

THE USE PATTERN OF URBAN OPEN SPACES :
CASE OF A LOW-INCOME
RESIDENTIAL AREA

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CHAPTER 1

OUTLINE OF THE DOCUMENT

INTRODUCTION

This dissertation entails an investigation of the use pattern of open spaces in low income residential areas as well as to hi-light issues which influence this pattern. Open space provision is often ranked last in the list of the major needs in low income areas, coming behind issues like the provision of land for housing, for employment creation, for welfare facilities, etc. In view of the fact that land for other uses is regarded as more important, it is therefore critical in poorer areas (more so than in the better-off areas) to ensure that the open spaces provided are as useful and usable as possible.

CHAPTER OUTLINE

Chapter two initiates the discussion by giving a brief summary of the definitions of urban open space as discussed by the various authors. It goes on to outline the problems associated with open space planning and provision, particularly in low income residential areas. Chapter two also includes a formulation of the purposes of this project, a description of the study area as well as the methodology used in undertaking the study. A brief description of the study areas is also included in this chapter.

Chapter three gives a broader conceptual framework for open space planning. The important factors which need to be taken into consideration when planning for urban open spaces are hi lighted.

The fourth chapter deals with the context in which planning in South Africa's Black townships is being undertaken. The

chapter looks at how the Apartheid policy, capitalism and the Homeland system have helped shape urban planning in Black areas, in general and with respect to urban open spaces facilities in particular.

Chapters five, six and seven are based on the case study, which is Mahwelereng Township. Chapter five discusses the design, development and maintenance aspects of urban open spaces as observed in the study area. In Chapter six the role of the authorities in the provision of urban open spaces is discussed while chapter seven focuses on the use pattern of the open space facilities in the study area.

The conclusion and recommendations are made in chapter eight.

CHAPTER 2

INTRODUCTION

A great deal has been written about the necessity and beauty of open spaces in urban environments (for example, Gold, 1980; Hecksher, 1977; Hester, 1975; Johnson, 1984; Cherry, 1977; Council for the Environment, 1990, etc). Urban open space is often associated with pleasure, with recreation, with human encounters and communal celebration. It is therefore seen as playing a significant role in renewing and stabilizing the cities' social and economic base (Hecksher, 1977 p1).

2.1 WHAT COMPRISES URBAN OPEN SPACE

Many attempts have been made to define urban open space. Hester (1975 p20) defines urban open space as the public outdoor territory close to home which because of the residents' collective responsibility, familiar association and frequent shared use is considered to be their own. Clawson (1971 p20) has defined it as all geographic area (land or water) within or reasonably adjacent to a city or urban concentration which is not covered by buildings or other permanent structures.

Cotton (in Wright et al, 1976 p6) provides a more or less similar definition which refers to urban open space as that part of the three dimensional void of the landscape not occupied by man-made features constructed for spatial closure. Gold (1980 p305) defines urban open space as land and water in an urban area which is not covered by cars or buildings; or any undeveloped land in an urban area which has value for park and recreation purposes, conservation of natural resources or historic or scenic purpose. Lynch (in

Wright et al, 1976 p6) adds a new dimension to the definition of urban open space as an outdoor area ... "which is open to the freely-chosen and spontaneous activity, movement or visual exploration of a significant number of city people."

In combining these definitions therefore, urban open spaces are areas (land or water) within the urban environment that are not covered by any man-made structures, are open to shared and freely chosen and spontaneous activity or visual exploration or are useful in conserving unique or threatened features (Wright et al, 1976 p6). They include parks, paths, streets, playgrounds and playing fields, wastelands, rubbish dumps, ponds, flood plains, streams, gardens and bus stops.

Open space facilities normally depict a three-level hierarchy, depending on their sizes, thresholds and ranges of users. The first hierarchy comprises of the local or neighbourhood facilities. Such facilities have a lower threshold and a shorter range, for example, smaller parks and play lots. The second hierarchy consists of community facilities which serve a larger population over a wider range, for example, larger parks and playing fields. Open space facilities of the third hierarchy are larger and are used by many communities, for example, botanical gardens, zoos and major parks.

Urban open space facilities can form an important component of city life. Indeed urban open space can make a positive difference to an area. It can be the structural framework of a city to produce edges, focii, nodes, districts and regions of different sizes, scales and character (Gold, 1980 p32). No single element can better shape and compliment urban form than well placed open space. Its ability to

differentiate, integrate or buffer different types of land use activities is unsurpassed. Sensitively designed open space can also give people a sense of identity and territoriality. It can define urban form and limit the physical size, shape or identity of a city or neighbourhood (Gold, 1980 p32).

2.2 PROBLEMS ASSOCIATED WITH URBAN OPEN SPACE

Although the beauty and necessity of urban open space is widely appreciated, there is however, inadequate literature on problems associated with the provision of urban open space, especially in low income areas where there are limited funds for the development, management and maintenance of these spaces. Instead of enriching the lives of the residents, such spaces might be turned into health hazards and high risk environments which are to be left lifeless for most parts of the day. Refuse dumping, crime and deviant behaviour are very rife in many of the open spaces. They also consequently serve to separate areas within the same built-environment rather than integrate them.

According to Wright et al, (1976 p2), the provision of sufficient, suitable open spaces in urban areas has posed vexing problems for many years. Open spaces, both active and passive can constitute a major problem in many low income residential areas despite their being provided with good intentions in mind. The problems often stem out of their being poorly planned or undeveloped or not being well maintained or managed.

As unplanned dumping grounds the spaces are turned into a breeding ground for insects and wild animals which might turn the areas into a health hazard. The overgrown weeds

and bad smell emanating from these dumps also make life unpleasant for households staying adjacent to the spaces. The values of properties close to such open spaces are therefore likely to be reduced tremendously, which is the opposite of what is normally intended in the provision of urban open spaces. The whole neighbourhood is also made unpleasant and unattractive.

The problem of refuse dumping is indeed important in many of South Africa's low income residential areas. A study by Kadungure (1985) shows the extent of this problem in Soweto, one of the earliest and largest black townships in the country. The problem of refuse dumping is, according to Kadungure (1985) related to a variety of other reasons. People dump refuse in the open spaces not just because of ignorance about health issues, but because of various other reasons, among others, the system of refuse removal and the design and planning of open spaces which make them targets for refuse dumping. On page 45, Kadungure (1985) argues that not only is the dumping problem in South Africa's townships a result of the apartheid political economy and negative externalities, but the spatial form and urban design do contribute towards refuse dumping.

He further argues that *ad hoc* planning resulted in undesirable remainders of open spaces (at times by default and not deliberate), uncoordinated pedestrian walkways and roads, alleys and passages that are not adequately surveilled. Such open spaces tend to attract refuse dumping and other negative activities.

Indeed urban open space provided on an *ad hoc* basis due to a lack of a goal directed and co-ordinated open space policy result in facilities that lack any meaningful functional, physical and visual integration into the overall urban

structure. "Space left over after planning" (SLOAP) is often in the form of useless fragments of land which tends to be misused (Council for the Environment, 1990 p2).

The problem of crime (including vandalism) in the open spaces is also a very important issue. In many South African townships crime is reaching alarming proportions. Open spaces are regarded as extremely high risk areas, especially at night although it is not uncommon for acts of crime to be committed in broad daylight. Open spaces tend to be havens for muggings, loitering, rapes, murder, delinquent behaviour and the gathering places for social outcasts. They are also turned into battle grounds for gangs and/or used as boundaries between warring factions.

Because of these problems, open spaces in low income areas tend to become the insurmountable barriers between areas rather than make the whole area cohesive. These no-man's lands often turn into places for inter-group battles and are used as boundaries between the different criminal territories and even political groups. In many Natal townships, particularly Kwa Mashu, some sections are assumed to be Inkatha supporting and some UDF/ANC supporting and open spaces between these sections are regarded as the dividing lines or boundaries.

Indeed the images that many of the open spaces have taken on is not what their designers have envisioned, but what the criminal and the fear of crime have created. The conversion of open spaces into high risk areas cannot, however, be completely blamed on the criminal elements. The commission of a crime in an open space or elsewhere requires at least two elements; a willing offender and an environment that offers relatively favourable opportunity to commit an offence (Ewing and Wallis, 1981 p104). Lack of insight

during the planning process, among other reasons, can lead to undesirable occurrences in the urban open space.

However, other spontaneous uses of urban open space in low income areas are not as bad as that of refuse dumping and serving as havens for criminal elements; open spaces are also used for informal urban agriculture. The poor and the land less classes of urban residents tend to use undeveloped open spaces for gardening purposes, the products from which are used in the home or are sold locally (Lado, 1990 p258).

Planning and designing for open spaces therefore have a lot to do with what the provided open space will turn out to be. However, good planning and adequate design processes form only a part of how open spaces will turn out to be. Lack of development of the open spaces as well as inadequate maintenance also contribute a great deal in the transformation of open spaces into negative elements within the urban fabric.

Many low income South African communities are now becoming concerned about the state of open spaces in their areas. Since 1977 when one, Japhtha Lekgetho, founded an environmental awareness committee (NEAC - National Environmental Awareness Committee) based in Soweto, several communities have become aware of their living areas and have started to organise around issues which affect their environments.

During the unrest period of 1986 to 1987 when many black township schools were closed because of riots, school children became involved in cleaning and improving their parks. Although many of these parks have since deteriorated back to their former conditions, some are still well kept even to this day and are a source of pride for the

communities who took part in making them the way they are. There had also been cases where individuals have taken up some action where open space problems were affecting them personally. An article appeared in City Press (January 28, 1990 p3) about the plight of a homeowner who had to take legal action against people who dump rubbish next to her house. Her main argument was that this refuse dumping next to her property will lower the value of her house in the real property market.

If open spaces are planned, designed, developed and maintained in such a way that they attract the demand for their use, the chances of them turning into safety and health hazards will be greatly reduced. The location, form, shape, size, quality, level of development and maintenance, the availability of lighting in the spaces and the social acceptability of the facilities are some of the important factors which have a bearing on what the open spaces will turn out to be.

The turning of open spaces into high risk elements tend to stem out of the following reasons:

Firstly, planners tend to use planning standards and planning principles in a blind way. In many cases no modifications are made to suit specific areas. The same standards are applied universally to all communities regardless of obvious differences in their needs and resources.

Secondly, the social factors influencing the use of open spaces are often neglected during the design process. In many cases the residents have no say in the decision making process. Planners are often in the dark about what the people want, where and how they want the facility. This

problem is quite important in the South African situation where most of the planners differ from the users in terms of the socio-economic status, class and race.

Thirdly, the provision, development and maintenance of open spaces in low income areas is normally the responsibility of the local authorities. These local authorities often do not have enough funds for the provision and maintenance of facilities. Open spaces are therefore kept fallow or are misused until the local authority can afford to develop them.

The importance of open spaces (both passive and active) cannot be overemphasized. The provision of these spaces in low income areas is therefore a necessity that should not be allowed to be overridden by the problems they create. Reasons for these problems need to be identified and explored in order to find appropriate solutions.

2.3 PURPOSE OF THE STUDY

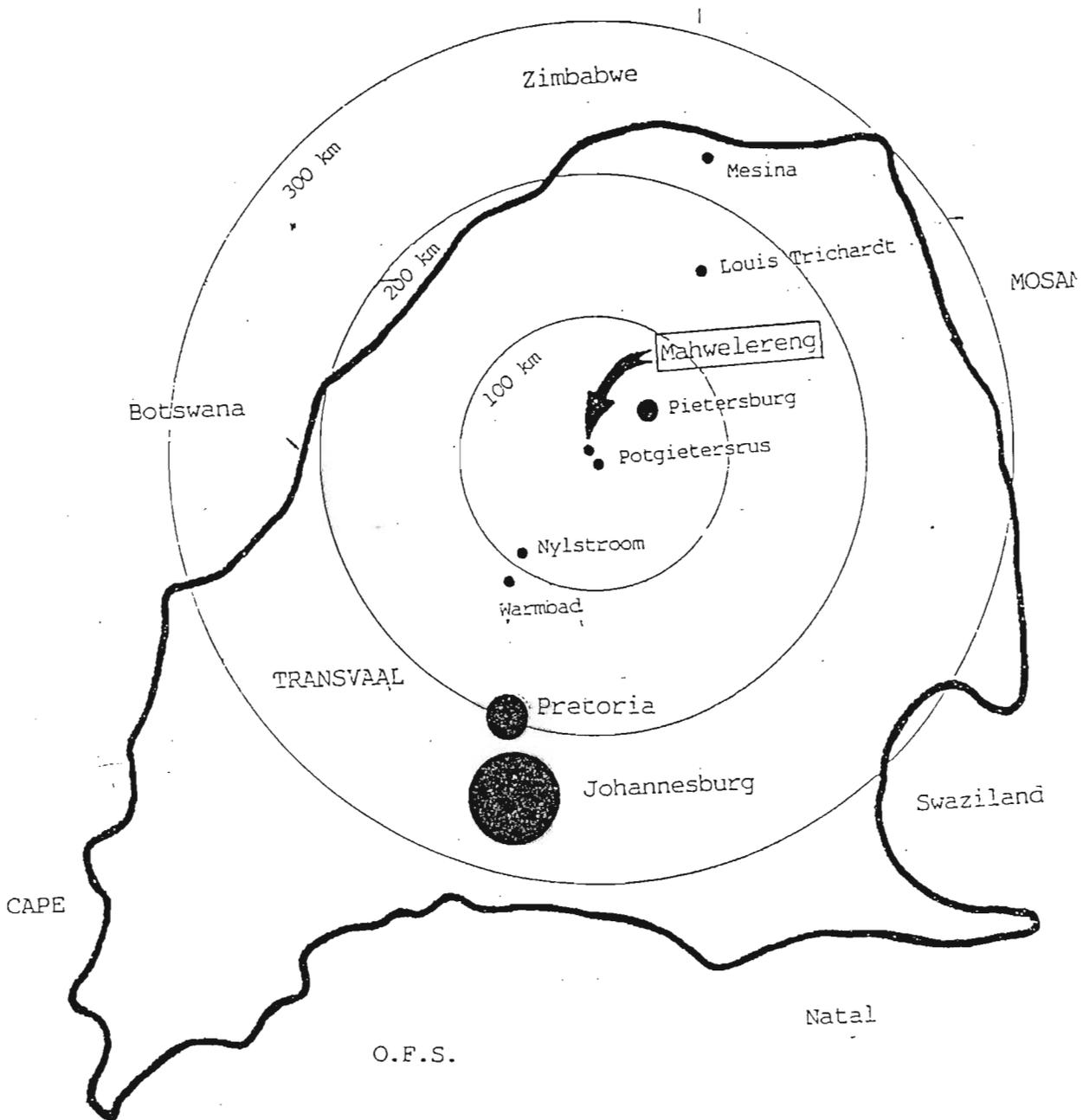
The study will serve basically two purposes:

1. To create an understanding of the use pattern of open spaces in low income areas, in terms of who uses them, when, how and how often.
2. To identify the design issues, as well as other issues which could influence the use pattern of urban open space facilities.

Information obtained from this study can be useful as a guide in designing and planning for useful and usable urban open space facilities.

2.4 STUDY AREA

The study was undertaken in Mahwelereng township, a dormitory town next to the Northern Transvaal town of Potgietersrus, see Map 2.1.



MAP 2.1: LOCATION OF STUDY AREA

Source: Van Nyk & Partners (1988)

According to the South African homeland policy, Mahwelereng township falls under the Lebowa government although the South African government still remains the superior authority (Mahwelereng Structure Plan, 1988 p20). The Lebowa Department of Home Affairs and the South African Department of Development Aid (DDA) regulate the development and administration of all the townships in the homeland despite the fact that Lebowa has attained self-governing status. Mahwelereng is also under the limited authority of the Mahwelereng Town Council.

Mahwelereng was chosen as the study area because of the following reasons:

1. I have lived in the area for the whole of my life and am familiar with its problems. Due to the time limit set for this project, my knowledge of the area will be an advantage. In addition, the extent of the area is manageable, given the available resources.
2. The area is a good example of a low income residential area which has got problems of misuse and/or under use of the open spaces.
3. Many urban studies are done in townships with no links to any homeland, for example, Soweto (Johannesburg), Atteridgeville and Mamelodi (Pretoria), etc. It would be interesting to look at the hardship experienced by the homeland urban areas.

BACKGROUND INFORMATION ABOUT STUDY AREA

Mahwelereng has become one of the most important black townships in the Northern Transvaal. The influx of rural people created by the economic strength and drawing power of

the nearby town of Potgietersrus in offering job opportunities and a range of consumer goods and services have led to an excessive growth in population. This has led to a multitude of socio-economic, physical development and coordination problems.

The township originally covered an area of about 376, 3197ha (Unit A) but has since increased in size. Mahwelereng is hot and very sunny in summer and very windy and dusty towards the end of winter. The present population is about 17 000 people and the monthly household income was about R700 in 1988. According to the 1988 Socio-economic study (in Mahwelereng Structure Plan, 1988 p55) only about 1% of the household expenditure was spent on recreation and entertainment.

Although the Mahwelereng Structure Plan (1988) takes cognizance of the necessity of urban open space, not much is said about planning for open space in the formal township. Mahwelereng has no formal public open space recreation facilities, except for open play grounds such as school or creche sites.

2.5 METHODOLOGY

The method used involves the studying of maps of the area, observations and physical surveys of the open spaces, interviews and discussions with the residents and the authorities as well as the use of questionnaires directed at both the residents and the authorities.

2.5.1 INTERPRETATIONS FROM MAPS

A structure plan of the area was studied to find out the physical aspects of the open space design which could have a

bearing on the demand for use at a macro level. Aspects of interest include the following:

1. the numbers and sizes of the various spaces
2. their shapes and form (especially with regard to their position in relation to that of houses - for surveillance purposes)
3. their locations relative to other land-uses
4. their intended (theoretical) uses and
5. their physical accessibility

2.5.2 SURVEYS AND OBSERVATIONS

In addition to the confirmation of the aspects seen on the maps, physical surveys and observations were undertaken to ascertain the levels of development and maintenance of the spaces as well as finding out about the actual uses of the spaces. On a micro level, these processes involved a study of the patterns and levels of use of the different parts of an open space (only one space was chosen for the micro level study) and to try and find reasons for the differences in the use levels and patterns.

Surveys and observations will also involve a study of the social characteristics of the people using particular spaces and the types of activities they engage in.

2.5.3 INTERVIEWS AND QUESTIONNAIRES

A. FOR THE RESIDENTS (see APPENDIX 1)

Interviews and the use of questionnaires (based on random sampling) involved an investigation of the human factors which influence the use of open spaces, particularly the socio-economic factors such as age, sex and the type of

economic activities which people are engaged in. Although the interviews were based on random sampling, an attempt was made to ensure that the following categories of respondents were represented:

1. People interviewed in the open spaces and people interviewed elsewhere in the residential area;
2. Equal number of male and female respondents;
3. People within a variety of age groups and economic activities and
4. People who stay adjacent to open spaces and those who stay far away from them.

Interviews were also used to give an indication of the problems associated with the open spaces as well as of the extent to which the residents are involved in the processes of open space provision.

Only about 40 questionnaires were used. No major scientific basis was expected to be derived from the use of these questionnaires as most of the answers were descriptive. Where necessary, percentages will be used to interpret the data. The use of questionnaires were however useful in providing some guidelines on the open space experiences of the residents.

B. FOR THE AUTHORITIES (see APPENDIX 2)

Officials of the Lebowa Department of Home Affairs and the Mahwelereng Town Council were interviewed to find out their levels of involvement as well as the problems they encounter in the planning, development, management and maintenance of open spaces. The policies (or major determining factors) applied in the provision of open spaces were also noted.

Information obtained from the use of a combination of these methods is expected to be sufficient to can draw conclusions about the use pattern of the open spaces as well as the planning, development and maintenance issues which influence this pattern.

CHAPTER 3

CONCEPTUAL FRAMEWORK

3.1 INTRODUCTION

This chapter deals with the general conceptual framework behind open space planning as well as to highlight the importance of good planning and adequate design, development and maintenance of the spaces in attracting the demand for their intended uses. The important aspects of open space planning which will be looked at are:

- a. the functions of open spaces in urban situations;
- b. the problems associated with the development, control and management of open spaces;
- c. the important design factors which must be taken into consideration in the planning of open spaces, and finally,
- d. the importance of community involvement in the processes of open space provision.

It has for a long time been recognized that there is a link between the city's amenities and the soundness of other aspects of life (Heckscher, 1977 p1). The open space system is one of these amenities. According to the Council for the Environment (1990 p2) the quality of the urban environment depends to a large extent upon the provision and protection of open spaces and on their sound planning and management by the local authorities. It was in fact recognized as early as the 1890s that outdoor recreational areas were a critical need in the crowded industrial cities (Kornblum, 1981 p15). Although the importance of urban open space has long been acknowledged by urban leaders, there has always been a problem of assigning part of the valuable and often

scarce urban land for use as part of the urban open space (Council for the Environment, 1990 p2). Energy, shelter, social relationships and security are often seen as more crucial than the provision of open space so that urban open space is often denied the attention it deserves.

With the introduction of machinery in industries and the subsequent increase in leisure time, urban open space has become an important issue in the planning process (Wurman et al, 1972 p11). The increasing international concern about the environment has also led to more attention being given to the provision of urban open space.

3.2 FUNCTIONS OF URBAN OPEN SPACE

Urban open spaces perform a variety of functions. A well maintained open space system adds to the aesthetic value of the city or neighbourhood, thereby increasing its prestige. This increases the real property values within the area, especially for properties adjacent to these spaces. They also help in shaping and guiding development and are often used as reference points when directing strangers into the area.

Open spaces are also used for movement (paths, streets), working (informal sector activities, mobile clinics, mail delivery), leisure (parks, play lots and playing fields), and for educational projects (nature studies). As paths for movement the open spaces should be well interconnected and planned in such a way that they attract a lot of movement and have a good level of surveillance. This will increase their levels of safety from criminal elements. Spaces that are used for work purposes such as the informal sector activities could require some special facilities such as waste bins, shading and/or even paved surfaces. As places

for leisure activities the spaces should be planned, designed, developed and maintained in such a way that they meet the needs of the users and as places that serve some educational purposes the spaces themselves should have some aspect of educational interest, for example, wetlands within the built environment and could require specialized facilities like sitting places.

Another important function of urban open space that is often ignored is that of community and political gatherings. Open spaces are often preferred as gathering places for mass protests and demonstrations because in such a location a demonstration is more visible and have symbolic weight and can accommodate more people than a building can (Carr and Lynch, 1981 p18). In addition, in an open space the chances of panic or entrapment are reduced.

Open spaces also provide some stimuli necessary in human development (Kornblum, 1981 p15). Because open spaces such as parks allow some degree of "getting loose" it is here that one first senses some shift in social relations or an evolution of dress or manners. Because it is the public place for free commentary and artistic expression, a lot can be observed or learned in the urban open space (Carr and Lynch, 1981 p18).

Open spaces within the city may also be useful as places for the preservation of natural and human resources. Water, marshland areas, forests and woods, geological features such as rock outcrops, as well as historic and cultural sites are some of the features worth preserving. With the current popularity and importance of nature conservation and resources management, the need for open spaces within the built environments is likely to increase.

Other spaces within the city are kept for urban expansion such as areas for housing, commerce, industry, public service facilities, etc while some spaces within the urban setup could be left vacant because of the concern for public safety, for example, flood plains, areas below dams and areas with unstable soils.

Urban open spaces are also useful in separating functions which are not compatible, for example, noxious industries and residential areas. In South Africa open spaces have even been used as buffer strips to reinforce the Group Areas Act by separating areas occupied by the different race groups.

It is rare to find an open space that is used solely for one purpose. Parks, for example, may be used both for leisure, landscaping and for learning experiences. The multi-functionality of urban open spaces is an objective that open space designers often aim for.

Although it is easy to predict the theoretical uses of urban open space, the actual specific use is much more difficult to predict. Usually activities occur where they have not been planned for, that is, urban open space is not always used for what it was designed for. This could indicate the difficulty the designer has had in predicting the specific use of urban open space. This, according to Hester (1975 p38) normally results from lack of information on non-design design variables, that is, the socio-economic and psychological characteristics of the people that the open spaces are intended for. This implies that the use of open spaces depends on many factors other than the physical design of the space. The levels of development and maintenance of the spaces also determine what the open space

will be used for. The actual use of open spaces is therefore often unique to each area.

The usefulness of urban open space is determined mainly at two stages. the planning stage and the post-planning stage.

1. The planning/design stage.

Planning refers to the decision-making activity which leads to the systematic allocation of land and water areas for various open space purposes and the development of implementation measures to guarantee the future protected status and public accessibility of such areas (Wright et al, 1976 p13). A variety of factors need to be taken into consideration to ensure adequate planning. These include a consideration of the present and future demand for the various types of open spaces; identifying potential useful open space areas, especially with regards to the important design factors such as the shapes of the open space areas, their sizes, forms, slopes, locations in relation to other land uses, etc; environmental considerations; suggesting appropriate implementation programs; spelling out the intended purposes of the spaces, etc.

This stage of open space provision could be well done by the planner. However, any or all of the planning or pre-implementation aspects could be poorly or inappropriately done, leading to a space that will either not function or be used for other purposes.

2. The post-planning/implementation stage

This stage involves the carrying out of plans prepared in the planning stage. In order to be successful therefore,

the plans must be correctly interpreted and properly implemented.

The implementation stage deals with the actual development of the open spaces. Depending on the intended uses, the development of open spaces could involve the provision of the following requirements:

1. landscaping or the planting of trees, flowers and grass
2. seating and toilet facilities
3. foot paths and/or paved surfaces
4. playing or sporting equipments
5. refuse bins
6. the application of a proper management and maintenance system for the spaces, etc.

It is the presence or absence of any one of either the planning or development aspects that is important in determining the usefulness of the spaces. Even if all the planning aspects have been appropriately done, without proper or total development of the spaces, the plan will fail.

In practice the activity of planning has usually been regarded as separate from implementation and almost invariably carried out by different organizations or components of the authority. The result has been that planners generally hand over their reports to decision-takers who pass it on to a certain component of the authority and then pay little further part in the proceedings. Obviously this arrangement has inherent problems with planners excluded from the implementation process and therefore unable either to adjust plans to meet changing circumstances or to learn from experience (Robinson, 1990 p1). Robinson (1990 p1) goes on to suggest that ideally, planning and implementation should be treated

as one continuous process, partly in order to cope with increasingly complex situations that are characterized by uncertainty and the need for short-term decisions.

In order to provide useful and usable urban open space therefore, both the planning and the implementation stages should be properly undertaken. The planning and design of the spaces should be followed by their adequate development if the usefulness of the open space is to be achieved. The type and amount of development of the space will depend on its intended function. For instance, an open space that was planned for conservation purposes might require as little development as the erection of a fence around it while an open space that is meant for sporting activities would require a lot of equipments.

Open spaces that are well planned and adequately developed will attract the demand for their intended uses. Such spaces will have a lower chance of being misused.

3.3 THE DESIGN OF OPEN SPACES

Many authors, such as Hester (1975), Wright et al (1976) and Carr and Lynch (1981) have argued that the deficiency in the previous and some current open space planning is the neglect of the critical relationships between the physical design of the open space and the function it is intended to serve. These authors argue that the misuse and lack of use of the spaces point to - among other things - to the inadequacies in the design process. Hester (1975 p37) argues that in fact designers have been guilty of a kind of physical design determinism, ignoring social factors and expecting a space to be used if it is aesthetically pleasing and provides a variety of settings. It has become clear that the aesthetic consideration is only one of several factors that influence

the use of neighbourhood space. It is critical that the unique social factors be taken into account in the design process.

This section will focus mainly on the design of recreational open space because all urban open space tend to have some recreational value, be it planned or spontaneous. According to Clawson (1971 p144), the consideration of the various aspects of open space planning for recreation can therefore best precede the consideration of open spaces for other purposes.

Various physical and socio-economic factors have to be considered in the design of urban open spaces. These factors operate at the macro- and micro level in influencing the use of open spaces. Important factors which influence the use of open spaces at a macro-level include the following:

1. the quantities or numbers of the spaces
2. the quality of the spaces
3. accessibility of the spaces
4. the social characteristics of the potential users
5. the management and maintenance of the spaces
6. the levels of community involvement in acquiring the spaces.

The important micro-level factors include the provision of the various equipments and facilities and the social characteristics of the users. These important macro- and micro-level factors will be discussed below.

3.3.1. THE QUANTITIES OF THE SPACES

Of the quantities of land to be used as open space a variety of indices and standards have been generally utilized. Most of these depend on the type of use and often relate to the

number of people residing in the area, for example, X hectares per Y number of people. Although these standards are useful, care should be taken to ensure that they are not applied blindly but should take into accounts some factors unique to the area, for example the topography of the area and the socio-economic status of the residents.

The concept of standards is an important phenomenon in normative planning. Despite conspicuous warnings against the unqualified use of standards, many planning endeavours have adopted standards, apparently without question. Even where standards are impossible to implement, most cities have persistently retained their use. Departing from conventional standards seems unthinkable, despite all logic to the contrary. What began in an arbitrary fashion has become codified by blind acceptance.

The use of standards is often viewed as the easy way out for urban planners. Most standards are absolute and simple. To the busy decision maker or planner, they represent a quicker solution. They require no study and can be applied as an instant solution to problems. In many instances they become ends rather than means or guidelines. Communities are often evaluated by "how much" rather than "how good" their facilities are.

It is important to clarify several ambiguities before a community adopts the traditional standards. Gold (1980 p181) discusses the following inadequacies inherent in the conventional standards:

Firstly, the difference between minimum, maximum, desirable or optimum standards is more than semantic. Most of the traditional standards are therefore vague and contradictory and as a result have significant legal, social and environmental implications.

Secondly, time dimensions are seldom attached to conventional standards. The ambiguity of relating a standard to the ultimate population assumes either infinite wisdom or a stable population, both of which are impossible or improbable.

Thirdly, the dimensions of scale and access are not explicit in conventional standards except for vague reference in some cases to an arbitrary service radius and finally, the traditional standards do not adequately consider the population density. The number of individuals or households is taken as the determining factor of how much should be provided.

Despite the various problems, conventional standards can still be very useful in urban planning. Gold (1980 p179) suggested that to be useful the standards should at least satisfy the following criteria:

1. they should be people oriented,
2. they should be feasible, that is, they have to be politically, socially, economically and environmentally realistic,
3. they should be practical, that is, they must be simple and be based on sound planning principles and finally,
4. they should be relevant which implies that they should relate to people and time.

3.3.2 THE QUALITY OF OPEN SPACE FACILITIES

Good quality open spaces should be one of the important objectives that designers should aim to reach. The quality of the spaces is very important in determining the usefulness and usability of the facilities.

Quality should involve not only the aesthetic aspects of the space, but safety, comfort and convenience as well (Wurman,

1972 p38; Hester, 1975 p77). Planners tend to consider physical comfort among the most important design determinants, but psychological comfort, a social factor, is seldom considered (Hester, 1975 p77). In order to provide the users with some level of psychological comfort, designers must try to minimize the feeling of confusion, uncertainty, ambiguity and discomfort in the open space designs. Spaces that portray these characters are likely to be under used or to be taken advantage of by the criminal elements. Many people would prefer to use spaces that are not too complicated, where the chances of getting lost, being mugged or coming across a dangerous animal or reptile are slim. People need to feel free yet protected.

Other people might view open spaces as places where one can escape to be totally alone. These people would prefer spaces that satisfy one's need for personal autonomy, that provide them with emotional release and the opportunity for self-evaluation, while at the same time they have a feeling of safety from the knowledge that there are other people within the same space.

The consideration of the psychological factors is very complex because many of them tend to differ for every individual. It is however important to find out how various people perceive the senses of comfort and to try and cater for these in planning for usable open spaces.

3.3.3 ACCESSIBILITY OF THE SPACE: VISUAL, PHYSICAL AND COST ACCESSIBILITY

Urban open space can provide a refreshing escape from the tedium of big city monotony. The benefits, however, are universally beneficial only if the spaces are accessible to all people (Leornard, 1981 p84). Beautiful landscapes have

no meaning for people who have no visual or physical access to them just as much as expensive sporting activities mean nothing for people who cannot afford them.

The physical and cost accessibility factors influences how often a particular space is used. This factor is closely linked to the physical (especially the location of the open space), psychological and socio-economic factors.

Accessibility also has to do with the physical comfort a particular open space offers as well as to the distance between the people and the open space facility. The availability of a suitable means of transport, its affordability and the cost of the open space activity are also important. The accessibility factor therefore determines the frequency of use of the space, for example, in the sense that low income people tend to use the nearest spaces frequently because this does not involve a lot of travel expenses.

Planning must therefore take into consideration the percentage of local residents who have access to each open space facility and to try and plan in such a way that as many people as possible are able to use the facility.

3.3.4. THE SOCIAL CHARACTERISTICS OF THE POTENTIAL USERS

The social characteristics of the potential open space users are as important as the physical structure and aesthetic value of the space in determining how useful the space would be. It has become clear that the aesthetic consideration is only one of several factors that influence the use of open spaces (Hester, 1975 p37). Social variations, especially the socio-economic class, age, sex, culture and religion are equally important consideration in the allocation of urban

spaces. It is therefore critical that the unique social factors in each area be taken into account in the open space design process. If the spaces are socially unsuitable, they are either unused or misused.

Different groups perceive, use, feel about and interact in space differently. Their requirements will therefore also differ. The availability of leisure time, the affordability, mobility and culture will strongly determine the levels of use of the spaces as well as the types of activities undertaken. The income bracket, gender and age, for example, can be important in determining how much leisure time one has for open space activities or what one can afford.

Low income people, for example, might prefer to use open spaces near their homes (to avoid travel expenses) and activities that are less costly, such as having a picnic or playing soccer.

Age is also important mainly because of considerations such as the need for supervision of children and levels of mobility. There is no clearly defined age brackets for use but it is undisputed that general correlations do occur between stages in the life cycle and various open space (especially recreational) activities. For example, children below the age of six require special spaces with specialized safe equipment such as those expected in the play lot. Ideally, these spaces should be close to home and have sitting places for adults who will be supervising them. Playing spaces for toddlers should also be accessible by a walking route that is free from heavy vehicular traffic and other physical hazards. They should also be within sight and hearing distance from as many dwelling units as possible

to allow for additional unpaid supervision (Canada Mortgage and Housing Corporation ,1980 p7).

As children grow, so do their levels of mobility and independence. Teenagers for example, can travel further, are reasonably more independent and prefer to be involved in active sports such as soccer, rugby, etc. Adults would require open spaces that cater for all age groups such as big parks with sporting facilities nearby so that children of various age groups can be catered for in cases of family outings. Pensioners would require spaces for walking and watching things such as bird life. They would generally prefer places that are quite and peaceful.

The issue of "age" is quite an important one in that if it is not sufficiently considered during the planning process, it might lead to a lot of conflict within the open spaces. This depends to a large extent on the purpose of the space. Adults may be offended by what the teenagers engage in and teenagers may dominate younger children who will in turn dominate the toddlers. A more powerful group (either through aggression or offensive behaviour), will end up attaining territorial dominance over the whole space.

Since urban open space is quite limited, conflict often arise over its use, especially if the uses conflict. Such a problem is common in dense urban neighbourhoods. It is therefore essential to develop a compromise plan that satisfies the needs of the various users. Territoriality and dominance of an urban open space by one user group should be discouraged at all costs.

The influence of sex, culture and religion, although still very important in some societies, tend to become more blurred as the socio-economic status improves. In the more

sophisticated societies other factors such as personal preference and the types of facilities available tend to be more important in determining the choice of activity and the level of participation.

If the socio-economic characteristics of the users are not adequately considered in the design of the spaces, their provision tends to be of no use to anyone. This is due to the fact that the needs and wishes of the users tend to be misunderstood, especially if the designers are not local residents or differ from the local people in a variety of socio-economic characteristics. This problem is very important in South Africa where most of the planners are White and middle-class.

In planning for the predominantly Black neighbourhoods, these planners often do not understand or do not try hard enough to find out about the beliefs, values, needs and desires of the mostly low-income Black population. Spaces that were planned under such conditions could tend to be inappropriate for the kind of situation and are therefore misused or vandalized.

The design process is therefore critical in determining the usefulness of open spaces. There has been renewal of interest in the design of urban open space because of the increasing importance of user expectations. Designers are now beginning to realize the importance of designing spaces that meet the needs of the various user groups rather than designing spaces that satisfy the values and desires of the people that are being planned for and not necessarily those of the planners, (Hester, 1975 p37).

3.4 MANAGEMENT AND MAINTENANCE OF OPEN SPACES

The proper planning and adequate development of open spaces, although very important, are not enough to guarantee proper usage of the spaces. It is also imperative that the open space facilities should be properly maintained, managed and controlled.

All urban open spaces should be managed, no matter what their functions are. According to Clawson (1971 p15) there is no such thing as an unmanaged open space, any more than there is an unmanaged wilderness. The important issues in the management of open spaces are, according to Clawson (1971 p15) the kind of management, the tools used and the objectives for management processes. These can vary over a wide range, but some form of management is inescapable. It may be day-to-day, or seasonal, or be based on other schedules. Management processes involve keeping the spaces clean, planting and tending trees and grass, repairing equipments, controlling the behaviour of the users, etc. The type and level of management depends a lot on the function of the open space.

The maintenance of open space facilities is affected by the availability of funds, materials used, community attitude and individual and public commitment (Wurman, 1972 p44). Inadequate maintenance could lead to the dysfunctioning of facilities as well as poor aesthetic value of the space and even of the neighbourhood as a whole.

The management of urban open space is however very complex, especially when dealing with the control of user behaviour in the public territory. Understandably, open space, as with other aspects of open society, must be free yet controlled (Carr and Lynch, 1981 p18). Open spaces should

provide some level of "getting loose" as well as an opportunity for the expression of self and group, unfettered by routine constraints of work place and family.

Unfortunately the amount of freedom that open spaces offer may also lead to deviant behaviour, especially because many open spaces increase the chances of not being caught (Kornblum, 1981 p16). This normally has to do with the design and planning of the space, such as the shape and size of the space, or could be due to inadequacies in the development or maintenance aspects such as the amount of vegetation cover, the quality of the lights, etc.

Although the freedom of action and behaviour in the public spaces is an important issue that is to be respected, it may offend other users, especially in a big neighbourhood accommodating people of different cultures and ages. This may lead to conflict which might override the important purposes of urban open space. The importance of public behaviour also depends on the purpose of the space and also differ for different cultures and customs.

It is therefore difficult to manage open spaces as it is difficult to differentiate between socially acceptable behaviour and that which is offensive. In some areas specially trained police are employed to correct public manners in these spaces as well as to reduce vandalism (Carr and Lynch, 1981 p17). Full time caretakers of open spaces may also be employed so as to lend a presence to the open spaces to avoid undesirable activities (Hecksher, 1977 p18). In high-income areas this measure is often fairly effective as the local authorities are often in a financial position to afford this. In addition some of the spaces are privately controlled as well as owned, for example, by sport clubs which then become responsible for their management and maintenance.

In general, the management and maintenance of open spaces in low-income areas is very inadequate. The shortage of funds is one of the major reasons for this. Poor management and maintenance lead to the deterioration in the quality of urban open spaces and subsequently, to their misuse or under use.

3.5 COMMUNITY INVOLVEMENT IN OPEN SPACE PROVISION

Open space facilities do not exist for the benefit of the planners and the local authority, they are provided for use by the people in the area. Because residents frequently share the use of these open spaces, ideally they should be involved collectively in acquiring, planning and changing these spaces. This kind of involvement increases their collective symbolic ownership of the spaces, especially if the spaces are perceived to be meeting their special needs (Hester, 1975 p20). An ideal situation in any community is therefore to have the people share in the responsibility of providing for their own needs (Wilson and Hatting, 1988 p119). Planners should therefore encourage citizen participation in the planning process (Gold, 1980 p38).

Community involvement is necessary both for social and economic reasons. For social reasons in that people community involvement can lead to the provision of facilities that are socially acceptable to them and will therefore utilize them effectively and protectively. Community participation is also necessary for economic reasons in that facilities will not be vandalized and will be used properly if the community was actively involved from the planning stage to the maintenance stage. Community involvement can therefore mean an investment in monetary terms. Although community involvement can help in making

people appreciate their facilities more, it is however, important to note that just as vandalism is a symptom of other more concrete problems, so community involvement is a method of applying solutions to these problems rather than a solution in itself (Pullen, 1973 p261). The proper design, development and management of the spaces can be linked with community involvement to reduce the chances of misuse of the spaces.

Citizen participation will ensure that plans are made according to what the people want, not what the planners or authorities believe is best for them. The real success of urban open space planning therefore depends largely on the extent to which the citizens participate in the major decisions affecting the eventual course of action, or strategy (Wright et al, 1976 p61).

3.6 SUMMARY

There is a trend towards greater interest in urban open space as an integral part of a complete living environment. People are therefore demanding that planners do a better job of creating quality spaces that are socially and psychologically acceptable as well as aesthetically pleasing, (Hester, 1975 p37). Spaces that do not meet the needs of the residents are either not used or become the targets for vandals.

However, it is not only planners who should get the blame for the misuse or under use of the spaces. The local authorities who have to develop and maintain the open spaces can also be held responsible for the improper use of the spaces.

To avoid the misuse or under use of the spaces, not only must planners know the people they are designing for, they should themselves be involved in the planning, along with those who will develop, manage and maintain the spaces. The planners and the people should come together to share ideas and even to undertake some research in cases of situations which both groups are not very familiar with. This involvement leads not only to better spaces but also to that investment that makes more likely their future care (Carr and Lynch, 1981 p18).

The importance of taking into consideration the unique social and physical factors of each area when planning for urban open space cannot be overemphasized. It is important to note that the importance of the factors differ from place to place and that each area should be researched before any planning decisions are made. It is also evident that it is not only the physical features that are important in the design of open spaces, but a whole variety of social, psychological, economic and political processes as well. It is important that planners design spaces that meet the needs of the users, spaces that are not rubber stamps of other neighbourhood spaces, spaces that are consistent with the values and desires of the neighbourhood and not necessarily those of the planners (Hester, 1975 p36).

CHAPTER 4

URBAN PLANNING IN SOUTH AFRICA'S BLACK TOWNSHIPS - THE CONTEXT

4.1 INTRODUCTION

This chapter looks at the context in which planning in South Africa's Black urban areas is being undertaken. Factors such as the history, political context and economic situation under which planning is being done are very important in shaping the urban planning processes. Their importance lie in their influence on the various aspects of planning, such as, the planning principles and standards applied, the allocation of funds to different areas for planning, design, development and maintenance of urban facilities, the availability of skilled and committed labour for undertaking planning activities in various areas, etc. It is therefore important to give a brief discussion of the major factors which influenced urban planning in South Africa's Black townships, which, subsequently influences the provision of open space facilities in these areas. Because this study is undertaken in a black urban area, the discussion will focus on the development of black urban areas with special emphasis on factors which have helped shape the kind of urban planning applied in these areas.

The next section of this chapter will briefly look at how the Apartheid policy and the homeland system have helped shape the urban planning processes in the black homeland townships, and therefore, how they helped shape the planning and development of urban open space facilities.

4.2 APARTHEID, CAPITALISM AND THE HOMELAND SYSTEM - THEIR IMPLICATION IN THE PLANNING AND DESIGN OF BLACK URBAN AREAS

The policy of apartheid or separate development of the races has attracted international condemnation as well as growing opposition inside the Republic. It is a comprehensive system of grouping and segregating people by race and was evolved by a component of White South Africans - the National Party (Smith, 1976 p1). It is unique as a modern form of discrimination in that it is sanctioned by the ideological commitment of its practitioners. It operates through spatial, political and social separation of the four major race groups (African, coloured, Indian and White) as categorized in the Population Registration Act of 1950.

A complex system of laws and other regulations have been applied to effect the policy of apartheid, one of the most notable being the Homeland system. The ruling Nationalist Party created ten separate national states for the African population out of what were formally the African Reserves. This implies that about 70% of the population was to be forced to live on only 13% of the land (effect of the 1913 and 1936 Land Act). The official governmental view is that the homeland concept recognizes and helps to preserve the distinct ethnic and cultural identity of the African tribal groups. A more plausible interpretation, however, is that this plan actually serves the interest of white domination and the exploitation of Black labour (Smith, 1982 p26). The homelands perform an important function in the maintenance of the Africans as a cheap and disenfranchised labour force for the (predominantly white) South African capital and for foreign investors. Authors such as Wolpe (1972 p427) and Legassick (1972 p30) in fact see apartheid and its homeland system as acting directly in the interest of capitalism.

Initially, Blacks could only stay in "white" South Africa in so far as they could benefit white capital. The specific means by which cheap labour is produced are as follows. The extended family in the homeland fulfills social security functions needed for the reproduction of the migrant labour force. Under the conditions of migrancy, the subsistence needs of the migrant worker between contracts and provision for his maintenance during periods of illness, unemployment and old age could be met in the homeland, so could the subsistence and welfare needs of his children (Stadler, 1987 p108). The reserves (homelands) relieve the capitalist sector and its State from the need to expend resources on these necessary functions (Wolpe, 1972 p435).

The political, social and economic setup in the homelands is in such a way that employment opportunities are non-existent and production from farming is low. The settlement of Blacks in homeland townships in close proximity to "white" urban areas (for example, Garankuwa and Mabopane near Pretoria, Umlazi near Durban, Mahwelereng near Potgietersrus, etc) also clearly prejudices the development of industry within the homelands themselves; without such development, the homelands will always be dependent on the white-controlled economy (Smith, 1976 p2), and will always be dependent on it for employment purposes.

Indeed "inescapably the logic of apartheid is that on the one hand the bantustans will remain labour reserves from which employers in the Republic will be able to draw at will, while on the other they will provide disposal areas where the unemployed, the sick and the disabled can be sent when the central economy no longer has use for them," (Kane-Berman, 1979 pp251, 246-7).

The doctrine that Africans had no right to remain in the "white" urban areas except as labourers shaped the parameters of their living conditions. Single sex hostels and poorly planned residential areas (also called locations or townships) were created to temporarily house cheap labour which would eventually move back to the homeland. The provision of well planned and properly developed open spaces is a rare sight in these locations. Many of the African townships are poorly planned and inadequately developed, with very poor urban infrastructure and services as well as gross financial problems.

While townships (within "white" South Africa) close to the major cities portray a lot of problems, the situation is even more acute in the homeland townships. In addition to the problems experienced by "South African" townships, they are also in a confusing situation by being directly under the control of a three-tier level of government: the central government, the quasi-independent homeland government and the local government which is in the form of a Town Council. For example, the development and administration of Mahwelereng (study area) is determined by the South African government's Department of Development Aid (DDA), the Lebowa government's Department of Home Affairs and finally by the Mahwelereng Town Council which has very limited authority.

Processes such as decision making, coordination of the planning process and the issue of funding of projects are therefore very confusing. Land use and planning regulations followed are those determined by the DDA (Directorate: Physical Services, DDA, 1988). Such regulations are therefore determined by officials whose way of life, culture and values are completely different from those of the people in the homeland; and these differences might tend to be reflected in the regulations which they formulate. The

Lebowa Department of Home Affairs merely coordinates ideas brought forward by its various departments affected by township plans (such as the Departments of Health, Education, Welfare, Justice, etc) and to approve plans which are in most cases drawn by private consultants.

The homeland town councils normally have very little say in matters concerning the planning of their townships. The town councils, and even the homeland governments, are clearly not autonomous; they depend to a large extent on funds and decisions made by the central government. This confusing situation leads to a lot of problems in the planning process. It is often not clear as to whom to blame or to applaud for the planning situations in the homeland urban areas.

The inadequacies in the urban planning processes have led to an emergence of a variety of urban social movements in the townships - out of a previous situation of an almost total non-citizen participation in the planning endeavours. People are beginning to organize around issues such as the provision of adequate housing, better open space facilities and other urban facilities and infrastructure. Rent boycotts, marches and boycotts of white businesses are some of the processes used as weapons to pressurize the authorities to provide better living environments. As a result, there appears to be some renewal of interest in the planning of better urban residential areas for the black population; including the need for the provision of useful and usable urban open space facilities.

4.3 SUMMARY

Because of the political policies of this country, the planning of living areas for the urban Blacks has always left much to be desired. These areas resemble temporary abodes which are supplied with very few facilities and infrastructure. The poor conditions in the black townships clearly show that in planning for these areas, an effort was made to keep costs as low as possible, much to the detriment of the people that are being planned for. The situation is made even worse by the fact that for a long time, community involvement in planning was virtually non-existent.

The situation in Homeland urban areas is even more problematic. Because of the shortage of enough skilled and experienced personnel in planning within the homelands, often consultants from outside these areas are employed to undertake planning activities, including the planning of open space facilities. These consultants would understandably have very little first hand knowledge about the areas and the people. Their planning endeavours are therefore likely to reflect their values and wishes rather than those of the people they are planning for.

The shortage of funds for the planning and development of facilities also constitute a major problem in the homeland urban areas. The homeland governments rely on the central government for financial assistance. They therefore have to be accountable to the central government and to plan (albeit indirectly) according to the wishes of its bureaucrats. The standards and regulations employed in the planning of homeland towns - and subsequently, the planning of urban open space facilities - are those formulated by the central government departments although the physical, social and

economic factors in the homelands differ a lot from that of white South Africa.

The planning processes in the black urban areas often tend to be inadequate because of the factors that were discussed above. The emergence of urban social movements in the townships has played an important role in pressurizing the planners and the authorities to rethink their roles.

CHAPTER 5

THE DESIGN, DEVELOPMENT AND MAINTENANCE OF OPEN SPACES

CASE STUDY: MAHWELERENG

5.1 INTRODUCTION

In order to be able to relate the pattern of use of the open spaces to their design, development and maintenance, an identification of the spaces as well as their various design features and development and maintenance levels would serve as some point of departure. The findings discussed in this chapter are those obtained from the interpretation of the layout map of Mahwelereng (Map 5.1) as well as from observations and physical surveys of the area, and to a limited extent from interviews with the residents of Mahwelereng.

Findings relating to the various design features of the open spaces, their development and maintenance levels as well as their theoretical and actual uses are summarized on Table 5.1.

OPEN SPACES	THEORETICAL USES	ACTUAL USES	SIZES (HA)	DEVELOPMENT LEVELS
A	Park	Bus Rank, Informal sector Recreation	0.6	Poor
B	Play Lot	Recreation Refuse dumping	0.2	Poor
C	Park	Not used	0.4	Poor
D	Unspecified	Path	0.2	-
E	Unspecified	Playing	0.5	-
F	Parking	Recreation	0.5	Poor
Y	Dumping site	Refuse dumping	11.3	-
X	Township edge	Playing	13.2	-

TABLE 5.1: OPEN SPACES IN THE STUDY AREA

In addition to school yards, streets and paths, eight other major open spaces were identified, see MAP 5.1. Open spaces in the area seem to be concentrated in the southern part of the township, in the vicinity of the Central Business District (CBD). Open spaces in Mahwelereng do not show a clear distinction in hierarchy.

5.2 THE OPEN SPACES

OPEN SPACE A (See Map 5.1)

a. Design Features

INTENDED FUNCTION: Park

SIZE: 0.6ha

SHAPE: Rectangular

FORM: This open space lies parallel and adjacent to a busy main road on one side and a primary school on the other side. The level of surveillance from the housing units is quite low.

LOCATION: Open space A has got the best location in terms of accessibility as compared to the other spaces. It lies opposite the Central Business District in an area where many of the residents go to at one time or another for different reasons or purposes. This area has got a variety of shopping facilities, surgeries, a clinic, a community hall, a bank, a post office, administrative offices as well as the major bus and taxi ranks in the township. People are therefore attracted to the area because one can engage in a variety of functions during a single visit.

b. Development and maintenance

Not much has been done to develop this area into a park. It has been fenced around but the fence has been cut at various places by vandals so as to create a path through this space. Two toilets are provided but they are almost always out of order. The area is illuminated by flood lights at night.

This open space is to a large extent an open terrain, dusty in the dry season and muddy during the rainy season. It has got several big shady trees which just grow wildly without ever being trimmed or watered. No sitting places have been provided whatsoever. A few rocks scattered in this space are used as sitting facilities. Very little cleaning work is ever done in this space and is mostly carried on by people who engaged in the informal sector selling activities in this space.

c. Actual uses of the space

Part of open space A is presently being used as the major bus rank in the township although there are no sufficient facilities required for such an activity, for example, enough toilets, tarred or paved surfaces, proper bus stop shelters, etc.

Another part of the space is used for informal sector selling activities where mainly fruits and vegetables are sold. The large amount of movement of people throughout the day makes this space attractive to the informal sector. Another section of this space is used for informal recreation activities, mainly by male teenagers, young adult males and middle-aged males who tend to use different parts of the park.

This open space is also very popular as a centre for community gatherings. Reasons for its popularity are as follows:

First, this open space is highly accessible to all the people in the township.

Second, it is very open and flat so that all the people in the meeting are able to see and hear the speaker clearly.

The visibility of the gathering also gives it more symbolic weight.

Thirdly, the area is well lit so that meetings can be as easily held in the evenings.

d. Micro-level study

This open space facility can be divided into three parts according to the type of activities which occur there, as illustrated on Figure 5.2.

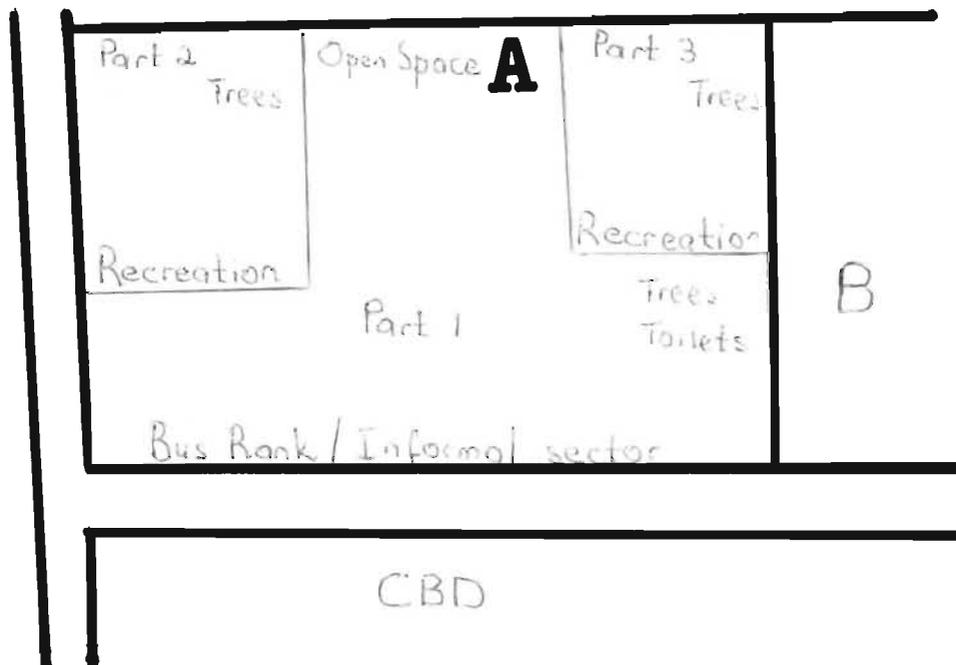


FIGURE 5.2: MICRO-LEVEL STUDY, OPEN SPACE A

Part 1 which occupies the largest area is used mainly for bus rank and informal sector activities. The shady trees available in this part of the park offer some relief for the bus users from the extreme temperatures in this part of the country. The informal sector sellers bring their own sun shades. This part of the open space is occupied during weekdays from as early as six o'clock in the morning to about seven o'clock in the evening. On Saturdays it is

intensely occupied only until the early afternoon and is almost deserted on Sundays.

Part 2 appears to be the most popular section for recreation purposes. It has got the largest and most shady trees and is far enough from the CBD to can allow the users some level of privacy while at the same time allowing them a good view of what is happening in the Central Business District.

It is occupied mainly by adult males who park their cars under the trees and chat for hours, listen to music, have braais and drinks (especially over weekends) and watch the activities in the Central Business District on the other side of the road. The openness of the space makes it an ideal place for braais because chances of veld fires are reduced.

This part of the park is occupied mainly between 5pm to about 8pm during the week and from as early as 1pm over the weekends. The good lighting system in the area makes it possible for activities to go on until very late in the evening.

Part 3 is occupied mostly by male teenagers. Many of them are delinquents and school drop-outs. They sit in group to drink liquor or smoke dagga. They hang around this area for a significant part of the day until very late at night. Many of the people interviewed said they always try to avoid this section of the park because of the offending behaviour of these people. This allows the groups privacy to do whatever they want. The location of this section at the furthest part of the park on the sides bordered by a school playing field and an unused play lot also increases the level of privacy of this section. However, the

location still allows the users a clear view of the activities in the Central Business District.

Despite the presence of these delinquents, open space A is viewed by all the people interviewed both in this open space and elsewhere in the township to be a very safe open space facility in terms of crime. This could be attributed to the presence of many people in the vicinity for a significant part of the day and the good lighting system provided. The space is also too open and flat to can give offenders any kind of opportunity for hiding or laying in wait for the victims.

COMMENTS

Open space A has a suitable location for the development of either a park or a bus rank because of several reasons:

1. it is highly accessible to all the people in the township, it is in the proximity of the CBD so that one can do a variety of functions in a single trip.
2. the site is also well suited for both types of development because it is flat but reasonably well drained and the various design features (size, shape, form,etc) are also reasonable in that the space has no sufficiently hidden sections where undesirable elements can be encouraged to establish their territory.

OPEN SPACE B (See Map 5.1)

a. Design features

THEORETICAL USE: Play Lot

SIZE: 0.2ha

SHAPE: Rectangular

FORM: Open space B lies parallel and adjacent to a busy main road on one side, open space A on the other and is bounded by a few houses on the other two sides. The houses do not overlook this space but are on the same row with it.

LOCATION: It is separated from open space A by a minor road and also overlooks the Central Business District.

b. Development and Maintenance

Open space B has what remains of the swings and other play lot facilities which had been in a state of disrepair for more than fifteen years. Maybe if the equipments were repaired as soon as they get broken, they could still be in use today.

This space also has a few shady trees on the side overlooking the Central Business District. The rest of the space has got overgrown weeds which could reach as high as more than 2m during the rainy season. Like open space A this space is also adequately illuminated at night.

c. Actual uses of the space

This open space is one of the worst dumping sites in the township. The houses adjacent to this space are occupied by civil servants who do not own them. These houses are shared and the occupants are only available during weekdays. They therefore do not concern themselves much with the amount of dumping that is being done in the space next to their dwelling places. Their own yards are also not well kept so that there is one long continuous stretch of a dirty environment. Mainly garden refuse, dead animals and left-

over food is dumped in this area. It is therefore very smelly even though once in a while the authorities try to clean and burn these dumps.

The bad smell in this area is also exacerbated by the fact that the space is often used as an "informal toilet". Because the toilets provided for in open space A are not always in good condition, people using this space tend to use open space B for toilet purposes. This is being encouraged by the overgrown weeds in the latter space which offer some level of privacy. This problem becomes virtually non-existent just after the authorities have burned the weeds and cleaned this space.

A foot path which has been created in this space to connect the southern section of the township to the Central Business District has developed small dongas wherein water stand during the rainy season. These water puddles, in addition to the food remains dumped in the area, attract a lot of insects so that this space is virtually turned into a health hazard.

Interviews with the households staying in the vicinity of this space indicated some general complains about the bad smell that emanates from this space as well as the insects, rats and occasionally a snake being seen in the area. They also talk of attacks on people passing through this space, especially at night and when the weeds have grown very tall. All the people interviewed, however, agreed that since the flood lights were installed in this area about a year ago, a number of such incidents has been significantly reduced.

It is ironic that children are hardly ever seen in this space although it was originally planned for them. They

only use the path created in this space rather than play in it.

COMMENTS

Open space B is good for development as a play lot. It is in the vicinity of a lower primary school and a pre school. Children from these schools could use the play lot for equipments which they do not have. It is also in the vicinity of a space that was to be developed into a park so that in the case of family outings even the toddlers and primary school-going children could be catered for in the same vicinity. The site conditions are also reasonably good for play lot development (the area is flat and open).

This open space would however, not be suitable for development as the only play lot in the township (as it seems to be the case) because children would then have to cross a busy main road to reach it.

The levels of development and maintenance are disappointing. The playing equipments got damaged even further because they were not regularly maintained and timeously repaired.

OPEN SPACE C (See Map 5.1)

a. Design Features

THEORETICAL USE: Park

SIZE: 0.4ha

SHAPE: L-shaped

FORM: This space is overlooked by a row of houses on one side, a bus depot and a vehicle testing ground on the other two sides.

LOCATION: Open space C is located in the vicinity of the industrial area, on the outskirts of the residential area.

SITE CONDITIONS: Open and flat terrain

b. Development and Maintenance

Very little has been done to develop this space into a park. It has got several large shade trees and is brightly illuminated by lights from the bus depot on the opposite side of the road.

c. Actual Uses

This space is deserted most of the time. Although one section of it is used as a bus stop, not many people catch buses in this space because it is located on the outskirts of the township where there are not many households to support it.

COMMENTS

This space is too isolated for development as a park. It is located in the part of the township where there is nothing of interest to go to. Since people hardly ever go to this section of the township, the space is reasonably clean and no incidents ever occur in it.

OPEN SPACE D (See Map 5.1)

Intended use: Unspecified

Size: 0.5ha

This more or less rectangular open space is also located in the vicinity of the Central Business District. It has quite a good level of surveillance from the households overlooking it. It is well lit at night and is very open with no weeds or shrubs. Many people from the eastern section of the township use it as a path to connect them to the Central Business District. However, it is rare to find people sitting in this space. This could be due to the lack of trees (for shade) and rocks on which to sit.

OPEN SPACE E (See Map 5.1)

Intended use: Unspecified

Size: 0.5ha

Shape: Rectangular

Open space E has got overgrown weeds and shrubs. It is frequented mainly by boys of primary school going age who hunt for small animals and play hide and seek among the weeds. The houses which overlook it give it a fair amount of surveillance and no incidents of crime or deviant behaviour in this space are known. The edges of this open space are used for refuse dumping.

OPEN SPACE F (See Map 5.1)

Intended function: Parking area

Size: 0.5ha

Shape: Rectangular

Open space F is located in the vicinity of the Central Business District (CBD) behind the beer hall. It is occupied everyday and throughout the day by people who buy sorghum beer from the beer hall nearby and then come and drink it in this space. The people who frequent this place are mostly the unemployed and the pensioners. They come and sit under the trees in groups, chat, drink beer, play dice and card games and even sing and dance. Some informal sector activities also occur in this space where mainly cooked food is sold.

OPEN SPACE Y (see Map 5.1)

Intended function: Refuse dumping site

Size: 11.3ha

Shape: Irregular

Open space Y is the only formal refuse site in Mahwelereng. It is located adjacent to the soccer stadium in an area located between Mahwelereng Unit A and Unit B. Because Mahwelereng Unit B is not fully developed at the moment, this dumping site appears to be located at the edge of the township. However, with full development of Unit B, this site will be almost in the centre of the township. These refuse dumps could therefore prove to be a health hazard later on.

OPEN SPACE X (see Map 5.1)

Open space X forms the township edge in the southern boundary of Mahwelereng. It separates the formal township

from the tribal areas in the South. It is a long stretch of natural area which extends in length to about 1.4km. This space is rarely used by the residents. However, children, especially young boys tend to frequent this space in search of wild berries and small animals and birds.

PATHS (see Map 5.1)

Several pedestrian paths have been created in Mahwelereng as shown on Map 5.1. These paths are mostly not well coordinated and interconnected and do not appear to be leading to specific activity areas. They appear to have been provided on an ad hoc basis.

CHAPTER 6

THE ROLE OF THE AUTHORITIES IN THE PROVISION OF OPEN SPACES

CASE STUDY: MAHWELERENG

6.1 INTRODUCTION

The effective planning, development and maintenance of open spaces depend to a large extent on the functioning of the local authorities concerned, especially in relation to how suitable their policies, principles and standards are and the kind of problems they are faced with in their activities.

This chapter will look at the various activities of the authorities responsible for the provision of open space facilities in the study area (Mahwelereng). The discussion is based on findings obtained from interviews with the authorities; both through the use of questionnaires (See Appendix 2) and through verbal discussions. These interviews were conducted with the Mahwelereng Town Council and the Lebowa Department of Home Affairs who are two of the authorities responsible for the development of the township, the third authority being South Africa's Department of Development Aid. In the case of the Town Council the questionnaire was filled in by the Town Clerk while a Town and Regional Planner responded to the questionnaire on behalf of the Department of Home Affairs.

This section attempts to determine how the provision of open spaces is being undertaken in Mahwelereng township in view of the important factors of open space planning and development discussed in the previous chapters. The important considerations include the problem of determining

who is responsible for the different aspects of open space provision in the context in which urban planning is being undertaken in South Africa's homelands, as well as the planning policies, principles and standards employed and the difficulties encountered by the authorities in providing useful open spaces.

It was found out through the interviews that all the physical planning and design works in the area, including the planning of open space is being undertaken by private consultants with the instruction of the Department of Home Affairs. The function of the latter is merely to organize the steering committee meetings and to advise the various department which will be affected by the plans - for example, the Departments of Education, Health, Welfare, etc., who require some open spaces for some of their activities - as well as to coordinate these departments' inputs.

The Mahwelereng Town Council is involved to a very negligible extend in the provision of open spaces. It is mainly responsible for the maintenance of the spaces.

6.2 POLICIES, PRINCIPLES AND STANDARDS EMPLOYED IN THE PROVISION OF OPEN SPACES

Both the Department of Home Affairs and the Mahwelereng Town Council recognize the need for open space provision in the urban fabric. The important factors considered in the provision of open spaces are as follows:

- a. that open spaces are necessary for health reasons and for joining different land uses.
- b. that if the spaces are not properly planned and utilized, they can easily become refuse dumping sites and crime centres.

- c. the high cost involved in the development and maintenance of open spaces.
- d. that the multi-functional use of open spaces should be promoted and
- e. that the open spaces should be provided to enhance the environmental quality of the township as well as to promote interaction between the different parts of the township.

The policy of the authorities is that the provision of open spaces is planned for by private consultants with the instruction of the Department of Home Affairs. After this, any interested party (such as a sports club, environmental conservation group, etc) or government department can approach the Department of Home Affairs and the Town Council if they want to utilize a particular space. The type of use should be approved by these authorities. The interested party would then be responsible for developing and maintaining the particular space. There are, however, no organized interest groups or financially secure sports clubs in this township who can undertake the running of these open spaces. As a result, all the open spaces in the area are not adequately developed or maintained.

On the question of the standards used to determine the amounts and types of open spaces provided, it was learned than conventional standards were used, subject to comments and suggestions by the Steering Committee organised by the Lebowa Department of Home Affairs.

6.3 PROBLEMS ENCOUNTERED IN THE PROVISION OF OPEN SPACES

Both the Department of Home Affairs and the Town Council encounter similar problems or difficulties in the planning, development and maintenance of open space facilities. The following important problems were discussed:

1. Shortage of skilled staff

The shortage of knowledgeable personnel within the authorities in the planning, development and maintenance of open space facilities is a very important problem. As a result, private consultants have to be employed to undertake such projects. The consultants are White and middle class and are often not as familiar with the values and needs of the local people as the staff in the local authorities would have been. The consultants also have to be paid a lot of money, sometimes for work that is not even satisfactory.

2. Political reasons

There is no clear acceptance of the responsibilities for the provision of the various open space facilities. There is a confusion between the various departments within the Lebowa government who require some open spaces for some of their activities, for example the departments of Education, Health and Welfare. There is also the Town council on the other hand and South Africa's Department of Development Aid. It is not clear how much involved each of these authorities should be in the planning, development and maintenance of open spaces.

3. Lack of public interest

The town councils and the homeland governments are very unpopular in the townships and are seen by many residents as not being legitimate. The residents therefore tend not to recognize them. Community participation in the planning, development and maintenance of open spaces is as a result virtually non-existent. It is therefore difficult for the authorities to correctly determine the people's needs,

wishes and aspirations regarding the provision of open space facilities.

4. The problem of funds

The authorities do not have sufficient funds for the provision of open space facilities. Mahwelereng is to a large extent dependent on funds supplied by the Lebowa government. It therefore has to compete for funds with other town councils within the homeland. The Town Council also has its own budgeting problems.

COMMENT

While the Mahwelereng Town Council and the Lebowa Department of Home Affairs appear to recognize the need for open space facilities in Mahwelereng, there are however problems with some of the principles and standards employed in the provision of open space facilities.

It is somewhat clear that the designers of the township layout plan, had, through their training, been taught about the necessity of open spaces in the urban fabric. It was also obvious to these planners that the authorities responsible for the development of Mahwelereng would not approve any plans which do not give allowance for urban open space. As a result, these planners seem to have resorted to using conventional standards. The use of these standards is problematic in that they might not work out well in a context like that of Mahwelereng.

What is inappropriate in the use of these conventional standards is that:

1. they probably do not specify (identify) forms of open spaces properly,

2. they do not locate the facilities in the best areas, and
3. they do not locate the facilities well relative to other urban functions.

The principles, policies and standards adopted in the processes of urban open space provision are very important in determining the usefulness of open space facilities.

CHAPTER 7

THE USE PATTERN OF OPEN SPACES

CASE STUDY: MAHWELERENG

7.1 INTRODUCTION

The use pattern of open spaces and their usefulness often reflect the effectiveness of the planning, development and maintenance processes adopted in the provision of open space facilities. These three processes are themselves an indication of the appropriateness of the authorities' decisions.

This chapter is based on the analysis of finding obtained from the use of a questionnaire (See Appendix 1), verbal interviews with the residents as well as from general observations in the open spaces.

7.2 OPEN SPACE USES

From observations, verbal interviews and the use of questionnaires, the following were found to be the main uses of open spaces in the area: sport and recreation, informal sector activities and community gatherings (see Appendix 4).

The next paragraphs involve a discussion of the use pattern of open spaces with particular reference to the following questions: who uses the open space facilities? When? How do they use them and how often do they use them? This section also involves a discussion - from the point of view of the residents themselves - as to why they tend to misuse or to avoid using some of the spaces.

a. SPORT AND RECREATION

Sport and recreation (both formal and informal) constitute an important use of open spaces in Mahwelereng. 80% of the people interviewed agreed that they engage in these activities quite regularly (see Appendix 4).

The pattern of use of open spaces for sport and recreation was found to be influenced mainly by the availability of leisure time and the lack of proper facilities. The former was found to be related to a large extent on age and sex (see Appendix 5). Age influences mainly how much leisure time a person has or how far a person can move to recreate while sex and cultural factors determine mostly the types of activities one can engage in as well as the amount of free time available to him/her.

The next paragraphs will look at how people of different ages and sexes make use of the open space facilities, when they use them and how often they engage in open space activities.

1. Young to Middle-aged Adult Females: ages 20-59

The most distinguishing feature in this area as far as open space recreation is concerned is that adult females rarely use open spaces for leisure activities. All the female respondents between the ages of 20 and 59 said they never visit any of the open spaces for recreational purposes. From observation mostly the female pensioners were seen recreating in open space F which is located in the vicinity of the Central Business District, behind the beer hall (Map 5.1). They spend their days drinking and chatting in groups in the vicinity of this open space.

The reasons given for the almost absence of the younger and middle-aged adult females in the open spaces were given as the shortage of free time and the lack of proper recreation facilities.

The availability of leisure time

From the questionnaires the amount of leisure time available to the younger and middle-aged adult women in this area was found to be on average about 10 hours per week (see Appendix 5), most of the leisure hours being over weekends. Even the women who are not economically active indicated that they have very little free time.

From further interviews many women felt that culturally a woman's work is never done. They are the ones who are expected to stay at home and look after the house and the small children when the men and older children go out to recreate. The limited amount of leisure time they have often coincide with that of leisure time available to their husband and older children who go to school and often have to look after the younger children after school. The opportunity of recreating outside the house is therefore given to the children rather than be enjoyed by the mothers.

The lack of proper recreation facilities

All the adult female respondents agreed that there are no proper recreation facilities, especially for adult women. They see it as culturally improper for adult women to hang around in the open spaces without doing anything in particular. This is quite a difference from the adult males who often just hang around the spaces and watch the activities around them.

2. Teenage girls, primary school-going children and toddlers

One striking feature noticed about the use of open spaces in the area is that often teenage girls tend to hang around with the primary school-going children (6-12 years) and the toddlers (2-6 years), especially during the week. This is mainly due to the fact that after school the teenage girls have to look after the younger children until the parents get back from work. Even in cases where the mother is unemployed, the responsibility of caring for the younger children is often given to teenage girls, especially during week days. It is only during weekends that taking charge of the younger children becomes the responsibility of the mother; probably because it is the only chance that the parent has of spending time with the child since in most cases, by the time the mother gets back from work, these toddlers are already tired and sleepy. Teenage girls therefore tend to spend a lot of time with the younger boys and girls. They therefore have lesser free time to be on their own as compared to their male counterparts. Female teenagers have on average only 10 hours per week leisure time (see Appendix 5).

An interesting aspect is that during the week this group (teenage girls and the younger children) often play close to home. This group often play in the nearest streets with the favourite place being opposite a house that has got a shady tree in the front yard. Such a location is preferred because the babies/toddlers could play in the shaded pavements (they usually play with dolls, sand, stones, etc.) while the older children are engaged in activities like kicking a ball, chasing each other, etc. The older girls often congregate on the pavements in chattering groups.

The situation often changes over weekends. The group tends to split into three groups. The toddlers and younger girls stay with their mothers or play together in someone's yard. The boys would either play soccer in the nearest school playing field or engage in adventurous activities like picking wild fruits or catching small animals and reptiles in the bushy area on the outskirts of the township (open space X - see Map 5.1). The teenage girls often walk around in groups, especially in the vicinity of the Central Business District; or watch soccer or soft ball matches which are often held in school playing fields.

Children playing in the streets are interrupted quite often by passing vehicles. Even though the streets are not the safest places to recreate in, they still are the most popular playing spaces for children who prefer playing not very far from home.

3. Male Teenagers

As far as sport and recreation are concerned, males tend to be the main users of open space facilities (see Appendix 4). In general, teenage boys tend to have more leisure time than teenage girls (teenage males have on average leisure time of about 35 hours per week while females teenagers have about 10 hours per week, excluding the time they spent looking after the younger siblings - see Appendix 5).

Although some of the male teenagers who hang around the open spaces engage in delinquent behaviour like drinking and smoking dagga, many teenagers partake in sport, especially during week days, with soccer and softball being the most popular. Jogging is also important. School playing fields are the most popular venues, probably because they have proper facilities. During weekends, these teenagers also

enjoy walking around with friends, especially in the vicinity of the Central Business District where there is a large volume of movement and therefore a lot of things to watch. They also watch soccer and softball matches.

4. Adult Males: ages 20-59

Adult males tend to have more leisure time than adult females (on average about 25 hours per week - see Appendix 5). They therefore spend more time engaging in outdoor recreational activities than the females.

The most distinguishing feature as far as the young adult males are concerned is the almost complete absence of females in the open space activities they engage in. They occupy mostly open spaces A and B which overlook the Central Business District (see Map 5.1). From these locations they can engage in their own activities like drinking, playing music, having braais, etc while at the same time they are able to watch the activities in the Central Business District.

5. Pensioners

The pensioners use mainly open space F which is located behind the beer hall in the vicinity of the Central Business District (see Map 5.1). They sit in this space for hours each day with females within their own age group. They often chat for hours, drink beer, play card games and even sing and dance. Because of the large amount of leisure time available to them (on average about 45 hours per week - see Appendix 5), this space tends to be occupied throughout the day, with no obvious differences in the levels of use between weekdays and weekends.

b. INFORMAL SECTOR ACTIVITIES

Informal sector activities constitute another of the most important open space uses in the area. About 60% of the respondents visit open spaces either to sell or buy from the informal businesses located in these spaces (see Appendix 4). Through observations, it was found that it is mainly the women and children who are engaged in such activities which involve mainly the selling of fruit, vegetables and other food stuffs.

Although some kiosks and other permanent structures for the informal sector are available, mostly in the vicinity of the Central Business District, they are few. As a result, most of the informal sector activities are undertaken in the open.

Open spaces which attract a lot of movement of people are the most popular venues for the informal sector, also the busy street corners, entrances to busy footpaths and open spaces next to institutions such as schools, hospital and government offices. The amounts of time spent in the spaces depend on the kind of location. For example, people who sell things in the vicinity of the Central Business District often stay there until the formal shops close while those selling outside the school premises leave the places after school. In addition, the former tend to work everyday of the week while the latter, who depend on the buying power of school children, only work there during the week.

c. COMMUNITY GATHERINGS AND COMMUNAL CELEBRATIONS

The use of open spaces for community gatherings is a very recent phenomenon in the area, mainly because it is only recently that people started organizing around issues which

affect them as a community. About 50% of the respondents agreed that they have used an open space to attend a community meeting or communal celebration (see Appendix 4).

From the interviews it was found that open space A (see Map 5.1) is regarded by the residents as the most popular open space for this activity. Reasons given for this popularity were varied. They include the following:

1. Open space A is large enough to accommodate a large percentage of the community.
2. It is highly accessible to all the residents, either by walking or through public transport,
3. It is very open and clear, and also reasonably clean and
4. It has got a good lighting system in cases of evening gatherings.

Although sports and recreation, community gatherings and informal sector activities are the most important urban open space uses in the area, they are not the only ones. Through observations, it was found that people also use open spaces to wait for buses and taxis, for movement (paths and streets), to wait for and to meet visitors into the area as well as to use them as reference points when directing visitors into the township.

7.3 UNDESIRABLE USES OF OPEN SPACES

Physical surveys and observations were conducted to find out how urban open spaces are being misused. Interviews were also conducted with residents staying adjacent to open spaces as well as with those staying far away from them.

The most important misuse of open spaces in this area was found to be refuse dumping. Crime, vandalism and other delinquent behaviours only occur at a very limited scale.

It was interesting to find out why people walk for up to a total of 10 minutes per trip to go and dump refuse in the open spaces rather than use the refuse bins which have been provided for every household. Reasons given for the dumping problems were all related to the refuse collecting system used in the township.

Refuse is collected only once a week. As a result, the refuse bins tend to overflow before the next collection day comes around. The food stuff remains and garden refuse also tend to get rotten within a few days, creating bad smelling conditions for the household. In order to avoid the two problems of overflowing and smelly refuse bins, food stuff remains and garden refuse tend to be dumped in the open spaces.

Through observations, it was seen that the problem of refuse dumping is also related to the design, development and maintenance of the open spaces. Open spaces that are not adequately surveilled, those that are not intensely used and those that have got overgrown weeds and shrubs tend to be the targets for refuse dumping.

CHAPTER 8

CONCLUSION AND RECOMMENDATIONS

In an attempt to achieve the objectives of bringing forward an understanding of the use pattern of open spaces in low-income areas and of the planning issues that influence the pattern, this document was introduced by a discussion of the conceptual framework and the problems or issues behind urban open space planning. It has then gone on to define the use pattern of the spaces as well as to highlight the main social, planning, development and maintenance or management issues which influence this pattern.

In looking at the influences of the use pattern of open spaces in low-income areas, various conclusions could be made, based on questions such as who uses the spaces, how the spaces are used, as well as when and how often the spaces are used. Generally, it was found that all the people, irrespective of their social characteristics, make use of open spaces at one stage or another, either for movement (paths and roads), for sport and recreation, to catch a bus, to sell or buy from the informal sector or to attend a community gathering. When and how often a person uses an open space as well as how he uses the space depends on a variety of factors which are discussed below.

In general, the use pattern of urban open space facilities was found to be influenced by three important factors, namely:

1. the social characteristics of the potential users,
2. the type of open space activity or facility provided in the area and its location relative to other uses, and

3. the processes of design, development and maintenance of the spaces, which are mainly a reflection of the authorities' principles, standards and policies used in the provision of open space facilities.

1. The social characteristics of the potential users

Depending on the type of open space activity, the use pattern of open spaces can be greatly influenced by the social characteristics of the users. The levels of influence differ for different activities. For instance, while open space recreational activities are highly influenced by social factors, open space uses such as the informal sector activities are not very importantly influenced by the users' individual social characteristics.

Age or life stage of the potential users and the concept of gender or sex were found to be the most important influencing social factors, especially in terms of open space recreational use. Age or life stage is quite an important factor because of its bearing on the levels of mobility and independence of the potential open space users as well as on the amount of leisure time available to individuals. Open space users such as children below the age of 12 years who have a relatively larger amount of leisure time at their disposal, tend to use open spaces more often than adults because the latter have more responsibilities at work and at home.

In addition, the younger children, particularly the toddlers, would require some level of supervision (which in this case is mostly offered by teenage girls) and would play closer to home because of their lower levels of mobility and independence. Such a situation has important planning implications. It will understandably be imperative that in

planning for children's playing areas, the spaces should be located closer to home and some activities or facilities for the teenage women should be provided in the vicinity. The latter would give the child minders a chance to recreate while at the same time doing an important and necessary job of looking after the playing children.

The influence of age on the use pattern of open spaces and its implication on the planning processes is not only related to children. Pensioners, for instance, would require spaces with seating places because they generally tend to engage in passive activities. Their spaces should also preferably not be located in the same vicinity as playing spaces for teenagers whose active and noisy plays could disturb the pensioners' peaceful and quite surrounding. If facilities for pensioners and teenagers are located closer together, a certain amount of conflict could be generated between these two groups because they have quite different open space requirements.

Teenagers and adults other than pensioners who have higher levels of mobility and independence can use spaces that are further away from home. Sports and other active plays are quite popular for these two groups of users, especially for teenagers, while adults tend to enjoy watching the activities without actually participating.

Age or life stage is therefore a very important factor to consider in planning for open space facilities. It has a bearing on who uses particular spaces, when and how often they use the space and how they use the spaces. The life stage could therefore dictate specific open space design and development requirements for the various groups of users. For instance, playing spaces for toddler could require the provision of sand pits while teenagers might require some

sporting equipments. If these specific requirements are not adequately provided for, the usefulness and usability of the facilities may be reduced.

Although the issue of gender or sex is not a very important influencing factor of the use pattern of open spaces in the more sophisticated societies, it is still very important in low-income areas. In these areas, gender is still a very important influencing factor because of its bearing on the amount of leisure time available to an individual as well as on the type of activity one can engage in.

Culturally, women are responsible for household duties even if they hold full time jobs. Females therefore have a lesser amount of leisure time as compared to males. As a result, men tend to use open spaces more often than women do. Again, because of the issue of culture, women, particularly adult women, cannot engage in some activities because they are regarded as unacceptable, for example, sitting in a public space and watching people going about their businesses without doing anything that would benefit her or her family. On the other hand, men can spend time in an inadequately developed open space and engage in spontaneous recreation activities like chatting with friends and playing music while watching people going about their different activities. It is however seen as improper for women to do the same. Women therefore suffer more from the lack of adequately developed open space facilities. Since all groups of people have a right to recreation, it is imperative that proper facilities be provided so that even females can have a chance to recreate. An appropriately located and developed with playing facilities for children could be one of the ideal facilities that would cater for women in that they can recreate while still looking after the younger members of their families.

Even for children, gender plays an important role in the types of activities undertaken. While boys might prefer watching cars or engaging in adventurous activities, girls might prefer something feminine like playing "house" with dolls. It is therefore important to cater for both sexes when planning for open space facilities.

2. The type of open space activity or facility

The type of open space activity or facility provided has a bearing on who uses which open space as well as how often the space is used. Recreation was found to be the most important open space activity and all spaces were found to be having some recreational value, be it planned or spontaneous. All spaces are therefore useful as far as recreation is concerned although the popularity of the spaces differ, depending on the type of recreation activity.

In general, recreational open spaces tend to be used all day and everyday, although the intensity of use varies with time and space. For instance, the demand for the use of such spaces will be higher in the late afternoons or over weekends when people have more free time at their disposal. The recreational use of open space facilities also varies spatially. Spaces that are located in highly accessible areas tend to be more intensely used, also the facilities that are located in the vicinity of other important urban functions such as the Central Business District where one can engage in a variety of activities within a single visit. Properly designed and adequately developed and maintained spaces will be more popular than spaces with poor design features and inadequate levels of development and maintenance. Both the temporal and spatial variability in the use intensity of recreational open space facilities

should be adequately considered in open space planning and management in order to avoid the overcrowding of facilities.

Another important use of open spaces was found to be the running of informal sector activities. The use pattern of spaces that are used for such activities will understandably be different from that of recreation. While recreational open spaces tend to be used throughout the day and everyday, it is not the case with spaces for the informal sector. Informal sector activities normally take place on days and during periods when there is a lot of people or movement of people in or through a particular area.

The use pattern of open spaces for informal sector activities is influenced by the location of the space. Spaces that attract a lot of movement of people everyday and throughout the day, such as spaces in the vicinity of the Central Business District, tend to be more intensely used throughout the day and every day by the informal sector sellers and buyers. On the other hand, sellers in spaces next to schools, for example, would only locate in those areas during school term and only during school hours or even particularly, during school breaks. These sellers can only be in these areas as long as their main customers, the school children, are around. Open spaces for informal sector activities should therefore be planned for in areas that have a large volume of pedestrian movement everyday and for a large part of the day. However, since the success of the informal sector depends on the number of people who pass through the area, it is imperative that in planning for such activities, care should be taken to avoid the obstruction of pedestrian movement and vehicular traffic. Spaces for the informal sector could also require some special facilities such as waste bins, kiosks and toilets.

The use pattern of open spaces for community gatherings does not have a set pattern because such gatherings occur when the need arises; which, so far, is not very often. All spaces that are relatively open and large, and are accessible for as many residents as possible, can be used for community meetings.

3. The design, development and maintenance of the spaces

The processes of open space design, development and maintenance are very important determinants of the use pattern of open space facilities. If either of these processes is not adequately done, the space would not function properly even if the other two processes have been satisfactorily carried out.

In general, adequately designed spaces have a better chance of being appropriately used while poorly designed spaces may be misused or vandalized. The important design factors which were found to influence the use of open space are, among others, the following:

- a. the location of the space, especially in relation to other urban functions,
- b. the types of open space facilities provided, that is, the appropriateness of the theoretical function of the space,
- c. the sizes of the spaces.

a. The location of the open space facility

The appropriate location of an open space is very important in attracting the demand for its use. Different open space activities could have different locational requirements. However, in general, spaces that are located in accessible areas - either in terms of the use of public transport or

being located within reasonable walking distance for as many residents as possible - and spaces that are located in the vicinity of other important urban functions which attract a lot of movement of people, such as shopping centres and bus ranks have a better chance of being appropriately used. The main attraction for the latter location type would be that one can visit a variety of urban functions do a variety of activities in a single trip. The popularity of open spaces A and B (Map 5.1) in the study area (see Appendix 3) are one good example of the importance of an accessible and well located facility relative to other facilities

b. The types of open space facilities provided

In planning for open spaces, it is also very important to ensure that the spaces provided are those wanted by the people in the area. Spaces that do not meet the needs of the users or are socially and culturally unacceptable will either be under utilized or will be vandalized. Planners therefore have a duty to study the needs and values of the people they are designing for and to satisfy these needs and values rather than those of the planners.

It is therefore very important that planners familiarize themselves with the following socio-economic characteristics of the people they are planning for:

1. their incomes
2. economic activities
3. educational levels;
4. culture
5. religion
6. life stages and proportions of the sexes.

These factors influence the needs and desires of the residents for specific open space facilities. Facilities

that do not satisfy these needs and desires will not be properly used.

c. Sizes of the open spaces

It is also very important that in designing for open space facilities, care should be taken to ensure that the spaces are not too small for the intended purposes or are too large to can be adequately developed and properly managed and maintained. Open spaces often tend to be too large or too many because of the unquestioned use of conventional standards. Although conventional standards could be useful in open space planning, they can also be totally inappropriate in some context. It is therefore very important that in designing for open spaces, planning standards should not be used blindly without being modified to suit specific areas. For example while the 0.5ha normally recommended for a play lot with a service radius of about 0.4 to 0.5km - according to conventional standards - might work out well in very densely populated areas, for other areas a lot smaller size could still suffice for the development of a usable play lot. It is always better to provide smaller, adequately developed and well managed and maintained spaces that can be properly used than have large tracts of useless spaces that could attract refuse dumping and other ill-uses of urban spaces.

The adequate design of open spaces does not necessarily imply proper utilization of the spaces. What is equally important is proper and adequate development and maintenance of the spaces. Inadequately developed and poorly maintained open space facilities have a higher chance of being ill-used.

Below are some of the important development and maintenance factors which could need to be satisfied in order to achieve an appropriate open space use pattern:

1. Appropriate equipments should be properly erected in the spaces. These equipments should be appropriate for the kind of users expected, for instance, teenagers do not require the same open space equipments as the toddlers or the pensioners. If proper equipments are not provided, the open space facility would not be useful and will therefore be vandalized.

2. Some open spaces might require trees, some level of landscaping and/or a regular cleaning program. People tend to respect clean, attractive areas. This would reduce their chances of being used for refuse dumping and other undesirable uses.

3. Some open spaces could require some specialized facilities such as those for sitting, picnic areas, paths, refuse bins,, enough toilet facilities, etc. If these are not provided, the users would go all out to try and overcome the deficiency, usually creating more problems in the process. For example, a space that is fenced all around could have the fence cut at specific places to give way to path development.

The processes of open space design, development and maintenance should all be adequate enough in order to achieve an appropriate use pattern of the spaces. The adequacy of these processes depend to a large extent on the efficiency of the concerned local authorities and on the planners and developers concerned with the provision of open space facilities.

Various guidelines and recommendations can be made to the planners, developers and authorities concerned with the processes of urban open space provision. Recommendations that are specific to the study area as well as the general ones will be made.

a. Recommendations specific to the study area: Mahwelereng

Most of the open spaces in Mahwelereng appear to be concentrated in the southern part of the township, particularly in the vicinity of the Central Business District (see Map 5.1). While this location around the Central Business District is an ideal one in terms of accessibility from the various parts of the residential area, it is really not necessary to have as many as five open spaces in the same vicinity. Some of these spaces will be under used or even misused. For instance, while open spaces A, B and F (see Map 5.1) are relatively intensely used, it is not the case with open spaces D and E (see Map 5.1). These under utilized spaces could attract refuse dumping and other undesirable elements in the long run. Such under-utilized open spaces could be adequately developed for their intended functions where these had been specified or be rezoned and developed for other purposes such as housing.

Some suggestions for urban open space uses are represented on Table 8.1.

OPEN SPACE	SUGGESTED USES	SUGGESTED SIZES (HA)
A	Bus rank and informal sector	Whole area (0.6ha)
B	Play Lot	Whole area (0.2ha)
C	Rezone - Small Industries	Whole area (0.4ha)
D	Housing	Whole area (0.2ha)
E	Housing	Whole area (0.5ha)
F	Park for pensioners	Whole Area (0.5ha)
X	Leave natural	13.2ha
Y	Community Park	8ha

TABLE 8.1: SUGGESTED USES OF OPEN SPACES

Open spaces A which has an area of about 0.6ha has proved to function well both as a bus rank and a park. However, this size is too small for a full development of facilities required for these two activities. This space appears to be better suited for bus rank activities than for park activities because of its limited area. Open space A could therefore be fully developed for bus rank activities. The

following requirements could be provided in order to create a better environment for bus rank activities:

1. The area must be fenced around but gates should be installed at strategic points to allow pedestrian passage through the space.
2. Routes on which the buses move should be tarred or paved because this area tends to be very muddy during the rainy season and very dusty during dry periods.
3. Grass and flowers could be planted in the rest of the space. This will not only make the area attractive, but could also serve as an informal park like it is being used at present.
4. Seating facilities and bus stop shades should be provided to protect the bus rank users from the atmospheric elements.
5. Enough toilet facilities should be provided.
6. Specific areas should be set aside for the informal sector activities which often accompany areas such as a bus rank which attract a lot of pedestrian movement. These areas could also be paved and be provided with waste bins and storage facilities.
7. A good and reliable lighting system.
8. A proper cleaning and maintenance program could be adopted in the space.

The authorities responsible for the development of Mahwelereng, together with the transport company which uses this bus rank could work together to ensure that the improvement of the bus rank succeeds. Since this rank is located in a very popular part of the township, its aesthetically pleasing appearance could be some form of pride for the residents of Mahwelereng.

Open space B (0.2ha) appears to be generally well located in terms of the activity it was assigned for, that is, for

development as a play lot B. Children from the nearby lower primary school and pre school could make use of equipment in this play lot which are not available in their schools. They could safely move to this play lot without having to cross a busy main road (see Map 5.1). To make this play lot more usable and aesthetically pleasing it could be provided with some special requirements such as a well tended grass, trees, sand pits and swings for children, seating facilities for teenagers or teachers who will be supervising their plays, a good and reliable lighting system (to avoid a situation where criminal elements can make use of this space at night) and a proper management and maintenance program.

Open space F (0.5ha) which was planned for use as a parking area is never used for this purpose. This is because it is located at the rear end of the Central Business District behind the beer hall where there are no other businesses to go to. People prefer parking along the main road in an area that lies opposite open space A (see Map 8.1) because this area is located in front of a variety of different shops.

Contrary to its intended purpose, open space F has proved to be an important meeting space for pensioners. Ideally, it should be developed for these older residents because it provides them with some peace and quite away from the main road with noisy passing cars and from the more active younger people. This space could be provided with simple structures such as seating facilities, toilets, some level of landscaping, trees, waste bins and an area for informal sector activities. Quite a number of these pensioners engage in informal sector activities in this area, for example, selling food, cutting people's hair or shoe repairing.

Space C which was zoned as a park can also be rezoned for other purposes. Its remote location towards the outskirts of the township makes it difficult for it to function properly as a park because the area in which it is located has no other attractions for people to go to. Part of the section lying parallel to the road can still be used as a bus-stop while the rest of the space can be used for the development of small industries. Small industrial development could be a suitable activity because open space C is located in the vicinity of other small industries.

The township edge (open space X) could continue to be left with as little interference as possible because natural open spaces are an important requirement in the modern urban world. This natural open space could be a good adventurers playing area for children, could be useful for nature studies and is also necessary for soil conservation. Since this space is located in the outskirts of the residential area, it does not pose a threat to the safety of the residents in terms of criminal elements because people do not have to walk through it to reach other urban functions..

The activity of open space Y, that is, as the official dumping site in Mahwelereng, could be moved elsewhere. With the development of Mahwelereng Unit B in the northern eastern side of the study area (that is Unit A), the dumping site will be in the centre of the residential area. Such a situation would pose a health hazard and would make the vicinity unattractive and smelly. Such conditions would subsequently reduce the values of the properties around it. This dumping site would also prove to be too small in the long run as Unit B achieves full development and the township population increases. Having moved the dumping activity elsewhere, this space can be rezoned and developed for other compatible uses.

This dumping site, which covers an area of about 11.3ha, can have part of it developed into a community park (see Map 8.1). About 8ha of this site could be used for the development of a community park which will be supplemented by the smaller parks in both Unit A and Unit B (see Map 8.1). Ideally, a community park should be located adjacent to main public transport routes for the benefit of people who are not staying within walking distance of the park. The area in which the dumping site is located is therefore suitable for the development of this park.

Open space Y is suitable for the development of a community facility because of the following reasons:

1. It is almost bounded by two of the most important bus and taxi roads in Mahwelereng,
2. there is a connection of pedestrian paths leading to it,
3. it lies almost in the centre of the township, between Unit A and Unit B and
4. it is located adjacent to an important community facility, that is, a community stadium (see Map 8.1).

The following requirements can be provided in this park to make it both attractive and useful:

1. Trees, grass and flowers would have to be planted and any other landscape features could be provided.
2. Enough toilet and seating facilities.
3. A good and reliable lighting system.
4. One section could be provided with swings, sand pits and other playing facilities for children.
5. An artificial fountain,
6. Picnic area,
7. Enough parking spaces, etc.

The park should also be cleaned and maintained regularly. In order to adopt this regular maintenance program

successfully, full time staff for the care-taking of the park may be required.

The remaining area of the dumping site, which is about 3.3ha, could be used for the development of a softball ground, a tennis court and/or a swimming pool area. These two facilities have been mentioned as the most wanted facilities during interviews with the residents. Since no school in the area has got any of these facilities, they need to be provided in an area that would be accessible for all the residents, such as next to another community facility.

In order to reduce the problem of refuse dumping in some open spaces, the refuse removal system used in Mahwelereng needs to be reviewed. For example, refuse collection could be done more than once a week. Should this be impossible because of financial matters, big public waste bins can be provided at strategic points, such as in spaces that experience an acute dumping problem. Residents could dump excess refuse in these bins which could then be regularly emptied.

It is very important that as few spaces as possible are provided, more so in a low-income area like Mahwelereng where the authorities cannot afford to develop and maintain all the spaces adequately. Full development and maintenance are necessary in order that the spaces should not attract undesirable uses.

General recommendations

In order to plan for useful and usable open space facilities, various general recommendations can be suggested to local authorities as well as to planners and developers.

1. In the process of open space provision, the planning and development stages should be a continuous process, requiring constant review and evaluation of the recommendations of the projects. If the plans are made by a certain agency or department of a local authority while the plans have to be implemented by a different agency or department, after some years have elapsed, some problems could arise. Firstly, the developing agency might interpret the plans incorrectly. Secondly, the social dynamics in the area could have changed over the years so that the plans made years ago become unsuitable and inappropriate for the residents and finally, it would not be easy for the decision-takers, that is, the developing agency, to regularly review and evaluate the plans which have been made by a different agency. It is therefore important to have both the plan formulation process and the implementation process carried out as a continuous process by the same agency or department of a local authority.

2. Facilities and programs should be financially feasible at all stages of development. Operation and maintenance costs could place a greater financial burden on the municipality than the initial capital costs. The authorities could also avoid providing too many spaces in order to meet the standards applied in other areas. They should rather go for a lesser number of spaces; highly accessible and well located relative to other urban functions; spaces of smaller and manageable sizes; open spaces of acceptable shapes which would not give undesirable elements a chance for hiding; as well as adequately developed and maintained spaces which will attract the demand for their use. This will also help reduce the misuse of open spaces.

3. Open space planning should not be undertaken in isolation. It should be undertaken in conjunction with the planning of other urban functions. For instance, if an open space separate houses from shops, it could serve as a path and should therefore not be fenced all over. If this is done, vandals will cut the fence to give way to a thoroughfare. In providing for open space sporting facilities, school facilities could be taken advantage of. This will be a useful way of avoiding a duplication of facilities.

4. All the spaces should have defined uses so that the necessary design features such as locations, shapes, form, sizes, etc could be appropriate for the set function. Allowance should however, be made for other related activities that might crop up later on. For instance, in planning for bus rank activities, allowance should be made to plan for informal sector activities to avoid the obstruction of vehicular and pedestrian traffic.

5. Not all the urban open spaces need to be developed. Natural open spaces are important for adventurers activities, nature studies as well as soil and water conservation. However, care should be taken to ensure that such spaces are located in areas where they might not pose a threat to the safety of the residents.

6. Open space facilities should be accessible to as many residents as possible. Ideally, they should also have a multiplicity of functions. This will increase the intensity of use of the space. Having many people in an open space at all times of the day will help to reduce the extent of undesirable uses.

7. Urban open spaces should have a high level of safety. Their shapes and site conditions should be in such a way that they do not give the criminal elements and the delinquents opportunity to pounce on their victims or to engage in socially unacceptable behaviour. Open space facilities should also preferably be adequately surveilled by the adjacent households and should be able to attract a lot of movement of people throughout the day. Spaces that are intensely used often tend to be the safest.

8. Planners and developers should consider local physical conditions, such as surface and climatic conditions when planning for open space facilities. These spatially variable conditions are some of the most important determinants of the type of development features required. For example, hot and sunny areas would need to have trees more than would cooler areas while areas with muddy soils could require some paving while it would not be the same in areas with sandy soils.

9. In providing for facilities or equipment, care should be taken to choose those that are durable and/or can be repaired locally and easily at reasonable costs. Broken equipments that are not repaired timeously tend to be vandalized and broken even further. Once they have been left in a state of disrepair for a long time, it becomes very expensive to replace them.

10. Citizens should be involved in the planning process throughout all the stages. This involvement would increase their symbolic ownership of the spaces as well as instill some pride and protectiveness towards the facilities. Adequate residents participation in open space provision could therefore reduce the chances of their being under used or ill-used.

Open spaces are a necessity in any urban set-up and care should be taken to ensure that this important urban life requirement is not allowed to be overridden by the problems associated with their provision. It is high time that the need for open spaces is recognized to be just as important as the need for other urban land uses. It is also imperative that open space facilities make the most efficient use of land and are designed, developed and managed in such a way that they are able to provide for the convenience, health, safety, and pleasure of the residents.

This study has fairly succeeded in explaining the use pattern of open spaces in low income residential areas, albeit on a more general level. It has shown how open space facilities are being used, when they are normally used, how often they are utilized and why some of the spaces are misused or rarely used.

The study has also attempted quite reasonably well to identify issues which influence the use pattern of urban open space facilities. Issues such as the social characteristics of the potential open space users, the design of the spaces, their levels of development and maintenance, the commitment of the authorities in carrying out the processes of open space planning and development as well as the problems they experience in the course of these processes were found to be the main influencing factors.

The paper has also gone on to make some recommendations concerning the planning and development of urban open spaces in view of the discoveries made about the use pattern of such facilities as well as the factors which influence this pattern.

In general, this study has been fairly successful in achieving the objectives it has set out to reach. The conclusions made also tie well with the conceptual framework behind urban open space planning, as discussed in Chapter 3.

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APPENDIX 1

FOR THE RESIDENTS

QUESTIONNAIRE ON OPEN SPACE PROVISION

1. Life stage
 - A. below 12 years old
 - B. Teenager
 - C. Young to middle aged adult (20 - 59 years)
 - D. Pensioner (over 60 years)

2. What is your sex?
Male/Female

3. What is your occupation/economic activity?
 - A. Student
 - B. Unemployed
 - C. Employed
 - E. Pensioner

4. How many hours per day do you usually devote to your occupation/employment and obligations, including travelling time?

Sunday: -----
Monday: -----
Tuesday: -----
Wednesday: -----
Thursday: -----
Friday: -----
Saturday: -----

5. Which of the following open space activities do you normally engage in?

1. Sport and recreation

2. Informal sector activities

3. Community gatherings

4. Other (specify)

6.a. Do you ever visit any of the open spaces in your area?
Yes/No

If yes-

b. Which open space/s do you go to (order of frequency) and what do you do there?

OPEN SPACES:

A: -----
B: -----
C: -----
D: -----
E: -----
F: -----
X: -----
Y: -----

c. Why do you like visiting the particular open space?
(e.g. it is safe, it is highly accessible, it has got the sporting activity I like, etc).

OPEN SPACES:

A: -----
B: -----
C: -----
D: -----
E: -----
F: -----
X: -----
Y: -----

7. If you seldom visit any of the open spaces, what are the reasons? (Name the space and give reasons for each).

10. In what way/s are the open spaces in your area a problem (eg. they attract criminal elements, etc)

11.a. Are the residents in your area involved in the
planning and running of the open spaces?
Yes/No

b. If Yes, at which level are they involved?

THANK YOU

APPENDIX 2

FOR THE AUTHORITIES

QUESTIONNAIRE ON OPEN SPACE PROVISION

1. Name of your Department/Town Council/Authority

2. Rank/profession of person completing this questionnaire

3. Who designed the layout of this township?

4. What role did your Department/Council/Authority play
in the planning of this township?

5. In your opinion what criteria/principles/standards were
used to determine the amount, location and types of open
spaces provided?

6. Who is responsible for the various aspects of open space
provision?

- a. Designing: -----
- b. Developing: -----
- c. Maintaining: -----

7. Which factors (policies/principles) does your take into
account when making provision for open space facilities?

8. What are your main problems/difficulties in planning, providing and maintaining open spaces and open space facilities in your area (for example, lack of funds, lack of trained personnel, lack of interest from public, etc)?

THANK YOU

APPENDIX 3
WHICH OPEN SPACE DO YOU USE OCCASSIONALLY?

OPEN SPACE	USERS	PERCENTAGE USERS
A	40	100
B	16	40
C	5	12.5
D	2	5
E	5	12.5
F	8	20
X	2	5
Y	2	5

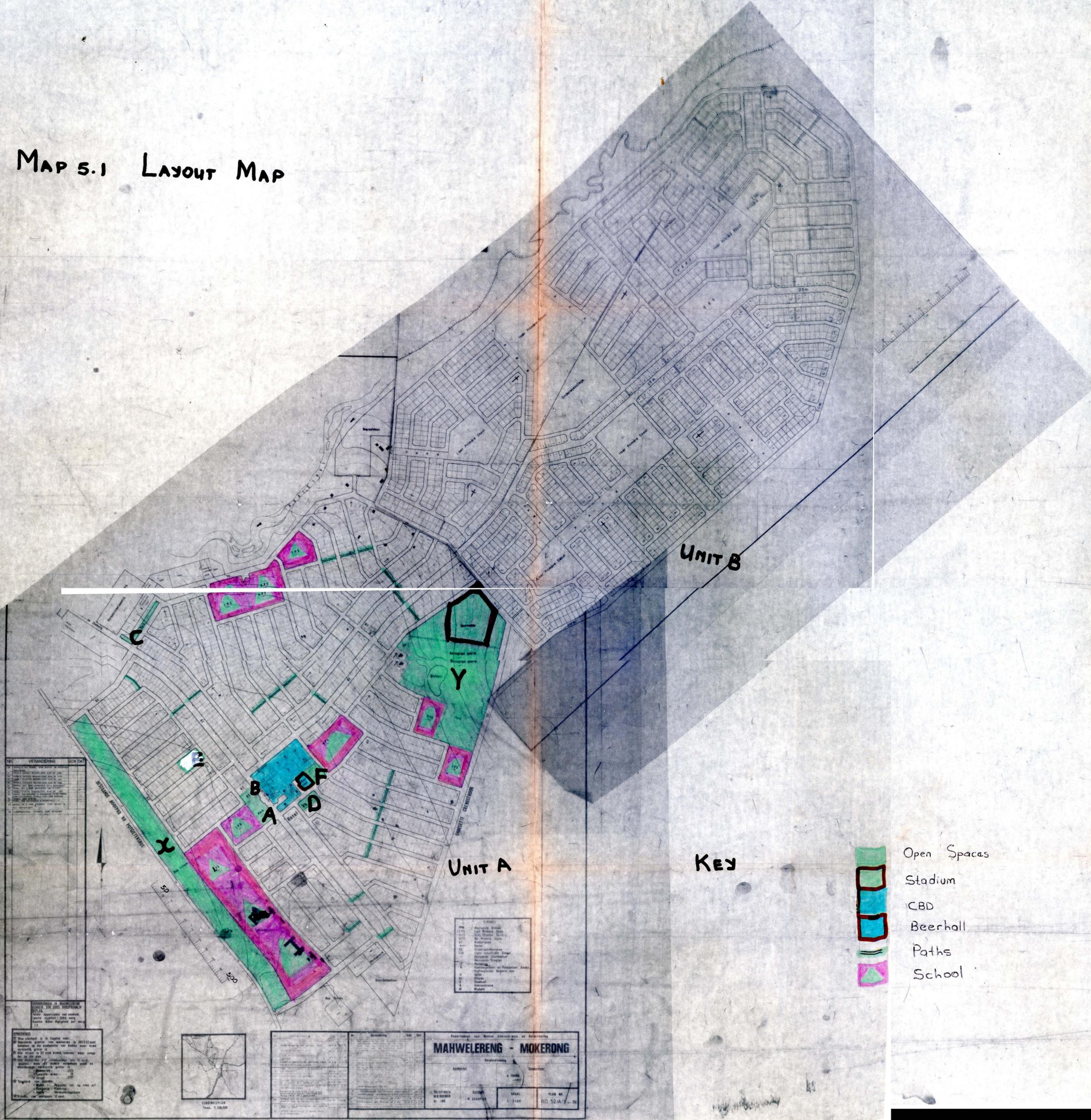
APPENDIX 4
WHICH OPEN SPACE ACTIVITIES DO YOU OCCASSIONALLY ENGAGE IN?

ACTIVITY	MALE/FEMALE	PERCENTAGE	MALES	FEMALES
Sport and recreation	32	80	27	5
Informal sector	24	60	4	20
Community gatherings	20	50	12	8
Other	10	25	5	5

APPENDIX 5
AMOUNT OF LEISURE TIME AVAILABLE PER WEEK

AGE/SEX	HOURS/WEEK
2-12 years (males/females)	37
13-19 years (females)	10
13-19 years (males)	35
20-59 years (females)	10
20-59 years (males)	25
Pensioners (male/female)	45

MAP 5.1 LAYOUT MAP



UNIT B

UNIT A

KEY

- Open Spaces
- Stadium
- CBD
- Beerhall
- Paths
- School

NR	VERANDERING	SOEK DAT
1
2
3
4
5
6
7
8
9
10

SYMBOL	BESCHRIJVING
1	Beveiligde Zone
2	Laat Prinses Straat
3	Laat Prinses Straat
4	Laat Prinses Straat
5	Laat Prinses Straat
6	Laat Prinses Straat
7	Laat Prinses Straat
8	Laat Prinses Straat
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MAHWELERENG - MOKERONG

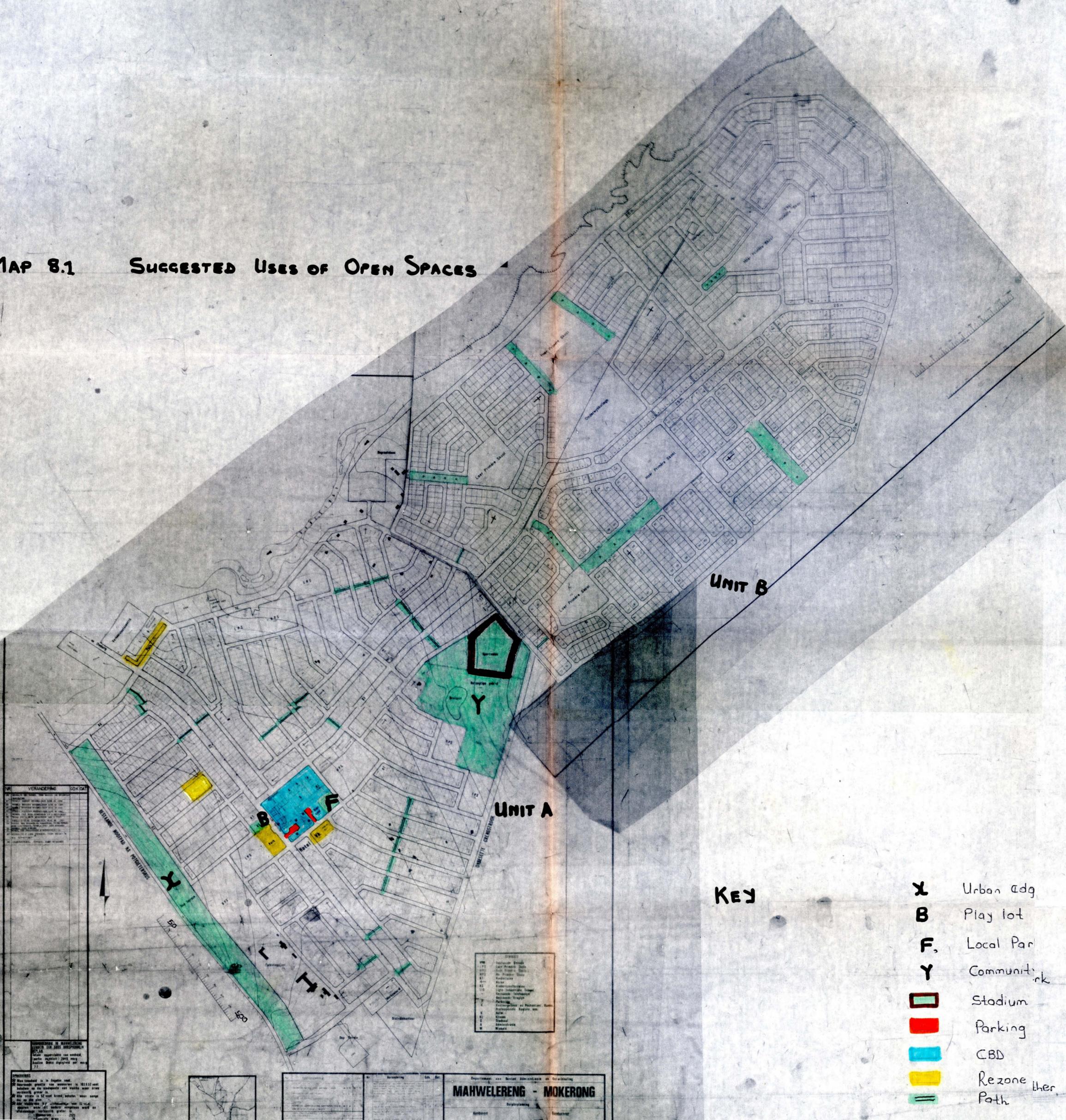
Departement van Sektor Administrasie en Oorwagting

Beveiligingsplan

PLAN NO. BD 52/A/7-36



MAP 8.1 SUGGESTED USES OF OPEN SPACES



KEY

- X Urban Edg
- B Play lot
- F, Local Par
- Y Community
- Stadium
- Parking
- CBD
- Rezone
- Other Uses
- Path

Code	Description
1	Industriële Grond
2	Landbouw Grond
3	Woon Grond
4	Woon Grond
5	Woon Grond
6	Woon Grond
7	Woon Grond
8	Woon Grond
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