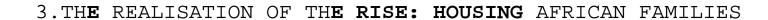
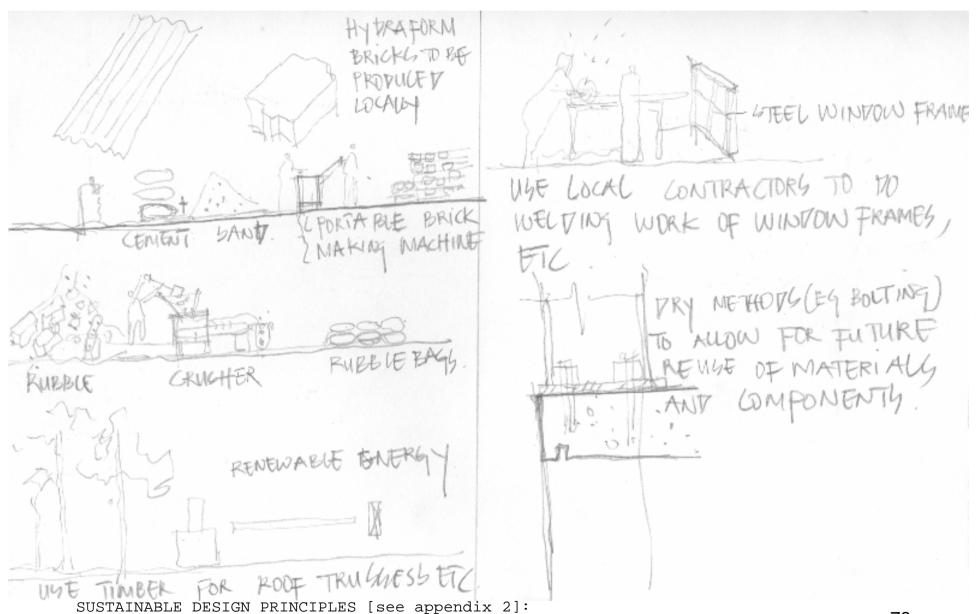


SUSTAINABLE DESIGN PRINCIPLES [see appendix 2]:

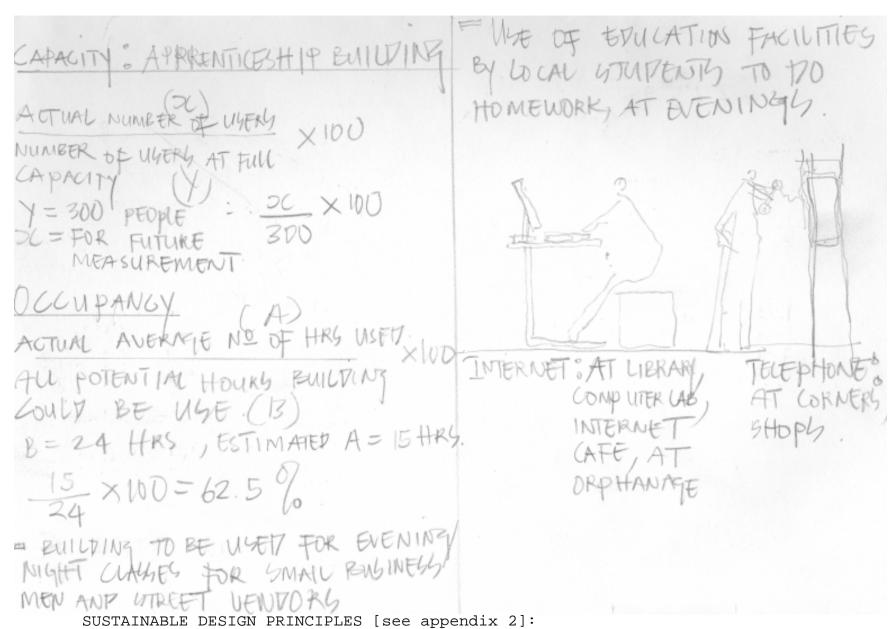






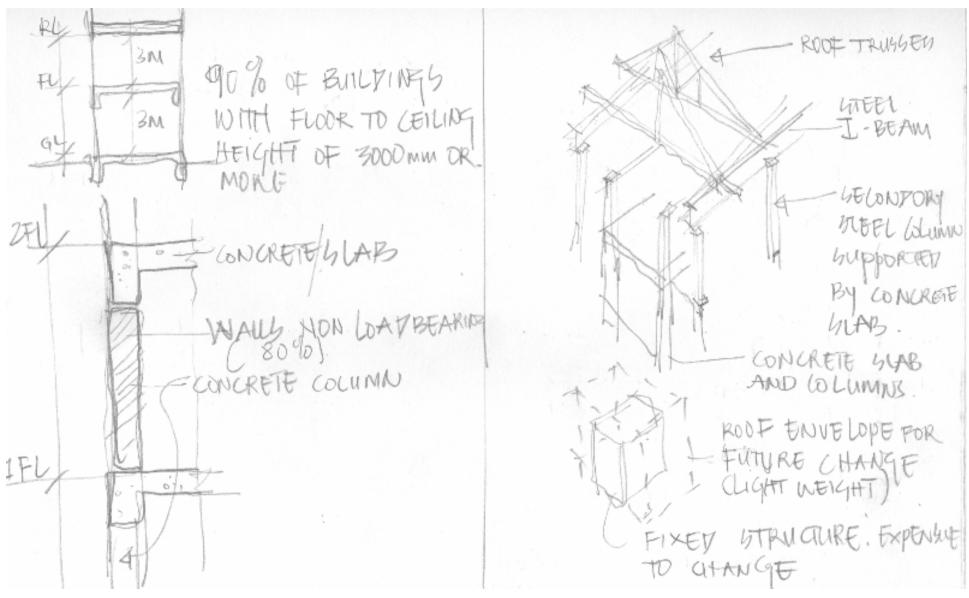








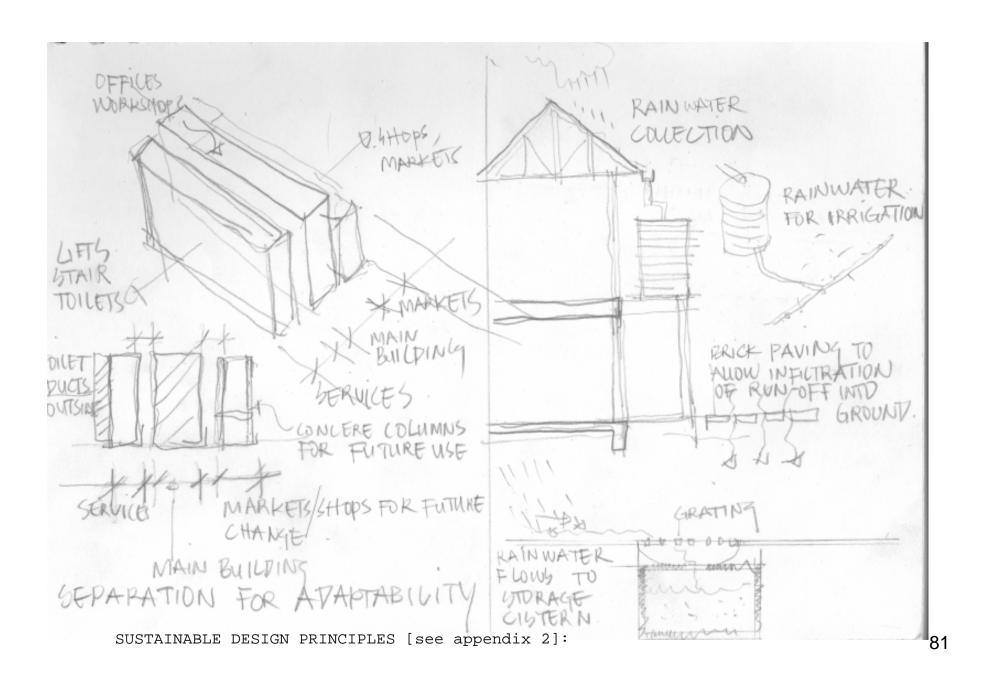




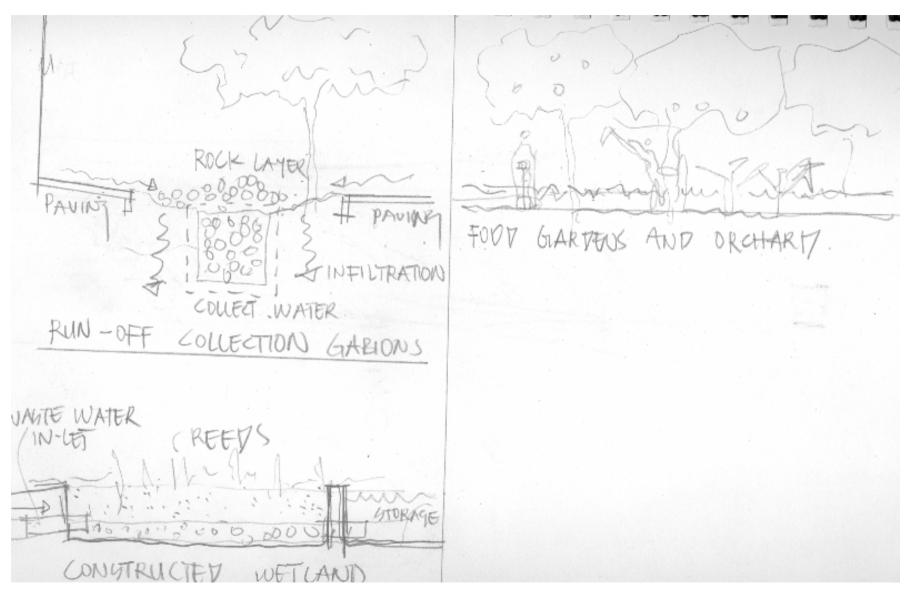
SUSTAINABLE DESIGN PRINCIPLES [see appendix 2]:











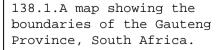
SUSTAINABLE DESIGN PRINCIPLES [see appendix 2]:



138.1

# 2. CONTEXT

2.1 Regional Mamelodi
is a Township
located in the
Greater Tshwane
Metropolitan
in the Gauteng
Province of South
Africa.





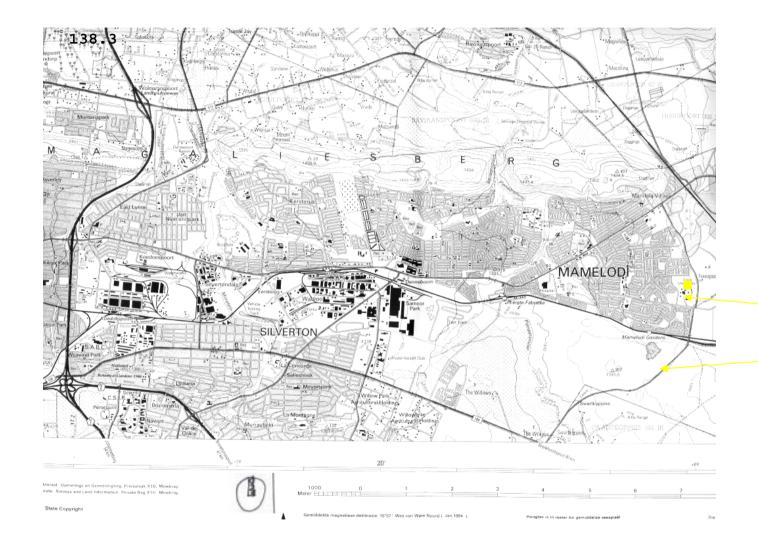


The total area of Mamelodi is approximately 25 square kilometres and the unofficial population of Mamelodi is now close to one million. It is a fairly flat area other than the northern and eastern ridges that form the boundary around the township.

Hans Strydom Drive

138.2 Satellite image showing Mamelodi, South Africa.





Mamelodi is situated about 20 km east of the centre of the City of Tshwane (Pretoria). It is bordered by the Magaliesburg ridge in the north, Pretoria's northern suburbs such as Silverton (industrial area) and "the Willows" (residential area) in the south, another township called Eersterus in the west and another large Magaliesburg ridge running north-south in the east.

University of Pretoria, Mamelodi campus, Ext. 5

Hans Strydom road

138.3 A cartographic map showing the location of Mamelodi with reference to nearby areas, Pretoria.

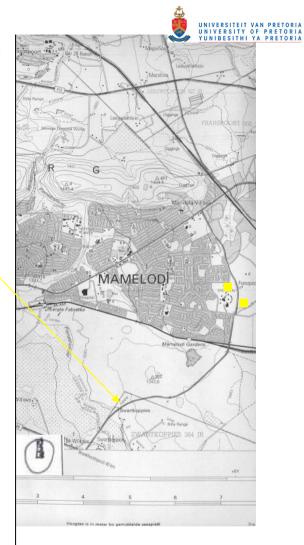


## 2.2 Local

The site under considerations is located in extension 5, Mamelodi Campus of the University of Pretoria, along Hans Strydom road.

## 2.3 Climate

The site falls under the summer rainfall area. Showers appear in the form of thunderstorm from October to April. The daily average temperature ranges from approximately 10 degrees Celsius in winter to 24 degrees Celsius in summer. Frost occurs during June and July. Moreover, dust storms occur mainly during August, September, and October due to the vast amounts of unprotected soil [WEATHERSA 2003].

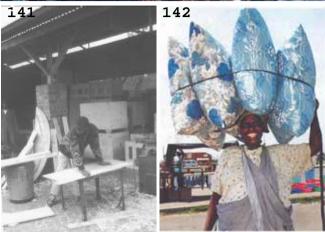


139.Aerial photograph of Mamelodi Vista University and surroundings.





#### 2.4 Economical context



Informal micro-enterprise sector (IME): This sector is driven by needs of people. Within the African context the IME sector is considered the most important employer. Studies show that it provides work opportunities to 70-80% of the urban workforce. Therefore, architecture must respond to IME such that it is efficiently facilitated and sustained on long-term basis [Haan 2006]. Africans are rising up in this sector, the question is, how can this rise be grounded and sustained?





140. Clothes retailer, Soweto.

141. Carpenter, Johannesburg.

142.Pillow retailer, Soweto.

143. Sculptor Grant Sihlahla, Soweto.

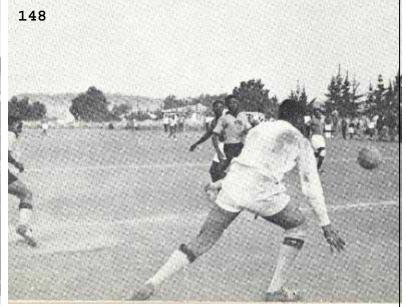
144.Florist Soweto-born Jean Davidson, Tarlton.

145.Craftsman makes tiny baths, kettles, mugs and plates from recycled metal, Soweto.

146.Freedom Square barber.









Bantu education was established by the apartheid regime and was designed to produce people for menial work. For example black people were forced to study gardening and sewing as subjects in school.



147.Black Africans are still very active as building artisans, Mamelodi.

148.Soccer is a popular sport amongst the Black Africans, Mamelodi.

149.Home craft and needlework for the Black Africans were also encouraged by the previous apartheid government.

150.Nursing work is also popular amongst the Black Africans. However, there is a increased number of doctors in the townships.



The Everyday

As designers we need to think of places and linkages in terms of activities of the everyday. The words we use to describe and define space should be what the inhabitants do everyday; walk, pray, play, work, think, cook, eat, drive, park, worship, learn, sell, buy, talk, seat, sleep, bath, read, build etc. Therefore, the context needs to be expressed by the same words. Humanity should not be "...lost in statistics and technical solutions" [Van der Waal 1991].



151. A little boy selling newspapers in Africa Road, Soweto, should be in school.



SITE; 6:30-9:30am

15-04-2008

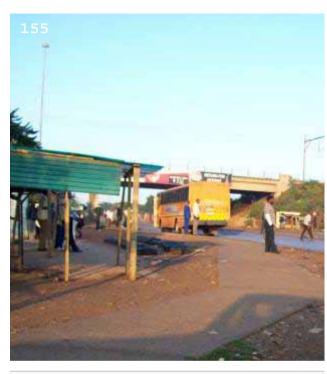
#### HINTERLAND STREET

- 1.At the University entrance-pick up zone for taxis and buses
- 2.Petrol garage-pick up zone, both students and workers
- 3.At the municipal clinic-pick up zone next to the post office
- 4.At a bus stop, pick up zone
- 5.Corner Tsamaya and Hinterland Street-very intense pick up zone



SITE; 6:30-9:30am

15-04-2008



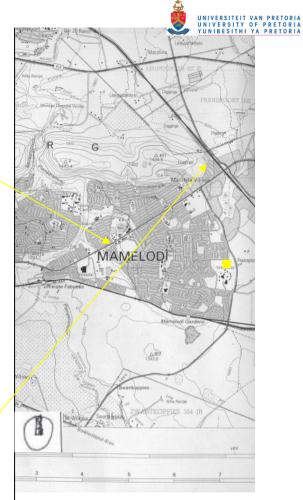
#### TSAMAYA ROAD

- 1. Buses, taxis, cycling, pedestrians
- 2.Container shops
- 3.Pick up zone next to school-near Anglican Church
- 4. Paving used for informal tradingsmall scale shops-4x2.5m to 8x5m
- 5.Zozo panels manufactured and displayed on the street
- 6.Cattle, sheep, goat for sale
- 7. New skill training centre recently completed, Tswane North College Mamelodi campus, park (informal trader at the borders) and Mamelodi Hospital, computer school, Jewish community project



## SECTION 10

- 1. Housing typology-steel frame structure with option for extension in the future
- 2.Chicken heads and feet for sale
- 3.STANZA BOPAPE
- 4.Clinic and sports complex
- 5.Many school children walk to school
- 6.Car washing business
- 7.Driving school before Hans Strydom



SITE; 6:30-9:30am

15-04-2008

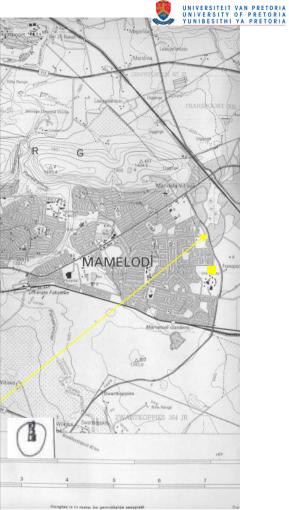


## HANS STRYDOM

### Motel

- 1.Collection zone
- 2. Shopping complex at the foot of the
- 3.north bordering Magaliesberg mountains- fenced development
- 4. Goats crossing the road
- 5. Single lane with about 10m reserve on the sides
- 6.Nodes at the intersections with perpendicular roads-Hinterland informal markets, taxi rank, playground, informal rubbish collection)







SITE; 6:30-9:30am

15-04-2008



#### SUBURBS-SOUTH OF HINTERLAND

- 1.Organised waste removal-municipal service
- 2.Ownership of street front-home owners clean the pavement in front of their houses
- 3. Many home businesses- hair saloons, tuck shops, taverns (garage), crèche, surgeries
- 4.Low boundary walls (1.2 m high)
- 5.Existing community hall







#### GENERAL

- 1.Storm water continually flows on the roads-poor storm water drainage
- 2.Neglected open space normally pile up rubbish-no sense of ownership
- 3. Public open space surrounded or near by houses, is cleaned and taken care of.
- 4.Most trees at homes are orchard trees





SITE; 9:50-13:30 16-04-2008

167





### HINTERLAND STR SUBURBS-SOUTH OF HINTERLAND

- Number of pedestrians reduced
- 2. Shops opened and people gather around them.
- Storm water flows- car washes, laundry, ect
- Retail attraction-at corner of streets
- Public park maintained 5.
- One person at the edge of the park
- Old women working at the gardens of the old age home
- Pick up truck to collect refuse
- Women cleaning their street front
- 10. Most of the streets no people or very few, but more gather at the homes with tuck shops, buying bread, vegetables
- Continuous house additions-bricks packed at front of houses for construction work
- 12. Zozo panels also used for building outbuildings-for renting out, retail shops, children room ect
- 13. Boundary walls used for hanging laundry
- 14. Glass collected at open space







SITE; 9:50-13:30

16-04-2008



### TSAMAYA ROAD

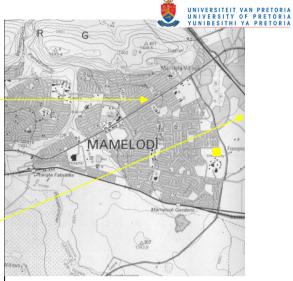
- 1.Board saying-Pedestrian Safety Project
- 2.Small shops opened- food sold with shaded seating area along the pavement
- 3. Traffic less busy



173

### INFORMAL HOUSES-EAST OF HANS STRYDOM

- 1. Houses at human scale- about 2.2m high to roof level
- 2.Streets are more vibrant
- 3.Commercial nodes- small shops, informal traders, flea markets, and concentration of traffic- equal mix of men and women business owners
- 4.Some of the roads are paved with bricks rather than tar
- 5.Storm water damages roads and cause bumps and potholes
- 6.Furniture, building materials etc sold at the streets
- 7.Many informal traders around schools
- 8.Sports ground-no grass surrounded by houses
- 9.Rubbish informally collected and burned at certain times
- 10. Fire wood is used for cookingespecially for commercial purposes











SITE; 9:50-13:30

16-04-2008

## HANS STRYDOM

- Storm water channel clogged with rubbish-especial at intersections
- 2. Very low flow of pedestrians
- 3. Welders welding and displaying the finished work under a shaded structure
- 4. Brick laying business

5. 'Chicken dust' shop operating



182



176











SITE; 9:50-13:30 16-04-2008



### UNIVERSITY CAMPUS

- 1.Arena used for weddings, events, and sports activities and the cafeteria is used on Saturdays'
- 2.Most students from Limpopo, Mpumalanga, and North West provinces
- 3.Students rent from local people-R300 per month
- 4. Campus clinic- counselling also for Mamelodi school children
- 5.Campus Legal Aid Clinic- offers legal services to the local community



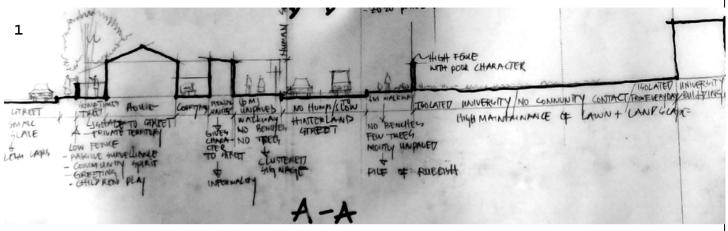


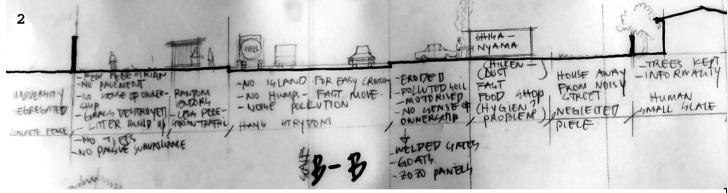


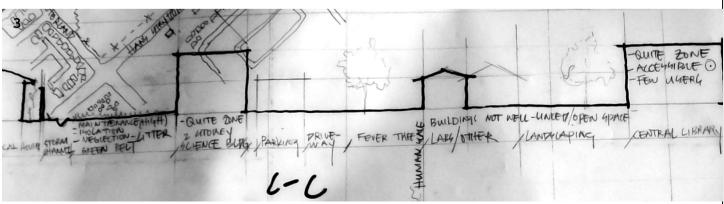




THE RISE OF CONTEXT









- 139.Analysis of the streets surrounding the site
- 1. Hinterland Street.
- 2.Hans Strydom.
- 3.University of Pretoria Mamelodi Campus.



### BRIEF

#### HOUSING AFRICAN FAMILIES

- 1.Business school: The school, trains and equips existing informal traders, jobless residents of Mamelodi, and other small business men and women. Entrepreneurship is the driving spirit of the school. Businessmen and businesswomen are to be trained not only to start their own businesses but also to grow and expand to bigger businesses in the future. The school should prepare even the non-matriculate students for the Information Age we are in today. It aims to avoid preparing students for the industrial Age [training students just to get jobs]. Instead, they are to be equipped to be able to obtain information then wisely apply it to their own current world to create rather than to repeat as the Industrial Age use to do.
- 2. Family support facility: Family activities, marriage counselling, and family building activities are accommodated in this facility. Opposite it is the exhibition/gallery, which will exhibit Black African achievements locally, nationally and internationally.
- 3.Home-based businesses: Live-work units are to accommodate jobless single mothers who are interested in starting their own businesses. These units are positioned in the vicinity of the University of Pretoria, Business School and nearby residencies to facilitate their operation. Training facilities are also part of these live-work units.
- 4.Rental units: These are designed for singles or at most very small families who are running their businesses along Hans Strydom road which is planned for light industries.



- 5. Orphanage: In the process of healing African families the project accommodates for orphaned and homeless children from Mamelodi.
- 6.Student accommodation: University students are accommodated with the privilege of getting services from the owners of the accommodation facilities. Local people who own the student accommodation will manage and maintain them. Exchange students from other institutions who intend to offer community services can also use the accommodation when the University of Pretoria is on recess.

#### CLIENT PROFILES

1.Rev. William Winston founder of The Joseph Business School

The Joseph Business School [Winston: 2008] is a world-class, state-of-the-art business school that educates students of any background on how to become successful entrepreneurs and business leaders using biblical principles. The Joseph Business School is one facet of the overall Joseph Center® mission which is to provide a virtual "one stop" shop for entrepreneurs and business development.

"Thus saith the Lord... I am the Lord thy God which teacheth thee to profit, which leadeth thee by the way that thou shouldest go." [Isaiah 48:17]. This Christian Bible scripture was the foundation of the mission for The Joseph Business School. [Winston: 2008]

Highly successful entrepreneurs identify business opportunities and leverage new capabilities to create greater wealth and independence for themselves while providing new employment opportunities for millions of others. The school's goal is to produce entrepreneurs who will be able to receive God's direction and blessing so that they will be a blessing to the community, the nation, and the world [Winston: 2008].



The Joseph Business School has been in operation since 1998. The school, certified by the State of Illinois Board of Education, U.S.A, consists of a rigorous nine-month program [Winston: 2008] . Winston recently purchased part of Tuskegee, which was for people of colour in the U.S.A when they were not allowed to study in white owned institutions. His vision has expanded to the people Mamelodi. After consulting his friends, like Oral Roberts founder of Oral Robert University, Pat Robertson founder of Regent University, and others, Winston raised enough funds to initiate the project in Mamelodi.

According to Winston the project is to be founded on the motive of restoring Black families in the township. His desire is to redefine the role of Christian missionaries among the Black community. They are to take responsibility for the needs of God's people. They are only relevant if they practically solve the needs of the community rather than boast on eloquent sermons and theology of no effect to needs at hand.

#### 2. The Government

The Department of Social Development of the Republic of South Africa has been involved with many social development projects currently running in Mamelodi . Bathopele, meaning people first, is the mission statement of the entire Gauteng province. In search for ways to put this in practice, major social development projects have been implemented in Mamelodi. Therefore, the government is willing and available to fund a portion of the Housing African Families project [Skweyiya: 2008] .The NDoH [National Department of Housing] will be involved as it can be seen as a model BNG [Breaking New Ground] project similar to N2 Gateway [Cape Town].

## 3. The University of Pretoria

The university has committed to treat Community Engagement as an integral in all aspects of learning and teaching. Therefore, the University is accessible for funding the project because it embraces community development. This will be in the form of offering its land and other resources as far as the project is concerned [University of Pretoria 1002008].

#### USER PROFILE

- 1. Informal traders: Most of the nodes along Hans Strydom are created by informal traders, selling vegetables, second hand cloths, etc. There is a vast potential of helping them develop their businesses
- 2. Jobless single mothers: The Department of Social Development currently provides a welfare fund for single mothers to support their children. This is not a sustainable approach because in the future if the fund fails, the single mothers will be left stranded. Considering the current global economic situation, there is need to help them to be self-sufficient rather than completely depended on the government.
- 3.Homeless children: The SOS Children's Village is already doing a wonderful job in taking care of homeless children in Mamelodi. We need more facilities for orphaned and homeless children. South Africa is faced with the HIV/AIDS challenge, leaving many children orphaned. It is time we integrate them with larger social development projects.
- 4.University of Pretoria students: The number of students enrolled with the University of Pretoria Mamelodi campus have been reduced drastically since the end of Vista University, being taken over by University of Pretoria. However, future plans of the campus indicate that this will change in the near future. Therefore, there is need for student accommodation in proximity to youthful facilities and the campus.

### 1 Business School

Workshops [565m²]
Shops/market stalls[400m²]
Administration[60m²]
Foyer [50m²]
Classroom [110m²]
Conference hall [240m²]
Toilets [270m²]
Stairs and escalators[80m²]
Computer Labs [220m²]
Library [470m²]
Apprenticeship Departments:
Cashflow, Communication,
Business Legality,
investment, and Business
systems[610m²]

### 2. Family Facility

Self-service
restaurant[170m²]
Public toilets [60m²]
Exhibition/gallery [185m²]
Offices [25m²]
Family hall [70m²]
Toilets [25m²]
Family reception/gallery[100m²

## ACCOMODATION SCHEDULE

### PARTIES INTERESTED

International Finance Corporation: a member of the World Bank Group, the SME Toolkit offers free business management information and training for small businesses / small and medium enterprises (SMEs) on accounting and finance, business planning, human resources (HR), marketing and sales, operations, and information technology (IT). The SME Toolkit offers a wide range of how-to articles, business forms, free business software, online training, self-assessment exercises, quizzes, and resources to help entrepreneurs, business owners, and managers in emerging markets and developing countries start, finance, formalize, and grow their businesses.

#### SITE SELECTION

The site is positioned along a busy road with a potential of becoming a commercial route. Very close to the informal settlement bustling with informal traders. Along the streets and at intersections different commercial activities are at display. At the northern side a residential zone frozen by the university's concrete fence borders the site.

#### 3. Home-based businesses

Small family units [660m<sup>2</sup>]
Offices [20m<sup>2</sup>]
Shops [50m<sup>2</sup>]
Training school [160m<sup>2</sup>]

- 4.Rental units [400m<sup>2</sup>]
- 5.**Orphanage**

Living units [1300m<sup>2</sup>] Study area [150m<sup>2</sup>]

- 6.Student accommodation with laundry facilities [760m<sup>2</sup>]
- 7.Fresh produce store [85m<sup>2</sup>]
- 8.Circulation [2000m<sup>2</sup>]

**TOTAL** [8540m<sup>2</sup>] **COVERAGE** [4555m<sup>2</sup>]



## CONCLUSION

#### WHAT THE SCHEME ACHIEVES

- 1.It is a platform for the restoration of the broken families in Mamelodi.
- 2.It allows for an environment of growth and multiplication for currently insignificant and non-existant small businesses.
- 3.It questions the need of architecture: when architecture is no more needed it should stop to exist and then, learn from the new needs of man why it should exist again.

#### BUILDING FOR CHANGE

Loved buildings are the ones that work well, that suit the people in them and that show the age and history. Revisiting and changing design decisions must be allowed instead of the drive toward completion [Brand 1994]. The buildings of the scheme could learn from the needs of users by the following ways;

- 1. Spending more money than usual on the basic structure, less on finishings, and more on perpetual adjustments.
- 2. Shape is square: the only configuration of shape that grows well and subdivides well and is really efficient to use is the rectangle. This the reason of using rectangular shapes in the scheme [Brand 1994].
- 3. Stairs, services, and corridors stand on one long side and a row of rooms on the other side allow for change.
- 4. For the sake of longevity there must be a serious structure. A concrete structure is used for that purpose. The building's foundation and frame should be capable of living 30-300 years [Brand 1994].
- 5. The buildings are designed for reuse and for disassembly: by using hydraform bricks that need no or less mortar so that they can be easily disassembled, roof structure supported on easily disassembled elements, bolting of components, drywall construction etc.



- 6. Walls and structure are protected from sun and rain by large overhangs to keep them healthy enough to be reused in the future.
- 7. Walls are separated from structure and allow for easy penetration with new doors and windows. Stud walls and easily unpacked hydraform walls serve this purpose.
- 8. Services are kept separate from the skin as well from structure by means of ducts.

#### NEXT STEPS AND PHASES

- 1. Training and assisting local residents to design, manufacture, franchise, and manage components of the buildings.
- 2. Establishing a local hydraform brick manufacturing company to be owned and managed by interested local residents with the help of the business school.
- 3. Identifying and selecting local artisans: welders, carpenters, plumbers, bricklayers, etc for training, testing, and appointment for the construction work phased as follows;
- Phase 1 -Business school
- Phase 2 -Home-based businesses
- Phase 3 -Rental units
- Phase 4 -Student accommodation
- Phase 5 -Family building facility
- Phase 6 -Orphanage



Continuous education, interaction, and exchange of information between identified locals and supporting bodies, experts, and clients. This is the main purpose of the conference hall.

#### LIMITATIONS OF SCHEME

- 1. Not enough exploration of materials and tectonics.
- 2. Very shallow demonstration of how water systems, energy systems, and social systems integrate and interact in the scheme.
- 3. The absence of real life users and clients with specific and dynamic requirements for the scheme.
- 4. Physical seclusion from the University of Pretoria Mamelodi campus.
- 5. Food gardens, rental units, and student hostels may not produce sufficient income to support businesses school, and orphanage.

#### ANSWERS TO MY CRITICS

- 1. Buildings on plan are very simple, harsh, and doors are out of scale:
  - Simplicity is one of the author's approaches to design. The users are simple people, uncontaminated with academic jargons. The buildings are for them, not them for the buildings. Charles Correa Peter Rich, and other architects have their way of representing social architecture. The author believes that social architecture could be represented by the social spirit that founded the programs and events of the scheme.
- 2. The scheme desires to mediate the differences between the more public and private activities so as to investigate new possible way of creating sustainability. The African Black family homes as observed by the author have faint walls between the public and private realms. For example, they prefer to seat in front of their houses [stoeps] rather than backyards so that they can watch and greet passers-by while enjoying their private conversations.



- 3. Excessively massive columns: These are used at public buildings to create an overwhelming sense of place as compared to the more private places.
- 4. The orientation of the business school disrespect the north sunlight: The programmes of the business school are dependent on the conceived to be busy commercial Hans Strydom road. It is easier to operate small shops and markets where pedestrians walk than closed off recesses.
- 5. Food garden space does not work: In case the food gardens are no more preferred by future users, the space may be used for other income generating activities that heralds environmental education, like handcraft, basket weaving, pottery, sustainable designs etc.
- 6. Why too many stairs in the home-based business family units: Individual stairs may be costly than communal ones, but they provided flexibility for change of each family unit without disturbing neighbours. Moreover, spaces underneath space could be used for storage, toilets, and other purposes.

#### WHAT IS THE ROLE OF THE SCHEME TO THE GROWTH AND RISE OF THE BLACK AFRICAN PEOPLE?

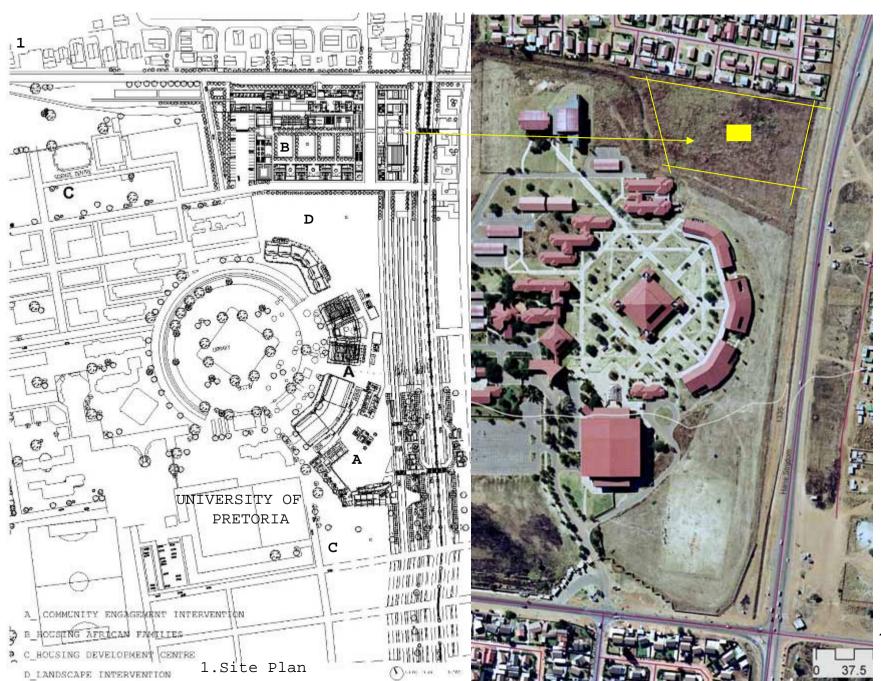
- 1. Provides possibilities and facilities for the African people to create, manage, and expand their own wealth without being totally depended on foreign investors.
- 2. The scheme helps African people to have reduced reliance on the South African government. Many political parties promise a lot of things especially during electioneering time, but fail to deliver on those promises.



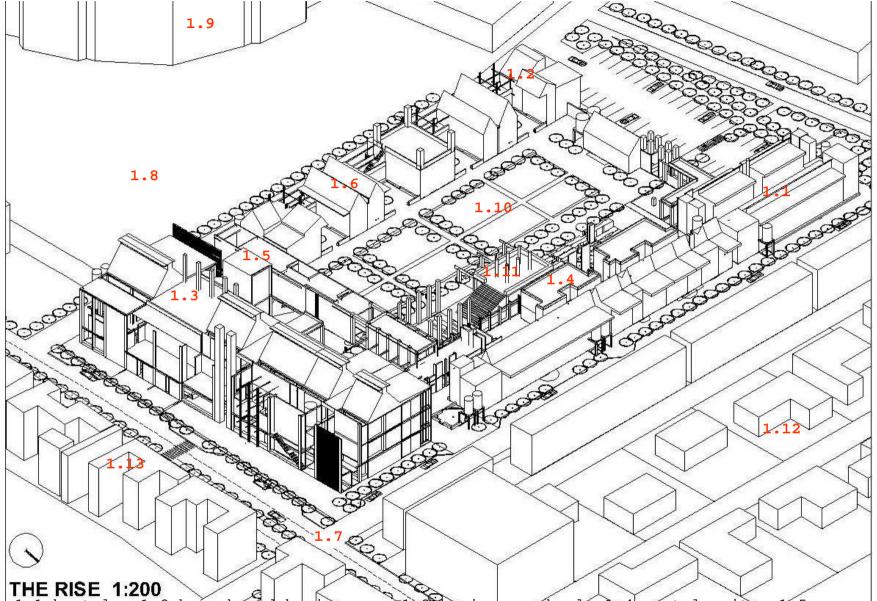
- 3.Major companies are constantly reducing staff members in search for bigger profits and due to business failures. Employees are then left jobless and hopeless. Therefore the scheme addresses this issue by creating and promoting a culture of entrepreneurship amongst the existing and future small business owners.
- 4. The scheme also seeks ways of solving current problems of the Black African people while creating future opportunities. For example, the orphanage solve the current problem of orphans as a result of HIV/AIDS and other family problems, while supporting work-live developments to strengthen existing families for the future.
- 5. The scheme desires to tap into the minds of Black Africans. Their past told them they are not capable of the best. However, their wild and questioning minds told them they were created for the best, they were created for this planet, and they were created to rise from their past to create their future.



# 3.THE REALISATION OF THE RISE: HOUSING AFRICAN FAMILIES IN MAMELODI

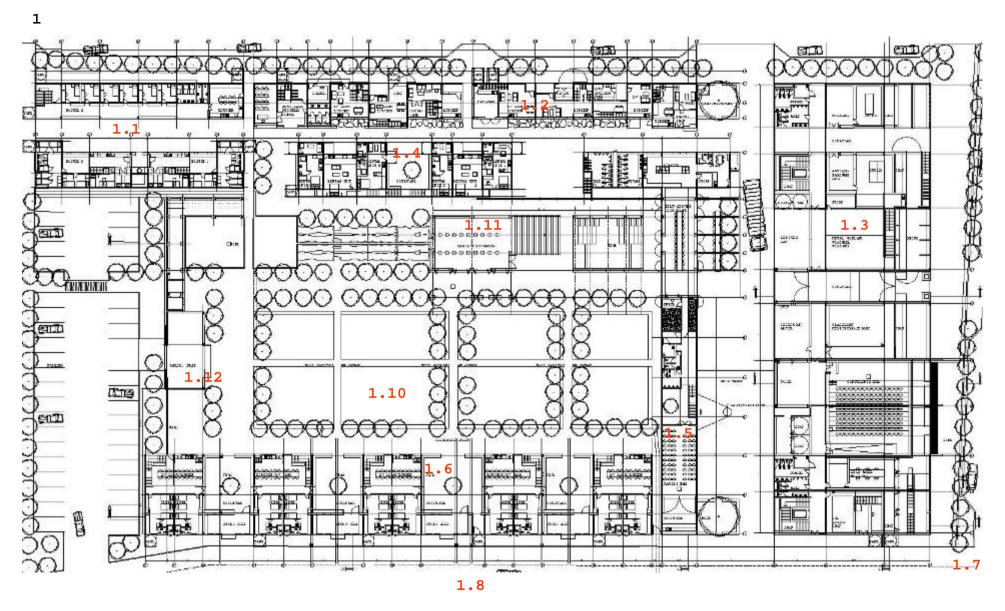






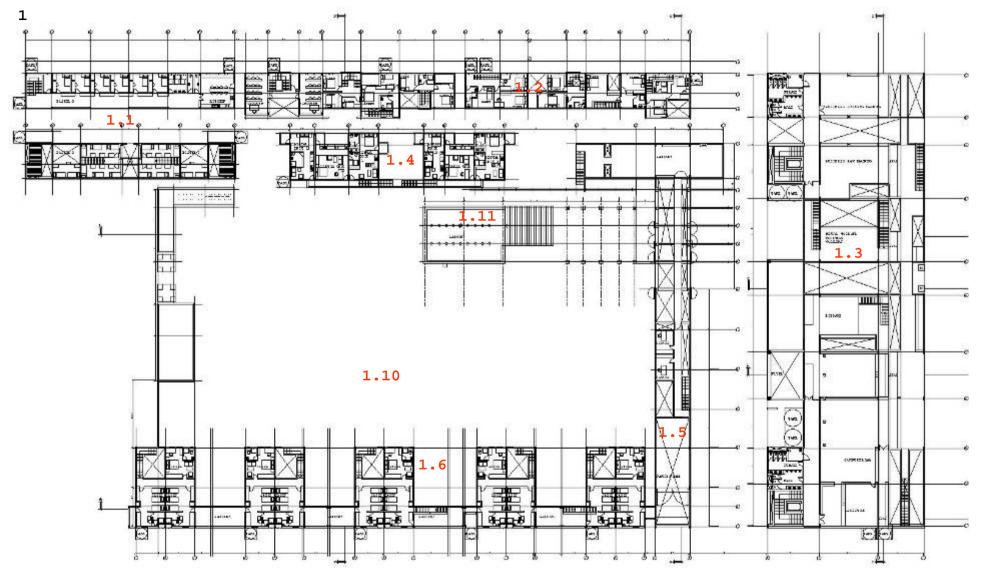
1.1 hostels, 1.2 home-based businesses, 1.3 business school, 1.4 rental units, 1.5 family building facility, 1.6 orphanage, 1.7 Hans Strydom, 1.8 park, 1.9 University of Pretoria 1.10. Food gardens 1.11. Gallery 1.12. Residential units, 1.13. Commercial ans light weight industrial buildings.





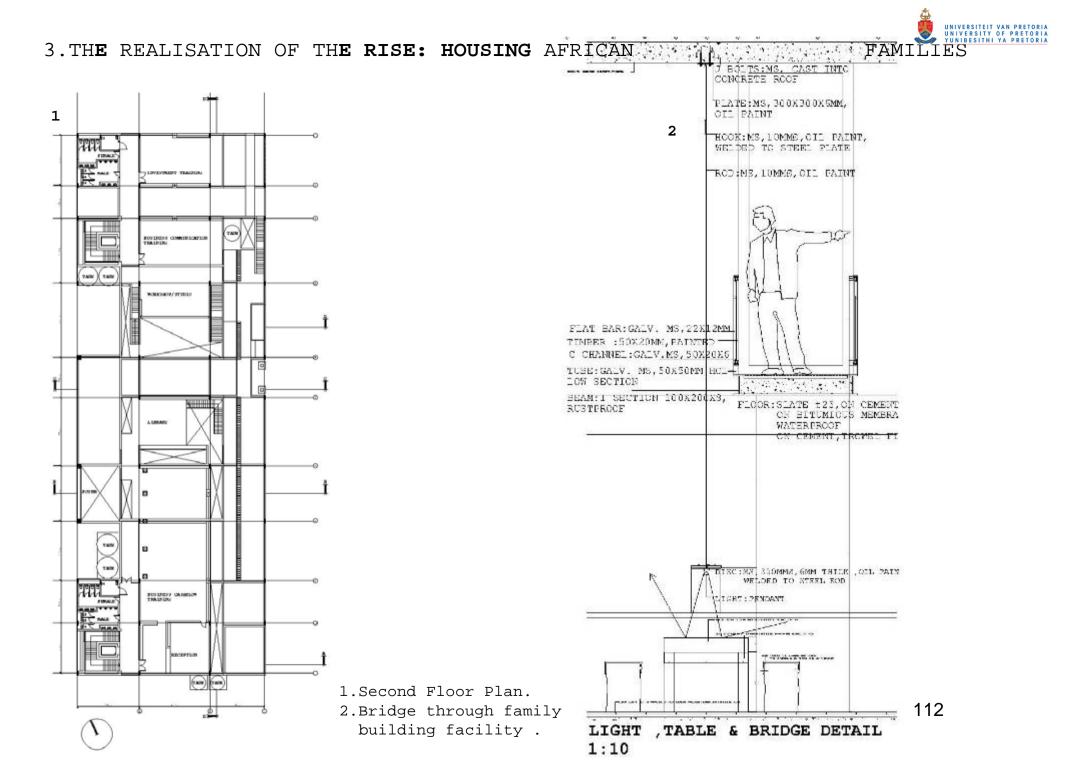
1.Ground Floor Plan: 1.1 hostels, 1.2 home-based businesses, 1.3 business school, 1.4 rental units, 1.5 family building facility, 1.6 orphanage, 1.7 Hans Strydom, 1.8 park, 1.9 University of Pretoria 1.10.Food gardens 1.11.Gallery 1.12.Fresh produce



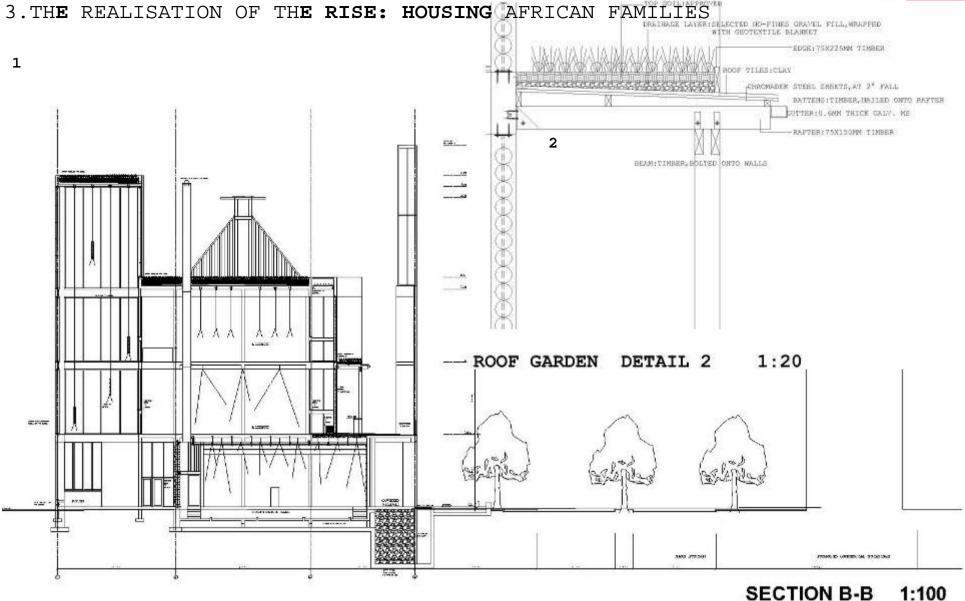


1.First Floor Plan: 1.1 hostels, 1.2 home-based businesses, 1.3 business school, 1.4 rental units, 1.5 family building facility, 1.6 orphanage, 1.10.Food gardens 1.11.Gallery.

**ÙFIRST** 1:200

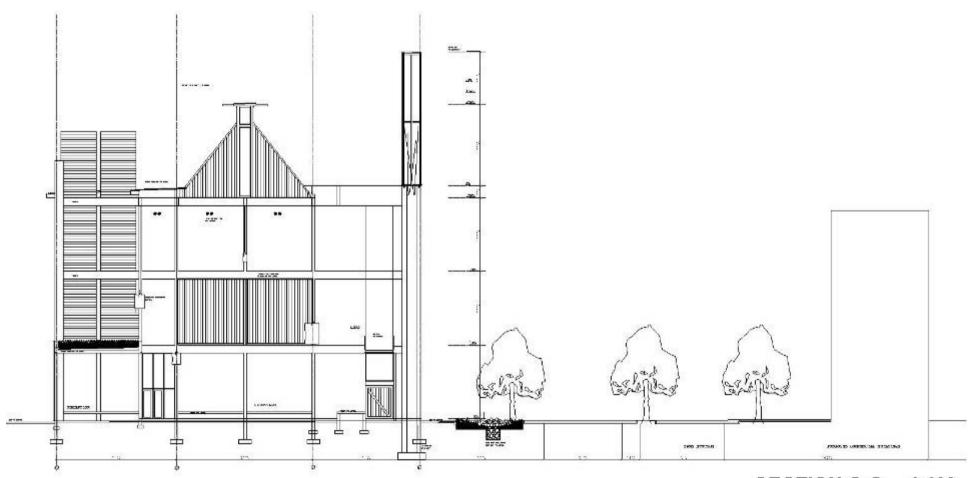






- 1. Section B-B through the business school, showing the foyer, conference hall, rock store bin to ventilate conference hall, and library.
- 2.Roof garden detail 2 above a shop.

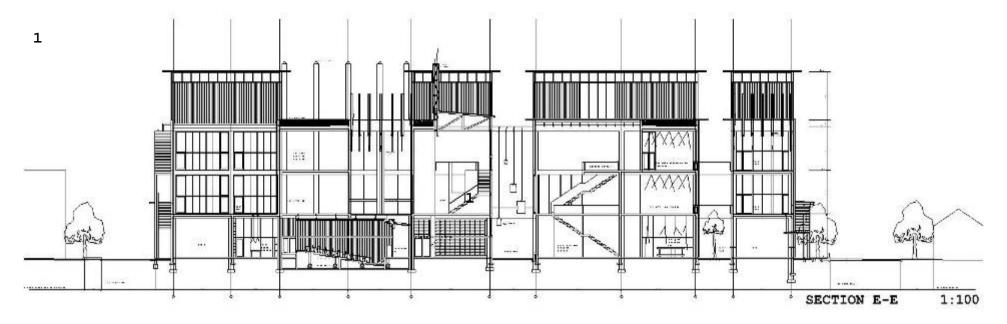
1

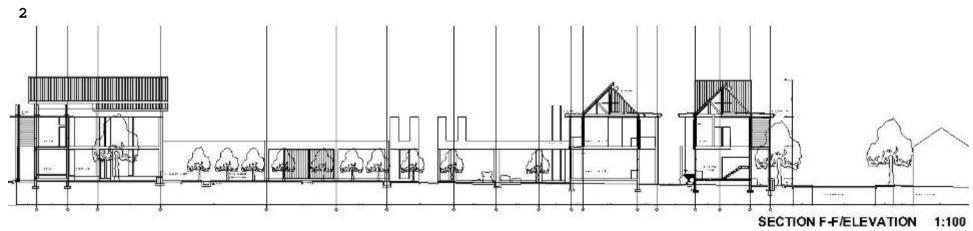


SECTION C-C 1:100

1. Section C-C through the business school courtyard and entrance tower.



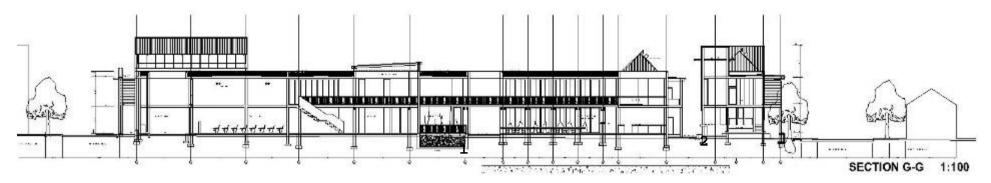


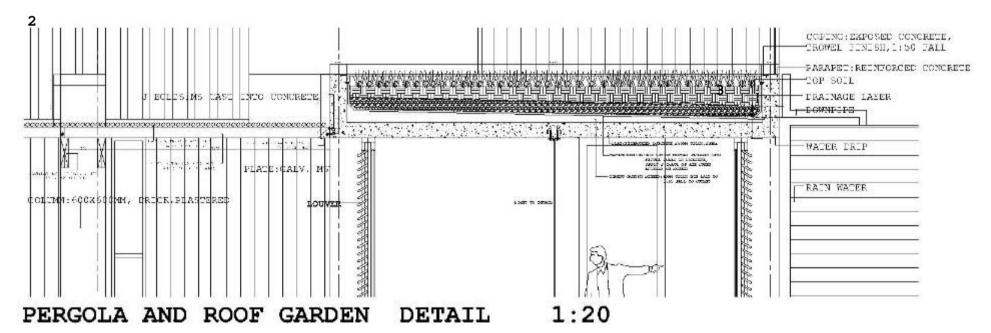


- 1.Section E-E showing shops, conference hall, classroom, library,workshops, and courtyards.
- 2. Section E-E through home-based business, food gardens, and orphanage.



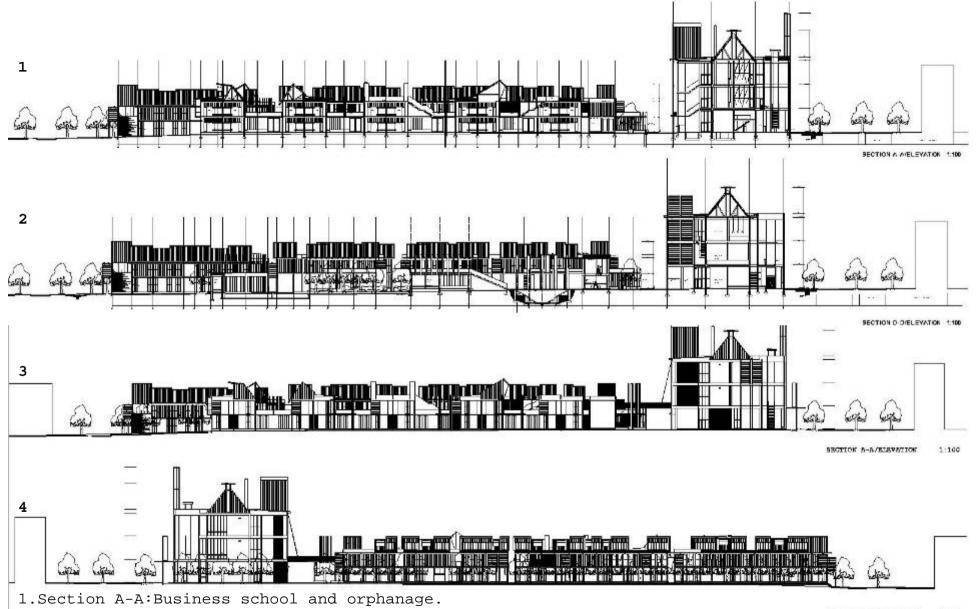
1





- 1.Section G-G through family building facility, showing family hall, restaurant, section through home-based business family unit.
- 2. Roof garden to provide insulation and oxygen for occupants.





- 2.Section D-D:Business school and restaurant.
- 3. South Elevation.
- 4. North Elevation.

SECTION D-D/ELEVATION

1:100

117