

# THE ORIGINS GROWTH AND FUTURE OF GREATER CAPE TOWN

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AN EXAMINATION OF THE RESPONSE IN URBAN  
FORM AND STRUCTURE TO THE INFLUENCE OF  
MOVEMENT IN URBAN DEVELOPMENT WITH  
PARTICULAR REFERENCE TO THE PRESENT AND  
FUTURE ROLE OF THE PUBLIC PASSENGER  
TRANSPORT SYSTEM.

T. E. BRICE

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AN EXAMINATION OF THE RESPONSE IN URBAN FORM AND  
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DEVELOPMENT WITH PARTICULAR REFERENCE TO THE PRESENT  
AND FUTURE ROLE OF THE PUBLIC PASSENGER TRANSPORT  
SYSTEM.

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A thesis presented in partial fulfilment of a Master  
of Urban and Regional Planning degree University of  
Cape Town.

May 1979



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## THESIS OUTLINE

This document sets out to attempt to obtain an understanding of the influence exerted by movement upon the structure and form of cities, with particular reference to their growth process. This appreciation of the important interrelationship and interdependence between urban movement, structure and form is related to basic theory and is then used as a reference throughout the subsequent study of the city of Cape Town.

Movement at all levels is established as the main concern in the tracing of the origins and growth of the city from the first landing to date. The influence of movement as affected by natural geographic and climatic conditions peculiar to the site is traced and related to the gradual growth process of the city over time.

Various significant developments in the rate and mode of movement in the history of the city are accounted for at various stages and the impact of these changes is explained. The early road system followed by the railway network and still later by the motor car are all seen to have had direct influence upon changing the structure and form of the city.

Population increase, particularly in the Coloured sector

of the population and the socio-economic implications of this group is seen to assume an increasingly important role in the growth process. Problems relating to the Coloured population are further aggravated by political considerations concerning racial separation and in total form the cornerstone of the urbanisation problem of the city.

Having traced the development of the city through history and through having obtained an overview of its present condition, two main growth phases emerge - the "unplanned" and "planned" phases. Each phase is then examined in more detail and analysed in regard to process and performance against a basic set of criteria considered necessary to provide all citizens with the opportunities required for attainment of a good life style.

Movement at the level of urban transport is then examined in detail with particular attention being given to the public passenger transportation system. Incorporated into this study are the concerns with urban traffic congestion, infrastructure cost and the implications of the anticipated energy crisis. The perceived problems affecting the use of public transportation are studied with a view to popularising the use of public transport in the interests of enhancing the level of mobility of the poorer section of the population, reducing dependence on private transportation and conserving energy resources. As a basis for this examination reference is made to recent official investigations into the local movement system.

On the basis of the studies conducted and evaluation of the performance of the city, it is concluded that the main cause of malfunction is the urban structure arising out of the policy of spatial separation of races and specialisation and separation of land uses.

Proposals are then advanced in the nature of planning principles which should form a necessary part of the planning strategy for the accommodation of the unprecedented Coloured urban population increase, simultaneously using this growth process to correct the perceived malfunction of the metropolitan area as a whole through revitalising the main problem area - the Cape Flats.

The proposals advanced are then taken a stage further by way of an exploratory investigation of the possible alignment of the proposed new Cape Flats activity spine. This approach represents a rough overview of the possibilities open to planners in attempting to generate self sustaining activity in the Cape Flats and presupposes the necessity for in depth studies by a multi-disciplinary team with a view to testing the viability of various alternative strategies and implementing remedial treatment of the urban condition without delay.

### 1.0.0 STUDY AREA

This study is primarily concerned with what can be described as the greater City of Cape Town, but in the consideration of the influence of movement in terms of its growth and development over time, some degree of flexibility must be permitted in the determination of the extent and the limits of the "Study Area".

Throughout the development of a city its relationship to the surrounding region changes in respect of many of its central place functions. The area of influence of the city generally expands with its own growth and expansion but this expansion is not uniform for all urban functions" due to the fact that spheres of influence exercised by various metropolitan functions differ considerably.<sup>1</sup> In consequence it would seem reasonable to focus this study upon the geographical area encompassed by the Cape Metropolitan Area Draft Guide Plan of 1977 as graphically indicated in Figure 1, allowing some excursions into the region beyond where particular influences have to be accounted for.

### 2.0.0 INTRODUCTION

Communication particularly physical movement in terms of transportation of persons or materials and the facility with which man has been able to exercise this function, has to an enormous degree dictated his life style and influenced his quality of life over the ages. This

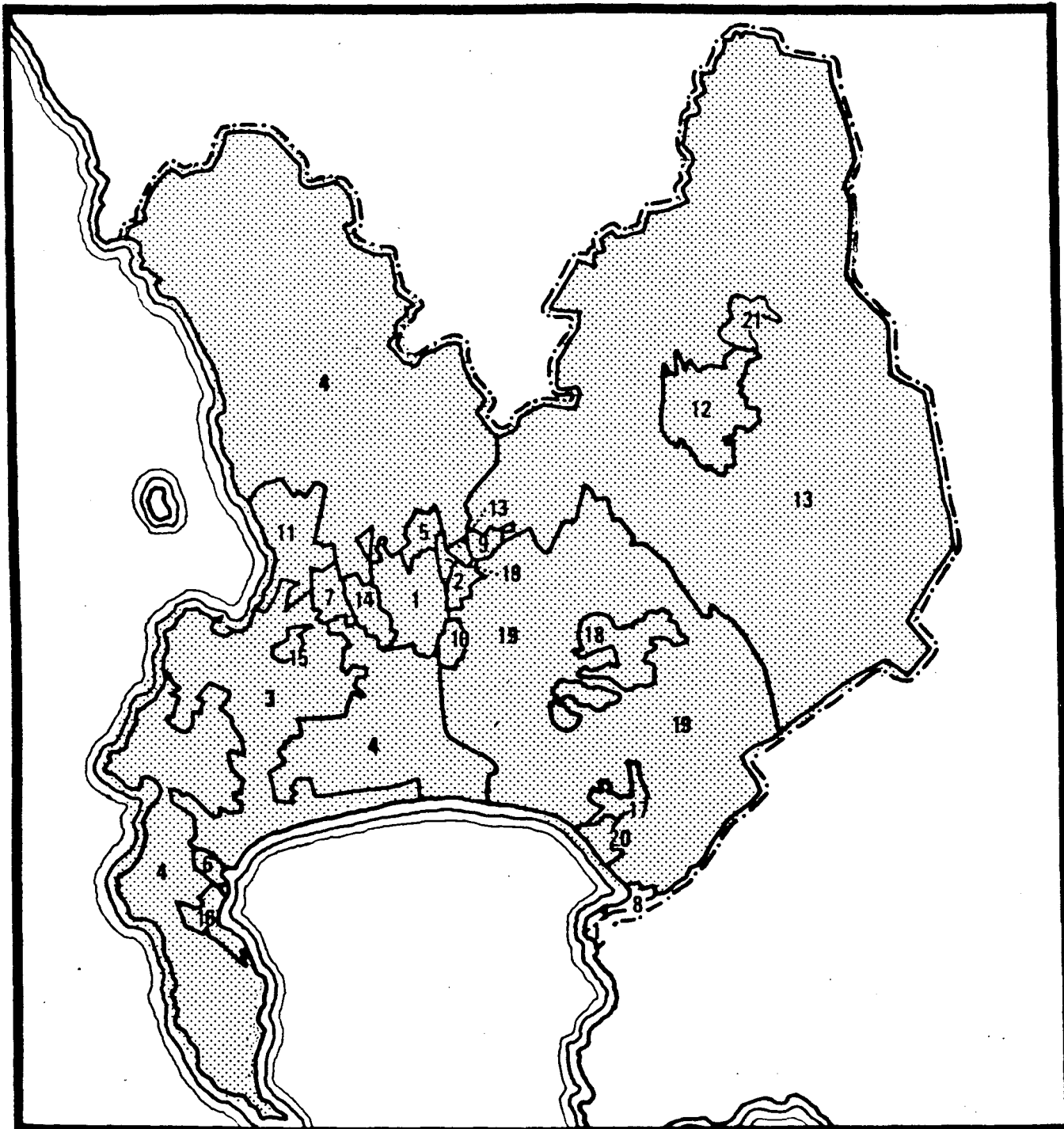
- 1 BELLVILLE
- 2 BRACKENFELL
- 3 CAPE TOWN C.C.
- 4 CAPE DC.
- 5 DURBANVILLE
- 6 FISH HOEK
- 7 GOODWOOD
- 8 GORDONS BAY
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- 16 SIMONSTOWN
- 17 SOMERSET WEST
- 18 STELLENBOSCH
- 19 STELLENBOSCH D.C.
- 20 STRAND
- 21 WELLINGTON

--- CMPC AREA



# fig.1

## ADMINISTRATIVE BOUNDARIES



Source : Cape Metropolitan Planning Committee

function now hopefully better understood and more under his responsible control, continues to have vital influence. "Transportation is movement. The possibility of moving about is one of the most important conditions of human life. From time immemorial mankind has sought to develop this facility further. The distance a man can cover on his own feet. The loads which he can carry on his own shoulders too small. He wants to enlarge his area of operation. He wants to overcome the "friction of space".<sup>2</sup>

2.0.2 Movement is concerned with the overcoming of the "friction of space" and to this end operates over a wide scale range as a function of Time and Distance. In his life span modern man has been witness to the sensational development of movement technology and systems which can be claimed to have effectively "shrunk the world" and to have even penetrated beyond its limits. At urban scale modern developments have tended rather to enable the rapid enlargement of urban centres having released the development process from the limiting influences exerted by earlier movement modes generally slower and less flexible in performance.

2.0.3 A volume of basic theory exists much of which is substantiated in the history of human settlement and subsequent urban development which attributes the origin and location of these settlements largely to the existence of movement "channels" and in turn, their subsequent growth to be a factor of the intensity of human activity along these lines of physical communication. In history trade routes across Europe for example, particularly at

the points of intersection or change of transportation mode, are found to have spawned the rise of a hierarchy of significant urban concentrations. Many emerging and surviving as the current capital cities of the continent with international significance in addition.

- 2.0.4 In the study of the influence of movement on the development of the structure and form of a city, one is dealing with a highly interactive and interdependent set of factors. Movement gives cities their structure and form and in addition confines their layout on the land. Movement in turn has an inseparable and interdependent relationship with land use :

"Land use generates a demand for transportation, which is met by the supply of transportation facilities, which provides accessibility which enables the land values which determined land use <sup>3</sup> ---".

Since movement technology is subject to constant change it follows that movement constitutes a vital variable in the formula of urban development, exercising influence and holding the potential for change over time in land use, structure and form of the city.

The concept of urban structure and form is described by Chapin thus "Urban structure refers to the spatial organisation of key functional areas and essential facilities of the city in response to certain fundamental living needs



and activities of human society, and urban form refers to the visually perceptive features of the city which this structure produces, both the two dimensional and three dimensional forms created by surfaces, spaces, structures, and circulatory systems in a defined natural setting".<sup>4</sup>

Guttenberg in his theoretical approach to the study of urban structure and growth stresses the factor of accessibility as an "organising concept" based on the view that human interaction is the underlying reason for minimising distance through the spatial organisation of land use functions.<sup>5</sup>

City form would appear to be a more "fragile" concept and apart from its important relationship to "place" it has a distinct time relationship which is not brought out in the above definition which renders it subject to change more easily and sometimes independently of city structure. A more comprehensive understanding of this element of city development would be gained from the following :

"Form is a statement of the place and the time; it is the recognition of the uniqueness which derives from a particular position, spatially, culturally and temporarily. It derives from the recognition of the uniqueness of the natural conditions which exist, of position (in an urban area, in a valley and so on), of the needs of the time and of the significant and dominant attributes of the culture."<sup>6</sup>

City form can be influenced by the presence or absence of trees, the nature and shape of man made structures within the urban fabric which give the city shape and a degree of uniqueness. These elements of form are susceptible to easy change. More enduring influence can be exercised by the presence of "a particular grid street pattern (which) gives a kind of physical form"<sup>7</sup> to cities. In former times city walls gave form to the city, defining its limits clearly in relation to the land. Permanent elements of form are contributed by geographical features and Cape Town in common with cities like Rome and Paris has been given uniqueness of form by the presence of distinctive geographical features in the proximity of the mountains and the shoreline. These elements of form both in relation to the definition of boundaries and aesthetics further illustrate the interrelationship referred to earlier in that they also have influence on the structure of development of the city.

Another important aspect in the study of Cape Town relevant to the necessary acknowledgement of the interactive aspects of movement, land use, structure and form is the appreciation of the time span over which development took place. During this period, most factors underwent change and the changing input into the growth process brought forth changes in the urban environment and more importantly to the quality of life of the inhabitants of the city.

2.0.5 In looking at Cape Town and attempting to trace in some detail the history of its growth as related to "movement" during the two major phases in its growth - the earlier unplanned, and the current planned condition of the city, the main features and underlying principles will be identified and discussed. Based on an evaluation of the present day condition of the city and in anticipation of the accelerated rate of growth which is inevitable in the light of population projections, and increased urbanism some basic planning strategies will be advanced suggesting the possible role of movement towards securing urban growth consistent with the provision to Man of the opportunities needed to improve his quality of life as a citizen of the city.

### 3.0.0 HISTORICAL BACKGROUND

3.1.1 Initial settlement of the Cape of Good Hope did not respond directly to motivations of these models but nevertheless owed its origins to movement on a broader scale in pursuit of international maritime trading activity being a convenient and desirable port of call not necessarily essential however to the voyage, but lying approximately halfway between Europe and the East Indies.

3.1.2 The developing nations of Europe during the fifteenth and sixteenth centuries were engaged in overland trade with the East and due to the unsettled political conditions between themselves, those who were seafaring nations were motivated into seeking a sea route to replace the overland trade route to the East and

in addition to discover what opportunities for enrichment might exist over the oceans.

At that time there was no settlement of any consequence at the Cape, the only local human inhabitants being nomadic Hottentots and Bushmen. It is possible that earlier seafarers had rounded the Cape and even possibly landed but for all practical purposes, the area was virgin territory remote from any ordered human habitation. In 1487 Bartholomew Diaz formally discovered the Cape of Good Hope and in 1497 his fellow countryman, Vasco da Gama pioneered the sea route between Europe and India. Thereafter the Cape did not assume any importance in relation to the trade routes to India. The rig of the type of vessel employed and the sailing and navigational techniques dictated by sailing limitations in relation to the prevailing wind conditions resulted in the east bound route lying well to the south of the Cape, whilst although the homeward voyage followed a closer passage, it held considerable risk of running the heavy laden vessels ashore due to the character of the coastline and the frequently unfavourable weather conditions.

The Portuguese who dominated the route to the East demonstrated no particular interest in the Cape as a port of call. after 1580 the Spanish broke the Portuguese supremacy and vessels of various nations began to round the Cape in larger numbers.

3.1.3 The Dutch first landed in 1601 and named the Bay, Table Bay.

In 1616, the Dutch East India Company decided that all its vessels were to put into Table Bay to take on water, what supplies might be available and to rest the crews. As a result Dutch vessels called regularly and a crude system of mail exchange was instituted.

In 1620 two Englishmen, Shillinge and Fitzherbert proclaimed British sovereignty of the Cape but this was not consolidated since the English favoured the use of St Helena as a port of call for their vessels.<sup>8</sup>

After the wreck of the Dutch vessel Haarlem in 1647, the survivors who were caused to spend approximately six months ashore, reported very favourably to the company on their return to Holland, stating that conditions were suited to the establishment of a settlement.<sup>9</sup> They also cautioned that the Portuguese or Spanish might use the Cape as a base from which to harass Dutch shipping en route to or from the East. A confirming report in 1650 by Jan van Riebeeck who had called on his way to the East, persuaded the Dutch East India Company to decide to establish a refreshment station at Table Bay. In 1652 Jan van Riebeeck returned with orders to build a fort enclosing a timber house capable of accommodating seventy to eighty men and thereafter to seek out the most favourable land for the establishment of vegetable gardens.<sup>10</sup>

3.1.4 The prevailing climatic conditions and dangerous nature of the coast line have already been referred to but it is necessary to elaborate to some extent on the natural conditions of the Cape in order to support the deliberate and particular choice of Table Bay as a site for the refreshment station, factors then important and which have had an enduring influence on the present day siting of the city, its form and growth.

### 3.2.0 OBJECTIVE

3.2.1 The Dutch East India Company in common with other callers at the Cape required four main services for vessels voyaging between Europe and the East :

Freshwater

Safe anchorage

Vegetables and meat

Facilities to rest crew members suffering from the effects of the rigours of contemporary sea travel.

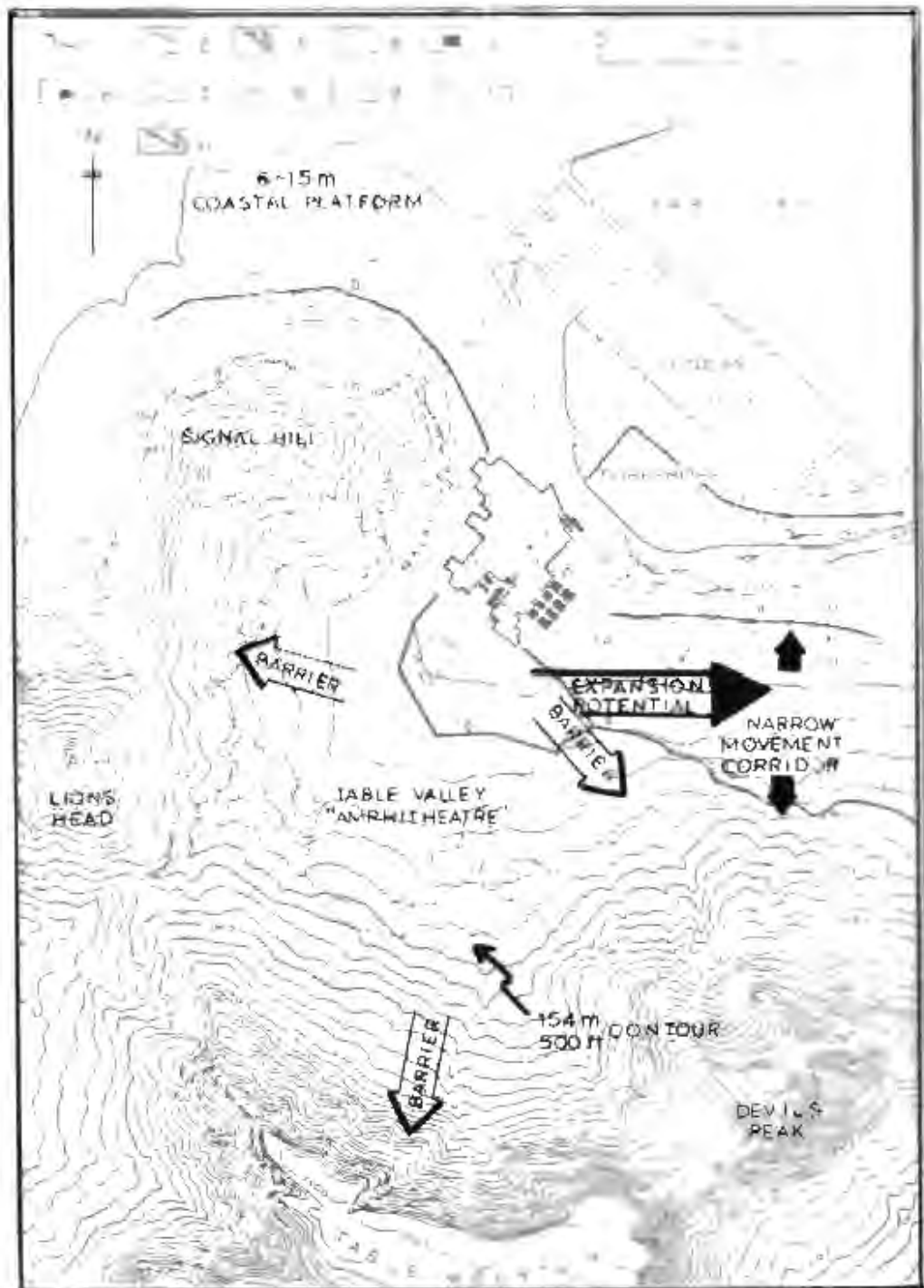
3.2.2 Table Bay held no attraction for the Dutch as a trading port in goods, minerals or slaves as was the case with many other land falls visited by ships of the period. There was no apparent intention on the part of the Company that the refreshment station should develop into a colonial settlement. The station was to be manned by Company servants tending the needs of passing ships and Company militia would protect its limited interests.

### 3.3.0 SITE DETERMINANT

- 3.3.1 Fresh water was the prime factor in the establishment of the station and was to be found in perennial abundance in the two more or less parallel streams that descended from the mountain through the valley and into the Bay. The availability of water favoured Table Bay despite its winter north-westerly gales, over more calm and safe anchorages available in Saldanha Bay, Hout Bay, and False Bay where the supply of fresh water was however less reliable. Water therefore determined the choice of site, neighbouring anchorage and subsequently the position of the vegetable and fruit gardens, thereby providing a locational axis about which the initial works of the station were erected and were in the ultimate to become the core of the present day city of Cape Town.
- 3.3.2 The head of the fertile valley is shaped as an amphitheatre formed with Table Mountain at the back, flanked on the east by Devils Peak and on the west by Lions Head and Signal Hill. The enclosed valley to seaward is relatively level with a gradual upward slope to a level of thirty metres over approximately one kilometre, thereafter rising more rapidly to a level of 150 metres. The gradient then increases rapidly towards the near vertical face of the mountain. The slopes to the median height of Lions Head and Devils Peak are less acute. The "Backdrop" and the amphitheatre to the settlement had an influence on both the structure and

# TOPOGRAPHICAL FEATURES INFLUENCING GROWTH: 2

## TOPOGRAPHICAL DETAIL



The map of Cape Town's CBD illustrates the following features: 1. The 1938 shoreline; 2. Railway yards; 3. CBD boundary; 4. Large triangular area of built-up area; 5. Government and municipal buildings immediately beyond the CBD boundary; 6. St. George's Cathedral and School; 7. Government and municipal buildings within the CBD; 8. Groote Kerk; 9. Castle; 10. Public open spaces lying immediately beyond the CBD boundary; 11. Major roads as indicated: A. Roeland St.-de Waal Drive; B. Darling St.-St. Louis Rd.; C. National Rd.; D. Summer Rd.-Main Rd.; E. Long St.-Orange St. Corridors are drawn as 100-foot wide boulevards. Additionally, the 250 ft and 750 ft contours are shown by means of peaked lines. The passenger sections of the fold railway station are shown within the CBD, other sections outside its boundary. The smaller Dock Area northwest of the Duncan Dock is the Victoria Basin. Based mainly on the 1:25,000 Cape Peninsula Series of the Trigonometrical Survey Sheet 1, 1958.



form of the gradual urban development and is seen today to lend to the City of Cape Town form which is universally admired.

3.3.3 It is important to appreciate, particularly in the light of the eventual urban expansion which was to take place upon the foundations laid for the "refreshment post" that the advent of the Dutch represented a transplantation of European and Dutch colonial culture and experience directed towards achieving a planned and limited objective on a raw site in a distant land. The Dutch skills and the efforts to create without delay vestiges of the contemporary European urban environment to which they were accustomed are evident. The settlement did not evolve over time from primitive origins and by gradual process to its position in the mid sixteen hundreds - it was given something of an artificial impetus through the deliberate business decision of the Dutch East India Company implemented promptly and capably by Van Riebeeck and his party.

3.3.4 It will be progressively demonstrated that despite the Company's initial policy to the contrary, that Cape Town begins to take shape as a "colonial city" and that in large measure its development conforms with the description offered by J H Johnson which might appropriately be quoted as being particularly applicable to the roots of this settlement. "One type of urban plan is associated with cities built where none had stood before. Often this type of city is associated with the occupation of an area

for the first time by people with urban life as part of their culture; and the process of colonisation produces a particular socio-economic situation which is found in numerous examples, widely spread in place and time. In such cities building has to be commenced from scratch and the original settlement tends to possess an overall plan, rather than be the result of a gradual process of accretion. Of necessity a pioneering town in a strange place will have a simple plan, which can be easily laid out. In a remarkable number of cases a grid plan,<sup>11</sup> with straight streets set at right angles, has been adopted." In colonial cities, the street patterns came before the buildings, the rectangular grid is therefore the mark of the colonial city.<sup>12</sup>

#### 3.4.0 THE FIRST STRUCTURES

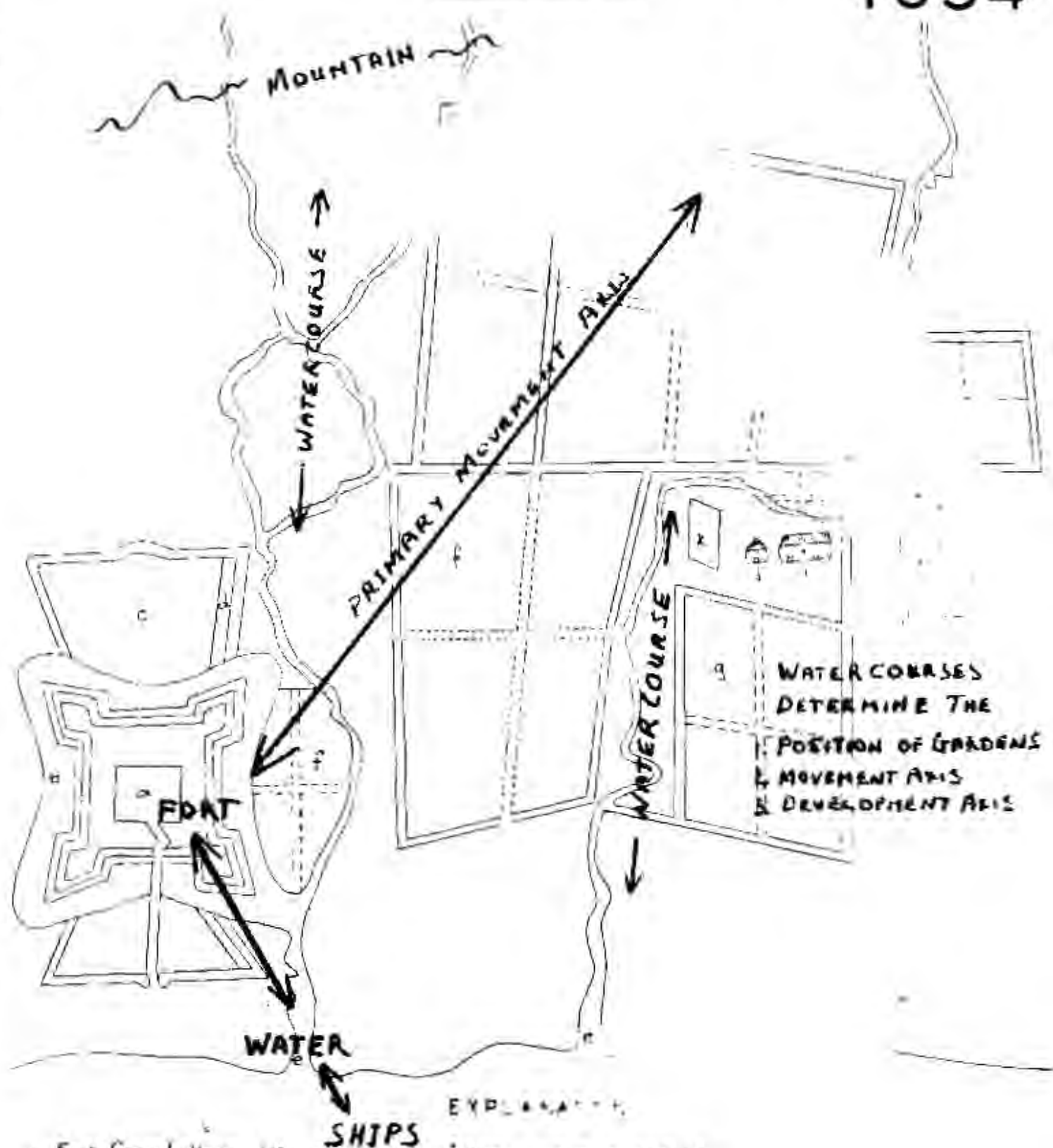
3.4.1 Two days after reaching Table Bay the ship's Council decided upon the position to be occupied by the fort. A site on the south east banks of the major Fresh River was chosen close to the beach line which had a good view of the beach and gradually rising land up valley between the courses of the two adjacent rivers. The site was on approximately the 6 metre contour line and lay somewhere between the site of the present O.K. Bazaars in Adderley Street and the north west end of the Grand Parade as it now appears. The latter location is supported by Piccard who has overlaid a plan of present day Cape Town on a comparatively scaled copy of the plan of 1693 to support this finding.<sup>13</sup>

3.4.2 Construction of the fort was regarded as a matter of urgency

since it would provide the first shore facilities after the crowded conditions of the voyage from Europe and was necessary to protect the ships in the Bay and the supplies being landed from attack from sea or interference from the local Hottentots.

One hundred men were put ashore to raise the earthworks and to construct the timber structures within. The fort was 78 metres square with a bastion at each corner conforming to the cardinal points of the compass. It was surrounded by a moat connected directly to the river and within its walls were located most of the structures necessary for the initial settlement; living quarters, store rooms, work shops, hospital and cattle pens.

- 3.4.3 Across the river to the north and in close proximity to the fort the vegetable and fruit gardens of the Company were laid out covering approximately 6 Hectares which supported most crops with the exception of potatoes and maize, the first crops however suffered severely from summer drought.
- 3.4.4. The severe first winter with heavy rains lashing the earth works of the fort and the inadequate timber structures created within its walls, caused hardship for the 125 European occupants, many still suffering from the effects of their sea voyage from Europe. The walls of the fort were virtually washed away and the wooden structures were found to be inadequate against winter conditions.



- a Fort Good Hope (On the site of the present GPO)
- b Canal round the fort
- c Enclosure for cattle at night
- d The stables
- e Rivers
- f Company's gardens
- g Proposed Company's gardens
- h Gardens of private people surrounded by ditches
- i Guesten's house
- j this house
- k Proposed pond for ducks
- surrounded by ditches & 8 ft wide

(From map no. 44 in the Cape Archives)

Considerable repair work was necessary.

3.4.5 Figure 3 is a drawing indicating the layout of the settlement in 1654 after the fort had been restored and completed the previous year and the wooden structures replaced by mud daub or brickwork construction. Irrigation canals are also indicated bordering the gardens which served also as a degree of protection against intruding animals. Apart from a structure described as a "Gardener's house" no other dwellings exist except the Fort which dominates the settlement and is the focus of all human presence and activity at this stage. The appearance of "gardens for private people" is significant.

Movement between the shore, the Fort and the gardens would appear to follow an approximate southwest to northeast axis. All activity is based physically and conceptually on this axis and all works on the ground respond to it. Together with the associated river it is the major structuring feature of the settlement thus far.

3.4.6 At this early stage the Council of seventeen saw reason to censure Van Riebeeck for showing tendencies towards enlarging the settlement. This arose out of his agreement to permit certain of his subordinates who wished to settle permanently in the Cape to establish gardens.<sup>15</sup> Some increased activity is suggested since in 1656 the Company ordered the opening of two inns in the settlement and in 1657 the first Free Burghers

were settled outside the limits of the Fort.<sup>16</sup> These men initially only nine in number were released from their contracts with the Company and were granted rights to land for residential purposes lying not less than 185 metres (50 roods) removed from the Fort, as well as to farm land bordering the lower reaches of the Liesbeek River.

### 3.5.0 SOUTHERN DEVELOPMENT AXIS

3.5.1 These early farms along the Liesbeek River were reached via the forest wagon track used to bring timber in from the forests of Wynberg and Newlands known as "Wagenpad na t'bos". The route followed the present Main Road to Rondebosch where the first settlement outside the main settlement was to develop and then swung right up the slope following the present Church Street and Groote Schuur Avenue to Kirstenbosch. A road later came into use which branched off the main track at Rondebosch following the lower level, crossing the Liesbeek River at Westerford and then following the present Protea Road at Claremont, then rising to "Bosheuvel" or now Bishops Court<sup>17</sup> where van Riebeeck's farm was located.

3.5.2 The grant of residential land near the Fort gave rise to the first 'streets' being set out on the grid pattern and the observance of some order in the building lines to which the streets conformed (by May 1658 the settlement had a population of 360 persons and slaves from Guinea were first

imported in the same year).

3.5.3 Figure 4 indicates the situation in 1660 and significant changes in the structure and form of the settlement. The Fort is still dominant but the additional 'Burgers houses' appear to the northwest of the Fort on a line at right angles to the prime movement axis. A 'grid iron' street plan is evident, the cross grid being made up of four streets : Olifant, Reyger, Heere, and Zee.<sup>18</sup> Reyger Street is not shown on later plans and is presumed to have been deleted, whilst Olifant, Heere Street and Zee Street conform to present day Hout, Castle and Strand Streets respectively. It is also noted that a gardener's house, an isolated Burgher's house and the Company cable house, whilst lying closer to the Fort, locate reasonably closely to one or other of the aforementioned street alignments. The new streets introduced a potential secondary movement axis (which in later years was to become dominant).

3.5.4 As was characteristic of the Dutch in their regard for order, Van Riebeeck had caused to be set out a block of sites for private dwellings located some 50 roods (185 metres) from the Fort so as not to interfere with its defence. This grid pattern which was to control further extensions to the village to a large extent set the block size and street patterns for the development well into the nineteenth century and still dictates the form of the greater part of the Central Business district of Cape Town. The first retail and service activities



- a Fort Good Hope
- b Pottery
- c Company's kilns
- d Company's stables
- e Company's brick kilns
- f Company's mill
- g Company's cable house
- h Gardener's house
- i Burgher's houses
- j Burgher's gardens
- k Company's gardens

- 1 Canal
- m River
- n Tolly
- o Clifant Street (Now Longmarket Street)
- p Rayger Street (Now Shortmarket Street)
- q Heene Street (Now Castle Street)
- r Zoo Street (Now Strand Street)

(From map no 59 in the Cape Archives)



were commenced by the Free Burghers who in the Dutch tradition combined residential and commercial land uses and traded from their houses thereby establishing the foundations of the retail area within the angle formed by Heerengracht and Waterkant streets where the two main movement flows intersected and activity was even at that stage likely to be greatest. The establishment of the first farms along the Liesbeek River and the resultant movement pattern set up by that action had given rise to the establishment of Burghers gardens along the road to the south-east of the fort.

3.5.5 To the south west of the Fort on the higher ground off the street grid appear other work activities on independent sites noted on the 1660 plan as the Company's Mill, Stables, Kiln, Pottery and Brickmaking sites. A pier had recently been constructed from local timber and rock near the fort at the point where ships boats took water.

3.5.6 The Fort continued to suffer damage from the winter rains and was now considered to lie too close, from a defensive point of view, to the developing village. With the outbreak of war between Holland and England in 1664, the defensive deficiencies of the Fort were realised - the guns were ineffective against shipping at anchor in the Bay - and a decision was taken to build a new Castle approximately 220 metres to the south east of the old Fort which was completed in 1679.<sup>19</sup> The old Fort was demolished in 1674 and houses close to the new Castle which might impede

its defence potential were ordered to be demolished.

3.5.7 The Castle was constructed of stone obtained from the quarry on Signal Hill and the transport of these loads over the years contributed to the width and status of the present Strand Street which provided a virtually direct route for this work and was the major cross road intersecting with the original movement axis on the line of the present Adderley Street.

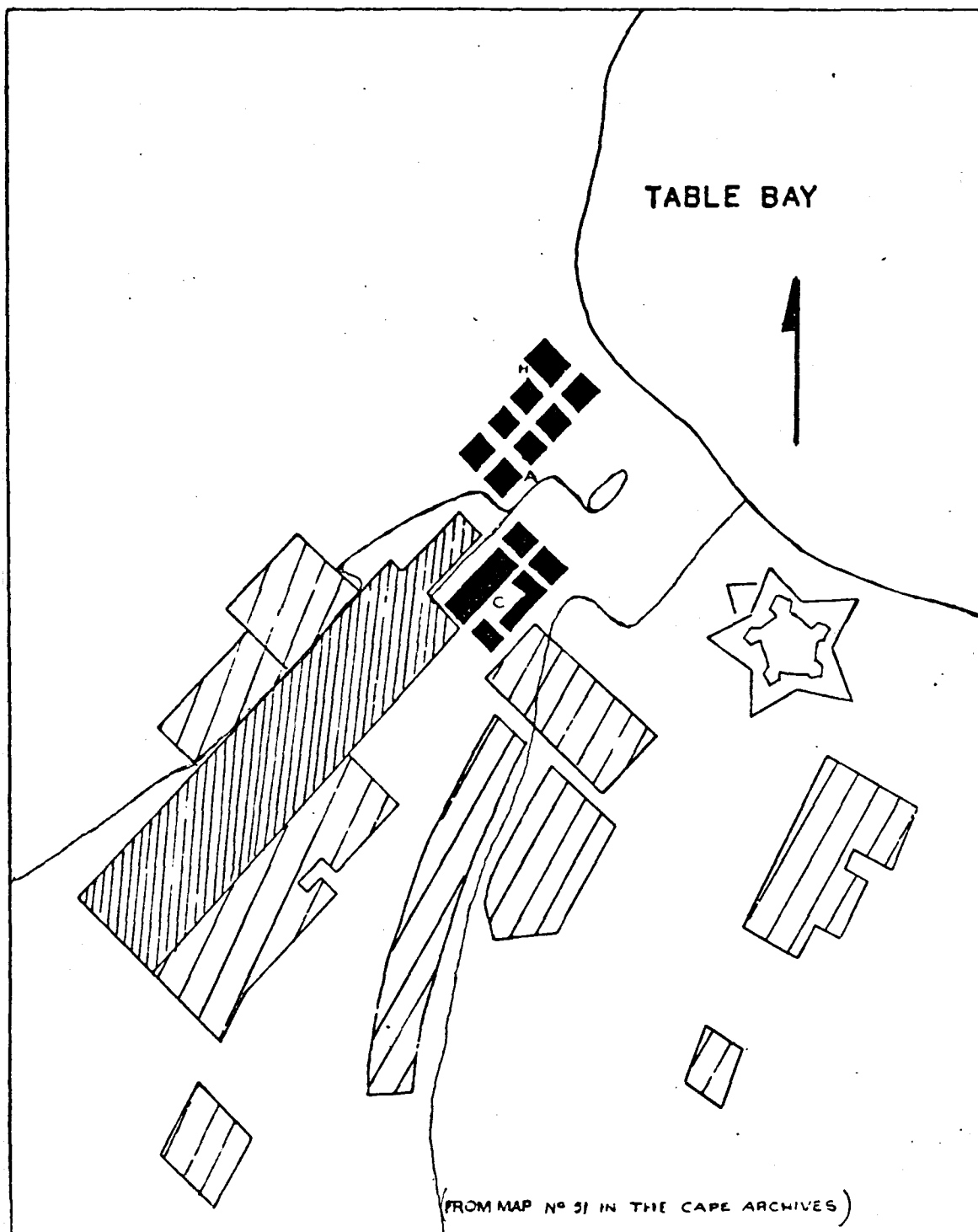
3.5.8 The company's gardens were extended further towards the mountain and the first church to be built outside the Fort was commenced on the site of the present Groote Kerk. Additional amenities constructed about this time were a water tank near the pier to facilitate the watering of ships and a hospital opposite the Church on the line of Adderley Street. Growth of the village had been slow and the population at the close of 1679 numbered 460 residents including 171 slaves but excluding a group of Hottentots who had camped at the outskirts of the village above the present Riebeeck Square. Population figures differ significantly depending on their source and it is considered that they can only be taken as a rough indication of the measure of growth of the settlement.

3.5.9 Outside the central village along the southern movement axis in areas later to become known as Salt River, Rondebosch and Wynberg, there was an increase in the number of 'residents'

fig.5

PLAN OF CAPE TOWN

1693



making their appearance in addition to the few farmers already established. Salt River was then a settlement of fishermen and boasted an inn for the benefit of the locals and passers by. Much activity centered on the defence of the settlement and its wagon routes to Wynberg, for which purpose block houses were erected at the Liesbeeck River crossings and a cavalry post was established on the northern edge of the present Rondebosch Common.<sup>20</sup>

- 3.5.10 After his arrival in 1679, Governor Simon van der Stel refashioned the Company's gardens, abandoning the section between the present line of Wale Street and Longmarket Street making that section available for the building of the aforementioned church and hospital initiating a change in land use which was to be extended to accommodate other Government buildings in later years.<sup>21</sup> He also redeveloped the gardens creating the present avenue down their centre.

- 3.5.11 The 1693 plan of the village, Figure 5, records several significant changes in its structure and form. The most marked change is the replacement of the original fort by the more off centre Castle leaving an intervening open area later to become the Grand Parade lying between it and the first of the village buildings.

The plan shows the newly established avenue through the company's gardens now lining up with the yet unnamed Heerengracht on the main axis of movement established between

the old fort and the company's garden. The slave quarters, church, Thuynhuis and new hospital and remaining company gardens now extend further towards the mountain and close off the top of the Heerengracht much as it is closed today. Additional residential properties have appeared on both sides of the Heerengracht, particularly to the north east of Strand Street and there has been expansion of the street grid to the northwest of Heerengracht giving rise to another street parallel with it appearing as Bergstraat, the present St George's Street. The village appears to be developing in the Table Valley diagonally across Heerengracht on a north/south axis with new erven having been laid out extending the grid pattern, whilst sub division of blocks into erven is noted. Structurally it would appear that the dominance of the Castle is weakening and the form of the settlement is responding more directly to activity following the Heerengracht axis. The street shown earlier as Reygerstraat on the 1660 plan has been built over and has disappeared. The alignment of additional present day streets begin to emerge as further extensions of the grid - Plein Street, Darling Street, Parliament Street.

- 3.5.12 The main streets running down from the mountain towards the sea with their canals or 'Grachts' carrying water were structurally stronger and held priority over those at right angles which were obstructed by the bridges over the Grachts.<sup>22</sup> In 1695 Keizergracht (Darling Street) was laid out serving the Castle and also demonstrating the steady increase of movement between the village and the small settlement to the south along the

Liesbeeck River and the two main routes. These farms had gradually taken over from the central gardens the function of provisioning the ships in the Bay, since less windy conditions permitted the growing of grain crops. Slowly the central gardens through the process of invasion and succession were making way in order to accommodate new buildings in the village.

3.5.13 In 1697 the Parade which bordered the Keizergracht was levelled by slave labour and was used for military purposes.<sup>23</sup>

Additional structures appearing in the village were large stables in Stal Plein, a large shed for marine gear and a slaughter~~ter~~ house on the Parade facing the sea.<sup>24</sup> The seaward boundary of the Parade was for a considerable period used for such incompatible activities.

3.5.14 With the growth of the village, the late 1600's saw the introduction of various regulations primarily of health concern intended to support and control the developing conditions of 'urban life'. Attention was given, inter alia, to maintaining the Grachts and other waterways in clean condition and biannual inspections were conducted on roads and bridges. Building regulations having effect on the form of the settlement were reinforced by the introduction of a law in 1692 requiring the height of house walls to be 4,6 metres and further providing that "no wall poles were to be used in the construction of houses, shacks or corrals".<sup>25</sup> These and other regulations passed

indicated an intention to allow the settlement to develop into an orderly town.

3.5.15 Beyond the boundaries of the town the number of farms and private houses steadily increased, Wynberg had extended into the Constantia Valley, whilst the founding of Stellenbosch by van der Stel, focussed attention on the northern side of the Cape Flats (then a sandy impenetrable waste denuded of most vegetation by firewood gatherers) along the "eastern" route via present-day Maitland, Parow and Bellville. Parow had become a halfway house and a small settlement began to develop there. This "northern" development was further boosted by the arrival in 1688 of the first Huguenots the bulk of whom were settled in Stellenbosch to which certain of the families of the "southern suburbs" had already moved leaving only twenty-four families resident between Wynberg<sup>26</sup> and the Castle in 1685.

3.5.16 Development along the road to the southern suburbs was accelerated once van der Stel had decided that Simonstown was to be used as a winter anchorage in order to avoid the northwesterly gales which plagued Table Bay and additional movement was attracted to this route. Prior to this decision, although there had been a garrison at Muizenberg, Simonstown was a small fishing community somewhat cut off from the main settlement.

3.5.17 Strict control by the Company still sought to restrict

residents from trading freely among themselves with the result that commercial activity was discouraged and the little manufacturing there was, was under the strict control of the Company and conducted by its artisans. After 1680 an open market for produce was allowed to operate in a shed on the Grand Parade.<sup>27</sup> Competition in farming occurred between officials and farmers causing ill feeling and a resultant company decision forbidding officials to farm on their own account. This and further restrictions placed on immigration caused a slow down in the growth of the village since the Company considered the growth to be cause of too much trouble.

- 3.5.18 Where in 1685 a total of one hundred houses existed in the village, by 1710 this had risen to only one hundred and eighty houses indicating growth at an extremely slow rate.<sup>28</sup> The period 1710 to 1750 is regarded as a period of slow growth after the governorship of the two van der Stels, between 1679 and 1708. This was due to the state of decline of the company and to the international uncertainty resulting from a series of wars between European nations and to some extent to the severe mortality rate of the 1713 Smallpox epidemic.<sup>29</sup>

- 3.5.19 The central zone of the settlement was considered to be the prime residential area. Subsequent consideration was given to the building of houses on the Grand Parade or along the sides of the Grachts but eventually the Company officials decided that any residential growth would have to be directed



towards the mountain and accommodated above the gardens.

By 1712 there were 250 private houses besides the buildings

of the Company.<sup>30</sup> A fire in 1736 destroyed many of the thatch roof houses, the bulk of which were later rebuilt with flat tiled roofs against the risk of fire and added a distinctive

appearance to the town.<sup>31</sup>

### 3.5.20 Examination of the plan of the village in 1730, (Figure 6)

contrasted with that of 1693 indicates residential expansion to the northwest of Heerengracht with the appearance of Green-market and Church Squares and the street alignments of the present Burg, Long and Loop Streets being added to the expanded grid system. At the head of Heerengracht and along upper Plein Street the gardens have given way to additional buildings. The Castle remains separated from Heerengracht by the open expanse of the Grand Parade.

### 3.5.21 Table Bay was sounded and charted and it was thought that

the construction of a mole would render it a safe anchorage.

A storm in 1741 caused heavy losses and a mole was commenced

from Mouille Point but ~~was~~<sup>2</sup> soon abandoned. The 1741 storm

had the further result of Simonstown being declared the

official winter port of the Cape and thereby reinforcing the importance of the road link as a structuring element of

further urban expansion of what were to become the southern

suburbs. Simonstown itself began to grow with the building

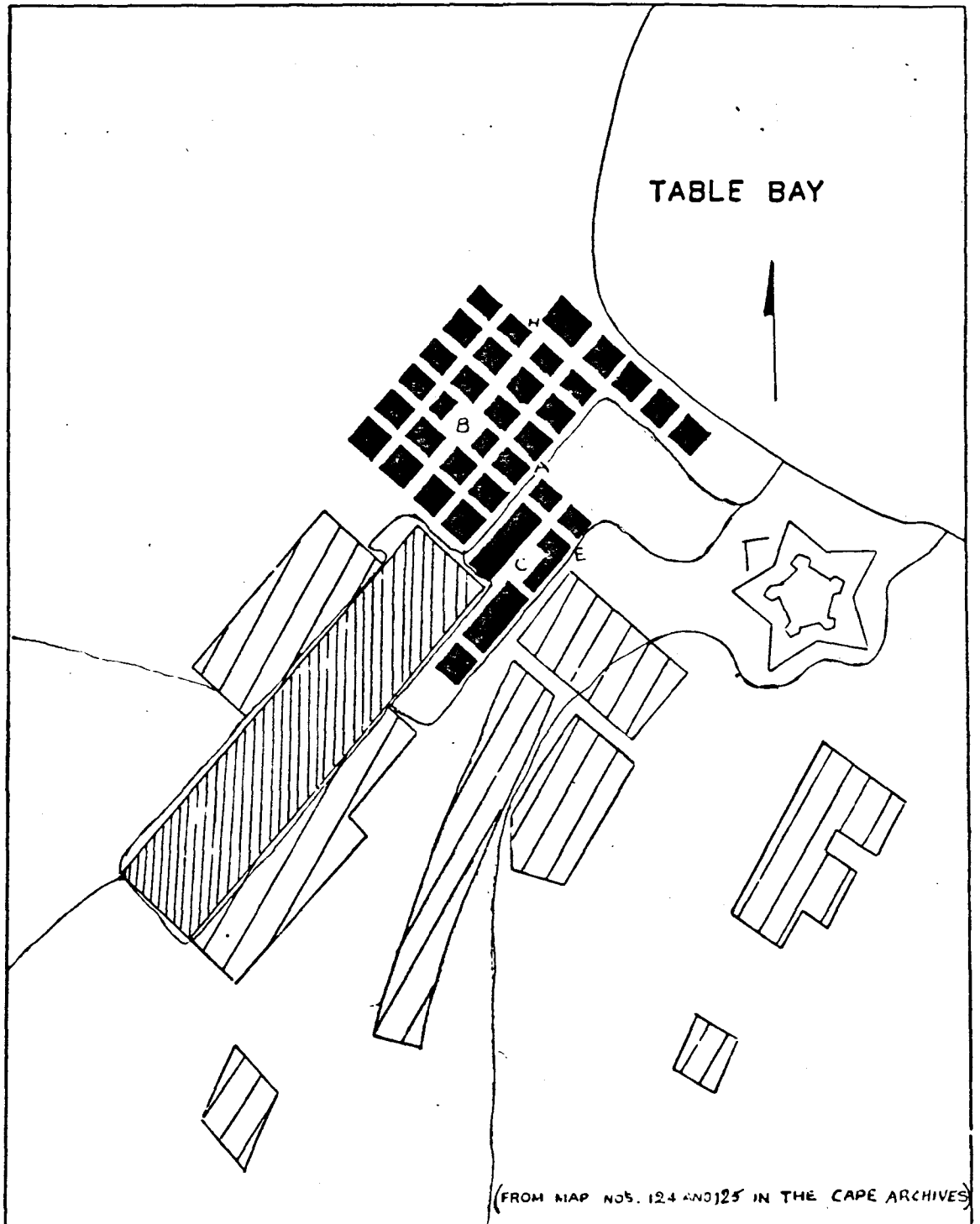
of a magazine, hospital and barracks between the railway

station and the dockyard. Later a pier was built together

fig.6

PLAN OF CAPE TOWN

1 730



with storehouses, slaughterhouse, bakery and residences for  
 the officer in charge and the Governor.<sup>33</sup>

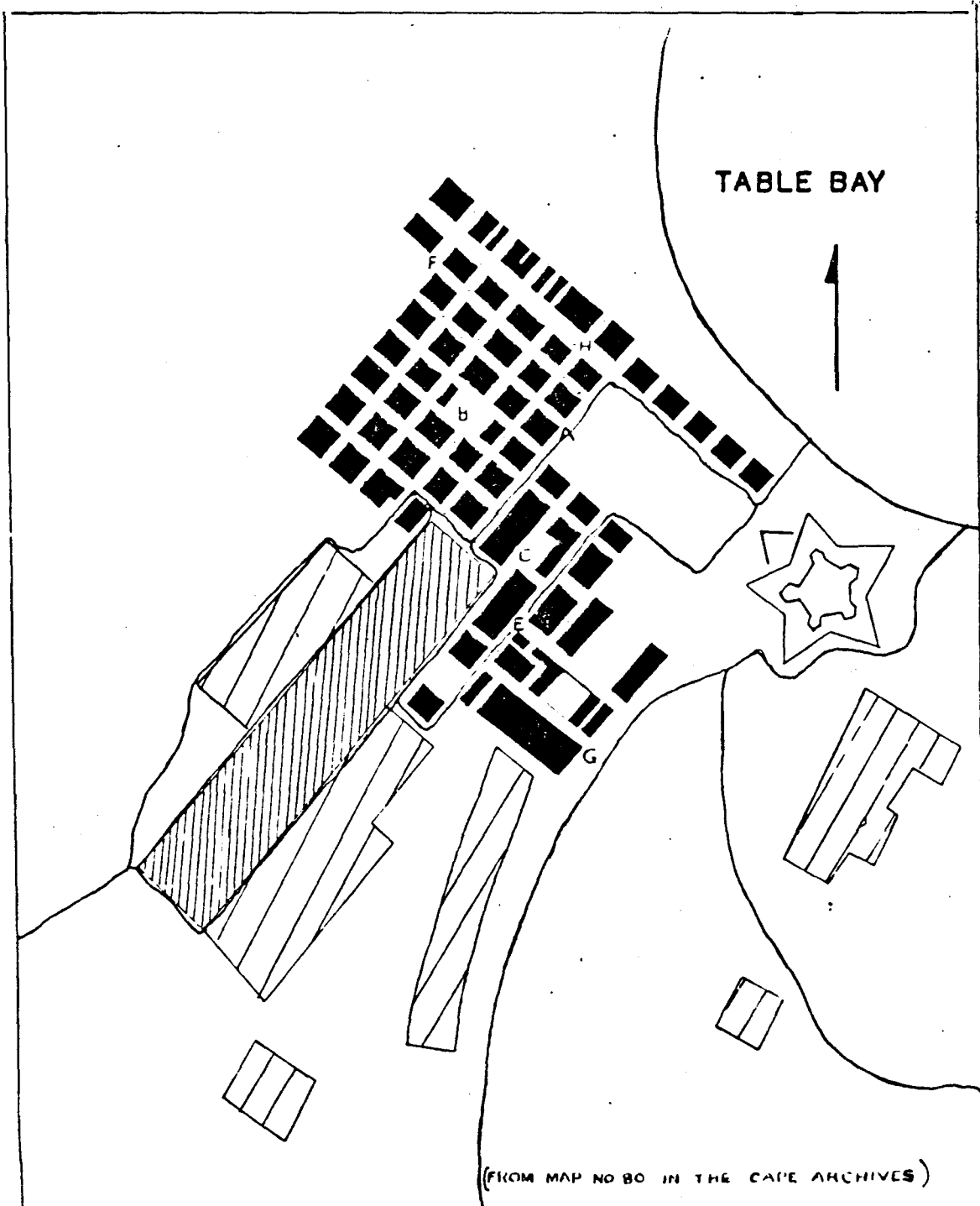
3.5.22 After 1751 the tempo of growth at the Cape quickened despite the continuation of wars in Europe and partly due to the increased number of ships calling at the Cape en route to India. The Dutch East India Company was declared insolvent in 1794 but by that time the town had become sufficiently developed not to be adversely affected, the economy and general activity having received impetus from the presence of the French garrison during the American War of Independence between 1775 and 1783 (when Cape Town had earned the name "Little Paris".)<sup>34</sup>

3.5.23 The town plan of 1767 (Figure 7) shows the boundaries of the grid to be Buitenkant and Buitengracht Streets and the coast and the gardens. No significant further intrusion had been made into the gardens except adjacent to Buitenkant Street but development is seen to be extending towards the Castle along the Strand Street boundary of the Parade. The street grid has extended further since the 1730 plan towards the north west to include the present day Bree Street and Buitengracht Street and to the south east to Buitenkant Street. To the south west the grid has been extended one additional block to the line of the present Dorp Street.

3.5.24 The gradually increasing population caused an equally gradual increase in urban activity and for some years various tradesmen

PLAN OF CAPE TOWN

1767



had plied their skills but due to the monopolistic and regulatory attitude of the Company, trade on any scale and manufacture was discouraged. By the late eighteenth century due to the Company wishing to avoid expenditure on imports, some small industries were allowed to develop but private trading beyond the settlement was still prohibited. A popular and widespread home based activity appeared to be the catering for lodgers.<sup>35</sup>

- 3.5.25 On the northern side of the village Sea Point had moved a stage further towards its modern role of a sea resort with the building of a Heerenhuis or pleasure house for the more affluent families. Camps Bay had its fortifications modernised and to the east of the village, Woodstock ( Papendorp) was recognised as a village and named.<sup>36</sup>

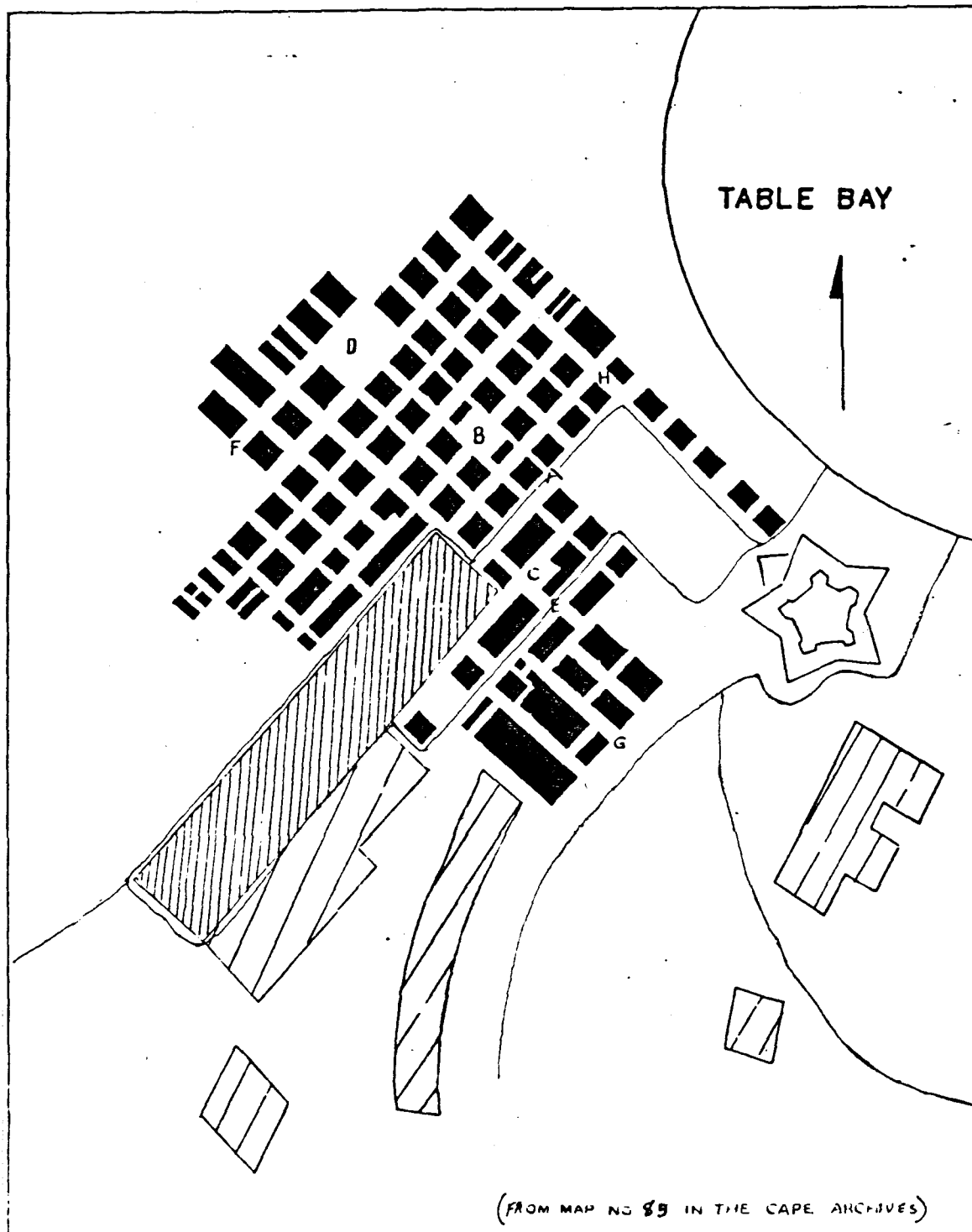
### 3.6.0 BEGINNINGS OF COLONIAL PERIOD DEVELOPMENT

- 3.6.1 The Cape was occupied by the British in 1795 who had the opportunity to realise its potential "as an entrepot between Europe and Asia the Cape has every advantage that could be wished".<sup>37</sup> The town plan of 1795 (Figure 8) indicates further expansion on the street grid to the north west up the slopes of Signal Hill with the appearance of Riebeeck Square between Bree and Buitengracht Streets and the road line of the present Rose Street being reached. Further buildings appear between Bree Street and the gardens in the Dorp Street, Leeuwen Street and Keerom Street

fig.8

PLAN OF CAPE TOWN

1795



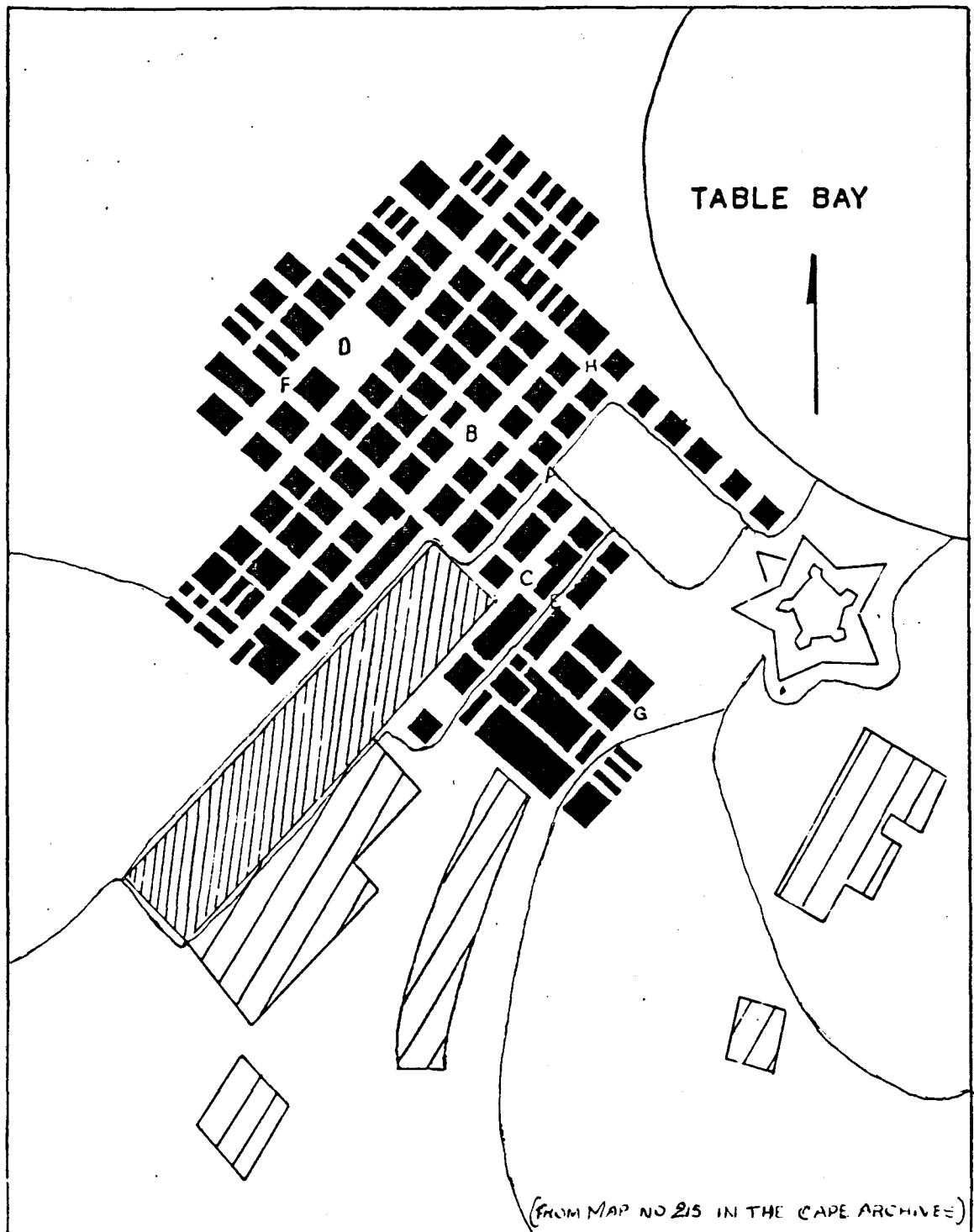
area. The town plan of 1810 (Figure 9) reflects minor extensions to the grid, the bulk of which was directed towards the coast to the north east of the town in proximity of the present Bree Street.

- 3.6.2 The Cape was returned to the Dutch after three years only to be reoccupied by the British in 1806 and formally ceded to Britain in 1814. In the interim, in 1804 Cape Town was first officially recognised as a town and in 1805 boasted a total of 1258 private homes.
- 3.6.3 The second British occupation marked a turning point in the development of Cape Town. The British invested large amounts in support of their fleet and garrison in the Cape. International trade improved whilst local monopolistic restrictions imposed by the Company were removed. Slavery was abolished and the entry of ex slaves into the labour market together with the more free commercial activity boosted the local economy.
- 3.6.4 Streets within Cape Town were generally in poor condition except those in the lower portion of the town which were paved.<sup>38</sup> The Grachts, stoeps and bridges still constituted a serious obstruction to the traffic movement and only Darling Street and Heerengracht, the most active streets of the town were illuminated at night by a system of voluntary co-operation among the residents.

fig.9

PLAN OF CAPE TOWN

1810





## CAPE TOWN : CONSOLIDATION OF GROWTH STAGES

fig. 10

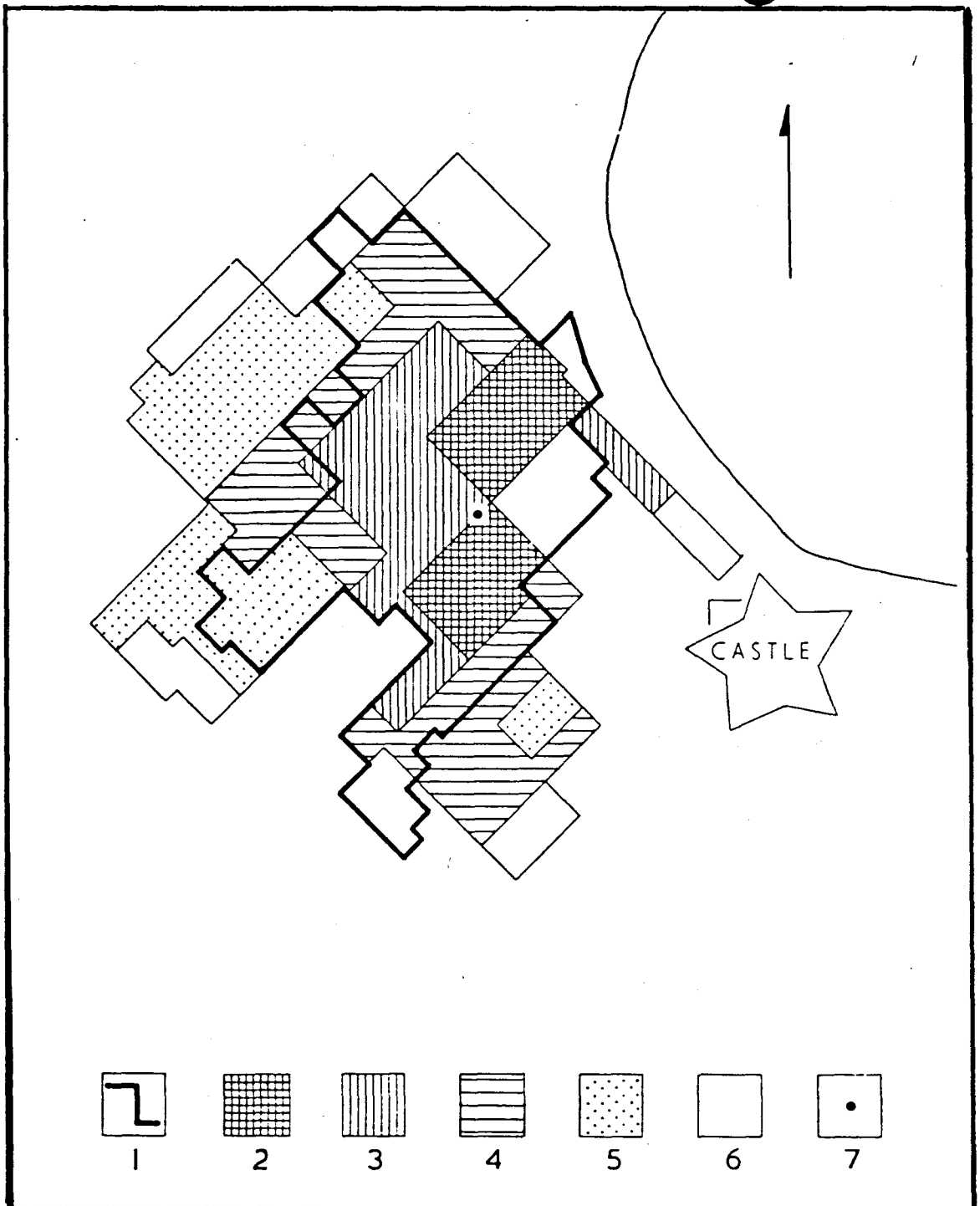
(Reproduced, with permission, from *Economic Geography*)

FIG. 7. The Growth of Cape Town, 1693–1810. Numbers refer as follows: 1. CBD boundary; 2–6. inclusive — refer to extent of built-up area in (2) 1693, (3) 1730, (4) 1767, (5) 1795, (6) 1810; (7) Peak Land Value Intersection. Based on maps 51, 80, 89, 124, 125 and 215 in the Cape Archives. (Partly after M. Marshall). Because of inadequacies in the source maps there are slight simplifications in the boundaries shown and an exact scale has been omitted.

Source : Davies, Land use in Central Cape Town.

3.6.5 Heerengracht and Keizergracht (Darling Street) were still the choice residential streets in 1822 where the wealthy people lived but now several shopkeepers had moved in attracted to the activity generated in these main thoroughfares. There was however still no functional commercial core since most of the trading, manufacturing and entertainments ( theatre on Riebeeck Square built in 1801 and several inns) were dispersed throughout the town intermixed with residential uses and did not appear to coalesce in any particular sector although Heerengracht was still the most active street with the point of peak activity being approximately its intersection with Keizergracht.

3.6.6. The public buildings of the Dutch were inadequate to meet the colonial administrative needs of the English and this gave cause for change in function of many of the older structures and the appearance of new buildings.<sup>39</sup> The Somerset hospital at Green Point replaced the Heerengracht and Caledon Square institutions and the commercial exchange rose near the site of the original fort - the present O.K. Bazaars Adderley Street property. The slave lodge was converted into government offices and judges chambers and Bureau Street was opened to link Heerengracht and Church Square.

3.6.7 The advent of the British placed a great emphasis on trade using Cape Town as a halfway house en route to their eastern empire as also a gateway to further their colonial

40

aims in Africa. The town was exposed to increasing flows of people benefiting both the local commercial and cultural activities and raising them to an order which could not otherwise have been supported by the local population. This trade however also highlighted the shortcomings of the harbour facilities in Table Bay as also their vulnerability to inclement winter weather conditions and motivated a case for their improvement.

- 3.6.8 Simonstown had become a naval station but still hosted shipping in winter months when Table Bay was considered dangerous. A reasonably good road now linked Simonstown with Cape Town carrying Ox wagon traffic and the faster human portorage of small valuable or fragile items. Simonstown itself remained a small village populated largely by Naval personnel and those responsible for the winter shipping matters.
- 3.6.9 Muizenberg still housed its garrison and was a toll point on the road to Cape Town. Wynberg was the next settlement of note with a military camp on the hill from which the road to Muizenberg could be kept under observation. The village benefited from the presence of the garrison, the traffic along the route and the terminal of the coach service from Cape Town with the result that certain small shopping facilities had already been established. Rondebosch, Woodstock and Salt River remained small settlements in the early

19th century and Green and Sea Point were largely undeveloped areas.<sup>41</sup> The Cape Flats remained an impenetrable sandy waste where moving dunes and drift sands made passage difficult and road building or development impossible.

3.6.10 As farms were established along the Liesbeeck River and towards the north east, most of the older estates lying in the Table Valley near the town centre were subdivided permitting further urban development and higher density residential settlement towards the centre. Expansion of the town occurred towards the mountain and towards the south east of the Castle. The town began to spread towards the sea to the north east after 1830 in an uncontrolled manner which continued until 1840 when Cape Town became a municipality and rudimentary building controls were introduced.<sup>42</sup> A degree of tidying up of the town took place with the remaining Grachts ordered to be filled after 1828, being eliminated except for that in Heerengracht which received attention only in 1856. Stoeps continued to obstruct movement within the town until after 1862.

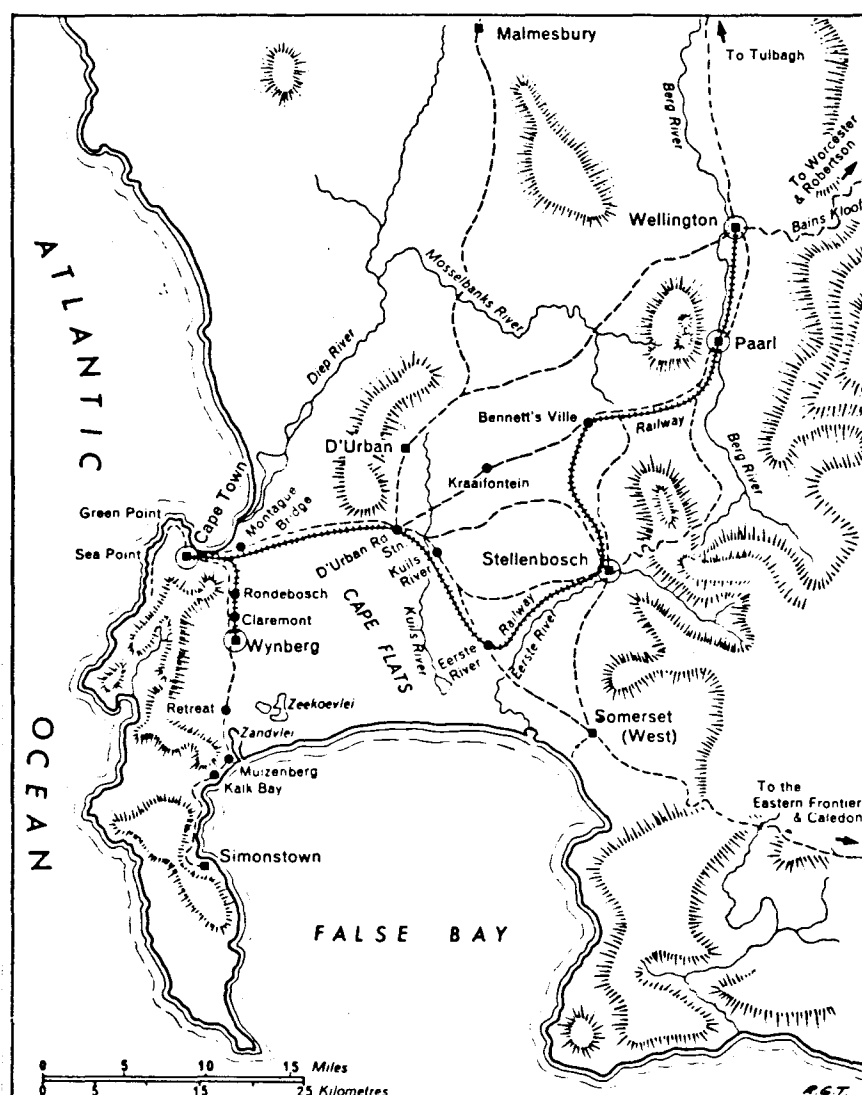
### 3.7.0 IMPROVED COMMUNICATIONS - PROMOTION OF SUBURBAN GROWTH

3.7.1 The role of Cape Town as the gateway to the interior made her economic condition largely dependent on that of the rest of the country. The prime activity was agriculture which formed a precarious base for solid urban development. Communication with the interior was slow and difficult and the increasing trading operation created the need for improved roads.<sup>43</sup>

fig.11

ROAD AND RAILWAY SYSTEM

(1860 - 1900)



Illustrating Road and original Cape Town - Eerste River railway line (1862) and Cape Town - Wynberg line (1864) with subsequent extensions to Wellington and Simonstown.

Source : Coates, Trams and Trackless.

3.7.2 Basic "roads" existed from the town to Simonstown, Camps Bay and along the line of the Koeberg Road to farms lying westward towards Malmesbury, settlement along these roads was still very limited. The route towards Bellville was still a track across the Cape Flats sand wastes but between 1844 and 1847 progress was made towards improvement of this eastern route. The Salt River was bridged and a hard road was driven across the Cape Flats raised in sections 5 metres above the surrounding sand and following the alignment of the present Voortrekker Road.<sup>44</sup> The improved road allowed the use of the Eastern Frontier Royal Mail Coach for the first time in December 1844 replacing the pack horses previously used for conveyance of mails.<sup>45</sup> By 1846 a four hourse omnibus was brought into service, replacing the 6 to 8 horse carts previously used, and reducing the journey to Bellville from between six and eight hours to four hours each way. In 1848 this route was extended to Stellenbosch providing a daily service. In 1851 first efforts were made to stabilise the sand along the new road by planting grass but this proved unsuccessful and considerable time was to elapse before transportation was freed from the hindrance of the drifting sand and settlement of the area became feasible. Renewed efforts were made in 1877 and by 1886 signs of success were demonstrated with the establishment of grass, Pine trees and Australian Black Wattle over extensive areas of the Cape Flats.

3.7.3 1862 saw the first railway line brought into operation between

Cape Town and Elsie's River followed in 1864 by the branch between Salt River and Wynberg. In 1863 a horse tramway line was introduced between Cape Town and Sea Point. Realisation of the need to improve communications linking the limits of development both within the Peninsula and towards inland points so as to facilitate trade marked a significant step towards future urban growth and development in the Cape and established clear lines plotting out the direction which would be followed by this growth. These movement axes with their intense activity patterns and high degree of accessibility remain today the strongest structuring elements in the Metropolitan area.

3.7.4 The improved roads and particularly the railway line converted movement from the range and pace of man on foot or using the horse to a higher order of movement broadening the potential spatial distribution of development relevant to the town centre. Increased activity and accessibility occurred along the main movement corridors and it now became more convenient to establish settlements further out from the centre. Whilst growth remained slow in pace it began to assume a much less concentrated and more irregular pattern than previously when movement was restricted, slower and less reliable before the improvement of the roads and the introduction of the initial rail system.

3.7.5 By 1840 Claremont boasted small shops along its main road and by 1850 Sea Point in fact possessed a Church and market place

and together with Green Point and Camps Bay was becoming a popular residential area due both to its proximity to the town centre which was the focus of commerce and employment and to its pleasant climate. By 1858 Wynberg had a population of some 150 persons and Rondebosch, the most popular southern village after 1860, housed 200 persons.

Meanwhile Mowbray was also developing into a settlement.

Villages to the south of Wynberg remained small and largely seaside resorts, with the exception of Simonstown which was essentially a harbour oriented single street village.<sup>46</sup>

Both Maitland and Bellville had developed into small villages on the eastern route from Cape Town.<sup>47</sup>

- 3.7.6 In the central area with the more dispersed pattern of settlement emerging, the town demonstrated a reasonably clear functional form.<sup>48</sup> Residential uses were still found in the central area, but commercial activities had succeeded residential uses in the zones of greater activity in Adderley Street and Darling Street attracted by the proximity of the railway station built in 1860. The wealthier townsfolk now resided above the Gardens having moved out of the centre of town and the poorer classes occupied areas on the fringe of the central area in the neighbourhood of Caledon and Buitengracht streets, an area interspersed with goods handling activities and mixed land uses. The Coloured folk occupied the slopes of Signal Hill and the higher ground to the south east of the Castle later to become known as "District 6".<sup>49</sup>



The centre of the town was becoming more commercial in its activities and residential uses were being forced out of the centre with the more affluent residents moving out to the Gardens linked uniquely to the centre of town by the avenue running through the old company gardens. As Davies has observed, "the gardens divide the frame into two parts and serve as an unusual "bridge" directly from the CBD hard core to the middle class inner residential area".<sup>50</sup> In contrast with the compact and rigid rectangular form of the Dutch period a more dispersed pattern of settlement was beginning to appear. Commercial activities occupied the centre with the majority of retail shops locating in Adderley Street, Darling Street, Plein Street and St George's Street. Wholesale and warehousing activities were concentrated towards the sea in the Waterkant Street, Strand Street and Burg Street vicinity near the jetties displaying a clear indication of the development of functional linkages between land uses. Less compatible activities such as slaughterhouses and butchers shops continued to occupy the seaward boundary of the Grand Parade. The upper St, George's Street and Wale Street area had already attracted the banking, insurance, and newspaper activities and the beginnings of the administrative and institutional uses.

- 3.7.7 Expanding trade with the hinterland fostered by the colonial policy adopted by the British administration directed an increasing volume of traffic through the harbour facilities. These facilities were inadequate and unsafe to handle the

traffic and in 1860 new works were put in hand to enlarge the port and render the anchorage more safe to shipping. The harbour development over time exercised a significant influence on the development of the town particularly in regard to the location of harbour related land uses such as warehousing, and provisioning and repair of ships. With the increase in trade, particularly after the opening of the Kimberley Diamond Mines in 1875 and the Transvaal Gold Mines between 1875 and 1891, the harbour assumed considerable functional importance both in relation to Cape Town and to the country as a whole. On both local and national planes, the level of harbour activity has varied from time to time exerting influence on the rate of growth of the town as will be referred to later.

The proximity of the harbour and the town created certain problems in regard to land use compatibility due to certain of the industrial activities which were attracted to the harbour and located along the shoreline. It was noted in 1880 that the approach to the town was marred by the presence of activities such as, inter alia, boat building, skin and fish curing, wool pressing, flour milling, and gas and soap manufacture.<sup>51</sup>

- 3.7.8 Development of harbour facilities at Port Elizabeth, East London and Durban and later at Lourenco Marques caused a fall off in the quantity of heavy mining equipment landed at Cape Town due to the shorter distance from these new ports to the mines and also the heavy gradients present

on the rail line out of the Cape - (considerations which continue to adversely affect tonnage handled by the port today). Cape Town retained its port supremacy in respect of mails, passengers, and high value low bulk goods. The opening of a rail link between Johannesburg and Lourenco Marques and Durban in 1892 and 1895 respectively caused a general decline<sup>52</sup> in the passenger and goods traffic through Cape Town.

3.7.9 Availability of Coloured labour and local and imported raw materials supported the development of small scale industrial activity in and around Cape Town. A major industry particularly before the extension of the railway to the Reef was the manufacture of wagons which was conducted at significant scale and on a factory basis.

3.7.10 Meanwhile the tempo of suburban growth and expansion had increased and it is reported that whilst 700 hundred new buildings had been erected between Wynberg and Sea Point in the period between 1863 and 1872, in 1888 a total of 800 new<sup>53</sup> buildings were erected in the same areas, Wynberg being then regarded as the most desirable suburb with hotels, schools and shopping facilities and was operating as a service centre to the neighbouring and less accessible Cape Flats area. The villages of Woodstock and Roodebloem grew but Salt River remained sparsely developed whilst Green and Sea Point had a population of 1700 persons by 1880 and was a popular residential area for the more affluent.

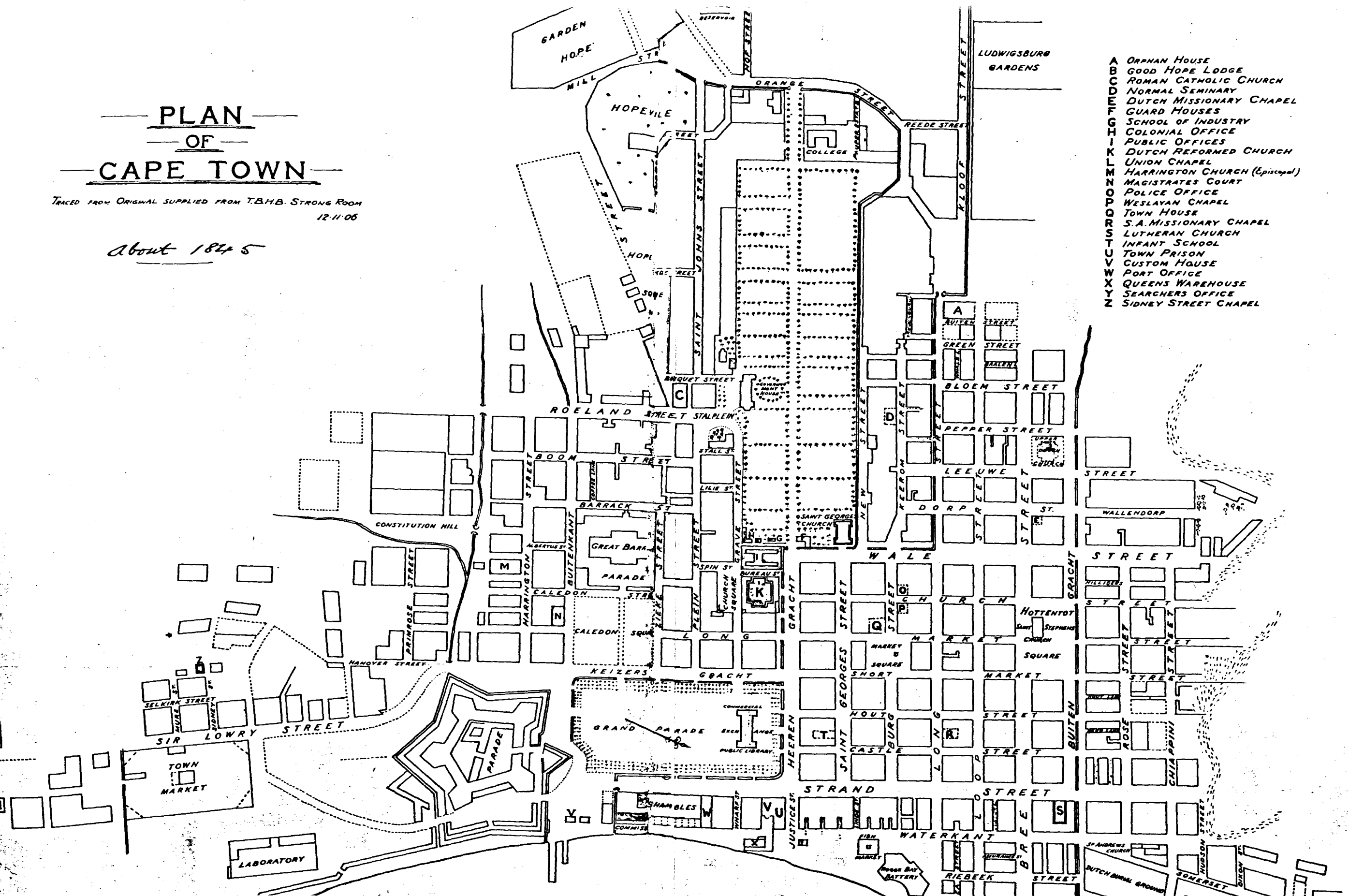
- 3.7.11 Further railway development occurred with the southern suburbs line being extended in 1890 from Wynberg to Simonstown and in 1891 a railway was opened between Cape Town and Sea Point, the latter railway line was not a success and closed down in 1897.<sup>54</sup> The Simonstown rail extension brought growth to the False Bay villages which became linked to Cape Town by a reliable and relatively fast transportation mode. Growth of the southern suburbs along the distinct linear movement channel spread more rapidly since the new suburbs were rendered far more accessible and the route consolidated its metropolitan function.
- 3.7.12 Late in 1889 a railway line was extended from Eerste Rivier to Somerset West followed at the end of 1905 by the construction of a branch line to the Strand. This extension had significance in the growth and development of the region in that it increased the "forking" effect of the existing railway line from Cape Town to the northern interior at Bellville, resulting in a lesser scale duplication of the growth potential provided by the original rail/road axes from the city to Simonstown and Bellville. The Bellville - Paarl and Bellville - Strand railway movement axes again paralleled by roads served to increase accessibility and to promote activity which fostered urbanisation along their routes but in particular contributed to the further development of the towns of Somerset West and the Strand.

# PLAN OF CAPE TOWN

Traced from Original supplied from T.B.H.B. Strong Room  
12-11-06

About 1845

- A ORPHAN HOUSE
- B GOOD HOPE LODGE
- C ROMAN CATHOLIC CHURCH
- D NORMAL SEMINARY
- E DUTCH MISSIONARY CHAPEL
- F GUARD HOUSES
- G SCHOOL OF INDUSTRY
- H COLONIAL OFFICE
- I PUBLIC OFFICES
- J DUTCH REFORMED CHURCH
- K UNION CHAPEL
- L HARRINGTON CHURCH (Episcopal)
- M MAGISTRATES COURT
- N POLICE OFFICE
- O WESLEYAN CHAPEL
- P TOWN HOUSE
- Q S.A. MISSIONARY CHAPEL
- R LUTHERAN CHURCH
- S INFANT SCHOOL
- T TOWN PRISON
- U CUSTOM HOUSE
- V PORT OFFICE
- W QUEENS WAREHOUSE
- X SEARCHERS OFFICE
- Y SIDNEY STREET CHAPEL
- Z



3.7.13 Towards the end of the 19th century the reclaimed waste sand lands along the northern (Voortrekker) Road were divided into small holdings and between 1902 and 1904 small villages began to spring up along the road.<sup>55</sup> By 1904 Maitland was a municipality with a population of 7000 whilst Goodwood, Parow and Bellville had populations of 1700, 3000 and 2000 persons respectively.

### 3.8.0 THE TWENTIETH CENTURY

3.8.1 Meanwhile the centre of Cape Town had further consolidated in form and function becoming more distinctly commercial and less residential with commercial land uses having succeeded residential uses around the centre and the immediate fringe becoming increasingly a mixed use area. By 1905 the town was described by the Duke of Argyll as being " a place to work in and live out of"<sup>56</sup> no doubt a fair observation on the changing quality of residential life.

3.8.2 Adderley Street and Plein Street were the busiest commercial streets being very accessible from the railway station in respect of suburban shoppers apart from the residents of the Gardens and fringe areas. Shopping activities had also extended along Long Street and further along Sir Lowry Road. The latter road had become the newest commercial road supported largely by the residential concentrations of poorer class people on the slopes of the mountain and the residents of the Woodstock area at that stage a popular middle class suburb. St. George's Street and Burg Street continued to accommodate the office

uses whilst Parliament Street had assumed a Governmental function responding to the building of the Government and Parliament buildings within portion of the original company gardens. The Gardens and Oranjezicht were the favourite central White residential areas conveniently accessible via the avenue to the town centre and the bulk of the Coloured population resided on the high ground above Buitengracht Street and in District <sup>57</sup> Six.

3.8.3 The functional areas of the city had not changed to any appreciable degree and the central area of the town boxed in by the Company Gardens, Government Buildings, the Castle and Parade, the Railway system, and the steep gradient above St George's Street, had tended to expand vertically rather than horizontally across the land and in addition to have stabilised locationally. The main commercial elements retained their central location in order to benefit for the more intense central area activity. The development of commercial activity along Sir Lowry Road might be noted as part of the linear development of lower order activities responding to the accessibility afforded from the increased movement flows of metropolitan significance in and out of the centre which characterised the southern suburbs growth pattern.

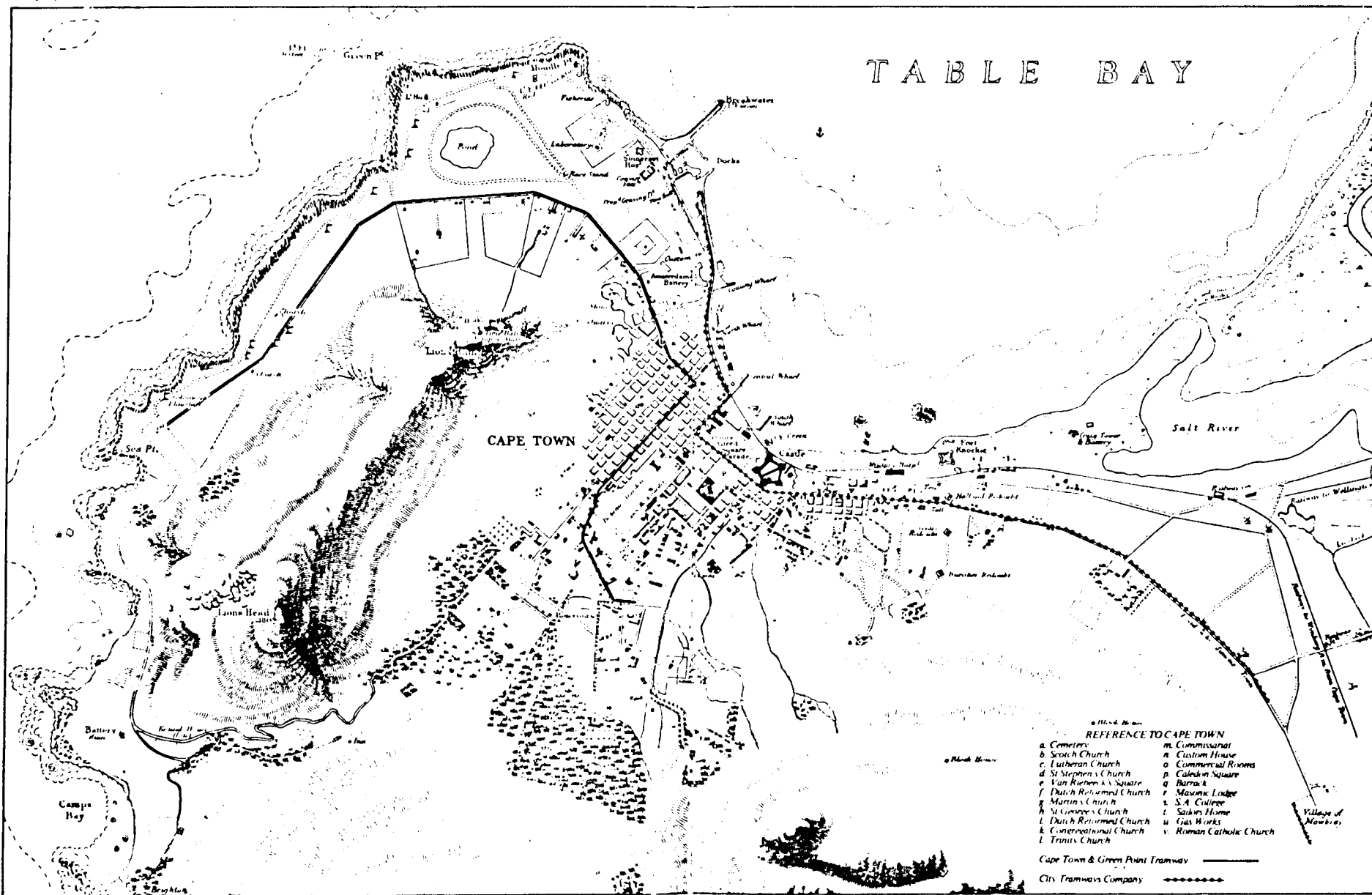
3.8.4 Suburban development already fostered by the railway lines to Bellville and Simonstown resulting in railway station oriented growth of suburbs, was reinforced by the introduction of the electric tram routes in 1905 from Cape Town to Sea Point,

Gardens and Wynberg.<sup>58</sup> The electric tram with its more frequent stopping points facilitated infill linear growth along the main roads particularly at points between railway stations. The tram car played an important role in the development of the suburbs of Cape Town since at the time it was the most flexible and efficient form of urban transportation available. It possessed the capability of negotiating almost any terrain and was well suited to steep grades and comparatively tortuous curves. In certain instances, the tramway system was developed and operated by syndicates owning large tracts of land for the express purpose of providing convenient access to these estates and enhancing their value by linking them through an efficient mode of transport to the centre of the town. An outstanding venture of this nature concerned the formation of a syndicate in 1899 known as the Mills Syndicate for the purchase of a large tract of undeveloped land at Camps Bay. The Syndicate also acquired an interest in the development of Oranjezicht and set about the planning of roads and a tramway track system linking Sea Point, Clifton and Camps Bay via Kloof Nek, Oranjezicht and Cape Town.<sup>59</sup> The Syndicate subsequently formed a company, The Camps Bay Tramway Company Limited and two associate companies indicating its land development function; the Oranjezicht Estates Company Limited and the Cape Marine Suburbs Limited.

- 3.8.5 Similar considerations arose in portion of the Cape Flats below Claremont and Wynberg in 1893 well before the construction of the Cape Flats railway line when German settlers who had



1. Cape Town and suburbs, showing tramlines built by the Green Point Tramway Company and the City Tramways Company. Based on an Admiralty chart about 1878.



CAPE TOWN EARLY TRAMWAY SYSTEM

fig.13

converted portions of the sandy waste into rich and productive small holdings, sought a means of conveying their produce to market. When early proposals for construction of a railway line failed to materialise, the Cape Flats Tramway Syndicate Limited was formed in 1903 with the stated aim of constructing a tram line along Lansdowne Road to Wynberg or Claremont. This scheme failed to mature and is suspected of having been engineered merely to promote and increase the prices of land being sold at the time along Lansdowne Road.<sup>60</sup>

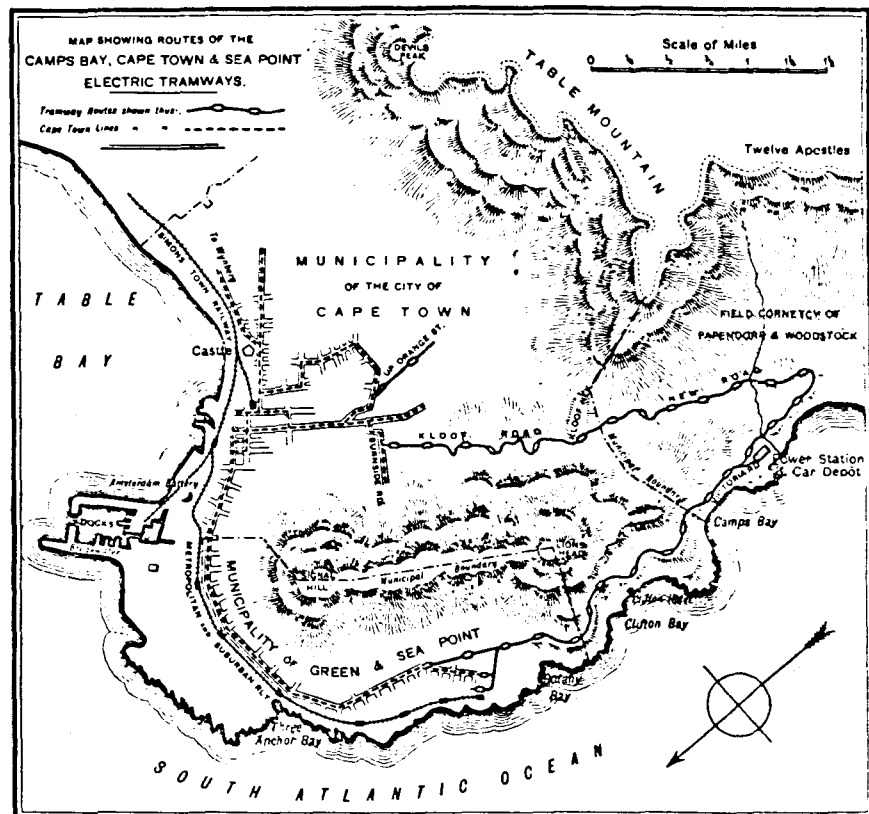
- 3.8.6 Further communications developments occurred in 1912 when new railway lines were laid between Cape Town and Milnerton and between Maitland, across the Cape Flats, to Diep River - the " Cape Flats " line. The latter railway line opened up for more intense development a considerable area of the Cape Flats and development was initially concentrated particularly between Athlone and Lansdowne where land was subdivided on a grid system following the line and was rapidly built up along both sides of it. This line promoted further linear residential development but in the absence of a well defined major road through the area and insufficient local residential support there was little activity to attract other land uses except at the railway stations, particularly those of Athlone and Lansdowne which were the major road/rail movement intersections. As compared to the southern suburbs development axes formed by the railway line and supporting main road, development along the Cape Flats line was fragmented and weak.

3.8.7 The defunct railway line between Cape Town and Sea Point was reopened the same year and continued its competitive struggle for patronage with a virtually parallel electric tramway system running along the main road which was commenced during the period of its previous operation prior to the electrification of the tram system.<sup>61</sup> This railway line was in fact at one stage owned by the Cape Town Tramway Company. A map (Figure 14) indicates the relationship between the routes of the tram and the railway systems in the Sea Point - Camps Bay area. Residential population in this area was increasing and the main road was attracting a variety of commercial activity in response mainly to the support given by local residents. At this time Woodstock, Salt River, Observatory, Mowbray, Rosebank, Claremont and Wynberg were all rapidly growing suburban towns. Woodstock had a large commercial element with a fair mix of industrial uses backed by residential areas located between its two main roads and on the lower slopes of the mountain housing a mix of White and Coloured persons. The development further south found places such as Diep River, Retreat, Lakeside, Muizenberg, St James and Kalk Bay as popular residential and commuter villages. The settlements beyond such as Fish Hoek and Glencairn were small hamlets whilst Simonstown being essentially a naval base and having a specialised and limited function, was developing very slowly.<sup>62</sup>

3.8.8 On the eastern road and railway line development proceeded more slowly with Maitland continuing to develop as a poorer residential town with some low order shops, whilst Goodwood, Elsies

fig.14

CAMPS BAY AND SEA POINT TRAM AND TRAIN SYSTEM



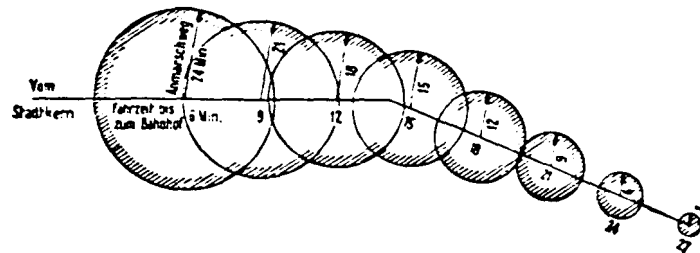
Source : Coates; Tram and Trackless

River, Parow and Bellville continued to grow on a linear ribbon basis with settlement being concentrated around the railway stations but with sparsely settled and comparatively undeveloped sections between each town. The cemeteries in the Maitland area lying between the railway and the road with the Government land opposite, created a considerable stretch of inactive roadway which through lack of residential support attracted no commercial activities. Between 1928 and 1934 the railway lines to Simonstown, Bellville and between Maitland and Diep River were electrified. During the same period the motor car began to make its appearance in significant and increasing numbers on the local roads, accompanied by the motor bus. As in most cities the flexibility and level of accessibility provided by the motor car and motor bus, which released urban transportation from rail and route bound systems marked the beginning of the era of rapid and in most cases sprawling city growth.

- 3.8.10 The significant speeding up of the public passenger transport system, particularly the railways caused an acceleration in the rate of linear expansion of the metropolitan area. With faster transportation available, people could exercise a choice of living further from the city or from their place of work taking advantage of the availability of cheaper ground in addition to the possibly more pleasant natural environment. Leibbrand identifies a relationship between the efficiency of the available transportation mode, the size of the suburban settlements it enables, and the time / distance based choice exercised by the suburban resident. His statement uses the

fig.15

'RAILWAY - AGE CITY



railway as the mode and, discounting the operation of alternative modes, has relevance to the transport structured and stimulated growth of the Cape Town suburbs "railway stations in the outskirts of cities provide the nucleus for suburban settlements. New centres are built up around them, and then buildings spread out over roughly circular areas. For a given total travel time from the city centre the size of the area that can be settled around each station decreases as the distance from the centre increases, since the rail travel time increases and less and less time is left for the walk to the station. Thus the suburbs of a 'railway city' are strung out like pearls of decreasing diameter along the railway line (Figure 15) Between the railway lines wide areas remain unbuilt until they are served by the local transport with its denser network and then by the car."<sup>63</sup>

- 3.8.11 In common with most cities, the most important factor contributing to the acceleration of the urban growth rate was the increasing use in the late 1920's and early 1930's of the motor vehicle - the motor car in private use and the motor omnibus in public transport use. Public and private transportation on the land was now free ranging and highly variable in both capacity and scale of application. The ribbon of development following the major movement systems was widened and distorted spreading into areas where access had previously not been convenient. New townships began to develop deeper into the Cape Flats and further up the mountain slopes and particularly into the Constantia Valley. Suburbs to the

south of Mowbray and Rondebosch where individual properties tended to be larger built up rapidly as both the motor bus and the private car became available to convey residents to the railway stations or directly to the destinations of their choice.

3.8.12 Most suburbs located on the main movement axes had developed significant commercial areas usually along the main road where shops etc could draw support from both the passing traffic and the local residents within their respective trading thresholds. For the most part, commercial development in the suburbs was linear with the possible exception of points such as Salt River and Wynberg where it tended to coalesce around the point of intersection of major movement flows and along the more direct routes between the main roads and the railway stations attracted by the activity generated by commuter flows.

3.8.13 Increasing population pressure developing industrialisation and possibly some function of social conscience after the 1918 war focussed attention on the prevailing slum conditions and associated manifestations of urban conditions particularly in the central area. The result was that the municipality of Cape Town in 1918 resolved that action should be taken towards the elimination of slums and their replacement through 'planned' public housing projects. In 1920 the municipality secured the promise of Government aid to relieve the housing shortage by permitting private individuals to erect wood and iron



cottages of approved design at Claremont.

Two significant planned housing schemes were commenced in 1923, the construction of the garden village of Pinelands was commenced for the private developer R Stuttaford and by Act of Parliament in the same year it became compulsory for the Black population of Cape Town to reside in the newly developed Cape Flats township of Langa which had been provided with a specially constructed rail link with the Cape Flats railway line. These initial 'planned' housing projects were built in reasonably close proximity to the existing urban infra structure and transportation systems and whilst to a large extent the housing was repetitive and of indifferent quality, they linked on to the existing urban fabric and served to generate further urban activity in the existing system. Increasing industrialisation during the inter war period and the effects throughout the country of the depression during the early 1930's resulted in additional urban population pressure, particularly amongst the Coloured population due both to natural increase and further in-migration from the rural areas.<sup>64</sup>

The projects referred to together with subsequent programmes are detailed on Schedule Figure 16.

- 3.8.14 During the post war years, the population of the city grew more rapidly with a consequent increase in the residential development particularly for the Coloured population and in the suburbs the municipality continued its programme of

slum clearance and construction of public housing.<sup>65</sup> These schemes were by and large planned blocks of housing intended to improve housing stock and condition and were rather in the nature of 'in-fill' or add on schemes to areas in proximity to certain sections of the earlier developed areas where space and infra-structure existed. Schemes commenced during the war period were on a small scale but between the years 1941 and 1949 a total of approximately 2100 dwelling units were completed. In the white housing field the township of Bergvliet was commenced in 1950.

- 3.8.15 Subsequent residential growth began to assume a new pattern influenced jointly by population increase on the one hand and a combination of political ideology and planning concepts on the other. The slum clearance and rehousing programmes being undertaken by the local authorities at modest scale and contributing insignificantly towards coping with accelerating urban population growth in Cape Town were overtaken by the passing of the Group Areas Act in 1950 applying considerations of political ideology to an already serious social problem. Superseded by the Group Areas Act No 36 of 1966, this legislation has resulted in the transfer of some 12500 families, all non-white except for 11 from their previous places of residence in areas around the central city and elsewhere in Wynberg, Claremont and Newlands.<sup>66</sup> This action aggravated the housing shortage since many persons who were previously cheaply and reasonably housed in old residential stock had to be rehoused in the so-called "resettlement areas", mainly

SCHEDULE OF EARLY SLUM CLEARANCE AND PLANNED HOUSING  
PROGRAMMES CONSTRUCTED IN THE METROPOLITAN AREA  
(1903 to 1939)

FIG. 16

| <u>Date</u> | <u>Units</u>                                | <u>Location</u>                  | <u>Developer &amp; Occupants</u>        |
|-------------|---------------------------------------------|----------------------------------|-----------------------------------------|
| 1903        | 20 cottages                                 | Mowbray                          | Municipality - White                    |
| 1917        | 122 cottages                                | Maitland Garden Village          | " "                                     |
| 1919        | 45 cottages                                 | Roeland Street                   | " "                                     |
| 1923        | Complete Township                           | Pinelands                        | R Stuttaford - White                    |
| 1923        | " "                                         | Langa                            | Municipality                            |
| 1924        | 120 cottages                                | Athlone                          | Municipality - Coloured                 |
| 1926        | 25 concrete block houses                    | Gleemoor                         | Central Housing Board - Coloureds       |
|             | 54 wood/iron Houses                         | "                                | " " "                                   |
| 1926/7      | Special design Hse.                         | Sunnyside                        | Municipality - Coloureds                |
| 1926/7      | " " "                                       | Devils Peak Est.                 | " - Whites                              |
| 1929        | 1174 Houses                                 | Within Cape Town Municipal area. | Citizens Housing League for Whites.     |
|             | 4000 "                                      | Within adjacent Municipalities   | Citizens Housing League for Whites.     |
| 1931        | 46 Flats                                    | Canterbury St. C.T.              | Municipal Slum Clearance for Coloureds. |
| 1931/2      | 600 Houses                                  | Good Hope Village Brooklyn       | Citizens Housing League for Whites.     |
| 1933        | 154 Cottages                                | Bokmakierie                      | Municipality - Coloured.                |
| 1937        | 100 Houses                                  | Brooklyn (Zorgvleit Township)    | Citizens Housing League - White.        |
|             | 700<br>(Plus Town Hall and Shopping centre) | Epping Garden village            | " " "                                   |
| 1939        | - Flats                                     | Bloemhof District '6'            | Municipality - Coloured                 |
|             | 250 Houses                                  | Alicedale                        | " "                                     |
|             | 200 Houses                                  | Kewtown                          | " "                                     |
|             | - Flats                                     | Kalk Bay                         | " "                                     |

(Source The Golden Jubilee of Greater Cape Town)

located on the Cape Flats whilst much of the dilapidated stock vacated was demolished as was the case in District Six. Serious delays were experienced in the proclamation of land for occupation by the various racial groups which delayed production of housing units whilst the backlog increased. To the 'spectre' of the Coloured housing backlog is attributed the attitude displayed by the Department of Community Development in its practical implementation of the provisions of the main controlling legislation, The Housing Act, The Slums Act, and the Group Areas Act - the concern being the provision of housing as a matter of urgency.<sup>67</sup>

- 3.8.16 The result of this policy has been the development of the large planned and apparently 'independent' residential townships primarily located on the Cape Flats between the two arms of established linear growth. The choice of site is explained by Rees thus "through natural market forces, the Cape Flats, being wind swept, sandy and wet in winter was not built upon to any extent when the Act was passed and lower quality, cheaper land here, realistically, was selected for low cost housing."<sup>68</sup> Examples of these townships are, inter alia, to be found in Bonteheuvel, Heideveld, Hanover Park and Mannenberg being rental schemes erected by the Local Authorities interspersed with home ownership schemes such as Vanguard Estate. The most recent addition to the Cape Flats mass housing projects is Mitchell's Plain, planned as a complete 'city' with all urban facilities, except sufficient job opportunities and therefore destined to serve as a dormitory to the metropolitan

area. This development some 27 Kilometres from the centre of the city represents a determined effort on the part of the planners to overcome the earlier pitfalls of mass housing as far as possible and whilst the overall concept is open to criticism, for possibly the first time a genuine multi-discipline approach has been made also involving the people who are to occupy the facilities. The scale is again Large and the location is the Cape Flats although elaborate action is being taken to improve the natural environment.

- 3.8.17 Atlantis more remote from the CBD - being some 45 Kilometres out of the city, was initially intended as part of the decentralisation programme to be a self sufficient unit with its own industrial sector independent of Cape Town. It was rather to form part of the West Coast activity axis designed to counter-balance the primacy of the city. The development is planned to accommodate 500 000 persons by the turn of the century. It is considered too close to Cape Town to develop a full range of high order urban functions and it has already been conceded that approximately half of its economically active inhabitants are likely to seek employment in the Cape Town area, commuting daily as have the bulk of the residents of the neighbouring village of Mamre for many years. Possibly the most significant characteristics of this new residential development was
- a) The planning financing and construction being almost exclusively the responsibility of the Public Authority with very insignificant private participation in housing programmes as in the case of Bishop Lavis Township.

- b) The considerable scale of the individual schemes.
- c) The remote location of the townships in relation to established areas and urban infra-structure.
- d) The lack of designed variation apparent in the dwelling units both within a single scheme and as between various schemes.
- e) The almost exclusive limitation of the developments to single land use activity.

### 3.9.0 INDUSTRIAL DEVELOPMENT IN THE METROPOLITAN AREA

3.9.1 Reference has thus far been made primarily to residential growth and to the resultant commercial activities attracted towards the residential areas particularly along the main movement channels whilst there has been comparatively little specific mention made of the somewhat delayed and gradual development of the industrial component of the city. Under the free conditions of land use location which prevailed during the earlier phases of development in the absence of planning controls, locational factors applicable to residential and commercial uses were equally applicable to industrial activities - being a function of the interrelationship between movement and land use. At the turn of the century industrial activity was very limited being confined largely to manufacture for the local market and to a lesser extent for the inland markets to the north associated with the mineral discoveries between 1875 and 1895. The Boer War had interrupted urban development generally and had halted industrial development

in Cape Town. Industrial growth was to receive great stimulus from the conditions imposed by the 1914/18 war through the need to manufacture locally much of what had previously been imported. This impetus however weakened immediately after the war when the overseas trade returned to normal and local industry encountered severe competition from abroad.

- 3.9.2 Much of the industrial activity was related to the harbour and railway facilities being reliant upon materials railed from the interior or to a lesser degree imported through the harbour. The main industrial zone developed eastwards along the southern and eastern railway lines and their parallel main roads from beyond the Castle avoiding the low lying and marshy areas around the lower reaches of the Liesbeek, Black, and Salt Rivers and occupying much of the comparatively flat land below the 30 metre contour line.<sup>69</sup> Further industrial uses found their location to the north west of the city near the harbour whilst a general scatter of factories appeared throughout the southern suburbs in mixed land use areas and along the northern railway line at Maitland and further afield at Parow. Industries located closer into the city were served by labour which commuted to the centre mainly on the radial structured railway system being supplemented to a large degree by both White and Coloured workers who resided within walking distance of the factories. This was particularly true of industries to the Green Point side of the city as well as those in the Woodstock and Salt River areas and along the

railway line and main roads at Maitland, Observatory, Rosebank, Rondebosch and Wynberg.

3.9.3 Industrial growth in the metropolitan area was gradual in the 1920's and particularly retarded through the depression period in the early 1930's. Thereafter industry began to expand with the establishment of new units of manufacture and to a considerable degree the movement of established industries from old premises close into the city to larger generally purpose built factories predominantly locating in the Salt River, Maitland, Paarden Eiland, Parow and Bellville areas. This movement was particularly marked in the lighter industries such as clothing manufacture which was expanding and tending to move out from small premises within the commercial centre of the city in search of larger site areas and/or to avoid increasing land values at the centre. A further motivation for transfer was the wish to locate in proximity to the resident labour sources or to the points of transportation focus outside the central area. These movements and changes in land use were generally motivated on economic grounds and were free from regulation and control.

3.9.4 Before the introduction of rigid land use zoning regulations and planning controls, there was a significant tendency for many industries to locate near or even to penetrate within the residential areas of the labour that they wished to attract



to their employ. Mixed or integrated land use areas were reasonably common and were demonstrated by, inter alia, the location of

- a) A Crown Cork Factory in the centre of the Green Point residential area.
- b) A food factory on the corner of Woolsack and Main Roads Rosebank.
- c) A food cereal factory on Court Road Wynberg.
- d) A variety of home based activities e.g. tailoring, wood-working etc conducted from residential premises.

These manufacturing operations have since largely disappeared but other examples exist of continued industrial activity being conducted reasonably compatibly within predominantly residential areas, for example :

- a) A printing works in Court Road Wynberg.
- b) A brewery on Main Road Newlands.

The earlier presence of reasonably large industrial activities being conducted in residential areas is evidenced by the presence of the Schweppes Factory in Main Road, Rondebosch and the Old United Tobacco Company premises in Kloof Street Gardens.

3.9.5 Many industrial and commercial activities were established during the period when personal mobility of labour was not as mechanised and convenient as today and when both land

use and racial regulations were more flexible. They represented elements in a land use mix which appeared to have been accommodated in the urban structure and fabric and which functioned generally in the community interest and with very modest demands upon energy, the movement system and the urban infrastructure in general. Each suburb had displayed an integration of the land uses together with a residential racial mix usually separated into their respective parts of the town through voluntary operation of custom and economic considerations - the Coloured folk generally occupying the older and cheaper residential stock to be found along small streets off the main roads immediately behind the commercial and industrial land uses and in greater concentrations as existed in lower Wynberg and Harfield Road. These people generally found employment close to their homes or conducted some trading, service or repair operation from their homes, contributing to urban economic activity and vitality of the suburb.

- 3.9.6 During 1937 the Cape Town City Council had caused a comprehensive survey of the city to be undertaken - the first of its kind in South Africa, which was to form the basis of a formulation of town planning proposals with the attendant concerns relating to health, roads, open spaces, land use zoning and building control regulations.<sup>70</sup> These planning measures were introduced during the early 1940's and exerted a marked influence on subsequent growth and development of the urban area.

3.9.7 With increasing industrial activity and the imposition of the recently implemented land use zoning provisions of the Local Authorities a separation of land use activities was introduced, new industrial areas were developed to accommodate those activities which no longer enjoyed freedom to locate purely through the operation of economic forces and the interplay of movement and land use factors as had been the situation in the earlier periods of the growth process. Much industrial activity already existed in pockets scattered throughout the city and integrated in the multi-use areas in residential neighbourhoods, many continuing their industrial operation under "non-conforming right concessions". Industries in the established commercial/industrial concentrations in the Salt River and Maitland areas tended to expand into the remaining available space, the Salt River area becoming the centre of labour intensive light industry and of the clothing industry in particular. Major industrial townships were developed at N'Dabeni, Elsie's River, Parow, Epping Industria, Bellville South and somewhat later at Philippi, Kuils River, Wetton, Hein Road, Athlone and in the proximity of the D F Malan Airport.

3.9.8 With the changing pattern in the distribution of land use areas came a response in the construction of new movement links. A rail link was provided from Mutual Station on the main eastern line linking with the Cape Flats spur line at Langa, then proceeding from west to east across the Cape Flats and linking up with the Somerset West line to the east of Bellville station. In addition a new north to south branch off this line extended

fig. 17

GRADE 10 (HIGH INTENSITY)  
HOE INTENSITEIT

GRADE 5

GRADE 4

GRADE 3

GRADE 2

GRADE 1

SOURCE:  
PROVINCIAL ADMINISTRATION PLANNING  
REPORT NO. 2. 1968. P 37

BRON  
PROVINSIALE ADMINISTRASIE  
BEPLANNINGSVERSLAG NR 2 1968 P 37

INDIENSNEMINGSINTENSITEIT

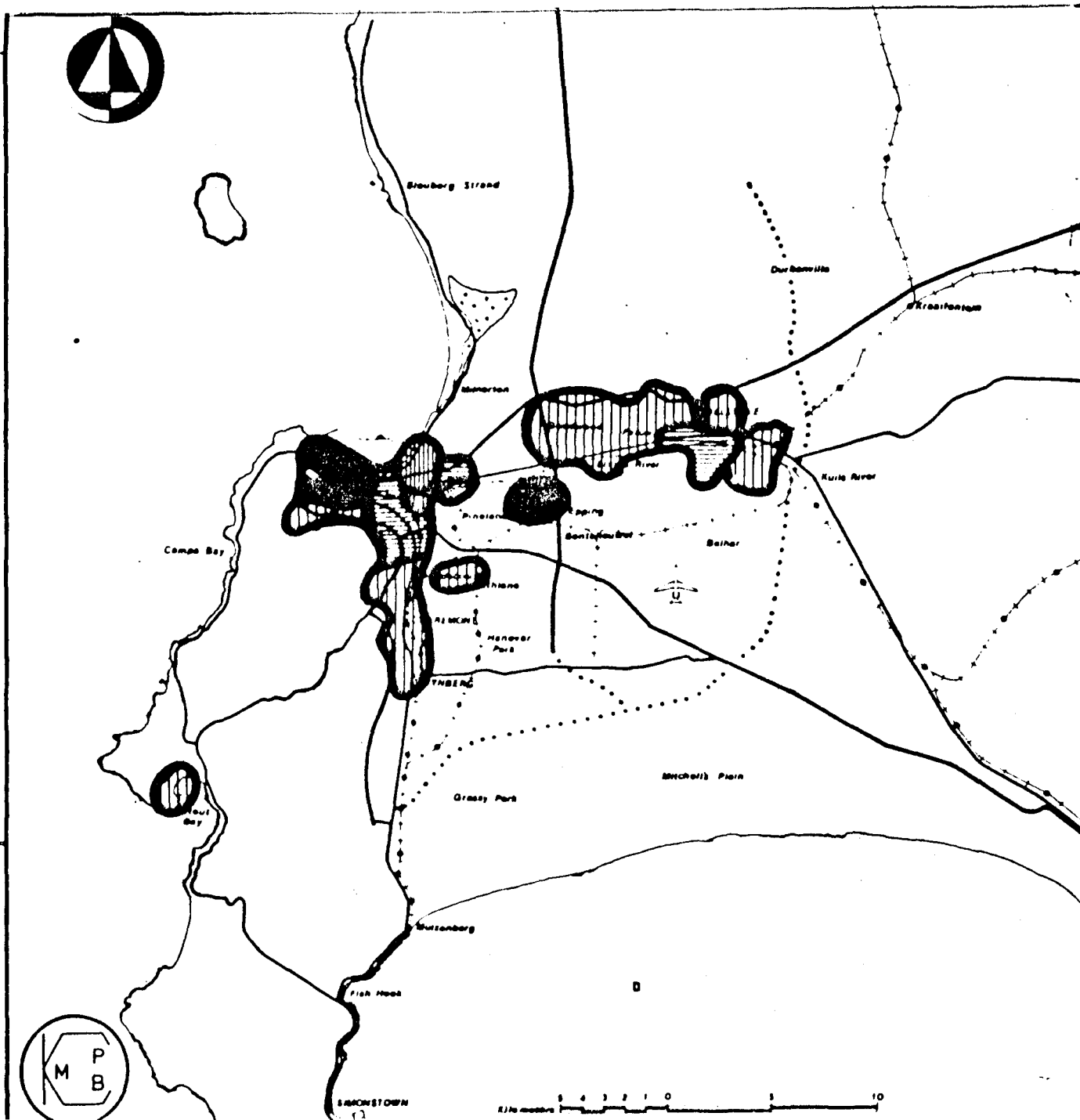
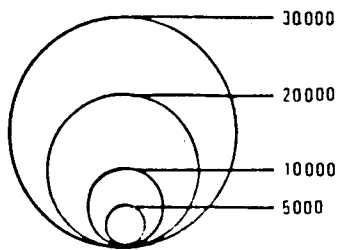


fig.17a

# EMPLOYMENT IN MANUFACTURING



NO. OF WORKERS



some 6 kilometres to terminate at Nyanga. In order to facilitate the movement of passengers from the eastern to the southern railway lines a rail loop was constructed linking Maitland with Observatory so as to obviate the need for passengers to change trains at Salt River. Road access to the new industrial area was initially provided from the existing road network but later was improved by providing links from these areas to the newly constructed urban freeway system.

### 3.10.0 THE CENTRAL BUSINESS DISTRICT

- 3.10.1 The central area of the city had been undergoing a progressive process of changing land use with predominantly commercial and light industrial uses expelling the remnants of the original residential land use activities. The central business district as it is described by D H Davies covers the site of the original settlement and with "the adjoining zone of goods handling localities interspersed with slum housing, government and municipal offices, and public open spaces that forms the 'frame' around it and the inner residential zone beyond, occupies the floor and lower slopes of the Table Valley amphitheatre formed by Table Mountain and its eastern and western bastions Devils Peak and Lions Head/Signal Hill. The spread of the settlement beyond the amphitheatre principally to the south and east along the two main movement axes, has resulted in the CBD having a decided off centre location, linked with its suburbs by movement corridors which for topographical reasons are narrow and impose constraints on transportation systems." <sup>71</sup> The form of the CBD at this stage was further characterised by the retention of its

grid of narrow roads with the exception of those which had originally carried the "Grachts" and were consequently somewhat wider and more capable of adjusting and accommodating to modern traffic requirements. The road grid was interrupted by public gardens to the south which together with neighbouring and intruding government buildings effectively block south east to north west vehicular movement across the city. Only Wale Street, Darling Street and Strand Street permitted reasonable cross flows through the centre whilst the only alternative route avoiding the city was via Orange Street to the south west.<sup>72</sup> Further obstruction of traffic movement in a north east/south west direction was created by the railway station fronting on Adderley Street with its associated track system extending to the south east. Vehicular movement within the core area was severely constrained by the local road system and subjected to further stress through having to cater for cross city movements which were not in fact CBD related. With the development of the suburbs to the north, south and east of the city, the main flows within the city had changed in direction from predominantly south west to north east (or coast to mountain) to a predominant flow across the area from north west to south east.<sup>73</sup> This directional flow was further reinforced by traffic generated by the harbour moving eastwards to the southern suburbs or points inland.

- 3.10.2 Due to a combination of geographic and historic reasons, the main movement axes serving the central area had radiated out - wards from the city in the general direction of Sea Point,

Simonstown, Bellville and Milnerton. The CBD although considerably off centre to the settled metropolitan area was strong centred and exercised considerable attraction to its higher order functions comprising concentrations of shopping, financial and commercial facilities, government offices, cultural and entertainment centres. It was the point of maximum accessibility to the entire metropolitan area population, the position of the railway station in the very centre of the CBD reinforcing this factor, and to a degree negating the disadvantages of its geographically eccentric position.<sup>74</sup> To the public transport dependent resident of the more remote suburbs and in particular the poorer Coloured residents who had access to the Cape Flats line, this factor was extremely important. Further metropolitan focus was drawn by the presence of the main transportation termini for both suburban and main line railway travel and sea travel.<sup>75</sup> At this point in time accommodation congestion was already being experienced within the CBD and certain non commercial establishments had already begun to move out of the centre in search of expansion space or in response to increase in cost structure at the centre. Extension of the harbour facilities which had been planned in 1935 and partially completed during the war period, involved also the reclamation of a large tract of land to be known as the foreshore which was intended to support an extension of the CBD as well as providing areas for extended railway facilities and future roadworks. This development was planned to relieve the CBD from the constraints imposed



upon its horizontal expansion by both the natural and historic features discussed earlier.

- 3.10.3 The foreshore was planned as a monumental approach to the city from the harbour and intended to integrate as an extension to the original city core. The repositioning of the railway station virtually within the core of the city rather than on its periphery whilst maintaining the intense accessibility of the city to public transport represented an intrusion into the CBD fabric which caused the separation of the new from the old areas.<sup>76</sup> Added to this the overscaled movement corridors of the foreshore do not, having regard to the local climatic conditions, attract significant intensity of activity to the area due partly to its inconvenience to the pedestrian. In consequence the development of the reclaimed area has been rather slow and biased towards entertainment and office uses rather than realising the full range of Central Business District activities, particularly retail shopping. The tendency is for the CBD to be divided and for development to take a dual-centre direction - weakening the attraction of both components.<sup>77</sup>

Although served by a radial railway system, in 1958 the construction of an elaborate freeway system with a proposed but as yet incompletd ring road around the CBD was commenced. The intention was to reinforce the accessibility of the CBD to the motorist in an effort to minimise the disadvantage of its eccentric position in relation to the expanding metropolitan

area against competition from developing suburban centres supported largely by the motoring public. In addition the freeway system was to provide a more direct route across the centre for the non CBD focussed traffic flows. The improved road system through the CBD and the inherent route and destination flexibility of the motor car held the potential of either benefitting or damaging the centre. In 1965 Davies stated " --- there are indications, in Cape Town itself and in cities elsewhere that may serve as analogies, that centrifugal forces may currently be of sufficient strength to slow down, in the long run, the natural economic growth rate of the (dual) CBD to an extent where it cannot keep pace with the unusually rapid growth of its (physical) fabric at the present time. In the absence of planning controls, this could lead to excessive vacancy, which would be injurious to the economic well being of the heart of the city"<sup>78</sup>. These remarks would seem to have been prophetic in the light of present conditions relating to the degree of vitality of the central business district of Cape Town.

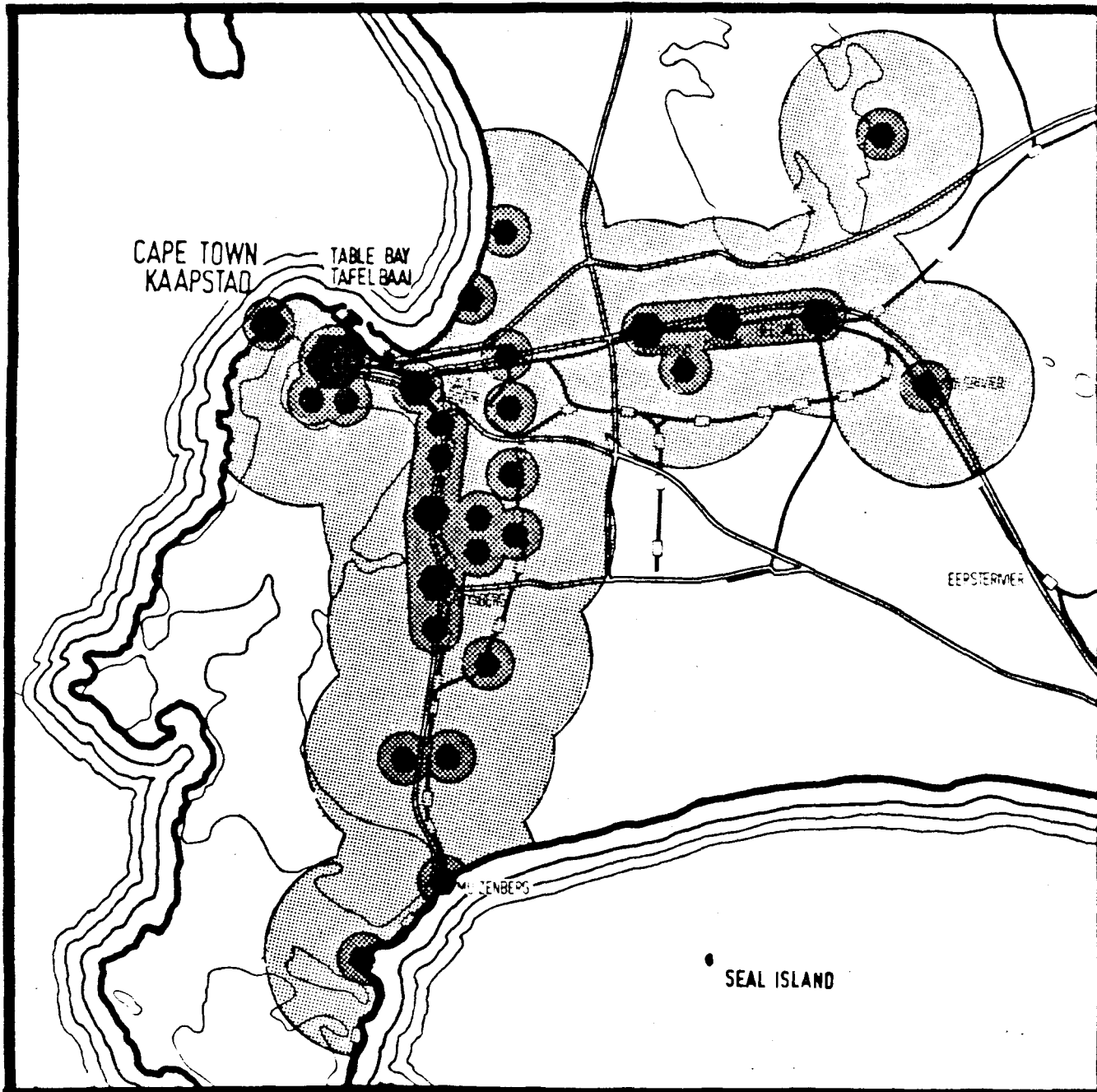
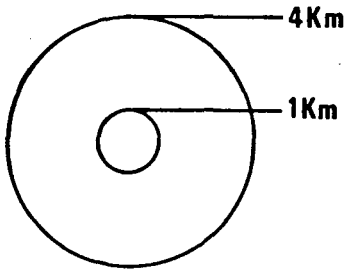
The growth of Cape Town has been traced from the first settlement to date in an attempt to gain an understanding of the role played by movement as a structuring device in the development of the city. Thus far the city has been examined as a whole and it is now proposed to look more closely at the two main sectors of the Metropolitan Area developed through the action of two distinct processes.



● DISTRICT CENTRE

● SUBURBAN CENTRE

# COMMERCIAL HIERARCHY



Source: Cape Metropolitan Planning Committee

#### 4.0.0 THE PREVAILING URBAN CONDITION

- 4.0.1 The end product of somewhat more than three hundred years of growth and development of the 'settlement' as evidenced by the present city of Cape Town, demonstrates distinctive characteristics in urban structure and form clearly discernable in the fabric of the city. The two phases in the growth of the city are generally identified as the unplanned or 'evolutionary' phase which operated up to approximately 1920 and thereafter the 'planned' phase. Whilst this is a convenient division and acknowledges time periods the distinction is rather a matter relating to the changing attitude brought about by the important influence of TIME in relation to the development process. In respect of movement there was the influence of a changing physical performance level coupled with changing attitudes towards movement as an input into the process. Influence was also exerted by changing attitudes towards Land Use - inseparable from and interactive with the function of movement. These formative forces coupled with the increasing pressures exerted by growing urban population are common to the urbanisation process of settlements generally whilst in the local case political forces tended to 'distort' the course of normal development.
- 4.0.2 In his efforts to convert mere existence into agreeable life style Man realises a variety of needs many of which he relates to his use of the land. In ordering the location of his varied activities he creates the need for movement linking these land uses in the conduct of his daily life. Convenience and economy

of effort enter his considerations and to the best of his ability he will usually attempt to adapt his environment so as to minimise the cost in terms of energy, time and distance expended in overcoming this 'friction of space'. Movement provides accessibility to varying land uses " it is a generally accepted 'law' of urban location that each activity seeks a site for which the costs of friction are at a minimum. Efficiency in the layout of a city is inversely proportional to the aggregate costs of friction, and the city's spatial structure is largely determined by a monetary evaluation of the importance of convenience."<sup>79</sup>

Movement responds to and serves to link the various land use functions providing accessibility which in turn operates to attract further activities setting up a cyclical and cumulative process. The lines of movement therefore become potential activity spines upon which urban development and growth might be structured.

- 4.0.3 The planner is able to employ these natural structuring principles in a positive manner in guiding the process of urbanisation but is frequently constrained by the dictates of planning regulations many of which whilst once purposeful and valid are now out of date in the context of modern technology.<sup>80</sup> The planner must however be directed to appreciate that "the fundamental focus of all planning action is Man and the betterment of his condition.

The focus of physical planning is the interdependent relationship between man and his environment: The role of environment in stimulating developmental uplift and improved quality of life and man's role in modifying that environment."<sup>81</sup> The planner in order to

ensure that the full potential of metropolitan life is made available to Man creating for him the necessary opportunities to enable him to enhance his life style, has to monitor the urban condition to ensure performance of certain functions. Dewar has advanced the following as necessary indications of satisfactory metropolitan performance :

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1. The accommodation of the needs, requirements and activities of people of all ages in an enriching and enabling way.
2. The release of individual creativity and utilization of the ingenuity of society as a whole.
3. The reflection of the essence of the place in which it exists.
4. The utilization of regional and National resources in a responsible and efficient manner.

From these requirements flow the need for an understanding of the local metropolitan condition with reference to the need to reduce population growth, poverty, inequality and energy and material resources. In order to maintain positive development it is also essential for the planner to create conditions of an active urban environment which will facilitate job creation and self improvement.

4.0.4 Both the 'evolutionary' and 'planned' phases in the growth of the city of Cape Town must now be examined in outline in an attempt to relate the development to the applicable principles of movement and their influence upon urban structure and form as a guide to the planning of the city's future. According to Chapin "there are at least three areas of investigation that promise to give the urban designer deeper insights into his design subject. One concerns the study of significant historical values that have influenced the growth of the city. The study of urban form in any particular city is deeply rooted in its culture of the past as well as in the functions it serves in the present."<sup>83</sup>

#### 4.0.5 THE 'EVOLUTIONARY' DEVELOPMENT PHASE

The significant features of the 'evolutionary' development phase were :

- a) The gradual rate of growth in terms of both time and incremental physical scale
- b) The condition of relatively slow but accelerating population increase
- c) The freedom during the greater part of the period from rigid planning controls
- d) The gradual development of physical movement technology during the period of growth



- e) The virtual freedom from political constraints particularly relating to choice of residential location

The development followed the clear structural directions set by the initial movement pattern laid down for man and wagon with its major and dominant axes to the south, east, north and west, the first two axes exerting the greatest influence on the process of growth. Early development was related closely to the road in a linear form. The road later reinforced by the parallel railway lines held the development close to it along its length extending the ribbon effect since with the apparent abundance of land and the absence in the early stages of more sophisticated movement systems, there was no incentive for development to broaden out from these axes. The result was that the older areas once developed along the dominant movement channels left the Cape Flats area between the southern and eastern elements of the suburban movement system undeveloped and virtually vacant.

- 4.0.6 The gradual growth was essentially a response to population increase at a very modest but accelerating rate. It took form along the eastern and southern movement axes from the town - these routes initially being crude links between it and functions and activities which for a variety of reasons had found their location outside the town limits. The stronger axis was that focussed on Simonstown for reasons of its being of early importance as an alternative anchorage

for shipping which was of vital importance to the settlement. The later rail / road route through its increasing activity became the dominant movement channel and along its length attracted first additional settlement and later other urban activities. The flow of people and consequently accessibility was greatest where the route was reinforced by the location of a railway station or where a route branched or intersected (this has classic precedent in the historic origins of towns which tended to develop at intersections of trade routes and changes in mode of transport and at a later stage which developed like 'beads on a string' at station locations on a railway line). (For growth phases refer Map Fig. 19 Page 100)

- 4.0.7 At the points of greatest accessibility coincident with the greatest concentrations of residential population the combination of these factors and the intensity of movement along the route attracted various urban land use activities in response to these conditions and trading, manufacturing and service operations made their appearance along the main road. The process was self generative as the presence of urban activity attracted a greater intensity of movement to the routes increasing the accessibility of the location and promoting its development still further. Where movement flows were supported by relatively dense local residential concentrations the variety, integration and activity of land uses intensified and higher order functions came into operation which could not have been supported by the local

residential population alone. These higher order commercial activities increased the metropolitan significance of certain suburban towns such as Woodstock, Salt River, Claremont and Wynberg which then became dominant in the neighbourhood and through the increase in their effective threshold areas, constrained the growth of adjoining suburbs. These towns also reaped the benefit inherent in their being exposed to flows of people from outside the immediate area which apart from the commercial activity enhanced the quality in terms of cultural, educational and related concerns.

4.0.8 The dominance of these suburbs and their higher order trading which was to lead to their becoming competitive with the central area has been identified by Dewar as creating for them a socio economic advantage especially in relation to the less affluent section of the population whereby "the poor benefited from the presence (and buying power) of the rich"<sup>84</sup> - these centres trading in a full range of goods at considerable volume being able to market lower order commodities at prices far lower than those ruling in the smaller suburban stores.

4.0.9 The 'evolutionary' growth process of the older sector of the city culminating in the emergence of active suburban towns, was as has been detailed in the foregoing historical record a development spreading over almost three hundred years. Growth proceeded stage by stage in response to population growth and increasing urban activity each

addition following upon earlier development in a progressive incremental process of experimentation - the good being retained whilst that which did not satisfy was rejected and not repeated. The time span alone indicates that the process of refinement involved the contribution of many individuals from successive generations and was conducted at a pace which provided opportunity for evaluation and adjustment to detail resulting in the structuring of a continuous well integrated and cohesive urban fabric. Stages and phases of growth were generally modest in scale resulting in variety of appearance and quality in the fabric and even where structures were repetitive, their number was insufficient to present a condition of monotony.<sup>85</sup> This modesty of scale and variety in land use mix served to avoid a high degree of specificity in structure and form and provided a condition for flexibility of function against possible change of use. This quality also enables the fabric to assimilate infill and additional development without undue disruption. A degree of maturity, stability and form beyond attainment through the agency of modern project planning is demonstrated.

- 4.0.10 Early development proceeded simultaneously at a variety of points within the metropolitan area modest at first and linked by unsophisticated and slow movement modes. A high degree of functional independence was therefore necessary for the activity centres to survive and this condition could only be achieved through the combination and interaction

of a practical and viable mix of land uses. In the absence of restrictive planning controls this multi use activity was possible and enabled the mechanism of normal urban economics to operate freely and permitted the entrepreneurs to inform their locational decisions relating to business activities on the basis of viability having regard to the land cost to be paid for the accessible location sought. The multi-use commercial structure enabled the small operator to locate outside the area of greatest accessibility and highest rentals that only high order operations could afford, yet he could locate within the intense metropolitan movement flows and benefit from the custom attracted to the high order activities. The older sector of the town in consequence having developed before implementation of controls which tend to separate out different land uses, possessed a wide variety of uses integrated into and geographically well dispersed over the development. This multi-use character of the development enabled it to offer access to a wide range of shopping, cultural, educational, and entertainment facilities and above all, to job opportunities to both local residents and the metropolitan area generally.

- 4.0.11 The predominantly linear form of the development structured on the dominant movement channels and the high levels of activity supported by reasonably dense residential concentrations enable the viable operation of public passenger transport systems which over many sections of the route enjoy two directional passenger flows providing favourable

vehicle utilisation and economy in terms of infra-structure.

This access to efficient public transport also serves to weaken dependence upon alternative private transportation

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modes.

4.0.12 The variety of residential stock both in regard to quality and age ensured a wide choice of accommodation and being dispersed over the area gave opportunity for environmental options. In the absence of racial laws residential choice was virtually free and operated in terms of custom and market forces. As has been mentioned the poorer Coloured population generally sought residence in the older sectors of the city where rentals were low and where there was usually convenient and cheap access to work place and other necessary facilities. In this regard the normal pattern of urban development operated in that the poorer classes tended to live in the old residential stock within the FRAME of the city or on the fringes of industrial areas. The variety of residential quality in most areas reflects in the income range and consequent spending power of the residents to the benefit of the local commercial component.

4.0.13 The fine grained fabric of the multi-use old areas ensured good and convenient access to and distribution of most urban facilities. The linear form of the development with facilities concentrated on the highly active main roads ensured accessibility between residential and commercial components limiting movement demands. Where access was desired to the highest

order functions of the CBD, a high degree of convenience was available especially to the public transport dependent sector of the public, through the proximity of the CBD focussed railway system and certain bus services which operated into the CBD. A system of station feeder bus services catered for areas of more dispersed development.

- 4.0.14 The road system throughout the area provided a wide range in level of service ranging from intimate narrow residential streets in the older sectors to the highly active main commercial roads where vehicle and pedestrian mixed and both could relate to the roadside shopping activity to the benefit and enrichment of the area. At metropolitan scale these activity roads "provided continuity and comprehensibility to the city, as they are the threads which integrate the various parts of the metropolis,"<sup>87</sup> supported by the road structure and the variety of the built environment the topographical features of the area with its range of mountain slopes and flat area lent a quality of place and identity to individual parts of the area. In so far as the climatic condition varied according to the relationship with the mountain, further variety and distinction was imparted to the environment and attendant living condition.

"Just as our mental process needs fixed points (fixed in the sense that they are changing over a relatively long period) to enable it to classify and value transient information and thus remain clear and sane, so

the city needs 'fixes' - identifying points which have a long cycle of change by means of which things changing on a shorter cycle can be valued and identified." <sup>88</sup>

- 4.0.15 The linear form of the main movement/activity axis with its multi-use character and nodes of intense activity occurring at points of high accessibility serves to distribute these facilities equitably and efficiently throughout the older areas to the benefit of the bulk of the population and with limited necessity for movement. The dominant main road and the major directional roads are clearly defined and attract the bulk of the traffic away from the residential areas with their roads of varying widths and generally interrupted grid patterns generally where activity is less intense residential and institutional uses border the main road. In the older residential areas many small streets carrying little vehicular traffic serve a double function as play areas for children whose homes perhaps happen to be under provided with open space. These roads as well as the high activity shopping roads of the neighbourhood perform a function as personal contact areas which add a social input to the maintenance of a more person related and scaled life style. A wide variety of residential stock both in age and quality exists and in consequence of the road structure residential uses can in many areas locate close to the main roads and commercial areas, yet remain undisturbed by the intensity of traffic flows in close



proximity.

- 4.0.16 The linear ribbon of development throughout the southern suburbs is divided by the railway line which creates a barrier to free traffic movement which becomes concentrated at the various crossing points. It also tends to establish a degree of social/residential differentiation. Separation between the railway line and Main Road varies along its length. In the older more densely developed areas where the alignment is close industrial uses tend to predominate and where the separation increased the industrial strip bordering the line gives way to residential infill. In more recently developed areas through combined effects of zoning and land scarcity, the wider areas are residential whilst the narrower portions tend towards industrial use.

The railway line has influenced the development of roads paralleling the main road and relieving it to a great extent of local traffic and to a lesser degree of through traffic. Where main roads became excessively congested the pressure tended to be relieved by the construction of alternative routes with expansion and new development following the dominant structure and being closely integrated with preceding phases of development.<sup>89</sup> Development and growth was functional and responded to need and was effected without over provision for future growth phases frequently taking the form of infill into subdivided or 'renewal' areas. This factor contributes greatly to the cohesive quality of the older sectors.



### DOMINANT SUBURBAN CENTRES

- 4.1.0 For the purpose of contrast with the later phases of 'planned' urban development in the metropolitan area, it is considered to be of interest to briefly trace the growth and development of certain of the typical suburban towns which straddle the main movement channel and which have developed over time into a position of dominance in relation to neighbouring suburban towns through the gradual 'evolutionary' growth process.

It is proposed to examine in somewhat greater detail the towns of Woodstock / Salt River, Claremont and Wynberg. All locate on the Southern movement axis and all incorporate a railway station and a junction of routes. Claremont has developed into a very high order centre due to the degree of accessibility it enjoys and due to the large local residential back-up it possesses. It is also sufficiently distant from the CBD not to be detrimentally affected in its commercial functions. In the case of Woodstock / Salt River, the position differs, a very high degree of accessibility exists but due to its proximity to the CBD it loses attraction to the high order function of that centre and in consequence its shopping component is not so highly developed. These suburban centres together with the more dominant centres on the eastern movement axis such as Parow and Bellville compete with the CBD for the custom of the residents of the Cape Flats. Many of these people are employed in these suburban towns and combine the work and shopping trip or find them within convenient access by public transportation or car.

#### 4.1.1 SALT RIVER

Any discussion of Salt River is difficult without incorporating Woodstock since the two contiguous units appear to operate in a complimentary manner as the Salt River / Woodstock complex.

The development of the complex was a response to the two major movement channels radiating from the central city which diverged through the area to the metropolitan area beyond. The activity pattern in this particular area is intensified by its geographic and topographic characteristics forming the bottleneck through which all movement between the CBD and the metropolitan area has to pass. The volume of movement through the area is reinforced by the location of two railway stations, the Salt River station being of greater importance as a generator of movement which has caused a wide range of activities to be attracted to the major activity roads. These activities enjoy support from both passing traffic and from the considerable residential component which has grown up within a complex and irregular grid of minor roads between the major routes and the mountain slopes above the southern route.

Apart from exposure to metropolitan through traffic, considerable numbers of persons commute into the area daily to employment within the locally based labour intensive industries. Traffic volumes on the major roads are high although relieved to an extent by the south and east bound freeways. The routes allow an active mix of traffic and pedestrian movements which is beneficial to

the commercial activity.

A feature of interest is the fact that through the Woodstock area commercial activity is chiefly concentrated along Victoria Road with the lower Albert Road accommodating less commercial and more space intensive wholesale, service and manufacturing activities. This phenomenon is possibly due to the fact that Victoria Road bisects an area of intensive residential concentration whilst Albert Road parallels the railway line and has good access to the harbour and Paarden Eiland industrial areas with less even residential distribution and lower traffic flows which do not favour commercial activity. In the case of Salt River, the position reverses itself. Victoria Road attracts the manufacturing, wholesale, and service activities and has very little residential support between it and the mountain slopes. Albert Road in contrast is the location of intense commercial activity drawing support from residential concentrations both to the south and the east as well as considerable support from movement along Albert Road, the Lower Main Road and to an extent, along Voortrekker Road. Further support of the commercial component is drawn from movement flows to and from the neighbouring railway station and whilst most commercial activity is clustered on both sides of Albert Road, a variety of shops, a hotel and barrow vendors concentrate in the short length of a side street, Junction Road, to intercept this pedestrian flow.

As a major transportation terminal within an area of intensive employment, the Salt River commercial complex enjoys much patronage from customers resident elsewhere in the metropolitan area. Many of the people employed in the area combine the journey to work with the shopping trip and are attracted back to the area outside working periods using the Salt River / Woodstock complex as their major shopping facility in preference to facilities in their residential areas.

The residential element is protected from intruding traffic by the dominance of the main movement channels but suffers a degree of invasion of industry resulting from an unfortunate interface of uses particularly where large industrial units are concerned. A comprehensive variety of land uses lends vitality to the area.

#### 4.1.2 CLAREMONT

Claremont is structured upon the metropolitan significant rail / road movement axis with the main road accommodating a high intensity of movement reinforced by the presence of the railway station, bus terminal and junction with Lansdowne Road, itself of metropolitan importance, feeding in large numbers of commuters and shoppers across the railway line from the Cape Flats. Claremont is a major transportation terminal and point of inter-modal transfer.

The main road commercial development is characteristic of the southern suburb developments being a ribbon of commercial activity on both sides of the road behind which and particularly bordering along the railway line, certain light industrial activities continue to operate and offer job opportunities. The commercial development broadens out near the railway station to extend down Ralph Street, Station Road and rather weakly, down Stanhope Road attracted by pedestrian flows to and from the Station and Bus terminal. More recently the linear commercial ribbon has been artificially broken by the construction of major shopping centres such as Cavendish Square and The Link, tending to concentrate high order commercial activity in the centre of the town with the possible result that activities at the extremities of the linear main road ribbon will decline in order. Some commercial activity extends to the Wynberg side beyond Stanhope Road but this is considered to be in the nature of local convenience facilities and not truly part of the Claremont commercial sector.

Several major roads traverse the suburb on the western side of the railway line linking the Main Road and Lansdowne Road to the freeway and other roads carrying traffic of metropolitan significance such as Edinburgh Drive, Paradise Road and Newlands Road. These roads which cut through residential areas where privacy is generally preserved by the substantial size of the stands, attract major traffic flows particularly at peak periods but the speed of traffic and regulations deter other than residential uses. Off these roads some highly

select residential zones exist in an area liberally provided with private open space, educational institutions and recreational facilities. To the east of the railway line, residential, recreational and educational uses predominate, the former to some degree supporting the lower order commercial facilities located at the western end of Lansdowne Road. Traffic is carried through these areas by roads running parallel to the railway line which serve to relieve the Main Road of portion of the through traffic. Claremont is a mixed land use centre with commercial activities of the highest order which with the high accessibility enjoyed by Claremont, attracts custom from a wide area including the Cape Flats and threatens the dominance of the CBD.

#### 4.1.3 WYNBERG

Wynberg locates on the major southern road / rail movement axis and was historically one of the first suburbs to be settled having early importance as a military garrison post at the halfway point on the Cape Town to Simonstown route and commanding the approaches from Muizenberg. For a time it was the southern terminal of the railway line and served as a service centre for an extensive area of the Cape Flats. The accessibility of Wynberg to these areas was reinforced by the road system which carried significant flows of traffic to the commercial centre.

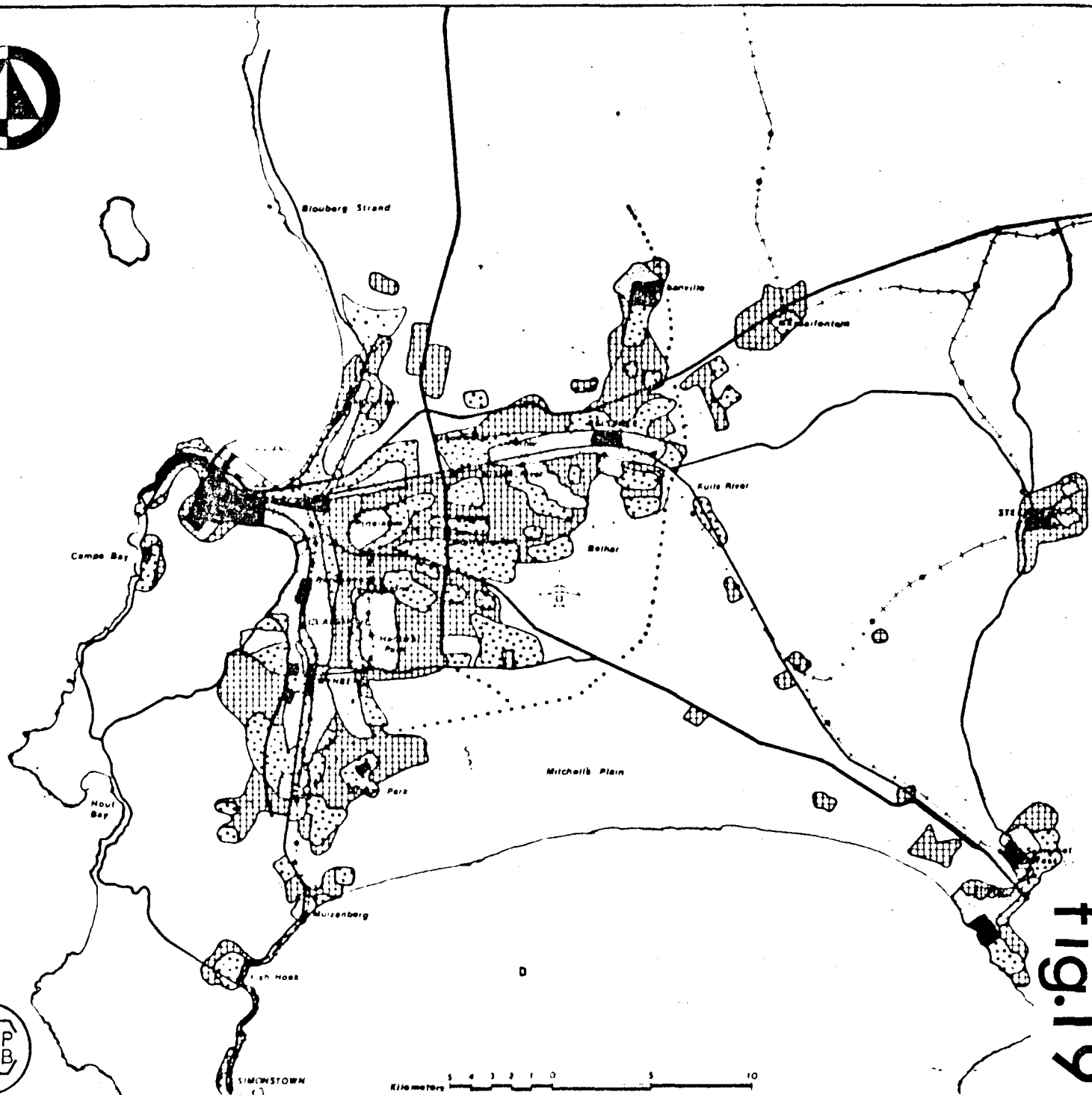


Wynberg exhibits consolidated commercial activity along the Main Road with the order of functions decreasing towards the south where many of the shops have dubious viability. In addition to the main linear concentration, further commercial activities extend from the Main Road down Church Street and Station Road to the railway station, responding to the movement flows generated by both station and bus terminal on both sides of the railway line. On the east side of the railway line a small cluster of lower order commercial activities exists at the head of Ottery Road in an area of mixed land uses which include industrial, institutional and residential uses. From the main road westwards, commercial activity extends for a short distance up certain side streets. Wynberg is the seat of the Magistrate's Court and District Police headquarters for which functions extensive redevelopment is taking place in close proximity to the commercial centre.

The road structure of the suburb incorporates, apart from the dominant and commercially active main road, several major traffic channels which would appear to perform two main functions. Certain of these secondary movement channels serve as bypasses for the somewhat traffic congested main road carrying through traffic on courses parallel with it, both to the east and west of the railway line and at the same time acting as feeders and collectors to the subordinate road grid around which the extensive residential component is clustered. Roads such as Ottery Road and Broad Road act

largely as feeder roads bringing local traffic into the commercial area their operation at any higher level being constrained by their limited access across the railway line.

Wetton Road also feeds the Wynberg commercial area but in addition performs a metropolitan movement function being part of a wide ranging distributor network carrying through traffic to and from the Cape Flats.

 1973

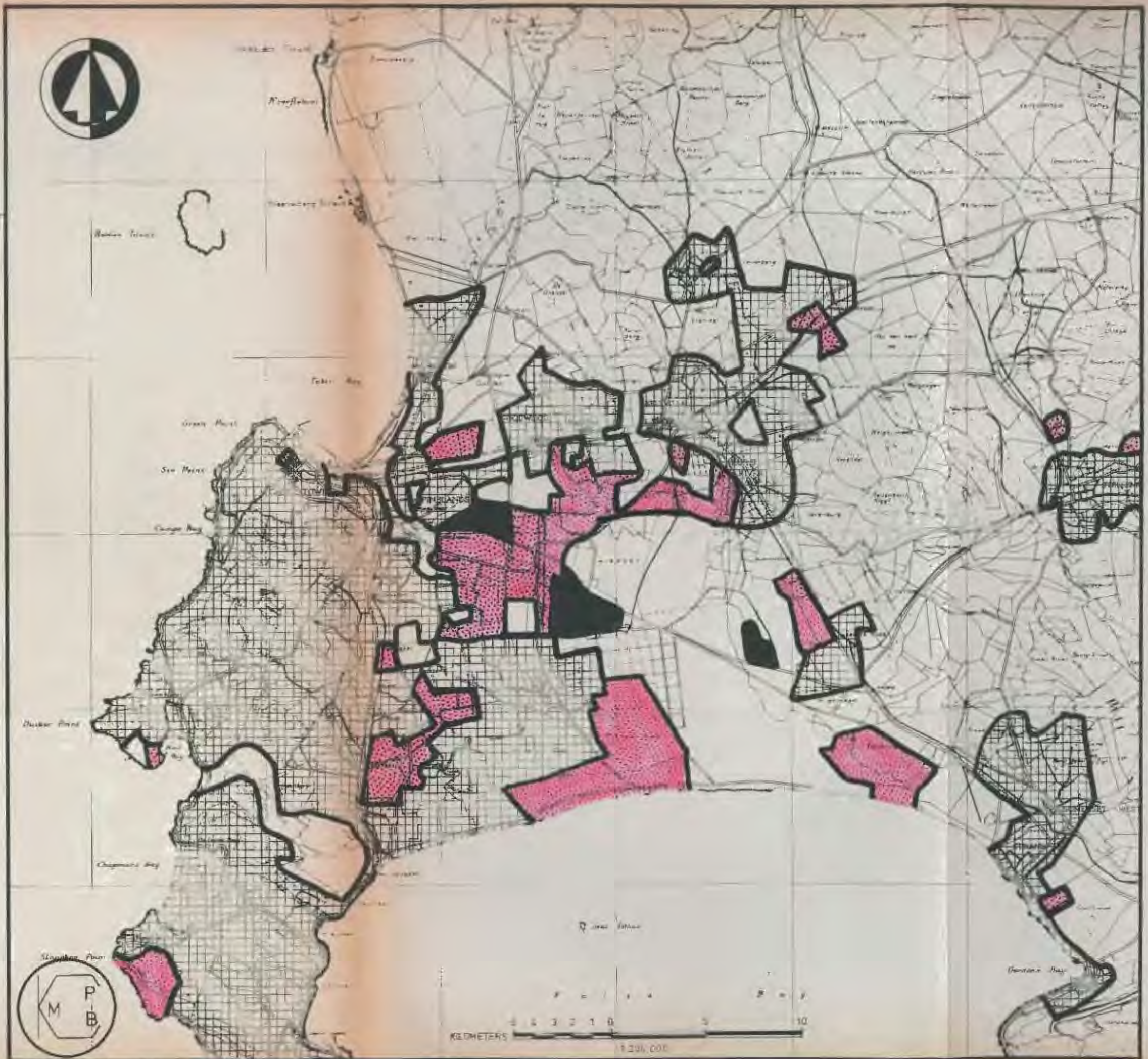
# CAPE TOWN HISTORICAL DEVELOPMENT

fig. 19



GENERALISED GROUP AREAS

- WHITES
- COLOURED & ASIANS
- BANTU





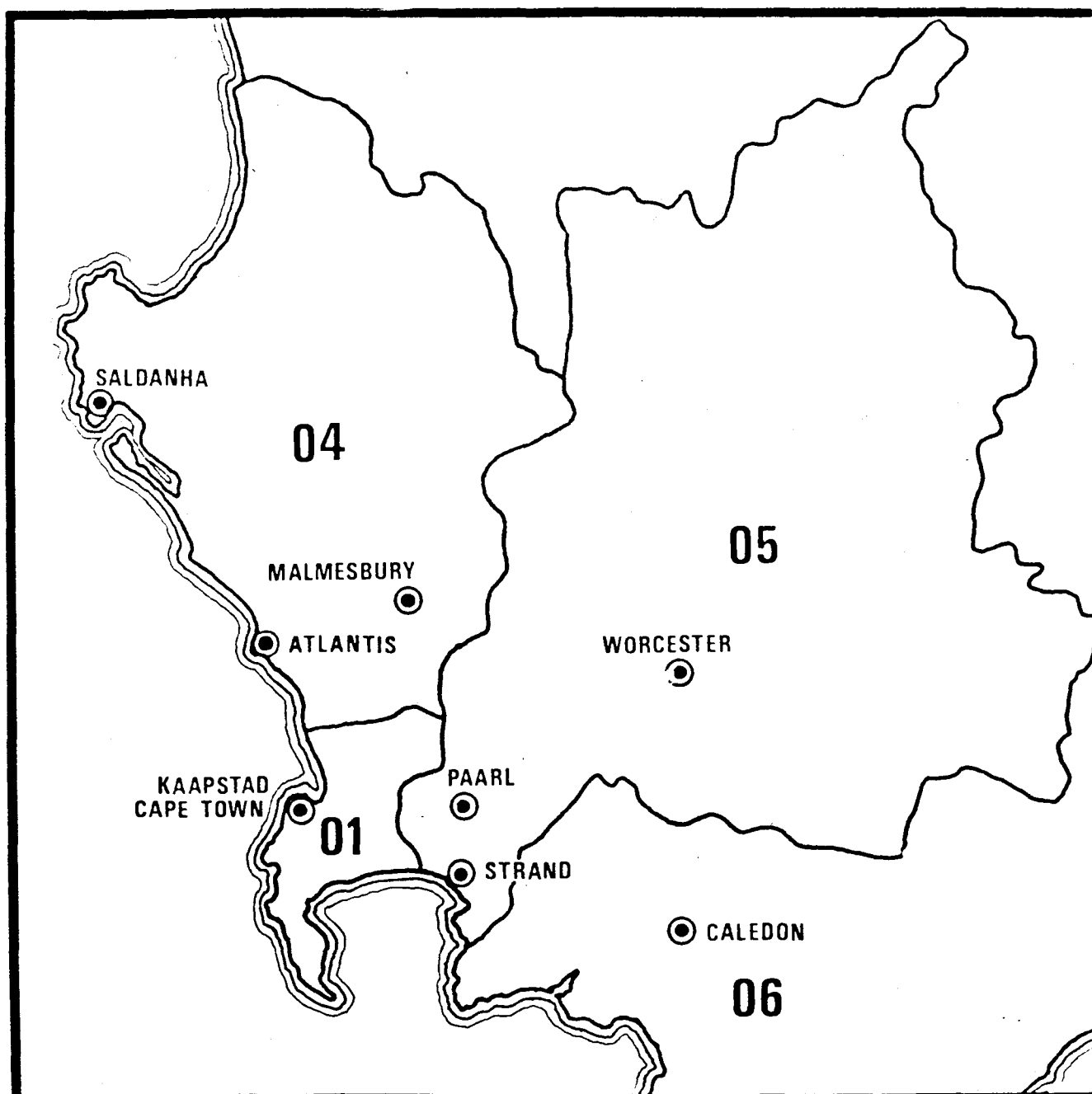
## fig.21

EARLY POPULATION STATISTICS - CAPE TOWN.

| YEAR | WHITE  | NON-WHITE | TOTAL  |
|------|--------|-----------|--------|
| 1691 | 1000   | 383       | 1383   |
| 1763 | 3250   | 3250      | 6500   |
| 1795 | 4357   | 9664      | 14021  |
| 1805 | 6273   | 10719     | 16992  |
| 1818 | 7460   | 10713     | 18173  |
| 1827 | 8805   | 9491      | 18296  |
| 1838 | 10660  | 9456      | 20016  |
| 1854 | 16299  | 7786      | 24337  |
| 1865 | 20966  | 17825     | 38791  |
| 1875 | 25567  | 19673     | 45240  |
| 1891 | 40844  | 38022     | 78866  |
| 1904 | 103887 | 65754     | 169641 |
| 1911 | 85442  | 76137     | 161579 |
| 1921 | 113302 | 94102     | 207404 |
| 1936 | 173412 | 204473    | 344233 |

NOTE: These statistics are furnished as an indication of the absolute numbers and rate of increase to which the earlier growth of the city responded. The sources of the data are various and particularly the earlier figures are qualified.

# ECONOMIC REGIONS



Source: Cape Metropolitan Planning Committee

fig.23

**POPULATION PROJECTION : OF ECONOMIC REGION**  
(migration kept constant for whole projection period)

|                                       | WHITES                       | COLOURED                        | TOTAL                          | % of total increase for 5 year period |           |
|---------------------------------------|------------------------------|---------------------------------|--------------------------------|---------------------------------------|-----------|
|                                       |                              |                                 |                                | Whites                                | Coloureds |
| 1970<br>increase for 5<br>year period | 386 300<br>43 338<br>(2,1%)* | 620 980<br>111 358<br>(3,36%)   | 1 007 280<br>154 696<br>(2,9%) | 28,02%                                | 71,98%    |
| 1975<br>increase for 5<br>year period | 429 638<br>45 248<br>(2%)    | 732 338<br>125 601<br>(3,2%)    | 1 161 976<br>170 849<br>(2,8%) | 26,48%                                | 73,52%    |
| 1980<br>increase for 5<br>year period | 474 886<br>46 312<br>(1,9%)  | 857 939<br>140 590<br>(3,1%)    | 1 332 825<br>186 902<br>(2,7%) | 24,77%                                | 75,23%    |
| 1985<br>increase for 5<br>year period | 521 198<br>47 026<br>(1,74%) | 998 529<br>154 120<br>(3%)      | 1 519 727<br>201 146<br>(2,5%) | 23,37%                                | 76,63%    |
| 1990<br>increase for 5<br>year period | 568 224<br>47 387<br>(1,6%)  | 1 152 649<br>165 190<br>(2,9%)  | 1 720 873<br>212 577<br>(2,4%) | 22,29%                                | 77,71%    |
| 1995<br>increase for 5<br>year period | 615 611<br>48 465<br>(1,53%) | 1 317 839<br>175 587<br>(2,7%)  | 1 933 450<br>224 052<br>(2,2%) | 21,63%                                | 78,37%    |
| 2000<br>increase for 5<br>year period | 664 076<br>49 189<br>(1,44%) | 1 493 426<br>185 440<br>(2,3%)  | 2 157 502<br>234 629<br>(2,1%) | 20,96%                                | 79,04%    |
| 2005<br>increase for 5<br>year period | 713 265<br>48 918<br>(1,34%) | 1 678 866<br>194 589<br>(2,25%) | 2 392 131<br>243 507<br>(2,0%) | 20,08%                                | 79,92%    |
| 2010<br>increase for 5<br>year period | 762 183<br>47 581<br>(1,22%) | 1 873 455<br>202 175<br>(2,2%)  | 2 635 638<br>249 756<br>(1,9%) | 19,05%                                | 80,95%    |
| 2015<br>increase for 5<br>year period | 809 764<br>45 393<br>(1,1%)  | 2 075 630<br>207 630<br>(1,9%)  | 2 885 394<br>253 023<br>(1,7%) | 17,94%                                | 82,06%    |
| 2020                                  | 855 157                      | 2 283 260                       | 3 138 417                      |                                       |           |

\* Figure in Brackets: Compound Annual Growth Rate

SOURCE: Cape Metropolitan Guide Plan First Report, November 1975.

# POPULATION PROJECTION 01 : BEVOLKINGSPROJEKSIE 01

Run 4 - Migration Figures (Low) : Loop 4 - Migrasiesyfers (Laag)

Run 5 - Migration Percentage (High) : Loop 5 - Migrasiepersentasie (Hoog)

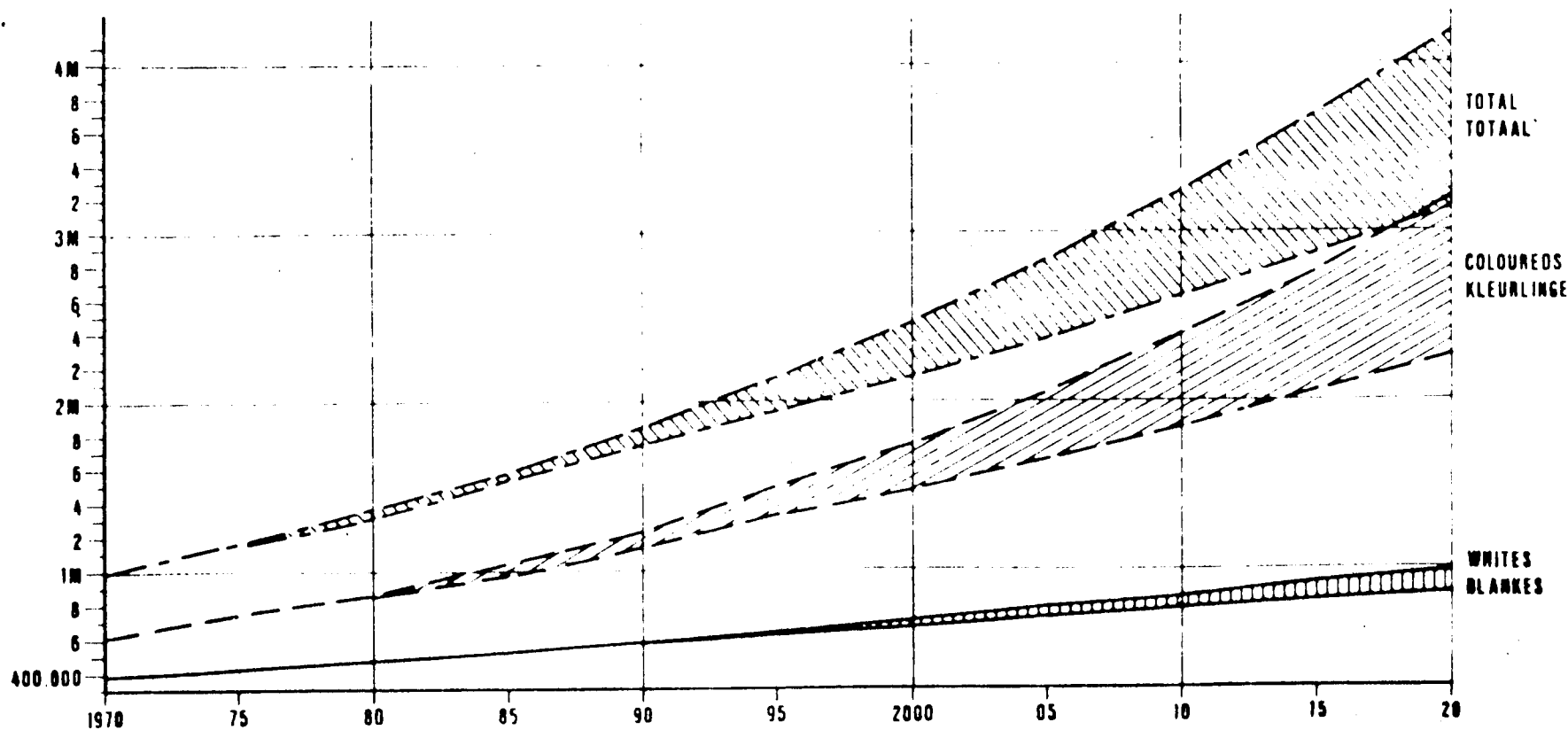


fig. 24



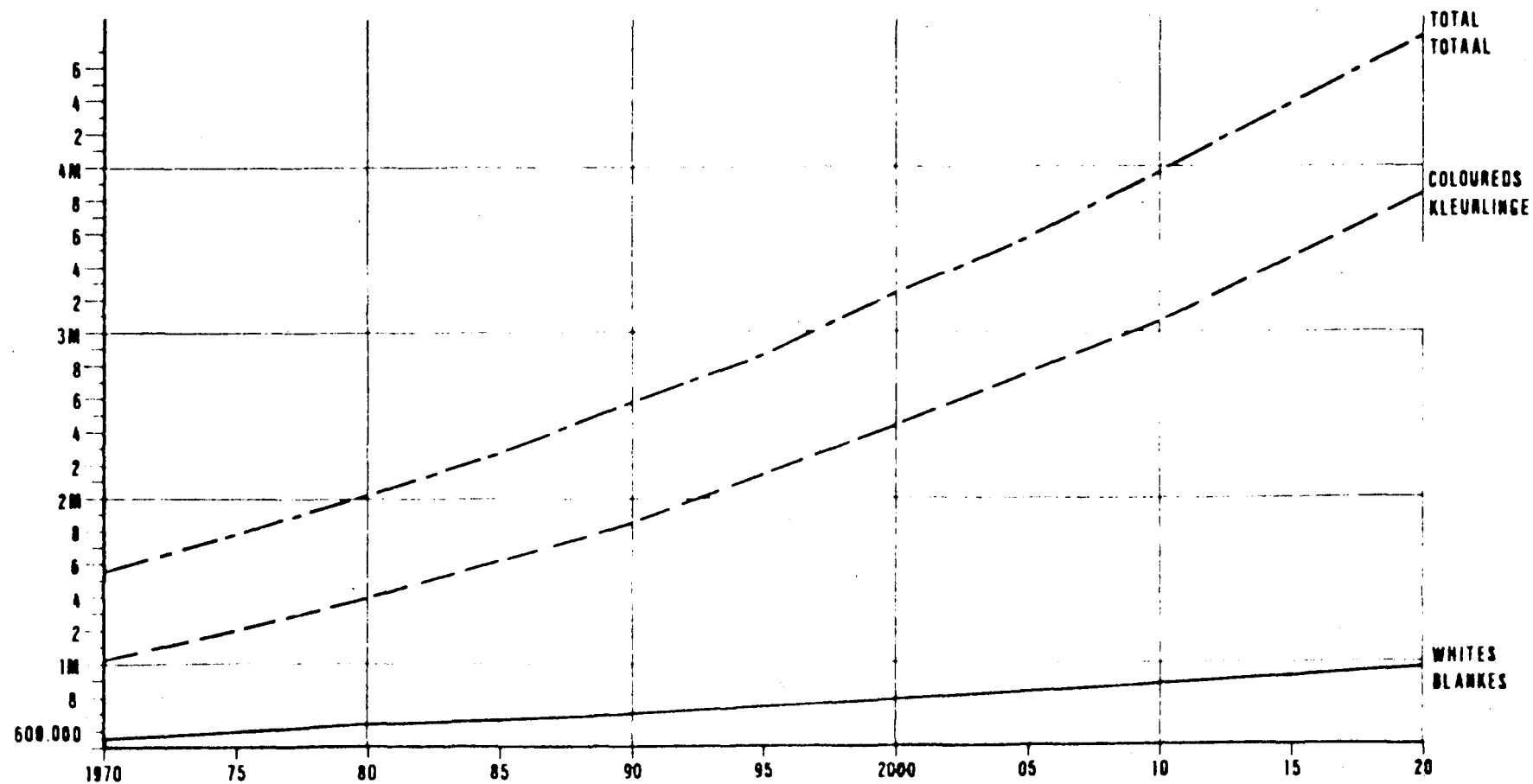
fig.25

| POPULATION PROJECTION :<br>ECONOMIC REGIONS 01, 04, 05, 06* |         |           |           |
|-------------------------------------------------------------|---------|-----------|-----------|
|                                                             | WHITES  | COLOURED  | TOTAL     |
| 1970                                                        | 549.500 | 1.013.800 | 1.563.300 |
| 1975                                                        | 588.900 | 1.203.100 | 1.792.000 |
| 1980                                                        | 629.300 | 1.400.200 | 2.029.500 |
| 1985                                                        | 669.100 | 1.621.600 | 2.290.700 |
| 1990                                                        | 706.600 | 1.865.600 | 2.572.200 |
| 1995                                                        | 744.500 | 2.133.100 | 2.877.600 |
| 2000                                                        | 787.200 | 2.426.400 | 3.213.600 |
| 2005                                                        | 833.600 | 2.745.200 | 3.578.800 |
| 2010                                                        | 880.400 | 3.087.400 | 3.967.800 |
| 2015                                                        | 924.600 | 3.450.700 | 4.375.300 |
| 2020                                                        | 966.400 | 3.832.400 | 4.798.800 |

Source : Cape Metropolitan Planning Committee

# POPULATION PROJECTION 01,04,05,06 : BEVOLKINGSPROJEKSIE 01,04,05,06

Run 6 - No Migration : Loop 6 - Geen Migrasie



Source : Cape Metropolitan Planning Committee

fig.26

#### 4.2.0 THE "PLANNED" DEVELOPMENT PHASE

It has already been noted that the motivation for the development of the Cape Flats area emerged from the interplay of a variety of factors, inter alia :

1. Urban population expansion on an unprecedented scale, particularly among the Coloured population (and within that group more particularly among its poorer segment). The impact of this growth is statistically indicated in population data in Figs. 21/22/23/24/25.
2. The policy of slum clearance and related housing programmes designed to supplement and upgrade the existing housing stock.
3. The implementation of the provisions of the Group Areas Act. (Refer Map Fig. 20 for details of affected areas).
4. Financial considerations implicit in the public funding of the schemes, their vast scale, and the need for cheap land of sufficient extent.
5. The application of town planning concepts with particular reference to the attitude towards Land Use Policy.
6. The denial of choice of residential and commercial location to the Coloured population.

- 4.2.1 "The Cape Town metropolitan area has grown more rapidly than any of the other areas but primarily as a result of the very high growth rate of its large Coloured population. Here, the growth rate of the White population has been well below the general growth of urban and metropolitan White populations."<sup>90</sup> South Africa cannot rank among the most advanced countries in so far as economic growth is concerned assuming, on account of its population composition and their varying degree of advancement towards industrialisation and urban sophistication, a profile closer to that of a "Third World" developing nation. What applies to the Republic in general in this regard, applies to an even greater extent to the Cape Metropolitan area due to its lower ranking in both economic activity and growth rate, aggravated by its greater responsibility in securing employment for its Coloured population.
- 4.2.2 With the greater degree of urban population growth and a lower level of economic prosperity, the problems of urban growth and development assume alarming proportions, since contrary to the situation where "in the economically advanced nations, urbanism is both an antecedant and a consequence of high levels of living"<sup>91</sup> in Cape Town this growth is natural and unavoidable and is occurring among some of the poorest of the population. It is coupled with the real problem of providing a livelihood for each person in order to offer him the opportunity of structuring for himself a decent life style with a greater degree of independence - becoming a contributor to urban welfare rather

than a burden.

4.2.3 Under the circumstances, the mass housing programmes that began to make their appearance mainly on the Cape Flats, affected the Coloured population most seriously due largely to the workings of the Group Areas Act coupled with their high incidence of poverty. The effect of the Group Areas Act upon the White group has been negligible and their involvement in low cost housing has been minimal and in consequence few housing schemes of any significance have been developed for this group. Where they do exist, through wider choice of site, they are generally environmentally superior, smaller in scale, less austere and monotonous than those developed for Coloured occupation.

4.2.4 On the scale of impact upon the growth of the metropolitan area, the "Coloured townships" rank highest and constitute the greatest physical growth element to be reckoned with. There is a proven correlation between high birth rates and poverty and in the South African context a further correlation exists as between race and income. It can therefore be predicted that the greater portion of the future population increase will occur among the poorest people and further projections indicate that "in the next twenty-three years, more housing, more jobs and more services have to be provided in the urban centres of South Africa than have been created in the last three hundred years. Effectively assuming a 50%

success rate, this would represent the creation of eleven cities the size of Cape Town. "<sup>92</sup> It is possible that the policy of decentralisation could divert a significant proportion of the predicted growth to other new centres which might be established, but in the medium term the metropolitan area of Cape Town with its high degree of primacy which attracts in-migration from the region, together with the high birth rate amongst its Coloured population, will have no alternative but to make provision for this unprecedented rate of urban growth. For this reason it is essential that a critical look be taken at the performance of the initial planned areas in order that the shortcomings in urban performance that might exist are not carried forward and perpetuated in the city's accommodation of the anticipated future growth.

- 4.2.5 Professor Cilliers states that "the Cape Peninsula therefore evinces the population growth pattern of city growth in underdeveloped areas, i.e. a very high rate of increase in that section of the population with a relatively low socio-economic standing and therefore unable to make an equitable contribution to the provision of the social, cultural, physical and economic infrastructure required to cope with the needs of a rapidly growing population. The responsibility for the provision of social services, housing, education and cultural and recreational facilities must therefore increasingly be shouldered by the public sector under circumstances where those for whom this provision has to be made

cannot contribute directly in significant measure to the costs of these facilities."<sup>93</sup> This statement is supported by statistics indicating the White element of the population to constitute only 34,5% of the total and further, that 60,84% of the Coloured population are reported at the last census to have no income as compared to 48,75% of the White population. "This indicates the dependency ratio of the Coloured population, implying a low potential for economic and social upgrading and a low propensity to save and thus contribute to the capital-formation required for an expansion of the economy of the region in order to cater for the fast growing population."<sup>94</sup> This factor has resulted in the large residential townships being funded through public finance and in consequence the accommodation provided is predominantly rented accommodation. This results in repetitive and standardised accommodation being provided with lack of choice or opportunity for individual expression. To a degree it is considered that particularly in regard to the poorer element an undue amount is being expended on an unnecessarily high standard of accommodation for persons who do not rank shelter as among their highest priorities and are capable of providing their own requirements. This finance might be better directed into the areas of public facilities and social services.

- 4.2.6 In terms of future planning requirements, the Coloured population is therefore the more significant sector in the metropolitan area and the process applied thus far in respect

of this group must be considered in contrast with the older "evolutionary" areas. It will be appreciated that the first mass housing projects of the Cape Flats were planned in a response to urban population growth of a magnitude not previously experienced and that both in terms of time and scale, a continuation of an "evolutionary" process would not have been capable of coping with the developing situation.

4.2.7 As a planning exercise it would appear that the problem was perceived as a concern for provision of housing as being the dominant priority and that other equally important aspects required for provision of reasonable opportunities pre-requisite to a decent life style, were to varying degrees neglected in this process. The application of planning techniques to the problems confronting the city was to a large degree an arithmetical approach where a package was designed to accommodate a predetermined number of persons and a set of standard amenities was provided scaled in a matching ratio to the population size with some provision for expansion. The exercise was seen to involve "the building of a complete image, but on hitherto unprecedented scale."<sup>95</sup>

4.2.8 The earlier schemes such as Bonteheuvel evidence planning conducted in terms of rules and standards laid down by the Department of Community Development against a limited budget by planning officials constrained further by the implementation of planning controls and regulations. Accent was on provision of "decent and healthy" accommodation planned "for" the people



rather than in participation with them. This rather impersonal approach to a problem affecting the lives of many promotes an attitude of disinterest on the part of residents which comes through in many areas in the monotonous and drab appearance of the area.

- 4.2.9 Products of this process demonstrate a high degree of non-functional performance resulting from extensive specificity in land uses and over regulation of activities. The planning techniques employed called for segregation and separation of various land use activities into tidy and well defined areas "it is this approach which more than any other, underlines the purist approach to city development (industry must occur in "industrial areas", metropolitan shopping functions must take place in "shopping centres", residential areas must be distinct from work areas and so on (and this approach, as has been shown, contributes substantially to the inefficiency, inequality and sterility of urban areas."<sup>96</sup>

- 4.2.10 The land appropriated for the Cape Flats mass housing developments was generally previously under agricultural use being farmed as small holdings producing vegetables for the local market or as dairy farms. The displacement of this important activity with low density residential development represents an inefficient use of a valuable resource for the unnecessary extension of urban sprawl. Considering that arable land is at a premium in the metropolitan area and the country generally,

these developments could have been accommodated with more positive results if planned as an infill into already established areas with existing infrastructure. The residential density established in these projects exceeds that to be found in the older mass housing schemes such as Bridgetown but by modern standards still represents an exceedingly low gross residential density.

RESIDENTIAL DENSITY FACTOR - CAPE FLATS HOUSING SCHEMES

| Scheme           | Open Space<br>% of Total | Density - Dwg per Ha |        |
|------------------|--------------------------|----------------------|--------|
|                  |                          | Gross                | Net    |
| Lavender Hill    | 19                       | 34.15                | 104.00 |
| Hanover Park     | 15                       | 22.70                | 54.20  |
| Heideveld        | 16                       | 17.50                | 44.00  |
| Bridgetown       | 9                        | 15.30                | 28.90  |
| Mitchell's Plain | 16                       | 21.80                | 48.77  |

(Source - Low Income Housing Alternatives for Western Cape  
Paul Andrew, Derek Japha)

4.2.11 This perpetuation of the condition of urban sprawl with low density development lies at the base of many of the problems and inefficiencies demonstrated in the new planned development having influence on cost of infrastructure, transportation and living costs generally. The tendency towards sprawl and the planning of the various schemes as independent units standing remote from each other with large intervening areas of undeveloped land adds further to the wasted use of land which at best takes the form of buffer strips, expansion areas, or is absorbed into vast road reserves and traffic interchanges at points where urban freeways provide connection to the townships. The apparent belief that an abundance of land is

available for low density development ignores the longer term wastage and the cost factor of extended infrastructure, travelling and time costs and contributes through dispersal to the breaking down of viable service thresholds. Linkages with other important metropolitan facilities become extended generating further transportation needs and aggravating the condition particularly of the poorer residents.

- 4.2.12 These residential townships have been developed on the Cape Flats as isolated units but are functionally related to equally isolated and randomly dispersed employment areas, each being linked with the other and with the older "evolutionary" areas by means of elaborate road systems which act purely as conduits for the distribution of vehicular traffic. These roads do not perform an active urban function as a continuing activity spine and structuring device. They are extremely costly in terms of infrastructure since they enjoy poor utilisation in return to capital outlay as they carry single direction flows predominantly during the two peak periods and are physically scaled to accommodate these intense peak loadings.<sup>98</sup>

- 4.2.13 Due to the dispersed and isolated location of these new mass housing townships, generally beyond the limits of existing infrastructural services, considerable costs are incurred in providing connection to normal urban services inter alia, electricity, stormwater disposal, sewerage, water supply, and communications. In so far as public transportation is

concerned these areas are served by bus services in addition to which certain of the townships are served by the rail network which was extended in the 1950's to provide for the resettlement areas. More recent additions such as Hanover Park and large portions of Manenberg and Heideveld which have no convenient access to rail transportation are dependent entirely upon the bus service which operates over a maze of routes to provide linkage with areas of employment and with facilities such as education, shopping and entertainment where these are inadequately provided for in the townships. Whilst public transportation is vital to the welfare of the poorer element in these townships, low residential densities do not provide the concentrations necessary for the operation of an efficient public transport service. In addition, the internal road patterns are generally impractical from the point of view of rendering a bus route accessible to the maximum number of residents and in consequence this inability to provide a convenient service tends to reinforce dependence upon use of the motor car as being the only sufficiently flexible mode of transportation capable of catering for the requirements presented.

- 4.2.14 In the planning of the recent developments insufficient cognisance has been taken of the structuring value of movement either within the townships or between townships and other developed areas. This attitude towards the function of movement and the apparent belief that there is virtue in a high degree of orderliness in separating out and dispersing

land use activities particularly when coupled with the low residential levels provided forms the base cause of most of the malfunction and negative performance encountered. The developments are almost totally residential with a limited commercial component in consequence providing the very minimum of job opportunities to the community. Town planning regulations preclude the incorporation of multi-faceted land uses into these areas which function therefore as dormitories. The low residential density factor found in the areas has important consequences in several vital areas relating to support thresholds for various services and facilities, apart from being apparent in the somewhat "desolate" physical appearance of the developments.

- 4.2.15 Internally the effects of isolation and unipurpose land use have serious influence upon the living environment. The road pattern is such that personal movements are largely predictable since the grid road pattern which ensures flexibility of choice of alternative routes and a high degree of anonymity has not been employed in most of the new developments. Here the tendency has been towards more geometric and complex road layouts. The high degree of predictability of pedestrian movement, together with the relative absence of dominant routes attracting more intense flows and the generally overscaled intervening areas of open space, contribute to a condition of personal danger. This condition exists within the townships as a result of complex social problems reflected in the fact

that "there are eight times as many cases of violence in the coloured areas as in white areas."<sup>99</sup> Movement flows have tended to be dispersed across the area and not channelled into well defined flows which promote accessibility and create activity. It is possible that this active function of the road system was not considered important in view of the fact that land uses which would normally respond to such conditions were not in any event permitted. The small low order commercial component of the developments is generally centrally located in the form of a "shopping centre", an area which is usually the planned location of all the locally provided shopping, community, and recreational opportunities. This central location denies the accessibility and activity created by movement where commercial facilities are structured in linear form.

- 4.2.16 The fact that most of the mass housing schemes are rental schemes results in the population being relatively homogeneous in terms of social and economic level- most are relatively poor and there is no interface between rich and poor. In consequence coupled with the condition of isolation and low residential density, the facilities available to the residents are those that the limited numbers of poor people can generate and support. This results in the shopping facilities being of very low order and through poor turnover, due partly to the local condition and the fact that many shopping trips are conducted outside the township, prices tend to be high and there is little chance of the order being elevated. Together

with poor local support and the fact that due to lack of comprehensive facilities, residents are obliged to seek their requirements outside, is the problem that this very reaction creates conditions in which the existing situation is not motivated to improve. Existing facilities continue to perform but weakly and the 'leakage' of both financial and threshold support towards other areas robs the township of the potential to attract improved facilities and amenities thereby consolidating the sterile and impoverished atmosphere of what approximates to a closed system.

4.2.17 Within certain of the larger developments the problems of isolation are carried further to a second stage of "insulation" which is achieved through the creation of community or neighbourhood facilities which tend to foster community identity around an arithmetically assembled set of facilities, independent of the already limited central facilities.<sup>100</sup> This serves to further reduce support for facilities central to the total development and diminishes the operational viability of the total unit through fragmentation of support thresholds.

4.2.18 Within the townships there is no contact with the active flows of metropolitan movement. Lying outside the metropolitan "stream" the residents do not enjoy the valuable personal contacts with persons outside the local area.

Being located independently with main movement flows passing across the perimeter of the developments on high speed traffic corridors no benefit is gained from the enriching effects of metropolitan movement flows. The areas are not linked into the metropolitan system which, planning controls excepted, would bring greater accessibility and activity to their commercial components reinforcing the support provided by residents and elevating the order of the functions beyond that possible under present isolated conditions. Apart from the bypassing freeways not contributing towards the vitality of the townships the access into the townships is such that traffic flows are not encouraged to divert and pass through. Both roads and railways are used as conduits merely touching the fringes of the development and both acting as independent movement modes instead of integrated and active interdependent systems capable of generating and maintaining active urban conditions.

- 4.2.19 The monotony of the average mass housing scheme employing standard unit designs in large repetitive blocks represents a serious negation of values in urban form. These structures are designed for ease of construction under industrial building system conditions and create an overwhelming impression of "sameness" as between schemes throughout the country - resulting in a loss of regional identity as between the various cities.<sup>101</sup> The standardisation of housing units and shortage of low cost housing supply has contributed towards lack of choice within the townships



aggravated by the inflated property market in areas qualified for coloured occupation in the older sectors of the city. Being generally letting units self expression on the part of the occupants is not brought forward towards relief of the visual monotony by modifications which might lead to a greater degree of urban identity. This lack of identity extends to the public facilities and buildings, which due to funds being predominantly directed towards housing, are somewhat neglected and detract further from the overall appearance of the development depriving it of any uniqueness of place which would contribute towards a more positive urban form. Where provided these public amenities usually make their appearance late imposing a great deal of inconvenience and lack of amenity upon the earlier residents. The local natural environmental quality is poor and attention to its improvement is lacking. This is accepted to be a considerable task under the prevailing conditions, weather included, and due to the overscaled planning would involve considerable labour and finance in the maintenance of its quality. The neglect of public space tends to discourage care of private areas resulting in the degradation of the total living environment.

- 4.2.20 As a direct result of the policy of land use specialisation and separation compounded by the racial separation consequences of the Group Areas Act, excessive travel over appreciable distances has become part of the problem of living within the recently developed areas. The absence of an integrated mix of land use activities within the townships causes the inhabitants

to journey to the source of the facilities, services, and employment opportunities which they lack locally. The journey to work is predominantly directed towards the older "evolutionary" areas where most job opportunities exist or to one of the industrial complexes dispersed across the metropolitan area - also a product of the concept of land use specialisation and separation.

4.2.21 The separated and dispersed distribution of land uses combined with the low levels of residential density render the planned areas transportation dependent but present unfavourable conditions for the efficient provision of public transportation services. Distances between complementary land use functions are significant resulting in high cost to the resident both in terms of actual travel and in terms of time spent on the journey. Public transportation services cannot achieve realistic average vehicle occupancy levels under these conditions and in consequence through poor access to many areas and infrequency of service, not meeting the demands of convenience, a high degree of private transportation exists. Transportation under these conditions operates as a response to preimposed conditions structured by deliberate planning processes and not in the role of a structuring element.

4.2.22 The journey to work as also the journey to shopping and access to other urban amenities is excessively long and results in high cost outlay particularly in relation to the poorer element dependent on public transportation. This expenditure should



be largely unnecessary and could be diverted to other family expenditure heads which might more directly and favourably improve life style. Time spent on travelling can average in excess of three hours daily which represents a cost, if viewed as time which has alternative use and possibly monetary value in the working of remunerative overtime or in secondary "after hours" employment. In addition it has value in the opportunities it offers for rest, recreation, socialising or domestic activities. Excessive travelling has been claimed by employers to contribute to high labour turnover and loss of productivity due to absenteeism and tiredness among employees.

- 4.2.23 A general paucity of shopping facilities in most new residential areas exists few offering a reasonable range of merchandise at prices comparable with those offered in the higher order centres in the predominantly white areas. This motivates and in fact necessitates shopping trips outside the local area. The generally available alternative would be to purchase locally at higher cost from a restricted range, the increased prices resulting from lack of threshold support or turnover or alternatively from profiteering in conditions of captive market. Increasingly the shopping trip is being made by motor car for convenience particularly where larger purchases are made at less frequent intervals from supermarkets and use of public transport under the circumstances would become difficult.

- 4.2.24 Through operation of the "leakage" of purchasing power from the townships to white areas referred to earlier coupled with the fact that there is a tendency towards improving access to the outside shopping facilities by way of better roads and public transport services, the initiative required for the establishment of local facilities is weakened. A further aggravating feature is the provision of shopping and other facilities well after the township is substantially occupied. The residents tend then to secure their requirements outside the local area and develop travelling patterns to these alternative sources of supply. These patterns are frequently difficult to break when once local facilities become available. In many instances, it is claimed that the travelling cost is recovered in the price advantage gained by shopping at one of the high order centres which through its greater threshold and clientele of wider income range is able to offer highly competitive prices on its merchandise.
- 4.2.25 In view of the high incidence of poverty amongst the coloured group and the fact that of necessity many of these people are obliged to travel furthest to employment areas a disproportionate amount of their earnings has to be allocated to transportation costs whereas in the old areas jobs were frequently within walking distance of home and work was frequently conducted on residential premises, planning regulations applicable in the new townships do not permit working within residential

premises nor are any light industrial areas provided within the townships. Whereas many were previously able to trade from their homes as tailors, dressmakers, shoemakers etc. and being dispersed throughout the older "evolutionary" areas they could find a reasonable livelihood trading with customers of all race groups and income levels, this is no longer possible. In any event, even if they were permitted to trade from their homes, the clientele would be largely restricted to residents of the township. "Whereas it was easier for family businesses to be run in the older areas, where controls were, by necessity, less rigid, the new townships give little scope for relocating or reestablishing them. Space is at a premium and controls are everywhere - rigid zoning, health regulations. There are thus fewer corner shops, where prices are admittedly higher, but where credit can be obtained and where a friendly chat can do much to sort out a problem which easily takes root in an unfriendly anonymous environment."<sup>102</sup>

- 4.2.26 Being planned as almost entirely residential areas the new townships display a high degree of inflexibility to change over time. This change can relate to political uncertainty in general terms and in particular to current proposals to grant a greater degree of autonomy to coloured areas. Autonomy would hold as a prerequisite the need for financial resources to meet the high cost of "local government". Such revenue is generally raised in form of property rates and an area with predominantly residential property cannot

reasonably be expected to meet the requirements. A more highly developed commercial and industrial sector is required as a rates base and this development should be well distributed throughout the coloured areas so as to ensure that a particular highly developed commercial node is not expected to carry the bulk of the financial load.

4.2.27 Changes in physical terms would appear to present a problem since the residential schemes have little gradient in terms of quality and environment - they tend to cater for a category of persons en masse and do not meet the needs of a diverse range of cultures, incomes and life styles as did the older areas. Provision to accommodate change in size through expansion of facilities and amenities has been made by way of leaving undeveloped areas within the most vital sectors of the development with the result of untidiness and inconvenience in the use of existing adjacent facilities. A point of major concern in the structuring of this development is the dependence on movement and in consequence upon energy. Being energy dependent disastrous consequences could flow from events which might interrupt energy supplies or through escalation in cost render the operation of the system even less viable than at present.

4.2.28 The foregoing applies equally to Atlantis and Mitchell's Plain in terms of spatial separation from the body of the metropolitan area and inefficient performance. Atlantis has a greater mix of land uses in reasonable proximity but this is not adequate for the planned scale of the

development and many persons will be obliged to commute to work over distances of approximately 60 kilometres. Mitchell's Plain has been better planned and includes provision - separated but in close proximity - for some variety of land use which should support better job opportunity. Again however the form of the development is marred by repetition and monotony - not overall as in the lesser townships but in the form of fairly large blocks which detract from a necessary local sense of place and identity required to enhance urban form.

- 4.2.29 The incentives offered to industries to locate in Atlantis are attractive but in view of the lack of rail connections and inefficient communications certain industries are discovering that their operations are being inconvenienced and rendered more costly than would have been the situation in the Cape Town area. Despite the pool of labour resident in Atlantis many industries that have transferred operations from Cape Town have encouraged employees to take residence in Atlantis or to commute to work. It will take time to assemble a mix of interlinked industries in Atlantis to promote local growth and the movement of industries from Cape Town to Atlantis merely serves to aggravate the local job shortage. In the medium term Atlantis can only be regarded as another unfortunately located dormitory for the city.



### 5.0.0 EVALUATION OF URBAN ENVIRONMENT

"The building of cities is one of man's greatest achievements. The form of his city always has been and always will be a pitiless indication of the order of his civilisation. This form is determined by the multiplicity of decisions made by the people who live in it. In certain circumstances, these decisions have interacted to produce a force of such clarity and form that a noble city has been born." <sup>103</sup> Whilst it was convenient to examine the metropolitan area in terms of the older and newer portions respectively our concern is with totality of the city. If part of the city is inefficient the whole unit suffers since it is clear that all its component parts interact and are to varying degrees interdependent. Similarly, whilst the major concern has been viewed as the welfare of the increasing Coloured population it is realised that this concern inescapably affects the concerns of the White group. At all levels therefore our concern with the city must be synoptic.

5.0.1 The characteristics and urban performance of both the "evolutionary" and the "planned" sectors of the city have in the previous section been critically examined in detail against a basic set of criteria directed towards the planners prime goal of establishing for Man the opportunities necessary for him to improve his life style. Of particular concern has been the role of movement in producing an active urban structure and form conducive to an environment wherein particularly the poorer Coloured person, who will constitute

the bulk of the anticipated dramatic population increase, will be enabled to improve himself.

5.0.2 The examination of the relative performance of the two sectors of the city has been conducted largely with the lot of the Coloured group in mind for two basic reasons;

- a) The Coloured group will present the major future growth problem in the metropolitan area due to numerical increase coupled with high incidence of poverty.
- b) The "planned" growth of the city to date has predominantly concerned the provision of facilities for the Coloured group.

In contrast White population has been accommodated mainly in the older areas and in the future it is not anticipated that growth in this sector will pose a problem of any significant magnitude, particularly in view of the fact that there would appear at present to be an over supply in excess of one thousand White dwelling units and no shortage of vacant undeveloped lots in approved townships. Also very relevant is the fact that in contrast with the situation in the Coloured group, poverty does not complicate the accommodation of growth in the White group to any appreciable extent.

- 5.0.3 The older areas of the city demonstrate the existence of a well balanced environment developed over time in response to steady but gradual population increase. Growth involved expansion of urban facilities over the full spectrum to meet the increasing needs of the population. A wide range of choice was available in the selection of housing and location based largely on the quality and age which enabled persons to rank their priorities against their means and live accordingly. This state presupposed an intermixing of people on a socio-economic gradient - the poor could reside in proximity to the not so poor. This situation provided facilities for social mobility and the general upgrading of individual life style.
- 5.0.4 Accelerated Coloured population growth could not have been contained through the workings of the slow "evolutionary" development process and called for a more rapid process of urbanisation. Whilst earlier urban growth had been accommodated in an incremental and cohesive manner following strong and distinct structural lines set by the dominant movement axes, once the rate of population growth accelerated the response changed radically. Urban expansion broke away from the major structuring elements and aided by the motor car set a trend towards extensive sprawl. Although the implementation of the Group Areas Act and associated legislation undeniably aggravated the position,

Coloured residential development was already turning towards the environmentally poor Cape Flats area. The Britten Commission of enquiry was set up to investigate conditions on the Cape Flats in 1942 and in its report of 1943, stated "In the layout of Cape Town and its environs, it is difficult to discover any coherent pattern or discern any social purpose. Like scores of other cities of similar size throughout the world, Cape Town has grown by a process of indefinite accretion so that it has become in the words of a town planning critic, " a fortuitous concourse of atoms held together temporarily by motives of self seeking and private profit."<sup>104</sup>

- 5.0.5 Implementation of the Group Areas Act added an additional dimension to the problem by introducing the concept of racial separation and depriving the Coloured person of his right to choose his residential location in terms of his private priorities. It is submitted that the market process in responding to demand for land against increasing population pressures, would have caused the Cape Flats to be developed independently of the workings of the Act. The process of urban renewal or housing infill in the old areas would ultimately have raised the cost of this accommodation beyond the ability of the original occupants to pay. In face of rising building costs etc. these people in all probability would have had little alternative but to move to the Cape Flats. Housing demand arising out of population increase and the workings of the Group Areas Act served to deprive the Coloured

family of a second important level of choice - choice of dwelling quality and type.

5.0.6 In reacting to the need to provide shelter on a large scale an element of urgency or panic entered the planning process. The result was the choice and erection of simple, standardised and cheap dwellings in vast numbers by rapid industrialised building techniques in overscaled townships on the Cape Flats. Whereas the housing demand had previously been met from private finance, the urgency and vast scale of these schemes presupposed the employment of public finance resulting in the "housing problem" becoming institutionalised with public bodies funding and controlling the process. This factor has caused Coloured housing to become emeshed in a tangle of procedural requirements which tend to cause delay and complicate matters at all levels; from the tenant of Bonteheuvel to the prospective purchaser of a higher quality dwelling in Mitchell's Plain. Costs dictated most aspects of the process and limited the range of needs that could be met. In consequence a decision was taken to embark on mass housing schemes which made their appearance on the fringes of the older urban fabric. "Being State financed - and by necessity cheap - this home building is as stereotyped as the layout of the township. In addition, it is built as an instant suburb with little thought being given to the inevitable process of ageing. It thus lacks the richness and variety of the older, mature areas of the city

and is poorer for this."<sup>105</sup>

5.0.7 The older "evolutionary" areas of the city have responded over the years to changing needs and have accommodated the life styles of people of varying cultures, social and economic levels. They have demonstrated a quality of flexibility and a high degree of "timelessness" of form.<sup>106</sup> In contrast the "planned" areas demonstrate a high degree of specificity and rigidity, lacking important complexity of structure and displaying little ability to accommodate ageing and change over time. Considering the uncertainties of present times and the pervading situation of rapid change, this quality is considered to be of greater important for the future than ever in the past.

5.0.8 On evaluation of the product of the two growth processes, it is considered that the "evolutionary" sector displays a superior structural quality to meet the kind of needs which will be imposed upon the city when accommodating the anticipated urban population increase. The older areas would appear to possess the structure capable of promoting the range of activities and urban environment necessary to support the efforts of individuals towards the improvement of their lifestyle. In contrast the existing "planned" developments display a structure which denies movement the opportunity of creating self sustaining activities conducive to the creation and maintenance of a viable living environment.

- 5.0.9 The Cape Flats has become the established residential location of the poorer citizen of Cape Town and irrespective of changing political policies it is likely to continue in that role. Professor Cilliers states "it would appear that there has been up til now a tendency to approach the planning and development of these areas in terms of a "housing scheme" concept rather than anything else. Quite clearly a complete "re-think" on all aspects of the whole issue is overdue."<sup>107</sup>
- In his approach to the forthcoming wave of urban growth, it is important that a planner approaches the problem as involving a viable expansion of the complete urban environment and not just as an exercise in provision of additional "housing". It is essential to ensure that the defects in performance of the existing planned areas are not carried through to the new developments and that opportunities provided in dealing with the new growth should be used to improve the urban viability of the existing "planned" areas.
- 5.0.10 It will be necessary to develop a planning strategy which will provide the qualities and opportunities apparent in the "evolutionary" areas but which is at the same time capable of accommodating a more rapid rate of growth than has been possible under the "planned" process. It will be necessary to face the realities of the situation and to accept lower and more realistic standards of housing and conditions of living which more closely conform to those of a developing or "Third World" society. Facilities and





services will have to be provided at prices which the poor can afford and it will be essential that movement and land use functions are permitted to interact freely in order to develop the enabling urban structure which is necessary.

"Essentially therefore, Cape Town's problems are problems of structure not size"<sup>108</sup>. Perhaps the roots of the problem encountered with the existing non-viable "planned" developments lies in the answer to the question posed by B C Floor " the question really is whether the separate development of metropolitan land (which seems to be fundamental to any system of political separation), can be sustained over the long run within the limits of resource availability, bearing in mind that the new connotation of separate development includes an equitable distribution of income."<sup>109</sup>

- 5.0.11 Considering the importance of movement relative to urban structure and form and in view of the established fact that the basic problems encountered in the negative performance of the "planned" areas related to a disregard for the structuring potential of efficient urban movement, it is proposed to investigate critically the existing public passenger transportation structure in the city and thereafter to attempt to advance a statement outlining the constituent principles considered necessary for inclusion in any planning process designed to cater for the future growth in the Cape Town metropolitan area.

## 6.0.0 TRANSPORTATION SYSTEM

### 6.0.1 Introduction

From the foregoing it has been seen that the basic movement system structure was composed of linear arms radiating out from the centre with the dominant movement flows being directed along the strong rail / road axes to the east and south. The weaker movement to the north and west was confined to a road movement axis and was structurally less strong - the north largely through constraining geographical factors and the east due to competition from the eastern limb. The structure was simple and clearly defined and the overall effect of this system was to establish and maintain the dominance of the centre as the most accessible location in the metropolitan area. This dominance has continued largely due to the strength of this movement structure and to the high proportion of public transport dependence particularly among the poorer elements of the Coloured population having access to the system.

The system functioned efficiently until the advent of the motor car and bus in the 1920's freed movement from public transport dependence and fixed - route patterns and served to accelerate the dispersal of development away from the main structuring elements, initiating the spread of low density sprawl and separation of land uses. This resulted in the generation of increasing movement demands rendering efficient public transport operation difficult and

simultaneously reinforcing dependence on the motor car thereby aggravating the degree of immobility among persons who cannot, or who cannot afford to drive a car. Possibly one of the more serious present day effects of the motor car is the acceptance of its undoubted convenience and high degree of mobility by certain planners who use its capabilities simplistically in support of their movement / Land use considerations.

#### 6.0.2 The Existing Public Transportation System

The main elements of the local public passenger transport system are the suburban electrified railway network operated by the South African Railways Administration and the bus system operated by private enterprise, the greater portion being controlled by Cape Tramways Limited with the more recent participation of Associated Bus Holdings Limited (jointly owned by Tollgate Holdings Limited and various Coloured shareholders) in respect of the servicing of Mitchell's Plain and Atlantis. Taxis and lift clubs since certain relaxation of conditions provided in The Road Transportation Act 1977 supplement the rail and bus system particularly in the more dispersed and low density areas. The service area of both rail and bus systems is shown on the map of the movement system (Figure 27). It is not proposed to enter into involved operational detail on the various modal systems but rather to offer a descriptive overview of the principles of the transportation system and its operation



# MOVEMENT AND ACCESS

 ACCESS TO STATIONS  
(1km radius)

 AREAS SERVED  
BY BUS ROUTES





concentrating rather on its urban function of extending the basic concept of movement in the structuring of the city.

Attention will be given to the perceived problems relating to the public passenger transport system, their cause and possible remedy directed towards promoting greater use of this system in serving the movement needs of the city.

6.0.3 The focus of the railway system is strongly directed towards the CBD as also are many bus routes which run directly to the CBD from outer termini or which support the rail system by feeding suburban railway stations. This strongly concentrated movement system has contributed much to support the continuing dominance of the CBD both as a work place (some 22% of all metropolitan jobs locate in the CBD) and high order commercial centre. This despite increasing competition from suburban centres popular in view of both the high use of private transport and accessibility to public transport as also the fact that the eccentric location of the CBD renders it increasingly distant from the more recent townships with their inferior access to public transportation systems.

6.0.4 The CBD - focussed movement channels are due to geographical and topographical conditions routed through a very narrow corridor in the Woodstock / Salt River area and the rail system in particular is further constrained by the limitation on the number of tracks available between Woodstock and Maitland - a section over which all the Cape Flats traffic is routed. In consequence the rail system is at present operating to capacity

and faces considerable capital outlay and disruption of the urban fabric should it be decided to ease this constriction. Some small relief will be enjoyed once the new Kensington line comes into operation later this year but this will not offer much improvement to the heavy loaded Cape Flats services. The same "bottleneck" affects bus transport from the point of view of its competition for road space with private road traffic during peak hour traffic conditions in this particular section.

- 6.0.5 Specialisation and separation of land use activities and their planned dispersed locations in the recently developed areas, together with the fact that whilst the bulk of the Coloured population now resides on the Cape Flats, most job opportunities occur in the older predominantly White areas, has resulted in a dramatic restructuring of movement patterns over the past twenty years. Increasing commuter flows now tend to run across the area and its CBD - focussed basic movement systems. Being less flexible, the rail system has not yet effectively been able to respond to the changing needs of the passenger, whilst the bus system has been and continues to be adapted to meet these new demands.
- 6.0.6 In the earlier development the presence of a variety of integrated land use activities recurring at intervals along the linear development axis resulted in a close locational coupling between residence and work place, as also between residence and the other suburban amenities and facilities necessary for a convenient life style. This served to limit movement

needs and direct them largely towards a single channel. The position now developing in the metropolitan area is infinitely more complex, dispersed and movement intensive. The home-based journey to work upon which the efficiency of most urban transport systems is judged, now presents a multiplicity of possible origin and destination combinations dispersed over a wide area generally increasing travel distance, travel time, cost and usually involving a change of vehicle and/or mode. In an attempt to cater for this pattern, the bus system has been structured so as to offer a range of services :

- a) Direct origin to destination services where demand and traffic conditions permit.
- b) Feeder services from a variety of origins to certain railway stations.
- c) A network of interlinking services focussed on strategically located intermediate interchange points.

6.0.7 Taxis, legally limited to vehicles with a total capacity of nine persons, perform a useful function in the transportation system, particularly where conveyance is required at awkward hours or under circumstances where the use of public transportation would not be convenient (e.g. illness, infirmity, with personal effects). In practice, however, many taxis and "pirate taxis" operate illegally as mini buses in direct competition with established bus services some times being

able to offer a greater degree of convenience in service through not being tied to a fixed route and being able to deliver passengers "to the door" especially at night having regard to the unsafe conditions prevalent in certain of the Coloured residential areas. In terms of recently revised transportation legislation, registered lift clubs are permitted and may use vehicles with a total capacity of nine persons. This arrangement is of use particularly where awkward combinations of origin and destination are involved or where no public transport is conveniently available. The extended use of taxis and lift clubs may have the result of lessening traffic congestion but will most certainly facilitate continuing urban sprawl and diminish public transport use and availability through lack of support, to the ultimate disadvantage of persons who might be dependent on its services.

#### 6.1.0 Problems in the Public Transportation System

Criticism of public transport facilities usually centres on considerations of availability, convenience, cost and safety. Much of the problem however is not directly related to the service as such or to its operation but rather to the sometimes unreasonable tasks expected of it. Public transport is not intended to operate in response to specific needs as is expected of a taxi, it is concerned rather with a larger scale of passenger conveyance and can only respond efficiently to significant levels of demand. In this area, the problems experienced by the user lie rather in the field of policy,



planning and urban structure and are usually the product of dispersal and separation. Whilst urban structure contributes greatly to the major causes of the problem the factor of uncertainty impedes the formulation of strategies directed towards the remedy. These uncertainties concern plans for the creation of a racially split metropolitan system and the effect, if implemented, that this concept will have on the existing metropolitan urban activity centres and the apparently indispensable interflow of persons both Coloured and White between the two sectors of the city.

It would seem inevitable in any event that the CBD will lose some of its dominance particularly in the retail commercial area but will maintain its activity and attraction in the office, governmental and professional functions. This would be expected to result through competition from existing and developing urban centres with greater convenience of access to the large residential townships in terms of distance, cost and traffic congestion independent of any constraints that might be placed upon private vehicle entry to the CBD. The proposed legal separation of Coloured and White areas will accelerate this effect and serve to reduce service thresholds of the White activity areas whilst not necessarily in the short term, improving those in the Coloured areas. It is common cause however that whatever official action might be taken, urgent efforts have to be made to infuse greater activity and viability into the predominantly Coloured areas of the Cape Flats and to ensure that further growth is correctly planned.

6.1.1 The transportation problem of the metropolitan area has several significant dimensions which are closely interrelated and interactive and basically are a result of the unprecedented urban population increase :

1. Increasing traffic congestion attributable to the extensive use of private transportation either in exercise of choice by the more affluent or through necessity where public services cannot accommodate the need.
2. A high level of immobility exists especially amongst the Coloured population aggravated by the pervading condition of poverty among many, resulting in considerable public transport dependence. To most of the non-White population public transport is a basic need in support of an opportunity to earn a living.
3. The major problem relates to the urban structure and arises from land use specialisation and separation compounded by racial spatial separation. All these factors contribute to a condition of high movement dependence which is not easily and efficiently accommodated by public transportation and promotes use of private transport.

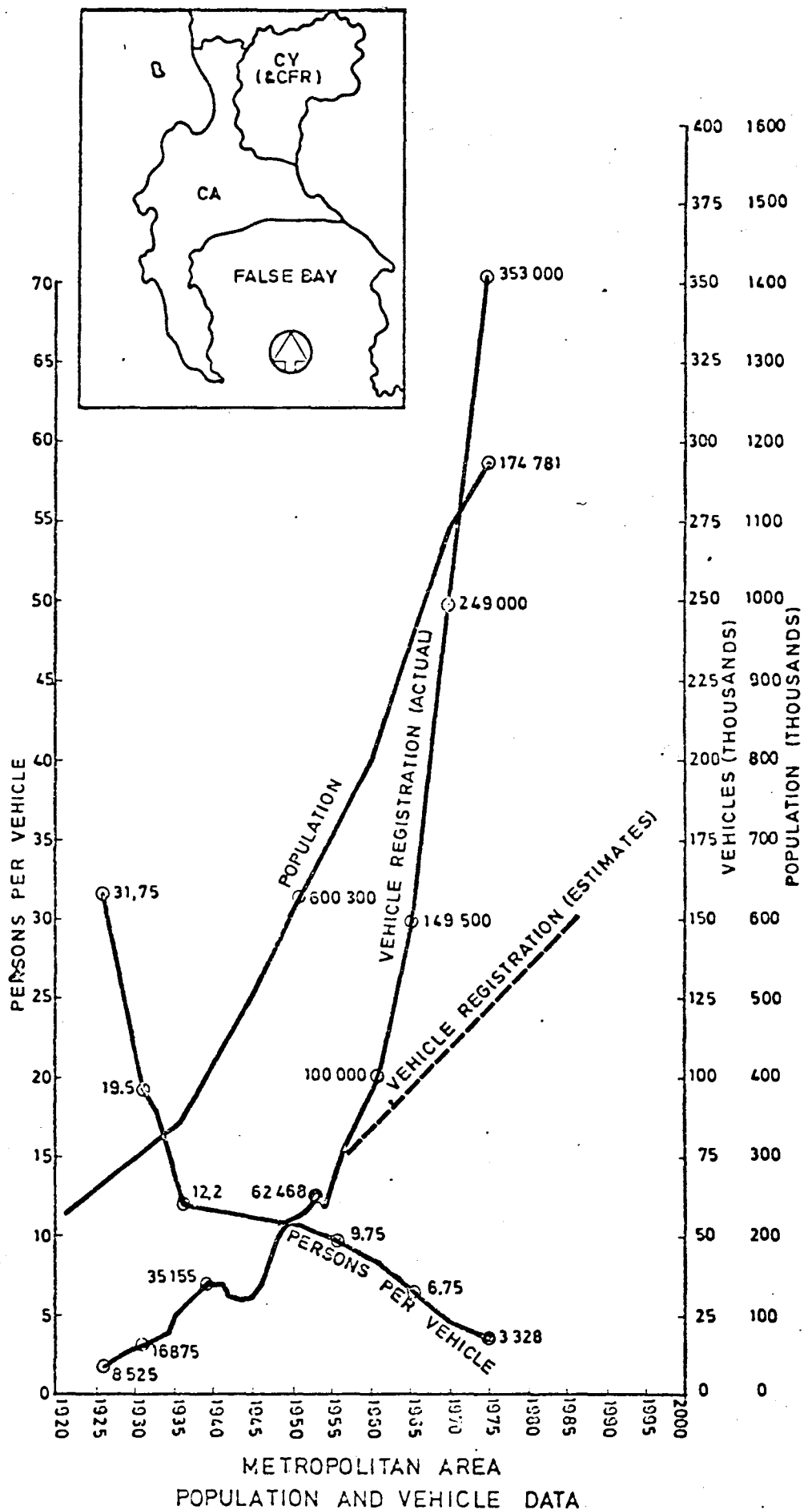
6.1.2 Traffic congestion on the city's roads is predominantly a function of the increased car population over recent years now being compounded by the increasing car ownership among

the expanding non-White section of the metropolitan population. The increased car ownership trend among the non-White group is variously attributed to increasing affluence or the dire necessity of owning a vehicle in order to gain access to employment in the absence of satisfactory public transport facilities and widely dispersed locations of residence and work base. "Because most new residential areas have been sited rather randomly, with only private vehicle access in mind, they are often ill suited for public transportation purposes. Therefore, the servicing of these areas by bus and rail must be indirect and costly. To add to the difficulties, the rapid improvement in living standards of the Coloured population group has brought about a tremendous upsurge in car ownership."<sup>110</sup> This view is supported by statistics which indicate that whereas in 1978 a total of 37% of Coloured families in the metropolitan area owned cars, the figures for 1970 and 1962 were 12% and 4% respectively.<sup>111</sup> A further indication of a contributory factor in traffic congestion is the dramatic increase in car registrations against increasing population for the area over past years as provided graphically in Figure 28.

- 6.1.3 Many of the private transport commuters might transfer to public transport should restraints be imposed on entry to the CBD or should congestion reach a level where they are "shut out". Whilst indicative of potential public transport passenger increase, congestion does not affect rail transport directly and affects bus transportation only through competition for road space in the absence of

INDICATION OF INCREASING URBAN TRAFFIC CONGESTION

fig.28



suitable bus priority systems. Should such systems be provided then the relative advantage of private over public transportation might well be reversed. It is not proposed to deal here with the large range of available congestion control measures which could be applied in the CBD with the effect of increasing the demand for public transport since "it is clear that the way to improve public transport usage is by improving public transportation rather than by penalising private transport."<sup>112</sup>

#### 6.2.0 ENQUIRIES INTO URBAN TRANSPORTATION PROBLEMS

Public transportation in the metropolitan area has recently received the attention of three independent enquiries, The Driessen Commission, The Theron Commission, and the Cape Metropolitan Transportation Study. In introducing the Driessen Commission Report in 1976, the Minister of Transport in reference to the country as a whole, highlighted the local problem in stating " non-Whites generally reside in separate and relatively isolated residential areas, while they are for the greater part employed in the White areas. They make substantial use of public transport to and from these areas and networks of urban transport services are therefore required which are different and distinct from those of Whites."<sup>113</sup>

6.2.1 The Driessen Commission listed the main factors considered to contribute to the transportation problem in the metropolitan areas throughout the republic which apply equally to

Cape Town. In summary they are as follows :

1. The rapid economic development of the country and the urbanisation of the population coupled with increased car use, growth in income, prevalence of low density housing, density of employment in central and other urban areas, concentration of peak hour traffic, and financial problems of local authorities.
2. The "dualism" in the South African economy reflected as two sets of problems relating to White and Coloured persons.
3. The high ownership rate of cars and the relatively low present ownership rate by non-Whites.
4. The daily transportation peaks resulting in congestion and consequent socio economic costs and poor investment utilisation.
5. Losses suffered by public transport. (In the local area this would apparently relate to the railway system).
6. The environmental and safety concerns in so far as they intimately affect the quality of life.
7. The possible impact of the fuel (energy) crisis.

6.2.2 The Driessen Commission report which served to inform and was later supported in its recommendations by the Urban Transportation Act 1977, identified most of the relevant problem areas and advanced a detailed planning and policy formulation directed towards a remedial strategy. The concern of the Commission was urban transportation in all its forms but the prime concern was upon the CBD and traffic congestion caused by the excessive use of private transport. As a means of reducing pressures caused by private transportation, stress was put on the need to divert people to greater use of public transportation. In the light of more recent fuel shortages and price increases and the existing level of congestion apparent, it has been suggested that the Commission was unduly concerned since "the level of traffic congestion in South African cities is well below the limits which would be tolerated or even accepted as normal in many cities overseas and that a moderate degree of traffic congestion is an inevitable consequence of urban development."<sup>114</sup>

6.2.3 Perhaps the most important contribution made by the Commission was its resolve to promote the planning and provision of adequate urban transport facilities through the setting up, in terms of the Urban Transportation Act 1977 of planning and co-ordinating machinery in form of the Metropolitan Transportation Advisory Board and the subordinate Metropolitan Transportation Advisory Councils which would focus multi-disciplinary and locally representative attention upon metropolitan movement problems. Recognition is given to the important inter-relationship between movement and land use planning in the

context of local metropolitan areas and it can be hoped that in attending to the transportation plans of the city, these bodies will be able to adopt a synoptic view of the situation and possess the skills and the authority to direct action to the benefit of the community as a whole.

6.2.4 The Commission made various recommendations supported by the Act towards improving transportation conditions generally which provided for inter alia the following :

1. The preparation of an approved transportation plan for each metropolitan area.
2. Promotion of higher density residential development.
3. Reduction of travelling distances between residence and work particularly applicable to the non-White group.
4. Control of maximum bulk factors in central urban areas.
5. Target reduction of person/kilometres travelled based on 1970 statistics calling for a reduction in the White group of 25% by 1980 and 45% by 2000. In the Coloured group a figure of 25% was required for each of the two target dates.
6. Taxis to be regarded as a necessary adjunct to transportation systems and encouraged to operate on a



"roving" basis.

7. Feasibility studies to be conducted into alternative modes of transportation before new services are introduced.
8. Grants to be made in respect of capital equipment, land, site works and buildings for new and improved bus facilities. Similar provision to apply in respect of railway facilities. This expenditure to be financed partly by the Urban Transport Fund, Metropolitan Transport Fund and by the Local Authority.
9. Introduction of staggered working hours.
10. Urban transportation undertakings to satisfy the National Transport Commission that they have effective and efficient management.
11. Bus transport to be accorded preference or priority in urban traffic control systems by introduction of bus lanes or other measures.
12. Augmentation of public transportation facilities before imposing measures to discourage use of motor cars in urban areas.
13. Close liaison to be established between Metropolitan Transport Advisory Councils and public transport operating

managements.

14. The principle that variable costs on services should as far as is possible be recovered by revenue from fares.

15. Assistance and encouragement to be given towards the training of transport management personnel and the funding of transportation research.

6.3.0 The Theron Commission of enquiry into Coloured affairs was more locally interested in the Cape Metropolitan area and also investigated the urban transportation problem. Many of the matters raised in the Commission Report appeared to endorse similar concerns already dealt with by the Driessen Commission. For the rest the Commission collected a volume of observations related to the public transportation system and the bus system in particular - certain of which were clearly ill informed and insufficiently substantiated but are nevertheless indicative of the areas which will have to receive attention in an effort towards rendering a more acceptable public transport service.

6.3.1 Given the structural conditions existing in the recently developed areas with its movement intensive and dependent characteristics and considering the impoverished state among the greater part of the Coloured population, it is considered to be of prime importance that public transportation should become more viable. In order to be able to extend the public

transportation systems within convenient reach of the bulk of the population, it is necessary for a greater degree of patronage to be enjoyed by both road and rail systems. Additional benefit would flow from this achievement in the direction of energy conservation and relief of traffic congestion. For this reason it is considered that certain of the complaints raised by the Commission as representative of Coloured opinion warrant comment :

a) Co-ordination of train and bus timetables.

Train timetables by the nature of operating conditions are usually reasonably closely adhered to. Bus arrival times are, however, dependent on various conditions beyond the control of the operator. It follows also that the longer the bus route, the greater is the potential for delay which is then carried forward to subsequent trips upsetting the entire schedule. This is one of the most viable motivations for the granting of bus traffic priorities. Prevailing conditions in relation to traffic congestion, passenger loading, road, and weather can cause variation in bus running times and it is therefore virtually impossible to achieve perfect synchronisation between modes. Bus departure times from railway station termini are set to co-ordinate with the train arrivals and as a rule buses do not depart before the arrival of the train.

b) Direct routes.

This claim relates to the admitted inconvenience of vehicle or mode change experienced on linked services. This has little to do with the fact that in certain cases different operating companies are involved - if this were the problem a solution would be reasonably easy to find. The problem arises rather out of the multiple permutations of origin and destination coupled with varying passenger demand in relation to origin and destination termini or intermediate points. Basically the problem is one of passenger demand being consistently sufficient to justify a direct link between any two termini. If, for example, there are 150 persons at any one terminal, their choice of destination might involve five or more different points widely dispersed. Assuming that they wish to depart at 7 am, a minimum of five vehicles will have to be employed very much underloaded and possibly operating over significant distances which, having regard to traffic conditions and the limited duration of the peak passenger demand period, will result in only one or two trips being completed in the peak hour. This pattern will repeat itself as between other points of origin and destination and again in respect of the frequency of service which would have to be provided. The result would be the employment of a considerable number of vehicles with very poor utilisation and in consequence, operating costs would be inordinately high resulting ultimately in increased fares to the passenger.

Further problems relating to long haul routes are :

- a) Maintenance and control of running times and timetables, in conditions of extended exposure to traffic congestion and possible breakdown. Any delay would have the result of delaying subsequent trips to be operated by the particular vehicle and inevitably result in the bunching up of buses disrupting the frequency of the service to the inconvenience of the passenger and the uneconomic operation of vehicles.
- b) On long haul services to dispersed destinations the trip intervals would generally be greater than those applicable to shorthaul routes and any breakdown or disruption of the service would involve more serious delays to the passenger. In addition emergency adjustments to the service to account for breakdowns or traffic dislocation become extremely more difficult as the length of the route is extended.
- c) Additional vehicles required apart from inflating the cost structure of the service would require additional road space, terminal and parking areas aggravating conditions of traffic congestion particularly within the CBD.

The organisation of multi-origin/destination transport systems on the basis of interlinked services is common to most large networks and is in operation in both London and Hamburg. It is a function of balancing passenger loads as between various points on the basis of varying passenger demand conditions in the interests of economic vehicle and crew utilisation and cost/fare structure. Where passengers are accumulated for any destination at an interchange terminal nearer the destination it frequently becomes practical to operate an express service over the balance of the journey to the convenience of the passenger. This is particularly efficient where traffic priorities are available to the bus.

In the metropolitan area passengers are fortunate that bus services are not operated by various municipalities as is the case in other provinces since routes are then frequently terminated at municipal boundaries with the additional need to change transport systems. Shorter routes are more economic to operate and the efficient co-ordination of short feeder routes with long haul sections results in lower operating costs and overall fare structure.

It is submitted that much of the opposition to using interlinked services in the local area arises from the lack of properly engineered and equipped terminal facilities, particularly considering local weather conditions. Provision of these facilities is the responsibility of the Local Authority and should the bus operator have to meet the additional capital

costs involved, a marked impact on the bus fare structure would probably result.

c) Through fares.

It is understandable that a passenger would prefer to pay once for any journey irrespective of whether he is obliged to change vehicle or mode. Where prepaid period fares - for example a weekly clip card - are involved, there is no great difficulty in the issue of such a ticket for a through journey. This in fact already exists on certain bus services in the area (e.g. Atlantis - Killarney (inter-change) - Cape Town) involving the services of Associated Bus Holdings and Cape Tramways Limited. Similarly it should be possible to extend the system to an intermodal fare as between train and bus. Where a journey involves two linking services, the passenger under present conditions pays slightly less in fact in total on the two buses than he would on a single-bus direct journey.

Difficulties arise however where a casual cash fare ticket is purchased through organisational complications both within a single operating company in relation to varying routes and between any combination of companies in respect of joint services. This arises out of complications inherent in the recording of the waybill record of each component of the journey and the allocation of revenue in the final analysis. Under these circumstances, costs of collection

and supervision would be high and the system would be open to abuse as has been the experience on certain overseas systems.

#### 6.3.5 Fare Structure

The Commission reported that :

"The strongest complaints were made about bus fares and to a lesser extent, train fares." The South African Railways operates on and adjusts its fares on a Republic wide basis. Railway fares are graded according to distance travelled. Rail fares are unsubsidised for first class travel but carry a subsidy for third class passengers. The S A Railways have in fact increased their fare structure more frequently over the last two to three years than have the bus operators. Bus fares are basically calculated on the distance travelled but in application are rated on a zone system which to an extent tends to be less distance critical. In establishing and authorising what is considered to be a reasonable charge for any particular journey, the Department of Transport is influenced by distance travelled on individual routes apart from investigating the overall cost structure of the system. Local bus fares compare favourably with charges for similar journeys elsewhere in the country and the main operator City Tramways Limited last increased fares in March 1977 since which date municipal operators in Pretoria, Durban and Pietermaritzburg have increased their fares, and Johannesburg, in fact, has increased on two occasions.



The Driessen Commission recommended that fares should where possible be related to the cost of providing the service. Fares levied on bus services have to have the prior approval of the Department of Transport to which any proposal for a variation in fares has to be submitted with full motivation for scrutiny by the Department's cost accountants. Unlike most commodity price increased, bus fare applications are published in the Government Gazette in full detail and are subject to public hearing.

On local bus services Coloured passenger fares are subsidised up to 50% provided the ten-ride weekly clip card is purchased. In terms of conditions prescribed by the Department of Transport subsidies are not applicable except on clip cards which are available for all routes. For example, the full cash fare for the journey from Atlantis to Cape Town is R1-10 per single journey, whilst a ten ride clip card with a face value of R11-00 is sold to the passenger for R5-50. This card is in fact valid for the two portions of the journey over the systems of the two operating companies.

Despite the considerable advantage to be gained through purchase of clip cards (valid over a period just short of two weeks) a considerable number of passengers opt to pay the full cash fares for no apparently good reason other than that they might be erratic users of the service.

A further point of interest in relation to subsidised fares is that initially the subsidy scheme was intended to apply only to Coloured residents of the "resettlement areas" who were disadvantaged due to the extended travelling distances imposed upon them. In fact, the subsidy is now enjoyed by all Coloured passengers even, for example, those living in the Woodstock or Athlone areas and therefore represented on introduction of the scheme, a reduction in the fares paid by them. A critical analysis of the fare basis on the local system would indicate that the fare levels are high but not relative to similar journeys on other systems. They are high because distances are generally great and routes diverse and this flows from defects in the urban structure not the transport organisation.

#### 6.3.6 Fixed Fares

The Commission suggested the charging of a "uniform tariff irrespective of the duration of the journey". Official comment on this suggestion was that "it is an accepted principle of the economics of transportation that fares must bear a relation to the cost of providing the service and must therefore be differentiated according to distance."<sup>115</sup> This view is in accord with the proposals of the Driessen Commission and generally is the foundation of the existing bus fare structure.

A fixed fare would have considerable advantages in the mechanics of fare collection on public services particularly if coupled with a system where only the exact fare was to be tendered by the passenger. However with the wide variation

in distance run on particular routes it would be difficult to establish the level of a reasonable single fixed fare for the entire system. On shorter feeder routes which should in the interests of urban transport be encouraged, the fare might be seen to be unduly high and therefore discourage patronage.

#### 6.3.7 Seating

Complaints of overcrowding on trains and inability to obtain seats are common. The railways claim that crowding occurs only at the height of the peak period and is common on all public transport systems - on average peak period trains run to approximately 80% of capacity loading.

Similar complaints are made regarding the bus services. Buses are licensed to carry a certain number of passengers seated plus a number of standees calculated by formula laid down in the Road Traffic Ordinance and applied by the Local Traffic Department. In practice passengers are reluctant to stand and frequently claim that a bus is full once a seated load exists, Seating on all buses in the local fleet is cushioned whilst on many other systems both in the Republic and overseas, moulded fibre glass seats are fitted as a measure against vandalism, which is equally prevalent on the local system. Regarding standees, the railways correctly maintain that the worldwide trend in public passenger transport systems is to provide for far more standing passengers and fewer seated passengers and that forty-five minutes is considered reasonable for a passenger to be expected to stand en route.

#### 6.3.8 Facilities

There is justified complaint concerning shelter and terminal facilities for bus passengers. The operating company has in the past provided certain facilities at its cost, for example, the terminal at Mowbray and the shelters at Elsie's River, Athlone, Bonteheuvel and Guguletu. The Local Authority has since assumed responsibility for the provision of terminal facilities and is under pressure from both bus operating companies and passenger representative bodies to improve conditions in regard to terminals, interchange terminals and route shelters.

It is confidently believed that passengers would find the use of linking services, necessary in the nature of the network of services planned to cater for the local urban structure, far more convenient if the proper facilities were available for their comfort and protection from weather conditions etc.

#### 6.4.0 Cape Metropolitan Transportation Study

Further indications of commuters attitude towards public transportation services, both dissatisfaction expressed by users of the service or reasons advanced for the apparent reluctance of many to transfer from private modes to the rail and bus systems, have emerged from early surveys conducted by consultants in the course of the current Transportation Study. A series of house-to-house questionnaire surveys produced the following responses reproduced here in tabular form : Ref. Figs 29A and 29B.

A

## REASONS GIVEN FOR DIFFICULTY IN MAKING TRIPS

FIG. 29a

| Difficulty                     | Percentage of Those Experiencing Difficulties |           |
|--------------------------------|-----------------------------------------------|-----------|
|                                | Whites                                        | Coloureds |
| No public transport available  | 23                                            | 5         |
| Poor public transport          | 45                                            | 73        |
| Public transport too expensive | 6                                             | 19        |
| Public transport unsafe        | 0                                             | 0,3       |
| Parking & traffic congestion   | 18                                            | 0,2       |
| Handicapped                    | 4                                             | 2,0       |
| Other                          | 4                                             | 0,5       |
| TOTAL                          | 100                                           | 100       |

B

## PRESENT MODE USED FOR DIFFICULT TRIPS

| Mode Used                                | Percent of Difficult Trips |           |
|------------------------------------------|----------------------------|-----------|
|                                          | Whites                     | Coloureds |
| <del>Work</del> <sup>Walk</sup> /bicycle | 1                          | 1         |
| Motorcycle                               | 30                         | 2         |
| Car / Truck Driver                       | 25                         | 16        |
| Car / Truck Passenger                    | 18                         | 53        |
| Bus                                      | 13                         | 15        |
| Train                                    | 0                          | 0         |
| Taxi                                     | 13                         | 13        |
| TOTAL                                    | 100                        | 100       |

Source : Based on data ex Cape Metropolitan Transportation Study 1978

6.4.1 A : Reasons given for difficulty in making trips.

On the basis of notes accompanying the relevant table it is significant to note that few of the respondents in fact lived in outlying areas where public transportation coverage might be expected to be most difficult. Many who stated that public transport was poor, resided in areas served by comprehensive bus services in addition to train services. Only 5% of the respondents in the Coloured group alleged that no public facilities were in fact available. The indication is that a choice is being exercised against criteria with convenience ranking first and cost second.

6.4.2 B : Present mode used for difficult trips.

It is perhaps significant having regard to the response in the previous tabulation of "poor public transport" that 53% of the respondents are now reflected as car/truck passengers, and 16% as car/truck drivers, indicating a preference for private transportation possibly in the form of informal lift clubs. It is noted that of these 82% of Whites and 94% of Coloureds expressed dissatisfaction with the present public services, and 8% of drivers and 23% of passengers considered cost to be the main deterrent. Convenience would again appear to be the major area of difficulty and cost a secondary consideration.

C IMPROVEMENTS TO PUBLIC TRANSPORT NECESSARY TO MOTIVATE TRANSFER

|                         | <u>Whites</u> | <u>Coloureds</u> |
|-------------------------|---------------|------------------|
| A quicker service       | 4%            | 8%               |
| A cheaper service       | 6%            | 16%              |
| More convenient service | 32%           | 47%              |
| Would never change      | 58%           | 29%              |

D REASONS FOR USING BUS TRANSPORT FOR WORK TRIPS

| Reason for using Public Transport | Percent of bus Users |           |
|-----------------------------------|----------------------|-----------|
|                                   | Whites               | Coloureds |
| No car available                  | 26                   | 48        |
| Cheaper                           | 33                   | 19        |
| Parking difficulties              | 8                    | 0         |
| Quicker                           | 1                    | 5         |
| More convenient                   | 29                   | 23        |
| Other                             | 3                    | 5         |
|                                   | 100                  | 100       |

E TRANSPORT AVAILABILITY AMONG WORKERS

| Transport Availability        | Percent of Workers |           |
|-------------------------------|--------------------|-----------|
|                               | Whites             | Coloureds |
| No car available              | 17                 | 60        |
| No public transport available | 47                 | 27        |
| Car but no public             | 43                 | 16        |
| Public but no car             | 13                 | 49        |
| Neither car nor public        | 4                  | 11        |
| Car and public available      | 40                 | 24        |

Source : Based on data ex Cape Metropolitan Transportation Study 1978

6.4.3 C : Improvement to public transportation necessary to motivate transfer.

Whilst convenience is rated highest at 47% amongst the Coloured group, it is significant that 29% of this group indicated that they would never change to public transportation.

6.4.4 D : Reasons for using bus transport for work trips.

Among the Coloured group 48% of respondents are public transportation captives. However, a significant 19% chose this mode because it was considered to be cheaper and 23% because it was considered to be more convenient.

6.4.5 E : Transport availability among workers.

A high proportion of Coloureds have no car available and 11% have neither car nor public transportation available representing a high degree of immobility.

6.4.6 The response to the questionnaires indicate the general availability of some mode of public transport service in the various areas canvassed but stressed the lack of convenience in the service offered. It will be necessary to determine what is meant by convenience in order to ascertain what remedies can be offered. Convenience could be material from the point of view of inconvenient access to the service at origin or destination or both. It could relate to the need to interchange between vehicles or modes en route or



to the paucity of suitable terminal facilities etc. The degree of public transport dependence is high among the Coloured group and the large proportion of commuters making use of private transportation demonstrates the potential which might be attracted to the public services should they be rendered more efficient and acceptable. This transfer could also be motivated by private mobility becoming less attractive in terms of cost due to fuel price increases or cost in time in the event of public services being given facilities for priority use of roads.

- 6.4.7 Analysis of the modal split as between Coloured and White households is indicated on Table Fig 30 . The most significant difference between the two races is the high degree of dependency of Whites on the motor car for all but school trips and the high number of Coloured walking to school together with a fair percentage being able to walk to work. For the work trip Coloureds rely heavily on public transportation whilst Whites make use of their cars. The shopping trip is unfortunately not clearly reflected in the case of the Coloured group where it is included under 'other' and not separated as in the analysis of White trips, which are made almost exclusively by car. In both race groups there appears to be excessive use of the motor car - possibly for different reasons. It is suggested that the factor of choice of mode favours the White group, whilst in the Coloured group poverty produces a greater captive public transportation patronage.



MAIN MODE OF WHITE AND COLOURED HOUSEHOLD TRIP

FIG.30

PRODUCTION BY TRIP PURPOSE

MODE

| Trip Purpose   | <sup>1</sup> Public |      | Private <sup>2</sup> |      | Other <sup>3</sup> |      |
|----------------|---------------------|------|----------------------|------|--------------------|------|
|                | White               | Col. | White                | Col. | White              | Col  |
| Work           | 20,8                | 49,4 | 70,7                 | 34,7 | 8,5                | 15,9 |
| Education      | 13,0                | 9,2  | 37,8                 | 4,5  | 49,2               | 86,3 |
| Other          | 7,0                 | 49,9 | 93,0                 | 50,1 | -                  | -    |
| Non-home based | 4,0                 | 9,0  | 96,0                 | 91,0 | -                  | -    |
| Shopping       | 6,8                 | -    | 93,2                 | -    | -                  | -    |
| Private        | 3,4                 | -    | 96,6                 | -    | -                  | -    |
| Average        | 11,04               | 29,8 | 75,7                 | 25,0 | 12,9               | 45,2 |

1. Includes bus, train and taxi passengers
2. Includes car and truck drivers and passengers
3. Includes walk, motorcycle and bicycle trips

Source : Based on data ex Cape Metropolitan Transportation Study 1978

6.5.0 The goals stated in the Urban Transportation Act 1977 aim at the attainment of mobility, convenience for the user, reasonable costs, and minimum side effects. These goals are intended to inform the preparation of the various Metropolitan Transportation plans. Although not specifically formulated for conditions peculiar to those currently existing in the Cape Metropolitan area, the set of transportation objectives prepared on the basis of this goal statement for the Port Elizabeth Metropolitan area would appear to represent a fair guide for the improvement of the local conditions with realistic stress being placed on the importance of efficient public transportation yet not neglecting the role of the motor car.<sup>116</sup> For reference these objectives are quoted :

A Goal of mobility.

1. To provide a land use structure which will reduce the need to travel.
2. To provide an arterial highway system and a public transport system to make all parts of the metropolitan area accessible.
3. To enhance the viability (accessibility) of the CBD by transportation improvements.

B Goal of convenience.

1. To provide a frequent and accessible public transport

service.

2. To provide a reliable (with respect to timetables) urban public transport system.
3. To provide adequate cost sensitive parking.

C Goal of reasonable cost.

1. To reduce the total cost (provision and maintenance of facilities plus operating costs) of metropolitan area travel, as well as public transport costs.
2. To promote a balanced transport system in which each mode is used for the purpose to which it is best suited.
3. To reduce congestion costs in the CBD.
4. To improve the productivity of bus and / or rail travel in the metropolitan area.

D Goal of minimum side effects.

1. To reduce accidents.
2. To reduce consumption of scarce energy resources.

6.5.1 The urban condition in the Cape Metropolitan area demonstrates transportation difficulties calling for attention in four main areas :

1. The provision of mobility to a large sector of the population which currently displays a high degree of immobility and is public transportation dependent.
2. The optimum utilisation of existing transportation infrastructure and capital equipment directed towards low capital cost remedies for the maximum efficiency in moving people rather than vehicles.
3. The conservation of energy and resources generally that are related to urban transportation.
4. The avoidance and control of any excessive traffic congestion towards obtaining efficient utilisation of the road infrastructure.

6.5.2 In regard to the above, it must always be realised that a balance between various available transportation modes is necessary - the best use being made of the properties of each with the end objective being the maximum community benefit. In the public transportation area the train, the bus, and the taxi must be seen as complimentary in the provision of an efficient service. It must also be appreciated that the promotion of public transportation is not only related to solving traffic congestion by attempting to substitute

itself for the motor car, it has a direct and non competitive objective of providing mobility for those who cannot aspire to car travel and ownership.

6.5.3 The apparent range of problems and possible remedies in the field of public transportation fall into two main categories relative to the city of Cape Town :

- a) Those that relate to the existing structure of the city and which of necessity therefore can only be solved in the long term through policy decisions and intelligent planning action towards the reordering of land use activities and their location with due regard to efficient transportation operation.
- b) Those that can be improved or remedied in the short term and which relate rather to superficial and organisational reasons rather than urban structure. These remedies would involve improvement in the areas of passenger convenience, comfort and time saving.

#### 6.6.0 Long term (structural) problems and remedies.

Whilst the urban structure of the unplanned sector of the city was movement efficient the later dispersed development in itself and through its interdependent relationship with the older areas, renders the city transportation intensive and dependent.

The overall structure is related to the mobility of the motor car rather than to public transport. This dependence on the car, apart from any influence upon traffic congestion, energy economy and over elaborate and costly supporting infrastructure is self generative and compounding. It has to be acknowledged that a situation has been created where transportation convenience can only be assured through the use of the motor car. Increasing use of private transportation encouraged by recent legislation facilitating the formation of lift clubs and the extended use of the taxi, will tend to further discourage use of public transportation and reinforce the tendency towards further sprawling urban development with its associated conditions of environmental sterility, non viability, energy dependence, and high incidence of poverty. A serious associated problem of the foregoing possibilities is that through lack of passenger support particularly in the low density areas, public services will become more infrequent and might even have to be withdrawn to the disadvantage of those persons dependent upon these services. With the further directive to the effect that public transport fares should where practical be cost based, any decrease in support which results in a reduction in public transport occupancy levels, particularly on the more sensitive and flexible bus systems, will inevitably result in increased cost structures which in turn will have their effect in increased fares, further discouraging their patronage and hastening their possible withdrawal.

- 6.6.1 Floor states that "public transport is most efficient when trip origins and trip destinations are highly concentrated,



while private transport is indispensable when both trip origins and trip destinations are dispersed.<sup>117</sup> The city has been structured with a multiplicity of residential origins and work place destinations widely dispersed with very random flows of commuters from one to the other. This condition is aggravated by lack of residential choice (both in relation to overall Group Area constraints and accommodation availability) particularly among the non-White group resulting in the work place not necessarily being within the employment area nearest the place of residence. This results in excessive trip length, duration and high cost both in terms of fare and time. The dispersed character of the city in relation to land use activities and racial separation aggravated by the prevailing low residential density, renders it virtually impossible for public transportation to be efficient, convenient and economic. Whereas in the unplanned development where although there was a close coupling between residents and work place, many persons frequently travelled appreciable distances between home and work as a function of choice and evaluation of personal benefits, in contrast the present urban condition has caused this pattern to become rather the rule on a considerable scale without the privilege of choice. Apart from the "work trip" the transport dependent urban structure imposes the same disbenefits in relation, inter alia, to shopping, cultural, and recreational facilities.

6.6.2 With widely dispersed and low density residential townships having to be linked with dispersed activity and work centres, public transportation is unable, at reasonable cost levels, to provide a frequent and conveniently accessible service which is sufficiently attractive to persuade commuters to shun private transportation. Local conditions favour private conveyance on the basis of convenience and provided three passengers are carried the travel cost comparison to the commuter is likely to be favourable where the costs of private transportation are seen as variable costs exclusive of any terminal charges such as parking fees.

6.6.3 It has already been stated that bus services are more economic and efficient in operation over short feeder or distributor routes where a high level of vehicle utilisation can be obtained and control procedures are more effective. This operation lends itself to the servicing of railway stations, or termini from which express bus systems operate. Longer bus routes through high activity areas such as those operated along the southern suburbs main road, are also efficient in the conveyance of short stage intermediate passengers. In this use these services perform a valuable urban movement function reinforcing accessibility and activity along the route, particularly where they are co-ordinated with and supported by train services.

6.6.4 The planning of recent growth and development in the metropolitan area with apparent neglect or lack of appreciation

for the transportation difficulties inherent in the separation and dispersal of land use activities, has resulted in the bus system becoming involved in the operation of a considerable network of long haul services. These services produce very poor vehicle utilisation and in consequence costs of operation are high. The resultant fare structure and slowness of operation primarily due to traffic congestion does not serve to attract patronage except from captive commuters. These circumstances again tend to favour use of private transportation where provided the vehicle occupancy is in the order of four persons, costs compare favourably with bus fares and in addition convenience and trip duration are generally more favourable.

- 6.6.5 Under prevailing conditions it would appear therefore that public transportation either by bus or rail mode cannot hope to provide a more efficient service than that which can be provided by private transportation at a competitive cost. Should the cost of the public service be related to the cost of providing the service, it is highly unlikely that the fare structure would appear sufficiently attractive to the prospective commuters. In the case of a bus service due to its high capital and labour intensive characteristics, substantial overhead costs have to be carried in addition to variable costs of which no less than 60% is comprised of wages. A competitive service therefore can only be provided under conditions of substantial external subsidy bearing in mind that Coloured passengers already enjoy the benefits of heavily subsidised fares.

- 6.6.6 Public transportation in the metropolitan area in common with general experience in most cities both in the Republic and

abroad has indicated steadily declining patronage whilst the statistics of passengers conveyed by private transportation have indicated an increase. An indication of the impact of this change is given in modal split statistics for persons commuting to the Cape Town CBD on the basis of checks taken in 1974 and 1978. Car commuters increased from 43% to 57% whilst railway commuters decreased from 42% to 34%, and bus passengers dropped from 15% to 9%.<sup>118</sup> In certain overseas cities where strenuous efforts have been made to encourage the use of public services, in the interests of reducing urban traffic congestion, these services have been heavily subsidised in the view that the cost involved would be far less than that required to provide additional infrastructure to cope with the increasing traffic. Despite subsidies and low cost services, the experience has been that the car commuter has not responded favourably and transferred. More success had been enjoyed where measures have been taken to allow the public service faster passage through peak period traffic by implementation of suitable traffic priority provisions. This has enabled the public service to gain a definite advantage over private transportation by way of convenience and travel time saving. Where such provisions are operative it is usually common to extend their use beyond public services to high occupancy vehicles, generally defined as vehicles carrying a minimum of three passengers.

- 6.6.7 In considering the promotion of the use of public transportation in the metropolitan area and the implications of extended use

of private transportation attention must be given to the costs of providing infrastructure in support of both rail and road modes. If the emphasis is placed upon the movement of people and not vehicles, and the attitude is adopted that the promotion of the public modes is in the community interest, particularly having regard to the disparate incomes and life styles of the local population, then it is suggested that expenditure must be directed to the most cost effective areas of the transportation problem. The Driessen Commission directed that alternative transportation solutions should be evaluated and that public transport should be improved before any restraints are imposed on private transportation use. It would seem appropriate therefore in the interests of improving overall mobility in the city, avoiding congestion and conserving energy, that the recommendations to be made arising out of the Metropolitan Transportation Study should be critically analysed so as to extract the best mobility value out of every Rand to be spent. It is submitted that public mobility should take precedence over expenditure on expanding the scope of personal mobility.

The first priority should be to improve public transport and to urgently attempt to reduce the city's dependence on energy (oil) resources in the face of worldwide reports of its diminishing availability, fuel cost escalations and their effect on the national economy and possible politically inspired interruption of the country's supplies.

In common with many cities, Cape Town is excessively motor

dependent and is therefore vulnerable to any change in the fuel supply position. A public transport infrastructure exists and in particular the suburban electrified railway system represents an asset which is energy efficient and not vulnerable to external actions.

- 6.6.8 It has been demonstrated that the mere improvement of public transportation services and the expansion of their service areas is not likely to bring forward passenger patronage which will so increase service occupancy as to enable operating costs to be reduced to a level, where it becomes more economic and convenient to use the public in preference to the private mode of transport. This somewhat general condition is further aggravated in the local area due to the existing urban structure with spatial separation of land uses and race and an overall low level of density. The long term strategy for improvement of the transport condition involves changes in the structure and form of the city in such a way as to reduce the need to travel and so escape from the prevailing condition of movement dependency which imposes conditions unfavourable to the effective use of public transportation, which in turn has an adverse effect on the opportunities and life style of a large and increasing sector of the Coloured population which suffers a high degree of immobility.

- 6.6.9 The solution to the problem would appear to be a significant increase in the density of development and the establishment of a more human scale urban environment. In the local

context this poses further problems of a socio-political nature. If the city is to become a racially split twin urban complex, then there would appear to be little chance of its becoming an efficient city both in terms of transportation and urban performance generally. The problems posed by the existing planned "loose" structure would tend to be perpetuated for the foreseeable future together with the inevitable consequence of cost inefficiency in public transportation, immobility and hardship for a great number of the population and dissipation of energy and infrastructural investment.

- 6.6.10 Discounting as both impractical and improbable the pursuit of the proposed establishment of a racially segregated metropolitan area with twin centres, the interests of transportation efficiency and positive urban performance can only be served by minimising the need for movement. This would involve checking and reversing the process of separation in terms of land use and racial areas which has been seen to be the cause of the poor urban performance of the city since the planning of the "resettlement areas" and to revert to a more tightly woven urban fabric where significant travel does not become a component in the performance of most normal and necessary urban functions. In order to curtail trip lengths, the first requirement will be to increase the residential density levels by accommodating the inevitable future growth as moderate scale infill projects within existing developed areas and infrastructure, bringing the isolated developments such as Mitchell's Plain into consolidation with the total

urban development and thereby eliminating much of the land waste evidenced by the present intervening underdeveloped areas.

The existing dispersal of land use activities linked by transportation in performance of a passive responsive role must be reordered through the integration of a greater variety of activities with residential areas, such that residential, commercial and compatible industrial uses (i.e. compatible in both nature and scale) are brought within close reach of each other thereby providing opportunities for positive life style independent of mechanical transportation. The increased density of development will ensure threshold support for facilities and a greater concentration of support at point of origin for the operation of viable transportation routes to serve the area. With more efficient public transport services accessible to a greater number of persons at higher levels of convenience and cost efficiency, the need for and dependence upon private transportation should diminish. Public transportation will then be enabled to operate at a scale where it can perform an active role in promoting urban activity and where by careful alignment of its main axes, it can be used to facilitate the structuring of the more dense development advocated.

- 6.6.11 The efficient function of public transportation is facilitated where urban development contains high population density and



where this development is concentrated so as to limit the number of points of origin and destination. It follows that a system focussed on a strong centre with essentially linear movement corridors converging on the centre, as was the original pattern in the city, is clearly defined and functional. Cape Town however due to its geographical constraints and eccentric location limits the potential of such a movement structure:

"Transportation makes life in big cities more expensive. The spreading out of a city has the same effect. If the residential density is lower, or if because of mountains or water the city cannot spread out evenly on all sides, expenditure on traffic must rise."<sup>119</sup>

- 6.6.11 Cape Town conforms with this statement in all respects and certain of the reasons contribute to its nonconformity with the classical urban structure and land use models such as the Concentric Zone Concept, Sector Concept, and Multiple Nuclei Concept. The city structure comes closest to the latter concept but this relationship has been distorted by political factors in the shape of the Group Areas Act which interfered with the natural urban development process. Whilst it would appear that the dominance of the CBD will weaken due to the spread out form that urban development has taken, aggravated by the eccentric position of the CBD, it is proposed that the apparently natural trend towards establishment of competing nuclei in the suburban areas

should be exploited in a manner designed to pull together the dispersed elements of the city into a more cohesive form. This will promote activity and urban vitality using transportation (movement) in its intra-urban structuring function rather than merely as an inter-land use connecting device.

The inseparable relationship between movement and urban structure and form is clearly illustrated in the fact that strategies necessary to render public transport in the urban area viable and to achieve transportation efficiency generally, are the same as those necessary to set right the undesirable trends in urban structure and form emerging from the more recent planned development of the city.

#### 6.7.0 Short Term (Non-Structural) Problems and Remedies

Problems basic to the efficient function of transportation and the public transportation system in particular have been dealt with in the previous section. Action is now explored that could be taken towards rendering the system more efficient and public transport more convenient to the community pending the implementation of the more important and vital long term changes. The short term improvements are intended to be low cost remedies based on the retention and possible up-grading of existing transportation infrastructure and centre broadly upon measures to improve convenience and comfort. These

short term remedies are related and are contributory in many instances to the long term proposals and in some cases are no less important. Measures relevant to energy conservation are for instance of immediate concern and urgent action is required to minimise any disruption of the urban function especially considering its energy dependent characteristics.

Short term improvements might involve inter alia :

- 6.7.1 Provision of modern properly designed and engineered bus terminal facilities at both ends of major routes (i.e within the residential and the employment areas) provided with adequate shelter, amenities and security to enhance the comfort, convenience and safety of passengers. Safety is an important consideration both in relation to bus and railway termini due to the high incidence of interference and assault prevalent at these points which serves to discourage many from the use of public services.
- 6.7.2 Provision of well designed and functional interchange termini where passengers can change from vehicle to vehicle or effect modal change in condition of shelter, safety and comfort, particularly where it might be necessary to wait for connection with the ongoing portion of the journey. Where practical, these interchange termini should be located at railway stations so as to provide multi-modal choices and obtain the maximum potential from the facility.

- 6.7.3 Extension of the availability of "through tickets" over inter-linked journeys for the convenience of the passenger. For reasons explained earlier, such tickets would in the interests of control and avoidance of malpractice, be confined to prepaid period tickets. It is unlikely due to administrative difficulties that such a system would be extended to cater for bus/rail journey combinations or casual cash fare journeys.
- 6.7.4 Provision, in the interests of promoting use and convenience of public transportation and simultaneously reducing traffic congestion and energy dissipation, of suitably surfaced commuter car parking facilities at railway stations and at major residential bus termini to promote the operation of "park-and-ride" services. The same facilities could be arranged to also accommodate the "kiss-and-ride" system.
- 6.7.5 Provision of traffic priority systems for buses on roads to facilitate the operation of services particularly in congested areas and to permit the effective operation of express services between major points of origin and destination during the peak traffic periods, thereby providing the commuter with a time saving incentive to transfer to public services and minimise the travel time delay inherent in the dispersed nature of local urban development. The merits of permitting high occupancy private vehicles (usually carrying a minimum of three passengers) must be determined against a study of the number of such vehicles in view of the prevalence of official and other lift clubs which might cause the prime objective to be lost.
- 6.7.6 Introduction of additional short-haul feeder bus services to railway stations and express bus termini in order to make the

best and most economic use of the existing transport systems and to extend the availability of these public services to the greatest number of persons.

6.7.7 Provision of improved roads and access roads into non-White areas. Public transport operation is frequently rendered dangerous and at times impossible due to the condition of certain roads serving as bus routes. This condition results in lack of comfort and convenience to the passenger. In other instances, the internal road plan of the townships is more decorative than practical and it is impossible to provide a bus route conveniently located to the maximum number of people. The road plan of Mitchell's Plain was designed on a grid pattern with roads graded according to the level of service anticipated. Block sizes and road spacing is such that the average walk to a bus stop will not exceed five hundred metres. This layout improves accessibility of public transportation to the resident and enables passengers to board buses at stops along the route. In contrast in many other areas passengers are obliged to walk considerable distances in order to board vehicles at a central terminal point.

6.7.8 Provision in terms of the recommendations of the Driessen Report for the implementation of staggered hours of work, school and other activities that have the result of causing high peaks in the movement flows of persons and traffic. The worst peaks in urban transport are due to the conventional hours of work of offices and shops. The peak period

movement flows tend to adjust themselves to the maximum capacity of the system giving rise to congestion. The peak period dictates the capacity of the road infrastructure as also of the public transportation capacity and hence the size of bus fleets and to a somewhat lesser extent, the number of train sets. Generally the flows during the peak hour are significantly greater than the periods immediately preceding or following and by spreading this period to two hours, a considerable degree of flexibility will be obtained in the transportation structure generally. This flexibility might then be traded off so as to achieve a fresh balance between additional passenger volumes carried or reduction of congestion in the system subject to certain controlling measures being applied. Staggering of hours by voluntary arrangement has seldom been effective except where adopted by employers of large numbers of persons as in the case of state employees in Pretoria. The savings in infrastructural cost available from staggering of hours are significant and warrant some serious investigation into means of implementation accepting that the benefits relate not only to the CBD but to points throughout the movement system in the metropolitan area. The table Fig.31 relates to the CBD and indicates that by extending the peak hour thirty minutes on each side a traffic volume reduction of twenty per cent can be achieved.

- 6.7.9 It is considered that these measures and no doubt many others could be implemented at low capital cost in order to render

fig.31

CAPE TOWN CENTRAL AREA SCREEN LINE COUNT

| QUARTER HOUR PERIOD | VEHICLES | MEAN PEAK HOUR | MEAN PEAK 2 HOURS/HOUR            |
|---------------------|----------|----------------|-----------------------------------|
| 7.00 - 7.15         | 2150     | 18736          | 14942<br>REDUCTION<br>20 PER CENT |
| 7.15 - 7.30         | 3191     |                |                                   |
| 7.30 - 7.45         | 4321     |                |                                   |
| 7.45 - 8.00         | 4809     |                |                                   |
| 8.00 - 8.15         | 4860     |                |                                   |
| 8.15 - 8.30         | 4746     |                |                                   |
| 8.30 - 8.45         | 3368     |                |                                   |
| 8.45 - 9.00         | 2439     |                |                                   |

Source : Brand J G , Urban Mobility - Cape Town Seminar May 1978

public transportation more effective, accessible and attractive and to simultaneously serve the interests of congestion control and energy conservation. In regard to costs and in view of the anticipated preparation and consideration of the metropolitan transportation plan for the local area, it is well to consider any measures which might, in terms of total transportation costs, achieve the objectives desired and maximum community benefit in the most cost effective manner. This does not presuppose that the needs of the motor car should be neglected but rather that in view of the worldwide and local energy predictions, schemes should not be lightly embarked upon based on twenty year traffic projections which might be disrupted through circumstances beyond our control. "Counting the cost does not, however, necessarily mean no road construction but rather the realistic appraisal of whether such construction is worthwhile.



#### 7.0.0. FRAMEWORK FOR VIABLE URBAN GROWTH

Examination of the quality and performance of the city as it exists in accommodating the complex needs of Man in pursuit of a good life style has revealed that to attempt to follow the lines laid down in recent "planned" areas of the Cape Flats would neither cope with nor improve matters in so far as future growth is concerned. The present structure and particularly the role allocated to movement is not productive of viable urban living considering the rate and scale of population increase anticipated and its composition.

- 7.0.1 In the past the ranking of priorities, based on standards applicable to a higher level of well being, would appear to have been incorrectly weighted in favour of shelter. If as has been suggested our urban population pattern more closely relates to "Third World" patterns then employment would be likely to rank highest whilst shelter would occur much further down the scale.<sup>121</sup> Our goal has been to provide the urban resident with opportunity for self uplift and improvement - this ranking would then seem to confirm that the demand is for a livelihood, which under urban conditions cannot easily be self produced, and items which can be attained by self help and personal ingenuity rank far lower particularly among the poorer strata of populations. It has been erroneous to provide housing on vast scale in the apparent belief that other factors necessary to viable urban life would look after themselves despite constraints imposed

by a ponderous body of largely negative regulations and controls.

7.0.3 The requirement is therefore a total city which provides opportunity to all its inhabitants. The urban structure must of necessity display the enabling quality needed to promote activity through intelligent and economic use of movement together with the free response of land use activity. It is only reasonable that the positive characteristics displayed in the existing old city should be used for guidance in the future - particularly the value of a strong and clear linear movement structure which has controlled growth and proven its efficiency. The situation as at present where housing moved out across the Cape Flats unsupported by adequate non-residential activity in a dispersed and resource dissipating pattern must be checked and existing development together with future growth structured on the basis of concentration of activity and conservation of resources.

7.0.4 Activities covering employment for both blue and white collar workers, commerce and recreation will have to be introduced into the Cape Flats thereby effecting a further stage of decentralisation of functions in the metropolitan area. This decentralisation is designed to fill the non-residential activity void in the area and to reduce the current heavy dependence upon movement. The aim will be to develop activities of sufficient strength and order to

resist the attraction of the CBD (except for the highest order urban functions) and the powerful White suburban centres on the southern and eastern movement axes. If this is not achieved the survival of these activities will be in doubt and the reduction in movement dependence lessened.

- 7.0.5 Whilst the major concern is with the city as a totality it is accepted that the present situation in the Cape Flats areas and the impending growth calls for particular and urgent attention to be given to providing a balanced urban structure with an adequate complexity of viable urban functions. In considering the strategy to be adopted, one must take a step down from the metropolitan area as a whole and look at the entire Cape Flats complex, since the object is to structure self generative activity and vitality throughout the present Coloured areas. It is necessary to incorporate proposals for Mitchell's Plain into the scheme of things and in this regard it is felt that the large commercial centre planned for this development should be located where it will be of benefit to the entire area and it should therefore form part of the proposed linear activity axis. (It is possible that the eccentric location of the town centre in relation to Mitchell's Plain might have some connection with official plans to project the sprawl of Coloured housing towards Macassar and Eerste Rivier).

7.0.6 In designing a planning process to cope with the growth of the Coloured population and to simultaneously incorporate and revitalise the existing Cape Flats developments, study of the metropolitan area indicates that the process must incorporate the following major concerns:

- a) Restructuring of the movement system.
- b) The creation of additional employment opportunities at all levels of ability.
- c) Increase of residential density.
- d) Introduction of mixed land uses.
- e) Revision of the financial structure in regard to development.
- f) Relaxation and revision of planning and administrative controls.

7.1.0 A: Movement

Whilst the older areas were structured along a distinct, dominant and highly active linear movement axis the major defect of the "planned" development lies in its apparent failure to exploit the potential of movement in order to promote self-sustaining urban activity.

Movement is used in a passive role rather than in an active structuring role. It is necessary to modify the urban structure in order to release these forces and to generate a higher level of activity in the area generally.

7.1.1 Examination of the earlier urban development indicates that the greater part of the positive performance of the area is attributable to the strength and clarity of the dominant linear movement axes which attract intense metropolitan movement flows promoting accessibility and the agglomeration of highest order activities where accessibility is greatest.

7.1.2 In restructuring the Cape Flats therefore it is necessary to concentrate the main movement flows into a minimum number of major channels clearly defined so as to be seen as being the dominant movement axes which will begin to attract intense flows of people through the area and develop metropolitan significance.<sup>122</sup> This movement and the urban activities attracted due to enhanced accessibility will in turn attract additional movement flows and set in motion a cumulative and self perpetuating function. As far as possible existing transportation infrastructure should be incorporated and fully utilised and the effects maximised by co-ordination of public transportation modes into a structural framework where each mode reinforces the other. The various modes must be seen as complementary and not competitive and each must be used in accordance with its efficiency and suitability

within the movement system as a whole. The rail system should where possible parallel the major road route and be employed for both line haul as well as intermediate journeys. The bus service will cater for passengers along the route and can if required be employed in the operation of both line haul and express services. The two services should not be looked upon as parallel alternative modes since neither should have the excess capacity to aggressively compete with the other nor to act as relief in the event of breakdown. Generally the bus will be best employed on short trips particularly feeder trips to the railway stations or between residential areas and neighbouring suburban nodes along the line of route.

- 7.1.3 With loosely dispersed developments on the Cape Flats and the need to gain access to the maximum number of people - both in terms of activities and public transportation - the linear movement system is proposed as being the most suitable. With concentration of movement flows a high degree of utilisation of road infrastructure is achieved and provision of service infrastructure is less costly. Public transportation is capable of efficient service and control along a linear activity spine and can maintain favourable average vehicle occupancy with steady turnover of passengers joining and leaving the service at various points along the route. In addition linear routing of public transportation services through activity areas results in superior vehicle utilisation due to the availability of two-way traffic.

"Public transport becomes an inefficient proposition where urban development is dispersed and routes cannot be linearly amalgamated."<sup>123</sup>

- 7.1.4 On a linear axis movement is concentrated and where intersections of significant flows or the position of a railway station occurs, accessibility is intense and nodes of activity develop supported also by local resident population. These nodes space themselves out along the route and represent the peaks of accessibility. Activity levels assume an irregular wave formation along the axis with intensity of activity varying at different points enabling entrepreneurs to select their location either at a peak of accessibility with consequent high land values and rentals, or at some distance from the peak where costs will be lower but where they will still have exposure to the passing movement flows. A linear system distributes activity over a wider area whilst a nodal form of development concentrates activity at a single core point requiring everyone to travel to the same point from varying distances on the periphery of the development.
- "The advantage of the linear shape is that all structures are close to the main line, and readily accessible in terms of time or effort, given efficient transportation."<sup>124</sup>

- 7.1.5 The alignment of the suggested linear axis or axes will require careful study in order to derive the maximum benefit for the overall area and to link in with the existing metropolitan movement systems providing necessary connection but

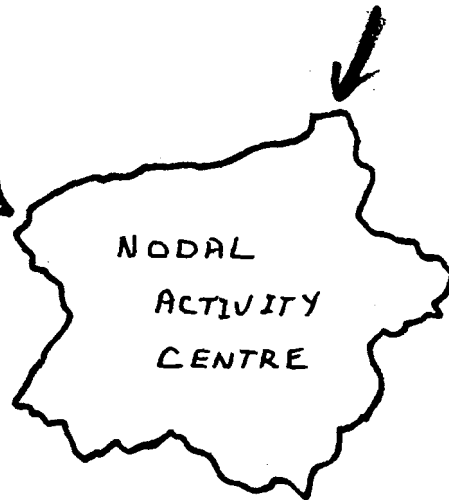
NODAL:

CROSS FLOWS CREATE  
PROBLEM ESPECIALLY  
FOR PUBLIC TRANSP.

MOVEMENT INTENSIVE  
AND DEPENDENT  
MOVEMENT NOT 'ACTIVE'

MOVEMENT FLOWS  
CONCENTRATE AT  
CENTRE AND NOT  
ACTIVELY ON ROUTE

INCREASING  
DISTANCE TO  
CENTRE NOT  
EFFICIENT



LINEAR:

MINOR MOVEMENT  
FEEDS INTO MAIN  
AXIS

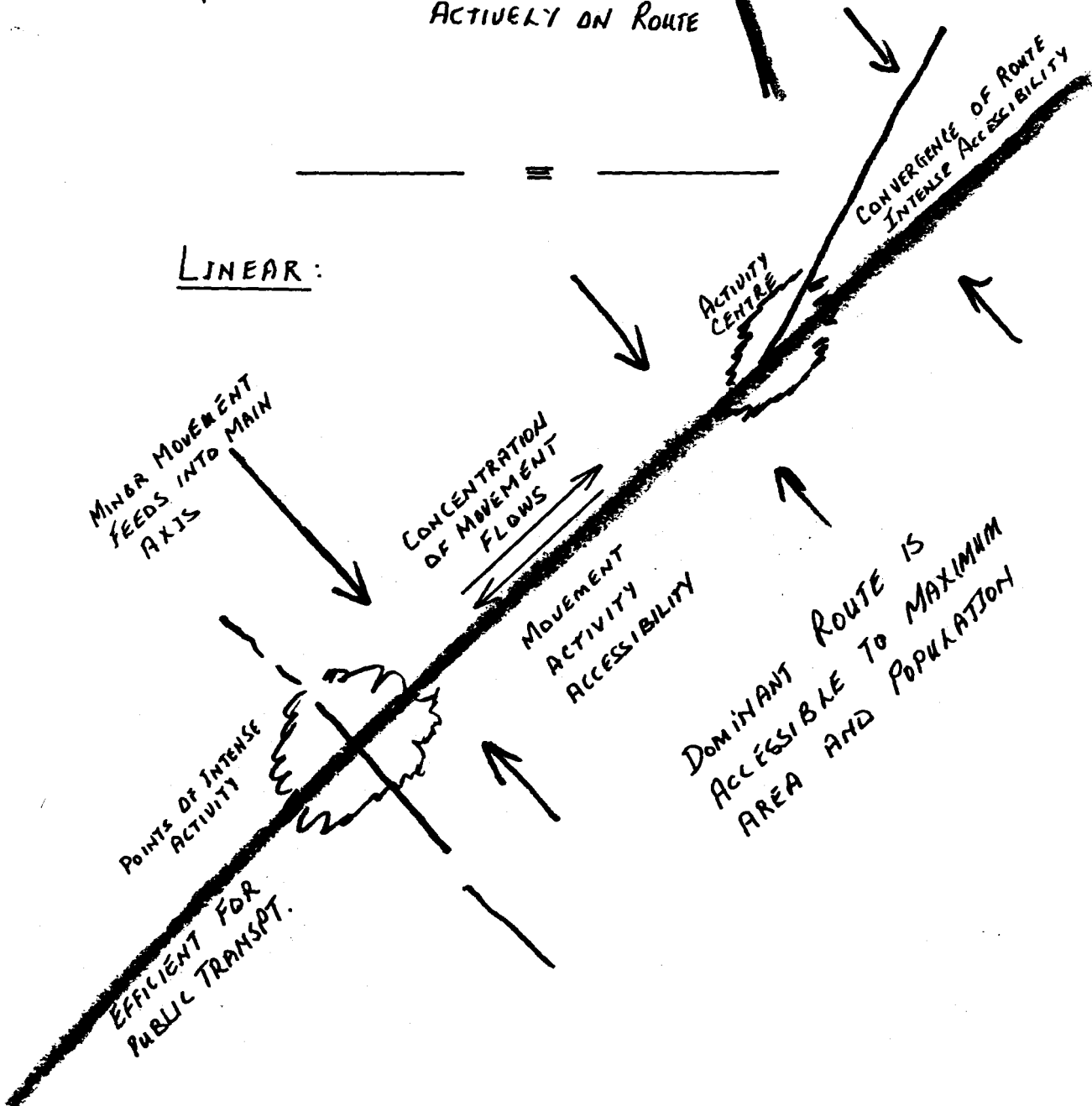
CONCENTRATION  
OF MOVEMENT  
FLOWS

MOVEMENT  
ACTIVITY  
ACCESSIBILITY

DOMINANT ROUTE IS  
ACCESSIBLE TO MAXIMUM  
AREA AND POPULATION

POINTS OF INTENSE  
ACTIVITY

EFFICIENT FOR  
PUBLIC TRANSP.





relying on the strength of the proposed newly introduced urban activities to avoid these connections promoting a leakage of patronage towards the well established White activity arms. Where possible existing infrastructure should be used whilst major disturbance of the urban fabric should be avoided. Most existing townships do not lend themselves to through passage of traffic and where practical the dominant axis will be required to pass within close proximity of these developments and their road structures will have to be altered to facilitate access to this main movement channel and simultaneously to provide more convenient internal access to public transportation systems.

- 7.1.6 The prime object therefore is to restructure the movement system so as to enable it to play an active role in the development of viable urban functions in the Cape Flats area through its free interaction with land use activities. The role of movement in relation to the Cape Flats must therefore change and assist "in bringing "city" to the people rather than people to the city."<sup>125</sup>

7.2.0 B: Employment opportunities

Considering the great number of jobs which will be necessary in order to provide employment and livelihood to the Coloured population it will be imperative to encourage employment both on a formal and informal basis. To overcome the inactive

residential township environment compatible non-residential land uses will have to be permitted to be introduced and to integrate with the residential uses. This action should provide job opportunities to prospective employees within walking distance of their homes thereby minimising the present dependence on transportation and energy. This action will also allow others who wish to be self employed to use their skills in small industrial and business activities either in their homes or in close proximity to them.

7.2.1 Formal employment will call for the establishment of labour intensive industries on the Cape Flats and in order to achieve this in the short term incentives will have to be offered to attract certain of the large White owned operations. Industries in the tertiary and quaternary categories which provide well paid "white collar" jobs are highly compatible with residential uses and would be most desirable in locations in close proximity to residential areas. This would redress the defect of the present condition where Coloured residential townships have been moved further away from the core employment centre and located near industrial areas offering mostly "blue collar" jobs - whilst the large and increasing number of "white collar" workers have now to seek work at considerable distance in the CBD or the somewhat nearer White suburban centres.

7.2.2 A considerable number of jobs for the Coloured population will remain in the CBD and established White areas of the city and will continue to generate commuter flows over reasonably

long distances and involve travel and time costs. Once a large body of employment opportunity exists in close proximity to the places of residence on the Cape Flats, commuting to work outside the area will not be virtually obligatory as at present but will be based upon individual value judgment and interaction between the interests of employee and employer. This pattern is common in most cities and the public transportation system makes provision for these movements. "The value which a worker places on time, and the degree to which he is willing to make a specific journey to work will depend upon many variables. Age, sex, race, occupation, economic class, cultural group, reason for working, will all be important determinants of the valuation of the journey to work by individuals. No gross generalisation can be made as to the "optimum" journey to work, nor can generalisations be made as to how far employees as a whole are willing to journey to their jobs."<sup>126</sup> Certain criteria have been established by Floor regarding the journey to work by public transport which suggest that by rail the journey should not exceed 32 kilometres and by bus 20 kilometres and that allowing for walking between home and transport and transport and work place the total travelling time should not exceed<sup>127</sup> forty-eight minutes in one direction. On this basis it is likely that a considerable number of Cape Flats residents will still find employment in the established White areas.

### 7.3.0 C: Residential Density

Urban sprawl must be halted and the invasion of agricultural land uses and natural areas by low density residential schemes checked. The city boundaries will have to be "frozen" whilst urban growth resulting from population increase is directed towards increasing the residential density in existing townships or to "infill" projects of moderate scale in areas where physical space exists within the present loose scatter of "planned" developments, much of it already served by or in close proximity to established urban infrastructure.

7.3.1 The "absorption" of the increased population into these areas will serve to increase density in existing developments and over the Cape Flats generally providing the potential for greater viability in the existing sterile townships. This action will, inter alia, contribute towards :

- a) Conservation of land resources.
- b) Avoidance of cost of additional infrastructure provision.
- c) Increasing of the support thresholds for local facilities and amenities promoting their viability and extension towards more effectively meeting the needs of the resident.
- d) Rendering the operation of the public transportation system more feasible and reducing dependence on private transportation and consequent saving in energy resources.

fig.33

POPULATIONS AND DENSITIES (EXISTING AND PROPOSED FOR COLOURED  
GROUP AREAS IN CAPE METROPOLITAN AREA

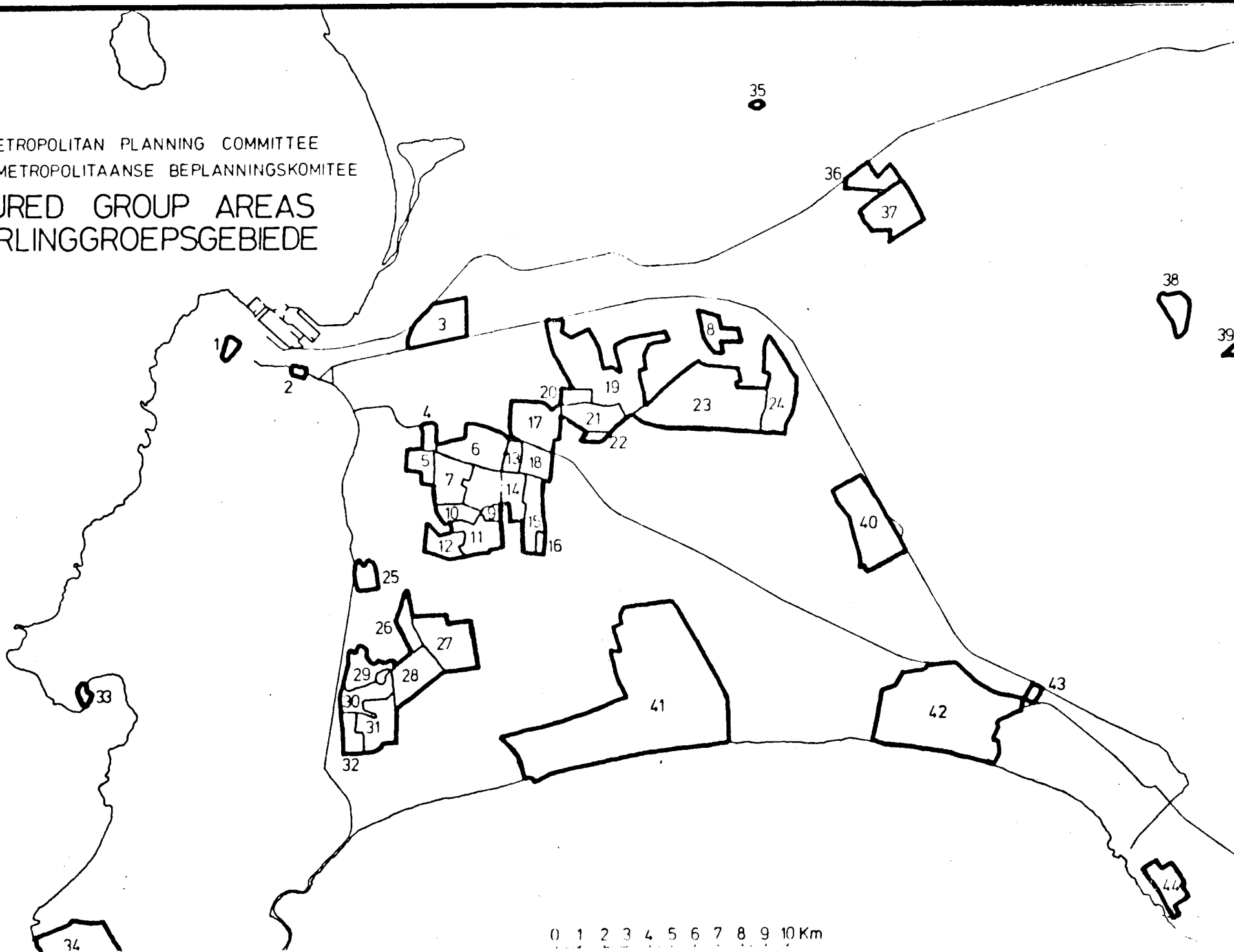
| NO. | GROUP AREA                      | EXISTING<br>POPULATION | EXISTING<br>DENSITY<br>PER HECTARE | PLANNED<br>POPULATION | PLANNED<br>DENSITY<br>PER<br>HECTARE |
|-----|---------------------------------|------------------------|------------------------------------|-----------------------|--------------------------------------|
| 1   | Malay Quarters                  | 9700                   | 155                                | 9600                  | 153                                  |
| 2   | Walmer Estate                   | 8685                   | 201                                | 8685                  | 201                                  |
| 3   | Kensington                      | 36586                  | 97                                 | 18400                 | 49                                   |
| 4   | Hazendal                        | 5914                   | 118                                |                       |                                      |
| 5   | Athlone                         | 12518                  | 83                                 | 59800                 | 70                                   |
| 6   | Bridgetown, Kewton, Silvertown  | 26268                  | 70                                 |                       |                                      |
| 7   | Belgravia & Sunnyside           | 24626                  | 89                                 |                       |                                      |
| 8   | Bellville South                 | 24620                  | 140                                | 36000                 | 205                                  |
| 9   | Newfields                       | 571                    | 11                                 |                       |                                      |
| 10  | Penlyn                          | 4138                   | 33                                 | 50200                 | 80                                   |
| 11  | Hanover Park                    | 37100                  | 134                                |                       |                                      |
| 12  | Landsdowne                      | 12400                  | 70                                 |                       |                                      |
| 13  | Vanguard                        | 4700                   | 47                                 |                       |                                      |
| 14  | Surrey Estate                   | 9000                   | 51                                 | 60000                 | 77                                   |
| 15  | Manenberg                       | 37161                  | 135                                |                       |                                      |
| 16  | Sherwood Park                   | 3100                   | 62                                 |                       |                                      |
| 17  | Heideveld                       | 17258                  | 98                                 |                       |                                      |
| 18  | Bonteheuvel                     | 40814                  | 116                                | 43700                 | 124                                  |
| 19  | Elsies River                    | 80428                  | 80                                 | 90000                 | 90                                   |
| 20  | Matroosfontein                  | 5300                   | 53                                 | 5300                  | 53                                   |
| 21  | Bishop Lavis                    | 30800                  | 102                                | 32000                 | 106                                  |
| 22  | Nooitgedacht                    | 3870                   | 77                                 | 4000                  | 80                                   |
| 23  | Belhar                          | 1800                   | 1                                  | 65000                 | 56                                   |
| 24  | Kuilsriver                      | 3685                   | 8                                  | 35800                 | 79                                   |
| 25  | Wynberg                         | 12900                  | 129                                | 7100                  | 73                                   |
| 26  | Parkwood                        | 5954                   | 107                                | 12000                 | 80                                   |
| 27  | Grassy Park Exts. & Lotus River | 17410                  | 36                                 | 70000                 | 84                                   |
| 28  | Grassy Park                     | 29500                  | 84                                 |                       |                                      |
| 29  | Heathfield                      | 6100                   | 30                                 |                       |                                      |
| 30  | Retreat North                   | 12493                  | 55                                 | 46800                 | 52                                   |
| 31  | Retreat South                   | 32903                  | 94                                 |                       |                                      |
| 32  | Steenberg                       | 3491                   | 27                                 |                       |                                      |
| 33  | Houtbay                         | 2492                   | 66                                 | 4200                  | 112                                  |
| 34  | Ocean View                      | 8040                   | 11                                 | 12500                 | 18                                   |
| 35  | Durbanville                     | 1200                   | 48                                 | 1600                  | 64                                   |
| 36  | Scottsville                     | 6762                   | 38                                 | 13362                 | 76                                   |
| 37  | Scottsdene                      | 3858                   | 9                                  | 40000                 | 94                                   |
| 38  | Cloeteville)                    | 13129                  | 58                                 | 20400                 | 90                                   |
| 39  | Idasvalley }                    |                        |                                    |                       |                                      |
| 40  | Eerste River                    | 7000                   | 11                                 | 57330                 | 91                                   |
| 41  | Mitchells Plain                 | -                      | -                                  | 250000                | 76                                   |
| 42  | Macassar                        | 5900                   | 3                                  | 101430                | 57                                   |
| 43  | Firgrove                        | 2485                   | 49                                 | 3300                  | 66                                   |
| 44  | Strand                          | 14500                  | 72                                 | 20300                 | 101                                  |





CAPE METROPOLITAN PLANNING COMMITTEE  
KAAPSE METROPOLITAANSE BEPLANNINGSKOMITEE  
COLOURED GROUP AREAS  
KLEURLINGGROEPSGEBIEDE

Source: Cape Metropolitan Planning Committee



RESIDENTIAL DENSITY

fig. 34

- e) reducing the need for mechanical movement in so far as local facilities will be attracted to cater for the increased demand and activity.
- f) Introduction of a wider variety and quality of housing stock breaking the existing visual monotony and mediocracy of the townships and, particularly where smaller additions occur, enhancing their sense of identity and their form.
- g) The attraction of a wider range of resident in terms of socio-economic quality contributing to the uplift of the community.

#### 7.4.0 D: Land Use

Existing regulations in planning concepts will require relaxation to permit the introduction into future developments and the existing uni-purpose residential townships of a variety of land use activities that are compatible in nature and scale with the residential environment. A degree of positive control will be necessary but should be applied on the principle that what does not materially and adversely affect the amenity of others will be permitted. The controls should be enabling and not negating as at present. What is required is a slight step back in time when "facilities for residence, work and other activities can all be found within the same small area of the city. Indeed, the same plot of land often serves multiple functions. A religious



building, for example, may also serve as a school, with markets being held on the grounds around the building. Within the confines of the same building a man may reside, produce his wares, and also store and sell them."<sup>128</sup>

- 7.4.1 The important interrelationship between land use and movement must be realised and allowed to operate freely. At all scales of development care should be taken to ensure a viable and complex mix of land uses and consider their location and distribution throughout the area with regard to movement potentials and public transportation in particular.
- 7.4.2 The proposed introduction of multi-use developments will inter alia, result in the following situation :
- a) The provision of a wide variety of job opportunities in close proximity to homes.
  - b) The significant reduction of dependence on movement and dissipation of energy resources.
  - c) A greater level of activity arising out of the interaction between linked land use activities.
  - d) The increase of the property rates base through the more even distribution of high rateable industrial and commercial activities throughout the area.

#### 7.5.0 E: Financial Structure

To date the provision of housing and the building of Coloured townships has been institutionalised and funded from public sources with the consequences of poor urban quality, poor living environment, visual monotony, isolation and sterility discussed previously. It is considered that a greater opportunity should be provided for private investment to re-enter the Coloured housing market (as in the older developments) and that public finance should be redirected towards the provision of more improved and comprehensive public facilities and services not within the scope of self help or private investment. In this way housing would relate more closely to the individuals' needs, will add variety to the urban fabric and will also provide work opportunities for a greater number of smaller scale contractors. The breaking of the prevailing sense of monotony through the introduction of variety will serve to improve the image and identity of the developments and add form to the city generally.

- 7.5.1 Public funds will then provide the necessary civic facilities (buildings and developed and well maintained public open space etc) required in the townships to promote a more full urban life style. Legislation will require amendment to permit investment of White capital within the Coloured areas in order to establish the industrial and commercial activities required to provide work opportunities and increase the vitality of the area. Some formula of increasing Coloured participation should be devised to avoid excessive and continuous "leakage"

of revenue from the Coloured areas.

#### 7.6.0 F; Planning and Administrative controls.

Regulation and control of development will require to be relaxed in order to allow the lowering of living and domestic building standards implicit in the move towards "Third World" urban standards. The basis of control will have to be to permit the relative freedom of action provided this does not unduly detract from or damage the property or amenity of others. In relation to dwellings controls will have to operate mainly in the areas of health, safety and welfare, relaxing material and construction standards which are at present unreasonably high in the urban area. It is generally considered that controls operate with a negative bias and are effective in preventing actions but are not often seen to achieve positive goals unless supported by sufficient authority.

7.6.1 Current regulations are based on avoidance of unfortunate experience in the past and do not tend to encourage positive action to the benefit of the community as a whole "it is important to note that in this process most new action was informed by inadequacies rather than by positive features - there seems to have been an intuitive belief that positive features would look after themselves. In fact, however, by not overtly protecting the positive features they have become lost."<sup>129</sup>

7.6.2 In particular land use control will have to be radically

revised in order to enable the revitalising of the Cape Flats through integration of varied land use activities and not by specialisation as at present.

7.7.0 The main concerns of the planning process considered to be necessary in order to guide the Metropolitan Area towards efficient accommodation of future urban growth and development occasioned by the anticipated population increases have been identified and detailed. In addition an attempt has been made to outline briefly the consequences likely to flow from the implementation of each proposal although since the components of the process are highly interactive and interdependent it will be appreciated that such an assessment cannot be precise.

7.7.1 Since the planner does not operate in a 'vacuum' the successful implementation of the proposals advanced is highly dependent on political accommodation and the overall economic climate of the nation and the region in particular. Rees has summed up the situation in saying "There are serious movements afoot to rebond the traditional contact between the races and looking back in history most large cities have survived radically different political systems without showing too many scars. What is vital now is to reidentify the components of the city which make it strong and healthy and a good place to live in. We must re-establish how to put these components together again, to weave into the old

cloth of Cape Town a lasting fabric which can accommodate growth, for growth is one of the few tools we have for structuring the city. Perhaps we are fortunate that we are still in a period of growth, which, if used more wisely than in the past, could free up the city again --- ----- it is not for planners alone, for they are helpless without political understanding and without the capacity of the business man to create work and productive work, to keep the economy in a state where physical growth can match  
130  
population growth."

#### 8.0.0. IMPLEMENTATION ( AN EXPLORATORY APPROACH)

Fig. 32 indicates two possible alternative suggested routings which the proposed new dominant movement channel across the Cape Flats could follow. Following upon the proposal that the Cape Flats could be revitalised by means of encouraging intense movement flows through the area along a strong road/rail movement axis a brief attempt will now be made to take an exploratory look at one or two alternative routes that the proposed axis could follow.

- 8.0.1 The basis of this investigation will be to attempt to discover a low capital cost method of introducing activity into the area in order to start the self generative revitalisation process. Where possible it will be of advantage to capitalise on existing infrastructure and development that might show tendencies of following the proposed direction always assuming that one of the main objects is to consolidate growth through halting urban sprawl and increasing residential densities as far as possible within the existing limits of the developed area. A further assumption which would seem necessary to any solution of the present Cape Flats problem is that no further active steps are taken to legally divide the Metropolitan Area on a racial basis which would lead to the aggravation of present problems and create an urban situation even more artificial than that which has contributed to the malfunction of the city to date.

8.0.2 Before any attempt can be made to concentrate existing movement through the area into a dominant movement channel, a study will have to be conducted in order to determine the motivation for movement as it exists at present. Since the aim is to promote activity within the Cape Flats, it is necessary that the route created does not merely permit traffic to flow out of the area towards one or other of the existing White dominant axes or to the CBD. The present movement pattern is strongly focussed on the White activity axes both in relation to the journey to work and the shopping trip hence the excessive dependence on transportation discussed previously.

8.0.3 Wishing to capitalise on any movement situation which might be able to be intensified and provide the basis for the movement axis desired an overview of the Cape Flats indicates movement in two main directions, east/west or north/south. In both directions the movement flows would appear to be focussed on the White activity axes predominantly due to the present inactive residential environment of the Cape Flats.

8.0.4 Examining the existing east/west major routes, Lansdowne Road and Klipfontein Road emerge as channels supporting a considerable volume of movement to and from the Cape Flats area and in addition supporting a ribbon of commercial development attracted to these heavy traffic flows. The commercial element of Lansdowne Road occurs largely in the White area nearer Claremont and apart from a node around

Lansdowne Station, activity diminishes rapidly beyond this point. Klipfontein Road east of the Cape Flats railway line, borders the commercial centre of Athlone and supports sporadic commercial activity between Athlone and Rylands, where a new shopping complex of small retail stores has recently been established. Thereafter the road is inactive with most traffic turning north into Modderdam Road or south into Duinefontein Road shortly before Klipfontein Road crosses the Nyanga railway line and enters the Black township of Guguletu.

- 8.0.5 Both routes are affected by their direct connection with the southern activity axis which draws custom to Claremont and Mowbray (and beyond to the Salt River / Woodstock complex.) The main movement flows would seem to be directed to the higher order centres and the commercial activity along the routes would be dependent on support mainly from neighbouring residents.
- 8.0.6 On first sight therefore, it would seem that the east/west routes would not perform the structuring role required of them in the interests of the Cape Flats since they are too predominantly focussed on the southern activity axis and the bulk of the commercial activity that is attracted to these routes occurs mainly in the White sector of the route.
- 8.0.7 Turning attention to the south / north routes there would appear to be two possible routings which might form the



basis for the establishment of a major movement channel around which to structure the urban development contemplated. The construction of Mitchell's Plain with its location outside the main body of Cape Flats development would promise to act as a strong generator for movement flows initially as can be expected, towards the CBD, the northern suburbs and southern suburbs in search of employment. If as proposed, additional work opportunities can be provided on the Cape Flats, this movement pattern can be curtailed to occur over a shorter distance. The movement can then be exploited by channelling it into a single movement corridor where the accessibility provided will attract urban commercial activities. It is also possible assuming that the development of Atlantis proceeds according to plan, that the location of Mitchell's Plain in the south and Atlantis in the north will serve to set up a movement pattern on this north/south axis.

8.0.8 The two possible routes therefore both begin in Mitchell's Plain and proceed thereafter :

- a) By Duinefontein Road and Modderdam Road to Bellville  
or,
- b) Via Hein Road and Vanguard Drive to Goodwood or in effect beyond to Potsdam.

Both alternatives would provide a mixture of land uses along the route and would penetrate an area of major Coloured residential townships. The presence of Mitchell's Plain at the southern terminal with major shopping facilities and a large population will serve to attract traffic to the southern sector of the route in both cases. Exploring the two alternative routings the following features emerge :

8.1.0 a) Mitchell's Plain via Duinefontein Road and Modderdam Road to Bellville

Leaving the commercial and residential area of Mitchell's Plain the route passes through an area of agricultural smallholdings until reaching Lansdowne Road in close proximity to the western end of the Philippi industrial area. Duinefontein Road closely parallels the railway line through the Coloured residential area of Manenberg and thereafter Heideveld, continuing along Modderdam Road between Bonteheuvel and the higher quality home ownership townships of Montana Vista and Charlesville. A small industrial area is encountered to the east of the road near its intersection with Borchers Quarry Road followed by the Airport boundary which constitutes a dead stretch of the road. On the western side of Modderdam Road, immediately opposite, lies the rather poor quality low density residential area of Bishop Lavis township with some higher density flat developments at Nooitgedacht and near the intersection of Modderdam Road and Halt Road.

Continuing on the west side of the road, Delarey Road gives access to the Parow industrial area and thereafter a considerable length of the road is bordered by railway installations and State property. On the east side of the road after passing the Airport, the home ownership residential township of Belhar is encountered followed by the Coloured Representative Council buildings and the University of the Western Cape. The road then enters the Bellville South area, a mixed use area with residential, commercial and a considerable element of heavier industry. Modderdam Road then crosses the railway line and intersects with Voortrekker Road in the White suburban centre of Bellville.

- 8.1.1 Throughout its length between Mitchell's Plain and Bellville the road is supported by a railway line (assuming the completion of the Mitchell's Plain sector of the proposed railway line) although the routing of the railway line is somewhat circuitous. Certain of the railway stations such as Nyanga, Heideveld and Modderdam lie in close proximity to the road whilst others such as Lavistown, Unibell, Werkgenot and Sarepta lie well off the road inside residential townships. The road and rail again coincide at Bellville. Whilst the co-ordination of road and rail would not be as positive as it is on the southern and eastern axes, the support that does exist could be encouraged to generate activity at the point where road and rail co-ordinate.

8.1.2 The variety of land uses that occur along the route alternating between residential and industrial, will facilitate availability of job opportunities in reasonable proximity to places of residence and form the foundation on which more intense activity can develop in response to the intensified movement flows anticipated. Sufficient open space occurs along the route to provide flexibility for future development either by way of commercial uses or high density residential uses. A possible disadvantage of this route is the presence of considerable stretches of State land use which render portions of the route inactive. Several major intersections occur along the route inter alia, Lansdowne Road, Klipfontein Road, Halt Road and Delarey Road where movement flows should be intensified and where peaks in activity might well occur. A possible problem which might be faced in regard to this route is the fact that it terminates at Bellville, a highly developed White residential suburb with significant commercial and industrial components. Bellville will exert a strong attraction to Coloured residents along the new activity spine whilst Whites will be unlikely to be attracted to any activities set up along the new route. The competitive attraction of Bellville might well adversely influence any development towards that end of the route.

8.2.0 b) Mitchell's Plain via Hein Road and Vanguard Drive to Goodwood. (Possibly continuing via Malmesbury National Road to Potsdam).

As with route (a), this route leaves the commercial and residential area of Mitchell's Plain passing through the area of agricultural smallholdings until Lansdowne Road is reached. At the intersection of Lansdowne Road and Hein Road, a small industrial area lies to the west bordering on Lansdowne Road and proceeding along Hein Road a light industrial area borders the road on the east for a considerable distance. To the west of the road, lies the Coloured residential township of Hanover Park followed by Newfields which in turn is followed by the Athlone industrial area and then the Indian township of Rylands before Klipfontein Road is reached. Returning to the east side of the road, the industrial area gives way to the residential areas of Surrey Estate and Greenhaven. Between Klipfontein Road and Settlers Way, to the east of the road, lies the home ownership township of Vanguard Estate followed by Welcome Estate, whilst to the west lies an open area currently an unused golf course where it is contemplated that the Coloured Development Corporation is likely to erect a major commercial centre together with a certain quantity of high density housing. Proceeding along Vanguard Drive beyond Settlers way to the east lies the residential township of Bonteheuvel and to the west the Black residential township of Langa. Crossing the railway line, Vanguard Drive then enters the high intensity employment area of Epping Industria. Thereafter before reaching Voortrekker Road, the White residential area of Thornton lies to the west with the Goodwood Showgrounds to the east.

- 8.2.1 Whilst this route is not supported by a railway line in close proximity, it would appear to lie more central to most of the established Coloured residential areas and would therefore be valuable in revitalising many of the sterile townships. A variety of land uses exist along the route as with the previous route alternating between residential and industrial uses at reasonable intervals, thereby offering the creation of additional job opportunities in the short term pending more major changes in the urban structure. Activities attracted to the route can be adequately accommodated in undeveloped portions of land and barrier strips.
- 8.2.2 Major intersections along this route occur at Lansdowne Road, Klipfontein Road, Settlers Way and Viking Drive, where movement intensity will be high and where accessibility if correctly exploited could attract considerable urban activity. Whilst running through a predominantly Coloured residential area, a significant income gradient exists due to the presence of home ownership schemes and in particular the better quality residential stock in Rylands. Unlike the first alternative, this route bypasses the White township of Thornton whose residents might well be attracted to any activities established in the absence of a very strong commercial element in Goodwood. Similarly Goodwood is unlikely to exert the attraction on this route that would be exerted by Bellville on the former route.

- 8.2.3 Returning to the influence of Atlantis, the proposed route would be the most direct to any Atlantis residents wishing to journey to the Cape Flats and should job opportunities and high quality commercial and recreation activities be established along this axis, movement flows could well be reinforced due to the polarising effect of the large residential populations in both Mitchell's Plain and Atlantis. Considering the poor commercial activity existing in Goodwood and the fact that Voortrekker Road to the west of its intersection with Vanguard Drive is inactive until Maitland is reached, it is unlikely that any strong competitive attraction will be exerted by this termination of the route.
- 8.2.4 Whilst the objective is to establish high intensity commercial activity within the Coloured area, this activity could be projected further north towards Potsdam since further development of the Potsdam industrial area and the neighbouring Montague Gardens industrial area will offer attractive work opportunities to Cape Flats residents and thereby reinforce movement flows along that sector of the route.
- 8.3.0 The proposed routes have been roughly outlined on Map Fig. 32 route A in yellow, route B in red. An indication of the land uses bordering the two routes is given and the alignment of the routes in relation to existing Coloured residential townships can be clearly established. Both routes lend themselves to easy service from neighbouring townships and route B (the

red route) if ultimately reinforced by a railway line could become a major north / south activity spine running through the Cape Flats and if desired projected further north to link up with Atlantis, thereby forming a powerful structuring element for future growth of the city in that direction once densities within the existing developed area have been sufficiently increased.

8.3.1 These proposals are intended merely as suggestions of the direction that proposals for the restructuring of the Cape Flats could take and it is accepted that in depth study will be required to establish their basic feasibility or otherwise. It is suggested that route B would be the favoured route, lying more central to the existing developed area and possessing a good alignment for future development in a northerly direction. It is further suggested that the proposed rail link with Atlantis be investigated to establish whether it might be feasible to link this line into the Cape Flats system rather than to the CBD thereby reinforcing the road route and enhancing the possible success of the restructuring programme. It would appear that a rail link could be routed from Mitchell's Plain through Nyanga via Epping Industria, Acacia Park and Montague Industrial Area, linking at Kempet and proceeding from there to Atlantis along a route already contemplated by the South African Railways administration.

8.3.2 These basic suggestions will now have to be considered by a multi-disciplinary planning team whose brief should be to explore the most cost effective manner of establishing the



necessary movement / activity spine through the Cape Flats area and it is suggested that the route proposed would represent use of existing infrastructure requiring however a redress of the balance between private transportation and public transportation having in mind at all times the goal of maximum community benefit.

#### 8.4.0 CONCLUSION

The lesson to be learned from the history of the growth of the city would appear to be the need and value of the existence of a strong, clear and dominant movement channel. In the early period the only route was dominant and attracted to it through the accessibility provided agglomerations of activities and growth. The route was the structuring element and growth the response to the interaction of movement and land use. Where planning processes seek to distort this natural interactive process of urban forces, and to dissipate the essential elements the resultant environment fails to be self sustaining and the process fails at the cost in terms of quality of life, convenience and money, to the citizens. It is essential therefore, that the artificial constraints be filtered out of the urbanisation process and that growth be structured upon the intelligent use of the opportunities provided through the interaction of movement upon land use resulting in enhanced structure and form of the city.





Kaapse  
Vlaakte

Cape  
Flats

SCALE 1:62500  
1 cm = 1 km



fig.32

SUGGESTED NEW  
ACTIVITY AXES



| GENERAL LAND USE           |          |  |
|----------------------------|----------|--|
| RESIDENTIAL:               | COLOURED |  |
| "                          | WHITE    |  |
| "                          | BLACK    |  |
| STATE AND INSTITUTIONAL    |          |  |
| INDUSTRIAL                 |          |  |
| PROPOSED COMMERCIAL CENTRE |          |  |



HISTORICAL DEVELOPMENT OF METROPOLITAN CAPE TOWN  
1800 - 1975

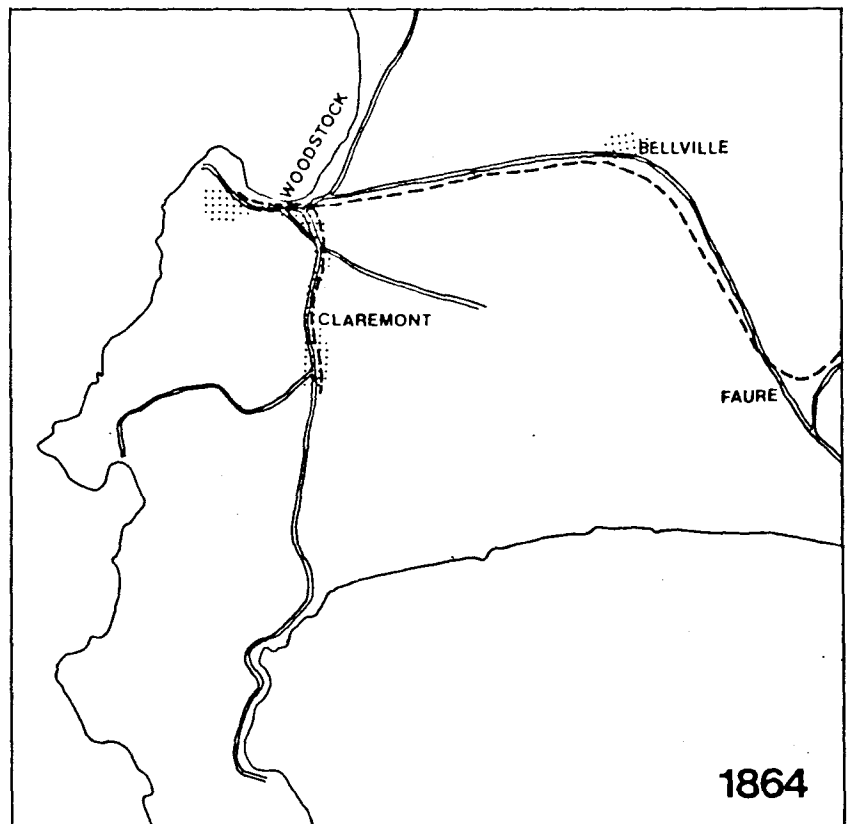
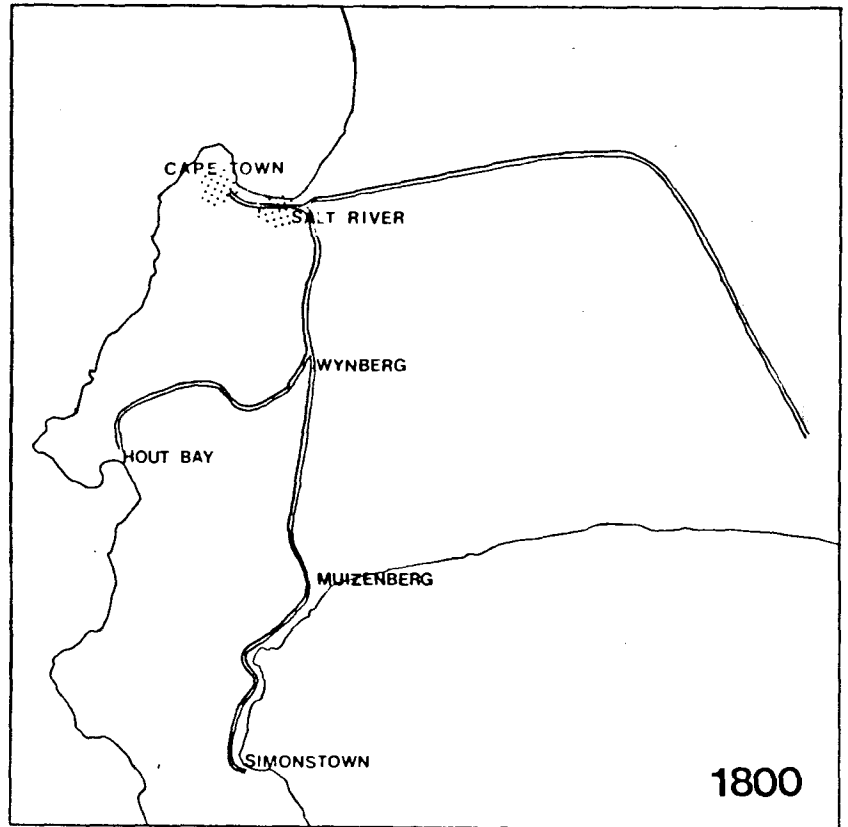


fig. 33 b

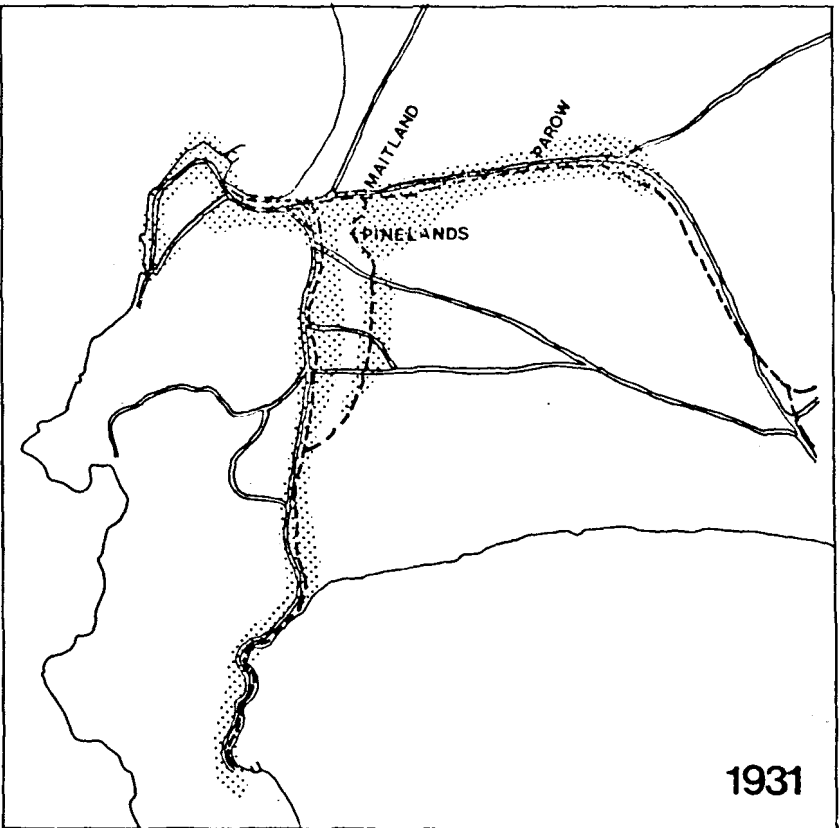
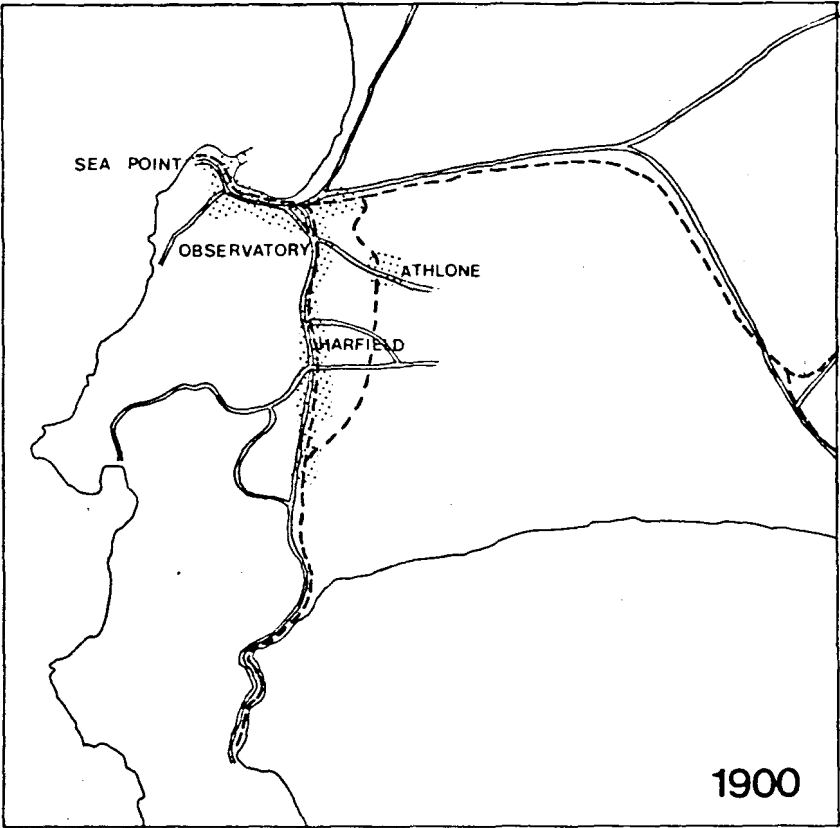
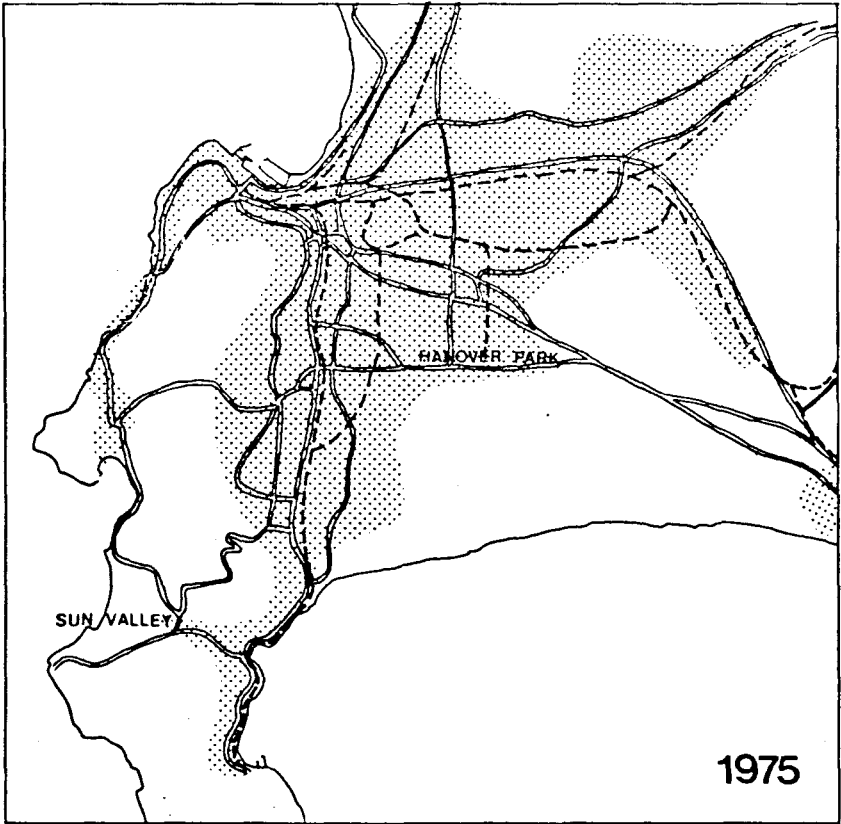
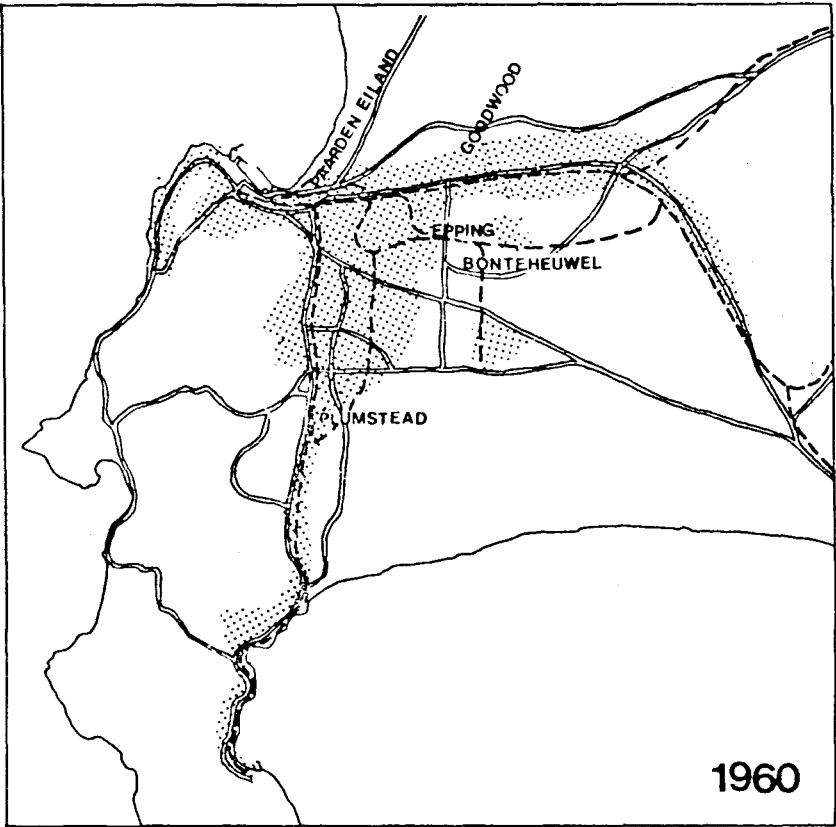


fig. 33c



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