

# ***GOEDEHOOP :***

## ***A CASE STUDY FOR URBAN RENEWAL***

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## PROLOGUE

### Why Goedehoop as a case for urban renewal?

Since the first black location, Skoolplaaz was established in 1875. The so-called area 'Goedehoop' has remained "frozen", unaffected by the bustling growth of Pretoria in an easterly direction. It is an area of great political controversy and one rich in culture, history and symbolism.

Associated with 'coolies' and 'kaffirs' the Steenovenspruit served as a border between white Pretoria Central and Goedehoop. Considered as an hygienic threat to Pretoria Central, Goedehoop - once a bustling commercial and residential area, was cleared in the 1960's, serving up to date as a derelict buffer strip. Marabastad is the only surviving history in the area, rich in flavour of the culture and community that once thrived in Goedehoop.

In light of the recent political changes in South Africa, the opportunities for Goedehoop to act as a cultural integrator and the Steenovenspruit as interface between 'black' and 'white' has far reaching political symbolism. The re-development of the derelict area of Goedehoop can achieve this and span the lost generation between the Apartheid city and the post-Apartheid city. Situated in the heart of the New Capital of South Africa, it will stand as a model for the whole country.

### Why develop in the Goedehoop area?

In physical terms, there is a breakdown in the spatial continuum from east to west. Goedehoop not only acts as a buffer strip between Marabastad and Pretoria Central, but also between Pretoria West (a white residential area) and Pretoria Central. Districts are therefore isolated, and detached from the main CBD. If spatial and cultural integration are achieved, improved circulation and a wider range of opportunities for the individual will be realised. For this to happen, the infill of the Goedehoop is required.

### Economic viability for re-development of Goedehoop

Prior to the clearing of the area in the 1960's, Goedehoop was a hive of small business activity and informal trade. By the turn of this century, the only solution to South Africa's run-down economy will be this type of commercial activity. In these terms, Goedehoop presents itself as an ideal opportunity as a catalyst for business: the availability of open land, competitive land prices in comparison to an over-crowded and expensive market in the eastern suburbs, provides the opportunity for larger businesses to locate in the area, with smaller businesses and informal trade benefiting from their presence.

If a move to a more compact urban environment is the only answer to dwindling energy supplies and limited access to resources, the open area of Goedehoop provides a good opportunity for development. If one considers that the workforce of South Africa, both black and white, are separated from their workplace in the cities (situated in suburbs and townships on the city periphery), and considering increasing transportation costs, the need to re-introduce a strong residential component into the city is justified. Goedehoop can fulfil these demands where a strong residential component supports commercial activity in an otherwise 'dead' CBD. The re-introduction of a 'people component' to the city centre will also promote a genius loci and return sense of community, something that is much needed in Pretoria City.

### How should Goedehoop be re-developed?

The success of Goedehoop as a commercial and residential area, before it was cleared in the 1960's, and the continued commercial success of Marabastad today, is the fine textured, compact and small block size of the development. Allowing a great degree of permeability or access to facilities, they worked well at a pedestrian level and this was of benefit to the small businessman. Part of the failure of Pretoria Central as a CBD is its mega-block that prevents a high degree of permeability and pedestrian access.

If we acknowledge that small business and informal trade is the key to economic wealth, and their success is dependant on the pedestrian, then we can turn to Marabastad as precedent. In these terms, the existing grid of Marabastad can be extended over Goedehoop, promoting in the future, an environment that works well at a pedestrian level, and fits into the existing city structure. At the same time, there should be a mixed-use function, buildings serving residential, commercial and office needs. There should also be a sufficient number of catalysts or large commercial stores. Acting as natural generators of people and the wealthy, the small businessman and informal trader can benefit from their presence.

The incongruity of scale between Pretoria Central and the Pretoria West residential area can be met with a 'step down' approach in Goedehoop, taking place from east to west.

The opportunity of the Steenovenspruit as a seam between two previously isolated districts, should be realised where it can be re-developed as a waterfront and natural corridor. Its importance as a city boundary will then be realised in the process.

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# **PART ONE :**

# **PERSPECTIVE**

## 1. PERSPECTIVE

### 1.1 INTRODUCTION

The city is more than just an expression of man's understanding of the universe, but is a place where communication channels converge, goods are exchanged and the impromptu dialogue between shopowner and passerby is initiated. The city is central to any society and is a cultural stage where players act out their lives through the interaction with others.

The modern city does little to fulfil its role as a cultural stage where participation of the individual, his relationship with his neighbour and environment is fostered. Far short of this, it is a beast diseased with the vehicle, pollution and towers of concrete and glass, that respond neither to the needs of the individual and the unique qualities of place. This 'blandness', 'placelessness' and 'unspiritual' quality of space as it is described, has been compounded in recent decades by: the unsympathetic style of modernist architecture and their policy to open space; the functionalist approach to zoning where the city is sliced into discrete elements; and the dominance of major institutions that deny the importance of the individual's role in city building, where the form of the city is informed by the actions and needs of the community, and not by specialists detached from the local context.

If we are to return a sense of place and spirit to the city, then current planning and design principles need to be re-evaluated. A city form is needed that responds to the social, cultural and economic needs that are unique to the inhabitants of each city. Informed by the needs of the community, an urban environment is created that is truly diverse in nature, where the city centre is re-established as an expression of human activity and cultural heart of society.

### 1.2 INTENTION

The purpose of this study is the formulation of a design process, to understand certain urban design principles and their application in a design scenario. The intention is ultimately to structure a framework that will guide future development in achieving a city form that is both legible and reflect the qualities of place.

### 1.3 STATEMENT

*"... it will concentrate especially on one particular visual quality: the apparent clarity or 'legibility' of the cityscape. By this we mean the ease with which its parts can be recognized and can be organised into a coherent pattern. Just as this printed page, if it is legible, can be visually grasped as a related pattern of recognizable symbols, so a legible city would be one whose districts, landmarks or pathways are easily identifiable and easily grouped into an overall pattern."* (Lynch, 1960 : 3).

Man's development is determined by his relationship with his peer and the surrounding environment, both rural and urban. They are both a source of reference from which he learns and accumulates knowledge, and depending on the level of interaction with either, a built form therefore emerges that reflects either a more or less evolved state of consciousness. It is therefore necessary that a close relationship between individual and environment is fostered, if a built form that reflects the unique qualities of place and plurality of culture is to emerge. This can only be achieved if the environment we create is flexible and offers the opportunities necessary for interaction and participation. Fundamental to this is how effectively the individual operates within his environment. Lynch's case studies of American cities reveal that the individual's operational knowledge of a city is minimal:

*"It's much the same all over ... it's more or less just commonness to me ... I mean sometimes you can't decide which avenue you want to go on because they're more or less just the same, there's nothing to differentiate them."* (Lynch, 1960 : 31) and in another extract, *"It's as if you were going somewhere for a long time, and when you get there, there is nothing there after all."* (Lynch 1960 : 41).

Both extracts reveal the state of many cities, where placelessness and the lack of 'imageability' is manifested in the city form. Due to this, the individual is unable to operate effectively within the city. Overwhelmed by feelings of insecurity, confusion and disorientation, he is unable to experience the city and its peoples, the principles of participation and flexibility undermined.

Biljon, in his thesis cites Appleyard (1976) who speaks of the city as an educator (Biljon, 1986 : 2). By this the individual should experience all the delights and mysteries which the city holds, his existence tempered and enriched with cultural diversity and opportunity. In these terms it is necessary that the city's form communicates a legible, coherent set of patterns to the observer, within which he can operate successfully in moving from one destination to the next.

### 1.4 GOALS

From the above discussion, a set of goals can be established:

- a high degree of legibility and sense of place;
- the promotion of a built form that reflects the plurality of culture, and uniqueness of place;
- a diverse environment, where opportunity and experience allow a spirit of place to develop.

In the Pretoria context, the latter are of great importance in promoting:

- a city form that reflects Pretoria as the New Capital of South Africa;
- a city form that is an expression of the diversity of culture and tradition that is unique to this country;
- a city form where through the sharing of resources, a basis for community is developed, displacing ignorance and hate, those vestiges of Apartheid that have denied a richness in the physical and spiritual qualities of space and the art of placemaking.

### 1.5 THE PROCESS

Before a solution can be provided and a set of guiding urban design principles can be established, we need to look at the whole, and understand the dynamics of the city, how it operates and the forces that have shaped its form. This way the designer can make informed decisions.

The report is divided up into five sections:

1. Perspective;
2. Historical and philosophical context;
3. Economic and cultural context;
4. Physical context; and
5. Design intervention.

Within the first four sections, a set of issues are established from which a set of principles and objectives are derived to guide development. The last section is the synthesis of this data, into forming a final framework drawing.

The process used is therefore:

**Analysis - Synthesis - Design**

1.6 STUDY AREA

The study area chosen can be loosely defined as Pretoria Central and a portion of Pretoria West. The framework is defined by Paul Kruger Street in the east, Maltzan Street in the west, a railway line servitude to the south and the Apies River and Skinnerspruit to the north.

The latter three naturally function as boundaries to the site. Paul Kruger Street was chosen, as it includes important structural elements like Church Square, the Museum and the Zoo along its axis, while Maltzan Street in the west, forms the boundary for Pilditch Sports Stadium (Fig. 2).

Seven districts have been identified in the area: the open area of Goedehoop is central to the framework and is bound to the east by Pretoria Central; Marabastad to the north; an industrial area to the south; and to the west, the Showgrounds and Pilditch Stadium, a white residential area and state property (Fig. 28)

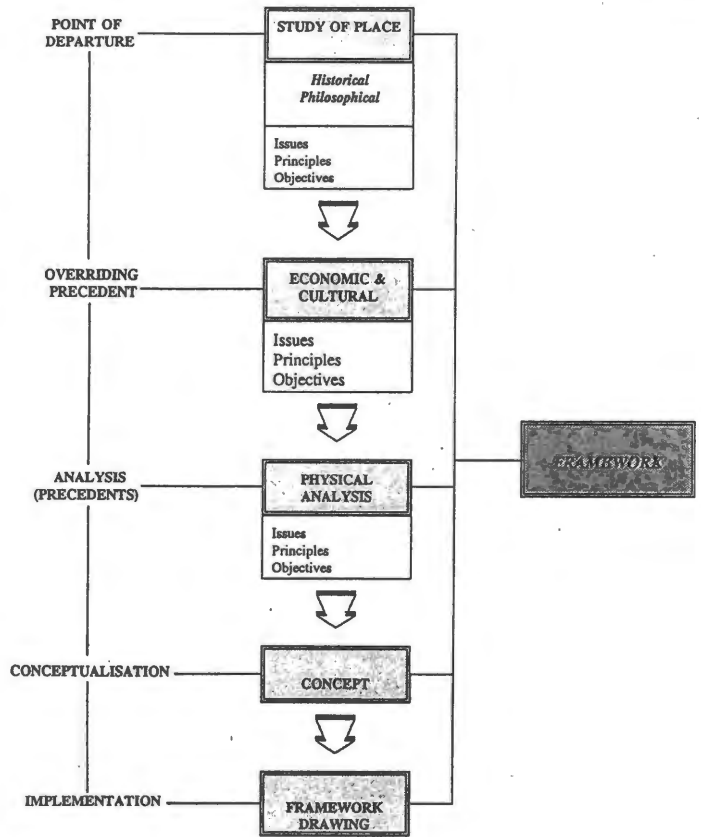
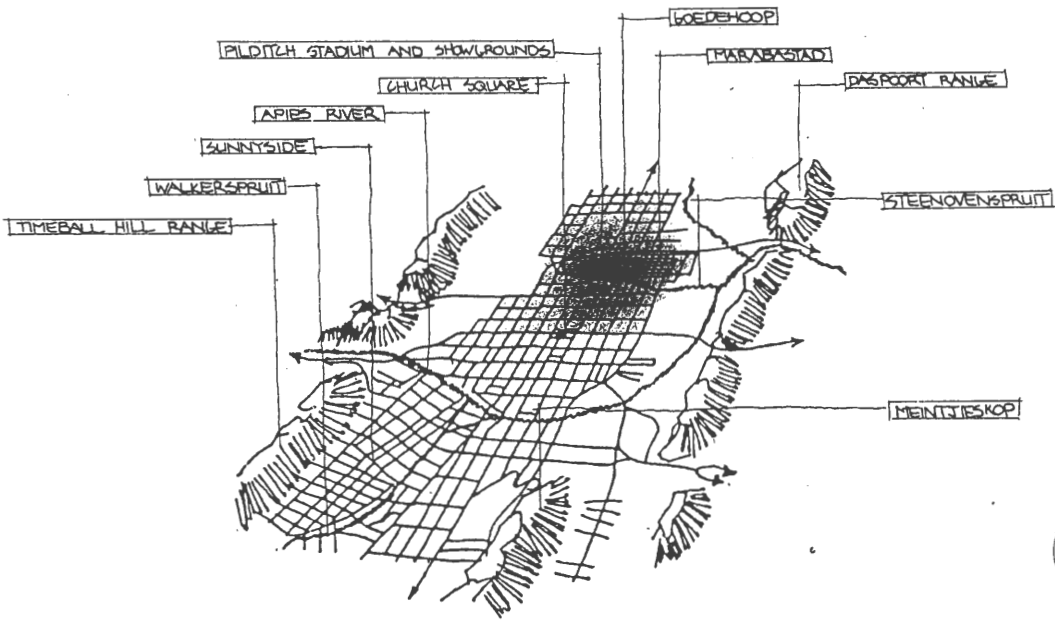
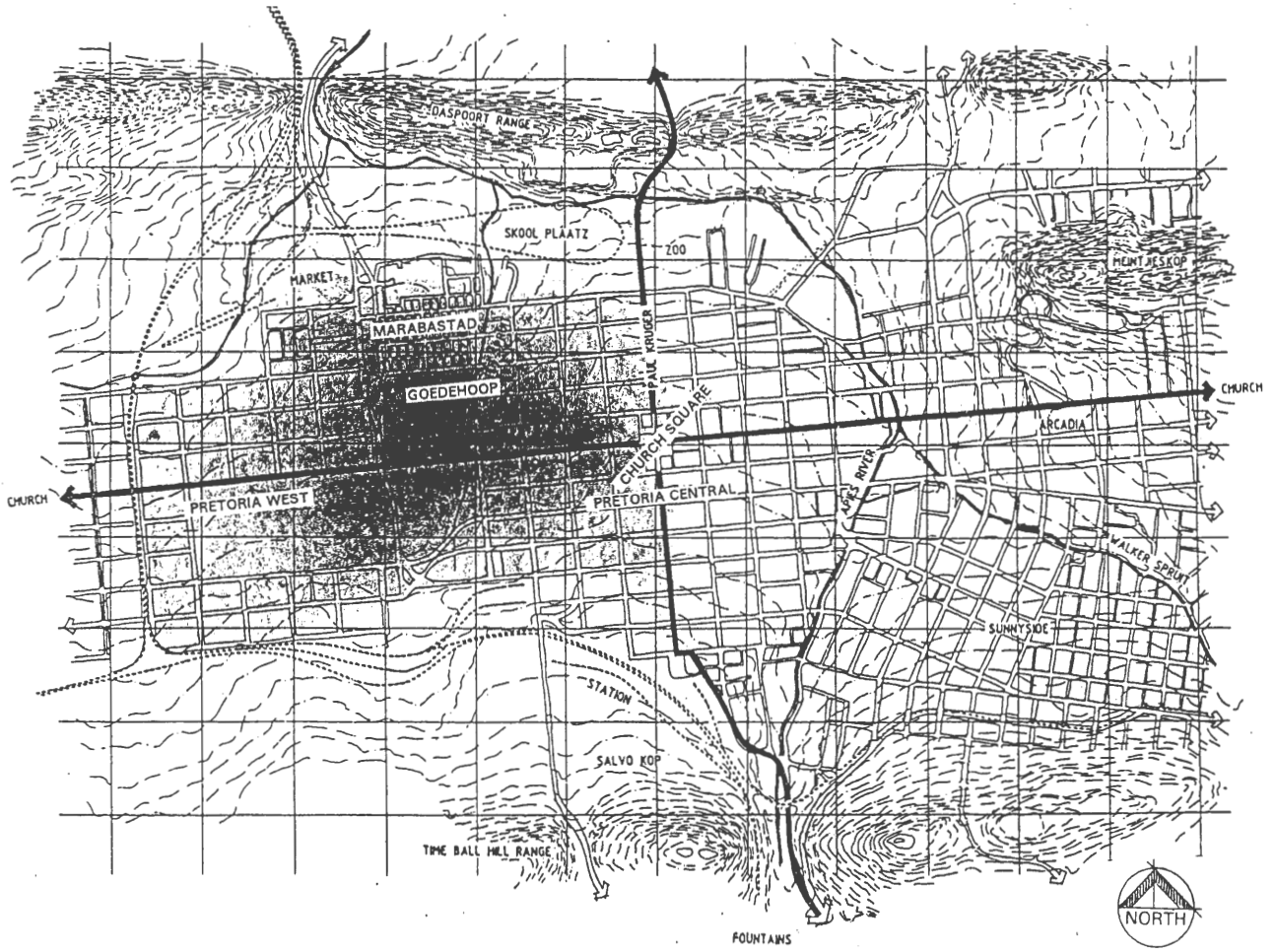


Figure 1: The Process





 STUDY AREA

Figure 2:  
**LOCATION**

# **PART TWO :**

# **HISTORICAL AND PHILOSOPHICAL CONTEXT**

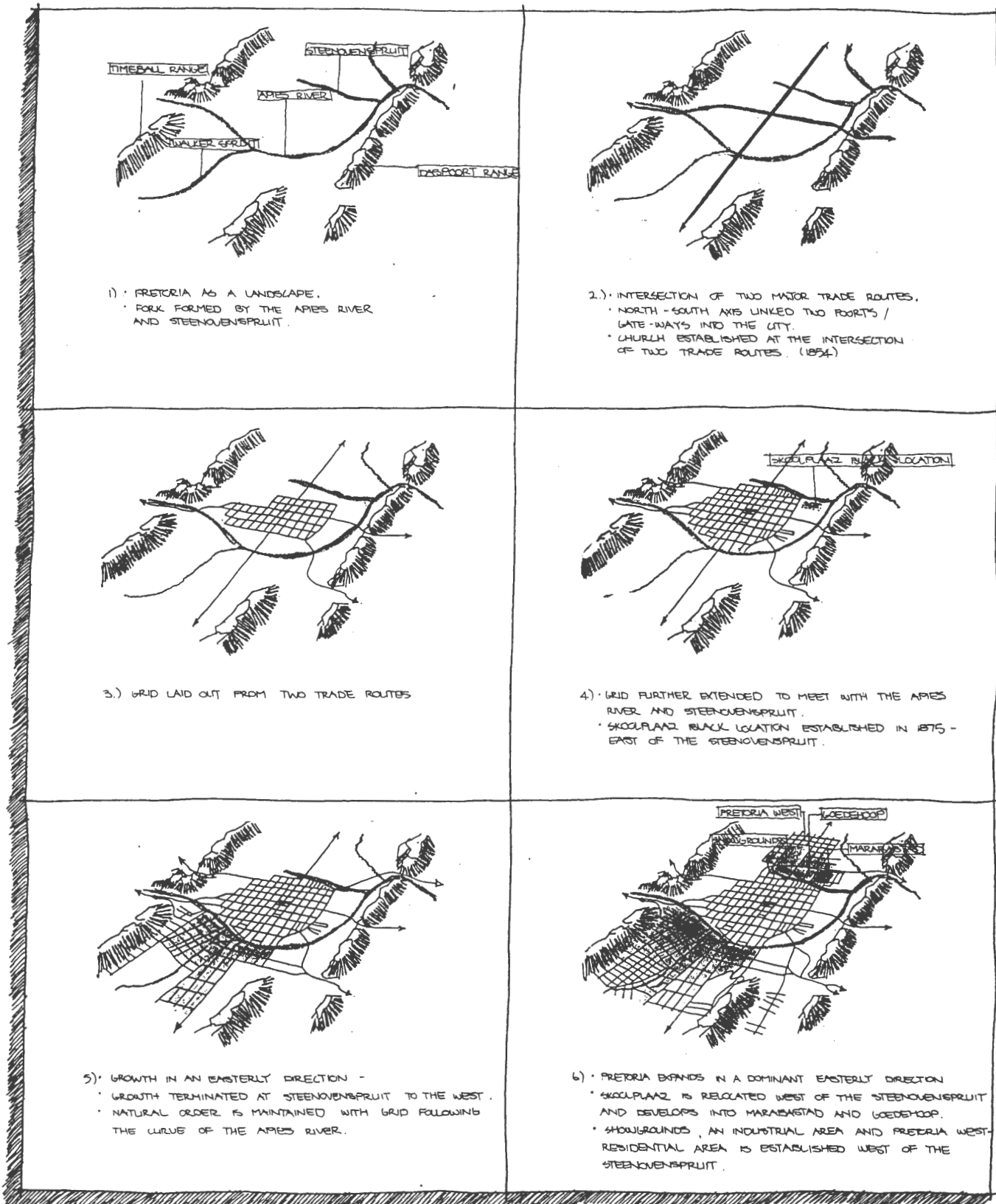


Figure 6: Definition of the public realm (Jordaan, 1989)

Figure 5: Historical development (Jordaan, 1989)

built (Fig. 7 and Fig. 8). Slowly, Church Square was defined, receiving more status as a public place and civic centre.

During this same period there was a strong thrust in establishing green/open areas within the city. These include the Zoo (1899), at the northern end of Paul Kruger Street, Princess Park (1892) situated along the Steenovenspruit, the Botanical Parks (1874), later developed as Burgers Park (1889) and the mass planting of Jacaranda trees along all streets (1888 - 1907). The inherent link with nature was continued, and also gained expression in the built form of Pretoria.

### 2.2.3 British Rule (1905 - 1930)

During British rule between 1905 and 1930, the north-south and east-west trade routes were further strengthened when additional government institutions were located along it, namely the Transvaal Museum (1905) and the station (1910), situated at the southern end of Paul Kruger Street, and the Technical College (1920). The station was to effectively serve as a link with nature.

It was during this period that the Reformed Church Congregation, erected by the Afrikaners in 1854 at Church Square, was demolished by the British, who recognized it as a symbol of Afrikaans patriotism (Jordaan, 1989).

### 2.2.4 The years following British Rule

This era is marked by the International Style of Architecture, increased industrialisation and the policies of Apartheid.

#### Issues:

- a natural order evolved where there was a close relationship developed between individual, city and natural environment. This is expressed in the first buildings and their close relationship to the street edge, and the placing of the town in the fork of the Apies River and Steenovenspruit for an accessible source of water.
- there is a strong symbolism attached to Paul Kruger Street and Church Street as the original trade routes of Pretoria. Both are physical links with nature and form the two main axes from which the grid was laid out.

Church Square at the intersection of these two axes symbolises the cultural and political heart of Pretoria.

- an environmental ethic developed concurrently with Pretoria's political consciousness and gained expression in the number of parks that were developed in the Kruger era. These were important public places. Both the Zoo and the Botanical Gardens were places of interest and informed the public of their natural heritage.

there are strong cultural and historical links between Church Square, its associated axes, the Zoo, Museum, Skoolplaaz and the various parks established in the city. All of these were built within fifty years of each other and reflect distinct historical periods which shaped Pretoria's form.

- with the advent of Apartheid and the International Style of Architecture, the value of Church Square, as a civic centre and Paul Kruger Street and Church Street as civic spines, was undermined. Today, they stand as perverted symbols of state and commerce in the extreme.
- the International Style is responsible for the mega-block and high rise tower which bears no relationship to the individual and the unique qualities of place.

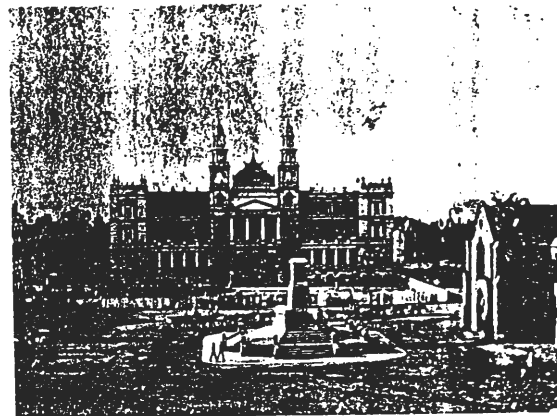


Figure 7: The Ou Raad Saal

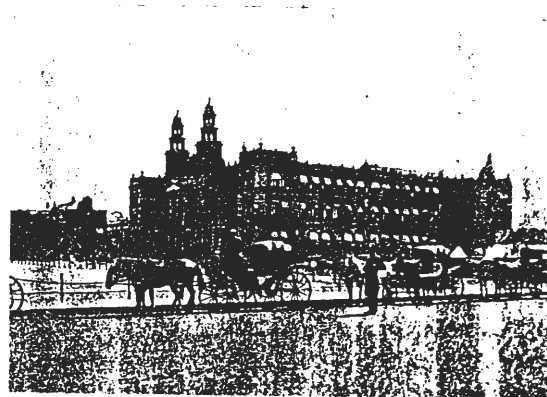
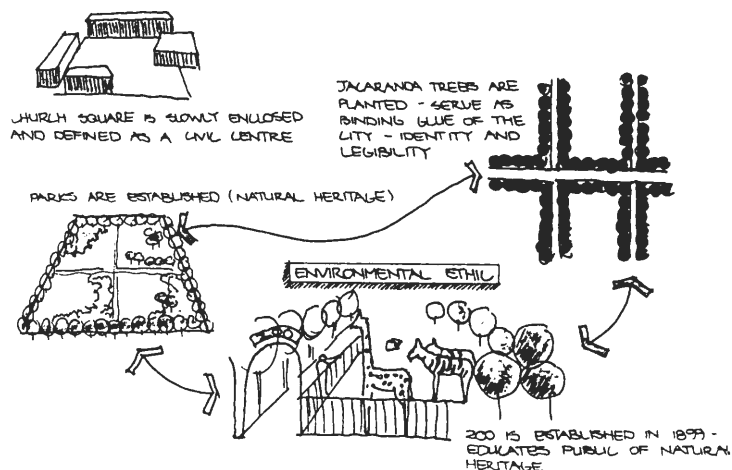
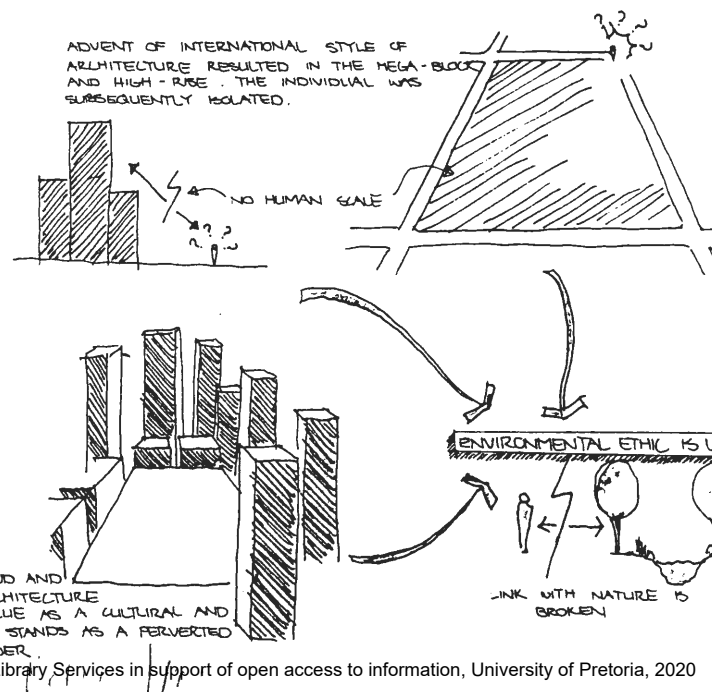


Figure 8: Palace of Justice



WITH THE ADVENT OF APARTHEID AND INTERNATIONAL STYLE OF ARCHITECTURE CHURCH SQUARE LOST ITS VALUE AS A CULTURAL AND SPIRITUAL CENTRE. TODAY IT STANDS AS A PERVERTED SYMBOL OF WEALTH AND POWER.

- the latter two points have undermined the environmental ethic and consciousness that once guided Pretoria's form.

#### Principles:

- historical responsiveness/context.

#### Objectives:

- to reinstate the environmental ethic and consciousness of the individual and re-establish his/her link with nature.
- to acknowledge and emphasize places of cultural and historical importance and re-incorporate them into the greater public realm of Pretoria. These would include places like Church Square, its associated axes and the Zoo for example.

### 2.3 PHILOSOPHICAL CONTEXT

#### 2.3.1 Introduction

In the previous section it was illustrated how city form evolved, beginning with the intersection of two major trade routes as physical links with nature, a church at the heart of the community and the location of the settlement in the fork of two rivers. It followed that Pretoria's growth was governed by a strong environmental ethic, and the individual's close relationship with nature. In this section, the symbolic relationship between the individual and his/her environment is explored and Pretoria's position as a spiritual order.

It will become clear, that reflected in Pretoria's unique landscape is an universal order, and the shape and location of the city and the environmental ethic installed in the individual, was a natural response to this order. It is this underlying consciousness or cosmic order that needs to be explored in realising Pretoria's true identity as an universal city.

#### 2.3.2 The Mandala

Man's quest for the ideal can be traced back to biblical times, "and the Lord planted a garden eastward of Eden.... and a river went out of Eden to water the garden; and thence it was parted and became into four heads.... and the fourth river is Euphrates." (Jellicoe, 1987)

This concept of the four rivers of life is not an uncommon symbolism in the built form and can be seen throughout the world, east and west, and represents an universal ideal. In Buddhist philosophy this same ideal is expressed by the Lotus flower in the symbol of the Mandala (Fig. 9 and Fig. 10). Inherent in the flowers simple geometric composition of four symmetrical quadrants, is the idea of the four corners or rivers of life. The Mandala encapsulates this universal ideal. Its properties of concentration and enclosure are described as being basic to any man made process (Jordaan, 1989).

Helen Rossenau (1974 : 163) identifies that, "... as far as the intention for city planning is universal, it is based on the simplest geometric forms, but variations issue logically from changing social requirement. As a rule the city possesses a central core (centre) which includes the main piazza, the boundary is emphasized by a border, either of walls or an avenue, or a green belt as a means of demarcation." (Jordaan, 1989).

This idea of centre and periphery is clearly manifested in the form of the Mandala. Its form thus gains universal appeal that spans time and culture. It is however modified by local circumstances.

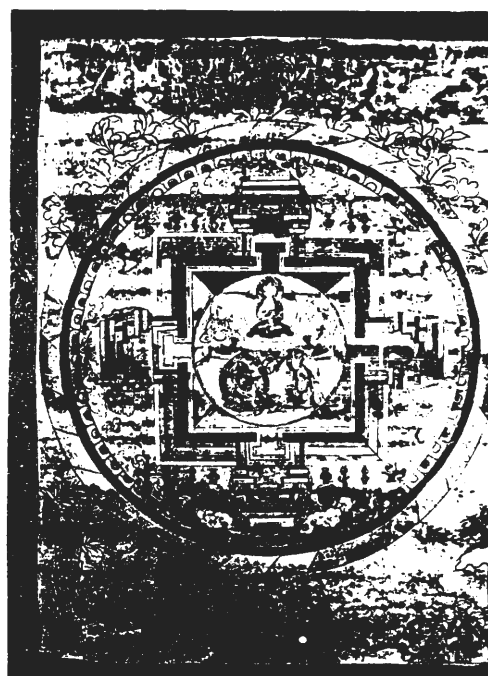
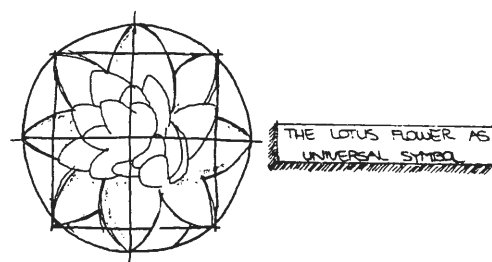
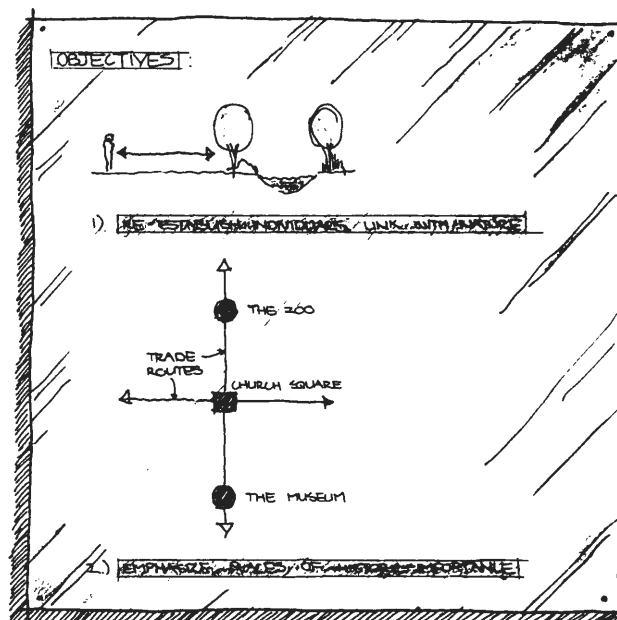


Figure 9: The Mandala (Jellicoe, 1987 : 78)



THE MANDALA REFLECTS THE QUALITIES OF CONCENTRATION AND ENCLOSURE. INHERENT IN ITS FORM IS THE IDEA OF CITY CENTRE AND CITY PERIPHERY.

Figure 10: The Mandala - universal model of the city (Jordaan, 1989)

2.3.3 Pretoria as a universal and cosmic order

Having defined the Mandala as a universal city model, its value in the Pretoria context becomes clear: the strong north-south axis of Paul Kruger Street and east-west axis of Church Street, extending from a spiritual centre are in effect the four rivers of life, linking the city centre with the natural surroundings and the cosmos (Jordaan, 1989) - Paul Kruger Street links the two Ports or natural gateways into the city. The boundaries of the city are emphasized by the natural borders of the Daspoort mountain range to the north, the Timeball range to the south and the Apies River and Steenovenspruit to the east and west of Church Square, respectively (Fig. 11).

The properties of the universal of city enclosure and concentration are thus achieved. The ridges in town symbolize male stability and their role as protector, the valley and rivers as soft and flowing and symbolic of the female role of supporter and cradle of life (Jordaan, 1989).

Norberg Schultz (1980) describes the above as a classical landscape and inherent in its form is a strong relationship between man and nature (Jordaan, 1989).

If we examine the city, we can see how closely the urban order relates to the Mandala: most State institutions and State property are located along the two main axes; along the edges of the Apies River and the Steenovenspruit; and the Timeball Hill and Daspoort Range (Fig. 12).

2.3.4 Goedehoop in the city context and as a city border

But how does the open area of Goedehoop fit into this cosmic order?

It has been described that the natural boundaries of Pretoria form the borders of the city limits in terms of the Mandala. The city is therefore a self contained whole and reflects the properties of concentration and enclosure. It then makes sense to acknowledge and emphasize these areas as distinct and meaningful boundaries.

The area of Goedehoop lies along one such boundary - the Steenovenspruit. However, since the early beginnings of Pretoria, the area has received little attention in terms of development, and has been described as "frozen", Marabastad left standing decaying, the last remnant of Goedehoop<sup>1</sup>.

If we look at Pretoria at a regional scale, we see there is a distinct breakdown in the urban fabric to the west, in the area along the Steenovenspruit, while to the east, development has flourished (Fig. 14). But what is accountable for the stagnation along this western border of the city?

As Pretoria grew as a city, and in expression of radical state policy, and with the introduction of the automobile, it lost its original value as cultural and spiritual centre. The value of the Apies River and Steenovenspruit as important cosmic elements in Pretoria's make-up was also lost due to their channelisation and so there was a need for the individual to regain a link with nature. This rebirth was subconsciously associated with the east.

Since Egyptian times there has always been a strong symbolism between the rising of the sun and birth. This is illustrated by the close relationship between the Union buildings (symbolic of growth) and the eye of the Apies River (symbolic of birth), which are both situated in the east, with Heroes acre in the west (Fig. 15 and Fig. 16). If one continues with this analogy the imagery becomes even stronger when one considers that the Union buildings and Heroes acre are in effect linked by the Apies River which flows west, following the path of the sun, and life's journey from birth to death, sunrise to sunset. It is in fact this route that is used by state funerals, beginning at the Union Buildings, and ending at Heroes Acre on the western banks of the Steenovenspruit (Jordaan, 1989).

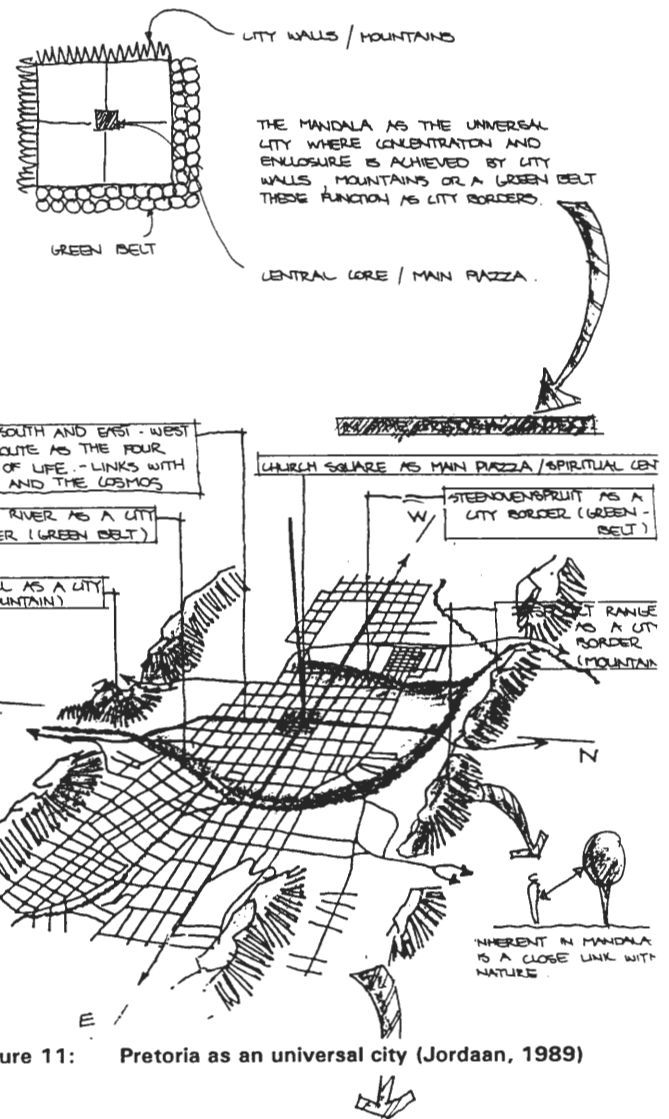
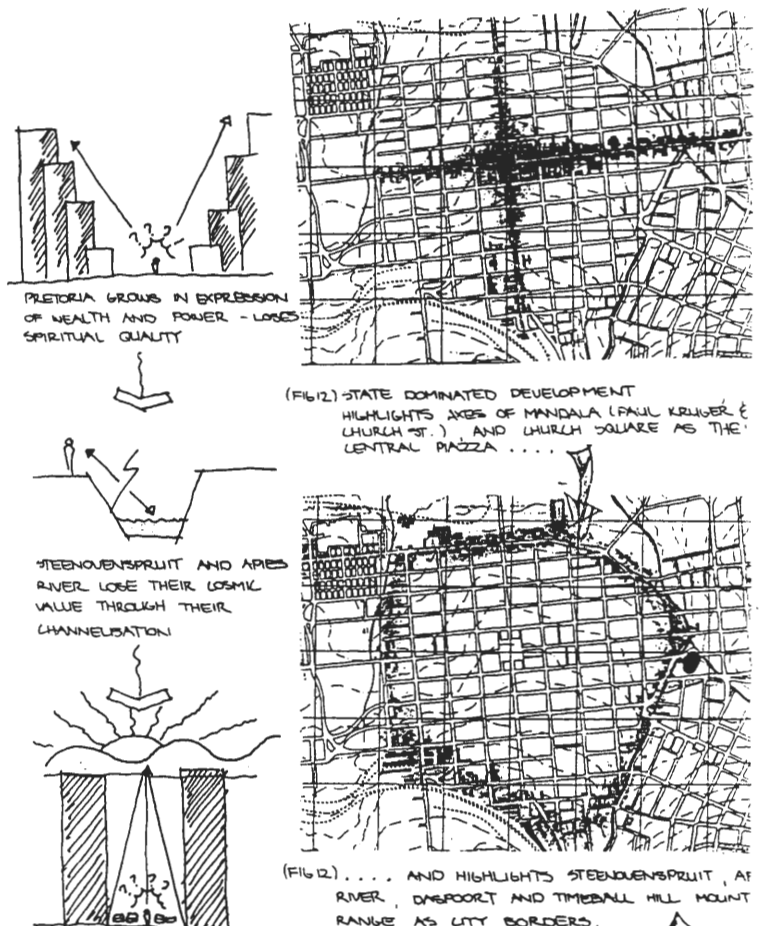


Figure 11: Pretoria as an universal city (Jordaan, 1989)



1. Vide 4.4.1: 40 and 4.4.2: 40

The situation described here is not dissimilar to the philosophy of the Egyptians. For them the sun symbolized birth, death, and resurrection. The burial chambers of Kings, associated with the setting sun were therefore placed accordingly on the west bank of the Nile River. It follows in Egyptian philosophy that there had to be a harmonious existence between life and death and it was believed the Sun-God Ra created the River Nile and it was to him they attributed their very existence and livelihood. The Nile River therefore symbolized this interface, between the physical (the fertile river valley) and spiritual afterlife (infertile desert). The Steenovenspruit in a similar way represents this interface, where the original settlers dependant on the waters of the Apies River and Steenovenspruit settled in the fork of the two rivers, with Heroes Acre positioned outside and west of this fertile area.

In terms of this analogy and seemingly universal need of man to be it associated with birth and renewal, it is clear why Goedehoop has remained underdeveloped, and why today there is a stigma attached to Pretoria West. Acknowledging the unique politics of the country and state policy we can also understand: why the first black location was placed in this area<sup>1</sup> and in later years an industrial area was built in the vicinity; why Goedehoop was declared as a "slum zone" and cleared accordingly in the 1960's and has remained a derelict area<sup>2</sup>; and why state development up to date has been a non-meaningful exercise, with the likes of the high rise developments of Kruger Park and Schubart Park. These will be addressed later on in the report.<sup>3</sup>

In terms of the analogy described above and the strong symbolism between east and west, and the Mandala, it becomes apparent that the development of Pretoria was by no means coincidental but was governed by an underlying universal order or consciousness. It accounts for the thrust of development that took place to the east, and why today, development still persists in that direction with shopping centres like Menlyn and Brooklyn and the proposed State Lake development.



Figure 12: Urban order relates Mandala (Jordaan, 1989)

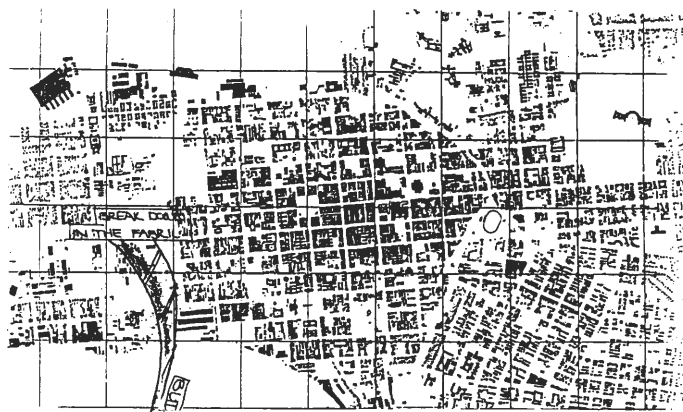
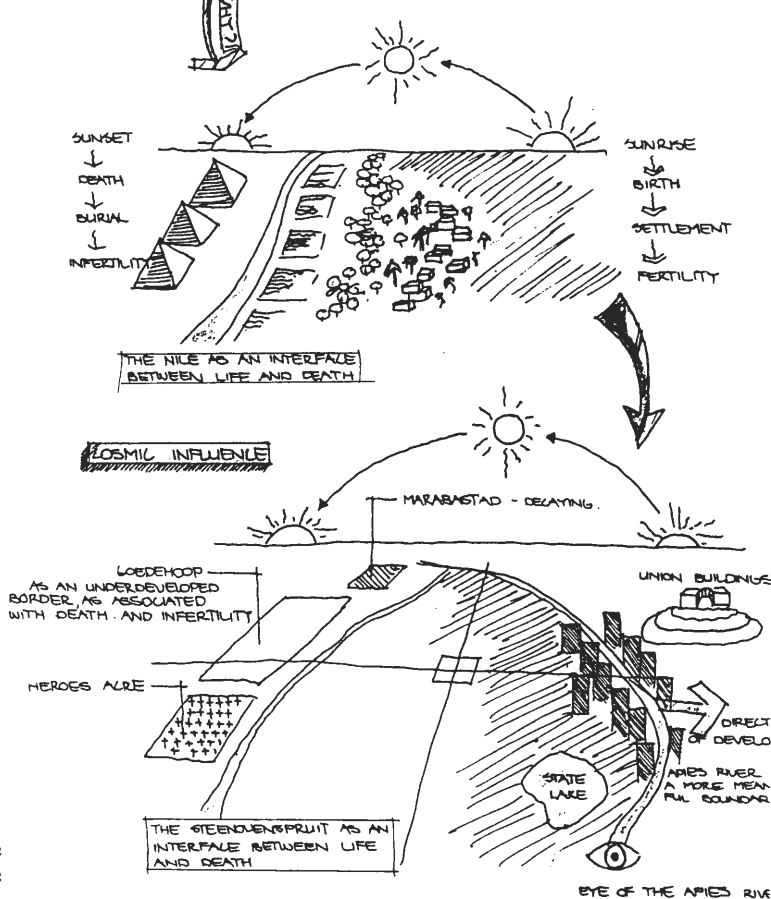


Figure 14: Regional figure ground study



**Issues:**

- Pretoria as a classical landscape where settlement, individual and natural surroundings are closely linked at a cosmic level.
- Pretoria as a manifestation of the ideal city and universal properties of concentration and enclosure: Church Square as a city core or centre; Daspoort and Timeball Hill ridges, the Apies River and Steenovenspruit as natural boundaries and city borders; Church Street and Paul Kruger Street axes symbolic of the four rivers of life and link with nature and cosmos.
- Mandala in Pretoria context as an expression of state and power.
- Goedehoop as an underdeveloped city border due to its symbolic association with the west and death.
- Steenovenspruit as an interface between the physical and spiritual after life.

**Principles:**

- cosmic responsiveness.

**Objectives:**

- enhance classical qualities of Pretoria. This would include the re-integration of the Apies River and Steenovenspruit into the urban environment as natural systems. By this their value as city borders are strengthened and relationship between individual, settlement and natural environment is reinstated. Enclosure of the city proper is then also achieved.



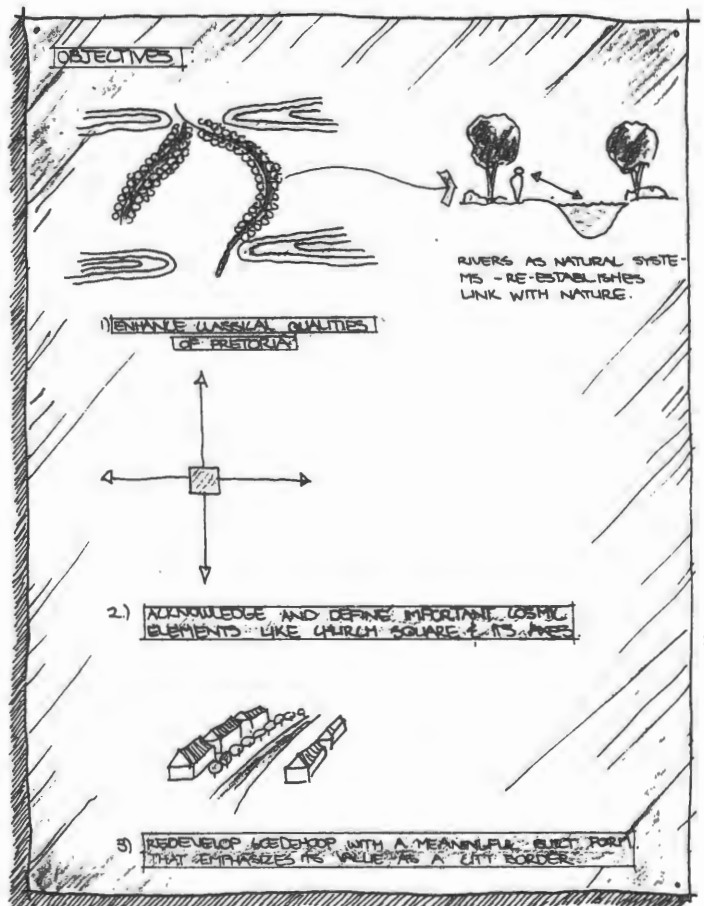
- important symbolic features like Church Square, Paul Kruger Street and Church Street should be defined and their cosmic value recognized.
- Goedehoop is re-developed with a meaningful built form that reflects its cosmic value as a city border.



Figure 15: The Union Buildings - symbol of growth



Figure 16: Heroes Acre - symbol of death





# **PART THREE :**

## **ECONOMIC AND CULTURAL CONTEXT**

3. ECONOMIC AND CULTURAL CONTEXT

3 ECONOMIC AND CULTURAL VIABILITY OF GOEDEHOOP AS AN INTEGRATOR

3.1 GOEDEHOOP AS A BUFFER STRIP

Most of South African cities were subject to colonial policies of development which prevented the integration of various cultures - the city centre was reserved for the white elite, with non-whites positioned on the periphery of the city, separated from the central CBD by means of a buffer strip, or *cordon sanitaire* (Fortmann, 1992). This situation was intensified during the Apartheid era. The buffer strip took on many forms, either that of a natural barrier, like a river, or a man-made barrier, in the form of industry or railway lines (Fig. 17). The type of city which developed, was one where two CBD's emerged one catering for European trade, while the other catering for non-white trade.

Pretoria is not unlike the situation described here. It would seem that as the white CBD of Pretoria expanded, its position was threatened by the presence of the black location, Skoolplaaz, which was originally established east of the Steenovenspruit'. It was therefore, in direct conflict with 'white' Pretoria. This would explain why Skoolplaaz was later moved west of the spruit. The area later developed into GoedeHoop and Marabastad. Situated on the periphery of the city, they were physically separated from Pretoria Central by means of the Steenovenspruit.

These types of periphery developments took on the form of shanty towns. By the 1950's, these areas were considered as health hazards and were subsequently demolished, as part of an 'urban renewal programme'. This included the forced removal of its peoples and their re-location further from the city centre. GoedeHoop underwent such a transformation in the 1960's, from a bustling residential and commercial district, to a 'frozen' and derelict site. Today it fulfils its function as a buffer strip between Marabastad, Pretoria West and Pretoria Central.

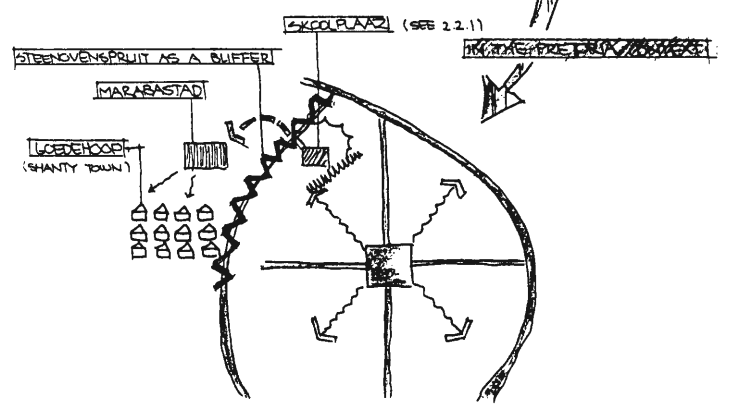
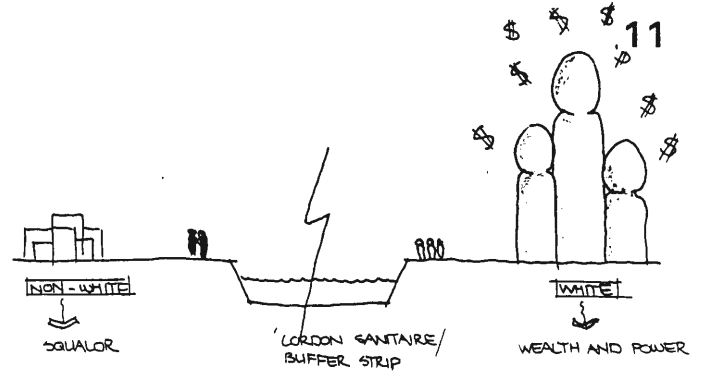
Marabastad remains today as an isolated CBD, detached from Pretoria Central, serving the needs of the black community.

3.2 THE APARTHEID CITY VERSUS THE COMPACT CITY

3.2.1 The Apartheid city - a diffuse system.

The development that took place during the Apartheid era, favoured the whites populous as an elitist group leaving most non-white areas underdeveloped, isolated and in squalor. Common to both white and non-white groups however, was the sacrifice of huge tracts of land for black township and white suburb development. The result was one where the individual was separated from his work-place, leaving for work in the city in the morning, and returning home in the evening (Fig. 18). As urban sprawl continued, and the urban fringe expanded, the individual found himself detached from his work-place in the city, having to travel a greater distance to work. The consequences of this fragmented and diffuse system are summarised by Behrens and Watson (1992: 51-52):

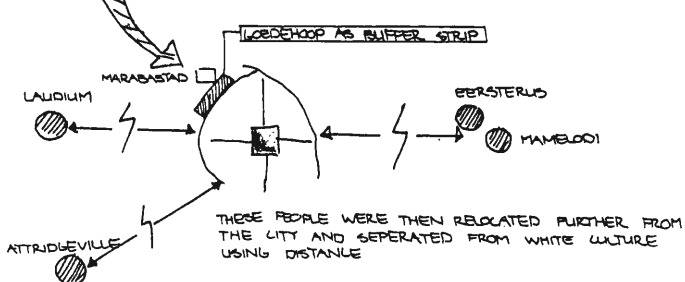
- 1) Capital costs - dispersed urban growth makes the provision of utility services expensive.
- 2) Operating costs - the excessive distances, low levels of support and expansive spaces, generate unnecessarily high operation costs of road-based public services and maintenance of public open spaces.
- 3) Individual costs - large percentages of total income earned is spent on travelling costs.



AS 'WHITE' PRETORIA EXPANDED ITS POSITION WAS THREATENED BY THE BLACK LOCATION SKOOLPLAAZ. THE LATTER WAS SUBSEQUENTLY RELOCATED WEST OF THE STEENOVENSPRUIT, WHICH FUNCTIONED AS A BUFFER.



GOEDEHOOP WAS CLEARED IN THE 1960'S, CONSIDERED AS A 'HEALTH HAZARD' TO 'WHITE' PRETORIA. - FORCED REMOVAL WAS IN VOGUE!



THESE PEOPLE WERE THEN RELOCATED FURTHER FROM THE CITY AND SEPERATED FROM WHITE CULTURE USING DISTANCE

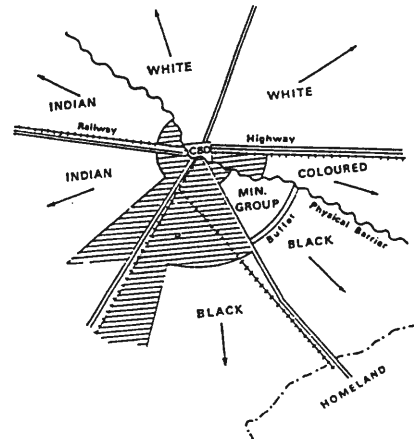


Figure 17: Western's model Apartheid city (Western, 1981 : 65 in Fortmann 1992 : 42)

1. Vide 2.2.1:4

- 4) Environmental costs - dispersed urban growth consumes large amounts of valuable agricultural land.
- 5) Efficiency costs - the nature of urban growth has a negative impact on the efficiency of operation.
- 6) Congestion costs - the use of private road transport (individual cars and taxis) contributes to congestion in the cities, thus increasing time, and therefore, money spent commuting.
- 7) Economic productivity costs - individual productivity is negatively affected due to increased travel time and, in turn, affecting production costs and consumer spending. In addition, the viability of small business activity is inhibited due to low consumer thresholds in peripheral areas and the income levels of these communities (Fortmann, 1992 : 75).

The irony here is that the distance Apartheid policy placed between black communities and their working place, and the necessity for roads to transport the black work-force (both integral to the success of the national economy), were in fact, undermining the national economy.

If one examines these issues, we then see the inefficiency of South Africa's economy due to government attitude towards development. Behrens and Watson highlights that Apartheid is consuming itself. Expenditure is lost for the maintenance of public services like roads and the income of the black populous that can be used for improving quality of life and to support small business activity in the townships is lost to travelling costs. (Although applicable to the white populous, their thresholds are high enough to compensate for travelling expenses). If one considers that the general well-being and standard of living of a nation's majority, is a reflection of the national economy itself, then South Africa's economy is left much to be desired. With the loss of revenue and low consumer thresholds in the peripheral areas, many black and coloured communities operate below subsistence level, relying on informal trade as the only option for survival (Fig. 19 and Fig. 20).

In surmounting South Africa's economic crisis, a greater mix and concentration of businesses and people is necessary to support the informal trader. The next section, The Compact City, offers a possible solution in achieving the goal of an integrated urban economy.

### 3.2.2 The Compact City

*"A central pre-condition for the achievement of high performance urban environments is to compact the form of the city : to ensure it develops over a period of time into a system which works well at a pedestrian scale."*  
(Dewar, 1991 : 43)

South Africa is faced with a crisis by the year 2000, where it is guesstimated that some 26 million people, mostly African people, will be concentrated around the four major metropolitan centres. Dewar describes that this urban explosion is occurring amongst the poorer people, and the tendency is towards a younger and poorer urban population (Dewar, 1991 : 10). Accompanying this is a high level of unemployment where the survival of these people depends on informal trade, which operates at a pedestrian level. However, the form of our urban environment is dictated by the high speed function of the car. For the informal trader and small businessman who relies on the casual glance of the pedestrian or passerby, the car does not sell cigarettes or papers, and the financial consequences can be devastating. The issues that therefore need to be addressed here, are one of distance and access (Dewar, 1991 : 16). It is these two aspects that influence the urban form and the success of an integrated urban economy. On the one hand, it is all very well to provide public spaces that are conducive to interaction and

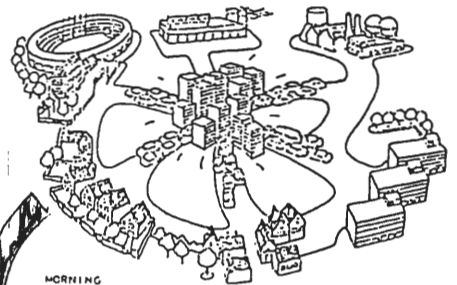
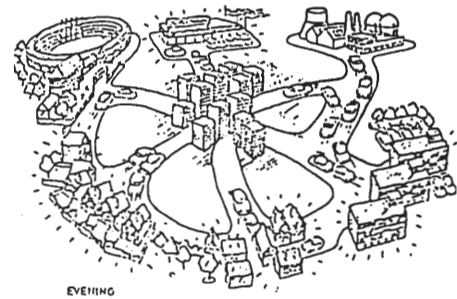


Figure 18: Separation of activity (Bentley)



URBAN SPRAWL RESULTS IN:

- INCREASED TRANSPORTATION COSTS
- DENUDATION OF THE NATURAL ENVIRONMENT
- INCREASED CONGESTION

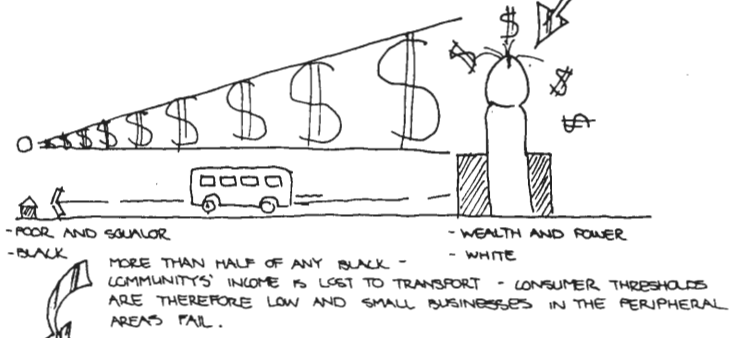


Figure 19: Informal trade in Marabastad - the only option for survival

where the informal trade can take place, but if access to such places is denied, and where distance is a barrier to overcome for both the wealthy and the poor, then the economic viability is reduced.

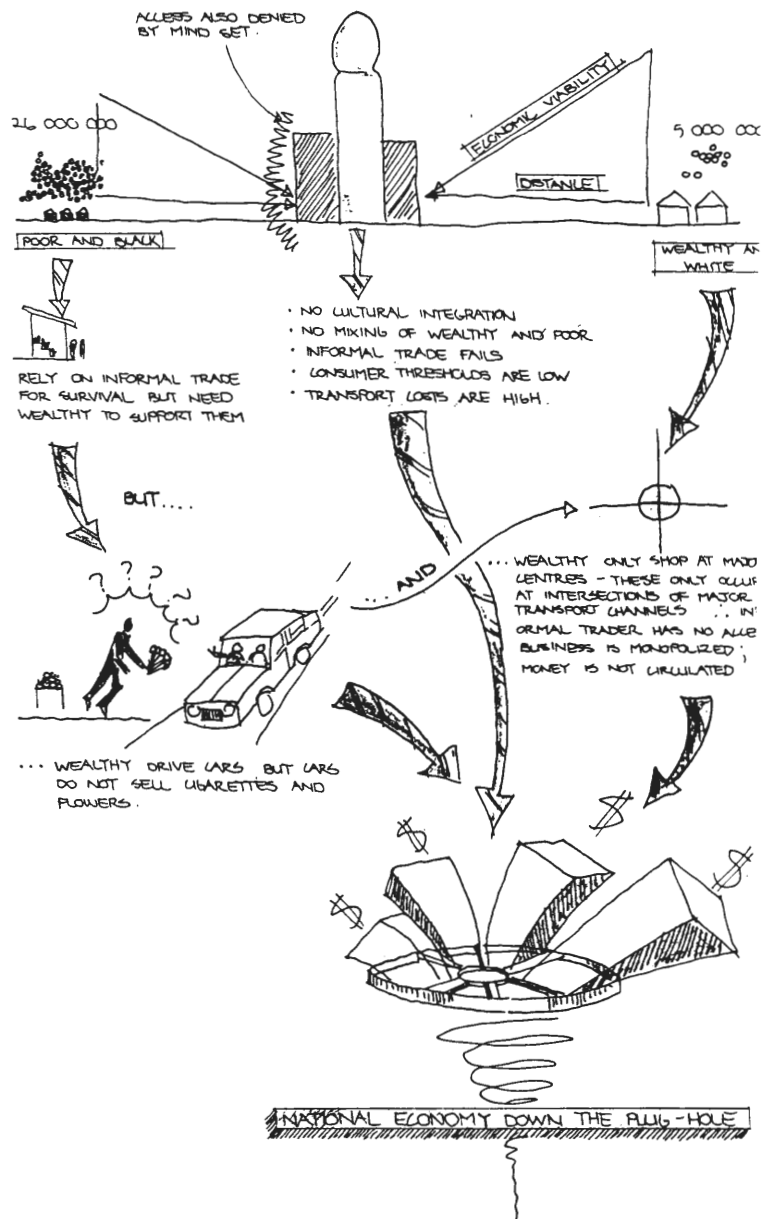
If we, as designers, are to begin to bridge this gap, then current city planning has to be questioned, and issues concerning increased densities and the city in a more compact form, multi-functionalism, and public transport needs to be considered as the only option left to answer for South Africa's tired economy.

But how does compaction of the city and increased densities address South Africa's economic position and the plight of the informal trader and small-scale businessman? Dewar identifies eight reasons why this approach is feasible:

- 1) The more compact the local market, the greater the range of potential economic opportunities which present themselves to all inhabitants. In the case of small economic enterprises, this is important. Because of the lower volume of output of small enterprises and the larger the proportion of distribution costs to total costs.
- 2) In sprawling diffuse markets, places of economic opportunity are few and isolated, only occurring at the intersection of major transport channels, thus rendering small-scale activities ineffective, since the upper limit of their range does not encompass sufficient thresholds.
- 3) At such intersections the economic activity is dominated by larger enterprises that do not fit into an overall urban framework, are only accessible by car, and therefore, do not allow small-scale enterprise to benefit from their value as a magnet of people.
- 4) Job generation is affected by compactness and specialisation. In a compact environment which generally has a large market, specialisation and greater economic, diversification occurs.
- 5) In a compact situation, levels of social and commercial service are much higher and can be experienced more easily as they operate at a pedestrian level.
- 6) Through a more compact urban environment, one encourages the use of public transport. As access is improved, the individual no longer is so reliant on his car, the wealthy are more exposed to small-scale business districts, thus improving turnover and the thresholds of the poor.
- 7) In a more compact system unit costs of social and other services tend to be lower since levels of support per facility are higher.
- 8) Social services tend to be less vulnerable to change as they cater for the whole, and not specific sector of the populous (Dewar, 1991 : 43).



Figure 20: Informal trade in Marabastad - a thriving market



At current urban growth rates and type of urban form development follows, South Africa is faced with a situation where there is simply not enough physical room to expand. The black working force of the country, already isolated from its working place in the city, simply cannot afford the increased costs of transportation if townships sprawl goes unabated. This situation is, of course, applicable to white suburbia. Both forms of development consume vast quantities of land and have a considerable impact in the denudation of the natural environment. They are cost and energy inefficient and because of the nature of their development where each house is seen as an exclusive entity, neither help in cultural integration and bridge-making (Fig. 22).

Issues:

- function of the buffer strip was to separate different racial groups. The area Goedehoop is one such area, separating Marabastad - a black CBD, from Pretoria Central - a white CBD.
- urban sprawl has negatively impacted on the country's economy: valuable agricultural land is sacrificed; capital, operational and individual costs are increased through transportation and valuable production time and money is lost due to congestion and time spent commuting.
- with the placing of townships on the city periphery, thus separating the black work-force from its place of work, more than half of any black community's income is lost to transport. This, coupled with the Apartheid policy, which pumped millions of rand into the development of white areas, has resulted in a standard of living, that in most black communities and in many coloured areas is below subsistence level. For many people; informal trade is the only option for survival.
- a compact city form with increased densities as the only solution for South Africa's failing economy: a more efficient use of land with a reduced impact on the environment and valuable natural resources; reduced costs on utility services and maintenance.
- a compact city form where there is a greater reliance on public transport for all sectors of the community, where a pedestrian environment is created. The individual's dependence on his/her motor car is therefore reduced and congestion in the city alleviated. Thus, access to a wider variety of activities is achieved; a greater degree of cultural integration is promoted; there is improved mixing of the wealthy and the poor, where small-scale businesses and the informal sector can benefit, and thresholds are improved.

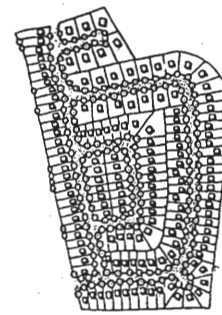
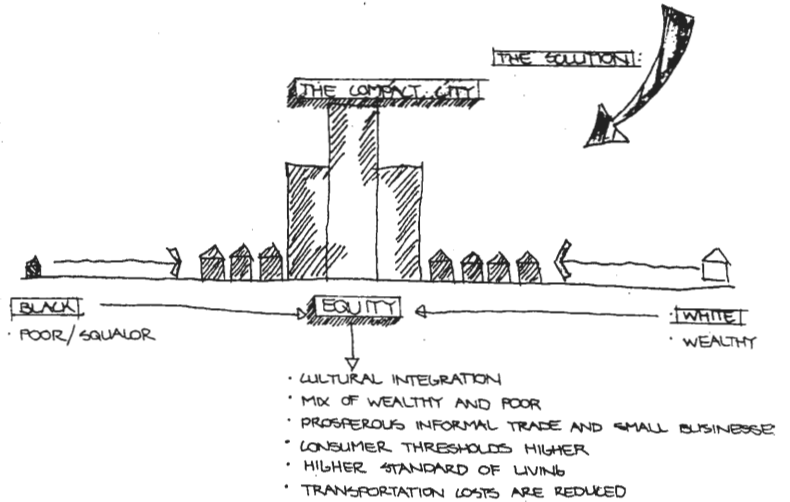


Figure 22: Detached single family - a zoned monoculture (van der Ryn, 1986 : 77)

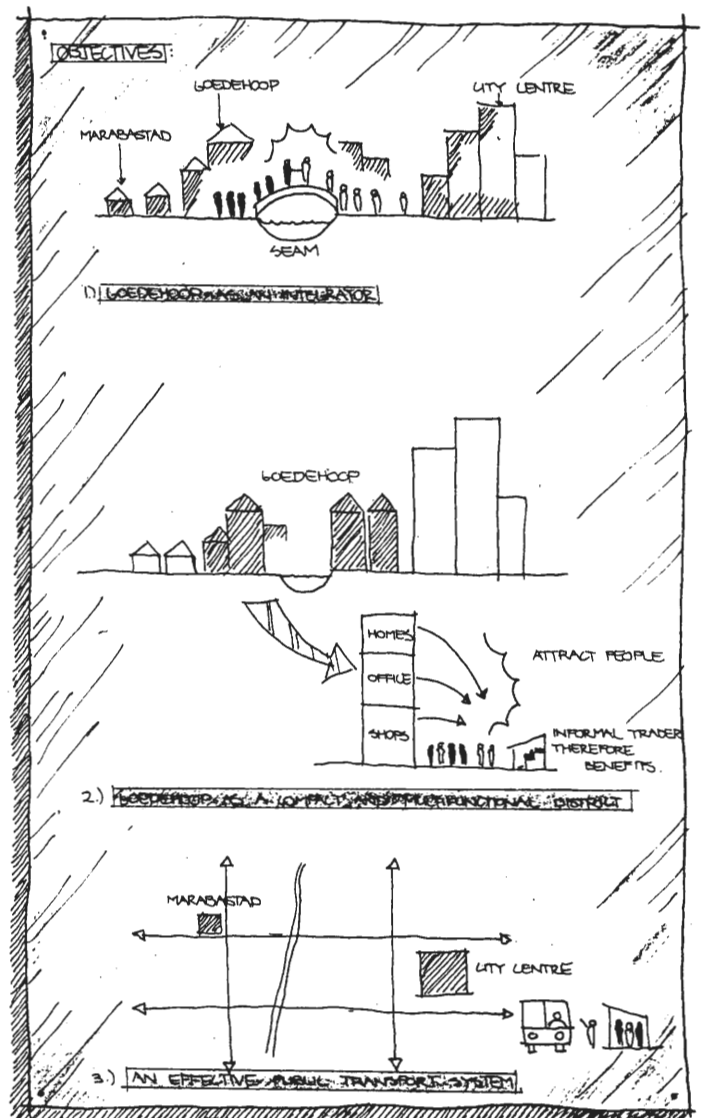


Principles:

- integration;
- accessibility;
- concentration/implosion;
- proximity;
- diversity.

Objectives:

- Goedehoop developed as an interface between Pretoria Central and Marabastad, and thereby, acting as an integrator between two otherwise separated cultures. In this light, the Steenovenspruit can function as a seam.
- Goedehoop, can be compactly developed as a multi-functional area, with commercial and office activity, backed up by a strong residential component. The more wealthy can establish homes and businesses in the area, where informal traders can benefit from their attractive power, thus improving thresholds.
- An effective public transport system that effectively links these two parts of the city, where a more pedestrian environment is promoted, thus benefitting the informal trader and small businessman.



# **PART FOUR :**

# **PHYSICAL CONTEXT**

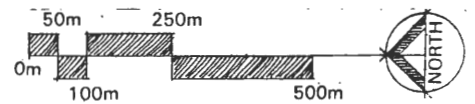
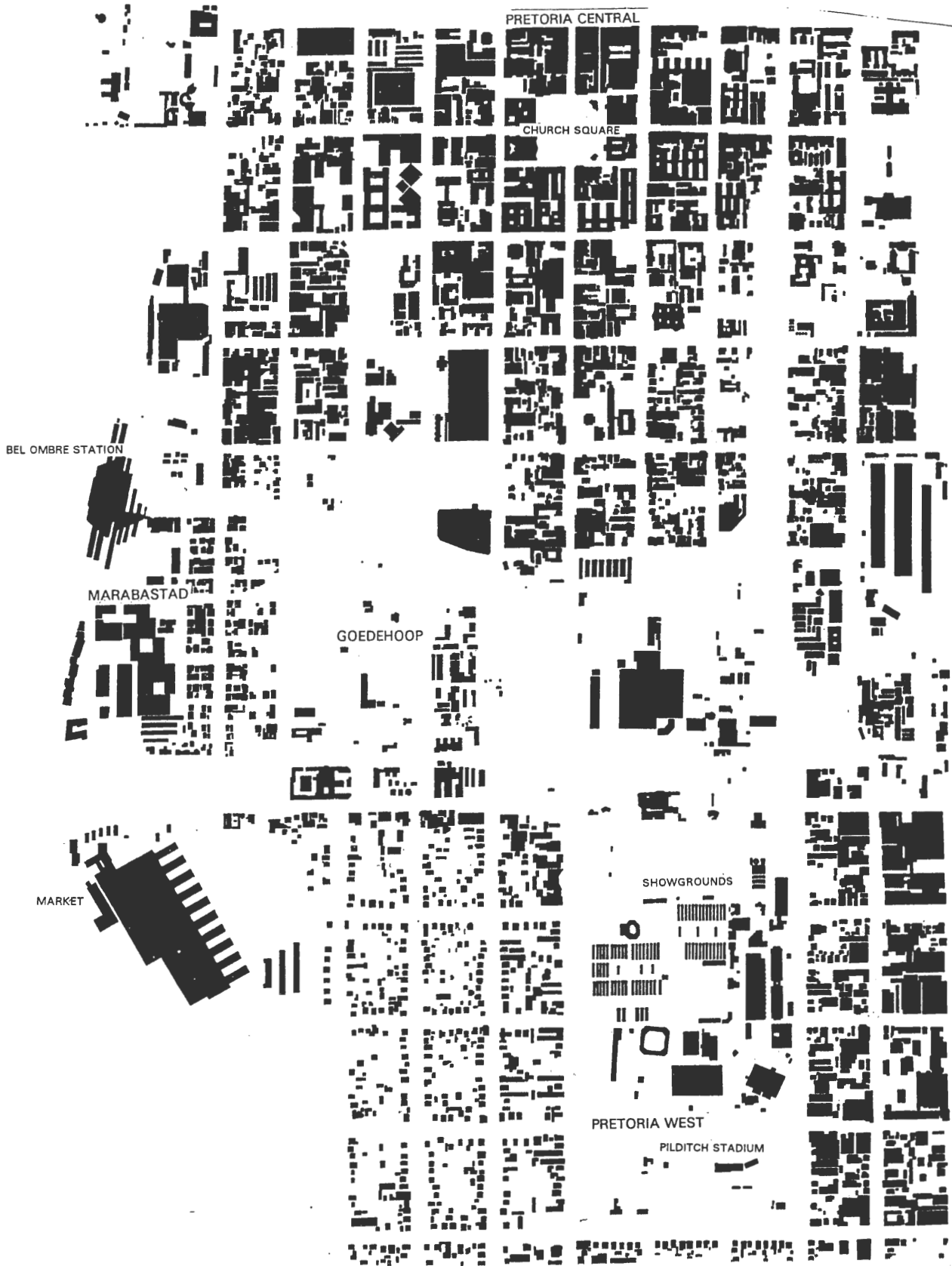


Figure 24:  
**FIGURE-GROUND**

#### 4. PHYSICAL ANALYSIS

##### 4.1 SPATIAL ANALYSIS

##### 4.1.1 Figure - ground study

There is a distinct breakdown in the spatial continuum from west to east in the derelict area of Goedehoop; the area occupied by the Department of Transport south of Goedehoop; the undeveloped Yskor recreation centre, Showgrounds and Pilditch Stadium (Fig. 24). There is also a distinct break in the urban fabric to the south of Church Square, where the new Skinner Street extension has been built.

##### As individual parts:

- Pretoria Central is characterised by a dense, often impermeable coarse texture with buildings covering large surface areas. In many cases, a development may take up a whole block. This accounts for a lack of permeability in the city centre and an inhumane scale.
- the industrial area to the west are also characterised by this built form, but in the form of warehouses.
- Marabastad is characterized by a fine and permeable grain.
- Pretoria West is characterised by the sprawl of white suburbia and the isolated area of the showgrounds and Pilditch Stadium.

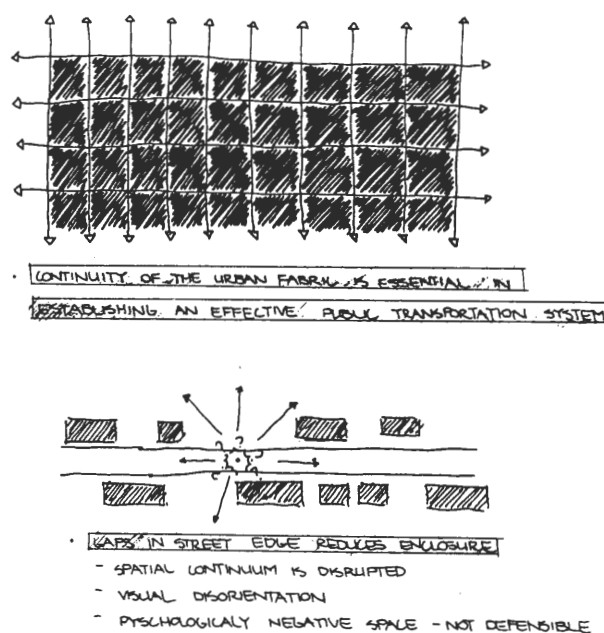
Incongruities of scale within districts are often seen: Schubart Park in Pretoria Central, Bel Ombre Station, and the Asiatic Bazaar in Marabastad, and the market north of Pretoria West.

Dewar identifies that a "feature of positive urban environments is that the urban fabric at the smallest scale is fine-scaled and complex" (Dewar, 1991 : 42). Through increased permeability these environments provide the greatest number of opportunities for the pedestrian. They are rich in character and reflect a human scale (Fig. 25).

The first step in achieving a diverse and easily accessible urban environment, is the continuity of the urban fabric (Dewar, 1991 : 48). It is also essential in establishing an effective public transportation.



Figure 25: Goedehoop as a positive urban environment (prior to 1960's clearing of the area)





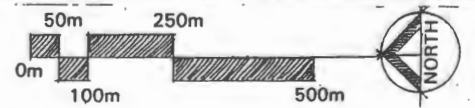


Figure 26:  
**STREET-BLOCK RELATIONSHIP**

4.1.2 Street - Block pattern

This study also illustrates the breakdown of the spatial continuum from east to west. A good comparison can be made between the super blocks of Pretoria Central (240m x 150m) and the block size of Marabastad (70m x 50m) which affords the pedestrian a greater degree of flexibility in movement (Fig. 26). Bentley also recognizes that a block size of between 80m and 90m is the most suitable for an urban environment, as access is improved affording the user a greater number of opportunities.

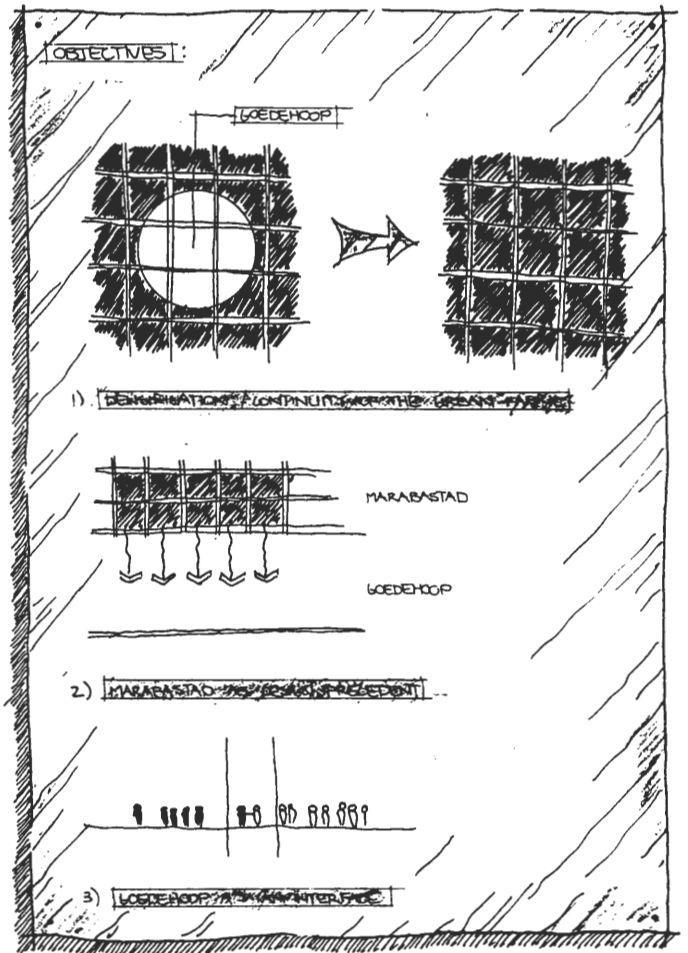
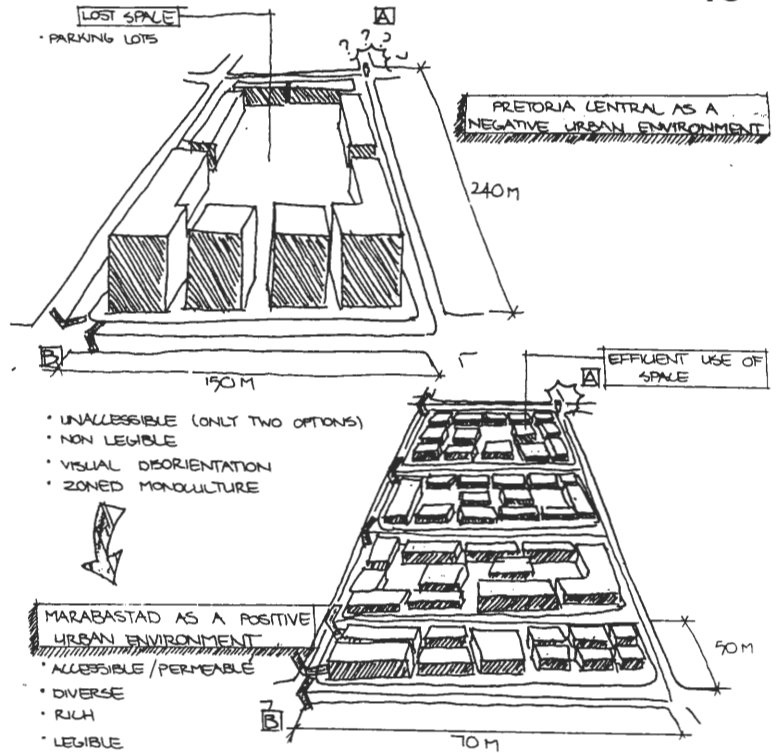
The blocks that are formed between D F Malan East and D F Malan West and between Skinner Street north and Skinner Street south, bear no relationship to the existing street-block pattern and appear as isolated islands bound on both sides by fast moving traffic (Fig. 41).

Issues:

- a breakdown in the urban fabric to the west of Church Square. The spatial continuum has also been disrupted in the area where the Skinner Street development has taken place.
- Goedehoop as lost space.
- Marabastad as a design precedent for the development of Goedehoop. Its effective block size and urban fabric promotes an urban environment that works well at a pedestrian level.
- a diverse and easily accessible urban environment can only be achieved through the continuity of the fabric.

Principles

- integration;
- densification;
- sequential movement;
- access and permeability.



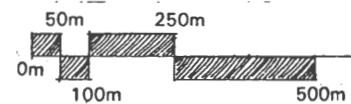
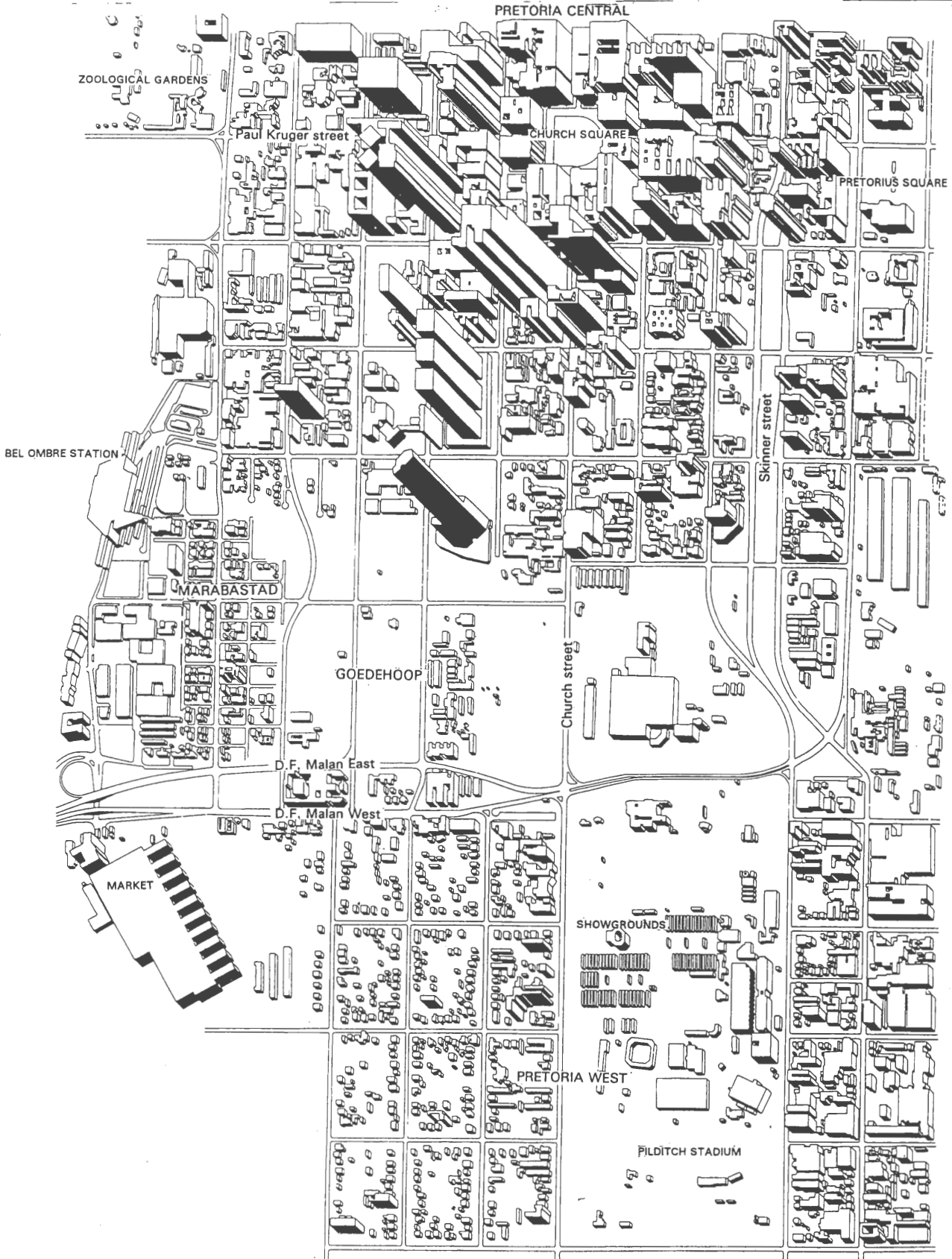


Figure 27:  
**THREE DIMENSIONAL**

4.1.3 Three - dimensional

In terms of this study, the incongruity in the vertical scale of the buildings between Pretoria Central and Pretoria West is illustrated (Fig. 27). Pretoria Central is characterized by the modern style of architecture and is monumental in scale in the comparison to the diffuse residential area to the west. Neither of these built forms acknowledges the relationship between building (interior private space) and street (exterior public space) where the individual is either isolated in his home or in a concrete tower.

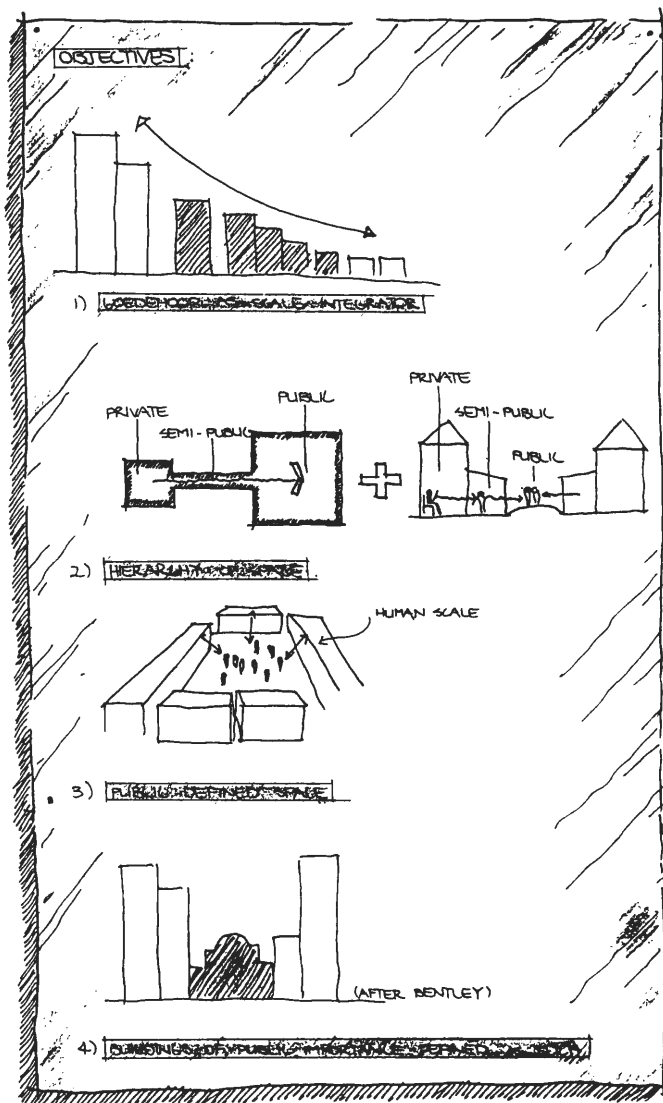
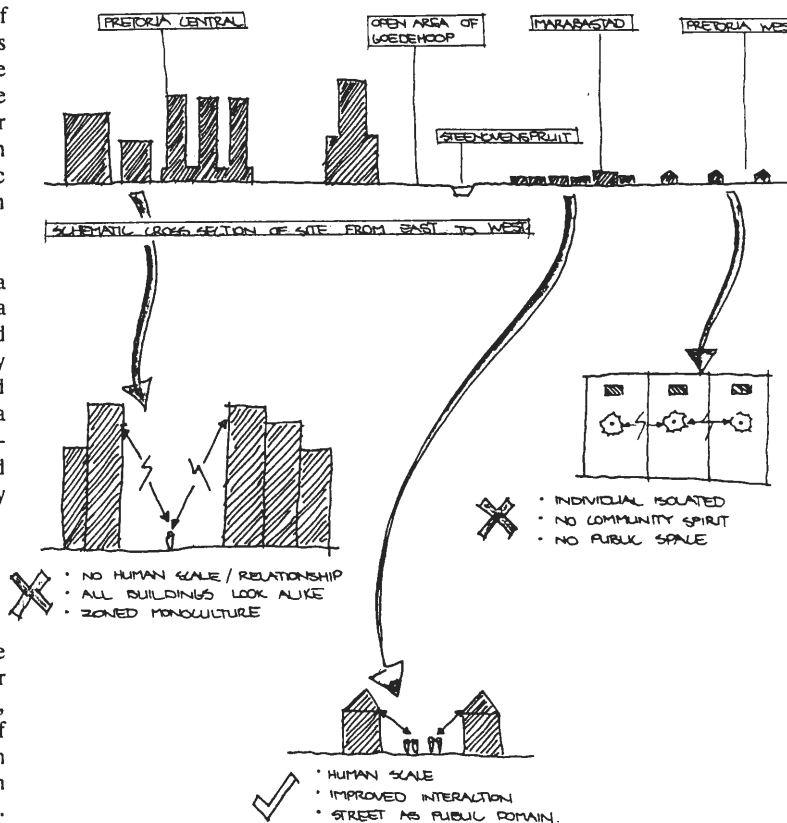
The urban towers of the city centre and urban sprawl have a considerable impact on the environment and do not promote a built form that is responsive to the individual's needs and spiritual well-being of the city's inhabitants. The city character is often arbitrary and is a reflection of a zoned monoculture. In comparison, Marabastad functions well at a pedestrian level - there is a close relationship between shop-front and street-edge, and a greater feeling of community and sense of place. Most buildings in this area are at a two-storey level and respond well to the individual.

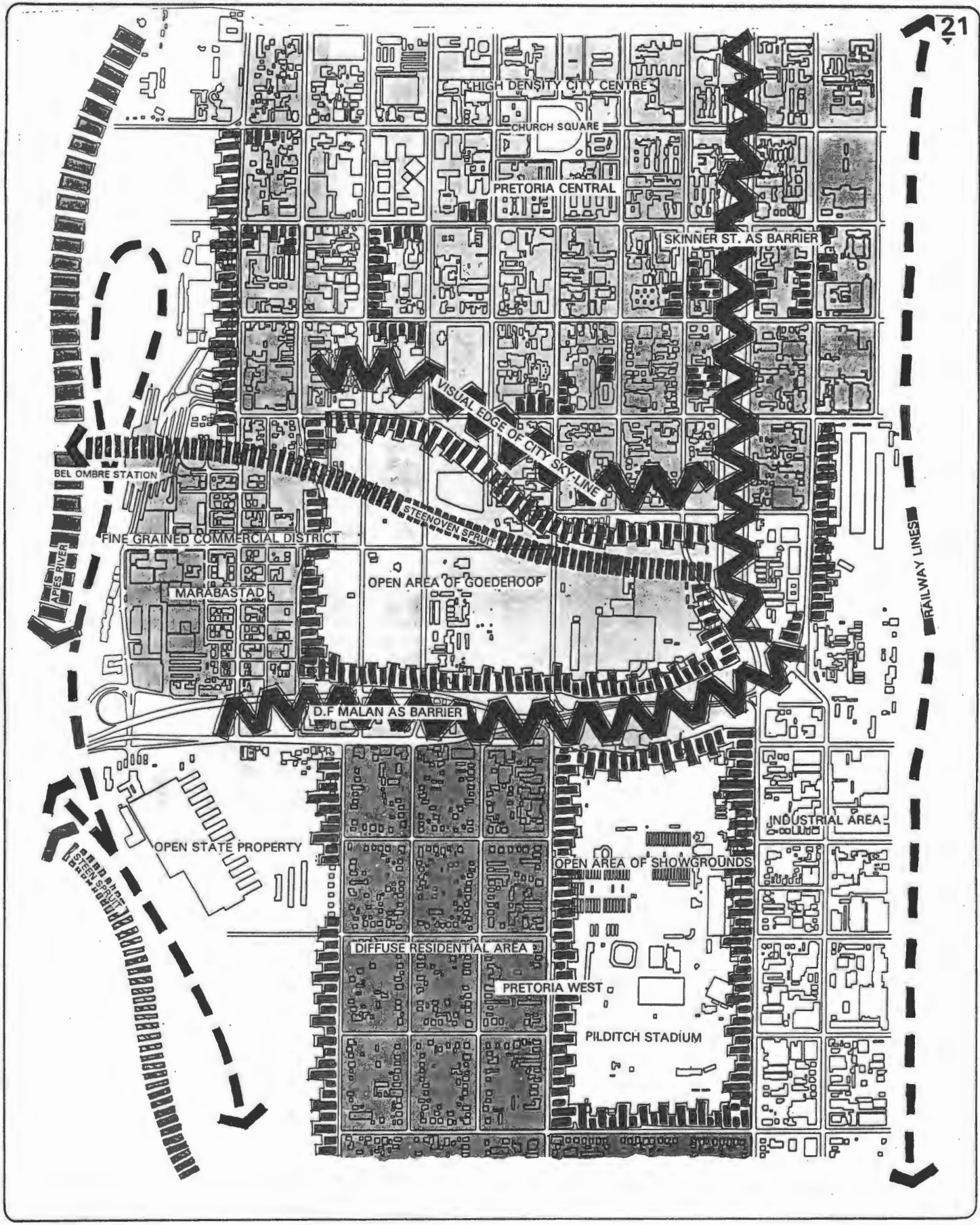
Issues:

- the post-industrial city is characterized by large scale development in the form of high rises and suburbia. Under the pressures of modern economics and increasing technology, their layout and construction is achieved in a short period of time. In the process, unique qualities of place are often ignored, and reflective of an autonomous state, the built form is unable to respond to the changing needs of the community.
- shaping coherent space is next to impossible if the urban form is predominantly vertical or diffuse as in modern suburbia.
- difficult to distinguish between private buildings and buildings of public importance.

Principles:

- incrementalism;
- integration;
- sequence of space;
- social responsiveness/human element;
- indoor and outdoor fusion.





	HIGH DENSITY CITY CENTRE		RIVERS		
	FINE GRAINED COMMERCIAL DISTRICT		RAILWAY LINES		
	OPEN AREA OF GOEDEHOOP		MAJOR EDGES BETWEEN DISTRICTS	<p><b>Figure 28:</b> <b>DISTRICTS AND EDGES</b></p> <p>16514138</p>	
	INDUSTRIAL AREA		DISCONTINUED STREET EDGES		
	OPEN AREA OF SHOWGROUNDS AND PILDITCH STADIUM				
	DIFFUSE RESIDENTIAL AREA				
	OPEN STATE PROPERTY				

4.2 LEGIBILITY ANALYSIS

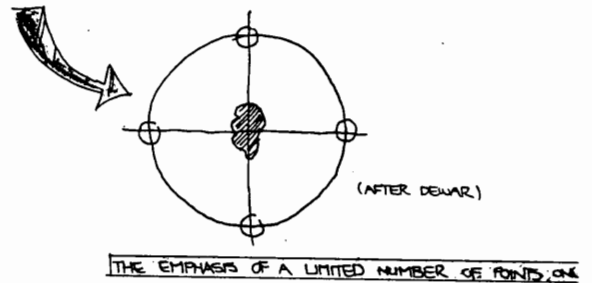
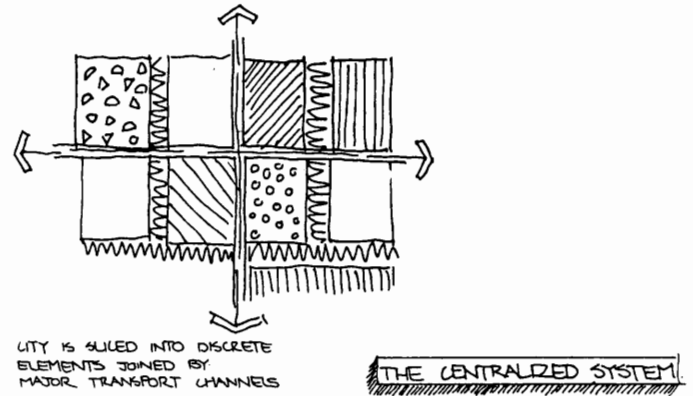
4.2.1 Districts and edges

4.2.1.1 Districts

Following Figure 28, seven major districts can be identified:

- city centre - characterised by superblock and modernist style of architecture (Fig. 29).
- Marabastad and commercial spine along Boom Street and Bloed Street - finer textured, greater permeability and more pedestrian orientated (Fig. 30).
- Goedehoop - open and undefined (Fig. 31 and Fig. 3 ).
- industrial area - characterised by coarse texture of warehouses and commercial character (Fig. 33).
- Pilditch Stadium and Showgrounds - isolated as an exclusive development and ineffectively used (Fig. 34).
- white residential area - superblock and diffuse character of suburban sprawl (Fig. 35).
- state property - colossal development of market as an isolated development (Fig. 36).

Due to the nature of the modern movement and its approach to zoning, the functions of the city are separated and districts are therefore isolated. Reliant on a centralized system, isolated districts within major metropolitan areas are linked together by major transportation routes. The result is a zoned monoculture, where access to facilities are denied and opportunities are greatly reduced. This situation occurs on this site where Marabastad bears no relationship to the city centre, the residential area, Showgrounds and the market are isolated and detached from the city whole (Fig. 28).



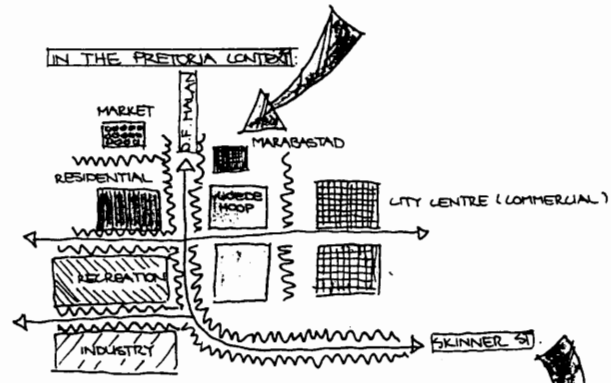
- ACTIVITY IS RESTRICTED TO THESE POINTS - SERIES OF PEAKS CONNECTED BY MOVEMENT ROUTES. THIS RESULTS IN:
  - LIMITED NO. OF OPPORTUNITIES FOR INTENSIVE USES
  - MONOPOLIZATION
  - OVER SPECIALIZATION OF FUNCTION ∴ VULNERA TO CHANGE
  - TRANSPORTATION ROUTES DIVIDE AND DON'T INTEGRATE
  - GENERATES ENORMOUS AMTS. OF MOVEMENT

RESULTS IN:  
**INEFFICIENCY, POVERTY & INEQUALITY**

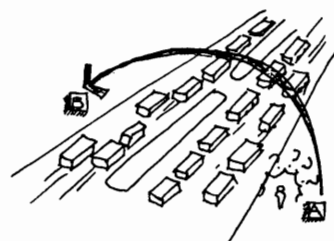
4.2.1.2 Edges

Following Figure 28, five major edges exist:

- D F Malan and Skinner Street function as major transportation routes in the city (Fig. 41). Due to their high traffic volume, they also serve as effective barriers between adjacent districts (Fig. 37 and Fig. 38). In the case of D F Malan, it forms a major edge to the western boundary of Goedehoop and is a formidable barrier to the pedestrian and motor vehicle between Pretoria West and Pretoria East. Skinner Street poses similar problems as a barrier between the station and Church Square;
- a visual edge is formed by the incongruity of scale between buildings in the city centre and the residential area and Marabastad to the west (Fig. 39);
- the train lines to the north of Marabastad and south of the industrial area. The former is a problem in terms of pedestrian linkage to the Apies River;
- the Apies River and Steenspruit;
- major street edge definition is lost along certain streets.



• LACK OF CONNECTIVITY BETWEEN DISTRICTS



• SKINNER ST. AND D.F. MALAN AS MAJOR PEDESTRIAN BARRIERS - SPLIT CITY IN HALF

Issues:

- scale anomaly between city buildings, in the east and Marabastad, and Pretoria West.
- integration between Pretoria West and city centre prevented by Goedehoop as an under-developed site, and D F Malan as a major transportation route.





Figure 29: City centre - modernist style of architecture



Figure 33: Pretoria West - industrial character



Figure 30: Marabastad - fine grained and permeable



Figure 34: Pilditch Stadium - an isolated development



Figure 31: Goedehoop - open and undefined



Figure 35: Pretoria West residential area - diffuse and sprawling



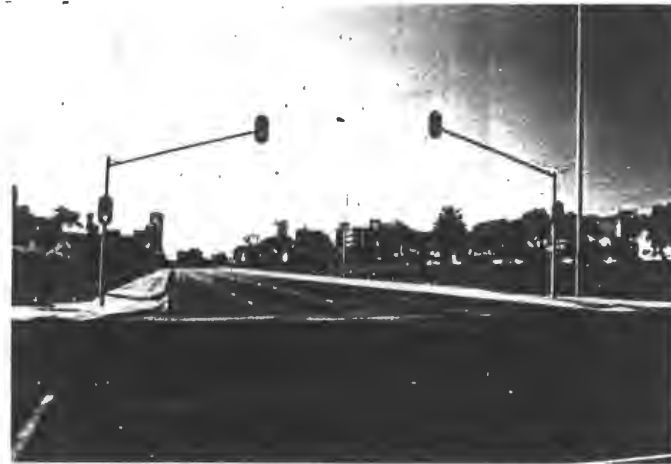
Figure 32: Goedehoop - derelict and under-utilized space



Figure 36: The Market - an isolated development



**Figure 37: D F Malan - a pedestrian barrier**



**Figure 38: Skinner Street - a pedestrian barrier**



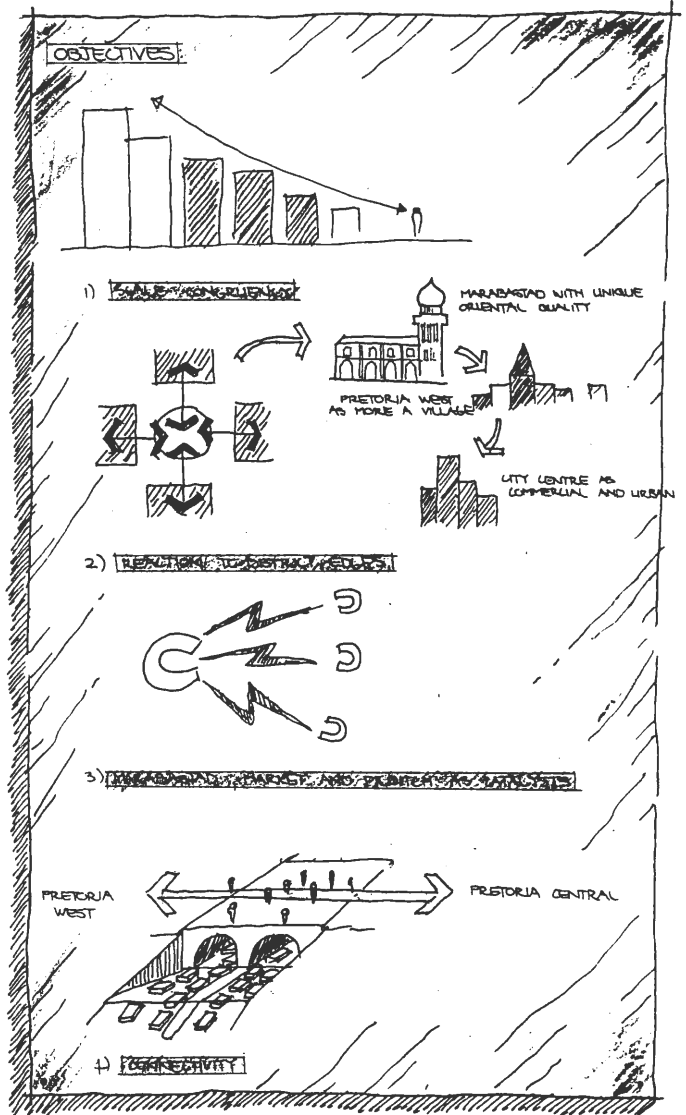
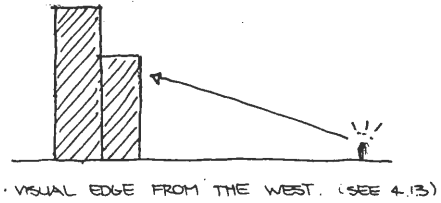
**Figure 39: City skyline - visual incongruency from the west**

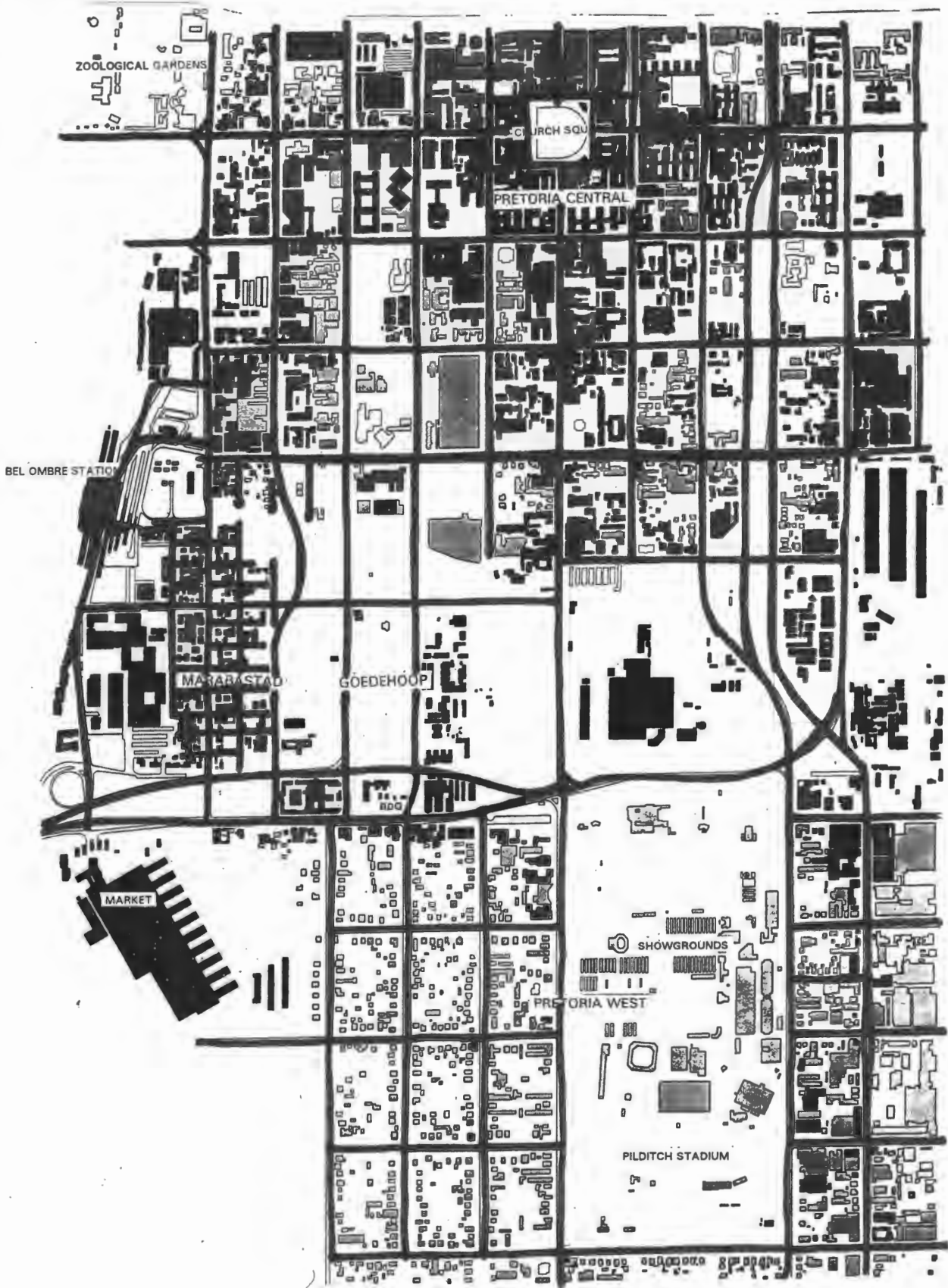


- Skinner Street development has disrupted the existing block structure and presents itself as a formidable barrier to the pedestrian between the central and southern end of the city.
- loss of generative power in Marabastad, city centre and market.
- Pilditch sports facilities are isolated and inaccessible to the community.
- district character and legibility is undermined by poor street edge definition along many streets. Visual orientation is then made difficult.
- lack of connectivity between districts.

**Principles:**

- linkage;
- integration/continuity;
- integrated bridging;
- contextualism;
- edge defining buildings;
- catalyst as generator.





- |  |                        |  |          |
|--|------------------------|--|----------|
|  | STATE / SEMI-STATE     |  | SCHOOLS  |
|  | OFFICES                |  | PARKING  |
|  | OFFICES AND RETAIL     |  | CHURCHES |
|  | RETAIL                 |  |          |
|  | SERVICE BUSINESSES     |  |          |
|  | INDUSTRY / WAREHOUSES  |  |          |
|  | RESIDENTIAL AND RETAIL |  |          |
|  | RESIDENTIAL            |  |          |
|  | SPORTS AND RECREATION  |  |          |

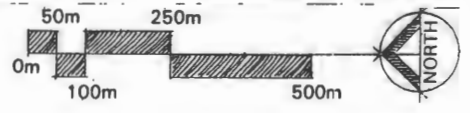


Figure 40:  
**LAND-USE**

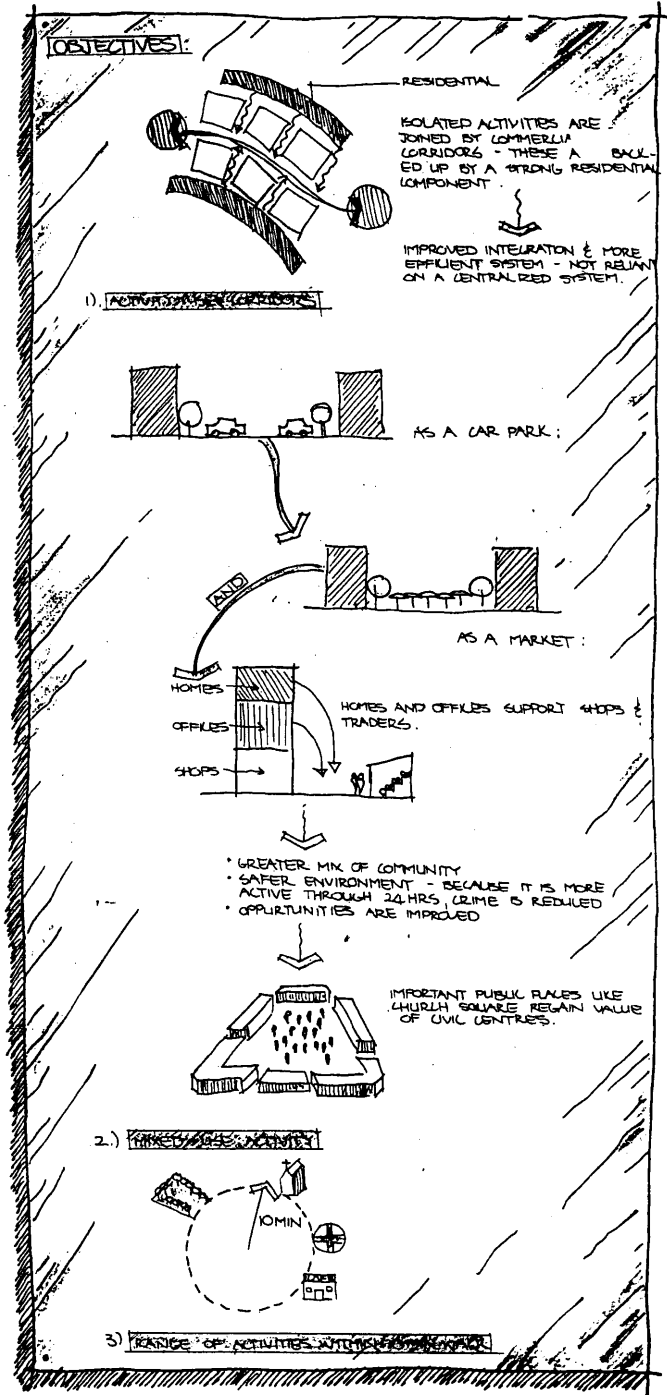
## 4.2.2 Land-use

**Issues:**

- isolation of districts and activities through strict zoning.
- the city centre, as the seat of power and bureaucracy is dominated by state institutions, and office buildings. There is lacking a strong residential component to support retail facilities. The retail spine that runs through Marabastad and along Boom Street, also lacks this residential back-up:
  - Church Square and Marabastad remain as detached and isolated CBDs;
  - white residential area is isolated, detached from important commercial facilities and recreational areas.
- scattered and low residential component in the city centre - apart from a few apartment blocks (Kruger Park and Schubart Park<sup>1</sup>), Pretoria Central is devoid of private residences.
- buildings have specialised functions and therefore, activity in the city is restricted to certain hours. Multi-functional buildings with a mix of shops and residences are few and scattered in the city centre.
- due to strict zoning, accessibility to facilities is restricted and therefore opportunities are reduced.
- original quality and value of Church Square, as a civic centre, and the Church Street and Paul Kruger axes as civic spines, have been undermined through extensive state and office developments around Church Square and along the two axes (Fig. 40).

**Principles:**

- integration/sequential movement;
- diversity/mixed use activity;
- effectivity/proximity.



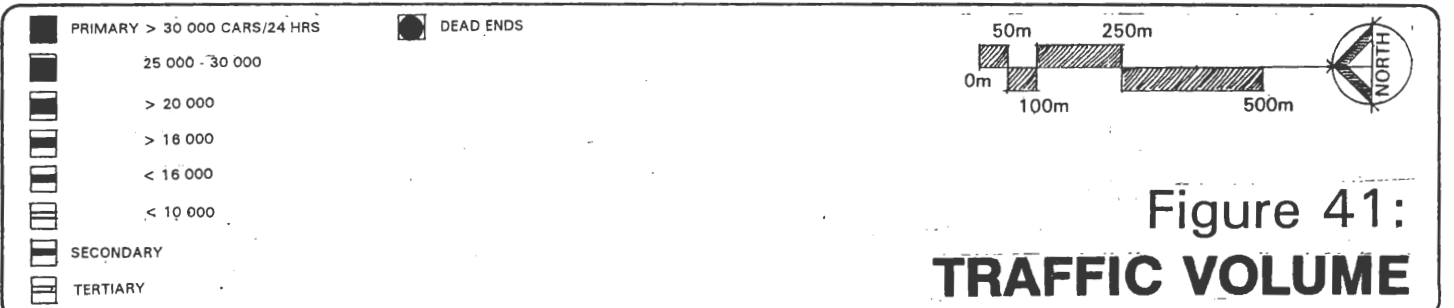
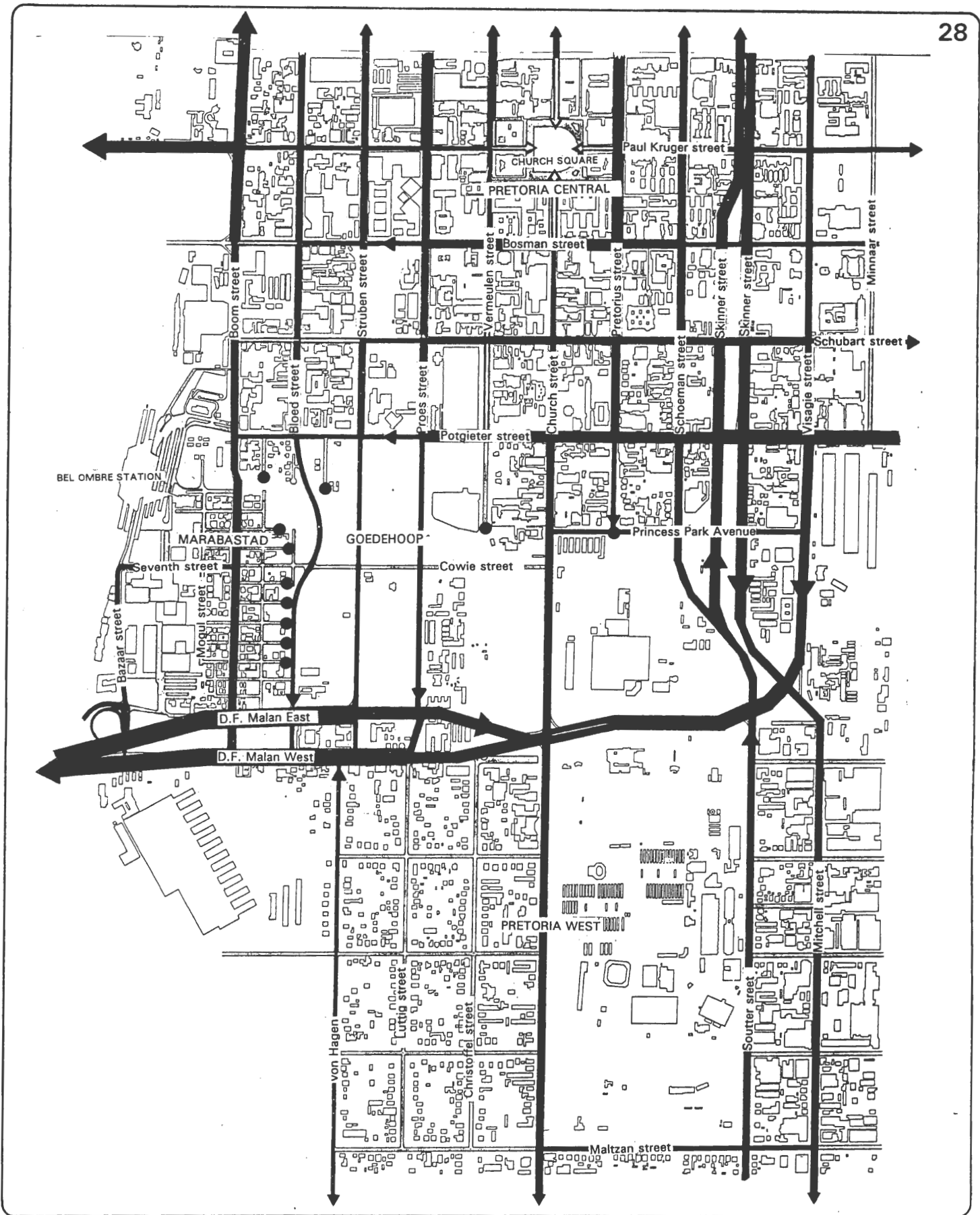


Figure 41:  
**TRAFFIC VOLUME**

4.2.3 Vehicular flow and intensity

Pretoria Central is characterised by a grid pattern that is dominated by the vehicle. Operating only at a vehicular level the city is highly congested; individual streets lack identity; street blocks are isolated and pedestrian flow along streets and between street blocks, is ignored (Fig. 41). Important streets such as Paul Kruger Street and Church Street lose their identity as symbolic axes and therefore places like Church Square, the Museum and the Zoo, situated along these axes therefore, also lose their value as important public nodes - the overall legibility of the city is therefore greatly reduced.

In an attempt to deal with congestion, D F Malan facilitates a north-south flow and provides a connection to the northern suburbs, while Skinner Street runs east-west. Both are dual carriageways and function as barriers with D F Malan separating Pretoria Central from Pretoria West, and Skinner Street bisecting Pretoria Central in half (Fig. 41 and Fig. 28).

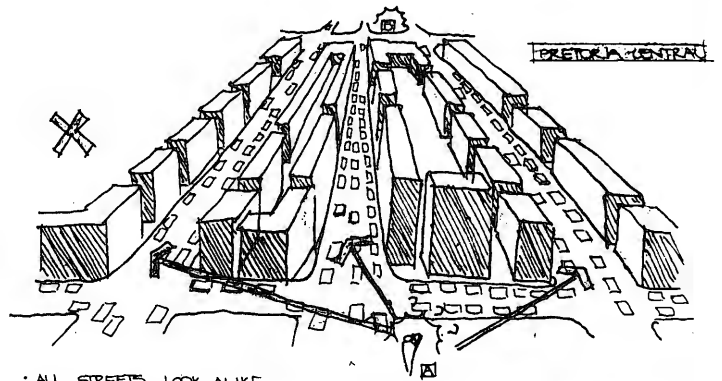
In comparison to Pretoria Central, Marabastad displays a certain hierarchy, where a primary movement channel passes through it, with second and third order roads that cater for pedestrians and parking for shop owners (Fig. 42 - Fig. 44). Due to forced removal of people from Goedeheop, and its subsequent clearing in the 1960's many streets running north-south from Marabastad, suddenly terminate and the street pattern is discontinued (Fig. 41).

Issues:

- there is an under-developed hierarchy of streets - most streets operate only at a vehicular level, pedestrian movement subsequently ignored.
- a discontinuity of the street pattern in the area of Goedeheop with many roads ending in dead-ends.
- as most streets operate only at a vehicular level, important paths and their associated public nodes, lose identity and the legibility of the city is greatly reduced.
- Skinner Street and D F Malan as major high speed movement channels in the city. These streets are characterized by an underdeveloped and isolated island strip that separates two traffic flows.
- Marabastad as a precedent for Goedeheop and Pretoria Central, where a street order is established that caters for the vehicle and the pedestrian.

Principles:

- hierarchy;
- legibility;
- axes and perspective.



- ALL STREETS LOOK ALIKE
- VISUAL DISORIENTATION
- NON LEGIBLE ENVIRONMENT
- STREET HIERARCHY LACKING - PEDESTRIAN MOVEMENT IS IGNORED

IN MARABASTAD:

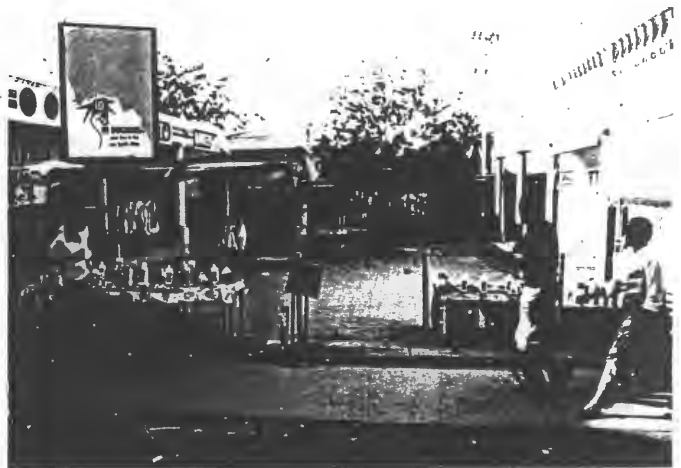
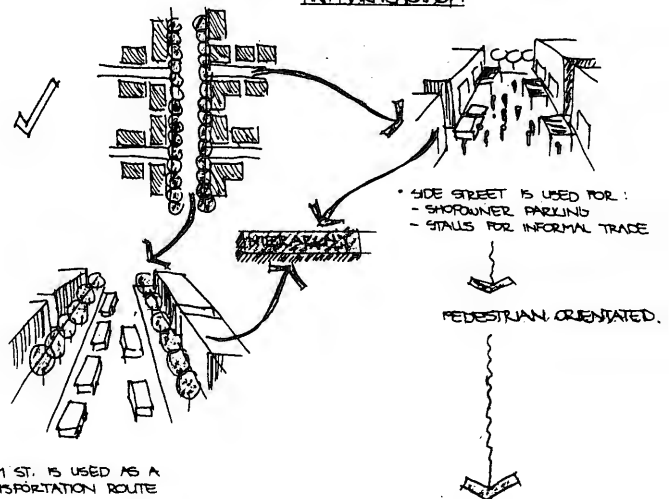


Figure 42: A street Market in Marabastad

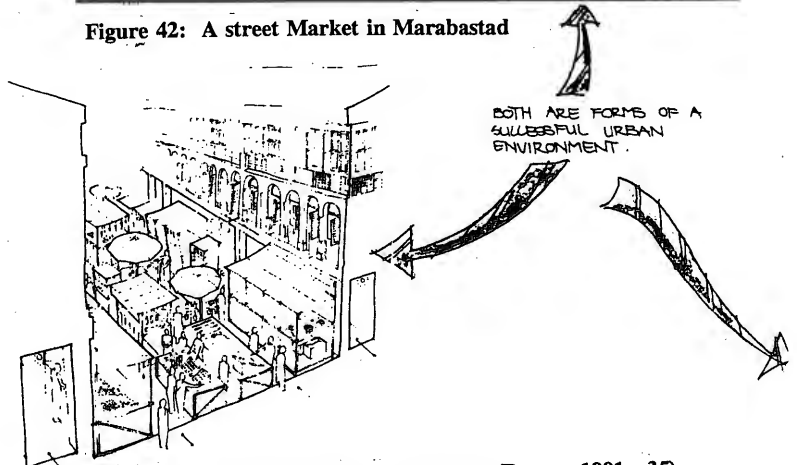


Figure 43: A street market in Singapore (Dewar, 1991 : 35).

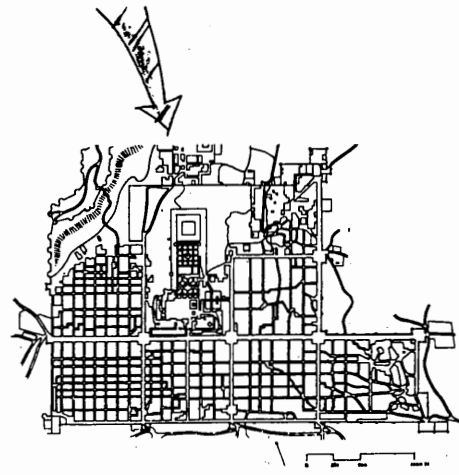
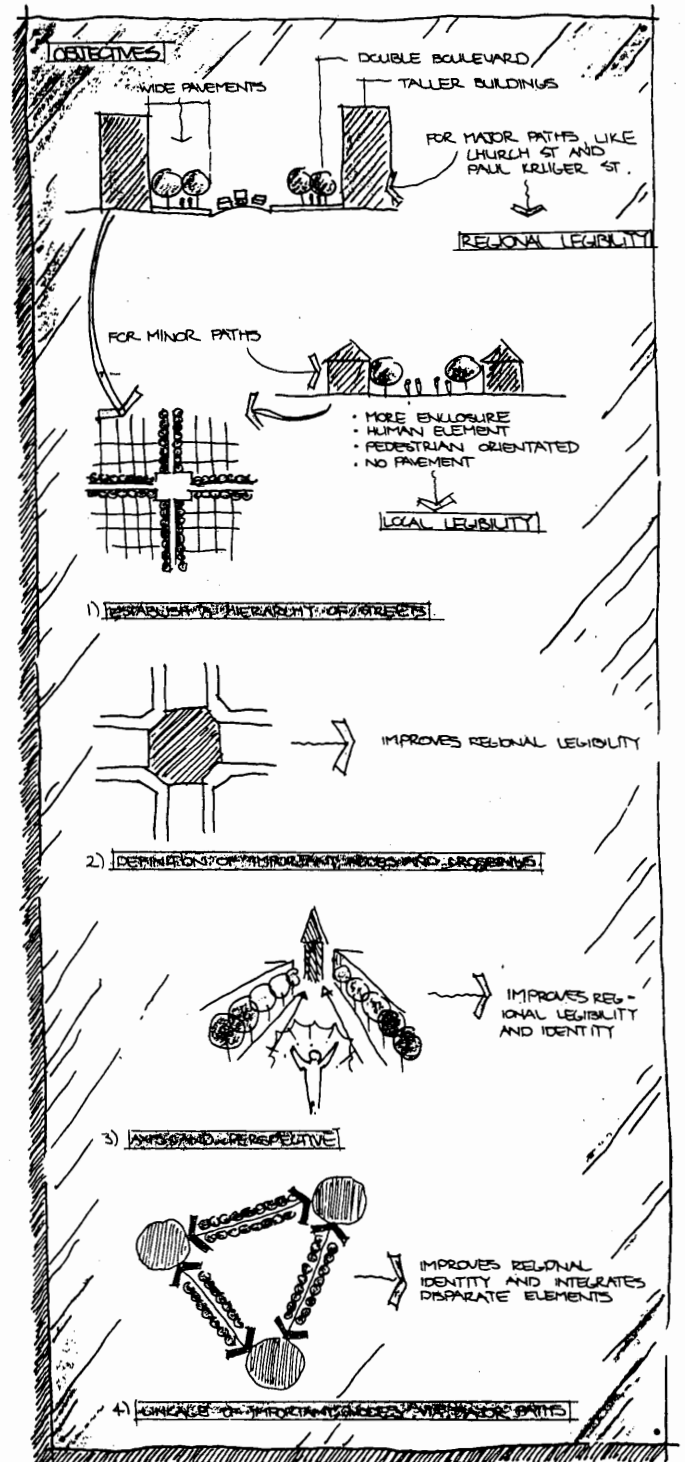
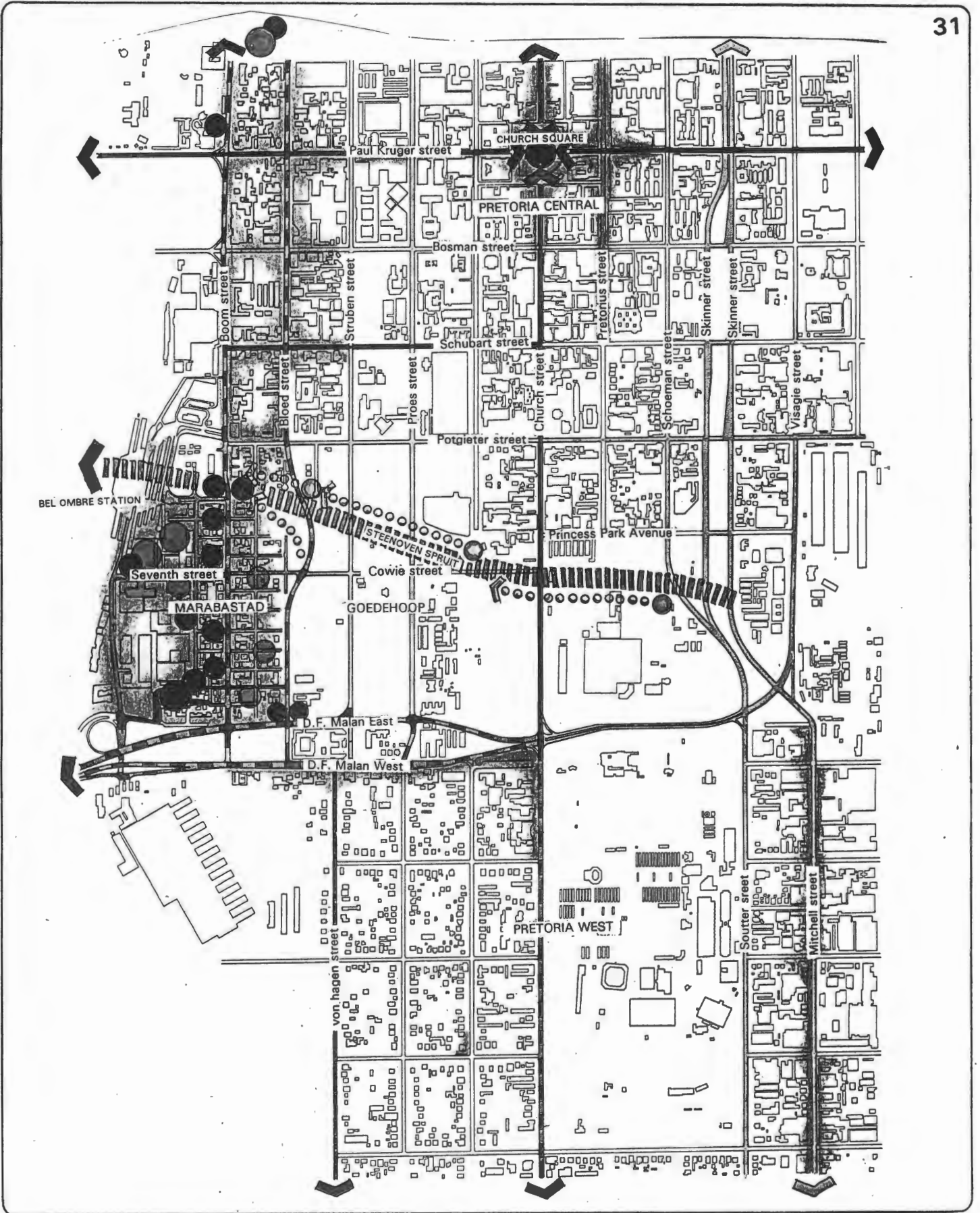


Figure 44: Street hierarchy in Jaipur, India (Dewar, 1991)

• MANDALA IS REFLECTED STRONGLY IN THE URBAN FORM, WITH THE AXES OF THE MANDALA ACTING AS INTEGRATORS







	PEDESTRIAN ACTIVITY		PUBLIC BUS ROUTES AND TERMINALS	
	PEDESTRIAN PATHS		BUS AND TAXI ROUTES	
	INFORMAL BUSINESS		MAIN TRAFFIC ROUTES ADJACENT TO AND BISECTING SITE	
	TAXI ROUTES AND RANKS		STEENOVEN SPRUIT	

Figure 45:  
PEDESTRIAN AND  
VEHICULAR ACTIVITY

4.2.4 Vehicular and pedestrian activity

Issues:

informal trade is closely associated with bus and taxi ranks, and are either situated next to these drop-off points or along their major routes. The drop-off points and taxi routes are natural generators of people, and in Marabastad, the informal trader and small businessman, benefits from their presence. This accounts for the high pedestrian and commercial activity along Boom Street and Bloed Street.

- Goedehoop is easily accessed by major bus and taxi routes. Several main streets bisect the site providing access from the west and east.
- easy pedestrian access into Church Square is prevented by public transport system that penetrates the area. This undermines the square's value as a public place.
- pedestrian activity in the commercial areas of Marabastad and Boom Street, D F Malan, Church Square and Mitchell Street, are detached and isolated.
- there is considerable pedestrian activity that occurs along the Steenovenspruit (Fig. 45 and Fig. 46).

Principles:

- catalysts;
- access;
- integration/linkage.

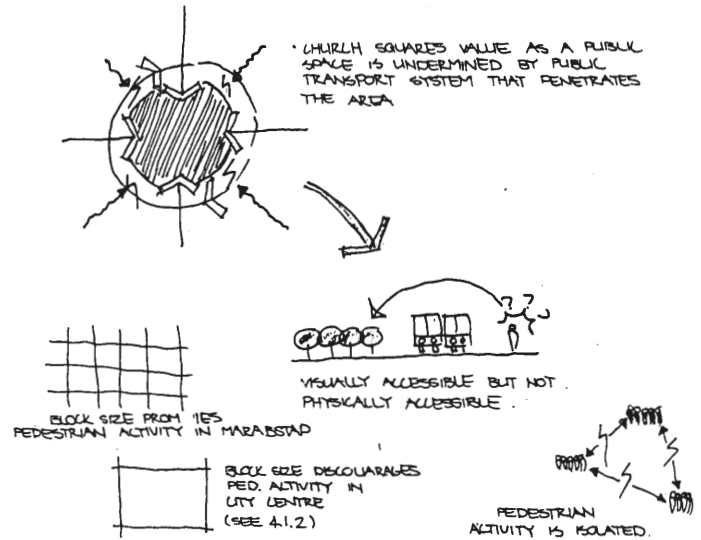
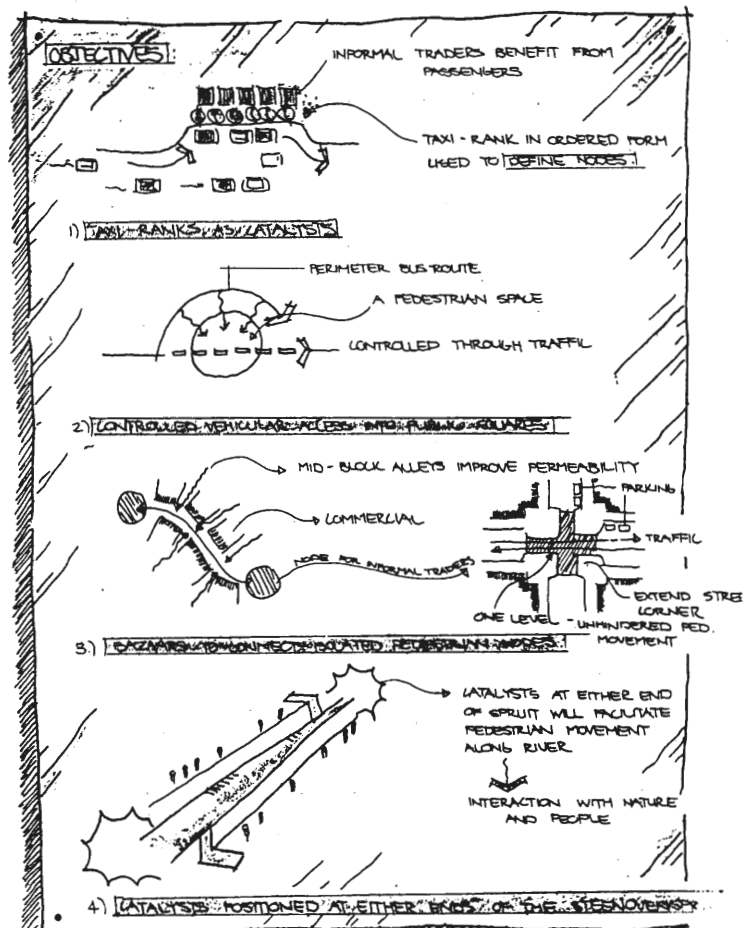
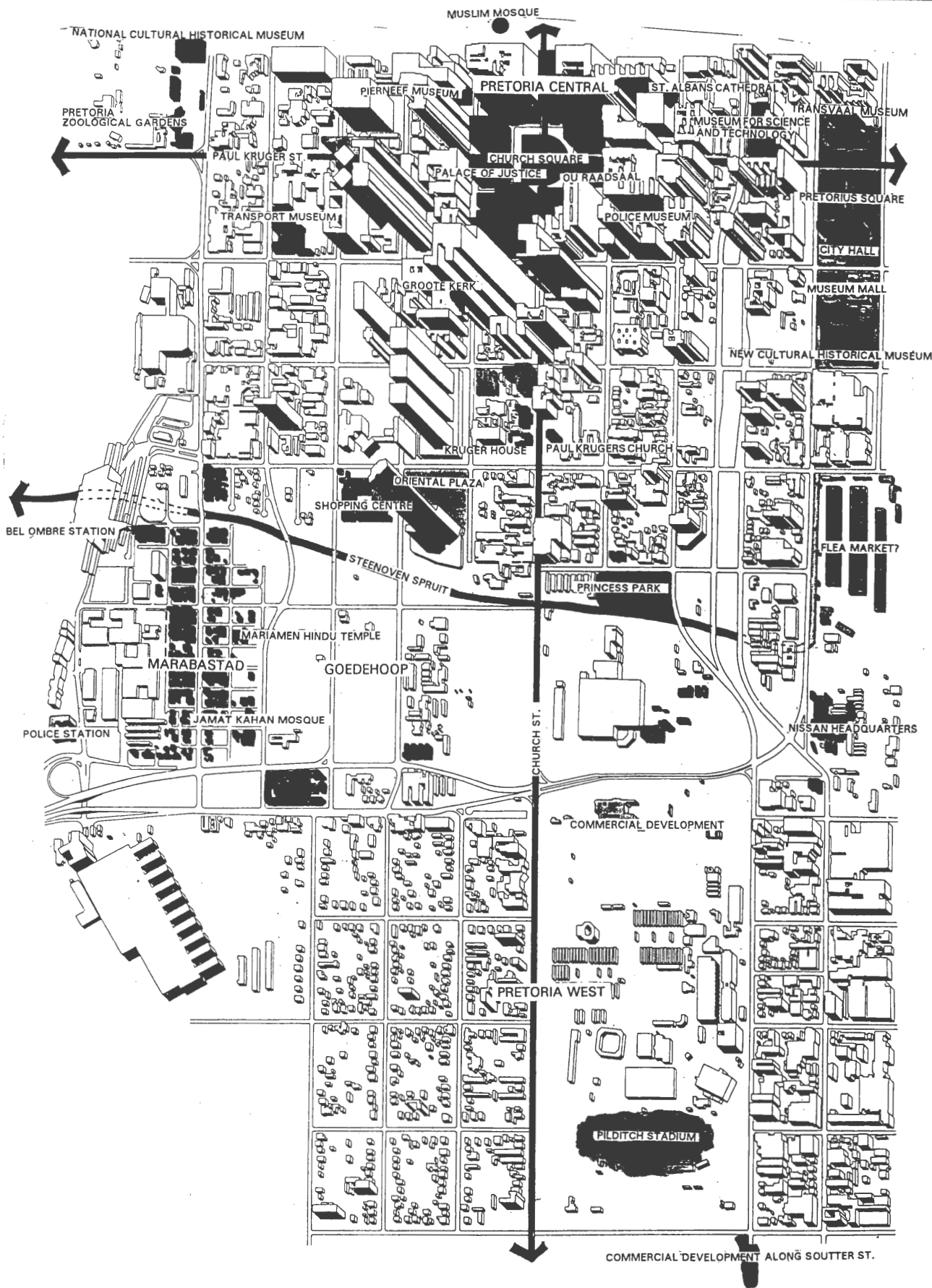


Figure 46: Significant pedestrian activity along the Steenovenspruit







- PLACES OF CULTURAL AND HISTORICAL IMPORTANCE
- NEW DEVELOPMENT
- PROPOSED DEVELOPMENT

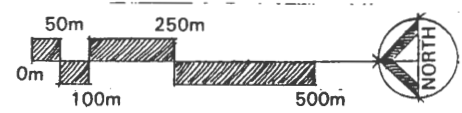


Figure 47:  
**PLACE STRUCTURE**

#### 4.2.5 Place Structure

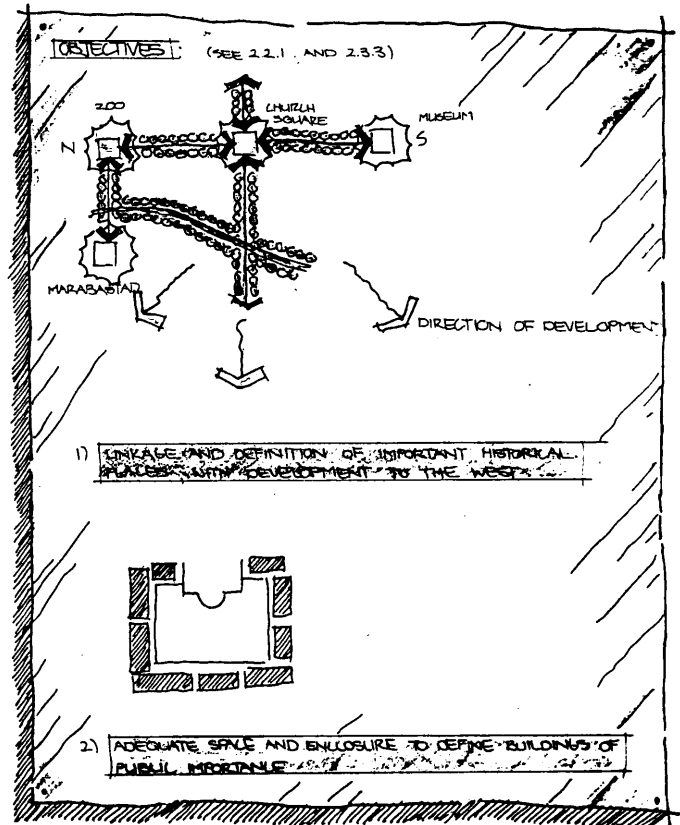
##### Issues:

- Pretoria Plain, Church Square, Zoological Gardens, Marabastad, Paul Kruger Street and Church Street axes as places of significant public and historical value.
- Steenovenspruit as an important natural boundary for Pretoria city.

significant development taking place in Pretoria West. The availability of land for a prime business location in comparison to high rent values and an exclusive market in the eastern suburbs supports the idea of Pretoria West as a potential market for viable commercial development (Fig. 47).

##### Principles:

- linkage;
- definition;
- nodal development.



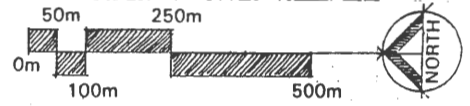
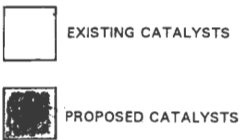
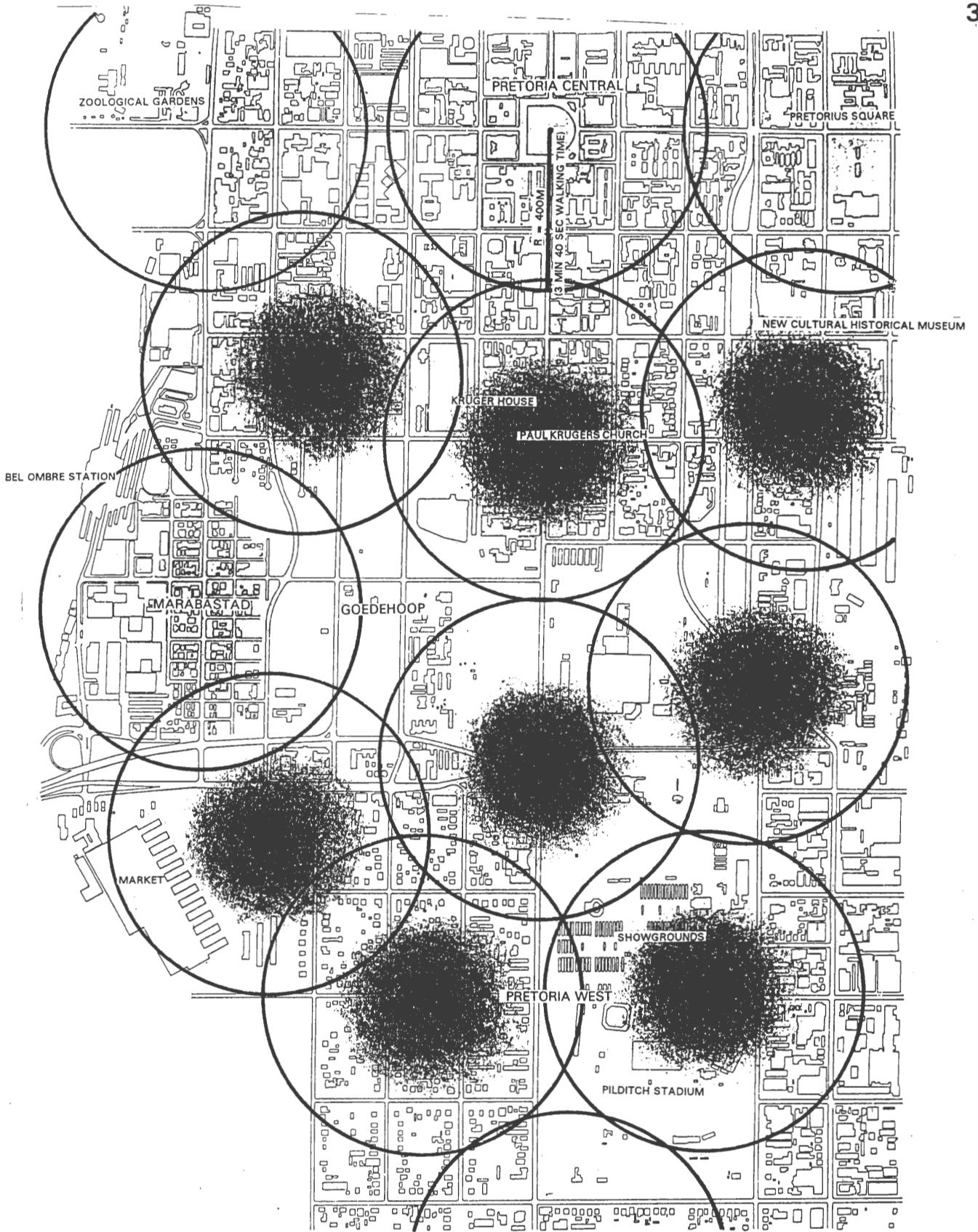


Figure 48:  
**PROXIMITY**

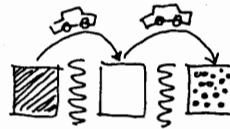
4.2.6 Proximity

Issues:

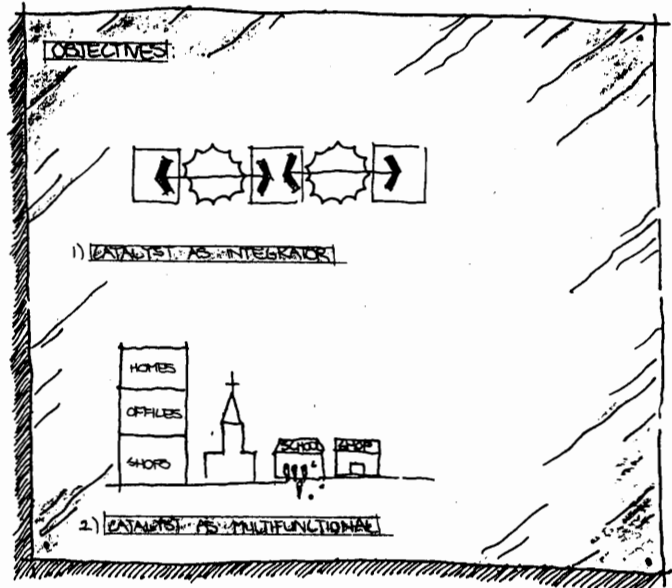
- existing nodes of the Zoological Gardens, Church Square, Pretoria Square and Marabastad should be strengthened as major structuring elements in the city.
- Marabastad is detached from Church Square at a pedestrian level.
- lack of sufficient catalysts or nodes in Pretoria West to provide sufficient linkage with Pretoria Central. Overall city legibility is therefore reduced, discouraging pedestrian movement between districts. However, existing developments in the area like the Market and proposed developments like the new Cultural and Historical Museum, Kruger House Plain and Pilditch Olympic Stadium can provide the necessary visual and physical links with the city centre if developed as public nodes (Fig. 48).

Principles:

- nodal development/place theory;
- integration;
- legibility.



\* ACTIVITIES / FUNCTIONS ARE SPECIALIZED (SEE 4.2.1.1)  
 - ISOLATED DISTRICTS.  
 - JOINED BY THE USE OF THE MOTOR CAR.



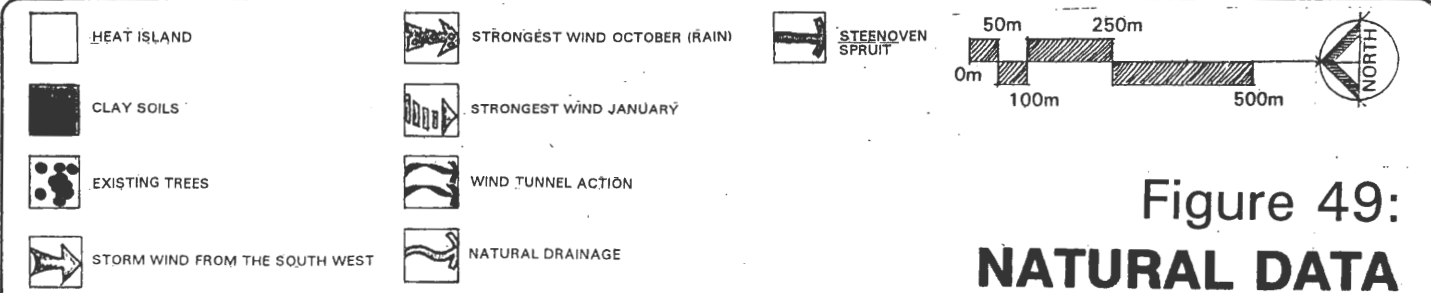
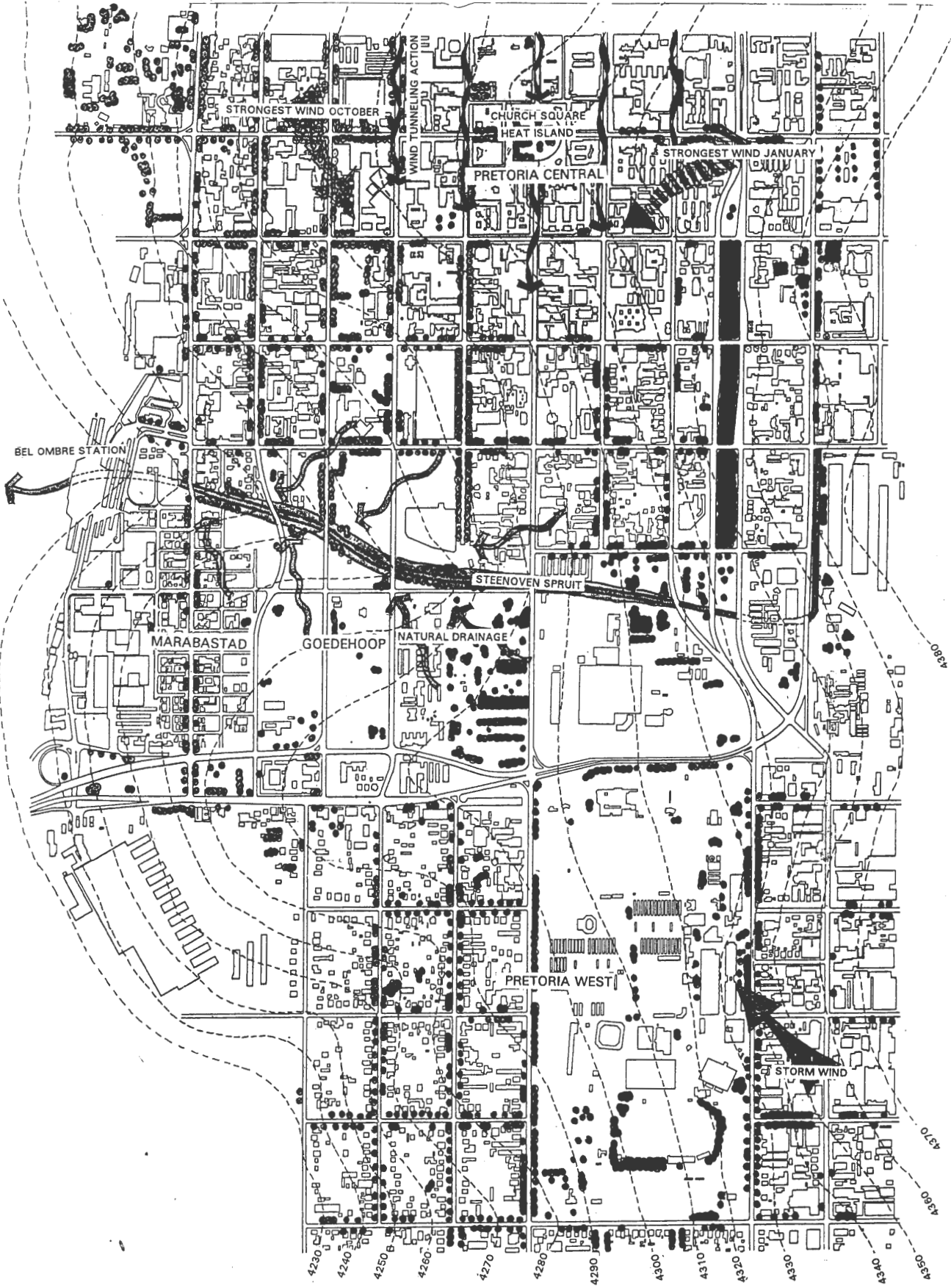


Figure 49:  
**NATURAL DATA**

4.3 NATURAL DATA

4.3.1 Micro-climate

4.3.1.1 The Urban Heat Island

This phenomena is common to most cities, where the city is hotter than the surrounding countryside during part of the day, and much of the night (Fig. 49 and Fig. 50). This is because much of the natural plant cover of the countryside has been replaced by concrete and bricks in the city. These materials naturally absorb more heat and store it much longer than do plants, soil and water. The situation is also aggravated through combustion of the car, manufacturing processes and generation of electricity e.g. air-conditioners (Spirn, 1984 : 52). The micro-climate of the city is therefore negatively affected, especially in Africa where naturally high summer temperatures need to be contended with.

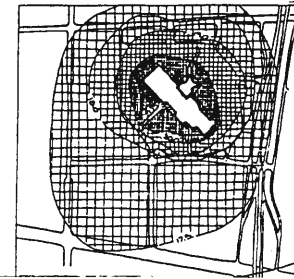


Figure 50: Shopping mall heat island - air above the buildings (innermost circle) is 4°C hotter than in a suburban neighbourhood, one block away (outermost circle). (Spirn, 1984 : 54)

4.3.1.2 Inversions

Due to high pollutants that are emitted from motor cars in the city centre, there is a concentration of poisonous gases at street level. These pollutants adversely affect the quality of life in the city - both indoor and outdoor. The situation is aggravated by the height of the buildings: at the bottom of a street canyon, the morning sun is prevented from heating the cooler air at street level. A local inversion then occurs, trapping pollutants at a street level until noon, when the midday sun can heat the cooler air below, allowing it to rise and dispersing the pollutants in the process (Fig. 51). It is this period between morning and midday that the levels of pollution are sufficient to affect anyone exposed to this air for as little as an hour (Spirn, 1984 : 56). Spirn also notes that if air-conditioning inlets are situated at street level, carbon monoxide levels may be as high inside buildings as it is at street level.

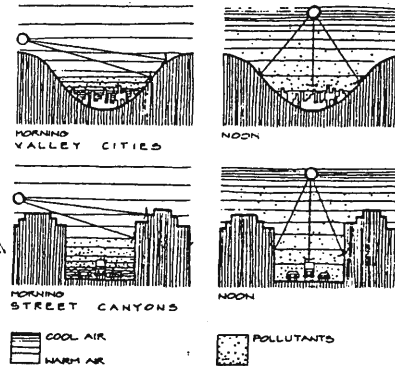


Figure 51: Inversions in valley cities and street canyons

It should also be noted that inversions also permit the formation of a phenomenon known as the Urban Heat Island<sup>1</sup>. Pollutants emitted from cars and industry are not only trapped at the bottom of street canyons, but in valleys (Fig. 51). As in the street canyon, the warm air forms a lid over the city preventing the dispersion of pollutants: the accumulation of pollutants just below the inversion layer reflects any outgoing radiation back to the city, and in the same way, this layer also prevents any incoming radiation that is necessary to warm the cooler air that is trapping pollutants on the valley floor (Fig. 52). At a regional level this is due to the placing of industry and highways in low lying areas where inversions naturally occur and prevailing winds are unable to disperse pollutants effectively.

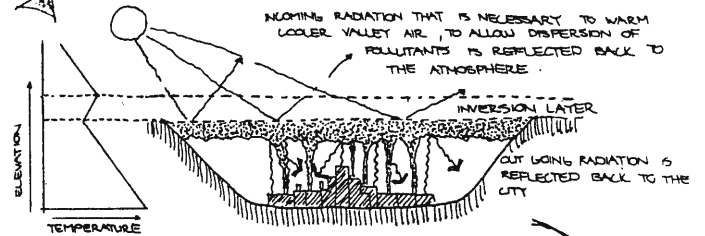
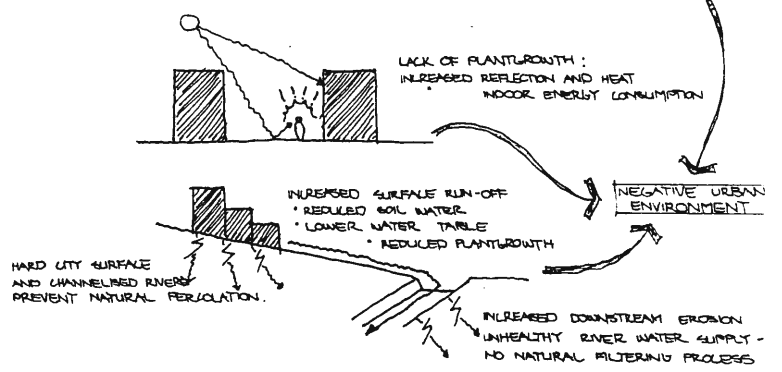


Figure 52: Air layers under inversion conditions (after Brooks, 1982)

4.3.2 Landform

The landform of Pretoria Central is undulating with a slight valley formation in the Goedehoop area, where the Steenovenspruit runs. The general slope west of Church Square to Pilditch Stadium is between 5 and 8%. This does not place any restrictions for housing development and commercial activity (Fig. 49).



4.3.3 Plantgrowth

What with increasing pollution levels, surface run-off, street widenings, and earth compaction, many of the street trees that were planted during the Kruger era have been lost to today's generation. Street trees are few and scattered in the city centre and no longer serve as the binding glue of the city (Fig. 49). The lack of street trees and plantgrowth also negatively impacts on the micro-climate of the city.

Prolific plantgrowth along the Steenovenspruit has been prevented through its channelisation. Natural percolation cannot occur and a ground water supply necessary to support plantgrowth is therefore not available (Fig. 49).



Figure 53: Channelised Steenovenspruit - an underutilized natural resource

1. Vide 4.3.1.1: 38

4.3.4 Soils and Geology

The underlying geology in the Goedehoop area is andesitic lava (Hekpoort formation) and shale. Soils that arises from andesitic lava are generally shallow and belong to the Mispah group. These soils have an under-developed A-horizon and are well leached.

Neither the geology nor the soils are restrictive in terms of development. The hard nature of the andesitic, lava and shallow Mispah soils, however, will increase the costs for the laying of services and foundations.

The low swelling capacity of the clay soils along the Steenovenspruit does not prevent development taking place in this area (Fig. 49).

4.3.5 Hydrology

The slight valley formation in the Goedehoop area where the Steenovenspruit runs naturally facilitates drainage from Pretoria Central (west of Church Square) and from Goedehoop and Marabastad (east of D F Malan) Both Paul Kruger Street and D F Malan run along watersheds constituting Goedehoop as a natural catchment area (Fig. 49).

Through the channelisation of the Steenovenspruit and hard landscape of the city, natural percolation and renewal of ground water has been prevented (Fig. 53).

4.3.6 Winds

There are three dominant wind directions in Pretoria - one is generated from the north-east and is normally associated with light rains, with one from the south-east and a storm wind from the south-west (Fig. 49).

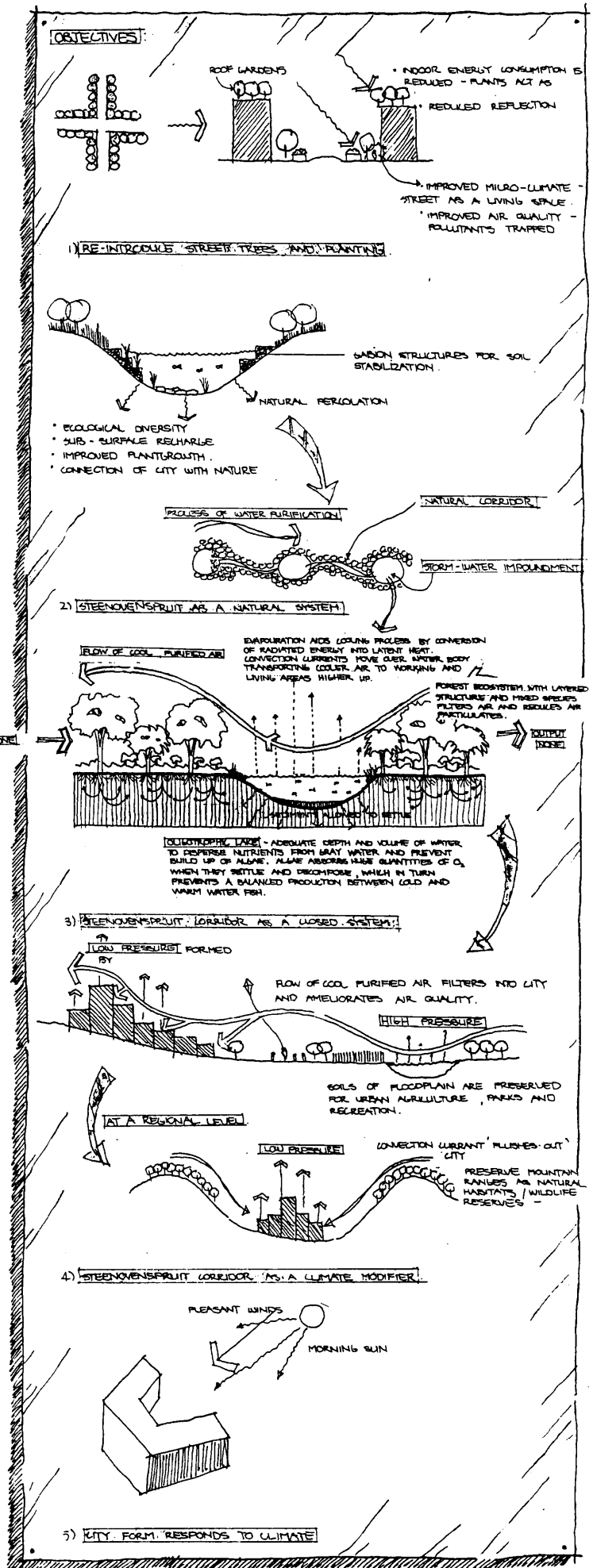
These winds can influence the micro-climate of the city, and in terms of orientation, buildings should respond to these wind patterns. The winds from the north-east and south-east are the most favourable.

Issues:

- urban heat island negatively impacts on the city micro-climate. This is due to a lack of natural vegetation in the city centre.
- street canyons encourage inversions which trap pollutants at street level which negatively impact on health. At a regional level, this situation is exacerbated by locating industry and highways in natural basins where there is limited air circulation.
- lack of street trees undermines the city's legibility.
- Steenovenspruit as a natural corridor is prevented by its channelisation.
- drainage in the Goedehoop areas is facilitated by the Steenovenspruit.
- predominant wind patterns can be used to ameliorate air quality.

Principles:

- urban ecology and sustainability;
- mobilization of natural resources.





4.4 INSTITUTIONAL GOALS

4.4.1 1967 Highway Proposal

In 1967 the City Council accepted the construction of a ring road around the city centre as well as connecting other freeways (Fig. 54).

"The scheme was an engineering exercise in which the road pattern was super-imposed on the existing fabric of the city" (Kraehmer, 1978) in (Biljon, 1986 : 35).

In its completion it will result in:

- destruction of the existing urban fabric. To the north, the entire block between Boom Street and Bloed Street, stretching from D F Malan to Beatrix Street, would be demolished for the highway's construction. This would include the obliteration of Marabastad, a prosperous CBD for small businesses and the informal trader. A similar design scenario is illustrated by Trancik in Figure 55.
- a visual stain on Pretoria's identity as a capital, the raised highway bearing no relationship to existing built form, "...the proposed interchange at what is now the Caledonian grounds, would be the equivalent of four storeys" (Kraehmer, 1978 in Biljon, 1986 : 37).
- the obliteration of the Steenovenspruit and Apies River. In terms of their value as natural boundaries to the city<sup>1</sup>, their cultural and comic value would be lost forever. In this light, a further implementation of the proposal is not suggested!

A decision was taken after the proposal was accepted not to construct the section that runs along the Apies River. The rest of the plan remains, but due to a lack of funds, the Highway Proposal has never seen final completion (Biljon, 1986 : 37). However, D F Malan and the Skinner Street extensions, both dual carriageways, have been built to facilitate increased volume of traffic into the city centre. To the west of Goedehoop, D F Malan provides a link to the northern suburbs, and Skinner Street extension sees the completion of the 1967 proposal facilitating east-west flow (Fig 41).

It should also be noted that the proposed interchange in the north-west quadrant of Pretoria effectively spreads over the entire area of Marabastad and Goedehoop, providing an excuse for the council to eradicate an area that is seen as a threat to white Pretoria (Fig. 54). Marabastad was lucky enough to survive such 'sanitary' measures<sup>2</sup>, and still stands today in defiance of Apartheid, a bustling commercial district, the only true polycultural African context Pretoria has.

Issues:

Skinner Street extension sees completion of the first phase of the 1967 Highway Proposal and effectively splits the CBD in two. This road is not sunken as stated in the proposal, and is an effective barrier to the pedestrian. The spatial continuum of the city is suitably destroyed in this area (Fig. 26 and Fig. 28).

4.4.2 Goedehoop area

This area comprises some 20 city blocks, and would include the area 'Goedehoop' just south of Marabastad, which was demolished in the 1960's for the construction of the 1967 Highway Proposal. This area, some 82,5 ha in extent, was 'frozen' by the former Department of Community Development, some years back (Biljon, 1986 : 37) (Fig. 56).

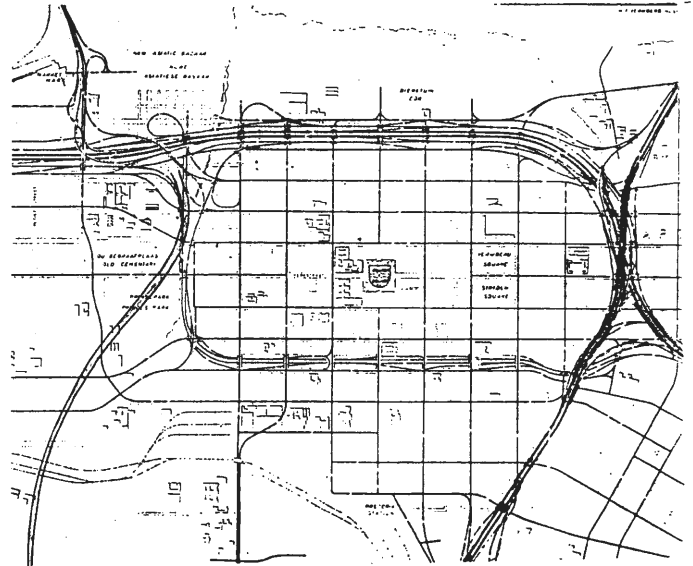


Figure 54: The 1967 Highway Proposal

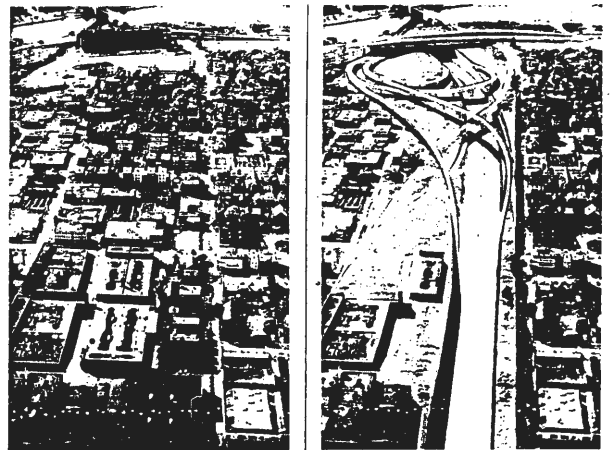
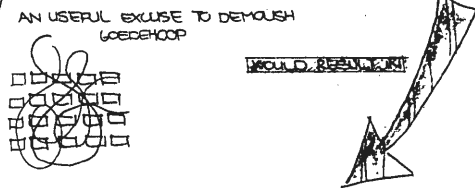
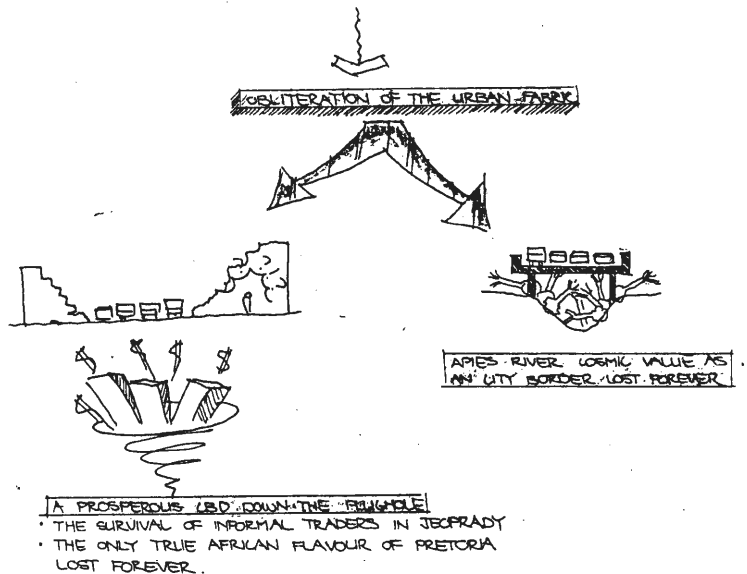


Figure 55: Highway proposal scenario (Trancik)





Many of the re-development proposals for this area date back to 1971 (Biljon, 1986 : 38). The aim was to develop a high residential component adjacent to the CBD (Fig. 57). Characterised by the modern movement, the development took on the form of high-rise apartment blocks. Two complexes, Schubart Park and Kruger Park have been completed (Fig. 58 and Fig. 59). The comparison between the proposed development in Figure 57 and Hilberseimer's proposal in Figure 60 is frightening!

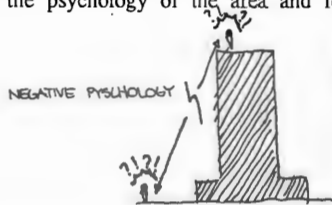
These complexes were envisaged as self-contained units, high-rise towers on podiums that accommodated house parking, community and shopping facilities (Biljon, 1986 : 38). However, they stand isolated, are introverted and bearing no relationship to the street edge, they stand isolated, detached from the very meaning of community.

**Issues:**

- the 'frozen' area of Goedehoop is an incomplete link in the city's structure, devoid of spirit and meaningful development.
- self-contained complexes of Schubart Park and Kruger Park negatively impacts on the psychology of the area and its residents.

**Principles:**

- integration;



**4.4.3 Church Street Pedestrianisation**

Part of Pretoria's structure plan is the conversion of Church Street into a pedestrian mall, extending from Potgieter Street in the west, to Beatrix Street in the east. Work on the first stage of this proposal has started with the pedestrianisation between Prinsloo Street and van der Walt Street. This will join Sammy Marks Plaza with Strydom Plain and the State Theatre. This will form a secondary node with Church Square, remaining as the focus of attention along the east-west axis. To the west of Church Square, an additional node Kruger Square is envisaged, where a National Cultural Historical Museum, Botanical Gardens and other governmental institutions will be located. This site is the location of Paul Kruger's House and the Gereformeerde Kerk (Biljon, 1986 : 38).

**Issues:**

- the location of Kruger Square to the west and the Strydom - Sammy Marks Plain to the east, are well positioned as catalysts between districts and can function well as cultural hubs. In terms of legibility and their historical value, they are important nodes in Pretoria's physical make-up.
- total exclusion of the motor vehicle from Church Street might not be economically viable. If Church Street is to be developed as a type of activity corridor, then access to shops and businesses should not be restricted. Still heavily dependant on the motor-car for transportation, vehicular access to the mall should be considered.

**Principles:**

- accessibility;
- mixed use planning/multi-functionalism;
- legibility.

AN OFFERED URBAN ENVIRONMENT



Figure 56: Goedehoop - the "frozen" area (Biljon, 1986).



Figure 57: Goedehoop urban renewal housing scheme



Figure 58: Kruger Park - an impenetrable fortress



Figure 59: Schubart Park - isolated towers



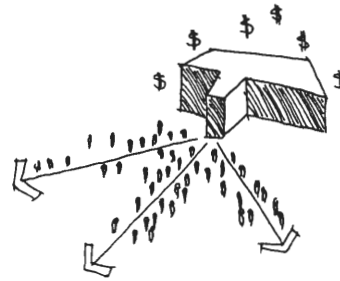
Figure 60: Hilberseimer's city model (Trancik, 1986)

1. Vide 2.3.3:  
2. Vide 3.1:11

4.4.4 Marabastad

The future of this prosperous CBD is uncertain. Although the buildings belong to the Indians, the land belongs to the State. The highway proposal that slices through the area, further complicates matters and it is uncertain whether the area is to be upgraded or partly demolished for construction of the highway (Biljon, 1986 : 39)!

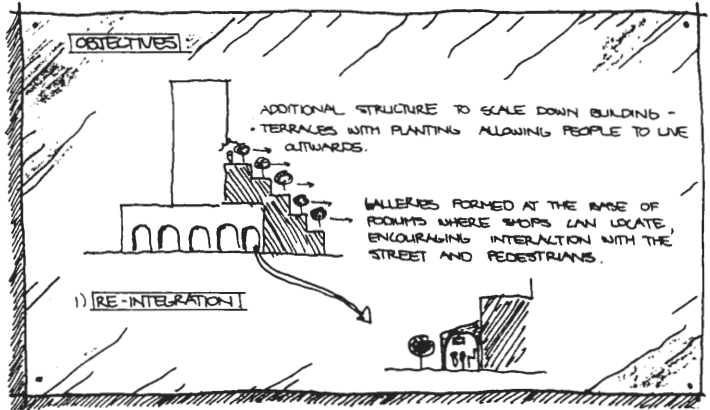
The area remains today as an example of successful small-scale business activity and informal trade, supported daily by tens of thousands of pedestrians, generated from Bel Ombre Station.



MARABASTAD AS A PROSPEROUS CBD  
- INFORMAL TRADERS AND SMALL BUSINESS  
SUPPORTED BY TENS OF THOUSANDS OF PEOPLE  
GENERATED FROM BEL OMBRE EACH DAY.

Issues:

- if the highway proposal is implemented, this prosperous CBD, unique to Pretoria and rich in culture and tradition, will be lost forever.



## 5. DESIGN INTERVENTION

### 5.1 EXPLORATION

After an initial historical and physical analysis of Pretoria was made, a loose concept was formulated, identifying the major components or issues for the restructuring of Pretoria Central and Pretoria West. They are identified as follows:

- continuity of the urban fabric, by extending existing city block structure of Marabastad over Goedehoop. Through the infill of Goedehoop, existing city patterns are strengthened, and disparate elements are meaningfully connected - in this case, Pretoria West and Pretoria Central.
- the linkage of places of historical and cultural importance through the identification of major paths. Linkage between the Zoo, Church Square and the Museum is provided by Paul Kruger Street. Historically it has always joined these nodes. Church Street in a similar way, links Pilditch Stadium with Church Square and functions as the east-west axis in the city.
- a strong linkage is forged between the Zoo and Marabastad along an existing commercial spine along Boom Street. This should be recognized and strengthened.
- acting as major linkages within the city, the symbolic value of Church Street and Paul Kruger Street, as the original trade routes of Pretoria, is realised. This can be further emphasized by treatment of their visual appearance and function. City legibility is therefore reinforced.
- Steenovenspruit should be developed as an integrator, reacting to both east and west. It also provides an effective pedestrian link between Bel Ombre station and the industrial area.
- D F Malan is a physical barrier and in the process of integration between Pretoria East and Pretoria West - some kind of bridging is necessary.

# **PART FIVE :**

# **DESIGN INTERVENTION**

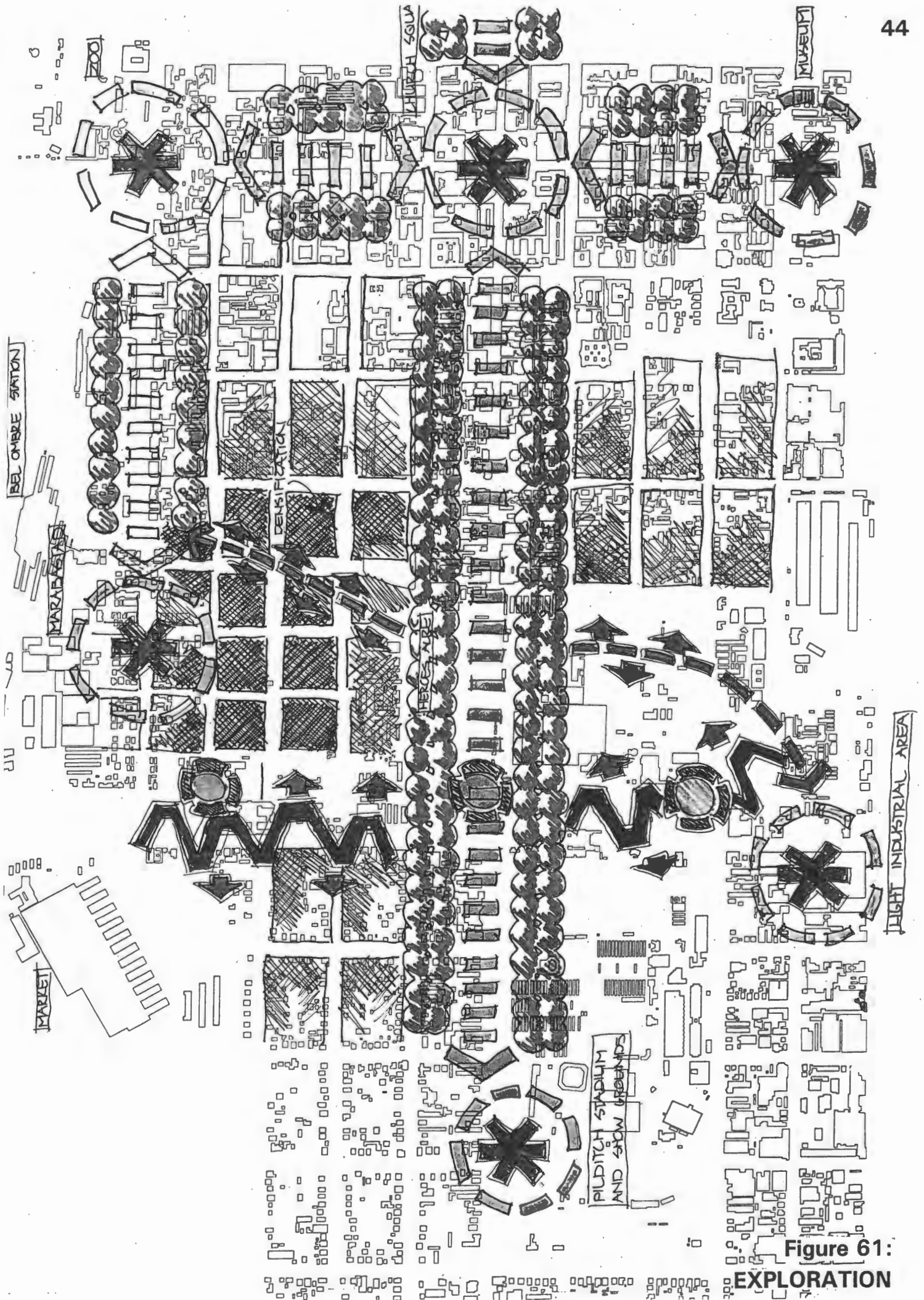


Figure 61:  
EXPLORATION



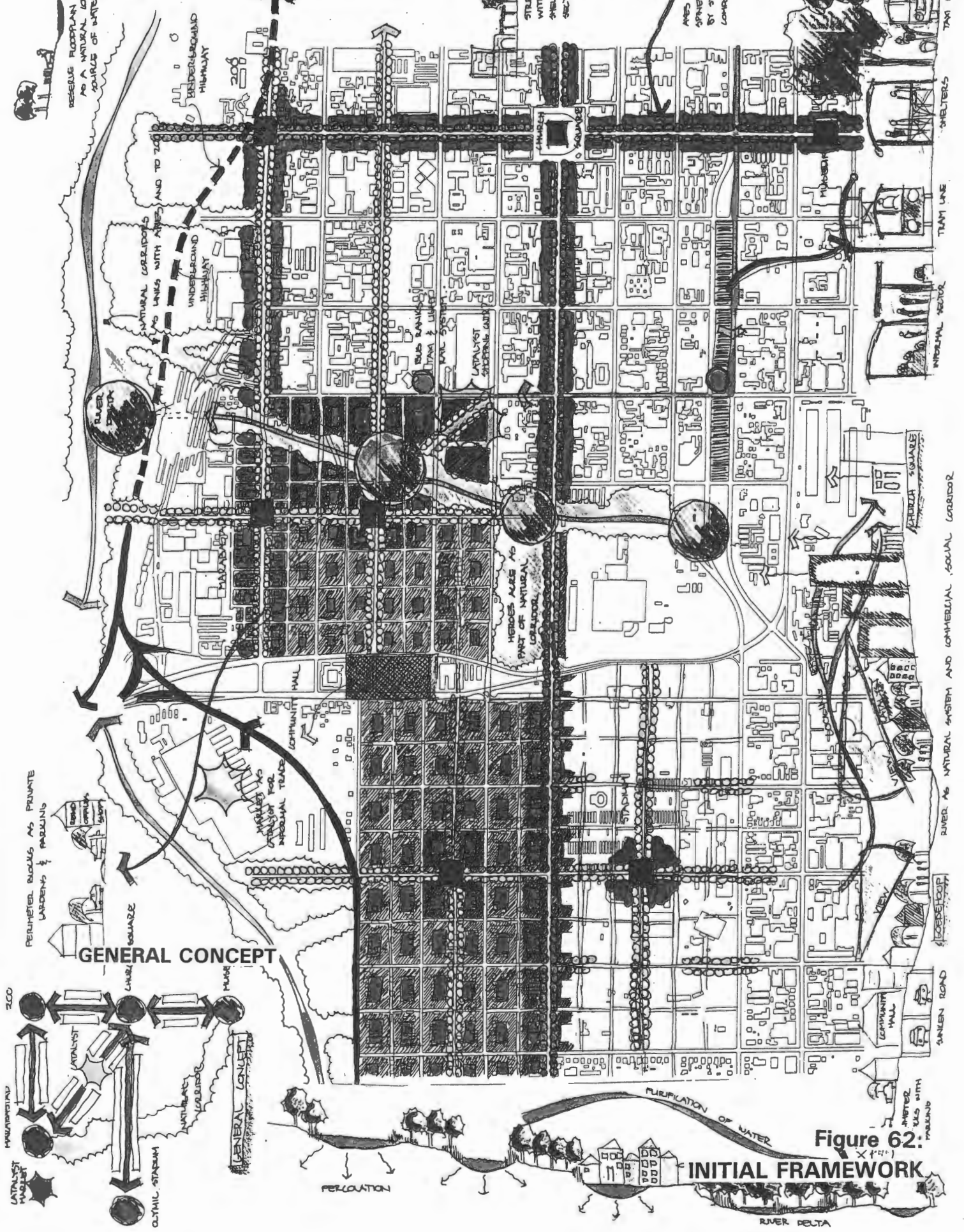
# REGIONAL LIFE

- ACTIVITY SPINES - STRONG COMMERCIAL VALUE
- RESIDENTIAL
- NATURAL CORRIDORS
- ⇨ BUS ROUTE AND LIGHT RAIL SYSTEM.

RESERVE FLOODPLAIN FOR AGRICULTURE AND AS A NATURAL CORRIDOR - SPRUIT AS A SOURCE OF WATER FOR URBAN AGRICULTURE

STREET AS A PUBLIC SPACE WITH WALKWAYS AND SHELTERS FOR MICROCLIMATE IN WORKSHOP

INTER SPACES AS ACTIVITY SPINES BALANCED BY STRONG RESIDENTIAL COMPONENT



## GENERAL CONCEPT

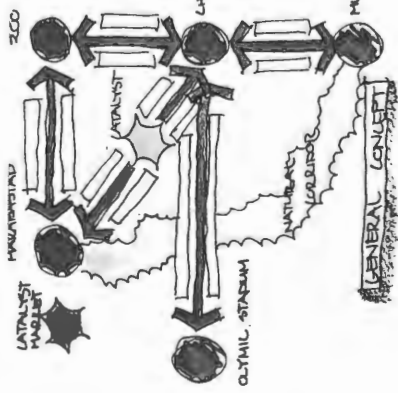
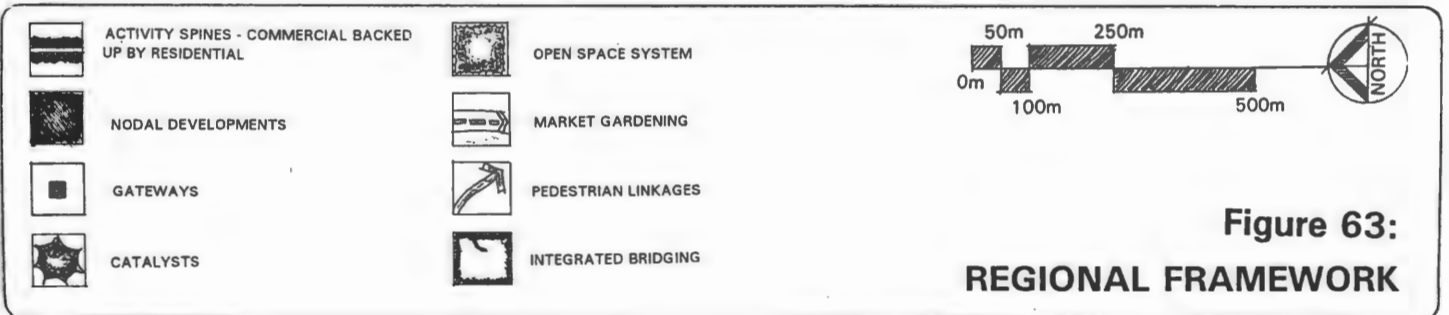
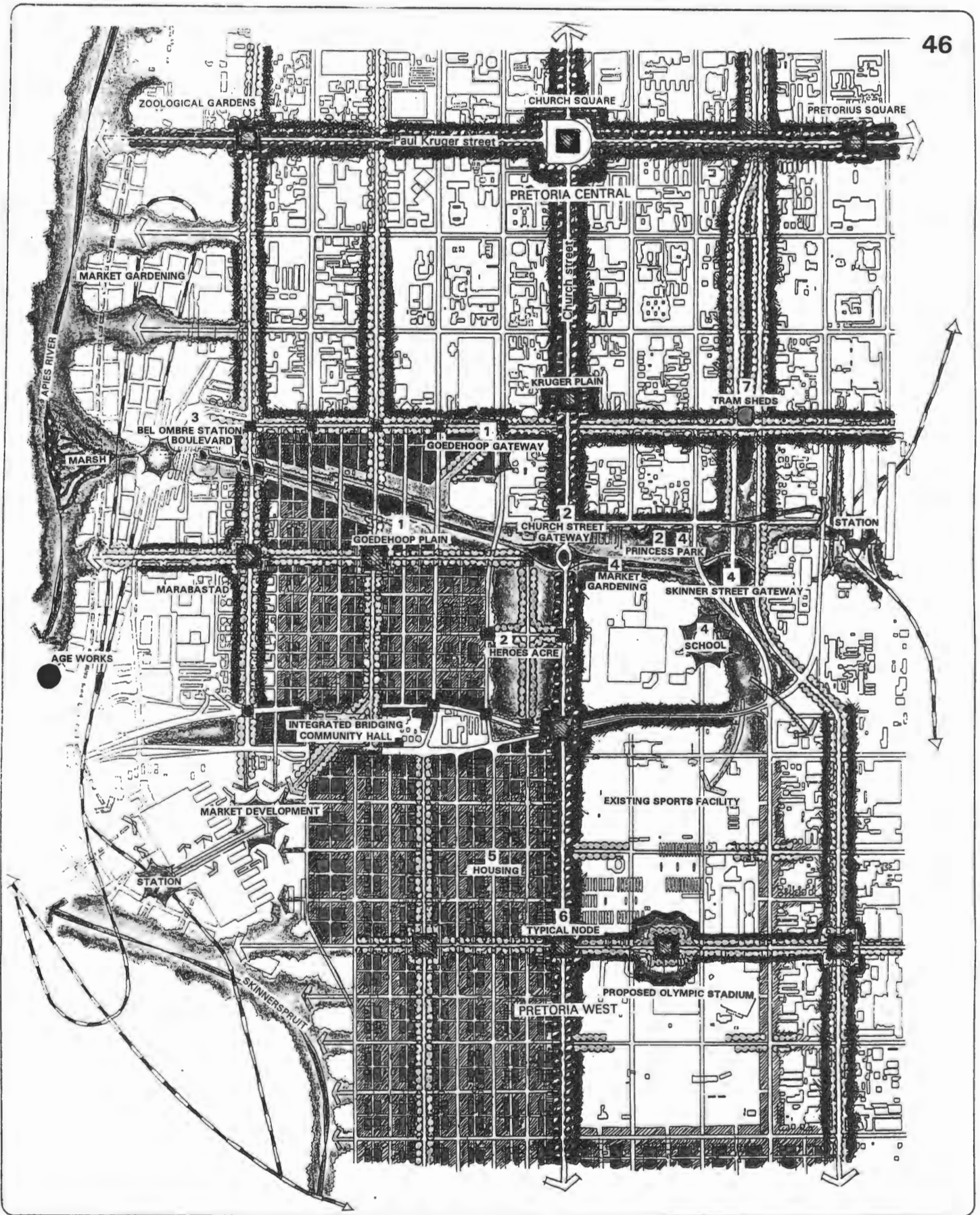


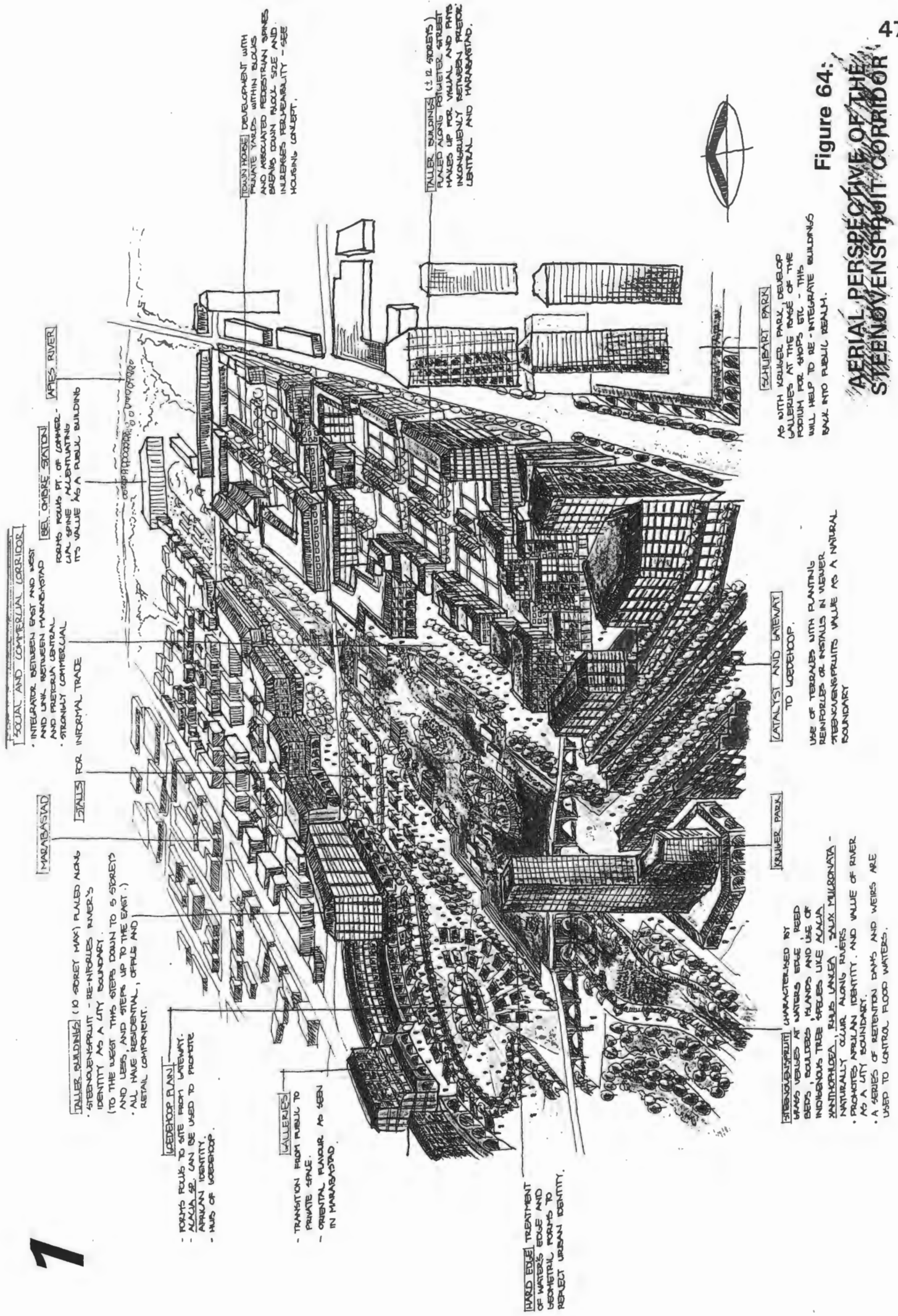
Figure 62:

## INITIAL FRAMEWORK



**Figure 63:**  
**REGIONAL FRAMEWORK**





**SOCIAL AND COMMERCIAL CORRIDOR**  
 INTEGRATOR BETWEEN EAST AND WEST AND LINK BETWEEN MARABASTAD AND PRETORIA CENTRAL  
 STRONGHOLD COMMERCIAL

**BE-ONDRSE STATION**  
 FORMS ROUND PT. OF CORNER - LINK SPINE ALLEVIATING ITS VALUE AS A PUBLIC BUILDING

**MARABASTAD**  
**STALLS FOR INFORMAL TRADE**  
 TALLER BUILDINGS (10 STOREY MAX) RULING ALONG STEENOVENTERSPRUIT - RE-ITERATES RIVER'S IDENTITY AS A CITY BOUNDARY (TO THE WEST THIS STEPS DOWN TO 5 STOREYS AND LESS AND STEPS UP TO THE EAST.)  
 ALL HAVE RESIDENTIAL, OFFICE AND RETAIL COMPONENT.

**LOBBYHOOP PLANNING**  
 FORMS FOLLOWS TO SITE FROM WATERWAY. ALAKA SP. CAN BE USED TO PROMOTE AFRICAN IDENTITY  
 HUBS OF LOBBYHOOP

**GALLERIES**  
 TRANSITION FROM PUBLIC TO PRIVATE SPACE. ORIENTAL FLAVOUR AS SEEN IN MARABASTAD.

**TOWN HOUSE**  
 DEVELOPMENT WITH PRIVATE YARDS WITHIN BLOCKS AND ASSOCIATED PEDESTRIAN SPACES BRINGS DOWN BLOCK SIZE AND INCREASES PERMEABILITY - SEE HOUSING CONSULT.

**TALLER BUILDINGS (12-14 STOREYS)**  
 RULING ALONG POTGIETER STREET MAKES UP FOR VISUAL AND PACE INCONGRUENCY BETWEEN PRETORIA CENTRAL AND MARABASTAD.

**HARD EDGE**  
 TREATMENT OF WATER'S EDGE AND GEOMETRICAL FORMS TO REFLECT URBAN IDENTITY.

**STEENOVENTERSPRUIT**  
 CHARACTERISED BY WANGS VERGES AT WATER'S EDGE, REED BEDS, BOULDERS, ISLANDS AND USE OF INDIGENOUS TREE SPECIES LIKE ALAKA. XANTHOROZEA, BAUS LANGER, SALIX MULLONATA - NATURALLY OCCUR ALONG RIVERS.  
 PROMOTES AFRICAN IDENTITY AND VALUE OF RIVER AS A CITY BOUNDARY.  
 A SERIES OF RETENTION DAMS AND WEIRS ARE USED TO CONTROL FLOOD WATERS.

**KRUIVER PARK**

**USE OF TERRACES WITH PLANTING REINFORCES OR INSTALS IN VIEWER STEENOVENTERSPRUIT VALUE AS A NATURAL BOUNDARY**

**CATALYST AND BREVET TO LOBBYHOOP**

**SZHUHART PARK**  
 AS WITH KRUIVER PARK DEVELOP GALLERIES AT THE EDGE OF THE FORUM FOR SHOPS ETC - THIS WILL HELP TO RE-INTEGRATE BUILDINGS BACK INTO PUBLIC REALM.



**Figure 64: AERIAL PERSPECTIVE OF THE STEENOVENTERSPRUIT CORRIDOR**



LINKAGE OF MARABASTAD AND GOEDEHOOP WITH HERCLES ALLE WITH PERIPHERAL BOULEVARD.  
 RELIGIOUS CEREMONIES

GATEWAY DEFINITION - ACKNOWLEDGES SYMBOLIC VALUE OF STEENOVENSPRUIT AS A CITY BOUNDARY AND CHURCH STREET AS AN ORIGINAL TRADE ROUTE OF PRETORIA. PROMOTES HISTORIC VALUE OF PRETORIA'S TRADITION OF GATEWAYS TO THE CITY, AS AT LIONS BRIDGE AND THE FIRST GATEWAY AT THE CROSSING OF THE RIVER.

STEENOVENSPRUIT SHOULD MEET WITH HERCLES ALLE IN THE FORM OF A RETENTION DAM. ENHANCES RELATIONSHIP BETWEEN THE TWO - STEENOVENSPRUIT AS A CITY BOUNDARY AND WITH ITS CROSSING, TO BE LAID TO REST, IN THE WEST, WITH THE SETTING SUN. - RELIGIOUS CEREMONIES.

THIS WAY, ALSO INCORPORATES HERCLES ALLE WITH NATURAL CORRIDOR - THEREFORE IMPROVED ACCESS TO A SITE OF HISTORICAL IMPORTANCE AND AREA BETTER UTILIZED.

POSSIBLE RECREATIONAL FACILITIES?

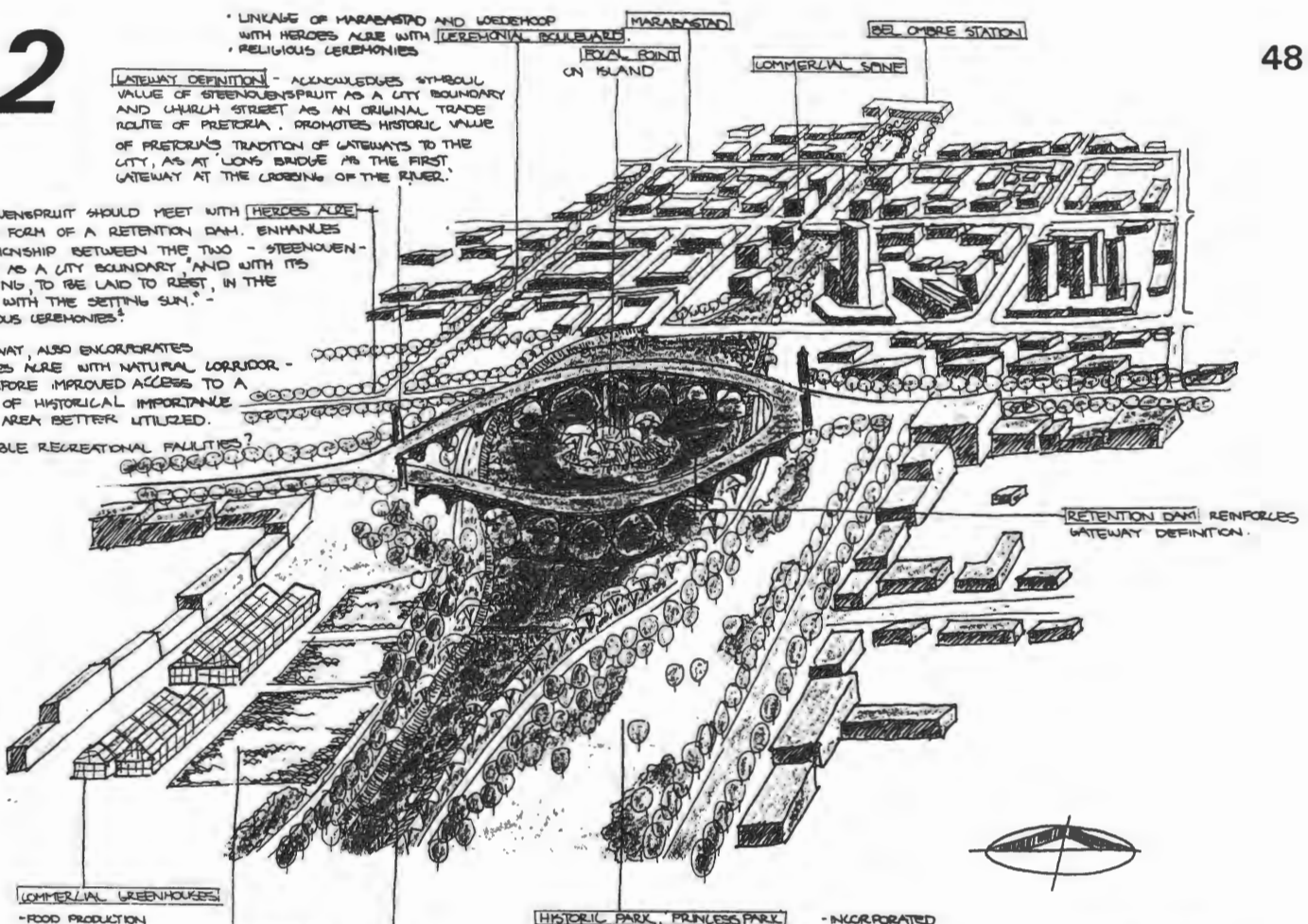


Figure 65:

**CHURCH STREET GATEWAY TO PRETORIA**

PEDESTRIAN CROSSING

ACCENTUATES PEDESTRIAN FLOW FROM BEL OMBRE TO GOEDEHOOP.  
 ASSOCIATED WITH TAXI RANKS AND STALLS FOR INFORMAL TRADE.

BOULEVARD

INVOLVES PEDESTRIANISATION OF 11TH STREET.  
 FACILITATES MOVEMENT FROM BEL OMBRE STATION TO GOEDEHOOP.  
 PROVIDES AXIS FOR STATION.  
 STRONG INFORMAL TRADE COMPONENT

WATER ELEMENT

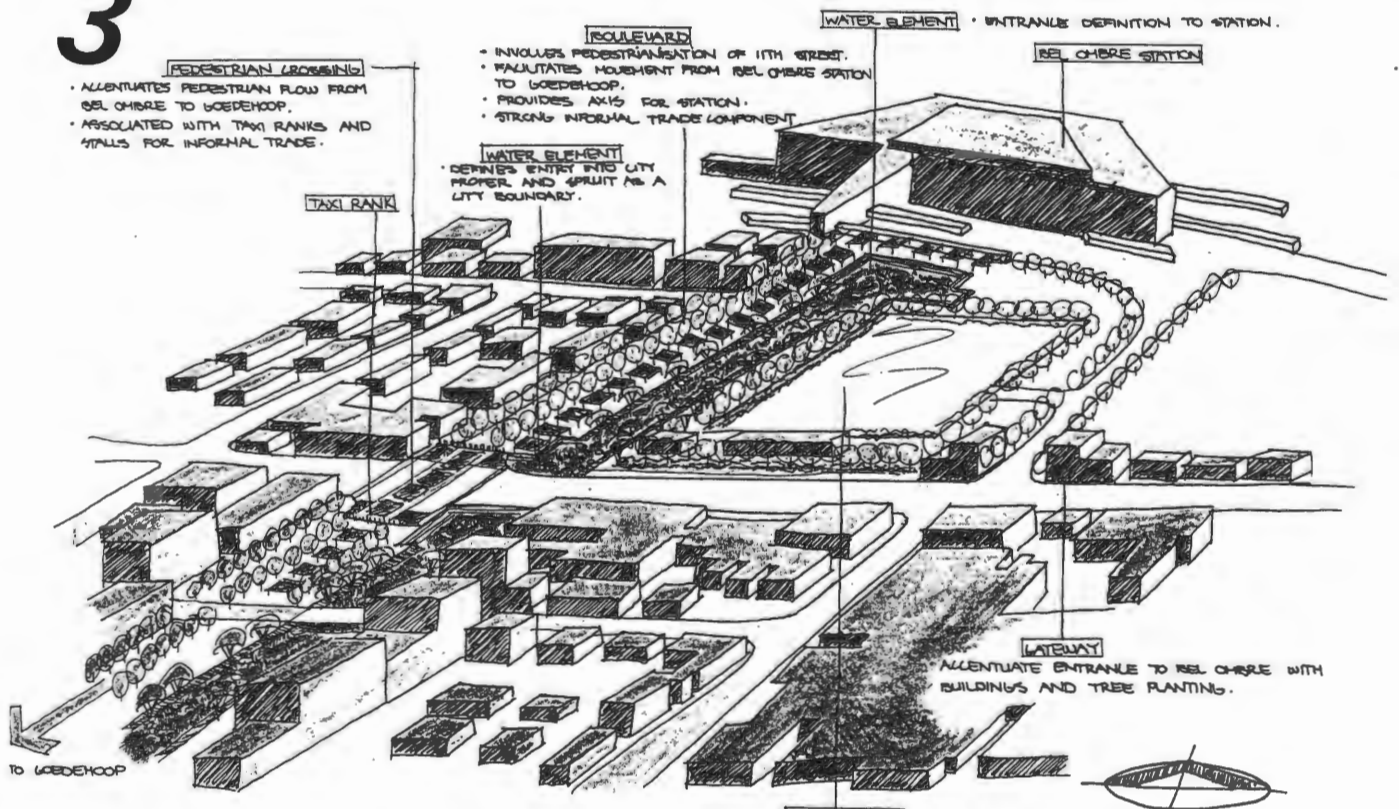
DEFINES ENTRY INTO CITY PROPER AND SPLIT AS A CITY BOUNDARY.

WATER ELEMENT

ENTRANCE DEFINITION TO STATION.

TAXI RANK

BEL OMBRE STATION



GATEWAY  
 ACCENTUATE ENTRANCE TO BEL OMBRE WITH BUILDINGS AND TREE PLANTING.

SUB-STATION

SCREENED OFF WITH PLANTING.  
 RESTRICTS STEENOVENSPRUIT TO LINEAR FORM.

Figure 66:

**BEL OMBRE STATION BOULEVARD**

1. VIDE 2.3.4.

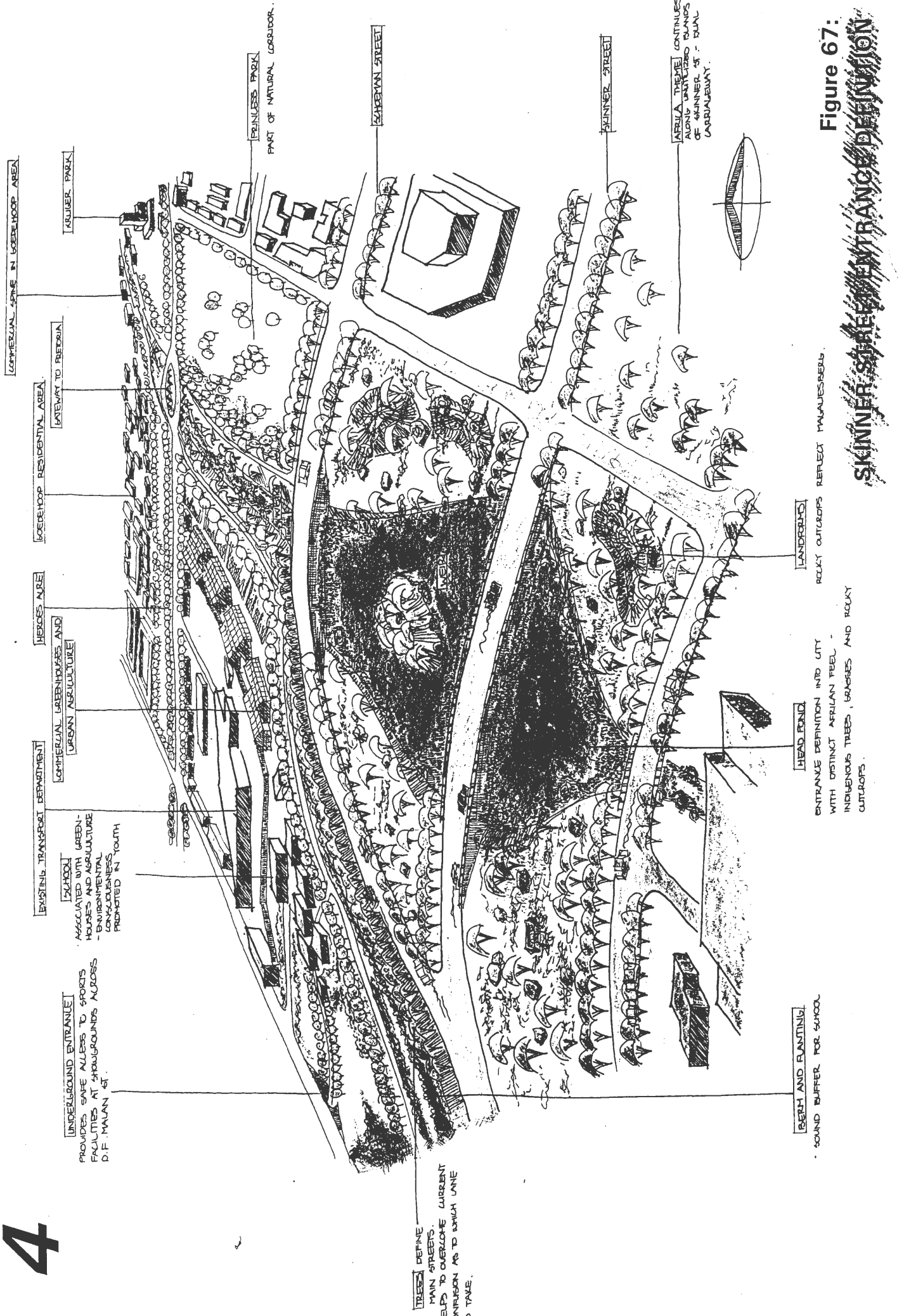
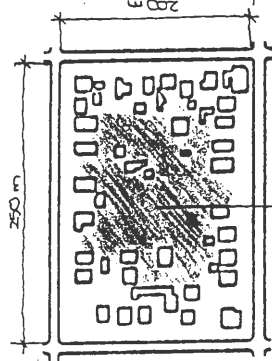


Figure 67:

SKINNER'S CREEK ENTRANCE DEFINITION

4

# EXISTING BLOCK STRUCTURE

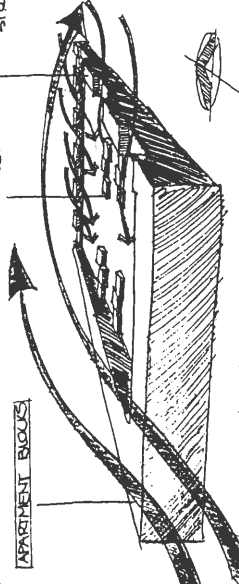


**INNER CORSE:**

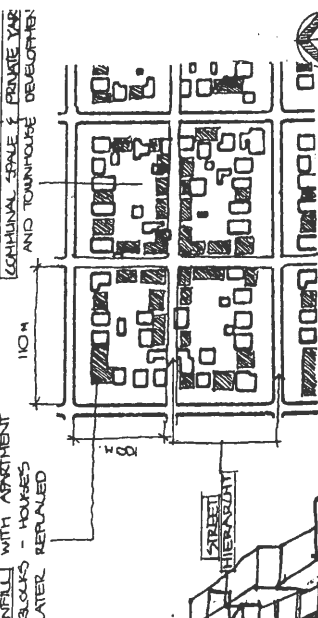
- TOWN-HOUSE DEVELOPMENT
- PRIVATE YARDS
- COMMUNAL SPACES

**STREET EFFECT:** - ALLOWS PLEASANT WINDS IN BUT MAINTAINS STREET ENCLOSURE

**RELEASED WINDS:** FROM NORTH-EAST FLUSH OUT THE SYSTEM.



# PROPOSED BLOCK STRUCTURE



**MEGA BLOCK:**

- LOST SPACE
- TOO MUCH PRIVATE SPACE / NOT ENOUGH PUBLIC
- INDIVIDUALS ISOLATED
- LIMITED ALLEYS

**PERIMETER BLOCK DEVELOPMENT:**

- DEFENSIBLE SPACE
- CLIMATE CONTROLLED
- TOWNHOUSES AND APARTMENT BLOCKS ALLOW FOR A MIX OF COMMUNITY.
- ALLOWS FOR PUBLIC AND PRIVATE SPACE.
- MORE EFFICIENT USE OF LAND.
- PROMOTES STREET ENCLOSURE

**STREET BUILDING:** - INDIVIDUAL NOT ISOLATED FROM STREET.

BUILDINGS LIVE OUT ONTO STREET - SURVEILLANCE IMPROVED.

**ROOF LANDINGS:**

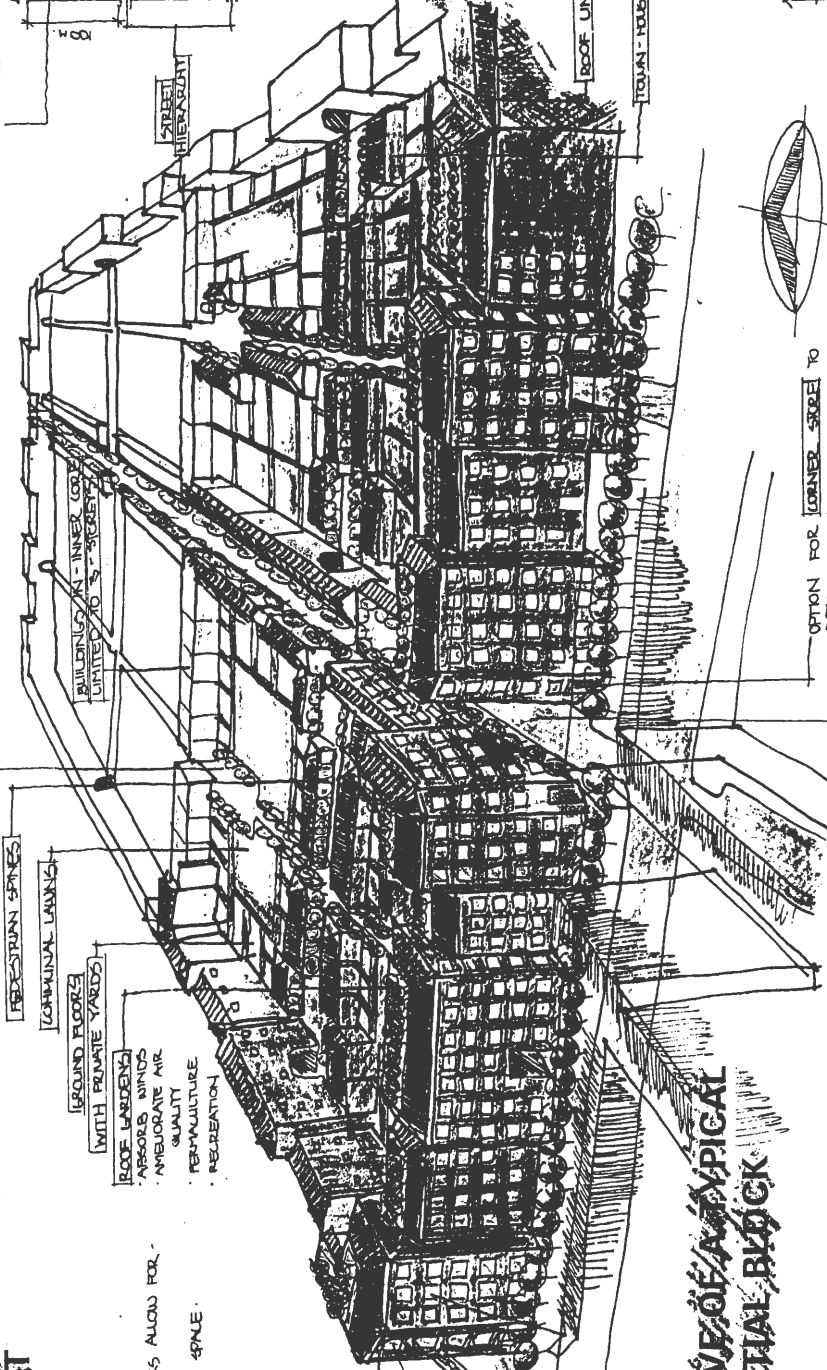
- ARBORES WINDS
- AMELIORATE AIR QUALITY
- RECREATION

**GROUND FLOORS WITH PRIVATE YARDS:**

- COMMUNAL SPACES
- PEDESTRIAN SPINES
- PARKING

**STORM WINDS FROM THE SOUTH WEST:** DEFLECTED BY TALLER APARTMENT BLOCKS.

- MIX OF PUBLIC AND PRIVATE SPACE
- MORE EFFICIENT USE OF LAND
- COMPACT ENVIRONMENT PROMOTES INTEGRATION AND COMMUNITY
- INCREASED ALLEYS AND PERMEABILITY
- INCREASED VISIBILITY
- STREET AND SPACE HIERARCHY DEVELOP
- MIXED USE / MULTIFUNCTIONALISM.



# PERSPECTIVE OF A TYPICAL RESIDENTIAL BLOCK

AS AREA DEVELOPS AND GRIDS, BUILDINGS SHOULD REMAIN FLEXIBLE TO ACCOMMODATE RESIDENTIAL, OFFICE AND COMMERCIAL COMPONENT.

Figure 68:

# HOUSING CONCERN

6

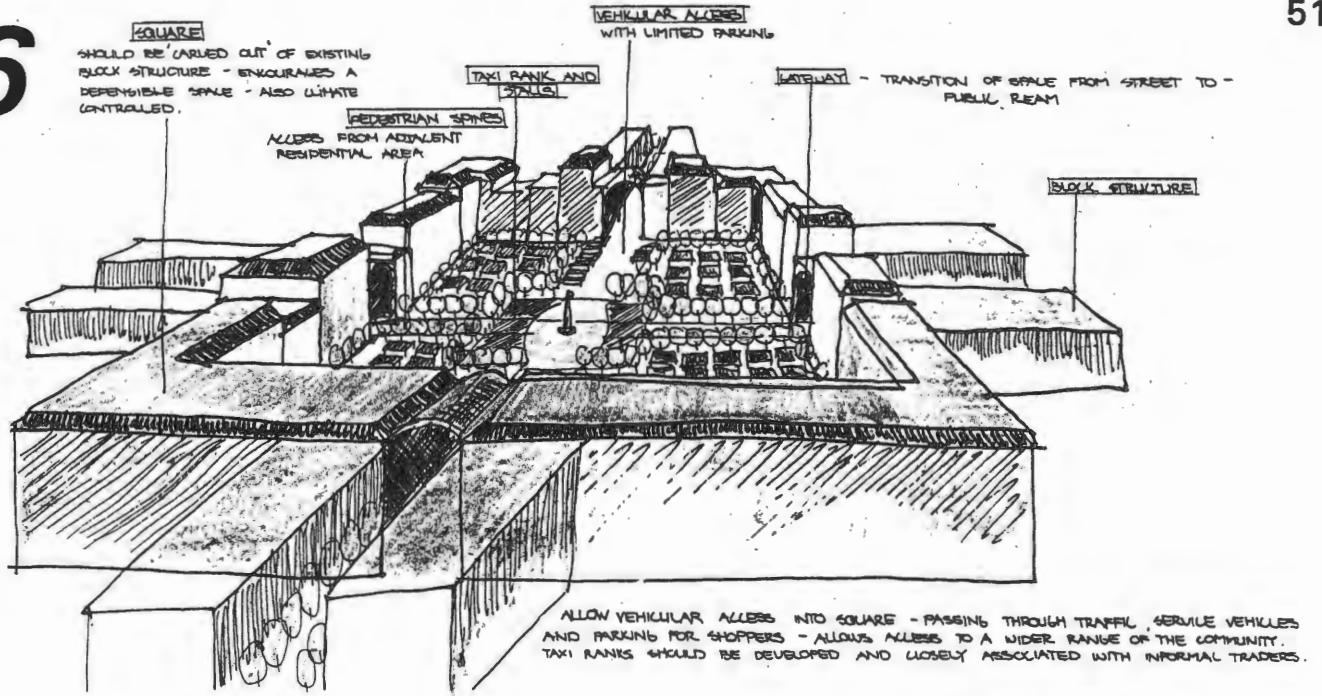


Figure 69:

**TYPICAL NODAL DEVELOPMENT**

7

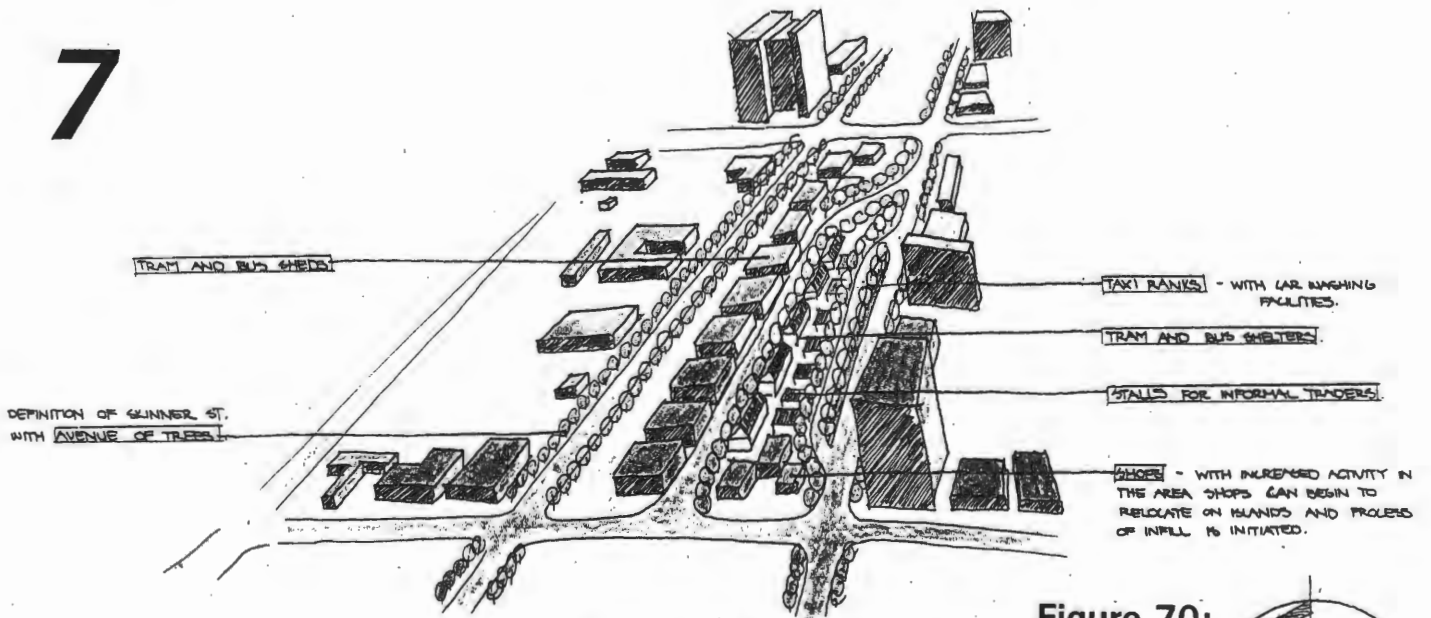
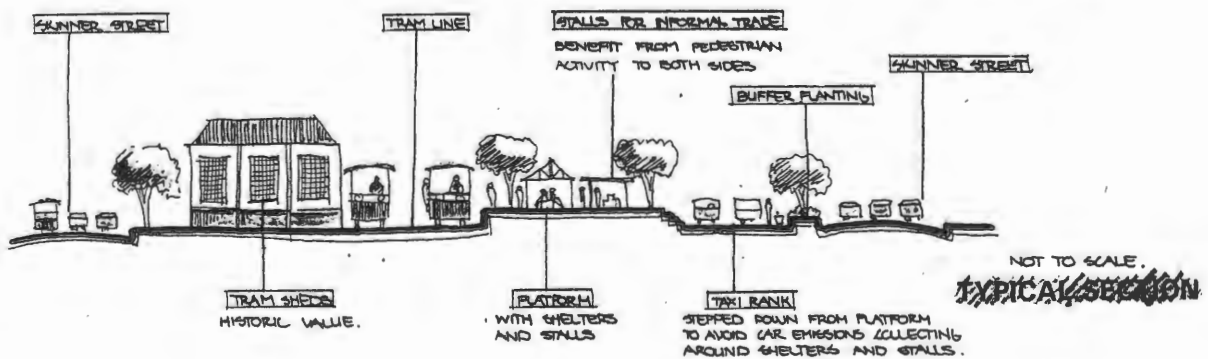
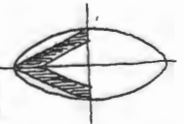
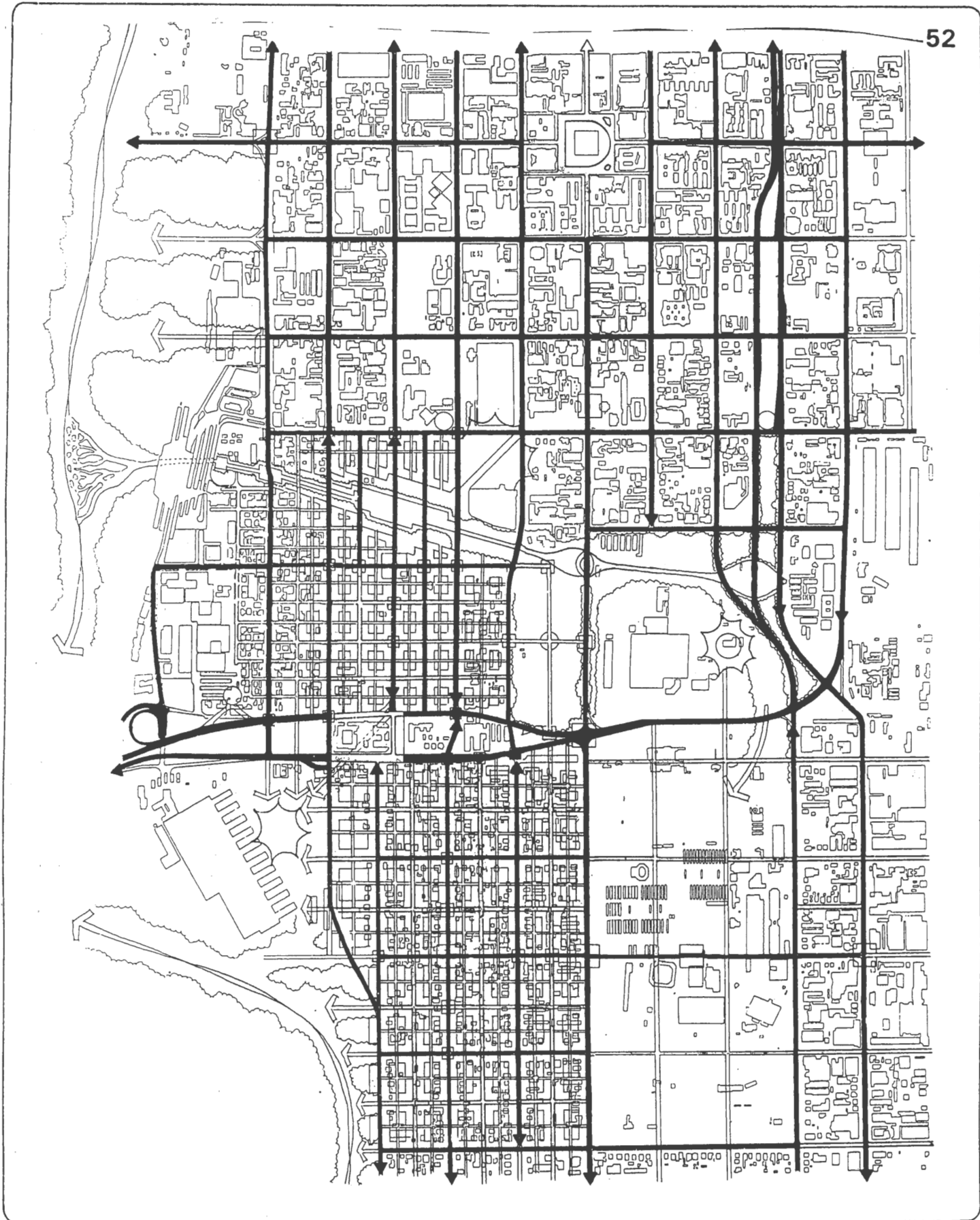


Figure 70:

**SKINNER STREET ISLAND DEVELOPMENT**







- PRIMARY
- SECONDARY
- TERTIARY
- PEDESTRIAN

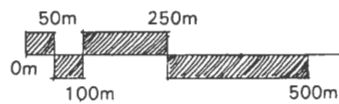


Figure 71:  
**PROPOSED STREET-ORDER**

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