"Living in Mamelodi"

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Preface

For the minor ‘People, Planet, Profit’, which is a 5 years program, 12 students from the ‘Hogeschool van Utrecht’ are going to South Africa. This research was in the township ‘Mamelodi’ close to Pretoria and it is to make a sustainable life in the township and trying to make a better live for the people who are living over there.

All Students, ‘The Pioneers’, together made one baseline report about the background research of the township ‘Mamelodi’, like basic figures and graphics and from there the group of twelve students was split up in three groups of four students, the groups were HEIDI, REMP and NEO. Each group has its own assignment. In the group of HEIDI this graduation report of two students was made and is about the “Compound Neighbourhood” and within a “Market street”.

The report before you is the graduation report of two students of different disciplines, Building Engineering and Urban Planning, who did research in a South African township in Pretoria called ‘Mamelodi’.

This report is written for "Hogeschool van Utrecht" and "Tshwane University of Technology. The following students took part in the project:

- Willem-Jan Kleyn
- Sander Nieuwenhuis

Our special thanks go out to the following people, who generously shared their knowledge with us and helped us gathering the information:

-Joey Metlele, community worker and tour guide in Mamelodi
-Leon de Klerck, freelance project developer and member of the ANC party, Mamelodi expert
-Francois van der Walt, student of architecture at the University of Tshwane
-Debby Goedknegt, graduation coach of Willem-Jan Kleyn
-Lies Rollmann, graduation coach of Willem-Jan Kleyn
-Ellen van Keeken, graduation coach of Sander Nieuwenhuis
-Wim Vos, Graduation coach of Sander Nieuwenhuis
-The Pioneers, for all the help and fun in South Africa
-Pam Fairlamb, for checking our grammar and spelling in English

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Management summary

The following questions are answered in this report.

Main question

-How do you come to recognisable and sustainable controlled areas with high quality and enough facilities for the people?

The main question is answered by answering the background and key questions. In the following answers to these questions you will find the answer to the main question.

Background questions

-What is a recognisable area?
An area in which the inhabitants feel at home and an area with which they can identify. For outsiders the area will be easy to drive through because the road patterns and the orientation is good.

-What is a controlled area?
An area where the land is defined and no illegal building takes place. The houses in a controlled area have toilets, running water and electricity. People build on the defined land, for that reason.

Key questions

-How do you make an area recognisable?
The most important thing about recognisable areas is that they must be recognisable for the people who live there. They must be able to identify themselves with the area. Keeping the area small, 500 inhabitants and 300 meters across, will create a community. Enough green spaces in the area will make the people feel comfortable and they can relax and have recreation close to their houses. By keeping most traffic out of the area a nice and peaceful neighbourhood will be created.

-How do you make and keep an area controlled?
How to make an area controlled is a very difficult question. If you look at the illegal settlements it is impossible to get control back over these areas without very drastic measures. With a good street pattern and defined land you can keep an area controlled. When the neighbourhood looks good and the people are proud to be living there, they will feel responsible for their neighbourhood.

-How can we make a better, more sustainable city plan and what should this plan look like?
A city plan that will still be good after 20 years is sustainable. So the plan must be flexible. Enough facilities to cover the area to cover the compound neighbourhood will be self sufficient.

-How can we make a street pattern with clear hierarchy?
In the current situation the traffic stays in the area too long. This is caused by a lot of dead end streets and a road pattern without any clarity. In the new situation all the passing traffic is lead around the area by a ring road. A secondary road goes through the area and most neighbourhoods will be accessible from this road. This road also gives access to the main roads. Within the neighbourhoods the street pattern is clear. They are easy to drive trough. What is tried with street pattern is to create neighbourhoods which are not isolated, but really feel like a neighbourhood.

-What is the best location for a market street within the compound neighbourhood?
If you look for a place which lies in the centre of the compound neighbourhood, which is easily accessible and has enough open space to create a centre, there is only one place where the centre can be located. That place is the Hector Peterson Street, because the questions above are located over there. In the current situation there are already some shops located there and during the interviews the name Hector Peterson kept coming up. This indicates that the street is one of the main streets in the area and that people think that the Hector Peterson Street the best place is for a market street in the surrounding area.
-How to make an attractive market street?
You can make the market street attractive by making all the designs of
the shop buildings in the same architectural way by putting all the facili-
ties together and including trees and benches in the street. Similar areas
exist in different market streets all over the world, for example 'Hoog
Catherijne-Vredenbrug' in Utrecht, the Netherlands.

-How can we make a market street which is safe for the pedestrians?
To make a market street which is safe for pedestrians you don't allow
traffic into your street and put a lot of police in the market street and the
surrounding area to control crime and robbery.

-What is the best design for a shop in a market street?
About a best design of a shop in the market street you can say that there
isn't a best design. Because everyone who will design shops for that par-
ticular market street will make an other design for the shop buildings. But
while the designer is making a design of a shop building he has to think
of a few preconditions in order assure that a shop look like a shop.

Procedure
The research has been done by taking in-depth interviews with inhabi-
tants of the research area and Mamelodi-experts. Also literature review
has been done. The process was controlled by our coach from the
"Hogeschool van Utrecht"
Chapter 1
Introduction
1 Introduction

The background research, that is done to have a good basis for starting working on the assignment, is done by “the Pioneers”. A detailed report about this phase of the project is the document called "Baseline data collection" (see bibliography for details). In this report the assignment for the graduation report will be dealt with.

For this assignment we formed the following main question:

How do you come to recognizable and sustainable controlled areas with high quality and enough facilities for the people in Mamelodi East?

Report structure

This report is divided in several chapters. The first chapter is the introduction. Here we explain how the report is structured and we tell a little bit about the history of Mamelodi. You can read more about this in the 1.2 research context.

The second chapter will contain a description of the current situation, the problems in Mamelodi and an analysis of the research area.

The third chapter will contain the research for the controlled informal settlements. Which can be divided in recognisable neighbourhoods, street patterns and a neighbourhood centre.

The fourth chapter contains the research on self sufficient economy in the research area

The fifth chapter contains a design for a market street with several designs of a shop building which can be placed in the market street.

In the sixth chapter the conclusions of the previous chapters will be brought together in an urban designing plan for our compound neighbourhood.

The seventh chapter contains the conclusions and recommendations that follow up on the key questions that are answered in the several chapters. The key questions are:

- How do you make an area recognisable?
- How do you make and keep an area controlled?
- How can we make a better, more sustainable city plan and what should this plan look like?
- How can we make a street pattern with clear hierarchy?
- What is the best location for a market street within the compound neighbourhood?
- How to make an attractive market street?
- How can we make a market street which is safe for the pedestrians?
- What is the best design for a shop in a market street?

This chapter will also reveal the way we think the recommendations must be implemented and on what subjects more research is needed.

The eighth chapter contains the references. Here you can see all the resources and literature we used for our report.

In the ninth chapter you will find the appendices. This contains the following information:

- Appendix 1, Lynch's elements
- Appendix 2, Interviews
- Appendix 3, Dwelling units
- Appendix 4, Unemployment in Mamelodi
- Appendix 5, List of claims of the shop buildings
- Appendix 6, Drawings of shop buildings for the market street
1.1 General information

- Division of labour:
  Sander Nieuwenhuis is main responsible for chapter three controlled informal settlement. Willem-Jan Kleijn is main responsible for chapter five. We did the other chapters together.

- Occupation directed subjects:
  Willem-Jan Kleijn, Architecture and Construction Management
  Sander Nieuwenhuis, Urban design, Urban research and Housing

- Assignment and the assignor:
  Our assignment is to make a compound neighbourhood in Mamelodi East with a Market street.
  Assignor: Prof. Gerald Steyn

1.2 Research context

The history of the township Mamelodi East of Pretoria, South Africa.

Mamelodi is a township in Pretoria, the capital of South Africa. It has a population around 400,000 to 650,000.

Mamelodi (the name is associated with whistling) is a dynamic black community set against the majestic backdrop of the Magaliesberg (locally known as Thabo tsale Magale). The urban landscape stretches for 12 km between this mountain in the north and Tsamaya. Tsamaya Road was the old trade route to Sekhukhuneland and cuts diagonally across Mamelodi while the railway is a reminder of President Paul Kruger's struggle to gain independence from Britain through access to the Maputo (Mozambique) harbour 110 years ago.

The township was established on the farm Vlakfontein 329JR in 1945 (proclaimed in 1953). The aim was accommodate the black people congregating around Pretoria looking for work shortly after World War II. The township took its name from the farm (elderly people still call it Vlak), but it changed to Mamelodi in 1962 through the personal intervention of DR Hendrik Verwoerd, the prime minister. The oldest part of Mamelodi runs from the western entrance along Tsamaya Road and the Moretele River to Baviaanskloof. The western section along the cemetery and south of the mountain, and the whole of Mamelodi East we are developed the 1960s. In 1968 all building activities in black townships were halted in line with the grand apartheid doctrine. New areas such as Mamelodi Gardens were only added during the late 1980s.

Black people removed from newly proclaimed white areas under the infamous Group Areas Act of 1950 were provided with economic mass housing at Vlakfontein. However, established social bonds were disturbed when the government forced Shangaan, Venda, Nguni and Sotho speakers to live in separate residential areas in Vlakfontein.
Picture 1.1: Geographic position of Mamelodi East
Originally perceived as temporary labourers, the people of Mamelodi have played an important part in local and national political, economic, cultural and educational life for 50 years. After the country's first democratic election in 1994, numerous members of local, provincial and national political structures and relevant government departments came from Mamelodi.
Chapter 2
Research area

2.1 Current situation
2.2 Analysis
2.3 Problems
Picture 2.1: Research area in Mamelodi East
2 Research Area

The research area lies in Mamelodi East. The place where the informal settlements have the upper hand. Closed in by a big road in the east and a train track in the west and south.

2.1 Current situation

In Mamelodi there are two different types of housing. There is the formal type and the informal type. The formal type contains the houses built by the government. The 51/9 dwelling units and the RDP dwelling units are the most common examples of the formal dwellings. These RDP houses are built for the Reconstruction and Development Program. The informal houses are the houses built by the people themselves without any building regulations, but the government provides a toilet, running water and sewer systems and at some places electricity. The formal houses are for the people with some money, because they can afford to buy these houses. They do get some subsidy from the government, but these houses are not affordable for everybody. The people who can't afford these formal houses buy a piece of land with a toilet, running water and sometimes electricity and build their own house. On some pieces of undefined land people just start building their house. These are the illegal settlements. So in fact they steal the land and build their house without toilet, running water and electricity.

The government keeps these areas controlled by selling the land with the basic facilities to the people. In this way the chaos of land invasion is prevented in the area. The availability of facilities improves the quality of life for these people. But the situation in the areas with controlled informal settlements still is far from ideal because the facilities are very low and there is no work in the area.

Another problem is that there are no recognisable neighbourhoods, the only recognisable difference are the formal and the informal housing parts. If the neighbourhoods would be recognisable and the land would be defined, than people can't keep on building illegally and the neighbourhoods would become more attractive. An attractive neighbourhood is better for the people, but also better for investors and companies to start in Mamelodi and that would contribute to the economy and the employability.

Mamelodi is not capable of growing much bigger, but more people keep coming every day. Every undefined piece of land is being built on illegally. Lots of (illegal) immigrants come from countries like Mozambique and have to settle in townships like Mamelodi.

In the existing areas there is also a lack of good public areas. The open areas are undefined. Open areas are only a reason to build or extend a house.

Mamelodi is a township which doesn't have a lot of facilities. There are only some small shops where you can buy the most needed daily foods, like some bread, fruit and some drinks. There is a lack of facilities, not only food supplies but also pharmacy, drugstores, restaurants, bars and more. There are more facilities but those are outside of Mamelodi so the people have to travel a lot. They are not easy reachable. The people want to have more facilities in their area.

Mamelodi was built because it was necessary. The white people wanted the black people to leave Pretoria centre. But the designers didn't think of putting facilities in it. So the problem is that there are not enough facilities for the people in each area. The designers only thought about making as many houses as possible for the black people, they forgot to put shopping malls and other facilities in the urban plan.

There is a lot of crime in Mamelodi East. People are afraid to go on the streets after dark, especially on their own. There isn't enough security in the area so burglars brake into houses or rob people on the street. Robberies are the most common crime in Mamelodi.

Poverty is the main reason people rob or steal. Better social security would make Mamelodi a safer place. There are lots of dark places in the area, more street lights and less dark places like the dead end streets would make the area safer. Better police surveillance would make it harder for robbers to strike as well.
2.2 Analysing the current situation

In this chapter the current situation will be analysed to come to the problems playing in Mamelodi-East. This will be done by several sorts of analysis. First; the structural base of the area will be analyzed by using the theory of 'Kevin Lynch'. Second; the results of the interviews taken in Mamelodi-East will be shown and interpreted and last the results of the visits to Mamelodi-East and the talks with people who are politically responsible for Mamelodi will be worked out.

Lynch
This will be done by analysing the city image and its elements.
To analyse the research area the theory of 'Kevin Lynch' is going to be used. This theory says that the structural base of a city image is formed by five types of elements: Paths, edges, districts, nodes and landmarks. The definition of these elements can be found in appendix I.

Paths
Paths are the channels along which the observer moves.

In the current situation there are a lot of paths, but most of them are unrecognisable and of poor quality. The most important paths are the main roads. These are the roads with the highest density of traffic. These are the most important roads through and around the area. The secondary roads are important paths to travel within the area. They connect the neighbourhoods together. The tertiary roads will be less important paths, mostly used by the residents.

Edges
Edges are the linear elements not used or considered as paths by the observer.

The main roads around and in the area are the most important edges, together with the rail road. These edges can also be seen as the barriers which close off the area and cut it in two parts. Inside the area the secondary roads are edges. These roads are easily penetrable and so they can't be seen as barriers.

Districts
Districts are the medium-to-large sections of the city which are recognisable as having some common, identifying character.

In the current situation there are no clear districts in the area. The density of housing is the same all over the area and there is no difference in the housing types. If you look on a bigger scale, whole Mamelodi, there is a difference in the housing types and so there could be spoken of a district with informal housing and a district with formal housing.

Nodes
Nodes are points, the strategic spots in a city into which the observer can enter, and which are the intensive foci to and from which he is travelling.

There are a few nodes in the area. The biggest nodes are the points where the Hector Peterson Street crosses the main road east of the area. Inside the area there some nodes; the points where the secondary roads hits the Hector Peterson Street.

Landmarks
Landmarks are another type of point reference, but in this case the observer does not enter within them, they are external.

In the current situation there are no clear landmarks in the area. The building heights are quite similar and there are no buildings that jump out of the rest. With a little more knowledge of the area you could say that the soccer fields and the small shopping area could be defined as landmarks or better as recognition points. This is one of the reasons why the area is no good in the terms of urban planning, because no big landmarks can be point out.
Interviews

In Mamelodi we took several interviews. The results of the interviews were compared and from there on we came to the conclusions stated below. The choices we made in further research are often based on these results. The interviews can be seen in appendix II.

Most needed facilities are:
Schools, high schools, clinic, supermarket, Market street, recreation facilities

Public transport
The inhabitants are happy about the public transport and think the prices are reasonable. So the system with the taxi busses works for them.

Houses
The houses are small. The people who own a formal settlement mostly added a part to the house to have more rooms. Toilets and electricity are the most needed facilities. Bricks are the preferred building material, because the material is light and easy to use. Bricks are the most common used material.

Most people don't have problems with multi-level houses especially when you tell them about the benefits, like the higher density, lower distances, and more space in and outside the house.

Toilets and electricity are not available for all the dwellings, so that has to be achieved. The people who live in informal settlements do prefer a formal settlement but they didn't receive consideration from the government. That's mainly because there are not enough formal settlements available and the government doesn't have enough money to build enough dwellings to live up to the demand.

Shopping
There is no real centre in Mamelodi east. The busiest street is the Hector Peterson Street. There are some shack shops located. Shack shops are the little informal stalls and shacks that the inhabitants of Mamelodi build alongside the road. In these shops they sell mostly basic needs to other inhabitants, for example bread, fruit, sugar and sodas, but people do their shopping in the Denneboom complex, because the prices are lower. A majority of the people we interviewed liked the idea of a market street. The most requested shop was a supermarket.

Traffic
Most residents think that the traffic is safe in the streets, except for the big roads. From this result we conclude that a combination of shops and traffic in one street could be possible. However, a majority of the residents are enthusiastic about a market street without traffic.

Crime
The opinions on crime differ a lot among the residents. The police officer we interviewed noted that crime concentrates on the weekends because people get their wages on Friday. On the weekends these people get robbed. Cell phones are often targeted.

'Story of Mamelodi' - 2 Research area

Picture 2.7: Interview with shop owner
Picture 2.8: Having an interview
Comments of respondents  
Most urgent needs for the respondents were: More facilities, more jobs, more formal settlements, more recreational facilities.

The urgent need for more jobs was stated by three of the respondents. From this fact we can conclude that this must be one of the major problems among the inhabitants.

During our visits to Mamelodi-East we have seen the facilities and the area. We also had a few talks with people who are involved in the political world of Mamelodi. With this information we analysed the following points.

Employment and unemployment
Unemployment is a big problem in Mamelodi. As shown picture 2.6 of our project area, there are just a few business areas in Mamelodi east but this is far from enough to employ everybody in the area. Other opportunities for jobs are not in the area. There are very few shops. A centre in the area would be quite an improvement for the employability in the neighbourhood. More information about employability can be found in chapter 6 and appendix 6.

Education
There are four schools in the neighbourhood, but they are all for primary education. There are no high schools. During the interviews we discovered that there is a big demand for a high school in the area. It's possible to "upgrade" a primary school to a high school. It's also possible to combine a high school and a primary school in one building. A situation could be created where the morning lessons are for the primary school and the afternoon for high school classes.

Recreation and sports
Places for recreation are available, but the quality of these places is very low. The areas are used a lot by the inhabitants so the quality has to be improved. This can be done by placing sprinklers on the grass fields and placing some playing equipment for the smaller children. Some smaller grass fields can help to make the neighbourhood look nicer and the children can play here.

This is not very expensive and the government will support this, because this is also done in other places in Mamelodi. For recreation in the form of bars and theatres Mamelodi-East is not the best place. There are some bars, but they are more like shacks where you can get a drink. Museums and theatres are not available in Mamelodi-East. The stadium in the west of Mamelodi is a big place for recreation.

Religion
Places for religion, like churches, are available in the area and some more are being built at the time of writing. This is probably enough to cover the area. But it could be that some minor religions don't have a church in the area. During one of the visits to the area Jowi Metlele, our guide stated that the most important religions, like the ZCC do have their own church however.

Health care
There is one doctor and one surgery in the neighbourhood. In the Netherlands the average amount of doctors is one per 2300 to 2600 inhabitants. Figures on South Africa we could not find. But if we take the Dutch standard in account, and also take in account that clinics are quite busy due to the Aids problems, 7 doctors would be needed in the area. We did not do any sufficient research on these facilities to determine how many doctors they have. However it's clear that these clinics are quite small and that there are a lot more clinics in other areas like Mamelodi West, so there is clearly a shortage of health-care in the area.
Picture 2.9: Street in Mamelodi East.
2.3 Problems

In the analysis the next problems were found.

The area is not safe because of the traffic. The main road running through the area is a big barrier. The traffic that does not have to be in the area still passes through it. The tertiary roads are of poor quality and contain a lot of dead end streets which do not contribute to the traffic circulation and the safety in the area.

There is one big edge in the area which is a barrier as well. This is the Hector Peterson street. This cuts the area in two parts. This is a problem if you want the area to function as a compound neighbourhood.

There are no clear districts in the area. This is because the area looks the same in housing and density. This is a problem, because the compound neighbourhood will contain several recognisable neighbourhoods. There is no centre or other recognisable districts.

In the area there are a few nodes. These nodes are the points were the secondary roads hit the Hector Peterson street. These nodes are not safe points for pedestrians.

There are no big landmarks in the area, because every building has the same height. There are some small landmarks, but none of these can be seen from a distance. The lack reference points in the area make it hard to orientate.

During our research in Mamelodi East and in our conversations with local people and experts we noticed the following problems.

In Mamelodi east there are a lot of informal settlements. These informal buildings are built on parcels defined by the government. The government provides the land, a toilet, running water and electricity. For a small price the people can buy a parcel and build their own house. The facilities in these areas are minimum and the areas look the same all over Mamelodi.

The fact that the areas look the same everywhere is because there are no recognisable neighbourhoods. There are no recognition points, like a centre, and there is no difference in the housing types. This causes the problem of miss-orientation. If you don't know the area well it is difficult to tell where you are. This problem is also caused by the roads. There is no clear road pattern and the streets are mostly the same, which means wide and without any pedestrian or bicycle lanes.

In Mamelodi east there are no facilities. For daily needs the inhabitants have to travel 45 minutes to shopping mall 'Denneboom'. There are some shops in Mamelodi east, but these shops only have a limited assortment. They sell things like cigarettes, alcohol, fruit and some candy. Travel times are high for facilities like high schools and a clinic. For recreation, like restaurants and bars, the people of Mamelodi-East have to travel as well.

If the compound neighbourhood should be self sufficient this has to be improved. A market street would contribute to quality of the neighbourhood and to the employability as well.

An other problem in the neighbourhood is the unemployment. There is no work in Mamelodi-East, only when you have a little shop. Most of the people have to go outside Mamelodi-East for work with public transport. This is a big problem in Mamelodi-East

All these problems beg for solutions. With more facilities, the unemployment level would go down and people would not have to travel for everything they need.
Chapter 3

Compound neighbourhood

3.1 Recognisable neighbourhoods
3.2 Street patterns and types
3.3 Compound neighbourhood centre
   3.3.1 The need for a centre
   3.3.2 Location for a centre in Mamelodi East
3 Compound neighbourhood

In this chapter the quality of a compound neighbourhood will be shown. A compound neighbourhood is an area which contains a number of small neighbourhoods. The compound neighbourhood must be self sufficient, so it must have enough facilities and places to work for the inhabitants. First the smaller pieces, the neighbourhoods, in the research area will be defined, then a good a safe solution will be found for the traffic, which causes problems in the research area. In a compound it must be possible to buy your daily needs and get amenities like schools and clinics. For this a neighbourhood centre has to be built. In this chapter the need for a centre will be shown and a good location will be found.

After all the problems where known a list of claims for the compound neighbourhood was made. In the text below you can read what demands the compound neighbourhood has to live up too.

List of claims for the compound neighbourhood.

Recognisable neighbourhoods.
Create a compound neighbourhood where the difference between the neighbourhoods is clear. It must be clear when driving through the area if you are driving through the centre or through the south. This must be made clear by the types of houses. There must be a clear hierarchy in the different neighbourhoods.

Better houses with more stories.
In the current situation the houses are of poor quality and only have a ground level. In the new plan most houses must have multiple levels and have better quality of building materials.

Houses with electricity, running water and toilets.
All houses must have electricity, running water and a toilet. In the current situation this is not available in every house.

Higher densities of houses.
The density of housing must be higher then it is now. When the density gets higher the compound neighbourhood will be able to support a lively and sustainable neighbourhood-based economy.

Clear street patterns and types.
There must be a clear hierarchy in the roads. A clear difference between the main, secundary and tertiary roads is nessesary for a good street pattern.

Edges inside the area must be overcome.
The main road that is running straight through the area in the current situation is a big edge and barrier within the area. This edge must be overcome.

Area must be safe (traffic and crime).
Safety in the area is an important issue. In the current situation there are too many dark places where it is not safe to walk. The traffic in the current situation is not safe as well. The previous two points will contribute to this.

More work places in the compound neighbourhood.
Most the inhabitants of the research area are unemployed. The others are working outside the area. The new plan must support more work places in the neighbourhood.

More facilities in the compound neighbourhood.
The compound neighbourhood must give the people enough facilities. In the current situation this is not the case. In the new plan there must be enough facilities for the people.
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</table>
3.1 Recognisable neighbourhoods

In this chapter the smaller pieces, which build the compound neighbourhood, will be researched. A compound neighbourhood contains some small neighbourhoods. All these neighbourhoods together build one compound neighbourhood. This compound neighbourhood must be recognisable and sustainable with a high quality and enough facilities for the people.

Before there can be a discussion of a compound neighbourhood, the neighbourhoods within must be defined. Because there are no recognisable areas it is difficult to speak of neighbourhoods. The neighbourhoods can be defined by looking at the urban plan and at the road structure.

*If you want to create a recognisable neighbourhood it can not be more than 300 meters across, with no more than 500 inhabitants* Available evidence suggests, first, that the neighbourhoods which people identify with have extremely small populations; second, that they are small in area; and third that a major road through a neighbourhood destroys it.2

This 'law' was important for the South African assigner, Gerald Steyn of the Tswane University of Technology. With this and the outcome of the analysis in mind the research area will be divided in neighbourhoods.

The research area has a population around 15.000 inhabitants. That would mean that there should be around 30 neighbourhoods. This would be far too much, because the neighbourhoods would become too small. When you look to distance of 300 meters across, you will get around 15 neighbourhoods. So instead of 30 neighbourhoods there were 15 neighbourhoods defined in the compound neighbourhood. If the neighbourhoods would be bigger they would get too anonymous and that would have a negative influence on the living quality and people will not identify themselves with a neighbourhood that big.
Picture 3.4: Densities
15 neighbourhoods are defined

There will be three different types of neighbourhoods. From the center out the densities slowly get lower. So the center will have a high density and the bigger the distance from the center the lower density. Neighbourhoods in the centre will have a high density, around the centre the neighbourhoods will be medium density and in the north and south of the area the low dense neighbourhoods will be located.

High density  70 houses per hectare
Medium density  60 houses per hectare
Low density  50 houses per hectare

Average density  60 houses per hectare

A compound neighbourhood with an average density of 45 houses per hectare will support a lively and sustainable neighbourhood-based economy3.

The neighbourhoods have to be compact with no or very few barriers. The plans for the neighbourhoods will be future plans. The living quality in these areas is so low that drastic measures must be done. This can’t be done over night so the plans will probably take 20 years to completely realise. The plan has to be flexible for future developments. Maybe the financial situation of the people will be much better in 20 years. The plan is designed with that in mind. The houses are not self built anymore; they are all nice, brick houses with, in most situations, multiple levels. The houses in the current situation will be demolished, because the existing houses are not capable of carrying another level. New houses have to be built. The temporary housing of the inhabitants will be a problem and will need more research. This will not be done in this report. The street patterns can be realised much sooner.
Picture 3.6: Position of high density neighbourhood
From each type of neighbourhood one neighbourhood is worked out as a possible design for the future.

*Neighbourhood high density*

This is the neighbourhood which contains the shopping centre or market street. Because this is going to be a crowded area high density of the housing would be in place. High density in Mamelodi means 2, 3 and even some 4 storey houses. Along the big road on the westside of the neighbourhood, the houses will have 3 stories. This will protect the neighbourhood from the sound pollution from the passing traffic. Just behind the shopping centre a 4 story living unit is placed which will over the new park.

This location used to house a shop. This shop will get a location in the new shopping street. The rest of the neighbourhood will contain 2 storey houses. Done this way the community will not be too big and will still function as a small community with which people can identify themselves with.

Within the location, that is reserved for the shopping centre, a large green park will be designed with space for festivals and other events. Another green space is placed more south in the neighbourhood. This will be a green space for recreation, maybe with some soccer space and playing facilities for the smaller children.

*Picture 3.7: High density neighbourhood*
Picture 3.8: Position of medium density neighbourhood
Neighbourhood medium density

The housing types used in the medium density neighbourhood are 2 and 3 storey houses. All the houses are 2 stories, except for the centre of the neighbourhood. There will be buildings with 3 stories. These buildings could be used for a community centre or to house the elderly. There will be one park and one small green area. The lanes through the neighbourhood will be green with trees where people can sit and relax in the shade.
Picture 3.10: Position of low density neighbourhood
In the low density neighbourhood most houses will be 1 story. In order to create a community and hide the big roads which pass on the eastside and the westside, the surrounding houses will have 2 stories. In this neighbourhood there will be a lot of green spaces which really gives the neighbourhood a low density feel. In the current situation people build structures which will provide them with some shade. In the new situations the shade must be provided by trees. Trees look much better in the neighbourhood then those poor structures. The low density neighbourhood must be green and breathe an easy atmosphere. The circulation patterns for the traffic are good so the traffic will be able to get in and out quickly. Only necessary traffic will be allowed while other traffic will take one of the two big roads passing on the east and west sides. This neighbourhood will be very peaceful. A lot of 1 story houses and a lot of green spaces.


3.2 Street patterns and types

In chapter 2 the analysis made clear that the roads (paths) and the patterns of roads are not of good quality. In this chapter possible solutions for these problems will be shown.

The problem of orientation, or lack of orientation, is partially caused by the roads. There are no circulation patterns and there is no street hierarchy. There are some main roads, but the rest are all the same. The only difference is the quality of the roads.

There are a lot of dead end streets, which does not contribute to the quality of the area. Because of the dead end streets the neighbourhoods are not easy to drive through. The dead end streets have a bad effect on the traffic circulation of the neighbourhood. It also makes the neighbourhood less safe and increases crime.

Main roads

As is visible on the drawing of the current situation, there are two main roads, which are coloured red on the drawing. One is on the east side of the area and the other one, the Hector Peterson street, goes through the area. Hector Peterson street is a big street with lots of traffic. The H.P. Street is 15 meters wide and is very busy, especially during peak hours. This is a big barrier inside the neighbourhood because it separates the area in two.

In the current situation a lot of traffic goes through the area, because it is the easiest way to travel. A road pattern which keeps the traffic out of the area has to be created. West of the area the railway track is located. Between the track and the houses there is just enough space to build a road. A road on that location would function as a ring road and would lead the traffic around the area. This will create a safer and more comfortable place to live. The road will be placed right next to the railway. Placed like this the people will not be bothered by the new road.

Secondary roads

The secondary roads, which are marked blue in the drawing, run through the area. Some connects to the Hector Peterson Street and one meets with the other main road. The quality of these roads is quite good and they function well.

In the new situation the pattern of secondary roads is extended. The Hector Peterson street became a secondary road, because of the new main road west of the area. A part of the Hector Peterson is reserved for a compound neighbourhood centre where shops, restaurants and other facilities are located.

Tertiary roads

The other roads, which are yellow, are the small roads. The road structure of these roads can be improved as there are many dead end streets among them. Not all of these roads are paved. The roads that are not asphalted are sandy. There are a lot of stones, bumps and holes. It’s possible however to drive on them with a normal car, when you drive slowly. The roads that are asphalted are quite good.

To open up the area a little, a lot of dead end streets were opened and connected. In this way street patterns are created and the area gets much easier to access. There are lots of visual lines which gives it an open look. Places which used to be dangerous, because of crime, are more open now, decreasing crime in these areas.

In this new situation it is clear that the main roads are used to go to the area, the secondary roads for travelling through the area and the tertiary roads to travel within the area.
Picture 3.14: Range market streets big shops

Picture 3.15: Range market street normal shops
3.3 Compound neighbourhood centre

The lack of facilities in Mamelodi East ask for a solution to give the people the needed facilities close to their residence. During the research and conversations with local people and experts we found that there was a lot of interest for a centre in the compound neighbourhood. If the facilities would be placed all over the area people will still have to travel around a lot to get their products or services.

If a centre is realised, the inhabitants can do their shopping within walking distance of their residence (homes) and all in one place. In this centre there must be facilities like small shops, a clinic, restaurants and a bar. The layout for this centre will be shown in the next chapter.

3.3.1 The need for a neighbourhood centre.

The research area has a population around 15,000 people. In Holland this would mean that in the area 22,500 m² of shopping area should be available. In Holland the standard is 1.5 m² of shopping area per inhabitant. Of course the situation in a township as Mamelodi is completely different and the numbers normal in Holland are far too high.

If a shopping centre would be realised in the research area it would not just be for the research area, but would be used by most of the people of Mamelodi East.

For a township like Mamelodi 0.3 m² shopping area per inhabitant would be reasonable. This would mean that in the research area 4,500 m² of shopping should be available. In the current situation there is not more than 200 m² of shopping area available. This is far too low to cover the needs of the people. A centre is needed for the research area, but most of all for Mamelodi East. Our research area would be a perfect place for this because of the available space and the central position in Mamelodi East.

On the picture on the left the range of the shopping centre is shown. As you can see the shopping centre will be used by a lot of people from outside the research area. This is because of the lack of facilities in their neighbourhoods as well. A centre in the research area means that for those people the closest place to do their groceries will be the new centre. In the future the range of the shopping centre will become smaller, because of new facilities outside the research area that will be built in the future.

On the other drawing the range of the shopping centre is shown as it must become. Easily accessible for all people. A range of 1.5 km. Everybody can reach it within 20 min by foot.

In the new centre there will be a lot of small shops where they sell daily groceries and other products, but there will also be some larger shops. These larger shops will sell more luxury products like hifi equipment and nice clothes. The range of these shops will be much bigger then of the other shops. The range of these shops will be the same as shown on the first drawing, so for all of Mamelodi East.

The research area has a population around 15,000 people. In Holland this would mean that in the area 22,500 m² of shopping area should be available. In Holland the standard is 1.5 m² of shopping area per inhabitant. Of course the situation in a township as Mamelodi is completely different and the numbers normal in Holland are far too high.

‘Living in Mamelodi’ - 3 Compound neighbourhood
3.3.2 Location for a centre in Mamelodi-East

In the previous chapter the need for a centre in Mamelodi East was researched. It became clear that a centre would function well and that it would bring work to the area as well as shops. Now the location and the type of centre have to be chosen.

For the type of centre a market street was the most logical choice. This is the normal way to sell products in Africa and with small shops a lot of people could get their own business and get a better income. Not only shops should find their place here. Leisure facilities and restaurants and bars as well. There is a shortage of these facilities in Mamelodi East as well. More about the design and layout of the centre you will find in chapter 5.

The question now is where the centre should be located. The location should be easily accessible for the inhabitants and be on walking distance for every inhabitant of the neighbourhood. Also good accessibility by taxi bus is important.

In the current situation the street that is most suited to live up to these demands definitely is the Hector Peterson street. This street cuts down the area from north to south. It is a busy street where a lot of people come, there already are some shops now and there is enough open space to create a proper neighbourhood centre. During the interviews in Mamelodi with the local shopkeepers and inhabitants most respondents spoke of Hector Peterson street as the best location for a centre.

In the new situation the Hector Peterson street would be the most logical choice to make, because there are no other places in the area which are suited for a centre without destroying lots of houses. In the plans shown in the previous chapters the houses will be replaced in the future, but a lot of time is reserved for those actions. The centre can be built much sooner. When the centre is placed in the Hector Peterson street the work could start directly. The South African assignor was very pleased with the market street location and encouraged us to continue on that location.

In the next chapter the centre and the shop buildings will be designed.
Chapter 4
Economic explorations
Economic exploitation

Self sufficient economy of Mamelodi-East

In this chapter the following question will be answered: How can the Market street contribute to a better, more self sufficient economy in Mamelodi east?

On our fourth visit to Mamelodi we had interviews with people who own shops in Mamelodi. We took these interviews to understand what the needs are of the people who live in Mamelodi East. We also wanted to know whether people buy their things outside of Mamelodi east or not. With the information we got from the interviews and our own opinions we came up solutions for the Market street.

The problem

When you take a quick scan at the income rates of the Mamelodi Township, you'll see that a high percentage (65%) has got no income at all. From the people that do have an income, this isn't including child allowance, the male population is mostly represented in the scale R 801 till R 3200, while most women with an income are in the scale R 401 till R 1600. See appendix 5 for more employability figures. Daunting economic problems remain from the apartheid areas (like Mamelodi Township), especially poverty and lack of economic empowerment among the disadvantaged groups. High crime and HIV/AIDS infection rates also deter investment. The South African economic policy is fiscally conservative, but pragmatic, focusing on targeting inflation and liberalizing trade, as means to increase job growth and household income.

In order to get the economy of Mamelodi to grow, the inhabitants must support their own community. They can do that by buying products from their own people instead of from outside the community. In this way the money stays inside the community. The economic growth inside the community leads to more jobs in the area, which leads to more people with a better income, which leads to economic growth again. If this circle goes on and on, in the end Mamelodi will be a self sufficient economy.

In the interviews we took the 2nd and 3rd visit to Mamelodi, we discovered that the inhabitants of Mamelodi do most of their shopping outside of Mamelodi, at the Denneboom complex. The majority of the inhabitants of Mamelodi go there by taxi bus. They say this trip takes them about 45 minutes. The ones that go by car can get there in 20 minutes. The main reason to go to this supermarket is the price of the products compared to the price of the products in the so called "tuck stores". This supermarket is cheaper than the tuck stores inside Mamelodi. Tuck stores are the little informal stalls and shacks that the inhabitants of Mamelodi build alongside the road. In these stores they sell mostly basic needs to other inhabitants, for example bread, fruit, sugar and sodas.

What must the government do?

- Support and regulations
The idea of a Market street is supported by all the inhabitants of Mamelodi East that we have interviewed. But to let the people benefit from the results, the government must create good regulations. The main reason to create the market street is to improve the economy and environment in Mamelodi. To achieve that, the purchasing power of the people of Mamelodi must be improved.

Without any regulations big companies will compete with the small, so called "tuck stores". To improve the ability of the tuck store owners to survive the competition with big companies, the government can help and support the owners of the tuck stores.

There can be different ways in which the government can support the Mamelodi inhabitants. For example to allow them to pay no tax for their supplies, or higher the tax for the big stores at the Denneboom complex so they can compete with these companies.
Picture 4.2: Diamond model by Michael Porter
According to the famous American economist Michael E. Porter, the ability of competition of a country or region is influenced by four factors (see also picture 4.1), that influence each other as well:

1. **Factor conditions, structure and rivalry**
   Contrary to conventional wisdom Porter argues that the key factors of production are created and not inherited. Specialized factors of production are skilled labour, capital and infrastructure. Non-key factors or general use factors, such as unskilled labour or materials can be obtained by any company and therefore do not create sustained competitive advantage. However specialized factors involve heavy sustained investment. They are more difficult to duplicate.

2. **Firm strategy, structure and rivalry**
   The world is dominated by dynamic conditions and it is direct competition that encourages companies to work for increases in productivity and innovation.

3. **Demand conditions**
   The more demanding the customers in an economy, the greater the pressure facing firms to constantly improve their competitiveness via innovative products, through high quality, etc.

4. **Related supporting industries**
   When, upstream (e.g. supplying companies) or downstream industries (e.g. your customers) are available in your own country, it gives you the opportunity to exchange knowledge, ideas and innovations.

Traditionally, economic theory mentions the following factors for comparative advantage between regions or countries:
- land
- location
- natural resources (minerals, energy)
- Labour
- Local population size

Because these factor endowments can hardly be influenced, this fits in a rather passive view towards national economic opportunity.

Porter says sustained industrial growth has hardly ever been built on above mentioned basic inherited factors. Abundance of such factors may actually undermine competitive advantage. He introduced a concept of clusters of interconnected firms, suppliers, related industries, and institutions that arise in particular locations.

As a rule competitive advantage for nations has been the outcome of four interlinked advanced factors and activities in and between companies in these clusters. These can be influenced in a proactive way by the government.

The role of the government in Porters model is acting as a catalyst and challenger, it's to encourage or even push to raise their aspirations and move to higher levels of competitive performance.

When we translate Porters ideas back to Mamelodi, you can conclude that when you want to invest in the improvement of the Mamelodi economy, the government should support one or more of Porters' five factors. The best way to achieve this is to educate the Mamelodi residents about the opportunities that they have.
Picture 4.3: Public telephones
Cooperation
Another idea is to encourage the tuck store owners to unite themselves and create a cooperation to buy their stock. Buying in large batches will decrease prices. Also the possibility emerges to execute whole sellers from the supply chain, which saves money as well, however, this decreases the competition.

Export
The potential entrepreneurs in Mamelodi should be encouraged to not only start businesses that aim at the Mamelodi community, but also outside the community. In the economic world it’s a common belief that every region has its own economic advantages in comparison to other regions. The way to economic growth is to find and use these advantages. A passive advantage of Mamelodi for example is the low cost of labour. A specialized advantage can be the amount of labour that is needed for a certain job because of the amount of skills. Because things as environment, skills or technology influences the amount of labour that is needed for a certain job, every place in the world has its own advantages.

Practical solutions
In order to keep the money inside the Mamelodi economy, there is a supermarket needed in Mamelodi East. This supermarket must employ Mamelodi residents only. What must be prevented is that this supermarket will compete with the Mamelodi residents who have their own tuck store and therefore destroy the motivation of the residents to start their own businesses.

A solution to this problem could be that the supermarket will not be allowed to sell the same products as the tuck stores. The tuck store owners sell fruits, sodas, sugar, and bread; these are therefore the products the supermarkets will not be allowed to sell. The supermarket can sell, for example, vegetables, meat, and fresh milk. More importantly products that need large investments to sell, like electronical (hifi) products will also be sold at the supermarkets. What will be allowed and what will not is, of course, an area of further research. The tuck store owners must be encouraged and taught to distinguish themselves from the supermarket and their other competitors in order to survive.

Although these ideas do not compare with Michael Porter’s ideas, these regulations are needed for a transition period to eventually achieve an open market in Mamelodi.

Conclusion
The ideas stated in this chapter have to be brought on to the people of Mamelodi. Because they are the people who have to see and use their opportunities. There is only one way to accomplish this: educate them! Education of the people is the key. When you educate people about the possibilities that they have and at the same time create a good environment for them to execute what they’ve learned, then the community eventually get the progress that is needed and wanted so badly.
What must the city planners do?

The reason that the Hector Peterson is a busy street is mainly that it is an important taxi route. What must be prevented is that by closing down the street for traffic also the people will leave. On the other hand the market street must be an attractive street where people have a lot space to shop, without having too much problems with the traffic.

Solution one:
Close down the part of "Hector Peterson street", between the connecting corners of "Benjamin Seema Crescent" street and lead the traffic through the "Benjamin seema Crescent" street and make taxi stops on the street corners. The public can walk through the street, do their shopping and either get in the taxi again at the other end of the market street or at the end where they get out. The danger of this solution is that entrepreneurs will start their stand on the Benjamin Seema Crescent street.

Solution two:
Make small lanes for the traffic and big sidewalks and slow down traffic with chicanes or speed bumps. The advantage of this solution is that there will probably be more people travelling through the street, but the disadvantage is that they have less space to walk. Also the street is less attractive for recreation.

Solution three:
Make the market street part of Hector Peterson Street a one way road as well as the "Benjamin Seema Crescent Street". This solution is a compromise between the first two solutions; it has some of the advantages and disadvantages of the first two solutions. Traffic still runs through the street, but half as much as in solution two. The best solution:
The market street needs a design which encourages people to walk through the street. From an economic point of view solution two would probably be the best solution. But only if there also is space enough to make the market street an attractive street for pedestrians. The street must have a comfortable atmosphere. Chapter 3.4.2 of this report will elaborate on the practical design of the market street.

Conclusions
The market street needs a design which encourages people to walk through the market street. The best way to make the market street successful is help from the government. The government can help with regulations to protect the entrepreneurs in Mamelodi. Education is also vital and should be implemented with the diamond theory of Michael Porter kept in mind. Educating the entrepreneurs will encourage correct decisions. A successful and active market street is therefore dependent on three facts:
- Economic
- Planning
- Architecture
Chapter 5
Market street

5.1 Design of a market street in the centre
   5.1.1 First design of the market street
   5.1.2 Second and final design of the market street

5.2 Designs of the buildings
   5.2.1 Group 1: Shack shops
   5.2.2 Group 2: Single level shop
   5.2.3 Group 3: Shop/living units
   5.2.4 Group 4: Shopping mall
   5.2.5 Group 5: About the designs of group 2, 3 and 4
5 Market street

In this chapter the design for a market street will be illustrated. A market street is a street with a lot of facilities and shops together in a centre of a compound neighbourhood. In this area it must be possible for the inhabitants to buy their daily needs and get the needed facilities like schools and medical facilities (care).

First the problems caused by the lack of facilities and a market street will be shown. After the problems are clear the possible solutions will be shown with three options for a shop building.

5.1 Design market street

Working method

'Shops rarely place themselves in those positions which best serve the peoples needs and also guarantee their own stability. They must have their own catch basins. With hotel-ling you split half-half or you stand next to him and try to get everything. You go for safe or go for the competitions against other shops'7.

First you have to find out where the shops and facilities are. If you get all that information you put it together on a map. Then you can easily get to know where all the existing shops and facilities are and which are missing in the area. Then you have to look how they build their shops, and of what material. People just collect some materials and with that they will make the building. I saw this while visiting Mamelodi. After analysing all the problems we will be able to design a better shop building which can be placed in a market street.

Most of the problems of the shops are security, isolation against the cold, storage space and a basic plan to build a shop building.

To design an attractive market street I have looked at what was missing in a shop building; I then made a list of what will be needed.

- Attractive and cheerful market street. The market street has to be good looking in an architectural way so people want to go to the street and shop, eat, meet people or relax. You have to see it as a place where people can go and enjoy themselves.

- Easily accessible by walking or by public transport.

- Benches for relaxing.

- Sustainable and efficient, with re-usable and locally available building materials, such as, corrugated iron roofs, lime sand stones and concrete.

- Big trees and shaded places so that people can sit in the shade under a tree, we can call it a people tree.

- A lot of daylight, the reason why you should have a lot of daylight is because you get a well-organised street. The street won't be dark and it makes the customer to come to the street. The street gives a friendly and peaceful look when it is light and a clear overview in the street.

- Well organised, people can see easily where are all the shops are located and how they have to walk in the street to find a shop or the end of the market street where people can go home by walking or making use of public transport which is located in both ends of the street.

- Parking place, people who have a car have to be able to come to the market street. There has to be a parking place close by the market street and taxi-rank.

- The climate inside the shops has to be cool, the reason why the temperature has to be low inside is that it makes the customer comfortable to go into the shop and it is better for the products.
Picture 5.2: Street in Mamelodi-East. Here you can see informal housing that have electricity.
- Drop zone for the people, this is a place close to a beginning of the market street where people can be dropped off, for example by taxi busses at the taxi-rank.

- Streetlights, When you put street lights there will be also less crime in the evening because everyone in the street can see what’s happening.

- A lot of glass in the shop window, when people walk past the shop they can see what kind of things they are selling inside the shop.

- After we analysed on a map where all the shops and facilities are in the current situation we discovered which are less in our research area and which can be placed in the market street. Shops and facilities we want to put into the market street are:
  - Small shopping malls
  - Pharmacy
  - Doctor
  - HIFI-store
  - Clothes store
  - Library
  - Restaurants
  - Fast food restaurants
  - Cafes
  - Dentist

- Bus/train station nearby, on both sides of the market street there should be a bus or train station. (For example: People come by train, walk through the market street and go back by taxi bus on the other side of the street.)

- Water outlet pipe is needed, because in the rain season a lot of water comes down. The water has to be gone quickly, because otherwise you get so much water on the street and the street will flow over. The surplus water can go to the pond the park which is locate on the market street.

- Emergency exits, when there is a fire in the market street or terrorist attack happens people have to able to leave the market street immediately. There must be enough emergency exits, which are big enough for the escaping people. You can also use those emergency exits for police, fireman and ambulance. These emergency exits should accessible at every time of the day.

- How the sun turns, because when you design a shop building you have know on which side the sun enters the most. For example you can put less glass on the side where the sun is the most, because otherwise it gets to hot inside the building.

- Security, because there is a lot of crime in Mamelodi-East there should be more security. So you have to put more policemen in the market street and the surrounding area, because it will be crowded. And at a place where it is crowded there will be a lot of crime and robbery.

- Bicycle paths, cycling tracks. To make bicycle paths in the market street you have to first find out if people in the area use a bicycle, if yes then you should take a bicycle path in consideration.

'It is natural and convenient to want a market where all the different foods and household goods you need can be bought under a single roof. But when the market has a single management, like a supermarket, the foods are bland and there is no joy in going there. Instead of modern supermarkets, establish frequent market places each one made up of many smaller shop which are autonomous and specialized (cheese, ment grain and so on) Build the structure of the market as a minimum, which provides no more than a roof, columns which define aisles, and basic services. Within this structure allow the different shops to create their own environment according to their individual taste and needs'8.

For the design of the market street I made two developments views within some shop buildings which can be placed in the market street.
Picture 5.3: First design market street

Picture 5.4: Drawing design market street
5.1.1 The first design of the market street:

When you have a location for the market street, this will be Hector Peterson street, you have first make a plan, what the street will look like, because then you can divide the street in parts and design each part individually. In the end of designing each part, you bring all the parts together and then you create a new market street.

I split the market street into four groups. The reason why I do this is to give everybody in the area that has a shop a change to be part of the market street, this is based on the people's income in Mamelodi-East.

In Mamelodi-East the people aren't rich, but between the people who live over there you still can separate people with there income. Some people only have money to buy a piece of land and built their own house, like informal housing. Others can effort a piece of land with a little house on it, like formal housing which is built by the government.

The 4 groups:

-The yellow part in the picture is for group 1. This place will be for the people who don't have a lot of money. They only get water and electricity, and they have to build their own house and shop. The reason why this part is yellow because you don't have a parallel road where the shop owners are able to load and upload there goods. The shops are very small and the products which the people sell are small. The people are able to bring new goods by walking from the nearest road to there shop.

-The green part of the picture is group 2. Those people can afford to buy a piece of land where the government has put a little one level shop on. They still have to build their own houses behind the shop building. Here you have a parallel shop where the shop owners can load and upload there goods.

-The blue part will be for the people who have money to buy a piece of land with shop/living buildings. Those buildings will be made by the government and can also be build in the backyard. There is also a place where the people can load and upload there goods because at the back of their back garden there is a parallel road.

-The pink part is reserved for the big shopping mall. Here the government will place shops who sell products which aren't to buy in the market street.

To make the people with a shop interested in having a shop which is located on the market street you can give those shop owners education and explanation about the advantages of having a shop on the market street. Explaining how they have to run their shop.

Picture 5.5 / 5.6: Bridge in Soweto, Johannesburg
Picture 5.7: 3 options for crossing the road
5.1.2 Second and final design of the market street

After some time, I discovered that the first design of the market street is too big. Because a kevel is 21 meters - 14.5 meters and on each kevel I will put 2 shop buildings. Then you will have on both sides more than 100 shop buildings, that is too much for this area. The street itself is 30 meters wide. Then you have to make a less longer and wide market street, but with the four groups still in it.

The market street has to be easy reachable for all the people in the compound neighbourhoods. So there has to be a taxi busses parking place. You also have to look for an other possibility to come to the market street with public transport. Nearby the market street there is a railway.

‘The walking distance between the two connecting systems must be very short. But the different kind of public transportation are usually in the hands of different agencies who are reluctant to cooperate. So give the local communities control over their interchanges so that they can implement the pattern by giving contracts only to those transportation companies which are willing to serve these interchanges’ 9.

So I want to put a train station at the nearest place of the market street. Because you want the market street to be safe for pedestrians you have to make the way from the railway station to the market street safe. That's why I want to put a bridge over the road, which the people have to cross going from the railway station to the market street, that helps all the people safe to the other side of the road. In the township Soweto, Johannesburg you also have a bridge which works perfectly. Everyone takes the bridge to cross the street safely.

An other option is to put robots on the street, so the people are able to cross the road safe. You can also make a tunnel, this isn't a good idea because it is dark and a easy place to rob somebody, so it isn't a safe way to cross the road.

Then there is a small space where people can relax, wait for the train or where people can meet their friends in order to get to the market street or somewhere else.

In my second and final design of the market street I chose for a bridge instead of the robots and a ..., because the train station is built on a high level and it would be easy and safe if you place there a bridge and let the people on the other side of the road back to the ground by stairs. In the next three sketches I explain why I chose a bridge instead of robots. (Drawing 5.3)

After you pass the bridge there is a nice small boulevard which will lead you to the market street. The boulevard has a nice peaceful look because there will be a lot of trees and benches. On both sides of the boulevard you have shops where you can buy just small things like cool drinks, snacks or cigarettes.

There are two different shops over there, from group 1 and 2. At the end of the boulevard you come in ‘the market street’ (The white-stripe area, drawing 5.3). If you are walking in the market street you have on your left, with the pink colour, the shop/living buildings those are two levels high. In the beginning on the right there also some shops from group 2. If you walk further on there is on the right a big park where people can sit under the trees and relax close to the little lake in the park. There is also a place where people can give a performance, like a band that is playing.
Picture 5.9: Second and final design for the market street.
A town needs public squares: they are the largest most public rooms, that the town has. But when they are too large, they look and feel deserted. People often go to them, they become favourite places and people feel comfortable there. Make a public square much smaller than you would at first imagine, usually no more than 45 to 60 feet across, never more then 70 feet across.10

Behind the little pond there you could place two café/restaurants and six fast-food restaurants. Between the fast-food restaurants there is a walking through. Here is a big parking place for the people who came with their own car. Behind the parking place there is space to repair the mini taxi busses and private cars. Because behind this place there is space where the taxi busses can park and drop people off at the beginning of the other side of the market street. (The taxi busses can also pick people up from there and bring them to their houses). On this side of the market street you have on your left side three big shops. You can place for example a clothing shop, HIFI store and a library with a shop in it where you can buy books, because those three shops you don't have it in the surrounding area.

For the designs of the four groups you have to look at chapter 5.2 Different designs for shop building in the Market street

Between the yellow and the blue part of the drawing there is the boulevard.
5.2 Design of shop buildings

- Current situation about houses.
For the current situation there are now three types of buildings in Mamelodi-East. These are the RDP dwelling unit, the 51/9 dwelling unit and the shack with or without toilet and with or without electricity. For further information look at the appendix III.

Different designs for shop building in the Market street.

- Opportunities for all inhabitants
What I already mentioned, in the whole world and also in Mamelodi-East not everybody has the same amount of money. Some people can afford a formal house of the government others they have only just enough money for buying a piece of land with a toilet and electricity on it and they have to build their own house from materials they found or buy for some money (informal houses).

Everybody is equal to each other and everybody deserves a chance to make money with their shop in the market street.

In the market street I create four groups. One group is for the people of informal housing, two other groups are for formal housing. The last group is for the government. They will put here some big shop and eat facilities. This group offers a lot of jobs and it is good for the unemployment which is now very big.

All the groups are different.

- Group 1 is for an informal shop
- Group 2 and 3 are for a formal shop.
- Group 4 is a big shopping mall where you can get products which are for sale in group 1, 2 or 3. Group 4 will offer a lot of jobs, this will be good for the area because there is a lot of unemployment. There will be more information about unemployment in the appendix IV, unemployment.
5.2.1 Group 1 shack shops

One part of the market street will be used for people who don't have so much money but they get a toilet and electricity from the government on their piece of land and they have to build their own shop and house on their ground. The shop will build in front of their houses. In group 1 of the market street the shop owners can use a parallel street for loading and unloading the goods for the shops.

These shops will sell small products, like cool drinks, snacks, cigarettes and fruit and are placed in the beginning of one side of the market street and in the boulevard, which brings you from the railway station to the market street and back. Because people can buy some small products when they arrive or leave the market street. Those people will sell small products because they don't have much money to buy bigger products, that is why they live in an informal house. I saw this during my several visits to Mamelodi.

About the design of the shop from group 1, it is difficult to subscribe the designs. Because people buy a piece of land in order to build their own house and shop for themselves. The houses and shops are built from material which is found in the surrounding area or purchased for some money.

Most of the shops are built with wood, plastic and corrugated iron roof. Some people make their living from building small walls made from wood and aluminium plates. These walls can be purchased and used to build your own house or shop. What you also see a lot, is small shops next to the road made of just some wood and a little roof. The shop owners come there every day in the early morning and place all their products in the 'shop' and at the end of the day they take all their products back to the place where they stay.

At some places in the market street and the surrounding area there could be people who will sell their products illegal. These people aren't in group 1,2,3 or 4. You can't stop those people but you can hold most of them. As you can see in picture 5.2/5.3, the bridge in Soweto is also full with people who are selling illegal. I think it is acceptable if you only permit those people on the bridge.
Picture 5.14: Sketch of group 2

Picture 5.15: Sketch of group 2

Picture 5.16: Sketch of group 2
5.2.2 Group 2: single level shop

The second group is for people who have a little bit more money than the people from group 1. The parcels are the same size, but now the government puts a small single level shop building on it, with a toilet and electricity. The people can buy that piece of land but they have to build their own houses at the back of the shop building. There will be also a street behind their back garden, where the shop owners are able to load and unload new goods for their shop.

The shops will sell products which are a little bit bigger than the shops of group 1. They could sell small meals like a hot-dog, bigger snacks like candy or a chocolate bar and newspapers. You have to see it like a very small store. There are also places for some hair cutters in group 2. The shops of group 2 are located across the shops of group 1 and they have the same idea as group 1. That is that the people can buy some small products when they arrive or leave the market street.

On the park side there are also shops of group 2. The reason that I put shops of group 2 over there, is that in the park there is a place where people can perform for an audition and relaxing on the grass, so the people are able to buy a quick snack, cool chips, beer and bottles of cool drinks while they watch the performers or relax on the grass.

The little shop that is built by the government will have a simple but an efficient character. With efficient I mean that the building is built for having a little shop in it and not for other use.

To make a good design for a shop, I first made a list of claims. Some claims I have to take in account and what kind of things I want to put in and on it. For the list of claims you have to look at appendix V.

After I made this list I began to make some drawings for the design of the shop.
Picture 5.20: Drawing of group 2
The final design of the shop building of group 2. If you look at the list of claims, you will see that all of them are in it.

About the materials:

- The foundation is made of concrete that is dumped on sand.
- The building is only built to have a shop in it. For the walls a brick wall of 200mm thick is used. The roof is made from corrugated iron over a base of wood.
- In the shop there is a toilet and outside dwelling water.
- On the front of the shop building there is a big window, people can see from the street what the shop sells inside. Above the window there is place where people can put a sign with the name of the shop and what they are selling.
- On the front and the back of the building there an overhang. This is made to keep the sun from shining into the shop through the window so it stays cooler inside.
- A big water tank is at the back of the shop building. The sun will heat this water so you get warm water easily.
- At the back of the shop building there is space for people to build there own houses. On the end of the garden there is a road where people can load and unload there goods.

All the maps and side views can be found in the appendix VI.
5.2.3 Group 3: shop/living units

This part of the market street will have shop/living buildings. They will be two stories high. This part of the street is for the people who have a bit more money to spend than the owners of group one and two. Those shop/living buildings will be built by the government and those buildings also get inside dwelling water, toilet and electricity. In both designs you have a shop on the ground floor in the front of the building. On the back of the ground floor there is space for making a living room and a kitchen. On the first floor there is space for three bedrooms and a bathroom. Behind the house there is space for making more self built houses or a shed. At the back of the garden there will be a street where people are able to load and unload their goods for the shop.

The shop of the shop/living buildings can be used for doctors, pharmacy, dentist, liquor stores, banks, post office, phone shops shoe stores, butchery and bakery. In this part of the street there are a lot of different shops, which makes it pleasant to walk through the market street.

For the shop/living buildings I have made two designs. Both are built with the same architectural look. These shop/living buildings will be built by the government and placed by two by two. That means that you have got two of the same designs next to each other and then two designs of the other design next to it and so on.

To make a good design for a shop/living building, I first made a list of claims. Some claims I have to take in account and what kind of things I want to put in and on it. For the list of claims you have to look at appendix V.
The final two designs of the shop/living building of group 3. You have to look to the list of claims, all of them are in it.

About the materials:

- The foundation is made of concrete that is dumped on sand.
- The shop/living building is built to have a shop in it and a place where people can live. A brick wall of 200mm thick is used. The roof is made of corrugated iron, under that the basis is made of wood.
- Outside the building there is a toilet and dwelling water. There is also dwelling water inside and a small bathroom in both designs where you have a shower.
- In front side of the shop building there is a big window, people can see from the street what the shop sells inside. Above the window there is place where people can put a sign with the name of the shop and what they are selling.
- On both sides of the building there is an overhang. This is made to prevent the sun from shining into the building through the window keeping it cooler inside the shop and living area of the building.
- A big water tank has been placed at the back of the shop/living building. The sun will heat this water so you get warm water easily.

- At the back of the shop/living building there is space where the shop owners can build another house or a shed by themselves. There is also place to put goods for storage. On the end of the garden there is a road where people can load and upload there goods.

All the maps and side views you will find in the appendix VI.
Picture 5.32 / 5.33: Drawings of group 3.1
Picture 5.36 / 5.37: Sketches of group 4
5.2.4 Group 4: shopping mall

The fourth part of the market is a shopping mall. This mall will only be selling products you can't get in the market street. The shop building will be in the middle eight meters high. It has only a ground floor and consists of three big shops and eight places for eating.

The big shopping mall isn't only good for buying things but is also a good way to lower the unemployment in the area. The mall offers a lot of jobs and that will be good for the area because the unemployment is now a big problem in Mamelodi East.

The shopping mall could have a library, HIFI-store, clothes store, two café/restaurants and six fast-food restaurants. In the whole area you don't have a library. I would be a good idea for the education to have one, where people can get information, borrow and buy books. For the food, there are now plenty of restaurants in the shopping mall. People who relax in the park can buy some food in the restaurants or go out for dinner in the evening.

Behind the shopping mall there is a parking place for people who can afford a car and come to the market street with their own car. Next to the parking place there is a piece of land where people can fix their cars, like changing tires or fix small problems. This piece of land will be made of concrete because there will be oil on the ground and if you use concrete the ground won't be pollute. Next to this place there is parking place for the taxi busses.

To make a good design for a shopping mall, I first made a list of claims. Some claims I have to take in account and what kind of things I want to put in and on it. For the list of claims you have to look at appendix V. After I made this list I began to make some drawings for the design of the shopping mall.
All the maps and side views can be found in the appendix.

About the materials:
- The foundation is a pole foundation with a broad plate floor.
- The big shopping building is only built to have shops where people can buy products which isn’t to buy at group 1,2,3.
- For the walls you are using a hollow wall. Brick 100mm thick from the outside, in the middle there is an open place 30mm thick, then there is the isolation of 50mm thick. Then brick 100mm thick from the inside. The carry structure is made of steel columns. The roof is made from corrugated iron roof, under that the basis is made of wood and steel l-profile.
- Inside the building there are toilets in the restaurants, in the three big shops there only toilets for the employees.
- In front side of the shop building there are big windows, people can see from the street what the shop sells inside. Above the window there is place where people can put a sign on for the shop. Like the name of the shop and what they are selling.
- The building is 8 meters high because then it stays cool inside the shop building. There is place at the back of the stores where you can put goods for storage. On the back of the shop building there is a road where people can load and upload there goods.
- There is a parking place for people and for the taxi busses.
- There is a hall, so people can walk from the park to the parking place.
5.2.5 About the designs of the group 2,3 and 4

The design of the little shop is very similar to the two designs from group 3, the shop/living buildings, and the other way round. The reason why the designs are so similar is for the architectural look of the street. Because otherwise you will get a lot of different shop buildings. The street keeps its own face and is cheerful and peaceful to look at. In this way the design of shop buildings is a part of the design of the market street in total. I think it gives the street a nice look. I put four different designs in the market street to prevent the street from looking boring. All the designs are different but I let return specific architectural things in all the buildings, like an overhang, using the same material and the same front side.

I will also place a lot of trees and a place where people can relax while shopping, you could see it as a little park in the street.

About the design of the shopping mall you have to look to the designs of group 2 and 3. I also tried to let return architectural looks in the shopping mall.

So that the architectural look of the market street will be the same and keeps his nice and peaceful look. I think it is important because it gives the whole market street his own character and it gives a recognisable look in the surrounding area.
Chapter 6
Final vision
6 Final vision

Now that the street patterns are designed and the neighbourhoods defined the compound neighbourhood can be made. The neighbourhoods will be combined by building a ring road around the area. This will keep the big traffic streams out of the neighbourhood so the big barrier will get smaller and the two parts will be able to grow together.

In the research for facilities the following facilities were not around or not enough for the entire area: schools, high school, medical clinics, shops, recreation facilities with a better quality.

In the new plan all these facilities has to be present to make Mamelodi East a self sufficient place.

On the drawing on the next page you can see where the new facilities are located.

Education
In the current situation there are four schools in the research area, one crèche and three primary schools. This is enough to cover the area, but there is no high school and no adult education centre. One new school complex is placed in the North West side. This will be a multifunctional school complex. In the morning hours the school will be used as a primary school, in the afternoon as a high school and in the evening as an adult education centre. With this new school the area will be covered for as far as the necessary education is concerned.

Religion
In the current situation there are four churches. During the research was found that this was enough and nobody mentioned that more churches should be build. One church has to be moved, because of the new neighbourhood centre. This church switched places with a shop that has been moved to new centre. The number of churches stays the same and will still be sufficient for the area.

Employment
The coming of the city centre will bring work to Mamelodi East. This will lower the unemployment level straight away. The coming of the school and the adult education centre will lower the unemployment on the long term. The level of education is low in Mamelodi East. The new school will change this and in these modern times education is necessary for a good job.

Recreation and sports
There is enough space for recreation in Mamelodi East but the quality of it is poor. Sandy soccer fields and no playing equipment, like swings, for the smaller children. By placing sprinklers on the fields and placing playing equipment in the parks or on the grass fields Mamelodi East will be a good place for recreation and sports.

Health care
Two medical clinics came to bring the total of clinics up to four. This will be enough to cover the area. In the Netherlands the average amount of doctors is one per 2300 to 2600 inhabitants. Normally in a country like South Africa these numbers will be higher, but with the big Aids problems in Mamelodi East the numbers should be quite the same. Four clinics will be sufficient for the area.
Picture 6.2: Functions
New situation

Paths
The most important paths are the main roads. These are the roads with the highest density of traffic. These are the gateways to get in and out the area. Within the area the secondary roads will be the most important travel routes, these roads connect the different neighbourhoods. The market street will be an important path for pedestrians. For shopping or to travel from the train station to the taxi-stands. The tertiary roads will be less important paths, mostly used by the residents of a certain neighbourhood.

Edges
The main roads around the area are the most important edges, together with the rail road. These edges can also be seen as the barriers which close off the area. Inside the area the secondary roads are edges. These roads are easily penetrable and so they can't be seen as barriers.

Districts
The centre can be seen as a district en the neighbourhoods in the north and south with their low housing density. The area off course isn't as big as a city and that makes it harder to define districts. In this case the difference in housing density can make the difference between the districts.

Nodes
The most important nodes will be the junctions in the north and south where the main roads around the area come together. The junctions where the secondary roads meet the main roads will also be important nodes. The train will be a big node. The market street with the taxi stands at the beginning and the end will be an important node where a lot of people will be passing or change transportation.

Landmarks
In the research area there are no high buildings. There is nothing like a church tower or another high building rising out above the rest. Because of this fact there are no big landmarks in the area. The highest building will be the four story living unit west of the market street and the shopping centre. This will be the main landmark in the area. A lot of smaller landmarks will be present in the area like the market street, the shopping centre, the train station, the recreation areas, the churches and the schools.
Chapter 7
Conclusions and Recommendations
7 Conclusions and recommendations

Compound neighborhood

How do you make an area recognisable?
The most important thing about recognisable areas is that they must be recognisable for the people who live there. Residents must be able to identify themselves with the area. Keeping the area small, 500 inhabitants and 300 meters across, will create a community. Enough green spaces in the area will make the people feel comfortable and they can relax and have recreation close to their houses. By keeping the traffic out of the area a nice and peaceful neighbourhood will be created.

How do you make and keep an area controlled?
How to make an area controlled is a very difficult question. If you look at the illegal settlements it is impossible to get control back over these areas without very drastic measures. With a good street pattern and defined land you can keep an area controlled.

How can we make a better, more sustainable city plan and what should this plan look like?
A city plan that will still good after 15 years is sustainable. So the plan must be flexible. Enough facilities to cover the area makes the compound neighbourhood will be self sufficient.

How can we make a street pattern with clear hierarchy?
The traffic that does not have to be in the area should not be in the area. Main roads on both sides will prevent this. A secondary road, from which most neighbourhoods are accessible, will lead the traffic from the area to the main roads or the traffic from the main roads to the neighbourhoods. Within the neighbourhoods there must be clear circulation patterns and logical routes.

What is the best location for a market street within the compound neighbourhood?
If you look for a place which lies in the centre of the compound neighbourhood, which is easily accessible and have enough open space to create a centre, there is only one place where the centre can be located. That place is the Hector Peterson Street. In the current situation there are already some shops located there and during the interviews the name Hector Peterson kept coming up. There is a big open space where a park and shops could easily be located.

Market street

-How to make an attractive market street?
For making the market street attractive you have to make all the designs of the shop buildings in the same architectural way, because then you will create a market street which have the same look in the whole street. If to put all the facilities together people will come to the market street, because it is in their neighbourhood and why should people travel for a long time, when they can get all their daily needs in the area.

In the market street there will be a lot of trees and benches. The trees make a nice look in the street and you can sit under the tree in the shadow to relax, it will create a people tree. The benches will give a peaceful and relax image in the street. People can sit down while they are shopping, especially for old people.

-How can we make a market street which is safe for the pedestrians?
To make a market street which is safe for pedestrians you don't allow traffic into your street. The people can easily walk without watching out for traffic. If you don't allow traffic into your market street, the street will be peaceful and quiet.

-What is the best design for a shop in a market street?
About a best design of a shop in the market street you can say that there isn't a best design. Because everyone who will design a shop for that particular market street will make an other design for a shop building.

Because you split the market street into four groups, you have to make four designs for a shop building instead of one. But all the designs are good individual for the group which you designed for. Each group has their own aspects and that you have in all the four designs of a shop building.

But if you try to give the same architectural look to all the different shop buildings of each group in the street you will get a best design for the market street in total.
Recommendations

Compound neighbourhood
A good compound neighbourhood is built with good and recognisable neighbourhoods. The quality of the road patterns has to be good as well as the presence of the needed facilities. A good compound neighbourhood has to provide the daily needs and a place where the inhabitants feel at home.
Research should be done on how to improve the connection between the township and the city. Another question could be how a township like Mamelodi could become a good location for big organisations to start new factories and invest in the future of the township.

Market street
For making the market street ‘more’ attractive you can make a street plan, where you can see how the street will look like and what kind of materials you can use on the ground where the people are walking, and where you put all the trees and benches.

The conclusion on the question how to make a market street safe for pedestrians is answered.

For getting a best design of a shop in the market street, you have to give a few people the assignment to draw there ‘best design for a shop building’ and compare those.
Chapter 8
References
This chapter contains an enumeration of both recommended literature and literature we consulted for the making of this report. All the contacts and authorities we used while we were working for our research are also enumerated in this chapter.

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Pretoria, South Africa.


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Chapter 9
Terms list
9 Terms list

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<tr>
<th>Term</th>
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<tr>
<td>TUT</td>
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<tr>
<td>HVU</td>
<td>Hogeschool van Utrecht</td>
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<tr>
<td>The Pioneers</td>
<td>The first group of students that went to Pretoria, South Africa for the minor PPP.</td>
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<tr>
<td>PPP</td>
<td>People Planet Profit</td>
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<tr>
<td>Hotelling</td>
<td>You can place your shop in an area were you are selling your products without competition, or you place you shop next to a shop which sells the same products and try to get all the custumors, that is called hotelling.</td>
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Drawings of the shop buildings
Appendix I
Lynch’s elements
- **Paths**
Paths are the channels along which the observer customarily, occasionally, or potentially moves. They may be streets, walkways, transit lines, canals, railroads. For many people, these are the predominant elements in their image. People observe the city while moving through it, and along these paths the other environmental elements are arranged and related.

- **Edges**
Edges are the linear elements not used or considered as paths by the observer. They are the boundaries between two phases, linear breaks in continuity: shores, railroad cuts, edges of development, walls. They are lateral references rather than coordinate axes. Such edges may be barriers, more or less penetrable, which close one region off from another; or they may be seams, lines along which two regions are related and joined together. These edge elements, although not as dominant as the paths, are for many people important organising features, particularly in the role of holding together generalised areas, as in the outline of a city by water or wall.

- **Districts**
Districts are the medium-to-large sections of the city, conceived of as having two-dimensional extent, which the observer mentally enters "inside of", and which are recognisable as having some common, identifying character. Always identifiable from the inside, they are also used for exterior reference if visible from the outside. Most people structure their city to some extent in this way, with individual differences as to whether paths or districts are the dominant elements. It seems to depend not only upon the individual but also upon the given city.

- **Nodes**
Nodes are points, the strategic spots in a city into which the observer can enter, and which are the intensive foci to and from which he is travelling. They may be primarily junctions, places of a break in transportation, a crossing or convergence of paths, moments of shift from one structure to another. Or nodes may simply be concentrations, which gain their importance from being the condensation of some use of physical character, as a street-corner hangout or an enclosed square. Some of these concentration nodes are the focus and epitome of a district, over which their influence radiates and of which they stand as a symbol. They may be called cores. Many nodes, of course, partake in the nature of both junctions and concentrations. The concept of node is related to the concept of path, since junctions are typically the convergence of paths, events on the journey. It is similarly related to the concept of district, since cores are typically the intensive foci of districts, their polarising centre. In any event, some nodal points are to be found in almost every image, and in certain cases they may be the dominant feature.

- **Landmarks**
Landmarks are another type of point reference, but in this case the observer does not enter within them, they are external. They are usually a rather simply defined physical object: building, sign, store, or mountain. Their use involves the singling out of one element from a host of possibilities. Some landmarks are distant ones, typically seen from many angles and distances, over the tops of smaller elements, and used as radial references. They may be within the city or at such a distance that for all practical purposes they symbolise a constant direction. Such are isolated towers, golden domes, and great hills. Even a mobile point, like the sun, whose motion is sufficiently slow and regular, may be employed. Other landmarks are primarily local, being visible only in restricted localities and from certain approaches. These are the innumerable signs, store fronts, trees, doorknobs, and other urban detail, which fill in the image for most observers. They are frequently used clues of identity and even of structure, and seem to be increasingly relied upon as a journey becomes more and more familiar.
Appendix II
Interviews
The second and the third time we visited Mamelodi, we took some interviews from People who work or live in Mamelodi-east. The purpose of these interviews is to find out what the local People in Mamelodi need.

A 1.1 Interviews second visit to Mamelodi

First respondent:
Name: Mr. Eric Moshoma
Age: 54
Lives since 1986 in Mamelodi
Job: Leader of the community centre of Mamelodi East

How do you travel between your home and your work?
He walks between his home and his work, the distance is 2 km's.

How would your ideal neighbourhood look like?
More offices, more sport facilities, a library, HIV centre, more schools, a high school.

What do you think of the public transport?
I am satisfied about the transport, although there isn't a train station in extension 10. Taxi busses are affordable. For R3,- you can go anywhere in Mamelodi. For R6,- you can go to the city centre.

What are the best materials to build a dwelling?
Toilets and electricity are important. Electricity is prepaid in Mamelodi. Bricks are used as building material.

How many rooms does a dwelling have and how many people live in a dwelling?
A dwelling has one or two rooms. In one dwelling live about 6 people.

What do you think of a more stories house?
That's a good idea.

Do you want a market street in the centre of the area with a lot of facilities?
That's a good idea.

Is it a good idea that the market street will only be used by pedestrians?
That's a good idea.

Do you have any other ideas/comments?
The government doesn't do enough for Mamelodi. They must arrange more facilities for Mamelodi. Foreign money is needed to accomplish this.

Thanks for your cooperation!!!
Second respondent
The second respondent is a man who owns a prefab-walls workshop for informal settlements at the corner of Mohwelere Street and Moreltwa Street.

What's your religion:
ZCC, dove

What kind of dwelling do you live in?
He lives in a shack with toilet and electricity.

How long are you living in Mamelodi?
13 years. He moved in 1991 from Mpulanga to Mamelodi.

Do you like living here?
He prefers living in a formal settlement.

How do you go to your work?
I travel with my Bakkie. I also use it to deliver my products to customers.

What can be changed about the neighbourhood?
The neighbourhood needs more government rules. Formal settlements are needed. I would like my workshop to be in a formal settlement. Toilets and electricity are needed.

What kind of social facilities are needed?
Houses are needed

What do you think about the public transport?
The public transport is good.

If you could change your house, what would you change first?
He is quite happy about his house. He got a piece of land from the government with a toilet, where he build his own house on.

What things do you need in the house? (Toilet, douche or kitchen)
Two rooms

How many people live in a house?
Father, Mother, two children and grandchildren

What do you think of a more stories house?
Good idea

Do you want a market street in the centre of the area with a lot of facilities?
Good idea

Is it a good idea that the market street will only be used by pedestrians?
Good idea

Do you have any other ideas/comments?
Things must be more controlled by the government. Water, electricity, Toilets are needed. The most important is to get formal settlements in Mamelodi east.
A 1.2 Interviews third visit to Mamelodi

First respondent
This interview was taken from a woman in the age group of 40+. She lives in an informal dwelling at the corner of Motshidi street and Mongana street in Mamelodi-east. She has been living there since 1999.

Do you like living here?
Yes.
Do you have a job?
No unemployment is a big problem in Mamelodi.
What kind of social facilities does the neighbourhood need?
The schools are too far away.
Is the public transport good?
Yes
Do you think the prices are reasonable?
Yes. R3 for a trip to Mamelodi-west is okay
With how many people do you live in your house?
4 persons
How many rooms do you have?
5 rooms
From what kind of materials is your house build?
Corrugated Iron (Golplaten)
Do you like houses with more stories?
Yes it would be comfortable
Where do you do your shopping's?
Denneboom complex. For food. 45 min. with the taxi bus. The costs are R3,-
Is there some kind of centre in Mamelodi-east?
No
Do you think it is good to put all the shops and facilities together in a main street?
Yes, that would be a good idea
Do you think the streets are safe for traffic?
Yes
Is it a good idea that this street will only be used by pedestrians and not for taxi busses?
Yes
Is there a lot of crime in this neighbourhood?
It's bad. There are a lot of robberies in the weekends. Mostly cell phones. Drugs are a big problem and are probably the cause of a lot of robberies.

Do you have any other ideas/comments?
More Jobs

Thanks for your cooperation!!!
Second respondent
The second interview was with Kleinbooi. A 15 year old male resident in Mamelodi who still lives with his parents. They live with a family of five persons. They live in a formal dwelling and have built themselves an extension to the house. He has been living in Mamelodi for is whole life.

Do you have a job?
No, I am still going to school.

How do you go there? Walking/public transport/car/bike
I take the train and taxi bus to Pernif, where the school is. The trip takes about an hour.

What kind of social facilities does the neighbourhood need?
a high school

Is the public transport good?
Sometimes yes, sometimes no. For the taxi buses you sometimes need to wait a long time?

Do you think the prices are reasonable?
Prices are fine. You get some discount when you wear a school uniform.
You pay 2,50 to Mamelodi west. In the weekends you don't get this discount.

If you could change your house, what would you change first?
We need an extra window in front. We want it in front because you'll have a good view.

How many rooms do you have?
6 rooms. It's enough for this family.

Do you like houses with more stories?
I prefer single level houses.

Is there some kind of centre in Mamelodi-east?
No, we do our shopping in Denneboom, about 45 min. from here.

What is/are the main street(s) in this area?
Hector Picaza street

Where are the most shops located?
Tshippo street

Do you think it is good to put all the shops and facilities together in a main street?
Not a good idea. The people who sell stuff would get jealous of each other and you would get fights. A big supermarket however would be a good idea.

Do you think the streets are safe for traffic?
Yes they are safe and good.

Is it a good idea that this street will only be used by pedestrians and not for taxi busses?
Yes it would be a good idea to allow no cars in this street.

Is there a lot of crime in this neighbourhood?
Yes but it is better than in Mamelodi west. Mostly robberies. They first ask you what they want and if you don't give it he points his gun. I haven't been robbed myself but it happened to a friend.

Do you have any other ideas/comments?
Recreation areas for sports would be nice.

Thanks for your cooperation!!!
Third respondent
The third interview we took from an 18 year old guy who we met at a
daycare centre.

Do you have a job?
No I am unemployed. It is hard to find a job.

What kind of social facilities does the neighbourhood need?
Recreation area.

Is the public transport good?
Yes.

Do you think the prices are reasonable?
Yes.

With how many people do you live in your house?
Twelve people

How many rooms do you want?
Five

From what kind of materials is your house build?
Bricks and corrugated iron (golfplaten)

Do you like houses with more stories?
Yes.

Is there some kind of centre in Mamelodi-east?
No.

What is/are the main street(s) in this area?
Hector Peterson

Where are the most shops located?
Also Hector Peterson, it is also the main route for taxi's and busses.

Do you think it is good to put all the shops and facilities together in a
main street?
Yes.

But do you think there would be quarrels between the shop owners?
Yes, if they sell the same things.

Do you think the streets are safe for traffic?
Not so safe, the traffic is dangerous.

Is it a good idea that this main street will only be used by pedestrians
and not for taxi busses?
That would be a good idea.

Is there a lot of crime in this neighbourhood?
There is not so much crime. There is a lot of social control and the
police is doing a good job.

Do you have any other ideas/comments?
More jobs are needed. Drank abuse is a problem.

Thanks for your cooperation!!!
Fourth respondent
The fourth interview we took, was taken form Jowi Metlele. Jowi is an artist and makes visual art. He also is a community worker and a tour guide in Mamelodi and joined us the first time we had visited Mamelodi. We contacted him to guide us for this visit. His age is about 34 years (he didn't want to tell us exactly). He lives in a formal settlement in our project area, Mamelodi east and has been living in Mamelodi for about 30 years now.

Do you like living here?
Yah man, It's great!

How do you go to your work? Walking/public transport/car/bike
I go by taxi. It takes me about 20 min. My job is in Mamelodi west.

What kind of social facilities does the neighbourhood need?
An art culture centre is nice. For music, drama, poetry, books and a museum.

Is the public transport good?
Yes
Do you think the prices are reasonable?
The prices are fair

If you could change your house, what would you change first?
The roofing system.
With how many people do you live in your house?
seven
How many rooms do you have?
We have six, but want to have eight

From what kind of materials is your house build?
Bricks and a asbestos roof and sink corrugated iron plates

Do you like houses with more stories?
Yes it's good. It safes you space and is good for agriculture.

Is there some kind of centre in Mamelodi-east?
Hector Peterson
Do you think it is good to put all the shops and facilities together in a main street?
Good idea. The market street would be ideal
Do you think the streets are safe for traffic?
Partially
Is it a good idea that this street will only be used by pedestrians and not for taxi busses?
Good and safe
Is there a lot of crime in this neighbourhood?
The crime has decreased a lot and there is a lot of social security.
Do you have any other ideas/comments?
Unemployment, community life, social development

Thanks for your cooperation!!!
Fifth respondent
The fifth interview we took from a police agent at the police department in Mamelodi east. The agent is not an inhabitant of Mamelodi.

What kind of social facilities does the neighbourhood need?
Sports facilities for Rugby (there is only one), tennis court (there are five) and cricket field (there are none)

You know a lot about criminality, what is the biggest problem?
When the working people are free, a lot of robbery's take place, so in the weekend it's dangerous.

How about public transport? Is good enough to transport the citizens?
Yes the public transport is good enough, but there are some problems with illegal taxi busses, because they driving dangerous, and don't have any we can approach as a police officer.

How many policemen work at this station, and are on patrol in east Mamelodi?
We got 3 patrol fans, with two persons each. And at this moment there are working two to three persons at the police station. That doesn't seem a lot, is it enough to control this area? (officer starts laughing) No, it's almost impossible to deal with East Mamelodi.

What about other facilities like hospitals? Are they represented enough?
No there is only one hospital for east Mamelodi, there are 3 clinics, but there only open during the week day. There are more clinics but their not certificated.

Why aren't there more facilities?
It's too expensive for the government.

What is/are the main street(s) in this area?
That is the road in front of the police station.

Do you think there should be a shopping area in east Mamelodi?
Yes that would be a good idea, because all the citizens have a change to buy some goods themselves. Nowadays a lot of people can't afford to go to Denneboom shopping centre. A few little shops could be in front of the shopping centre, only if they got a permit.

Is it a good idea that this street will only be used by pedestrians and not for taxi busses?
No I think that would only cause trouble with the taxi busses.

Do you have any other ideas/comments?
Yes employment must be created, because 85% is unemployed at this moment.

Thanks for your cooperation!!!
A 1.3 Interviews fourth visit of Mamelodi

1st interview

The first interview was taken from Mister Gubay. He owns a tuck store in Mathane avenue. He sells bread, fish drinks etc.

1. For how long do you have this shop?
1999

2. Where do you get your stock?
I get it at the Big save. Big safe is a big wholesaler at the Denneboom complex

3. How do you get it here?
I go to the big safe by taxi. Every day the bread gets delivered to my store ass well as the newspapers. They are supplied by other companies.

4. What are your best selling products?
Sugar, bread, fish, tea

5. Is there a lot of competition with other shops?
No, we all have similar prices

6. How big is your family?
4 people live from the shop

7. In what kind of house do you live?
RDP

8. Where do you live?
Directly behind the shop.

9. Can you make a good living from your shop?
Not very much. He earns 60-80 rand in weekdays. In weekends 150-200 rand.

10. Are your prices always on a similar level or do they change a lot?
The prices do not change a lot, but my costs are influenced by taxi prices and suppliers prices.

11. What influences your prices the most? Consumer demand or supplier prices?
Supplier prices, I always try to be a bit cheaper than my competitors.

12. Can you choose between a lot of suppliers?
A few

13. Where are the most shops located?
Nearby the Victoria shop. It's the biggest shop in Mamelodi east.

14. Are there more shops needed, and what kind of shops?
Yes, a supermarket

15. Aren't you afraid that you loose your business when a big supermarket opens doors in Mamelodi-east?
No, Maybe I'll loose my business but it would be much better for the neighbourhood.

16. Do you think it is good to put all the shops and facilities together in a main street?
Yes, good idea.

17. What would be the best street for business?
This street, Methane avenue

18. Do you think the streets are safe for traffic?
Yes

19. Is it a good idea that this street will only be used by pedestrians and not for taxi busses?
No, a combination would be the best solution. So a big sidewalk and room for de taxi busses

20. Do you think trees would stay in place if they where planted here?
Yes, they would. And it would be very nice to have some.

21. Do you have any comments, or things that you think that are important for this neighbourhood.
Supermarket, surgery, furniture shop, clothing shop
2nd Interview

1. For how long do you have this shop?
   6 months
2. Where do you get your stock?
   The market of Marabastad
3. How do you get it here?
   Rented Bus
4. What are your best selling products?
   Banana
5. Is there a lot of competition with other shops?
   No there isn't
6. How big is your family?
   He is the only one who profits from the shop
7. In what kind of house do you live?
   Shack, informal
8. Where do you live?
   In the neighbourhood behind the shop
9. Can you make a good living from your shop?
   No not enough, about 70 rands per week
10. Are your prices always on a similar level or do they change a lot?
    They are constant.
11. What influences your prices the most? Consumer demand or sup-
    plier prices?
    The suppliers prices differ, but I keep a constant price for my customers.
12. Can you choose between a lot of suppliers?
    No, I have one supplier at the market.
13. Where are the most shops located?
    Hector Peterson street
14. Are there more shops needed, and what kind of shops?
    a big supermarket would be nice
15. Do you think it is good to put all the shops and facilities together
    in a main street?
    Yes, good idea
16. What would be the best street for business?
    Hector Peterson street
17. Is it a good idea that this street will only be used by pedestrians
    and not for taxi busses?
    No cars must be allowed
18. Do you think trees would stay in place if they where planted here?
    Yes, they will stay in place, and would be very nice.
19. Do you have any comments, or things that you think that are
    important for this neighbourhood.
    Supermarket, butcher
Appendix III
Dwelling units
A2.1 The RDP dwelling unit

Figure A2.2:
Example of a RDP formal living unit. Note that there are different versions of the RDP house. Though the scale is the same the plans of the house might be different from one another.
A2.2 The 51/9 dwelling unit

Fig. A2.2:
Example of a 51/9 formal living unit. Note that there are different versions of the 51/9 houses. Though the scale is the same the plans of the house might be different from one another.
A2.3 The shack with toilet

Figure 6.2: Example of an informal dwelling unit with toilet
Appendix IV
Unemployment in Mamelodi
Unemployment

An analysis of formal employment in Tshwane indicates that nearly one third (33%) of Tshwane inhabitants are employed. This means that approximately 654,457 inhabitants occupy some sort of formal sector employment while 404,809 people remain unemployed. This figure includes a small percentage of people who have given up looking for work and a fraction that choose not to work. It is assumed that this group of people largely represents the number of people involved in informal sector activities in pursuit of a livelihood.

A further 29.6% or 587,200 people cannot be employed because they are either younger than 15, older than 65, or are unable to work due illness or disability.

Unemployed people and those who cannot work in Tshwane account for half the population of the city. Scholars, students and pensioners are another group that is excluded from the analysis of formal employment. This group account for 14.2% or 282,529 people in the city.

Approximately 3% of Tshwane’s population is involved in other activities, namely are currently home-makers or housewives and are seasonal workers who are presently not working.

In Mamelodi there is nearly a 50 percent unemployment rate. The employment figures of Mamelodi look as followed:

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed</td>
<td>44,439</td>
<td>29,176</td>
</tr>
<tr>
<td>Unemployed</td>
<td>33,205</td>
<td>32,458</td>
</tr>
</tbody>
</table>

South Africa is a middle-income, emerging market with an abundant supply of natural resources. South Africa has got a well-developed financial-, legal-, communications-, energy-, and transport sector as well a stock exchange that ranks among the 10 largest in the world. The country contains a modern infrastructure, supporting an efficient distribution of goods to major urban centres throughout the region.
Appendix V
List of claims of the shop buildings
List of claims which are relevant for group 2,3 and 4:
- They have to use easy materials to built with. Materials which can reuse and which are light. The building has to be build easily.
- The design has to be placed in the design of the market street.
- Dwelling water, toilet and electricity.
- In the front of the shop building there has to be a way to look into the shop, so people are able to see from the outside what the shop is selling. (inside)
- Space for putting the name of the shop in front of the building.
- The wall between two shops has to be thick, so nobody is able to hear noise form the other side.
- The shop has to be cool from the inside. So you have to look which kind of materials you should use. Most important is the roof.
- There has to be a lot daylight inside the shop.
- The sunlight can't go inside the shop, otherwise it will get warm inside.
- There has to be enough ventilation, to get fresh air inside the shop. Natural ventilation.
- A place where the shop owners are able to load and upload there goods.
- Maybe you use solar-energy.

List of claims which is only relevant for group 1:
- Dwelling water, toilet and electricity.
- There has to be place on the piece of land for building a shop and a house.

List of claims which is only relevant for group 2:
- The design have to have the same look as the shop/living buildings from group 3 and the shopping mall of group 4.
- There has to be place for building a house on the same land where also the shop is built.

List of claims which is only relevant for group 3:
- The design have to have the same look as the shop building from group 2 and the shopping mall of group 4.
- There has to be place for building a house, a shed or for storage on the same land where also the shop is built.
- How to make a shop and a living place on a small piece of land.

List of claims which is only relevant for group 4:
- The design have to have the same look as the shop building from group 2 and the shop/living buildings of group 3.
- There has to be some shops which sell products what you can't get in group 1,2 and 3.
- There has to be place for storage for the shops.
- There should be a place where you can drop off by the taxi busses.
- There should be place for repairing cars and taxi busses.
Appendix VI
Drawings of the shop buildings
**Gevelconstructie**

- Lateen: Houten lat 70x200mm dik
- Gevelmateriaal: 100 a 200mm kalkzandsteen

**Gevelopeningen**

- Montagekozijnen: tropisch hardhout met FSC-keurmerk
- Buitendeuren: tropisch hardhout met FSC-keurmerk
Gevelconstructie

Laten: Houten laten 70x200mm dik of Houten laten 100x200mm dik
Gevelmateriaal: 100 a 200mm kalkzandsteen
Binnennuwen: 100mm Kalkzandsteen

Gevelpanningen

Montagekozijnen: tropisch hardhout met FSC-keurmerk
Buitendeuren: tropisch hardhout met FSC-keurmerk
Binnendeuren: tropisch hardhout met FSC-keurmerk