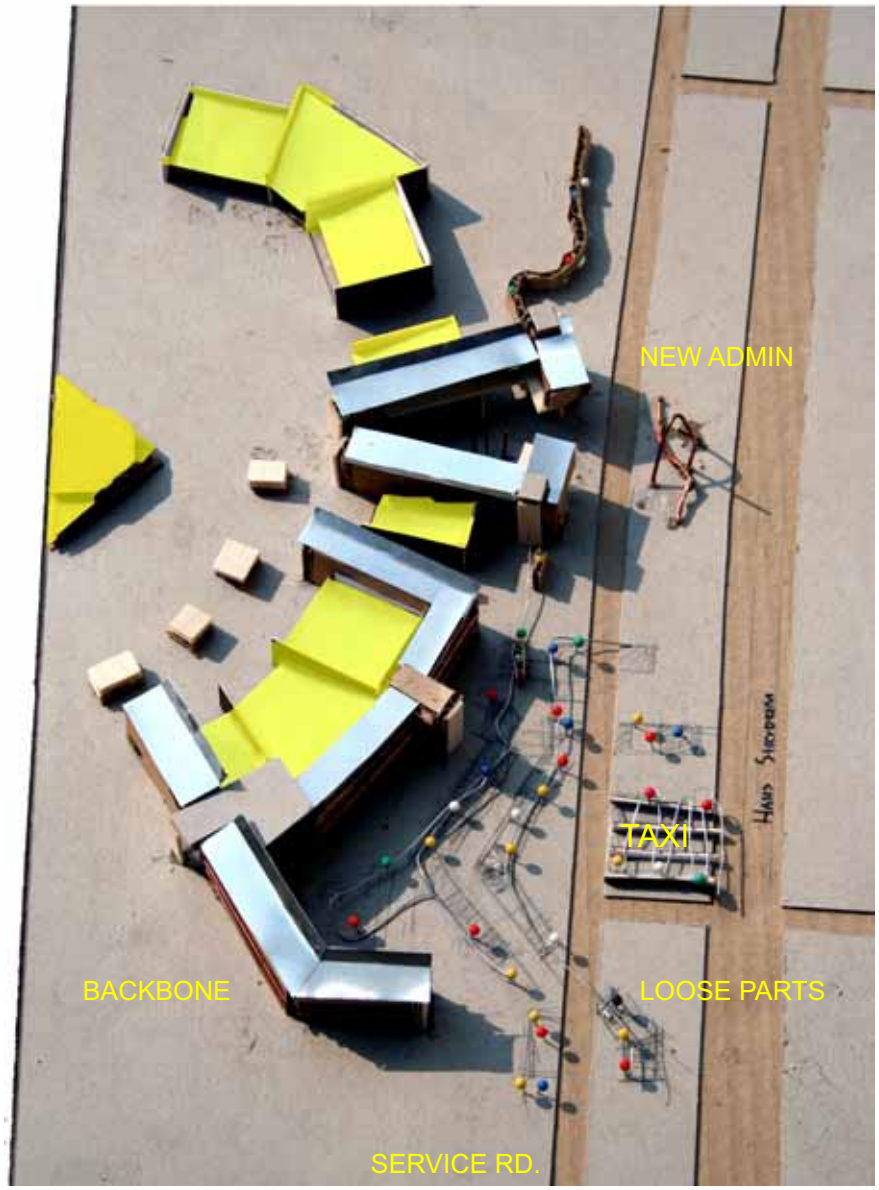


Figure. 72e
Concept model 1.
May 2008_
Site and Built form development

Existing lecture halls & library

6.3.4

DEVELOPMENT 3 0F 20

- Plan and site development.
- Urban and site scale.
- Indicating new structure with reduced entrances to courtyards in an attempt to control security, with the spatial intention of restriction and release into courtyard.
- The Courtyard serving as “the change in form” and “ transition space”.
- Development in the entrance admin University building.

However:

- The same restriction still evident, but form and change of grid is kept.
- Better articulation and stronger formation of space and definition.

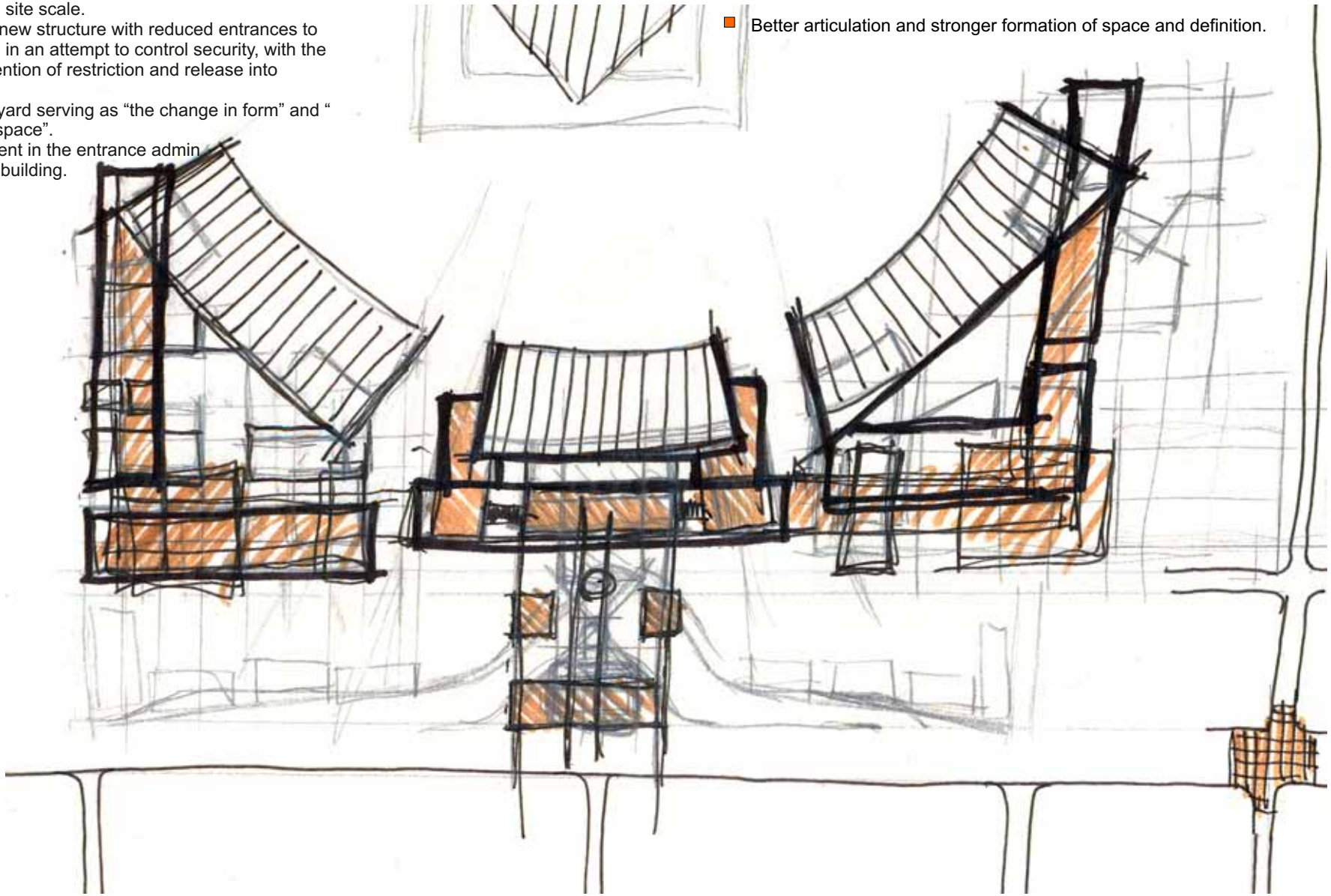


Figure. 73
Plan: site and program
Development 3 of 20

6.3.5

Figure. 74
Plan: site and program
Development 5 of 20

DEVELOPMENT 5 OF 20

- Plan and site development.
- Indicating new buildings. Public space and scale.
- Opening the courtyard squares to become public realm by wrapping the existing structure, thus engaging with built form.
- This proposal addressed both the concept of public engagement and built form engagement.
- The development of the major and minor scale of architecture, experimenting with the attempt of making large mass human scale.
- Creating public squares and small spaces of experience.
- Linking the parts of site to each other, thus proposing a holistic development, in aim of total engagement of tiers of society. As noted under chapter 4 and the introduction.
- Creating vistas and visual links from key areas of arrival.
- First attempts at integrating the lecture halls in function and visual line.
- The development of the public square at the new University entrance attempts a modernist approach of creating a landscape of arrival signifying identity and presence to the new image of the campus and building.

However:

- In the creation of multiple space, the legibility and orientation of the design becomes blurred and unclear. A ordered articulation is evident, but not legible to the first time user

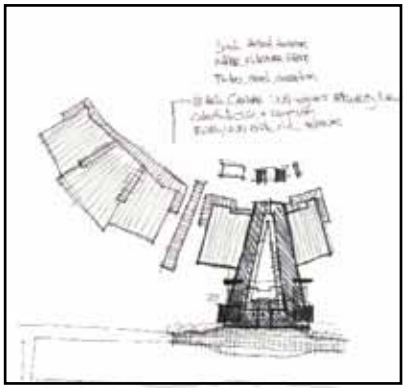
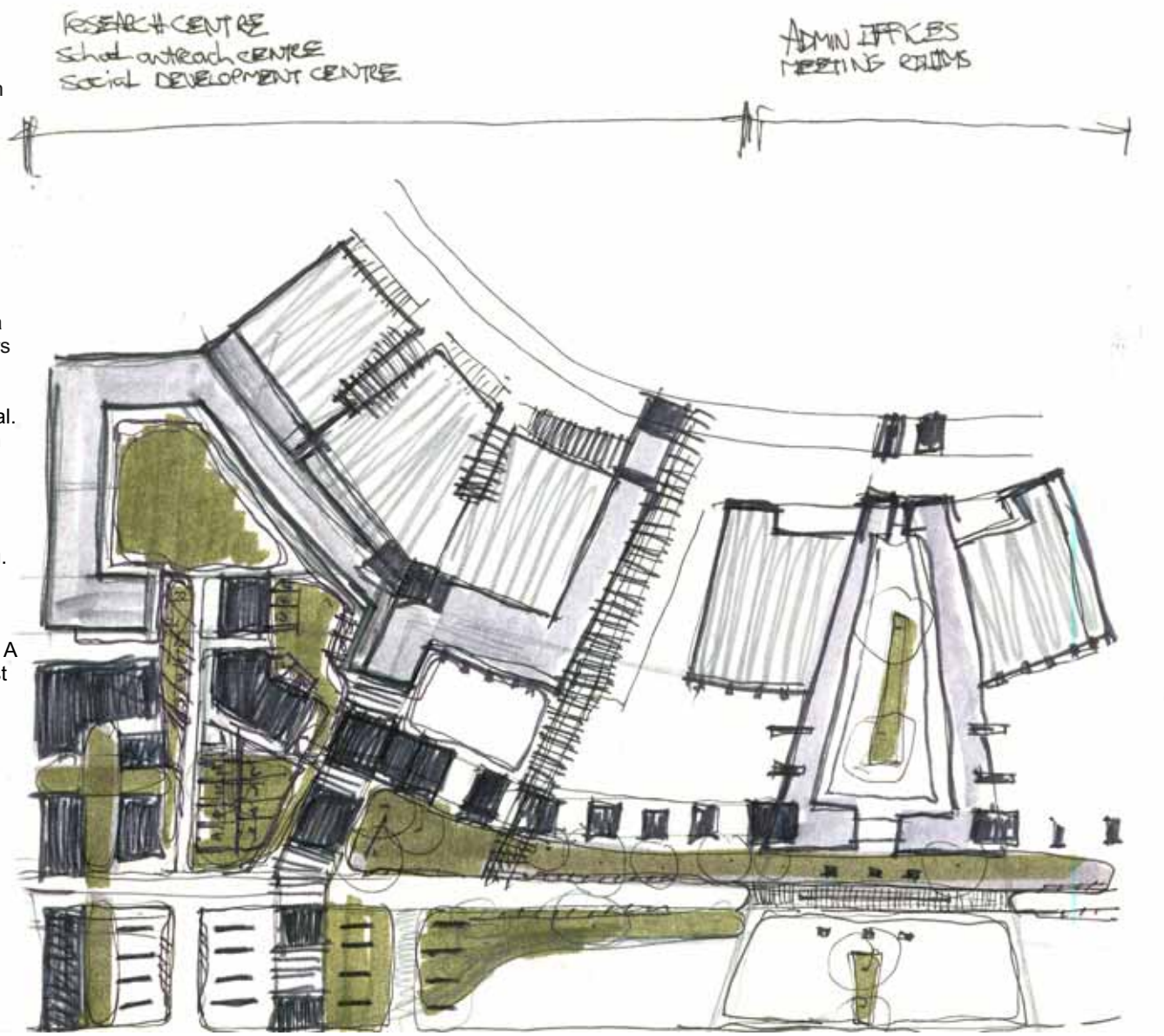


Figure. 75
New University of Pretoria administration building and public space development

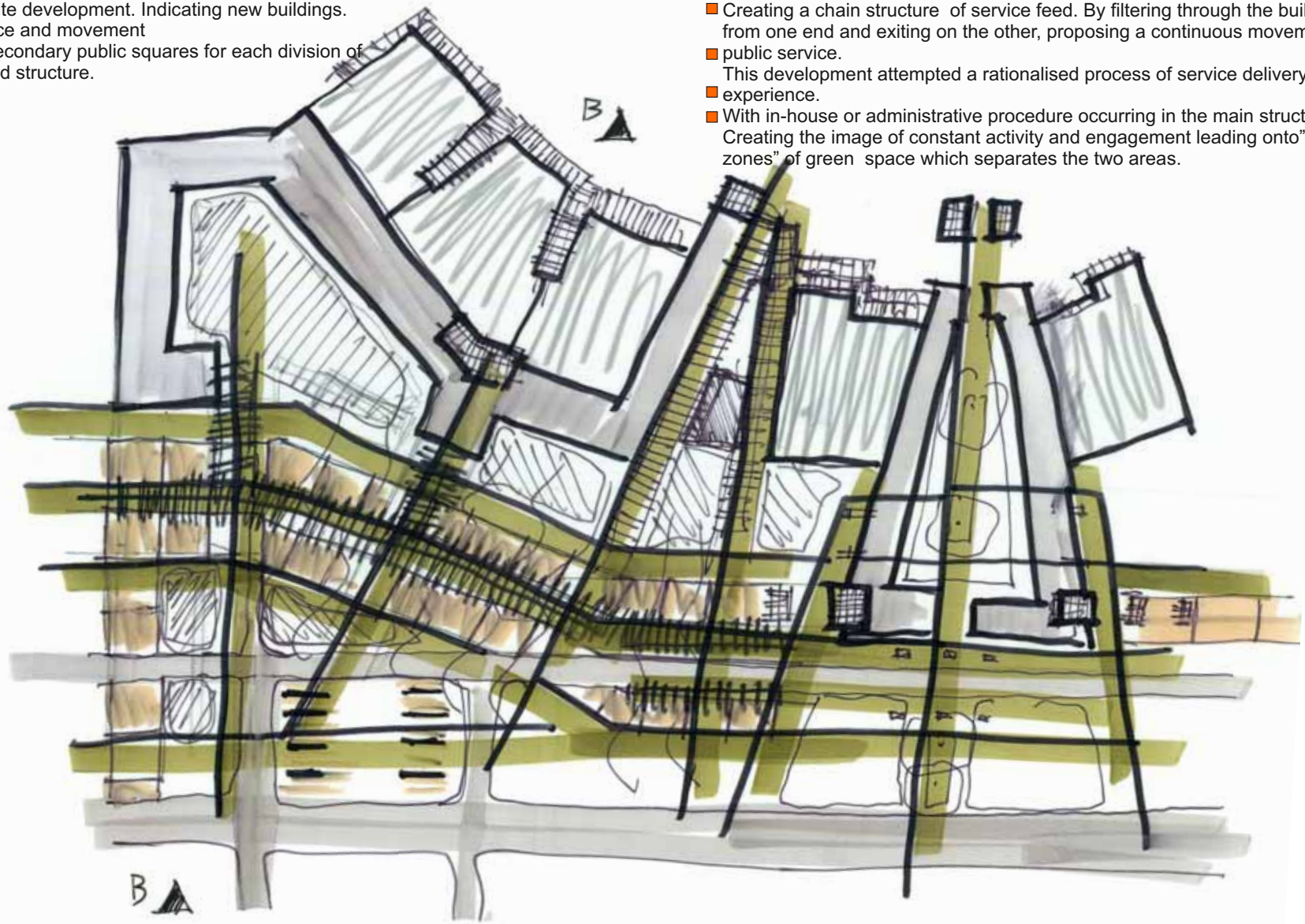


6.3.6

Figure. 78
Plan: site and program
Development 6 of 20

DEVELOPMENT 6 0F 20

- Plan and site development. Indicating new buildings.
- Public space and movement
- Creating secondary public squares for each division of amenity and structure.
- Creating a chain structure of service feed. By filtering through the buildings from one end and exiting on the other, proposing a continuous movement of
- public service.
  This development attempted a rationalised process of service delivery and user
- experience.
- With in-house or administrative procedure occurring in the main structure. Creating the image of constant activity and engagement leading onto"rest zones" of green space which separates the two areas.

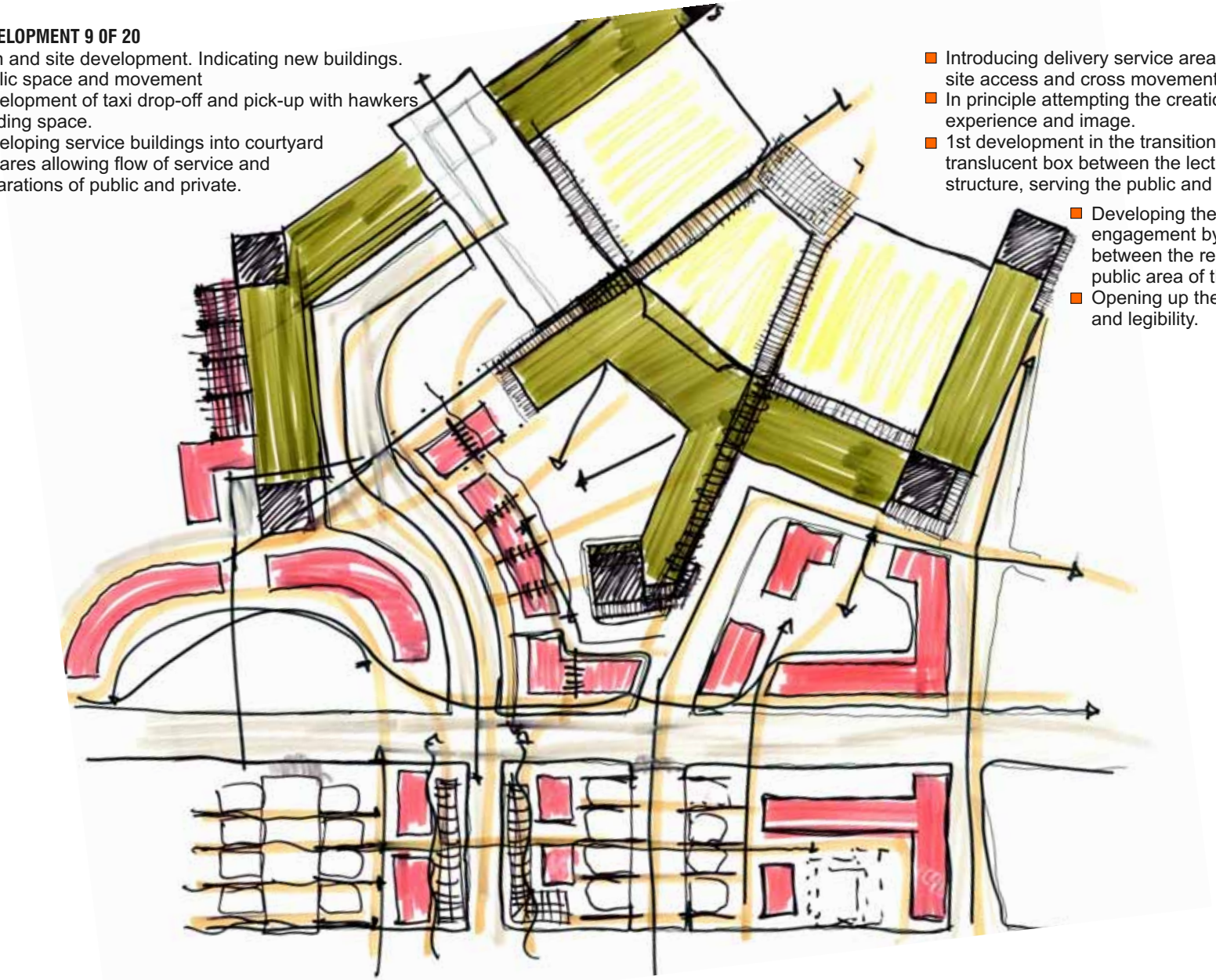


6.3.7

Figure. 79
Plan: site and program
Development 9 of 20

DEVELOPMENT 9 OF 20

- Plan and site development. Indicating new buildings.
- Public space and movement
- Development of taxi drop-off and pick-up with hawkers vending space.
- Developing service buildings into courtyard Squares allowing flow of service and separations of public and private.

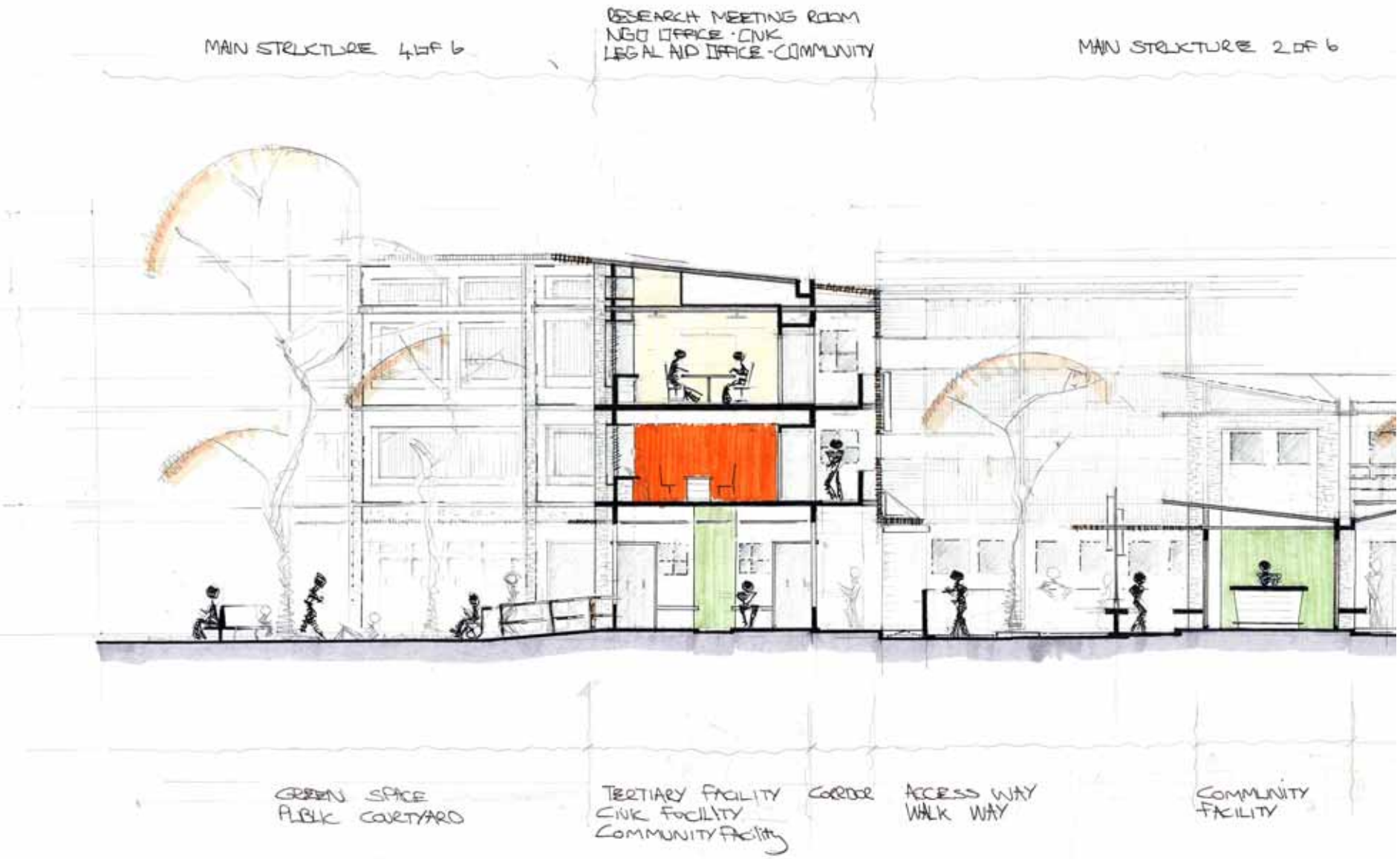


- Introducing delivery service area within facility as part of site access and cross movement.
- In principle attempting the creation of individual space of experience and image.
- 1st development in the transition space concept, as a translucent box between the lecture halls and the new structure, serving the public and student.
- Developing the visual and virtual zone of engagement by extending the walkways between the renovated lecture halls to the public area of the new developed facility.
- Opening up the ground floor for access and legibility.

Service shafts | Movement diagram | large scale / administrative bld's | Small scale service structures | existing lecture halls

6.3.7.1

Figure. 80
Section of developme
9 & 10




SERVICE CORE UP 2 OF 8
MAIN STRUCTURE 1 OF 6
GREEN SPACE
PUBLIC COURTYARD
COMMUNITY FACILITY
ACCESS WAY
MAIN GATE WAY
UNIVERSITY ADMIN

6.3.7.3

Figure. 81
Plan: site and program
Development 10 of 20

DEVELOPMENT 10 OF 20

- Plan and site development.
- Development of taxi drop-off and pick-up with hawker vending space. Note: separated for increased usage.
- Development of public ablutions and service.
- The development of student bus drop-of at main entrance.
- Inclusion of service cores and connections to existing services.
- Creation of a series of connected corridors and passages, aimed at creating a connected environment from University to public user.
- Inclusion of service road for maximum access to buildings

However:

- The multiple structures raises question to cost and functionality effectiveness.
- One finds a blurred sense of being as a result of legibility.
- The spaces do work autonomously by intent, but this ideas was in fact found to negate the principle of unity and complexity.
- The separation and layout of taxi area is questionable and needed reconsideration and precedent.
- The image of multiple nucleuses created a sense of confusion and thus a critical decision on purpose and rationality was required with regards to arrival and orientation.
- Integration with Lecture halls and campus needed to be more apparent and legible.
- In conclusion, complexity confused project intent and realisation. Simplicity and reduction was the principle requirement at this stage

6.3.7.4

Figure. 82a
Concept model 2.
July 2008_
Site and built form
developement 9&10

Figure. 82b
Concept model 2.
July 2008_
Site and built form
development

Figure. 82c
Concept model 2.
July 2008_
Site and built form
developement

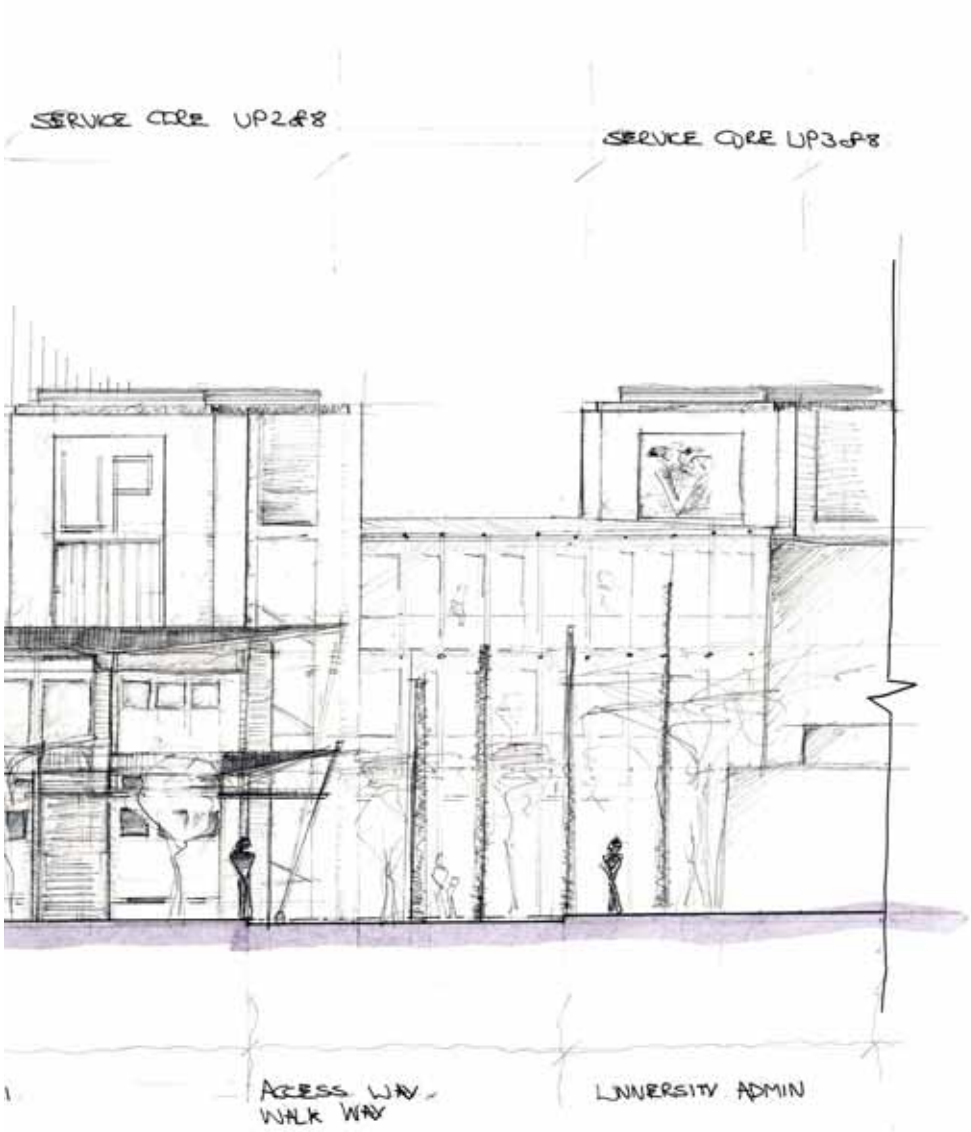
Figure. 82d
Concept
model 2.
July 2008_
Site and
Built form
developement

Figure.
82 e,f,g

Figure. 82h
Concept
model 2.
July 2008_
Site and
Built form
development

6.3.7.5

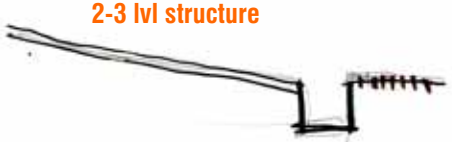
Figure. 83
Elevation of development 9 & 10



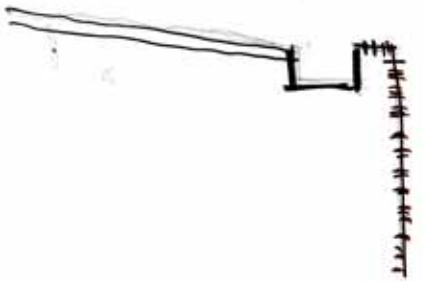
Initial development of a typology of form aimed at a morphology of shape and unity of structure. In principle Differing scales of building receiving a set roof typology, concluding into the roof developing into a skin .
As seen later this concept evolved into the final typology and morphology of the proposed Architectural solution.

1-2 lvl structure

2-3 lvl structure



3-4 lvl structure



6.3.8

Figure. 84
Plan: site and program
Development 13 of 20

DEVELOPMENT 13 OF 20

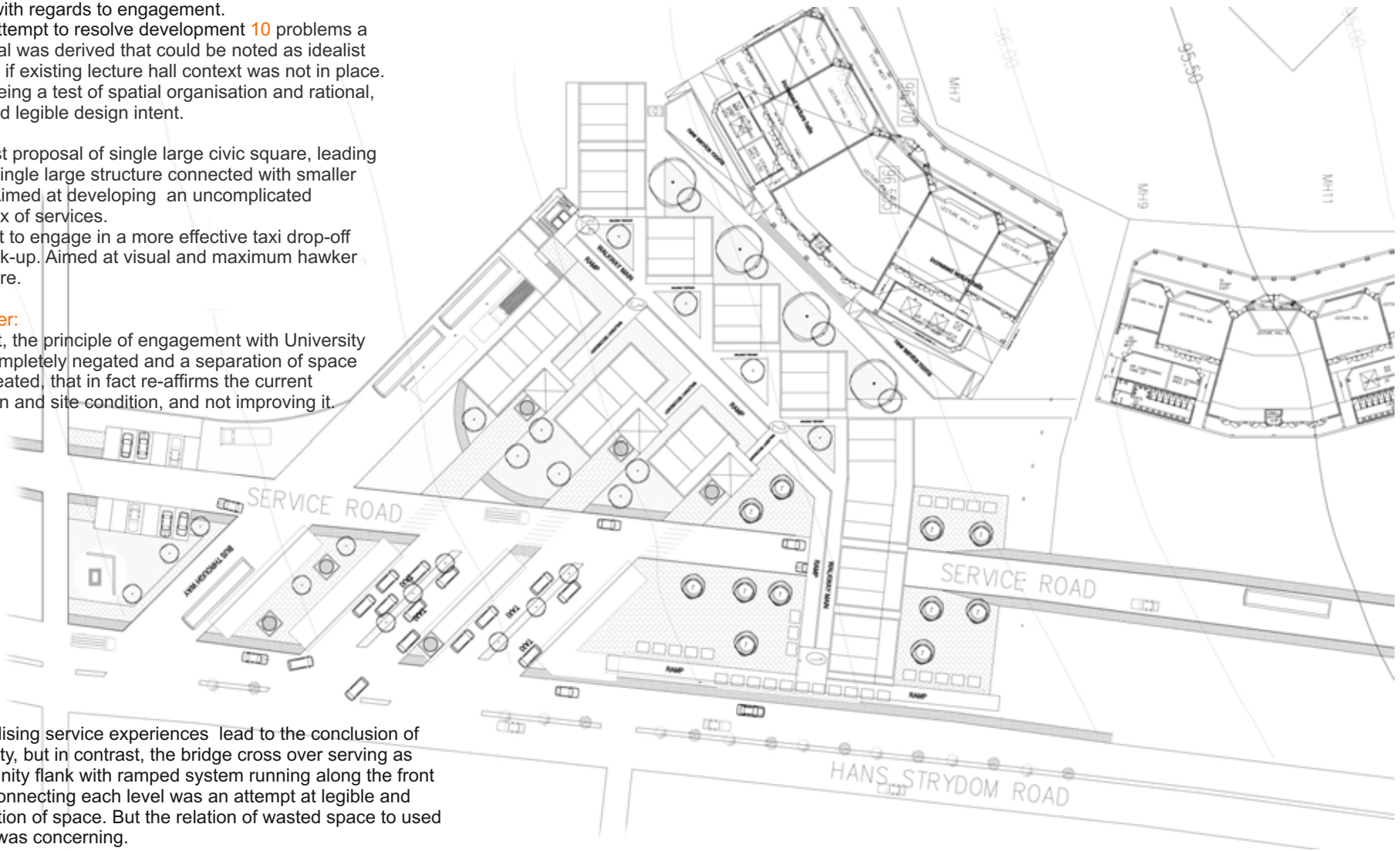
A new concept experiment of space and relation to site.

- Proposed pragmatic response, with less theoretical intent with regards to engagement.
- In an attempt to resolve development 10 problems a proposal was derived that could be noted as idealist design, if existing lecture hall context was not in place. Thus being a test of spatial organisation and rational, cost and legible design intent.

- The first proposal of single large civic square, leading into a single large structure connected with smaller units. Aimed at developing an uncomplicated complex of services.
- Attempt to engage in a more effective taxi drop-off and pick-up. Aimed at visual and maximum hawker exposure.

However:

- In short, the principle of engagement with University was completely negated and a separation of space was created, that in fact re-affirms the current situation and site condition, and not improving it.



- Internalising service experiences lead to the conclusion of illegibility, but in contrast, the bridge cross over serving as community flank with ramped system running along the front edge connecting each level was an attempt at legible and integration of space. But the relation of wasted space to used space was concerning.

6.3.8.1

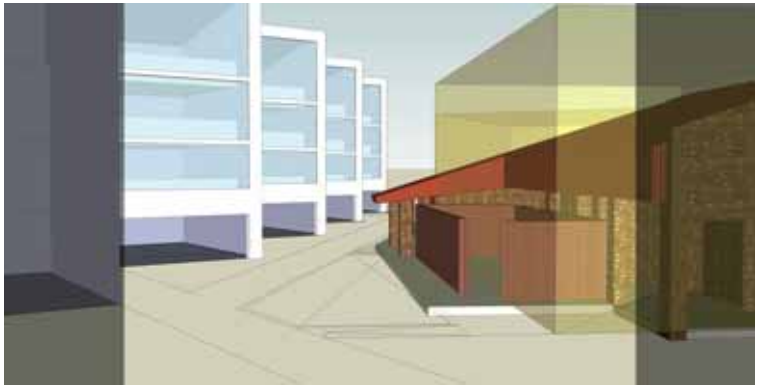


Figure. 85a,b,c
Sub development
Of concept 13

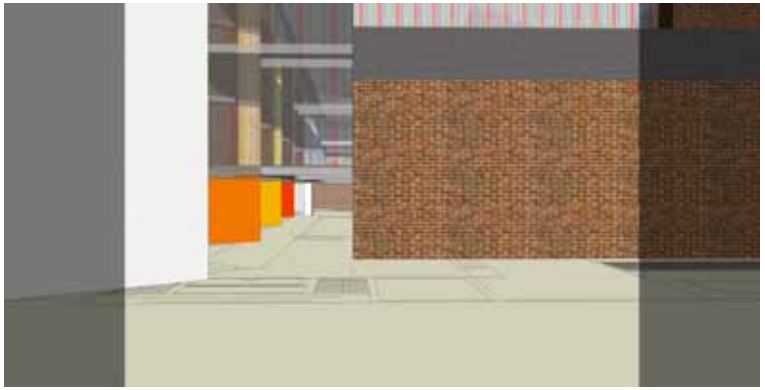
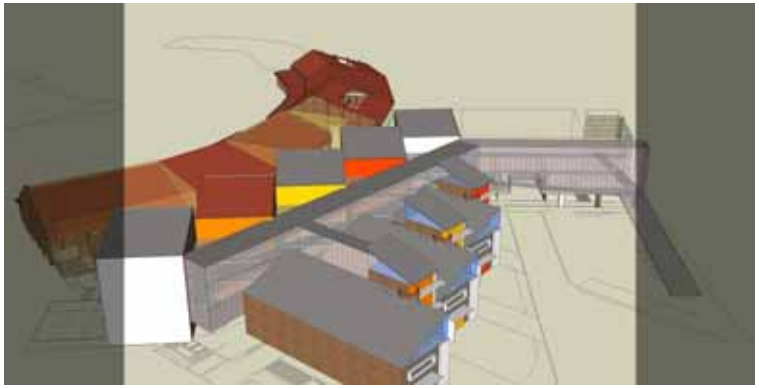


Figure. 85d,e,f
Sub development
Of concept 13



6.3.9

Figure. 86
Plan: site and program
Development 14 of 20

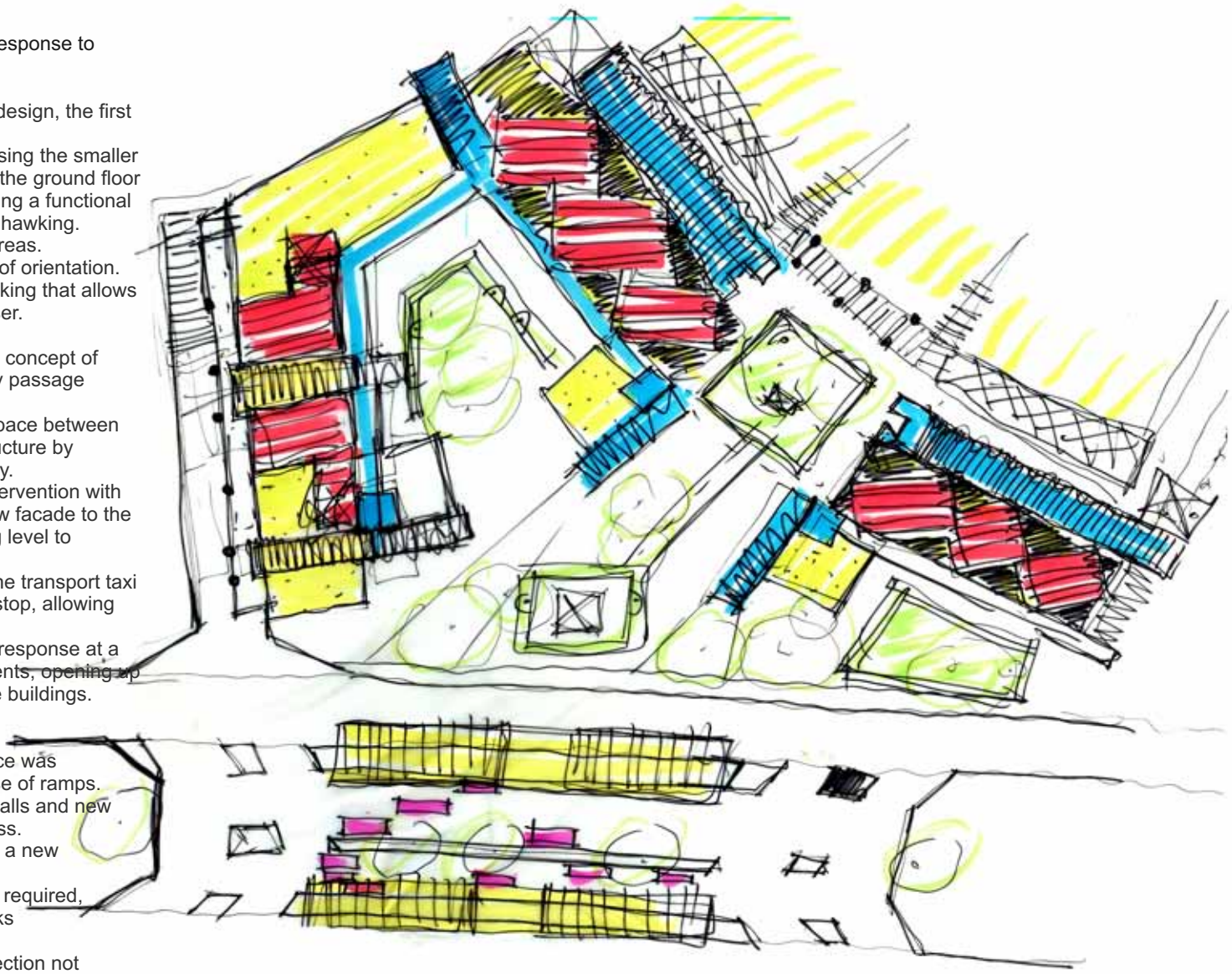
DEVELOPMENT 14 OF 20
A design development formulated in response to design phase 10 -13

- At outset with intent a more simplistic design, the first signs of tectonic form in development.
- Formulation of core structure, internalising the smaller collection of service structure, making the ground floor an interactive space, in doing so creating a functional public square for meeting, resting and hawking.
- Allowing vegetation growth to define areas.
- Creating visual connection and points of orientation. Intending to produce legible space-making that allows for easy and clear orienteering by a user.

- First attempt at experimenting with the concept of ramping edges and defining spaces by passage tectonic.
- The decision to attempt bridging the space between the campus buildings and the new structure by cantilever structure, creating a walkway.
- Simultaneously proposing a design intervention with the existing lecture halls creating a new facade to the structure and responding at a planning level to incorporating it in the program.
- Delving into a process of developing the transport taxi drop and go. Creating a two lane taxi stop, allowing two directional entrance.
- Starting the process of environmental response at a tectonic level with a series of experiments, opening up the roofs, allowing light and air into the buildings.

However:

- Lack of consistency in tectonic form,
- Ratio of walkway space to usable space was uneconomical, thus questioning the use of ramps.
- Resolution of space between lecture halls and new structure not resolved but in the process.
- Taxi stop, not efficient and to complex, a new resolution is required.
- Effective connection of public space is required, creating points of arrival and visual links _"Urban rooms"
- Level of engagement and visual connection not Effective and evident enough.



6.3.10

Figure. 87a
Sub development

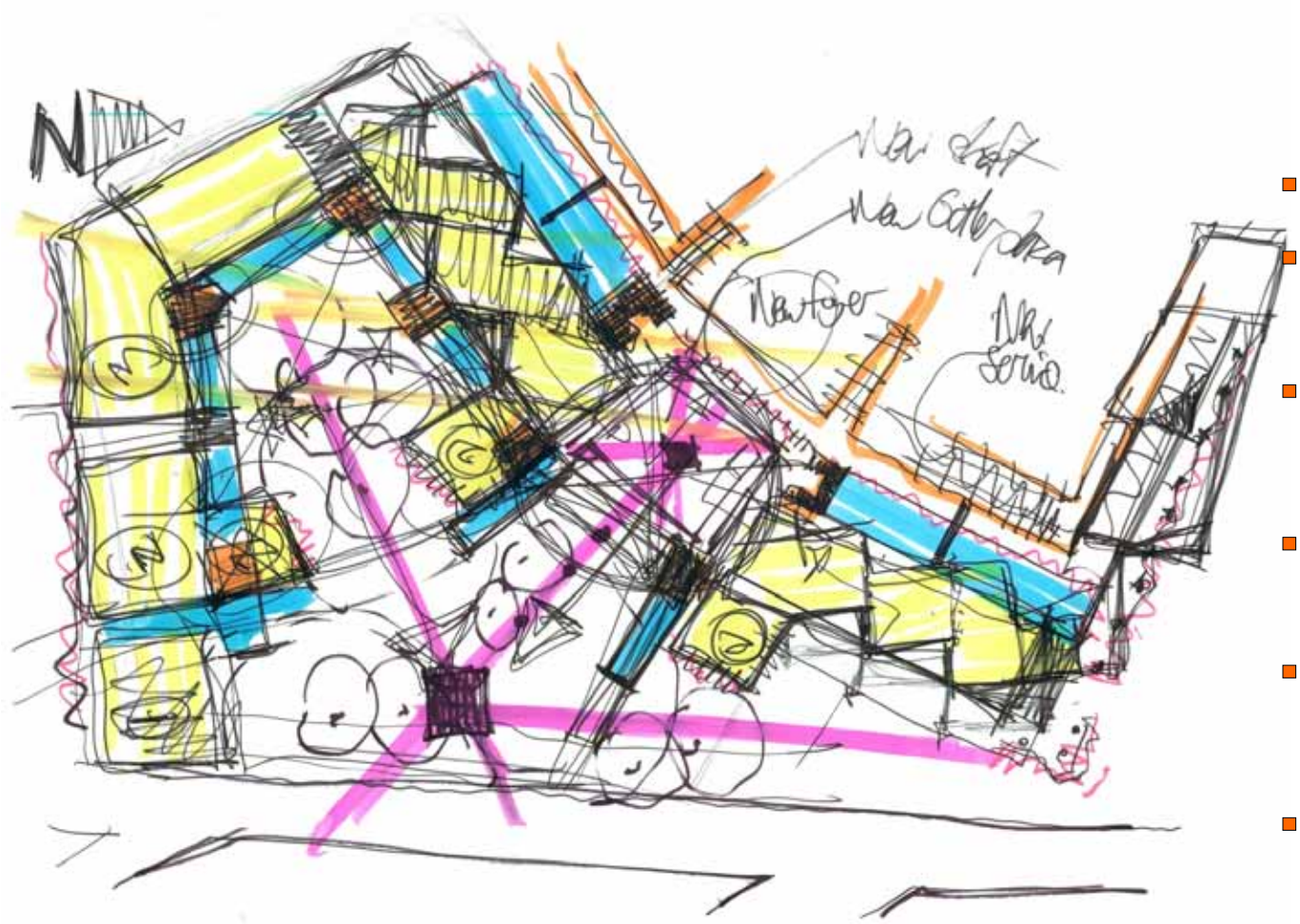


Figure. 87b
Sub development &
Sketch elevation

A design development formulated in response to design phase 10 -13 of 20_ spatial orientation.

- This diagrammatic response of design phase 14. explains the attempted resolution with regards to public space and legibility.
- Outlining the center point of the public square with its' visual and programmatic connections. Its outlines points of travel and possible spaces of engagement and potential gathering spaces.
- The development of tectonic resolution in service cores and creation of square inside squares, by using architecture, a step back from the previous development by not using nature as the carving knife, for space making.
- The internal courtyard leading from the new lecture hall foyer as noted in image below, intends to redefine a new private public square as a center of importance
- Developing the concept of walkways and passages, defining spaces and functions within the building, reducing mass into modules for tectonic and scale purposes but also for legibility and efficient user travel.
- Introducing service cores on edge of central square and main entrance flanks, serving functional reasons but also architectural definition to the space it frames, viewed from both the university and the public edge, creating a portal of frame.

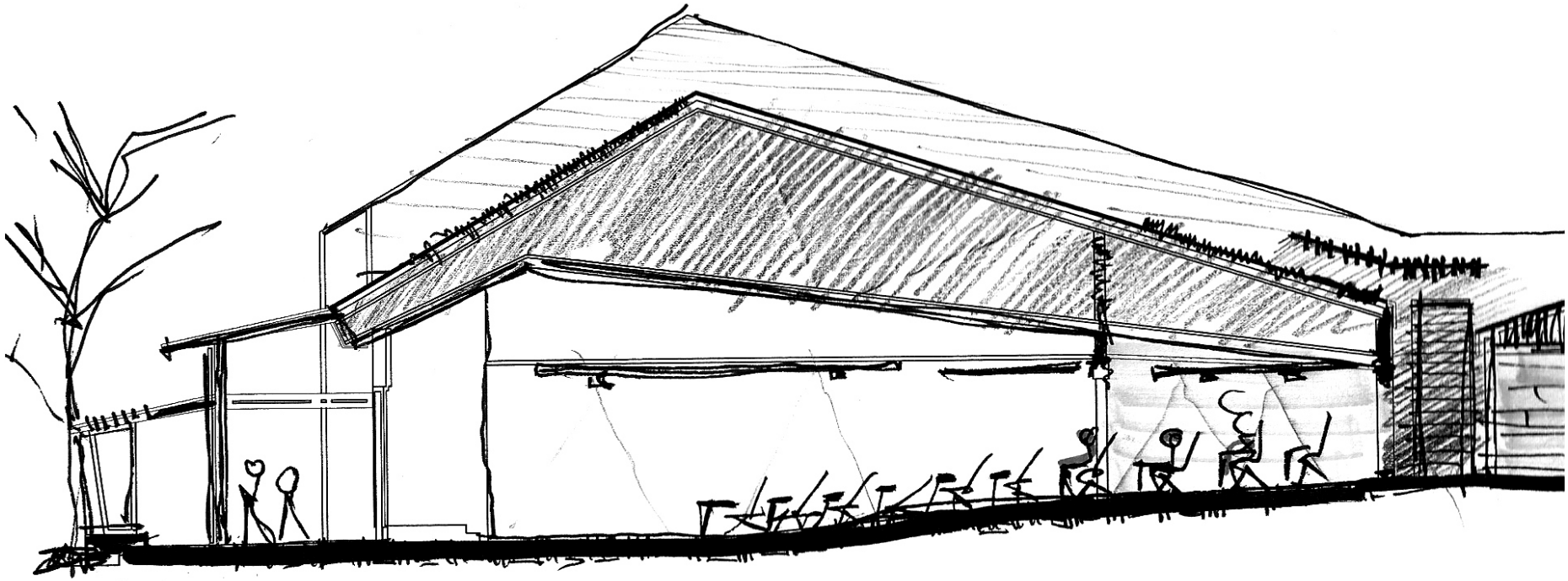
Main building Movement passages walkways Service shafts Existing structures Orientation and connection

6.3.10.1

Figure. 88
Design development section for phase 14-15

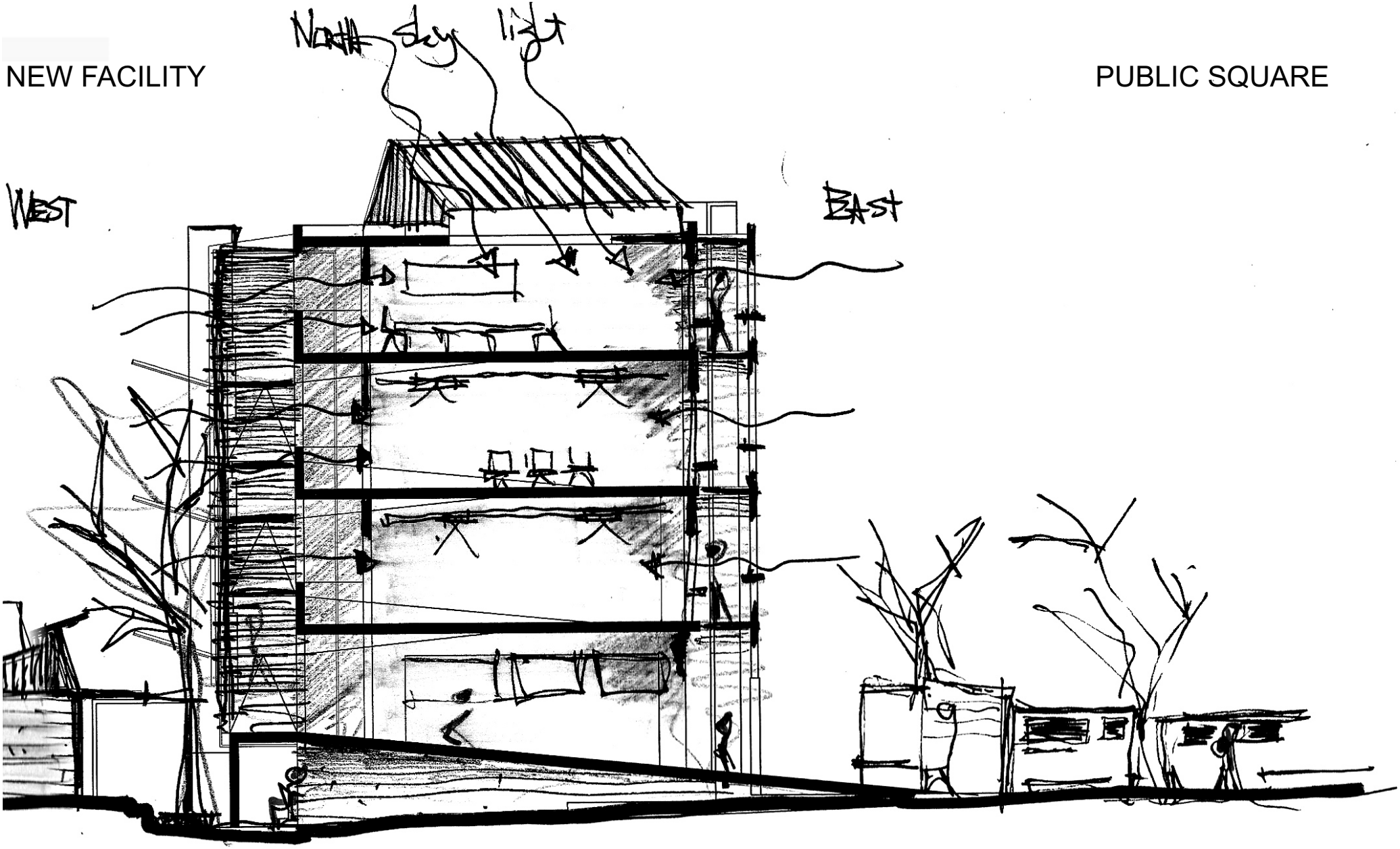
EXISTING

INTERVENTION



NEW FACILITY

PUBLIC SQUARE



6.3.11

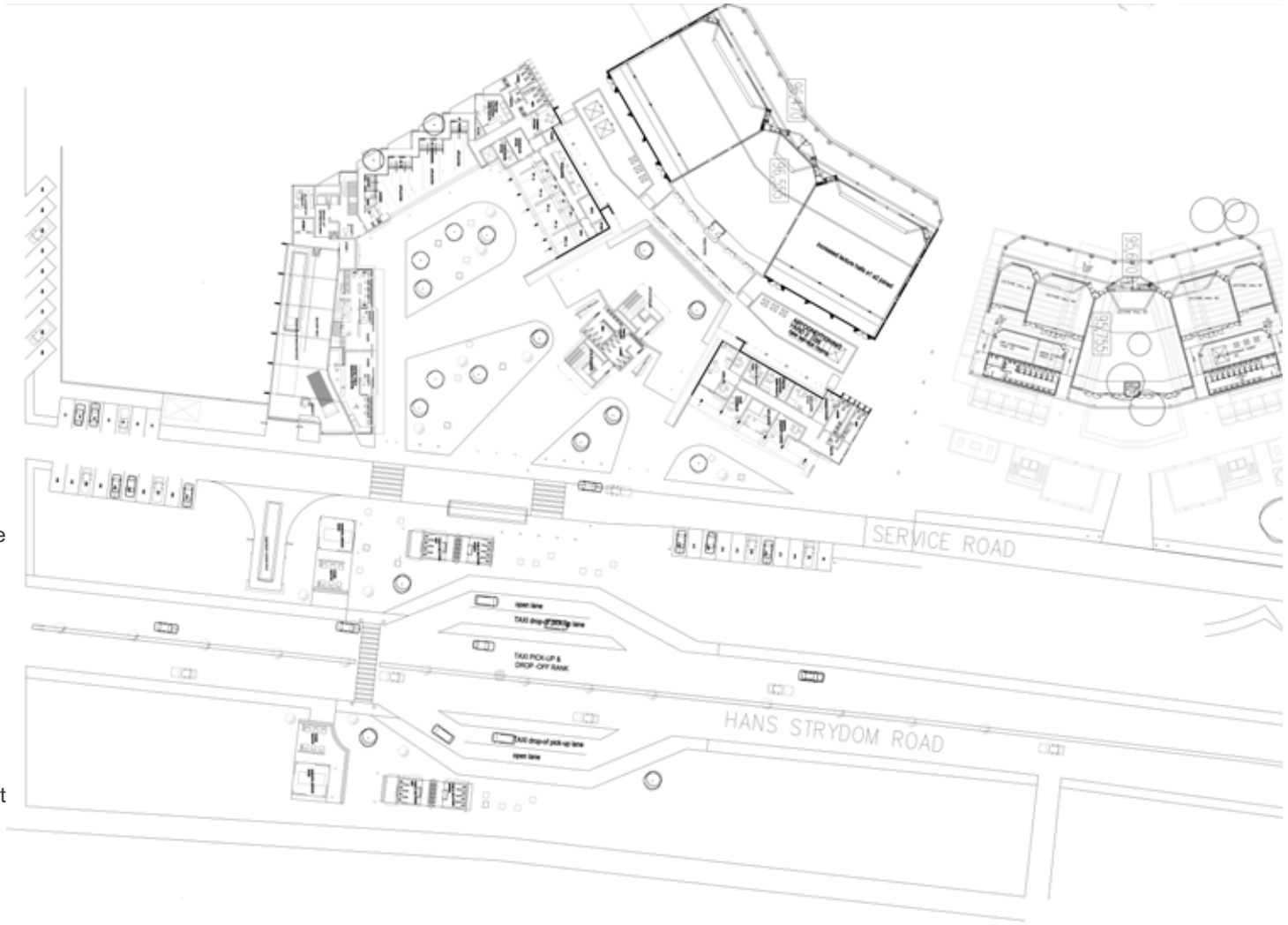
Figure. 89
Plan: site and program
Development 16 of 20

DEVELOPMENT 16 OF 20
Plan and site development,

- Development of the taxi drop-pick & go, realising that the site in fact requires to be extended to the other side of the carriageway, allowing maximum exposure and engagement.
- Introduction of public service and ablutions.
- Attempting to define the public square into smaller squares relating to the immediate function of the building.
- A change to service core, by adding a central core structure linked by sky-walks, aiming to reduce service cores and linking the two building in a physical way.
- Layout of program, and first approach at creating shared internal communal service rooms. Defining public and private access.
- Attempting organising the spill-out space from the new created lecture hall foyer.

However:

- Taxi stop and public walk space requires detail design.
- Public service areas requires better planning and placement for visual link and legibility.
- New central service with skywalks, needs to be carefully considered as it does divide the new created engagement space and visual link to the campus buildings.
- Public square layout, does require more substantial formation responds more to function and pathways.
- Thought to be given to removing and replacing the existing service yards and lecture halls, as they limit the space and create boundaries and aesthetic unpleasantness.



5.3.12

Figure. 90
Plan: site and program
Development 17 of 20

DEVELOPMENT 17 OF 20
Plan and site development,

- Detail development of public walkways and taxi drop-pick and go area.
- Design intent at revitalising the storm water channel attempting to create a green belt at site edge, for resting and shade.
- Creating minor squares at public service areas for waiting zones and definition of taxi holding area.
- Attempting to formalise the large civic-public square with sight lines and passage lines, first development from a movement diagram study. Figure 91.
- The introduction of a ramp at flank C intended for lvl 1 access only.

However:

- Position and placement of ablutions to be carefully designed, intend to be given to definition of space.
- Sight lines and walkways need to terminate or culminate into a space and not open land.
- Central service core still problematic, as well as service yards.
- Public square definition improved but still to be resolved.
- Attention to be given to planning of floors, specifically toilet facilities in flank A and B.
- Efficient and simple system of access needs to be introduced.

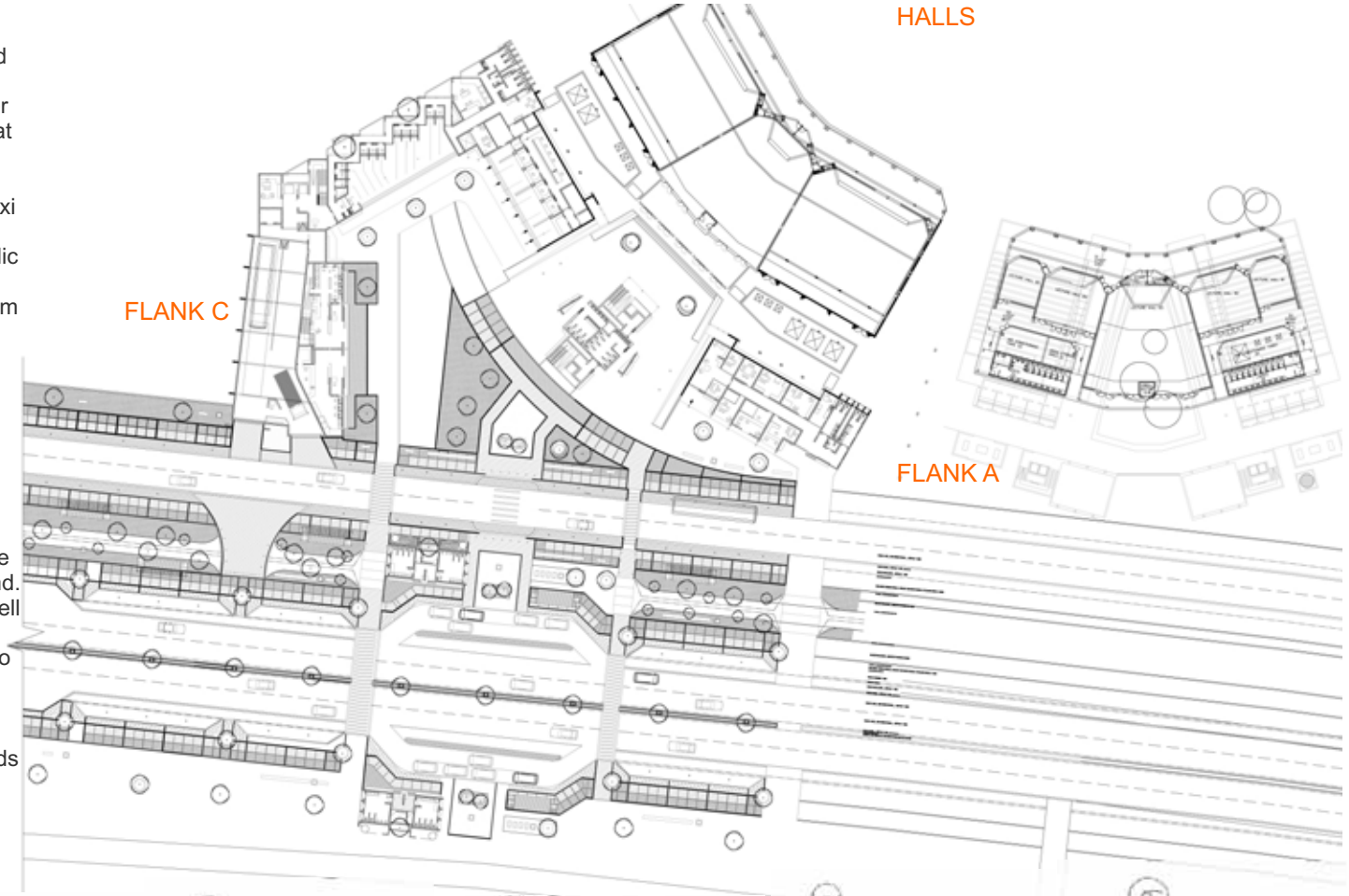
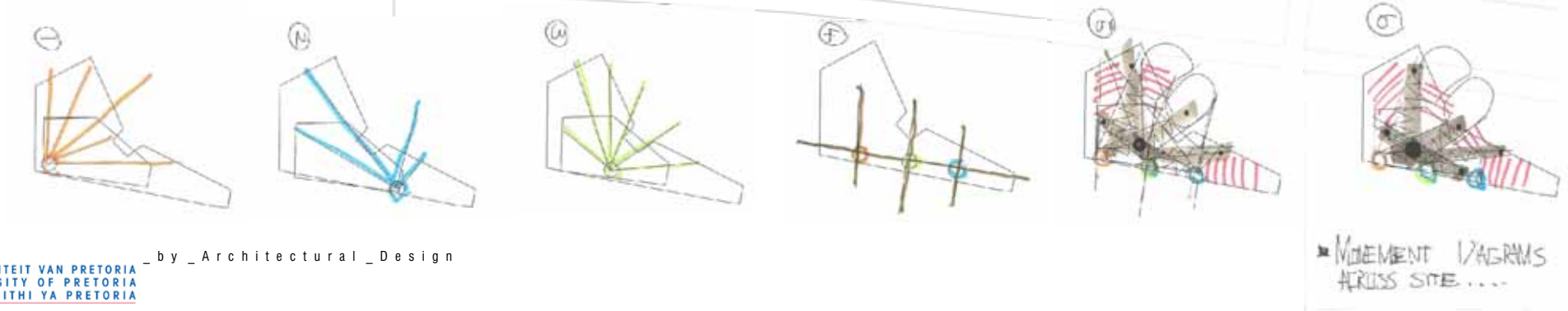


Figure. 91
Public square movement diagram study

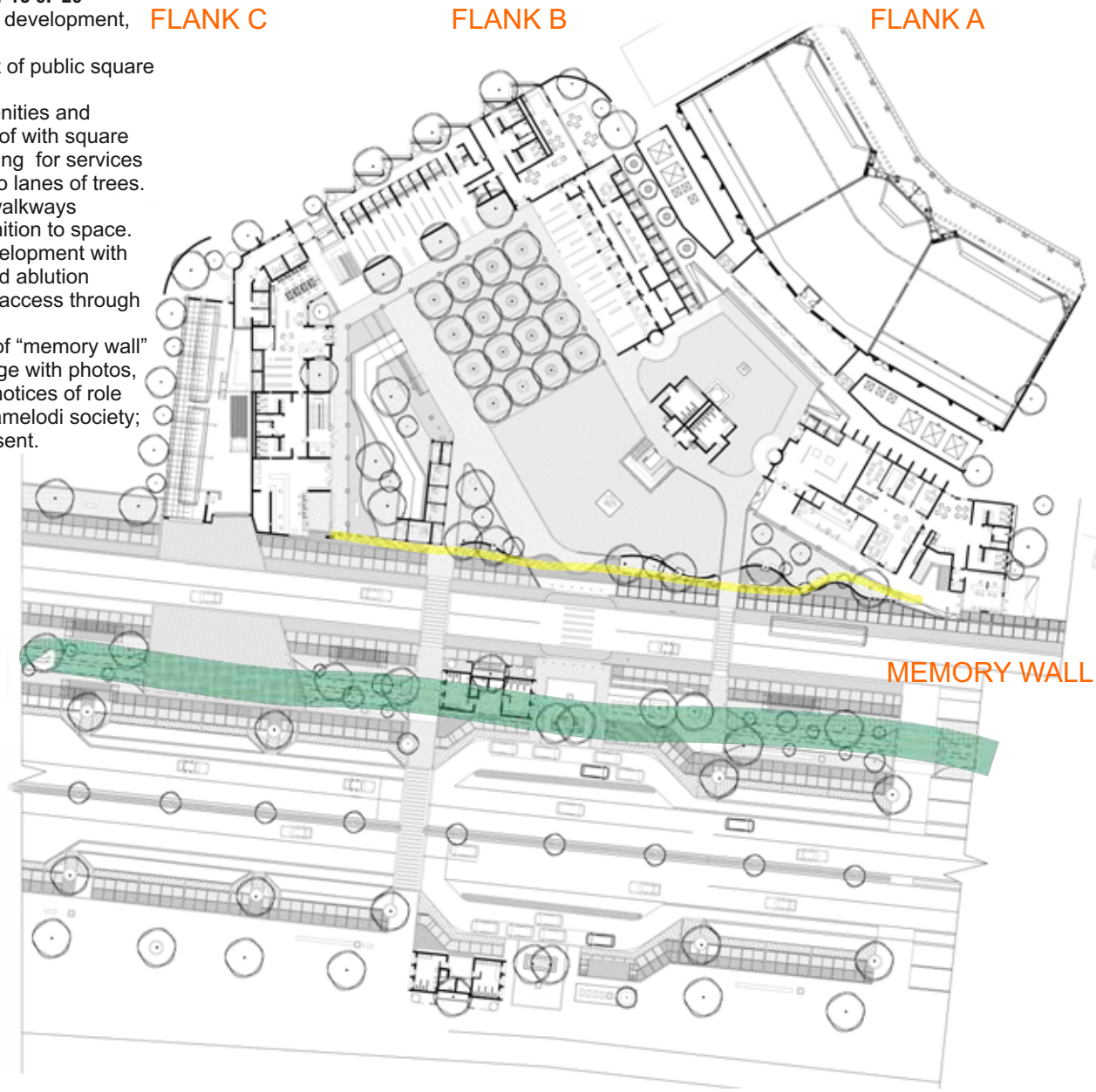


6.3.13

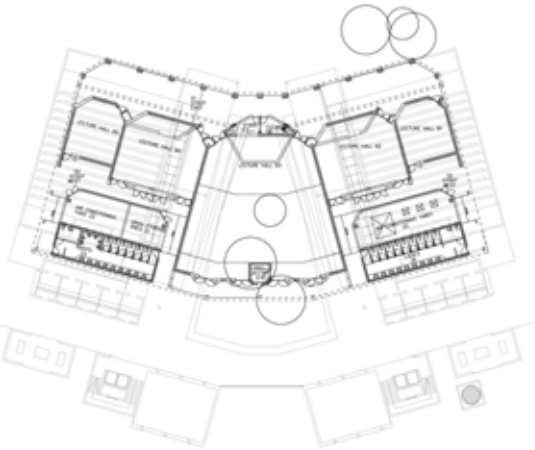
Figure. 92
Plan: site and program
Development 18 of 20

DEVELOPMENT 18 OF 20
Plan and site development,

- Development of public square design.
- Defining amenities and planning therof with square layout: Queuing for services extending into lanes of trees.
- Introducing walkways
- creating definition to space.
- Planning development with more resolved ablution facilities and access through building.
- Introduction of “memory wall” along site edge with photos, images and notices of role players in Mamelodi society; past and present.



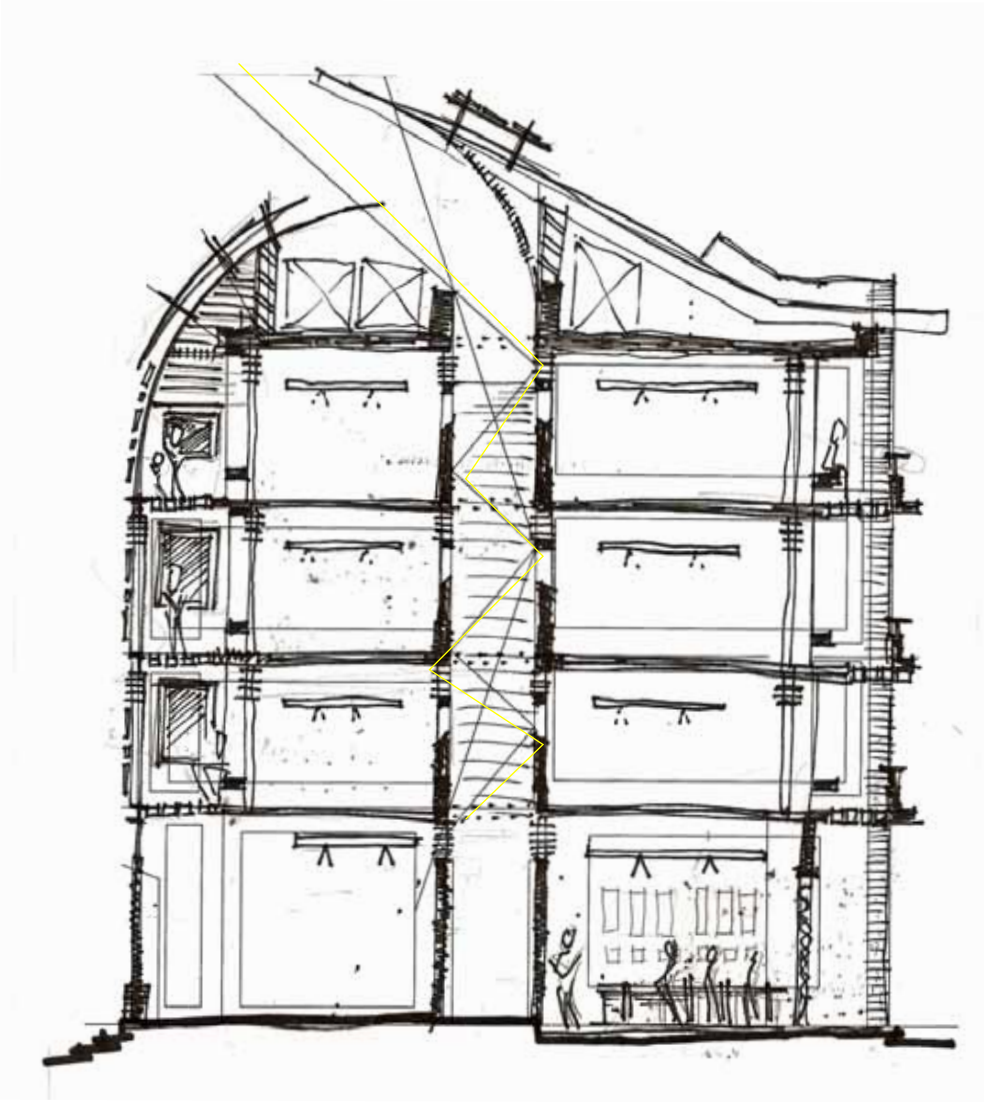
- Memory wall creating a permeable edge for extension of green space onto the square but also defining edges with the centre of nucleuses. The wall acts as cultural emblem to the people and a peri rural / urban township.
- Introduction of additional programs and dedicated hawking area under ramp.
- The development of light and air shafts in flank A and B. Creating central void space allow air and light to travel.

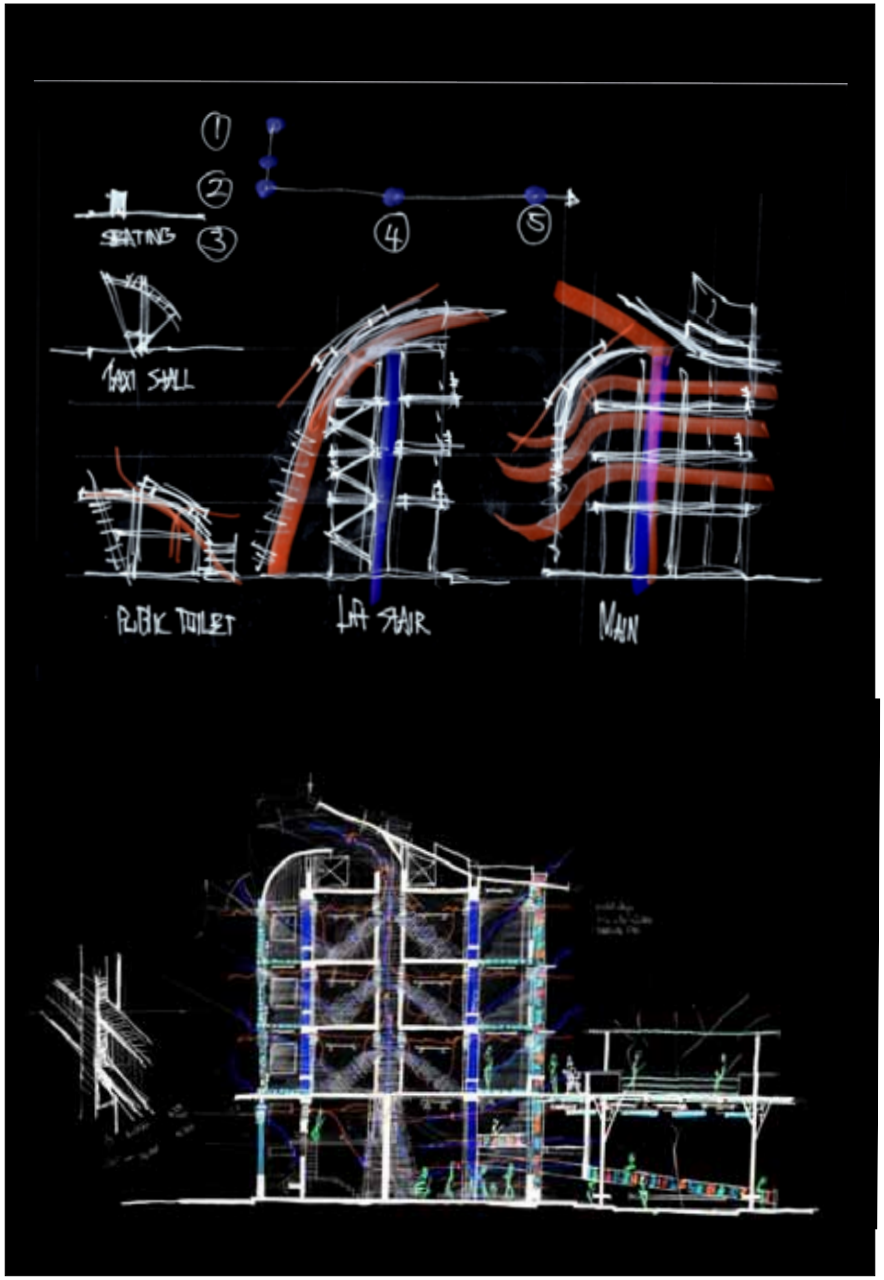


However:

- Central service core between flank A &B still problematic, in dividing space and hierarchy order of development.
- External ramp system flank C is questionable with regards to dividing space and obstructing views and legibility.
- Layout of program in planning much more rationalized and functionable.
- The air shafts in flank A & B raises major concern to economic use of space, as two passages, and air shaft reduce functional space to a minimum.
- Serious attention was required in resolution of a passive ventilated natural lit building

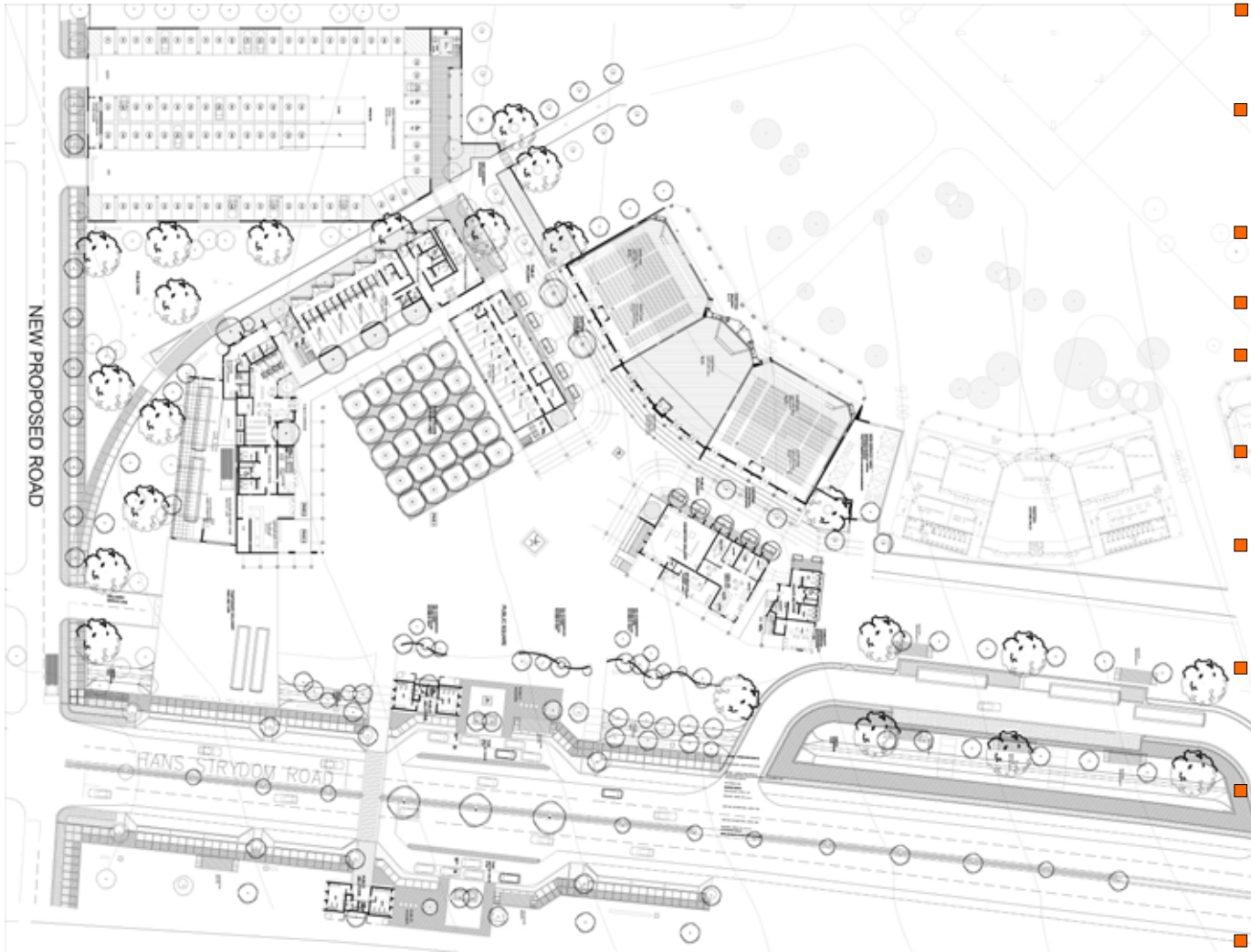
Figure. 93 a,b,c
Design section:
Exploration of tectonic context, structure, passive ventilation and corridor legibility





6.3.14

Figure. 94
Plan: site and program
Development 19 of 20



DEVELOPMENT 19 OF 20
Plan and site development,

- Removing the central service core, opening up the square, thus adding and giving definition to each flank.
- Programming flank A for community function only, hence creating hierarchy of space and program, and creating set urban rooms within the square.
- Removing the service road. It was serving as separator of the space appose to linking areas, but allowing the delivery area to spill onto the square making it a more functionable square space.
- Opening up vistas across the site thus creating destination on pathways with visual links through buildings and public spaces.
- Removing the service yards and creating a large single serving yard.
- By opening the “transitions space and creating a dedicated public space, for all user. In doing this it created a area for interaction between students, public and service providers.
- Apply the principle intention of being a engagement facility, not only in service and function but in space and people. Bringing people together.
- Extending the passage out into square and creating an inside- outside space. Intentionally blurring the built form space and the public walk space, but clearly defined by slab openings the private zone space.
- On the urban proposal a parking garage was proposed, but not designed, it was felt that the garage needs to be integrated with the design, as it host various users from within this building.
- New design of the three level parking garage serving University , public and students, linked by walkways into the facility and elevator down to new University entrance.

However:
- Public square still to be completed
- Proposed link to new University Administration entrance indicated and resolved.

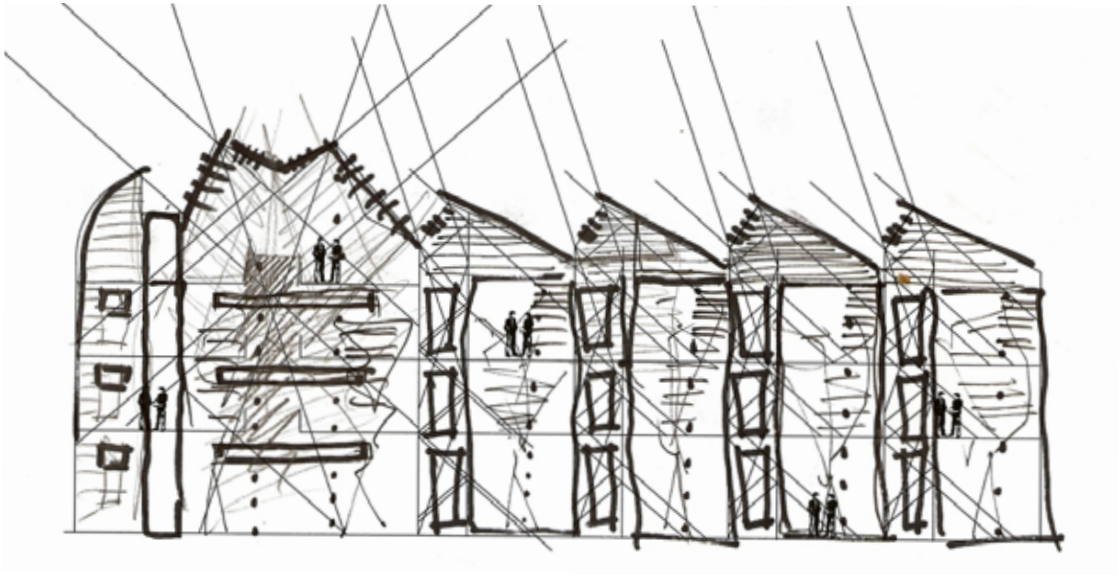


Figure. 95
Design section: Exploration of tectonic context, structure, passive ventilation and light wells specifically for flank C.

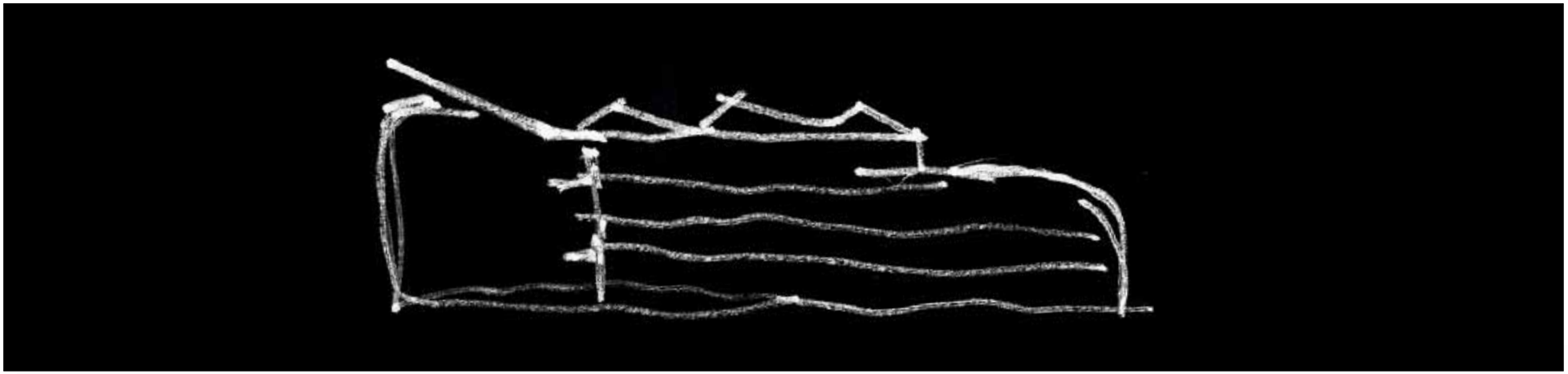


Figure. 96
Design section: Exploration of tectonic morphing in context, across site

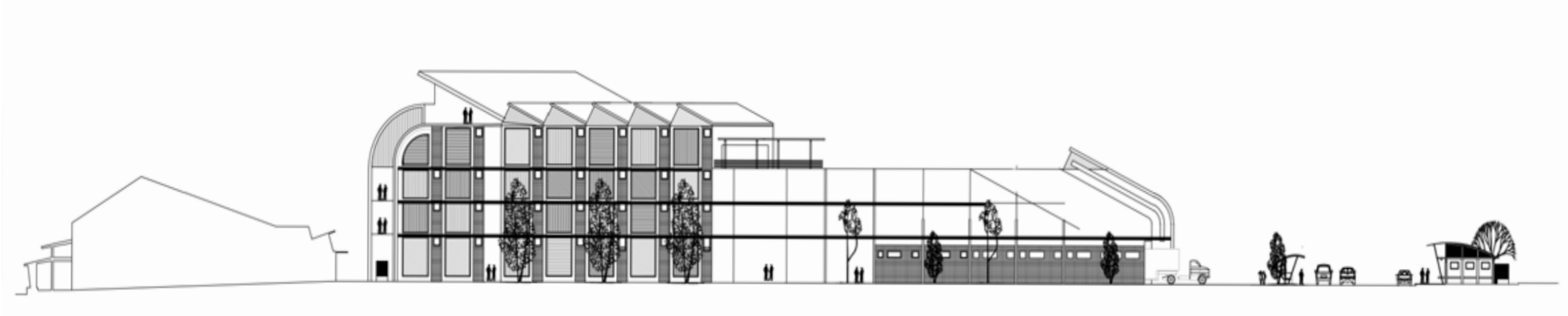


Figure. 97
Design site elevation: Exploration of tectonic morphing, ,material, roofing and scale.

6.4_

SOCIAL DERIVITIVE SPACE PROGRAMMING

6.4.1

Planning and the programming there-off was derived from the user point of view. The lowest level being the most access and used, and the more developed services can be found on higher levels. See figure 99

The focal zone of the program will be the civic functions during the day, while at night it will be the community functions. The space around the buildings are programmed to allow public to meander through the site and create its own community of user.
The presence of hawkers from the taxi drop and pick -up, to the university entrances was taken in account and is required, as they sustain the people: selling for income, and allow cheap food to the users queuing or meeting.
No restaurant are proposed, as across the Hans Strydom roadway existing food stalls are currently serving people see chapter 5 social space analysis_ figure 43a, the principle methodology is to add to the community and not take away. Allowing the users to make use of the food stalls and hawkers has a communal benefit.

The programming methodology is intended for an open free access building with constant visual connections to other areas of site, facility and context.

Building zones: The building security access works on the basis of a 2 key system. As there is shared amenities for the people working in the facility, they share a key to their office and to the communal area.

The stairs and lifts are free access to all, excluding the stairs in the HP- i centre and the service lift.

There has been allowance made for in-house/back-of house activities with own delivery yard, service lift, ablution facilities, offices and storage compartment for deliveries.
It is proposed that maintenance, managing company will run the facility, both maintaining it as well as facilitating all organisation.

User arrival points have been carefully looked at, as there are multiple points of arrival to site, with even more possible venues to visit.
Primary source of arrival: Taxi, walking and bicycle, with the employees commuting by vehicle. A parking garage has been proposed for the University and the employees of the facility, leading out from each floor of the building excluding the 2nd floor.

6.4.2

Basic layout: _figure. 98

Public square
Flank A_ Community facilities
Flank B_ University of Pretoria, Government and public
Flank C_ Public, community and Facility.

Taxi drop-pick & go
Public service and ablution

Parking garage

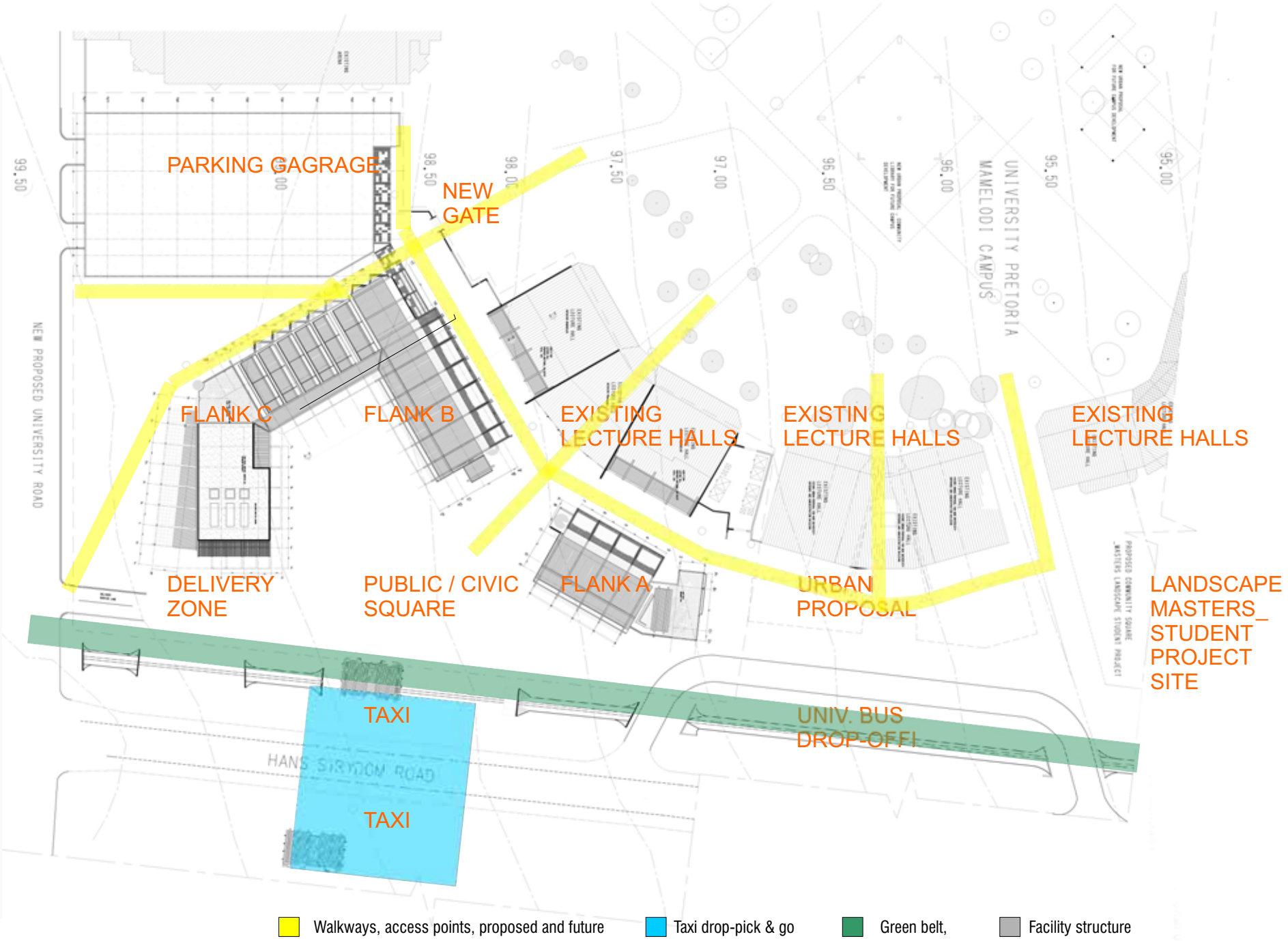
Urban proposal of new University of Pretoria administration building

SCHEDULE OF AREAS:

TOTAL HABITABLE FLOOR AREA_ Gfl	2084.00 msq
PARKING GARAGE AREA_ Gfl	2475.00 msq
ADDITION TO EXISTING_ Gfl	178.00 msq
TOTAL HABITABLE FLOOR AREA_ 1st fl	2333.00 msq
PARKING GARAGE AREA_ 1st fl	2681.00 msq
TOTAL HABITABLE FLOOR AREA_ 2nd fl	2111.00 msq
PARKING GARAGE AREA_ 2nd fl	2681.00 msq
TOTAL HABITABLE FLOOR AREA_ 3rd fl	1643.00 msq
TOTAL FLOOR AREA	8171.00 msq
TOTAL FLOOR AREA garage	7837.00 msq

UNIVERSITY SITE AREA	2001960.00 msq
PROJECT SITE AREA	154866.00 msq
PROJECT urban SITE AREA	201277.00 msq
ALLOWED FLOOR AREA RATIO	NA
PROPOSED FLOOR AREA RATIO	NA
ALLOWED COVERAGE	70 %
PROPOSED COVERAGE	10 %

Figure. 98
Site roof plan, indicating Layout and principle function



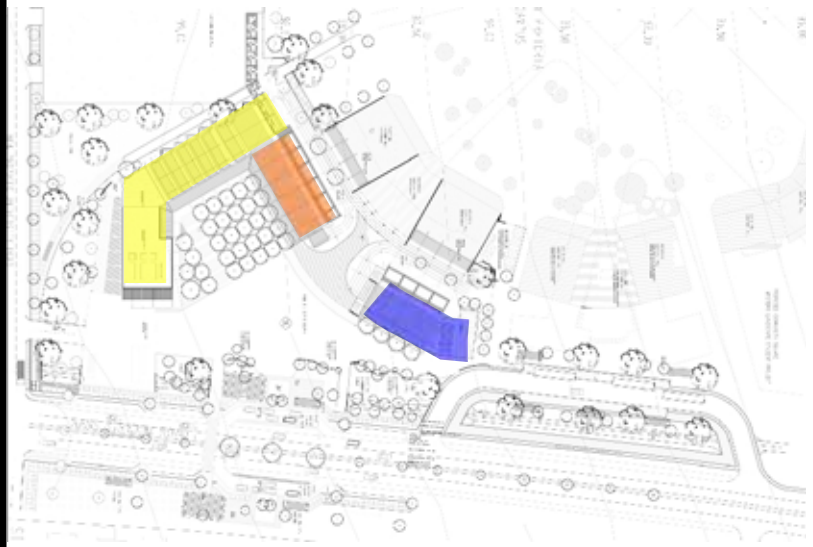
6.4.3.
6.4.3.1

Figure. 99
General Program sheet
Levels vs facility type

FACILITY TYPE	FLOOR LEVEL: GROUND	FIRST	SECOND	THIRD
COMMUNITY	information& tourism office Exhibition gallery Legal aid office Community administration office Access card kitchenette and ablutions HPi-centre foyer Postnet retail outlet	Community meeting rooms Community Sector 1 , 2 , 3 & 4 offices Community ward counselor office HP computer i-centre_ HP_ ablutions Access card kitchenette and ablutions	EBIT class rooms Teachers office Access card kitchenette and ablutions	Community business facilities, hot desking venture Break-out roof space
TERTIARY	UP_ e-library Access card kitchenette and ablutions			University of Pretoria community engagement faculty offices Access card kitchenette and ablutions University of Pretoria Department of social work and criminology research laboratory University of Pretoria Department of sociology, community service and social transformation research laboratories
CIVIC	Municipal pay points Home affairs booths Access card kitchenette and ablutions	Mamelodi East Municipal offices Home affairs satelite offices Access card kitchenette and ablutions	NGO offices Government department, Social development satellite office Government department, Public service and administrations Government department, Labour Access card kitchenette and ablutions	
FACILITY_IN-HOUSE	Access card kitchenette and ablutions Delivery yard and temporary storage Delivery offices Public stairs Service lift, public lift and stairs Ablutions:_mens, ladies & disable	In-house reception In-house managerial offices In-house printing facility In-house storage facilities In-house ablutions & common room Public stairs Service lift, public lift and stairs Ablutions_mens, ladies & disable	Public stairs Service lift, public lift and stairs Ablutions_mens, ladies & disable	**4th floor_ roof space** Conference venue Break-out terrace small roof space Break-out terrace large roof functions space Public stairs Service lift, public lift and stairs Ablutions_mens, ladies & disable

Figure. 100 a,b,c
Site, people context sketches

FLANK C FLANK B FLANK A



COMMUNITY ENGAGEMENT FACILITY ROOF PLAN_ (C.E.F.)

6.4.3.1

Figure. 101a
Detail Program sheet per floor. Flank A

FLANK A

ROOM TYP

GROUND FLOOR	FIRST FLOOR	SECOND FLOOR	THIRD FLOOR	FOURTH FLOOR_ROOF
Exhibition gallery Gallery store room Information & tourism office Legal aid reception Legal aid waiting lounge 2x Legal aid offices 2x Legal aid enquiry booths File room Meeting room Ablution: 3x male toilets 1x male urinal trough 1x 3 faucet basin trough 3x female toilets 1x 3 faucet basin trough 1x dressing and baby counter 1x disable toilet 1x disable basin 1x store room Common room: 1x kitchenette Community facilities administration office, Adult education enrolment X2 booths Store room New entrance to existing Lecture hall X4, re-use fire door entrance / exit public stairs	X2 Community meeting rooms: Room 1 _ 148 seats Room 2_ 145 seats Ward counselor office: 2x offices Community sector 1,2,3 & 4 shared office: 4x office public stairs	5x Adult education classrooms: Room 1_ 23 seats Room 2_ 23 seats Room 3_ 30 seats Room 4_ 12 seats Room 5_16 seats Teaching staff communal office: 2x offices Ablution: 3x male toilets 1x male urinal trough 1x 3 faucet basin trough 3x female toilets 1x 3 faucet basin trough 1x dressing and baby counter 1x disable toilet 1x disable basin 1x store room 1x kitchenette public stairs	Hot desk business facilities: Reception Store room Printer room 6x single offices 4x double offices 2x triple offices Roof space break-out social area. public stairs	Conference room: Foyer Bar area Lounge area Multifunction room Sound room public stairs

6.4.3.2

Figure. 101b
Detail Program sheet per floor. Flank B

FLANK B

ROOM TYPE

GROUND FLOOR	FIRST FLOOR	SECOND FLOOR	THIRD FLOOR	FOURTH FLOOR_ROOF
Municipal pay point: 1x Safe room 1x Store room Work counters_ 5 seats Manager office Security access foyer 6x paypoint booths 1x Applications booth 1x Enquiry booth Ablution: Share flank B & C 2x male toilets 1x male urinal trough 1x 2 faucet basin trough 2x female toilets 1x 2 faucet basin trough 1x dressing and baby counter 1x disable toilet 1x disable basin 1x store room Common room: Share flank B & C 1x kitchenette Seated space Public stairs	Municipal offices: Reception Printing room 1x digital and plan file store 1x public counselor booth 2x service enquiries booths 4x building plan submission booths Building plan scrutiny officer office_ 3 x booths Public development officer office_ 2 x booths Traffic and road works officer office_ 2 x booths Public water officer office_ 2 x booths Ablution: Share flank B & C 2x male toilets 1x male urinal trough 1x 2 faucet basin trough 2x female toilets 1x 2 faucet basin trough 1x dressing and baby counter 1x disable toilet 1x disable basin 1x store room Common room: Share flank B & C 1x kitchenette Seated space Public stairs	NGO. Offices: Reception General store room 6x NGO offices: Office 1: Project literacy Office 2: Community development resource association Office 3: The Mvula trust Office 4: POWA. Office 5: Urban service group Office 6: Ditsela Ablution: Share flank B & C 2x male toilets 1x male urinal trough 1x 2 faucet basin trough 2x female toilets 1x 2 faucet basin trough 1x dressing and baby counter 1x disable toilet 1x disable basin 1x store room Common room: Share flank B & C 1x kitchenette Seated space Public stairs	Community engagement faculty offices Faculty reception 1x Store room 1x Head of faculty office 3x shared faculty offices: Office 1: x2 booths Office 2: x2 booths Office 3: x 3 booths Faculty & SRC school outreach support centre: X3 booths UP. CE. faculty research department X4 stations/booths Ablution: Share flank B & C 2x male toilets 1x male urinal trough 1x 2 faucet basin trough 2x female toilets 1x 2 faucet basin trough 1x dressing and baby counter 1x disable toilet 1x disable basin 1x store room Common room: Share flank B & C 1x kitchenette Seated space Public stairs	Conference room: Foyer Bar area Lounge area Multifunction room Sound room Public stairs

6.4.3.3

Figure. 101c
Detail Program sheet per floor. Flank C

FLANK C

ROOM TYPE	GROUND FLOOR			FIRST FLOOR	
	Home affairs public service counters: Safe room 1x Cashier booth 1x finger print booth 1x enquiries booth 2x ID application booths 3x PP/Pt/RC/Imig. Application booths 3x DC/BC/MC/MA Application booths 2x Collection booths Ablution: Share flank B & C 2x male toilets 1x male urinal trough 1x 2 faucet basin trough 2x female toilets 1x 2 faucet basin trough 1x dressing and baby counter 1x disable toilet 1x disable basin 1x store room Common room: Share flank B & C 1x kitchenette Seated space Public stairs, lift & service lift University Pretoria E-Library: 1x Collection and return counter 13x computer stations Digital cd racks archive 1x store room 1x multiple printing counter. In-house facility delivery centre: 1x Wash-up counter 1x Delivery office 1x Municipal deliveries store 1x Government deliveries store	1x General delivery store 2x loading bays 1x double outreach bus laboratories park. 1x Security check desk. HP-I centre reception Private Ablutions: Share_ E-library, Hp i-centre & Postnet 2x male toilets 1x male urinal trough 1x 2 faucet basin trough 2x female toilets 1x 2 faucet basin trough 1x dressing and baby counter 1x disable toilet 1x disable basin 1x store room Postnet retail outlet: 1x reception counter 3x computer stations 1x printing counter 1x photocopy centre 1x store room		Home affairs Government offices Satelite_Mamelodi East Reception 2x Senior Manager offices 2x Manager offices 12x Administration booths 1x File store 1x Digital file store 1x Board room Ablution: Share flank B & C 2x male toilets 1x male urinal trough 1x 2 faucet basin trough 2x female toilets 1x 2 faucet basin trough 1x dressing and baby counter 1x disable toilet 1x disable basin 1x store room Common room: Share flank B & C 1x kitchenette Seated space Public stairs, lift & service lift In-house facility administration centre: Reception 1x Printing centre 1x Store room 1X Communication room 1x Manager office 1x Assistant office 6x General goods stores 2x Washrooms:	2x male toilets 1x male urinal 1x 2 faucet basin trough 2x Showers 2x female toilets 1x 2 faucet basin trough 2x Showers Common room 1x kitchenette Seated space HP-I centre : Foyer Information desk & help desk X4 seats 7x Research computer terminals 1x Printing counter 1x Lounge 1x Computer Lan X22 seats Private Ablutions: Share_ E-library, Hp i-centre & Postnet 2x male toilets 1x male urinal trough 1x 2 faucet basin trough 2x female toilets 1x 2 faucet basin trough 1x dressing and baby counter 1x disable toilet 1x disable basin

SECOND FLOOR

THIRD FLOOR

Government satellite office Social development department: Reception 2x Senior manager offices 2x Manager offices 1x Digital store 1x File store 12x Administration booths 2x Junior manager / enquiries offices Ablution: Share flank B & C 2x male toilets 1x male urinal trough 1x 2 faucet basin trough 2x female toilets 1x 2 faucet basin trough 1x dressing and baby counter 1x disable toilet 1x disable basin 1x store room Common room: Share flank B & C 1x kitchenette Seated space Government satellite office Social development department: Reception 2x Senior manager offices 2x Manager offices 1x Digital store 1x File store 12x Administration booths 2x Junior manager / enquiries offices Public stairs, lift & service lift Government satellite office Department of labour: Reception 1x Senior manager	2x Manager offices 3x Junior managers 1x Store room 1x Digital store room 12x Administration booths HP-I centre reception Administation offices: 3x Assistant lecturers offices 1x Manager office 1x Senior lecturer office 1x Computer Lan 22 seats		University of Pretoria social research centre; Various faculties. Department of social work and criminology research lab1. Department of sociology: Community service and social transformation research lab2. Research Reception 2x Senior lecturer offices 2x Research offices 2x Research laboratories 6x stations, 2x meeting spaces 1x Shared digital and file store Ablution: Share flank B & C 2x male toilets 1x male urinal trough 1x 2 faucet basin trough 2x female toilets 1x 2 faucet basin trough 1x dressing and baby counter 1x disable toilet 1x disable basin 1x store room Common room: Share flank B & C 1x kitchenette Seated space Public stairs, lift & service lift Outdoor rooftop function venue	

6.4.3.3

Figure. 101d
Detail Program sheet per facility. Miscellaneous facilities.

PARKING GARAGE, PUBLIC FACILITIES & LECTURE HALLS

ROOM TYPE

PARKING GARAGE	UNIVERSITY GATES	PUBLIC TOILETS	SERVICE YARD	LECTURE HALLS
GROUND FLOOR 1X Guard and communication room 81 Bays Public stairs and service lift FIRST FLOOR 72 Bays Public stairs and service lift SECOND FLOOR 72 Bays Public stairs and service lift	1X New university entrance gate	Public ablutions x2: 2x male toilets 3x male urinal trough 1x 4 faucet basin trough 2x female toilets 1x 4 faucet basin trough 1x dressing and baby counter 1x disable toilet 1x disable basin 1x store room 1x shower. 1x caretaker office and store room	1x New service yard Hosting lecture hall 1,2 & 3 as per existing, also hosting New Urban University entrance proposal as well as require electrical generators and transformers for new facility.	Lecture Hall 1: 1x Sound and electronic room 4x Reuse fire doors for new entrance doors New Seating: 164 new seats Lecture Hall 2: 4x Reuse fire doors for new entrance doors Lecture Hall 3: 1x Sound and electronic room 4x Reuse fire doors for new entrance doors New Seating: 164 new seats

Figure. 102
Busses , taxis , Mamelodi

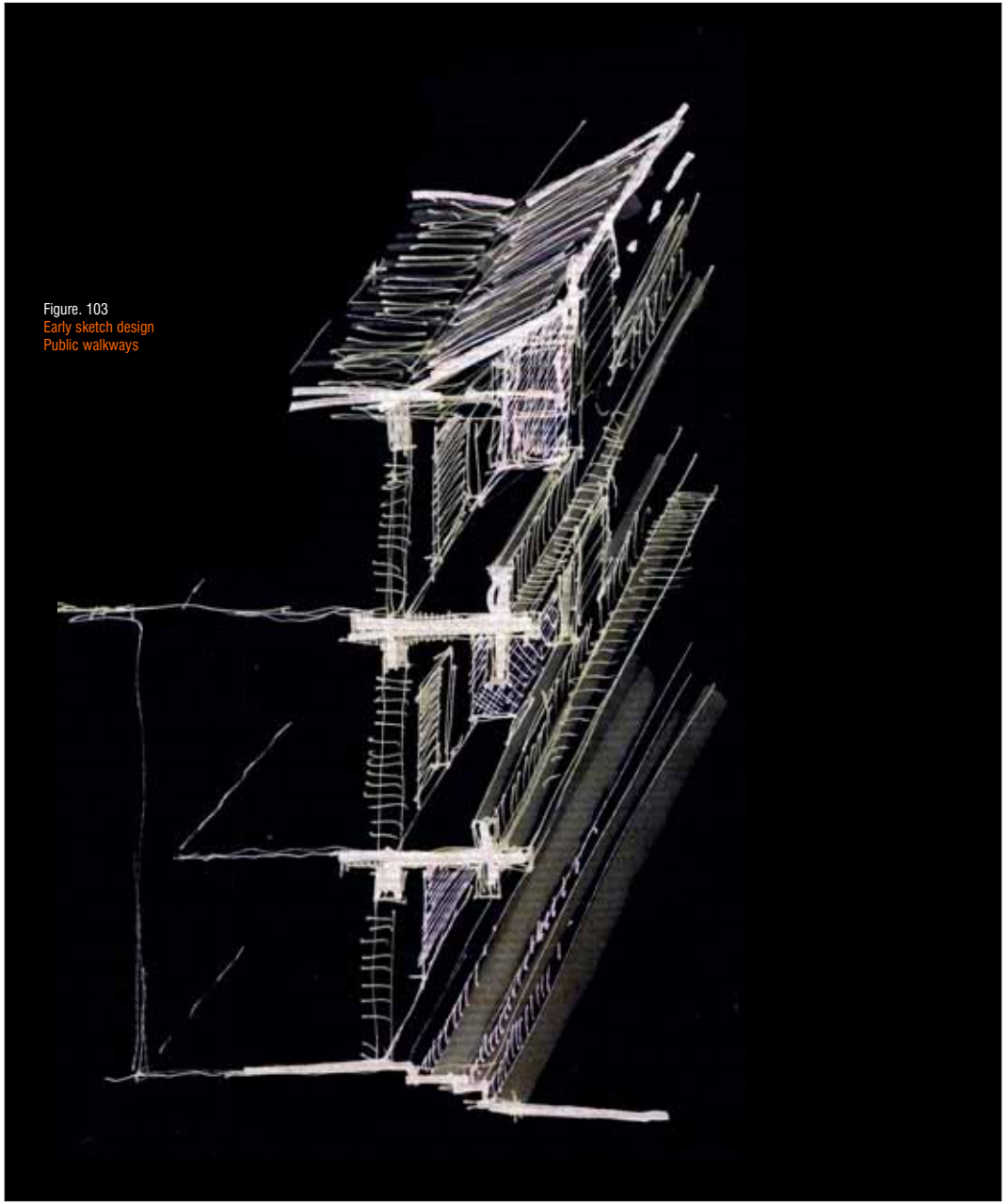


Figure. 103
Early sketch design
Public walkways

6.5

Explaining the program by user experience diagrams and scenarios.
See figures 105a - c for reference.

The following is a dialogue of possible experiences and engagements as a user visiting with purpose, working or merely passing by on the way to somewhere else other than the Community engagement facility.

Defining the users:
_The civic service user
_The community user
_The student
_The adult student
_The lecturer
_The Government official
_The hawker
_The tourist
_Service and delivery user.

Defining the arrival:
_By car
_By taxi
_By bus
_By tour bus
_By walking
_By cycling

Ground floor being the floor of interaction and experience, queeing for ID, passports Death certificates and paying your electrical bills etc, Booking a class at the adult education centre and receiving information on legal aid. Learning form the E-library and watching an exhibition by a local artist.

First floor, meeting for community meetings, and making an appointment to submit your building plans or complain about your leaking sewer line. Enquiring what is needed to become a citizen at the home affairs offices and learning
Computer skill, obtaining you computer licence at the HP I-centre

Second floor, going to class being taught maths, english and literacy, finishing your matric. Meeting a non-government organizations to obtain a grant for your business venture, community sector, or school. Visiting the labour department and voice your opinion and request information for your working situation,

Third floor, meeting the community engagement faculty of Pretoria University, taking part in a research program for the faculty of social sciences.

And finally chairing a meeting or being a guest in the rooftop conference centre.

Figure. 105a
User experience diagram
1. CIVIC SERVICE USER
2. COMMUNITY USER

LECTURE HALLS

TERTIARY

COMMUNITY FLANK

CIVIC

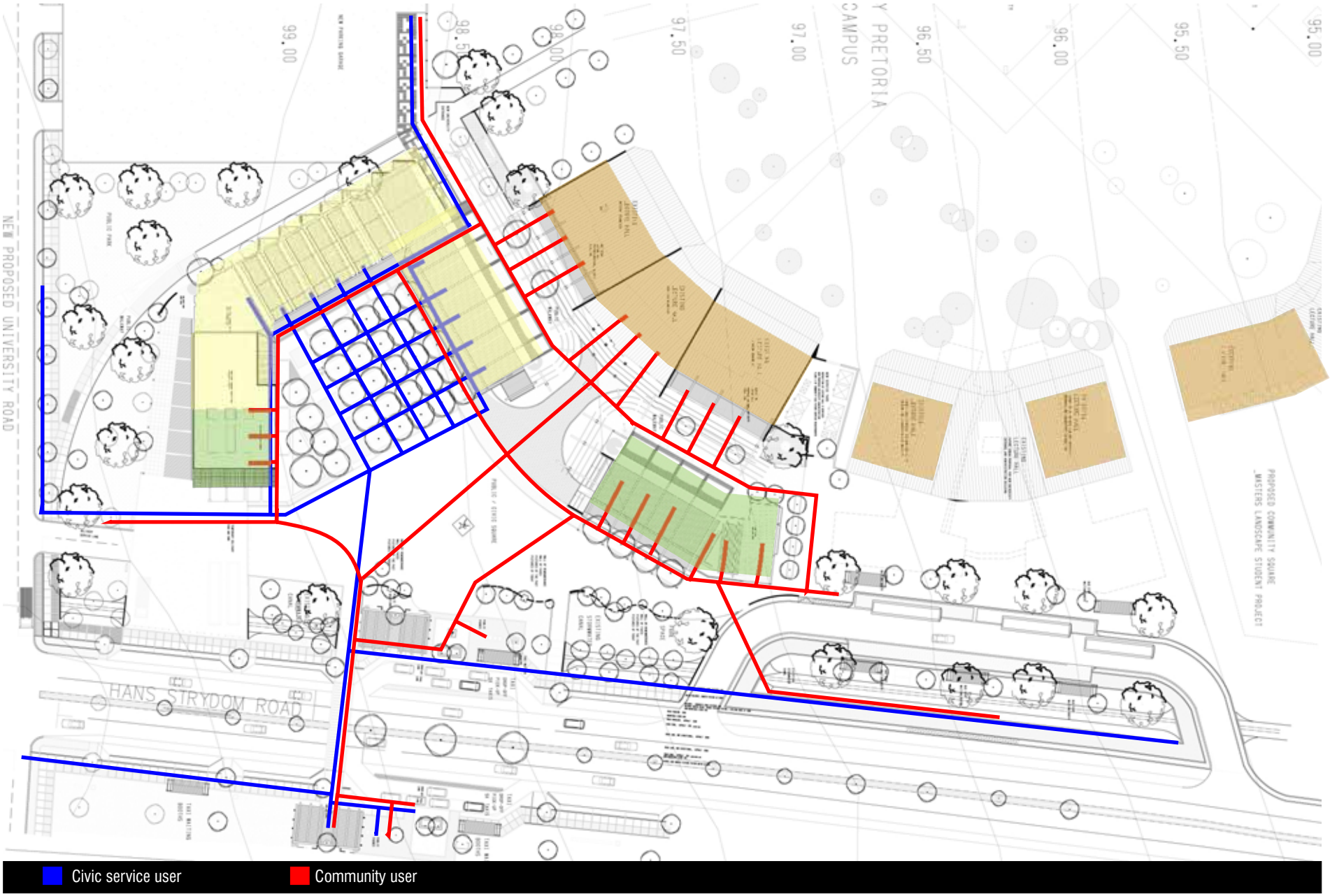


Figure. 105b
User experience diagram
3. STUDENT USER
4. LECTURER USER

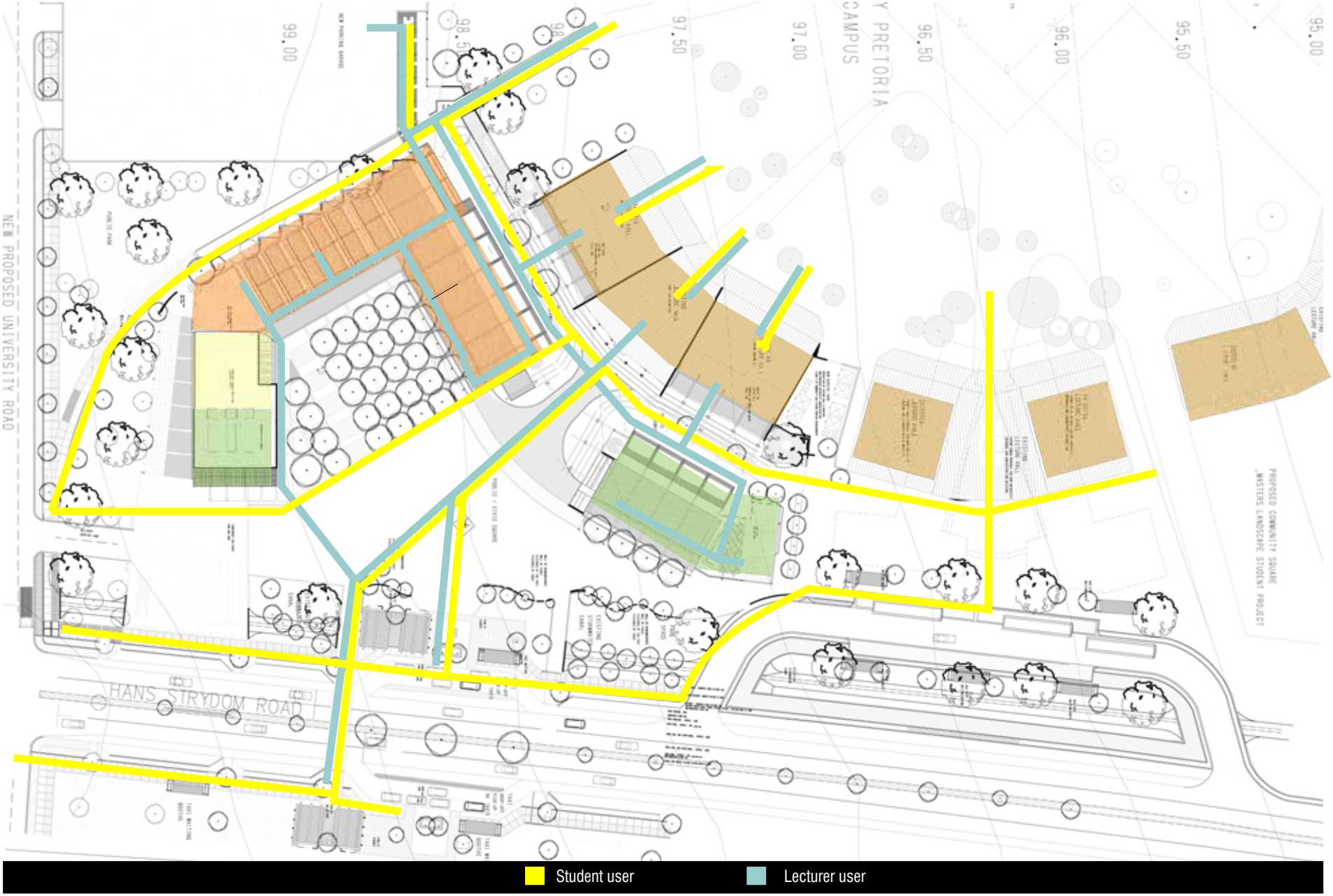
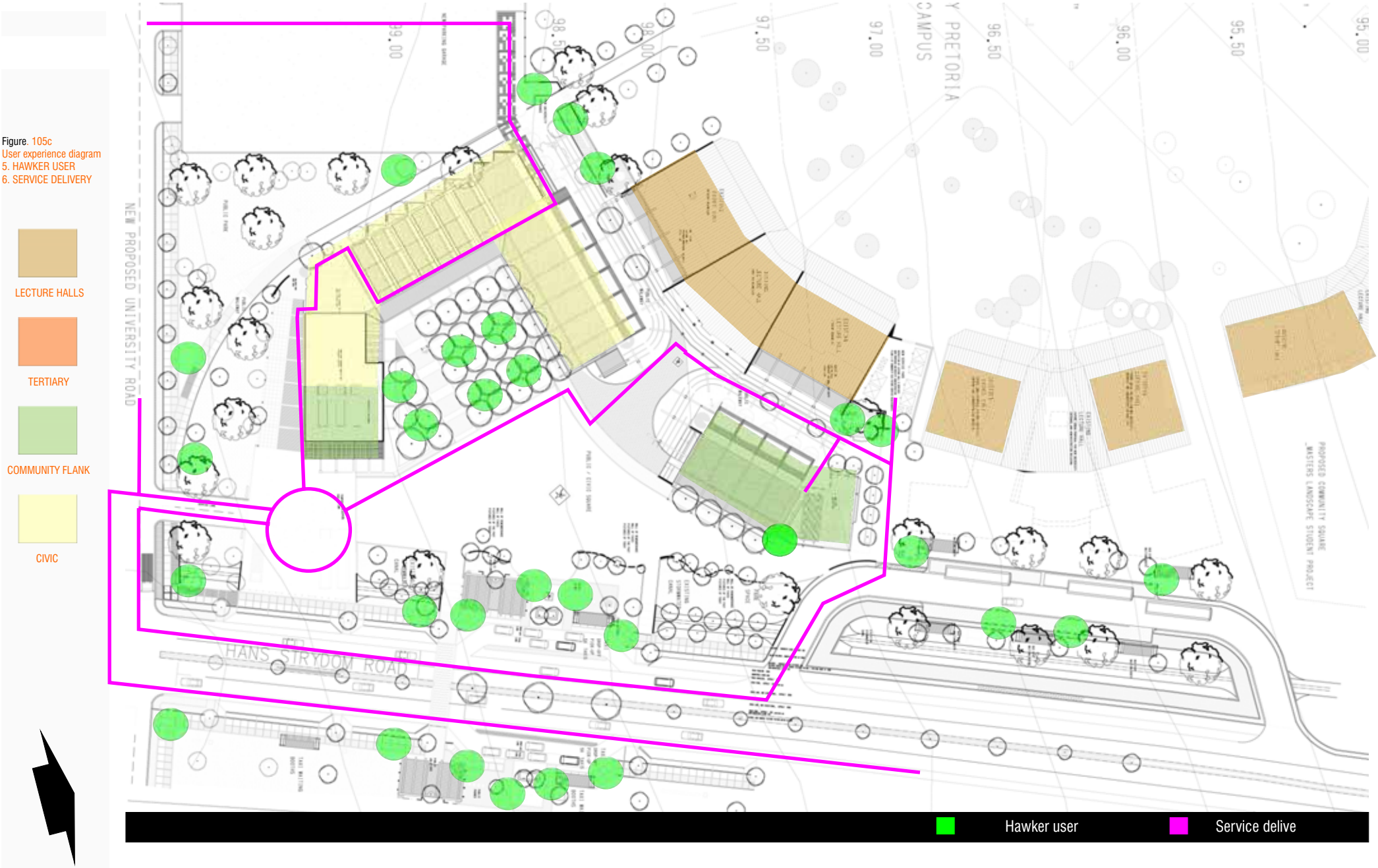


Figure. 105c
User experience diagram
5. HAWKER USER
6. SERVICE DELIVERY



6.5

6.5.1

PUBLIC ARCHITECTURE DESIGN PROCESS

Introduction:

As noted in the early part of this chapter, the requirement of a taxi drop-pick & go was a necessity. With this service, other services are required.
As a commuter certain services are necessities. The introduction of two public ablution facility, one on either side of Hans Strydom road was a prerequisite
The additional requirement was public phone booths and waiting stalls.

However simplistic the design of these structures are, they simultaneously need to be hardy but elegant, they also need to be inviting but not a home. They need to be managed with surveillance.
Finally they need to read as part of the total design in typology, planning and materiality.

The design: sketches 106a - 110b

Ablutions:
The intent was to provide for male, female and disable.
Utilising passive ventilation and water harvest, maximum long term efficient with low maintenance cost as any other public facility structure.
They require a storeroom that doubles as manager or cleaners room that provides surveillance over the facility.
They require baby changing facilities for mothers at ladies ablution, and outdoor seating for waiting commuters and hawkers.
A shower facility for the cleaner after work.
A typology of curved roof structure enhancing ventilation was employed and was a derivative of the main facility structure. Roof overhang covering for warm and rainy summer days.

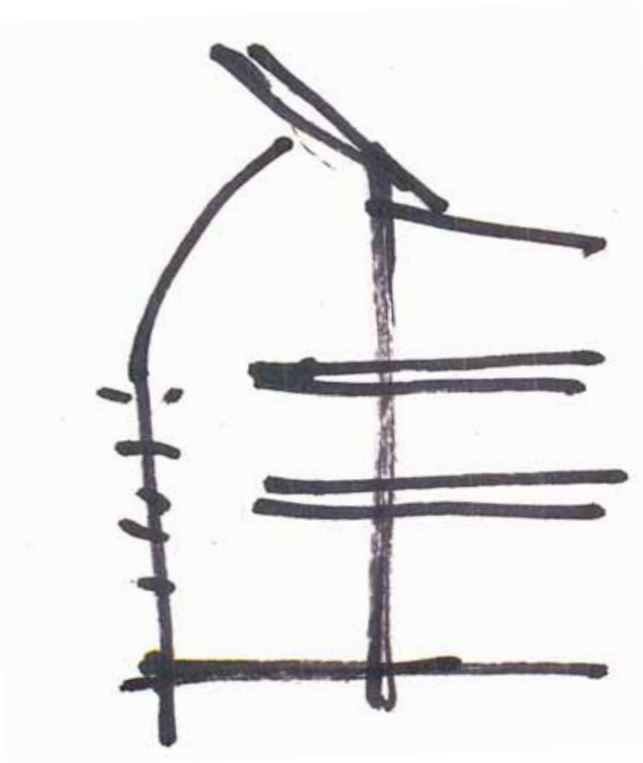
Telephone booths: A2
Initial thoughts was to provide roof coverings, but after some discussion, this concept was not the most effective, because it provides unfortunate sleeping place for homeless people, and thus makes it an unsafe area for commuters waiting for taxis'.
The proposal was for the placement of concrete plinths, with the booths on top slightly elevated. The final textures and finishes of the concrete plinths are in pigmented concrete with artists design inlayed, similar to walls and floor slab of the ablution block. only allowing the tree coverage to act as covering. See figure 125a for texture examples

Waiting stalls: A3
Following the design typology of curved corrugated sheet roofs on lightweight steel structure assembled form standard members and concrete bolted into floor plinth with lightweight concrete beams placed for seating.
Back of curved structure to be a bill board for advertising.
Roof lifted of ground to allow through air movement, and to create a light weight image of structure.
Each waiting stall fitted with permanent bin holder.

Figure. 14.
Community engagement facility site section, pedestrian Friendly proposal

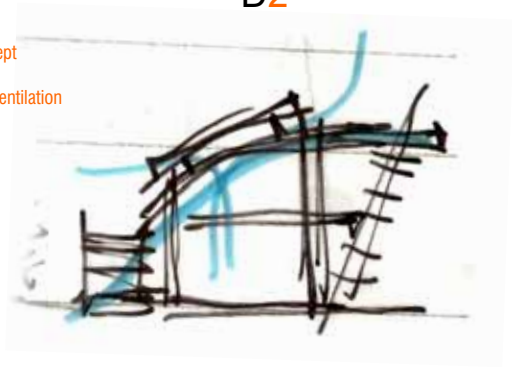
D1

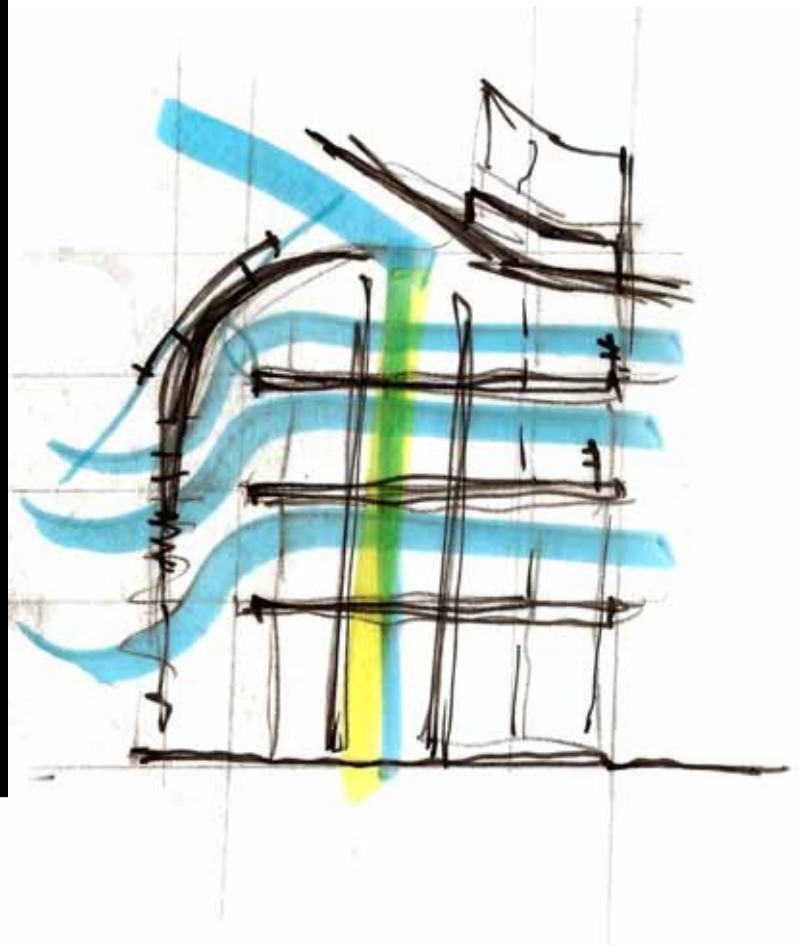
Figure. 106a
Design concept development
Typology



D2

Figure. 106b
Design concept development
Typology & ventilation





D1-5

Figure. 107
Design concept development
Seating,
Taxi stall,

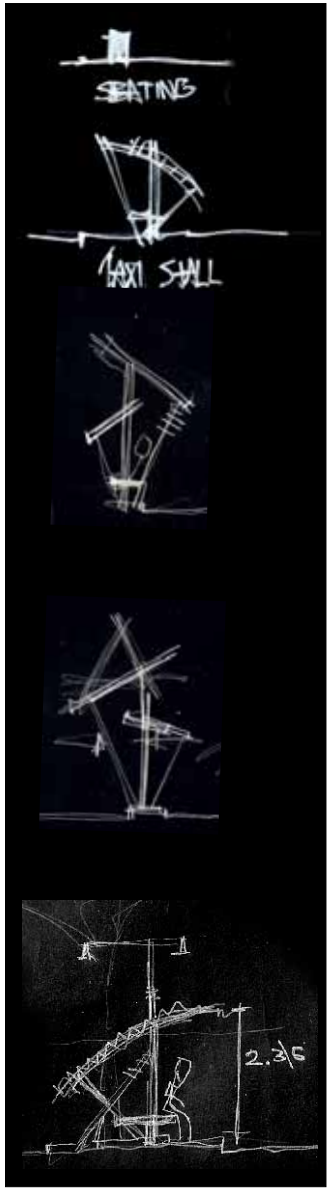
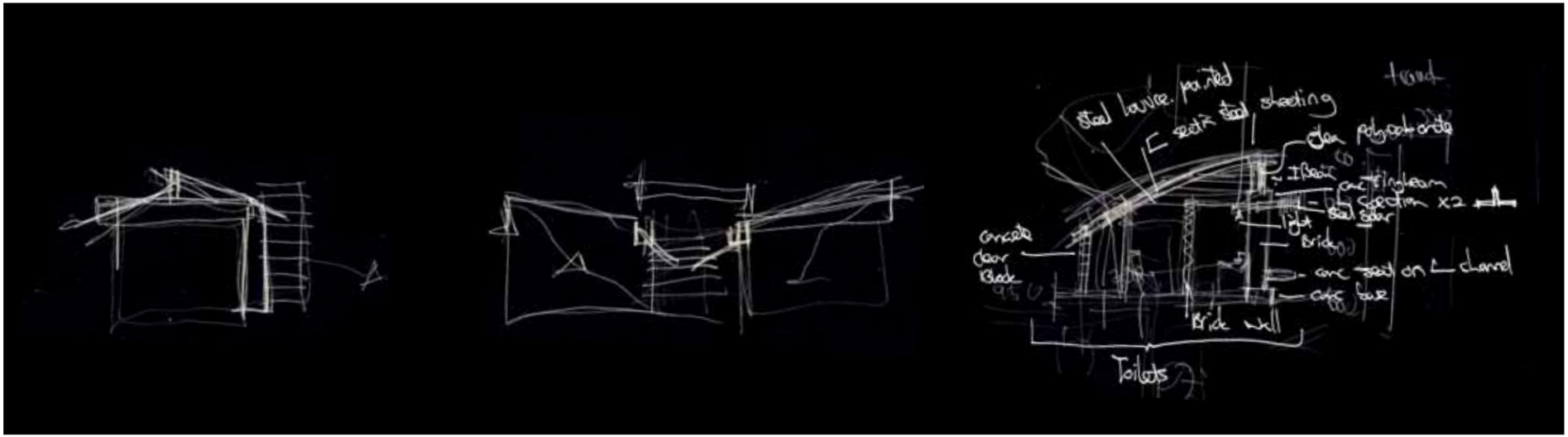


Figure. 108
Design concept
elevation
Public ablutions

Sk.1 Sk.2 Sk.3

Figure. 109a,b,c
Design concept
development
Public ablutions



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Figure. 110
Design concept development
Typology

Figure. 111a
Design planning development

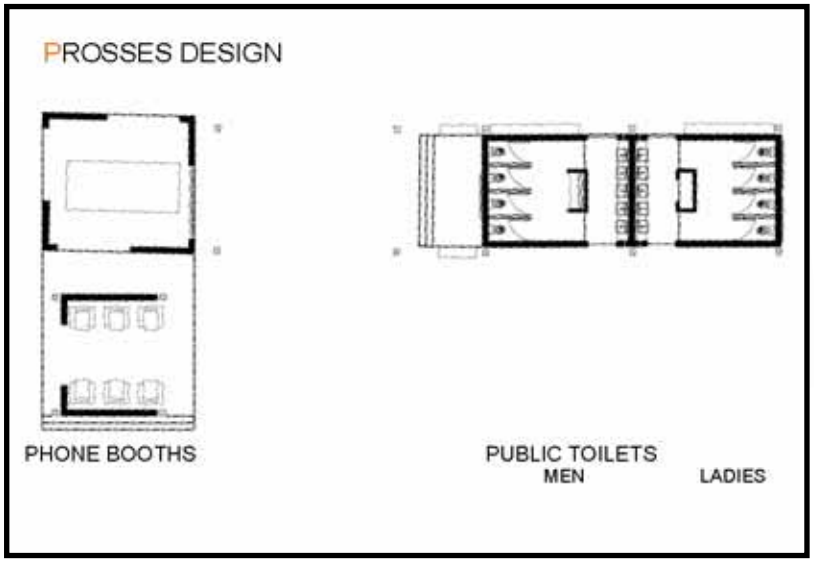
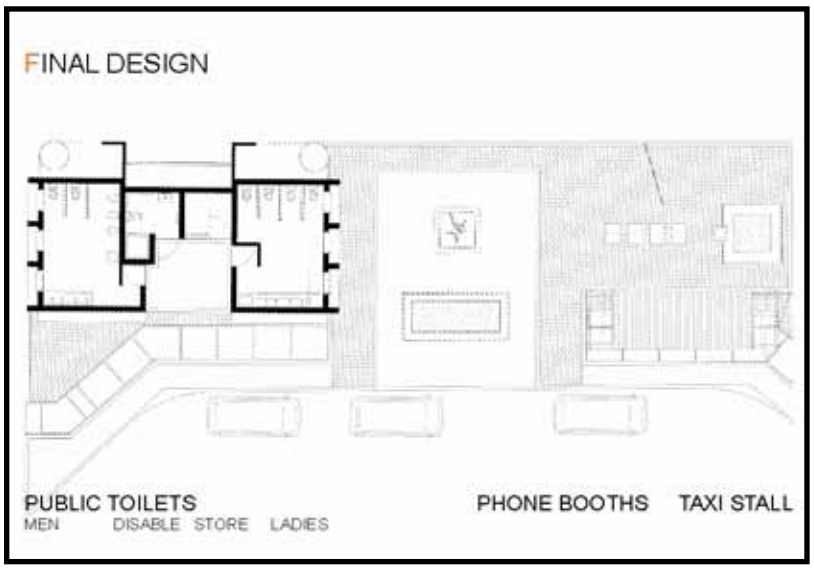


Figure. 111b
Final planning development



CHAPTER 7_ Technical discourse

7.1_

THEORY OF STRUCTURE

M. Van Der Rohe 1961

"We call a shack a shack and not a structure."

- "By structure we have a philosophical idea.
- The structure is the whole from top to bottom, to the last detail - with the same ideas "

"That is what we call structure."

7.1.1

The **structure as** architectural response:

M. Van Der Rohe

"Architecture starts when you put two bricks carefully upon each other."

- Creating a built form that serves as a transition between the existing University Campus and the Mamelodi community.
- The end vision for the campus is being an open campus for any person to wander in and to be informed and to enjoy the company and resource available to them.
- The utilization of the existing lecture halls, increasing the size and making them dual functional to be used in the day for University classes and at night for community meetings and education functions.
- Allowing the space between the new civic and community building and that of the existing lecture halls to become the transition space between the inside and outside of the campus, the broken down barrier of future and current integration.
  As Norberg-Shultz and Robert Venturi explains it is this transitional space that defines place and creates architecture. The "openings" created between the structure and the existing campus building serves this space. The typology and character of material and scale enforces this perception and creates a new space.

R. Venturi Complexity, pg 88

" Architecture occurs at the meeting of interior and exterior forces of use and space"

C.Norberg Schultz 1979, pg 63

"Evidently this meeting is expressed in the wall and in particularly in the openings which connect the two domains."

The structure form and materiality informs this sense of being and it grounds the principle of taking the old, adding the required and resulting in a new possibility of community engaged architecture facilities.
By programming floor space correctly, it leads one to and encourages the interaction of space and society.

The built form facilitates the same doing
Having a centre core structure resembling the existing concrete and brick massing of the university, but the outer edges, the walkways, the space most often used, once again becoming the transition space between the built form and public outdoors.
This has been achieved by adding a lightweight steel structure to the solid core mass that is open and free to breath, natural lit and permeable,

The walkways are threefold demonstrations of this permeable and legible precept:
Univeristy facade, public facade 1 & 2

University facade:
cladded by polycarbonate sheet, mirrors the small dwelling sheeted shack context in colour with natural ventilation up flow draughts. Becoming a skin for green architecture and symbol for context

Public facade:1
Open corridors, light weight steel structure with lazer cut steel balustrades designed by artists in the community colored to mark the legibility of each floor,
Public facade :2
Deep corridors for large load of people, open air walkway with roof coverage, cutaway slab to allow vegetation to infiltrate the space, adding new live to finished products and material.
A building wrapping the space creating a public civic square, that becomes legible and accessible, while simultaneously morphing in roof form creating a unity of simple tectonics.
As Norberg Shultz explains:

C.Norberg Schultz 1979

" A meaningfull relationship between horizontals and verticals also depends on the form of the roof."

Hence there is no intention to dehumanize the change in vertical space and horizontal space, but rather to find an eloquent relationship between proportion and mass on open space with green felt, figure 121.

The three levels of floors are planes supported on columns divided in function. They are seen as layers, horizontally starting at basic need, finishing in furthering yourself in education and uplifting your community across the site, so it runs vertically starting at basic civic requirements for most access, to less access but more specificness needs at the top.
In the words of Mies van Der Rohe ***"We call a shack a shack and not a structure....."***
We find the image of structure and totality of building as equally required and appropriate in symbolism of theory as this dissertations community engagement facilitatory vision. Honest in form and honest in material. To reflect honestly that which is inside to those that intend to use it. Steel, concrete, Brick work and corrugated sheeting.

Note: All structural calculations for beams, columns: steel, concrete and timber on technical drawings.

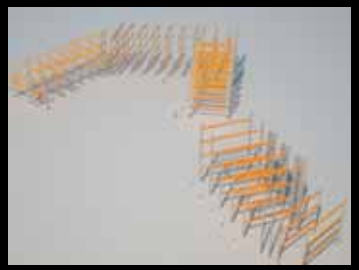
Concrete beam & columns

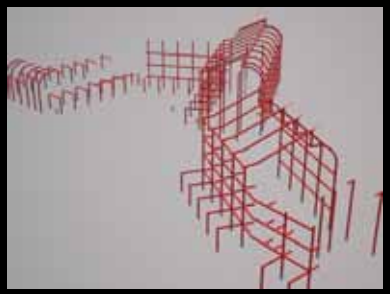
Steel beam & columns

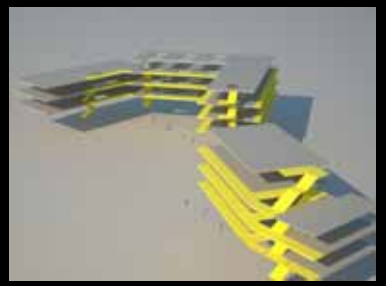
Concrete slab & walkway

Figure. 112
3d image of total structural system of proposed CEF facility

Figure. 112 a - c
Structural elements







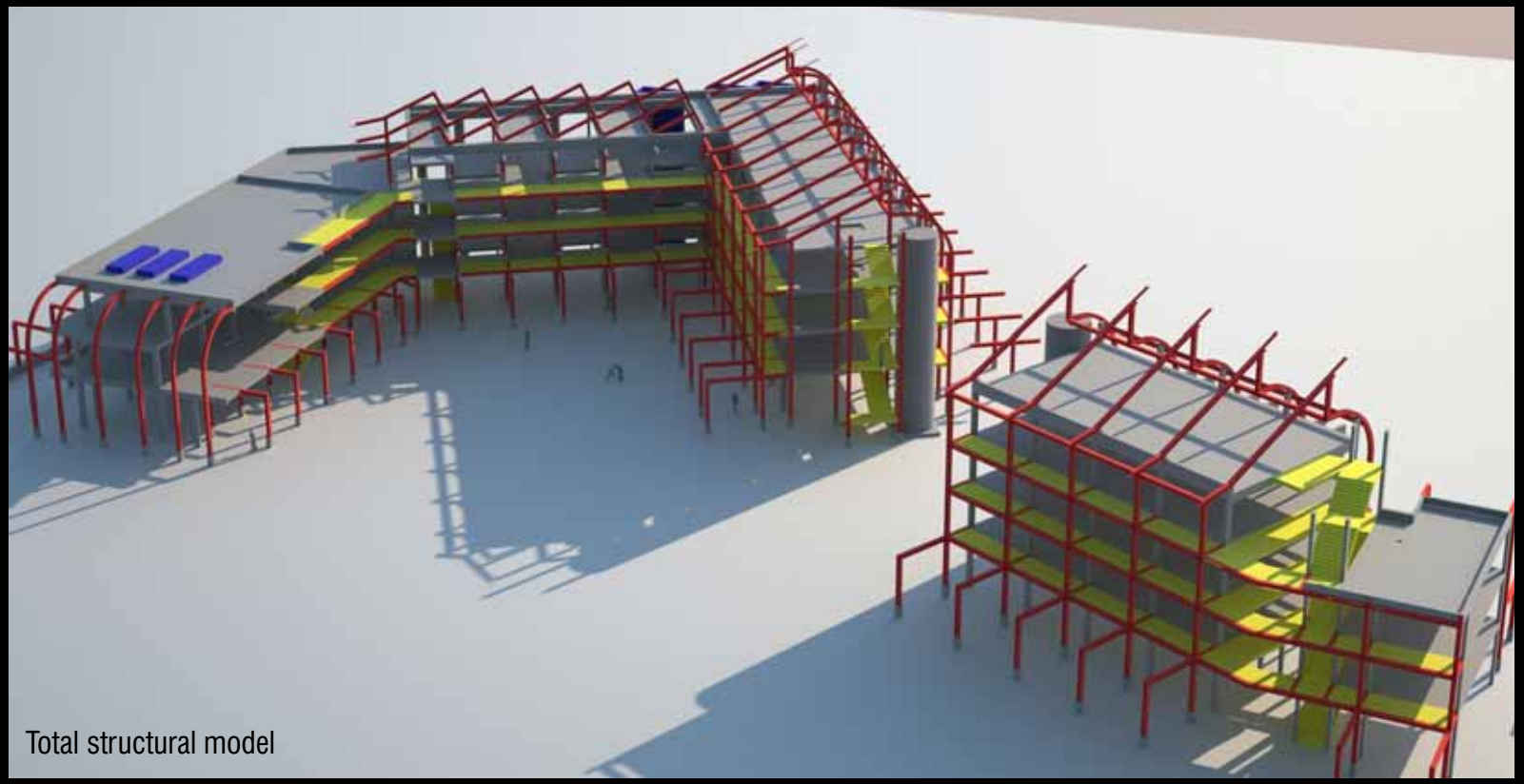
Concrete

Walkways & stairs

Steel

Ventilation systems

Service areas



Total structural model

Figure. 113a
3d2 image of structural system of proposed CEF facility

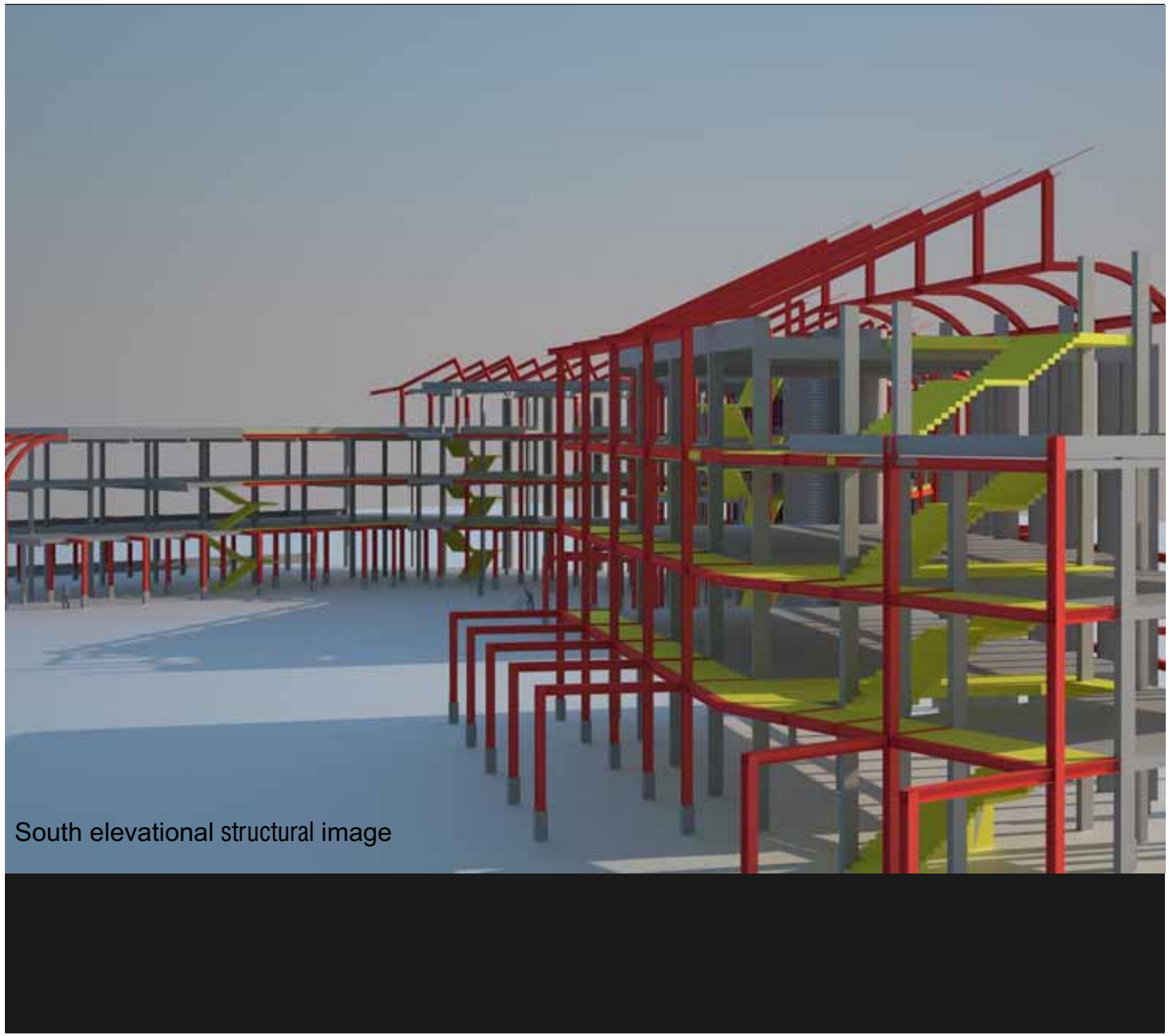


Figure. 113b
3d 4 image 3 of structural system of proposed CEF facility

Figure. 113 c -f
3d 5 image of structural system of proposed CEF facility

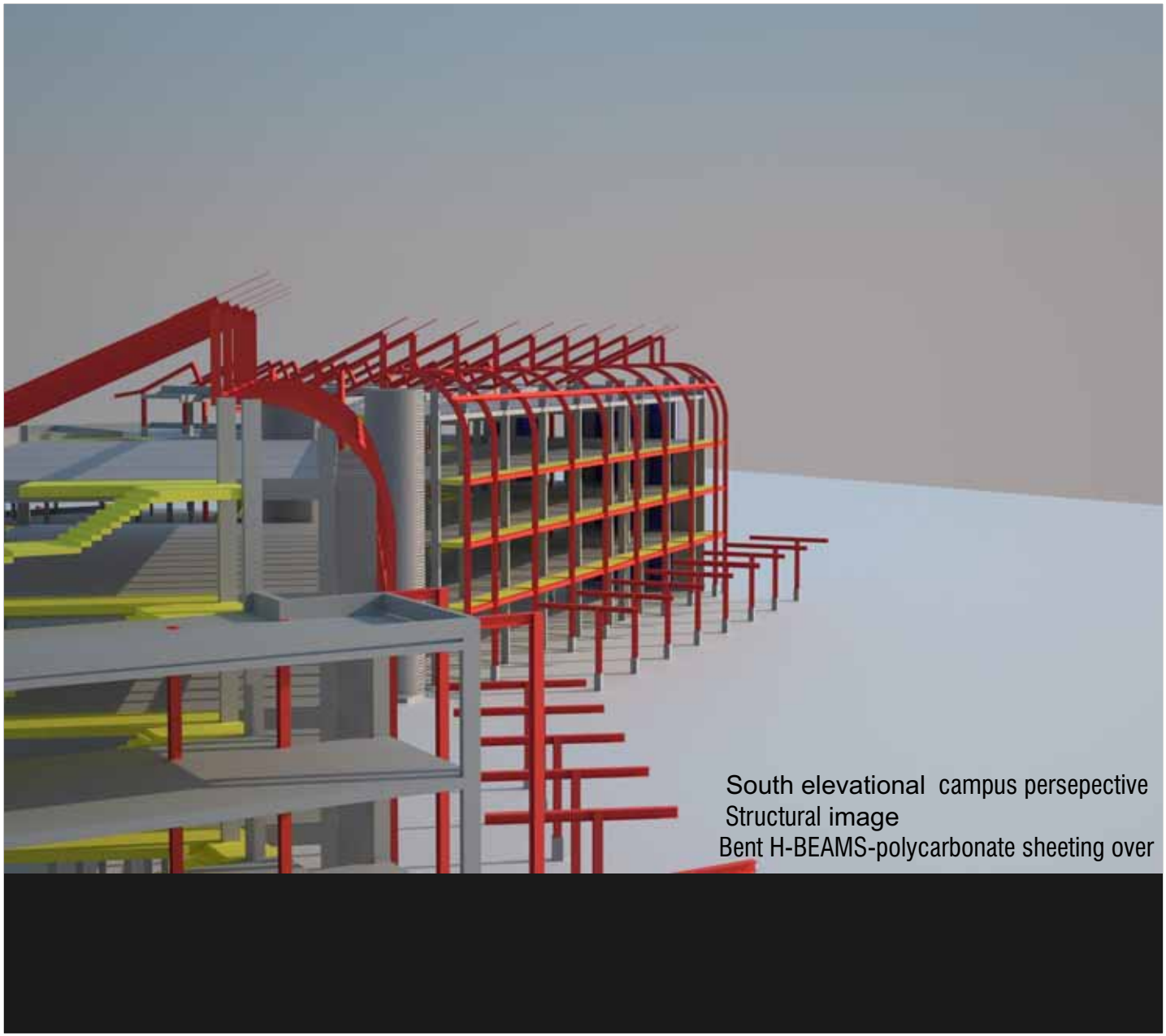
Concrete

Walkways & stairs

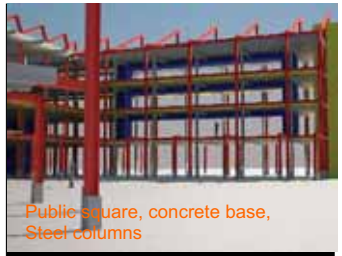
Steel

Ventilation systems

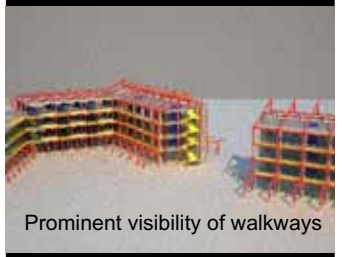
Service areas



South elevational campus persepective
Structural image
Bent H-BEAMS-polycarbonate sheeting over

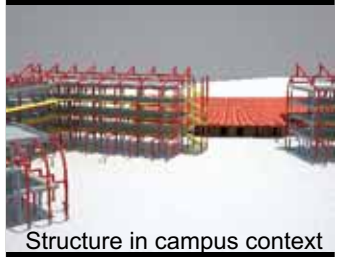


Public square, concrete base, Steel columns



Prominent visibility of walkways

Structure close-up



Structure in campus context

7.2_ SYSTEMS AND SERVICES_ A SUSTAINABLE APPROACH

7.2.1 SYSTEMS:

7.2.1.1 PASSIVE VENTILATION_
Flank A+B; figures. 114
The building is not holistically attempting to claim a green building status, however It was with intent that the use of a passive ventilation system was designed. For purposes of dissertation Flank B and subsequently Flank A is similarity in design was used for calculation purposes.
These flanks are mechanically assisted to passively ventilate the buildings.
The usable space are centralised with corridors at the edge, allowing for reduced heat gain, but resulting in reduced ventilation by natural means.
A series of development has taken place of which the final product as seen in Section Z-Z chapter 8,has been the answer.
The placement of two shafts running 1 st floor to roof top slab, 4sqm each with a cat-lader fixed internally and turbo extractor fan overhead, extracting all air in building 8x per day. More than the regulation requirement of converted 5x per day.
This does not cool the air as in air-conditioning but recycles the air, replacing warm latent air with fresh; hence cooler air. (See calculation on dwg.)
The system is powered by voltaic cells placed over curved roof edge, allowing enough energy collection to run the extractors as well the smaller jet motors for the louvre systems.

The extractor and louvres motors start & stop simultaneously 8 times per day and or when the thermometer drops and or reaches a certain temperature.

The allocated space for the shafts are sized for future changed ability with sufficient space on roof top for future plant requirements.

The excess voltaic energy is used for lighting in public ablution and corridor lighting during night time, in the attempt to reduce the electrical bill. Even if only by a fraction.

Flank C; figures. 115
Flank C face majority western sun hence heating up immensely, while the opposite public corridors face east collecting Eastern morning sun. The proposal to deal with this predicament is to recess the corridors and use vegetation to cool the space. Simultaneously using the thermal flywheel, or heat stack system on the western side. This will allow the air to be drawn across the offices from east to west in the afternoons when the offices should theoretically heat-up.

The chimneys, are cladded with corrugated sheeting to add to the heating effect, with a small top vent opening. They serve as service shaft for cable trays and

7.2.1.2 SYSTEMS:

PHOTO VOLTAIC_ AS NOTED AND MENTIONED
2X KEY SECURITY SYSTEM PER ORGANISATION OR COMPANY

7.2.2 SERVICE:
The in-house servicing is run from Flank C, ground floor being delivery yard and first floor being administration and communication.
The facility is run by a private management and maintenance company. Service lift connecting to all floors.
Major tenants have fixed storage bays on lvl 1.

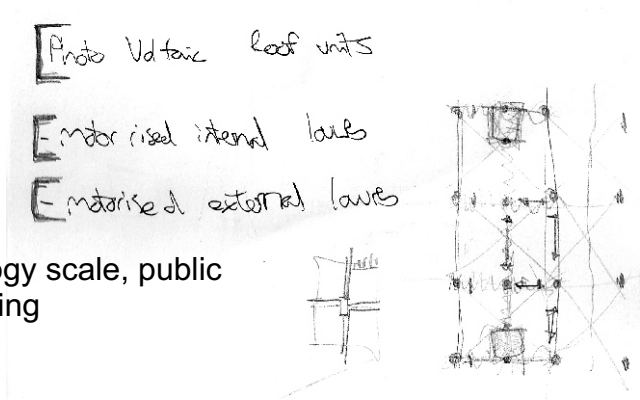
All ablution facilities are connected by service shafts, leading to access doors, all at external sides of building. Flank A at Northen edge. Flank C at western edge in vent shaft.

Existing service yards for lecture halls are removed and repositioned as noted on dwg's. New yard caters for existing and increased size air conditioning units for lecture halls, new power supply to building, back-up generator as well as transistors are required.

Connecting to existing sewer mains, by means of six new manholes. Existing fire points to be reused and additional added as per regulation. See technical drawings chapter 8.
Storm water off site drained to existing storm water channel. Water tanks act as holding tanks with overflows into storm water channel.

Roof access by cat-ladder fixed to vent shaft at flank C. Flank A to be accessed from rooftop at conference centre.

FLANK A&B
Passive ventilation process sketch design and detailing



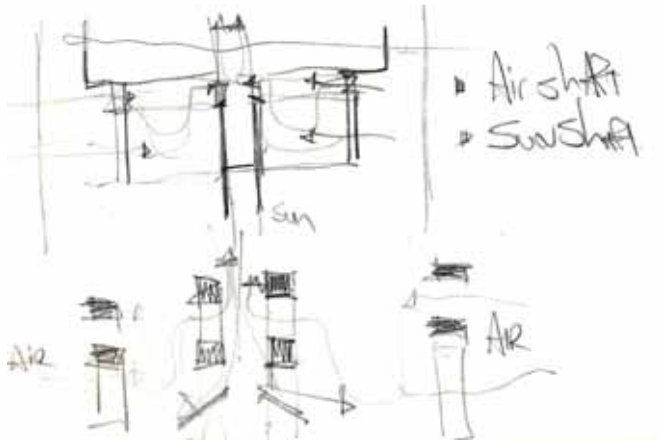


Figure. 114a
Flank A & B
exploration of passive
ventilation

Ventilation design & morphology scale, public
Architecture - large civic building

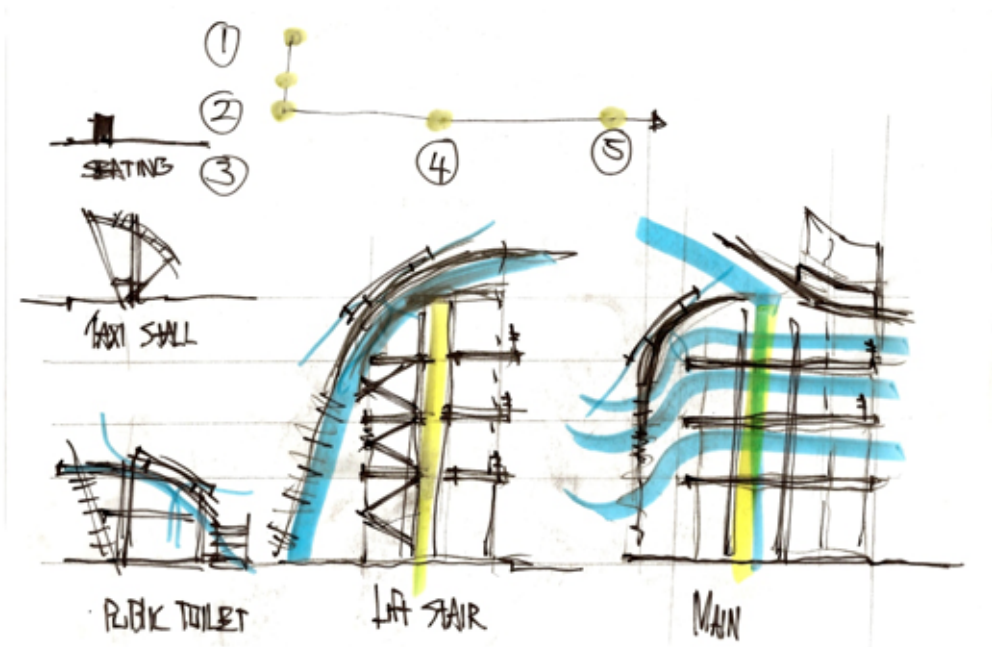


Figure. 114b
Flank A & B
exploration typology
of form with response
to ventilation

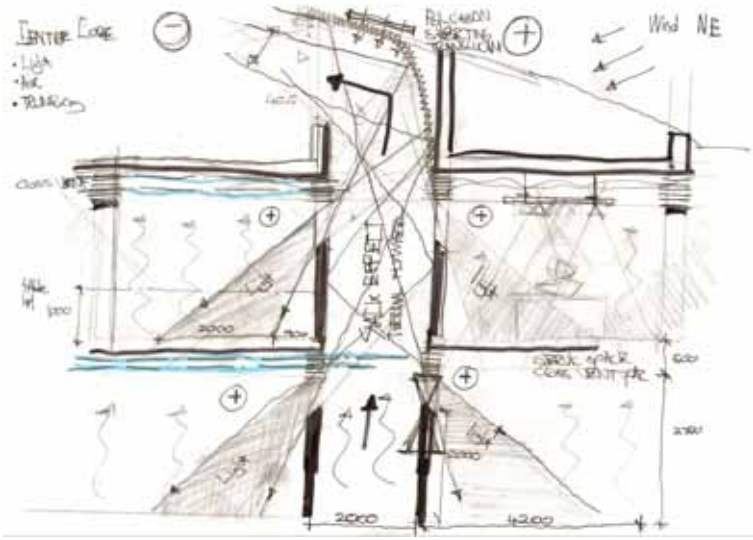


Figure. 114c
Flank A & B
exploration of central
core air and light
wells

7.2.3

CALCULATIONS

7.2.3.1

PASSIVE VENTILATION CALCULATIONS_
Flank A; B SECTION Z-Z

Note: proposal to make use of extractor fans to replace the air in the building 8 times per day (working hours), every hour, in doing so removing all warm air and replacing with fresh air, working on green building principles. Outcome results in the omission of an air-conditioning system, and the extractor system function on free energy basis, running of the solar voltaics as noted in photo voltaic calculations.
The louvers and extractor are linked and the motors start simultaneously opening and closing 8 times per day, with a thermostat connected to the motor, if the air temperature does pass over a set temperature the system starts up, if the temperature drop below a set temperature the system does not start up.
The system works only during daylight hours as it is powered by voltaics, but can be used at night on stored battery power, consideration was taken that none or very few employees will be at office after dark.
The two required shafts are over-specified by 2m² each, to allow for future users to change the system to air-conditioning, as all users do not find comfort in a energy efficient and co^2 free environments.

7.2.3.1a

CALCULATION:
shaft size: 2m x 2m = 4m² x 2 shafts

Total building flank b air intake openings as seen in section z-z
2700mm x 380mm = 1.026m² x 8 openings = 8.208m²
for 3 lvls/rooms excluding ground floor = 8.208m² x 3
= 24.624m²
total building flank b extract openings as seen in section z-z
1560mm x 380mm = 0.5928m² x 3 openings x 2 shafts
= 3.56m² per floor
3.56m² x 3 floors
= 10.68m²

7.2..3.1b

Total air volume required to transfer in flank b as seen in section z-z
24680mm x 10200mm = 251.736m² - 8m² for shaft space
= 243.736m² x 3200mm height
= 779.95m³ per floor
779.95m³ x 3 floors = 2339.86m³ total volume of air
replacement of air 8x per day

In order to specify the correct extractor one needs to calculate the speed required to transfer the air.
In the calculation of air volume, one needs to check that no draft or internal wind is created inside the room.

Thus:
Fan required for volume replacement in flank b as seen in section z-z
2339.86m³ x 8 (time per day replaced) = 18718.88m³ total volume of air to be changed
thus 18718.88m³ / 12hours = 1559.91m³h / 2 shafts = 779.95m³h
thus one needs to change 779.95m³ h of air every hour:
18718.88m³ / 12 hours / 60min = 26m³/min per fan.
turbo fan from Ewha machinery ltd. manufacturers a fan that passes 28m³/min with no noise.
fan no 2#: size_ 480mm x 330mm x 230mm with o.62kw power requirement to drive the shaft.

7.2.3.1c

Air movement required in shaft, air movement in room in flank b as seen in section z-z
779.95m³h / 4m² = 194.99mh in shaft
thus: 194.99mh / 3600 = 0.05m/sec
0.05m/sec x 1000 =
50mm/sec required for movement in shaft to replace air 8 times per day.

7.2.3.1d

Resultant air movement in room in flank b as seen in section z-z
779.95m³ x 3 rooms = 2339.86m³ total volume per day
2339.86m³ / 12hours = 194.98m³h
max air movement area: 10200mm x 3200mm height = 32.6m²
thus 194.98m³h / 32.6m²
=5.98m/h, but to replace 8 times every 12 hours.
5.98m/h / 8 x 12 = 9m/h
9m/h /3600sec = 0.003m/s air movement inside room for replacement of air 8 times per day
Note: one feels air only at 5m/s, thus no wind draft will be experienced, but total air replacement will occur 8 times per day, making it fully passive ventilated rooms

7.2.3.2

ELECTRICAL REQUIREMENT FOR EXTRACTOR FANS AND LOUVRE SYSTEM
Flank A; B SECTION Z-Z

Extractor turbo fan : 0.62kw x2 fan units x 12 hours = 14.88 kWhr per day
fan Louvre jet: 0.1kw per motor, single motor = 3 louvers
thus 42 louvers in take and exhaust vents / 3 = 14 motors
14 x 0.1kw = 1.4kw

14 motors @ 100w each @ 1min/h = 1400w
1400w / 1000 = 1.4kw @ 1min/h
1.4kw / 60sec = 0.02kw/sec x 12hours
0.28kWhr per day

0.28 + 14.88 = 15.16kWhr per day
as noted previously the voltaic has capacity at minimum & maximum to generate
minimum 26.72kw x 7hrs = 187.04kw/h
maximum 26.72kw x 9.91hrs = 264.8kw/h
thus in both cases one has
171.88kWhr per day left for store for public facilities and corridor lighting
249.64kWhr per day left for store for public facilities and corridor lighting

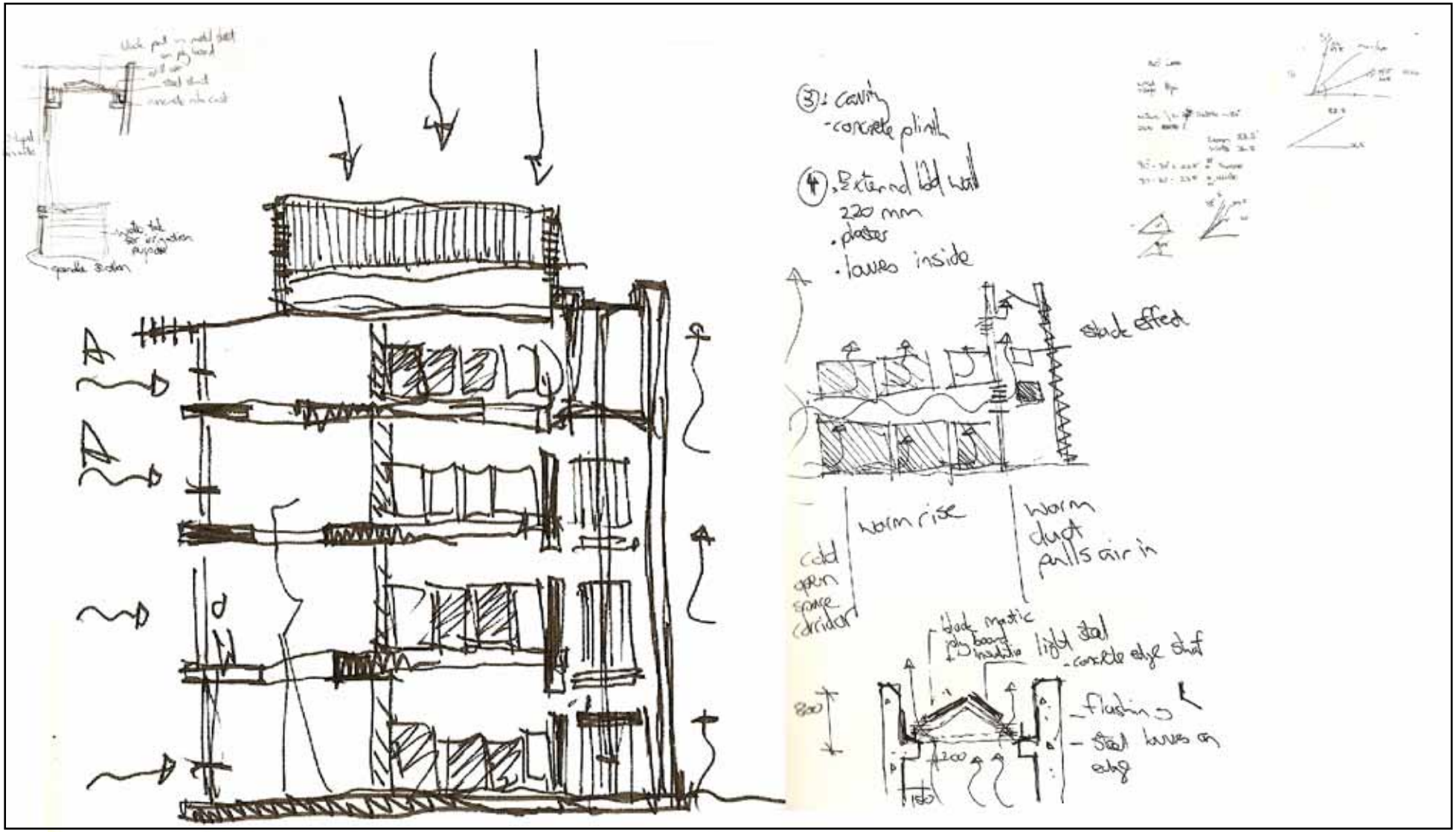
7.2.3.3

Photo voltaic energy harvest quantity:
note photo voltaics are only mounted on flank a & b.
SEE CALCULATION IN CHAPTER 5

FLANK C
Passive ventilation process sketch design and detailing

Figure. 115a
Flank C exploration stack vent shafts.

Figure. 115b
Flank C exploration of sun angles, as seen in previous drawings.



5.3.7

SITE CALCULATIONS

(SEE FIGURE 40 FOR AREA REFERENCE)
CALCULATIONS AS NOTED ON DWG: SITE, SERVICES & STRUCTURE PLAN

5.3.7.1 PHOTO VOLTAIC ENERGY HARVEST QUANTITY: figure 42, indicated area in red.

NOTE PHOTO VOLTAICS ARE ONLY MOUNTED ON FLANK A & B.
TOTAL VOLTAIC AREA FLANK A_ 87.38m²
TOTAL VOLTAIC AREA FLANK B_ 87.38m²
AS PER AMERICAN STANDARDS,75ft² IS REQUIRED FOR 1kW of energy.
thus 75ft² x 0.093m² = 6.54m² is required for 1kW of energy.

87.38m² / 6.54 = 13.36kW X2
TOTAL OF 26.72kW ENERGY TO BE HARVESTED.
AVG SUNLIGHT HOURS PER DAY PER ANNUM OVER PAST 11 YEARS =Min avg 7Hrs per day, Max avg 9.91Hrs per day
(Data station [0513314C9] - PRETORIA EENDRACHT)
Minimum 26.72kW X 7Hrs = 187.04kWhrs
Maximum 26.72kW X 9.91Hrs = 264.8kWhrs
ESKOM COST: 44.39c per kWh
thus 225.92 avg x 44.39c = R.100.29 saving per day

Note, energy harvest used primarily for passive ventilation system,
serving as switch for the extractor fan and automated louvered system, connected to a temperature gauge. See passive ventilation, electrical motor and air replacement calculation. differences of energy stored in power packs at rooftop, to be used for low voltage incandescent lighting in public toilets and along public corridors at night time

5.3.7.2 WATER CATCHMENT ROOF:
FLANK B+C ROOF AREA:1949m²
FLANK A ROOF AREA: 530m²
PARKING ROOF AREA: 2591m²
ALTERATION ROOF AREA: 144m²
TOTAL AREA: 5214m²
MAX RAINFALL PAST 17 YEARS: 1546.3mm / 365 = 4.24mm per day average
MAX MONTHLY RAINFALL PAST 17 YEAR: 281.1mm / 31 = 9.07mm per day
(Jan 2006,data station [0513465 1] - PRETORIA UNIV PROEFPLAAS)

MAX MONTH_
9.07mm / 1000 = 0.01m
5214m² x 0.01m = 52.14m³, per day at max rainfall
52.14m³ x 31 = 1616.34m³ per month at max rainfall
1000l = 1m³, thus 1616.34m³ x 1000l = 1616340L per month of max rainfall

ANNUAL MAX AVERAGE_
4.24MM / 1000 =0.004m
5214m² x 0.004m = 20.86m³, per day at max yearly average
20.86m³ x 365 = 7612.44m³ per year at max yearly average
1000l = 1m³, thus 7612.44m³ x 1000l = 7612440L per year at yearly max average

5.3.7.3 GUTTER SIZE REQUIREMENT:
TOTAL ROOF AREA: 5214m²
140mm²/1m² , regulation standard
5214m² x 140mm² = 72996mm² gutter area required
Proposed size: = 345429mm², reason for over size, for architectural aesthetic and steep roof pitch angle 25°, thus increased flow rate.

5.3.7.4 DOWN PIPE SIZE REQUIREMENT:
TOTAL ROOF AREA: 5214m²
100mm² / 1m², regulation standard
5214m² x 100mm² = 521400mm²
521400mm² / 15 proposed down pipes = 34760mm² per down pipe
4/3 x √34760mm² = 186.44mm□ for 15 down pipes required, as per design intent the gutter water tank detail is to be expressed and thus size is correct for both architectural

5.3.7.5 WATER TANK SIZE REQUIREMENT:
NOTE: Proposal for water harvest at current for irrigation purposes only any and all overflow and excess to be discharged into water-pipe under square into storm water channel, excess water at parking garage to be discharged into public park and retained and discharged by method of berms and large vegetation growth.

Water tanks detail
2 x 4 stack (3&4.8m per stack) 3325mm□,
= Πr²: Π1662.5mm² = 8.678m² x 16.8m = 145.79m³x2 x 1000l = 291580.0L
1 x 3 stack (3&4.8m per stack) 2264mm□
= Πr²: Π1132.0mm² = 4.023m² x 16.8m = 67.59m³ x 1000l = 67586.4L
7 x 3 stack (3&4.6m per stack) 1126mm□
= Πr²: Π 563.0mm² = 0.995m² x 16.8m = 16.72m³x 7 x 1000l = 117040.00L

total water store available:
291580.0 + 67586.4 + 117040.0
= 476206.4L
DAILY MAX AVERAGE CATCHMENT: 16163401L / 31 = 521400.03L PER DAY
MONTHLY MAX AVERAGE CATHMENT:16163401 PER SINGLE MAX AVERAGE MONTH
476206.4L - 521400.03L
= 45193.63L excess overflow into public park and storm water channel,
NOTE: berms to be designed by landscape architect
to allow for excess quantity.

5.3.7.6 TOTAL SITE WATER CATCHMENT INTO STORMWATER CHANNEL& BERMS:
SITE AREA EXCLUDING BUILDINGS :8272m² excluding public road space including public park
(note overflow from roof as calculated previously to be added:
MAX RAINFALL PAST 17 YEARS: 1546.3mm / 365 = 4.24mm per day average
MAX MONTHLY RAINFALL PAST 17 YEAR: 281.1mm / 31 = 9.07mm per day
(Jan 2006,data station [0513465 1] - PRETORIA UNIV PROEFPLAAS)

MAX MONTH_
9.07mm / 1000 = 0.01m²
8272m² x 0.01m² = 82.72m³, per day at max rainfall
82.72m³ x 31 = 2564.32m³ per month at max rainfall
1000l = 1m³, thus 2564.32m³ x 1000l = 2564320L per month of max rainfall

ANNUAL MAX AVERAGE_
4.24MM / 1000 =0.004m²
8272m² x 0.004m² = 33.09m³, per day at max yearly average
33.09m³ x 365 = 12077.12m³ per year at max yearly average
1000l = 1m³, thus 7612.44m³ x 1000l
= 12077120L per year at yearly max average

Note: existing storm water channel has been designed to handle all public stormwater of sites and road surface as per zoning regulations noted on this drawing at the relevant site zoning information for this site: ERF 29552 Mamelodi ext 5 storm water channel to be modified, RENO MATT to be installed, as per manufacturer: MACAFERRI specification.

5.3.7

Figure. 42
New proposed Community Engagement facilitator (CEF) roof plan

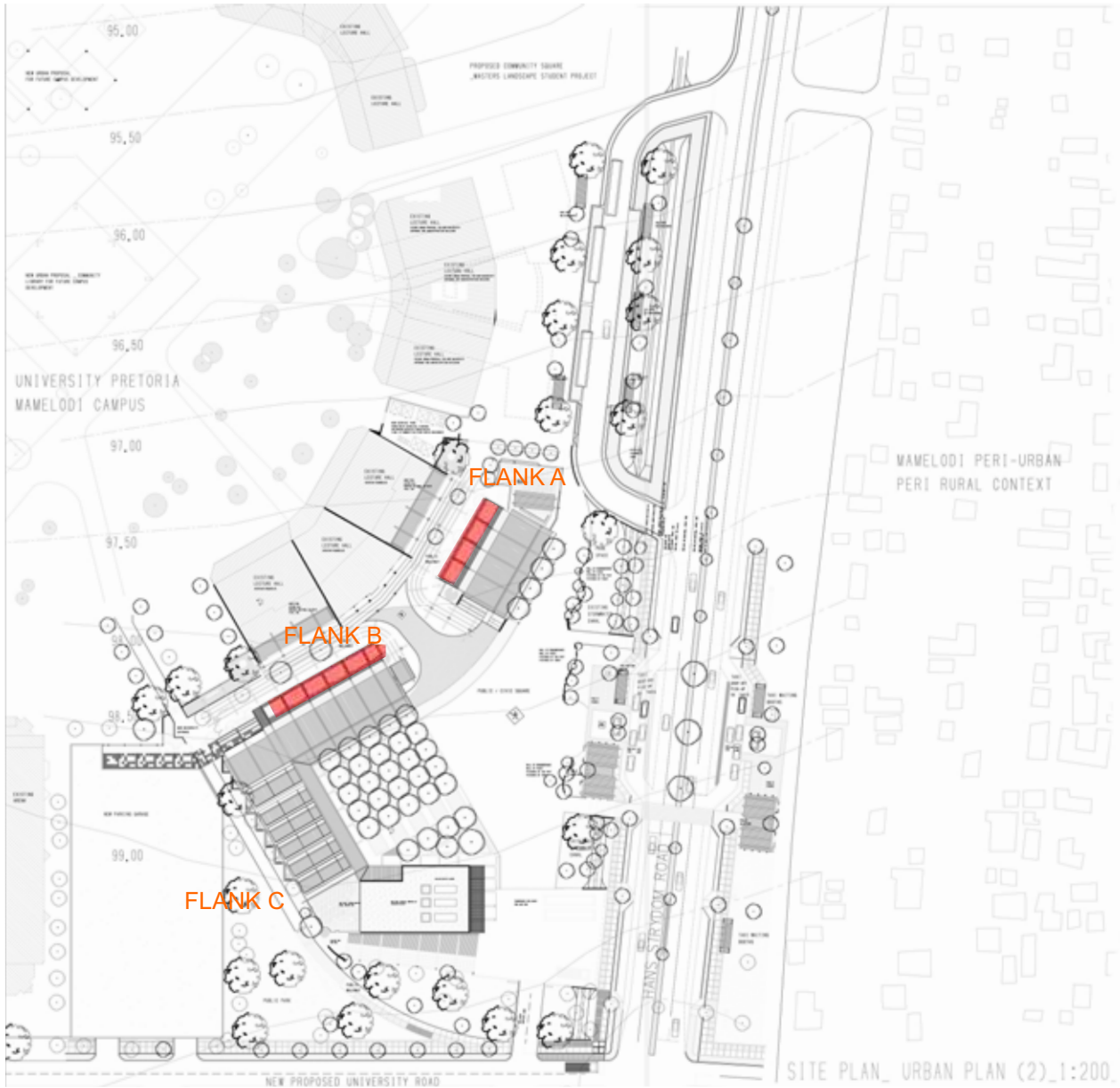


Photo voltaic

Figure. 116
3d images of ventilation shafts & stack vents in CEF building.

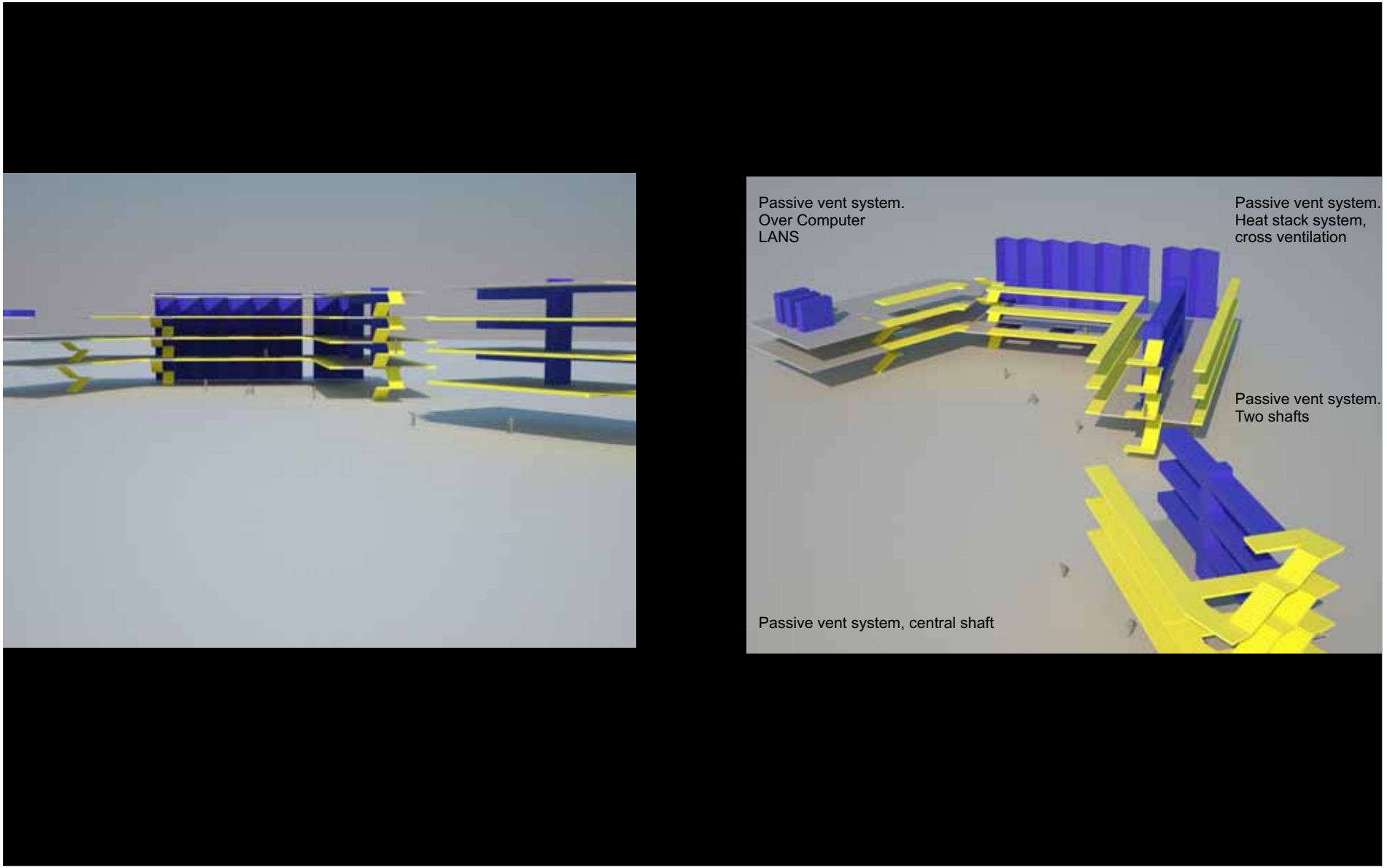
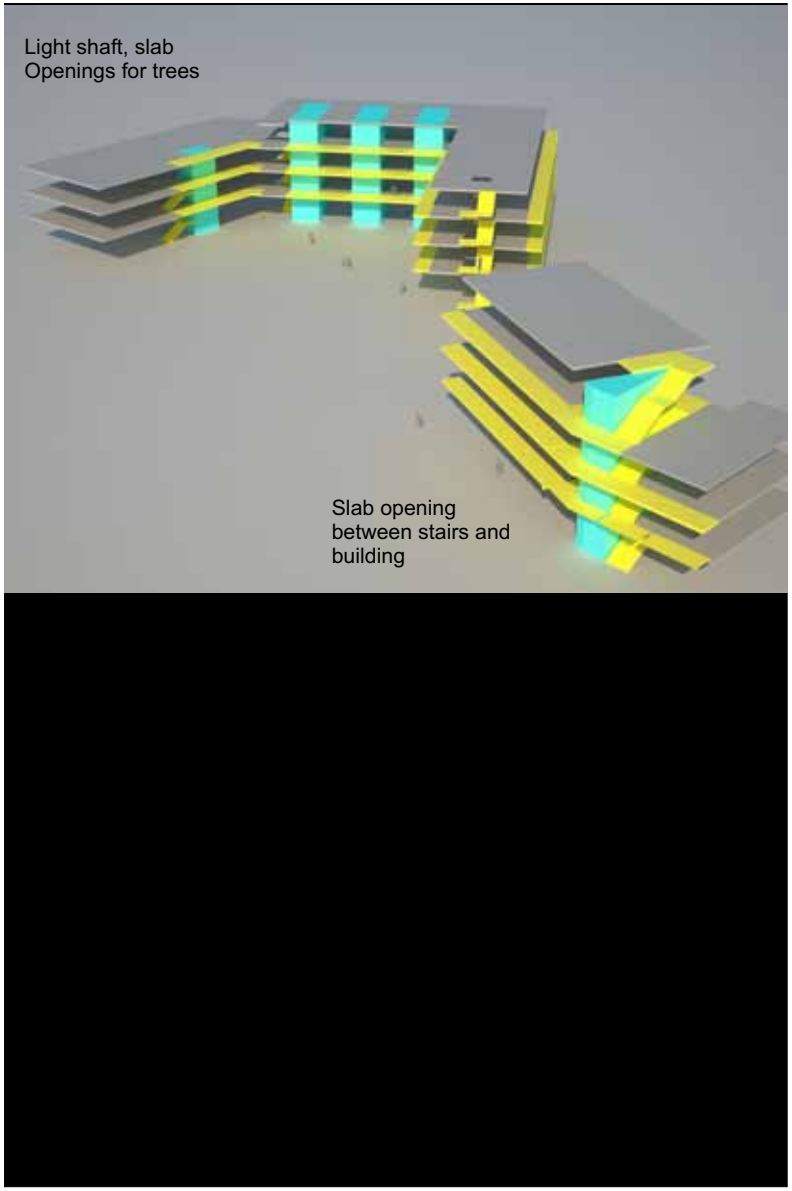
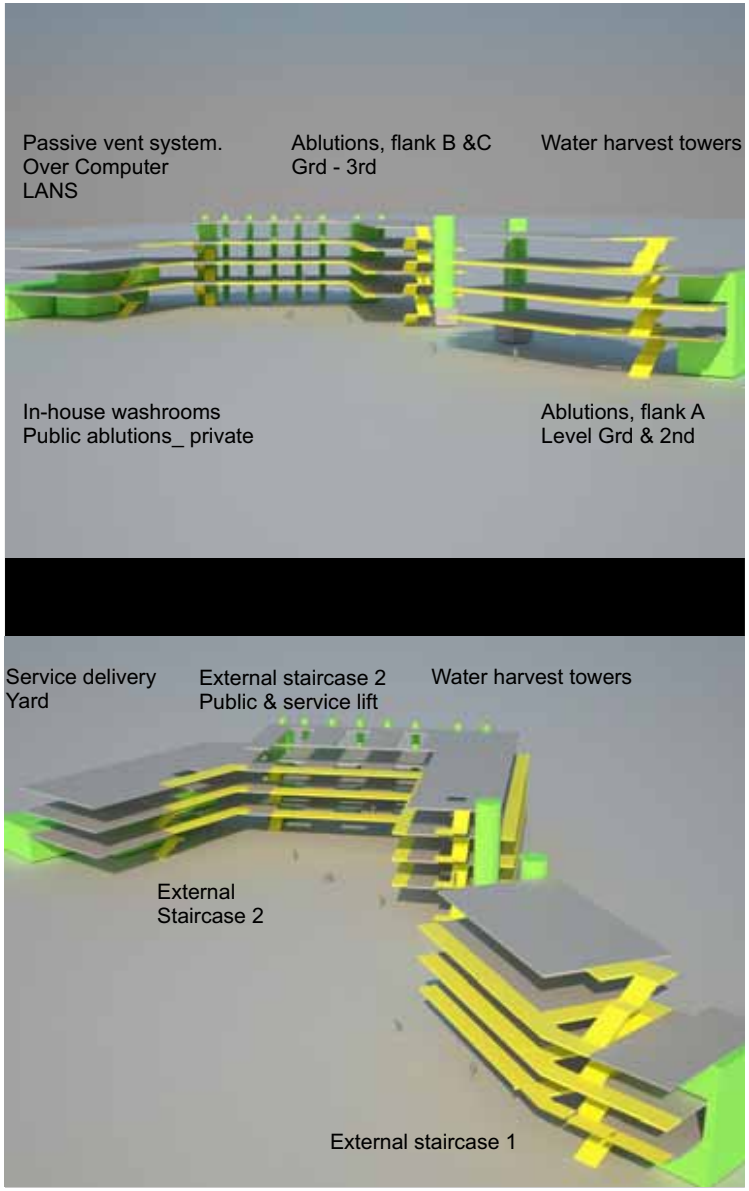


Figure. 117
3d image of light shafts in CEF building.

Figure. 118 a & b
3d image of service points in CEF building.





Concrete

Walkways & stairs

Steel

Ventilation systems

Service areas

Light shafts

7.3_

TECTONIC APPROACH

C.Norberg Schultz 1979, pg 58

"The distinctive quality of any man made place is enclosure, and its character and spatial properties are determined by how it is enclosed."

7.3.1

SEE FIGURES: 121 - 123 for tectonic clarification

Central core structure

Concrete columns, with brick infill

Externall structure

Lightweight steel structure with balustrading and polycarbonate sheet skin

Central floor structure:

Two way span concrete slab system on concrete beams, effectively forming a ring beam with the steel I-BEAM. The span of 10550mm for a floor slab has been reduced to 5300mm by using the beams. This also allowed for the entire structure to form a single module and thus reduce any possible deflection. If one looks at the costing analysis done for the most effective slab, column and beam as seen on Section Z-Z dwg this outweighs any other tested system.

Outer floor structure:(walkways)

Steel frame with mentis grid and timber floor boards allowing ventilation vertically along building, to work in conjunction with the polycarbonate skin on the Univeristy facade of flank B.

C.Norberg Schultz 1979

" A meaningfull relationship between horizontals and verticals also depends on the form of the roof."

The roof typology is intended to be an extended skin over building. Becoming a morpholgy of scale and shape, terminating at public square into light weight Permeable wall structure.

Top roof Flank A + B; figure 121

Curved edge to match curved roof typology of existing building on campus

Contrast on typology by using lightweight polycarbonate sheeting as appose to heavy weight steel sheeting.

Roof typology changes as it moves towards the eastern side on the public facade, opening up and covering the square. Matching single lean-to roof typology of surrounding shack and informal housing. Use of corrugated sheeting Br 7 to match the use of steel plates and sheeting for shack dwellings.

Roof and structure, laid into modules enforcing the principle idea of layers, with vertical steel members breaking the massing, dividing the unit into smaller units. This gives a more human scale appearance to the built form. The detail on Section Z-Z expresses this principle with the sheeting laid between steel member and flashed under and over.

Top roof Flank C; figure 121

A morphology of roof A & B, transforming into light shaft roof pitches: facing north north west. Allowing light to enter meeting rooms and public corridors through the cut back concrete slab openings. This allows light on Flank C during morning and afternoon, avoiding cold shadow spaces. Simultaneously dividing the public space and the private space but connecting the sense of place of the two domains. As noted by Shultz.

C.Norberg Schultz 1979, pg 63

"Evidently this meeting is expressed in the wall and in particularly in the openings which connect the two domains."

Rooftop function venue with flat slab, roof light openings fitted over computer flat slab to allow natural light to enter the double volume space and lan without ambient light affect functionality of room

Top roof Flank C front.

Roof line completed with curved skin of polycarbonate over sealed windows, as room houses computer LAN.

Note: All structural calculations for beams, columns: steel, concrete and timber on technical drawings.

Figure. 119 Layers of material & sketch design

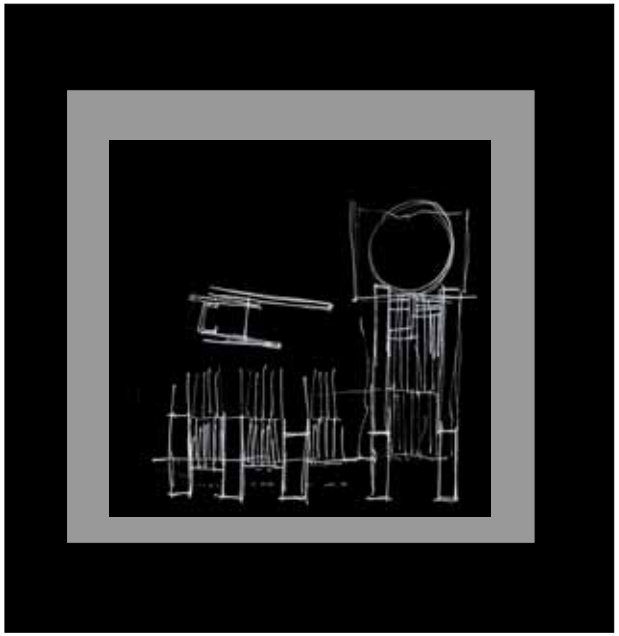


Figure. 120a
Tectonic dialogue a story board, precedent images of site and immediate context_ small scale structures

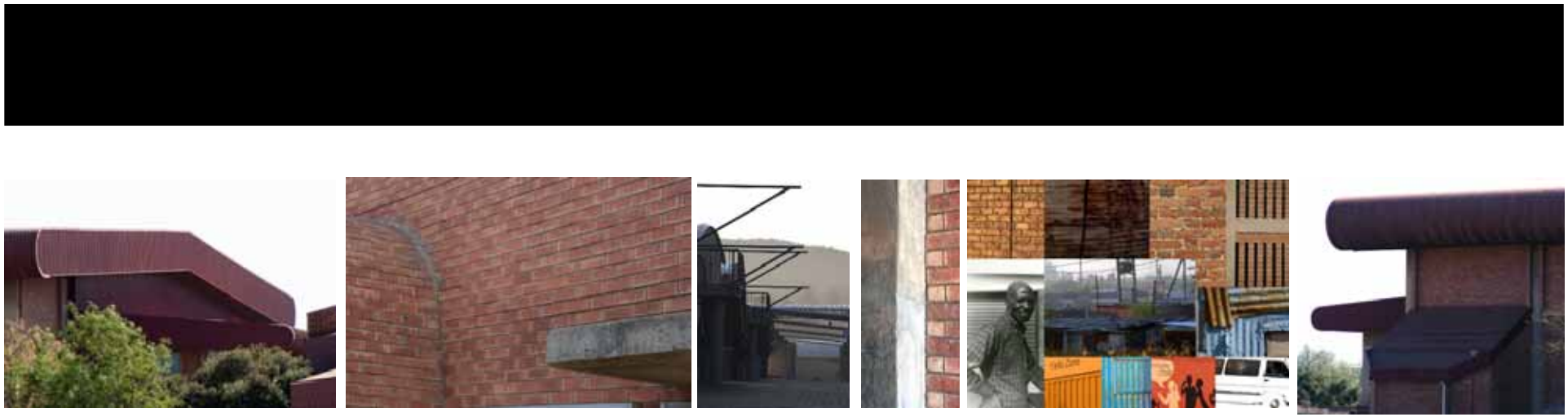
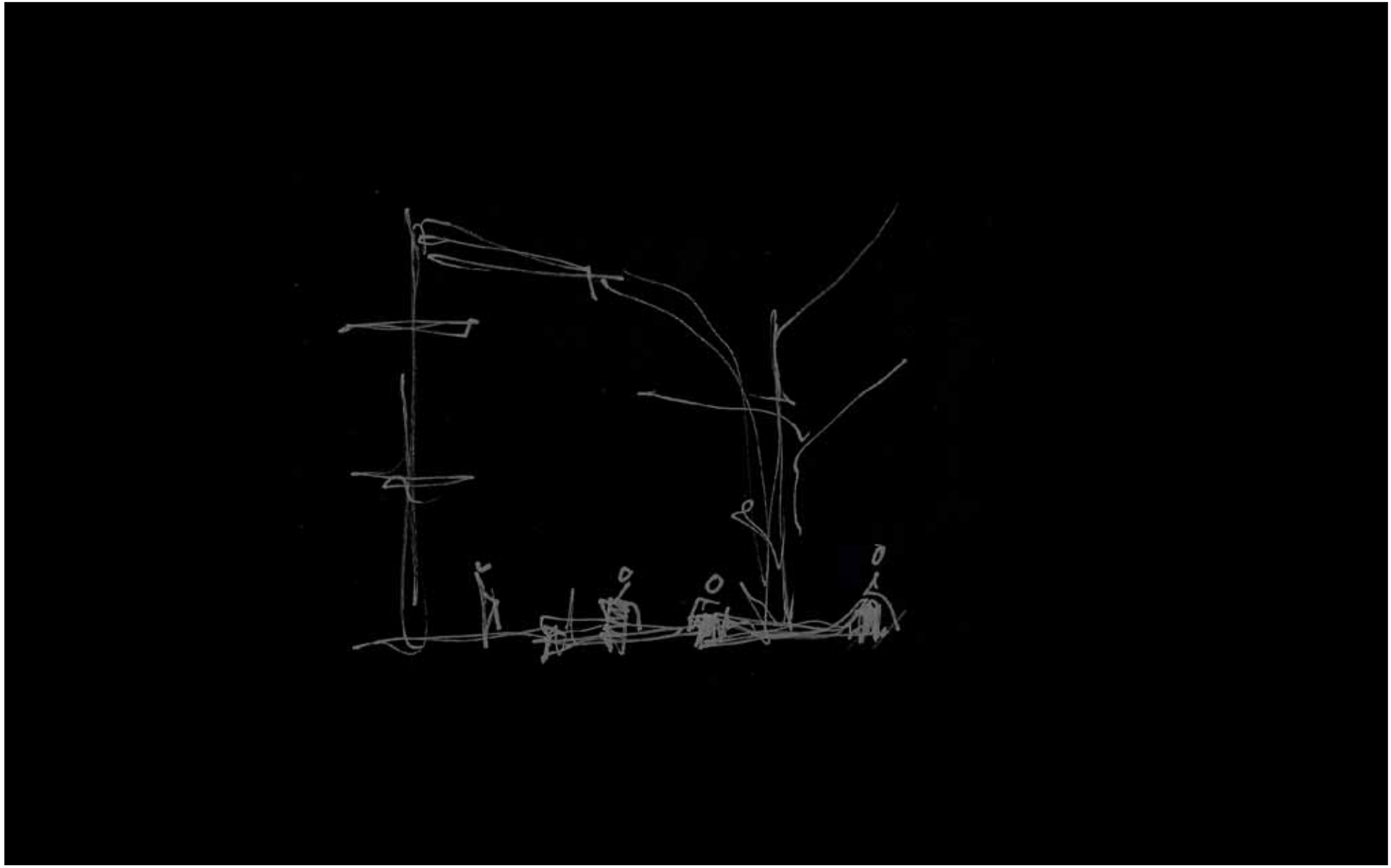


Figure. 120b
Tectonic dialogue a story board, precedent images of site and immediate context_ large scale Structures

Figure. 121a, b
Tectonic design development



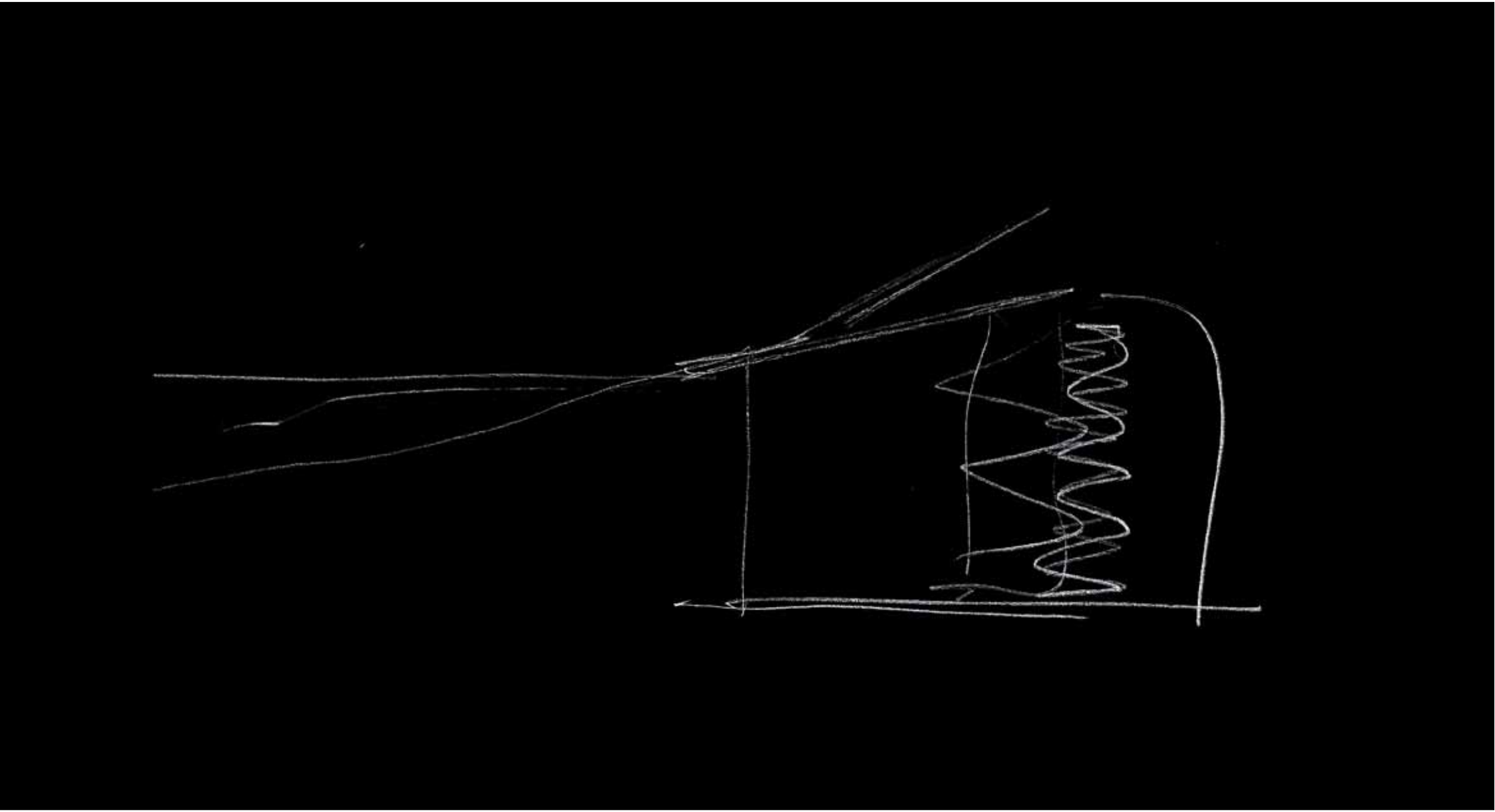
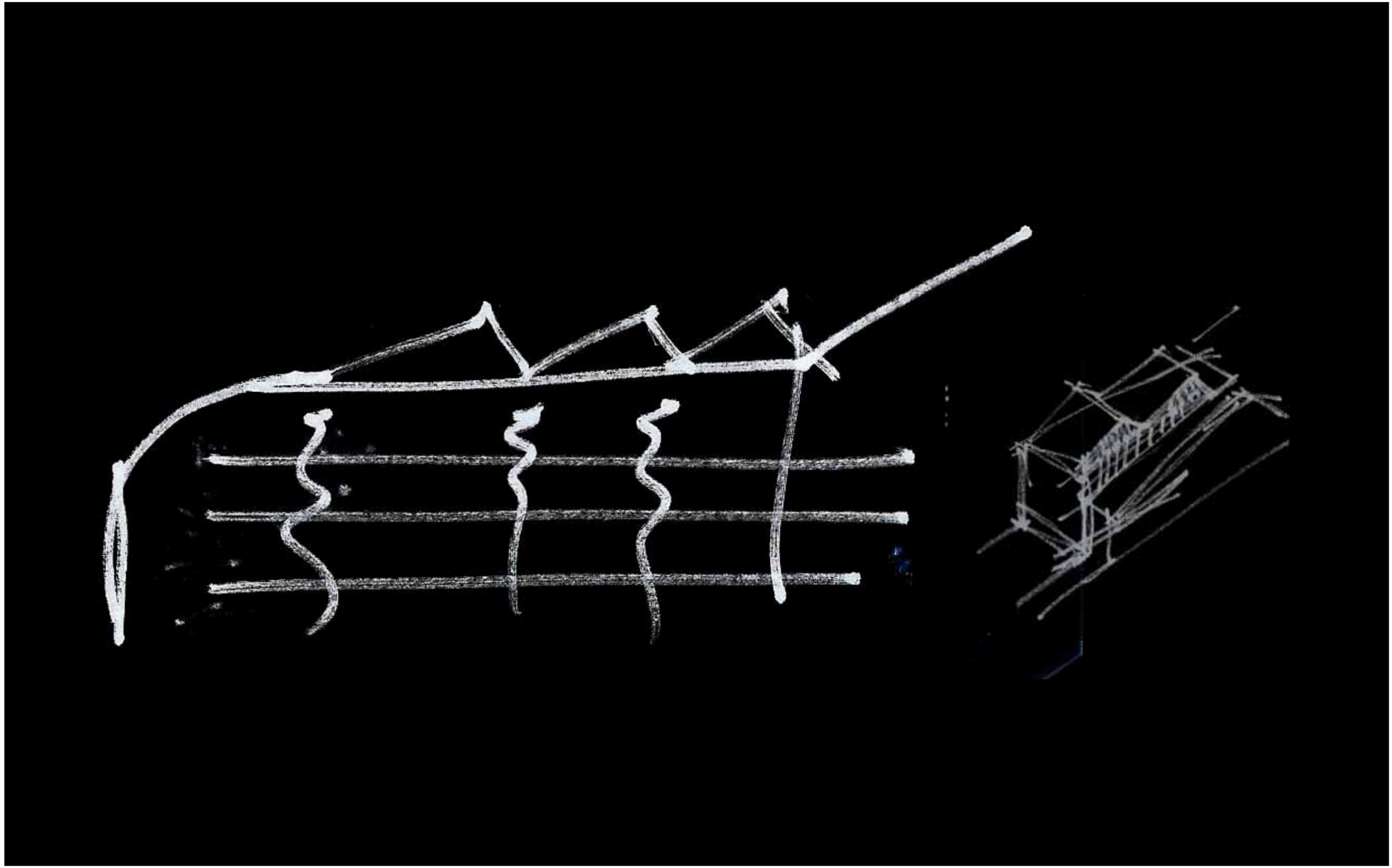


Figure. 121c,d
Tectonic design development



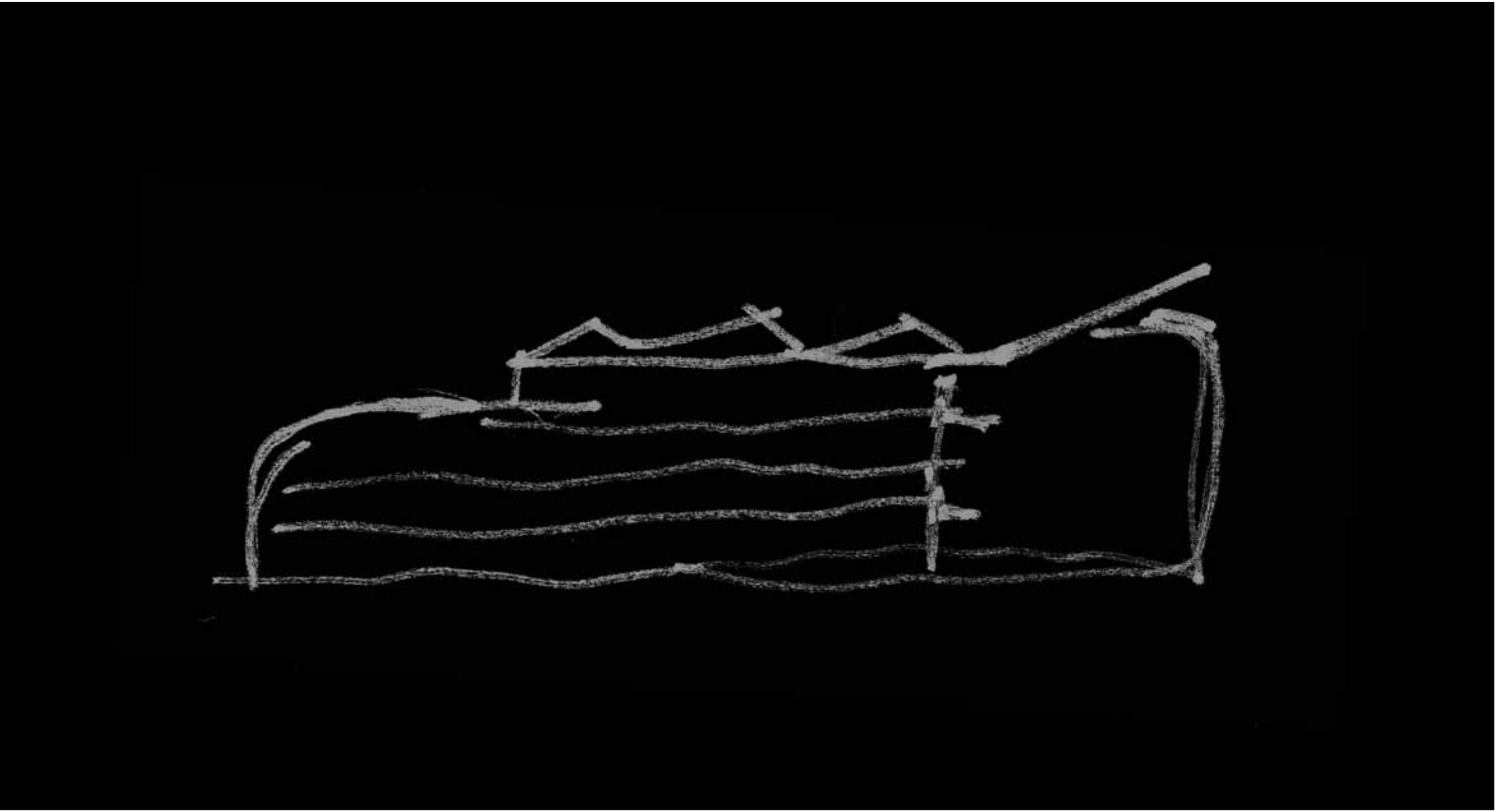


Figure. 122
3d images total CEF tectonic form and structure

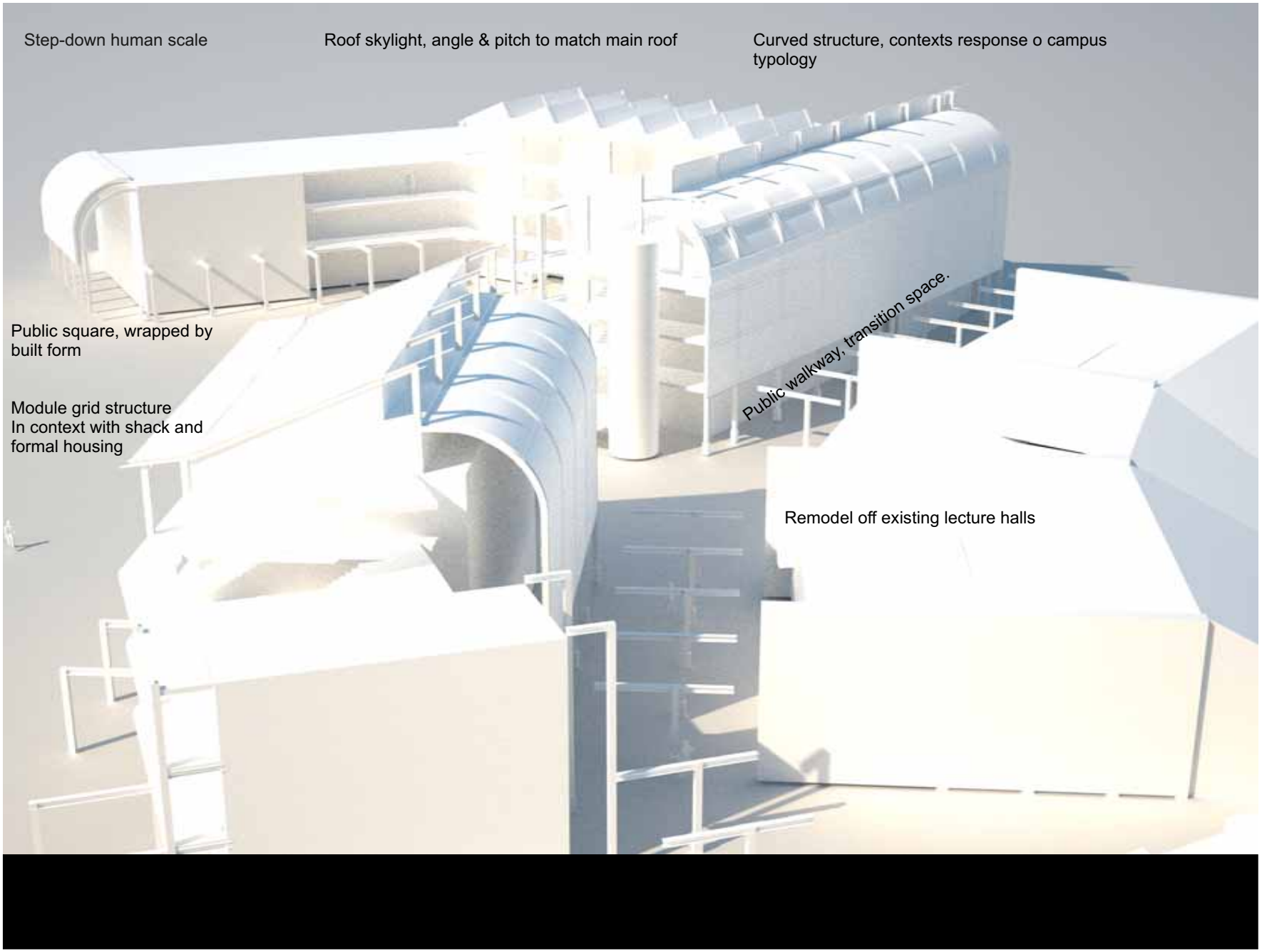


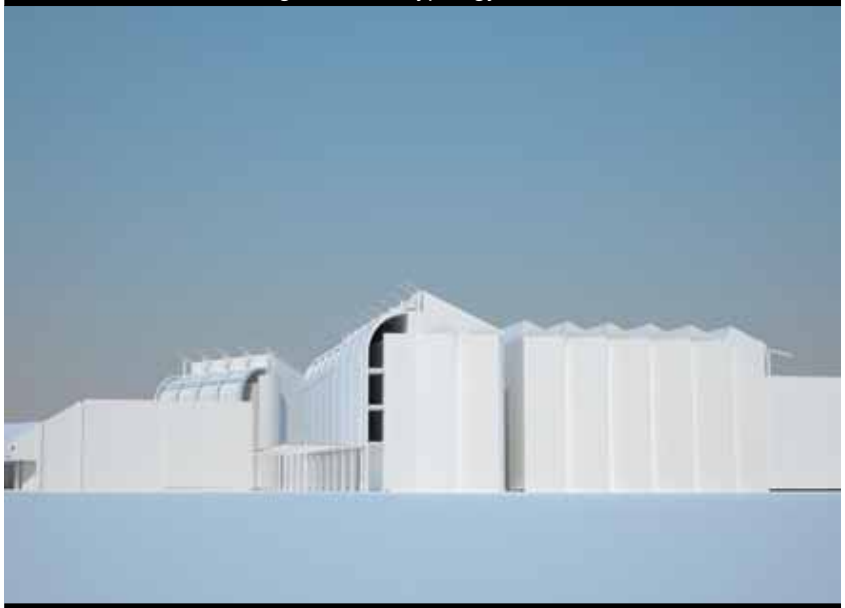
Figure. 123 a -d
3d 4 images total CEF
tectonic form and
structure

West elevation, building mass and typology In context with campus

North East elevation, building mass and typology, opening up to public square

Major mass at centre, stepping down in scale to outer flanks
A &C terminating at roadway.

South elevation, building mass and typology



Birds eye view, building mass and typology.
Emphasis on public spaces. Visual and physical connections

7.4_

7.4.1

MATERIAL AND EMBODIED ENERGY

Note, embodied energy values are based on international standards, South African value will variy depending on material produced locally, thus a 5 - 10% reduction and addition can be expected. These figure are based on new material, preferred use of recycled material, will greatly reduce energy value.

Material type	intended use	Embodied energy	U-VALUES
Brick	_ New and recycled _ Structure in-fill	2.5 MJ/kg	0.35 - 0.96 W/m K
Corrugated steel sheeting_ Br 7	_ main structure _ public architecture _ taxi waiting stalls	8.9 - 32 MJ/kg	60+ W/m K
Mild steel flats	_ mentis grid _ solar shade	8.9 - 32 MJ/kg	60 W/m K
Concrete	_ site furniture _ public seating in building _ portal frame structure _ plinths and column bases	1.3 - 2.0 MJ/kg	0.18 - 2.1 W/m K
Steel H- & I- Beams	_ structure	8.9 - 32 MJ/kg	60 W/m K
Aluminium sheets	_ balustrade lazer cutting Artist design	227 MJ/kg	200 W/m K
Polycarbonate sheeting	_ skin facade _ part roofing	30.3 -70 MJ/kg	0.17 W/m K
Glass	_ windows	15.9 MJ/kg	0.8 W/m K
Per-specs plastic sheeting	_ selected openings	30.3 - 70 MJ/kg	0.17 W/m K
Timber hardwood & soft wood floor planks	_ walkways	2.5 MJ/kg	0.13 - 0.20 W/m K
Pigmentation			

Material intent:

To make use of low budget material, either recycled or new.
Intended to be constructed by local artisans, skilled and or unskilled.
Promote the idea of work and job creation.
It was also intended to make use of material that has an effective heat transfer value, so to allow for least heat gain in summer and similar in winter heat loss, working effectively with the proposed passive ventilation system.
As noted the intended use of material must submit to a low embodied energy count.
Aimed at being as far as possible carbon friendly, and using recycled material.
The use of recycle material does play in favor of this development with relation to context.
Effort and research has been done with regards to precedents on materiality as noted under chapter 6, 6.1.

_Nelson Mandela Interpretation centre

_Phillipi transport interchange

The use of specific materials are not limited to structure and aesthetics, but are also intended to serve as signage and legibility.
The material intend to be guidance to the blind using textures, colour to the illiterate that cannot read. Textured images to the colour blind who can not depict colour.
Hence the language of the building also serves as signage and guidance of the facility. Examples, figure: 25a

Final material use for signage type, layout and purpose as per signage diagram
Figure: 25b

Figure. 124
Materiality:
Poly-carbonate sheets
Brick work
Recycled metal sheets
Roof corrugated sheet
Concrete panels

Figure.
125a
Materiality:
Textures_
floor and walls

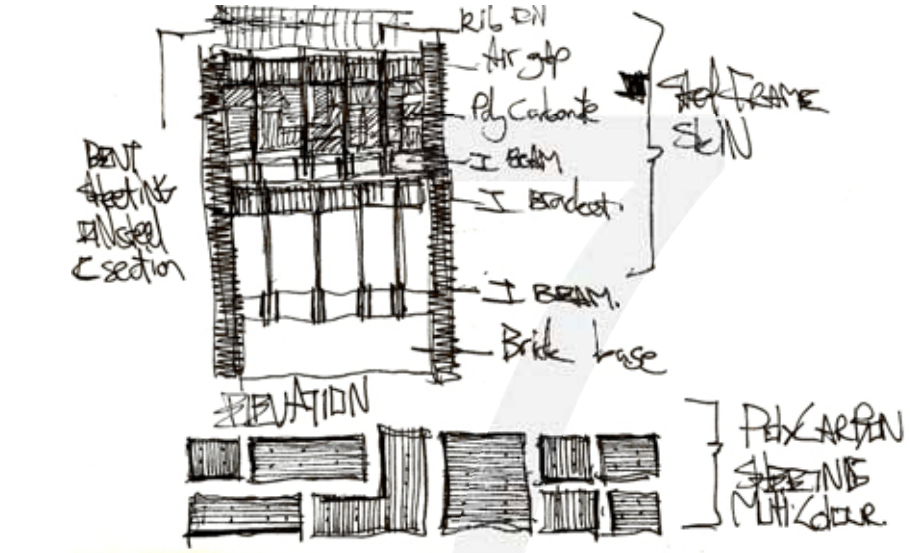
BRICK DETAIL SKETCH

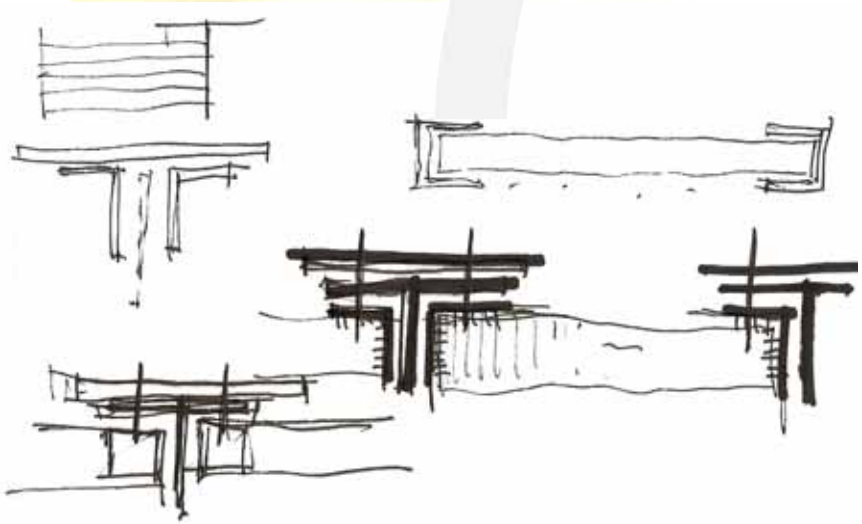
Figure.
125b
Materiality:
Early brick detailing at office corridors.

Creating concrete modules, brick layers and colour signage per floor and function

TECHNICAL DESIGN PROCESS_DETAIL SKETCHES

Figure. 126a
Technical design process sketches





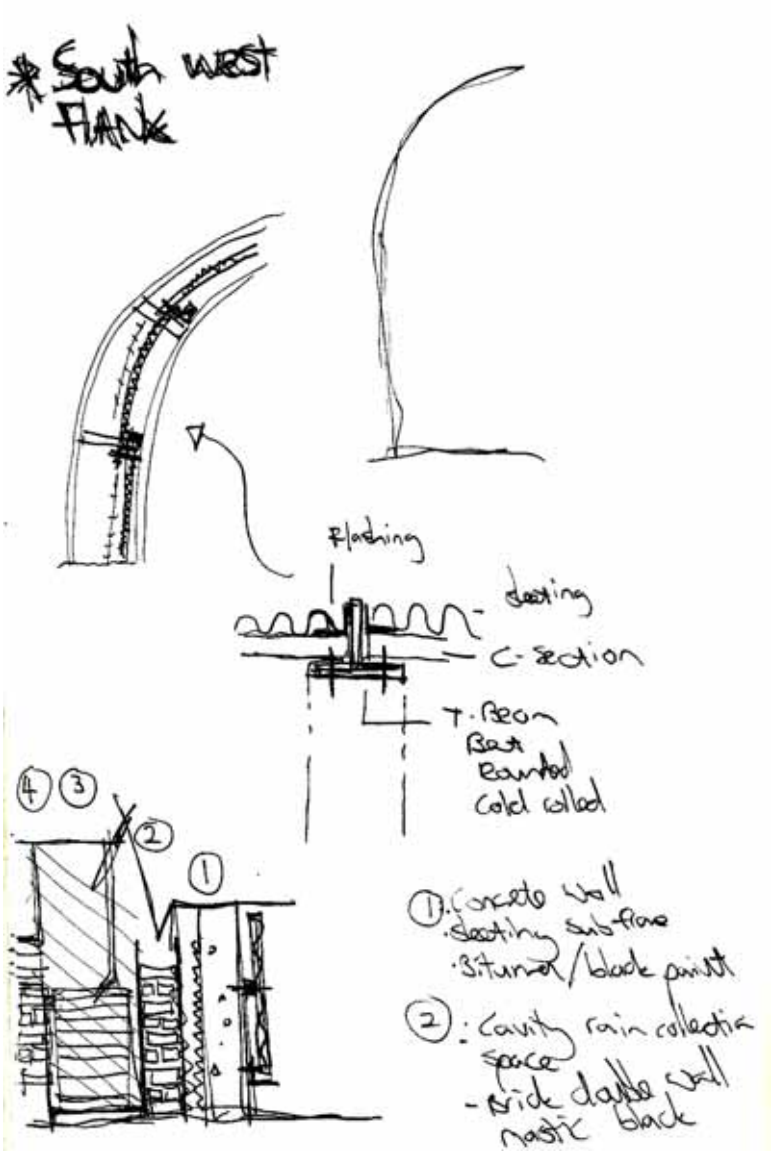
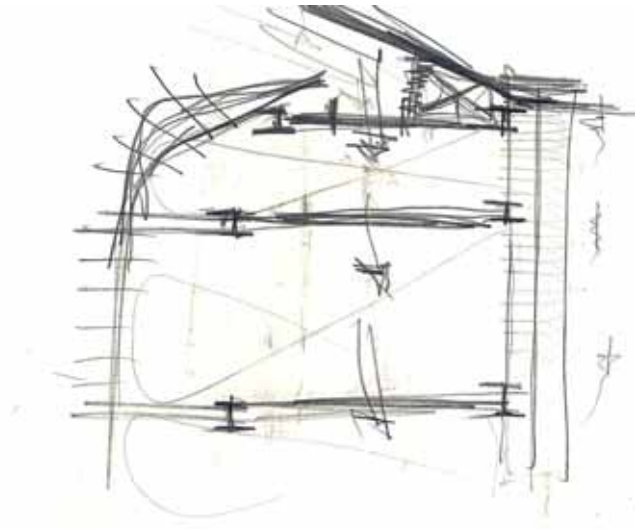


Figure. 126b
Technical design process sketches



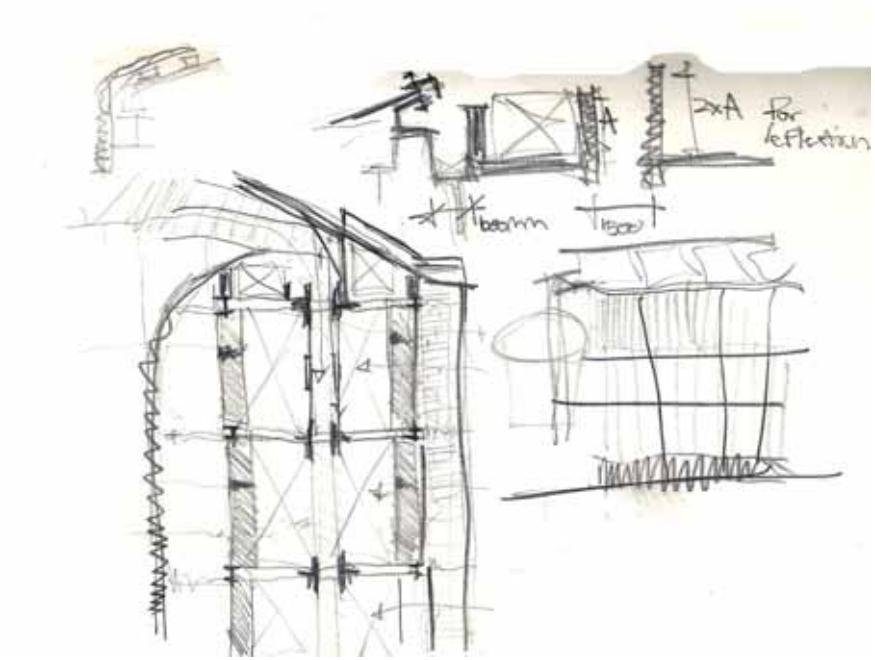
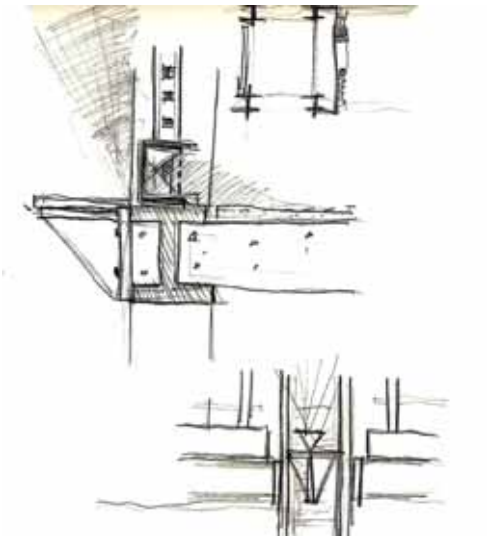


Figure. 126c
Technical design process sketches



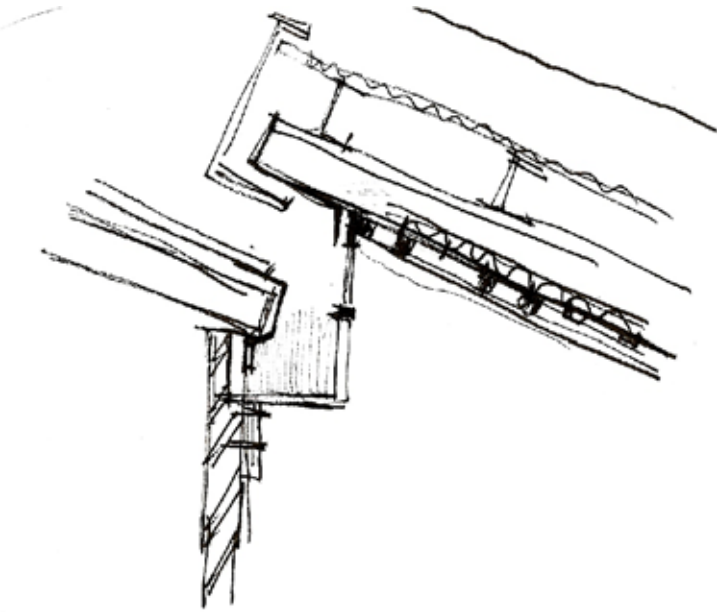
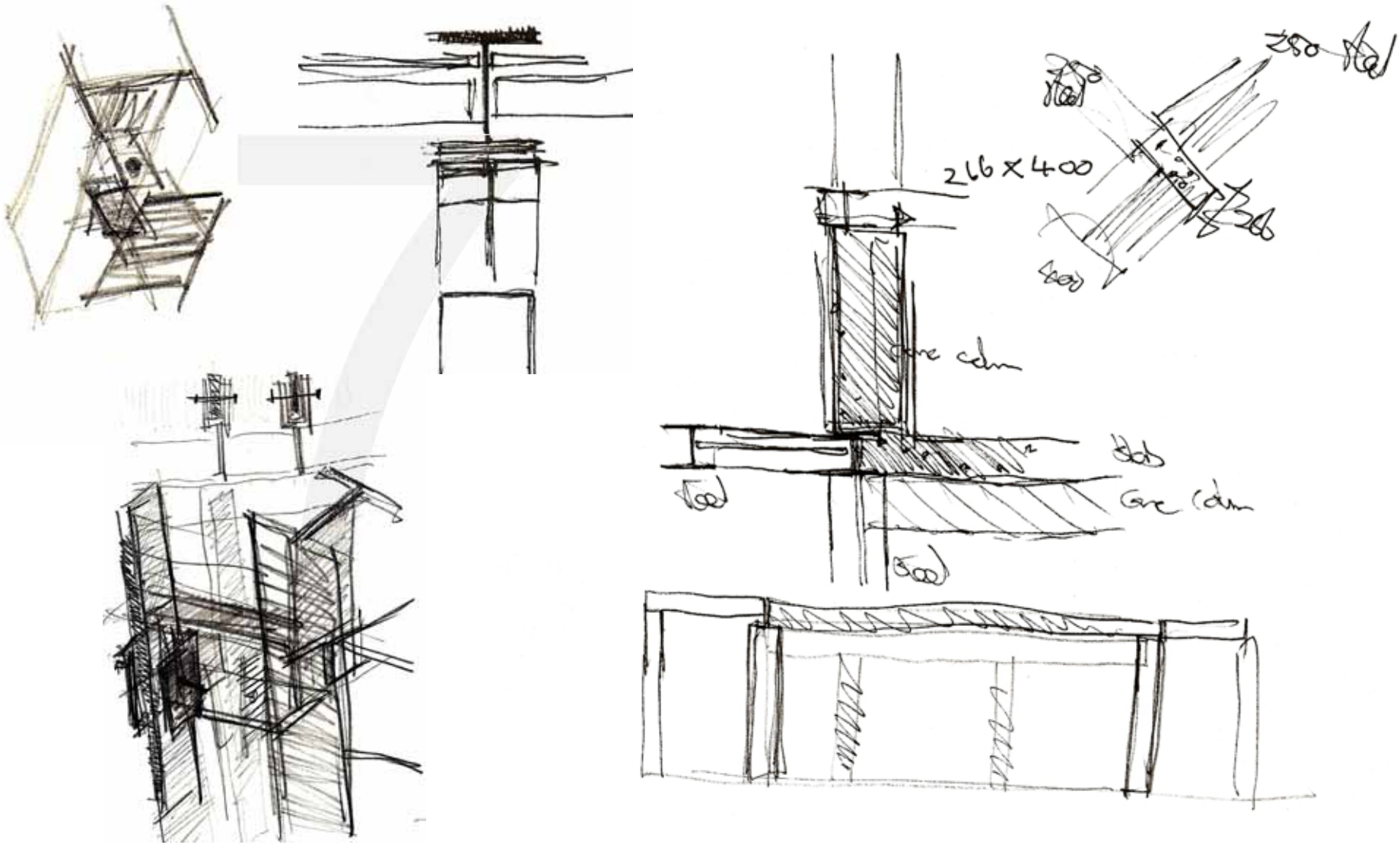
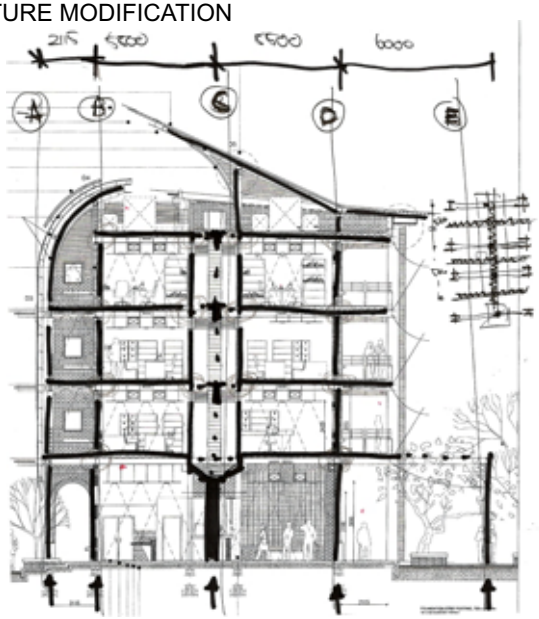


Figure. 126d
Technical design process sketches



DESIGN STRUCTURE MODIFICATION
PROCESS 1



Structure supports phase1

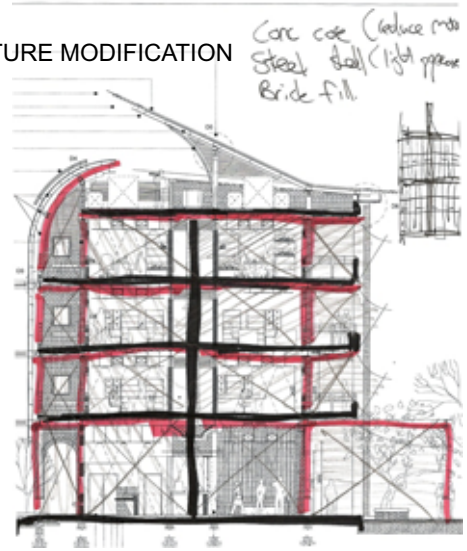
Figure. 127a
Technical design, structure modification process

DESIGN STRUCTURE MODIFICATION
PROCESS 2

Structure concrete Structure steel

Figure. 127b
Technical design, structure modification Phase 2

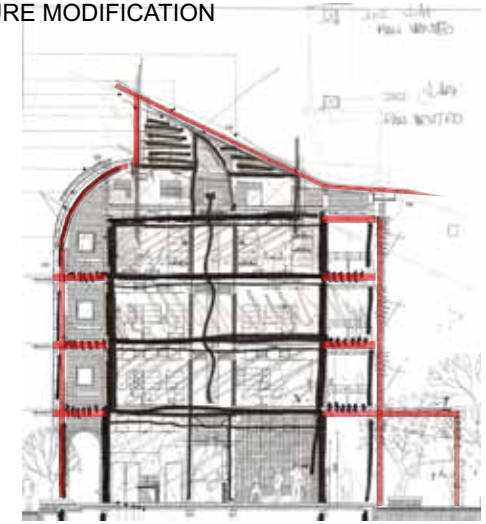
DESIGN STRUCTURE MODIFICATION
PROCESS



Structure concrete Structure steel

Figure. 127c
Technical design, structure modification process, phase 3

DESIGN STRUCTURE MODIFICATION
PROCESS 4



Structure concrete Structure steel

Figure. 127d
Technical design, structure modification process. Final phase

7.6_

EXISTING STRUCTURES_ IMAGES AND SKETCHES

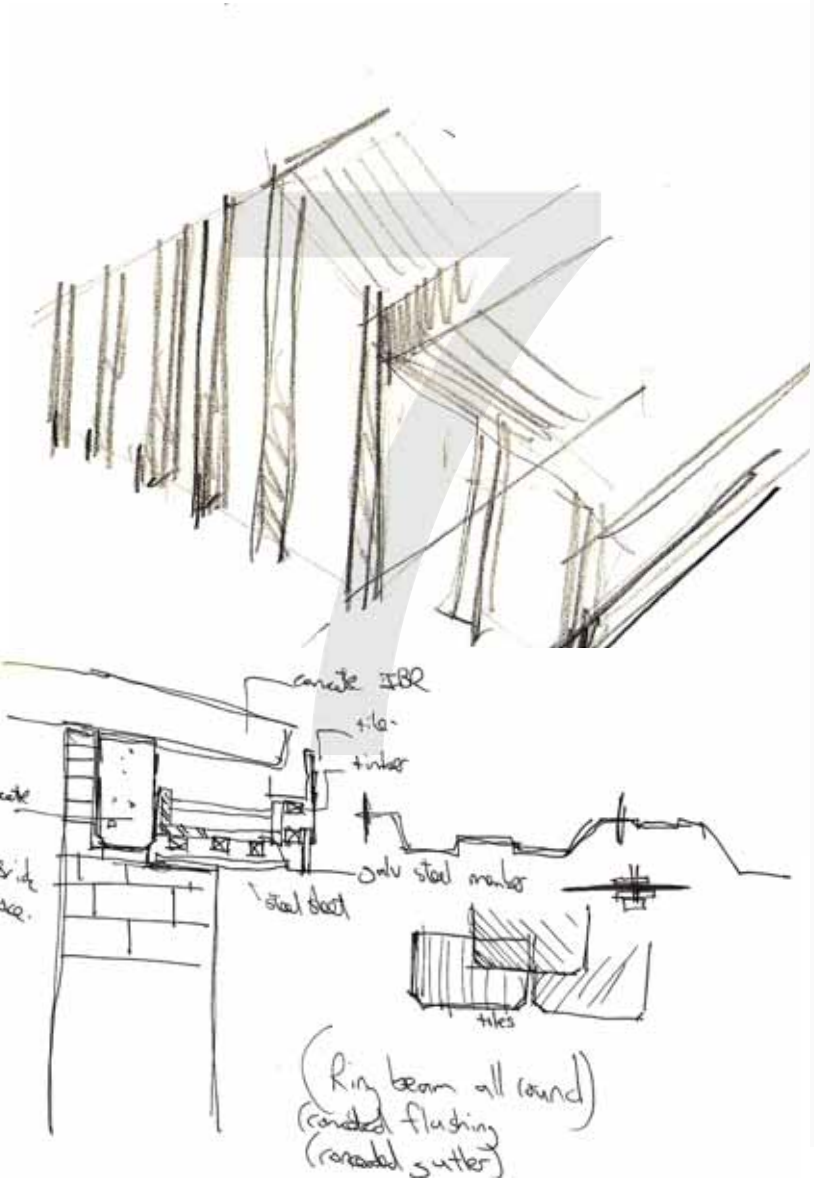


Figure. 128
Site technical sketches:
Elevations
Detail section

Figure. 129a
Structure
Lecture halls: roof steel frame

Figure. 129b
Structure
Lecture halls: internal

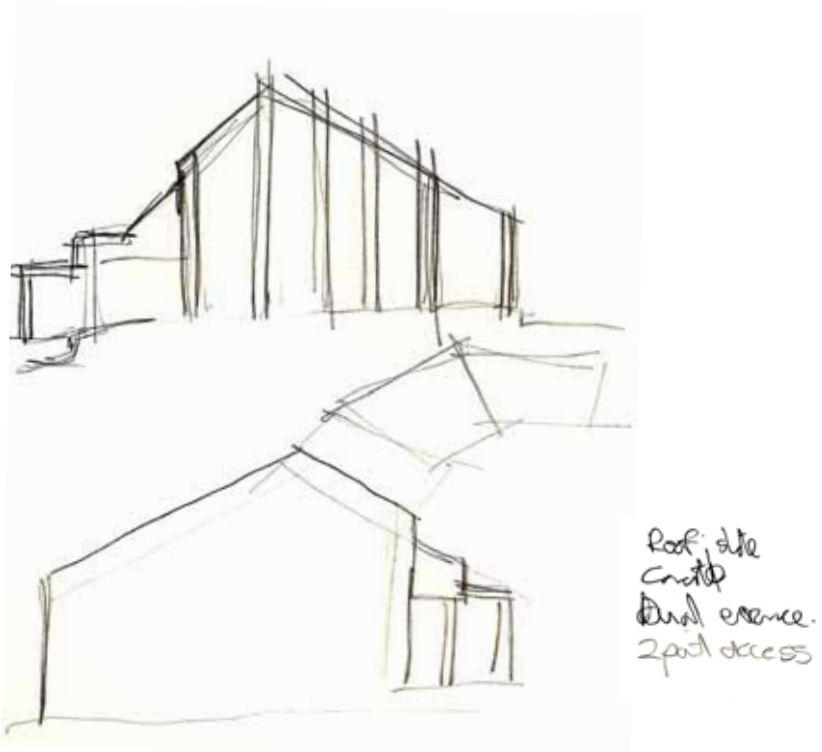


Figure. 130
Existing structure site plan

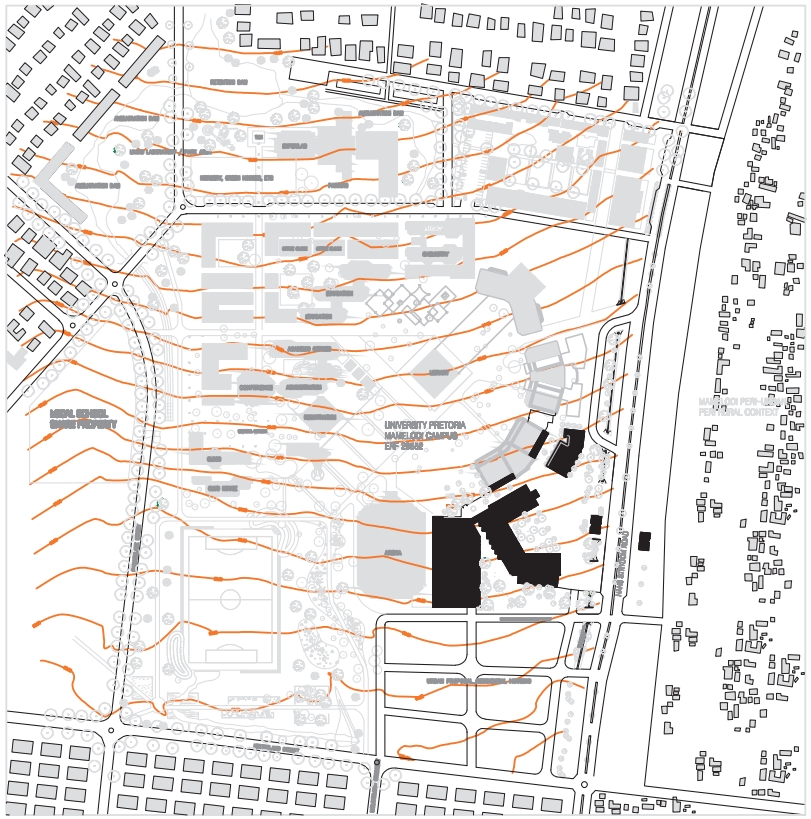
CHAPTER 8_

Technical Presentation drawings

8.1_

Figure. 131
Area map
scale NA
Location plan
1:6000 scale

AREA MAP



LOCATION PLAN _ SCALE 1:6000

DATE	SCALE 1:6000@A4
DRAWN BY	CHECKED BY
APPROVED BY	CHECKED DATE

SITE DESCRIPTION

University of Pretoria
Hans Glawion, ERF 28502
Mamelodi

DRAWING TITLE

COMMUNITY ENGAGEMENT FACILITATOR

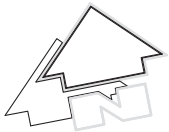
AREA MAP, LOCATION PLAN

PROJECT No.

1_Master Architecture dissertation 2009_University of Pretoria

DRAWING No.	REV.
MArch UP_PLAN_001_P01A_2009	C

REV	DATE	DESCRIPTION	BY
A	15.09.2009	TECHNICAL REVIEW	JN
B	25.09.2009	EXTERNAL TECHNICAL REVIEW	JN
C	01.11.2009	PRESENTATION CHANGES	JN



SCHEDULE OF AREAS:

ROOF COVERAGE (incl overhangs)	0.00 sqm
TOTAL HABITABLE FLOOR AREA_ GS	3094.00 sqm
PARKING GARAGE AREA_ GS	3475.00 sqm
ADDITION TO EXISTING_ GS	170.00 sqm
TOTAL HABITABLE FLOOR AREA_ 1st fl	2329.00 sqm
PARKING GARAGE AREA_ 1st fl	2291.00 sqm
TOTAL HABITABLE FLOOR AREA_ 2nd fl	2111.00 sqm
PARKING GARAGE AREA_ 2nd fl	2291.00 sqm
TOTAL HABITABLE FLOOR AREA_ 3rd fl	1043.00 sqm
TOTAL FLOOR AREA	8171.00 sqm
TOTAL FLOOR AREA garage	7957.00 sqm

UNIVERSITY SITE AREA	2501600.00 sqm
PROJECT SITE AREA	154000.00 sqm
PROJECT within SITE AREA	204277.00 sqm
ALLOWED FLOOR AREA RATIO	NA
PROPOSED FLOOR AREA RATIO	NA
ALLOWED COVERAGE	70 %
PROPOSED COVERAGE	10 %

CHAPTER 9_ Client_ Funding_ Development_ Management_ Costing

9.1_

THE CLIENT

The clients:

University of Pretoria
Government of South Africa, Department of Trade and industry on behalf of other departments.
Non Government Organisations
Citizens of South Africa

The secondary clients:

Mamelodi and Pretoria business fraternity
Hewlett Packard Inc.
Tswhane tourism authority

The development shareholders:

University of Pretoria
Government of South Africa, Public works department on behalf of other departments.

The social shareholders:

Mamelodi community
Pretoria East community
Non Government Organisations

9.2_

FUNDING

University of Pretoria:
Proposal includes the leasing or shareholding of property rights for the required area of property by the University of Pretoria, hence rezoning required.
Funding by the University for the development of the new University offices and public e-library.

Government of South Africa, Department of trade and industry.
Proposal includes 85% funding of facility development.

Non Government Organisations
Proposal includes 15% funding of facility development.

The project proposal includes:
Development value: Land value + estimate development value at date of completion and estimation.

University of Pretoria maintaining property ownership and % development share value thereof (development value - estimate development value.)
Government of South Africa, DTI:
Maintain 85% development share value thereof (development value - land value.)
Non Government Organisations
Maintain 15% share value thereof (development value - land value.) Renting of prescribed areas: The conference centres, HP i-centre, and business hot desk facility income after maintenance reduction and community overhead funding are divided according to percentage share value into a shared fund, available to the Department of Trade and industry for the sole use of funding for Mamelodi community development and upliftment.
Hence the noted % share adds to relative owners community development requirement per year.

To note: This development is a civic development and not a economic venture; with community interest at hand, thus funding is issued for community projects and development. The purpose of the facility is to accommodate civic amenities and community amenities, with limited income generation.
However design intent with regards to sustainable developing does allow for future change of function to a viable economic venture, note: this is not the sole intent and or vision for this dissertation.

9.3_

DEVELOPMENT PROPOSAL

An amalgamation of ownership thus the facility will be governed as a Section 21 non-profit organisation, run by members of the community, guided by government.
With application for a code 200 BBEEE full function organisation, as set out by the DTI.

If a development does propose development of rural developing black areas, and areas of past segregation it complies the BBEEE code for funding.
Full government_ DTI. funding will be issued to the development if development does show and or propose upliftment
As there is a major need for civic and community service and 99% of the community are black developing citizens a full grant will be issued.
To note: this grant will consist of Government funding and NGO, funding.

The proposal envisions that the NGO organisation receives its % share ownership, as this allows for additional future funding by those organisations. Providing a sustenance of income. Hence an engaged development of mutual benefit and constant future developing benefit.

This engagement with regards to the University of Pretoria will benefit future their future investment and development as it will allow the University to be full BBE compliant. Hence opening doors for additional Government funding and thus additional community projects.
The start of mutual benefactor developments within South Africa and Tswhane

BBEEE requirement funding notes:

DTI. South Africa's economic transformation: A strategy for broad based black economic empowerment

" Policy objectives of BEE:
Increased ownerships of land and other productive assets, improved asset to infrastructure, increased acquisition of skills and increased participation in productive economic activities in under-developed areas (Mamelodi) including the 13 nodal areas identified in the Urban renewal program and integrated sustainable rural development program"

"Policy instruments to achieve BEE:
The specific mechanisms to be used to achieve BEE targets including financing instruments, skills development, and employment equity"

"Finance for BEE
Intensifying economic transformation: This means that we increase the levels of employment and participation in the economy and that economic benefits are shared more equitable across the geographic dimension and by all social groups. This means more access to all forms of social service, and infrastructure to all citizens"

IDC:" Continue the role of facilitating and financing empowerment projects in disadvantage rural areas."

" Definitions of Black empowerment entities:
A community or broad based enterprise has an empowerment shareholder who represents abroad base of members, such as a local community, shared are held via direct equity, non profit organisations and trusts.
Benefits from the shareholding should in a measurable sense be directed towards the uplifting the community through job creation, welfare, skills development, entrepreneurship and human rights.
At the same time directors and management of groups should significantly comprise black persons.
These arrangements are appropriate in situation where the activities or operations of an enterprise or industry directly impact on a community or are located in a community, or may benefit a

University of Pretoria

IDC Your partner in development finance
Industrial Development Corporation

the dti
Department: Trade and Industry
REPUBLIC OF SOUTH AFRICA

MAMELODI COMMUNITY

9.4_ FACILITY MANAGEMENT PROPOSAL

As noted: ownership on share value basis within a section 21 company. However the proposal is to appoint a local company that employs local community members that facilitates the management and maintenance of the facility.
This not only allows for efficient and effective control over the state of the facility but also creates Jobs for the community.

The management will fulfill all financial and organisation requirements of the facility, as well as all delivery and service related requirements.
An in-house printing facility is proposed that serve as printers for the larger Government departments etc. This is also the responsibility of the management company.
Any and all site and building maintenance are to be done by the facilitating company.

In-house washrooms and common room have been provided for the employed company workers.

Public maintenance on the square however is the responsibility of the Mamelodi municipal services. Also included is the taxi area, with the caretaker employed by the municipal council of Mamelodi East.

The public park on the Southern edge of the facility site, is maintained by Municipal parks, as well as the storm water green belt area.

9.5_ FACILITY BRIEF COSTING PROPOSAL

A costing analysis was done on the most effective structural system to use, based on a series of trials of structure, in simplification of built form, and to reduce cost and construction simplification.

Concrete m^3:	Steel m^3:
Labour R.300-00m^3 Steel R1200-00m^3 Concrete R1000-00m^3 Shuttering R500-00m^3 Total_ R 3000 - 00m^3	R. 11500- 00 (steel/ton)

MAIN STRUCTURAL SYSTEM COSTING COMPARISON
See section z-z for structural area of calculation

1. SOLID CONCRETE SLAB SINGLE SPAN
(calculated in structural module 10550mm x 5300 of which for section z_z their are 4 modules and 4 slabs.)
SPAN: 10550mm x 5300mm
REINFORCED L/D FACTOR: 22 - 32
CALC FOR BEAM REQUIRED 10550 / 26 = 405.77mm thick slab, THUS 22.65m^3 concrete per module
COST estimate: labour= R.300-00m^3, steel= R1200-00m^3, concrete= R1000-00m^3, shuttering= R500-00m^3
1m^3 CONCRETE CAST = R. 3000 - 00
22.65m^3 x R. 3000 - 00 = R.67 936 - 00

1. SOLID TWO WAY CONCRETE SLAB ON STEEL BEAM TO REDUCE SLAB THICKNESS
(calculated in structural module 10550mm x 5300 of which for section z_z their are 4 modules and 4 slabs.)
EFFECTIVE CONCRETE SLAB SPAN: 5300mm
REINFORCED L/D FACTOR: 28 - 35
CALC FOR SLAB THICKNESS: 5300 / 30 = 176.67 mm
DEEP ROLLED STEEL BEAM SPAN: 10550mm
REINFORCED L/D FACTOR: 18 - 26
CALC FOR STEEL BEAM DEPTH: 10550 / 23 = 458.70 mm
COST estimate slab: 5300mm x 10550 x 176.67 =
9.84m^3 x R. 3000 - 00 = R.29 523 - 12
COST estimate steel beam: 458.70mm x 250mm x 250mm x 8mm x 10550mm = 0.04m^3 x 8500 = 2053.56 kg of steel
2.05356 x R. 11500- 00 (steel/ton) = R.23 615 - 91 X 2BEAMS = R.47 231 - 82
TOTAL R.23 615-91 + R 47 231 - 82 = R. 70 847.73

3. SOLID TWO WAY CONCRETE SLAB ON CONCRETE T or L BEAMS - chosen system -
(calculated in structural module 10550mm x 5300 of which for section z_z their are 4 modules and 4 slabs.)
EFFECTIVE CONCRETE SLAB SPAN: 5300mm
REINFORCED L/D FACTOR: 28 - 35
CALC FOR SLAB THICKNESS: 5300 / 30 = 176.67 mm
CONCRETE BEAM SPAN: 10550mm
PRESTRESSED L/D FACTOR: 20 - 30 (TO REDUCE THICKNESS)
CALC FOR BEAM DEPTH: 10550mm / 26 = 390.74mm (includes slab depth for construction purposes)

COST estimate slab: 5300mm x 10550 x 176.67 = 9.84m^3 x R. 3000 - 00 = R.29 523 - 12
COST estimate beam: 10550mm x 390.74mm x 390.74mm = 1.6m^3 x R. 3000 - 00 = R.4791 - 15 x 2 = R. 9582 - 30
TOTAL R. 29 523 - 12 + R 9 582 - 30 = R. 39 105 - 30

Thus the modular cost comparison clearly shows that the most economical structural system for the required design intent is number 3: the solid two way concrete slab on concrete T or L beams, in additon the system reduces beam thickness.

Thus the comparison clearly shows, for the core structure excluding the steel walkways that the proposed construction will be the best choice and decision. An estimate of 20 modules will be required excluding the parking garage structure, thus in larger quantities this system becomes more effective.

9.6_

IN CONCLUSION

It is believed that the proposed design and vision has achieved in part a baseline for further development in the field of community and service amenity delivery.

In the level of engagement achieved in creating public spaces that allow for interaction and revitalises a campus.

In reintegrating a unused space and past segregated facility to a workable public square and dearly needed social and civic amenities.

In providing a community space for interaction and guidance while providing amenities for a serviceless community.

By taking the first step in creating a multi disciplinary environment fully focused on the community and its people, a proposed vision for other segregated areas with fragmented communities and amenities, to be housed and delivered by a single functioning complex.

Thus creating the catalysts for a new nodal centre in a peri-rural, peri-urban area.

CHAPTER 10_

References

11.1_ BOOKS

ARCHITECTURE

11.1.2 Cities for People
William S.W. Lim, South East Asian, 1990; Studies in tectonic culture

11.1.3 Life between building
Gell J. 1987

11.1.4 The Image of the city
Lynch K. 1981

11.1.5 Modern Architecture, A critical history
Frampton K., Thames and Hudson, London, 2007

11.1.6 Responsive Environments, a manual for designers
Baily Alcock, Murrain, McGlynn, Smit

11.1.7 Urban Development and New Towns in the Third World, Lesson form the New Bombay experience, SOAS studies in development geography.
Alain R.A. Jacquemin, Ashgate England, 199

11.1.8 Cultural Struggle & development in South Africa
Kaarsholm Preben, Boabab books, Zimbabwe, 1991

11.1.9 Key concepts in Communication and cultural studies_Second edition
Fiske J. Routledge, London 1994.

11.1.10 Dwellings
Oliver P. Phaidon, London, 2003

11.1.11 A Pattern Language_ Towns, buildings, construction
Alexander C. Oxford University press, New York, 1977

11.1.12 The hidden dimension
Edward T Hall, Anchor Books New York, 1969

11.1.13 Planning for people
Maurice Broady; Bedford Square Press, England, 1968

11.1.14 The struggle for social and economic space, Urbanisation in the twentieth century South Africa
Lawrence Erlbaum Associates Inc, New Jersey, 1977

11.1.16 Jansen, J.D. (2004) Changes and Continuities in South Africa's higher education system, 1994 to 2004. In Changing Class: Education and social change in post-apartheid South Africa.
L. Chisholm (ed.) Cape Town, London and New York: HSRC Press and Zed Books.

11.1.17 Contemporary South African Architecture in a Landscape of Transition
Thorsten Deckler, Anne Graupner, Henning Rasmuss; Double storey books; Cape Town; 2006

11.1.18 Genius Loci_ Towards a phenomenology of architecture
Christian Norberg-Shulz; Rizzoli international publications; New York; 1979

TECHNICAL

11.1.19 Materials for Architects & Builders, second edition
Arthur Lyons;Elsevier Butterworth-Heinmann; Oxford; 2004

11.1.20 Neufert Architects data, third edition
Bousmaha Baicha, Nicholas Walliman; Blackwell Publishing Ltd; Oxford, 2000

11.1.21 Building construction & graphics standards
Andre Grobelaar; Anglo rand publications; Jeffreys bay,1999

11.1.22 Model building specifications & standards 5.0, Guide for Architetcts
Hans Wegelin; Hans Wegelin; Pretoria, 2007

11.1.22a Concrete, Metal and timber construction roofs, glass. Joinary, KON 210
Hans Wegelin; University of Pretoria; Pretoria, 2005

11.2 ARTICLES

ARCHITECTURE

11.2.1 Construction Knowledge of the Urban Site
Khan Andrea, Columbia University USA, 1995

11.2.2 Community Engagement: the mutual learning benefits of long term partnerships
Peter Howard, Jude Butcher, Elizabeth Labone; Australian Catholic University, 16 July 2003, University and community engagement Forum

11.2.3 NGO's and the use of ICT's at schools in South Africa

11.2.4 University of Tasmania, Policy Document no. P8, Community Engagement policy 2005, Http://www.utas.edu.au/universitycouncil/legislation/pol8.pdf

11.2.5 7th Global Forum on Reinventing Government, Vienna 2007,
Dr. Michael Cuthilll, UQ Boilerhouse, Community Engagement, Queensland, Australia, Www.uq.edu/boilerhouse

11.2.6 From little boxes to loosely-bounded networks: The privatization and domestication of Community
Barry Wellman, Centre for urban and community studies University of Toronto, October 1998, Wellman@chass.utoronto.ca

11.2.7 QUT Community engagement case studies
Queensland University of Technology, 2005, Lisa Harold_ Special projects officer community Engagement. Http://www.qut.edu.au/

11.2.8 Urban transformation and gated communities: a framework to map the (re-) production of urban space and its impact on urban governance
Karina Landman, CSIR Built environment, 2006, klandman@csir.co.za

11.2.9 The Politics of Place: Critical of Spatial Identities and Critical Spatial Indentities
Ulrich Best & Anke Struver, Residual Space and Other Urban Theory
Http://www.urbanresidue.com/theory/

11.2.10 Architecture SA 7.8_ (1988)
Recreating urban space; Dr Glen Mills
Community participation; Joe Noero

11.3_ DOCUMENTS

11.3.1 Tshwane IDP_Short version, May 2005, Revision cycle no 3,

11.3.2 AD Destinatum 1910-1960, Universiteit Pretoria

11.3.3 AD Destinatum 2, 1960-1982, Universiteit Pretoria

11.3.4 AD Destinatum 3, 1983-1992, Universiteit Pretoria

11.3.5 AD Destinatum 4, 1993-2000, Universiteit Pretoria

11.3.6 Educational centre Mamelodi East, Nov 1987, University Pretoria Architectural dissertation, Norbert Schingerlin

11.3.7 Golofelo, Architectural model for church and community centre in Mamelodi extension 22, Nov 2002, University Pretoria Architectural dissertation, Annalize Reeder.

11.3.8 Report of the National Working Group on Higher Education, December 2001, Http://www.anc.org.za/ancdocs/pubs/umrabulo/umrabulo14/report.html

11.3.9 Rhodes University South Africa, Community Engagement report 2007/8, Ingrid Anderson, 2007, Www.ru.ac.za/community.

11.3.10 The Mogalakwena HP i-community, September 2004, www.hpicommunity.org.za

11.3.11 Community buildings Maximising assets, Case studies and key issues in the management of community buildings, Community Matters, Local Government London, 4 Print limited 2006, Info@lga.gov.uk

11.3.12 Building confidence in the public school system, Interview: Ignatius Jacobs, 2002
11.3.13 In pursuit of a South African Scholarship of engagement, Frederick Fourie_ Rector & Vice-Chancellor UFS, University of the Free State, CHE-HEQC/JET-CHESP conference on community engagement in higher education, 3-5 Sept 2006
11.3.14 Level of entrepeneurship in the informal retail sector of South Africa, Prof. JH Martins, Bureu of Market research, UNISA, 2003, www.unisa.ac.za/dept/bmr.
11.3.15 South Africa's economic transformation: A strategy for broad based black economic empowerment; Author: Unknown, DTI, Date unknown, http://bbe.thedti.gov.za/21.htm

11.4_ HISTORIC RESEARCH

Note: Van der Waal collection; Africana , Mirensky library, University Pretoria, RSA
11.4.1 University Vista, Samevatting van voorgestelde ontwikkeling van Universiteit VISTA, Meeting, 30 April 1985
11.4.2 Government Notice of status of Mamelodi, Director of Technical Services, 24 August 1981, pg 3,4
11.4.3 Schools named in memory of individuals in Mamelodi, Mr. Felix Maimane, 1990
11.4.4 Letter: Support for the Mamelodi Heritage programme, S Mahlangu_ Chairperson of Mamelodi Heritage committee, 6 March 1996.
11.4.5 Community cultural centre for Mamelodi, Discussion paper for PAMDA meeting 16 February 1990, Unknown Author
11.4.6 Mamelodi Community resources, Organizations and Telephone no., General information.
11.4.7 Vista spotlight on community, Pretoria News newspaper, Moshoeshoe Monare, 7 April 1998
11.4.8 City planning and urbanization strategies: Meeting the challenges, David Dewar, 1987
11.4.9 Pretoria Tshwane, Bantoe, Nov 1955,
11.4.10 The story of Mamelodi, Joanne Walker & Gerhard-Mark van der Waal, Human science research council, Pretoria, 1993
11.4.11 Mamelodi Children recorded accounts, Motheo Primary, Ruth Mmotsepe, Weheminah E Mogotsi, Venessa Magane, Dimakatso Mahiane, Mary Mahlangu, Phillip Hlalele ,1990
11.4.12 Clashing cultures: Planning in Mamelodi, Dr G-M van der Waal, Mamelodi development advice Office.
11.4.13 A working history of Mamelodi, Draft copy, Joanne Walker, Gerhard-Mark van der Waal, Human Science reseach council, Pretoria, February 1991
11.4.14 Site account: 3rd visit to Mamelodi, 8 May 24 June 1990, Unknown Author
11.4.15 Interim comments: Mamelodi structure plan, Metroplan and van Wyk & Van Aard, 1994.
11.4.16 Proposed structured plan for eastward expansion of Mamelodi, Urban development, SJ Joubert, Metroplan inc_ Town and regional planners, Municipal Engineer, October 1987, pg 3.
11.4.17 Development of Mamelodi east extension, Gemeenskapsdienste, Vol5, 1 April 1985, Unknown Author

11.5_ INTERNET INFORMATION

ARCHITECTURE
11.5.1 Vanderbilt Peabody college, Department of Human and organization development, Nashville USA, http://www.vanderbilt.edu/
11.5.2 Community Engagement and outreach, University Sydney, Australia, 2006 Http://www.usyd.edu.au/
11.5.3 Kholofelong Community development centre, Mamelodi, grousseau@thediti.gov.za, www.kholofelong.co.za , 2005
11.5.4 University of Pretoria Strategic plan, Innovation generation: Creating the Future, 2007-2011, Http://web.up.ac.za/default.asp?ipkCategoryID=2995&subid=2995&ipklookid=2
11.5.5 Mawson innovative Cultural Community Learning and Information centre, Environmental sustainable design, http://cweb.salisbury.sa.gov.au/manifest/servlet/page?pg=10523
11.5.6 University of Denver, The centre for Community Engagement and service learning (CCESL), Service Learning scholars program, 2007, http://www.du.edu/engage/faculty/faculty_main.html
11.5.7 http://www.bristol.ac.uk/cms/cpe/outreach/
11.5.8 Http://peabody.vanderbilt.edu/
11.5.9 http://leadership.uark.edu/CLCE/
11.5.10 http://www.statssa.gov.za/census01/census96/Wards/catb/Pretoria.htm

TECHNICAL
11.5.11 Vanderbilt Peabody college, Department of Human and organization development, Nashville
11.5.12 http://www.saisc.co.za
11.5.13 http://www.aluvent.co.za/aluvent_aluminium_louvres.html
11.5.14 http://www.smartglass.co.za/performance-data.asp
11.5.15 http://www.corobrick.co.za/
11.5.16 http://www.everite.co.za/portal/everite/Everite.aspx?PCID=87
11.6.17 http://www.modek.co.za/ampagard.html
11.7.18 http://home.att.net/~cleardomesolar/solarflex.html
11.7.19 http://www.schueco.com/web
11.8.20 http://www.marlow.com/TechnicalInfo/estimating_heat_loads.htm
11.9.22 http://www.hunterdouglascontract.com/facades/resin_facade.jsp
11.9.23 http://www.eskomdsm.co.za/swh
11.9.24 http://www.sustainable.org.za/projects/national-energy-response-plan.html
11.9.25 http://www.solarimpact.co.za/product.html
11.9.26 http://www.tshwane.gov.za
11.9.27 http://www.canadianarchitect.com

11.6_ DEPARTMENT: NATIONAL, REGIONAL & INSTITUTIONAL

11.6.1 Department of Geography, University of Pretoria, Hatfield Campus
11.6.2 National weather services_ South Africa

11.7_ INTERVIEWEES

11.7.1 Nico , Community Leader Mamelodi East
11.7.2 Dean of students UP Mamelodi campus
11.7.3 Dr. Tokwane, Head of **Community Engagement** Mamelodi campus University Pretoria

11.8_ FIGURES

See list of figures

11.8_

FIGURES

COMMUNITY FLANK _ PUBLIC WALKWAY ONTO SQUARE

UNIVERSITY AND COMMUNITY ZONE OF ENGAGEMENT _ NEW ENTRANCES TO LECTURE FACILITIES

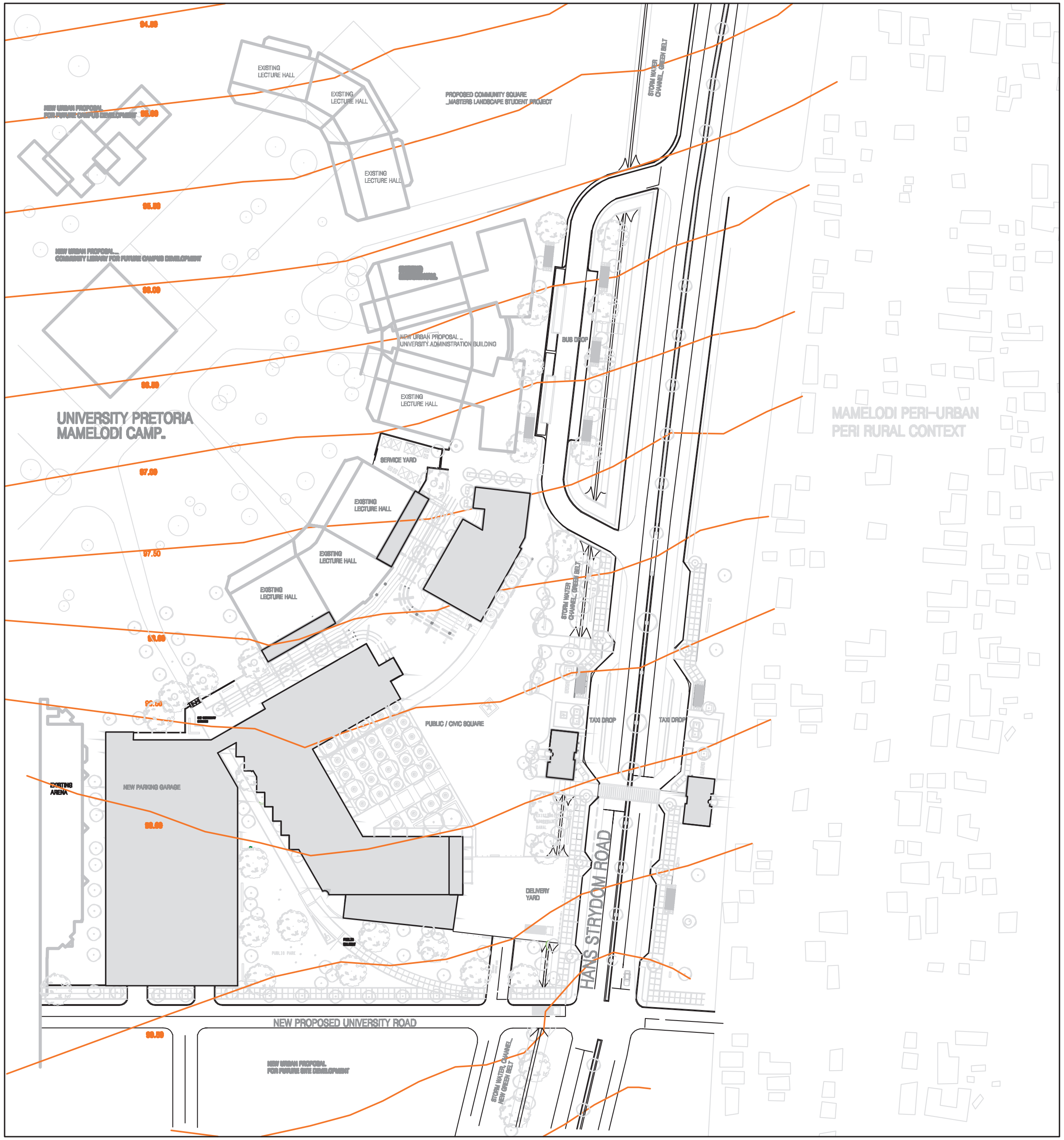
TAXI _ ABLUTION PUBLIC SPACE

WALL OF REVERBERANCE _ WAITING BOOTHS AND PUBLIC PHONES

BIRDS VIEW

8.1.1_

Figure. 132
Site plan
1:1800 scale



SITE PLAN _ SCALE 1:1800

DATE:	10.09.2008	SCALE:	1:1800 @A4
DRAWN BY:	Jako Nice	CHECKED BY:	
APPROVED BY:		CHECKED DATE:	

SITE DESCRIPTION:

University of Pretoria
Hans Strydom, ERF 20682
Mamelodi

DRAWING TITLE:

COMMUNITY ENGAGEMENT FACILITATOR

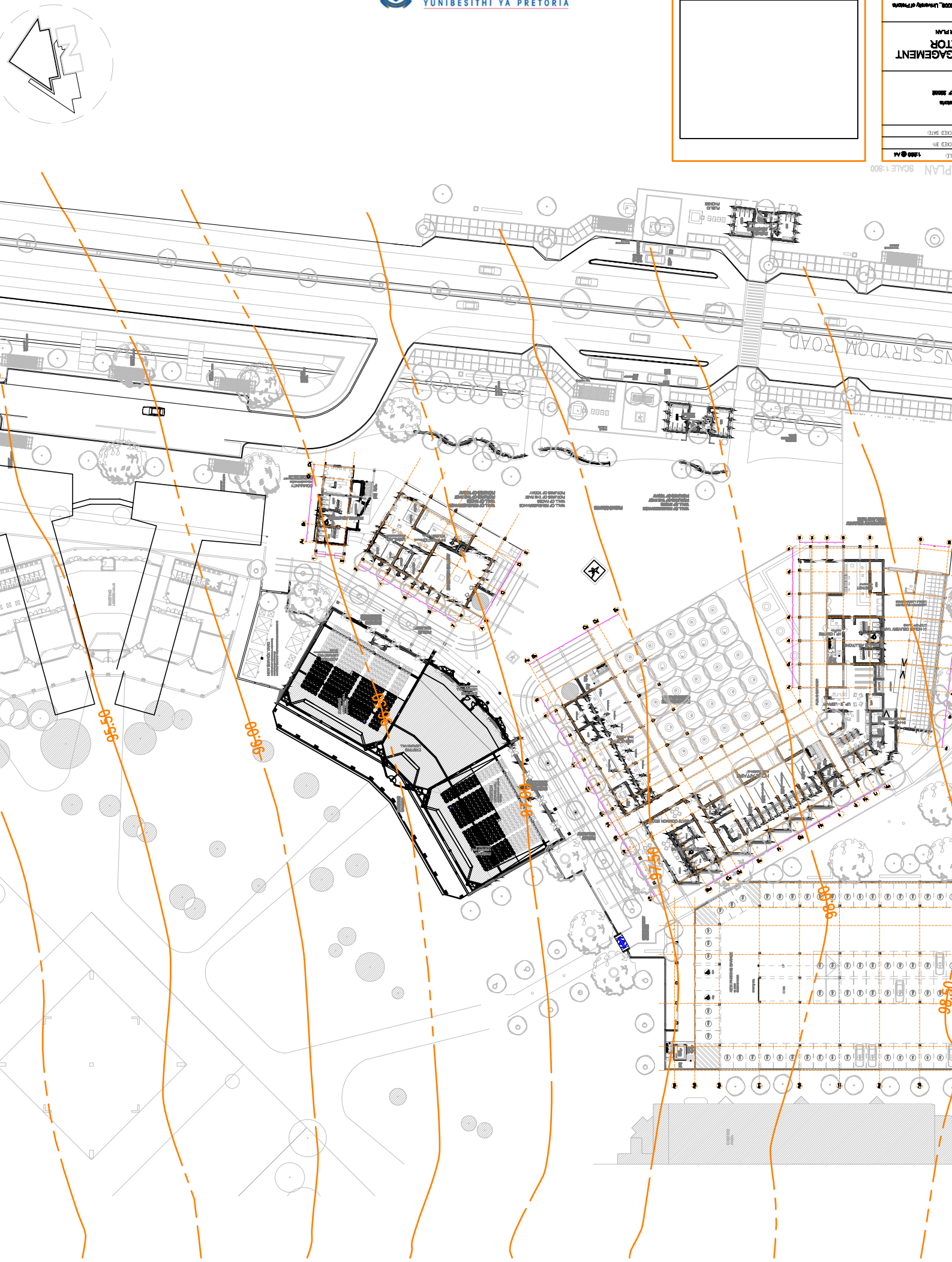
SITE PLAN

PROJECT No.

1_Master Architecture dissertation 2008_University of Pretoria

DRAWING No.	REV.
MArch UP_PLAN_001_P01A. 2008	C

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA



8.3_

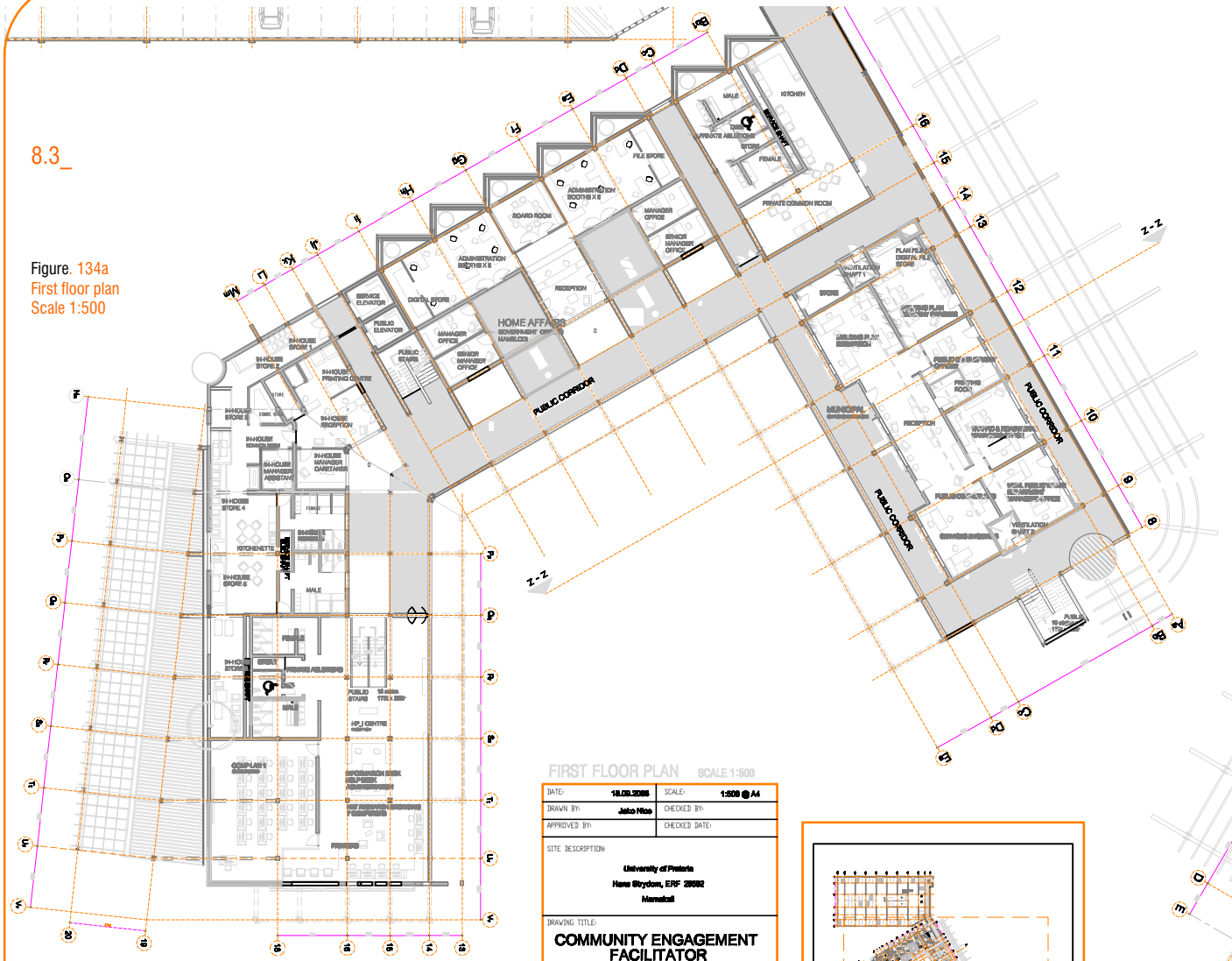


Figure. 134a
First floor plan
Scale 1:500

FIRST FLOOR PLAN SCALE 1:500

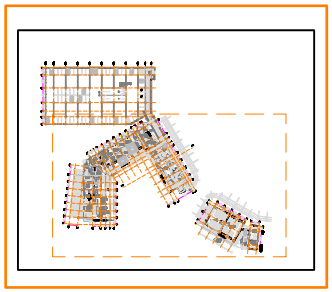
DATE:	18.09.2008	SCALE:	1:500 @ A4
DRAWN BY:	Jako Nice	CHECKED BY:	
APPROVED BY:		CHECKED DATE:	

SITE DESCRIPTION:
University of Pretoria
Hans Strydom, ERF 28692
Mamelodi

DRAWING TITLE:
COMMUNITY ENGAGEMENT FACILITATOR
FIRST FLOOR PLAN

PROJECT No.
1_Master Architecture dissertation 2008_ University of Pretoria

DRAWING No.	REV.
MArch UP_PLAN_001_P01A. 2008	C

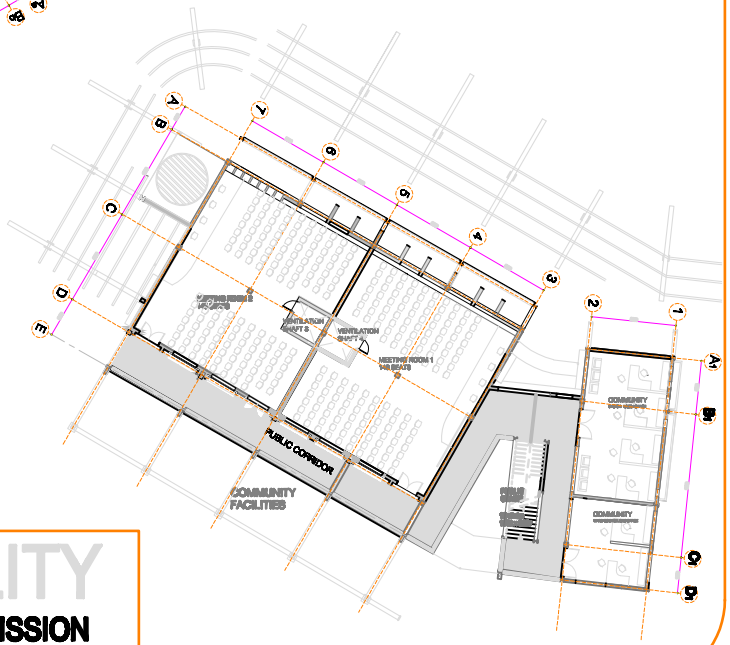


FLANK_ B
GOVERNMENT_ MUNICIPAL PAY POINTS

MUNICIPAL OFFICES

NGO: DITSELA
URBAN SERVICE GROUP
POWA
THE MVULA TRUST
PROJECT LITERACY
COMMUNITY DEVELOPMENT RESOURCE ASSOCIATION

FLANK_ A
COMMUNITY : ABET EDUCATION
SECTOR MEETING ROOMS
LEGAL AID OFFICE
INFORMATION AND TOURISM
COMMUNITY SECTORAL & ADMIN OFFICES
COMMUNITY WARD COUNCELOR OFFICES
BUSSINESS FACILITIES_HOT DESKING_
PUBLIC CONFERENCE FACILITY



COMMUNITY ENGAGEMENT FACILITY

MAMELODI_ CIVIC AND COMMUNITY SERVICE **TECHNICAL SUBMISSION**

8.3.1_

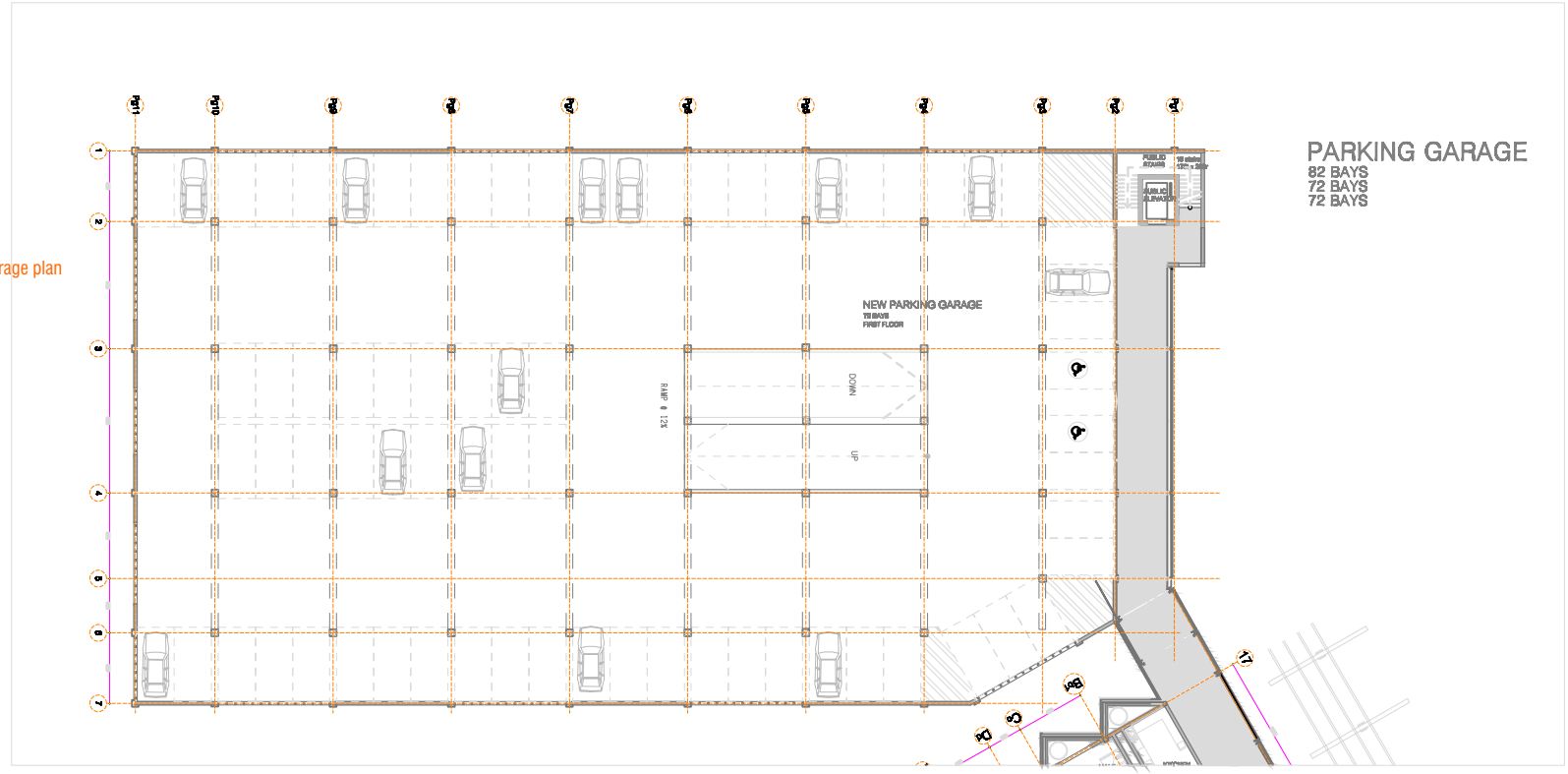


Figure. 134b
First floor garage plan
Scale 1:500

FIRST FLOOR GARAGE SCALE 1:500

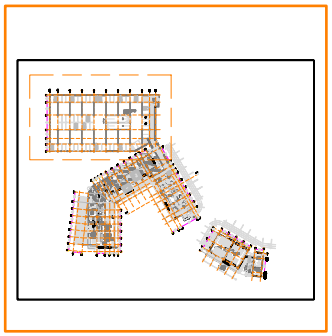
DATE:	16.08.2008	SCALE:	1:200 @ A4
DRAWN BY:	Jako Nina	CHECKED BY:	
APPROVED BY:		CHECKED DATE:	

SITE DESCRIPTION:
University of Pretoria
Hans Strydom, ERF 25502
Mamelodi

DRAWING TITLE:
COMMUNITY ENGAGEMENT FACILITATOR
FIRST FLOOR GARAGE PLAN

PROJECT No.
1_Master Architecture dissertation 2008_ University of Pretoria

DRAWING No.	REV.
MArch UP_PLAN_001_P01A. 2008	C

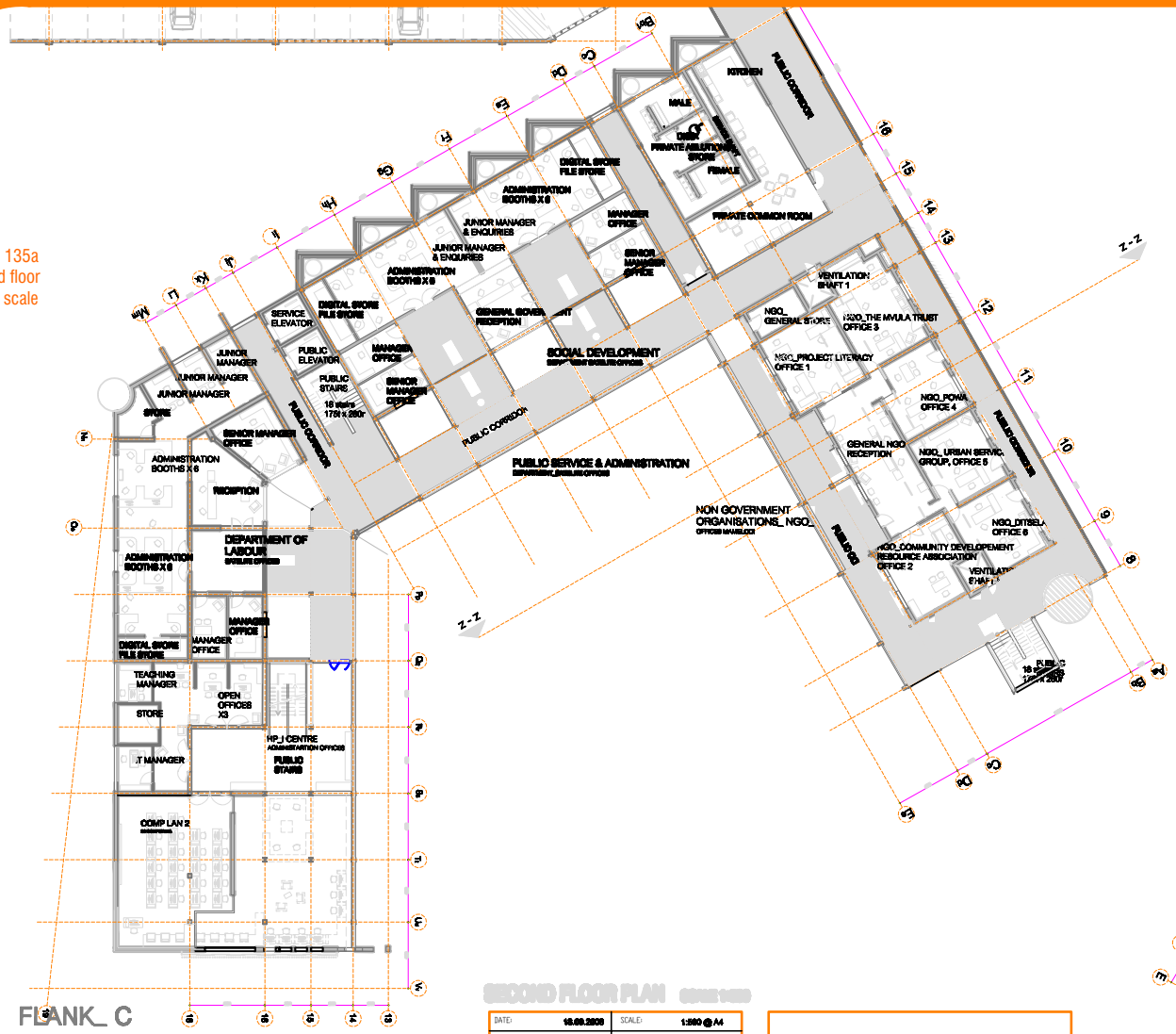


COMMUNITY ENGAGEMENT FACILITY

MAMELODI_ CIVIC AND COMMUNITY SERVICE **TECHNICAL SUBMISSION**

8.4_

Figure. 135a
Second floor
1: 500 scale

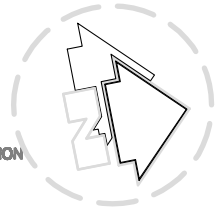


FLANK_ B

GOVERNMENT_ MUNICIPAL PAY POINTS

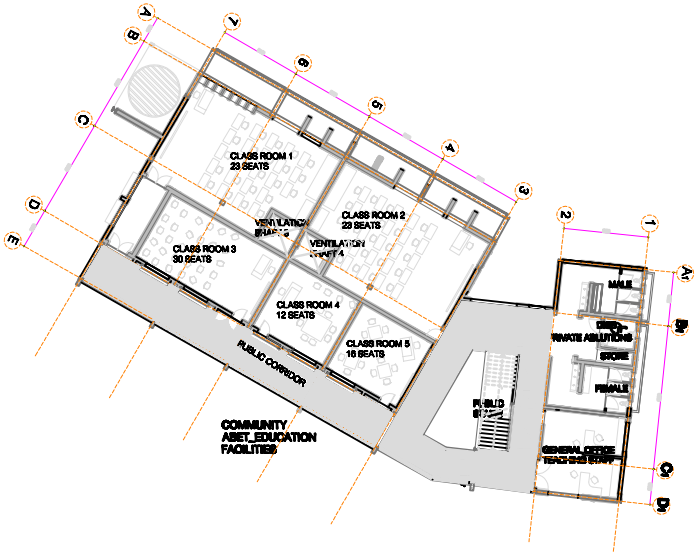
MUNICIPAL OFFICES

NGO: DITSELA
URBAN SERVICE GROUP
POWA
THE MVULA TRUST
PROJECT LITERACY
__ COMMUNITY DEVELOPMENT RESOURCE ASSOCIATION



FLANK_ A

COMMUNITY : ABET EDUCATION
SECTOR MEETING ROOMS
LEGAL AID OFFICE
INFORMATION AND TOURISM
COMMUNITY SECTORAL & ADMIN OFFICES
COMMUNITY WARD COUNCELOR OFFICES
BUSSINESS FACILITIES_HOT DESKING_
PUBLIC CONFERENCE FACILITY



FLANK_ C

HOME AFFAIRS_ PUBLIC SERVICE FACILITY
HOME AFFAIRS PUBLIC SATELITE OFFICES
COMMUNITY: UNIVERSITY OF PRETORIA – e-LIBRARY
hp E-CENTRE, EDUCATION
GOVERNMENT: DEPARTMENT OF LABOUR SATELITE OFFICES
DEPARTMENT OF SOCIAL DEVELOPMENT SATELITE OFFICES
DEPARTMENT OF PUBLIC SERVICE AND ADMINISTRATION SATELITE OFFICES
UNIVERSITY OF PRETORIA: SOCIAL RESEARCH CENTRE.
DEPARTMENT OF SOCIAL WORK AND CRIMINOLOGY RESEARCH LABORATORIES
DEPARTMENT OF SOCIOLOGY_COMMUNITY SERVICE AND SOCIAL TRANSFORMATION RESEARCH LABORATORIES
IN-HOUSE: STORAGE FACILITIES
CLEANING FACILITIES
DELIVERY FACILITIES
RETAIL POSTNET

SECOND FLOOR PLAN

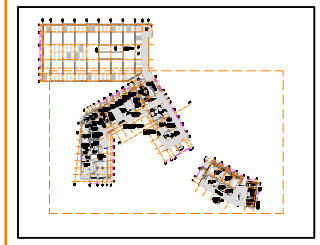
DATE:	16.09.2009	SCALE:	1:500 @ A4
DRAWN BY:	Jake Nice	CHECKED BY:	
APPROVED BY:		CHECKED DATE:	

SITE DESCRIPTION:
University of Pretoria
Hans Strydom, ERF 20662
Mamelodi

DRAWING TITLE:
COMMUNITY ENGAGEMENT FACILITATOR
SECOND FLOOR PLAN

PROJECT No.
1_Master Architecture dissertation 2009_ University of Pretoria

DRAWING No.: MArch UP_PLAN_001_P01A. 2009
REV.: C



8.4.1_

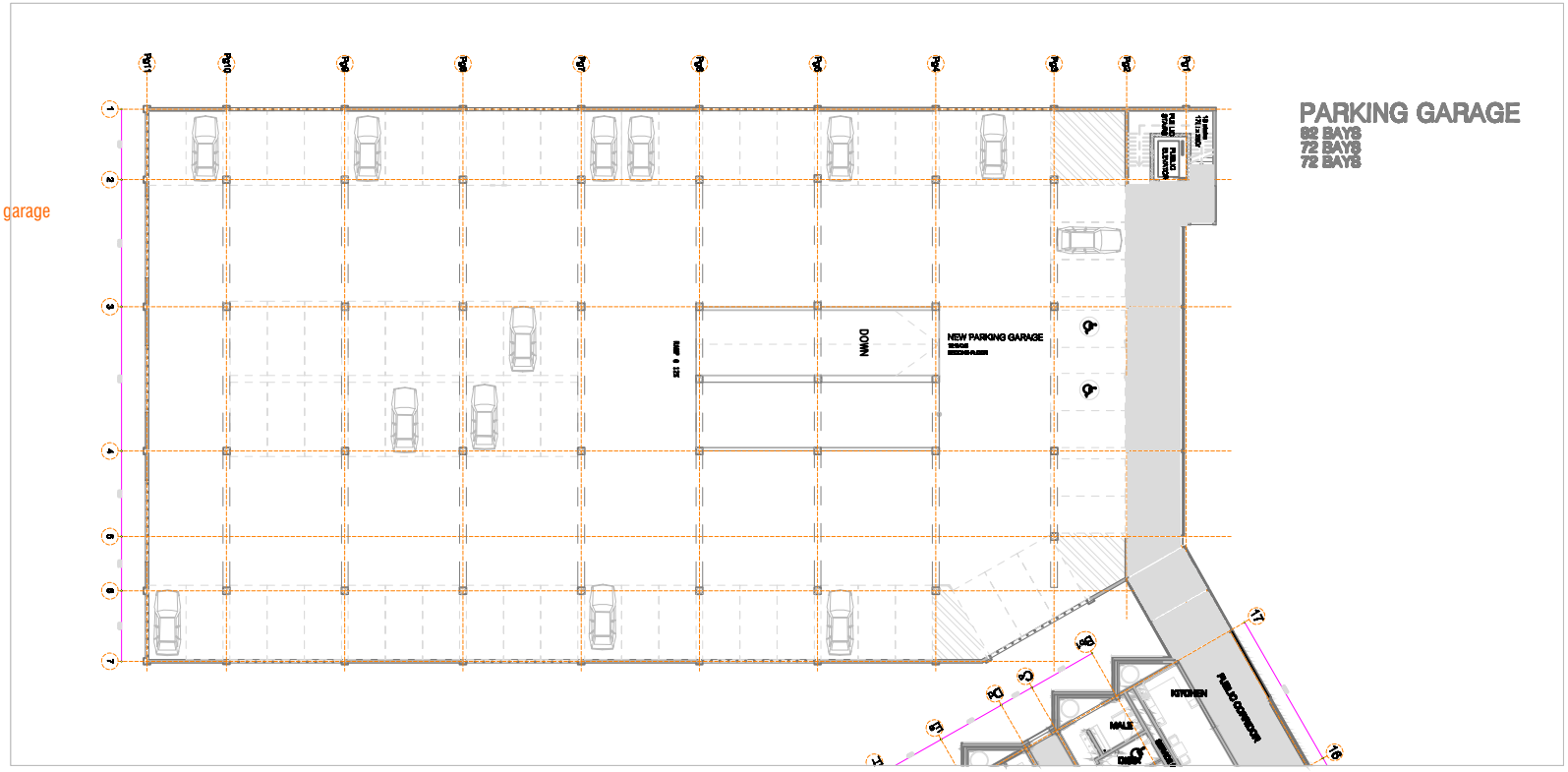


Figure. 135b
Second floor garage
1: 500 scale

SECOND FLOOR GARAGE SCALE 1:500

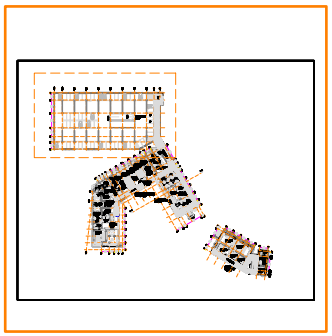
DATE:	16.08.2008	SCALE:	1:500 @ A4
DRAWN BY:	Jako Nico	CHECKED BY:	
APPROVED BY:		CHECKED DATE:	

SITE DESCRIPTION:
University of Pretoria
Hans Strydom, ERF 28652
Mamelodi

DRAWING TITLE:
COMMUNITY ENGAGEMENT FACILITATOR
SECOND FLOOR GARAGE PLAN

PROJECT No.
1_Master Architecture dissertation 2008_ University of Pretoria

DRAWING No.	REV.
MArch UP_PLAN_001_P01A. 2008	C

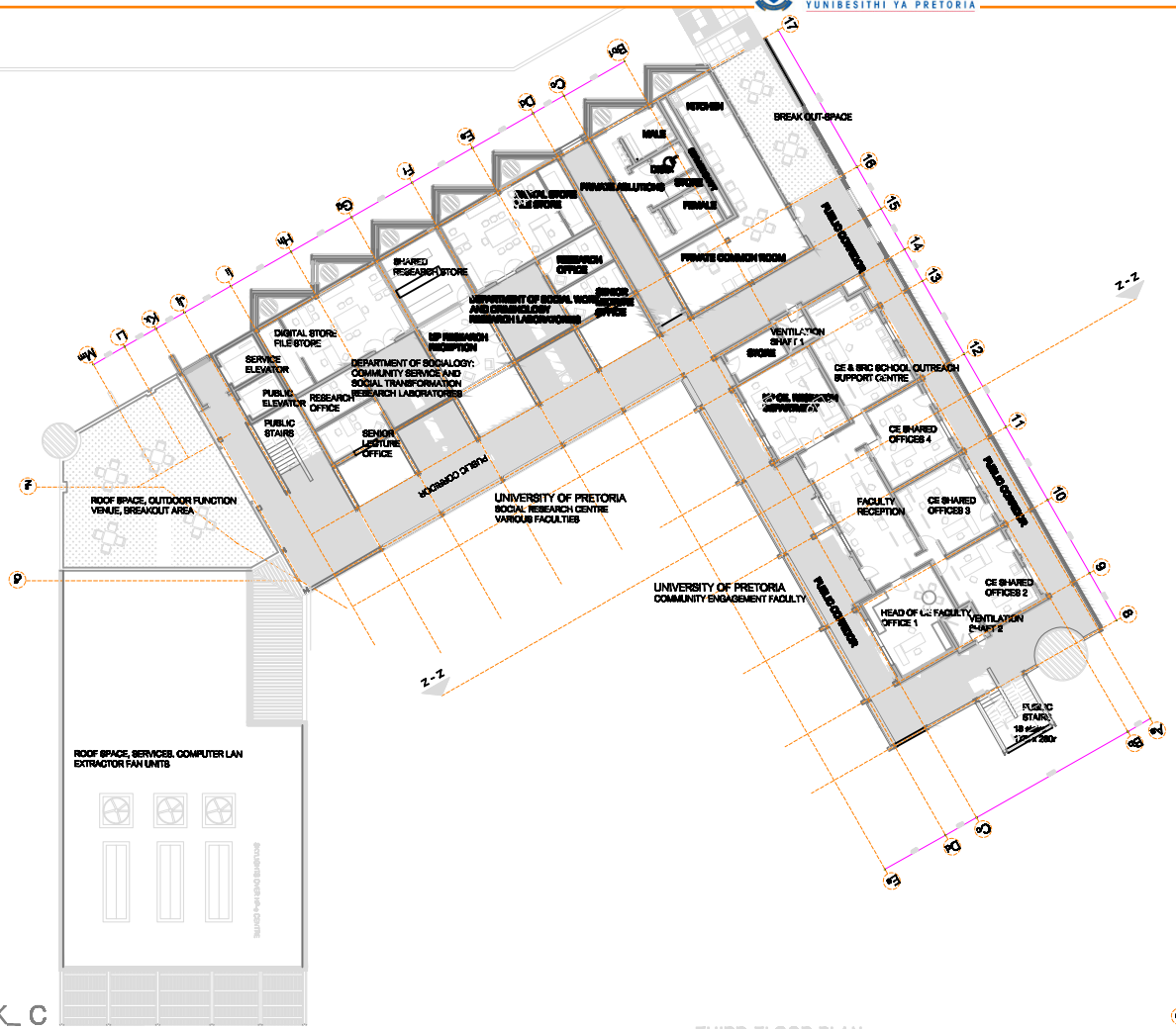


COMMUNITY ENGAGEMENT FACILITY

MAMELODI_ CIVIC AND COMMUNITY SERVICE **TECHNICAL SUBMISSION**

8.5_

Figure. 136a
Third floor plan
1: 500 scale

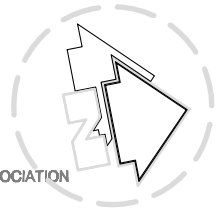


FLANK_ B

GOVERNMENT_ MUNICIPAL PAY POINTS

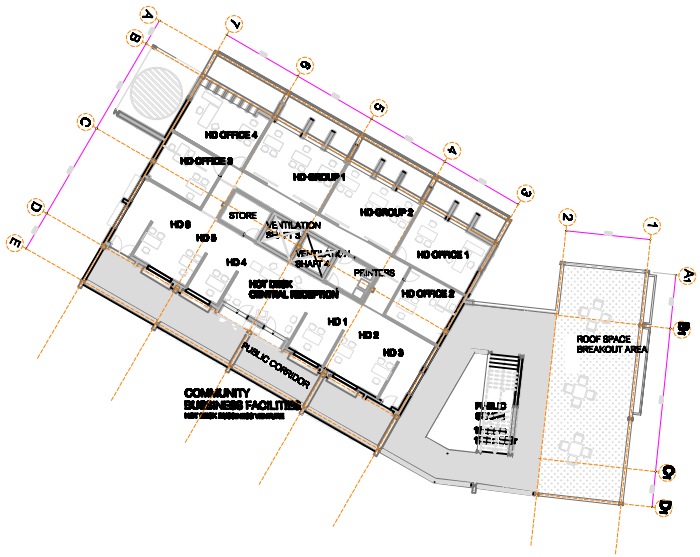
MUNICIPAL OFFICES

NGO: DITSELA
URBAN SERVICE GROUP
POWA
THE MVULA TRUST
PROJECT LITERACY
__ COMMUNITY DEVELOPMENT RESOURCE ASSOCIATION



FLANK_ A

COMMUNITY : ABET EDUCATION
SECTOR MEETING ROOMS
LEGAL AID OFFICE
INFORMATION AND TOURISM
COMMUNITY SECTORAL & ADMIN OFFICES
COMMUNITY WARD COUNCELOR OFFICES
BUSSINESS FACILITIES_HOT DESKING_
PUBLIC CONFERENCE FACILITY



FLANK_ C

HOME AFFAIRS_ PUBLIC SERVICE FACILITY
HOME AFFAIRS PUBLIC SATELITE OFFICES
COMMUNITY: UNIVERSITY OF PRETORIA – e-LIBRARY
hp E-CENTRE, EDUCATION
GOVERNMENT: DEPARTMENT OF LABOUR SATELITE OFFICES
DEPARTMENT OF SOCIAL DEVELOPMENT SATELITE OFFICES
DEPARTMENT OF PUBLIC SERVICE AND ADMINISTRATION SATELITE OFFICES
UNIVERSITY OF PRETORIA: SOCIAL RESEARCH CENTRE.
DEPARTMENT OF SOCIAL WORK AND CRIMINOLOGY RESEARCH LABORATORIES
DEPARTMENT OF SOCIOLOGY_COMMUNITY SERVICE AND SOCIAL TRANSFORMATION RESEARCH LABORATORIES
IN-HOUSE: STORAGE FACILITIES
CLEANING FACILITIES
DELIVERY FACILITIES
RETAIL POSTNET

DATE:	18.09.2008	SCALE:	1:500 @ A4
DRAWN BY:	Jako Nico	CHECKED BY:	
APPROVED BY:		CHECKED DATE:	

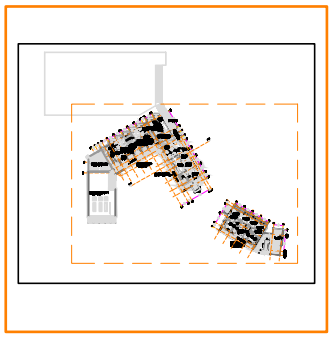
SITE DESCRIPTION:
University of Pretoria
Hans Strydom, ERF 28502
Mamelodi

DRAWING TITLE:
COMMUNITY ENGAGEMENT FACILITATOR
THIRD FLOOR PLAN

PROJECT No.
1_Master Architecture dissertation 2008_ University of Pretoria

DRAWING No.: MArch UP_PLAN_001_P01A. 2008
REV.: C

THIRD FLOOR PLAN SCALE 1:500



8.5.1_

Figure. 136b
Third floor garage plan
1: 500 scale

THIRD FLOOR GARAGE SCALE 1:500

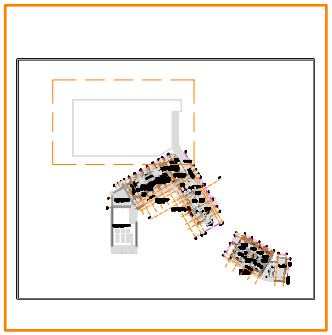
DATE: 16.09.2008	SCALE: 1:500 @ A4
DRAWN BY: Jake Nias	CHECKED BY:
APPROVED BY:	CHECKED DATE:

SITE DESCRIPTION:
University of Pretoria
Hans Strydom, ERF 25652
Mamelodi

DRAWING TITLE:
COMMUNITY ENGAGEMENT FACILITATOR
THIRD FLOOR GARAGE PLAN

PROJECT No.
1_Master Architecture dissertation 2008_ University of Pretoria

DRAWING No.	REV.
MArch UP_PLAN_001_P01A. 2008	C



COMMUNITY ENGAGEMENT FACILITY

MAMELODI_ CIVIC AND COMMUNITY SERVICE **TECHNICAL SUBMISSION**

COMMUNITY ENGAGEMENT FACILITY

MAMELODI_ CIVIC AND COMMUNITY SERVICE

TECHNICAL SUBMISSION

DATE: 18.09.2008	SCALE: 1:2000 @ A4
DRAWN BY: Jako Nkm	CHECKED BY:
APPROVED BY:	CHECKED DATE:

SITE DESCRIPTION:
University of Pretoria
Hans Strydom, ERF 28662
Mamelodi

DRAWING TITLE:
COMMUNITY ENGAGEMENT FACILITATOR
SECTION Z-Z

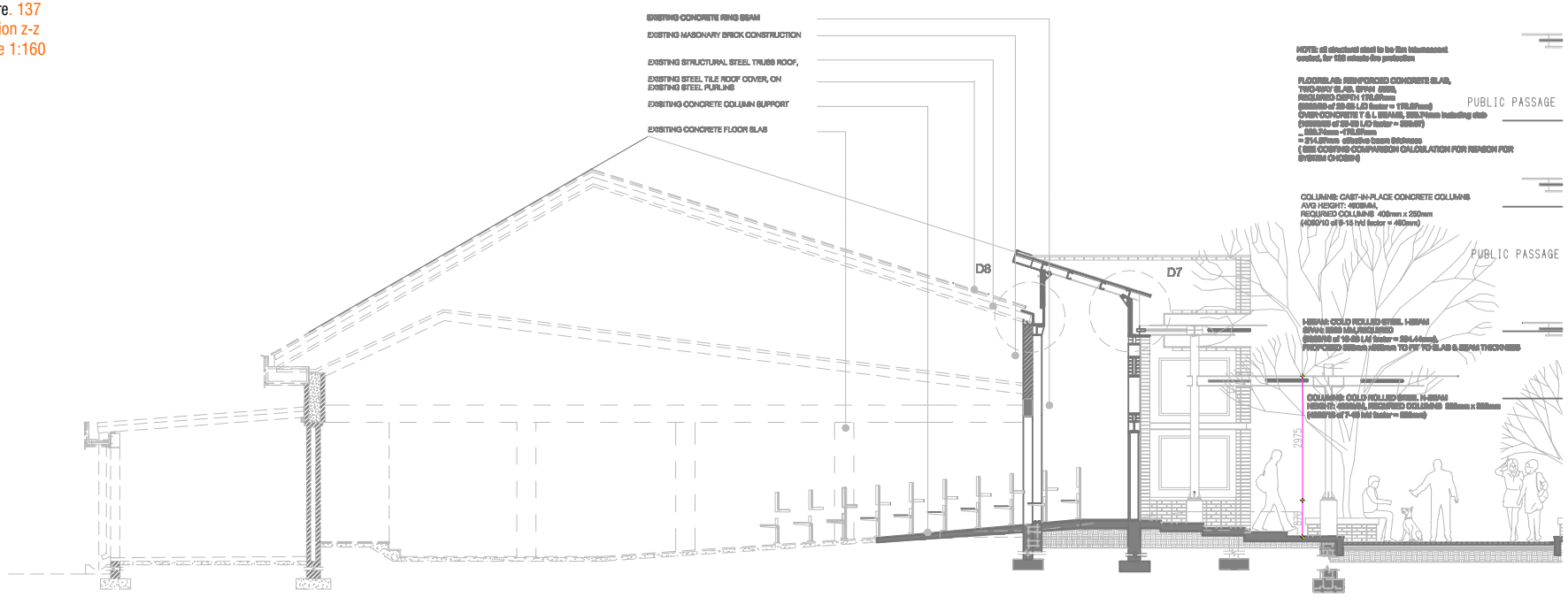
PROJECT No.
1_Master Architecture dissertation 2008_ University of Pretoria

DRAWING No.: MArch UP_PLAN_001_P01A. 2008 | REV.: C

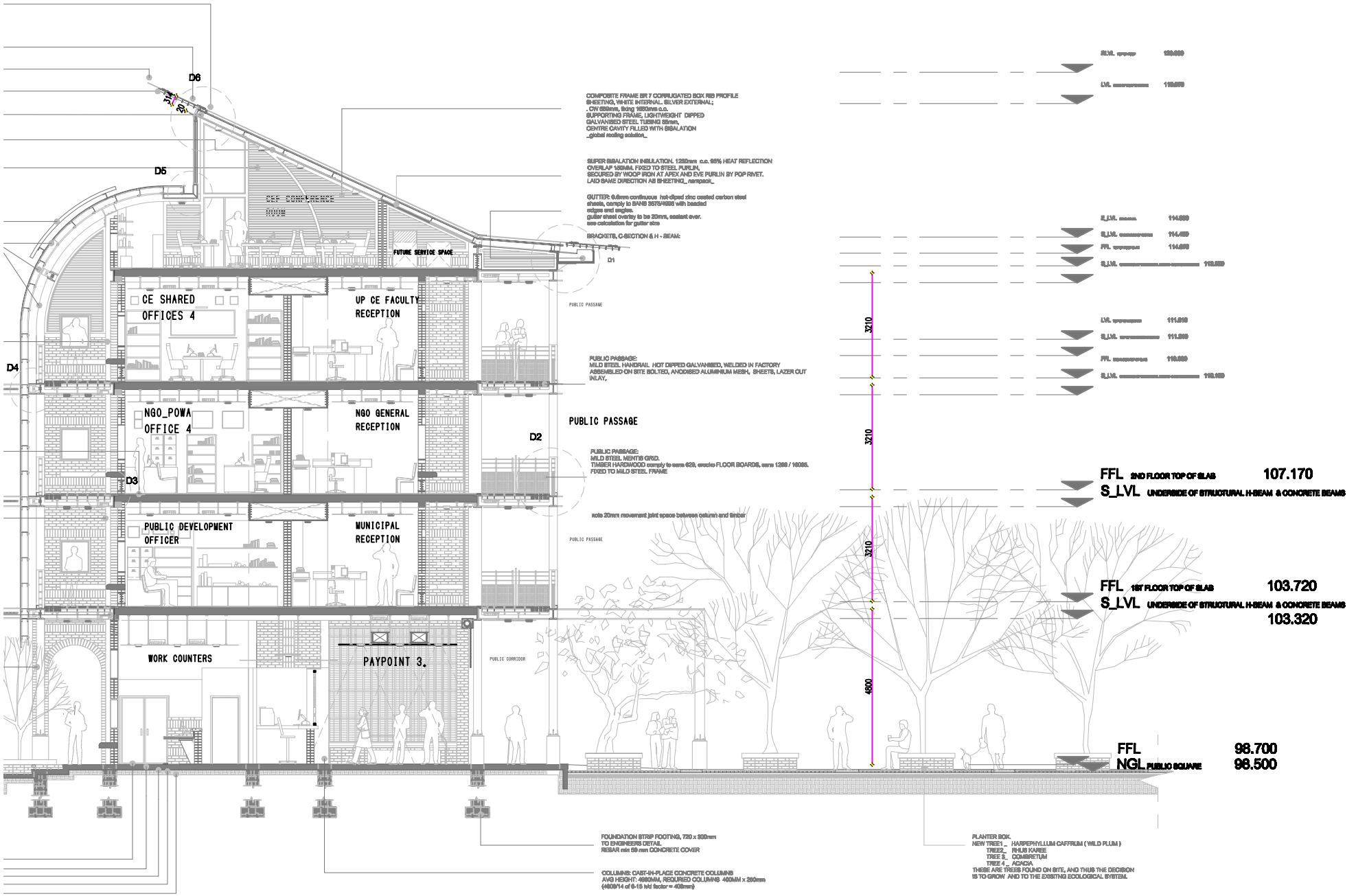
SECTION Z-Z SCALE 1:160

8.6_

Figure. 137
Section z-z
Scale 1:160

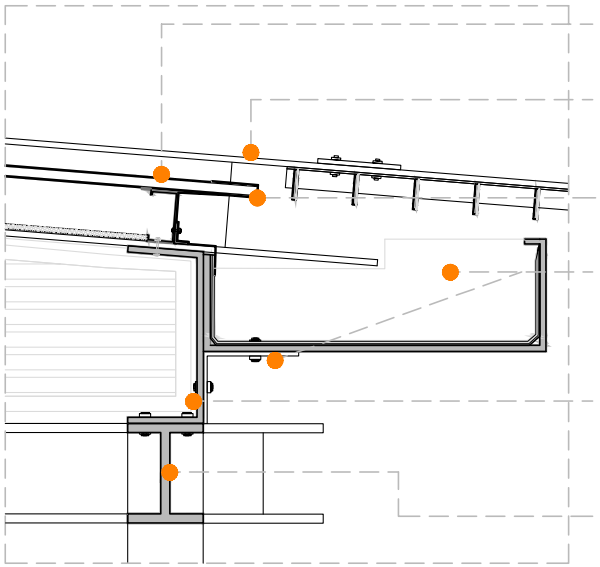


EXISTING STRUCTURE | NEW ADDITON AND ALTERATION | NEW ARCADE WALKWAY


D6
D5
D4
D3
D2
D1
CE SHARED OFFICES 4
UP CE FACULTY RECEPTION
NGO_POWA OFFICE 4
NGO GENERAL RECEPTION
PUBLIC DEVELOPMENT OFFICER
MUNICIPAL RECEPTION
WORK COUNTERS
PAYPOINT 3.
FUTURE SERVICE SPACE
PUBLIC PASSAGE
PUBLIC CORRIDOR
COMPOSITE FRAME ER 7 CORRUGATED BOX RIB PROFILE SHEETING, WHITE INTERNAL, SILVER EXTERNAL;
. CW 686mm, fixing 1600mm c.c.
SUPPORTING FRAME, LIGHTWEIGHT DIPPED GALVANISED STEEL TUBING 38mm,
CENTRE CAVITY FILLED WITH SISALATION
global roofing solution
SUPER SISALATION INSULATION. 1250mm c.c. 95% HEAT REFLECTION
OVERLAP 150MM, FIXED TO STEEL PURLIN,
SECURED BY WOOP IRON AT APEX AND EVE PURLIN BY POP RIVET.
LAID SAME DIRECTION AS SHEETING_ nampack_
GUTTER: 0.6mm continuous hot-dipped zinc coated carbon steel sheets, comply to SANS 3575/4998 with bended edges and angles.
gutter sheet overlay to be 20mm, sealant over.
see calculation for gutter size
BRACKETS, C-SECTION & H - BEAM:
PUBLIC PASSAGE:
MILD STEEL HANDRAIL HOT DIPPED GALVANISED, WELDED IN FACTORY ASSEMBLED ON SITE BOLTED, ANODISED ALUMINIUM MESH, SHEETS, LAZER CUT INLAY,
PUBLIC PASSAGE:
MILD STEEL MENTIS GRID.
TIMBER HARDWOOD comply to sans 629, ensicko FLOOR BOARDS, sans 1288 / 16095.
FIXED TO MILD STEEL FRAME
note 20mm movement joint space between column and timber
FOUNDATION STRIP FOOTING, 720 x 300mm
TO ENGINEERS DETAIL
REBAR min 50 mm CONCRETE COVER
COLUMNS: CAST-IN-PLACE CONCRETE COLUMNS
AVG HEIGHT: 4600MM, REQUIRED COLUMNS 400MM x 250mm
(4600/14 of 8-15 h/d factor = 408mm)
PLANTER BOX.
NEW TREE1 _ HARPEPHYLLUM CAFFRUM (WILD PLUM)
TREE2_ RHUS KARBE
TREE 3_ COMBRETUM
TREE 4 _ ACACIA
THESE ARE TREES FOUND ON SITE, AND THUS THE DECISION IS TO GROW AND TO THE EXISTING ECOLOGICAL SYSTEM.
3210
3210
3210
4800
FFL 2ND FLOOR TOP OF SLAB 107.170
S_LVL UNDERSIDE OF STRUCTURAL H-BEAM & CONCRETE BEAMS
FFL 1ST FLOOR TOP OF SLAB 103.720
S_LVL UNDERSIDE OF STRUCTURAL H-BEAM & CONCRETE BEAMS 103.320
FFL 98.700
NGL PUBLIC SQUARE 98.500

TECHNICAL SUBMISSION

8.7.1_



ROOF SHEETING:
0.58mm thick. Corrugated box rib profile.
Manufacturer_Global roofing solution; white; Br7.
cover width 869mm, fixing 1660mm o.c
Fixed to steel purlin according to manufacturer specification

I-BEAM:
hot rolled steel I-beam: 330 x 170 x 8mm,as per calculation.
chromadek pre painted.
Note: web cut back to express flanges and allow for reduces sheeting length and gutter depth

FLASHING:
Purpose made flashing, fitted between I-beam_
Manufacturer_Gutter fast; colour to match roof sheet.
0.58mm, hot dipped zinc coated carbon steel sheets.

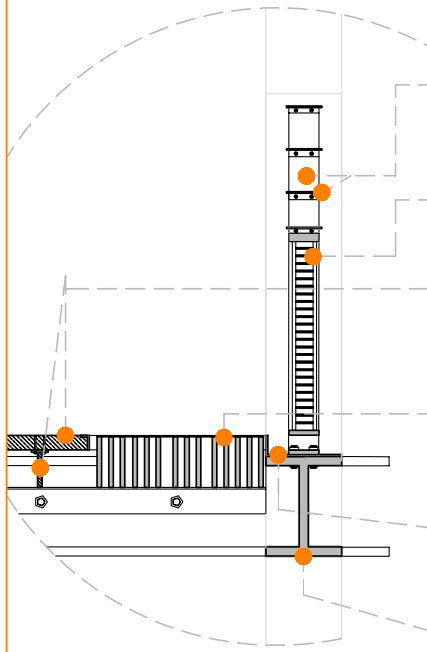
GUTTER:
Custom 340x 1050 x 0.6mm continuous hot-dipped zinc coated
carbon steel sheets. with profiled edges.
Manufacturer_Gutter fast; colour to match roof sheet.
as per calculation.
Bracket installation in strict accordance with manufacturer specification

C-SECTION:
Cold rolled steel structural c -section
300x 540x 2mm, galvanised,
bolted to H-BEAM. M10 grade 8.8 galvanised bolts, washer and hexagon nut..

H - BEAM:
300x 300x 8mm steel beam @ 5300mm span as per calculation.
bolted to vertical H-BEAM on 8mm steel plate, m12 grade 8.8 bolts.

Figure. 138
Details1 & 2
Scale 1:25

DETAIL 1_ SCALE 1:25



BALUSTRADE:
mild steel handrail hot dipped steel flats galvanised
120x 6x 500mm_horizontal
120x 6x 1100mm_ vertical
120 x 6x 750mm_ vertical
welded in factory assembled on site bolted by galvanised bolts m10, grade 4.2, to comply to SANS10104/1991
1100mm high, opening size 100mm.

ALUMINIUM MESH:
anodised aluminium mesh mill phosphate.
powder coated to approved colour.
490mm x 640mm x 1mm sheets, lazer cut design inlay.
Bolted to mild steel frame. In accordance with suppliers specification

PASSAGE FLOORING 1:
Timber hardwood
Federated timbers; factory oiled and varnished; Iroko
200x 1460x 50mm on joist between beams
Timber floor joist @ 200mm o.c screwed with self tapering wood steel screws, countersunk head 60mm @ 5.5mm steel
NOTE: 20mm gap between structure and timber board for movement joint

PASSAGE FLOORING 2:
Mild steel mentle grid
Galvanised finish; 166x 580x 2mm bolted to angle bracket.
20mm spacing on edge, welded in factory.
Fixing: 5mm angle plate, bolted with m12 grade 4.8 to H-beam. In accordance with suppliers specification

UNEQUAL ANGLE:
Mild steel angle
65x 300x 5mm fixed to H-Beam
cold rolled. galvanised; powder coated to match H-beam colour.
Fixing: Bolted to h-beam by balustrade bolting m10

H - BEAM:
300x 300x 8mm steel beam @ 5300mm span as per calculation.
bolted to vertical H-BEAM on 8mm steel plate, m12 grade 8.8 bolts.

DETAIL 2_ SCALE 1:25

MAMELODI_ CIVIC AND COMMUNITY SERVICE

DATE [illegible]	SCALE [illegible] @A4
DRAWN BY John Kiss	CHECKED BY
APPROVED BY	CHECKED DATE

SITE DESCRIPTION
[illegible]

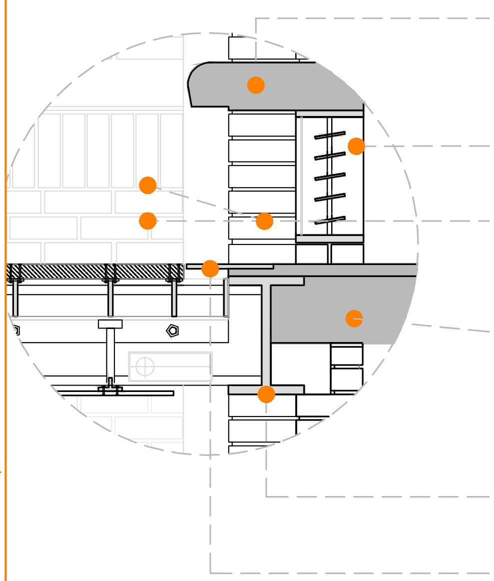
DRAWING TITLE
COMMUNITY ENGAGEMENT FACILITATOR
DETAILS 1,2

PROJECT No.
[illegible]

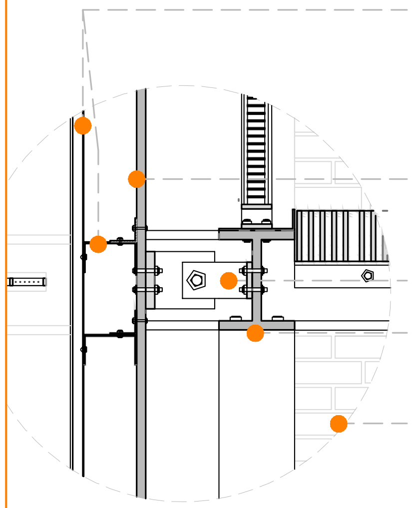
DRAWING No.	REV.
MArch UP_PLAN_001_P01A. 2008	C

8.7.2_

Figure. 139
Details 3 & 4
Scale 1:25



DETAIL 3_ SCALE 1:25



DETAIL 4_ SCALE 1:25

DATE: [illegible]	SCALE: [illegible] @ A4
DRAWN BY: [illegible]	CHECKED BY:
APPROVED BY:	CHECKED DATE:

SITE DESCRIPTION:
University of Pretoria
Hans Strydom, ERF [illegible]
Mamelodi

DRAWING TITLE:
COMMUNITY ENGAGEMENT FACILITATOR
DETAILS 3,4

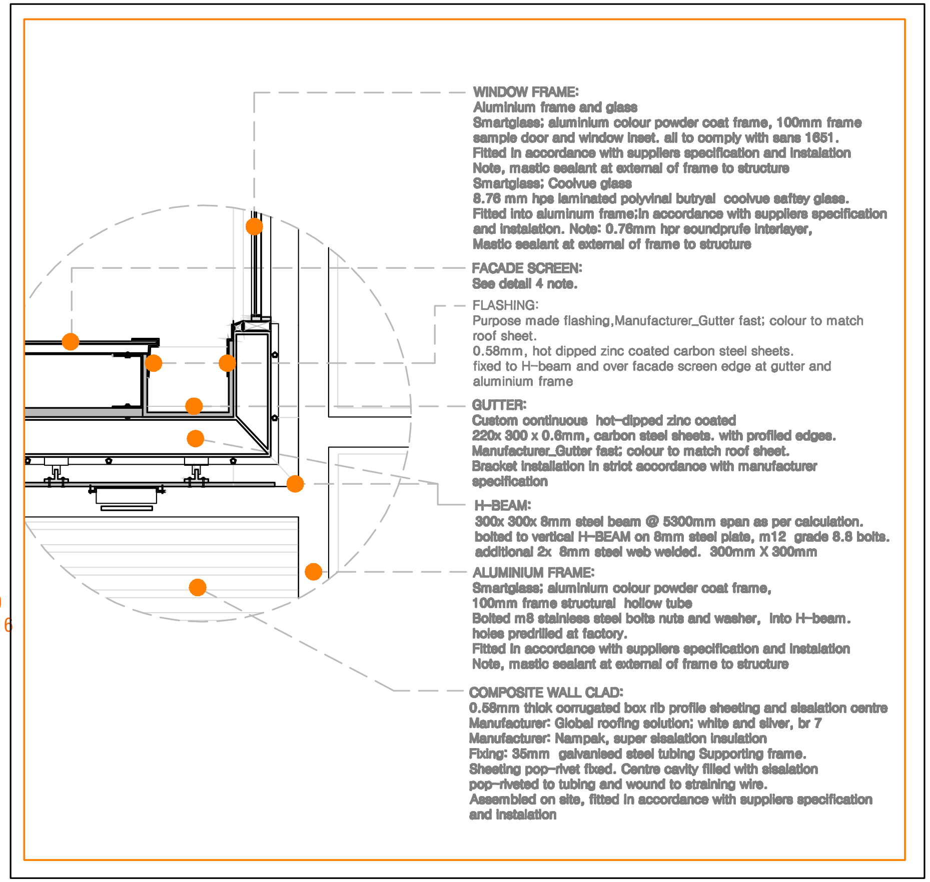
PROJECT No.
1_Master Architecture dissertation 2008_ University of Pretoria

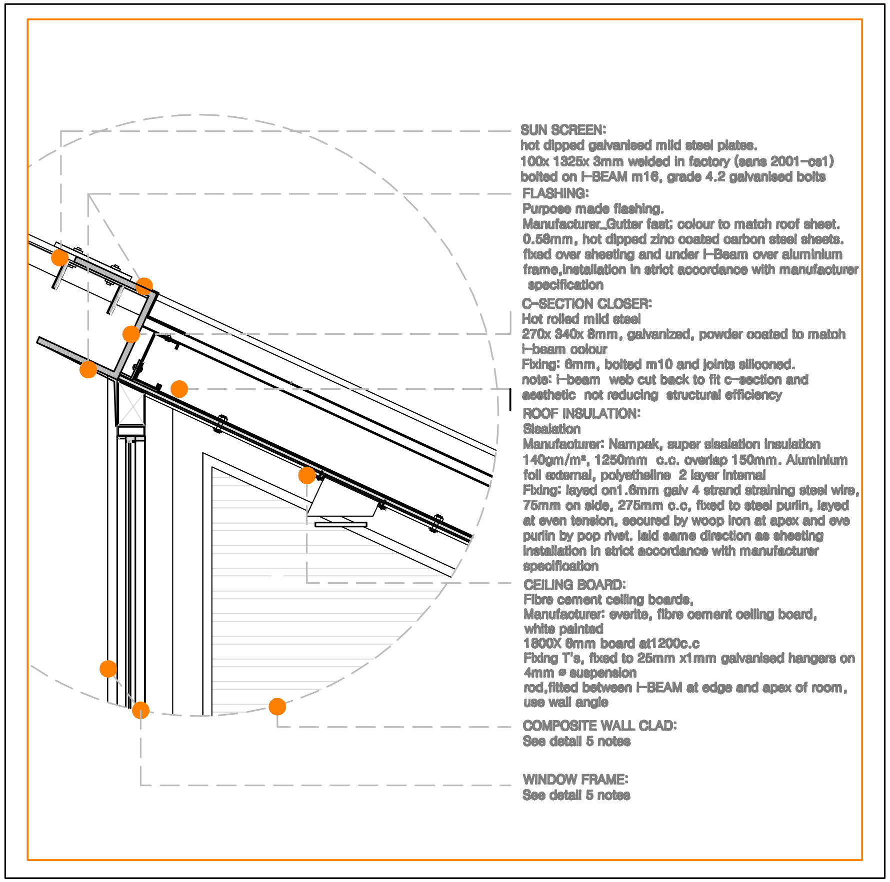
DRAWING No.	REV.
MArch UP_PLAN_001_P01A. 2008	C

TECHNICAL SUBMISSION

8.7.3_

Figure. 140
Details 5 & 6
Scale 1:25





DETAIL 6_ SCALE 1:30

DATE: [illegible]	SCALE: [illegible]
DRAWN BY: [illegible]	CHECKED BY:
APPROVED BY:	CHECKED DATE:

SITE DESCRIPTION:
University of Pretoria
[illegible]
Mamelodi

DRAWING TITLE:
COMMUNITY ENGAGEMENT FACILITATOR
DETAILS 5,6

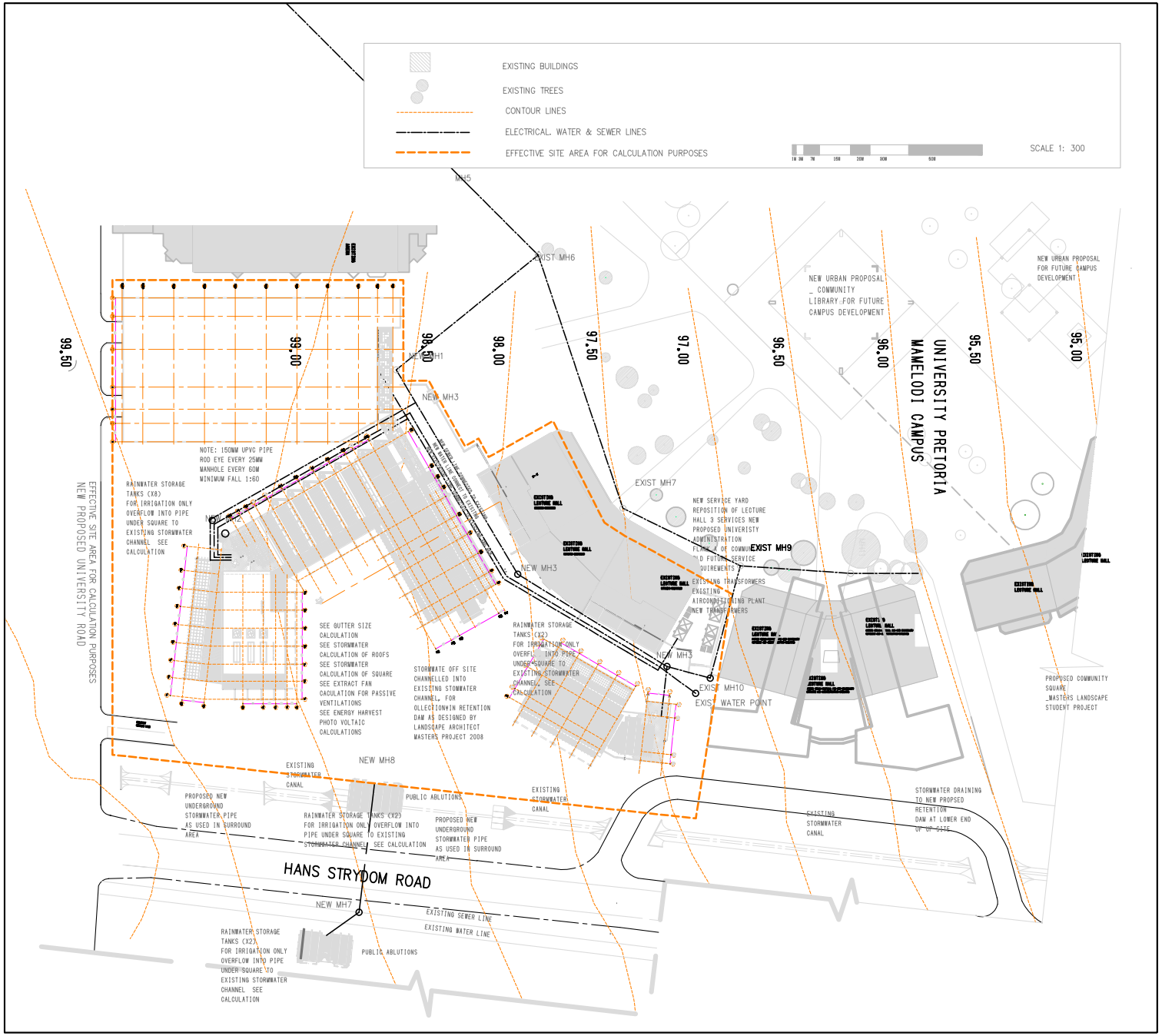
PROJECT No.
1_Master Architecture dissertation 2008_ University of Pretoria

DRAWING No.	REV.
MArch UP_PLAN_001_P01A. 2008	C

MAMELODI_ CIVIC AND COMMUNITY SERVICE

8.8_

Figure. 141
Roof & service plan
Scale 1:1500



ROOF & SERVICE PLAN _ SCALE 1:1500

DATE:	18.09.2008	SCALE:	1:1500 @A4
DRAWN BY:	Jako Nias	CHECKED BY:	
APPROVED BY:		CHECKED DATE:	

SITE DESCRIPTION:
University of Pretoria
Hans Strydom, ERF 29552
Mamelodi

DRAWING TITLE:
COMMUNITY ENGAGEMENT FACILITATOR
ROOF & SERVICE PLAN

PROJECT No.
1_Master Architecture dissertation 2008_ University of Pretoria

DRAWING No.	REV.
MArch UP_PLAN_001_P01A. 2008	C

8.9_

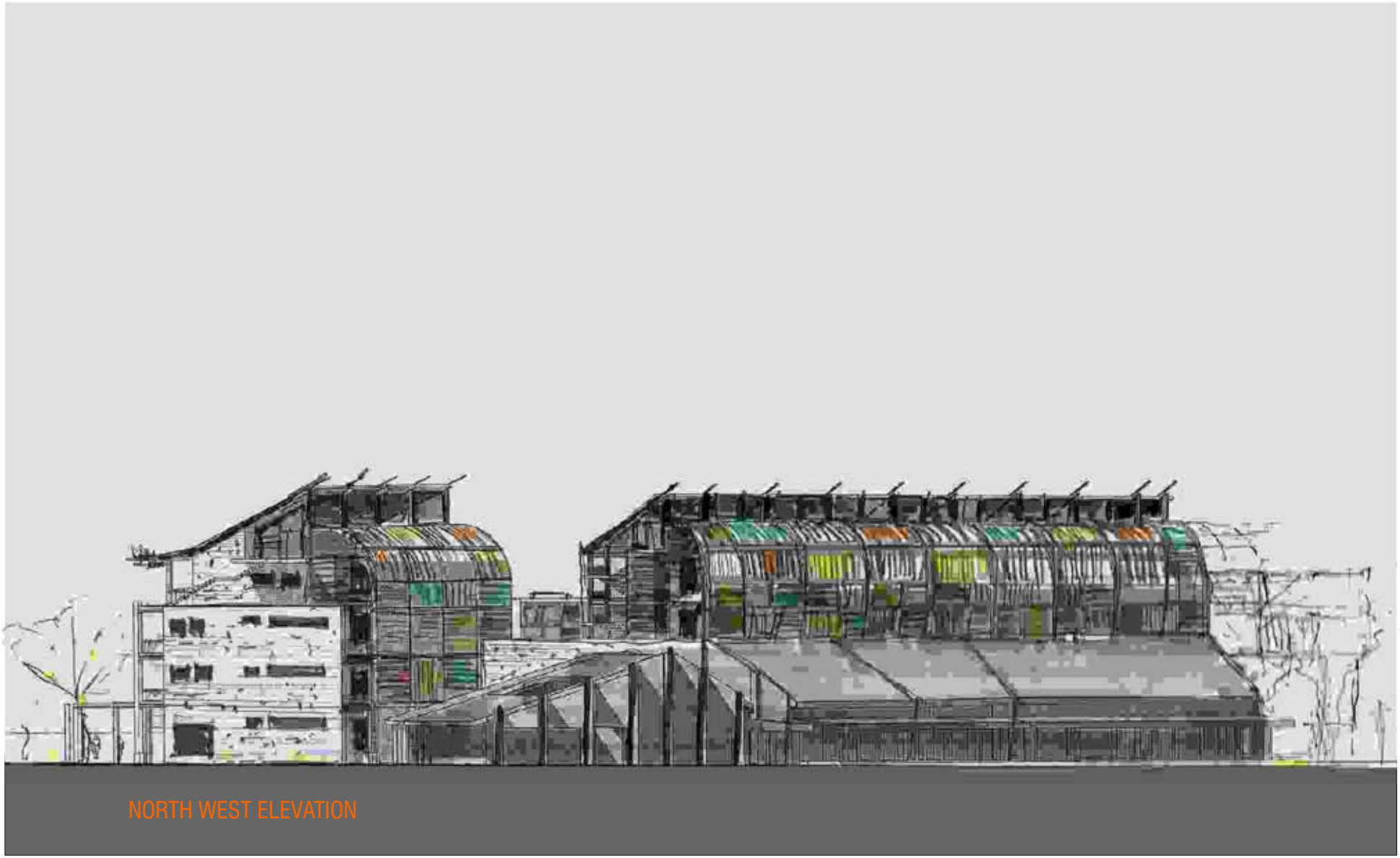


Figure. 142
North West elevation

8.9.1_

Figure. 142
South East elevation