Planning for Recreational Facilities and Open Spaces: A Case Study of ESikhawini Township at Umhlathuze Municipality, KwaZulu Natal
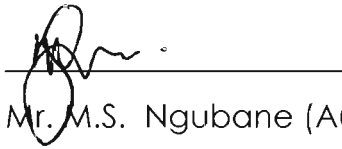
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Submitted in partial fulfillment for the Degree of Master in Town and Regional Planning

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Declaration

I declare that this research is my own work and not has been used previously in fulfillment of another degree at the University of KwaZulu Natal or elsewhere. Use of work of others has been noted in the text.

Signed:

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Abstract

This research examines planning for recreational facilities and open spaces in townships. In this regard, various planning methods and approaches to planning for recreational facilities open spaces have been reviewed. Both primary and secondary sources of data were used in the study. Secondary sources were used in defining the nature of recreational facilities and spaces whereas the primary sources provided experiential knowledge.

The study assessed the adequacy and appropriateness of recreational facilities and open spaces for the youth in the township. Different methods were employed in data collection and analysis. This includes the use of a questionnaire, check lists and documents. Questionnaires presented responses from the youth on the topic whereas check list represents the researchers' observations gathered through field survey.

The research focus examined suitability, quality and quantity of recreational facilities and open spaces for the youth in ESikhawini. The results reveal that recreational open spaces show varying degrees of suitability and quality. Poor quality of spaces was characterized with lack of visual appropriateness as a result of littering, maintenance and lack of open space furniture. As such conclusion and recommendations to improve the situation are made. These findings are useful to planners, urban designers, architects and developers in making decisions in the planning for recreational facilities and spaces in township environment.

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Chapter 1

Introduction

1.1. Background

Recreation is understood to include a range of activities. Some of these activities are: social, economic, political, and leisure (Hall and Page, 1999). It contributes to life satisfaction, spiritual and mental regeneration, quality of life and health (Valentine and McKendric, 1997). The use of recreation as an activity may have wellbeing implications to individuals with health disorders, disabilities and the aged. The presence of mostly calm spaces at outdoor recreation facilities provides an environment in which these individuals may engage in physical fitness exercises from which their wellbeing may be improved.

For some cultures and religions, recreation is encouraged on certain days or seasons and discouraged on others. This particularly relates to the use of outdoor recreation spaces. Recreation does not only provide outdoor areas for rest and relaxation but also for learning and appreciation of the built and natural environments enhanced by varying welcoming landscapes. This emphasises the importance of aesthetics made up by a mosaic of carefully planned built environs within the public realm.

This study assesses the adequacy and appropriateness of recreational facilities and open spaces in ESikhawini in meeting the needs of the youth. The assessment is not made to only look at the needs of the youth but to also make recommendations on the different options of recreational spaces and facilities that might be appreciated by both the youth and the wider community of ESikhawini. The study also aims to identify factors affecting the current usage of recreational facilities and spaces in ESikhawini; and to identify possible ways through which the current recreational facilities and open spaces may be improved and upgraded. The study is hoped to assist, directly or otherwise,

urban designers, planners, architects and developers in making decisions around the development of recreational facilities and spaces in township environments such as ESikhawini.

1.2. Statement of the problem

Town and regional planning requires the consideration of various factors in the development process. It is concerned with the forces that generate social development, location change, economic growth, and an understanding of different ways in which resources are best located (Healey, 1997). Failure by planners and decision makers to recognize the value of other land uses may result in their destruction and loss. This relates to the loss of resources that provide a range of recreational opportunities which are largely not adequately provided for, in formal parks and open spaces.

For the past 14 years, the Government of South Africa addressed a number of cross cutting issues. One of these issues is redressing the apartheid legacy through confronting social, economic and spatial maladies. This has been done through the implementation of several development programmes and projects. The massive Reconstruction and Development Programme (RDP) is testament to this.

While large scale development has resulted in increasing the pressure on natural and built-up recreational open spaces. Also, high urban population density and rapid rate of urbanization has increased the demand for housing, services, and infrastructure as well as employment, which places immense pressure on the country's urban natural resources. In most instances, densification places less emphasis on social amenities such as recreational facilities that need to be integrated with the delivery of houses in South Africa - especially low cost housing. Social amenities such as parks, recreational grounds and formal

gardens are often not planned for in most of South Africa's low cost housing schemes. An example of such housing schemes is the Umhlathuze Municipality's Affordable Housing Project in which about 472 houses have already been occupied without any recreational facilities provided. A scheme like this compromises the recreational and leisure component of the residents' lives.

On the other hand, lack of social amenities such as recreation facilities may lead to social problems facing our contemporary society. The social problems that are facing modern society are witnessed with the increase in Human Immune Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS), crime and drug abuse. In South Africa, literature demonstrates that:

> "Job-creation is also crucial to lower crime rate in South Africa. It's a world wide phenomenon that unemployed young man engage in gangs when there is no work. It's a fact that the vast majority of crimes in South Africa occur in poor areas. Thus, through job creation, poverty would be alleviated which will result in lowering the rate of crime" (Crime Expo South Africa, 2006).

The statement quoted above demonstrates that in most cases people involved in anti-social activities are the youth. Parents, in particular, seem to be concerned with those older children many of whom become victims of violence and vandalism or get involved in criminal acts like drug use (Valentine and McKendrick, 1997). Various studies have revealed that those associated with vandalism and other criminal activities within outdoor public spaces are largely young people, particularly males (Valentine 1996, Tucker & Matthews, 2001). As a result, these groups are perceived as responsible for a range of minor and serious crimes in and around public spaces. In addition, the researcher's experience in the township confirms that the youth in townships usually spend most of their time not at home but outside their home and school environment.

The South African government faces challenges while trying to solve the social problems facing the country through different safety and security mechanisms yet the rate of crime increases almost every day. Making the country safe both now and in the future requires a countrywide crime prevention strategy. Arguably, local government has both the capacity and mandate to initiate and implement this strategy. This mandate is supported by numerous national policy documents including the White Paper on Safety and Security 1999-2004. The "In Service of Safety" report published in September, 1998 states that;

> *"Local Government has a key role to play in ensuring an environment less conducive to crime and is well placed, provided the required resources and capacity are available, to design and implement programmes targeted at specific crime problems and groups at risk".*

The above is supported by many mission statements at different levels of governance. However, crime in South Africa affects different people and parts of the world in different ways. It is unrealistic to expect prevention of all types of crimes using similar methods, or expect that crime prevention through natural and human made environmental design can solve all the wide ranging array of crimes.

The respective areas of Empangeni, ESikhawini and Richards Bay fall under one municipality, but there still exists major development planning and control controversy with regards to resource allocation in the municipality. As a citizen of ESikhawini, the researcher personally sees uneven infrastructure development amongst townships located in the municipality. Nevertheless, this may be attributed to economic and social underlying factors, some engraved by the apartheid regime's urban planning. As much as efforts are made to improve

these uneven conditions between different wards, communities from areas with less development remain unhappy and frustrated.

The majority of the youth living ESikhawini Township tend to travel long distances at high prices in order to visit modernised recreational facilities. Through the research conducted people of ESikhawini confirmed that the public transport cost R20.00 return fare from ESikhawini to Richards Bay in order to enjoy better leisure atmosphere in a peaceful and enjoyable environment. Planning for recreational facilities and spaces in ESikhawini seems to be inadequate and inappropriate due to an increase in the number of anti-social activities such as drug abuse and the high crime rate. In most instances crime occurs in open spaces that lacks surveillances, proper lighting and other elements of a defensible space. It therefore follows that there is a need to assess the quality and quantity of public planned open spaces with a view of meeting the needs of the youth in ESikhawini. From the general observation of the area it appears recreation and open spaces are minimally used by the public for rest and relaxation.

1.3. Objectives

The overall objective of this research is to assess adequacy and appropriateness of recreational facilities and open spaces for the Youth in ESikhawini. The research looks at three themes that define adequacy and appropriateness, and those are: suitability, quality and quantity of recreational facilities and open spaces for the youth which will enable the researcher to provide recommendations based on the needs and interests of the youth. The study will recommend a criterion that can be used in assessing future recreational needs. The table below shows how the three themes are going to be measured.

Table 1: Themes, Measurements and Instruments

Themes	Measurements	Instruments
Suitability	Human Needs and preferences	Questionnaires
Quality	Maintenance of the existing facilities	Checklist
		Personal observations
	Visual aesthetics perspective	
Quantity	Size of each space	Maps
	Total amount of open spaces	Planning Standards
	Total number of facilities	

Specific objectives are listed as follows:

a) To examine the relationship between the physical features, and recreational spaces, together with their layout context in relation to the surrounding land use and anti-social activities

b) To examine accessibility[1] of the existing open spaces and recreational facilities, taking into account the changing needs of the local population.

c) To identify and propose ways of maintaining and improving the nature[2] of open spaces and recreational facilities.

d) To identify alternative ways for the provision of adequate and suitable recreation facilities.

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[1] This relates to physical elements that link different land uses such as pedestrian pathways or vehicular pathways and also look at travelling distance between open spaces and residential.

[2] This relates to sensory experience, visual qualities as they relate to visual and spatial dimensions of the given facility.

1.4. Research Questions

In order to investigate the problems related to recreational facilities and open spaces as outlined above, it is necessary to pose appropriate research questions which are stated as follows:

1.4.1   Main Research Question

To what extent does the planning for recreational facilities and open spaces meet the current and future needs of the youth in ESikhawini?

1.4.2 Specific questions

(i) What are the problems affecting the current use of recreational facilities and open spaces in ESikhawini?

(ii) What are the recreation and open space needs for the youth in ESikhawini?

(iii) How has planning for recreational facilities and open spaces in ESikhawini changed since the advent of Democracy (1994-2007)?

(iv) What is the current status of the existing recreational facilities and open spaces?

(v) What are current planning standards adopted for the provision of recreational facilities and are these standards appropriate?

The table 2 below shows a summary of the themes, objectives and accompanying research question.

Table 2: Themes, Objectives and Research Questions

Themes	Research Objectives	Research question
Suitability	1) To examine the relationship between the physical features [3]and recreational spaces, together with their layout context in relation to the surrounding land use and anti-social activities.	a) How has planning for recreational facilities and open spaces in ESikhawini changed since the advent of Democracy (1994-2007)?
		b) What are the recreation and open space needs for the youth in ESikhawini?
	2) To examine accessibility[4] of the existing open spaces and recreational facilities, taking into account the changing needs of the local population.	c) What are the problems affecting the current use of recreational facilities and open spaces in ESikhawini?
Quality	1) To identify and propose ways of maintaining and improving the nature[5] of open spaces and recreational facilities.	a) What is the current status of the existing recreational facilities and open spaces in ESikhawini?
Quantity	1) To examine the adequacy (in terms of numbers and size) of recreational facilities and open spaces. To identify alternative ways for the provision of adequate and suitable recreation facilities.	a) What are current planning standards adopted for the provision of recreational facilities and are these standards appropriate?

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[3] This refers to the:
- facilities in terms of furniture (type and condition)
- Physical Environment (Cleanliness, visual appearance and Aesthetics)
- Accessibility (transport and proximity to residential)

[4] This relates to physical elements that links different land uses such as pedestrian pathways or vehicular pathways and also look at travelling distance between open spaces and residential.

[5] This relates to sensory experience, visual qualities that relate to visual and spatial dimensions.

1.5. Hypothesis/Assumptions

This research assumes that careful design of the built environment within the natural environment can assist in reducing opportunities for anti-social activities and improve safety, comfort and security in ESikhawini. Furthermore, the mental and physical open spaces needs of the youth can be met in all public open spaces, but to a lesser extent in active recreation spaces like sports grounds. Therefore, this research assumes that passive recreation is the best way of meeting both physical and mental recreational needs of the young people. Besides providing recreational opportunities to local and surrounding areas, recreational facilities may also attract investment, regenerate the townships, boost tourism and promote healthier communities.

1.6. Location of the Study Area

ESikhawini falls under Umhlathuze Municipality which is located in the northern part of KwaZulu Natal Province, along the coast. Due to the fact that the borders of the municipalities have changed some of the previous municipal areas fall under new municipal areas. Umhlathuze Local Municipality falls under UThungulu District Municipality (see map 1). However, the Umhlathuze Municipality covers areas such as Umhlathuze and Richards Bay (previously referred to as Empangeni). Umhlathuze has thirty wards which equals to thirty councilors.

Map 1: KwaZulu Natal District and Local Municipal Boundaries

MPUMALANGA PROVINCE

Free State Province

Eastern Cape Province

Indian Ocean

Umhlathuze Municipality

Study Area: Esikhawini

Amajuba District Municipality (DC25)
Utrecht Municipality KZ253
Castle Municipality KZ252
Dannhauser Municipality KZ254

Zululand District Municipality (DC26)
eDumbe Municipality KZ261
uPhongolo Municipality KZ262
Abaqulusi Municipality KZ263
Nongoma Municipality KZ265
Ulundi Municipality KZ266

Umkhanyakude District Municipality (DC27)
KZDMA27
Umhlabuyalingana Municipality KZ271
Jozini Municipality KZ272
The Big 5 False Bay Municipality KZDMA27 KZ273
Hlabisa Municipality KZ274
Mtubatuba Municipality KZ275

Umzinyathi District Municipality (DC24)
Endumeni Municipality KZ241
Nquthu Municipality KZ242
Msinga Municipality KZ244
Umvoti Municipality KZ245

Uthukela District Municipality (DC23)
Emnambithi / Ladysmith Municipality KZ232
Indaka Municipality KZ233
Umtshezi Municipality KZ234
Okhahlamba Municipality KZ235
Imbabazane Municipality KZ236
KZDMA23

Uthungulu District Municipality (DC28)
Nkandla Municipality KZ286
Mthonjaneni Municipality KZ285
Ntambanana Municipality KZ283
Mbonambi Municipality KZ281
uMhlathuze Municipality KZ282
uMlalazi Municipality KZ284

uMgungundlovu District Municipality (DC22)
uMshwati Municipality KZ221
uMngeni Municipality KZ222
Mooi Mpofana Municipality KZ223
Impendle Municipality KZ224
The Msunduzi Municipality KZ225
Mkhambathini Municipality KZ226
Richmond Municipality KZ227

iLembe District Municipality (DC29)
Maphumulo Municipality KZ294
Ndwedwe Municipality KZ293
KwaDukuza Municipality KZ292
eNdondakusuka Municipality KZ291

eThekwini Municipality (Durban)

Sisonke District Municipality (DC43)
Kwa Sani Municipality KZ5a2
Ingwe Municipality KZ5a1
Greater Kokstad KZ5a4
Ubuhlebezwe Municipality KZ5a5
Matatiele Municipality KZ5a3
KZDMA43

Ugu District Municipality (DC21)
Vulamehlo Municipality KZ211
Umdoni Municipality KZ212
Umzumbe Municipality KZ213
uMuziwabantu Municipality KZ214
Ezinqoleni Municipality KZ215
Hibiscus Coast Municipality KZ216

SCALE: 1: 590 000

80   40   0   80
Kilometers

LEGEND

Towns
Local Municipalities

District Municipalities
Amajuba District Municipality
Sisonke District Municipality
Ugu District Municipality
Umkhanyakude District Municipality
Umzinyathi District Municipality
Uthukela District Municipality
Uthungulu District Municipality
Zululand District Municipality
eThekwini Municipality
iLembe District Municipality
uMgungundlovu District Municipality

N W E S
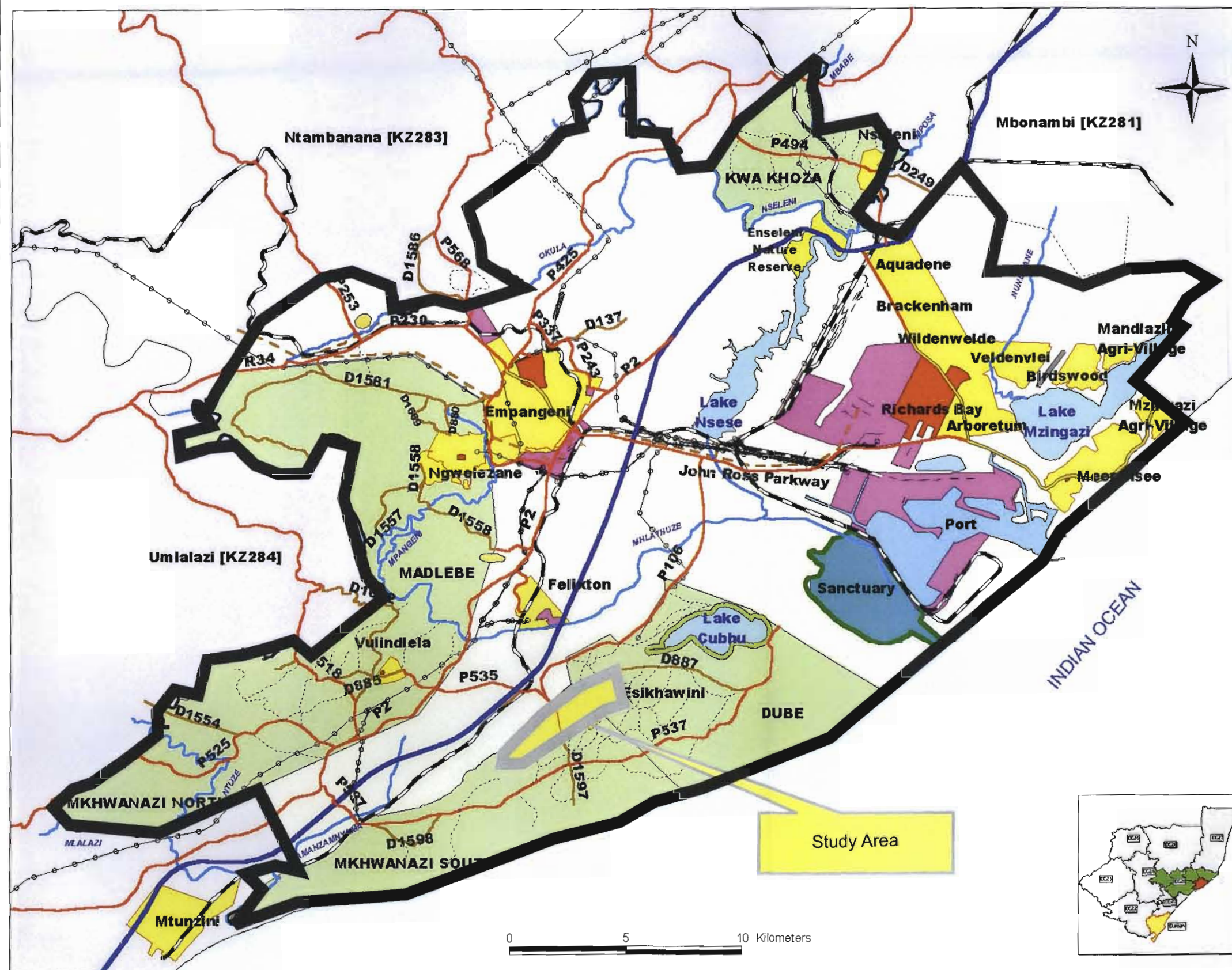
Map 2: The Location of the Study at a Local Context
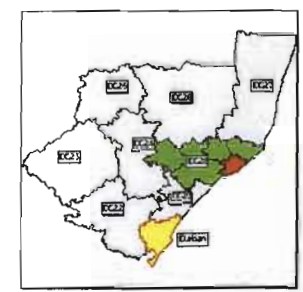
ESikhawini is located at approximately 5km from the coast of the Indian Ocean and approximately 180 km north of Durban. The settlements are situated 2km away from the N2 route and consist of mixed settlement types and land uses. Richards Bay and Empangeni are closest towns located at an estimated distance of 15- 20 km away from ESikhawini. The towns are accessible via public transport and private transport. Richards Bay and Empangeni dominate the region as prime sources of employment, Richards Bay functions mainly as the industrial hub and Empangeni as the commercial, shopping and service centre of the area (see map 3).

Map 3: Location of the Study Area in Relation to Industrial and Commercial Centers (Google Earth)
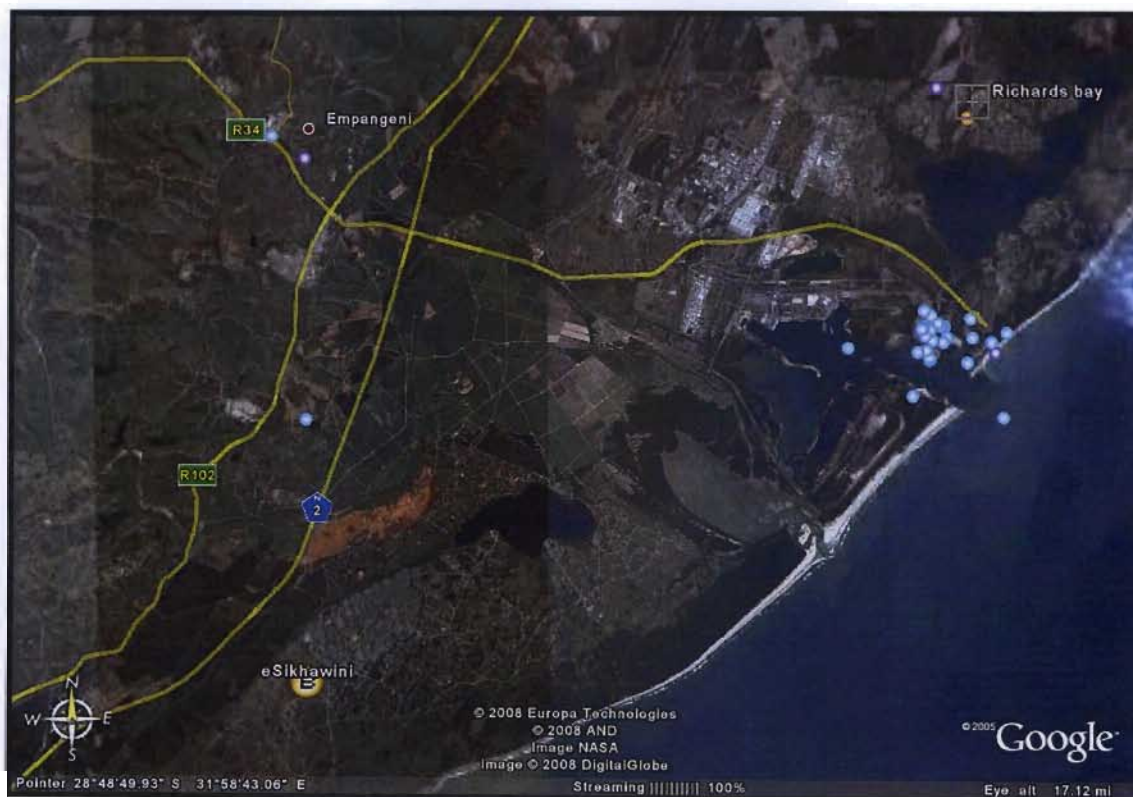
1.7. Brief Historical background

ESikhawini was established during the early 1970s at the time of global Industrial and Commercial Revolution in South Africa. During the early 20ᵗʰ century, large Industries moved into the area of Richards Bay and other commercial activities around Empangeni. As a result, a large population migrated to Empangeni and Richards Bay since these areas provided people with job opportunities that required both skilled and unskilled labour. People with qualifications especially those with matric certificates were the first priority since there were few black people who had access to education. Because these industries were in need of cheap labour, many people were employed but most black people occupied lower positions that required less expertise given that they lacked formal and professional training.

The citizens of ESikhawini (at present) confirm that during 20ᵗʰ century, there was an increase in the demand for houses especially for the industrial workers. Most people were migrating to the area, but few of those came from the surrounding areas. Therefore, in 1976 ESikhawini was developed into a black township consisting of middle income residents and there was only one tuck-shop operating in the area. The area had no recreational facilities provided, but only houses and the nearest place for recreation was in Richards Bay. Richards Bay as the closest town served both as the industrial town and also as the area for recreation. Richards Bay does not only provide recreation to ESikhawini residents but also to the surrounding areas that fall within Umhlathuze Local Municipality and outside the Municipality, this involves areas like Pongola and Ulundi.

Furthermore, there were houses built by the major Richards Bay Industries for their employees in the early year 2000. Those houses were of different types ranging from five bedroom houses to three storey apartments (Hostels). "Thorrington, Smith, Rosenberg and McCrystal in Pietermaritzburg produced the

overall structure plan and; Keeve Steyn and Partners did the detail residential layout and engineering design" (Khoza, 1992: 41). The engineers divided the area into two sections and these are section H and section J. Both sections cover an area of 2, 5 square kilometers which was divided into 15 neighborhoods of approximately 100 houses each.

1.8. Summary

Generally, planning includes variety of activities including recreation. Therefore, it is important to put recreation as part or as another element of land use. This means that in every development there must be space designed for recreation. The problem statement outlined above shows that the black townships and low cost housing seems not to have adequate recreation for the youth. Historically ESikhawini has been a black residential township with minimal basic services. However, ESikhawini is well located closer to Richards Bay, Empangeni and not far from the ocean for recreation. This dissertation assesses adequacy and appropriateness of recreational facilities and open spaces in ESikhawini.

Chapter 2

Methodology

2.1. Introduction

This section explains the tools and techniques used to collect data in this research. Different methods are pulled together and separated into themes to help unpacking of the topic. This focuses on four themes namely: an approach, population and sampling strategy, instruments of data generation and data analysis. The methodology used in this research is explained below.

2.2. Approach

The primary focus of this section is on the tools and techniques used in this research report process. These tools and techniques differ from discipline to discipline but the general review of previous research done indicates that pieces of research followed similar processes. They start by stating the problem and then go on to justifying why it has to be studied. Authors such as Miles and Huberman (1995) prefer qualitative over quantitative approaches. Generally, an integrated approach is advisable. A study that contains qualitative data or solely quantitative data misses the deeper interpretation that an integrated approach makes possible (Brewerton and Millward, 2001). Thus, the method used in this research is a blended version of both qualitative and quantitative method which is an integrated approach.

In a qualitative research the author describes the research problem and argues that it can be understood by exploring concepts and phenomena. "It is quite common to hear psychologists talk of qualitative analysis as if it was just one method, but in fact there are almost as many ways of doing qualitative analysis as there are ways of doing the quantitative analysis" (Hayes , 2000: 171). Qualitative research is exploratory and researchers use it to explore the topic. In

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the quantitative research, the problem is best addressed by understanding what factors or variables influence an outcome (Anderson, 1987). For instance, the researcher may need to understand what factors influence young teenagers to engage in anti-social activities.

This research applies both qualitative and quantitative tools and techniques to evaluate the suitability, quality and quantity of recreational facilities and open spaces in ESikhawini. A combination of both qualitative and quantitative approaches, concepts and language into a single study can help yield insights that neither approach would produce on its own (Hayes and et al, 1992). This research uses both the primary and the secondary sources of data. Secondary sources help to define the nature of recreational facilities and spaces whereas the primary sources provide experiential knowledge. The researcher explored the topic on recreation and open spaces through the use of academic books which make the research more qualitative. The primary sources such as people helped the researcher to understand factors which influences the final outcome. For instance, lack of Aesthetics and open space furniture prevents people from using open spaces designated for recreation.

2.3. Population and Sampling Strategy

Sampling Strategy can be classified as either non-probabilistic or probabilistic. Non-probabilistic sampling is used when the researcher is most interested in already visible or suspected sites and does not need to sample elsewhere (Brewerton and Millward, 2001). This information may be contained in documentary sources, local knowledge or they may simply be visible on the landscape. Whereas probabilistic sampling is used when it is necessary to have a representative sample of the site in a region, it is possible to sample only a small percentage of the entire population. By employing the statistical or the

quantitative approach methods, probabilistic sampling attempts to increase the probability that generalizations derived from the sample will be correct.

There is no appropriate answer to the question: What is an appropriate size sample to choose? It depends on the number of considerations and there is no predetermined appropriate sample size for all conditions. The choice of sample size depends on the degree of accuracy required and the funds available. Due to the fact that time is limited and the bigger the sample size, the higher the cost of obtaining all the responses, therefore this research used a small survey size with a combination of the targeted or untargeted qualitative and quantitative research methods in ESikhawini. A sample of 50 people was drawn from the population of eSikhawini and subdivided into categories purposively[1] whereby 40% goes to youth who are still at school, 40% goes to the youth not schooling and 20% goes to the youth with disabilities. Each of the three groups was further stratified on the basis of active recreationist versus passive recreationist. It was also necessary to investigate a sample of people who may or may not have visited recreational areas.

The sample of learners, non-learners and disabled was drawn in the following schools and sections:
a) Learners from Tisand Technical College (TTC), Umfolozi Technical College (UTC).

The researcher gave 20 questionnaires to twenty learners. TTC consists of 4 classrooms per Grade, starting from Grade10 to Grade 12. This added up to 12 classrooms, ten questionnaires were given to ten students out of all 12 classrooms. The researcher gave 12 questionnaires to TTC. The questionnaires were distributed purposively to each and every class prefect because

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[1] Obtain responses from different groups not to focus on one group and discriminate others and those are educated youth, non-educated youth and youth with disabilities.

prefects would be in a position to represent other learners' views. The instructions were provided in the questionnaires but the researcher first set up a quick 10 minute meeting with the class prefects explaining each and every question contained in the questionnaire to all 12 prefects together.

The Researcher also went to Umfolozi Technical College (UTC) with eight questionnaires left. The aim was to give eight questionnaires to eight learners. This was done in an unusual way; the researcher woke up early and went to UTC main gate before the opening time. The first eight learners who came were given the questionnaires.

b) Non-Learners from section H1, H2, J1 and J2.

These are people that are not at school and they consist of those in employment, the unemployed and students. The strategy in this case was to target places of worship.

c) Youth with Disabilities from H1, H2, J1 and J2 section.

The above participants were chosen to participate in responding to the questionnaires; the schools were selected because it was easier to target groups than individuals. However, not all schools got equal chance of filling in the questionnaire but only the selected ones. The Youth with disabilities were chosen because in most cases these are people that can not easily access the available recreational spaces due to poor planning of public realm. For example, to find out whether the available recreational facilities and open spaces cater for people with disabilities.

Table 3: Stratified Random Sample:

Categories	Sample %	Sample size
Learners	40	20
Non-Learners	40	20
Disabled	20	10
Total	100	50

Given that the research looks at particular interest groups mainly the youth, this research stratifies this group into three categories as stated above (table3). Only 20 learners were given questionnaires and about 10 youth with disabilities got chance to respond to the questionnaires.

All data collected was strictly confidential and the respondents had a choice of not to include their personal details. For example, even the researcher himself could not establish who answered what. The researcher used a box with one opening to collect all the answered questionnaires. This was done in order to ensure confidentiality.

2.4. Instruments of Data Generation

This research used two instruments in primary data collection which enabled the researcher to find out how people perceive the environment that they live in, whether they feel safe or unsafe in the presence of planned open spaces. The research project was based on the information gathered from questionnaires, Check list and observations. The instruments of data generation are explained as below:

2.4.1. Questionnaires

Questionnaires were used to collect primary data which responds to the aims of the study. Subsequently, pilot survey was the next step to take in order to find out whether the questions asked meet the objectives of the study. Information gathered from the questionnaires provides information on the importance of recreational facilities and the total recreational experience. The questionnaire attempted to bring out respondents perceptions about open spaces, in terms of whether the spaces are considered to be safe or suggestions to make the spaces even safer. The findings of the survey were then coded and summarised. Questions asked included personal background (age, gender), preferences of recreational facilities (active, passive), the relationship of recreational activities to other areas[2] around (location, distance, mode of transport), participation/use of facilities, safety and security and any other comments.

Questions were designed to gather both qualitative and quantitative data. Quantitative questions were close ended questions whereas qualitative questions were open ended questions which required more thought to the respondent.

2.4.2. Check lists

Check lists were based on a primary data source which differs from other survey methods. This method describes the observation technique of collecting the data in a non-verbal behavior. This research used checklist to assess the conditions and availability of recreational facilities on the site. The observation on the site was undertaken during peak use or hours where the researcher looks at the character and main elements of open space which include plot size, number of facilities, condition of facilities, Security, and observer's sketch plan. This was done through a site visit and also the use of maps (topographic, land

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[2] This is referring to areas such as residents and retail

use, and zoning map). The input through observation was received through hearing, sight, smell, taste, or touch and then analysed through their rational or irrational thought. For example, the researcher recorded the activities of the youth in these recreational open spaces, and checked whether environment facilitates/ provides opportunity for such behaviour when other factors are held constant. Researcher prepared a schedule of visits to the various recreational and open space facilities within the study area as summarised below.

Area	Number of visits	Time	Day
J2-Soccer Field	4	Weekday (Morning and afternoon) Weekend (Morning and afternoon)	2
H1-Soccer Field and Park	4	weekday(Morning and afternoon) Weekend(Morning and afternoon)	2
H1-Park	4	weekday(Morning and afternoon) Weekend(Morning and afternoon)	2
H2-Stormwater Drainage	2	Sunny weather and drizzling weather.	2

2.4.3. Documents

In most instances, documents are not written with the research in mind. For instance, personal documents such as letters to friends and family, diaries, or autobiographies are written for personal reasons. A variety of non-personal documents such as books, minutes of meetings, agendas and internal office memos are written with the view to the continual functioning of the organisation or for the execution of the particular matter (Miles and Huberman, 1994). A third group of documents aimed at the mass media, such as newspapers, magazines or newsletters are primarily written with the view to informing the public or selected section of the public. However, if these documents are studied and analyzed for the purposes of qualitative research, the method of document study as a data collection method becomes effective.

This research has used some data from secondary sources such as books and other related documents. The books helped the researcher to analyse the research topic deeply based on the views of other writers. The research on recreational facilities and open spaces has been undertaken in the past, therefore it is necessary to understand the past experiences. In addition, the researcher decided to examine the research topic based on multiplicity of themes as identified in table 2.

2.5. Instruments of Data Analysis

The analysis of the study begins by going back to the purpose of the study since the key principle is that the depth and intensity of the analysis is determined by the purpose of the study (Brewerton and Millward, 2001). Some data once collected, are simply achieved or stored. Most data however, are subject to some form of analysis which generally involves the use of mathematical techniques intended to uncover correlations between variables and to assess the possibility that research findings can be generalized to other settings (Miles

and Huberman, 1994). These are called the statistical techniques and their use in analysis data is called statistical analysis. Some theories for example, hypothesize a link between poverty and crime. Hence we might suspect that low income areas would be high crime areas. Once we specify the meaning of "low-income" and crime, so that they become measurable variables and gather data on income levels and the incidence of crime in various areas, then we can begin establishing the links between poverty and crime.

This study uses different instruments for data analysis depending on the data generation method used. For questionnaires, the study used the coding sheet and Microsoft Excel to create graphs and tables. There are other computer software used to analyse the data collected both from the documents and the check list, at the end all the data analysed was then incorporated to make one document. The information analysed was then categorised thematically[3]. Hayes (2000) states that there are two ways of identifying themes; and those are theory led thematic[4] analysis and inductive thematic analysis[5]. This dissertation analysed data based on both approaches of thematic data analysis mentioned above. This has been arranged in such a way that data that appear to be dealing with similar topics are grouped together.

2.6. Summary

The integrated approach used in this research provides for deeper interpretation of both qualitative and quantitative approaches adopted. This enabled the researcher to describe and explore what he saw as the problems. Furthermore, this approach enabled the researcher to understand factors or variables

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[3] "Themes, in this context, are recurrent ideas or topics which can be detected in the material which is being analysed, and which come up on more than one occasion in a particular set of data" (Hayes, 2000: 173). These themes emerge from the data as they are analysed, taking assumptions people make.

[4] "...themes which have been established before hand as they are likely outcomes of a particular psychological theory" (Hayes, 2000:176).

[5] In this approach the themes emerge from the data collected.

influence the outcome of the study. The researcher was able to establish how the youth utilize the recreational facilities.

The use of three instruments of data generation in this research namely questionnaires; check lists and documents yielded concrete data to tackle the topic. Questionnaires present responses from the youth on the topic whereas check lists present researchers' site analysis done through observations while documents present other authors point of view on the topic. Lastly, the use of computer software as an instrument of data analysis assisted to produce work of suitable standard.

Chapter 3

Literature Review

3.1. Introduction

This section reviews literature available on the planning and design of recreational open spaces. Some of the literature reveals that recreation is an integral part of other land uses and it can mean many different things for different people (Hall and Page, 1999). Therefore the integration of land uses in relation to recreational open space planning is relevant.

Authors such as Trancik (1986), Safriel (1991) and Zube (1995) consider Open spaces as areas that may be used for recreation. However these spaces fall into a number of categories. There are spaces dedicated to active playgrounds for children, the youth and adults, and there are also recreation spaces for Adults which are more passive, particularly for relaxation. An additional classification of open spaces which should not be ignored is the conservation and protection of the natural environment which exists within the built environment. This conservation mostly takes the form of greenbelts established to serve as buffer-zones between different land uses.

This research has organized literature into Planning Methods and Themes emerging from data analysis; from the assumptions people make and also themes which have been identified by particular authors. Planning methods explain how other authors have undertaken the research on planning for recreational open spaces and different approaches and models are explained. This helps to define the nature of recreational open spaces, three approaches and six models identified are linked to such an extent that one cannot function efficiently without the other. Planning methods and themes reviewed are explained below.

3.2. Planning Methods Review: Approaches and Models

Taking into consideration that planning for open spaces begins with an analysis of the existing situation; this section presents different planning methods used in the past years for recreation open space planning and provides a range of perspectives around future open space planning and design in the context of South African townships.

In the past, planning of recreational open spaces took cognizance and awareness of the need to protect important ecosystems and natural processes as was expressed by ecologists and conservationists (Tucker and Matthews, 2001). Experience in open space planning accumulated in the past years has resulted in various planning approaches articulating different planning models on open space planning and research. These approaches and models are discussed below:

3.2.1) <u>Approaches to planning</u>

Recreation planning can be approached in many different ways which may have a positive or negative impact on the communities' attitude or awareness of opportunities around recreational spaces. The researcher chose to look at three approaches namely, the demand approach, supply approach and behavioral approach. Planning approaches are appropriate to the physical or social character, values and planning capability of a community. Gold (1980) argues that there are two factors that determine the best approach and these are the social and the physical factors. The physical factors can either be man-made or natural. The Planning approaches reviewed in this section are determined by both social and physical factors described as follows:

a) Demand Approach provides a response to human demands for recreation, amenities and environmental quality (Safriel, 1991). This approach is based

on how the individual want to use leisure time and whether there is infrastructure or facility to accommodate him/her in the existing area of recreation and open spaces. This approach is meant to fulfill human needs. Human needs for recreation may to some extent, be determined through surveys. This information gives insight on the average frequencies of participation, for example, how often do the soccer players engage in soccer playing. Moreover, the way people participate provides information for opportunities in the future, meaning that public demand for opportunities is based on participation.

b) Supply Approach focuses on open space conservation as a means for protecting existing landscape and natural environment (Safriel, 1991). The approach looks more on the supply side rather than demand side. This approach is most effective in nature conservation. There are things that need to be considered on the supply side and these are: the function of facilities available, the quality and capability of different activities. For instance, an open space located outdoor should provide an aesthetically pleasing environment made up of facilities that accommodate users.

c) Behavioral Approach looks at the behavior of human beings which is constructed through different mechanisms/ elements such as transforming our perceptual environment into behavior environment (UNISA, 1995). The approach looks at the relationship of people with space and the existing natural and man made environment. For example, experience of a person who grew up in a township differs from those of a person who grew up in rural areas through style and needs. This approach states that television and any other advanced technologies changes the way people behave (UNISA, 1995). Human behavior is influenced by the way people use their leisure time beneficially. Gold (1980) argues that this approach is very effective in

analyzing nonuse, latent demand, future trends and special needs around recreational spaces. It focuses on human aspects of leisure activities and this is very difficult to determine as one has to consider what people really want.

3.2.2). Open Space Models

a) Space Standards- Quantitative Model

This is the most common model in a number of countries whereby it matches open space and user population. This model outlines that adequate responses to human needs requires a minimum area of open space for a given population size (Runte, 1987). This is just an assumption that has been used for the past many years and is still used up to the present world. Sometimes it works but sometimes it causes more problems since no plan has been seen as the best in the entire world. A given model can be seen as the best now but in 10 years to come people start changing their tastes and life also changes in different dimensions. Hence, there should be a linkage between the past, present and the future but the focus should be more on the present situation, the future and the past should come as a secondary point of focus.

The Guidelines for Human Settlement Planning and Design (CSIR, 2000) provides the direction on appropriate practices and technologies for planning. This includes the planning standards for recreational facilities, for example the spaces designated for sport should includes toilets and shower rooms. Most importantly, emphasis is placed on assessing performance in relation to issues like health, safety, recreation, education and trade. It provides a way of preparing one's own projects and specifications. The findings of this study by CSIR provide qualitative and quantitative guidelines relating to the planned elements of settlement system. This suggests that these elements of settlement system should not be planned in isolation. It focuses on cross cutting issues that have relevance across both planning and engineering perspective. The book

on Guidelines for Human Settlement Planning and Design (CSIR, 2000) outline most important planning standards that need to be considered in any development.

The guidelines that were stated for example, "Surface should include the hardened, attractive pathways of ±90cm with gradient not exceeding 1:12, in order to facilitate the easy movement of wheelchair users, pedestrian and cyclist" (CSIR, 2000:13). This also provides the standards required for the development of infrastructure such as roads. For example, the road reserve should not be less than 10 meters, which means that this also includes the alignments on both sides of the road; it can be the street furniture, the pedestrian pathway or other alignments such as pipes. This applies also to other open spaces not only roads.

The planning standards can also relate to the needs of the communities because the standards are based on actual citizens demand for services and other related infrastructure. Recreation and open space standards are established through the following methods: citizens' demand capacity for the facilities and land availability and the following questions should be posed (Runte, 1987):

(i) What is the citizens' demand for various recreation facilities and open space resources?

(ii) What is the capacity for various recreational facilities and open spaces? For example, how many people can the soccer play ground accommodate (both the active participants and the passive participants)?

(iii) Given the demand and the capacity for certain facilities, how much land will be needed to accommodate those facilities? For example, there should be enough provisions for the general use of outdoor recreation

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sites, sufficient in size and number to meet the recreational demands of the population.

In this context, standards are used as a means to assess the attainment of objectives. Standards are a valuable measuring tool as they measures effectiveness of recreational services for similar places or populations. These planning standards should facilitate avoidance of over provision and underutilization of recreational facilities and open spaces. In addition, one should understand that the quantity is not equal to the quality and community needs differ from place to place.

Gold (1980) has explained that if standards are to be used in a proper way it should focus on three essential components:

(i)   The amount of land and facilities required to serve the general public and people with special needs.

(ii) An estimated number of people a recreational area or facility can be designed to serve.

(iii) The adequacy of an area or facility to accommodate potential users in a service area.

Overall, literature on recreational standards reveals that one cannot apply a general standard of a specific area because there are no areas that have similar physical conditions or similar socio-economic group of people in similar conditions/ways. Gold (1980) argues that each area has to be studied in its own local context and the findings cannot be transferred to another area. Runte (1987); Maruani and Amit-Cohen (2007) argued that derivation of planning standards for open spaces goes far beyond specifying that we need X number of square meters to serve Y number of people. The study recommended other options in the setting of planning standards such as specifying the needs and

preferences for the number of people which defines the number of square meter needed for number of people.

b) Garden city-comprehensive planning model

This is the model developed by Ebenezer Howard in 1898 that aimed at achieving social transformation through comprehensive urban planning (Howard, 1902), based on socioeconomic factors (for instance, land reform, cooperatives and self containment), environmental factors (for instance, creating buffers between residential zones and pollution source) and structural (radial structure with open spaces as central parks, green linkages between different areas and as peripheral greenbelts) principles.

The idea of separating new houses away from the densely populated cities was initiated in the United Kingdom. This was done through provision of adequate well built housing surrounded by a minimum of open space for light and air. This is referred to as a Garden City Comprehensive Planning Model. These Garden cities gave rise to the City Beautiful Movement and New Towns, consisting of urban nodes interconnecting across open landscapes providing for green belts around the major cities (Healey, 1997). However, contemporary society tend to disagree with Howard's approach to land use planning in a way that people think that residential areas should not be separated from places of work.

"Howard's approach was not anti-urban. He valued cities and believed that industry was integral to their life and prosperity" (Pile, 1999: 255). He proposed to combine the best of both environments into a new sustainable form of city living. This is what produced the Garden City as an integration of City and Rural households. Howard's idea of combining the rural and urban areas was illustrated with three magnet diagram. The Garden City model was then adopted by different countries around the world. The First Garden City began in

Letchworth in 1902, where the city contains boulevards crossing from the city centre radically to the circumference and dividing the city into six equal wards (Howard, 1902). Factories, warehouses and workshops and agricultural land were located at the outer ring of the town. It also contains a cluster of individual gardens around the central city all interconnected and sharing leisure facilities and services.

Diagram 1: The three magnets representing the Town and Country (Howard, 1902)
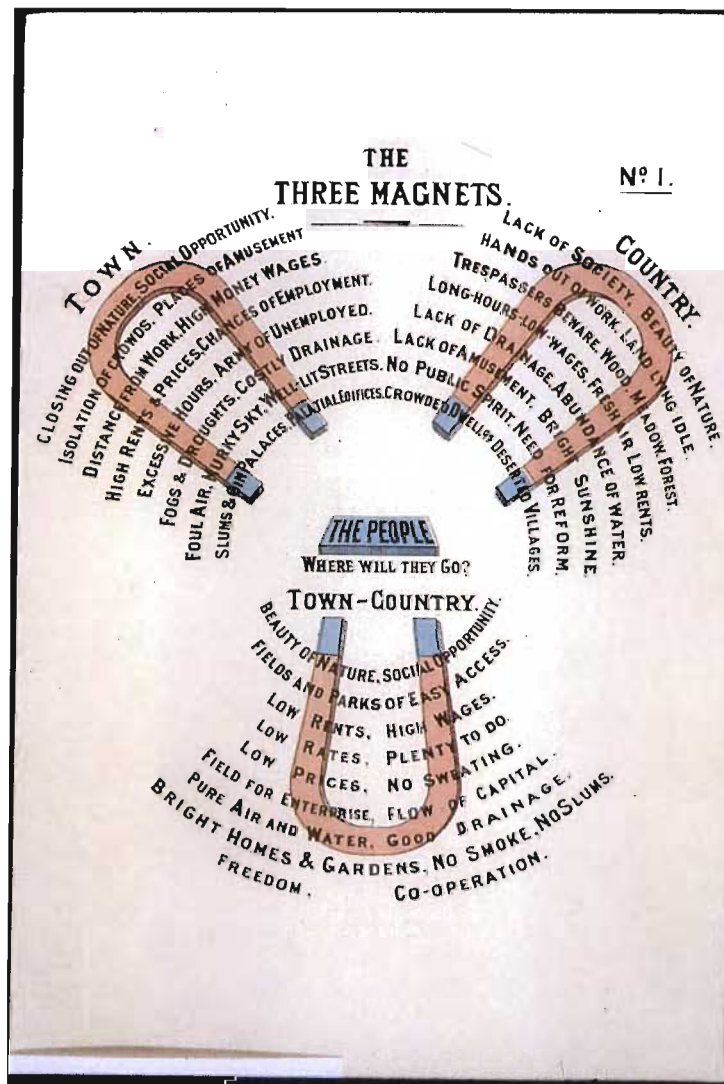
The areas were linked using a railway line to enable goods to be loaded direct into trucks from the warehouse and workshops and to send them by a railway to distant market. This helps to reduce traffic on the roads to town.

c) Shape related model

The shape related model relates to the layout form of open space which is defined by its shape and the spatial arrangement of built up areas or elements around it (Brooks, 2004). Brooks argues that conserving agriculture and natural areas around the city prevents settlement expansion and merging with smaller nearby settlements. Open space of a linear nature are based mostly on the existing surface elements, whether natural (streams or ridges) or man-made (rights-of-way of roads and railways).

The shape related model favors most developers since it allows for the demolishing of existing building and development of new buildings to allow maximum land use. This solution is appropriate where the buildings or facilities have no architectural beauty or are in a state of disrepair. This approach to development was seen as having an impact on the earlier urban renewal policies especially in countries like South Africa with a history of forced removals. The rehabilitation of existing buildings and facilities needs a detailed analysis of history of the neighborhood and establishing an approach to re-use the existing buildings. "In considering the re-use of historical buildings, do not just think of historic buildings as being the real landmark structures in the community. The entire building stock of a community can be considered for re-use if it does not have a viable current function" (Brooks, 2004: 1). The important thing about the above statement is that greater success has been experienced world wide when a group of poor buildings are re-used. This leads to a revival of the entire town or community.

d) Landscape related model

The word "landscape" is used here in the visual sense, as "that stretch of country as seen from a single point" (Meinig, 1979: 33). Space planning based on visual landscape principles in urban environments was already exercised in cities and metropolitan areas in the 19th century (Zube, 1995). Its purpose was to conserve highly valued landscapes, especially topographic (mountains and ridges) and hydrological (rivers and streams) elements. This involves the preparation of the topographical map which in the case of South Africa, is done by surveyors and civil engineers. "All rocky outcrops, krantzes, ridges, hill features, rivers, streams, spruits, groups of trees, roads, cart tracks, electric lines, buildings, fences, structures, holes, excavations, ploughed lands and stony patches should be picked up and plotted on the map" (Floyd,1951:05). This model is applicable to any situation where landscape problem is identified.

Troll, a German Geographer, used the term Landscape in 1938 while studying land use problems in East Africa (Turner, 1989). Troll used aerial photographs to study and analyse landscapes. Remote sensing data such as aerial photographs allowed visual examination of large areas of land. It also permitted landscape ecologists to study broad landscape spatial patterns (Way, 1973). This was the important step in the history of landscape ecology since analysis of spatial patterns and relationships is the basis for landscape ecology.

Park design has been an aspect of landscape planning whereby they are designed and redesigned as fashion changes. Moreover, parks provide the community with a successful social and ecological environment within urban and rural residential areas.

e) Ecological determinist model

Planning is determined by the natural characteristics of land. The ecologically oriented planning process starts with collecting and analyzing data on the natural features of the area (Kaplan et al., 2000). Sites identified as highly valued for conservation (or hazardous for development) are set aside for open space uses and the rest of the land is then allocated for building purposes according to development needs.

The model has been applied to different areas for example, the plan of Jerusalem metropolitan region was based on the analysis of surface morphology, bedrock, hydrology and agriculture, which were evaluated qualitatively according to their reliability, scarcity, diversity and visual quality. "The aggregate outcome of this analysis was a sensitive map, where areas of high sensitivity were designated for conservation (Kaplan et al., 2000).

f) Opportunistic model

The opportunistic model targets areas that were left after planning due to slope limitations or other related issues. Spaces that are left unattended are sometimes called this dead space and the opportunistic model designates those areas for open space purposes. In Paris, the demolition of slums by Haussmann in the 1860s offered an opportunity to create famous boulevards of the city (Schenker, 1995). In New York the central park was planned as an opportunity to get rid of environmental danger (Runte, 1987).

3.3. Theme review:

3.3.1) Crime and Space

The crime and space theme adopted by the researcher highlights the previous and current debates with regards to relationship between defensible space design and fear of crime. The misunderstanding about space is that the

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individuals move around freely without a physical awareness of other human beings or other elements of urban design. The subject on the movement of people in space is taken up by Sennett (1994), who declares that the importance of the spatial relationship with human body is the way they see, hear, touch, and relate to each other. There is "a divide between inner, subjective experience and outer, physical life" which has caused the "reduction and trivialization of the city as a stage of life" (Sennett, 1994: xii). The pace of movement in the city tends to reduce our contact with the urban fabric, as, in Sennett's words, "we now measure urban spaces in terms of how easy it is to drive through them, to get out of them" (Sennett, 1994: 17). As a result this lack of contact with urban space and people has resulted in the lack of our understanding of urban space and the approaches to its design.

On the other hand one of the principles of Newman's defensible space was the idea of defining and protecting the boundaries of an environment to keep the strangers and reduce the risk of crime. These also emphasize the design of space in such away that surveillance becomes possible. Presently, the principle has now developed into a wider use with the help of new technologies such as television cameras (Newman, 1972).

Newman (1972) brings forward four components of defensible space which act individually or in combination to contribute to the creation of safe environment. These are briefly outlined below.

(i) Surveillance and visibility: The observation of public and private areas by users or residents while involved in their normal activities. This depends on a number of factors that enhance visibility of an open space. For example, placing of windows, doors and other openings facing the open space or recreational facilities available around that area. It can be

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argued that fewer people lead to less surveillance which in turn leads to more crime which means the more attractive and usable the space is, the safer it will be (Newman, 1972).

"Improved surveillance operates most effectively when linked with the territorial subdivision of residential areas, allowing the resident to observe those public areas which he considered to be part of his realm of ownership and hence responsibility" (Newman, 1973: 79). Most crimes in general take place in semi public interiors of buildings such as streets and parks. Positioning of open spaces has a serious implication when one confronts the problem of open space design and the location within the buildings. People argue that symbolic barriers can change behavior and expectations, even without the sharp divisions created by locked gates and doors. These barriers define zones of transition- transition from indoor to outdoor or vice versa and from private space to public space.

(ii) <u>Territoriality</u>: The capacity of the physical environment to create a sense of neighborhood or perceived zones of defensive influence is critical in planning for recreational purposes (Newman, 1972). This is characterized by the barrier emphasized by fences or shrubs and in other cultures by walls and gates. Individuals or groups can decide or agree to change the pattern. The pattern itself is established by a set of rules. The rules are changed by changing the symbols that people use to form the rules, such as words, images, feelings and actions (Newman, 1972). When the territory is threatened, then the group can either defend it, or change the rules of the territory.

Altman (cited in Francis, 1989) identifies three types of territories that are distinguished on the basis of duration of occupancy and importance to

an individual. These are distinguished as follows. Primary territories include homes, which are occupied for long periods of time and are central to their occupants; while secondary territories, forms the basis for discussion of public spaces such as public parks that are accessible to a greater number of people. However, there is a tendency for regular users to exert some control over these territories in the form of shared public control.

(iii) <u>Image</u>: The relationship between buildings form and design influence perceptions and stigma that may be attached to a building or a group of buildings (Freundschuh, 2006). Freundschuh for example argues that it is unusual to experience high crime rate in spaces formed by buildings in circular shape than buildings in angular shape. The thief can easily hide in angular shape buildings because of its angles.

(iv) <u>Environment</u>: the effect of locating a recreational area adjacent to safe and unsafe areas is critical to space utilization. For instance it's safer to locate the park closer to the police station or within a cluster of mixed land uses (Newman, 1972).

The components identified (surveillance and visibility; territoriality; image and environment) make it more difficult or risky to commit crime in a particular place. There are other approaches to crime prevention and the most common response is law and order emphasis. This is based on the assumption that too many criminal activities in South Africa contribute to fear to use open spaces and that the criminal justice system has failed resulting in a call for harsher jail sentences for offenders, a greater police presence, tougher laws and an increase in private security (Wekerle and Whitzman, 1995).

3.3.2) Social Life in Open Spaces

It is common in most areas to find teenagers playing on the streets e.g. in townships and it can be argued that the area lacks playgrounds but the fact is that many teenagers play on street because it is closer to their homes, they feel safer and they like it.

The number of people using the open spaces varies according to seasons and the location of recreational open spaces influences the use of space. For example, some people prefer an open space located within the building itself because it protects them from various weather conditions. Traditionally, most indoor open spaces such as squares have been privately owned and managed in South Africa.

In the contemporary urban areas such as Mandela Square, the use of open spaces differs from the use in older cities such as Nongoma. Those spaces are no longer used for recreation only, but their function differs depending on the community needs at a time. The function of open spaces may be diverse for instance an open space can be for shopping, for loading and unloading vehicles, playing or just for walking. Open spaces may differ in its function but the nature might look the same. For example, the pedestrian path in a shopping strip can be used as a path for pedestrians, but at the same time the shop owners can use that space as an extension to their shops whereby they hang their products outside their shops so that pedestrians could take notice of the product they sell.

In general, public outdoor space in most neighborhood units is used for work and leisure activities, organizational gatherings, educational purposes and movement from place to place through or within the neighborhood unit (Freundschuh, 2006). But obviously the use of space depends on the activity that

is taking place during that particular time of the day. For example, playing soccer and hanging around a street can be an activity that is taking place at the same time on street. The street can function as the vehicle distributor from one place to another. The writings of Freundschuh (2006) show that different studies undertaken on youth's behavior show that there are more activities happening on streets and side walks than in the central playgrounds and open spaces designated for such activities. Personal experience testifies that in townships people tend to use streets instead of using open spaces designated for that particular sport because of many reasons, but the reason behind it is that streets are closer to their homes. Beside that, safety is also an issue, most crime incidences take place in those spaces designated for the activity and those spaces tend to be located far from other residences. Therefore, people do not feel safe and secure to travel such a distance (Freundschuh, 2006).

Overall, literature shows that social life in open space differs, depending on the type of open space and the essentials or infrastructure that exist within and around the space. The type of environment within a neighborhood unit can also influence the social life in open spaces. For example, in townships, children play on streets after school but in town houses, most children either play indoors or visit play grounds after school.

3.4. International Case study Review: London

During the late 19th century, a survey on open spaces was carried out in London to determine the overall pattern of recreational use. A count was made of people using the city's open spaces during lunch time in autumn. Plummer and Shewan (1992) further clarified that it was not possible to conduct an overall use survey during the summer period; an alternative was made to the Pedestrian Movement Survey. This was based on the interviews with people working within street blocks covering the city. The results indicated that there are far more

open space users in summer than in autumn. This shows that people do not only consider recreation but also the weather condition also influences people to use the space. It was identified that areas that contain high numbers of open spaces together, reflect greatest use (Plummer and Shewan, 1992).

The outcomes of the survey revealed that people use space differently depending on the type of user. For instance, an office worker may use the space for a short rest, closer to work, whereas a tourist may use the space for a longer rest. This shows that visitors and residents use open spaces for different purposes (Plummer and Shewan, 1992). It has been acknowledged that the successful management of open spaces for people within the city lies in their integration within larger perspective of pedestrian movement.

3.5. Summary

The planning models that are informed by the demand approach are directly influenced by population characteristics and needs (as shown in table 4 below). This is evident in quantitative and systems models such as space standard model. The supply approach gives emphasis to conservation of natural values as the basis of open space planning. The effectiveness of these models is also affected by other external factors such as institutional structure, cooperation between organizations and institutions.

This research has used the identified theories (table 4 below) to contextualize the research undertaken. For example, the demand approach which provides a response to human demand for recreation, amenities and environmental quality, this led to the development of new concept "Human demand" and human demand theory. The next chapter (4) on conceptual framework explains these theories in more detail.

Table 4: Summary of Recreation and Open Space Planning Theories

Literature Reviewed by:	Components	Development concepts
Method: Planning Methods (i) Approaches (ii) Models	Demand Approach	Human demand theory Space standard theory
	Supply Approach	Shape related theory, Ecological determinist theory Landscape related theory
	Behavioral Approach-	Behavior related theory
Theme: (i) Crime and Space (ii) Social Life in Open Spaces	defensible space design	Defensible space design theory
Case Study: London	integration within pedestrian movements	Linkage concept

Chapter 4

Conceptual Framework

4.1. Introduction

This section covers the conceptual framework for this study. It consists of concepts and theories that are pulled together so as to provide the backdrop for this research report. The core concepts of this research are: Planning, Recreation and Open Space. As a result, most of the concepts looked at in this research draw much from the reviewed literature in Chapter 3. Firstly, this section defines the core concepts of the research and goes further by explaining the theories that were identified from the literature reviewed (Chapter3) and those are Ecological Determinist theory, Defensible Space design theory, Space Standard theory and Human Demands theory. The theories will provide the researcher with clear guidelines on what to look for on the site visit. The concepts and theories are defined and explained below.

4.2. Definition of Concepts

Studies on planning, open spaces and recreation have shown that there is no single definition for these three concepts. Each of the reviewed books has a different definition for the terminologies. For purposes of this research, the concepts are defined as follows:

4.2.1. <u>Planning</u> refers to a highly regimented and formalized activity through which a society induces change in itself and involves the application of scientific and social knowledge in order to solve the problems and achieve goals of the larger society (Alden and Morgan, 1974). The responsibility for the planner is to create specific open spaces and build facilities for different land uses that are compatible with the environment and improve the quality of life for the present and future user.

Planning brings together skills from architecture and design, economics, geography, politics, environmental studies, sociology, as well as other disciplines. But planning is also respected academically in its own right with its own academic journals, and its own body of theories and theorists. According to Bentley (1985), the characteristics of a planner can be summarized as follows:

(i).   Someone with the interest in Architecture, design and layout of places

(ii).   Someone with ideas for improving home towns and other areas people visit.

(iii). Someone with a strong feeling about the need to reduce the environmental impact of human activities.

(iv).   Someone who wants to be involved in the regeneration of both urban and rural areas.

4.2.2. <u>Open spaces</u>- A review of literature on open spaces revealed that the definition of this concept varies. This is reflected in the examples below:

According to State of New York (2001) (cited in Schenker, 1995: 209), open space is "...land, which is not intensively developed for residential, commercial, industrial or institutional use. Open space can be publicly or privately owned. It includes agricultural and forest land, undeveloped shorelines, undeveloped scenic lands, public parks and preserves as well as water bodies. Internationally, land that is defined as open space is dependant, in part, on its surroundings. For example, a vacant lot or a small marsh can be an open space in a big city, or a narrow corridor or pathway for walking or bicycling is open space even though developed areas surround it."

According to Durban Metropolitan Open Space System (Durban Metropolitan Council, 1999) two types of open space were identified:

Urban open spaces "...are the human-made or legally designated places and areas within Durban Metropolitan that are developed for community use. They include parks, sports fields, agricultural fields, streets, town squares, road reserves, servitudes for services such as electricity transmission line, dams and private gardens".

Natural open spaces "...are the remaining undisturbed natural and undeveloped areas within Durban Metropolitan. They are the areas that contain the core terrestrial, freshwater, estuarine and marine ecosystems. These ecosystems include land cover types such as grasslands, forests, beaches, estuaries, rivers and wetlands".

This research paper defines open spaces according to the Department of Environmental Affairs and Tourism (1995) definition which:

"refers to any area within an urban or rural environment that contains natural and human made environment such as Nature reserves, private and public Gardens, park areas, golf courses and other sport and recreational grounds, cultivated, derelict and underdeveloped land and even road sides, rail verges and transmission line servitude's as well as open hard-surface area (brown areas) such as shopping malls, plazas and other paved concrete areas".

Passive open space includes the conservation areas, river reserves, parks and natural areas. These open spaces do not require prepared facilities such as fields or pavilions. Passive recreation place minimal stress on a site resources

as a result they provide ecosystem service benefits and highly compatible with natural resource conservation.

Active open space includes the market squares and sports venues such as playing fields. This is a team activity that requires the use of special facilities, fields or equipment.[1]

The use of open spaces differs depends on the location of open spaces but firstly let us look at the types of open spaces that are contained within an existing neighborhood unit.

(i) Private open space has restricted views and access and in most cases the space is totally controlled by an individual or group of individuals such as a family or an organization.

(ii) Public open space- the public has the full visual and physical permeability/ surveillance of space. Therefore, there is both visual and physical access. In this case, the space is owned by the public, for example roads and community halls.

The relationship between the public and the private space differs in most housing typologies (for example freestanding dwelling unit and duplexes). The free standing dwelling units in most cases consist of both private and semi-public space. The private space is located at the back of the house where family gatherings take place and the semi-public space is located at the front yard of the house where the public can only access that space visually without entering the yard (see Diagram 2 below).

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[1] Note that while active and passive recreation may be referred to as two different things they can be located together in one space for example, soccer field may be located together with the an area that is nature reserved.

Diagram 2: The relationship between public and private open space in a freestanding dwelling unit.
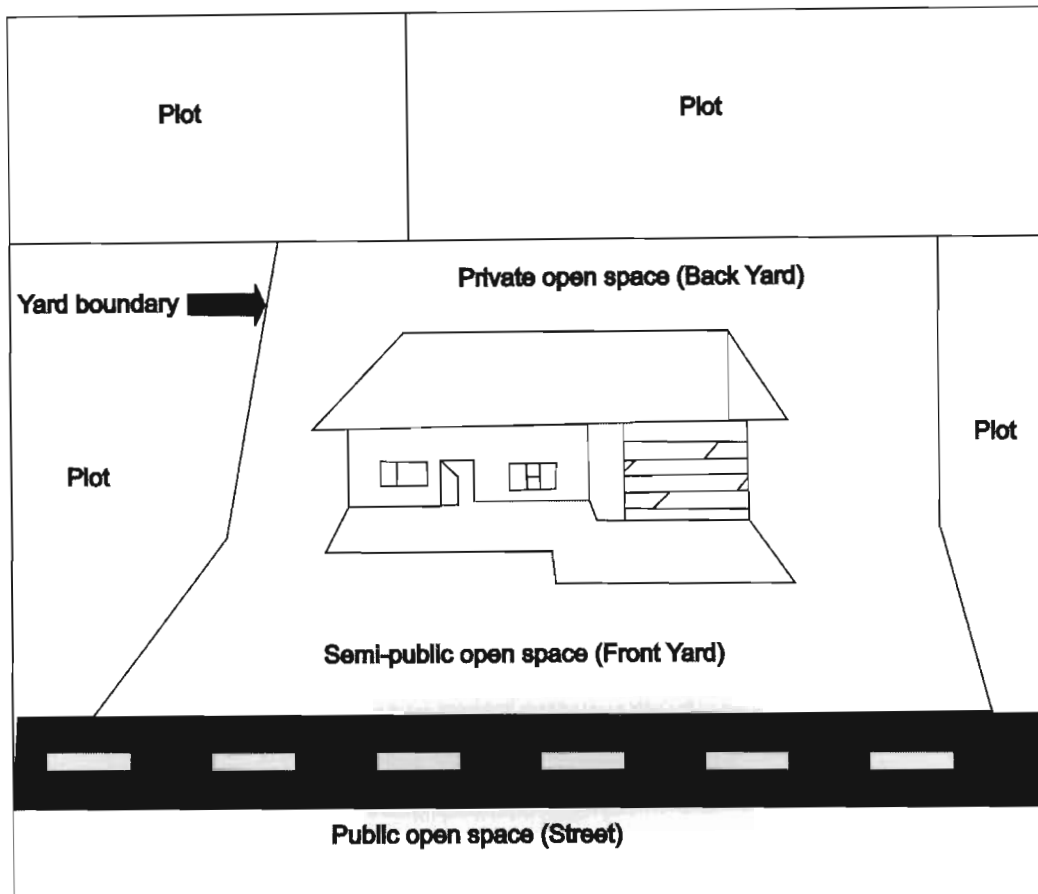
The public has limited access to semi-public open space physically, but visually, the public has unlimited access to the space. Public space, on the other hand, is a space where anyone has the right to use the space without being excluded economically or socially. An example of public space is a public park and in most cases, no fare or payment is required to enter these spaces.

4.2.3. <u>Recreation</u> given that the concept changes according to their purpose and context therefore the universal definition of recreation is impossible but in this context it is defined as follows: "As period of time, activity or state of mind in which choice is the dominant feature, in this sense it is the

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form of free time for individual; An objective view in which recreation is seen as opposite of work and is defined as non work residual time; and a subjective view emphases recreation as a qualitative concept in which recreation activities have meaning only within the context of individual perceptions and belief systems, and can therefore occur at anytime and any setting" (Hall and Page , 1999: 2).

The conception of recreation varies with individuals, heavily depending on a person's cultural and economic background. But in most cases, all types of leisure, irrespective of culture and economy, result in personal pleasure.

4.3. Definition of theories.

Before defining the four theories used or referred to in this study, this report explains the meaning of theory in general. Theory could be seen as the body of ideas explaining something in reality. Making reference to ideas means that theory is a result of someone's thinking. Theories explain the causes of the phenomenon or the empirical phenomenon or the occurrence of every day's occasions. Anything that the theory tries to explain must be explained adequately. Therefore, one may say that it helps in understanding particular aspects of the observed world (based on the experiment, experience and observation).

Theories explain the relationship between two themes, using the question of how and why. In addition, they are also important in correlating observed facts used to explain the relationship between the facts and the reality. Theories are associated with development of knowledge they support reality but they can and cannot be applied to real issues. A theory can influence the way in which people think about particular issues in a particular way. Some writers argue that

theory is not true or false rather it should be taken as a form of language which stretches out the words we can use to discuss a particular problem.

This research looks at four theories, pulled together thematically from the literature reviewed in chapter 3 namely, human demand theory, Ecological determinist theory, defensible space design theory and space standards theory. The four theories are associated with the development of knowledge which supports reality and this can be applied in real planning issues.
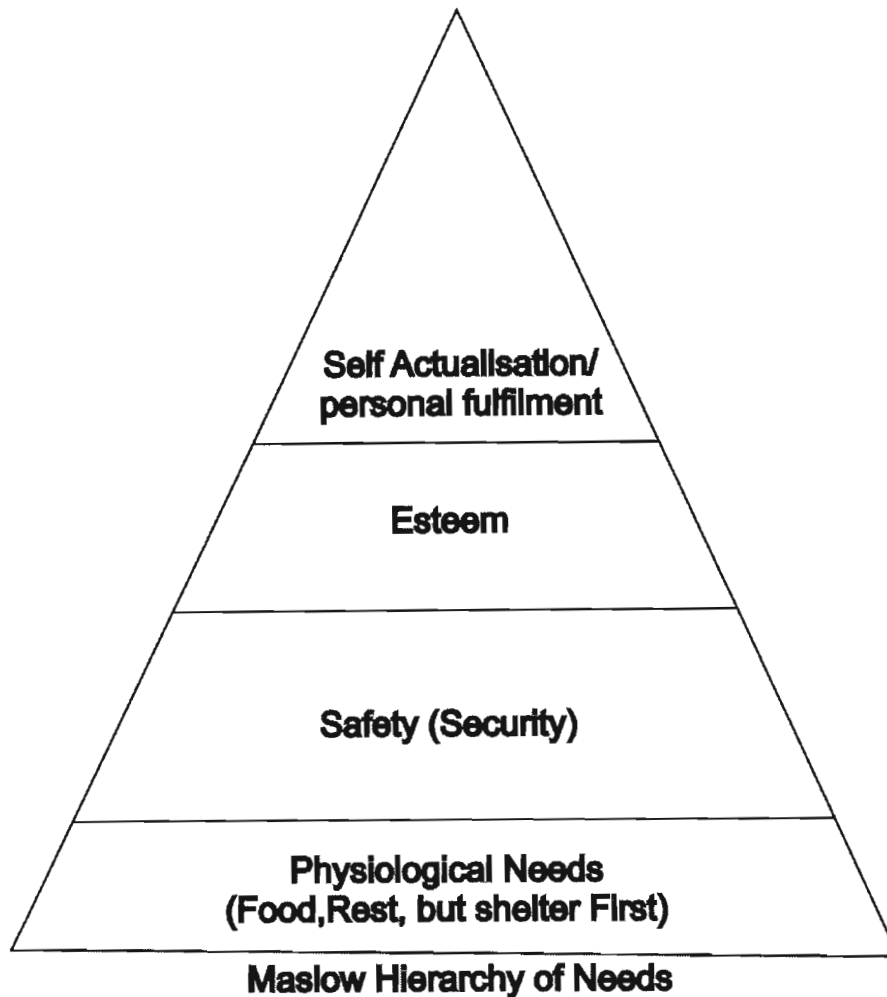
4.3.1. Human Demand Theory (HDT)

Human Demand Theory aims to provide the analysis on the current demands for recreation, amenities and environmental quality. There is a hierarchy of human needs from the most basic (survival) to the most abstract (aesthetical) needs (Maslow, 1954). This theory uses the concept of public participation all the way through physical implementation of the final plan.

There are a number of models of human needs and none has been seen as perfect but Abraham Maslow model of human needs is held in the highest esteem because it seems to provide a better explanation. HDT theory tends to borrow some of the concept of human needs model and assumes that all people have the same needs but the way people strive to meet them varies. The needs are classified as shown in diagram 3 below.

The diagram 3 below illustrates that the most important human needs are psychological needs which are highly related to needs for survival. The second important need shown above is safety and security highly related to survival need. In addition, it is important to note that people want to be safe and not frightened, excited and not bored that is why 'rest' on the diagram above is categorized as one of the primary needs of human beings.

Diagram 3: Hierarchy of needs (Maslow, 1954)

**Self Actualisation/
personal fulfilment**

Esteem

Safety (Security)

**Physiological Needs
(Food, Rest, but shelter First)**

Maslow Hierarchy of Needs

Maslow also argues that a human being has to have a sense of belonging whether you come from the large social group such as religious group, cultural group, professional organization or a small family. Failing to meet physiological needs can prevent one from obtaining security, esteem and personal fulfillment. For example, a person who experiences hunger and there is no one to support him/ her and his/ her background of literacy, that person may end up doing crime in order to meet his/her needs. As a result, safety is impossible to attain if there are other physiological needs that are not achieved. Therefore, physiological needs should be prioritised and this includes recreation, food and shelter.

4.3.2 Ecological Determinist Theory (EDT)

Ecological Determinist Theory provides with an analysis of the current situation of ecosystem aiming at protecting the areas that are highly valued (Turner, 1989). Since the environment is made up of natural ecosystem and human social systems and therefore environmental factors often affect one another. This theory states that no development should takes place if it disturbs the natural ecosystem of the area. This theory uses the concept of Landscape planting. In any recreational space, there shall be plantation of vegetation which serves both functional and aesthetical purposes. Planting shall be arranged to form a good looking pattern, with open areas, walkways, and highways. The ecological function of trees is generally well perceived by the public although it contributes significantly to the overall quality of township/ city life in a number of ways. For example trees and other plants give visual pleasure which change and increases our perception of township or city landscape.

4.3.3. Defensible Space Design Theory (DSDT)

Defensible Space Design Theory provides the idea of defining and protecting the boundaries of natural environment to keep strangers and the risk of crime away and also prevents invasion of squatter settlements (Newman, 1972). Furthermore, it is to organize space in such a way that surveillance becomes possible. This theory tends to borrow urban design concepts such as linkage concept, sense of place and design essentials which are explained below.

4.3.3.1. Linkage concept

Linkage concept aims at using open spaces and recreational facilities as an element in connecting multiple land uses which leads to an organized system of circulation. This can be achieved through the use of pedestrian pathways which should be designed in such a way that they lead to an organized system of circulation such as a water pond or commercial node of an area. All the streets

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must connect at some point to achieve accessibility in an area, whether by vehicles or pedestrians. Urban designers like Trancik (1986: 97) define linkage theory as "based on patterns of solids and voids, and is derived from 'lines' connecting one element to another". In any plan open spaces are used to connect different land uses like residents, retail and other land uses.

Bentley (1985:12) states that "permeability of any system of public space depends on the number of alternative routes it offers from one point to another". The park as an example of an open recreational space shall be located in terms of accessibility to major vehicular route and also pedestrian pathways.

4.3.3.2.   Sense of place

Sense organs relate to those organs in a human body that are important such as ears, nose and eyes. Lynch calls this sense as imageability of the city which he defines as "the user perception in motion and how people experience the spaces of the city" (Trancik, 1986: 120). This can be a positive emotion or negative emotion such as a sense of fear while moving through the space. A tall building makes the user to feel over powered because of the height of the building in relation to his/her height. There are things that impact on human body system in the surrounding operational environment. This concept aims at considering all senses including the most popular one: visual sense. There are other senses that have to be considered when doing an analysis in ESikhawini namely, sense of motion, sense of smell, sense of hearing and sense of touch. All these senses needs to be considered when doing an analysis of the site, so that it allows people to choose experience at different times. For example, a person sitting at the park is not getting the same sense of experience as a person who is doing shopping at an indoor open space.

Alignment of trees on both sides of the road provides more shade during day and also darkness at night. Therefore, this positive or negative feeling provides a sense of fear while moving past the given space.

4.3.3.3.   Design essentials

The assessment of the recreational facilities and open spaces of the study area shall, to a small extent, draw on design essentials such as fencing, walls, surface drainage, lighting, parking, and walkways from the basis of recreational open space design (Bentley, 1985). These elements provide the area with accessibility and security that works together all the time. For example, lighting in recreational open spaces increases the perception of safety especially the use of multiple lights rather than a single light and to reduce contrast between shadow and light. Well-designed spaces are characterized by good lighting, clear sight lines and a clean environment. Design essentials such as parking, walls and fencing are explained below:

(i) Parking

Issues of visibility, safety, screening, and access are central to traditional parking lot design (Bentley, 1985). There are other factors that need to be incorporated in the design of parking lot such as the needs for shade, buffering and water harvesting. Trees need to be aligned in the north-south row to shade as much parking as possible especially during the summer season.

(ii) Walls and fencing

Every structure of walls and fences constitute a boundary, a pause in the continuity of space (Newman, 1972). Furthermore, it protects vegetation and other weak environments by directing pedestrian and other traffic flow. This barrier defines pathways, enclose activity areas and social settings.

4.3.4. Space Standards Theory (SST)

Space Standards Theory uses standards as a means to access the attainment of objectives and sometimes can be used to constitute broad guidelines and will have to be varied to take into account local conditions (CSIR building and Reconstruction Technology, 2001). Relevant aspects are outlined below (in table 5).

Table 5: Space standards theory guidelines (CSIR building and Reconstruction Technology, 2001)

Human needs and preferences		
	Psychological	Passive engagement Active engagement Safety Visually inspired or impaired
	Physical	Visible and busy spaces comfortable to sit and talk. (at the perimeters and entrances of spaces) Sheltered areas to protect from all weather conditions
Location		± 500m walking distance (to measure: draw the circle around the space)
Quantity		10%-17% of the land for development should be accorded to recreation.
Linkages	Pedestrian pathways	90cm minimum width Hardened (but not slippery)

4.4. Summary

The concepts and theories explained in this chapter helps us to understand different aspects on planning for recreational facilities and spaces based on the on the literature reviewed, experiences and observations. The theories explain the relationship between natural and man made environment. For instance, Ecological determinist theory helps to understand the importance of natural environment in any development and stipulate that there should be no development that disturbs the natural ecosystem of the area. Whereas Human demand theory borrow some of the concept of human needs model and presume that all people have the same needs but the way people struggle to meet them differs.

Furthermore, the defensible space theory argues that the area is considered safer when proper design essentials are in place. The use of walls, lights and surveillances could reduce crime and create a sense of safety within a given open space. This also argues that when each space in an area is owned and cared for by the responsible party, this reduces the crime rate in open spaces.

Chapter 5

Research findings

5.1. Introduction

This chapter looks at the findings obtained from conducting the research based on the existing recreational facilities and open spaces at ESikhawini. The findings answer some of the questions asked in Chapter1. The emphasis was based on three themes of appropriateness and adequacy namely, suitability, quality and quantity of recreational facilities and open spaces for the youth in the area. Therefore there are two aspects that this section looked at namely, demographics and the spatial analysis. This research presumes that through analysis of demographics, suitability can be determined and through spatial analysis quality and quantity of recreational facilities and open spaces can be determined. Therefore, the findings will be synthesized by categorizing this work into three broad overlapping layers that is demographics and spatial analysis. These categories interpret findings based on the theories and concepts presented in the theoretical framework presented in this work.

5.2. Demographics

The population of eSikhawini was estimated to be 63000 in year 2007 according to Umhlathuze Demographics (Umhlathuze IDP, 2007). The area consists of mixed racial groups but the majority are blacks and the least in number are white. Umhlathuze demographic profile show that the area contains 62916 (Blacks), 62 (Colored), 16 (Indian/Asian) and 6 (Whites). The demographics show that the population of ESikhawini has increased for the past 10 years and recent population growth has changed the use and physical nature of the area greatly (Umhlathuze IDP, 2007). Most land designated to open spaces and recreation has been used for other land uses or neglected. As revealed from observations during field surveys, ESikhawini now faces the problems of visual and environmental deprivation. This

shows that ESikhawini lacks the innovative open space plan which preserves the nature and unique qualities of the place. Demographics of the population that took part in the survey are shown in the tables that follow in terms of gender, age and recreational preferences.

5.2.1. Gender

During the survey, different gender groups responded to the questionnaire disseminated and Table 6 below shows the responses of both gender including people with disabilities. There were a total number of 50 respondents and the majority were females with an estimate of 54% and three of those were disabled. The reason behind this was to get balanced views from both gender and seek women views on recreation. Most of recreational facilities in ESikhawini are active recreation such as soccer, basket ball and therefore do not meet the needs for the entire youth especially females that tend to prefer passive recreation as compared to active recreation.

Table 6:Gender of the Respondents			
Gender	Number of Respondents	Respondents with Disability	Percentage
Male	23	7	46
Female	27	3	54
Total	50	10	100

5.2.2. Respondents by Age Group

The majority of people that responded range between the ages of 14-19 years old of age (as shown in table 7 below) which means that most responses came from the youth. The youth are seen as the future of the nation. Therefore, involvement of youth in anti-social activities will not only harm the family but also the nation as a whole and recreational activities should be in a state that meets the needs of the

present and future generations. Table 7 below shows the ratio between different age groups that responded to the research the reason behind this was to get more views from the age group assumed as the victims of anti-social life.

Table 7: Age of Respondents		
Age	Number of Respondents	Percentage
14-19 years	25	50
20- 25 years	15	30
26 and above	10	20
Total	50	100

5.2.3. Youth Recreational Needs and Preferences

The Table 8 below shows the responses of different age groups based on their needs and preferences of recreational facilities. Out of the total sample of 50 that responded, 25 responses came from the age group of 14-19 and 15 prefer indoor passive recreation as shown in Table 8. The statistics (on table 9) show that the majority of youth ranging from the age of 26 and above prefer indoor passive recreational facilities.

Table 8: Recreational Preferences per Age Group					
	Indoor		Outdoor		
Age Group	Passive	Active	Passive	Active	Total
14-19 years	15	2		8	25
20- 25 years	7		8		15
26 and above	4		6		10
Total	26	2	14	8	50

Table 9: Percentage on Recreational Preferences			
Age Group	Indoor	Outdoor	Total
14-19 years	68%[1]	32%	100%
20- 25 years	47%	53%	100%
26 and above	40%	60%	100%

The percentage of the youth that prefers indoor recreation is high among the age group ranging from 14 to 19 years old. Table 9 above shows that about 68% of the youth between 14 and 19 years prefers indoor and on the otherside and 32% prefers outdoor. The age group from 26 and above who prefers outdoor recreation is estimated to be 60% as shown in table 9 above. The tables show that Group A[2] prefers indoor passive recreation such as cinemas and games room whereas Group B [3]and Group C[4] prefer outdoor passive recreation.

5.3.   Spatial Analysis[5]

This looks at the relationship between the physical features of recreational spaces, together with their layout context in relation to the surrounding land uses and opportunities available for occurrence of anti-social activities. In addition, it also looks at accessibility[6] of the existing open spaces and recreational facilities, taking into account the needs of the local population but four open spaces were critically analyzed in section H and J. Section H serves as the chosen section within ESikhawini where detailed analysis of layout focuses on.

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[1] Conversion from table 8 to table 9 sample =[15+2]= 17   (17 ×100)/25= 68%

[2] Youth between 14 to 19 years

[3] Youth between 20 to 25 years

[4] Youth between 26 and Above

[5] This includes the analysis of public and private outdoor spaces such as streets, playgrounds, parks, churchyards, street corners, gardens and other beautiful areas for recreation.

[6] This relates to physical elements that links different land uses such as pedestrian pathways or vehicular pathways.

Map 4: ESIKHAWINI WARD SECTIONS

Dlangezwa

N2

Mzingwenya River

Mzingwenya Forest

Mzingwenya Forest

Mzingwenya Forest

Mdlebe Ntshona (West)

Boundary (River)

Boundary (River)

J2

J1

H1

H2

Mkhobosa

Settlements

Mkhobosa Forest

Mkhwanazi

Settlements

Indian Ocean

Legend

	Boundary (Mthombothi street)
	J1 Section Boundary
	J2 Section Boundary
	H1 Section Boundary
	H2 Section Boundary
	Rivers
	Open Spaces
	Residentials
	Schools
	Worship

Section	Population Size	Number of Open spaces
J1	18750	12
J2	12750	5
H1	11720	6
H2	19780	14
Total	63000	37

North

Reference: Umhlathuze Municipality
M Ngubane
University of KwaZulu Natal

5.3.1. Streets Layout at H2 section

Section H2 consists of multiple road hierarchies that function at a neighborhood level but this section looks at three streets in ESikhawini that function at neighborhood level. Those streets are used to connect different land uses like open spaces with the residential areas or with other land uses. The street patterns are categorized as follows:

(i)   *Local Distributor Street-* this street distributes the traffic within and around communities in ESikhawini. For example, Mdlebe Ntshona West distributes traffic from ESikhawini to other surrounding areas such as Richards Bay and Empangeni. The street is mainly used by public transport, with moderate traffic volumes at a low speed and accessible to other streets (see diagram 4). This street consists of different street furniture or road elements aligned along the street. For instance, lights are aligned on one side of the street (the left side of the street if driving east). The second element of the street shows the bus terminus "Bus stop" aligned on the same side with the street lights (see picture 1).

Picture 1: Different street furniture aligned along Mdlebe Street such as the bus terminus located in H2 section, pedestrian pathway and plantation (Photographer: Author).

The other part of the street consists of pedestrian pathways with width of 1 to 1, 5 meters wide aligned on one side of the street. Mdlebe Street has two lanes for cars coming from the opposite direction with an estimated width of 5-6 meters. The third feature of the street is the storm water drainage: A part of Mdlebe Street is provided with storm water drainage on one side.

Local Distributor street also consists of open spaces that may be defined as "dead space". These dead spaces are along Mdlebe Street where there is no concrete or hard surface for pedestrian path but pedestrians still use their space for walking, or hawking business related activities. The businesses observed during the field survey include car wash and vegetable traders.

Diagram 4: Layout of three streets in eSikhawini

Local Distributor: Umdlebe Ntshona(West)

Open Space

Retail

Local Collector: Thokozani Street

Residential

Residential Access: Umzwilili Street
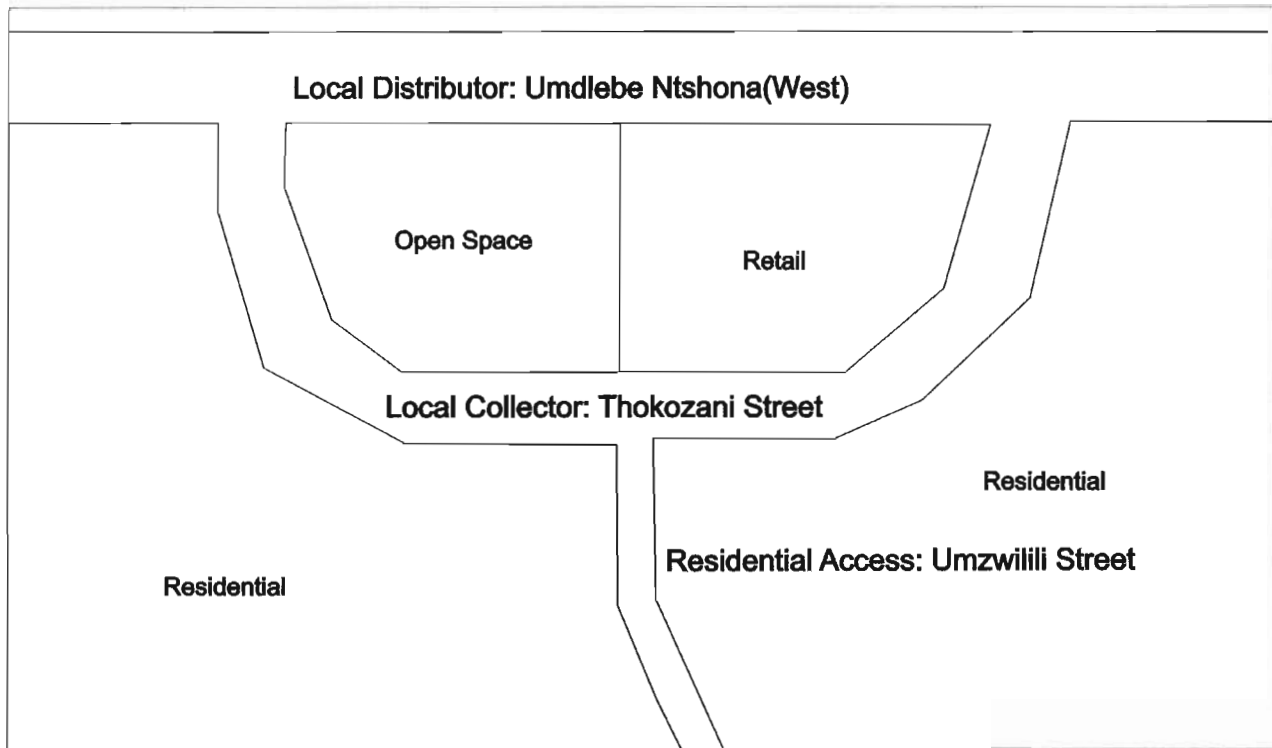
Residential

(ii)   *Local Collector Street-* this street collects the traffic from the local distributors to residential access street. For example, Thokozani Street collects traffic from Mdlebe Ntshona West Street to residential access street (see map 5 below). There are not many activities taking place along the street, but it still serves its function. The street consists of street lights, storm water management system aligned on the left side of the street. There are no other landscape elements at present.

Map5: Section H2 Street Layout

Mdlebe Ntshona (West)

Residents

Active open space
(Soccer, basketball
and Tennis court)

Shopping Node

Umzwilili

Community Hall and
Municipal offices

Thokozani Street

Residential

School

Reference
M Ngubane
(Author)
University
of
KwaZulu Natal

Masters in Town and Regional Planning - MTRP
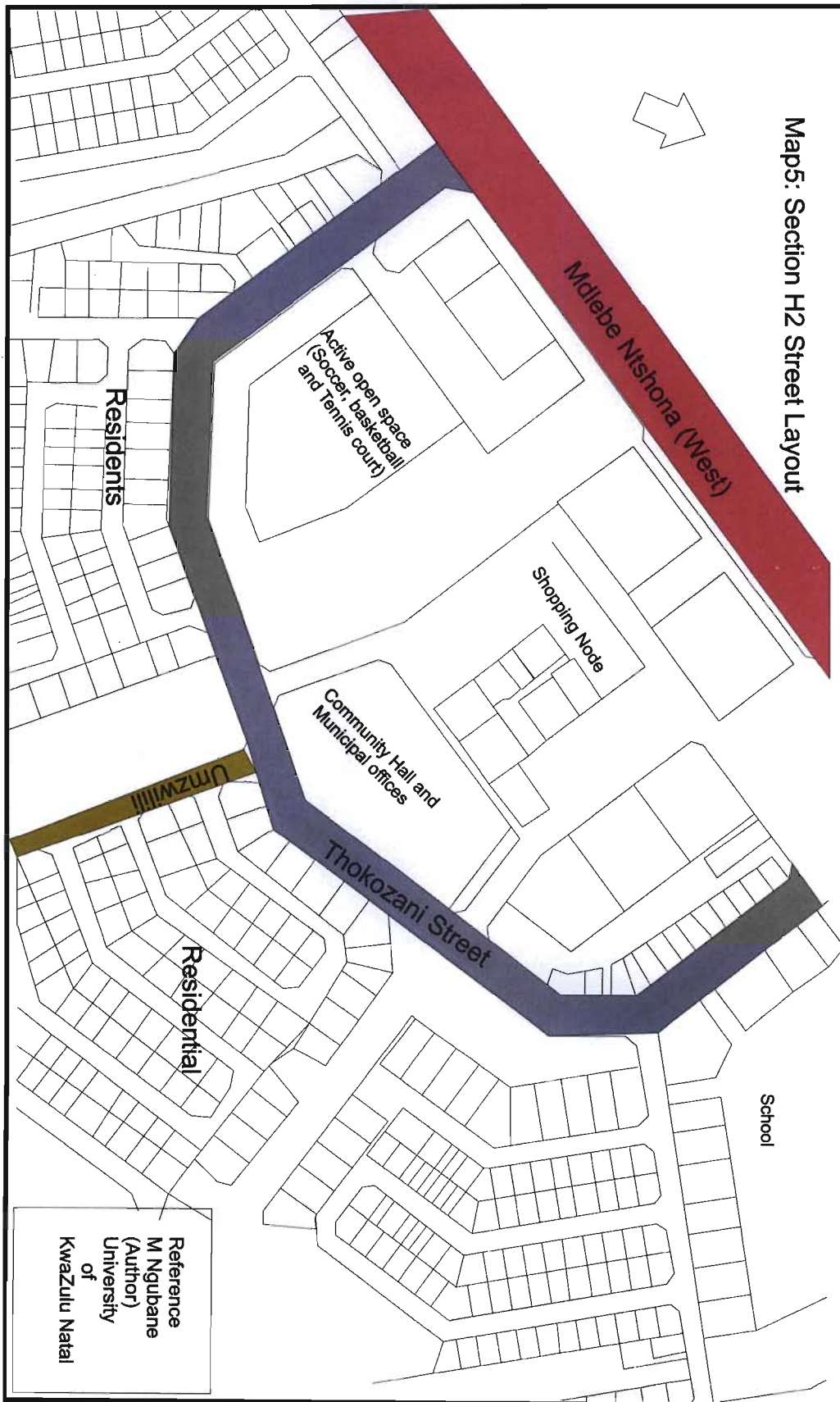
(iii)   *Residential Access Street* - This road gives direct access to neighborhood units, buildings and land. For example, Umzwilili Street give direct access to neighborhood units collecting the traffic from Thokozani Street to residential access street. The landscape elements that exist in Umzwilili Street are similar to Thokozani Street which are street lights and storm water drainage. There are no other landscaping elements such as trees or paved pedestrian pathways.

The function of the streets differs, given the brief description of the street hierarchies above (in (i)-(iii)), the kind of activities that take place in these streets and the quality of the environment. The streets perform well in integrating different land uses and the connection between the Local collector, Residential access and Local Distributor streets makes a good combination. The space can be improved through different mechanisms depending on the needs and preferences of people. But the recommended solution is to upgrade the existing and add more street furniture to make the space enjoyable. For example, changing the old street lights and putting advanced lighting with trees properly aligned along the pedestrian pathways can enhance the Visual Aesthetics of the area.

There is little provision to street furniture such as street lighting with badly[7] maintained kerbs. Researcher observed the use of spaces on the side of Mdlebe and Thokozani and Umzwilili Street for dumping, storage of heavy equipment and a cars repair which destroys aesthetics of the public areas and lead to poor environment (see picture 2). For instance, the problems that were identified include oil spills and stagnant water in unpaved areas.

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[7] The spaces contain general litter and other waste

Picture 2: Heavy equipment and oil spills destructing Aesthetics of public areas (Photographer: Author).

Bentley (1985) makes clear that permeability could be reduced through the use of hierarchical layouts, segregation of users of public space and scale of development (large blocks make an area difficult to access).

In ESikhawini, the space has been designed in such away that it avoids the hierarchal street layouts, segregation of uses and scale of development to allow permeability in the area. For instance, the pedestrian and vehicular users are sharing the same system of routes which give both users equal level of permeability in the area. All the roads (local distributor, local collector and residential access roads are aligned with pedestrian paths on both sides and consist of small blocks linked with both pedestrian and vehicular paths. There are no streets that limit the way for pedestrians such as national roads.

(i) Mdlebe Street Cross-Section

The illustration (diagram 5) below show the cross section through Mdlebe Ntshona West Street in eSikhawini taken through the street and across into the adjoining lots and the portion of the adjoining structures. This represents the components that are contained within the street and also on both sides of the street.

Diagram 5: The cross section of Mdlebe Ntshona West Street in ESikhawini
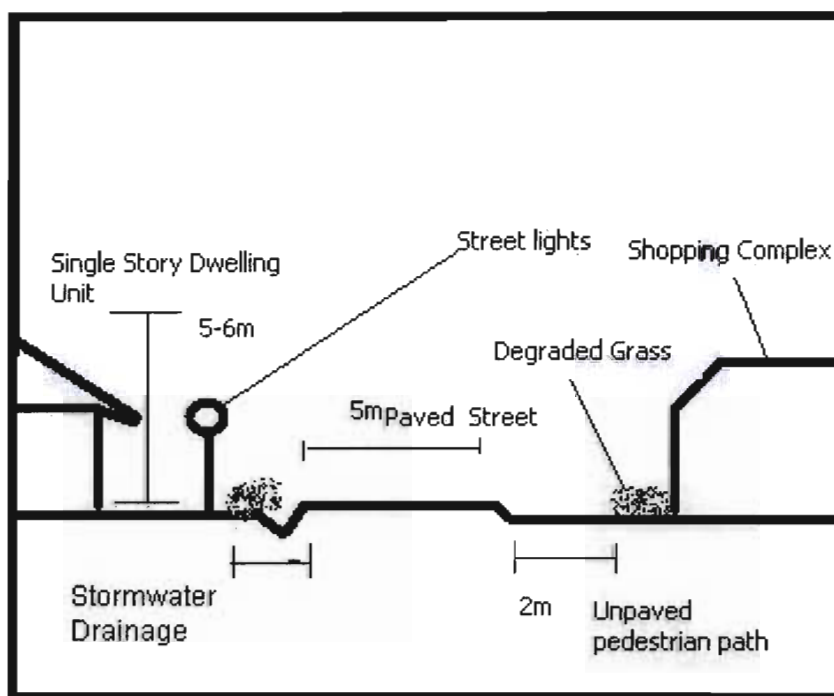
5.3.2. Facilities in the Neighborhood Space

The area consists of a variety of services and facilities which are both for public and private use. ESikhawini has two shopping nodes[8] namely, a shopping mall located along Mdlebe Ntshona West at J2 section (see picture 3 below) and the other shopping complex located along Mdlebe Ntshona West at H2 section. There are other commercial activities taking place in eSikhawini such as Tuck shops (located

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[8] Lynch defines Nodes as "points, the strategic points in a city into which an observer can enter, and which are intensive foci to and from which he is traveling" (Lynch, 1960: 47).

within the residential strips in H1, H2, J1 and J2 sections), street traders (located on both sides of the main street and around the shopping nodes). Most of these shopping nodes lack facilities for recreation both for workers and the visitors to the shopping nodes.

Picture 3: ESikhawini Shopping Mall located at the intersection of public transport route namely, Mthombothi and Mdlebe Street (Photographer: Author).

There are other facilities besides commercial facilities such as a clinic, hall and community library located along Thokozani Street All these are facilities located along the local collector street - Thokozani street (see diagram 4 on pg.60), gives a direct access from residential to the main bus route. A sport field is also located along Thokozani Street and a Petrol filling station locates at the corner of Thokozani and Mdlebe Ntshona West Street. There are also schools in all sections but of different grades (refer to land use map). In section 'H' there are four high schools and two primary schools. Most educational facilities and other facilities are located
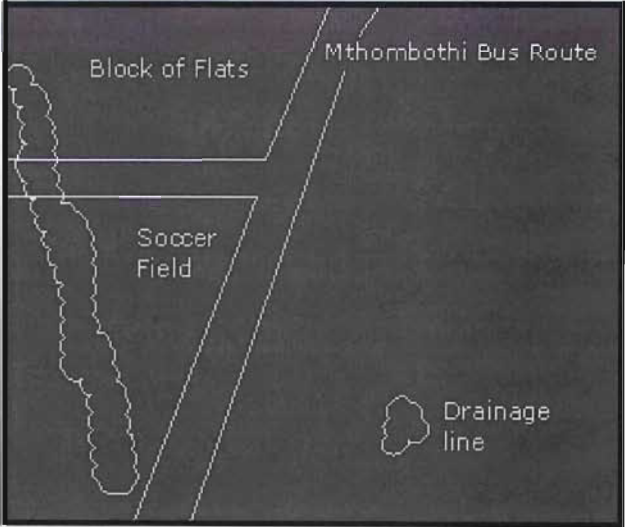
in 'H' section and there are few located in 'J' section but the major shopping node is located in 'J' section. Based on the three streets that were chosen (Diagram 4), only two streets consist of schools and these are Thokozani Street and Umzwilili Street. This is the good location of school not along the busy streets such as Mdlebe Street which is a major transport route for both public and private use.

Other facilities within the neighborhood open space include facilities that are contained within housing units such as inside Flush toilets and water taps (located inside the yard and inside the house). Almost all residences contain two outside taps (one at the back yard and the other on either side of the house). In most cases people use the back yard for vegetable gardening and also for other private family gatherings. The back yard space in all the houses at ESikhawini is not visible to the public so that it allows the family to have its privacy without any interference from the outsiders either visually or physically.

All residences use Eskom card system for energy generation but this serves as their primary energy generator while candles serve as the second source of light during certain periods. In terms of the site coverage, almost all the housing plots in ESikhawini are not less than 70m² in size per site and all contain both the front and the back space used for different purposes.

During the field survey, there were four open spaces visited and out of four open spaces, there were two parks(section H), two soccer fields and one passive open space(section H and J). The table 12 below show what the researcher observed and took note of during the site visit.

Table 10: Summary of Field Survey

Plot Number (Refer to Map 6 and 7)	Researchers sketch Plan and notes
Plot: 1958 **Location:** Section J2	The space contains a soccer field with an estimated area of 600 × 300 meters. It contains different plants such as grass but not properly maintained. There are no other facility that forms part and parcel of recreational space such as seats and trees to allow people to sit while watching soccer. Other facilities such as toilets, rubbish bins and other making needs to be provided. Sketch Plan 1. Sketch plan 1 above shows the location of a soccer field in relation to other land use. The space is well located along the major public transport route and at the T-intersection. Because of its location, there is a need to protect the parameters of the space and also the users against the public transport flow through fencing or other protective elements.

Map 6: ESikhawini Cadastral

Block of Flats

Soccer Field 1958

Soccer Field

X

Park

Police Station

385

Magistrate court 384

Open Field

MALANDA

JUBA

MAP 7: ESIKHAWINI LAND USE : J2 SECTION

H1
Section

Shopping Node

Mthombothi: Public Transport route

Border separate J2 and H1

Duplexis(Flats)

Park

worship

Soccer Field
(2)

(3)
Neighborhood Gardens

Residences

Mdlebe Nishona (West: Public Transport route

Residences

Residences

J2
Section

(1)

School

School

(4)

Worship

(6)

(5)

Border separate J1 and J2

Passive Open Space(River)

J1
Section

School

Mzingwenya Forest

Park and swimming pool

Mkhoboza
(Settlements)

Mkhwanazi
(Settlements)

Legend

	Residential
	Open space
(1)	Number of Open spaces
	J2 Section Boundary
	Mzingwenya

Space size	Number of Spaces
Small	1
Medium	2
Large	2
Total	5

Note:
Small=300-500 square meter
Medium=501-800 square meter
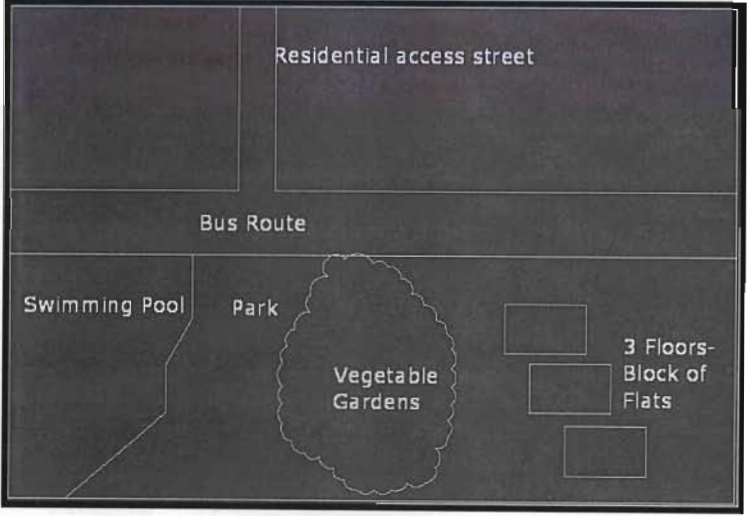Large=Above 800 square meter

Location

J2

Reference: MS NGUBANE
UNIVERSITY OF KWAZULU NATAL
SCHOOLL OF ARCHITECTURE, PLANNING AND HOUSING

North

Plot Number (Refer to Map 6 and 7)	Researchers sketch Plan and notes
Plot: X (Soccer Field, Park and Open Field) Location:Section H1	This space is used for both passive and active recreation. It contains a soccer field, park and an open field. The total area size of the space is estimated to be 600 × 300 meters for the soccer field and 200×300 meters for the park and 100*50 meters for the open field There are few facilities found in the park. This includes the child swing for active recreation. The soccer field has only the goal posts that show that it is a soccer field, otherwise no other facilities are provided. Furthermore, there are no trees, seats, rubbish bins, toilets and not even changing rooms. The area lacks the provision of the open space furniture. The open field (in sketch 2) consists of grass and pedestrian pathways linking the open space with the surrounding residents. The surface of the pedestrian pathways is unpaved. Those unpaved areas provide slippery surface and water stagnation during heavy rains. Whereas, the pedestrian path provides easy access from the residents to the open spaces.

Plot Number (Refer to Map 6 and 7)	Researchers sketch Plan and notes
	Sketch Plan 2.
Continue (**Plot: X**) **Location**: Section H1	The site is well located in terms of the surrounding residential land use and in terms of the streets that bound the space. The location of the space at the intersection of two residential access streets makes the space accessible to the surrounding residences without any inconvenience from the traffic flow especially during the day. During the site visit it was observed that the roads that surround the area turn out to be busy from the morning when people travel to work and also in the evening when people travel back from work. The location of open space closer to the police station make the user feels the sense of safety and security. While, some of the residents are located at a visible angle to the park.

Plot Number (Refer to Map 8 and 9)	Researchers sketch Plan and notes
Plot: 396 **Location** :Section: H1	The area contains passive open space used by the residents of ESikhawini more especially from Fridays to Sundays. During field survey it was observed that people in ESikhawini use the space differently during weekends and all age groups visit the space. The space has good combination of recreational facilities for all ages and gender groups (see sketch plan 3) and a swimming pool (see sketch plan 3). A park has grass, seats and two child swings. Sketch Plan 3. There are few facilities that exist in the area and this includes five seats and tables which are poorly maintained (for example, tables and seats not painted) and the grass not well maintained. There is no proper vegetation that can enhance the beauty of the public space. Although, there are rubbish bins within the site but not in a good condition and there is a need for replacement.

Plot Number (Refer to Map 8 and 9)	Researchers sketch Plan and notes
Continue (**Plot 396**) **Location :**Section: H1	The area is well located at the T-intersection of the residential access street and the bus route. This provides easy access to the public transport and short distance for residents to travel. This open space has no clear access roads that link the site with the bus route and the space has no sense of security especially during working hours. The space provides with some dark spots at night with no proper lighting. The swimming pool is provided with a fence, but the park and vegetable gardens do not have any kind of security fencing. During the site visits, the observations were made of people using the open space during weekends lunch time and the result indicated that there were far more open space users during weekend lunch time than during the rest of the week.

Map 8: ESikhawini Cadastral

Park

Swimming pool

Mthombothi Street

XHAPHOZINI SENIOR PRIMARY

ESIKHAWINI SENIOR PRIMARY

P.O.S.

References: Umhlathuze Municipality
: M Ngubane
University of KwaZulu Natal
School of Architecture, Planning and Housing

MAP 9:ESIKHAWINI LAND USE - H1 SECTION

Legend

■ (black)	H1 Boundary
■ (yellow)	Residential
■ (green)	Open space
■ (orange)	Shopping Node
□ (white)	Roads
■ (blue/tan)	Devotional
(11)	Number of Open spaces

H1 Section

H2 Section

Mdlebe Ntshona (West) Public Transport Route

Neighborhood Gardens (6)

(5)

Car Wash

(4)

Mthombothi: Public Transport route

Soccer field and Park

Police Station

Magistrate Court

Open Field

(3)

School

Boundary Separate H1 and H2 Section

Passive OpenSpace (River)

Park

(2)

Park

Swimming Pool

(1)

Passive open space

Mkhwanazi
(Settlements)

North

Note: This map show the number of open spaces located in J Section in relation to the surrounding residents

Space size	Number of Spaces
Small	4
Medium	0
Large	2
Total	6

Note:
Small=300-500 square meter
Medium=501-800 square meter
Large=Above 800 square meter

Localition

Plot Number (Refer to Map 10)	Researchers sketch Plan and notes
Plot: Storm water Drainage (Passive Open Space)

Location: Boundary separate H1 and H2 section | There are other passive open spaces that exist within ESikhawini such as long drainage lines that runs in all directions. There are drainage lines that cross from east to west and some traverse from north to south. This is an important open space serving diverse functions. The drainage lines in ESikhawini are well paved but cleanliness is the problem. Especially those drainage lines that are located closer to residential areas. During field survey a lot of littering was observed along drainage lines.

Picture 4: A drainage line that serves as passive open space (Photographer: Author).

Picture 4 shows the drainage line that traverses from |

Plot Number (Refer to Map 10)	Researchers sketch Plan and notes
Continue (**Storm water drainage**) **Location:** Boundary separate H1 and H2 section	South to North direction of the site and it divides the area into two sections. This open space serves as the barrier that divides H section into two sections: H1 and H2. The drainage line is aligned with family gardens and sometimes people use water from the drainage line to irrigate their gardens. The open space also serves as the source of water especially for irrigation purposes.

MAP 10: ESIKHAWINI LAND USE - H2 SECTION

Mkhobosa (Settlements)

Mdlebe Ntshona (West)-Public Transport Route

Mdlebe Ntshona (east)-Public Transport Route

School

Neighborhood Gardens (9)

School

School

School

School

School

Open Field

(8) Park

(7) Neighborhood Gardens

(6)

Open Field

School

Retail Node

Community Hall and Offices

Neighborhood Gardens (5)

Sport field (4)

(3) Neighborhood Gardens

(2) Park

(1)

School

Open Field

Boundary separate H1 and H2: River (Passive Open Space)

Legend

	H2 Section Boundary
	Border Separate H1 and H2
	Residential
	Open space
	Roads
	Devotional
(1)	Number of Open spaces

Note: This map show the number of open spaces located in J Section in relation to the surrounding residents

Space size	Number of Spaces
Small	6
Medium	6
Large	2
Total	14

Note:
Small=300-500 square meter
Medium=501-800 square meter
Large=Above 800 square meter

North Direction

Location

Table 11: Summary of Open Spaces in Section H and J by Size and Adequacy
(Author Field Survey)

Section	Plot Number	Type	Size	Accessibility	Adequacy
J2	1958	Active Open Space	• 600×300 meters	Pedestrians and Vehicular access	Lack open space furniture
H1	X	Passive and Active open space	• 600×300 meters-Soccer Field • 200×300 meters - Park • 100*50- Open Field	Pedestrians and Vehicular access	Lack Open space furniture
H1	396	Passive open space	• 600×300 meters	Pedestrian and Vehicular access	Lack maintenance and security

Given that the research focuses on the youths, the respondents were asked about the condition of the existing recreational facilities in their neighborhood unit. Table 11 below show that about 48 percent of the youth feels that the condition of recreational facilities and open spaces in eSikhawini is poor and about 20% feel that the facilities are of excellent condition. Poor means that young people are not happy about the condition of their recreational facilities. Personal observations testify that the condition of recreational facilities and open spaces are not at a satisfactory level. In addition, the spaces need to be equipped with proper light, fencing and design layout that ensures maximum visibility of the area to the surrounding land uses (see picture 5 below).

Table 12: Views of respondents on the conditions of recreational facilities and open spaces.		
Condition	Number of Respondents	Percentage
Poor	24	48
Good	16	32
Excellent	10	20
Total	50	100

5(a): Plot 396   5(b): Plot 1073

Picture 5: Un-welcoming condition of the existing recreational facilities in an outdoor recreational open space at ESikhawini. The seats are not painted, look ugly and not arranged well in space. {5(a)} The space contains litter and no refuse bins provided.

ESikhawini consist of 37 total number of open spaces located in different ward sections. Section H2 has the highest population size and also the highest number of open spaces. Table 12 below shows that H2 has 19780 people and there are 14 open spaces located. Open spaces located within the study area are of different size ranging from small size to large size.

MAP 11: ESIKHAWINI LAND USE: J1 SECTION

J2 SECTION

Boundary Separate J1and J2   River (Passive Open Space)

Mkhoboza
(Settlements)

(11)

Bush

Passive open space

Gardens

School

(10)

(9)

End
Link

Passive and active open space

Special Commercial

Mdlebe Ntshona (East)

School

General Residential

Mdlebe Ntshona (West)-Public Transport Route

Umgakla

Indlniamithi

Umgakla

(6)

Passive Open space (4)

Worship

(3)

Imvukuzane

Mzingwenya Timber Forest

School

Pa

(7)

Mkhwanazi
Settlements

Bush

(2)

(1)
Park

Imvukuzane

Start
Link

Legend

	Border Separate J1 and J2
	Residential
	Open space
	Flow direction in number of Open spaces
	Roads
	Worship
	J2 Section Boundary

North

Note: This map show the number of open spaces located in J Section in relation to the surrounding residents

Space size	Number of Spaces
Small	4
Medium	3
Large	5
Total	12

Note:
Small=300-500 square meter
Medium=501-800 square meter
Large=Above 800 square meter

Location

J1

REFERENCE: M NGUBANE
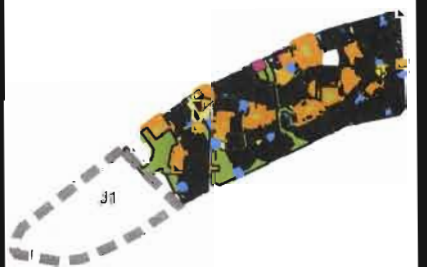
UNIVERSITY OF KWAZULU NATAL

SCHOOL OF ARCHITECTURE, PLANNING AND HOUSING

Table 13: The total number of open spaces and population size per ward section
(Umhlathuze demographics)

Section (refer to Map 11)	Population Size	Number of Open Spaces	Size of Open Spaces
J1	18750	12	4-small 3-medium 5- large
J2	12750	5	1-small 2-medium 2-Large
H1	11720	6	4-small 2-large
H2	19780	14	6-small 6-medium 2-large
Total	63000	37	15-small 11-medium 11-large
Note: Approximate sizes of open space classification			
(a) Small= 300-500m² (b) Medium=501-800m² (c) Large= Above 800m²			

5.3.3. Housing Typologies

There are varieties of housing types in ESikhawini ranging from the vertically proportioned to horizontally proportioned buildings (single storey raw houses). But there are few vertically proportioned buildings. The greater part consists of one freestanding dwelling unit that is single detached on one plot. These houses are occupied by household ranging from single families to multi-families, more that one family per plot or home. The vertically proportioned buildings in ESikhawini are

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duplexes (flats) that are about three to four storey high with individual entrance (as shown in picture 6 below). These kinds of houses are generally similar to row houses but on a single plot. Furthermore, these houses are difficult to extend due to space constraints, and sectional title ownership. These units have ground floor access to other upper ground units and a poor internal visual privacy. During field survey, poor maintenance of internal space was observed such as unpainted internal walls and overcrowding.
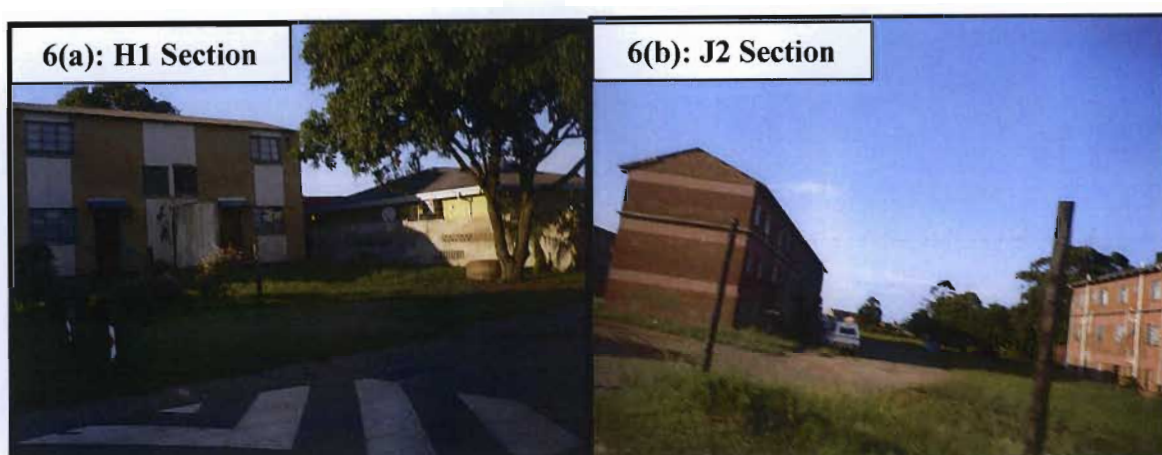
Picture 6: Housing typologies in ESikhawini namely, Duplexes-attached houses {**6(a)**} and row houses {**6(b)**}

The relationship between the public and the private space differs in both housing typologies explained above (freestanding dwelling unit and duplexes) the free standing dwelling units in ESikhawini consist of both private and semi-public space. The private space is located at the back of the house where family gatherings take place and the semi-public located at the front yard of the house where the public can only access that space visually without entering the yard. Most houses contain some elements of territoriality, for example, houses surrounded with a fence or long walls.

5.4. **Summary**

The results of the demographics analysis simply show that the area consists of mixed racial groups namely, Blacks, Colored, Indian/Asian and Whites but the majorities are blacks (with 62916 people). This makes it difficult to identify suitable recreational facilities for different groups with different culture. During the survey different gender groups responded to the questionnaire disseminated and about 68% respondents prefer indoor recreational facilities rather than outdoor recreation. This implies that planners and urban designers should consider indoor open spaces in land use planning as relevant.

Spatial analysis shows that the area possesses variety of services and facilities for both private and public recreational use. Most of these facilities are located closer to residents and are accessible via pedestrian paths. However, the findings show that recreational facilities and open spaces lack proper maintenance.

Chapter 6

Discussion and Conclusion

After examining recreational facilities and open spaces in ESikhawini this chapter attempts to explain whether the objectives of the study were achieved. The overall objective of the study was to examine suitability, quality and quantity of recreational facilities and open spaces for the youth. The findings have enabled the researcher to provide recommendations based on the needs and interest of the youth.

6.1. Discussion

Suitability: The instruments that are used to measure suitability differ across the country depending on researcher's preferences. This research has used questionnaire to get responses from youth of different age groups based on their needs and preferences for existing and future recreational facilities in ESikhawini. Furthermore, the researcher also looked at the facilities available and observed utilization of recreational spaces. From the results obtained on youth recreational needs and preferences(as explained in chapter 5), one can concludes that human needs changes as the technology change and as the life style changes, preferences also change. Therefore, it is important to take into account the change of the environment especially when planning for people with different tastes and style of living. In chapter 4 (Diagram 2) shows the hierarchy of needs according to Maslow (1958), the diagram is important to know and helps one to understand what comes first. Maslow's model of human needs assumes that all people have the same needs, but the way people strive to meet the needs varies. The research findings show that recreational facilities in ESikhawini are not suitable and the youth feel that some facilities need to be upgraded and begin introducing new ones. The existing facilities have been there since the late 1980's and the youth feel that there should be change or

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some improvements. Therefore, recreational facilities in ESikhawini do not fit the current needs for recreation especially for the youth. Most of the open spaces in ESikhawini are suitable because of location, accessibility to as many potential users as possible. For example, the park in H section (see map 8) is centrally located at a distance less than 500 meters from the residence. The Guidelines for Human Settlements Planning and Design (CSIR, 2000) outline the most important open space planning standards for different age groups based on the psychological and the physical needs. These are briefly outlined as follows:

Table 14: Psychological and Physical Needs (CSIR,2000)	
Psychological Needs	**Physical Needs**
(i) To feel secure	(i). To play on spaces located closer to benches or embarkments
(ii) To play	(ii). Soft play surfaces to prevent injury
(iii) Passive engagement	(iii). Visible and busy spaces
(iv) Active engagement	(iv). Challenging and stimulating spaces
(v) Challenged by the space	(v). Seating in sheltered areas that offers choice between shade and sun
	(vi). Flat or Gentle sloping pathways

About 60% of the public open spaces in ESikhawini do not meet the psychological needs of the youth. Most of the youth prefers an open space that feels safe and challenging. The results obtained in Chapter 5 testifies that the area experiences high rate of crime more especially in public open spaces due to a lack of defensible space elements. Whereas, about 70% of public open spaces meet the physical needs of the youth. This involves location of spaces

closer to the benches, soft play surfaces and gentle sloping pathways (Table 14).

Public participation is in the level of no existence in ESikhawini. However, the councilors and the youth are both to blame for this. In most ward meetings and public hearings held in ESikhawini, the total numbers of youth who come to the meetings, usually make up 30% of the expected sum to attend the meetings. About 80% of the respondents alleged that they have lost interest in participating in local matters, as they believe that the councilors undermine their interests. This is because during the meetings, the councilors make empty promises in spite of the fact that they do not report back regarding failures on their promises.

Most of the open spaces in ESikhawini are accessible via pedestrian paths and also via vehicular paths. However, some of the access roads need some improvements in terms of maintenance. Linkage concept discussed in chapter 4 provides some ideas on how accessibility could be improved through the use of open spaces and recreational facilities as an element in connecting the multiple land use. This assumes that through the use of pedestrian pathways and vehicular paths in combination with the elements of place making such as water pond could enhance the connection of different land use and accessibility. Furthermore, permeability of any system of public space depends on the number of alternative paths it offers from one point to another (Bentley, 1985). The public space with various alternative paths is easy to get to than a space with limited paths.

Quality: Another objective of the study was to examine the quality of recreational facilities and open spaces. The literature reviewed in chapter 3 demonstrates that the condition of facilities can influence the use of the facility.

For example if park facilities are not properly maintained, this reduces the number of park users due to poor maintenance of the area. The findings in chapter 5 testify that most open spaces in ESikhawini lack proper maintenance and few people visit those spaces. The space that contains properly maintained facilities always have high demand for users. Well maintained facilities and open space for example, give a good sense of place which allows people to choose different experiences at different times. Therefore, the quality of recreational facilities and open spaces is an important aspect in planning and design, good quality provides with good sense of place.

Quantity: This is an important aspect in planning, since planning involves the distribution of land uses in a balanced quantity. This means that a planner has to know how much space he/she needs to plan for each land use in an integrated manner. The question of how to deal with quantity is not simple. The community has shifted from being a traditional group of people within a small scale settlement to a more complex group of people from different backgrounds sharing same urban spaces. The demand for space differs for each group of people, some might require smaller than the other. The number of open spaces planned for recreation in ESikhawini such as plots number 1958 and 396 seems to be adequate but the facilities within those spaces are not adequate. Each section (H and J section) has enough spaces planned for active recreation but for passive recreation, spaces are not enough. This has been tested through the review of planning standards from CSIR building and reconstruction technology and has been compared with the current situation in ESikhawini. For instance, the CSIR planning standards outline that for every 500 households there should be an open space designated for recreation. In the case of ESikhawini, there are 37 open spaces of different sizes for 63000 people. Open spaces ranges from small to large spaces for both passive and active recreation. The research findings show an estimate of 15 small, 11 medium and 11 large open spaces

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located in all four ward sections. The J2 section has the least total number of households and also the least total number of open spaces. Table 13 (in Chapter 5) show an estimate of five open spaces located in J2 for 12750 people. This looks enough since people uses open spaces at different times and not everyone uses public open spaces for recreation. Some might prefer to use open spaces in the morning and some in the afternoon. In addition, still people can use other open spaces not located in their ward section. For instance, people living in J1 section can still share their public open space with people living in J2 section.

6.2. Conclusion

Different community groups expect to play a greater role in planning and designing their neighborhood space and they expect urban designers, Town Planners and Architects to produce a socially suitable plan that takes into account the unique needs of residents by considering social variations such as gender, identity, lifestyle and life cycle. The current planning is very consultative but regardless of that, it fails to engage communities. The result of all this is that the community feels disempowered. There are few people who can afford to sustain their involvement planning related issues. In that case the requirements of the single person, single parent, the nuclear family and the extended family differ and each of these groups require different facilities and a range of private, semi-private , semi-public and public space/ community space. However, another factor that needs to be considered is that of disability and cultural requirements that impact on the lifecycle.

The young teenagers of today are interested in technology such as internet, e-mail and computer games. The needs of the young teenagers in ESikhawini have changed from those in the 19th century when they were amazed by the active recreation such as soccer and basketball (research findings). Personal

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experiences testify that in most instances, adult recreation is centered on music. Planners should consider the interest of youth in different recreational facilities that can work indirectly to reduce crime, fear of crime, and other related problems that influence the behavior of residence and other potential users. Planners should take into account security implications before locating any land use on the site.

It is necessary to retain the existing recreational open spaces in ESikhawini, although in many instances, these spaces are considered unsafe, lack facilities, poorly maintained and for these reason several recommendations need to be put in place. These spaces in ESikhawini are well located because the youth can reach these areas via residential street through walking. The research findings reveal that with regard to outdoor open spaces (Park), the problems that were uncovered are related to safety. Residents expressed that they are not prepared to utilize the park due to the fact that it is not safe. In addressing this problem, surveillances in outdoor spaces, playgrounds and other play areas should take place both during the day and at night, or else the space will not fully serve its purpose. Trees and plants should be relatively minimal in size and height to avoid offering hiding places for criminals. As a response to the current conditions, a number of practical measures must be planned to increase the safety of the local neighborhoods. This includes adequate night lighting of the street, more than at the intersections, neighborhood watches where residents keep watch on their neighbors' properties and report suspicious activities. Burglar alarms and special patrols are expensive but may be necessary where a high-value property is at stake.

Fear of crime is a serious problem in South Africa and reducing the fear of crime can be as important as reducing or preventing crime itself. Therefore, effective policing is also an effective crime prevention and must be an integrated part of

the proposed strategy. The proposed strategy for ESikhawini is to have its own neighborhood Police Service to work closely and in conjunction with the South African Police Service (SAPS).

Another recommendation is to invest in programs that tackle grassroots problems. Instead of the municipality channeling funds to sport and recreation agendas, it must first channel funds to the rehabilitation of the youth with drug addiction. Personal experiences testify that, it is this addiction which motivates the youth to be involved in criminal activities. Recreation and open space planning alone will never change levels of crime and substance abuse in townships.

To conclude, this work was concerned about planning for recreation and open spaces in townships for the youth, it would be interesting in future, for anyone interested in planning perspective to do research on Planning for recreation and open spaces in both rural and urban context. A comparative case study of both urban and rural areas would be good. The results should provide with clear substantiation on matters that increases anti-social activities in our countries.

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Google Earth, Aerial Photograph of ESikhawini, 10 June (2008)

List of Appendix

Appendix (i): Topography Map

Appendix (ii): Questionnaires

Esikhawini Topography Map

Estate

14092

Maholobolo

Sobamdlovu

13787

Felix Park
Estate

Muzi

Waterworks

-9

117

-20

Mkobosa

97
30.3

Mzingwenya

-12

S

eSIKHAWINI

60

70

-16

Mzingwehya

-36

-31

Uitkykstoeng

s Esikhawini

Reference: Umblothuze Municipality

Legend

Informal
Settlements

Stormwater
drainage

Footprint

Contour
lines
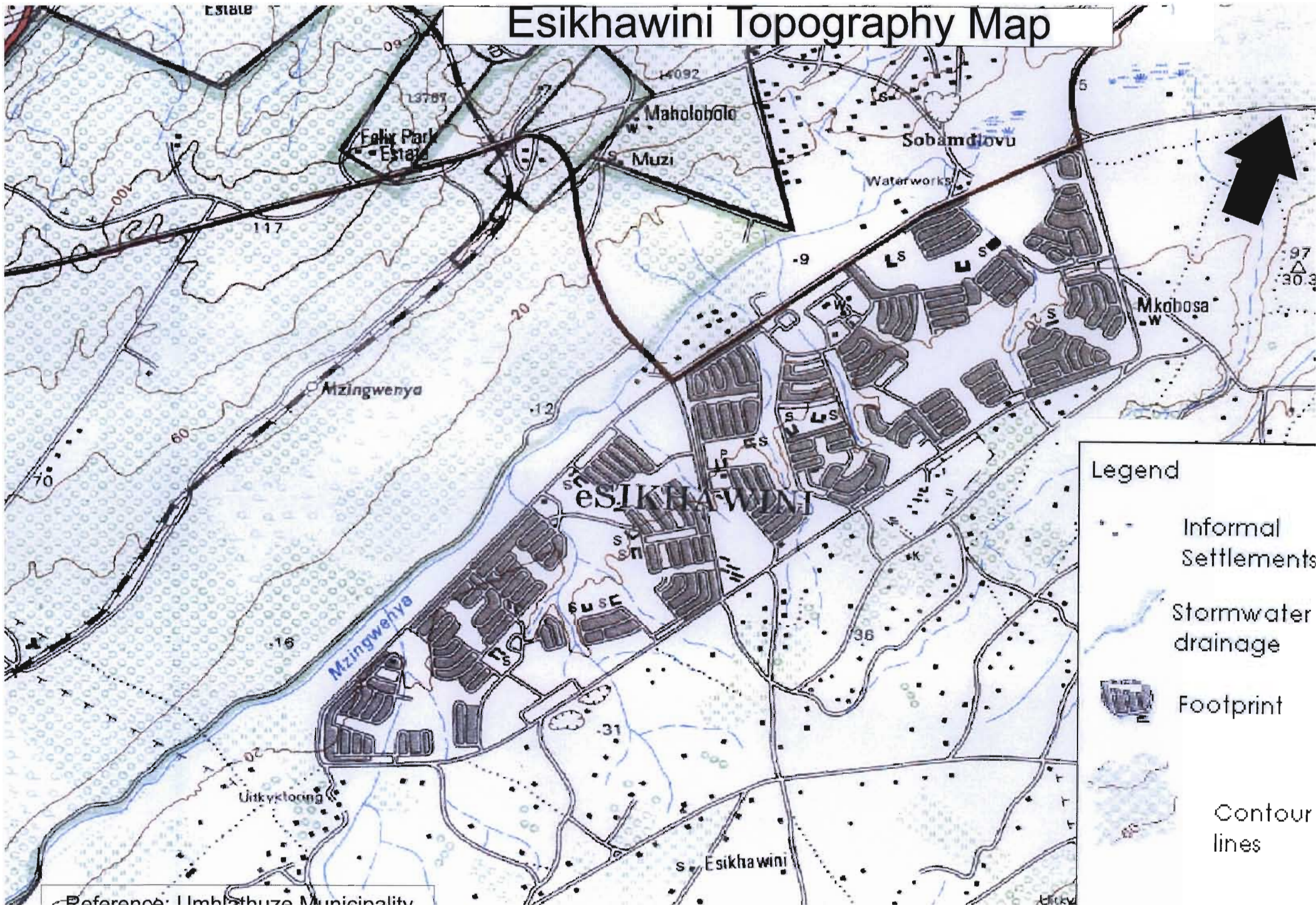
QUESTIONNAIRE

Hi

My name is Mthokozisi Ngubane, a student from University of Kwa-Zulu Natal. I am conducting a study concerning the use of recreational facilities by the young adult at ESikhawini .

Objectives

- To find out more about the interest of young people in different recreational facilities available in Esikhawini.

- To assess the physical conditions of recreational facilities and how it affects the demand for that particular facility.

- To identify the relationship between distances, location of facility, crime, etc.

May I please have 5 minute of your time to answer the following questions below.

A. Gender

    1. Male   ☐

    2. Female   ☐

B. Age

    1. 14-19 years   ☐

    2. 20- 25 years   ☐

    3. 26 and above   ☐

C. Which section do you reside?

    1. HI   ☐

    2. H2   ☐

    3. J1   ☐

    4. J2   ☐

5. OTHER (SPECIFY)_____   ☐

D. Do you think leisure facilities in your ward section are enough for the youth ?

    1. Yes   ☐
    2. No   ☐

E. What kind of recreational facility does your resident section has?
    1. Indoor   ☐
    2. Outdoor   ☐

F. Does your resident have other social events either than sports ?
    1. Yes   ☐
    2. No.   ☐

G. How would you rate the conditions of recreational facilities within your residence?

    1. POOR   ☐
    2. GOOD   ☐
    3. EXCELLENT ☐

H. What do you think needs to be done to enhance the efficient use of facilities around your area?
    1. Maintain the existing   ☐
    2. Demolish the existing and build new ☐
    3. Keep the existing and introduce new ones. ☐

I. Which facilities would you prefer if new ones were to be introduced?

1. Indoor ☐

2. Out door ☐

J. Are you paying for recreational facilities available within your section?

1. Yes ☐

2. No ☐

K. When you spend time outdoors, where do you spend most of it?

1. Private garden ☐

2. Neighborhood recreation space ☐

3. School playground ☐

4. Roads around home ☐

5. Friends House ☐

6. Other_____ ☐

L. What additional facilities do you think should be provided in your ward section?

_____

_____

_____

_____

M. Any other comment about recreational services/ open spaces/facilities etc.?

_____

_____

_____

_____