A DEVELOPMENT PLAN FOR THE AMENITIES OF THE CAPE TOWN METROPOLITAN REGION

A Thesis for the Degree of Master of Urban and Regional Planning

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C O N T E N T S

PRELIMINARY NOTE :

The word "amenity" is here taken to refer to any object of place which as a result of the response it evokes in an individual or group adds to the cultural - or merely civilised - values of life; hence the term "amenity-value". It is also used as an abstract noun to describe this response.

This work is restricted, in the main, to a study of the natural and historical amenities of the Region, which are inextricably interlocked. Related matters such as the development of open spaces and of recreational facilities are treated only so far as they are pertinent to this study.

References to source-material are given briefly in the text or in footnotes and in the bibliography.

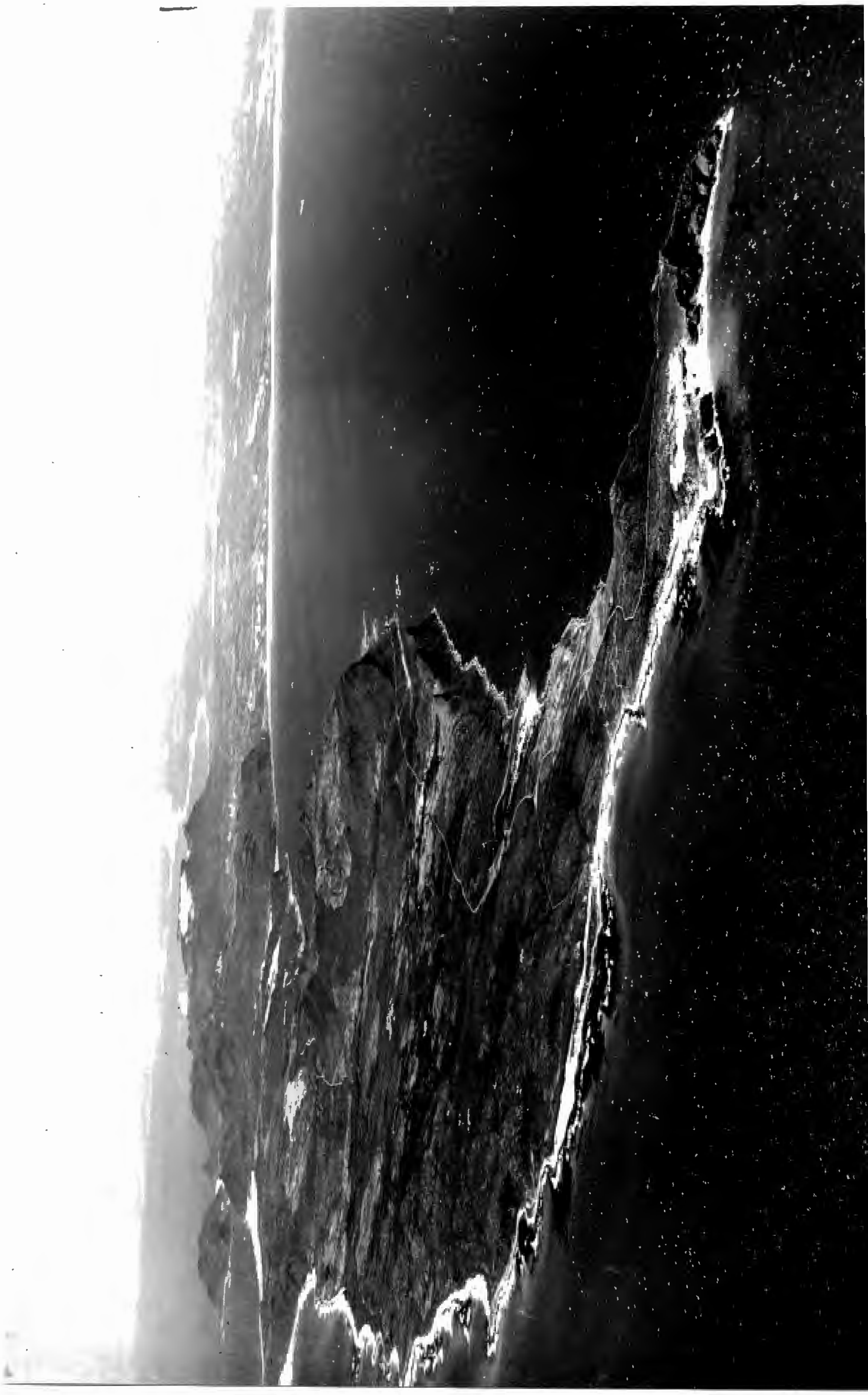
1.0 THE REGION

1.1 Introduction

Cape Town is the oldest city in South Africa and, in the opinion of many, one of the most beautifully situated in the world. Its setting within the mountain amphitheatre of Table Valley (photograph 1) is the most obvious of its natural amenities but the Region is extremely complex and also includes stony uplands and sandy flats; fertile, sheltered valleys and plateaux exposed to the full force of the marine climate; cliffs and beaches; enclosed harbours and stormy, ocean-coastline. All these are amenities of one sort or another and in fact the contrasting natures of the various amenities serve not only to emphasize one another but also to provide the complex overall character of the Region. This character is further affected by the peninsula-and-isthmus structure.

The Cape Peninsula is nearly 30 miles long and varies in width from 3 to 7 miles, tapering in the South to Cape Point (photographs 2 and 29). The greatest elevation is at Maclear's Beacon, 3563 feet above sea level. In general, the elevation decreases towards the South. Table Mountain dominates not only the city but the Region (photographs 3, 4, 5, 6 and 30) and the distant Hottentots Holland range serves as a barrier - both visual and material - between the Region and its adjoining areas on one hand and the rest of the country on the other. These influences are said to have had their effect upon the character of the people but whether this strong effect of enclosure has brought about a parochialism of outlook or whether the relative age of the social institutions has induced maturity are matters beyond the present study.

1. The Cape Peninsula from the North.



2. The Cape Peninsula from the South.

Table Mountain dominates the Region :

3. From the Docks.

4. From Rondebosch.

Table Mountain dominates the Region :

5. From Blouberg.

6. From the Northern extremity of the Region.

1.2 Geology*

Almost the entire length of the Cape Peninsula is underlaid by granite. Due to a series of "faults" the top of this layer varies in height from 1500 feet to below sea level, being highest in the North where a portion of the end of the layer is visible on the Sea Point side of Lions Head.

Above it occurs the Table Mountain Series (T.M.S.) consisting of hard sandstone. This splits into flat layers and also vertically into characteristically rectangular blocks; hence the flat top and the cliff faces of Table Mountain, with narrow kloofs as in the case of the Twelve Apostles formed by streams running in the vertical joints, and with "neks" probably formed by sea action in the distant past.

The lower levels of the Northern portion of the Peninsula are formed of the Malmesbury Series, crumpled and weathered, in many parts, to a clay soil and productive in general of an undulating surface formation. Granite weathers to a spheroidal rock surface where it occurs on steep slopes but where slopes are flatter, as in the case of Wynberg Hill, may (unique in the Peninsula) become covered by a weathered layer which has provided the valleys formed by the headwaters of the Liesbeeck and Diep Rivers. T.M.S. weathers to a thin grey sandy soil which is washed off steep slopes exposing the rock.

On the plateau of the Northern Peninsula there are old valleys with sluggish streams, while on that of the Southern Peninsula the valleys and streams are described as "mature". Younger streams have however taken over at the plateau edges particularly in the North; these are characterised by steep beds or waterfalls in their lower parts.

* Based upon: Prof. F. Walker - The Geology; and Prof.J.A. Mabbutt - The Physical Landscape.
The Cape Peninsula (Prof. J.A. Mabbutt, ed.) Cape Town Maskew Miller, 1952. Chaps. 1 & 2.

The Cape Flats consists of driven sand forming dunes and vleis. The dunes occur in a belt along the False Bay shore with long ridges in groups separated by depressions running across the Flats. There are also encroachments of sand driven by the South-East wind in parts of the Peninsula - across the nek behind Hout Bay (a height of 500 feet), in the "Fish Hoek Gap" where the sand belt (to a height exceeding 300 feet) divides the Peninsula and above Simonstown where it has reached a level of 900 feet.

Part of the Tygerberg area closely resembles the Cape Flats in many respects. It is however largely covered with rolling hills which convey an entirely different character to that of any other part of the Region and is slightly more fertile.

The coastline of the Peninsula is steeply shelving while that of the Cape Flats is generally at a very flat gradient. The Malmesbury Series extending from Sea Point to Table Bay is not very resistant to marine erosion and has been strengthened by sea-walls and harbour works. The granite coastlines between Sea Point and Llandudno and South of Simonstown consist of coves facing the waves, the latter stretch being less indented and thus less well provided with beaches than the former (due probably to a lesser degree of dissection by streams, as previously noted). The only granite cliffs are those below Chapmans Peak which fall almost vertically into the sea without beaches.

T.M.S. reaches the waterline in the Southern Peninsula where the characteristic horizontal and vertical jointing produces and maintains vertical cliffs, the best being those around Cape Point and the Cape of Good Hope. Rock platforms have been formed in the inter-tidal zone, especially between Muizenberg and Clovelly.

There are few mineral deposits of economic value in the Region apart from considerable areas of high grade silica and of lime on the Cape Flats.

1.3 Climate*

The climate of the Region, while somewhat complex in origin, is frequently described as "Mediterranean". In fact the summers are less humid than those of the Riviera and the temperatures more equable; the winters are milder, being more like those of the Southern Mediterranean coast. Summer temperatures seldom exceed 90^{o}F in the shade while winter temperatures seldom reach freezing point and then only on the mountains.

Summer conditions are tempered by the prevailing South-Easterly wind which however reaches considerable velocities and often renders exposed areas such as beaches or the Foreshore area of the city very unpleasant (photograph 7). The upper portions of the city and of Table Valley are largely sheltered from the South-Easter but this fact combined with the Northerly aspect of the valley and the densely built-up conditions, often results in high temperatures. The prevailing winter wind is North-Westerly.

Alone in South Africa the Cape Peninsula and adjacent areas are subject to winter rainfall. Annual rainfall reaches a maximum at Maclear's Beacon (mean of over 75 inches spread over 128 days), followed by Kirstenbosch (mean of over 75 inches spread over 112 days). In general heavier rainfall occurs on and around the mountains (especially Table Mountain) while the mean is considerably lower over the Cape Flats.

The divisions between summer and winter are less abrupt than in the rest of South Africa, and spring and autumn are more marked. Also the rainfall is not associated with thunderstorms as is the case particularly in the Transvaal, but rather with cool, moist winds.

Atmospheric conditions play an important part in the Region insofar as visibility varies between the extremes of great clarity and total obscurity. On winter days

* Paragraphs 1, 2 and 3 based upon : Dr. W. Schaffer - The Climate. Op.cit. Chapter 3.

7. The South-Easter - Table Bay Docks.

when rainclouds have cleared the air the detail and colour of the landscape are intensified; summer conditions are typified by a haze which when thin flattens detail and often produces a pearly blue or mauve colour on distant mountains and when thick may obscure them completely. The Cape Flats is often covered with a thick mist on winter mornings which can reduce visibility to some fifty feet and in which the intimate, small-scale scenery of bush, tree, dune and pond is mysteriously transformed. The most unfortunate atmospheric effect is probably the inversion which so often occurs over the city in winter in which smoke, particularly from railway engines in the Docks, forms a smog which fills the valley.

Cloud effects are extremely varied, the most famous being the "tablecloth" which the South-East wind frequently spreads over Table Mountain as a result of the condensation of warm, humid air which is forced up the opposing slope; unfortunately this also causes a dark cloud to collect over the areas adjacent to the mountain in the vicinity of Newlands, particularly on summer afternoons.

1.4 Vegetation and Animal Life*

At the time of the arrival of the first White settlers under Jan van Riebeeck in 1652, there were large indigenous forests in the Cape Peninsula. Van Riebeeck's diary for 29th July, 1653, for example, mentions that at Hout Bay: "The forests were the finest in the world...and contained timber as long, thick and straight as one could wish".** Sixty years later these forests had all been worked out as a result of the great demand for timber,

* Based upon: Dr. M.R. Levyns - The Flowering Plants: and Various - The Fauna of the Cape Peninsula. Op.cit. Chapters 3 and 5.
C.A. Luckhoff - Table Mountain. Cape Town, A.A. Balkema, 1951.
M. Whiting Spilhaus - Indigenous Trees of the Cape Peninsula. Cape Town, Juta & Co., 1950. pp.3 to 11.

** Van Riebeeck Society edition. Cape Town, A.A. Balkema, 1952.

chiefly for building purposes, ship repairs and fuel and today only four or five tiny and economically inaccessible remnants remain.

Efforts at re-afforestation were made by van Riebeeck to whom the Dutch East India Company sent a cask of pine cones; he also planted oaks as did Simon van der Stel. The latter have to some small extent re-established the original sylvan atmosphere but little more seems to have been done until 1884 when the Government laid out the Tokai plantations. It was at about the same time that Port Jackson Willow was planted to stabilise the sand of the Cape Flats. After 1893 pines were planted on Table Mountain and Devil's Peak with the object of arresting soil erosion caused by the cutting of the indigenous forests and by veld fires which destroyed the indigenous scrub. While this object has been attained it has been at the cost of covering much more of the mountain with pine than was originally intended due to the unexpectedly vigorous growth of the species used - cluster pine.

Attempts have frequently been made from the earliest times by the Governments of the day to halt the cutting of timber and desecration of the indigenous plant life but with such conspicuous lack of success that it is surprising that the variety of species still to be found is as large as it is.

Perhaps the most interesting and successful of the exotic imports was the vine and the reputation of Constantia as a wine-producing area was soon established (photograph 8).

Within the 182 square mile area of the Peninsula shown on the 1:25,000 map set issued by the Government Printer, 2,622 species of flora have been classified (Photographs 9 and 10). This compares with 2,047 species in the entire British Isles and 4,354 in France and Corsica combined. *

* R.S. Adamson & T.M. Salter, ed. - Flora of the Cape Peninsula. Cape Town, Juta & Co., 1950, p.IX.

8. Vineyard in the Constantia Valley, with Table Mountain and Devil's Peak.

Wild flowers of the Cape Peninsula :

9. Daisies at Kirstenbosch.

10. Disa Uniflora, a Cape orchid.

The Cape flora are unique in Africa and many species are unique in the world. The area of most luxuriant growth in the Peninsula is the sheltered East side of Table Mountain (photographs 11 and 12).

Numerous exotic species have been introduced in addition to those already mentioned and in some cases are destroying the indigenous vegetation.

Over fifty species of mammals still exist in the Peninsula, the best known being baboons, dassies and buck of various species many of which have been reintroduced together with some exotic mammals such as fallow deer and Himalayan mountain goats. Over 150 species of birds have been recorded in the Peninsula and Cape Flats, the vleis being the areas of greatest concentration. But the larger mammals whose presence is recorded in early chronicles - lion, elephant, rhinoceros, hippopotamus, buffalo and others - have for long been extinct in the Region.

A nature reserve has been established at Cape Point and bird sanctuaries at Rondevlei and Rietvlei. The botanical gardens at Kirstenbosch have established a world-wide reputation and have greatly helped both in the preservation of threatened species and also in public education.

There is a considerable variety of marine life around the coasts of the Region varying from table- and game-fish to seals, porpoises and penguins.

1.5 History

There are numerous sites in the Region where implements of the Earlier, Middle and Later Stone Ages have been discovered together, very often, with skeletons. The best known of these is Peers Cave in the ridge in the Fish Hoek Valley.

This sequence of cultures was still in existence when in 1652 the first Dutch settlers under the command of van

11 and 12. The fertile Eastern slopes of Table Mountain.

Riebeeck arrived to establish a victualling station to serve the ships of the Dutch East India Company en route to and from the East.

The settlement was established and a timber and earthern fort erected some 200 yards back from the beach on the banks of the Fresh River (which flows from Kloof Nek). Vegetable gardens 24 acres in extent* were laid out close by, on both sides of the river (photographs 13 and 14). The first road to be constructed into the hinterland was that around the Eastern slopes of the mountain and was intended for the transport of timber; shortly grain-farming was commenced in this area, more sheltered than Table Mountain, and in 1657 farms were granted along the Liesbeeck to retired Company servants - the "Free Burgers".

Simon van der Stel is held to have been one of the most enlightened of the early governors. It was he who in 1685 began the development of the vast Constantia estate and who established the hinterland towns of Stellenbosch, Fransch Hoek and Drakenstein. He also surveyed the bay later named Simons Bay in his honour; this was a much safer winter anchorage than Table Bay but was accessible by wagon at low tide only and it was not until eight ships and 200 lives had been lost in a storm in May 1737 that the Company decided to use it regularly from May to August.

The Rondebosch-Newlands area was favoured from the earliest days for residential purposes, especially in summer (photograph 15). The building of a summer residence, Rustenburg, was commenced at Rondebosch in 1657 by van Riebeeck.* This estate, at the height of its development, was to be an early example of Baroque landscape architecture as applied to the Cape - an approach to be followed later by the builders of many

* E.B.F. Lewcock - Some Eighteenth Century Cape Town Gardens. Journal of the Institute of Landscape Architects, No. 51. London, August 1960. pp. 3 to 6.

The Cape Town Gardens :

13. The continual encroachment for building purposes.
14. Government Avenue which, fortunately, still survives.

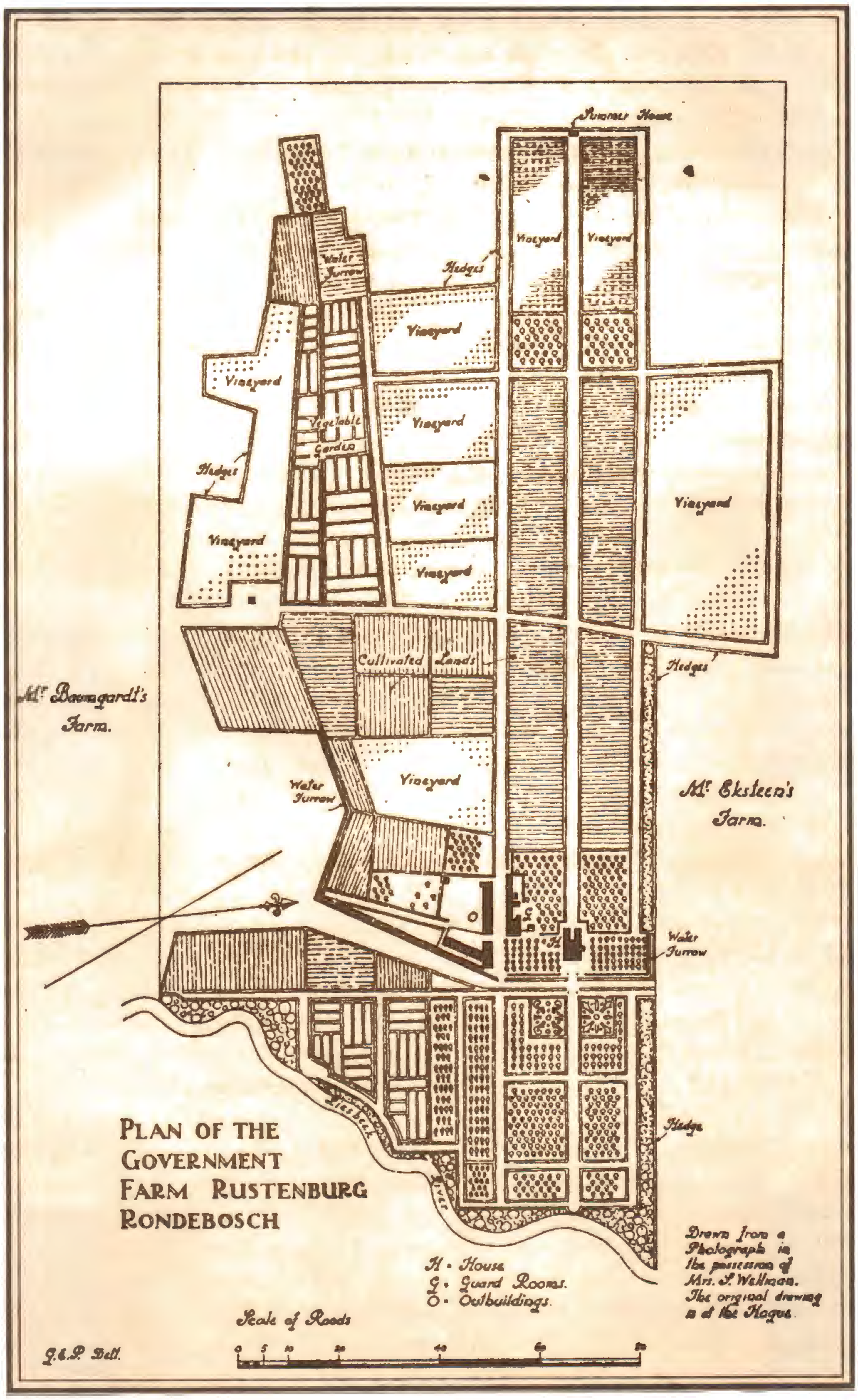
15. Rondebosch Fountain, a "village" nucleus.

of the "Cape Dutch" farmhouses. An avenue, axial with the house, extended in one direction to the Liesbeeck River and was flanked by parterres and orchards. In the opposite direction it extended up the mountain slope with cultivated lands, vineyards and orchards symmetrically on either hand and culminating in a summer house set on the main axis. This axis was visually strengthened by the planting of an avenue of trees. As Mrs. Lewcock has pointed out, the small beds of a parterre were well suited to the experimental gardening necessary at first in a new country and its hedges provided shelter from the South-East wind.* (See plan of the estate on the following page).

The Baroque attitude whereby the landscape was not only integrated with the architecture but also was subdued and made subservient to man's desires - which were shown visibly to stretch, apparently, as far as the eye could see - is also to be found in what Dr. Biermann has called "Simon van der Stel's autocratic instructions regarding the planting of trees".** The contribution of the Baroque and the Rococo to the architecture of town and country (photographs 16, 17, 18 and 19) and to the appearance of large areas of the countryside of the Western Cape, is inestimable. This influence may be seen in the Classical period that followed and in fact it has not yet disappeared; it may even now be contributing to the creation of a new and contemporary architecture in this Region. But it is important to note that, according to Dr. Biermann, it was the setting provided by the Cape that led to this architectural flowering which did not take place in the other Dutch colonies:

* E.E.F. Lewcock, op.cit.

** Dr. B.E. Biermann - Boukuns in Suid-Afrika. Cape Town. A.A. Balkema 1955. p.15.



Plan of Rustenburg Estate showing the house, the parterre and the avenue to the summer house.

(From Prof. G.E. Pearse : The Cape of Good Hope 1652-1833.

The Baroque landscape : Groot Constantia.

16. In its setting.

17. The ornate termination of the vista - the wine cellar.

Baroque architecture :

18. In the country - Tokai.

19. In the town - the Customs House, Buitenkant Street.

> Without doubt the major contributing factor is the setting. Whereas the buildings on Curacao - the showpiece of the Caribbean colonies - are seen against the background of a desolate waterless island and the Eastern buildings had to contend with an inimical vegetation and climate (which has destroyed most of them), at the Cape the architecture is wedded to a setting at once congenial and magnificent. The Palladian villa and palace were designed for countryside much like that of the Cape, and it is not surprising that buildings in that tradition perform best in these sympathetic surroundings. It is as well to bear in mind that the Cape setting is no more completely the work of nature than the mature Northern Italian Landscape, and that it is a fairly recent development ...
>
> Individual homesteads like Groot Constantia and Vergelegen may have enjoyed fully-developed surroundings from an earlier date, but the total impression of the Cape countryside as a mature European landscape had to await the intensive farming which commenced shortly before the middle of the nineteenth century. Cape Town itself was isolated by a bare, treeless expanse in which the buildings, windmills and all, looked as bleak and graceless as the landscape. The most elaborate gables and ancillary buildings cannot compensate for the absence of the oaks, vineyards and orchards which contribute a good deal of the atmosphere and condition the eye for appreciation of the building...
>
> The building in its mature setting, seen as part of a picturesque whole, and with a tangible measure of weathered antiquity... constitutes the main appeal of the architecture.*

European influence has been felt at the Cape in many ways. Apart from being governed by the Dutch East India Company from 1652 to 1795 and again from 1803 to 1806, French Huguenot settlers arrived in 1687 and 1688 and in 1781 a large French garrison was stationed in Cape Town. The British held the Cape from 1795 to 1803 and again from 1806 taking it on each occasion by force of arms - at the battles of Muizenberg and Blouberg respectively. It is very probable that the Cape benefited also from the fact that, as a seaport, it was frequently visited by skilled persons such as architects and engineers on their way to the larger establishments in Batavia or India who would not normally have come to so small a settlement as this.

* Dr. B.E. Biermann: The Sources of Designs for Historic Buildings at the Cape. The Preservation of Historic Buildings in South Africa. Cape Town, A.A. Balkema,1968. pp. 32 and 35.

Such persons were able to advise on local projects and, doubtless, frequently stayed to help.

In 1806 the town extended between Buitenkant and Buitengracht Streets and up the valley about as far as the top of the Company's Gardens.* The European population of Cape Town in 1805 was 6,273; there were 1,130 Asiatics and free blacks, 9,129 slaves and 452 Hottentots - total 16,984. There were 1,258 houses and stores in addition to the public buildings.**

Churches and inns along the road to Simonstown formed the nuclei around which villages began to grow; this nucleated growth was to remain a feature of the Region in which it is probably unique in South Africa. Naval headquarters were established at Simonstown in 1814 (photograph 28). There was little growth around the West coast until after 1850 and to the East the sand of the Cape Flats continually covered the track leading towards the mainland. The drift at the head of the Salt River estuary was bridged in 1844 and a raised road across the Flats was constructed in 1845.***

The English contributed significantly to the commercial growth of the Region but in the architectural sphere their contribution was also considerable. Apart from the traditions of their own architecture - at first Georgian and later Victorian - they introduced the concept of "Landscape Gardening". This was a more humanised and "natural" form than the Baroque; like it, it attempted to create the visual effect of an estate extending infinitely in all directions, but this was done not by imposing a rigid order upon nature but by appearing to work with nature to create a "natural" effect. Straight avenues marching

* Prof. W.J. Talbot: Town and Country, Past and Present. The Cape Peninsula. op.cit.Chapt.VII p.160
*** Op.cit. pp. 161, 163, 164.
** Prof. G.E. Pearse: The Cape of Good Hope 1652-1833. Pretoria. J.L. van Schaik Ltd. 1956. p.138

on endless axes across the countryside were discarded in favour of enormous stretches of grass stretching in most cases down to a pool of water and with trees and even the formation of the ground so modelled as to give the effect of space penetrating around them and by implication extending far beyond. The best example in the Region, though small and comparatively undeveloped, is Wynberg Park.

Growth speeded up considerably in the second half of the nineteenth century. A railway to Stellenbosch and Wellington was opened in 1863 and the local line had reached Muizenberg by 1883 thereby stimulating the growth of the village centres and of tourist travel to False Bay. The discovery of diamonds at Kimberley in 1868 (the main discovery was made in 1871) and of gold in the Transvaal in 1884 increased the importance of Table Bay as the main port of the country. The railhead reached Kimberley in 1885 and was then extended to Johannesburg. Work on a new dock basin commenced in 1860 but was not completed for ten years (in 1865, 18 out of 28 ships in the roadstead were driven ashore in a storm). A graving dock was completed in 1882 and an outer basin by the end of the century. Meanwhile in the town the eighteenth century houses were being demolished and the avenues of trees cut down to make room for commercial expansion;* the unity of the streets - indeed of the whole town - as depicted in pictures of the preceding half-century was fast disappearing.

Cape Town's role as a communications centre, while one of the main bases of its economic livelihood, reacted against the social and visual qualities of the town - in fact reduced its amenity; on one side of Adderley Street the town was cut off from the sea by the railway and on the other by the docks. Only the short stretch of Roggebaai

* Prof. W.J. Talbot. op.cit. pp. 164 to 169.

served to provide the Tavern of the Seas with any direct contact with its natural environment. By the middle of the twentieth century even this token was to disappear and the sea to be pushed yet further away, insulated not only by extensions to the docks but also by high-speed motorways virtually uncrossable on foot and by a further half mile of bleak and windswept reclaimed foreshore.

Mention has been made of the afforestation policies of the later nineteenth century. Towards the end of the century the establishment of a fruit export industry (largely as a result of the development of refrigeration) resulted in the expansion of the Constantia vineyards. The increasing demand for farm produce combined with the expansion of the town into some of the best farming land resulted in areas with poorer soils being developed for dairy farming and market gardening; it was found that with the aid of fertilisers the light sandy soil of the Cape Flats was excellent for vegetable growing.

On his death in 1902 Cecil John Rhodes bequeathed to the people of Cape Town the enormous estate he had built up on the lower slopes of Devil's Peak and Table Mountain, thereby ensuring that the majority of this area would never be built upon (photograph 20). Provision was made in his will for a site for a University and also for his house to become the residence of the Prime Ministers of the future Union.

Industries began to grow along the main lines of transport adjacent to the city. The intensification of this development during and after the Second World War, coupled with a considerable influx chiefly of Afrikaans-speaking persons from the country districts, has resulted in a very rapid growth towards the East; the little settlements of Parow and Bellville have been transformed into the most rapidly growing towns in South Africa and the conurbation of these together with the Southern and Western nuclei with the city has almost been established.

20. Rhodes Memorial and a part of the Estate.

Apart from industrial growth, three other factors have transformed much of the Region in the twenty-three years since the end of the war. These are the completion of the Foreshore already referred to which, unasked and for better or worse, has added sufficient space for a second business district in front of that existing; the programme of freeway construction which is improving communications through the Region with effects which are yet to be fully appreciated; and the Group Areas legislation which has removed Coloured and African persons from their traditional areas to new towns of doubtful merit which are fast covering the Cape Flats. The future of the Region, the development of which is at present in the hands of numerous bodies working without overall direction, gives cause for the greatest concern.

1.6 Population and Tourism

The cosmopolitan population of Cape Town is a reflection of its position as the Tavern of the Seas and certainly contributes to its character. Settlers from the Malay Peninsula arrived shortly after the Dutch and have remained to a considerable extent a distinct population group with its own religion and traditions and its own part of the city - the Malay Quarter (photograph 21). To these groups have been added, in particular, the British (photograph 22) and Coloured groups. There are also considerable numbers of Germans, French, Italians, and Bantu and some Indians besides other national and racial groups. A comparison on the basis of race (1960 census) together with forecasts for the year 2000 is as follows* -

	White	Coloured	Bantu	Asiatic	TOTAL
1960 -	350,277	476,183	86,110	9,198	821,768
2000 -	696,518	2,601,006	254,877	22,399	3,574,800

The area upon which these figures are based is the 01 Economic Region plus the "urban" populations of Paarl, Somerset West, Stellenbosch and Wellington.

* Department of Urban and Regional Planning, U.C.T. 1967.

Humble contributions which convey an aspect of the cosmopolitan character of the Region :

21. Malay - in the Malay Quarter.

22. English - at Waterloo Green.

It is perhaps at this stage that the main problem faced by this study becomes most apparent and most intractable - how to maintain and enhance the natural and historical amenities of an area subject to such considerable population increase.

The growth of tourism offers at once a further challenge and a possible financial aid. The Region has a great deal to offer to tourists and potentially a great deal more.

The growth in the number of tourists visiting South Africa is indicated in Table 1 which shows an increase greater than sixfold in the period 1946-1966. Figures covering the proportion of this number visiting the various regions of the country are not available but the increasing percentage arriving by air is particularly noteworthy (see Table 2); Jan Smuts Airport has taken over from Cape Town Docks as the point of arrival for most tourists. Added to this is the relative proximity of one of the country's main tourist attractions, the Kruger National Park, to this airport. This gives some idea of the competition encountered by the Cape Town Region in attempting to attract tourists.

The purpose of visits (Table 3) shows only slight changes over the period 1963-66, with a small rise in the percentage visiting the country for holiday purposes.

Figures regarding the numbers of Americans travelling abroad are also of interest. In 1950 these numbered 676,000 and in 1966 2,975,000. Of these the vast majority went to Europe and the Mediterranean, closely followed by the West Indies and Central America. South America, previously the next most popular destination, had by 1955 moved down to the fourth category, being supplanted by "other". (The number in the "other" category varied from 13,000 in 1950 to 225,000 in 1966, so perhaps Americans are becoming more enterprising!)

It is interesting to note that during the same period the average length of stay in Europe and the Mediterranean area (figures of other areas are not available) decreased from 64 to 37 days and average expenditure per trip from $742 to $533 excluding transatlantic passage fares. These figures would appear to indicate that the shortening of holiday periods results from the popularization of travel; it is reasonable to expect that these tendencies will be intensified by the forthcoming introduction of aeroplanes seating a thousand passengers with others of two and three times this capacity to follow.

Cape Town, with its port, is obviously well placed for tourists arriving by sea and a fair number of cruise liners call here. Most of the world-wide tourist increase will however be carried by air and because South Africa's international airport is on the Reef particular attention will have to be given to this fact in any plan for increasing the tourist potential of the Region.

1.7 The Region as a Whole

The attributes of the Region have been briefly indicated. It has appeared as one rich in natural amenities and with an interesting history; some of the events in this history and some of its legacies have added to the amenity-value of the Region while others have detracted from it, but the overall picture is of a varied but often satisfying interrelationship between man and a complex natural environment.

The Region has frequently been referred to but it has not yet been defined.

It would appear that the 01 Region as defined by the Provincial Administration (Map 1) would provide a reasonable area for purposes both of this study and of possible subsequent research for the following reasons -

1. It includes almost all the conurbation formed by Cape Town and its adjacent built-up areas.

2. Visually it occupies not only the whole Peninsula but also most of the Cape Flats and of the Tygerberg area - that is, it may easily be comprehended visually from a number of points.

3. It consists almost entirely of the Peninsula and its isthmus thus providing a convenient division from the points of view of geology, climate, vegetation and animal life.

4. It has been divided into planning units for which population statistics are available.

There is nevertheless a good case for including the populations of Paarl, Somerset West, Stellenbosch and Wellington in discussions relating to the population of the Region, as these towns, with a total White population in 1960 of 45,122 and Coloured population of 58,302 must affect the general picture. Many people, for example, commute to Cape Town each day from these towns.

However while the 01 Region will be that mainly covered by this study it is not possible to omit reference to the considerable extent of the natural and historical amenities of the adjacent areas, such as those of Stellenbosch, Paarl, the Fransch Hoek Valley, the Elgin basin and the continuation of the False Bay - Indian Ocean coastline.

1.8 Subregions (Map 1)

The Region may be divided into the following Subregions on the basis of the characteristics listed -

1. Northern Peninsula (Photographs 23 to 27) :

   The most mountainous portion of the Region with the highest elevation. T.M.S., Malmesbury shale and granite.

   Highest rainfall.

   Most fertile (particularly in respect of trees).

   Most densely populated and built-up.

   Contains most historical buildings (especially in the city).

   Mainly zoned for White Group Areas.

The varied character of the amenities of the Northern Peninsula Subregion :

23. Silvermine waterfall.

24. Tokai forest.

25. Kalk Bay harbour. (Part of the Southern Peninsula Subregion including Simonstown, in the background).

The varied character of the amenities of the Northern Peninsula Subregion :

26. Muizenberg beach; the Cape Flats beyond.

27. Clifton beach.

(Note that this Subregion also features in all the preceding photographs).

2. Southern Peninsula (Photographs 28 and 29):

Second most mountainous portion of the region. Chiefly T.M.S. with some granite.

Very exposed to maritime climate.

Not very fertile (virtually no trees).

Not very densely populated.

Mainly zoned for White Group Areas.

3. Cape Flats (Photographs 30 and 31):

Generally flat, sandy area with vleis and dunes.

Exposed to S.E. wind.

Not naturally fertile but responds well to artificial fertilisers. Good for vegetables.

Mostly covered with Port Jackson Willow and Gums.

Sparsely populated except where Coloured and Bantu townships have been built.

Zoned for Coloured, Bantu and Asiatic Group Areas.

4. Tygerberg - Milnerton (Photographs 32 and 33):

Previously in this study the Tygerberg-Milnerton area has largely been treated with the Cape Flats. If, as is now suggested, it be enlarged for purposes of this study to include the Goodwood-Bellville areas and the expanding Northern areas, its claim for separate consideration is evident. Some further grounds for this decision are provided by the hilly nature of much of the area, very much more pronounced than that of the Cape Flats with its dunes. But perhaps the most cogent reason is the apparent intention of the Government to occupy most of the Cape Flats with "separate development" for the Coloured, Bantu and Indian sections of the population.

1.9 Classification of Amenities (as existing).

In the following list of the amenities of the four Subregions the classification used is that suggested in the report: "Outdoor Recreation for America"*. It should be pointed out that some amenities as existing do not have the "wide variety of specific uses" or even "other uses" to which reference is made in certain of the headings but the

* Outdoor Recreation Resources Review Commission : Outdoor Recreation for America. Washington, O.R.R.R.C., 1962.

The maritime associations of the Southern Peninsula Subregion :

28. Simonstown - the naval dockyard and the yachting harbour.

29. Cape Point.

Some landscape elements of the Cape Flats Subregion :

30. Table Mountain from Sheik Josef's Kramat.

31. Industry and roads.

(For the beachfront of this Subregion see Photograph 26).

The pastoral quality and view-sites of the Tygerberg-Milnerton Subregion :

32. Towards Stellenbosch from Durbanville Avenue.

33. Towards Table Mountain, the City and Milnerton.

general descriptions are nevertheless applicable. Classes I to IV are shown on Map 2 and Class VI on Map 3.

Class I : High Density Recreation Areas

"Intensive development for mass use;
locations accessible from urban areas;
heavy investment in road access, parking areas, beaches, marinas, swimming baths, artificial lakes, playing fields, sanitary and eating facilities;
intensive use intended to avoid overcrowding of Class II and III areas."

Northern Peninsula:
- Green Point Common
- Sea Point embankment and lido
- Muizenberg promenade and beachfront
- Newlands rugby and cricket grounds
- Hartleyvale football grounds
- Newlands swimming bath
- Kenilworth Racecourse

Southern Peninsula:
- NIL

Cape Flats:
- Goodwood Show Grounds

Tygerberg - Milnerton:
- Ascot Racecourse
- Durbanville Racecourse
- Killarney Race Track

Class II : General Outdoor Recreation Areas.

"Substantial development for a wide variety of specific uses;
capacity as a result of development for large and varied amount of activity such as camping, picnicking, fishing, watersports, nature walks and outdoor games;
includes parts of public and commercial camping sites, picnic grounds, trailer parks, ski areas, resorts, streams, lakes, coastal areas, hunting preserves."

Northern Peninsula:

Beaches at Clifton, Camps Bay, Hout Bay, Muizenberg (extension), St. James, Kalk Bay
Golf courses, Sports Clubs etc.
School playing fields
Local Parks

Southern Peninsula:

Beaches at Fish Hoek, Glencairn, Seaforth, Millers Point, Buffels Bay, Kommetjie
Golf courses, Sports Clubs etc.
School playing fields
Local Parks

Cape Flats:

Beaches at Strandfontein
Golf courses, Sports Clubs, etc.
School playing fields
Local Parks

Tygerberg-Milnerton:

Beaches at Blouberg, Melkbos and Milnerton
Golf courses, Sports Clubs etc.
School playing fields
Local Parks

Class III : Natural Environment Areas

"Various types of areas suitable for recreation in a natural environment, usually in combination with other uses;
planning and development emphasizes the natural environment rather than the provision of man-made facilities and is usually restricted to access roads, footpaths and basic improvements necessary for camping etc."

Northern Peninsula:

Beaches at Llandudno and Oudekraal
Glen area of Camps Bay
Lower levels of mountainside including parts of Rhodes Estate not given over to other uses
Lower forestry area of Tokai

Southern Peninsula:

Beaches at Boulders, Smitswinkel Bay, Witsands, Scarborough, Olifantsbos, Platboom, Bordjesdrif

Cape Flats:

Beaches not previously classified

Sandvlei, Zeekoe Vlei, Princess Vlei, Little Princess Vlei

Tygerberg-Milnerton:

Upper levels of Tygerberg Hills

Class IV : Unique Natural Areas

"Areas of outstanding scenic splendour or scientific importance;

management object the preservation of resources in their natural condition" (sic);

"access for public enjoyment and education provided only where consistent with primary objective".

Northern Peninsula:

Upper levels of all mountainous areas

Kirstenbosch

Southern Peninsula:

Cape of Good Hope Nature Reserve excluding portions previously classified

Cape Flats:

Rondevlei

Tygerberg-Milnerton:

Rietvlei

Class V : Primitive Areas

"Undisturbed roadless areas;

natural, "wild" conditions including "Wilderness areas";

policy the preservation of the primitive condition and isolation;

avoidance of all development".

NIL

There is no area in this Region which is without roads even if in some cases these are only for access for purposes of fire-fighting nor is there any area in which complete "wilderness" conditions exist - where one can feel completely surrounded by primitive conditions, without any sign of civilisation. As against this, the considerable extent of the areas in the Peninsula Subregions classified under IV above is particularly noteworthy.

Class VI : Historical and Cultural Sites

"Sites of major historic or cultural significance
whether local, regional or natural;
closely associated with vacation travel;
management object restoration, protection and
maintenance and interpretation to the public".

The following list is by no means exhaustive:

Northern Peninsula:

- The Gardens
- The Castle
- Grand Parade
- Malay Quarter
- Numerous buildings in city and suburbs (subject to separate inventory) on basis of historical or architectural merit and representative of all periods
- Greenmarket, Church and Riebeeck Squares and Stal Plein
- Rondebosch Common
- Wynberg Park
- Arderne Public Gardens, Claremont
- Newlands and Wynberg Villages
- Forts at Hout Bay and on Devil's Peak
- Site of British landing at Muizenberg

Southern Peninsula:

- Simonstown town centre
- Buildings subject to separate inventory

Cape Flats:

- Sheik Josef's Kramat
- Buildings subject to separate inventory

Tygerberg-Milnerton:

- Site of British landing at Blouberg
- Buildings subject to separate inventory

1.10 An Urban Growth Model

The purposes of this work require some indication of urban growth to the year 2000. The study by Andrew Louw : "Studies towards a Plan for the Metropolitan Region of Cape Town" (1967)* provides information on the likely space requirements if present trends continue and are shown on Map 4. This study is based on certain premises of persons per dwelling and of densities by racial group and also of the distribution of racial groups in the Region. With the proviso that segregation of the racial groups "is still developing and it is not yet possible to forecast how growth of population will be accommodated" the following areas are indicated:

"The White Group: On the 'outside' of the area contained by the Cape Flats Railway Line and the branch line to Somerset West from Bellville.

"The Coloured Group: On the 'inside' of the area contained by the Cape Flats Railway Line and the branch line to Somerset West from Bellville.

"The Bantu Group: East and South of 'Nyanga'.

"The Asiatic Group : Around 'Rylands' to the east of Crawford and South of Parow in a ¼ sq. mile enclave".

The White Group Area corresponds generally to the Northern Peninsula, Southern Peninsula and Tygerberg-Milnerton Subregions and the Coloured/Bantu/Asiatic Group Areas to the Cape Flats Subregion plus an area to the East up to the Somerset West to Bellville branch line. The findings of the growth model indicate that the Coloured Group Area will be insufficient to take the growth of this section of the population by the year 2000 and that a further 5,659 acres will have to be found; it is suggested that areas to the North and East of the Tygerberg-Milnerton area be set aside for this purpose. (At the average density of 36.98 persons per acre gross, these would provide for some 209,270 persons).

* U.C.T. Dept. of Urban and Regional Planning.

The historical pattern of growth of Cape Town and its suburbs, mention of which was made in section 1.5 above, is one of nucleation, with the establishment of villages along transport routes. On account of the mountainous nature of the Region combined with these pre-existing lines of communication, expansion of the nuclei has resulted in a number of linear developments centering upon the central business district. This pattern of linear development permits easy access from the built-up areas to open space - an attribute still enjoyed by most parts of Cape Town today - as well as efficient public transport.

These considerations will be returned to once again in section 4 when the future development of the Region is considered as a whole.

2.0 STANDARDS FOR DEVELOPMENT

2.1 Conservation and Preservation

As these matters formed the subject of a paper prepared by the writer during the first half of this year,* it is not proposed to deal with them in detail here. They are in fact central to the present study and have considerable bearing upon the recommendations which will follow.

Conservation is defined as "the enlightened planning and management of a resource, either natural or artificial", while preservation refers to "the maintenance of an object or objects, natural or artificial, or of an area, in a virtually unaltered state".**

The point is made by Kevin Lynch that: "The physical setting could be managed to express and allow human diversity, and to bring those differences within sight of each other";*** the individual should feel a sense of identity with his surroundings. This sense of identity is strongly marked in many of those who have been brought up or who have lived for some length of time in the Cape Town Region. It is something more than mere pleasure in the numerous opportunities for physical recreation offered by the Region. It is not only the parochialism so frequently diagnosed by visitors from other areas, although this exists too; it cannot in fact be better described than as a veritable sense of identity and as in similar cases elsewhere - as in the farmer's attachment to his land - probably arises in part from the degree of contact with nature afforded by the Region, both by virtue of its natural amenities and by the open, linear shape of the developed areas which, as previously mentioned, afford rapid and easy access to the countryside.

* An Approach to Conservation and Preservation in relation to Urban and Regional Planning.

** Op.cit. pp. 1 and 2.

*** Kevin Lynch: The City as Environment. Cities. Harmondsworth, Penguin Books Ltd., 1967. pp. 204 & 205.

In part it is also probably based upon the historical associations of the Region which are very much more extensive than in any comparable area elsewhere in South Africa. These associations are rendered palpable in the old buildings of town and countryside and are of course particularly strong when one is enclosed by the setting of a building or buildings, as at Groot Constantia or in the Malay Quarter. Their existence has recently come to public attention as a result of the removal of Coloureds from their homes under the Group Areas Act.

The terms used in the classification of conservation areas are at present somewhat loosely applied and vague in meaning, for which reason that suggested by the ORRRC in respect of recreation areas has previously been suggested; this in fact covers all types of conservation area. What it does not indicate however is the extent of influence of each area - i.e. whether it is of international, national, regional or purely local interest. To some extent this hierarchy may be taken as parallel to the classification system as the historical areas (Class VI), the primitive areas (Class V) and unique natural areas (Class IV) are those most likely to be of international, or at least national interest as they are the most likely to contain features not encountered elsewhere in the world. Because of this quality they will attract visitors from other countries and from other parts of their own country almost regardless of their location. In this study it is not considered necessary to attempt to classify each amenity on this basis however, as many will clearly fall into more than one category. Kirstenbosch in fact may be said to fall into all categories, being an attraction not only internationally (especially to botanists) but also locally, to persons resident within walking distance. Such influences - either existing or potential - will however be referred to later as the occasion arises.

Considerable steps in the conservation of the environment of the Region and in the preservation of its historical character have been taken, as in the declaration of Table Mountain as an Historical Monument; the creation and gift by Rhodes of his estate; the establishment of the Cape of Good Hope Nature Reserve; the preservation of the Castle, the Malay Quarter and many town and country houses including the Groot Constantia house and estate.

As Dr. Biermann has said in the quotation previously cited, the landscape of today is very different from that of, for example, the Eighteenth Century. If the white walls of Groot Constantia in their setting of trees and vineyards and the grand oak avenue entrance (photographs 17 and 18) appeal to us we should accept them as they exist, not as redolent of the Cape of the Eighteenth Century which they represent only partially. This is a clear example of conservation rather than of preservation.

The conservation of the indigenous flora of the Region, often disregarded in the past, has now become a fetish with many persons and organisations. While this changed state of affairs is very admirable it should not be taken to the extent of excluding exotic varieties; the oaks, after all, are not native to the Cape but nevertheless afford much of its present character.

2.2 Standards of Access and Use

Class I : High Density Recreation Areas
These are by definition the most accessible and most heavily used recreation areas but those most distantly removed from the essential object of this study. They do however play an integral part in any plan for the development of natural amenities in the way mentioned in the original definitions - intensive use of their facilities is intended to avoid overcrowding of other areas, especially those of Classes II and III.

Class II : General Outdoor Recreation Areas

The accessibility and degree of development necessary for this class of area is, in most cases, self-evident. Once again the aim should be to avoid overcrowding areas of the following classes and without doubt the required development should be attained in actual fact.

The beaches of this class are more sophisticated and/or more often crowded than those listed in Class III. Yet - a chronic fault in the Cape - changeroom facilities are in most cases entirely inadequate and there are few with restaurants or other services and attractions.

Golf courses and sports clubs are on the whole better provided for and in most cases are used intensively.

School playing fields are not used during school holidays and weekend use is generally restricted to Saturday mornings. Here there is the obvious possibility of their being made available to adults with very little addition to the facilities existing, the limiting factor being the degree of wear-and-tear that the surfaces of the fields and courts can stand.

Some municipalities have provided recreation areas with swimming baths, tennis courts, bowling greens etc. which are well used. Space for further facilities of this nature should be reserved now as the expanding population will probably be more concentrated than is the case at present and it will consequently become more difficult to acquire land in the future.

Local parks are dealt with under Class II in section 4.3 later.

Class III : Natural Environment Areas

It is perhaps in areas of this class that the particular character of urban South Africa becomes obvious. This is the area of the braaivleis, the area where Sundays and public holidays may be spent playing games, eating and drinking, the area of the caravan park (which is usually much smaller and less developed than in Europe, Britain or America). Intensive development is not required - in fact this would spoil them, and their particular attractions can only be preserved by the intensive development of Class I and II areas and by a conscious limitation of their facilities.

This may be achieved for example by providing a limited number of fireplaces and forbidding the making of fires elsewhere. These areas should not be immediately obvious from main roads and their approaches should be indirect. Toilet facilities should be provided together with containers for rubbish and the areas should be supervised and cleaned.

Because of the extent of some of the areas of this class supervision is however difficult. Those parts set aside for camping or where the making of fires is permitted should be closely supervised as should any features that might be damaged by the public (such as wild flowers) and the extent of such parts should therefore be restricted; this will have the added advantage, in large areas, of leaving as much space as possible in a natural (or apparently natural) condition. A good example is the portion of Rhodes Estate adjacent to the Memorial where the concentration of facilities has succeeded in limiting the area used for picnicking. Thus even on the busiest days there are extensive areas of mountainside easily accessible to those prepared to walk a few hundred yards further; these areas are so little frequented as to provide adequate shelter for large herds of deer (photograph 34).

Similarly Sandvlei has been developed by the removal of much of the thick growth of reeds with which it was formerly choked, by a certain amount of dredging and by laying out grass and windbreaks of bushes around the edge of

34. Deer grazing above the picnic area of Rhodes Memorial.

the water thereby providing for the use of the amenity for both boating and picnicking.

Class IV : Unique Natural Areas

Is is the unique natural areas of the Region that are its greatest amenities and provide most of its character. Their extent in relation to the size of the Region is considerable; at the same time the most important - the upper mountainous areas - are the most inaccessible, which largely accounts for the amenity-value they have been able to retain.

The cliff-faces of Table Mountain, its most notable feature, are of course accessible only to mountaineers and it is certainly not suggested that any change be made to this state of affairs, even if it were physically possible. The mountain plateau is already directly accessible from above the city by means of the cableway which is capable of transporting 1,800 or more persons per day.* There are roads giving access for fire-fighting purposes to the top of the mountain but, as the nearest approach to a "Primitive Area" (Class V) in the Region it should not be made more accessible than at present - this is, by mountain paths and climbs, apart from the cableway. Furthermore, while the exposed rock of the plateau would of course stand any amount of wear, the thin soils of the adjacent kloofs would not; nor would the already decimated flora outlast the deprecations of large numbers of visitors.

The same general approach is applicable to the rest of the mountainous area of the Region - that is, to the upper levels of the spine of the Peninsula - except that slightly higher standards of accessibility may be permitted to some restricted sections such as is already the case

* Information from Table Mountain Aerial Cableway Co. Ltd. July, 1968.

with the Silvermine area behind Kalk Bay and Muizenberg, where a road has been constructed across the plateau with a branch to the reservoir (photograph 35). Picnicking facilities have been provided around the reservoir and these could possibly be extended, but only under rigid control.

In the Cape of Good Hope Nature Reserve the "pockets" of Class III have already been described. For the rest of the Reserve however standards of accessibility and use can hardly be improved without affecting the animal life (with the possible exception of the Cape Point area itself where the actual Point is not easily seen). The accessibility of the bird sanctuaries of Rondevlei and Rietvlei can similarly not be increased.

Kirstenbosch covers a large area of mountainside only a portion of which has been developed as a garden. The garden should be as easily accessible as possible for as many people as possible and will not suffer as hardened pathways are provided. Some further and rather less accessible development might however be contemplated, retaining some feeling of the solitude of the mountain; and in conjunction with this, consideration should be given to the development of a lower portion of the grounds as a picnic area of Class III.

The general problem in areas of this class is that of providing for the public while at the same time maintaining their high amenity value. The latter object can only be achieved by limiting public access; and this in turn is best achieved not by prohibition but by making access difficult - either physically or by imposing user charges. Anyone not prepared to make the effort or pay the price will, with justice, be denied the response that only these areas can evoke. Such persons will be catered for by the amenities of Classes I to III. It is important to plan for all the community - including those for whom contact with nature is of importance, a contact impossible under crowded conditions.

35. Silvermine reservoir and forestry reserve.

Class VI : Historical and Cultural Sites

The symbiosis between landscape and history in the Region has already been noted in section 1.5 above. The number of historical buildings and sites, though tremendously reduced, is still sufficient to lend considerable amenity to the region. It is obvious that the greatest possible efforts should be made to preserve those that still exist; but many more could be made publicly accessible if used by public bodies for meetings or as the headquarters of associations. The standard here is maximum accessibility, short of causing damage; supervision is thus indicated especially in buildings furnished with valuable furniture or works of art. Some buildings could be used once again for their former purposes, as has happened to the wine cellar at Groot Constantia.

Areas such as the Malay Quarter and Wynberg Village are preserved by continued use for living and retain (or have reacquired) considerable interest for the visitor from this fact.

Open spaces such as Rondebosch Common and Wynberg Park require certain restrictions on activities likely to cause damage and also horticultural attention in order to preserve their character; thus Rondebosch Common is at present suffering invasion by Kikuyu grass which is destroying the indigenous vegetation.

It is particularly important that not merely single buildings but groups should be preserved as the setting is of immense importance in creating the atmosphere of the period and the effect of the original building. And if the result is not to be the rather stale atmosphere of the museum, the buildings must be used. As Kevin Lynch has said* :

> We need not be bound by the structure of the past. Shifts in use should be encouraged, surfaces should be scarred by past traces and premonitory signs... these centres are the stable focal points of stimulus and change; I would make them visibly so.

* Kevin Lynch, op.cit. p. 207.

High standards of accessibility are also required because to those who have grown up in the Region, these old buildings can be landmarks, points of identification between the individual and his surroundings which help him to feel at one with his surroundings - and thus not only more secure but also more jealous of the reputation and condition of the environment in which he lives.

2.3 Landscape Design *

While it is obviously impossible to give even a resumé of this form of applied art, there are nevertheless certain aspects relevant to this study which should be mentioned.

Development should take place within the contours of hills and mountains which will then form the background to such development. Only "noble" buildings should appear on hilltops. Similarly such objects as electrical pylons, cooling towers, radio and telephone masts, roads, railways and bridges, paths and fences, telegraph poles and mineral workings are intrusions in a predominantly "natural" landscape although if well placed may improve it by force of contrast. Thus flat and almost featureless land such as the Cape Flats is improved by tall buildings and cooling towers, and roads and bridges, by introducing the contrast of their smooth, mechanical shapes may make a "wilderness" area appear even wilder.

Absorption of buildings into a landscape will depend upon the relative scale of the two elements - that is, whether the scale of the landscape is sufficient to hold the buildings within it or whether they will dominate it.

*Based largely upon : Sylvia Crowe : Tomorrow's Landscape. London, The Architectural Press, 1963.

Brenda Colvin : Land and Landscape. London, John Murray. 1948.

G.A. Jellicoe: Studies in Landscape Design. London, Oxford University Press. 1960. and discussions with Dr. Karl Schutte, Dept. of Botany, U.C.T.

Trees perform many useful functions. One of their most obvious uses in this Region is as windbreaks; also their large rooting systems hold water and improve the soil. In common with other vegetation, they prevent erosion by "slowing-up" the rain and making it more usable. They develop a new micro-climate which, by providing shade and shelter and modifying arid heat, is attractive both to human beings and to animals; in fact they provide the natural environment for many forms of animal life, including most birds.

Even a few trees - sometimes only one - will provide the shade needed for picnicking. Perhaps the most attractive surroundings however are created by mixed planting - including interplanting in a stand consisting chiefly of one type of tree. The addition of creepers and flowers can create a dell-like effect.

Large plantations of a single type tend to blanket the landscape and to reduce the significance of surface modelling, while conifers introduce a very strong, dark note not always in sympathy with other types of afforestation (especially the soft colours of most of the trees of this Region) and the silver-grey of rocks (such as T.M.S. or granite). Small plantings may on the other hand enhance the configuration and colours of the landscape, particularly in a mixed and complex Region such as this. Probably if conifers are planted in this Region it should be in conjunction with hardwoods - a mixture said to have the practical advantages of conserving fertility, checking the spread of fire and improving the bird-life. Certainly the edges of afforested areas should not be outlined in a hard line and skylines should not be planted if they form part of the main mountain formation or if they provide view sites - although trees either singly or in groups on rising ground usually look very impressive.

Afforested and agricultural areas can perform a useful additional function as "lungs" where townspeople can walk and picnic. Agricultural use might have to be modified - say by the substitution of grazing or market gardening - but such dis-economies might be balanced by the provision of adjacent recreational facilities based on user charges quite apart from fulfilling a need. The contact afforded by this duplication of use between town and country dwellers is also of importance. It is not unreasonable to expect additional upkeep costs to be shared by the various users.

Small woodlands can produce an effect (and a sense of isolation) out of proportion to their size. Thus the small wood alongside part of Rondebosch Common introduces a welcome contrast in colour and verticality in what would otherwise be an open and rather featureless area.

Reservoirs, such as those on Table Mountain and at Silvermine can be an interesting element in the landscape and provide numerous possibilities for development along the water's edge. The wall can in itself afford a dramatic contrast with the surrounding countryside. Where main water supply is involved, as is the case with the Table Mountain reservoirs, access must of course be restricted but even so it should be possible to provide views of the large sheets of water.

Those rivers that exist in the area are almost totally neglected as landscape elements. Only in the park alongside the Liesbeeck at Newlands previously mentioned and in the layout of the banks of the Black adjacent to the Black River Parkway have attempts been made to integrate the river to the landscape and to realise some of the considerable amenity-value possible. Where flooding involves the need for canalisation consideration should be given to the use of materials other than concrete which does not weather appreciably but becomes shabby. Wooden piles with hardcore behind them are a traditional method in some countries. Possibly exposed-aggregate concrete could be used and would certainly give more colourful results than the smooth cement finish of normal concrete.

The occurrence of flooding leads to the consideration of the possible construction of dams along the river course to conserve water supplies instead of allowing them to run to waste into the sea. Not only could the dams be scenically pleasant but also much canalisation might be avoided.

Roads should not, in most settings, be imposed upon the countryside but rather related to it by integrating the roadside verges with the surrounding countryside. This may be achieved by including in the verges such small areas of land as may present themselves - any land that cannot usefully be farmed, marshy areas, embankments and cuttings for example. Stopping places for cars at the roadside must of course be integrated into the design. Every possible means of introducing interest should be employed - in planting, in contouring the road, in varying the width of the verge. Union Avenue affords an excellent example of all these points.

In the flat country of the Cape Flats it would seem that roads should run straight; the intimate scale of the Peninsula gives place here to a relatively featureless landscape and the road can itself become a feature, possibly by means of planting as in the poplar avenues of France.

Derelict land can be reclaimed, as is shown by areas in Britain where open-cast coal mining has taken place. Such land can be converted to almost any use appropriate to the district, from parks or playing fields to farmland.

Industry requires integration into the landscape; large factories in rural areas may be so integrated by playing fields provided for the staff - a very necessary adjunct even if only on a modest scale, for lunch-hour use - and by banks of trees which will also serve as windbreaks, which are certainly a practical as well as an aesthetic need on the Cape Flats. The siting of large buildings, or of industrial townships, in relation to the contours of the landscape requires as much consideration as does the introduction of the intrusive objects already discussed.

The problem of integrating large industrial buildings with mountainous or hilly scenery or with the small scale of farmlands does not exist in the town where the scale is not the individual but the crowd. The urban industrial landscape is on a par with larger masses of trees, with sheets of water and with land-form. Trees may be used to form belts which unify distinct areas or to demarcate wedges of countryside intruding into the town. Water can provide a sense of tranquillity in contrast to the business of industry. And the surplus filling from industrial works may be used to mould the form of the land on a scale commensurate with that of industrial buildings and providing considerable interest, particularly as industrial sites are normally flat and rather featureless.

The seacoast is only too often subjected to considerable abuse. It is necessary to decide which stretches of coastline are to be conserved and to keep buildings away from these. Beaches and cliffs are easily dominated by buildings and carparks and roads can so easily transform their character that these elements must be kept back from the coastline if it is not to deteriorate into suburbia. Trees can provide effective screening. And any necessary buildings such as changerooms and lavatory blocks must be small, set as far back as possible and as unobtrusive as possible in design. Even so it may in some cases become necessary to make a decision as to whether the natural character is to be allowed to disappear or access is to be limited. The exception of course will probe the rule and in certain circumstances well-designed buildings may even add to the amenity-value of a stretch of coastline.

A continuous system of pathways, for walking or riding can provide an intimate degree of contact with the countryside. Paths can traverse mountain slope and plateau, farmland and forest, clifftop and riverside. They should be sited so as to provide the best views and the most interest and contrast in land formation and vegetation. There are innumerable footpaths all over the mountain spine of the Peninsula; these require integrating, in an unobtrusive manner, so as to provide a few main routes (which may be surfaced where necessary with stabilised earth or with hardcore) with numerous minor ways. Paths should be identified by means of an integrated system of signposts of uniform design.

The linking of open spaces containing these pathways will be discussed under Class II in section 4.3 later.

One further element of landscape and the most important of all probably rendering the approach to the landscape design of this Region unique, is Table Mountain, which dominates the entire Region (photographs 3,4,5,6 and 30). Against it even the greatest artificial constructions appear puny - if viewed from a distance. Only from within the built-up area can the foreground of construction dwarf or even hide the mountain background. Consideration of these two aspects of the relationship of the mountain to the city may well hold the key to the successful design of the landscape of the Region.

3.0 THE ECONOMICS OF AMENITIES

3.1 The Need for Amenities

Values, apart from market values, are notoriously difficult to quantify and the values to society of open spaces and of natural and historical amenities are possibly the most complex of all.

To start at the bottom by asking : why have amenities? why conserve mountain areas? why preserve ancient buildings? leads at once into a quasi-scientific morass in which certain definable social values wallow in a mire of romantic half-truths. The values that emerge may be described in the form of human needs, as follows -

1. The need for outdoor recreation (in the widest sense, re-creation).
2. The need to conserve flora and fauna for enjoyment and for scientific study.
3. The need, both aesthetic and physical, for contrast with and change from built-up areas and for contrasts within such areas - e.g. between modern and historical buildings.
4. The need for fixed points to provide a sense of identity with one's surroundings.

These needs are felt in different degrees by different individuals (by some, not at all); the value of an amenity will therefore vary between individuals. The social value of an amenity is measured by the extent to which it satisfies the sum total of individual needs, and therefore by the intensity of its use.

The number of historical buildings to be preserved and the number and extent of natural amenities to be conserved or developed is a function partly of availability of those amenities (i.e. of supply) and partly of population size and requirements (i.e. demand). The point is that once an area has been built up it is virtually impossible to re-establish any such amenities that may have existed there previously. Certainly an historical building, once demolished, can never be replaced. While certain standards have been laid down by various authorities regarding the amount of recreation space required in relation to population size, no such standards can reasonably be applied to natural amenities which for many people will only provide a view or which will be used primarily for walking or riding - such amenities could well be very extensive indeed in area. Also to be borne in mind is the considerable increase in demand likely in the future in view of population increase coupled with increases in personal income, leisure time and mobility.

These considerations lead to the inescapable conclusion that as large an extent of the natural and historical amenities of the Region as possible should be reserved immediately. Conservation measures must be applied to natural amenities; the extent to which further development may be necessary, particularly in the case of the classes of amenity subject to heavy use, may best be determined by periodic surveys. Preservation measures must be taken in respect of historical buildings and sites even if these measures consist only of proclamation as Historical Monuments together with such repairs as may be essential.

What criteria can be used in the choice and delimitation of amenities? So far as historical buildings and sites are concerned the matter is relatively straightforward; examples of various architectural styles, historical associations, areas exemplifying the character and ways of life of historical periods (that is, at any time up to the present), the work of famous architects or sculptors - all these can provide a basis for the choice of an historical monument for preservation.

The system of classification given in section 1.9 provides some basis for the choice and delimitation of natural amenities by classifying the interrelationship of the various types, thereby tacitly indicating the need for a balanced system in which each class plays its part. Beyond this point it appears that the matter is not capable of objective solution except in extreme situations - such as in the occurence in the area in question of a rare type of plant, or some particular scenic attraction, or an existing development such as an avenue of trees or a forest. The problem all along the boundary will be that of the value of the relative piece of ground in the two opposing uses. Probably the solution can only be based upon informed compromise in which the natural and scientific features and the value as an amenity to the community are balanced against the opposing claims. It is in this situation that an accepted basis for the evaluation of amenities is especially needed. (See section 3.3)

The location of amenities to be reserved is of little consequence. The Cape Town Metropolitan Region is not so large that any point is excessively distant from any person living in the Region who may require access to it, or from roads or public transport available to visitors. An amenity is located where one finds it and one expects to have to travel to it. Amenities can however be selected for primary development on the basis of location in relation to population and for continuing development on the basis of surveys; but the power of attraction of a hitherto undeveloped and not easily accessible amenity is not apparent and some sort of pilot scheme is probably indicated in this case. Even less apparent are the powers of attracting visitors from outside the Region. It should of course be remembered that the amenities of Class IV, depending as they do on their unique natural features, require less development than those of the previous classes and with those of Class VI are the ones most likely to attract visitors.

The use of amenities, as of recreational areas in general, is subject to concentration in respect both of time and space. Usage will depend partly on the time of year, partly on the day of the week and partly on the time of day. It is worth noting that experience in the U.S.A. indicates that more than 50% of the use of amenities approximately equivalent to Classes II to IV occurs on less than 20% of the days of the year. It tends also to concentrate around special features and along access routes.*

The concentration of use frequently results in congestion which in turn causes poor service; or requires additional measures of development, which cause a rise in costs. Congestion in itself causes a rise in costs to the user - in use foregone and in time.

3.2 Supply and Demand

Discussion of values has led inevitably to discussion of demand and supply, considerations central to the topic. According to Clawson and Knetsch** the factors involved in demand may be summarised as follows -

1. Factors relating to the potential recreation users, as individuals :

    a) their total number in the surrounding tributary area;
    b) their geographic distribution within this tributary area - how many are relatively near, how many relatively far, etc.;
    c) their socioeconomic characteristics, such as age, sex, occupation, family size and composition, educational status, and race;
    d) their average incomes, and the distribution of income among individuals;
    e) their average leisure, and the time distribution of that leisure;
    f) their specific education, their past experiences, and present knowledge relating to outdoor recreation;
    g) their tastes for outdoor recreation.

* Marion Clawson & Jack L. Knetsch : Economics of Outdoor Recreation. Baltimore - Johns Hopkins Press. 1966.

** Op.cit. p.60.

2. Factors relating to the recreation area itself :

   a) its innate attractiveness, as judged by the average user;
   b) the intensity and character of its management as a recreation area;
   c) the availability of alternative recreation sites, and the degree to which they are substitutes for the area under study;
   d) the capacity of the area to accommodate recreationists;
   e) climatic and weather characteristics of the area, the latter during the period under study.

3. Relationships between potential users and the recreation area :

   a) the time required to travel from home to the area, and return;
   b) the comfort or discomfort of the travel;
   c) the monetary costs involved in a recreation visit to the area;
   d) the extent to which demand has been stimulated by advertising.

Whether or not the demand is to be satisfied will depend upon the supply. In most considerations of economics the supply is limited by the scarcity of resources and it should be realised that this is still the case in respect of the amenities of the Cape Town Metropolitan Region. Although at first sight bountifully endowed with areas of great natural amenity and buildings of considerable historical interest, the total supply of amenity has, in many respects, dwindled considerably especially during the past century and this tendency continues. At the same time the demand is increasing rapidly. Even now, areas of mountainside that would have been of considerable amenity-value have been and are still being built over. Freeways have intruded beside quiet rivers and through the middle of homogenous residential areas. The top of Table Mountain is no longer the preserve of the mountaineer but is accessible to all at a cost of R1-00 per head. St. George's Cathedral, which dominated the upper portions of the central business district, has been demolished and at its opposite extreme the city has lost contact with the sea.

It is quite obvious that for too long the supply of amenity has been wrongly believed to be inexhaustible.

Either the value to society of the amenities that have been lost was less than that of the facilities that replaced them or else society was never confronted with this choice and the decisions were left to those sections most likely to benefit from the change. It is apparent that future decisions should be made by disinterested parties to whom all the relevant information is available.

On the other hand, can the natural and historical amenities of the Region be regarded as belonging to all its inhabitants to use to the maximum as of right? Here once again the morass shifts and slithers before us and can be avoided only by the question : if this right exists, what is its worth? what would each individual do to defend it, or pay in its defence? or give up that it might continue?

It is necessary to assert (with Clawson and Knetsch)* that :

> social values...are directly reflected in economic values and that there is no irreconcilable conflict between the social values and the more specific economic values... Indeed, many who assert the social values most strongly recognise that financial and other limitations may force choices based on other grounds.

It is said that every man has his price but cynicism apart, there is a limit to the amount we will pay (or give up) in order to enjoy a natural amenity or historic building. This limit is defined by the degree of satisfaction obtained by this expenditure (or financial sacrifice). Once the marginal cost of the satisfaction derived from the amenity equals the marginal cost of the satisfaction to be derived from another source, investment will be moved accordingly.

* Op.cit. p. 209.

The only overriding consideration here is that of concern for the future which may lead to the reservation of areas, usually by public bodies. This course has already been recommended in this study.

3.3 The Evaluation of Amenities

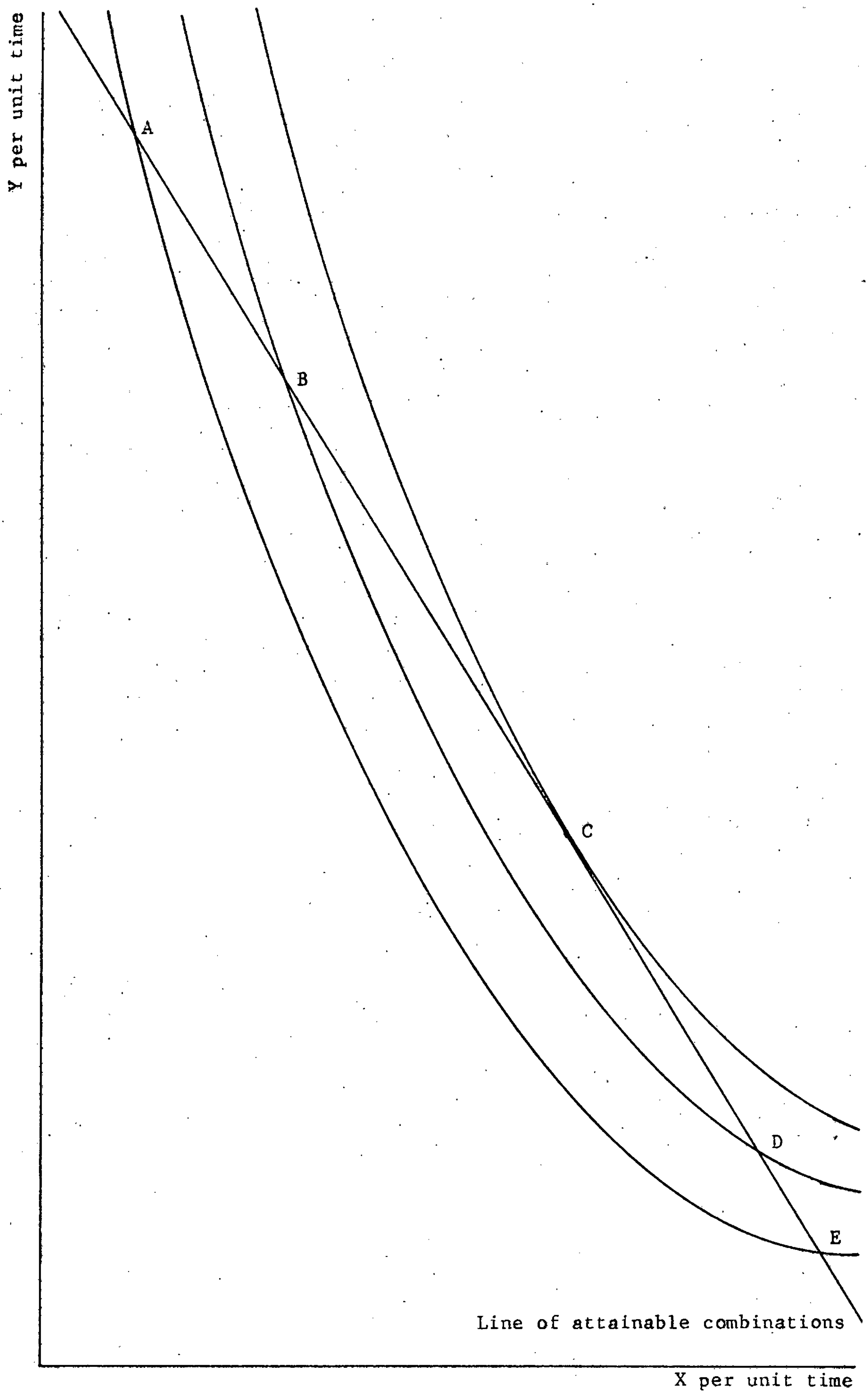
Having established the principle, it is necessary to investigate its application. It is impossible to do this by direct means as individual and social values have no direct monetary equivalent and we are therefore restricted to indirect indications of the value at which amenities are held by society.

The position for the individual may be represented graphically by an "indifference curve" or "substitution framework"* (see diagram on following page).

Degrees of satisfaction afforded by elements X and Y are measured along the axes by the number of visits to these amenities. All combinations of visits to these two elements yielding equal satisfaction (i.e. obtainable at equal cost) are shown on the curves, each succeeding curve indicating a larger amount of satisfaction than that below it. The individual's income is taken to represent his ability to obtain satisfaction from these two elements; this is shown by the "line of attainable combinations" which gives all possible combinations of X and Y units he can purchase with his total income. He would thus maximise satisfaction in terms of his income by adopting combination C.

If instead of considering a single individual it were possible to define a residential area in which the population was, within prescribed limits, homogeneous as regards income (and therefore, in general, small in size) the same graphical representation could be made of the choice of amenities (taken two at a time) available to this community. In this way a decision could be arrived at regarding

*Richard H. Leftwich : The Price System and Resource Allocation. New York - Holt, Rinehart and Winston. 1964. Chap.V.


Y per unit time
A
B
C
D
E
Line of attainable combinations
X per unit time

the development of one or other of these amenities.

In this discussion the curves each indicate the range of combinations producing equal degrees of satisfaction. The various curves shown therefore indicate different degrees or types of development possible for the amenities in question.

The "line of attainable combinations" indicates the extent to which the individual's income can be used to obtain satisfaction. However income (i.e. travel costs) is not the only consideration in this regard. Time is almost as important - in fact this may well be the limiting factor. The "line of attainable combinations" should thus be based not only on available income but also on available time. Similarly the curves representing satisfaction obtained should be based on cost per visit* and also on travelling time required per visit,** i.e.

Satisfaction obtained = cost of travel (mileage rate) x travelling time (in hours and decimals of an hour).

This method does not provide a direct indication of the value of an amenity to society but does provide the relative values of two (or more) amenities to a particular community. An indication of the <u>relative</u> values of the two amenities to society at large would be represented by the above formula X total number of visits to each amenity. This affords a basis for direct comparison of the two amenities in terms of social valuation.

The value of an amenity to society at large might be quantified by considering its value (preferably market value) in a possible alternative use. Thus Kirstenbosch might be subdivided and sold off as a residential estate which would provide a very considerable return; this could be estimated on the basis of the market value of

* Suggested by A.H. Trice and S.E. Wood : Management of Recreation Benefits. Land Economics Vol.34 No. 3. (August 1958) pp.195-207.and developed by T.L. Burton and G.P. Wibberley : Outdoor Recreation in the British Countryside. Ashford, Kent - Wye College.1965.

** Suggested in discussion by Mr. Z.S.A. Gurzynski, Dept. of Economics, U.C.T.

ground recently sold in adjacent areas. This approach is limited by the following factors :

1. While the immediate return would be high, property generally in the area might decrease in value due to the removal of the considerable amenity afforded by Kirstenbosch.
2. In other areas, comparison with the prices of adjacent sites might not be possible due to a lack of the latter or to differences in quality.
3. Some areas - such as the top of Table Mountain - might not readily be susceptible to alternative use.

As indicated in (1) above, an amenity may be of value to non-users by virtue of its effect in raising adjacent property values. It may also affect commerce by attracting visitors who will make use of nearby shops for the purchase of sports equipment, souvenirs etc. and may use local hotels. They will also use public transport or spend money at local garages. They may even be so attracted by the amenity (or amenities) of the Region as to decide to purchase property for either permanent or holiday use.

A further consideration is that of ease of transport. Good facilities may make it appear that one amenity is held in higher esteem by society than another not as well served and may also affect the value in alternative use. The possibilities of improving public transport facilities and also road access in general are probably the most potent means of increasing the demand for an amenity. Research is also required in respect of the use of public transport in relation to amenities; thus it might appear that the main users of the suburban train service as a means of access to the False Bay beaches are Coloured persons and young people generally.

Perhaps it is those who are not content with the amenities of a town and move out to its furthest limits thereby creating serious problems and expenses for the community as a whole, who should pay for the development of the amenities they have shunned. Had they remained the extra costs entailed in servicing the distant areas to which they have gone - costs of road building, sewerage, public transport, electrification etc. - would not have been incurred. This money could have been devoted to the rehabilitation of the part of the town from which they moved. The amount such persons would be willing to pay would be a measure of their preference for the amenities of the new over the old place of residence.

Similarly those who especially desire the use or preservation of a specific amenity should be prepared to pay to keep it and to keep others out. If user charges are collected for such an amenity they should be such that their application to another amenity results in drawing people to the latter, away from the former. This outlook is implicit in the heirarchy of classes of amenity given in section 1.9.

3.4 User Charges

The supply of and demand for amenities have been discussed in general terms and it has been indicated that in the past the supply exceeded the demand. Having considered the value of amenities in terms of the satisfaction they afford, it becomes necessary to emphasize the need to maintain this degree of satisfaction. In the face of increased demand (and possibly of no increase in the number or size of amenities available) there is no alternative but to introduce user charges. This may be repugnant to all those used to free access to the magnificent mountains and beaches of the Region and to those anxious to encourage such access on the part of the underprivileged. However there is no alternative manner in which the quality of most (if not all) amenities may, in the last resort, be maintained. It should in fact be pointed out that charges are already levied at Kirstenbosch, at Fish Hoek beach, at Cape Town Castle and other places. Such charges should be added to the costs shown in the formula suggested in Section 3.3 for measuring the satisfaction provided by an amenity in terms of the costs which individuals are prepared to pay; they are - as suggested previously - some indication of the social value of the amenity concerned.

3.5 Penetration and Succession

Walter Christaller has drawn attention* to the existence of the phenomena of penetration and succession in tourist areas; these in fact are to be observed in relation to many natural amenities which, from attractive seclusion, become popular; hotels and holiday houses are built, estate and travel agents publicise their attractions, they become fashionable. Sooner or later this process results in the loss of the original amenity-value and another place becomes popular. Muizenberg, Sea Point, Hermanus and Plettenberg Bay are at present at different stages of this process.

There is, of course, no reason why the process should not become a cycle; Muizenberg can be rehabilitated and probably will be; better road access and the improvement of the sea-front will help considerably. The residential population, many of whom moved to Sea Point, may consider returning as more large blocks of flats are built in the latter area. The problem for this study is whether or not every natural amenity must inevitably be subjected to penetration and succession. Probably only if absolute control can be established, can this state of affairs be prevented. Absolute control indicates the existence of a controller; this could be a conservation authority

* Walter Christaller : Some Considerations of Tourism in Europe. Regional Science Association Papers, 1964. Philadelphia - The Regional Science Association.

acting in an area of natural amenity which has been declared a reserve or animal sanctuary, or a development authority acting in a similar area which has been defined for planning and development purposes. In either case, the authority must act with at least the degree of purpose shown by the Historical Monuments Commission in obtaining and exercising control over the defined area of Table Mountain.

3.6 An Agglomeration Economy

The Cape Town Metropolitan Region is particularly fortunate in the number of natural and historical amenities it contains. In fact they are so numerous as to constitute an "agglomeration economy" in which visitors to one may be attracted to others; botanists visiting Kirstenbosch will travel up Table Mountain by cableway; architects studying historical buildings will visit not only Groot Constantia but also Rust-en-Vreugd and the Koopmans de Wet house; beach addicts will bathe at Muizenberg and sun themselves at Clifton. In order to attract the maximum number of visitors and the considerable income which may be so obtained it is necessary to develop a range of amenities in each class and particularly in Classes IV and VI, the unique amenities which will exercise the greatest attraction for tourists.

This indicates the need for an overall plan if the potentialities of so complex a region are to be realised and not squandered. In this plan the present study would combine with studies of open spaces and of recreation to form a trilogy to be considered as an element with those of commerce, industry, residence, transport and others.

While beyond the scope of this study, two further aspects of this "agglomeration economy" must be mentioned. The first is the existence of considerable natural and historical amenities outside the Region but easily accessible from it. The adjacent towns, such as Paarl, Stellenbosch, Fransch Hoek and Somerset West, contain numerous buildings of historical and architectural interest and the countryside, magnificent in itself, contains more. The Strand-Hermanus coastal area is particularly beautiful and well endowed with coves and beaches. The existence of these amenities so nearby considerably augments the amenity-value of the Region.

The second aspect is that of all amenities other than those covered by this study. These include the educational establishments such as the University of Cape Town and the many schools of the Region; the cultural organisations and institutions from the excellent Municipal Orchestra and Library Service to the Natural and Cultural History Museums; the sporting and recreational facilities; the road system, already the best in Africa, and the above-average public transport system; and many others. The development of these must match the development of the natural and historical amenities.

This section may be ended with a quotation from a paper by John Piperglou* :

> Investment priorities, so far as possible, should be given not to isolated locations but to concentrated groups of resources constituting a "region". This principle was adopted on the premise that regions create external economies and are more attractive to private capital. In newly opened tourist regions the absence of most kinds of necessary facilities keeps traffic low and the low traffic depresses entrepreneurial interest; hence investments are low, facilities continue to be inadequate, and the situation perpetuates itself. (Tourist investment needs to be concentrated by the) wide development of inter-related services ranging from cultural interest to good food and wine.

* John Piperglou : Identification and Definition of Regions in Greek Tourist Planning. Regional Science Association Papers 1967. Philadelphia - The Regional Science Association. pp.171-2.

4.0 THE DEVELOPMENT PLAN

The preceding sections of this study have indicated the breadth and complexity of the subject, even with the omission of considerations of open space and of recreation as constitutent topics. A comprehensive plan for the Region is clearly required in order to integrate these three related aspects of its development and in fact without this co-ordinating influence the findings of the present study can be presented only in a somewhat unilateral and generalised manner.

This limitation may however be regarded as an advantage, enabling the case for the conservation of natural resources and the preservation of historical sites and for the development of the general amenity-value of the Region to be presented with greater clarity.

In what follows, very little reference is made to the provision of separate facilities for the various races as required by the Group Areas Act. It is probably in relation to natural and historical amenities that the impractical side of this Act is most evident. Obviously, an historical building cannot be duplicated for separate access by each race; neither can its location in one or other of the Declared Areas be affected. If it is to be open on different days, or at different hours, for the various races, then at times access to it will be denied to all and it will cease to have any pretensions at being a part of the individual's intimate background (as suggested by Kevin Lynch - Section 2.1).

Similarly a natural amenity cannot be closed on certain days to a part of the population, nor can its unique areas be divided between the races. The whole intention of the present study, as will be emphasized in the following pages, will be towards the maximising of the utility of open spaces by linking them together and providing for their use for more than one purpose. The level of utility obtainable in the Region by these and other means will be drastically curtailed if two separate structures of open space are to be provided. Significantly, if open space areas are to be assigned in proportion to population (as is only reasonable) the White group will have to part with a great deal if the population projections given in Section 1.6 are anything like correct.

Thus, while the existence of Group Areas was taken into account as one of the given facts determining the nature and limits of the Subregions earlier in this study (Section 1.8), consideration of separate facilities has been omitted in describing the various developments recommended in the plan.

4.1 Amenity in General

It is apparent from Maps 2 and 3 that while the Region is richly endowed with natural amenities, these are largely concentrated in the Peninsula and along the coast leaving the naturally featureless spread of the Cape Flats to be covered with an apparently even spread of housing, as depicted in the urban growth model referred to in Section 1.10 above, and on Map No. 4.

This imbalance of amenities can only lead to a general decrease in overall amenity for the Region on a whole. If it is to be as attractive and pleasant a place as possible in which to live and work, or to visit, there is not much point in developing the great amenity-area of the spine of the Peninsula while the balance of the Region is largely made up of enormous stretches of relatively flat ground covered with houses, flats and industries, no matter how attractive these may be architecturally. Thus the important and inescapable conclusion emerges : the considerable, but generally localised, natural amenities of the Region must be artificially extended in order to raise the amenity-value of areas less fortunately supplied.

4.2 The Urban Growth Model Revised

In estimating population growth it is necessary to bear in mind that this is not an exact science; in the course of time factors that could never have been foreseen may arise which will completely alter the picture. Who was there twenty years ago who could have foreseen the Group Areas Act? The repercussions of this very far-reaching item of social legislation are even now far from clear; what, for example, will be its effect upon the social status, the education and employment of the Coloured community and directly and indirectly upon their birth-rate? The future of a people at the present semi-urbanised stage of development of the Coloureds is at the best of times difficult to foresee.

In view of this degree of uncertainty, is it wise to accept completely the urban growth model described in section 1.10 above with its logical extrapolation to the effect that the whole area of the Cape Flats must be given over to housing for Coloureds, Bantu and Asiatics together with a small amount of industry and devoid of major open spaces such as occur elsewhere in the Region? Should not such major open spaces be provided - expecially in view of the considerations advanced in Section 4.1 above - on the supposition that future events may in fact permit of such spaces or that altered premises regarding densities of development will indicate the possibility of housing requiring less space than presently estimated?

In the latter connection it should be pointed out that the densities upon which the Coloured housing in the growth model is based are not high - namely, 21.60 persons per acre for houses, 47.93 for flats and 40.00 for "other" (i.e. hotels etc.). In Table 4 the acreage required for housing the portion of the Coloured population to remain within the presently-demarcated Coloured Group Area at the densities shown in the urban growth model is compared with the acreage required at slightly higher densities. If gross densities of 30 and 60 persons per acre are adopted for houses and flats respectively and 60 for "other", a saving of some 15,400 acres is effected - i.e. of 6.4 acres per 1,000 population. A small amount would be added to this in respect of higher densities in Bantu and Asiatic areas.

The revised densities make allowance for four acres of open space and also for the same area in respect of primary schools, local roads, shops etc. per 1,000 population. They do not include such land uses as industry, central business and commercial areas, railways, sewage works etc. (which are never included in gross density calculations)* but allowance for these has been made elsewhere in the growth model.

American standards for the type of open space referred to in this study appear to vary from 2 to 20 acres per 1,000 population with the majority of examples towards the lower end of the scale.** The considerable variation may be in relation to the amount of open space available in the various States in which the figures were compiled and must of course be read in conjunction with the other recommendations for open space made in each report.

The additional space made available on the Cape Flats by the use of higher densities will, if organised in a linear manner as indicated diagrammatically on Map No. 5 permit of an integrated open-space system linked to the beaches and vleis, continuous with the minor open spaces contained within the built-up areas and readily accessible from the latter. In this way the maximum possible utility of the available open space will be obtained. In view of this, the allowance of 6.4 acres per 1,000 population would appear to be adequate.

Contained within this space would be parkland, golf courses etc. but the landscaping should be such as to enhance the apparent openness and verdancy of the area. Generally the amenities provided would be those of Classes I and II.

* Residential Areas : High Densities. London - H.M.S.O. 1962.
** Outdoor Recreation Space Standards : Dept. of Interior. Washington - U.S. Govt. Printing Office 1967.

The need for higher densities is already accepted in many highly-populated countries and while it runs counter to the traditional South African conception of suburban living it will become increasingly unavoidable here too as the population grows. So far only the housing of the Coloured people in the Cape Flats Group Area has been considered in this connection but the White areas will also be forced into higher densities if anything approaching the present high standard of natural amenity and the scenic value of the Peninsula are to be maintained.

The growth model is based on densities for Whites of 11.50 persons per acre for houses, 21.12 for flats and 40.00 for "other". The effect of increasing the first two ratios to 15 and 30 persons per acre respectively while maintaining the third at 40 is shown in Table 5 in which the incredible saving of 12,142 acres from the 51,201 previously required is demonstrated. In fact the revised total - 39,059 acres - is less than the 41,580 acres actually developed to 1960.

Apart from the possibility of increased densities, space for White housing is available outside the Region to the North and East.

The results of the calculations contained in this section present a very much more optimistic picture of the future amenity-value of the Region than was previously the case, provided higher densities find acceptance with the populations involved.

It should also be pointed out that the linear arrangement of open spaces facilitates police supervision. An objection advanced, especially in South Africa, against the inclusion of larger open spaces in urban developments is the cover so provided for criminals. As is suggested later (under Class II in Section 4.3) some roads might run in these spaces; such roads would be hardened but all would not necessarily be tarmaced and police vehicles would have access. Supervision would be considerably easier then is the case with the numerous separate open spaces usually found in our towns.

The linear arrangement of the residential areas would, by the same criterion, simplify public transport and the provision of services.

4.3 The Development of Amenities

It is proposed to examine the development of the amenities of the Region on the basis of the classification previously described. This will however be taken in reverse order as this study is primarily interested in the latter classes of the heirarchy. The following general considerations will be borne in mind :

a) the coherent development of each distinct class of amenity throughout the Region in order to emphasize its particular qualities;

b) the integration of the various classes into a system in which each class reinforces the attributes of the others in order to maximise the general amenity of the region.

Class VI : Historical and Cultural Sites

The interplay between nature and architecture in forming the environment of the Region has received considerable attention in Section 1.5 of this study. Public awareness of the need for preserving historical and cultural sites (i.e. buildings and/or open space of historical or cultural interest) is fortunately on the increase but requires considerable further stimulation and education if this intimate relationship so characteristic of the Region is to survive in sufficient quantity to exert an appreciable influence on the environment. The somewhat random efforts of individuals, societies and private organisations require co-ordinating not only for the direct purpose of preserving such sites but also in order to exert pressure on the Government to increase the scope of its authority in this connection. The Historical Monuments Commission should be empowered and financed to purchase, restore and maintain and not merely to negotiate; or alternatively the Public Works Department should take on these functions.

Only the State or an adequately State-aided body can establish and finance a Region-wide programme of preservation. This programme should commence with a survey of all sites of historical or cultural interest and the initiation of a policy whereby some of these would be cared for by the State as public museums or for other purposes while at the same time State financial and advisory assistance should be available to individuals and organisations wishing to purchase and preserve sites for their own use, with the proviso that reasonable public access be permitted.

Failing the establishment of a Regional Authority, this co-ordination is best applied at State level rather than by way of various local authorities. Uniform publications should be produced to describe the various sites and all publicity, from advertising to road-signs, should be in a uniform and clearly distinguishable style along the lines of the "house-style" adopted by various firms and organisations. A competent firm of design consultants should be appointed to advise on this matter. Any building or restoration work required should be under the control of an architect experienced in this rather specialised work.

Schemes of urban renewal should be initiated in depressed areas where sites of interest exist. Considerable progress has been made by individual initiative especially in areas of Wynberg, Newlands, Rondebosch and Mowbray in the renewal (seldom restoration) of cottages vacated by Coloureds as a result of the Group Areas Act, but the work done is frequently inadequate from the constructional aspect and superficially ornamented or fashionable from the point of view of design. Such developments are generally too small to create a complete atmosphere and require at least a measure of overall direction. The future of District Six and of the Malay Quarter are currently the most important matters of this type requiring study.

Such urban renewal schemes, if well done, would be redolent of the character of the Region and as such could well be of interest to visitors and therefore included in publicity material. All sites must be clearly shown on maps and road-signs and in the case of the more important, some effort should be made to interpret them to the public by such techniques as son-et-lumiere or by the provision of "visitor centres" similar to those that have been built in the U.S.A.* Here the history or background is described by audio-visual means and by lecturers with the object of making the sites interesting and attractive. The most obvious places for such centres are at the Castle, Groot Constantia, the Malay Quarter, the Gardens, Kirstenbosch, the Cape of Good Hope Nature Reserve and the bird sanctuaries, especially Rondvlei, (where the initial steps have already been taken). It is not too difficult to imagine the erection of a centre at Muizenberg to describe in vivid form the Battle of Muizenberg; this might become a considerable tourist attraction.

The best way to maintain an old building is for it to be used and there will be occasions when rigid restoration and preservation (which undoubtedly have their part to play) should give way to a policy of conservation in which the site is managed in such a way as to be useful in present-day conditions while yet maintaining its character. This has already happened to most of the natural environment of the Region, as indicated in Section 1.5, which in some areas has probably been enhanced in this way.

* Elizabeth Beasley : Interpreting the Countryside. Journal of the Royal Institute of British Architects Vol.75 No. 1 (January 1968) pp.23-26.

The development of the amenities of the C.B.D. and of the centre-city as a whole cannot be investigated in great detail except on the basis of an urban renewal plan. Individual buildings may be preserved but the "natural" amenities such as the Gardens (which could possibly be extended) together with such considerations as the relationship of the built-up area to the Docks, can hardly be examined in this study.

Class IV : Unique Natural Areas
Areas of major scientific importance fall into this class; these are the upper mountainous spine of the Cape Peninsula, Kirstenbosch, the Cape of Good Hope Nature Reserve, Rondvlei and Rietvlei. All have considerable public appeal in addition to their scientific value and are open to the public to the maximum extent "consistent with their primary objective" (section 1.9); this is in fact the criterion for the development of these areas and has been dealt with in Section 2.2. The creation of visitor centres has been suggested above and would increase the value to be derived from a visit. This in turn might increase the ability of the area in question to raise the funds required for maintenance or development.

The most obvious and important of the amenities of the Region is that of Table Mountain and the mountainous spine of the Peninsula. The nature of the area and its effects upon the city have been described at some length in previous sections(especially 2.2). It forms a natural amphitheatre for the city and has also been the main formative influence upon the linear growth of the Southern and Western suburbs, making possible a degree of accessibility to open space not often found in urban areas.

Apart from the demarcated reserves (shown on Map No. 1) this area is continually being encroached upon for building purposes and for roads. If it is to be maintained at anything like its present extent or if it is to be enlarged (which would be possible in terms of the revised urban growth model) a coherent approach is needed. This should be aimed firstly at demarcating the whole area as a Cape Peninsula Reserve (see Map No. 5) and the purchase by public bodies (Cape Provincial and Divisional Councils and Municipalities) of privately owned land within their jurisdiction falling into the Reserve. This procedure has been followed in the establishment of the Table Mountain Reserve, the area of which was originally demarcated by the Historical Monuments Commission. Secondly, continuity should be emphasised by the establishment of a path system as described in 2.3 which would not only extend through a large part of the Reserve but would also be integrated with an open space and path system more closely related to residential areas (to be described later). As previously indicated, public access to some parts of the Reserve will have to be restricted in order to preserve the indigenous flora and to prevent soil erosion and it is certainly not recommended that the entire area be covered by a close network of paths that would entirely destroy its scenic and botanical attributes.

The layout of pathways and the placing of areas available, to varying extents, to the public would have to be worked out in conjunction with a conservation and afforestation plan for the entire Reserve. The cluster pines that have spread through so much of the Northern portion of the Reserve and to a lesser extent to the Southern portion, growing even on narrow ledges and in relatively sheltered positions on the top of Table Mountain, have now achieved the object of consolidating the soil against erosion for which they were introduced and should now be eliminated by stages and indigenous or other vegetation re-established. Areas of grassland, as above Rhodes Memorial, could also be laid out, interspersed with indigenous trees and shrubs.

A survey is required of the areas peculiar to the various species of flora of the Reserve and of areas suitable for planting. Particular attention should be paid to the planting of the areas adjacent to the upper cableway station, as this is the part likely to be most frequented by tourists. The area around the lower station should be similarly developed.

The historical wine-producing associations and qualities of the Constantia Valley would justify the inclusion of parts of this district under the present heading of "unique natural areas" and should be conserved; while most of this area must inevitably be used for housing, certain parts should be maintained as vineyards. These might be located in the upper portions of the valley and around its perimeter, forming a part of the open-space system described under Class II below.

It has for many years been possible to obtain excellent views of the mountains from the roads of the Peninsula, and the higher-level roads provide magnificent panoramas of sea and land. The main scenic routes of the Peninsula are -

Signal Hill Road
Table Mountain Road
De Waal Drive
Constantia Nek Road
Chapmans Peak Road
Silvermine Road
Boyes Drive
Red Hill
Cape Point Road

If present plans are realised, several of these will be integrated into a magnificent North-South parkway running for most of the length of the Peninsula. The present study has however stressed the need for "the coherent development of each distinct class of amenity throughout the Region in order to emphasize its particular qualities" and it is felt that the number of roads intersecting the Reserve, especially at higher contour levels, should be drastically curtailed if the Reserve is not to be over-run and transformed into an area of Class III or II, which would entirely ruin all its natural attributes, reduce the range of open spaces available to the inhabitants of the Region and nullify its tourist potential. It is felt that more than sufficient high-level viewpoints accessible by road or cableway already exist to satisfy the majority of tourists (who, it would appear from section 1.6 are not likely to stay long enough to require further scenic drives than those now available).

Attention was drawn in the section dealing with landscape design (2.3) to the domination of the entire Region by Table Mountain. It was there suggested that the key to the successful design of the landscape of the Region lay in this fact and the interplay of the distant mountain view with the more intimate detail of the observer's immediate surroundings. Thus buildings, or the access ways to buildings, should be so placed that the mountain is not obscured except by intention - to provide, for example, the impact of a sudden and magnificent panorama. And relief from this magnificence must be provided in the intimate and detailed scale of nearby planting.

The same considerations apply to the landscaping of roads in which planting or artificial hillocks may be arranged near the road in order to provide an alternation (though not too repetitive) of near and distant views.

Similarly in town design the mountain should receive recognition for what it is - the greatest single asset of the Region. Open spaces in the city and suburbs should be organised in order to make the best use of the mountain as a backdrop or as a distant view. This is achieved in the relationship of the Grand Parade and City Hall which are well related in scale, from a viewpoint on or near the former, to the mountain amphitheatre. Similarly the "village nucleus" at Rondebosch Fountain is backed by a short slope and banks of trees (somewhat marred by blocks of flats) that lead the eye up the slopes of the mountain beyond and integrate the distant view with the foreground.

This however is a study in itself and cannot be considered in greater detail here.

In considering standards of access and use in Section 2.2 it was suggested that Kirstenbosch, which occupies the rather special position of being both a local recreational and international scientific amenity, should develop some of its less-accessible areas - not by making them more easily accessible but rather by increasing the seclusion in what is, after all, the most "natural" portion of the grounds. At the same time part of the lower area should be developed as a picnic site of Class III in order to help maintain the standards proper for a Class IV amenity in the upper section.

The seclusion of the latter would be aided by making access indirect, by limiting the number of entrance ways and by planting more trees and shrubs. Planting should however be so arranged as to make occasional use of the distant view, which is magnificent.

Class III : Natural Environment Areas
Areas of this class require to be maintained in a predominently "natural" condition while at the same time providing recreation facilities - for walks, picnics, "braaivleis's" camping or caravanning. These two requirements are basically contradictory and can best be met, at least in the case of large areas, by concentrating the recreation areas into pockets surrounded by "natural" development. Such concentration would also aid supervision, as previously suggested in Section 2.2.

The recreation areas should be equipped with fireplaces and refuse bins and should be provided with grassed areas for play and trees for shade. Parking facilities should be located close by; these, together with access roads, need not be asphalted but are better finished with gravel or stabilised earth (pise de terre). Windbreaks may be required in exposed locations and the best possible use should be made of near or distant views. Especially where such views occur in plantations, as at Tokai, fire-fighting apparatus should be available in the vicinity; water points would be advantageous for this purpose as well as in relation to the picnic facilities. Toilets should be provided.

Caravan parks and camping places should be similarly laid out but with the addition of showers. Such areas should also be arranged in "pockets" for the additional purpose of splitting up the sites for tents or caravans into small groups which apart from creating a more intimate atmosphere would help in the screening and camouflage of the area as a whole from the surrounding countryside.

All buildings required in these areas should be of an architectural type sympathetic to the natural surroundings. The development of each area should in fact be carried out in conjunction with a firm of architects and with a firm of design consultants to advise on sign posting, publicity etc.

Sandvlei, Zeekoe Vlei, Princess Vlei and Little Princess Vlei fall into this class. Their closeness to one another combined with the general low-lying nature of the surround-terrain suggest their development as a complex. Rondvlei is a bird sanctuary (Class IV) and occupies a central position in relation to the others, but it should nevertheless be possible to arrange a layout in which it is left inviolate. This Lakeside Development would be a large scheme involving a separate study but would provide a considerable area for recreation - boating and yachting, together with walks, caravan parks and picnic places - and would be of immense value to the Region as a whole. A system of canals could be constructed to link the vleis, based in part upon the line of the Sandrivier. The area involved would be sufficiently extensive for a portion of it to be developed into a General Outdoor Recreation Area of Class II and will be referred to again under this heading.

With the growth of the Goodwood-Bellville district the development of related open spaces is called for and these could best be located in the Tygerberg Hills, the most attractive natural area in the vicinity. Such open spaces require demarcation as soon as possible in view of the increasing number of housing estates which are being opened up. In general, the hilltops should not be used for housing which would then dominate the entire locality and considerably affect its present visual quality as an area of rolling, grass-covered hills. Excellent views are possible from the upper levels - towards Table Mountain and the Peninsula (photograph 33), towards Stellenbosch and the Hottentots Holland Mountains (photograph 32) and over the Cape Flats. The demarcated area should consist of a continuous system of open spaces rather along the same lines as the Cape Peninsula Reserve described above under Class IV but because of its greater accessibility subject to an intensity of use commensurate with Class III. The area required for this Tygerberg Development could be acquired in the same way as described for the Cape Peninsula Reserve. It too should be linked to open spaces and pathways more closely related to residential areas and, while it would predominently be located at upper contour levels, the related spaces might extend into the valleys, some of which are afforested and completely in contrast with the general openness of the area.

Beaches falling into this class require only the minimum development of a shelter for changing and toilet accommodation. No artificial attractions, such as restaurants, are normally required although some sort of refreshment facilities - preferably open-air - can add to the amenity if not too highly developed or too prominent. Buildings generally should be kept to a minimum along these coastlines in order to maintain their "natural" qualities, but if and when buildings are necessary they should conform to the requirements indicated above.

Areas of this class frequently require the development of their vegetation apart from the provision of the minimum of artificial facilities. An excellent example of this is afforded by the mountainside above Rhodes Memorial and Observatory. Here the pines planted towards the end of the last century, having achieved their object of stabilisign the soil, have been removed and thick grass, silver trees and flowering gums have been planted. Thus a large, rolling parkland has been created with magnificent views across the Cape Flats and the city and accessible without any great effort. The only supervision necessary is in the prevention of the formation of paths across the contour which might cause soil erosion.

It is apparent that with the increase in population, standards of living and leisure time, there will be a great increase in the demand for areas of this class which provide a considerable degree of "natural" environment but remain, in general, fairly easily accessible. The development of such areas is therefore recommended wherever possible around the fringe of the Cape Peninsula Reserve. Not only are areas suitable for such development available in many parts of this zone but in addition they would form a buffer to the Reserve itself.

Class II : General Outdoor Recreation Areas

Spaces in this class are intended primarily for recreational purposes and as such do not fall within the essential range of this study; their general requirements and position in the heirarchy have been described in Section 2.2 under the heading of Standards of Access and Use.

It is however here recommended that a further category of open space be established, which will fall predominantly into this class. This category results from the consideration of amenity in general (Section 4.1) where it was concluded that "the considerable, but generally localised, natural amenities of the Region must be artificially extended in order to raise the amenity-value of areas less fortunately supplied" in order to create a balanced development throughout the Region. Its form results from a consideration of linked open spaces.

Connecting open spaces not only adds to the amenity-value of each (as mentioned in section 4.2) but also permits of dual usage - pathways may run beside playing fields, along windbreaks and through parks and woods. Further advantages are outlined at the end of Section 4.2 above. Towns in general are no longer small enough to provide unimpeded access to the countryside or for the countryside to provide the town with its setting. The linear form of Cape Town and its suburbs has up to now made such access easier than is frequently the case but even here this basic shape is showing signs of breaking down in the expanses of the Cape Flats.

The revised urban growth model for Cape Town described in Section 4.2 has indicated the feasibility of continuing this essentially linear form through the introduction in the Cape Flats Subregion of strips of open space distinct from the built-up areas and contrasting with them, providing them in fact with a setting. Such strips could also be provided in the Tygerberg-Milnerton Subregion and existing open spaces in the Cape Peninsula Subregions should also in some cases be developed in this way.

Attention has been drawn (in Section 1.5) to the nucleated growth of the city; the open space of the strips could be extended between the nuclei, probably not so far as to isolate them from one another and to cut across the radial arms of the city structure but so as to give more ready access to the open country while at the same time emphasizing the distinct nature of the various nuclei. The pathway system referred to in the discussion of Class I above could extend along these strips of parkland (as also could certain roads) and the paths could connect with those of the mountainous area.

It is not suggested that the pathway system be entirely separated from roadways; paths could follow roads, at least for short distances, in order to introduce an element of contrast. Where paths and roads lie in the same strip of open space they should however in general be separated as widely as possible for most of their length; the introduction of planting and of variations in level will of course help in this separation where the width of the strip is restricted. Where roads cross open spaces and pathways some form of grade separation may be necessary, and here narrow subways should invariably be avoided. An excellent but expensive example is provided by the bridging of the freeway over the upper portion of Wynberg Park; a footbridge, or a culvert through a road embankment, would be very much cheaper.

In this way a structure of open space would be formed throughout the Region complementary to the structure of the built-up areas and adding considerably to the amenity of the Region as a whole.

Apart from containing roads and paths the open space strips could be used for market gardening and as parkland. School and club recreation fields could in some cases be accommodated within them. Where rivers exist the strips should be related to them.

While it has been convenient to discuss the linking of open spaces under the present class heading it is not necessary for all spaces that are so connected to be of this class. It was suggested under Class IV that parts of the Constantia area under vines be incorporated in the system of open-space strips and in fact spaces of all classes should be linked to form a continuous system throughout the Region.

At the lower end of the heirarchy, the provision of local parks is inadequate in almost all parts of the Region.

This is felt particularly in areas where large numbers of blocks of flats have been erected; the worst in this respect is that of Sea Point where there is virtually no open space other than the seafront embankment. Small parks should be available within walking distance of all houses and flats, especially in the more densely developed areas. These parks should provide play-areas for small children but do not otherwise require very intensive development; grass, trees and shade, together with restricted planting of flowers and shrubs and a number of benches are required. If a view is available - a distant view of the mountain or a slope leading towards the sea - this can add character to the area as also can any natural features such as rocks, hillocks or streams. One of the most successful local parks is that along the Liesbeeck River in Newlands adjacent to Paradise Road and it is recommended that further riverside parks of this nature be established. These, as with all local parks, should be linked with the open-space system.

Certain recreational areas falling into this class should also be so linked. Golf courses and school and other sports fields could be used to give the effect of continuity even when in private ownership; public access to such spaces, even if only for walking, should however be encouraged, possibly by such means as a discount on the rates which, for centrally situated spaces, would be high.

Beaches and adjacent areas of this class require more development than those of Class III; the work done at Millers Point by the Cape Divisional Council is an excellent example. Here a caravan park has been laid out, parking areas provided and an existing house adjacent to the caravan park converted to a restaurant. All these are so placed as not to interfere with the "natural" appearance of the coastline. In addition tidal pools for children and adults have been built and a bridge constructed in order to provide direct access from the pool area to the restaurant and caravan park.

It has been indicated under Class III above that the Lakeside Development suggdsted there could include areas of this class; a golf course would be the most obvious adjunct to such a recreational development and facilities for other sports such as tennis and bowls could also be provided together with club sports fields, but these activities would have to be carefully placed in relation to the rest of the development if a reduction in its amenity-value were not to result. Similarly the adjacent stretch of beach - Sunrise Beach - would fall into the present class rather than into Class III. The Muizenberg Development suggested in Class I below would complement this development.

The Tygerberg-Milnerton subregion is rapidly developing. This study has proposed the development of portions of the Tygerberg Hills as a Class III amenity; however the location of the excellent Blouberg-Melkbosch beach so close to the city and the expanding population to the North and East suggests the further possibility of the development of this stretch of coastline.

The fact that the suggested Tygerberg Development would be largely of Class III combined with the likelihood that in terms of the growth model, the population will be less concentrated in that vicinity than in the neighbourhood of Blouberg indicates that the development now proposed should be largely of Classes I and II. Further weight is given to this approach by the fact that the view of Table Valley obtained from this area is a strong draw for visitors. Many tourists would in fact appreciate the ease of communication that already exists with the city. While part of the attractiveness of the area lies in its lack of sophistication the continuation of present trends would indicate the strong possibility of it deteriorating into a rather second-rate suburb. The increasing population to the North and East would result in an intensification of this tendency and in the use of the seafront as this is the stretch of beach most conveniently situated in relation to the developing areas.

The various considerations mentioned above indicate that a portion of the Blouberg Development should be of Class I; that it should in fact include a seafront "Lido" with tidal (or heated) swimming pools, arranged to take the maximum advantage of the view of Table Mountain. The balance of the development - probably the majority of the area involved, in order to retain something of the character of the locality - would be of Class II and contain parkland, school and club playing fields, a golf course and less developed stretches of beach.

Class I : High Density Recreation Areas

This study is concerned with areas of this class only to the extent that by providing facilities for highly intensive forms of recreational land use they permit areas of the other classes to maintain an appropriate level of amenity. A considerable amount of building work is often required if the maximum utility of these areas in this respect is to be attained and this generally dissociates them from the more "natural" open spaces even of Class II.

The cost of this work is however almost as unavoidable as, for example, the cost of conservation measures in Class IV and is an integral part of the development of the natural amenities of the Region, which could be irretrievably spoilt by over-intensive use.

Facilities of this class should not, in general, be located adjacent to open spaces of the remaining classes as this would tend to lead to more intensive use of the latter. Also the large scale of some of the associated buildings - such as grandstands - would not normally relate to the more intimate scale of more "natural" areas which would tend to be overshadowed by such constructions. This need not invariably be the case, however, and under certain conditions large buildings could be incorporated in a carefully worked-out overall conception. Reference to this possibility is made in Section 2.3 which deals with landscape design.

The suggested Blouberg Development would incorporate an area developed to this class of intensity, as already described. It is now proposed that a Class I development should be carried out at Muizenberg. This suburb has in the past been a seaside resort verging on international standing. The long beach of white sand combined with the warm Indian Ocean currents and the distant mountain views across False Bay combine to provide a very high degree of natural amenity; unfortunately the built-up area has deteriorated in recent years with the growing local popularity of Sea Point and Clifton together with the country-wide appeal of Hermanus and Plettenberg Bay.

The rehabilitation and development of Muizenberg are inseparable from its role as a tourist resort and a residential population will have to be attracted if this is to be achieved. A Class I - type amenity in this area would be complemented by the Lakeside Development consisting as it would mainly of Class III with a limited amount of Class II. While these Muizenberg and Lakeside Developments have been separately treated in this study they would of course be linked at the planning stage. The overall development would provide a wide range of facilities and should become a considerable tourist attraction. The area is strategically located in relation to the Northern and Southern Peninsula and Cape Flats Subregions, both for access by tourists to their amenities and for access by the inhabitants of the Subregions to the developments.

4.4 The Region and Subregions

In addition to the development of amenities by class it is necessary to consider the general pattern of development in the Subregions and in the Region as a whole.

An exhaustive comparison between, on one hand, the capacities of the amenities existing and proposed and, on the other, the population today and in 2000 AD is beyond the scope of the present study. Information would be required regarding the capacity of each type of amenity together with the future distribution of the population in the Subregions. The effect of the "agglomeration economy" of amenities referred to in Section 3.5 on the intensity of use of each also requires further investigation.

However, it is apparent even from the incomplete list of existing amenities given in Section 1.9 that the vast majority of those of Classes IV and VI occur in the Northern Peninsula Subregion; that most of those in Classes I and III are similarly situated; and that those of Class II are rather more evenly distributed, with a slight preponderance in the Northern Peninsula. By the same criterion, the Southern Peninsula Subregion appears to be next in line with the Tygerberg-Milnerton and Cape Flats Subregions occupying third and fourth places respectively.

Proposals are made in this study with the intention of raising the amenity-value of the latter two Subregions in particular in order to obtain a more even spread of amenity in the Region and therefore a considerably higher level of amenity-value for the Region as a whole.

A further possibility for improving the amenity-value of the Cape Flats Subregion exists in the large-scale planting of trees. These would supply much-needed windbreaks and, like the poplar avenues of France (but set back further from the roadway), could be used to define the main roads and open-space strips of the Subregion. They would also provide some much-needed three-dimensional relief in this rather flat area. Planting should not be in the form of unbroken avenues but should be systematically planned as a unifying element in the landscape, providing near and distant views from roads and other vantage points.

While the soil of the Cape Flats is not well adapted to trees these would grow well if planted in large holes containing adequate compost. In some cases it might be necessary to cut through the limestone stratum but this would not be difficult as the deposit is not very hard or very thick in most areas. Generally new trees should be sheltered from the wind; this could be achieved by interplanting between gums and wattle (either existing or planted at the same time).

More trees and vegetation are obviously required in the vicinity of Muizenberg and it is intended that the developments suggested in this study should contain very adequate provision of trees as windbreaks. Experiments in Israel with the planting of trees in slightly salt soil may be of assistance in this connection. Planting with semi-halophytes (plants which absorb some of the salt in the ground and also provide bright-coloured flowers) is sometimes carried out after the stabilisation of dunes with marram grass.

Reference was made in Section 1.6 to the attraction upon tourists exercised by the Kruger National Park and to the effects of this on other amenities in the country, particularly those at some distance from Jan Smuts Airport. Many tourists are very interested in seeing wild animals in their natural habitat. The only game reserve in the Region is the Cape Point Reserve, where only a very limited range of animal life is available; the inclusion of predators would alter the character of this reserve and eliminate the various fishing and picnicking facilities which provide some of its present attraction. It should however be possible to establish a wild-animal reserve on a small scale in the North-Eastern portion of the Tygerberg area; an extensive privately-owned zoo already exists in this locality and this could be enlarged to provide more and larger paddocks with vantage points from which the animals might be viewed. An imaginative development is called for in which bars and cages are as far as possible eliminated and the area rendered attractive by landscaping. Trees would be required to provide shelter for the animals and the area should be well drained in order to prevent the various ailments (such as foot rot) caused by dampness. As the area would not be so extensive as to allow for normal methods of feeding - on vegetation or other animals - supplementary feeding would be necessary. Basically however the idea is authenticated by the fact that most types of African wild life were originally present in the Region; and the existence of a similar reserve outside Nairobi indicates that a small reserve within easy reach of a city is a feasible proposition.

4.5 A Future for the Future

This study represents only the start of the work required. Further subjects for investigation have suggested themselves continually; these range from urban renewal projects in which account is taken of the historical buildings of the city to surveys of the distribution of flora in the Region. Many lifetimes could profitably be spent in research and planning in the complex ecological system of the Cape Peninsula alone.

The upper limit to the world's population is not set by the maximum number that can be fed but rather by the maximum number for whom the facilities necessary for a full life can be provided. In at least one aspect of these facilities - amenities, as here defined - the Cape Town Metropolitan Region is already more amply provided, both in variety and extent, than any area of equal size in South Africa. The Region is in all probability one of the most fortunate in the world in this respect. However there are influences apparent which, as they grow, will threaten this still happy state of affairs. The times have changed and the future can no longer be excluded from our calculations.

TABLE 1

VISITORS TO SOUTH AFRICA : COUNTRY OF ORIGIN

	1946	1951	1956	1961	1966
African countries	36,009	75,623	114,857	145,524	181,390
Europe	2,548	13,574	16,447	18,860	56,480
Asia (and sundry)	439	1,307	675	602	2,049
America	517	2,320	4,561	4,802	13,735
Australia	176	574	1,073	1,127	3,354
TOTAL...	39,689	93,398	137,613	170,915	257,008
Increase over 5 years		135.32%	47.34%	24.20%	50.37%
Increase in comparison with 1946		135.32%	246.73%	330.64%	547.55%

Twentieth Annual Report of the South African Tourist Corporation 1966-67.

TABLE 2

VISITORS TO SOUTH AFRICA : MODE OF TRAVEL TO SOUTH AFRICA

YEAR	By Air	%	By Sea	%	By Road	%	By Rail	%	TOTAL
1966	96,389	37.5	20,468	7.9	104,845	40.8	35,306	17.7	257,008
1965	71,787	31.6	18,003	7.9	103,717	45.7	33,392	14.7	226,899
1964	61,348	26.8	19,728	8.6	110.408	48.2	37,768	16.5	229,252
1963	50,838	23.4	20,939	9.7	109,968	50.7	35,260	16.2	217,005
1962	43,225	21.3	19,745	9.8	109,324	54.1	29,863	14.8	202,157
1961	37,875	20.0	18,861	10.0	102,991	54.0	30,758	16.0	190,485

Twentieth Annual Report of the South African Tourist Corporation 1966-67.

VISITORS TO SOUTH AFRICA : PURPOSE OF VISIT

YEAR	HOLIDAY	%	BUSINESS	%	EDUCATIONAL	%	TOTAL
1966	212,549	82.7	31,401	12.2	13,058	5.1	257,008
1965	184,546	81.3	30,686	13.5	11,667	5.1	226,899
1964	190,965	83.3	26,544	11.6	11,743	5.1	229,252
1963	186,004	85.7	20,581	9.5	10,420	4.8	217,005

Twentieth Annual Report of the South African Tourist Corporation 1966-67.

TABLE 3

TABLE 4

URBAN GROWTH MODEL							ALTERNATIVE		
Density Type	%	Population	Household	Households per acre	Gross Density p.p.a.	Acreage	Gross Density p.p.a.	Acreage	Saving in Acreage
MEDIUM	23.64	566,060	5.40	4	21.60	26,200	30	18,868	
HIGH	72.36	1,730,000	4.50	10.65	47.93	36,100	60	28,833	
OTHER	4.00	95,670	1.00	10	40.00	2,391	60	1,594	
TOTAL	100.00	2,391,730				64,691		49,295	15,396

Space required for housing portion of Coloured population in Cape Flats Area on basis of densities shown in Urban Growth Model and Alternative : AD 2000.

(Total Coloured population 2,601,000 less 209,270 in other areas = 2,391,730).

TABLE 5

URBAN GROWTH MODEL							ALTERNATIVE		
Density Type	%	Population	Houshold	Households per acre	Gross Density p.p.a.	Acreage	Gross Density p.p.a.	Acreage	Saving in Acreage
HOUSES	70%	487,563	3,814	3	11.50	42,397	15	32,504	
FLATS	23%	160,100	2.64	8	21.12	7,585	30	4,336	
OTHER	7%	48,756	1.00	40	40.00	1,219	40	1,219	
TOTAL	100%	696,518				51,201		39,059	12,142

Space required for housing White population on basis of densities shown in Urban Growth Model and Alternative : AD 2000.

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Built-up areas and open space as existing. Map No. 1

This map shows the original village-nuclei now in most cases linked to the conurbination centred upon Cape Town. It also illustrates the linear form of the built-up area (to 1966) which has spread along the Eastern and Western flanks of the mountainous spine of the Peninsula. This form has also resulted from the urban spread along the railway and main road to the interior, to become the Goodwood-Bellville complex.

The areas that have thus far been declared forestry or nature reserves are shown as follows :

A : "Defined area" of Table Mountain, the majority of which has now been placed under the jurisdiction of the Historical Monuments Commission.

B : Tokai-Silvermine forestry reserve.

C : Slangkap-Witsand forestry reserve.

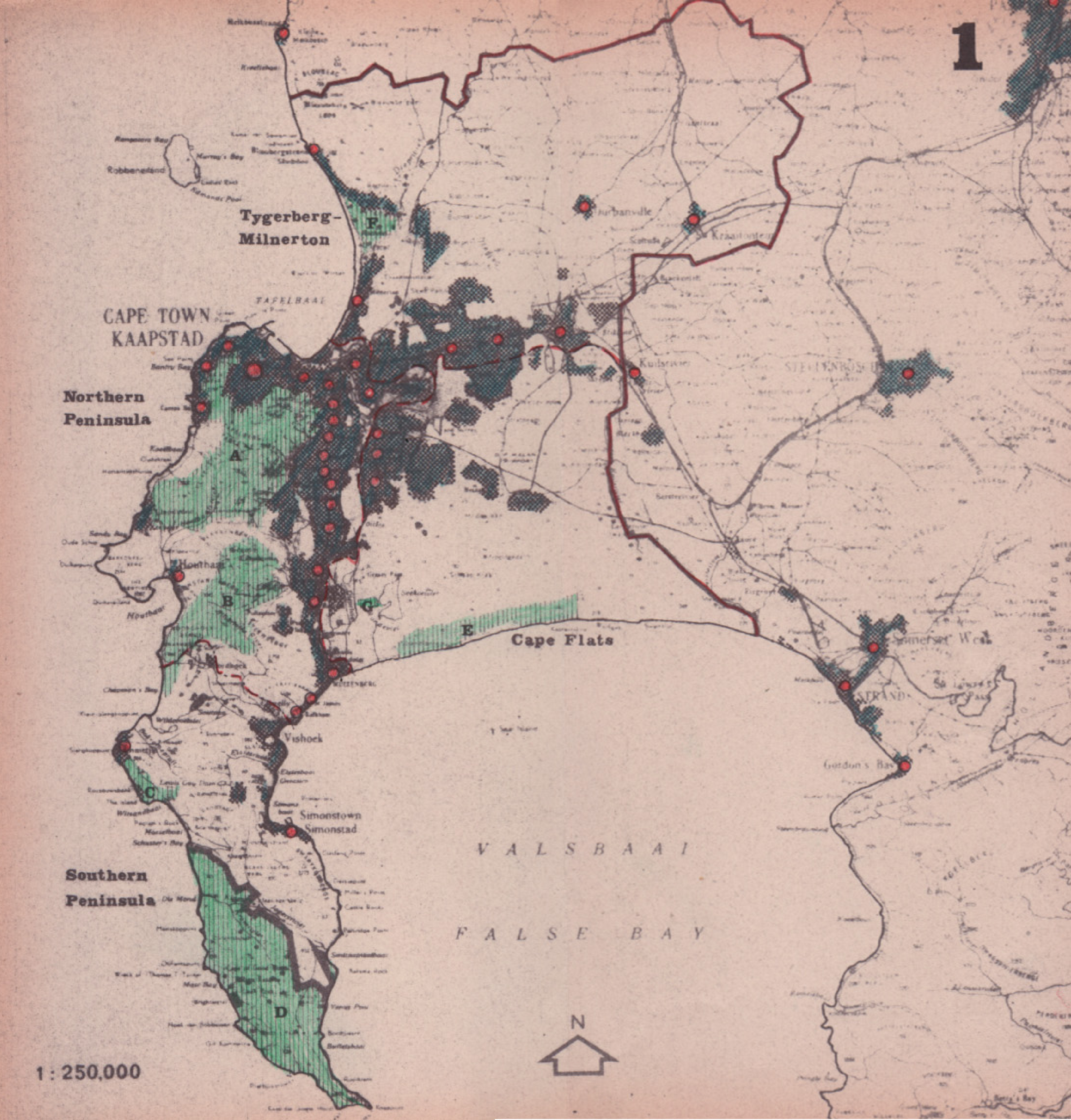
D : Cape of Good Hope nature reserve.

E : Strandfontein forestry reserve.

F : Rietvlei bird sanctuary.

G : Rondevlei bird sanctuary.

The boundary of the 01 Economic Region, upon which this study is based, is shown together with the boundaries of the Subregions.



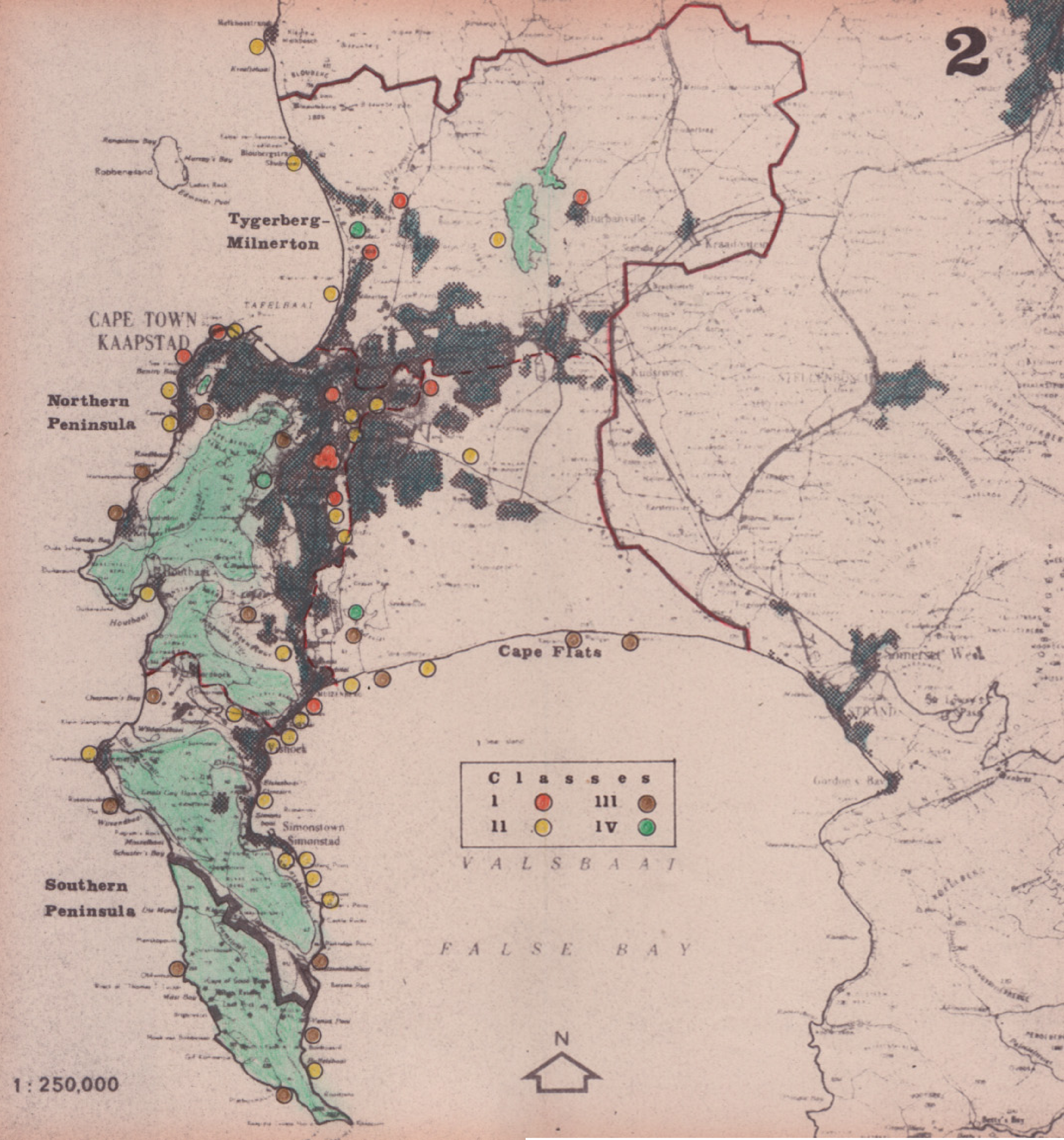
1
Tygerberg-
Milnerton
TAFELBAAI
CAPE TOWN
KAAPSTAD
Northern
Peninsula
A
B
C
D
E
F
G
Cape Flats
Vishoek
Simonstown
Simonstad
Southern
Peninsula
VALSBAAI
FALSE BAY
N
1:250,000

Amenities of Classes I to IV as existing. Map No. 2

The "Natural" amenities of the Region are shown on this map, the key on the map indicating the colour code. The upper areas of the mountain spine of the Peninsula (Class IV) are defined approximately by the 500-ft. contour; this has not been followed rigidly as the real criterion for the definition of this area is one of accessibility, and there are localities below this level more difficult of access than some points above it.

The lower slopes are generally more accessible and fall into Class III; this includes areas around roads that penetrate into the mountain spine.

The smaller clubs together with school playing fields and local parks are not shown.



2
Tygerberg-
Milnerton
TAFELBAAI
CAPE TOWN
KAAPSTAD
Northern
Peninsula
Cape Flats
Classes
I
II
III
IV
Simonstown
Simonstad
VALSBAAI
Southern
Peninsula
FALSE BAY
N
1: 250,000

Amenities of Class VI as existing. Map No. 3

The declared historical monuments of the Region are shown on this map together with the buildings listed in the book : "The Old Houses of the Cape" by Fransen and Cook*. It is based upon a map prepared by the Department of Geography at U.C.T.

The larger concentrations of historical buildings are marked with an asterisk.

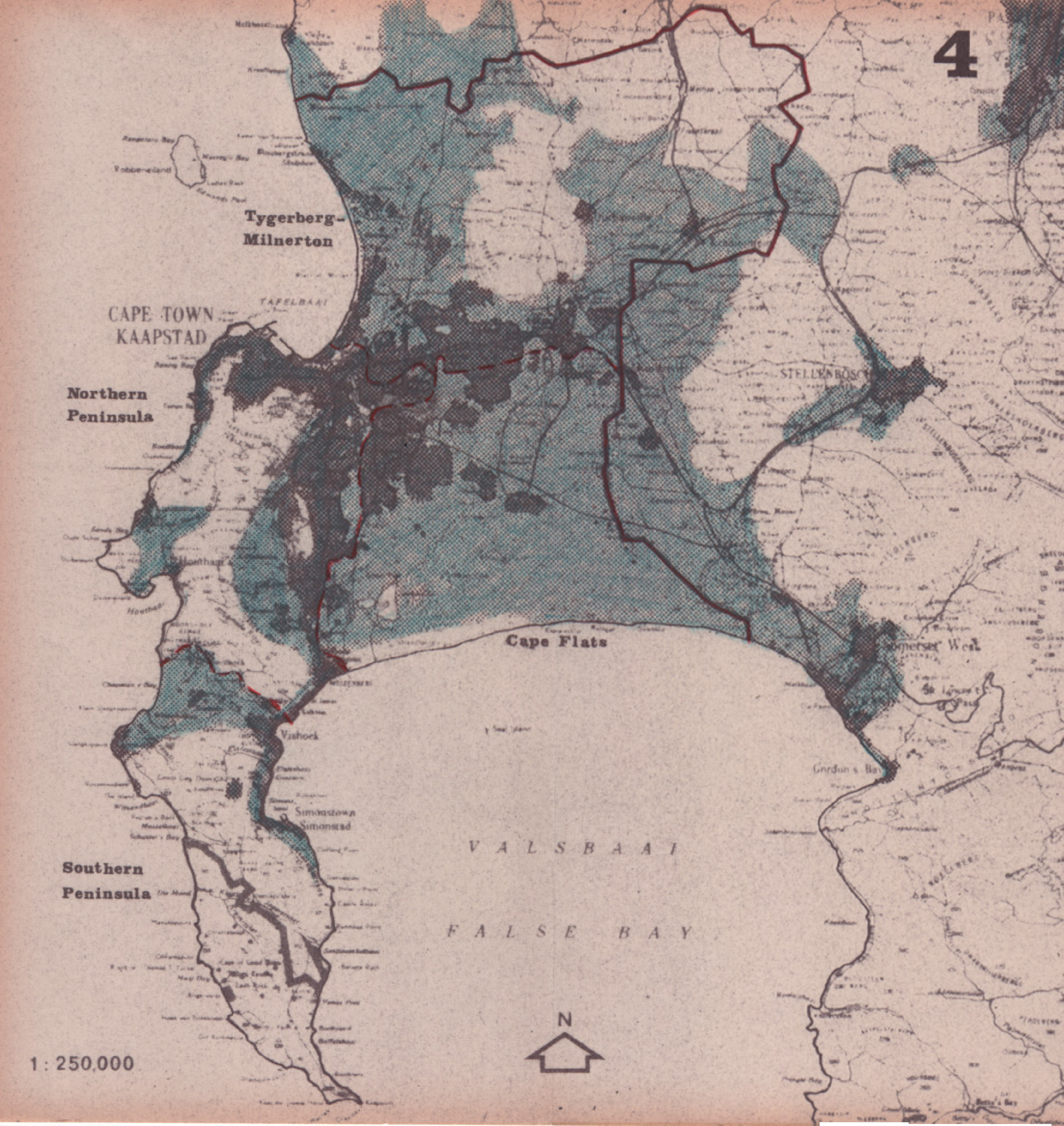
* Hans Fransen and Dr. Mary Cook : The Old Houses of the Cape. Cape Town - A.A. Balkema 1965.


3
Tygerberg-
Milnerton
CAPE TOWN
KAAPSTAD
Northern
Peninsula
Durbanville
Kraaifontein
Kuilsrivier
STELLENBOSCH
Cape Flats
Somerset West
STRAND
Gordon's Bay
Robbeneiland
TAFELBAAI
Houtbaai
Vishoek
Simonstown
Simonstad
Southern
Peninsula
VALSBAAI
FALSE BAY
N
1 : 250,000

An urban growth model. Map No. 4.

Mr. Andrew Louw's extrapolation of present trends to AD 2000 results in the built-up area shown on this map*, covering virtually all the land of the Region suitable for building apart from an area in the Tygerberg Hills and to the North-East.

* Andrew Louw, op.cit.


4
Tygerberg-
Milnerton
CAPE TOWN
KAAPSTAD
TAFELBAAI
Robbeneiland
Northern
Peninsula
STELLENBOSCH
Cape Flats
Somerset West
Gordon's Bay
Vishoek
Simonstown
Simonstad
Southern
Peninsula
V A L S B A A I
F A L S E   B A Y
N
1 : 250,000

The urban growth model revised, showing the major recommendations of this study. Map No. 5

The effect of increasing the densities of the built-up areas, especially in the Cape Flats Subregion, is shown on this map which also suggests in very general terms a possible form for the Region by AD 2000.

The built-up areas are organised on the basis of a radial system centred upon the C.B.D. and the open spaces are linked wherever this is possible.

The Class IV areas shown are :

A. Cape Peninsula Reserve
B. Rietvlei bird sanctuary
C. Rondevlei bird sanctuary

Class III areas :

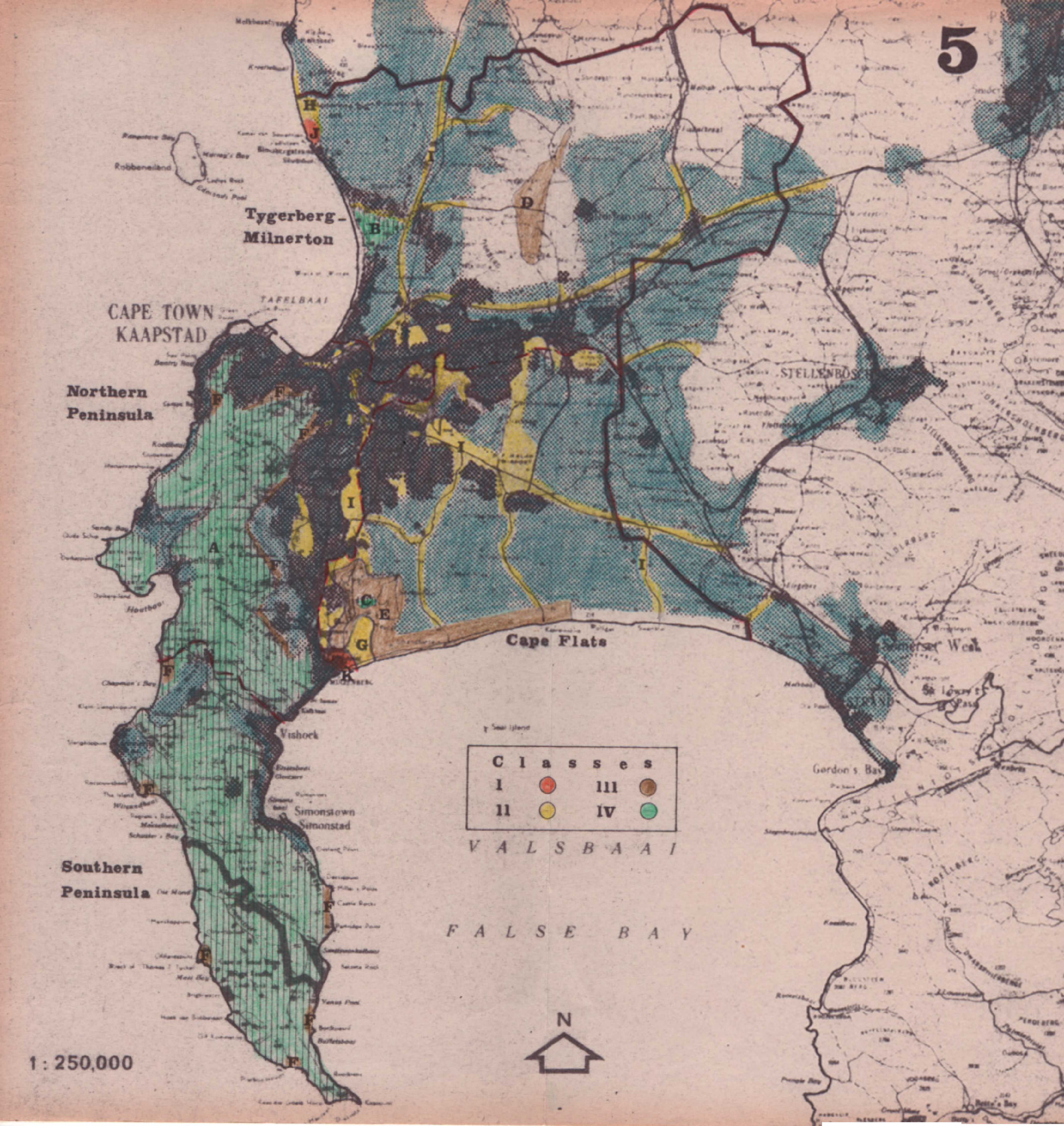
D. Tygerberg Development
E. Portion of Lakeside Development (including Strandfontein Forest Reserve)
F. Fringe of Cape Peninsula Reserve

Class II areas :

G. Portion of Lakeside Development (including Sunrise Beach)
H. Portion of Blouberg Development
I. Linked open spaces adjoining built-up areas

Class I areas :

J. Portion of Blouberg Development
K. Muizenberg Development (and urban renewal scheme)


5
Robbeneiland
Tygerberg-Milnerton
TAFELBAAI
CAPE TOWN
KAAPSTAD
Northern Peninsula
Southern Peninsula
STELLENBOSCH
Cape Flats
Somerset West
STRAND
Gordon's Bay
Vishoek
Simonstown
Simonstad
Classes
I
II
III
IV
VALSBAAI
FALSE BAY
N
1 : 250,000
A
B
C
D
E
F
G
H
I
J
K

Frequent mention has been made in the study of the existing linear form of the built-up areas of the Region and of the possibility of extending this form in the future, parallel with the linking of open spaces into a similar linear system. It has also been suggested that "fingers" of open space might project from this system. These might occur between the original nuclei of the built-up areas; apart from helping to define the various communities (if in fact these have any separate character) they would provide more ready access to the open space system.

Map No. 6 illustrates the existing linear forms referred to as they occur in the Observatory-Claremont area. The approximate positions of the "village nuclei" are indicated with asterisks. It is apparent that the "fingers" referred to already exist, in some areas, in rather more than rudimentary form, especially if school playing fields are taken into account.

The photograph below shows some of the spaces which appear on the map, penetrating far into the built-up area. Taken from the position marked on the map on the mountainside above Rhodes Memorial, it indicates the visual contact that already exists between Rondebosch Common and the open space of Rhodes Estate.

OBSERVATORY
6
PINELANDS
MOWBRAY
ROSEBANK
RONDEBOSCH
CLAREMONT
NEWLANDS
ATHLONE
CRAWFORD
University of Cape Town
Rhodes Memorial
Groote Schuur
Klein Schuur
Rondebosch Common
Mowbray Golf Course
Rondebosch Gholfbaan
Liesbeek
Prince of Wales Blockhouse
Hospital
Reservoir
Bosbouklas
Rhodes Drive
Keurboom Park