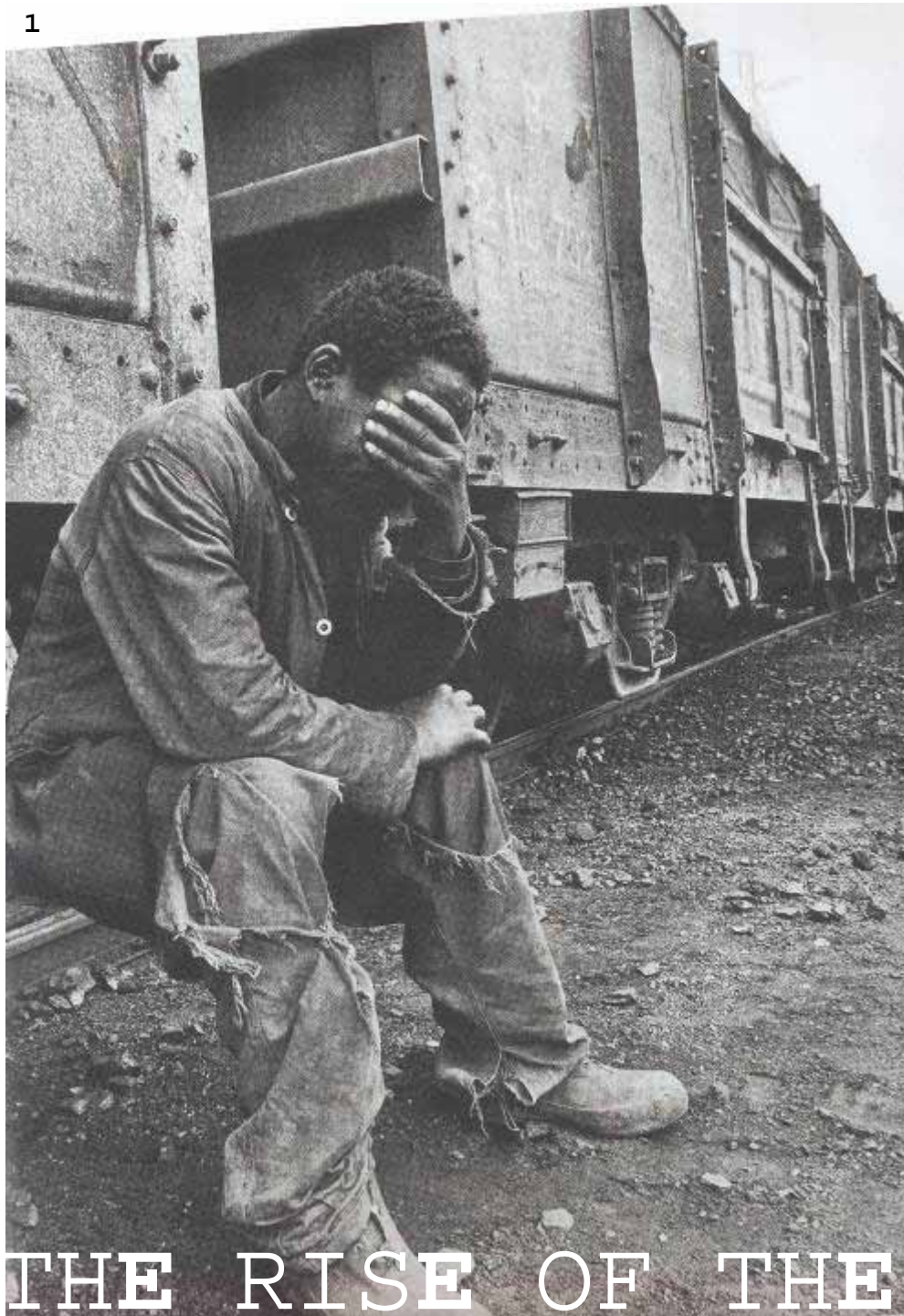


1



# THE RISE OF THE BLACK PEOPLE

THE RISE OF THE **BLACK** PEOPLE: UKUVUKA KWABANTU ABASUNDU

BY: MBONGISENI EMMANUEL NATHI NKAMBULE

DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE  
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STUDY LEADER: GARY WHITE

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1. Coal worker at Nancefield  
railway station [1978].

## ACKNOWLEDGEMENTS

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The Black Africans  
The people of colour  
Abantu abasundu

## THE RISE OF THE BLACK PEOPLE ABANTU ABAMNYAMA BAYAVUKA

Finally I would like to thank all the Black African architecture students those still studying and those who left after completing their studies. I begin with Chumani Nxiweni who founded my architectural journey from my first year [2003]. Absalom Molobe, Mandla Bhukwana, Ernest Mahlangu, Abel Mosweu, to mention a few. They were open to discuss things that make us worship and praise Mvelinchatu for being Black Africans. Our ancestors left a hidden fear in us for being Black Africans. They made us feel we are not complete human beings if we fail to master the European culture. Thank God the Light has risen upon us, now we know we were predestined and purposed to show forth His glory here on earth. We all came to this common revelation which we will never betray until we entrust it to our able children and children's children.

God the creator of Black Africans so loved us  
He gave us a skin that stands the heat of Africa  
Somandla gave us a sense of humour that enlightens our faces  
Numerous rivers that gladden our beloved Africa  
Tough muscles to climb her mountains and fight her enemies  
The Nguni cattle to plough the African soil  
And a big heart to welcome the strangers that invaded Africans  
Thank God we are Black Africans  
Born amongst the greatest people of Africa  
Born free so that we can free many bound  
This is our calling bafowethu  
This is why we are Black Africans  
Vuka Afrika! Vukani maAfrikans!

Mbongiseni Emmanuel Nathi Nkambule  
Department of Architecture, University of Pretoria  
November 2008

The people shall rise again  
The people shall rule again  
The people shall read again



# THE RISE OF THE BLACK PEOPLE ABANTU ABAMNYAMA BAYAVUKA

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Ayivuke iAfrika

Abavuke abantu beAfrika

Asivukeni maAfrikans



2

## INTRODUCTION

*"Go to the ant, you lazybones!  
Consider its ways, and be wise.  
It has no chief, overseer nor ruler;  
Yet it provides its food in summer  
and gathers its supplies at harvest-  
time.*

*Lazybones! How long will you lie therein  
bed?*

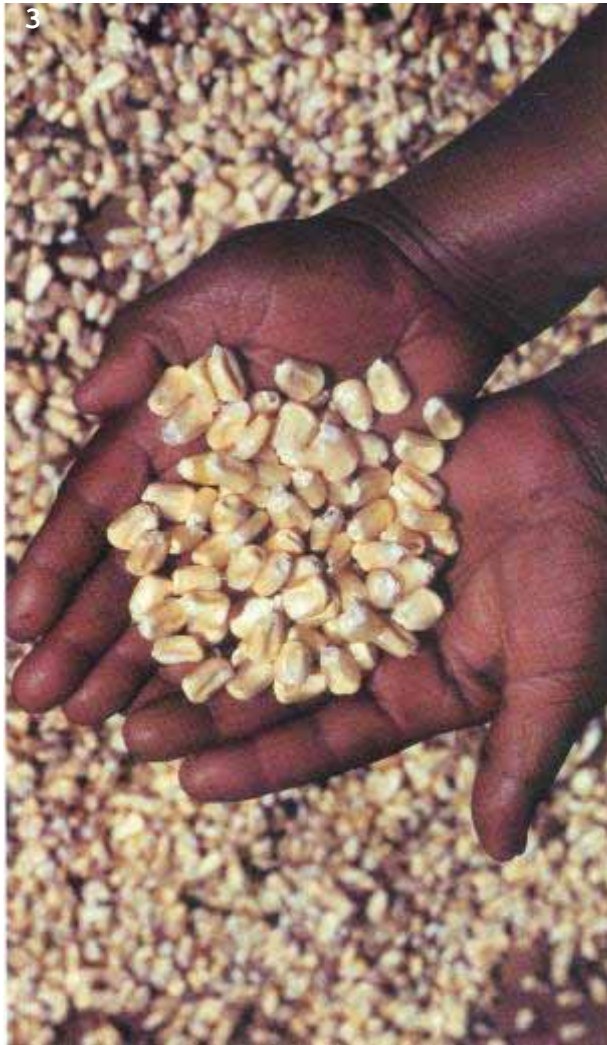
*When will you get up from your sleep?  
I'll just lie here a bit, rest a little  
longer,  
Just fold my hands for a little more  
sleep"-  
And poverty comes marching in on you,  
Scarcity hits you like an invading  
soldier...*

*If you love sleep, you will become poor;  
The ruin of the poor is their poverty  
he who sleeps during harvest is an  
embarrassment...*

*A lazy person won't plow in winter; so  
that at harvest-time, when he looks,  
there is nothing...  
Whoever is lazy in doing his work is  
brother to the destroyer; idle hands  
bring poverty."*

*-The Mishlei of Shlomo [Stern 1998:941-  
992]*

2. Black workers wake up very  
early to work, railway  
station, Pretoria [1965].



**RISE THROUGH DILIGENCE TO ABUNDANCE**

*"Keep your eyes open, and you'll have plenty of food.*

*A sensible person gathers in summer  
He who farms his land will have plenty of food,*

*But he who follows futilities has no sense...*

*Much is produced by the strength of the ox...*

*In all work there is profit, but mere talk produces only poverty...*

*The plans of a diligent man lead only to abundance;*

*But all who rush in arrive only at want.*

*The wealth of the rich is his fortified city...*

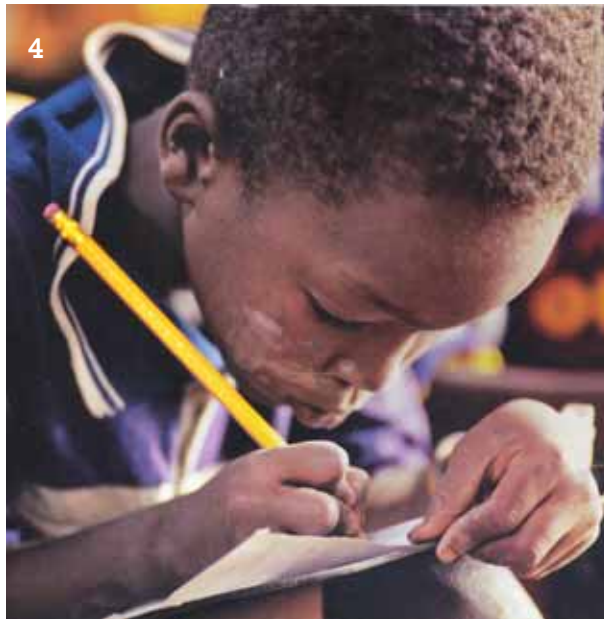
*...Some give freely and still get richer,  
While others are stingy but grow still poorer...*

*The person who blesses others will prosper;*

*He who satisfies others will be satisfied himself."*

*-The Mishlei of Shlomo [Stern 1998:941-992]*

3. Whatever a man sows the same shall also he reap.



RISE THROUGH EDUCATION TO GREAT WISDOM

*"...Poverty and shame is for him who won't be taught,  
But he who heeds reproof will be honoured...*

*He who walks with the wise will become wise, but the companion of fools will suffer...*

*How much better than gold it is to gain wisdom!*

*Yes, rather than money, choose to gain understanding...*

*To acquire good sense is to love oneself; to treasure discernment is to prosper...*

*Without deliberation, plans go wrong; but with many advisers, they succeed...*



*..He who has skill in a matter will succeed;*

*Do you see a man skilled at his work? He will serve kings, not obscure people...*

*A person's gift clears his way and gives him access to the great..."*

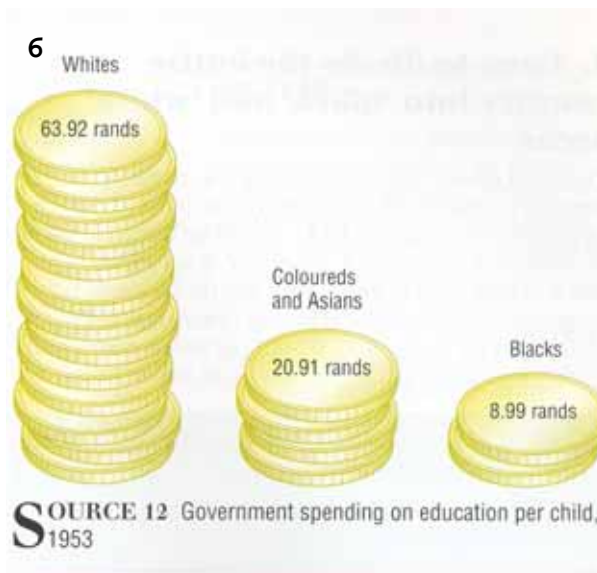
*-The Mishlei of Shlomo [Stern 1998:941-992]*

4.School boy, Mali.

5.Men at work, factory manufacturing electrical equipment, Pretoria.



# THE RISE OF THE PEOPLE UMUNTU.....NGUMUNTU.....NGEBANTFU

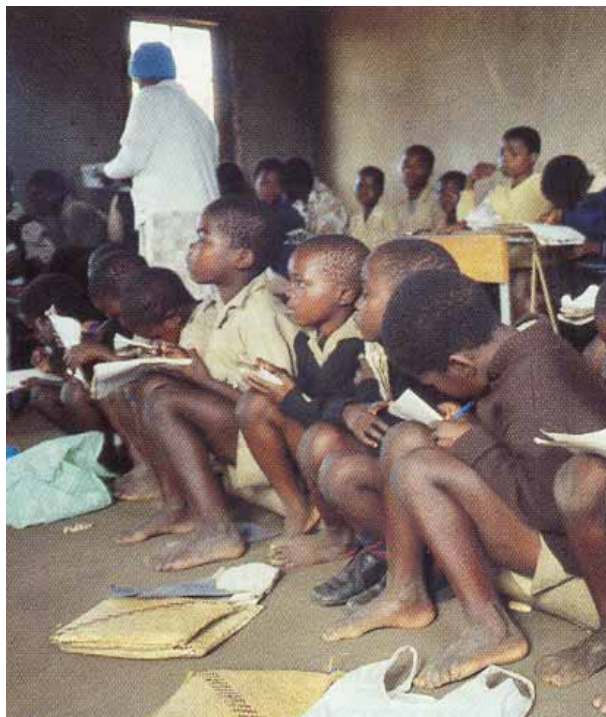


## RISE FROM INJUSTICE THROUGH HARDWORK

*"...Both oppressing the poor to enrich oneself and giving to the rich yield only loss. The fields of the poor may yield much food, but some are swept away because of injustice. Wealth gotten by worthless means dwindles away, But he who amasses it by hard work will increase it. Nothing comes from ill-gotten wealth..."*

*A good name is rather to be chosen than great riches Don't exhaust yourself in pursuit of wealth; be smart enough to desist..."*

-The Mishlei of Shlomo [Stern 1998:941-992]



6.A classroom under the poor Bantu education system created by the apartheid regime [1953].

7.Police dogs used to force back a crowd at Orlando stadium, Soweto, 1960s.

# 1. THE RUIN OF THE PEOPLE: BLACK FAMILY SHALL RISE AGAIN



*Do you hear the voices?*

*Voices of your deserted children*

*Voices of your aborted babies*

*Voices of your hopeless orphans*

*Voices of your restless homeless*

*Voices of your crooked young ones*

*Voices of your wounded ones*

*Oh African! What have you done?*

*Why ruin your own family?*

*Why ruin your own country?*

*These are the drops of your family's blood!*

*Crying out to Mvelinchanti from the ground*

*And you have already received your curse*

*When you till the ground,*

*No longer will it yield its strength to you*

*You shall become restless and friendless*

*upon the earth of your ancestors*

*See, what have you done to your family?*

*You shall reap what you sowed! [Stern 1998:4].*

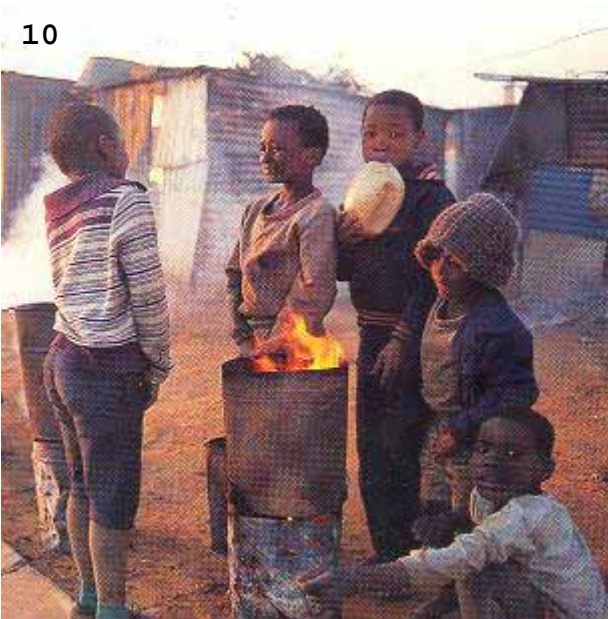
8.Orlando East Children's  
Home caring for abandoned  
babies, 1957.



## 1. THE RUIN OF THE BLACK PEOPLE: A CHILD LEFT TO HIMSELF



Environmental and economical degradation is a result of social degradation<sup>1</sup> [9]. Our elders normally say, when our environment is degrading and our economy failing is because the people of the land are too evil [Barnhill & Gottlieb 2001]. For example, when there is war, the land is affected. War kills people, land, and plants. It spoils water and air. Money value goes down, inflation rates rise up, and people starve because of war constraints.



1. said as he addressed a group of leaders from the Third World countries: Don't look at the Western nations for models in your development. They know how to make things, but they don't know how to live with them. They have acquired mind-boggling technology, but they've forgotten how to raise their children." [Peterson 2006:11]

A good man leaves an inheritance to his grandchildren [10]. Technology without ethical values is suicide to our children. Children get values from their parent and that is the inheritance.

9. Delivery vehicle burnt by demonstrators in Soweto frustrated by the apartheid regime.

10. Warming and chatting around fire, Soweto.

# 1. THE RUIN OF THE BLACK PEOPLE: A CHILD LEFT TO HIMSELF



A Jewish proverb says, "A child left to himself brings shame to his mother". For the most part of the twentieth century, different work experiences determined what was possible for parents. Blacks, principally African fathers, separated from their children and families for the need to work in distant places as migrant workers, [11] allowed to visit home once a year. Today we are reaping the consequences<sup>2</sup> [Breckenridge, 1998; Morrell, 2001].

<sup>2</sup>N women [12] between the ages of 20 and 50 are mothers corresponding to 8.5 million women. One third of mothers [13] under the age of 50 have one child. Some 20% have four or more children. Some three million mothers (a little more than a third) are not economically active while a further 2.6 million are unemployed according to the official definition. [Census 2001]

Around 230,000 South Africans get married every year. 16% are below the age of 25 and 8% are older than 50. 55% of South Africans aged 25 or more are married or living together, 4% are divorced or separated and 10% are widowed [AMPS 2005RA]

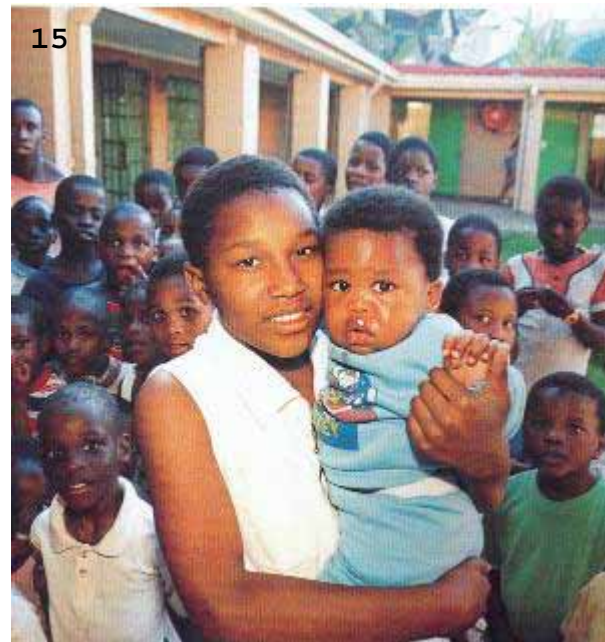
11. Women from the Black Sash demonstrating against Pass Laws, 1955.

12. Police attack a women's march protesting at Cato Manor, near Durban, in 1959.

13. A black woman is set upon by police during the Vaal uprising.



# 1. THE RUIN OF THE BLACK PEOPLE: A CHILD LEFT TO HIMSELF



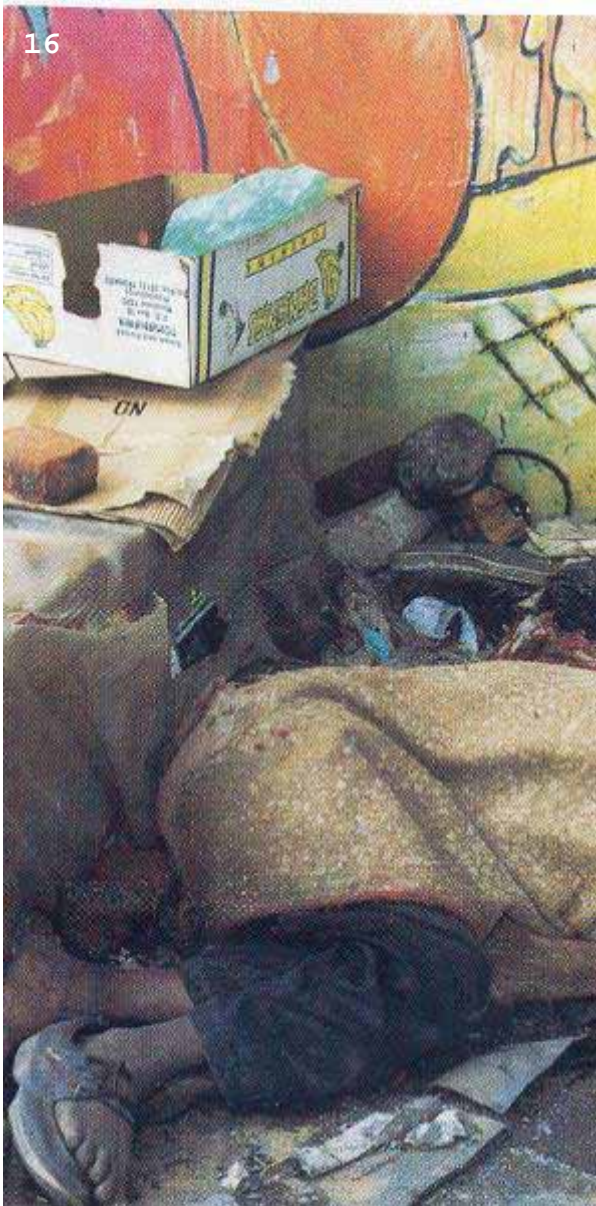
Recent statistics<sup>3</sup> highlights the destruction caused by migrant contracts to black South African families. What is the cause of this destruction? The statistics tell us that it is South African men. Our country is ruined because our men are failing to perform their family responsibilities.

<sup>3</sup>S children lived with only their mothers and 1% of children living only with their fathers in 1998 [Budlender, 1998]. A very large number of men are absent from households in which children are growing up and low level of father support for children's care. 67% of all white people aged 25 - 34 are married or living together. The corresponding proportion of black people is 31% [14], [AMPS 2005RA]. Every year more than 25 000 children are sexually abused in South Africa [ Richter, Dawes, Higson-Smith, 2004]. There are 41% of maternal orphans [15] living with their surviving parents in South Africa [Ainsworth & Filmer, 2001]. Increased care needs of children resulting from deaths and family disruption from the AIDS epidemic demands more responsibility for children's wellbeing.


14. Bride Thulile Tholo and groom Mphindiselwa Nkomonde at their wedding celebration at Ubuntu kraal.

15. Orlando East Children's Home's mostly orphaned children.

# 1. THE RUIN OF THE BLACK PEOPLE: A CHILD LEFT TO HIMSELF



No matter how successful we are in technological and economical terms, we are failures if we leave no family legacy for our children [16]. The family should provide a sound sustainable foundation for the next generation [Peterson 2006]. A wounded family is a wounded community. A wounded community is a wounded nation. Wounded nations make a wounded continent. Therefore, the source of a nation's problem is a broken family. Broken families<sup>4</sup> produce broken individuals.

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YUNIBESITHI YA PRETORIA

<sup>4</sup>I le families imply different things. Firstly, it implies that our parents have failed to provide us with a successful marriage model. Secondly, it implies that the existing single families are modelling a unsuccessful marriage for the next generation. Lastly, it implies that there is need to address the problem of broken families [Richter & Morrell 2006].

The rise of the Black people can be meaningful if, the broken Black families are restored again. We need to create social, environmental, and economical developments that make this possible.

16.A homeless child next to the Chris Hani-Baragwanath Hospital.



## 1. THE RUIN OF THE BLACK PEOPLE: HIS STORY OF MAMELODI



In 1958 Black people in Pretoria were moved from Lady Selborne to Mamelodi<sup>5</sup> and Atteridgeville. Benji, councillor for ward 16, recalls: "*...in Lady Selbourne [18] it was a mixed society, sort of a Chinese, Indians, some Whites nearby Blacks, all in the same vicinity, now coming here to Mamelodi it was only blacks...they wanted to separate all the people. We, the people, did not want to live like that, if you are in the same area then you must hold shoulders, black, white, brown or whatever you must live together [Breed Fevrier 2003:16].*

<sup>5</sup>P gives the following periods in the history of Mamelodi [17];

First period [1867-1913]. The Missionary Society of Berlin established Schoolplaats in 1867 .

Second period [1913-1922]. In 1913 the Natives Land Act (NLA) subdivided the land according to races .

Third period [1923-1947]. African people increased in number in the periphery of the city. Social engineering through the church .

Fourth period [1948-1968]. The nationalist government of the Apartheid launched an ultimatum in 1948 to put into practice their politics

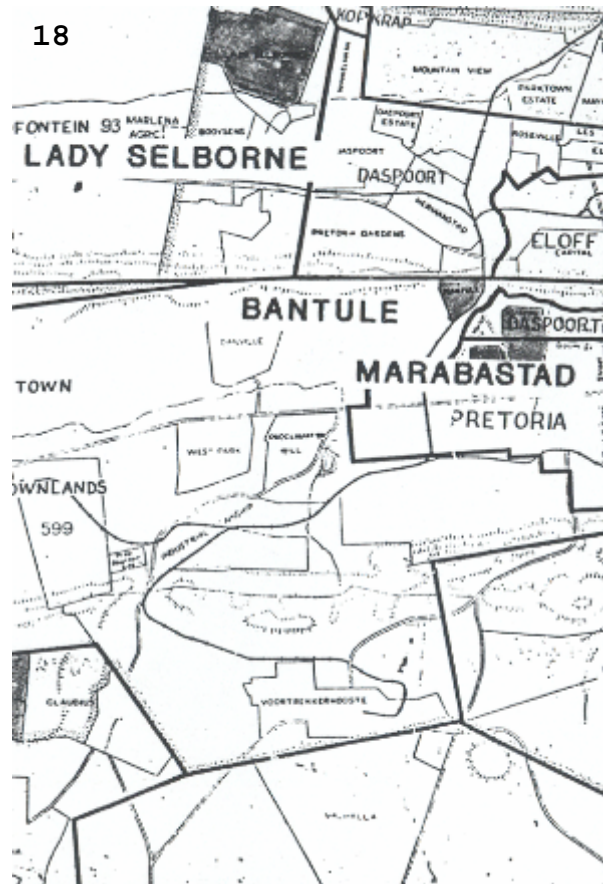
Fifth period [1969-1975]. In 1969 people were forced to move to Bophuthatswana as Native land.

Last period [1970-1990's]. protests against the wave of discrimination and racist laws.

17. Aerial photograph showing Vista University, Mamelodi

# 1. THE RUIN OF THE BLACK PEOPLE: FROM LADY SELBOURNE JA!

18



Apartheid's landmark was to separate<sup>6</sup>. Blacks were forced to live away from Pretoria CBD and other working places. Hence, long hours were spent on the road [19] rather than with their families. Unity and family ties were weakened. Relationship building is a vital activity for any society that desires to prosper.

<sup>6A</sup> [2002:32] migration, cultural complexity, urbanism, and affluence forces shifted social orientations to individualism. In the process family integrity got lost. Gain and profit are preferred above values and *ubuntu* [the spirit of sharing] in the world of individualism.

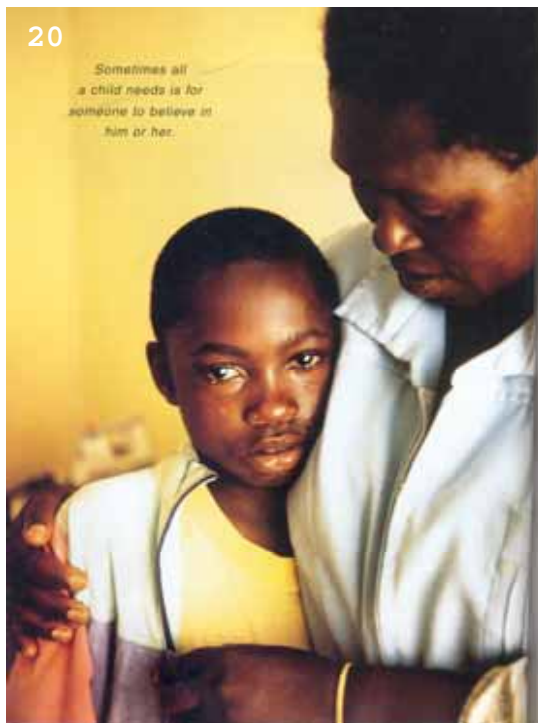
The church was used for social engineering in Mamelodi [Breed Fevrier 2003]. What we know as the pillar of values became a pivot of oppression. We ask ourselves then, what is the meaning of the church to the Black family?

18. Pretoria layout, 1950s.

19. Phefeni station in Orlando West people in a rush, 1978.



## 2.THE RISE OF THE BLACK PEOPLE: YOU BLACK MAN SHINE NOW



20

Sometimes all  
a child needs is for  
someone to believe in  
him or her.

And I am certain that...  
All shall be well...  
For the Africa I love,  
the Africa of my  
heart's desire  
Father Trevor Huddleston  
Naught for your Comfort, 1956

Wipe away the tears from your eyes-**Black** man  
There is hope for the future  
Wounded you were; Winner you are  
The past has passed away  
Arise and shine **Black** man  
Your light has come  
The glory of the Light  
Is risen upon you  
Put off the garment of darkness-**Black** man  
Put off the garment of slavery  
Put off the garment of hatred  
Put off the garment of grudges  
Put off the garment of the racist past  
Put off the garment of excuses  
Put off the garment of depression-**Black** man  
Remain but not naked with fear  
Remain but not discouraged  
Remain but not feeble-Bruised **Black** man  
Put on the garment of Hope  
Put on the garment of Faith  
Put on the garment of Love  
Put on giving-love-You **Black** man  
Away with revenge  
Away with violence  
Awake, work and water your brother-My dear  
**Black** man

-Author [2008] & Stern [1998]

20. Sometimes all a child  
needs is for someone to  
believe in him or her

## 2.THE RISE OF THE BLACK PEOPLE: 1994 NEW SOUTH AFRICA



*"Our deepest fear is not that we are inadequate. Our deepest fear is that we are powerful beyond measure. It is our light not our darkness that most frightens us. We ask ourselves: who am I to be brilliant, gorgeous, talented and fabulous? Actually who are you not to be? You are a child of God. Your playing small doesn't serve the world. There is nothing enlightened about shrinking so that other people won't feel insecure around you. We were born to make manifest the glory of God that is within us. It's not just in some of us. It's in everyone. And as we let our own light shine, we unconsciously give other people permission to do the same. As we are liberated from our own fear, our presence automatically liberates others."*

-Nelson Mandela Inaugural Speech 1994

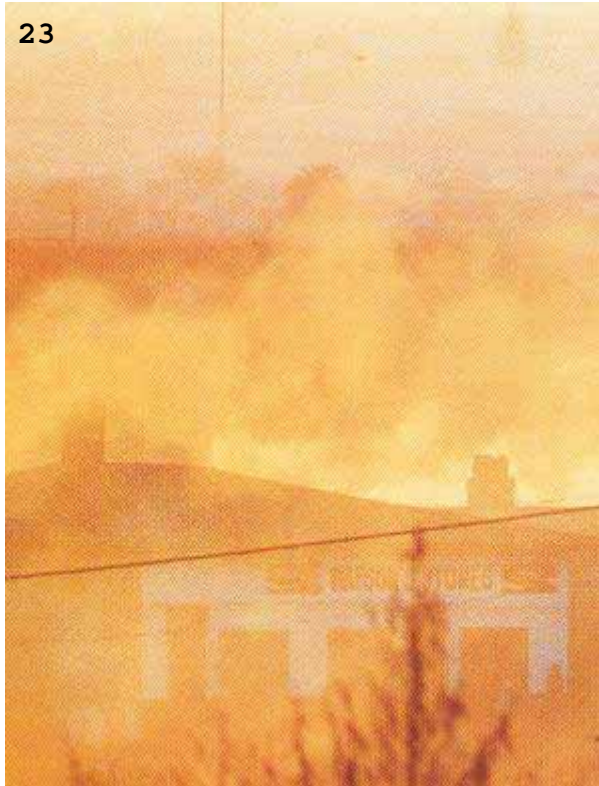


21.Nelson Mandela after release from 27 years in prison: with his ex-wife Winnie Madikizela-Mandela.

22.Nelson Mandela, President of South Africa 1994-99, at his inauguration.

## 2.THE RISE OF THE BLACK PEOPLE: AFRIKA SHALL RISE AGAIN

23



*"Africa, mighty nation of kings and princes, the Lord says to Africa,*

*"Rachel, weep no more. Your children are coming back to their borders, and every anointing that was forfeited, sold and stolen on every foreign seashore will return to your continent a hundred fold in this lifetime and the life to come.*

*For I see Esau coming back to Jacob. I see the Queen of Sheba coming unto Solomon. I see the wealth of the wicked returning; returning to the shores of Africa. And you will rebuild the old waste places and the cities that have been ashes."And though gross darkness has covered you, My glory shall arise and shine upon you and you will not fail in the time of testing and you will pour it back upon the King of kings and the Lord of lords.Great charity will break poverty, and Africa will become a storehouse to the nations."*

24



23.Soweto at sunset, with coal fires burning.

24.Ceremonial candle lighting, Ethiopia.

-Chad Taylor [2008]

## 2.THE RISE OF THE BLACK PEOPLE: AFRIKA SHALL RISE AGAIN



*"There will be storehouses filled with new manna and new bread, and other countries in the next decade will come to Africa to fill their bags and fill their ships. And I am recapturing the minds of your youth. They will become doctors and they will become geniuses in their fields.*



*They will become physicists and doctors and lawyers and they will defend you and they will stand for you. And I will raise them up to be the head and not the tail, as prophets and kings--as priests."*

*I hear the Lord saying, "A star is born, and kings will come to the brightness of its rising to bring their gifts, to bring their wealth and to bring their wisdom."*

-Chad Taylor [2008]

25.These are the ones who will soon demand that their voices be heard, Pretoria.

26.Sunrise-the brightness of Africa, Namibia



## 2.THE RISE OF THE BLACK PEOPLE: AFRIKA SHALL RISE AGAIN



*"Hospitals, Universities and  
Technological Breakthroughs*

*I see medical hospitals and medical  
colleges rising up within Africa that  
will be the envy of the nations, and  
people will come there to attend those  
schools and those universities. Like  
Oxford was in England, God is raising up  
the academic anointing in the nation of  
Africa, and you will be the envy of  
England and the envy of America.*

*Great medical institutions and great  
academic institutions shall arise from  
the ashes of civil war."*

-Chad Taylor [2008]

27. There is light at the end  
of the presently dark tunnel  
for Africa

## 2.THE RISE OF THE BLACK PEOPLE: MISSIONARIES IN AFRICA



### AFRICAN RENAISSANCE AND THE BIBLE

*"...those of us who so value the Christian way of life and would like to see AFRICANS and AFRICA become the true heirs of the Christian heritage so that with the best in their culture they could be enabled to make a noble contribution to true Christian civilization not resist to the utmost this diversion of the African to a dangerous secular stream-heathenism."*



Albert Luthuli [28] 1953, former president of ANC and co-founder of ANC Youth League.

*"My nation is poor and degraded, but the word of God is their stay and their hope. The word of God has brought my nation so far, that if a Hottentot young lady and an English young lady were walking with their faces from me, I would take them both to be English ladies...We are coming on; we are improving; we will soon all be one. The Bible makes all nation one. The Bible brings wild man and civilized together. The Bible is our light. The Hottentot nation was almost exterminated, but the Bible has brought the nations together, and here am I before you."*

Andries Stoffels [29] , Khoisan Christian convert who testified in London in 1835.

28.Chief Albert Luthuli with Danish clergymen, Oslo, Norway, 1960.

29.Andries Stoffels, 1837.



## 2.THE RISE OF THE BLACK PEOPLE: MISSIONARIES IN AFRICA



The history of the Jews is similar to that of Black Africans as Bishop Desmond Tutu [30] affirms [Hoffman, Alan Fischer, and Bradlow: 1988].



Both have been made slaves. Both have faced the hatred of racist enemies. Both have been betrayed and bruised by other ethnic groups and religious groups<sup>7</sup>.

Both have demonstrated that freedom from all oppression and prejudices is a course of dignity worth attaining. They both share a common history-the rise of the oppressed and hated .

<sup>7C</sup> Jews. The authors of the Christian Bible were all Jews. Jesus was a Jew. Therefore, Christianity came from the Middle East not from the Europeans. Europeans received it from the Jews [King & Stager 2001]. However, the problem is not with Christianity in itself, but the greed, jealousy, and racism of colonisers.

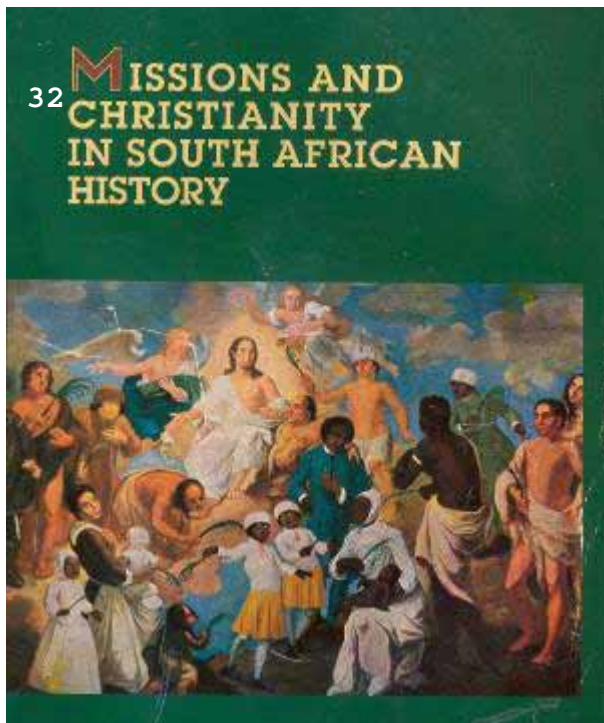
True Christianity has contributed immensely to the realisation of African Renaissance [31]. Freedom fighters like Martin Luther King Jr used Christian faith and prayers to fight against racism [King, Jr 1968].

30.Archbishop Desmond Tutu with Nelson Mandela.

31.Methodist Manyano women celebrate the new South Africa

## 2. THE RISE OF THE BLACK PEOPLE: MISSIONARIES IN AFRICA

also responsible for the social degradation of the Africans. After harvest, farmers supplied labourers with much liquor. They also protested against Khoikhoi who left them to reside in the Baviaans Kloof mission station [32]. These led to family separation and neglect with destructive liquor abuse [Viljoen 1995]. Having attended a missionary school during my primary school days I know the value of missionaries in Africa. Some Trek Boers resisted that Khoikhois should be educated [33] and treated as their equals. Early missionaries in South Africa laid the foundation of equality, freedom, and economical development of Black Africans.



32 MISSIONS AND CHRISTIANITY IN SOUTH AFRICAN HISTORY

By 1792 the trekboers had intruded into the traditional grazing land of the Overberg Khoikhoi. The missionaries found a Khoikhoi community that had been dispossessed of its land, robbed of its cattle, assimilated into colonial society as farm labourers, and subjected to colonial laws.



33

Their work amongst the Khoikhoi involved more than simply spreading the Gospel; they helped to improve the standard of life of the Khoikhoi. They offered the Khoikhoi labourers 'an alternative society where they could be protected from exploitation and ill-treatment<sup>8</sup> [Viljoen 1995].

32. Detail of 'First Fruits' of the Moravian Missions amongst various nations.

33. Staff and scholars at Inanda Seminary, Natal.

## 2. THE RISE OF THE BLACK PEOPLE: MISSIONARIES IN AFRICA

<sup>9</sup>M: Nigeria, Uganda, South Africa etc are evidence of the role Christian faith and prayers [36] have played in bringing positive results to entire nations [Adamo 2001].



34

What does the Bible<sup>9</sup> have to say about this subject?

Rabbi Goldstein answers this question by giving a profound Biblical view;

*"What does it mean to be human and how does this affect our understanding of the African Renaissance [35]?"*

*"It means being created in the "image of G-d" (Genesis Ch.1) which means that every human being has a G-dly soul and is therefore precious and has inherent potential greatness."*

*It "...means being a child of Adam and Eve...G-d created humankind from only one man and one woman in order to eradicate racism. If we are all the children of one father and one mother then we are all brothers and sisters." God decided to create the world with just one man and just one woman so that everybody would know that they have a common ancestor, and nobody would feel superior to another [34].*

*It also "...means being irreplaceable...and living for a higher cause." Mandela & Goldstein [2003 ,pp.14-6].*



35



36

34.A great champion of the liberation struggle, a priest in Sophia town when black residents were forcibly removed to Soweto, Bishop Trevor Huddleston of the Anglican church with George 'Kortboy' Mpalweni a former gangster.

35.A Christian Church, Ethiopia.

36.A man praying in the desert, Tchad.



## 2.THE RISE OF THE BLACK PEOPLE: MISSIONARIES IN AFRICA

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history provide infallible proofs that all men were created equal. Hence, all races should be recognised as equal partners in the pursuit of noble existence on earth. It is these proofs that inspired many Black Africans and Americans to pursue the ideals of freedom. We are all from the same man and woman. Therefore we are one family despite our differences. The colour of our blood is red, all of us.



37

We have fa  
changed th  
met the  
destinatio

The Black man [37] is an equal<sup>10</sup> to any other race under the sun despite differences in culture, education, traditions, etc. The main cause of racism is lack of recognition. Reconciliation is not sufficient because equality did not exist between the Blacks and the whites.



38

According to Price (2008) the Black people "...have been accepted as inferiors. And you cannot reconcile an equal with an inferior. The first step towards a good relationship between blacks and whites is not reconciliation, but recognition."

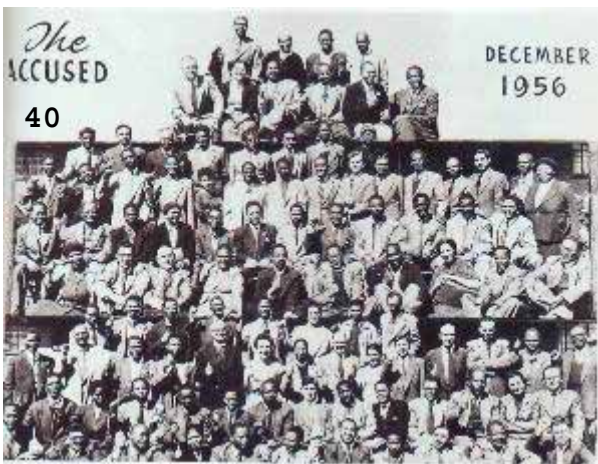
37.A Zulu man, an African in Zulu traditional attire is equal to any other race on earth despite his different skin colour.

38.Africanized Christianity, a group of Zionist believers during baptism ceremony.

## 2.THE RISE OF THE BLACK PEOPLE: MISSIONARIES IN AFRICA



*"The God who made the universe and everything in it, and who is Lord of heaven and earth...it is He himself who gives life and breath and everything to everyone. From **one man** he made **every nation**<sup>11</sup> living on the entire surface of the earth [39], and he fixed the limits of their territories and the periods when they would flourish. God did this so that people would look for him and perhaps reach out and find him although in fact, he is not far from each one of us, for in him we live and move and exist.' Indeed... 'We are actually his children [40]."*



APARTHEID MEANS  
SEPARATENESS BUT UBUNTU  
MEANS TOGETHERNESS

UMUNTU NGUMUNTU NGABANTU-  
A PERSON IS A PERSON BY  
OTHER PERSONS

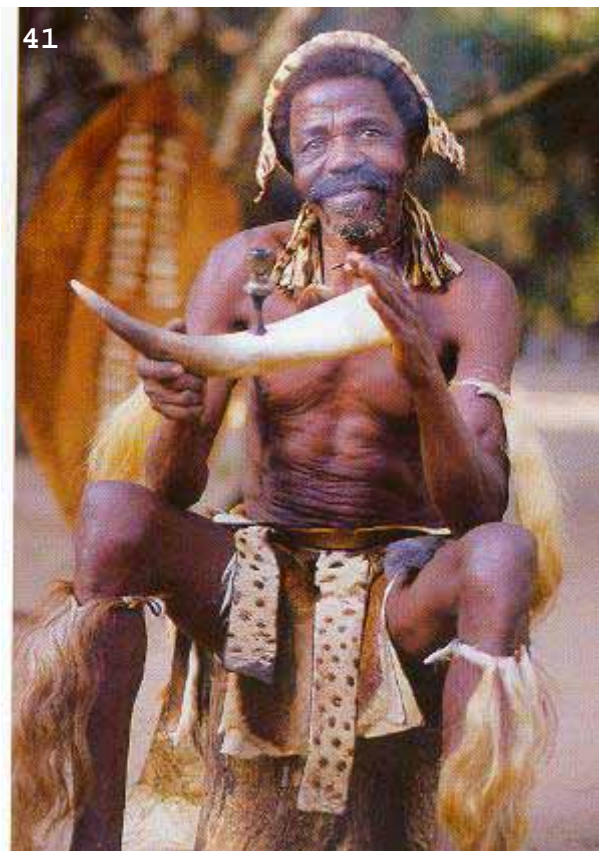
-Stern [1998:1385]

created equally, no one is superior to the other even though, each human being possesses a unique and peculiar individuality of personality. The greatest investment we can make as a nation is to train and build tomorrow's man. This can happen if our nation supports and creates a good atmosphere for family building activities. That is where a man is built.

39.Regina Brooks with her partner, Richard Kumalo, and their baby, were both sent to prison for four months in 1955.

40.The 156 people arrested and tried for treason following the Freedom Charter Congress, 1956.

## 2.THE RISE OF THE BLACK PEOPLE: MISSIONARIES IN AFRICA



We are all brothers and sisters<sup>12</sup>. Together and united we can build South Africa. The African philosophy of ubuntu encourages a collectivist orientation toward life.

Therefore, if collectivism is high, societies are more likely to have strong family structures that place much importance on family integrity . It is through this that Africans can arise and shine. When they find out who they are and what they can do. When they realise that what matters is how they think rather than the colour of their skin [Burgess 2002:32-3].



12. was founded on this Biblical understanding. It is the Bible that founded the freedom we enjoy today in South Africa. It is the Bible that inspired Abraham Lincoln, Martin Luther King, Jr, Albert Luthuli, Andries Stoffels, and many others to fight for the freedom of the Black man. The Black family will fully arise to its greatness by understanding and applying this Biblical truth- we are brothers and sisters, so we are equal [Viljoen 1995].

41.A Zulu chief proffers visitors to his village a pipe.

42.Mission stations in South Africa.



## 2.THE RISE OF THE BLACK PEOPLE: MISSIONARIES IN AFRICA



43

The author does not intend to discriminate other religions and views. However, he is revealing the hidden beliefs, ideas, and convictions that directly influence his design process and product. In the context of this study the focus is Black family restoration.

Why choose Rev William S. as client?: Winston<sup>13</sup> an African American has committed himself to help bring healing to South African Black families. His mission is to help develop upcoming entrepreneurs [44] in life skills, values, ethics, character, and business skills.



44

43. Rev. William S. Wilston, founder of Joseph School of Business.

44. Graduates at the Joseph School of Business.

## 2. THE RISE OF THE BLACK PEOPLE: MISSIONARIES IN AFRICA

<sup>14</sup>In Africa, some European missionaries created a bad reputation to Africans [Adamo 2001]. They enforced colonisation and Westernisation against the genuine Christian faith [45].

Therefore Christian missionaries were sometimes seen as tools used by previous colonisers to enslave and tame the 'wild Africans'. Reverend Wilson is committed to transform this distrusted representation of the Christian faith. He is convinced that Biblical wisdom is fundamental in order to realize the rise of Black South Africans.

The rise of Black Africans will only be genuine and permanent if there is first a spiritual and moral rising [Viljoen 1995:202]. Therefore, the Joseph School of Business help develop potential African leaders through mentorship.

45.A family in the Mamelodi Township, conformity to white lifestyle.

46.A vegetable hawker, Soweto-duplication.



### LEADERS

The client aims to create an environment where Black Africans<sup>14</sup> are mentored to be tomorrow's leaders.

The highest form of leadership is the kind that duplicates itself [46]. Wise leaders are constantly cultivating leadership skills in the people around them. This is a truth that has been stated in much of the literature on leadership, but the principle originated from the Bible [Stern 1998].

## 2.THE RISE OF THE BLACK PEOPLE: MISSIONARIES IN AFRICA

47



The objective of the project is to create an atmosphere in which poor, broken and neglected Black Africans can develop and grow an entrepreneurial spirit rather than an employee spirit [47].

We urgently need to do that in South Africa because many companies are reducing their staff numbers. For this country to rise up, Black Africans should learn to create and expand businesses of their own. In order to reach that level we need to raise our education standard through mentorship programmes<sup>15</sup>.

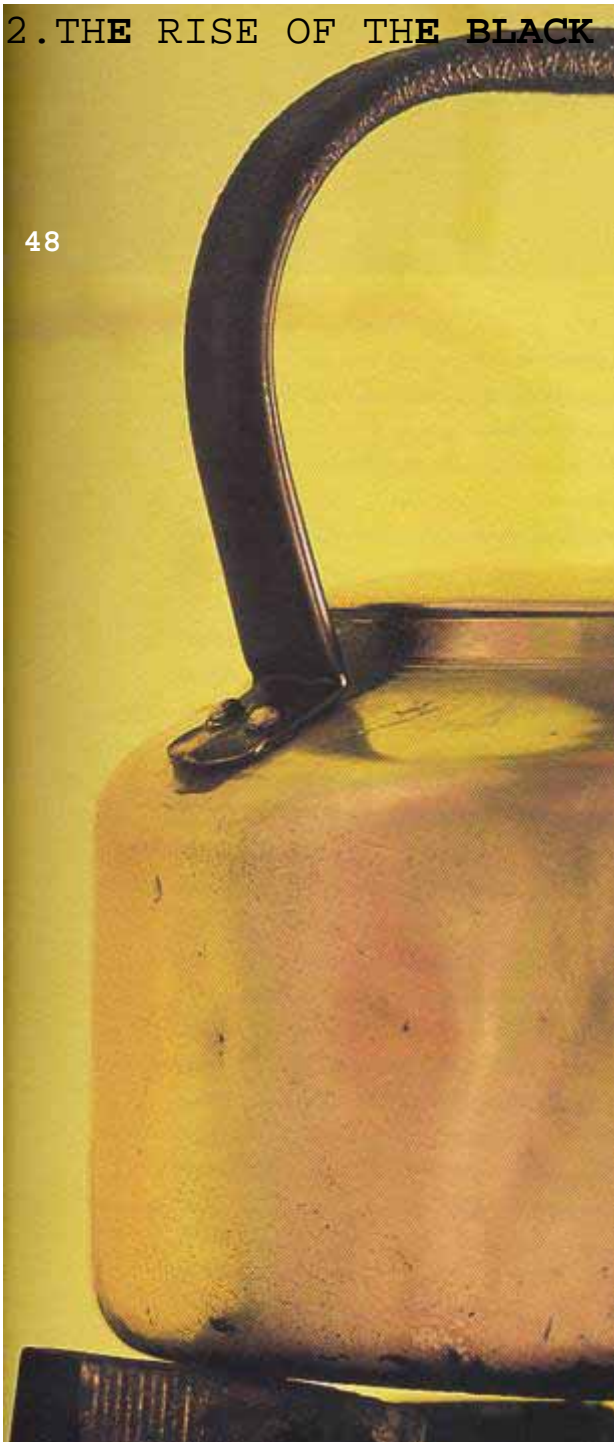
<sup>15</sup>Today It's Called  
"mentoring." In the Bible it is referred to as "discipleship." The Bible makes it clear that each person is to exert as much positive influence as possible on those around him and to teach others to do the same.

-Winner's Way Broadcast  
produced by Mac Hammond  
Ministries 2008

47.Black workers at the South African Iron and steel Corporation [IsCOR], 1965.



48



### 1.4 DELIMITATIONS

*"Not everything that can be counted counts, and not everything that counts can be counted." - Albert Einstein*

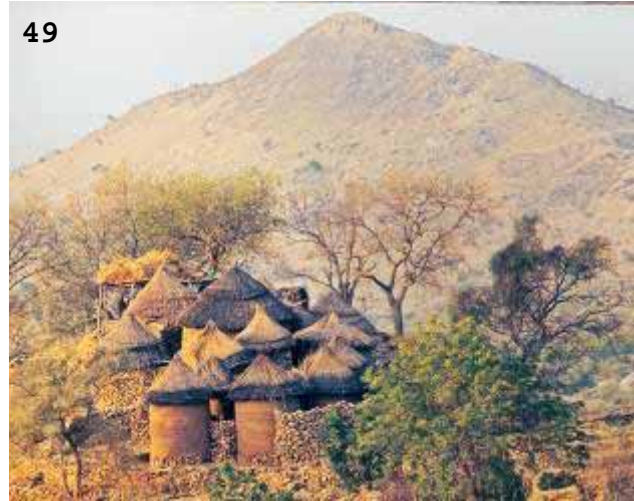
The studies in this thesis document will not focus on, African architecture and Symbols of different African clans as a main subject. Nor embark on the politics of RDP houses as experienced in townships. Concerning the existing building programme in the Mamelodi campus, the studies will focus on the restoration of the Black community through education. Therefore, the proposed programmes of the resulting architecture will investigate what the author terms 'AFRICAN ACTIVITIES ARCHITECTURE'. The aim of the study is to identify those African activities, then employ architectural form to serve those activities.

### 1.5 ASSUMPTIONS

1. There are organizations and individuals who are willing to take over the project in the future.
2. The Local authority is willing to accept a rezoning of the site from educational to mixed use.
3. Community members are committed to learn new skills and new things that will equip them for managing and sustaining the project on a long-term basis.

48. Stainless steel kettle on a paraffin stove - you assumed right!

## 2. THE RISE OF THE BLACK PEOPLE: ARCHITECTURE for AFRICANS



49

"THE BUILDING AS ARCHITECTURE IS BORN OUT OF THE HEART OF MAN<sup>16</sup>, PERMANENT CONSORT TO THE GROUND, COMRADE TO THE TREES, TRUE REFLECTION OF MAN IN THE REALM OF HIS OWN SPIRIT. HIS BUILDING IS THEREFORE CONSECRATED SPACE WHEREIN HE SEEKS REFUGE, RECREATION AND REPOSE FOR THE BODY BUT ESPECIALLY FOR THE MIND. SO OUR MACHINE-AGE BUILDING NEED NO MORE LOOK LIKE MACHINERY THAN MACHINERY NEED LOOK LIKE A BUILDING."



50

-Frank Lloyd Wright

family needs to be manifested through architecture. In the past, architecture in South Africa was imposing foreign values [50] and visions that are strange to African ideals [49], [Noero 1993]. It fostered separation and division. Breed Fevrier [2003:25] argues that an authentic identity founded on Eurocentric values is "...narrated and promoted by modern writers over the entire African continent." The tectonics of a shack [umkhukhu] in a squatter camp [50] is a reflection of a South African man's creativity for the pursuit of existence [Slessor 1994].

49. Traditional buildings for the Africans, Cameroon.

50. Squatter camp, Soweto.

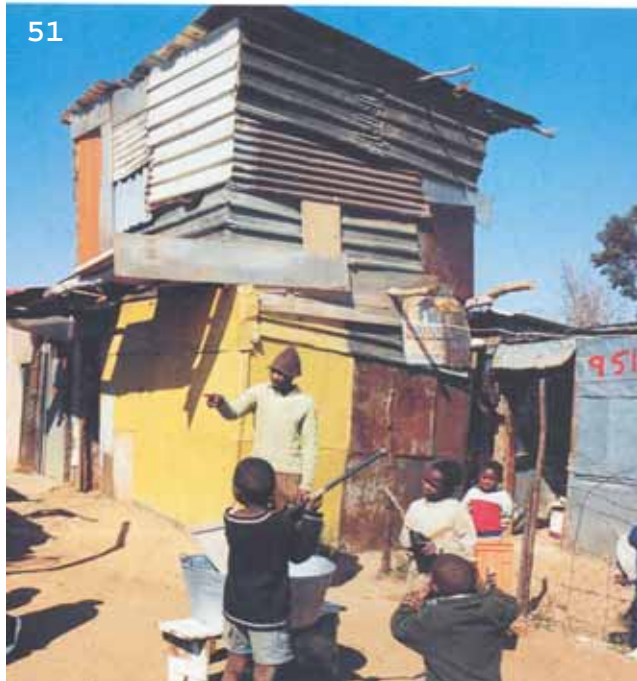
## 2.THE RISE OF THE BLACK PEOPLE: ARCHITECTURE for AFRICANS

17. Design is a tool we use to serve the needs of inhabitants of built form. Designers should find out what are the needs and wants of the future users, and then make the built form to serve them. Built form is the means and the result of inhabitation [Hamdi 1991:45]. Flexibility, participation, and enablement are attributes of architecture that serves the needs of inhabitants [Hamdi 1991].

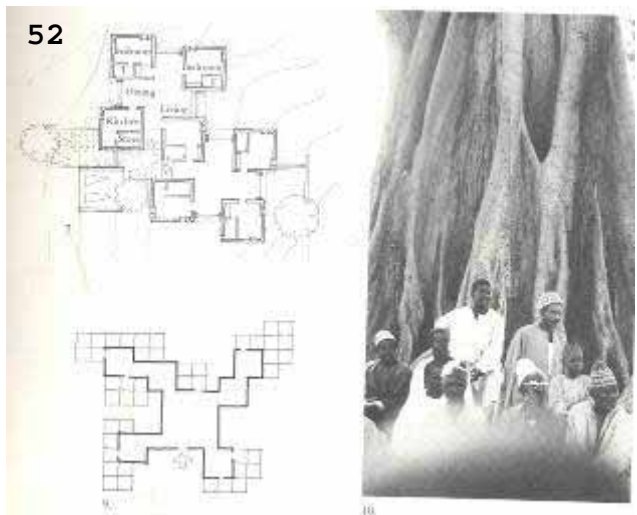
According to Hamdi [1991:47] "...flexibility [52] is a quality by which to measure the capacity of physical settings to be easily modified, which could undergo a series of incremental transformations in order to ensure good fit through time." The built form changes when the needs of inhabitants change.

51. Umkhukhu in Mandela Ville Squatter Camp.

52.Flexible and incremental composition transferred and transformed from traditional Indian villages of Rajasthan, Charles Correa.



There is need to free architecture from Eurocentric ideals so that it will be motivated by African authentic identity [Watson 2004]. This should be done within the perimeters of social, environmental, and economic sustainability. Hence, the rise of Black people can be realised through the making of architecture<sup>17</sup> [51].





## 2.THE RISE OF THE BLACK PEOPLE: ARCHITECTURE for AFRICANS

<sup>18</sup> User participation on the other hand, combines the built form with inhabitants [54]. Participation repairs the natural relationship between people and places. It helps identify the needs and release the potential of the public. When the inhabitants of buildings are given the opportunity to engrave their own personalities, then spaces are transformed to places. The building should not be fully finished by the architect. Rather the architect should provide activity platforms for future performers [inhabitants].

Thirdly, we have enablement. According to Hamdi [1991:47] this "...is a process by which to cultivate physically and gradually the conditions that enable inhabitation, that enable neighbourhoods to grow and change in response to prevailing conditions...design for change and incremental growth."

53.Dwellings and courtyards of traditional compound in northern Ghana.

54.A African woman decorating a compound the traditional way, Burkina Faso.

53



*"We have indeed been betrayed by the mysterious word Architecture away from the reality into a pretence about styles and orders and proportions and periods and conception and composition<sup>18</sup>. If we had no other words than building we might have been living in sound, water-tight dwellings... Architecture is human skill and feeling shown in the great necessary activity of building [53]; it must be a living, progressive, structural art, always readjusting itself to changing conditions of time and place."*

*William Richard Lethaby  
[Ward 1983:104]*



2.THE RISE OF THE BLACK PEOPLE: ARCHITECTURE for AFRICANS

19.

is one that helps bring the rise of the Black family. One of the African proverbs says, 'umuntfu ngumuntfu ngebantfu' meaning, 'a person is a person by others'. The 'others' referred to, begins from the family then expands to the community. The foundation of being a 'person' is laid by our family members [56]. In order to realise the rise of Black people, architecture must be born out of the heart of the Black family's activities [55.3].

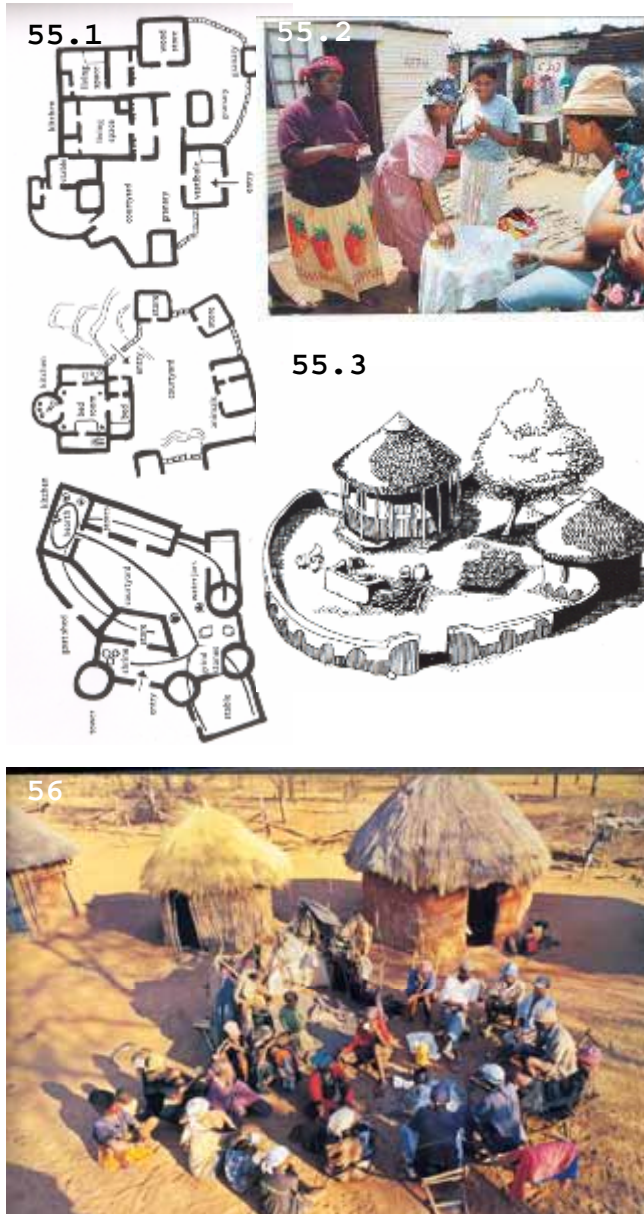
55.1.I idealized plan of the Dogon homestead having symbolic parallels with the human body. These may be compared with the plans of dwelling in Lower Ogol village, Mali.

55.2.African women gamble with a card games in a courtyard of a squatter camp, Soweto.

55.3.Huts, shade tree, and lolwapa of a Tswana homestead.

56.A family around the fire for breakfast, Namibia.

Architecture for Africans<sup>19</sup> asks, "How can I live with my brother?". How to live in peace and harmony with the other people with whom we share our communities, our countries, and our planet? Architecture created by activities that serve the needs of our people. Architecture that fosters unity and friendship [55.1]. Architecture that creates places and linkages for the building of family and community relationships [55.2]. Architecture that is freed from destructive ego, and enslaved to selfless life-giving service to people's activities.





57



TO MY CHILD

*"Just for this morning, I am going to smile when I **see** your face and laugh when I feel like crying.*

*Just for this morning, I will let you choose what you want to wear, and smile and say how perfect it is.*

*Just for this morning, I am going to **step over** the **laundry** and pick you up and take you to the **park** to **play**.*

*Just for this morning, I will leave the dishes in the **sink**, and let you teach me how to put that **puzzle** of yours together.*

*Just for this afternoon, I will unplug the **telephone** and keep the **computer** off, and **sit** with you in the **backyard** and blow bubbles.*

*Just for this afternoon, I will not yell once, not even a tiny grumble when you scream and whine for the **ice cream truck**, and I will buy you one if he **comes by**.*

*Just for this afternoon, I won't worry about what you are going to be when you **grow up**, or second guess every decision I have made where you are concerned.*

57.Sophia town, 1955.



58



*Just for this afternoon, I will let you help me **bake cookies**, and I won't stand over you trying to fix them.*

*Just for this afternoon, I will take us to **McDonald's** and buy us both a **Happy Meal** so you can have both toys.*

*Just for this evening, I will hold you in my arms and **tell you a story** about how you were born and how much I love you.*

*Just for this evening, I will let you **splash in the tub** and not get angry.  
Just for this evening, I will let you stay up late while we **sit** on the **porch** and count all the **stars**.*

*Just for this evening, I will snuggle beside you for hours, and miss my favourite **TV shows**.*

*Just for this evening when I run my finger through your hair as **you pray**, I will simply be grateful that God has given me the greatest gift ever given.*

58.Sophia town, 1955.

59



*I will think about the mothers and fathers who are searching for their missing children, the mothers and fathers who are visiting their children's **graves** instead of their **bedrooms**. The mothers and fathers who are in **hospital rooms** watching their children suffer senselessly and screaming inside that little body.*

*And when I kiss you goodnight I will hold you a little tighter, a little longer. It is then, that I will thank God for you, and ask him for nothing, except one more **day**....."*

By Zimbabwean Father to save his daughter from cancer 2008



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

60



NOW, LET US BUILD THIS CITY  
Now, Let us build this city  
For we are well able  
Let us build it on the  
foundations of love  
Let us embrace the needs of  
the people  
Let us build this city  
For we have many experts;  
Them architects, Them  
engineers, Them surveyors  
Let us build a city  
Let us train our experts to  
be servant leaders  
Let us build this city  
For we have multiple clients  
Yes! A city with open-ended  
programs  
Let us make it a city of the  
progressive  
Let us build this city  
For we have discretion  
Let us be generalists  
Let us be relevant  
When we build this city of  
Africa.  
This is the land of your  
ancestors  
Build cities great and  
prosperous  
Houses full of all sorts of  
good things  
Water cisterns dug out  
Vineyards and olive trees  
Then eat to your fill-in  
this city of love  
Let us build this city  
together  
-Author [2008] & Hamdi  
[2008]

60. Adventurous photographer,  
Guyana.



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

<sup>20</sup>Social development should be the motive of sustainable development. It is the denominator of both environmental and economical development. Through architecture this may be achieved.

The doctrine of sustainability emphasises the need to conserve and preserve the environment. This approach propels the ideals of scarcity. However, there is need to approach sustainability with the mentality of multiplicity rather than scarcity.



### SUSTAINABLE HOUSING SYSTEMS

"Life is right and the architect is wrong"

-Le Corbusier [toward the end of his life]

"...Be fruitful, multiply, fill the earth and subdue it..."

-[Stern 1998,pp. 2]

Sustainable development<sup>20</sup> must be born from social relationship building [61]. The following mathematical expression may be used as an analogue for this statement;

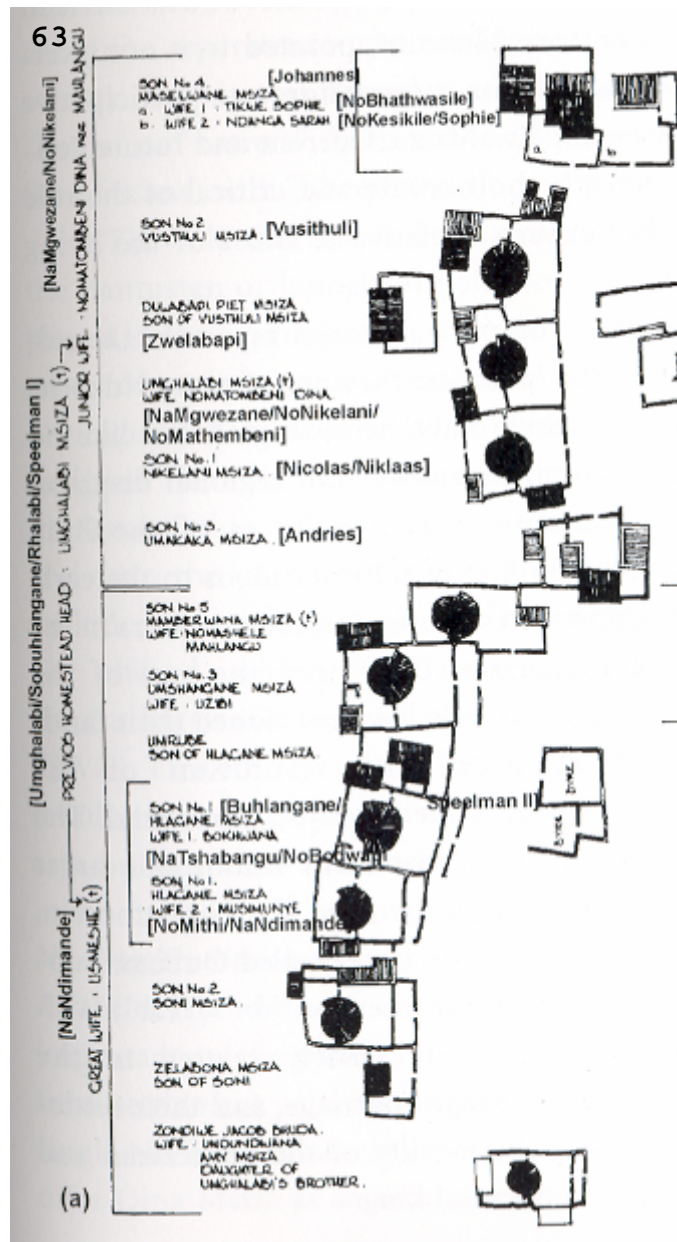
$$\text{Sustainability} = \frac{\text{Environment+Economy}}{\text{Social Structures}}$$



61.The Msiza village: indented settlement on the farm at Hartebeestfontein in 1953.

62.Vineyards, France.

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

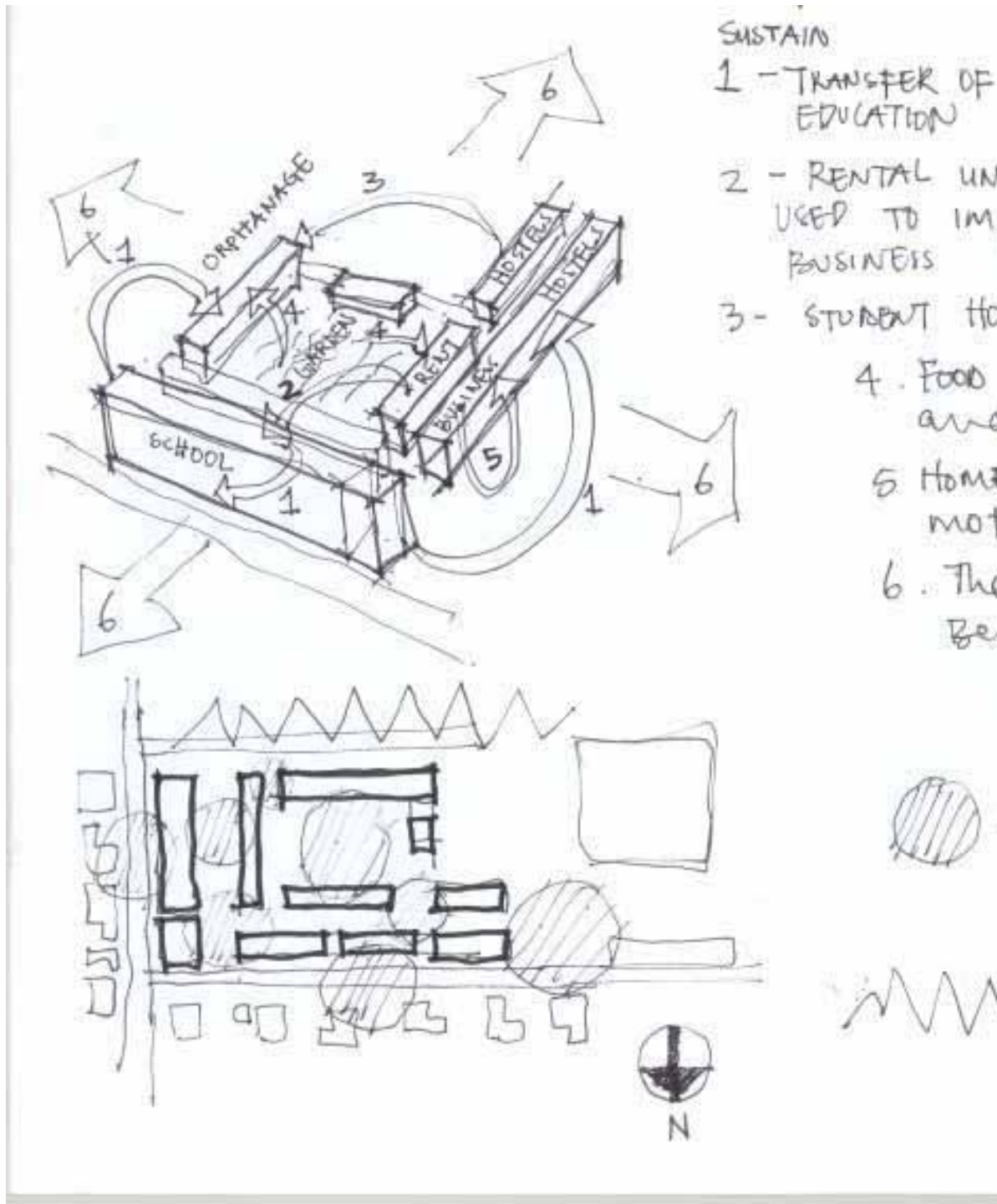


A sustainable housing system<sup>21</sup> is one that multiplies and keeps on multiplying [63]. Therefore, sustainability is defined as "... a characteristic of a process or state that can be maintained at a certain level indefinitely. The term, in its environmental usage, refers to the potential longevity of vital human ecological support systems, such as the planet's climatic system, systems of agriculture, industry, forestry, and fisheries, and human communities in general and the various systems on which they depend." [Wikipedia/Sustainability].

<sup>21</sup>There is need for developing a fruitful, multiplying, replenishing housing system, followed by leading and managing people to operate the system. Man-made systems normally have purpose, objectives. They are "designed to work as a coherent entity" [Wikipedia/System].

We may refer to a human body as a system because it consists of different organs which interact with one another to produce an organism (functional whole). A sustainable housing system is similar to a living organism because it grows, adapts, and replicates.

63. Inhabitants of the Msiza village at Hartebeestfontein (new names overlaid by Bakker on plan by Frescura [1983]).



### PROJECT AIMS

1. Transfer of skills and education.
2. Rental units produce income used to improve business school.
3. Student hostels produce income used to operate orphanage.
4. Food gardens supply food to orphanage and residences.
5. Home-based businesses support single mothers.
6. The rest of the community benefits from the scheme educational, economical, and other ways.

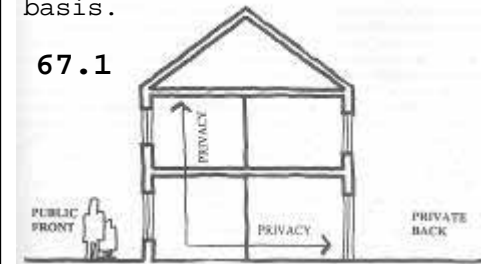
- Links that create and connect places as learnt from Ndebele settlement [63].

- Link to park and public space.



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

<sup>22</sup>Stern [1998, pp.2] mentions that "Adonai,...took the person and put him in the garden of Eden to cultivate and care for it..." The garden of Eden could be considered as the built environment that functions as a system. Then, the purpose and objective of human management in this system is to establish skills and profitable relationships in a continual basis.



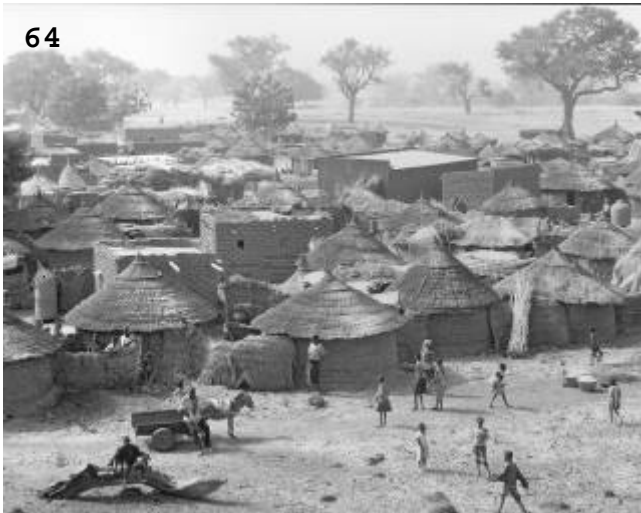
64.African village, Burkina Faso.

65.Mzimhlope station is one of the busiest stations.

66.An estimated over one million commuters use the taxi rank opposite Chris Hani-Baragwanath Hospital every day.

67.Families get together to collect water, Congo.

67.1. Positive privacy gradients maintain and respect the public/privacy distinction.

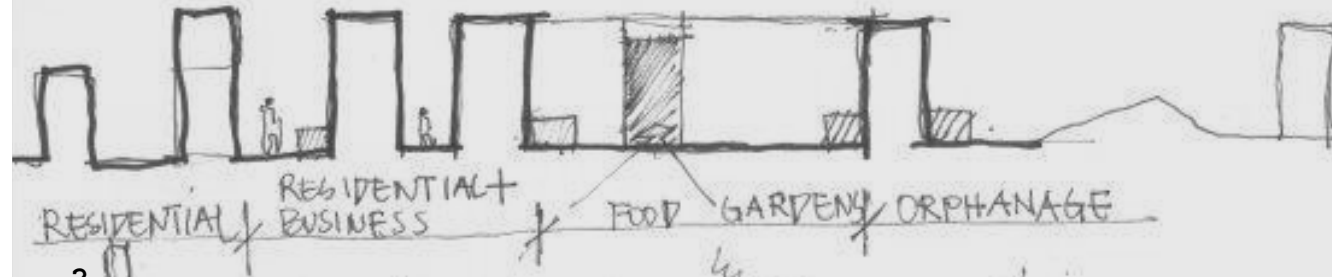


A sustainable housing system is facilitated by a compact urban form, income generating housing, and seed time and harvest paradigm . All these components related and intergrated together form a system<sup>22</sup>.



Compact urban form

1



▨ = THRESHOLDS.

HIGH DENSITY SUSTAIN  
MANY African villages  
(64). (118.1)

2



3



1.Thresholds and high density help sustain many African villages [64,118.1].

2.Meeting place: fountain [67].

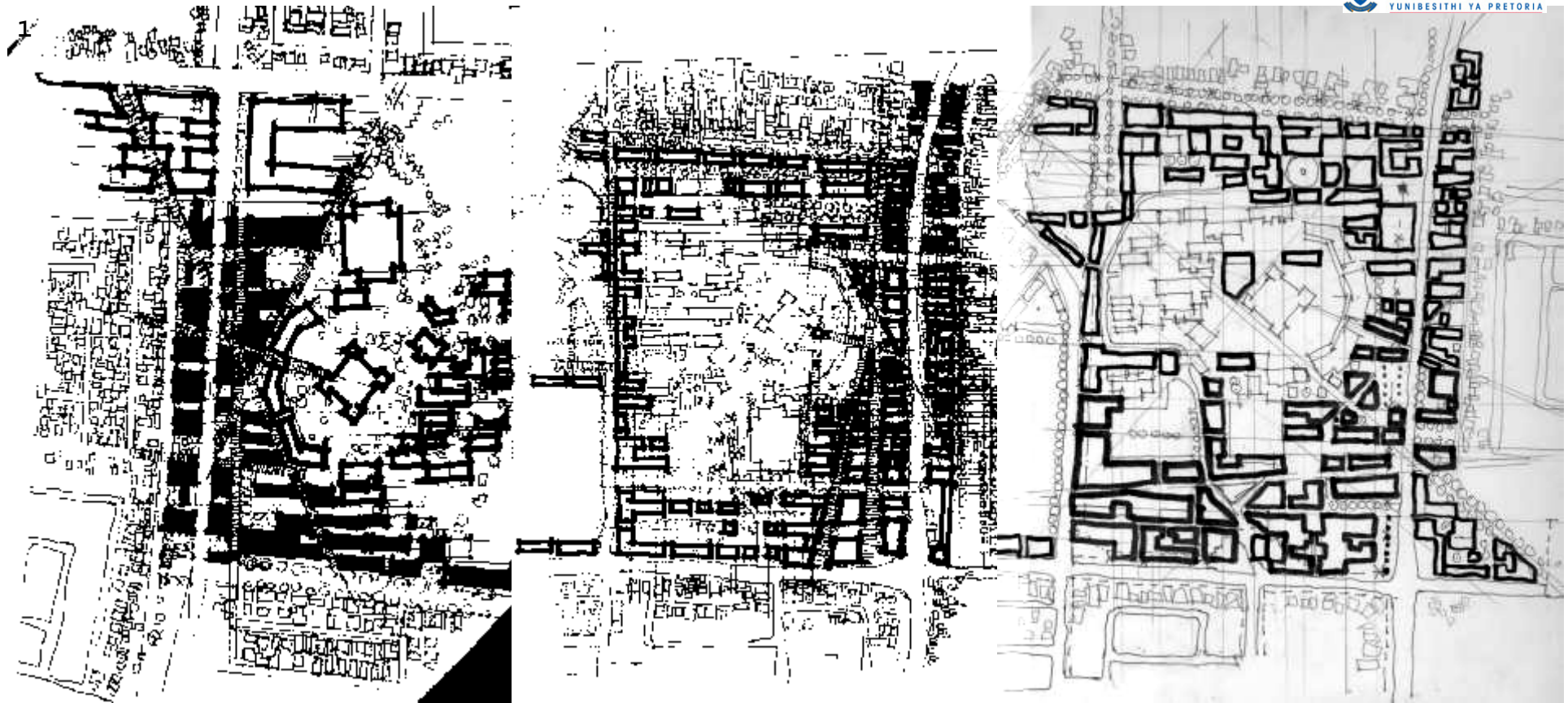
3.Business street [65-66].



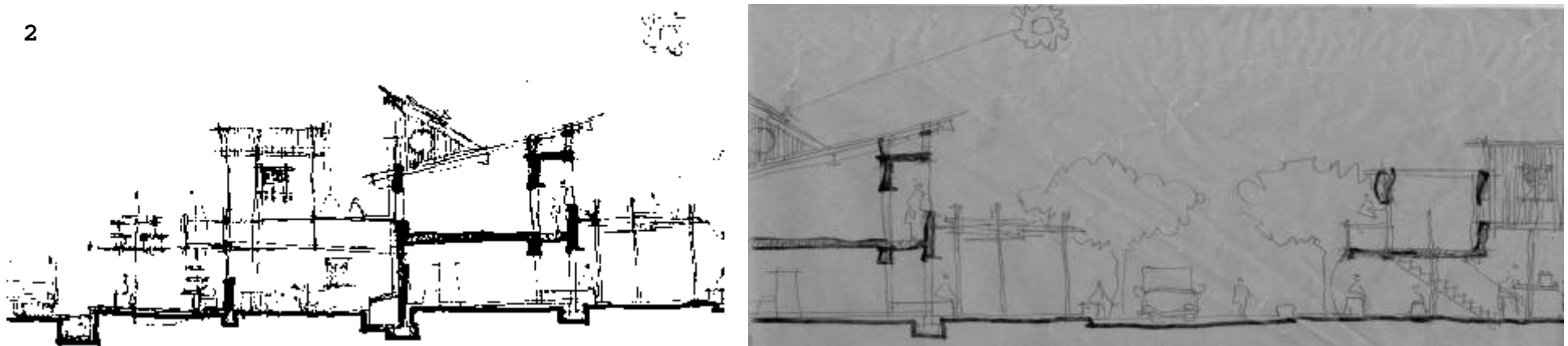
1. Passive surveillance is one of the cheaper ways to fight crime [103-104].

2. Horizontal density should be balanced with vertical density [120].





2



1. A response to density: series of density plans around the campus [103-104]

2. Quality of space in a densified scheme depends on street design [120]

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



68

#### COMPACT URBAN FORM

"Yerushalayim, built as a city fostering friendship and unity"

-[Stern 1998, pp. 921]

High density is of highest importance when developing a sustainable housing system [68]. Therefore, housing is planned for at urban scale down to individual dwelling<sup>23</sup>. This structures the public space such that it can be easily used as meeting place, market place, and traffic space where pedestrian and vehicle traffic coexisting in balance [Gehl & Gemzøe 2003, pp.10]. A compact urban form fosters friendship and unity by providing these functions.

<sup>23</sup>A sustainable housing system possesses a hierarchy of spaces, from the public space, then the semi-public, and finally the private space. Richard Rogers says, "At the heart of our urban strategy lies the concept that cities are for the meeting of friends and strangers in civilized public spaces surrounded by beautiful buildings".

Sustainable housing systems use pedestrianised central zones to create a hierarchy of public spaces linked by a network of green pedestrian routes [Powell 2006, pp.369].

68. Clustered Dogon compounds in one of the many such villages seen from the top of the Bandiagara escarpment, Mali.



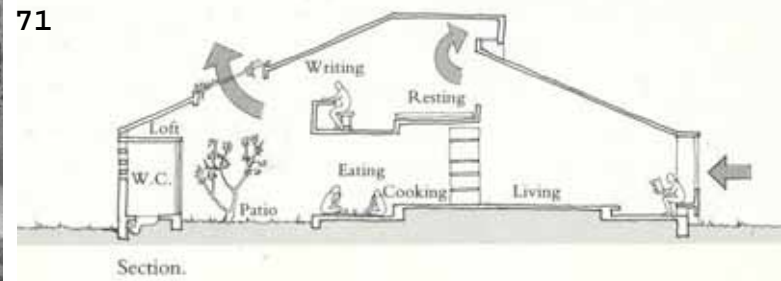
### 3.THE REALISATION OF THE RISE: HOUSING AFRICAN FAMILIES



Semi-public space is a threshold of a sustainable housing system [70]. This semi-public space is explored in the context of orientation and energy efficiency<sup>24</sup>. Compact-building plan around a courtyard could play a vital role in creating comfortable outdoor environment for city dwellers (Dean 2003). It is a place of separation from the busy world. A place where families enjoy the elements without disturbance [69].



71



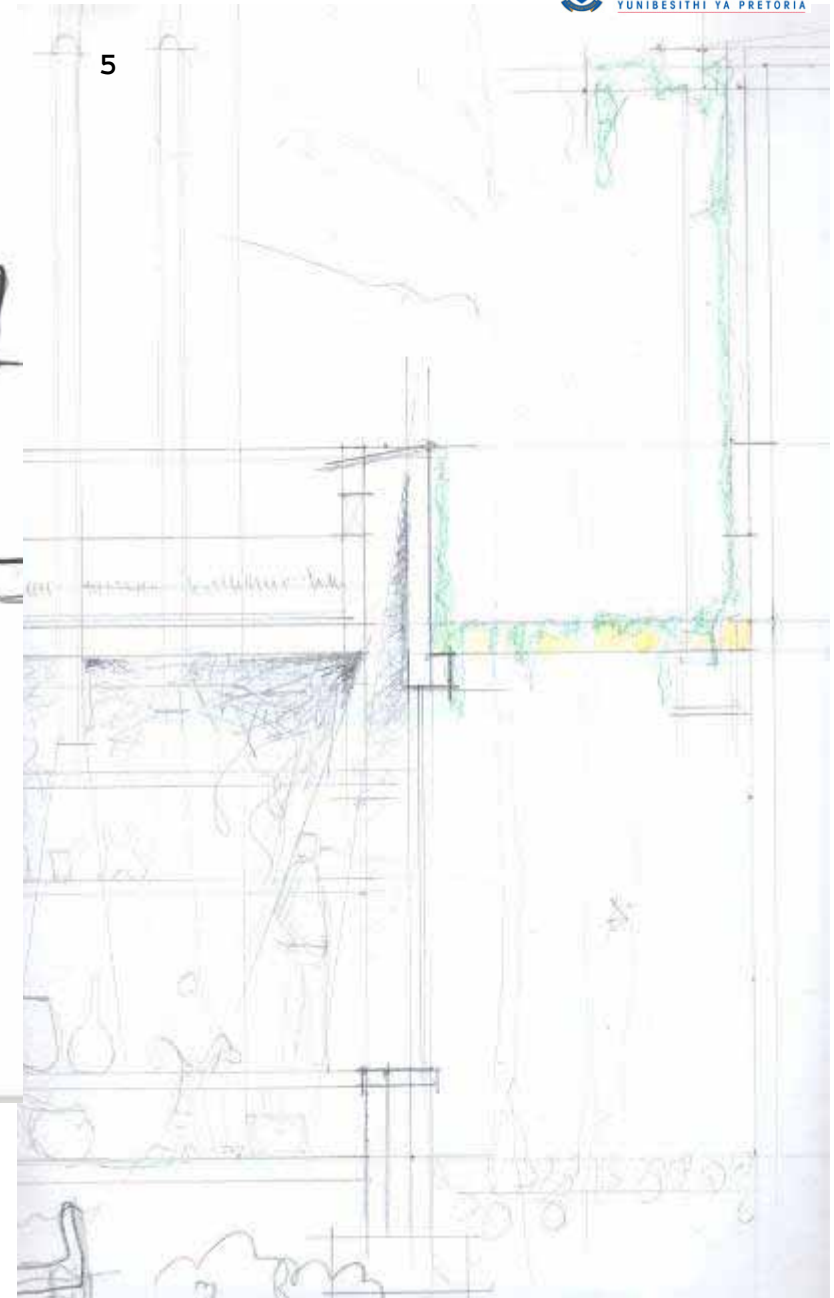
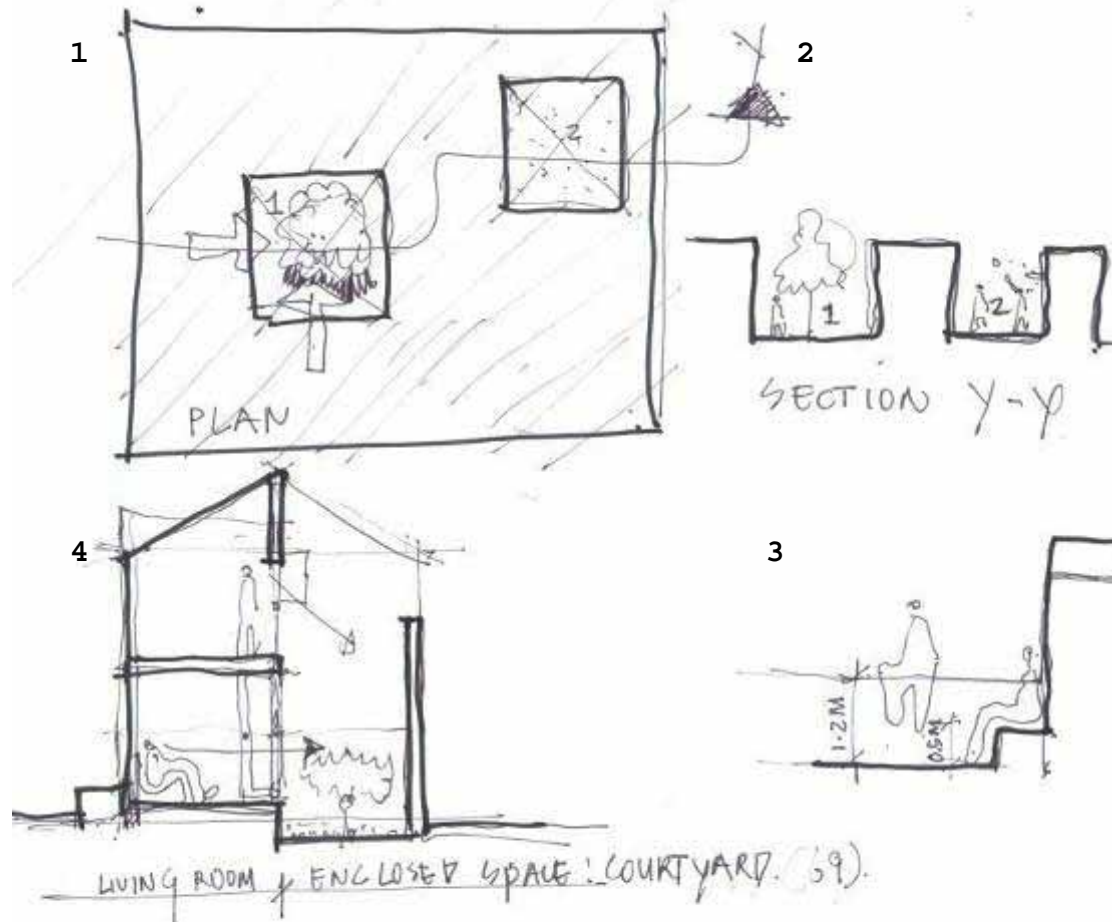
<sup>24</sup>According to Gonzalo & Habermann (2006,pp.90) "Narrow, long rooms are better for the energy balance of a building." Charles Correa's TUBE HOUSING [71] serves as good example in this case." The section..." of the TUBE HOUSING "...is shaped so that the hot air rises and escapes from the top, setting up a convection of natural ventilation." (Charles Correa Associates October 2007). Therefore Correa's scheme proves the fact that low-cost housing can provide both spaces of meaningful quality and energy-efficient environments.

69.Patio with bench adjacent to central sitting room, Architect's house, Colombo by Geoffrey Bawa, 1968.

70.Courtyard, thresholds, terraces, and dwellings in a African village, Burkina Faso.

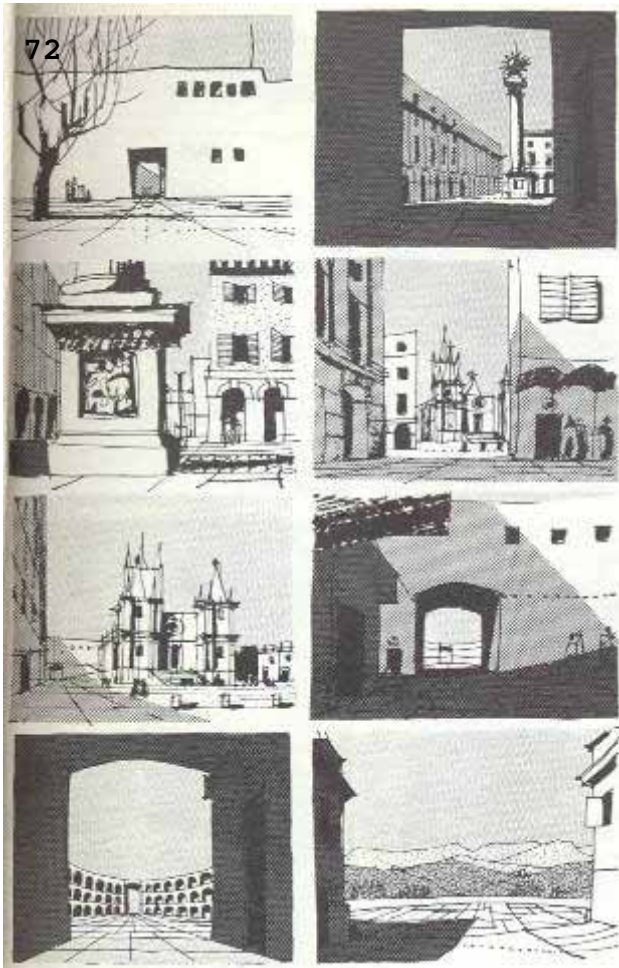
71.Section of Charles Correa's TUBE HOUSE, India.



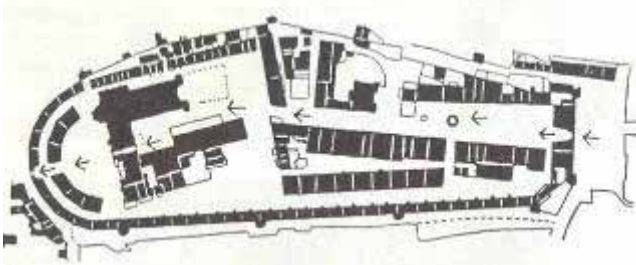


1. In dense developments there must be breathing spaces with trees [124,127].
2. In dense developments there must be open spaces for multiple functions [68].
3. Low walls and seats at comfortable heights for people to sit [70-71].
4. Courtyard space provides privacy while enjoying the elements: light, wind, and greenery [69].
5. Section through exhibition/gallery.

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



Each form is arranged such that the housing system is characterized by; high density<sup>25</sup>, hierarchy of spaces, enabling pathways [74], penetrable edges, legible gateways, economically viable nodes, and prominent landmarks to provide orientation [72]. These elements ensure legibility and orientation. Spaces are given character such that places are created.

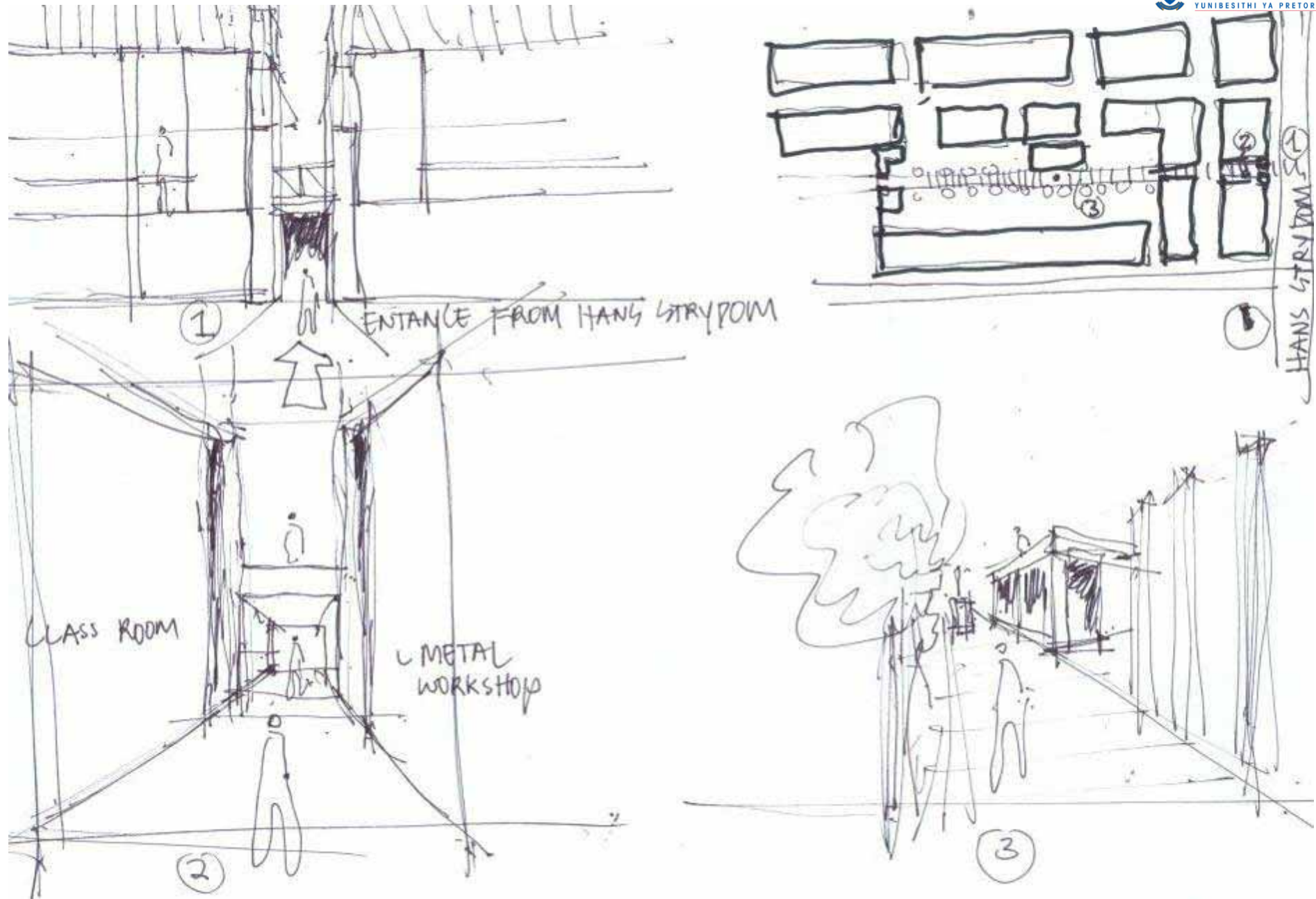


<sup>25</sup>“Yet another thing I observed under the sun is that races aren’t won by the swift or battles by the strong and that food doesn’t go to the wise or wealth to the intelligent or favour to the experts; rather, time and chance rule them all.” [Stern 1998, pp. 1084-5]. High density developments create chances or opportunities for many things to occur [73] at a given time compared to low density areas. Many small businesses thrive better in high density developments than low density ones. This is because high density increases the chances of people buying from them at a shorter time compared to low density areas.

72.A sequence of revelations and series of sudden contrasts and variations provides legibility and orientation.

73.African market place, Mali.

74.African street, Ethiopia.



Creating places by nurturing orientation and legibility throughout the scheme [72]. 52  
 1. Entrance from Hans Strydom 2. Courtyard towards Admin. And reception 3. Towards gallery.



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

<sup>26</sup>Gehl & Gemzøe [2003,pp.13] suggest that in a sustainable housing system the city is "...a thoroughfare providing access to, and connecting the various uses of the city..."

Goods can easily be transported and pedestrians [76] are able to walk where they need to go. Working areas, civic facilities, public buildings, commercial facilities, schools etc are at a comfortable walking distance.

75.Food gardens surrounded by dwellings, Venezia.

76.African sustainable transport, Mali.

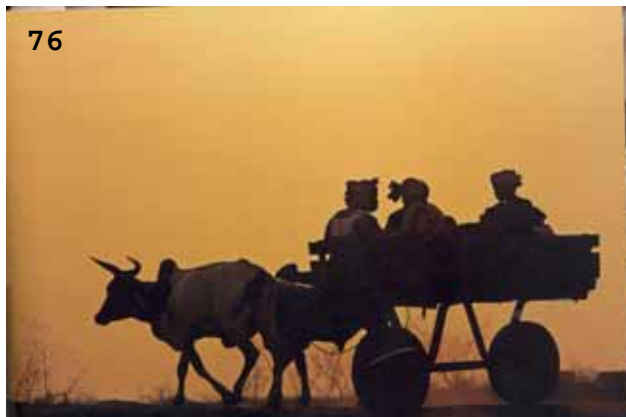


#### INCOME GENERATING DEVELOPMENT

"Prepare your outside work and get things ready for yourself on the land after that build your house."

-[Stern 1998,pp. 980]

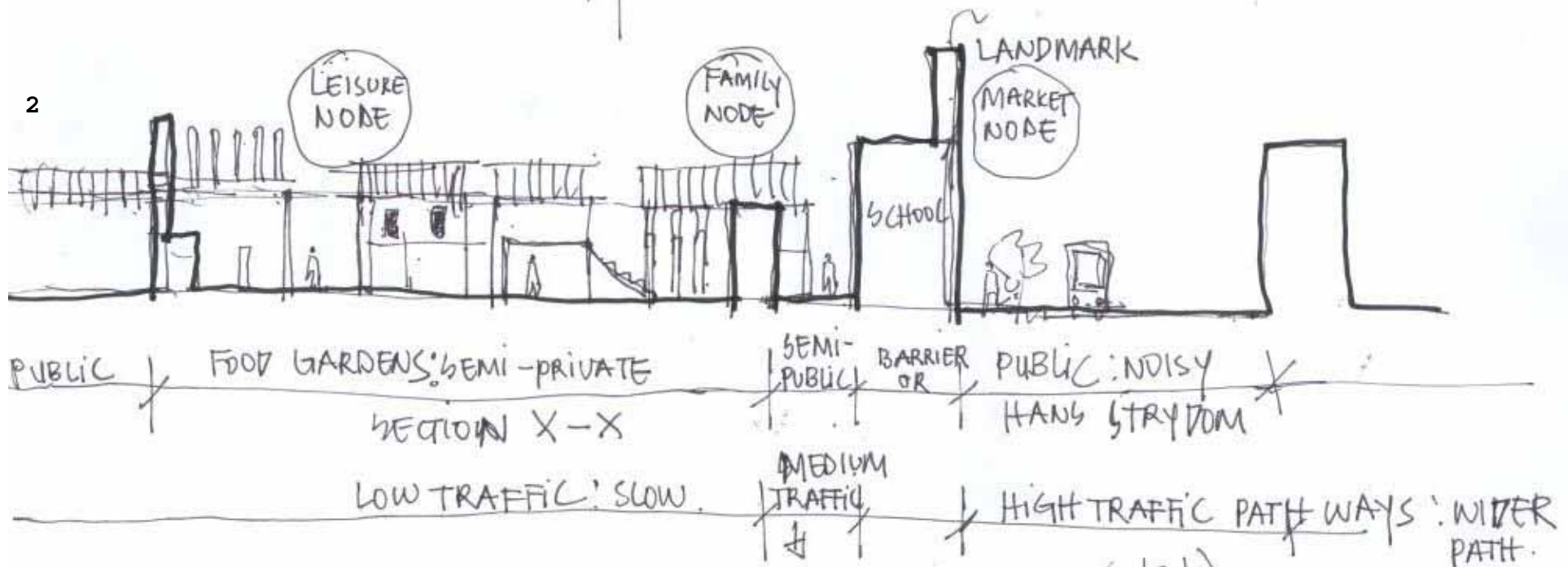
Primitive African communities used to travel from place to place in search of green pastures for their livestock and fertile soil for a good harvest [75]. Therefore, their dwellings were always preceded by income producing location. This is an attribute of a sustainable housing system<sup>26</sup>. It is not a live-work scenario but a work-live system.





FOOD GARDENS SURROUNDED BY BUILDINGS  
BUT WITH WALKWAYS TO ALLOW FOR  
PEDESTRIAN MOVEMENT (75-76)

(44)



1. Food gardens surrounded by buildings but networked with pedestrian walkways [75-76]. 54
2. Landmarks, nodes, pathways, edges, and gateways can be used to enforce legibility [121].

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

#### SEED TIME AND HARVEST PARADIGM



"So long as the earth exists, sowing time and harvest...will not cease<sup>27</sup>."

-[Stern 1998, pp. 8]

"In the morning, sow your seed; and don't slack off until evening; for you don't know which sowing will succeed, this, or that, or if both will do well."

-[Stern 1998, pp. 1086]



"THE SIGNIFICANT PROBLEMS WE FACE CANNOT BE SOLVED AT THE SAME LEVEL OF THINKING WHERE WE WERE WHEN WE CREATED THEM."

-Albert Einstein



<sup>27</sup> At the core of a sustainable housing system lies the principle of sowing and reaping paradigm. A stewardship responsibility is the driving force for every operation. We can only harvest sustainable results only when we sow sustainable actions.

The following is a check list of sustainable actions we can sow so as to harvest a sustainable housing system;

CONTEXT: the need to adequately respond to established urban design, landscape and architectural context and what is peculiar about the site and its surroundings (contextual).

77.Crop fields, South Africa

78.Sorgum sifting after harvest, Mali.

79. Urban design:A three dimensional drawing, Venezia



### 3 THE REALISATION OF THE

### RISE: HOUSING AFRICAN FAMILIES



80

**URBAN SPACE:** the need to establish a coherent network and hierarchy of urban spaces and visually interesting [80] townscape layout [morphological/visual].

**LEGIBILITY:** the need to create a legible [81-86], easily navigable environment by landmarks, pathways, nodes, gateways, and edges [perceptual], [Lynch 1984].



81



82



83



84



85



86

80. African urban morphology Dogon, Mali.

81. Public building, urban place, connectivity and nodes, Venezia .

82-85. Public place for public activities, Duisburg Nord, in Emscher Landscape Park Peter Lats + Partner, Landscape Architects.

86. Morning sunlight on the Piazza San Marco pavement, Italy.

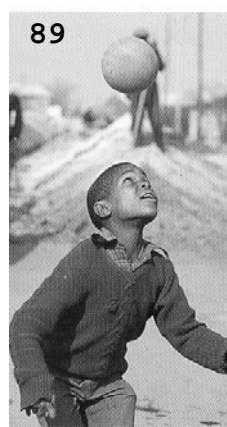


### 3.THE REALISATION OF THE RISE: HOUSING AFRICAN FAMILIES



**87** **SENSE OF PLACE:** the need to establish sense of place in new developments and, where appropriate, in the community [perceptual].

**COMMUNITY:** the need through design to encourage the creation of community and sense of belonging through the integration of physical and social foci, and well-used public realm [social], [Zetter & Watson 2006].



87 & 91. Public place for public activities, Duisburg Nord, in Emscher Landscape Park Peter Lats + Partner, Landscape Architects.

88. A child and water, Soweto

89. A child and soccer are friends, Soweto.

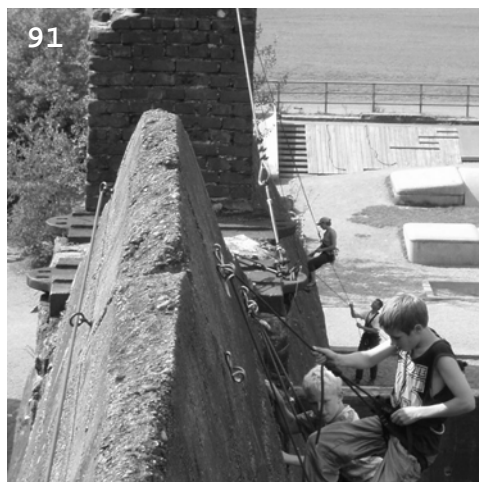
90. A child, running, and water, Soweto.

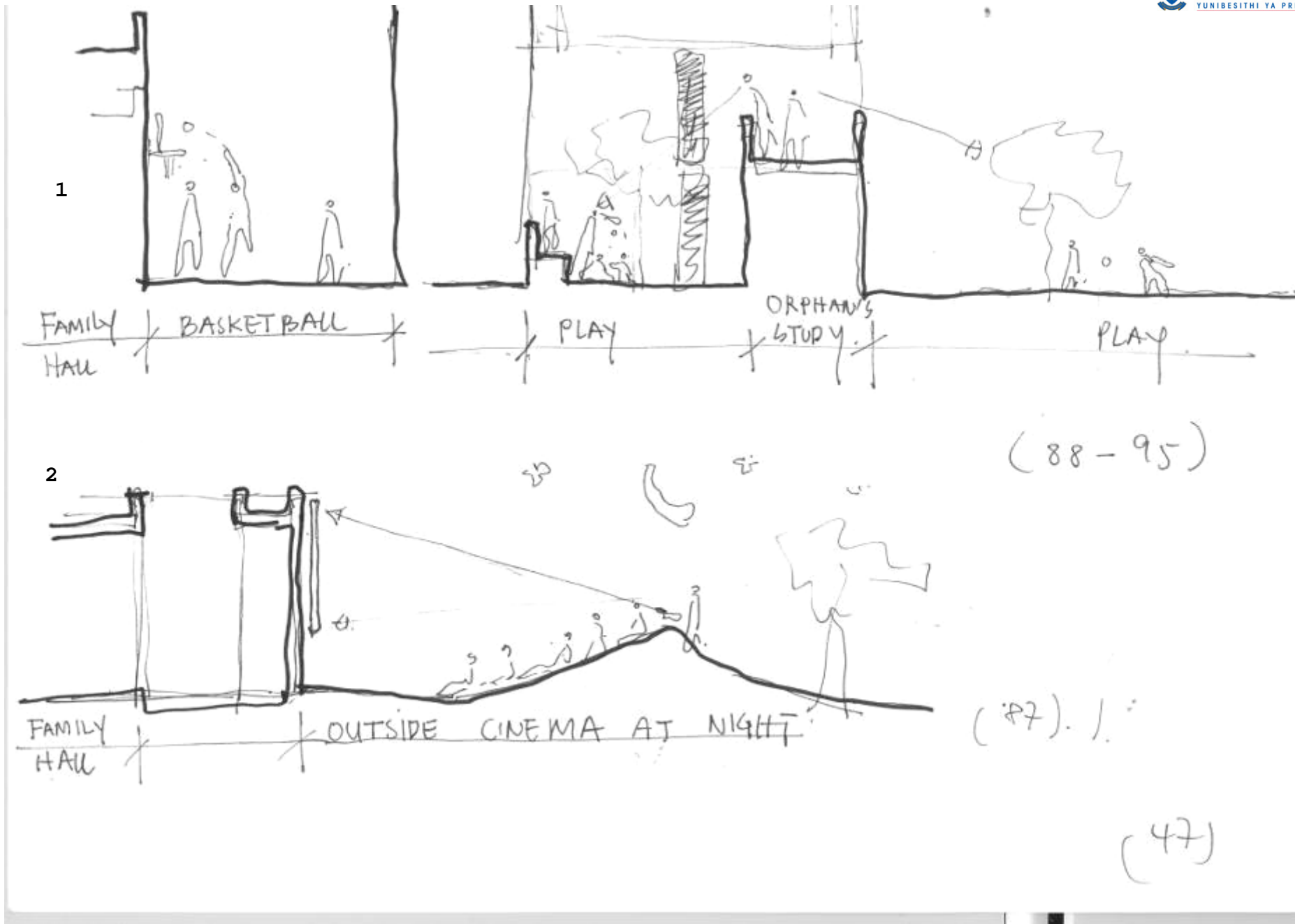
92. A horse racer, Soweto.

93. A child and car tires, Soweto.

94. Jazz in Mamelodi, 1965.

95. Jazz in Mamelodi today.



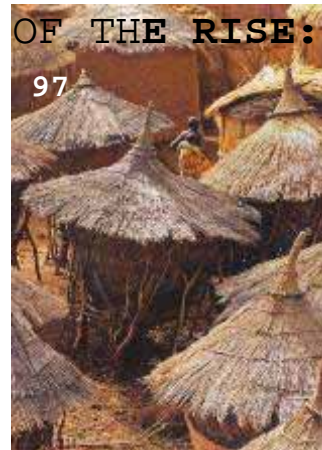


1. Open spaces allow children to play [88-95].

2. Grassy mould allows the audience to watch open air movies [87].

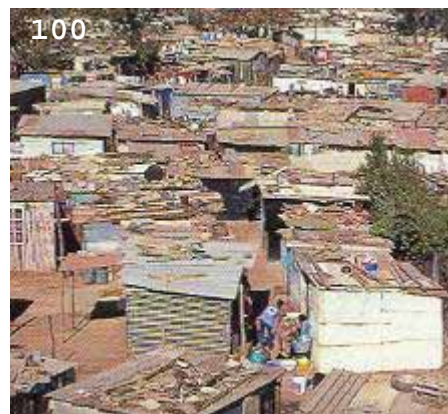


### 3. THE REALISATION OF THE RISE: HOUSING AFRICAN FAMILIES



**CONNECTIVITY:** the related need to create well-connected permeable layouts that are fully integrated into their surrounding environment [morphological], [96,97,99,100].

**MOVEMENT:** the need to create a pedestrian-friendly public realm designed for walking, for child play activities and to encourage social interaction [social],[98].



**MOVEMENT:** the need to create a pedestrian-friendly public realm designed for walking, for child play activities and to encourage social interaction (social)

96. Urban design, Richard Rogers & Partners.

97. Graneries of sorghum, Burkina Faso.

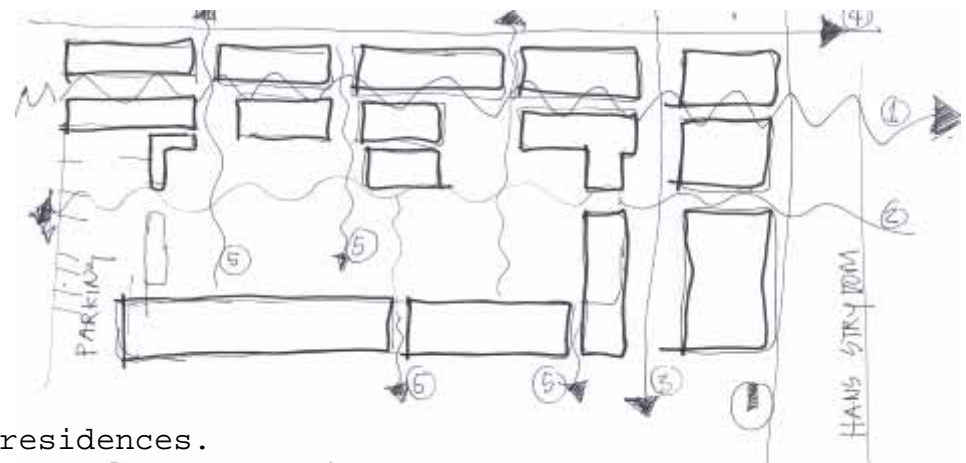
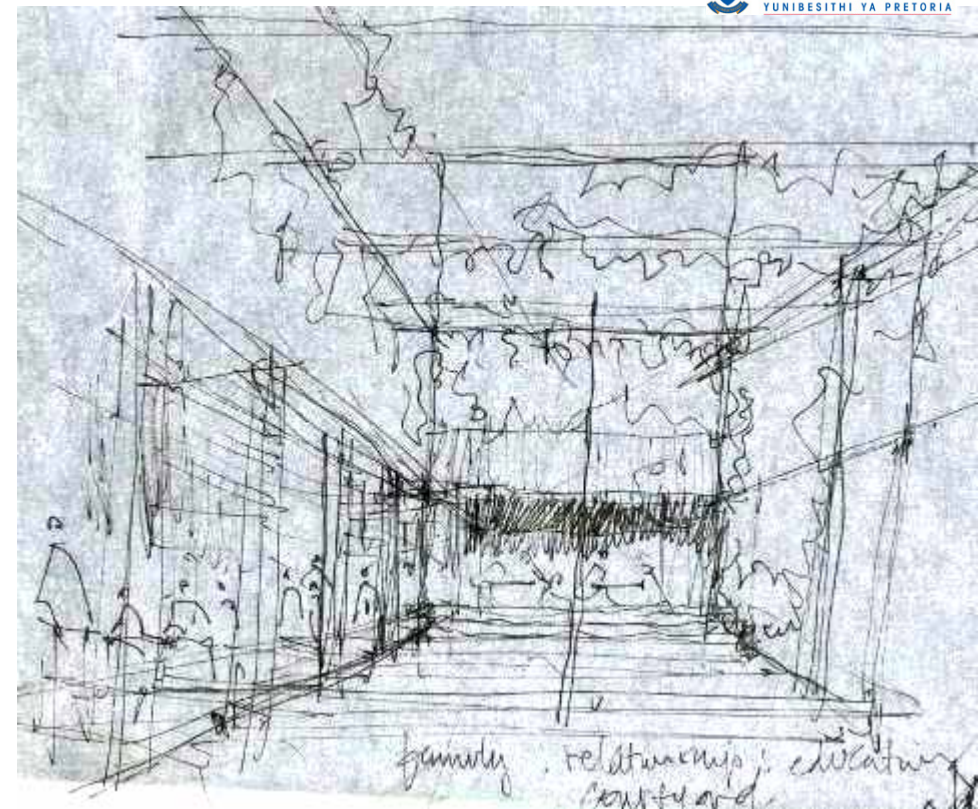
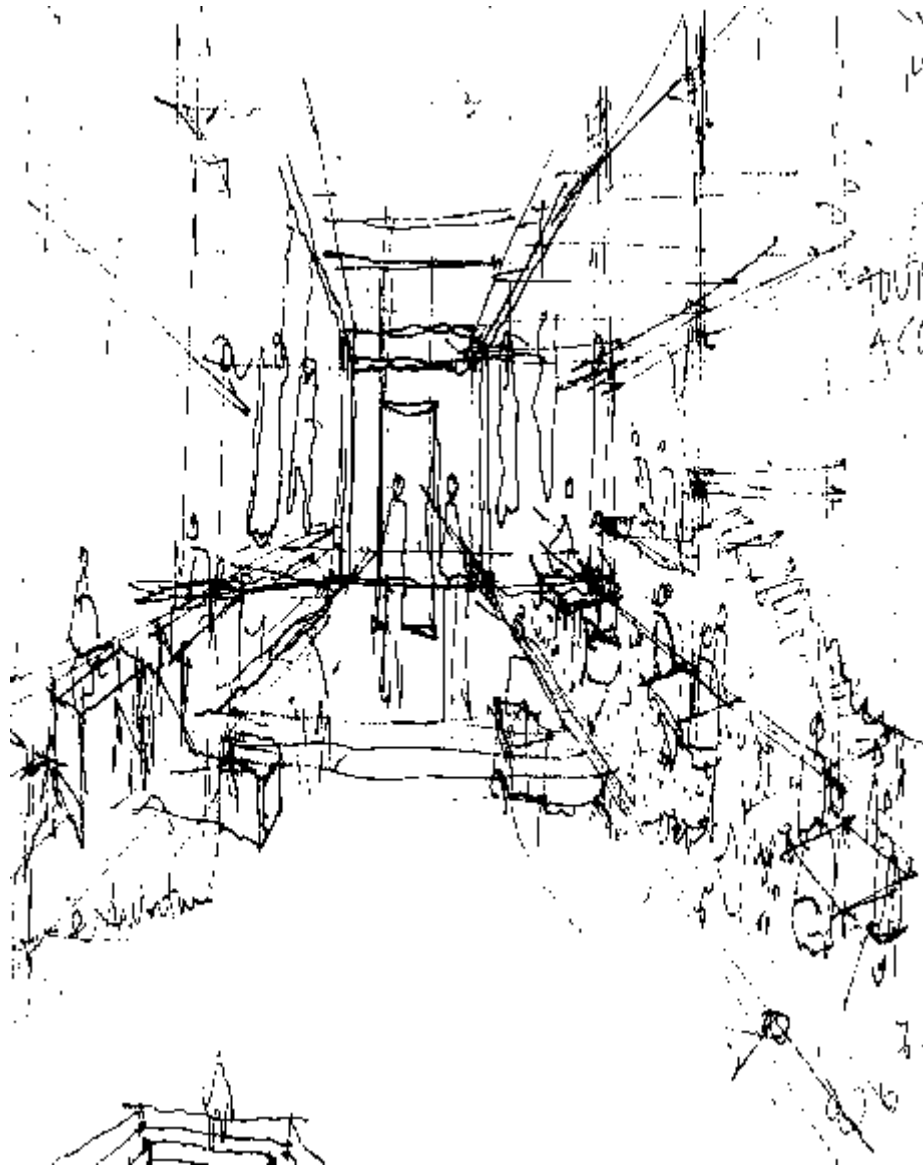
98. Westergasfabriek, by Francine Houben, Mecanoo Architects and Engineers, Amsterdam.

99. Public squares and paths, Venezia .

100. A Black township which was at the centre of the schoolchildren's protest in 1976.

101. Café tables and morning sunlight on the Piazza San Marco pavement, Italy.





1. Movement from residences to shops and school.
2. Movement from school, shops, and taxis back to residences.
3. Service vehicles, delivery vehicles and pedestrian movement
4. Vehicles from residences and pedestrians to shops and taxis.
5. Very slow movement within the development.



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



**CAR DOMINANCE:** the need to cater adequately for vehicular access [102], but reduce the dominance of cars in the design of urban space by designing for reduced vehicle speeds and reduced parking standards [functional]. Developing countries like South Africa use fuel at least twice as industrial countries. This is caused by failure to organise carefully planned public transport [WCED 1987].



**SECURITY:** the need to create well used, well surveilled streets and spaces [social]. The street need to be designed for social, economical, and environmental activities [103-107].



102.Vehicle parking, Venezia

103.Human scale buildings and sociable street edges, squatter camp, Soweto.

104.Street market, Burkina Faso.

105.Street soccer, South Africa.

106.The ritual slaughter of animals at weddings, baptisms and funerals, and to commemorate other events is an important aspect of African tradition. The animal, however, not always willing to co-operate.

107.A young chicken seller at the Freedom square.



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

108



**INNOVATION:** Innovation in the use of materials and construction details to improve the quality of human life [108-113].

109



110

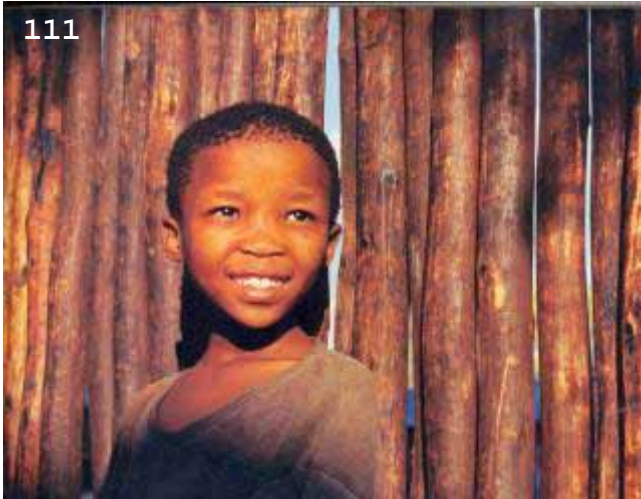


108.A peak of a farmhouse roof peers over a bright yellow field, Sweden

109.The desert tree and desert soil behind, Namibia.

110.Den Hague's ivy-covered red-shuttered cop shop, Netherlands.

111



112



111.Timber used as protection from the desert dune winds, Namibia.

112.Crimson doors and window frames adorn the façade of a barn, Belgium.

113.A African woman, child and wood, Kenya.

113





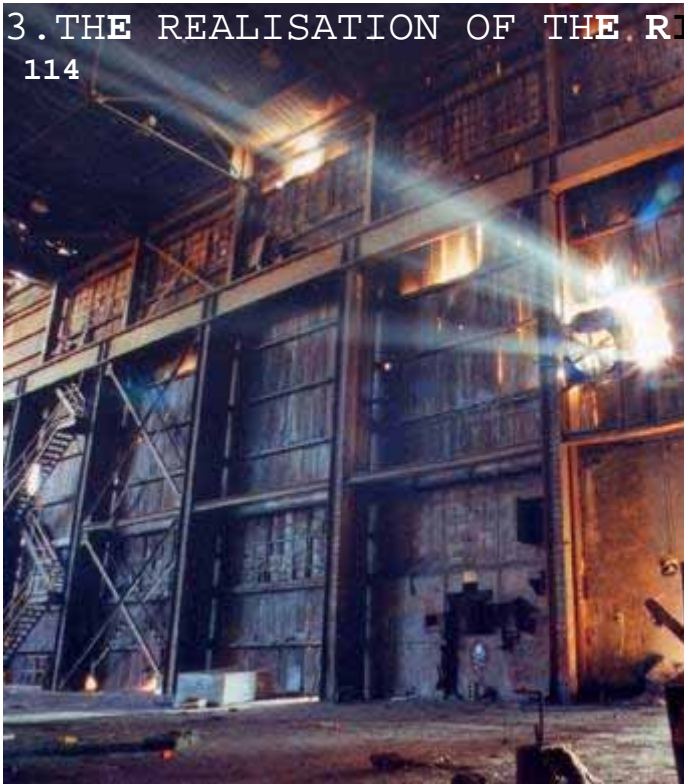


1. Pitched roof allows for geyser placement, storage, and sleeping [108].
2. Layers are created by trees in front of walls [109].
3. Openings can be used to construct a façade that gives identity and character [112].



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

114



**MATERIALS:** The elements (light, air, water, and greenery) and their effect on materials need to be used to create places.

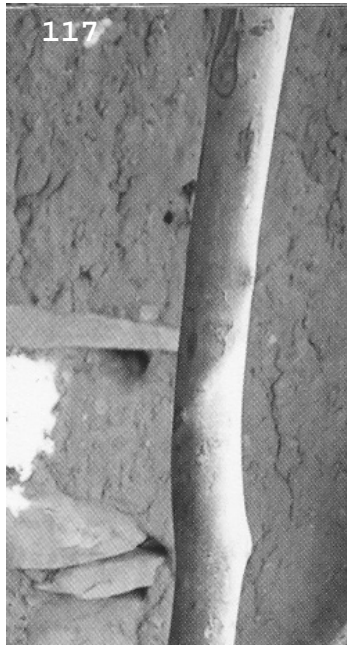
115



116



117

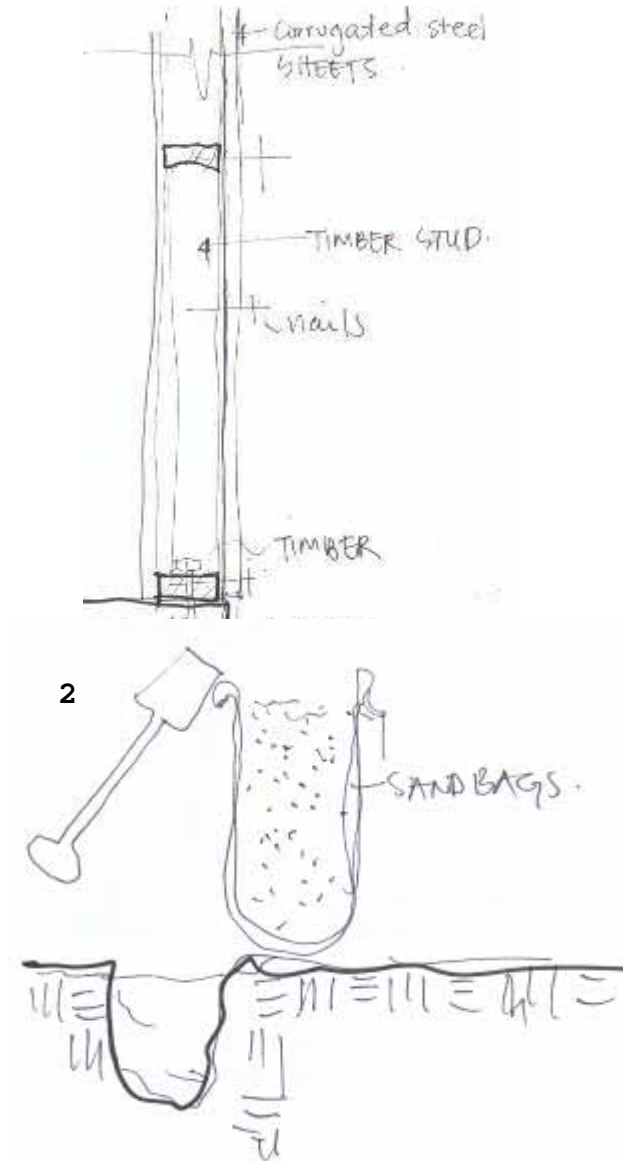
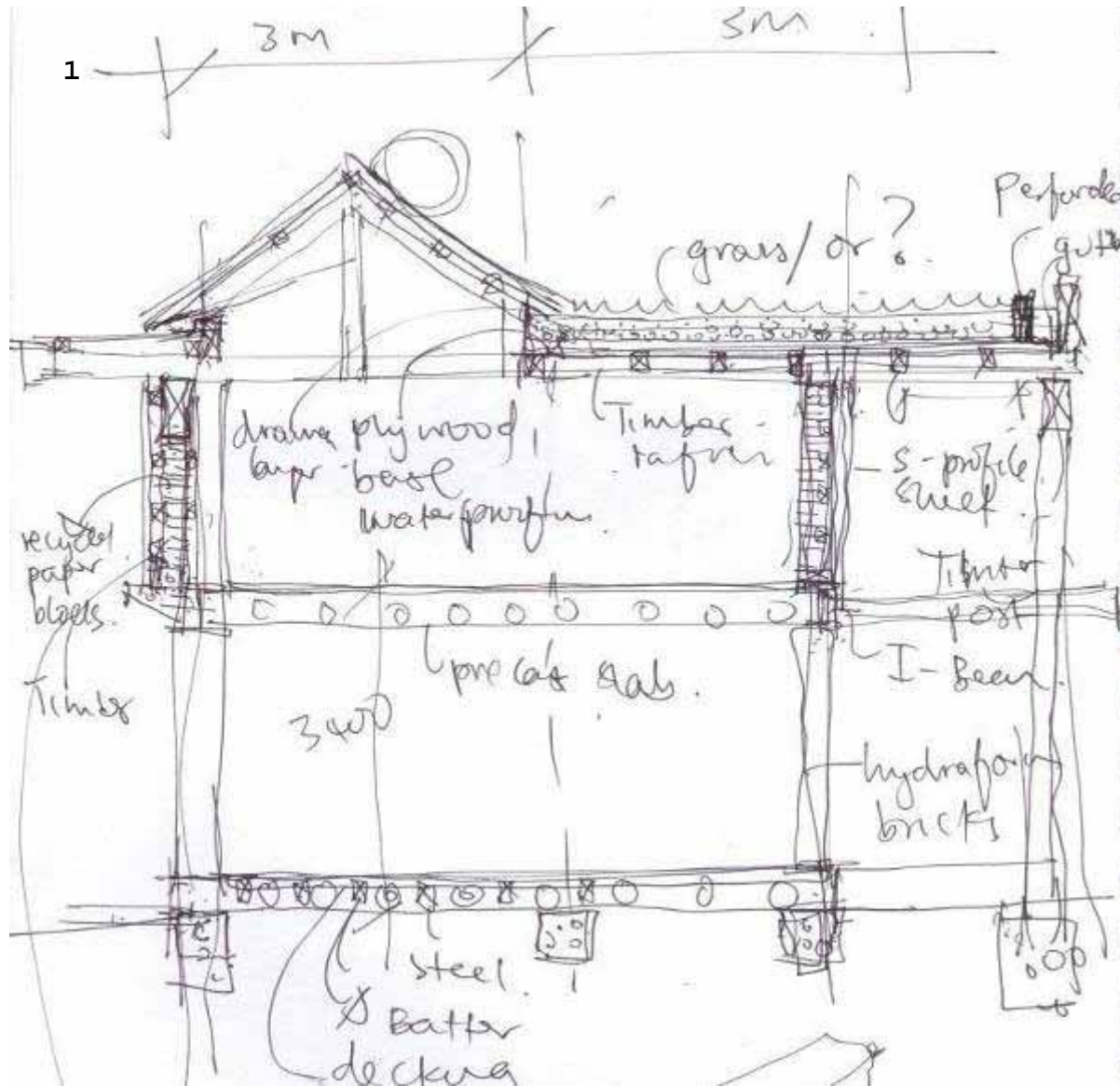


114-115. From Atlantic Steel to Atlantic Station, Ruth Dusseault, Artist in residence at the Georgia Tech's College of Architecture.

116. Weaving work, Mali.

117. Timber post, stone and earth wall, and sunlight, Mali.





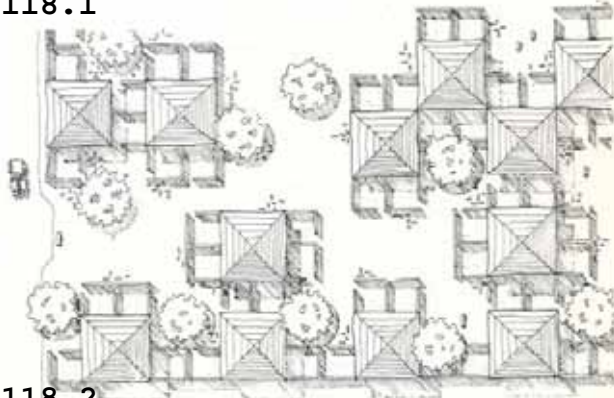
1. Corrugated steel sheets used as cladding allows for easier adaptation of building as its programs change. It is a material widely used for the construction of shacks in the informal settlement located in Mamelodi [114-115].
2. The use of earth to make walls has been practiced for decades in Africa. Today we can fill sandbags with sand so that when buildings are demolished the sand can be re-used [117] .

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

**FLEXIBILITY:** the need to create spaces and buildings that are resilient and adaptable which can be used to accommodate different needs and can be extended if required [sustainable]. Site, structure, skin, services, spaces, and stuff should be composed such that if one is changed, the system can still continue functioning[118-122].

**CHOICE:** the need to offer variety and choice in building sizes and types [social], [120].

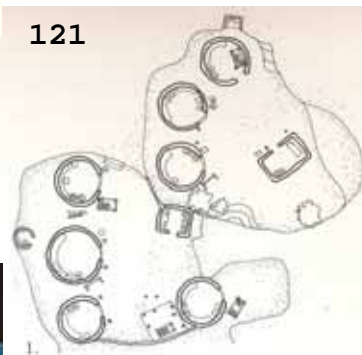
118.1



118.2



121



118.1.Squatter Housing [unbuilt], 1973, Bombay, Charles Correa.

118.2.Tube House flexible for increase in the future, Charles Correa.

119.Pompidou Centre, Paris, Richard Rogers in partnership with Renzo Piano.

120.Low-income Housing, 1971-72, Ahmedabad. There is variety of configurations, varying from incremental housing on small individual sites to two-story walk-ups with open-to-sky terraces.

121.Houses in villages of Rajasthan transformed to flexible and incremental designs, Charles Correa.

122.Welcome Valley in 1968 consisted only of toilet blocks, then houses were latter added.

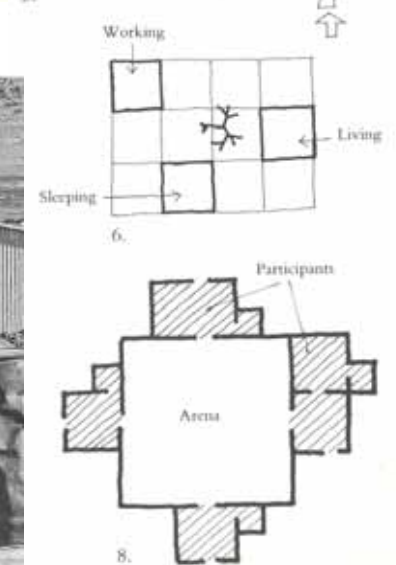
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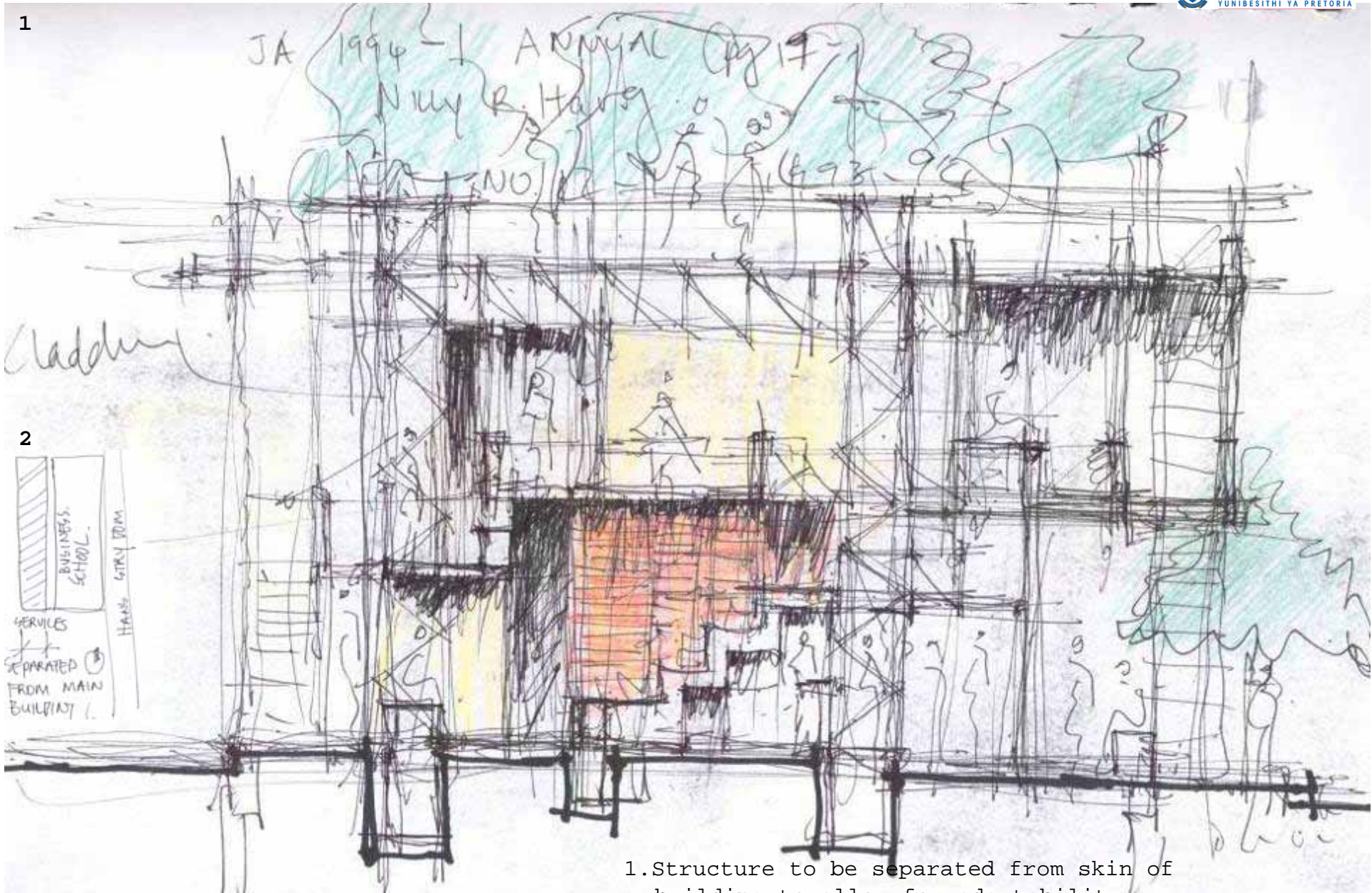
120



122







1. Structure to be separated from skin of building to allow for adaptability.
2. Services should be separated to allow for future adaptation as the functions of the building change [119].



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

123



**LANDSCAPE:** the need to integrate fully and address positively public open space, to invest in appropriate hard and soft landscaping (including trees) and to provide ample opportunity for private landscape display [spatial/contextual], [123-127].

124



125



126

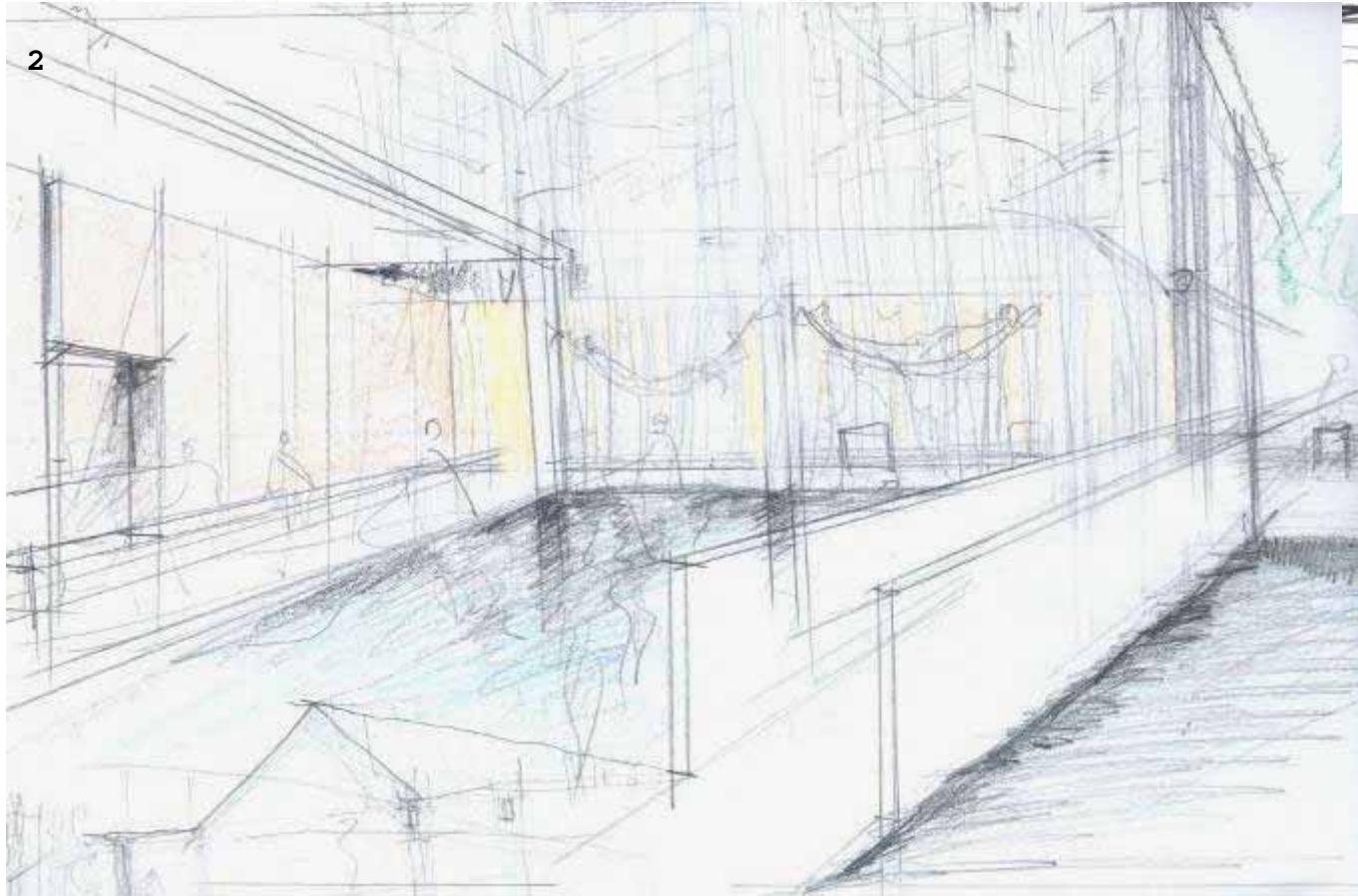
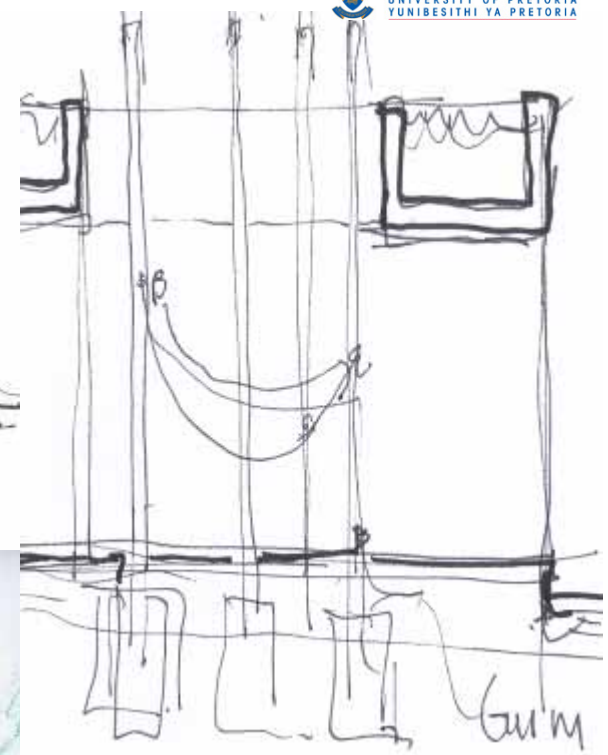
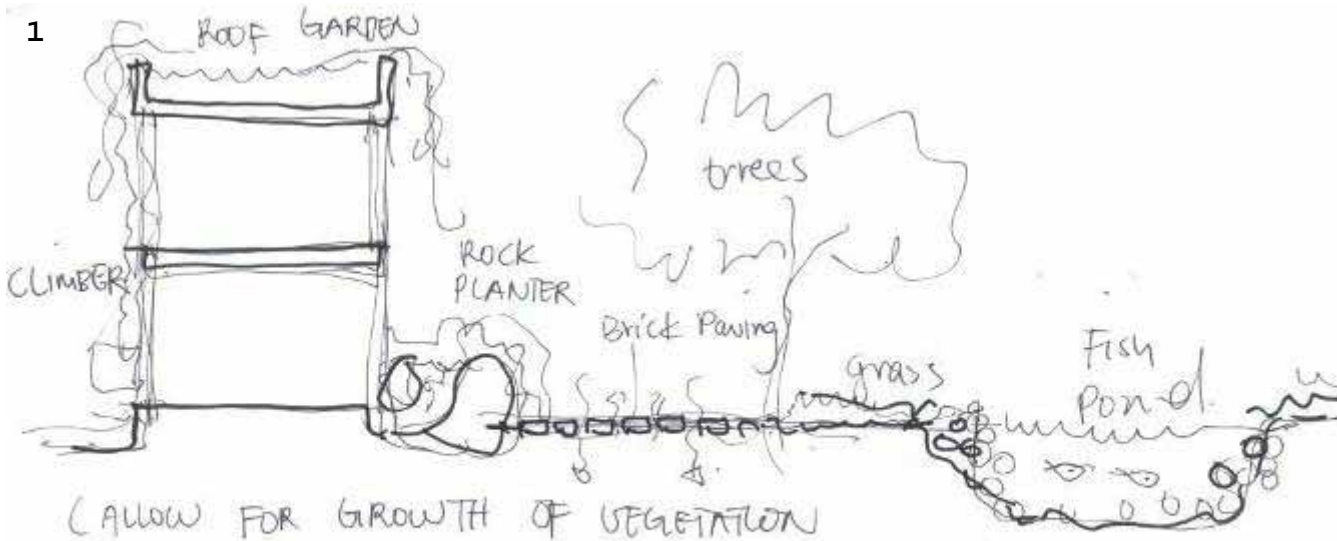


123. Westergasfabriek, 'Changement', by Kathryn Gustafson, Landscape Architect, Amsterdam.

124-126. Duisburg Nord, in Emscher Landscape Park Peter Lats + Partner, Landscape Architects.

127.The plantation, now "Mthunzini Park" and an original feature of the town using the existing trees around which to plan a social garden.





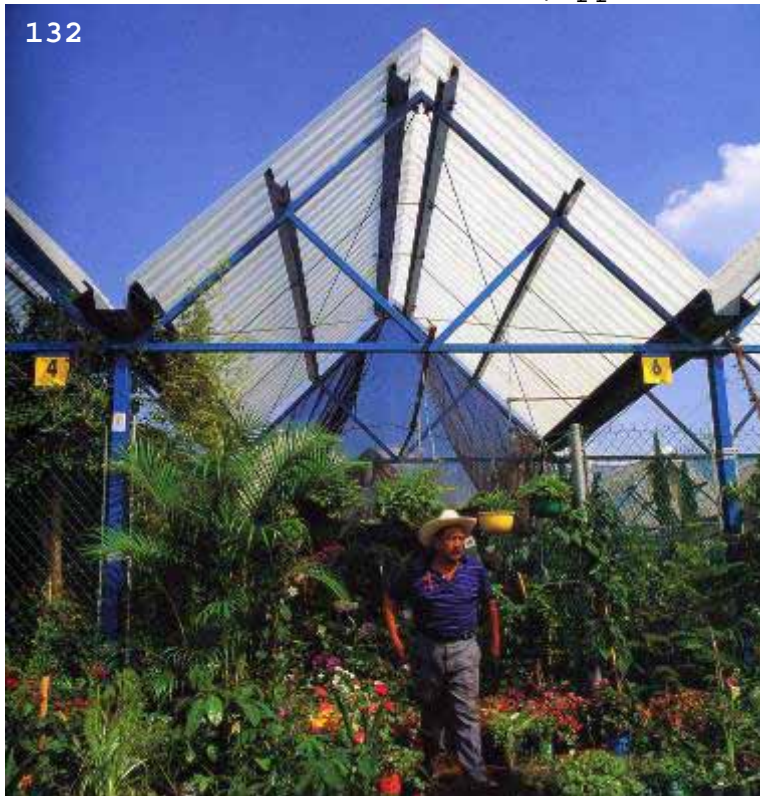
1. The built environment should allow for growth of vegetation so as to support the life of other organisms. Moreover, it is from plants that we obtain oxygen [123-126].
2. The Mthunzini Park located in Mamelodi inspired the use of vertical elements in the design [127].



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



**MULTIPLICITY:** the need to respond to the sustainability agenda by designing for the multiplication of productive land, animals and other material resources. This can be achieved by; integrating energy-efficient technologies, designing for ecological diversity, for less car travel and greater use of public transport, use of recycled and renewable materials, water catchments system, low maintenance, recycling of buildings, multiplication of the natural environment, solar orientation etc [Wines 2000, pp.65-6].

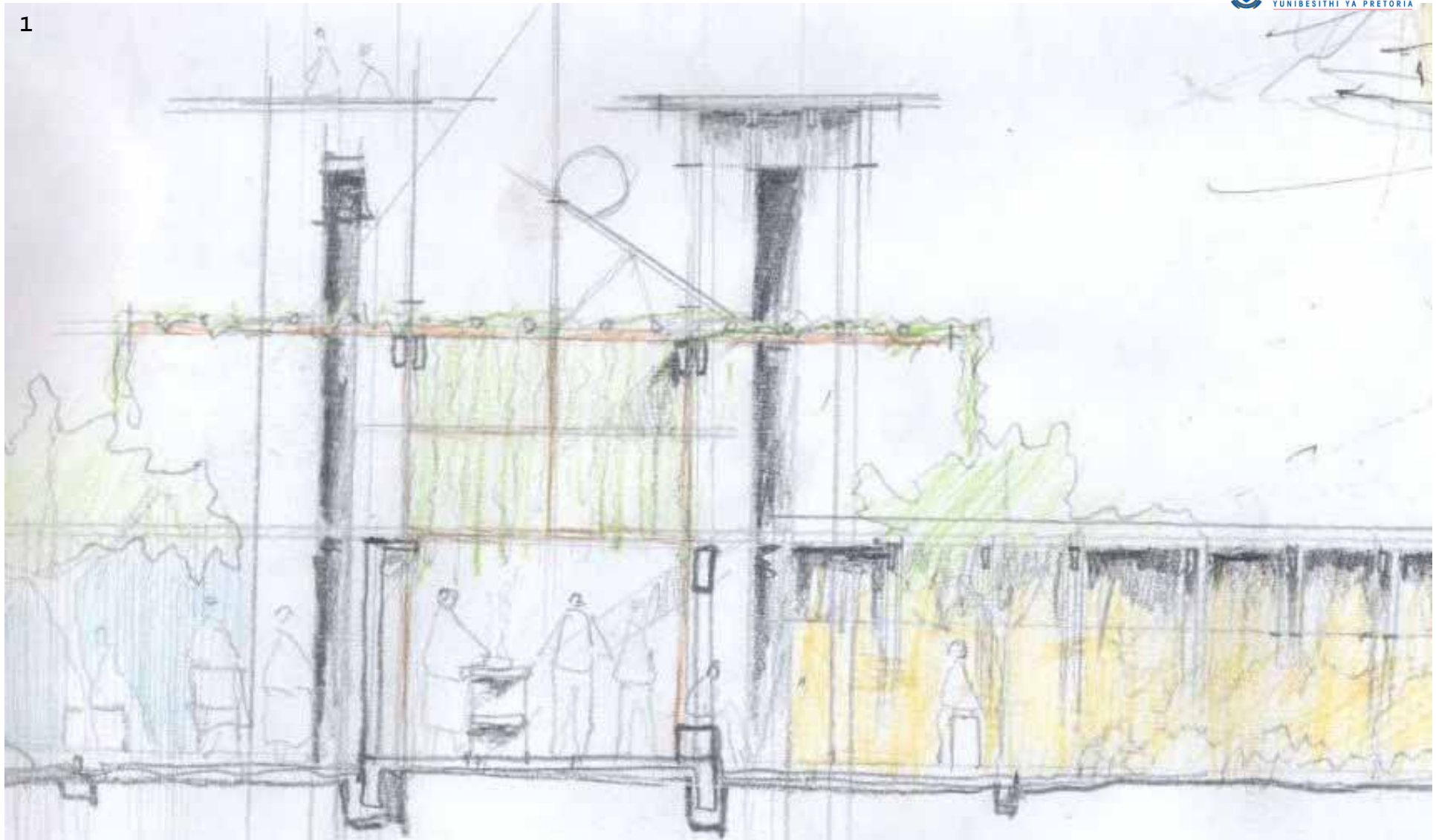


128-131. Duisburg Nord, in Emscher Landscape Park Peter Lats + Partner, Landscape Architects.

132. Parc Ecologico Xochimilco , Mario Schjetnan, Grupo de Diseño Urbano.



1



1. Integrating the structure with greenery, human activities, and human comfort[133-135]. 71

### 3. THE REIFICATION OF THE RISE: HOUSING AFRICAN FAMILIES

133

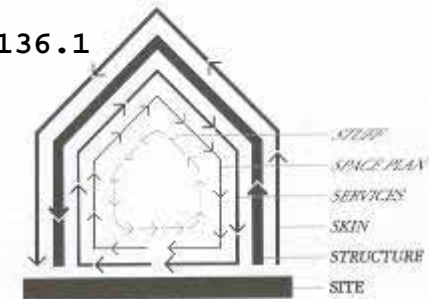


134



**RECYCLING:** "If households trash is made by mixing all our discarded materials together, then clearly the key step to unmaking it is to separate it, or rather to keep it separate, since most of the materials are used separately"-Dr. Paul Connett, cofounder of Work on Waste.

136.1



**SHEARING LAYERS OF CHANGE.** Because of the different rates of change of its components, a building is always tearing itself apart.

135



136

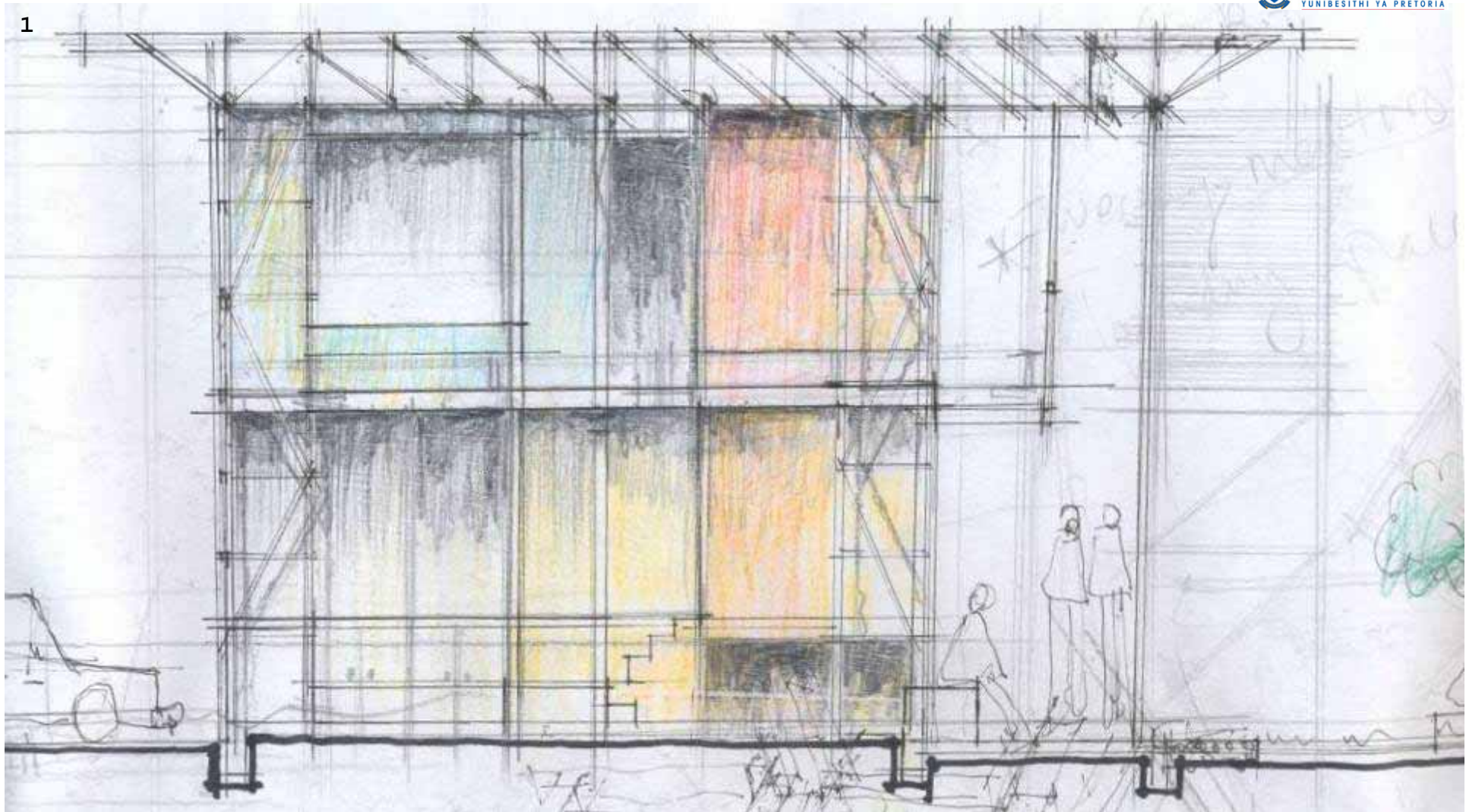


Separation of services, stuff [furniture etc], and skin of building from structure allows for re-use and transformation of spaces of the building. A separable structure can be re-used for other purposes on another site. The key is the ability to separate [Brand 1994].

133-135. Duisburg Nord, in Emscher Landscape Park Peter Lats + Partner, Landscape Architects.

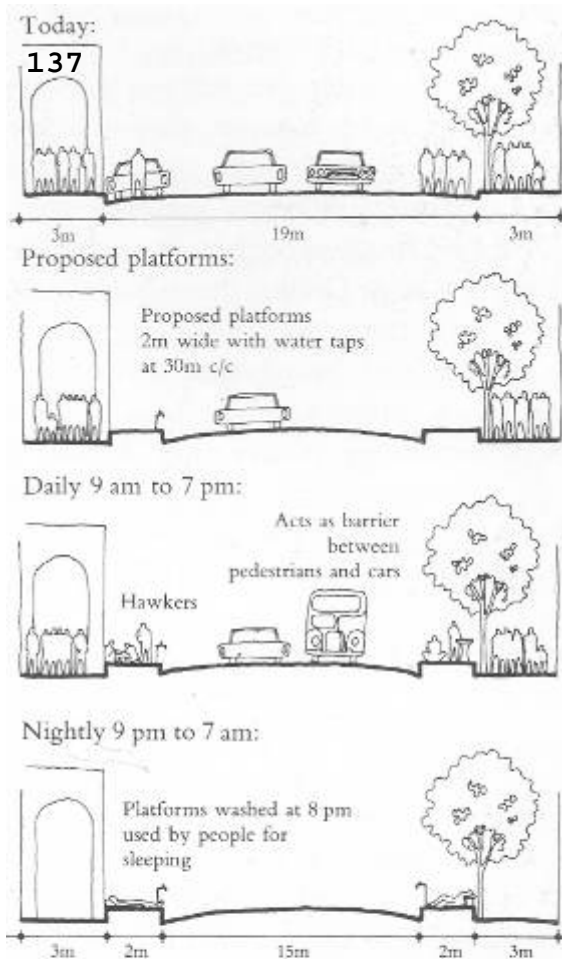
136. From Atlantic Steel to Atlantic Station, Ruth Dusseault, Artist in residence at the Georgia Tech's College of Architecture.





1. Roof and structure are separated from the skin of building. The structure can be used as furniture in the interior. Large overhangs protects the interior from rain, unwanted heat gain, and creates a threshold from the outside to the inside.

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



**MIXING USES:** the need to move beyond strict zoning by designing developments with all appropriate facilities and services, and by mixing housing with other uses when appropriate and feasible [137-138], [sustainable].

**AFFORDIBILITY:** the extent to which the buildings accommodate the size and produce the income of families from the community [137].

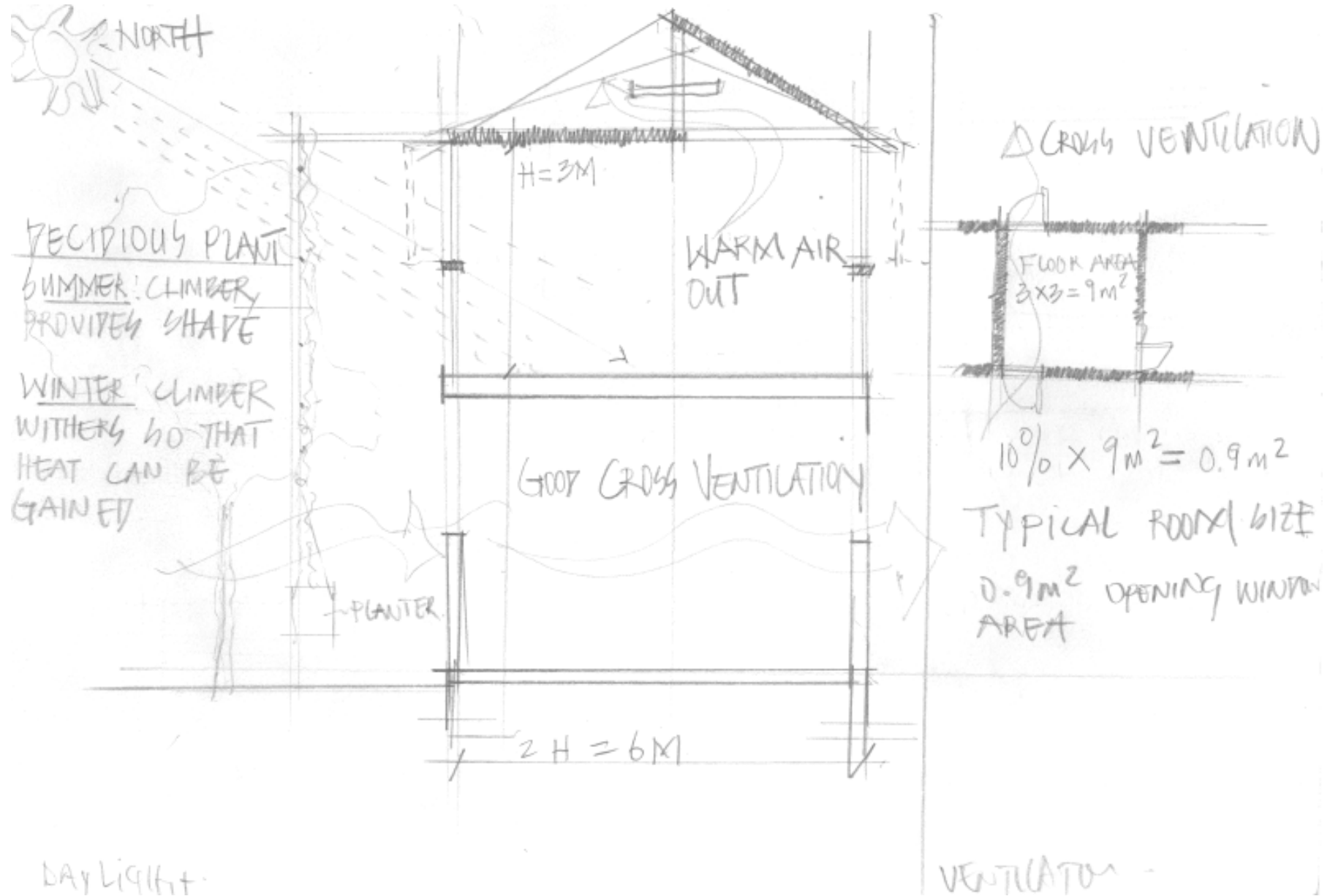


137. Hawkers/Pavement project designing for hawkers during the day and sleepers at night, Charles Correa, India.

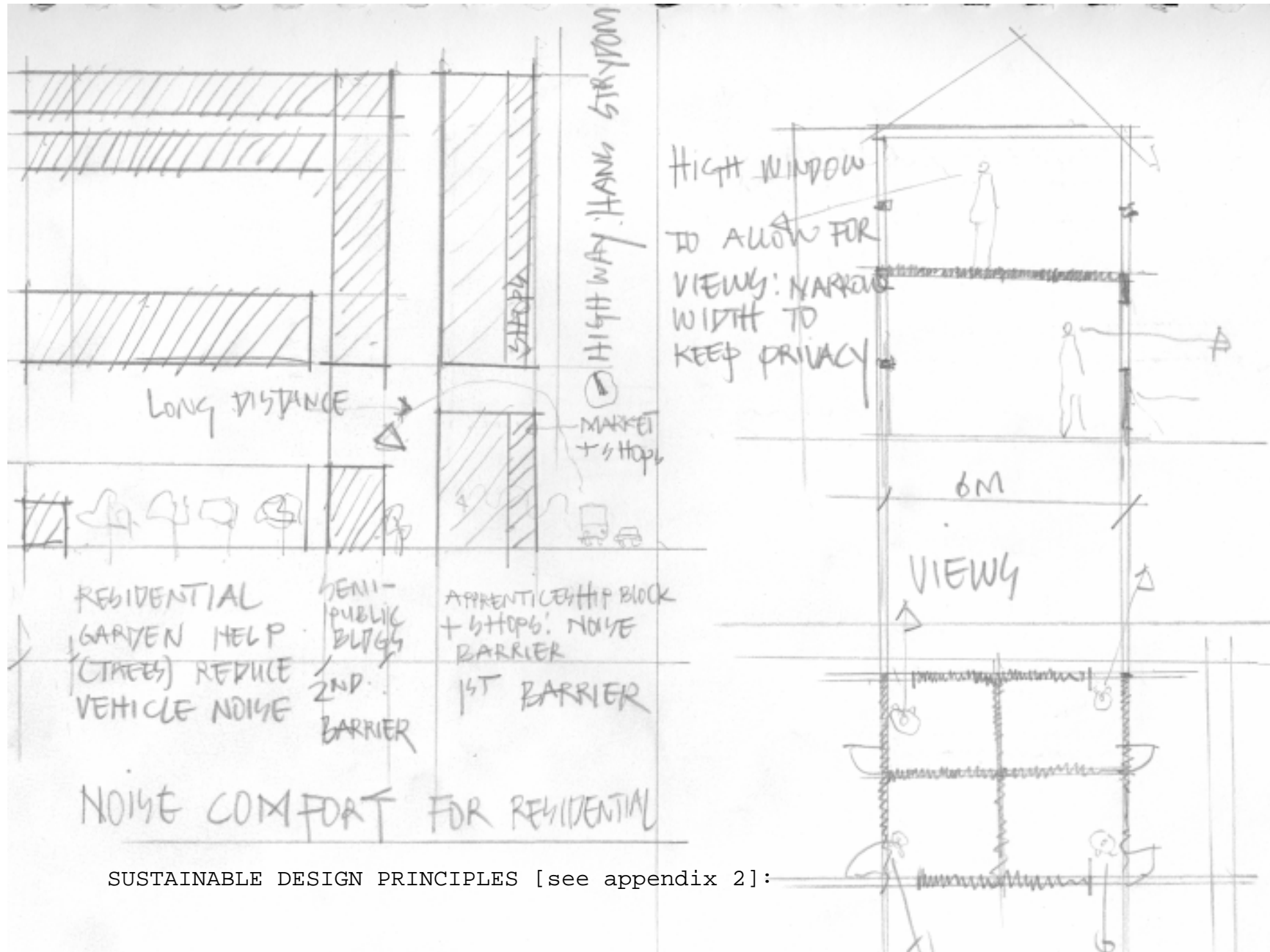
138. Decentralised sports area, food gardens, housing and commercial zones, Venezia.



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



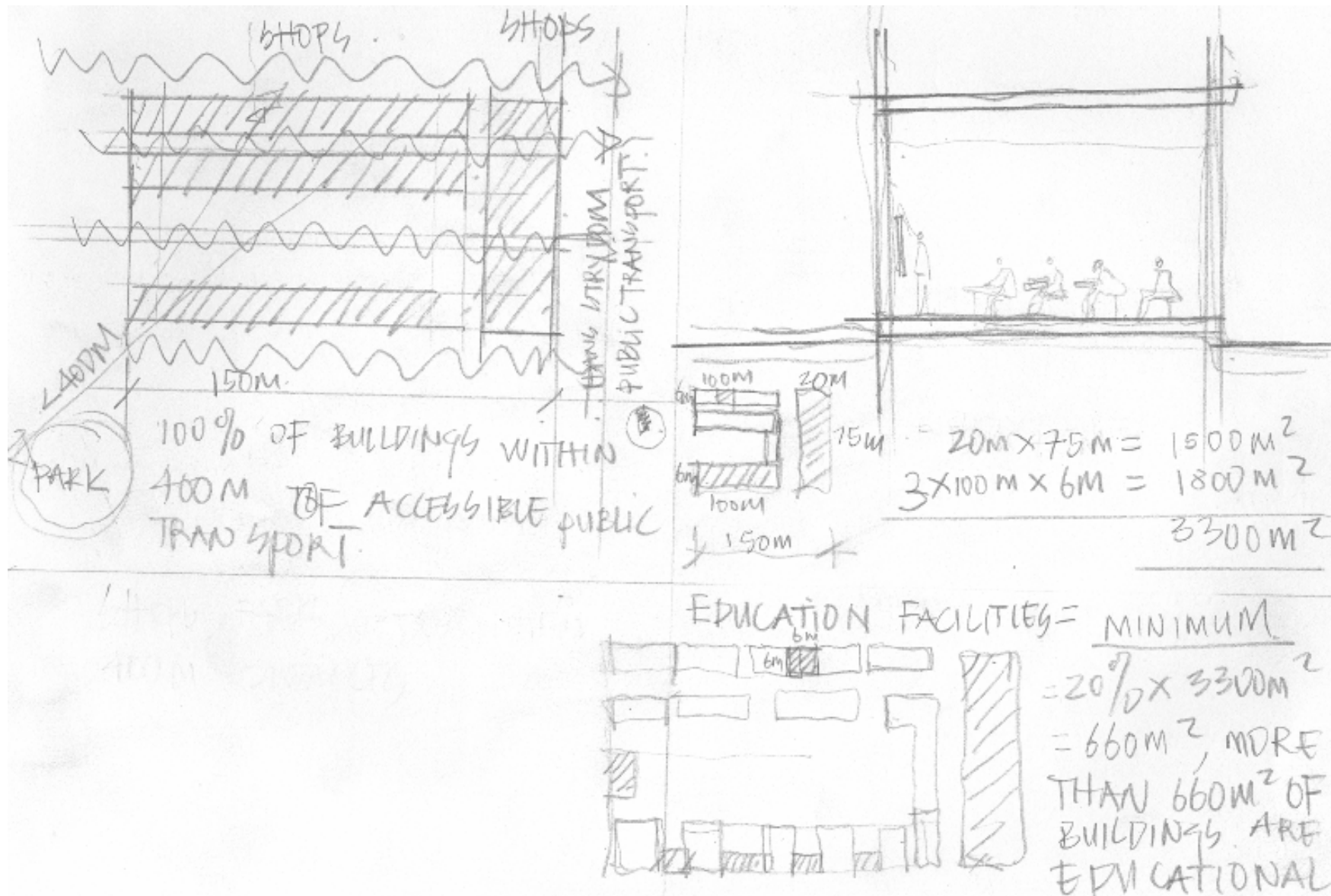
### 3. THE REALISATION OF THE RISE: HOUSING AFRICAN FAMILIES



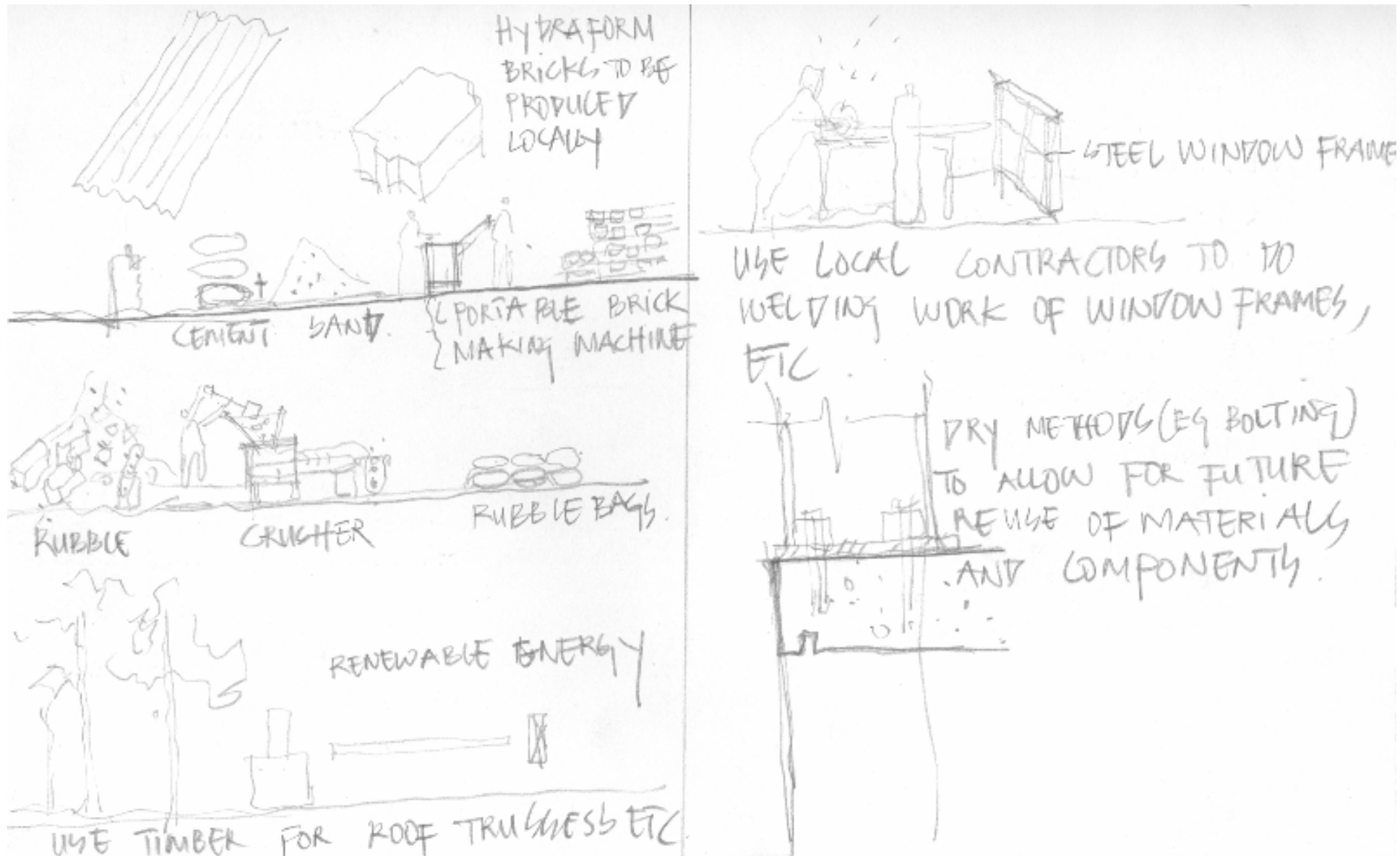
SUSTAINABLE DESIGN PRINCIPLES [see appendix 2]:



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



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



SUSTAINABLE DESIGN PRINCIPLES [see appendix 2]:



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

CAPACITY: APPRENTICESHIP BUILDING

ACTUAL NUMBER OF USERS (X)  $\times 100$   
 NUMBER OF USERS AT FULL CAPACITY (Y)

Y = 300 PEOPLE  
 X = FOR FUTURE MEASUREMENT

$\frac{X}{300} \times 100$

OCCUPANCY


ACTUAL AVERAGE NO OF HRS USED (A)  $\times 100$   
 ALL POTENTIAL HOURS BUILDING COULD BE USE (B)

B = 24 HRS, ESTIMATED A = 15 HRS.

$\frac{15}{24} \times 100 = 62.5\%$

□ BUILDING TO BE USED FOR EVENING NIGHT CLASSES FOR SMALL BUSINESS MEN AND STREET VENDORS

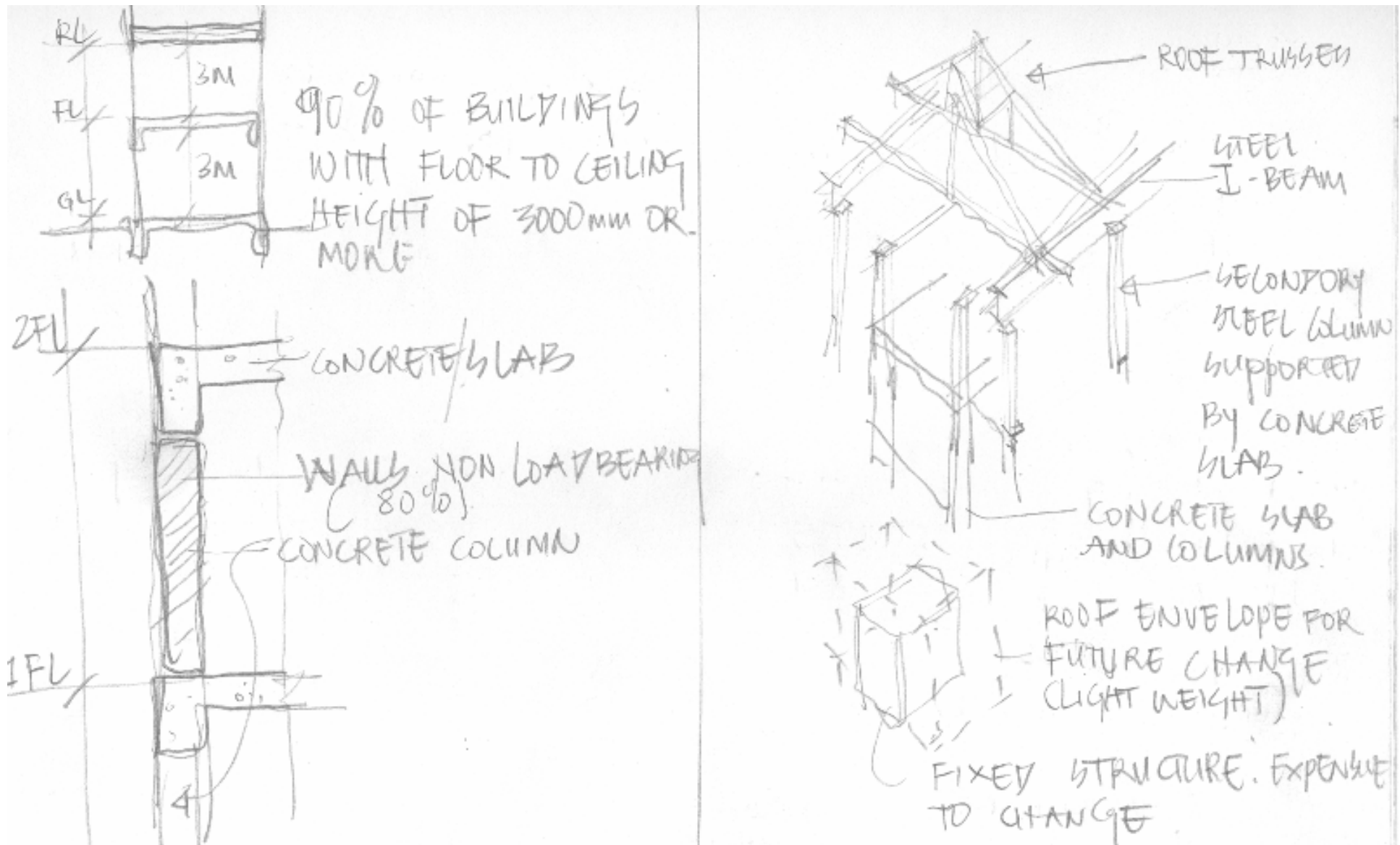
□ USE OF EDUCATIONAL FACILITIES BY LOCAL STUDENTS TO DO HOMEWORK, AT EVENINGS.



INTERNET: AT LIBRARY, COMPUTER LAB, INTERNET CAFE, AT ORPHANAGE

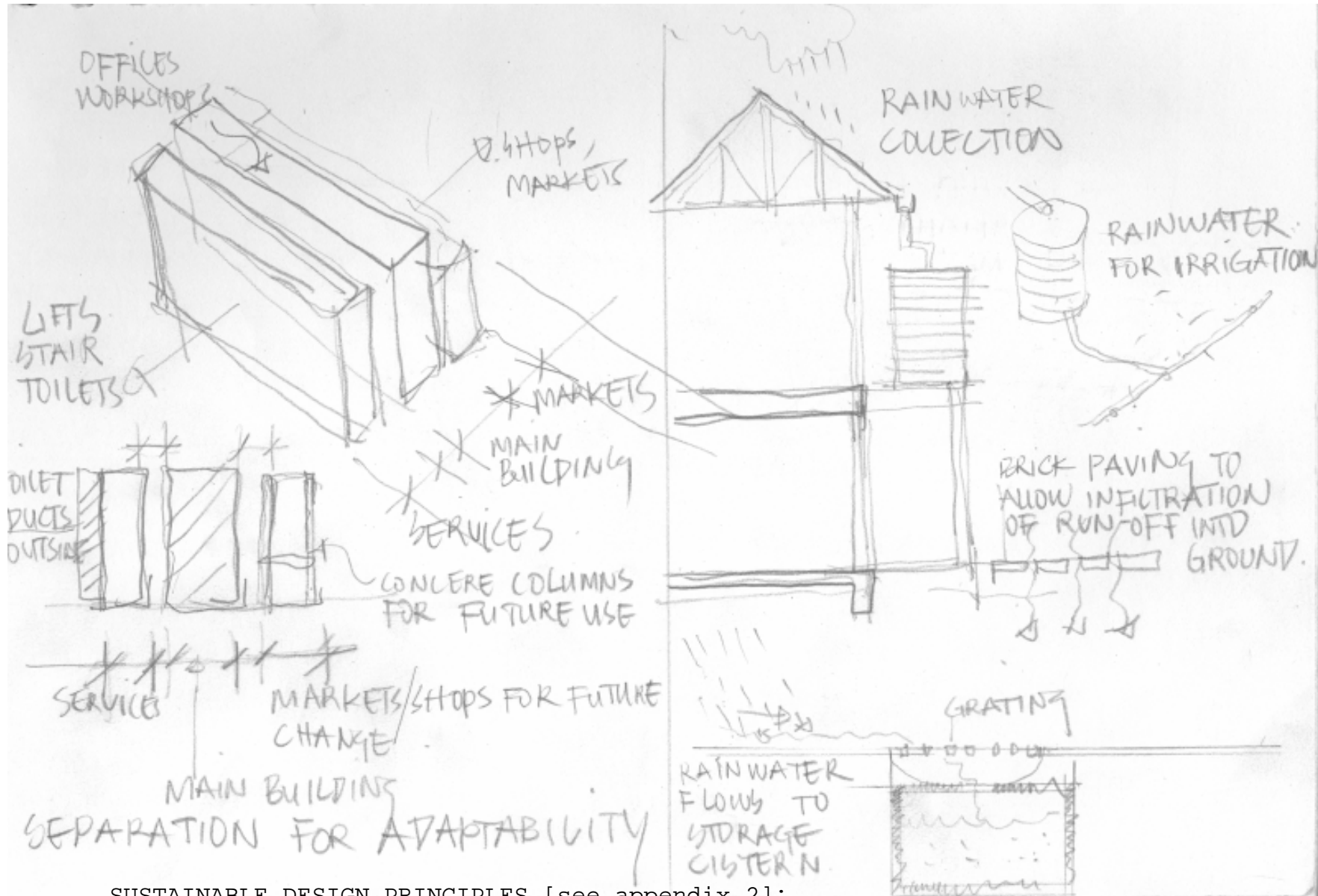
TELEPHONE: AT CORNERS SHOPS.

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



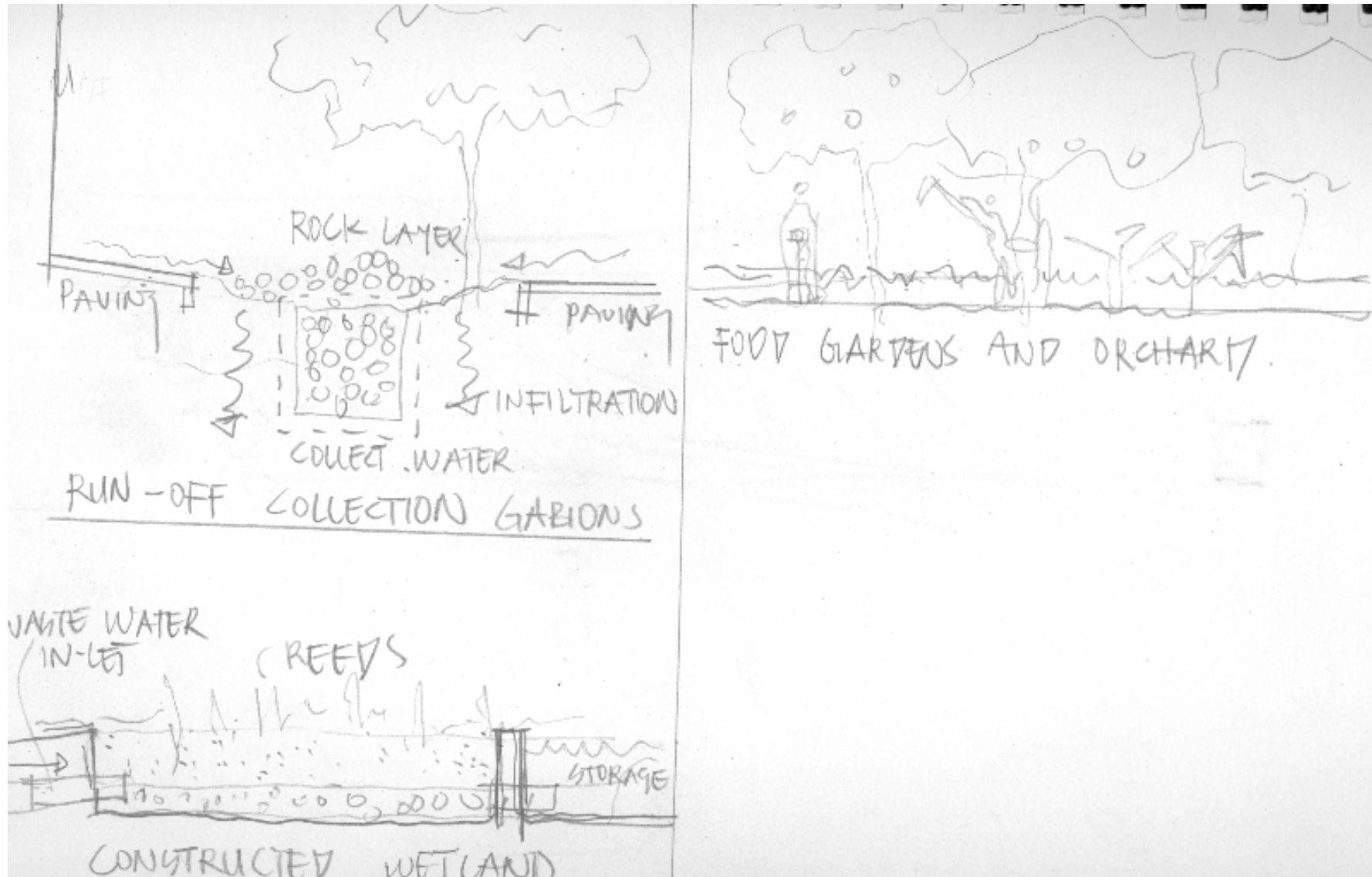


### 3. THE REALISATION OF THE RISE: HOUSING AFRICAN FAMILIES



SUSTAINABLE DESIGN PRINCIPLES [see appendix 2]:

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



SUSTAINABLE DESIGN PRINCIPLES [see appendix 2]:

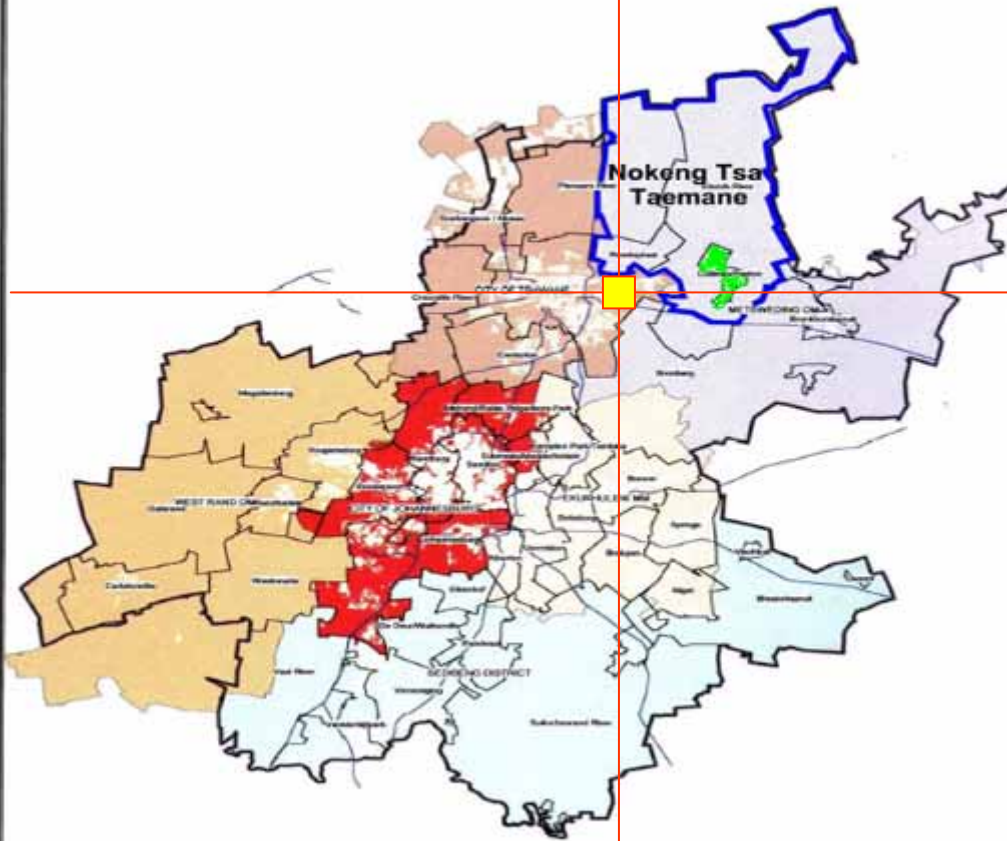


### 3. THE REALISATION OF THE RISE: HOUSING AFRICAN FAMILIES

#### 2. CONTEXT

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

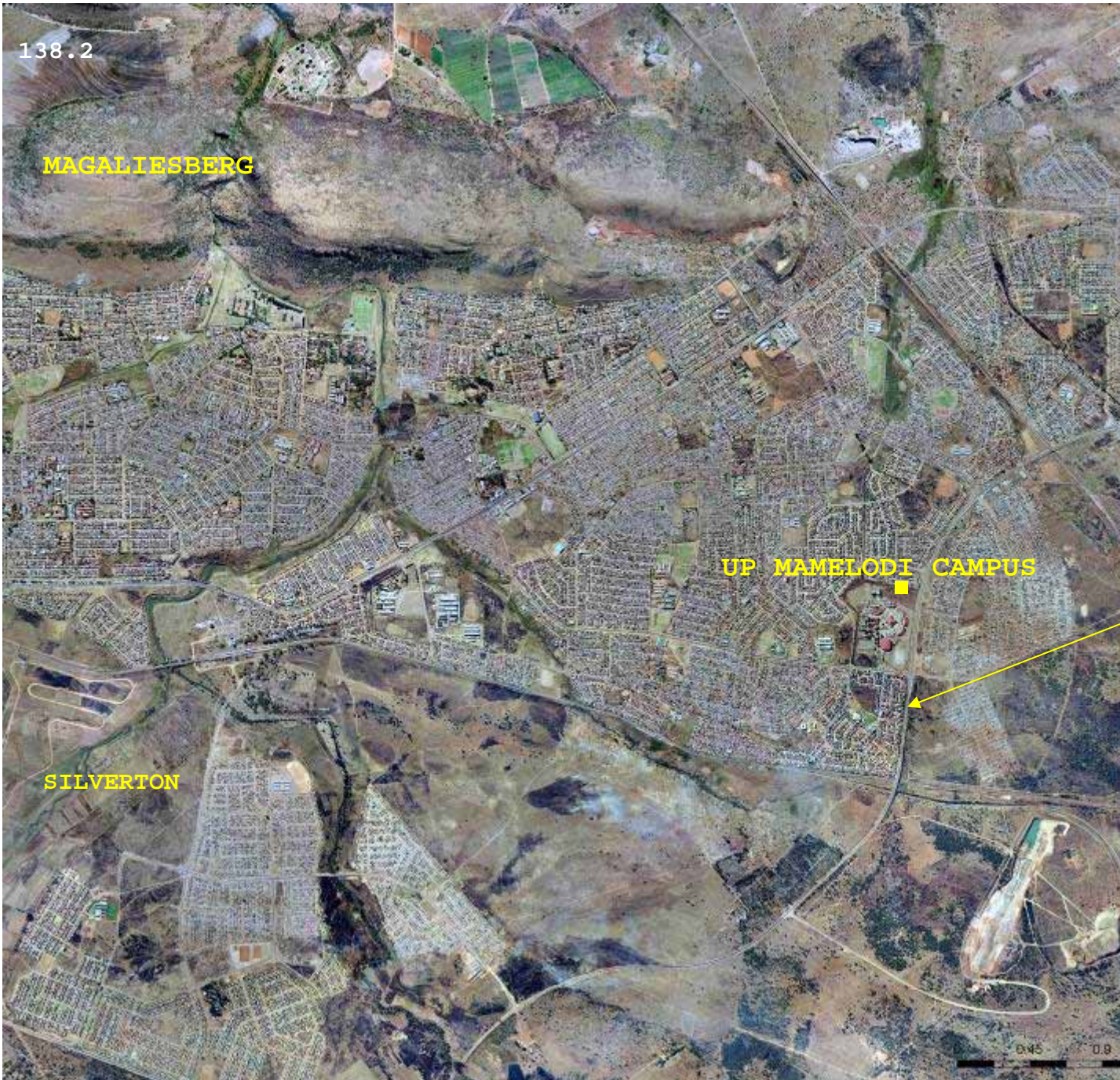
138.1



138.1.A map showing the boundaries of the Gauteng Province, South Africa.



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



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.

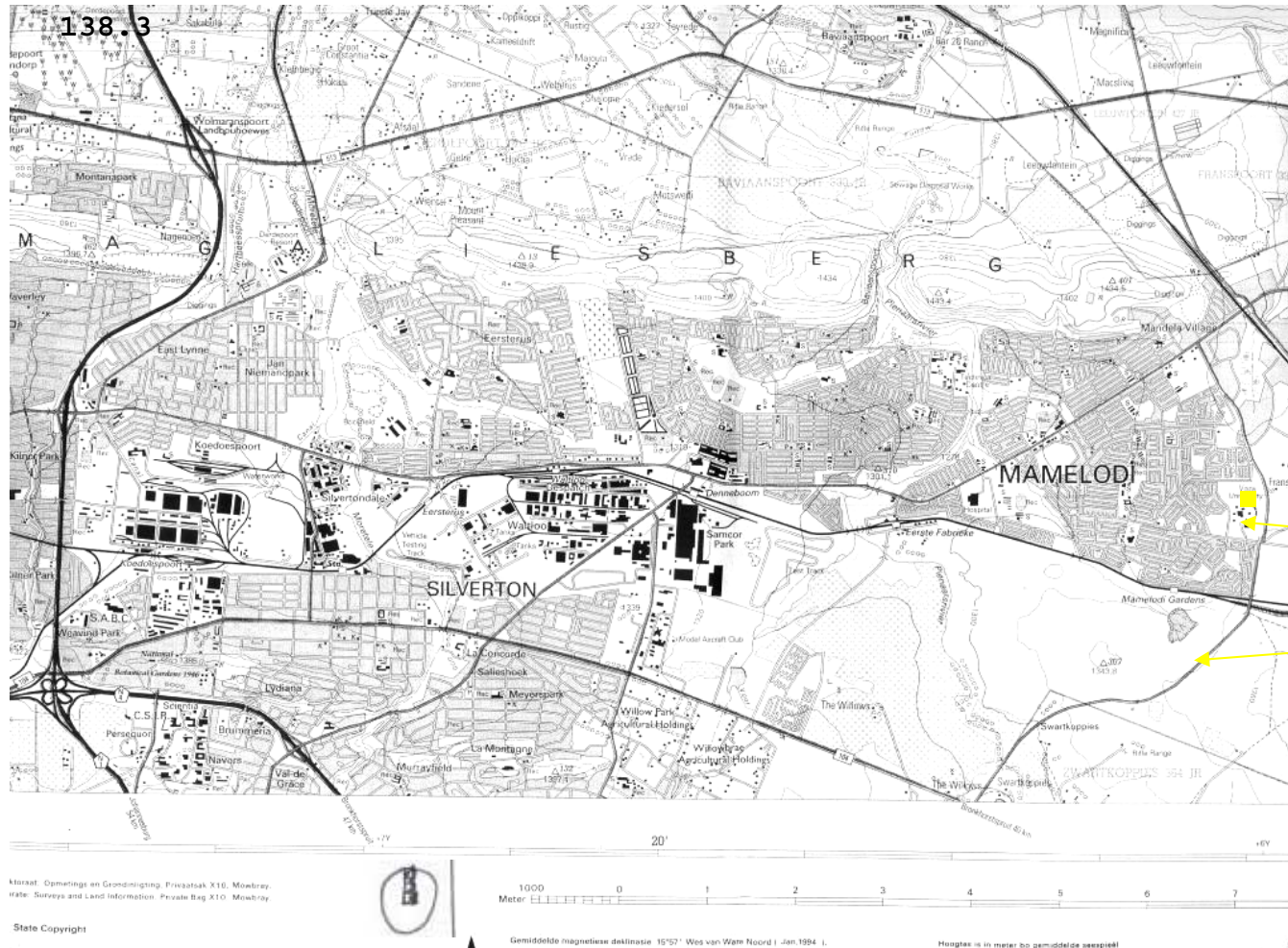
Hans Strydom Drive

138.2 Satellite image showing Mamelodi, South Africa.



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

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 .

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

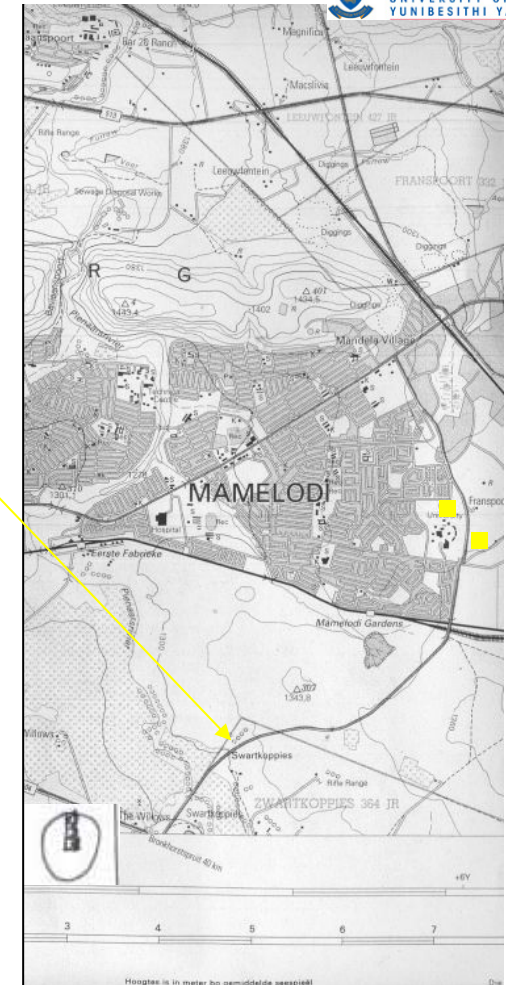


#### 2.2 Local

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.



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



#### 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.

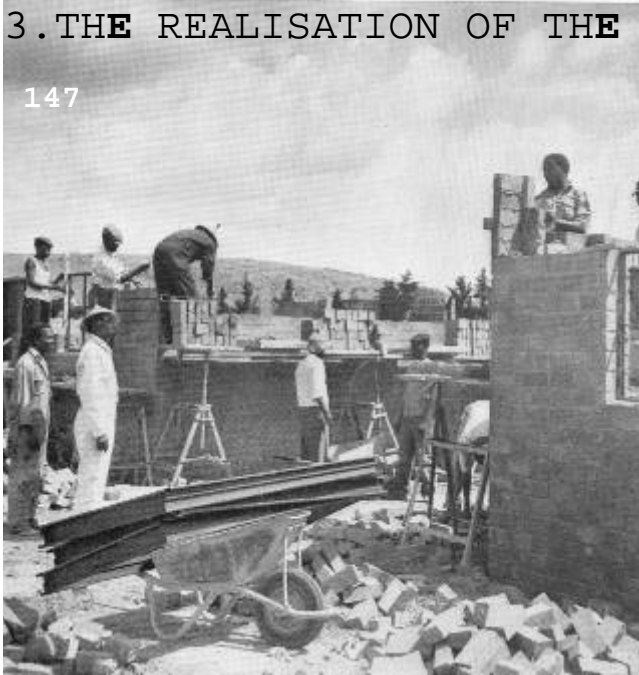
143. Sculptor Grant Sihlahla, Soweto.

144. Florist Soweto-born Jean Davidson, Tarlton.

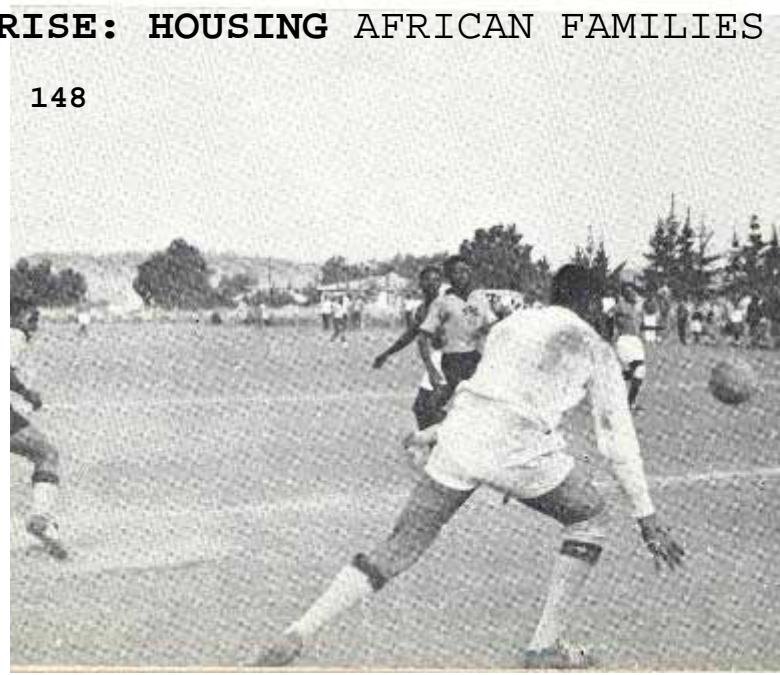
145. Craftsman makes tiny baths, kettles, mugs and plates from recycled metal, Soweto.

146. Freedom Square barber.

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



147



148



149



150

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 an increased number of doctors in the townships.

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.



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



151

#### 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.



152

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



153



154

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

SITE; 6:30-9:30am

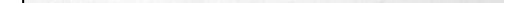
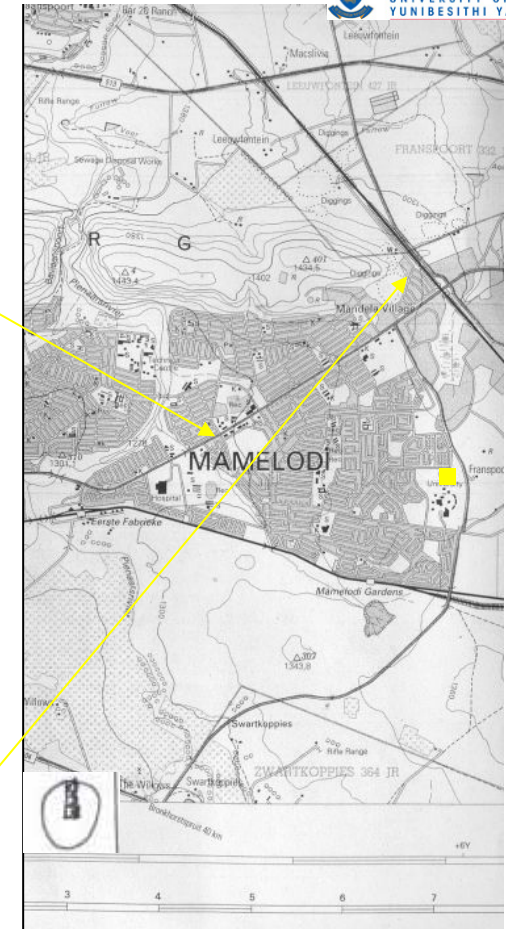
15-04-2008

#### TSAMAYA ROAD



155

- 1.Buses, taxis, cycling, pedestrians
- 2.Container shops
- 3.Pick up zone next to school-near Anglican Church
- 4.Paving used for informal trading-small 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



156



#### 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



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

SITE; 6:30-9:30am

15-04-2008



158

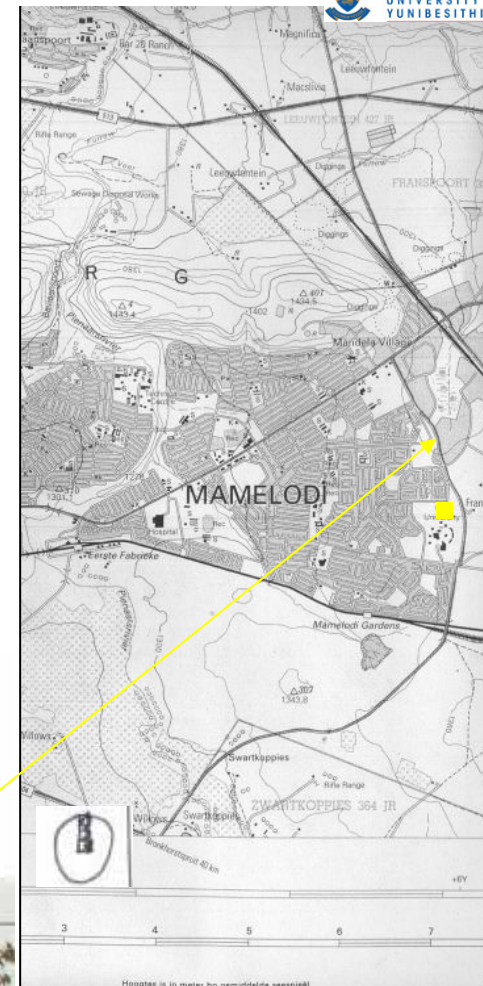
**HANS STRYDOM**

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)



160



162

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

SITE; 6:30-9:30am

15-04-2008



163

#### 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



164



165



166

#### 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



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

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

167



#### HINTERLAND STR SUBURBS-SOUTH OF HINTERLAND

1. Number of pedestrians reduced
2. Shops opened and people gather around them.
3. Storm water flows- car washes, laundry, ect
4. Retail attraction-at corner of streets
5. Public park maintained
6. One person at the edge of the park
7. Old women working at the gardens of the old age home
8. Pick up truck to collect refuse
9. 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
11. 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

168



169



170

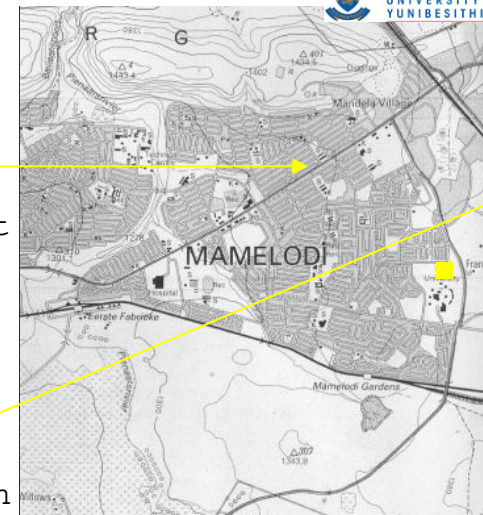




### 3.THE REALISATION OF THE RISE: HOUSING AFRICAN FAMILIES

SITE; 9:50-13:30

16-04-2008



171

#### 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



172

#### 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 cooking- especially for commercial purposes



173



174



175



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

SITE; 9:50-13:30

16-04-2008

**HANS STRYDOM**

1. 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





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

SITE; 9:50-13:30

16-04-2008



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#### 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



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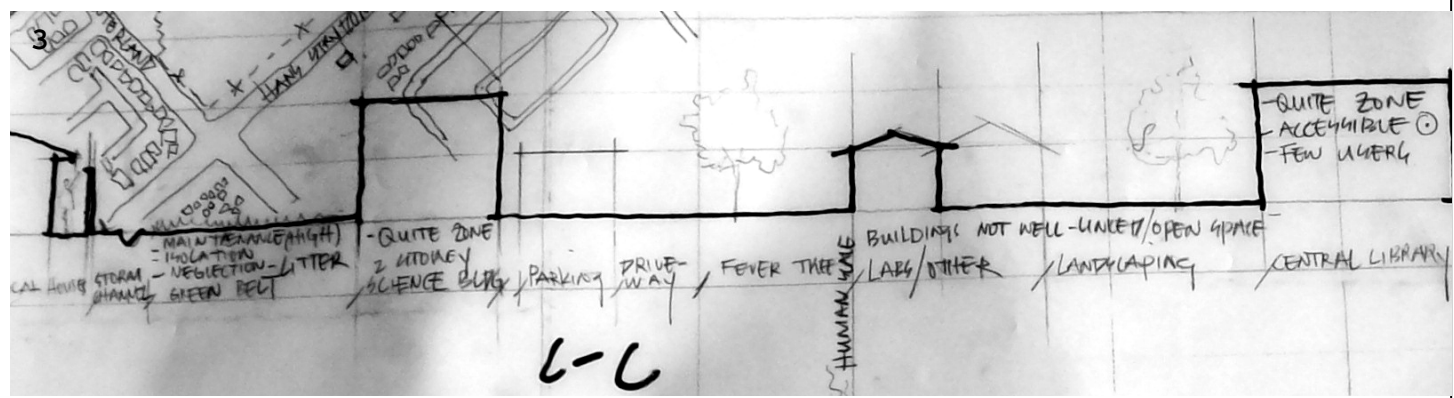
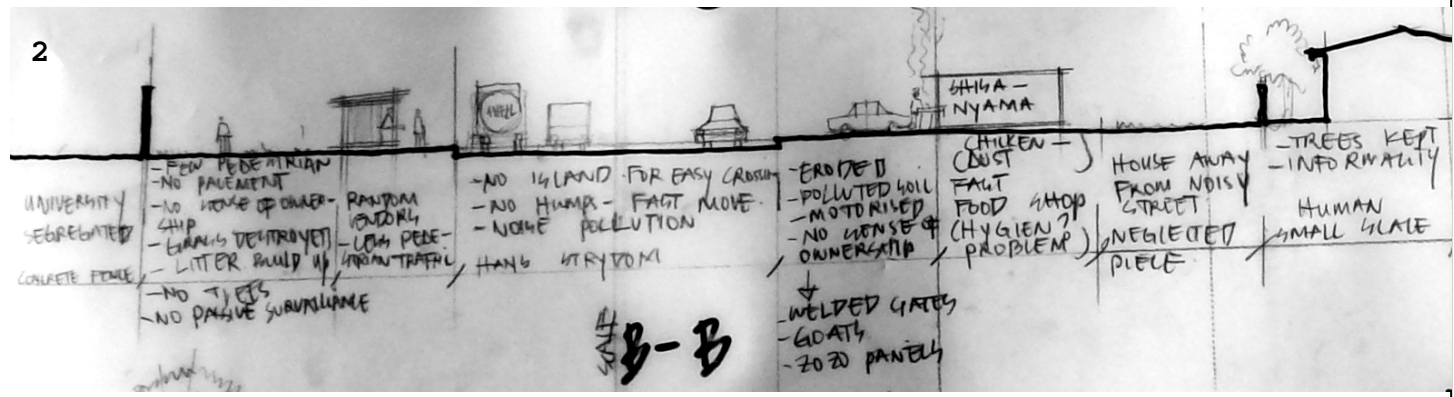
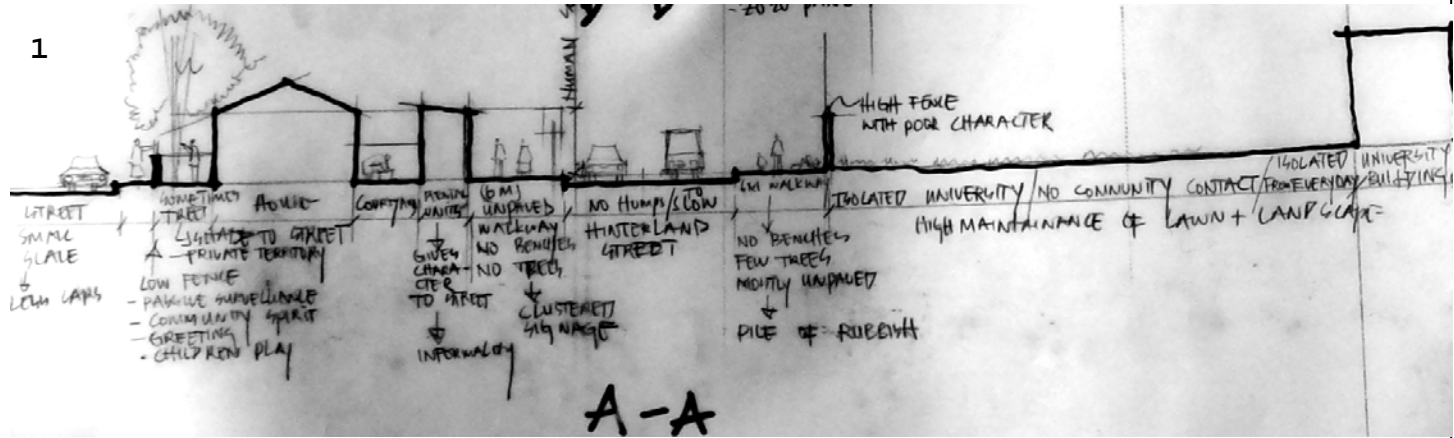


189



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

THE RISE OF CONTEXT



139. Analysis of the streets surrounding the site

1. Hinterland Street.
2. Hans Strydom.
3. University of Pretoria Mamelodi Campus.

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

#### 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.



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

**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] .

### **3.THE REALISATION OF THE RISE: HOUSING AFRICAN FAMILIES**

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 2008].



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

#### ACCOMODATION SCHEDULE

#### 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 [565m<sup>2</sup>]

Shops/market stalls[400m<sup>2</sup>]

Administration[60m<sup>2</sup>]

Foyer [50m<sup>2</sup>]

Classroom [110m<sup>2</sup>]

Conference hall [240m<sup>2</sup>]

Toilets [270m<sup>2</sup>]

Stairs and escalators[80m<sup>2</sup>]

Computer Labs [220m<sup>2</sup>]

Library [470m<sup>2</sup>]

Apprenticeship Departments:

Cashflow, Communication,

Business Legality,

investment, and Business

systems[610m<sup>2</sup>]

#### 2.Family Facility

Self-service

restaurant[170m<sup>2</sup>]

Public toilets [60m<sup>2</sup>]

Exhibition/gallery [185m<sup>2</sup>]

Offices [25m<sup>2</sup>]

Family hall [70m<sup>2</sup>]

Toilets [25m<sup>2</sup>]

Family reception/gallery[100m<sup>2</sup>]

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

#### 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>]



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

#### 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-existent 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.

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

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



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

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.THE REALISATION OF THE RISE: HOUSING AFRICAN FAMILIES

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.



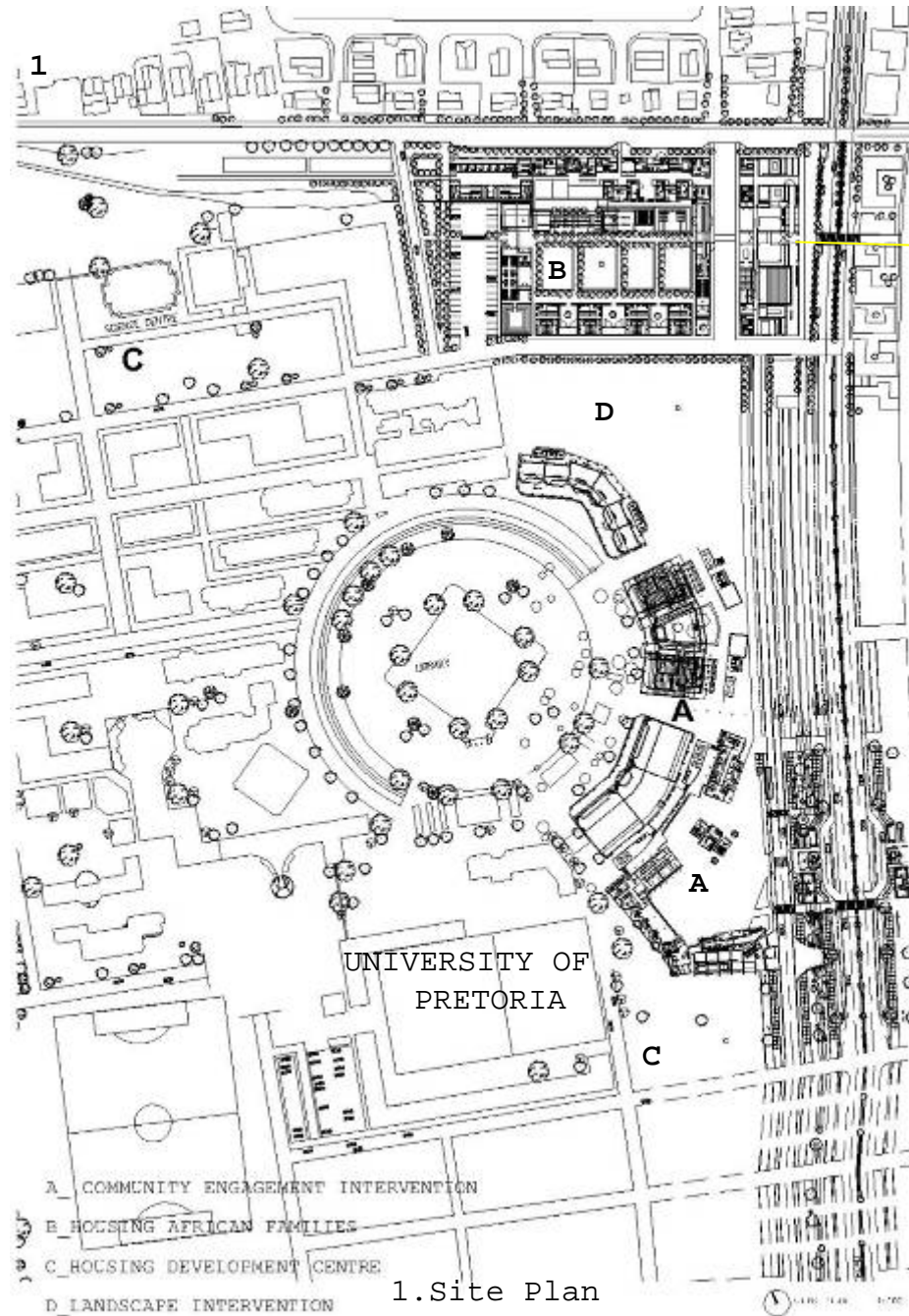
### 3.THE REALISATION OF THE RISE: HOUSING AFRICAN FAMILIES

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.

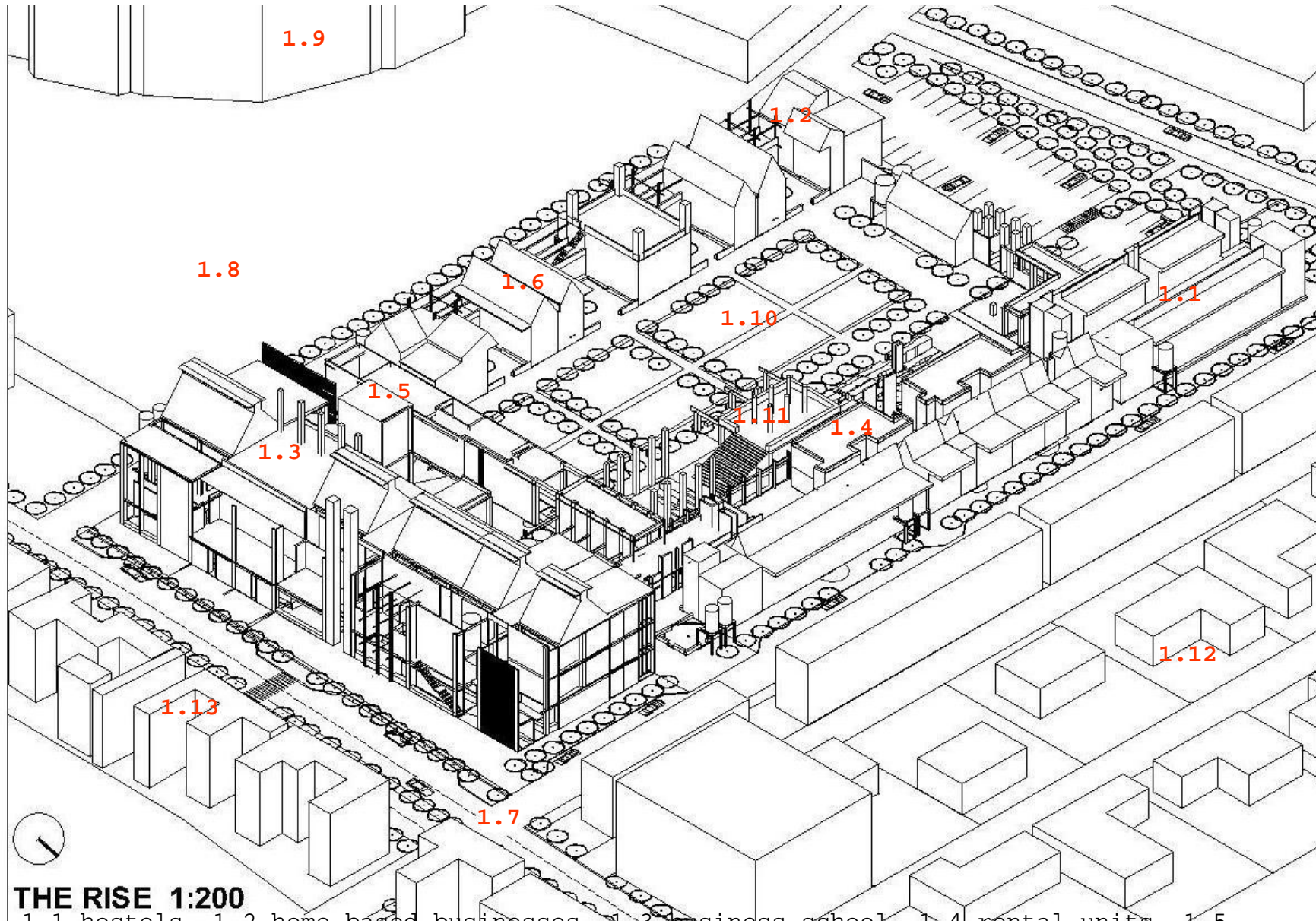
5.The scheme desires to tap into the minds of Black Africans. Their past told them they are not capable of the best. However, their wild and questioning minds told them they were created for the best, they were created for this planet, and they were created to rise from their past to create their future.

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





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



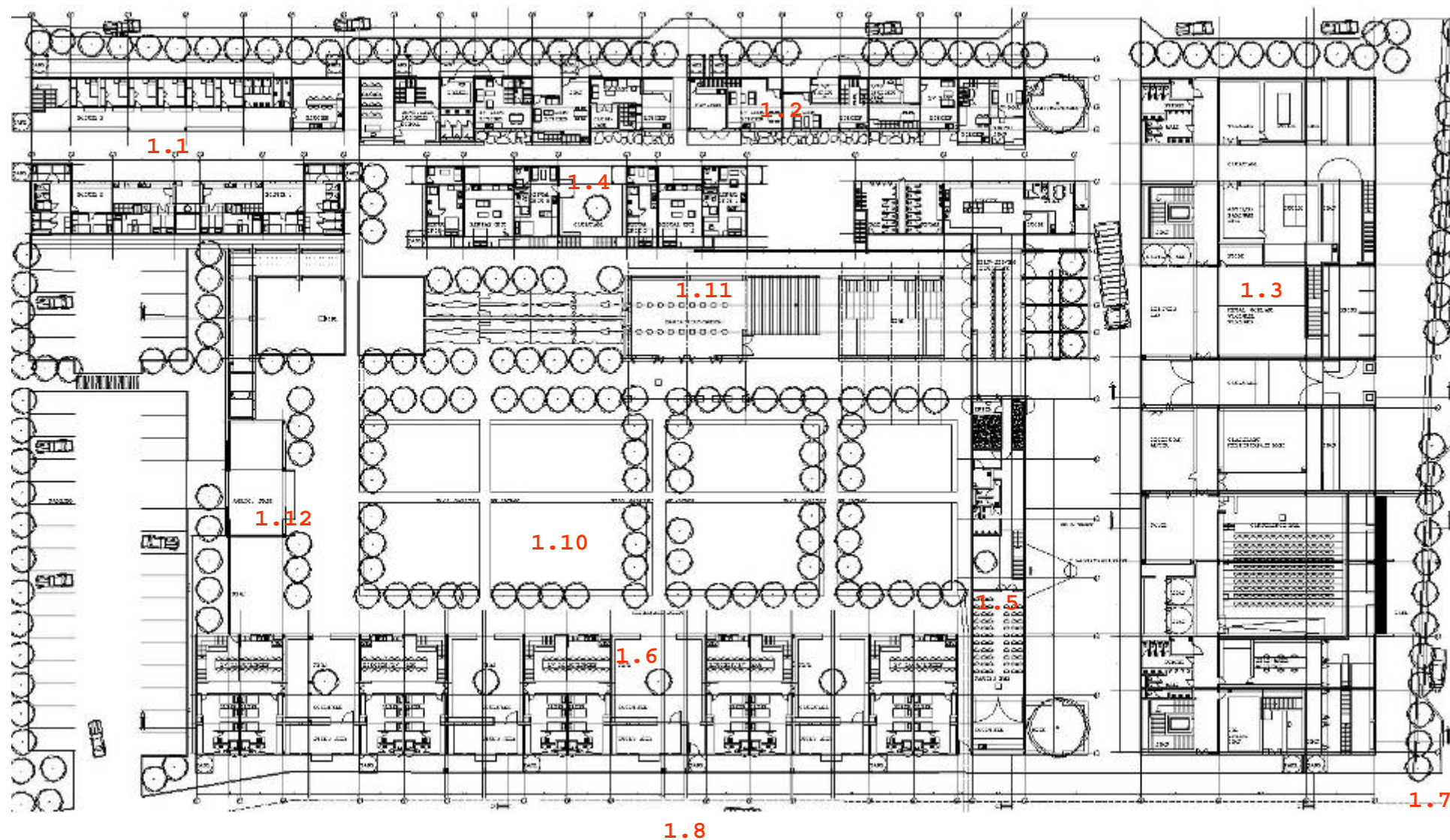
#### THE RISE 1:200

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 and light weight industrial buildings.



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

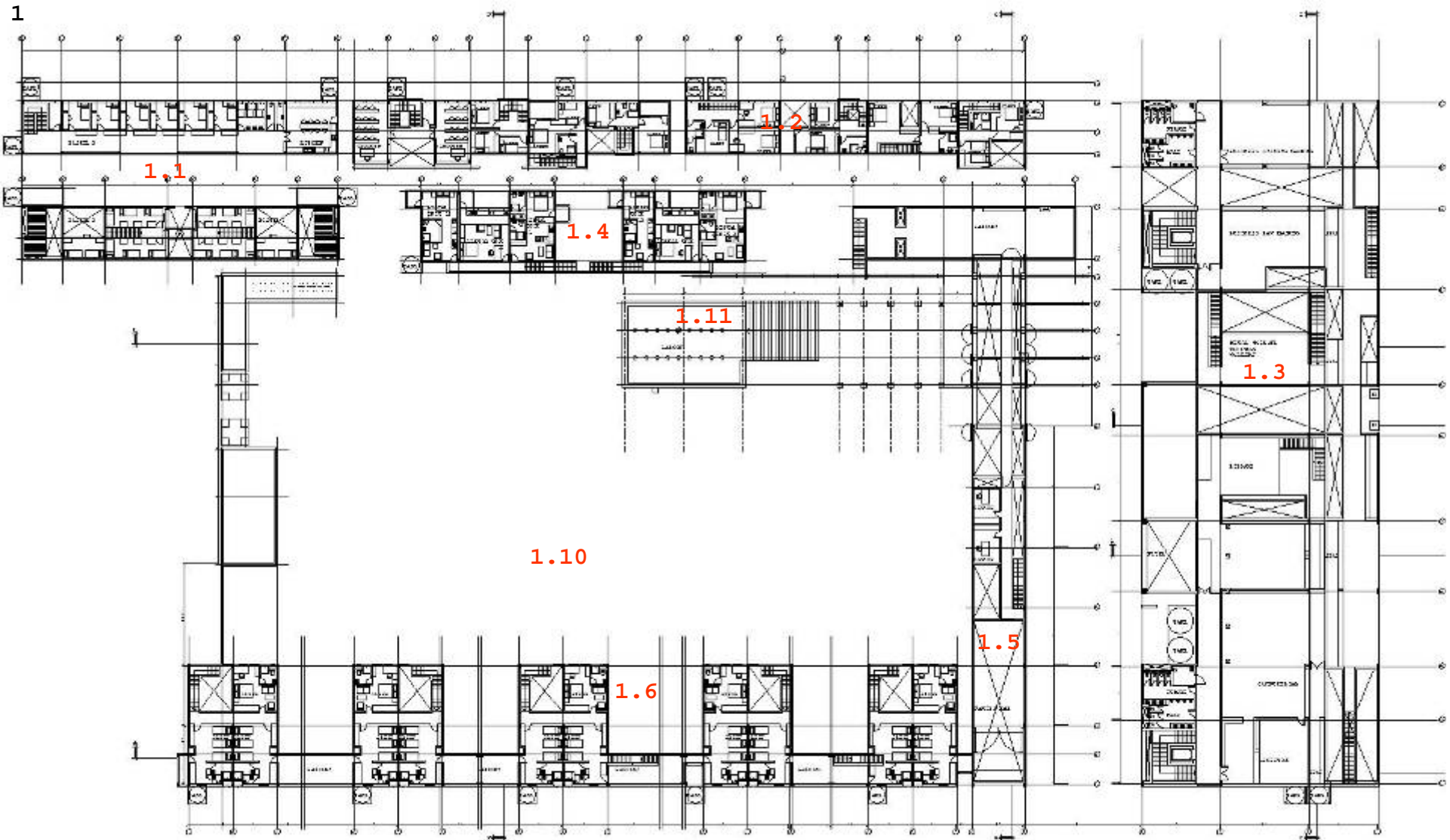
1



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



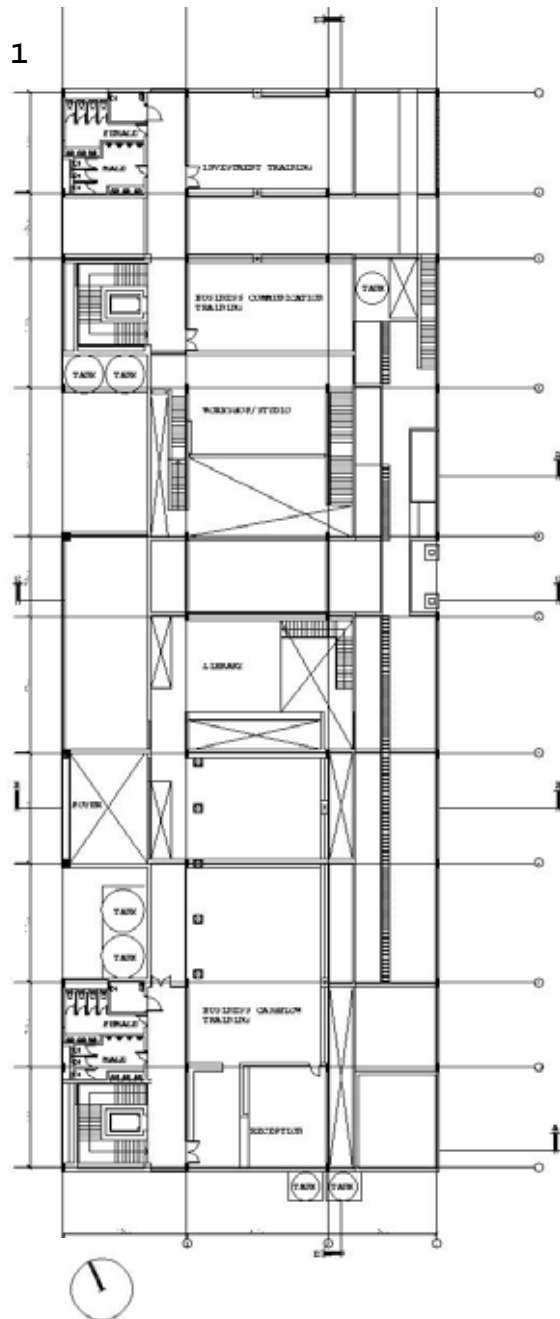
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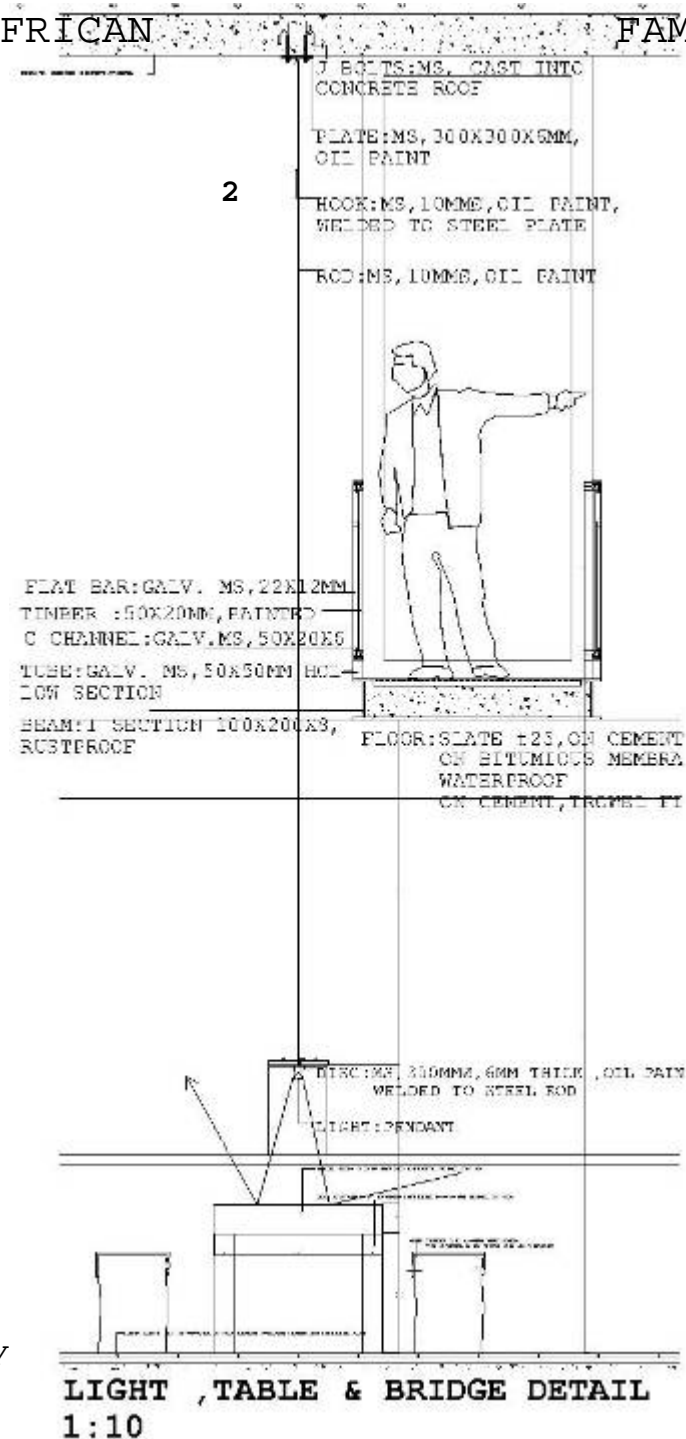
 FIRST 1:200

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.

3. THE REALISATION OF THE RISE: HOUSING AFRICAN FAMILIES



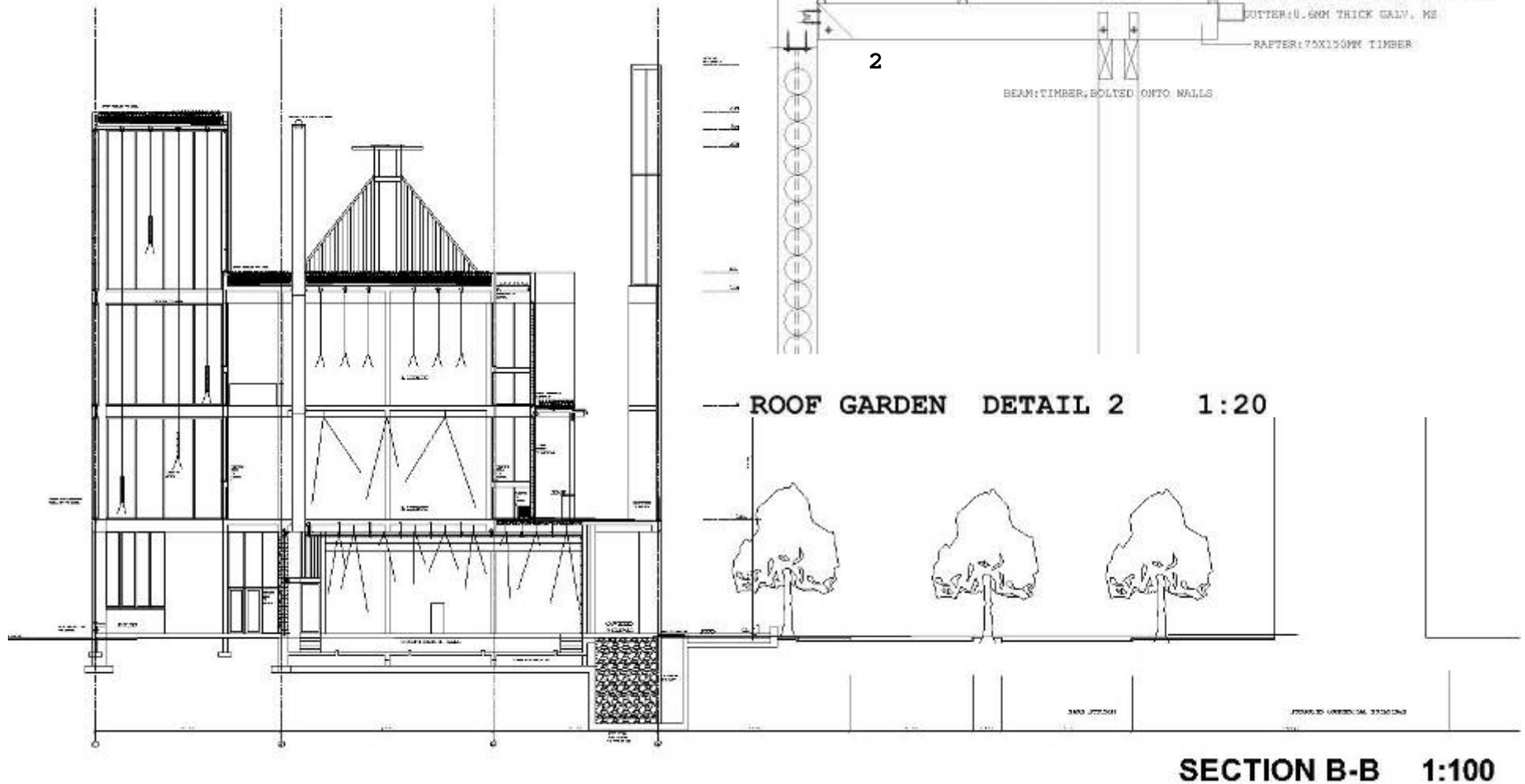
1. Second Floor Plan.  
2. Bridge through family building facility .





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

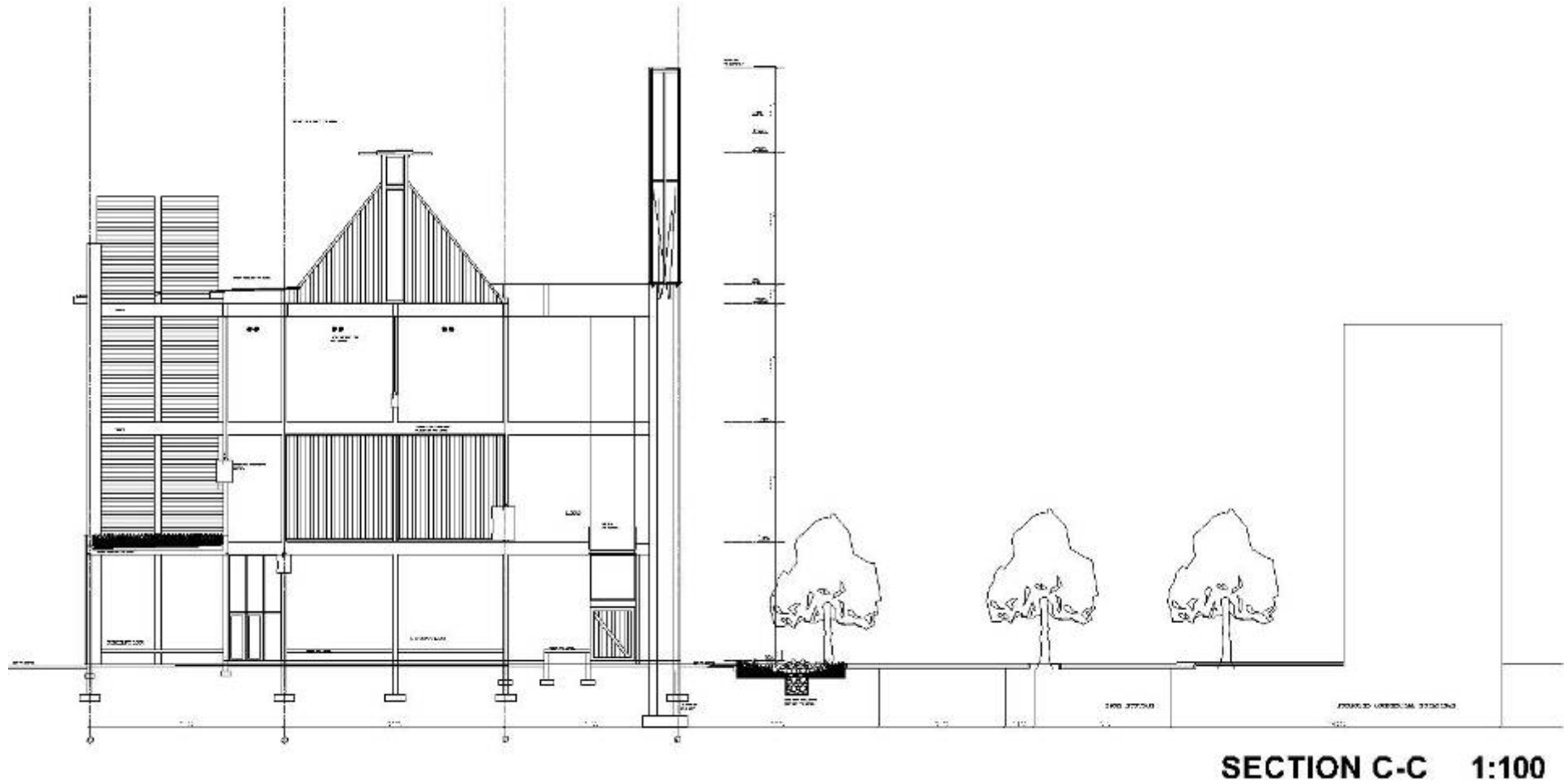
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1. Section B-B through the business school, showing the foyer, conference hall, rock store bin to ventilate conference hall, and library.
2. Roof garden detail 2 above a shop.

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

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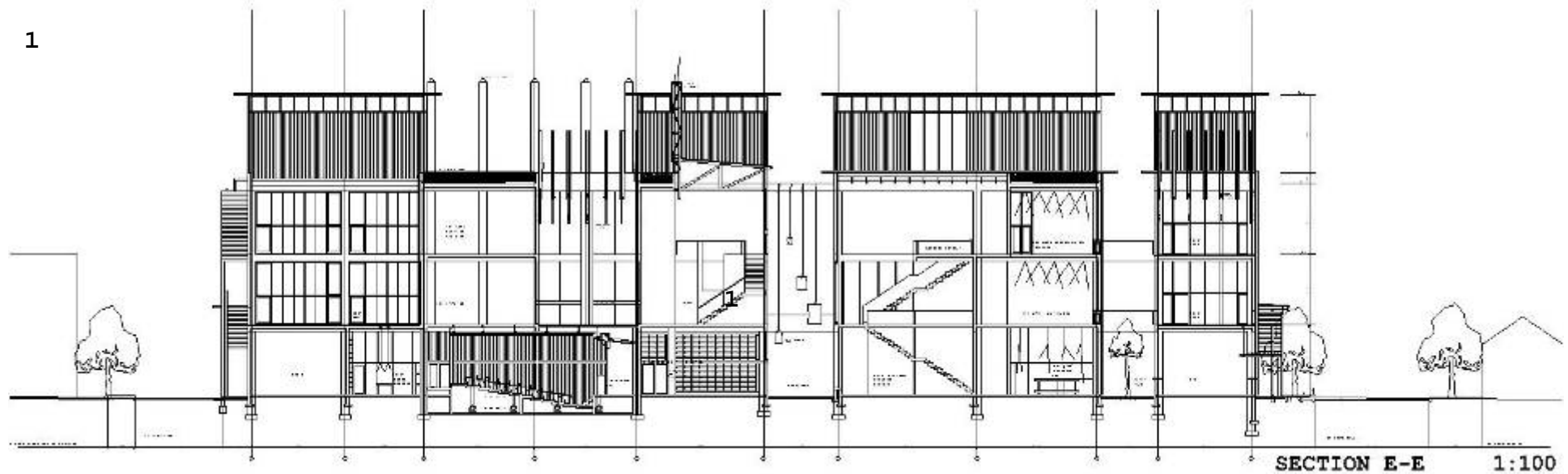


1. Section C-C through the business school courtyard and entrance tower.

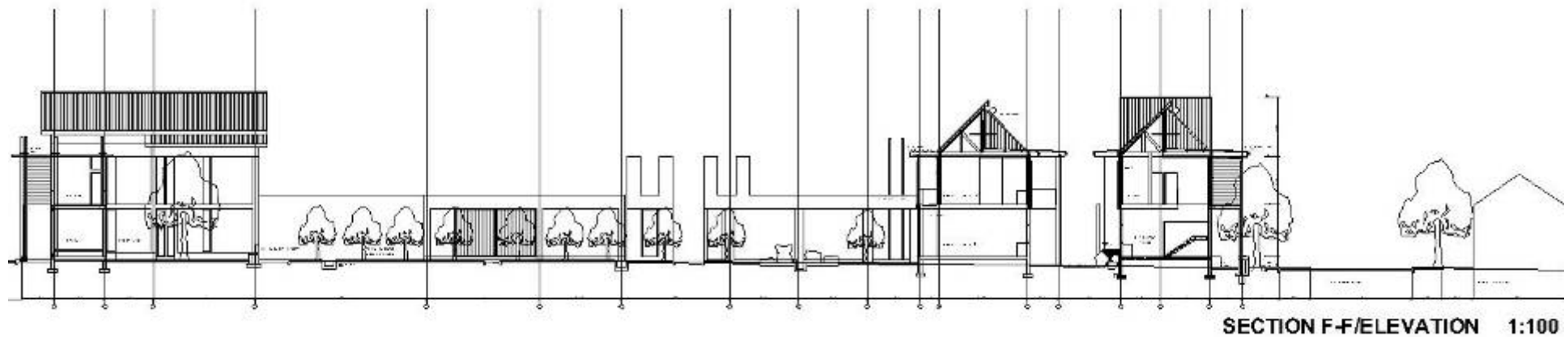


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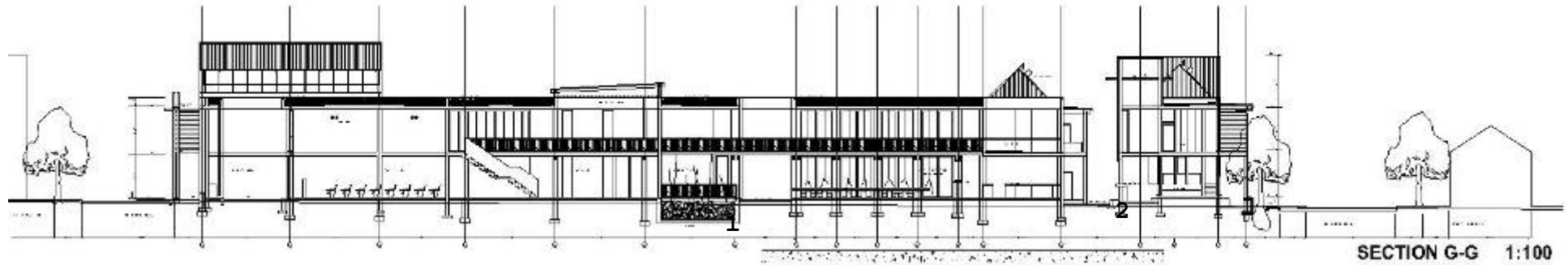


1. Section E-E showing shops, conference hall, classroom, library, workshops, and courtyards.

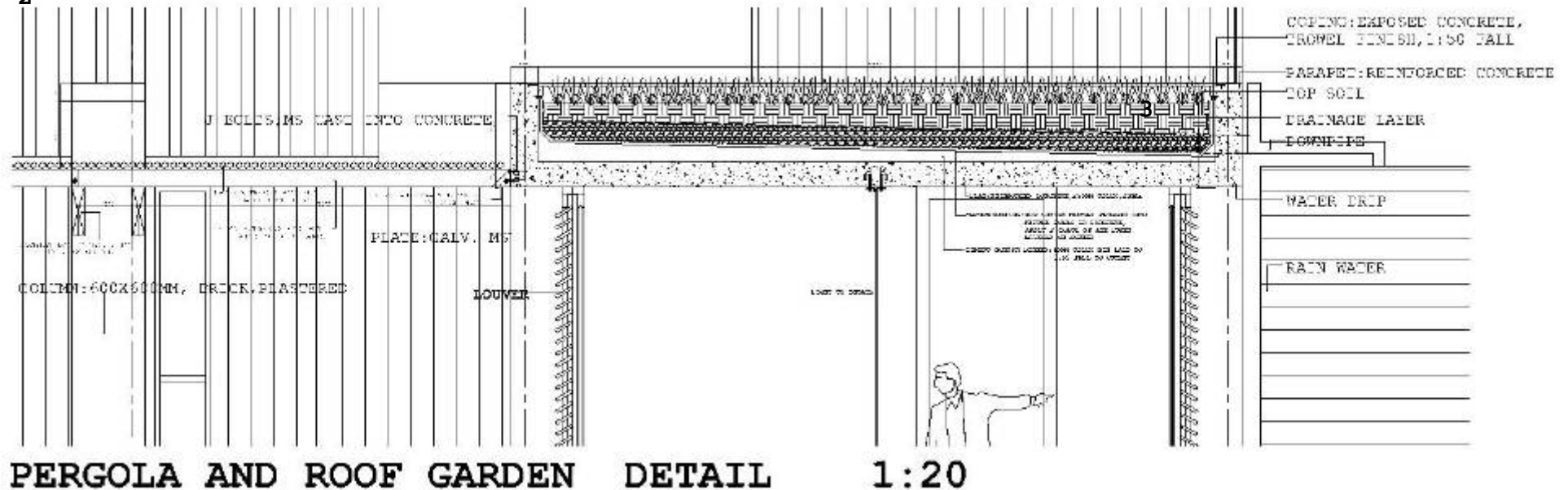
2. Section E-E through home-based business, food gardens, and orphanage.

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

1



2



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.



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



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

SECTION D-D/ELEVATION 1:100

## 4. APPENDIX 1

SABS STANDARDS [Wegelin: 2000]

SABS ENV 197-1:1992 Cement-composition, specifications and conformity criteria

Part 1: Common cements

SABS 198:1992 Functional control and safety valves for pressurized water supply systems

SABS 226:1987 Water taps [metallic]

SABS 227:1986 Burnt clay masonry units

SABS 242:1973 Stainless steel sinks with draining boards [for domestic use]

SABS 248:1973 Bituminous damp-proof courses

SABS 266:1982 Gypsum plasterboard

SABS ENV 413-1:1994 Masonry cement

Part 1: Specification

SABS 435:1972 Mild steel rivets

SABS 457:1994 Wooden poles, droppers, guardrail posts and spacer blocks, Part 1:1994 General requirements

Part 2: Softwood species Part 3: Hardwood species

SABS 460:1985 Copper tubes for domestic plumbing services

SABS 497:1991 Glazed ceramic sanitary ware

SABS 515:1972 Decorative paint for interior use

SABS 539:1980 Wood preserving creosote [Lurgi-gasification process]

SABS 542:1990 Concrete roofing tiles

SABS 543:1992 Fire hose reels [with hose]

SABS 545:1989 Wooden doors

SABS 558:1973 Cast iron surface boxes and manhole and inspection covers and frames



## 4. APPENDIX 1

SABS 657 Steel tubes for non-pressure purpose

Part 1:1989 Steel tubes for scaffolding and for structural and general engineering purpose

Part 4:1987 Steel tubes of round, oval, square and rectangular section for furniture

SABS 678:1973 Primers for wood for interior and exterior use

SABS 680:1979 Glazing putty for wooden and metal window frames

SABS 681:1997 Undercoats for paints

SABS 684:1972 Structural steel paint

SABS 727:1981 Windows and doors made from rolled mild-steel sections

SABS 731 Road-markings

SABS 752:1988 Float valves

SABS 763:1988 Hot-dip [galvanized] zinc coatings

SABS 767 Earth leakage protection units

SABS 791:1986 uPVC sewer and drain pipes and pipe fittings

SABS 820:1974 Mild steel nails

SABS 878:1983 Ready-mixed concrete

SABS 887:1972 Varnish for interior use

SABS 920:1985 Steel bars for reinforcement

SABS 934:1969 Hot-dip [galvanized] zinc coating on steel sheets and strip

SABS 940:1969 Emulsion paint for new galvanized iron

SABS 950:1985 uPVC rigid conduit and fittings

SABS 952:1985 Polyolefin film for damp-proofing in buildings

SABS 1015:1974 Fire-resisting door units for record rooms

SABS 1039:1975 Wooden ceiling

## 4. APPENDIX 1

SABS 1083:1994 Aggregates from natural sources  
SABS 1084:1976 Cover plates for wall outlet boxes  
SABS 1090:1996 Aggregates from natural sources-fine aggregates for plaster and mortar  
SABS 1091:1975 National standards for paint  
SABS 1115:1976 Cast iron gratings for gullies and storm water drains  
SABS 1129:1977 Steel door frames  
SABS 1143:1977 Bolts and nuts  
SABS 1149:1977 Flat and taper steel washers  
SABS 1171:1993 Metal screws for wood  
SABS 1186 Symbolic safety signs  
SABS 1215:1984 Concrete masonry units  
SABS 1240:1979 Automatic shut-off flush valves for water closets and urinals  
SABS 1253:1994 Fire-doors and fire-shutters  
SABS 1263 Safety and security glazing materials for buildings  
SABS 1273:1979 Fasteners for roof and wall coverings in the form of sheeting  
SABS 1282:1982 High-strength bolts, nuts, and washers for friction-grip joints  
SABS 1288:1994 Preservative-treated timber  
SABS 1307:1992 Domestic solar water heaters  
SABS 1321 Non-metallic waste traps  
SABS 1381 Materials for thermal insulation of buildings  
SABS 1383:1983 Rigid urethane and isocyanurate foams for use in thermal insulation  
SABS 1385:1983 Kitchen cupboards  
SABS 1415:1997 Textile floor coverings



## 4. APPENDIX 1

SABS 1419 Carpets underlay  
SABS 1431: 1987 Weldable structural steel  
SABS 1449:1996 Ceramic wall and floor tiles  
SABS 1460:1988 Laminated timber  
SABS 1504:1990 Prestressed concrete lintels  
SABS 1508:1990 Expanded polystyrene thermal insulation boards  
SABS 1528 Furniture  
SABS 1586:1995 Emulsion paints  
SABS 1700:1996 Fasteners  
SABS 1783: 1997 Sawn softwood timber  
SABS 1575:1993 Burnt clay paving units  
SABS 1549:1992 Raised access flooring  
SABS 927:1969 Precast concrete kerbs and channels  
SABS 949:1997 Strongroom and vaults doors  
SABS 794:1973 Aggregates of low density

## 4. APPENDIX 2

ENERGY MEASURES [Jourbert:2007]

1. Use low-energy fluorescent lights: Higher energy efficiency: e.g, a 15W compact fluorescent light bulb (CFL) gives off as much light as a 75W filament light bulb, public transport, organic matter composting, disposal of warm water (or air) vs. heat recovery.

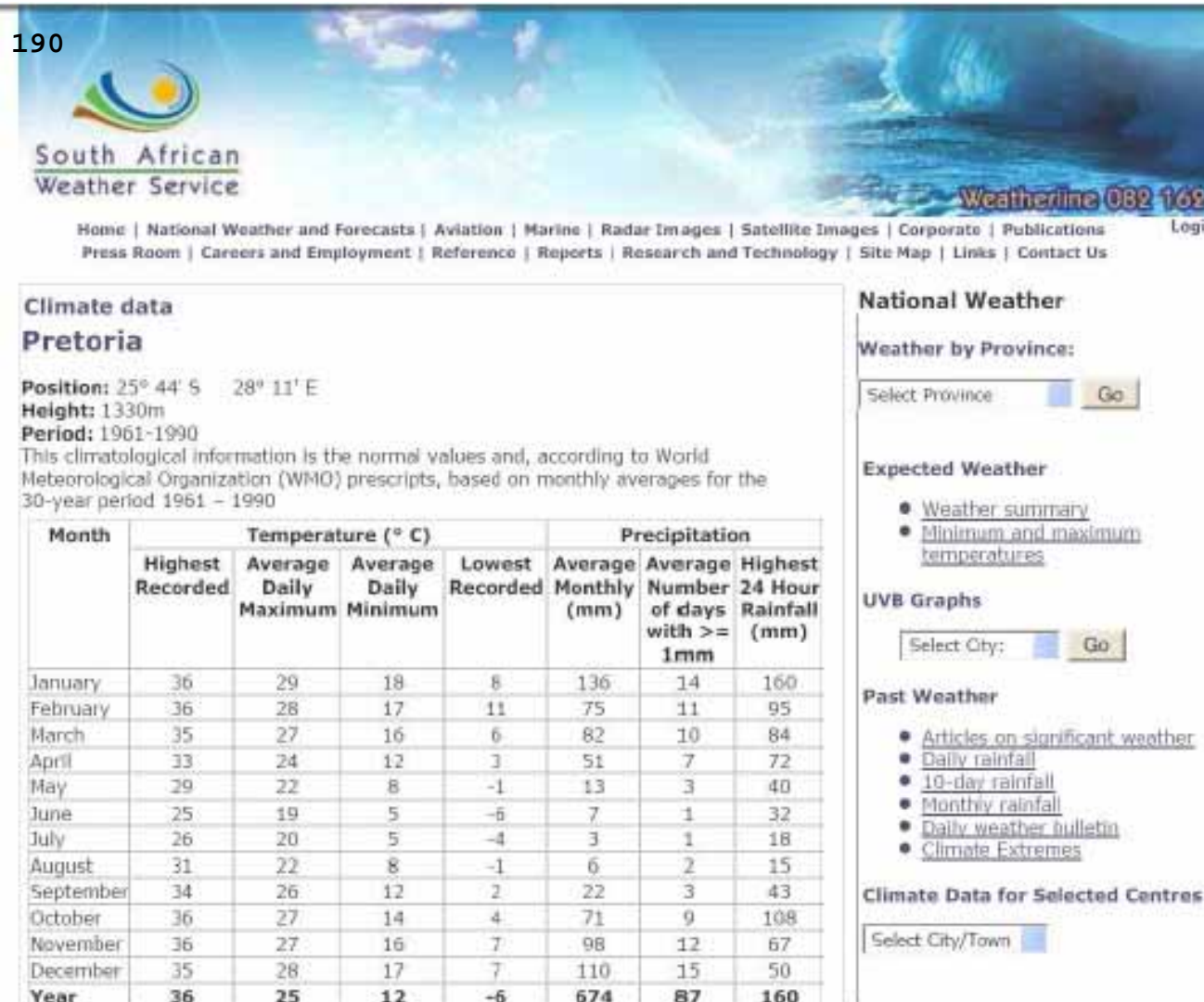
### 2. MATERIALS

Aluminium is very high in embodied energy and is mostly very recyclable. Steel has high embodied energy but much stronger per unit mass than brick or concrete.

Insulation material also has embodied energy, but due to operational energy savings, is justified.

### 3. SOLAR ENERGY

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The screenshot shows the South African Weather Service website for Pretoria. It includes a navigation menu, a climate data table for Pretoria (1961-1990), and various interactive sections like National Weather, UVB Graphs, and Past Weather.

**South African Weather Service**  
Weatherline 082 169

Home | National Weather and Forecasts | Aviation | Marine | Radar Images | Satellite Images | Corporate | Publications | Press Room | Careers and Employment | Reference | Reports | Research and Technology | Site Map | Links | Contact Us

**Climate data Pretoria**  
Position: 25° 44' S 28° 11' E  
Height: 1330m  
Period: 1961-1990  
This climatological information is the normal values and, according to World Meteorological Organization (WMO) prescripts, based on monthly averages for the 30-year period 1961 – 1990

Month	Temperature (° C)				Precipitation		
	Highest Recorded	Average Daily Maximum	Average Daily Minimum	Lowest Recorded	Average Monthly (mm)	Average Number of days with >= 1mm	Highest 24 Hour Rainfall (mm)
January	36	29	18	8	136	14	160
February	36	28	17	11	75	11	95
March	35	27	16	6	82	10	84
April	33	24	12	3	51	7	72
May	29	22	8	-1	13	3	40
June	25	19	5	-6	7	1	32
July	26	20	5	-4	3	1	18
August	31	22	8	-1	6	2	15
September	34	26	12	2	22	3	43
October	36	27	14	4	71	9	108
November	36	27	16	7	98	12	67
December	35	28	17	7	110	15	50
<b>Year</b>	<b>36</b>	<b>25</b>	<b>12</b>	<b>-6</b>	<b>674</b>	<b>87</b>	<b>160</b>

**National Weather**  
Weather by Province:  
Select Province: [ ] Go

**Expected Weather**  

- Weather summary
- Minimum and maximum temperatures

**UVB Graphs**  
Select City: [ ] Go

**Past Weather**  

- Articles on significant weather
- Daily rainfall
- 10-day rainfall
- Monthly rainfall
- Daily weather bulletin
- Climate Extremes

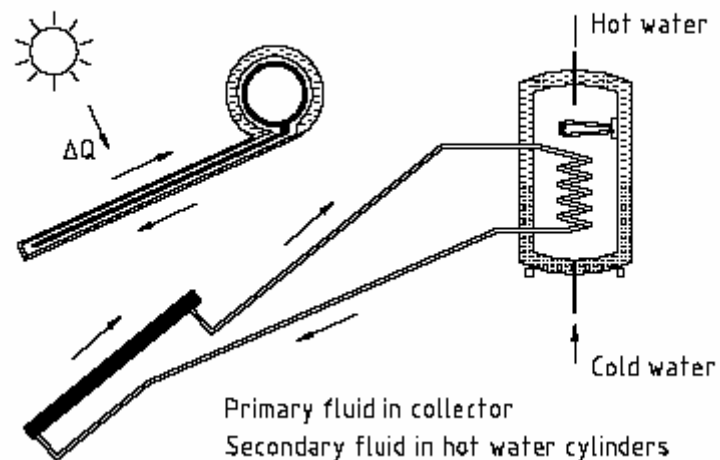
**Climate Data for Selected Centres**  
Select City/Town [ ]

190.Pretoria climatic data.



Over 300 days of sunshine recorded per year in South Africa. The insolation rate is of the worlds' highest over the Kalahari Desert. There is a part of the earth's surface that receives more than 6kWh/m<sup>2</sup> solar energy per winter's day, of which 49% is in South Africa. We have the best reason to install solar powered grid electricity in future and use solar water heaters at present.

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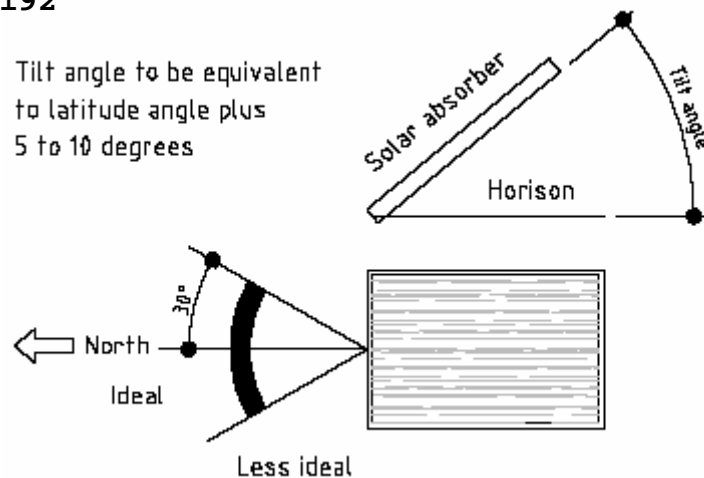


South Africa lies between 22° and 35° latitude. Ideal tilt angle range for solar absorbers would be 27° to 45°. A collector should face true north, or less than 30degrees off true north. In summer the sun travels overhead, but in winter it travels further north. For a year-round optimum performance, a collector should be tilted towards the equator at roughly the latitude angle of the site plus 5 to 10 degrees<sup>18</sup>. The angle of tilt is measured relative to the horizon.

191.Solar water heater:Use of secondary fluids to protect absorber components.

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Tilt angle to be equivalent  
to latitude angle plus  
5 to 10 degrees



To raise the temperature of 200 litres water by 43°C (as typically consumed by a family of four per day) one needs 10kWhr of energy<sup>20</sup>. A typical (200 litre) hot water storage tank may need to warm water from 17°C to 60°C. Water has a high specific heat (C) of 4200J/kgK and a density of 1kg/litre.

$DQ = mCDT$ , where  $DQ$ =heat required (Joule),  $m$ =mass (kg),  $C$ =specific heat of fluid (J/kgK),  $DT$ =change

in temperature (K), thus Heat Required =  $200\text{kg} \times 4200\text{J/kgK} \times 43\text{K} = 36,120,000 \text{ J} \gg 36 \text{ MJ}$

One kWh of energy is 3,6 MJ, thus 10 kWh = 36 MJ.

21 Surface area required = Energy sought/energy available per unit area =  $22 \text{ kWhr} / 5\text{kWhr/sqm} \gg 4 \text{ sqm}$

192.Orientation of solar collectors.

According to catalogues, typical commercial systems produce 60 to 70 litres hot water per square metre collector, i.e. a 200 litre water tank would require 3m<sup>2</sup> collector area.

#### 4. RAINWATER HARVESTING

Problems

1. Availability of rainfall
2. Rainwater could be defiled by dust, organic matter and bird droppings

Advantages

1. Could be used in toilets, size of storage tank for 80% of month of maximum rainfall (e.g.

Pretoria 130mm = size for 105mm).

2. Can be used in the garden.

Measures to be taken

1. Storage tank must be dark inside to prevent algal growth.
2. Allow for overflow.

Calculation of storage tank volume:

Volume of a rectangular tank = length \* width \* height

Volume of a circular tank = pi \* radius<sup>2</sup> \* height

Standard

1. "GUIDANCE ON USE OF RAINWATER TANKS"

as published by the Australian Government 2004

ISBN 0 642 82443 6

2. Average indoor use per household is estimated to be

in the range of 300-740 L per day or alternatively about 100-200 L per person per day.



## 5. VENTILATION

The volume flow rate through an opening or duct is related to the area of an opening and the air speed as follows:

$$V = 0.6 \cdot A \cdot v$$

where  $V$  is the volume flow rate ( $\text{m}^3/\text{s}$ ),  $A$  is area of the opening or duct ( $\text{m}^2$ ), and  $v$  is the air speed ( $\text{m}/\text{s}$ ). 0.6 is a factor to compensate for frictional effects.

The heat gain (in Watt) through ventilation is given by:

$$q = 1250 \cdot V \cdot (T_o - T_i)$$

where 1250 is the volumetric heat capacity of air ( $\text{J}/\text{m}^3\text{K}$ ),  $V$  is the volume flow rate ( $\text{m}^3/\text{s}$ ),  $T_o$  and  $T_i$  are the outside and inside air temperatures respectively. Note that latent heat content is not taken into account.

Air speed in ducts is in the range of 2-7m/s, with most cases it being 5m/s. The volume flow requirement can be found according to the occupancy in the SANS0400.

6. **BASELINE**: SBAT [see tables from pages 127-130]

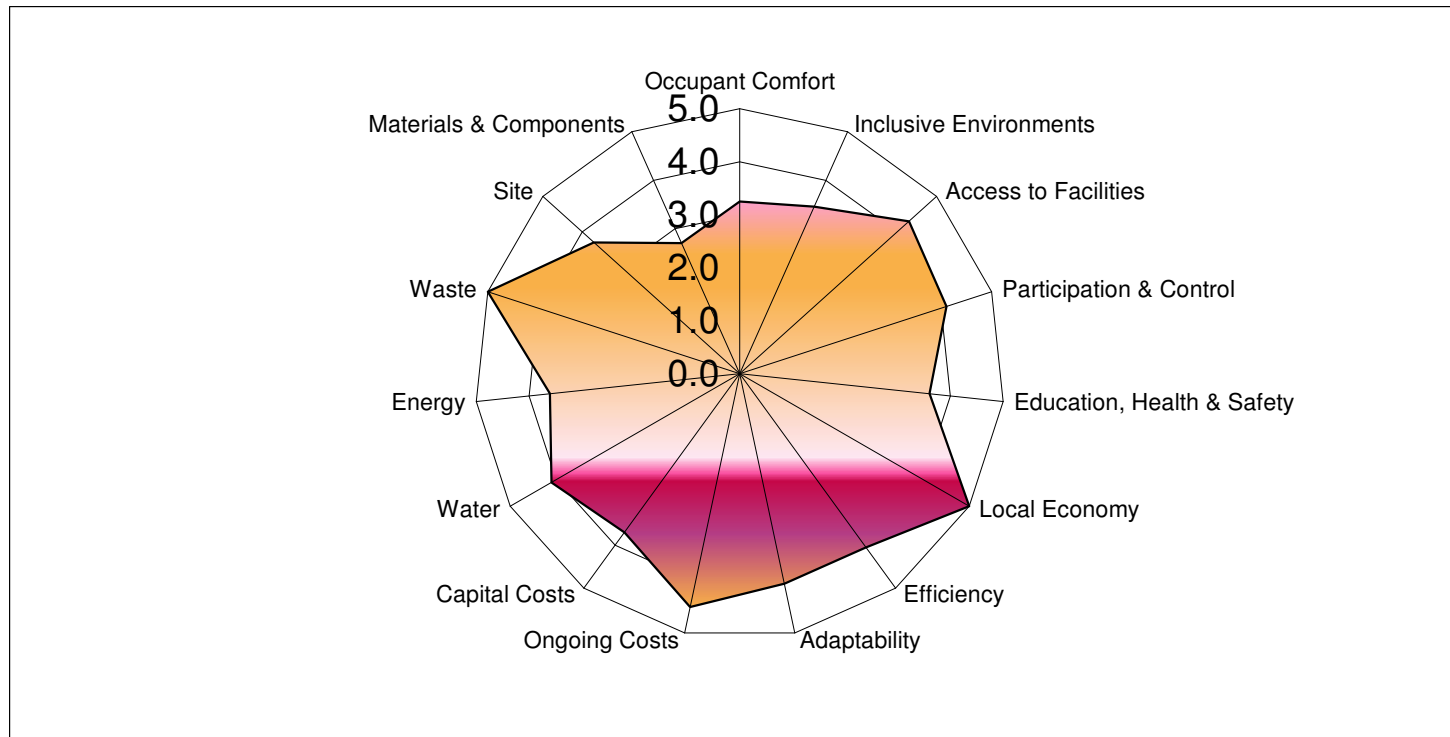
# SUSTAINABLE BUILDING ASSESSMENT TOOL (SBAT- P) V1

## PROJECT

Project title: HOUSING AFRICAN FAMILIES  
 Location: MAMELODI  
 Building type: RESIDENTIAL, INDUSTRIAL, COMMERCIAL  
 Internal area (m2):  
 Number of users: 500

## ASSESSMENT

Date: 23-Oct-08  
 Undertaker Emmanuel Nkambule  
 Company / organisation University of Pretoria  
 Telephone: 787611008 Fax:  
 Email: [mbongiseni@tuks.co.za](mailto:mbongiseni@tuks.co.za)



**Social** 3.7

**Economic** 4.3

**Environmental** 3.8

**Overall** 3.9

**Classification** GOOD

## j Performance - Social

Criteria	Indicative performance measure	Measured	Points	Notes
<b>Occupant Comfort</b>			<b>3.3</b>	
Daylighting	% of occupied spaces that are within distance 2H from window, where H is the height of the window or where there is good daylight from skylights	60	0.6	
Ventilation	% of occupied spaces have equivalent of opening window area equivalent to 10% of floor area or adequate mechanical system, with unpolluted air source	70	0.7	
Noise	% of occupied spaces where external/internal/reverberation noise does not impinge on normal conversation (50dba)	50	0.5	
Thermal comfort	Temperature of occupied space does not exceed 28 or go below 19°C for less than 5 days per year (100%)	60	0.6	
Views	% of occupied space that is 6m from an external window (not a skylight) with a view	85	0.9	
<b>Inclusive Environments</b>			<b>3.5</b>	
Public Transport	% of building (s) within 400m of disabled accessible public transport	90	0.9	
Information	High contrast, clear print signage in appropriate locations (100%)	70	0.7	
Space	% of occupied spaces that are accessible to ambulant disabled / wheelchair users	35	0.4	
Toilets	% of space with fully accessible toilets within 50m	80	0.8	
Fittings & Furniture	% of commonly used furniture and fittings (reception desk, kitchenette, auditorium) fully accessible	70	0.7	
<b>Access to Facilities</b>			<b>4.3</b>	
Children	All users can walk (100%) / use public transport (50%) to get to their childrens' schools and creches	90	0.9	
Banking	All users can walk (100%) / use public transport (50%) to get to banking facilities	100	1.0	
Retail	All users can walk (100%) / use public transport (50%) to get to food retail	80	0.8	
Communication	All users can walk (100%) / use public transport (50%) to get to communication facilities (post, telephone and internet)	95	1.0	
Exercise	All users can walk (100%) / use public transport (50%) to get to recreation / exercise facilities	65	0.7	
<b>Participation &amp; Control</b>			<b>4.1</b>	
Environmental control	% of occupied spaces able to control their thermal environment (adjacent to openable windows/thermal controls)	80	0.8	
Involvement	% of users actively involved in the design process (workshops / meetings with models / large format drawings)	50	0.5	
Social spaces	Social informal meeting spaces (parks / staff canteens / cafes) provided locally (within 400m) (100%)	100	1.0	
Sharing facilities	5% of facilities shared with other users / organisations on a weekly basis (100%)	100	1.0	
User group	Active representative user group involved in the management of the building / facilities / local environment (100%)	80	0.8	
<b>Education, Health &amp; Safety</b>			<b>3.6</b>	
Education	Two percent or more space/facilities available for education (seminar rooms / reading / libraries) per occupied spaces (75%). Construction training provided on site (25%)	90	0.9	
Safety	All well used routes in and around building well lit (25%), all routes in and around buildings (25%) visually supervised, secure perimeter and access control (50%), No crime (100%)	100	1.0	
Awareness	% of users who can access information on health & safety issues (ie HIV/AIDS), training and employment opportunities easily (posters/personnel)	80	0.8	
Materials	All materials/components used have no negative effects on indoor air quality (100%)	90	0.9	
Accidents	Method in place for recording all occupational accidents and diseases and addressing these	0	0.0	
			128	



## Building Performance - Economic

Criteria	Indicative performance measure	Measured	Points	Notes
<b>EC 1</b>	<b>Local economy</b>		<b>5.0</b>	
EC 1.1	Local contractors	% value of the building constructed by local (within 50km) small (employees<20) contractors	100	1.0
EC 1.2	Local materials	% of materials (sand, bricks, blocks, roofing material) sourced from within 50km	100	1.0
EC 1.3	Local components	% of components (windows, doors etc) made locally (in the country)	100	1.0
EC 1.4	Local furniture/fittings	% of furniture and fittings made locally (in the country)	100	1.0
EC 1.5	Maintenance	% of maintenance and repairs by value that can, and are undertaken, by local contractors (within 50km)	100	1.0
<b>EC 2</b>	<b>Efficiency</b>		<b>4.1</b>	
EC 2.1	Capacity	% capacity of building used on a daily basis (actual number of users / number of users at full capacity*100)	80	0.8
EC 2.2	Occupancy	% of time building is occupied and used (actual average number of hours used / all potential hours building could be used (24) *100)	70	0.7
EC 2.3	Space per occupant	Space provision per user not more than 10% above national average for building type (100%)	85	0.9
EC 2.4	Communication	Site/building has access to internet and telephone (100%), telephone only (50%)	100	1.0
EC 2.5	Material & Components	Building design coordinated with material / component sizes in order to minimise wastage. Walls (50%), Roof and floors (50%)	70	0.7
<b>EC 3</b>	<b>Adaptability</b>		<b>4.3</b>	
EC 3.1	Vertical heights	% of spaces that have a floor to ceiling height of 3000mm or more	100	1.0
EC 3.2	External space	Design facilitates flexible external space use (100%)	80	0.8
EC 3.3	Internal partition	Non loadbearing internal partitions that can be easily adapted (loose partitioning (100%), studwall (50%), masonry (25%))	50	0.5
EC 3.4	Modular planning	Building with modular structure, envelope (fenestration) & services allowing easy internal adaptation (100%)	100	1.0
EC 3.5	Furniture	Modular, limited variety furniture - can be easily configured for different uses (100%)	100	1.0
<b>EC 4</b>	<b>Ongoing costs</b>		<b>4.5</b>	
EC 4.1	Induction	All new users receive induction training on building systems (50%), Detailed building user manual (50%)	100	1.0
EC4.2	Consumption & waste	% of users exposed on a monthly basis to building performance figures (water (25%), electricity (25%), waste (25%), accidents (25%))	50	0.5
EC 4.2	Metering	Easily monitored localised metering system for water (25%) and energy (75%)	100	1.0
EC4.3	Maintenance & Cleaning	Building can be cleaned and maintained easily and safely using simple equipment and local non-hazardous materials (100%)	100	1.0
SO 4.5	Procurement	% of value of all materials/equipment used in the building on a daily basis supplied by local (within the country) manufacturers	100	1.0
<b>EC 5</b>	<b>Capital Costs</b>		<b>3.7</b>	
EC 5.1	Local need	Five percent capital cost allocated to address urgent local issues (employment, training etc) during construction process (100%)	100	1.0
EC5.2	Procurement	Tender / construction packaged to ensure involvement of small local contractors/manufacturers (100%)	70	0.7
EC 5.3	Building costs	Capital cost not more than fifteen % above national average building costs for the building type (100%)	100	1.0
EC5.4	Sustainable technology	3% or more of capital costs allocated to new sustainable/indigenous technology (100%)	100	1.0
EC 5.5	Existing Buildings	Existing buildings reused (100%)	0	0.0

**Building Performance - Environmental**

	Criteria	Indicative performance measure	Measured	Points	Notes
<b>EN 1</b>	<b>Water</b>			<b>4.1</b>	
EN 1.1	Rainwater	% of water consumed sourced from rainwater harvested on site	90	0.9	
EN 1.2	Water use	% of equipment (taps, washing machines, urinals showerheads) that are water efficient	70	0.7	
EN 1.3	Runoff	% of carparking, paths, roads and roofs that have absorbant/permeable surfaces (grassed/thatched/looselaid paving/ absorbant materials)	100	1.0	
EN 1.4	Greywater	% of water from washing/relatively clean processes recycled and reused	70	0.7	
EN 1.5	Planting	% of planting (other than food gardens) on site with low / appropriate water requirements	80	0.8	
<b>EN 2</b>	<b>Energy</b>			<b>3.6</b>	
EN 2.1	Location	% of users who walk / use public transport to commute to the building	90	0.9	
EN 2.2	Ventilation	% of building ventilation requirements met through natural / passive ventilation	100	1.0	
EN 2.3	Heating & Cooling	% of occupied space which has passive environmental control (no or minimal energy consumption)	50	0.5	
EN 2.4	Appliances & fittings	% of appliances / lighting fixtures that are classed as highly energy efficient ( ie energy star rating)	70	0.7	
EN 2.5	Renewable energy	% of building energy requirements met from renewable sources	50	0.5	
<b>EN 3</b>	<b>Waste</b>			<b>5.0</b>	
EN 3.1	Toxic waste	% of toxic waste (batteries, ink cartridges, flourescent lamps) recycled	100	1.0	
EN 3.2	Organic waste	% of organic waste recycled	100	1.0	
EN 3.3	Inorganic waste	% of inorganic waste recycled.	100	1.0	
EN 3.4	Sewerage	% of sewerage recycled on site	100	1.0	
EN 3.5	Construction waste	% of damaged building materials / waste developed in construction recycled on site	100	1.0	
<b>EN 4</b>	<b>Site</b>			<b>3.7</b>	
EN 4.1	Brownfield site	% of proposed site already disturbed / brownfield (previously developed)	40	0.4	
EN 4.2	Neighbouring buildings	No neighbouring buildings negatively affected (access to sunlight, daylight, ventilation) (100%)	100	1.0	
EN 4.3	Vegetation	% of area of area covered in vegetation (include green roofs, internal planting) relative to whole site	60	0.6	
EN 4.4	Food gardens	Food gardens on site (100%)	100	1.0	
EN 4.5	Landscape inputs	% of landscape that does not require mechanical equipment (ie lawn cutting) and or artificial inputs such as weed killers and pesticides	70	0.7	
<b>EN 5</b>	<b>Materials &amp; Components</b>			<b>2.7</b>	
EN 5.1	Embodied energy	Materials with high embodied energy (aluminium,plastics) make up less than 1% of weight of building (100%)	60	0.6	
EN 5.2	Material sources	% of materials and components by volume from grown sources (animal/plant)	50	0.5	
EN 5.3	Ozone depletion	No materials and components used requiring ozone depleting processes (100%)	50	0.5	
EN 5.4	Recycled / reuse	% of materials and components (by weight) reused / from recycled sources	70	0.7	
EN 5.5	Construction process	Volume / area of site disturbed during construction less than 2X volume/area of new building (100%)	40	0.4	

## Instructions

### Objective

The objective of the tool is to provide an indication of the performance of a building or the design of a building in terms of sustainability

### Scope

The tool should ideally be used on a building that has just been completed.

It can be used at other stages of a building's lifecycle but some criteria may not be relevant

The tool can be used on most building types such as schools, housing and offices, conventionally used by people to live and work in

### Instructions

#### Step One **Setting the Project Up**

Complete the *project* and *assessment* sections of the *A. Report* section

Refer to *definitions* below

#### Step Two **Entering Measurements**

Complete each of the sections *B. Social*, *C. Economic* and *D. Environmental*

Under the column *Measured* indicate the percentage compliance from 0 to 100 % for each of the relevant criteria

If you do not have the information required for the criteria enter 0%

Should you have any queries about criteria, refer to Notes adjacent to the criteria

Should you wish to make limited comments please note these in **red** under the Notes section

Detailed technical performance information on your building should be entered directly into the powerpoint accompanying this document

#### Step Three **Reading the Report**

On completion return to the *A. Report* section. The spidergraph should now have filled and values should have appeared in all boxes.

**Social** provides an indication of the social performance of the building in terms of sustainability

**Economic** provides an indication of the economic performance of the building in terms of sustainability

**Environmental** provides an indication of the environmental performance of the building in terms of sustainability

**Overall** provides an indication of the overall building performance in terms of sustainability

To rate the building use the scale below and enter the relevant building classification (Very Poor to Excellent)

Overall value	0-1	1-2	2-3	3-4	4-5
Classification	Very Poor	Poor	Average	Good	Excellent

### Definitions

Occupied Space: Space that is normally used by people for living or working in

User: People who regularly use the building

### Contact

Should you wish to comment on this tool, please contact:

Jeremy Gibberd, FPM, CSIR

Tel: 012 841 2839

Fax: 012 841 3504

Email: [jgibberd@csir.co.za](mailto:jgibberd@csir.co.za)



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