

CHAPTER 1

ORIENTATION AND PROBLEM STATEMENT

1.1 INTRODUCTION

Gated communities are the newest trend in residential developments. The country club estates place the neighbourhood on a higher level when combined with an expensive club, enhancing a new way of life in contact with nature, cautiously designed urban landscape, afforestation and security (Bragos, Mateos & Pontini 2000:3). People want to revive the olden days when children could freely move around within their neighbourhood without fearing criminal elements and traffic. They want their young children to be safe. They want to be able to forget about the worries of work and everyday life. A place of peace and quiet where one is able to recharge away from the demands of the everyday rat race. People are looking at new ways of protecting their families and themselves. This need has led to the invention of the modern trend of security villages, a far cry from the neighbourhoods developed during the 1970's and 1980's.

It is against this background that the researcher has decided to conduct research regarding the viability of this new type of neighbourhood in the prevention or reduction of crime, as well as developing and testing a new crime prevention model, applied in such a neighbourhood.

In this Chapter the research procedure and relevant issues will be highlighted, including the goal of the research, the hypotheses which guided the research, the delimitation of the research, definitions of terms regularly used, problems experienced while conducting the research as well as the lay out of the rest of the thesis.

1.2 GOAL OF RESEARCH

Research can be regarded as the gathering of new information, solving of problems and the extension and testing of theories (Smit 1985:5-6). According to Huysamen (1995:9) the aim of research on theories and research problems is to define, explain as well as predict and even to change or control human behaviour. The aim of research goals are also to focus the research as a whole and to make the delimitation thereof possible. The researcher has chosen to work in the field of crime prevention as it represents the pro-active way of dealing with crime, a more cost-effective way of dealing with crime than post-active intervention (Waller, Welsh & Sansfycon 1997:3). Based on this premisses,

the goal of research is to add to the field of crime prevention a new model of combatting crime in neighbourhoods.

Thus the primary goal of the study would be to describe and apply the elements of the “HONC”- model for primary crime prevention - and to determine whether or not it really reduces the crime rates in a neighbourhood. The proposed elements of the HONC model are as follows:

- H = Healthy lifestyle
- O = Online (information technology)
- N = Exposure to nature (gardens)
- C = CPTED (Crime Prevention Through Environmental Design)

The primary goal of the research was establishing the feasibility of the HONC-model against crime as a crime prevention model. To achieve this goal, focus was placed on the healthy lifestyle, nature, information technology and CPTED aspects of Woodlands Lifestyle Estate.

The secondary goal of the research was to determine to what extent the first three elements of the HONC model, namely a healthy lifestyle, nature and information technology aids the effectiveness of CPTED in neighbourhoods in reducing crime.

To attain these goals, research was also conducted about those crime prevention models focussing on the criminal, those focussing on the criminal's environment and those focussing on the milieu of the victim. These models of crime prevention are the backdrop against which the CPTED-model and the HONC-model can be understood best, and they were also the models that preceded the development of CPTED.

1.3 RATIONALE

We need safe neighbourhoods because “... it is the neighborhood that act as the interface between home and city and provides opportunity for human interaction and cooperation. The neighborhood is the scale at which communal standards of behavior are first formed... If crime cannot be controlled at the neighborhood, it will eventually undermine the entire city” (Gardiner 1978:5). The neighbourhood acts as the first defence line against the occurrence of crime and therefore the researcher wants to develop strategies that will address crime prevention at this level.

The main reason for the research is to determine whether or not the abovementioned integration of

different elements originating from sociology, information sciences and landscaping, could be integrated to aid CPTED as a primary crime prevention tool in neighbourhoods.

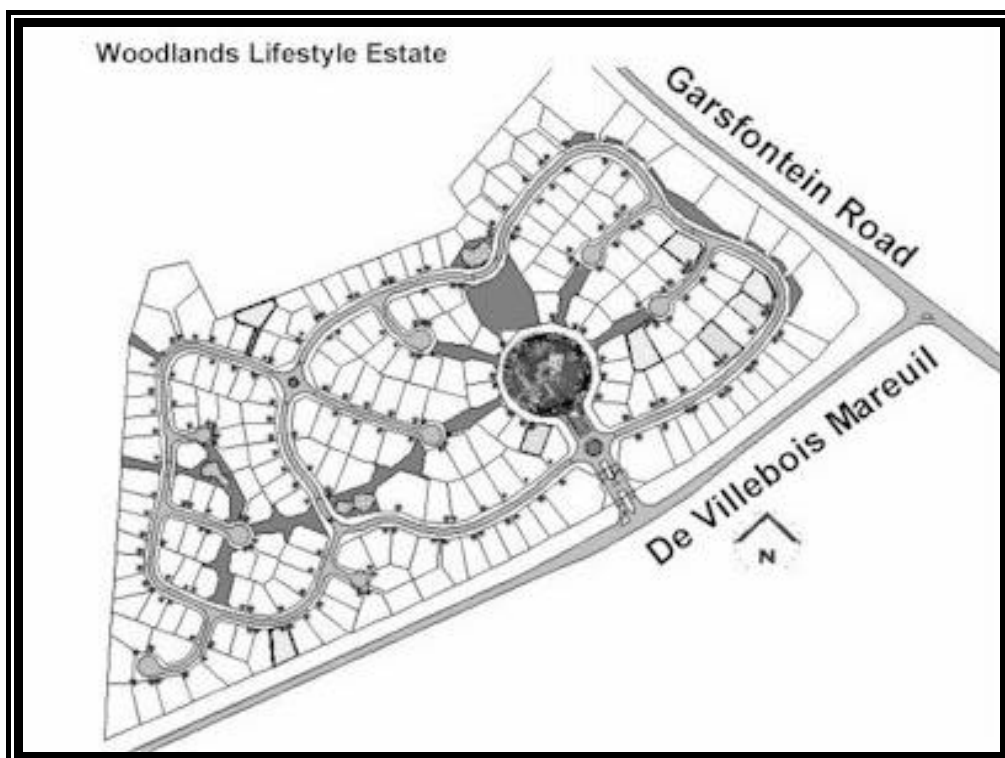
Furthermore, the researcher has a personal interest in crime prevention and has already completed the Master's Degree in Criminology on "Crime prevention at business complexes: a case study at Centurion Centre". The intended research will be a follow-up of this study.

1.4 DELIMITATION OF THE RESEARCH

1.4.1 Spatial delimitation

The first neighbourhood in the study, containing all the HONC theory elements, are situated in the east of Pretoria. This neighbourhood is named "Woodlands Lifestyle Estate", although it's officially registered at Pretoria Municipality as Moreletapark Extension 63. Lying next to Pretoria East Hospital, it is further enclosed of by Garsfontein main road on the east, De Villebois Mareuil on the south and Moreletaspruit on the western side. It contains 239 premises, walled off by a brick wall and has only two points of entry.

Image 1.1 Map of Woodlands Lifestyle Estate



The second neighbourhood will be called “Prairie Estate” for the purposes of this study, as the residents have requested that the neighbourhood not be identified in this study. It is also situated in the east of Pretoria, in the Garsfontein Policing Precinct. It was also developed as a security neighbourhood with one point of entry and contains 196 premises.

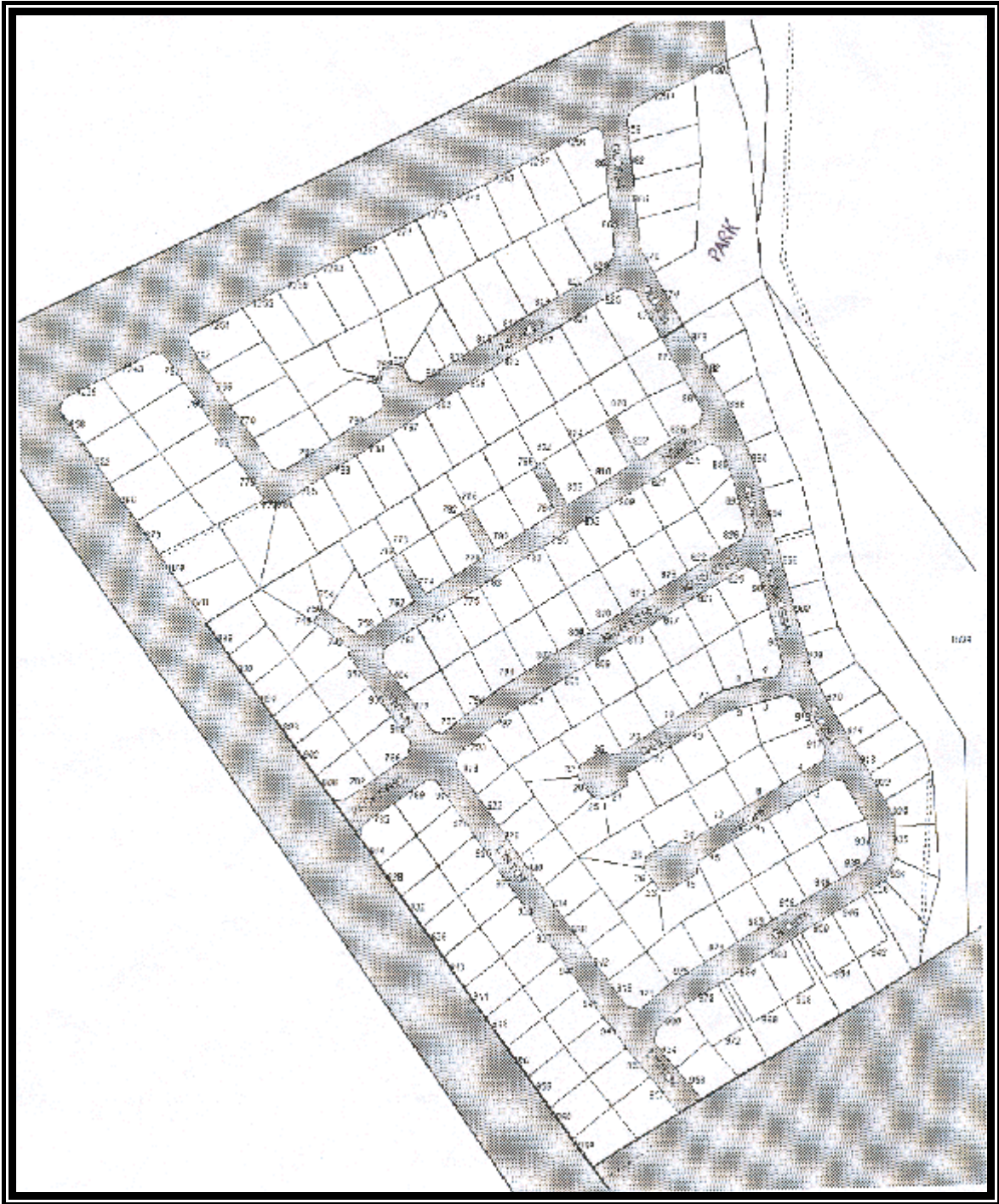
Image 1.2 Map of Prairie Estate



The third neighbourhood chosen for this study is an open neighbourhood, Moreletapark Extension 52, and will be named Glossa Estate. This neighbourhood has De Villebois Mareuil Road as one of its borders as well as Moreletaspruit on its eastern side. Wekker Road forms the western border whilst the southern border is formed by a fenced off agricultural piece of land. It contains 211 premises and

was chosen because of its close proximity Woodlands Lifestyle Estate.

Image 1.3 Map of Glossa Estate



All of these neighbourhoods fall in the policing precinct of Garsfontein Police Station.

1.4.2 Time delimitation

Since Woodlands Lifestyle Estate is a newly developed neighbourhood where the building of houses only commenced on 1 September 2000, the cut-off date for all three the neighbourhoods chosen to partake in this study were January 2003.

1.4.3 Sampling

In research it is common practice to make use of sampling to save time and money (Babbie 1990:65). It is noted that the best results would be gained if a whole universum could be used as a sample. However, it is sometimes unpractical and even impossible to test a whole universum if it is too large, unreachable or illegible (Guy, Edgley, Arafat & Allen 1987:174; Groenewald 1995:17).

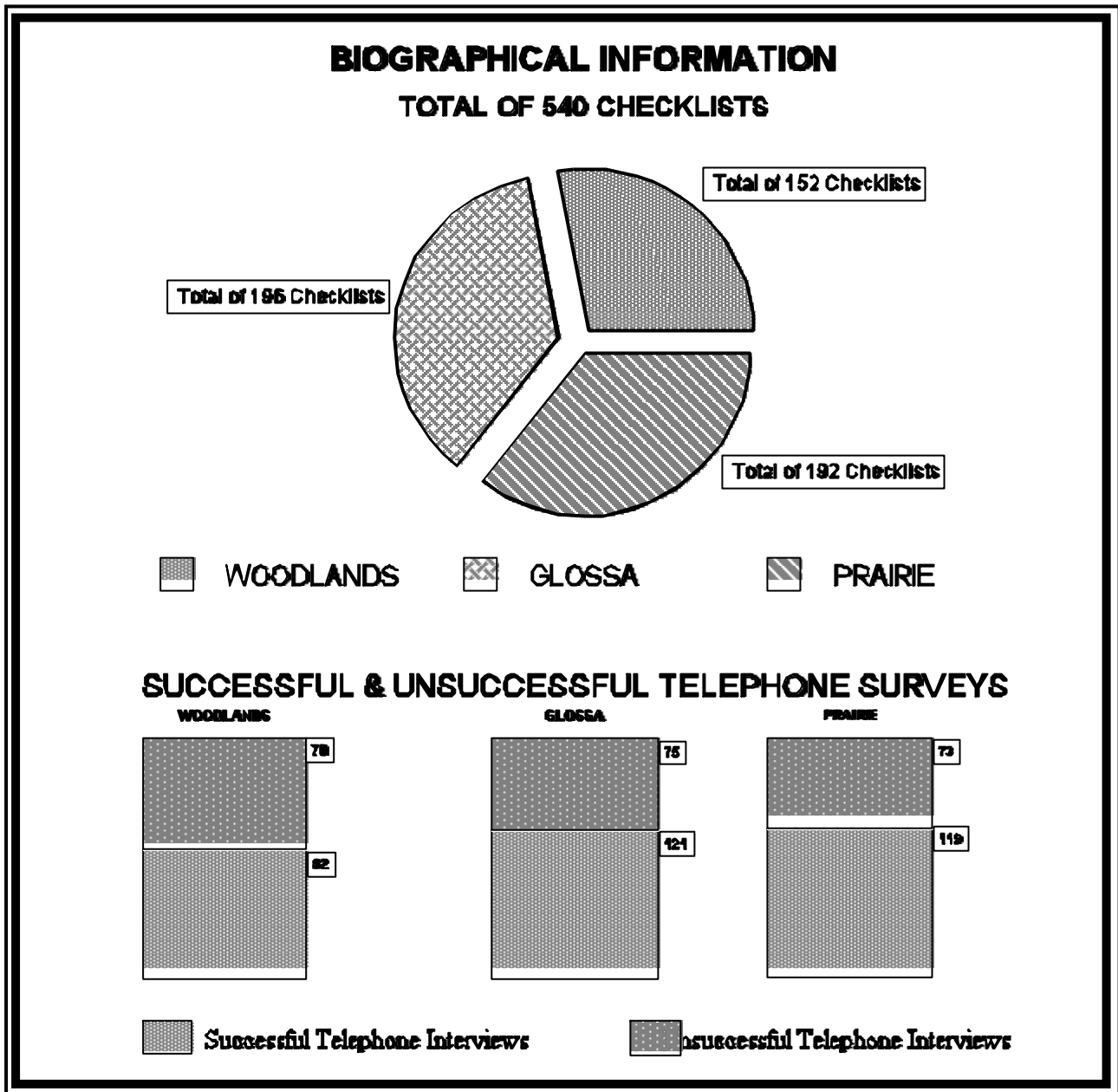
In this research report the universum consists of three different neighbourhoods. The first newly developed gated neighbourhood contains all of the elements of the HONC - model. The second gated neighbourhood contains some of the elements of the HONC- model, but not all of them. This is also true for the last neighbourhood which is an open neighbourhood. This selection was done to test if the elements as used in the first neighbourhood really make a difference in the safety of residents living in such a neighbourhood, the last two neighbourhoods acting as control groups for the first one.

In short, sampling can be defined as part of a group that must be representative of the whole (Guy *et al.* 1987:174; Steyn *et al.* 1987:16). Sampling can be divided into two major groups, namely probability and nonprobability sampling (Leedy 1997:204; Huysamen 1995:37; Groenewald 1995:15). In probability sampling the researcher is able to specify in advance that each segment of the universum will be represented in the sample, distinguishing it from nonprobability sampling. Whereas nonprobability sampling cannot guarantee that every element of the universum will be presented in the sample, probability sampling can and does (Leedy 1997:204-205). Probability sampling can be divided into random, stratified, systematic and cluster samples (Leedy 1997:205; Huysamen 1995:37). Huysamen (1995:37) names accidental, purposive, quota and snowball samples as examples of nonprobability samples.

To work with the universum of each of the three neighbourhoods chosen to be part of the study would have been ideal. This was however not possible as Woodlands Lifestyle Estate is still a new neighbourhood where all the dwellings have not been erected yet. Random sampling was applied. Checklists were completed in each of the neighbourhoods for every completed and occupied dwelling.

No checklists were completed for empty dwellings or dwellings still under construction.

Image 1.4



A total of 540 questionnaires (see Annexure) were completed for the three neighbourhoods. From these 152 (28.15%) were completed for Woodlands Lifestyle Estate, 192 (35.56%) for Prairie Estate and 196 (36.30%) for Glossa Estate.

Prairie Estate had the highest rate of successfully completed telephone interviews, namely 119 (61.98%) interviews conducted out of 192 questionnaires. Glossa Estate rated second with their telephonic interviews listing 121 (61.73%). The 82 (53.94%) telephonic interviews which were conducted in Woodlands Lifestyle Estate put them last on the feedback rate.

1.4.4 Crime incidence

The crime incidence for every neighbourhood chosen for this study was drawn from the Geographical Information System (GIS) of the South African Police Service (SAPS). The GIS is an important tool in determining the patterns of crime in specific areas, enabling a police station to look at the displacement of crime in their station area as well as the displacement of crime between stations. The GIS system also serves as a management tool for the Station Commissioner (Van Jaarsveld 2002:12-14). It can also provide the Crime Prevention Unit at station level with operational information in the combatting of crime.

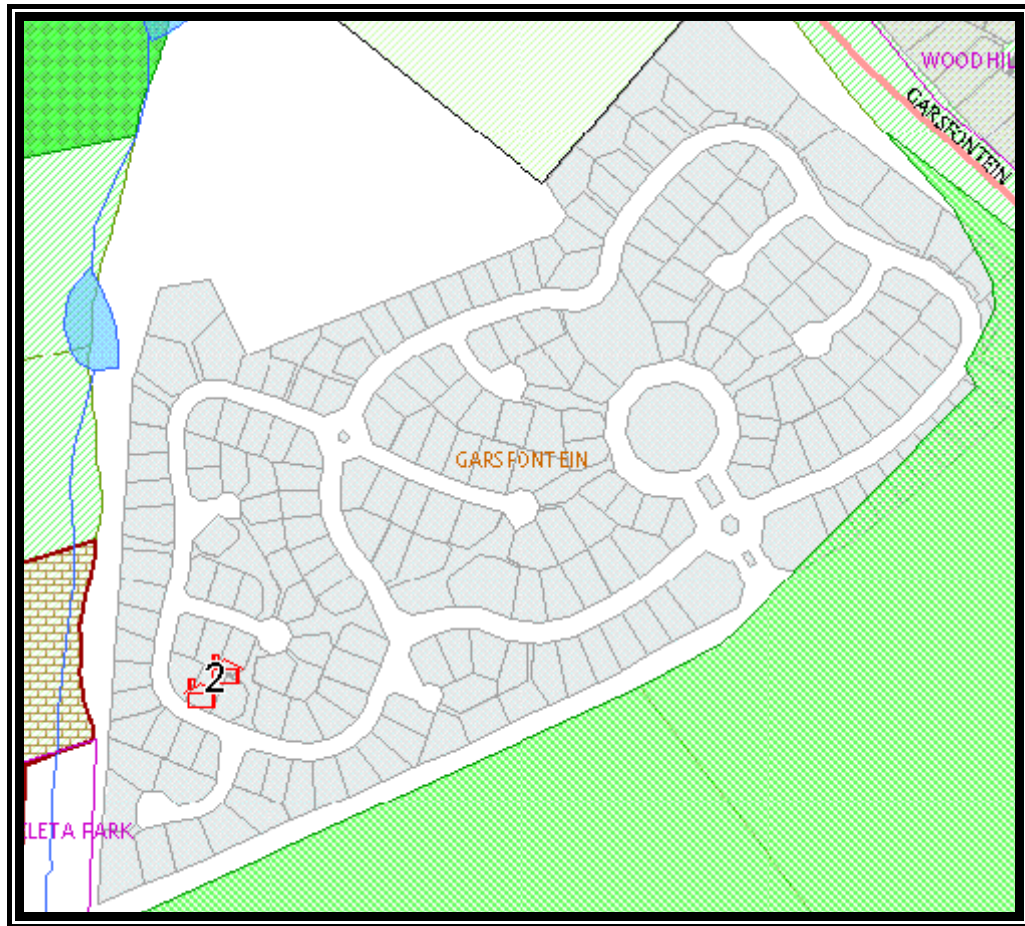
To add value to the study the researcher obtained mapped crime data for the three neighbourhoods from the GIS of the SAPS for the 2001 to 2002 time period. This timeframe loosely correlates with the questions that were asked of respondents in the telephone interviews, asking them if they have been victims of crime since living on those particular premises. The telephone interviews were conducted from 20 January 2003 until 31 March 2003. The crimes chosen for this crime mapping exercise also correlate with the property crimes that were contained in the telephone interviews, namely:

- residential burglary
- attempted residential burglary
- theft common
- motor vehicle theft
- theft out of or from a motor vehicle and
- hijacking.

This was done to determine the specific crimes needed to focus on in this research. Crime maps containing the abovementioned crimes for each of the three neighbourhoods were subsequently obtained from the system and the maps of the crime with the highest incidence were imported into Word Perfect for analysis by the researcher. The total number of housebreaking in residential premises (hereafter referred to as residential burglary) rated the highest of all the selected crimes within the three neighbourhoods.

Next the images of these maps are displayed and the rate of residential burglary explained as far as possible.

Image 1.5 Residential burglary in Woodlands Lifestyle Estate 2001-2002

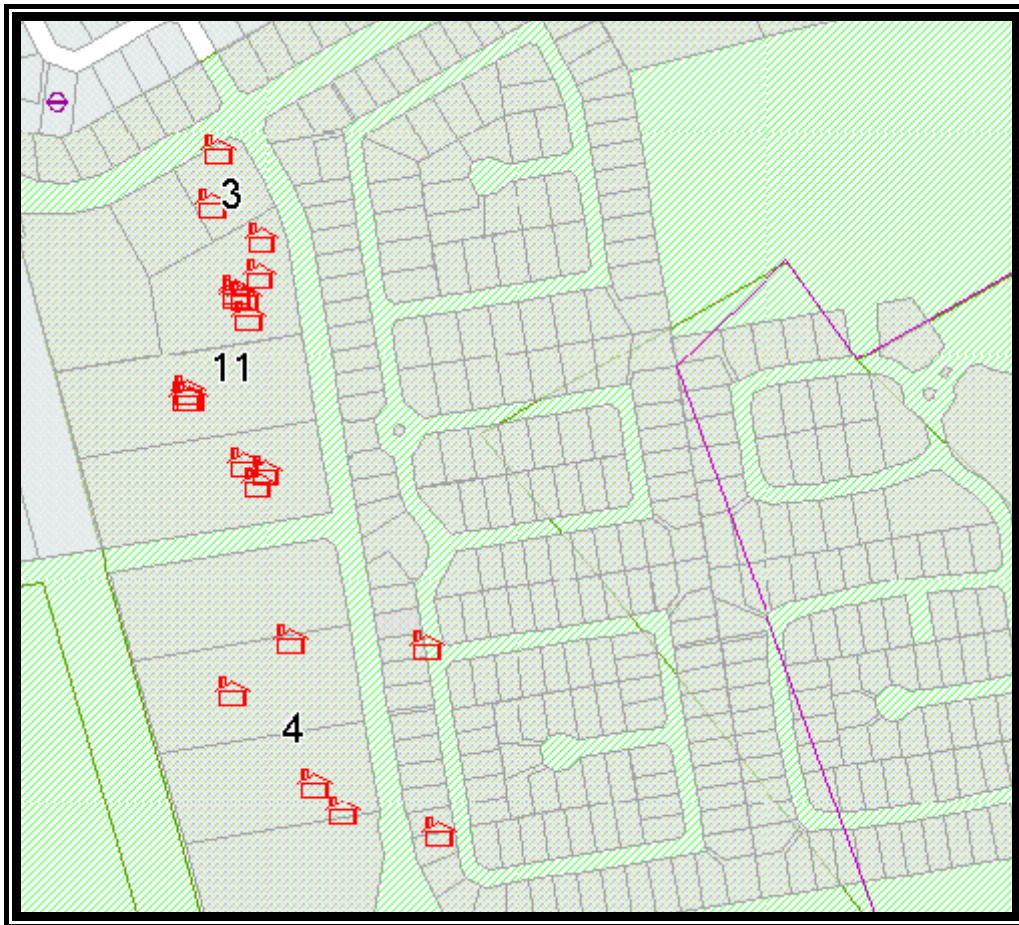


Two cases of residential burglary were reported for Woodlands Estate during the timeframe of 2001 to 2002. The very same residence was hit again within the period of one month. This dwelling had the unfortunate honour of being one of the first dwellings to be built inside this Estate. The burglars broke through the palisade fence facing Moreletaspruit on the western side.

Five incidents of theft other were reported by the Woodlands Estate. However, these cases could not be mapped on the exact locations as the GIS of the SAPS only contains the map of Woodlands without any stand numbers or street names. Insp André Theron, stationed at the Crime Information Analysis Centre, Garsfontein Police Station, manually mapped the cases of residential burglary after the researcher faxed him the map with the relevant street names and numbers on it. The development of Woodlands Estate is so recent that it is not yet reflected in the map books of Pretoria. Only maps of Pretoria City Council can be imported into the GIS system to ensure that the specifications of the new maps correlate with that of the existing maps on the system.

No mapped cases for attempted residential burglary, theft of motor vehicles, theft out of or from motor vehicles and hijacking were found on the system.

Image 1.6 Residential burglary in Prairie Estate 2001-2002

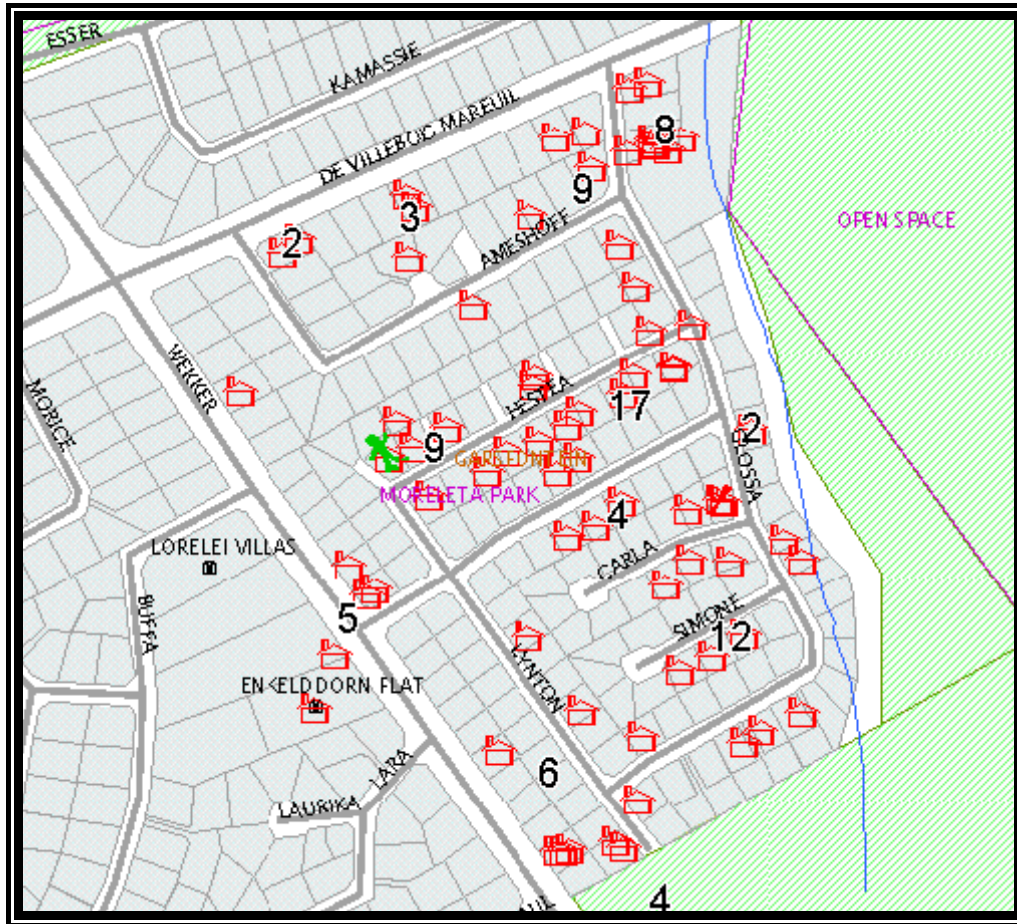


Two cases of residential burglary were mapped for Prairie Estate during the time frame of 2001 to 2002. The two residences are situated behind the front boundary wall of the Estate. Senior Superintendent Redelinghuys (1998) is of the opinion that dwellings which are situated on the boundaries of a neighbourhood are more susceptible to criminal events as they are easier to access than dwellings on the inside of the neighbourhood.

Prairie Estate experienced two incidence of theft other in this time period. No mapped cases for attempted residential burglary, theft of motor vehicles, theft out of or from motor vehicles and hijacking were found on the system.

The street names of this map have been left out so that this neighbourhood can not be identified, as requested by the inhabitants.

Image 1.7 Residential burglary in Glossa Estate 2001-2002



Glossa Estate experienced the highest rate of residential burglary of the three estates with a total of 72 mapped cases being found on the GIS system for the selected time frame 2001-2002. Some of the residents experienced more than three residential burglaries at the same address in this timeframe. Only two cases of attempted residential burglary are mapped for this time period.

Seventeen mapped incidences of theft other and theft out of or from motor vehicles respectively were mapped on the system. No incidences of hijacking were found on the system for the given time period.

The combined results of the three estates directed the researcher to focus the literature study mostly on the prevention of residential burglary and to obtain background on this type of crime.

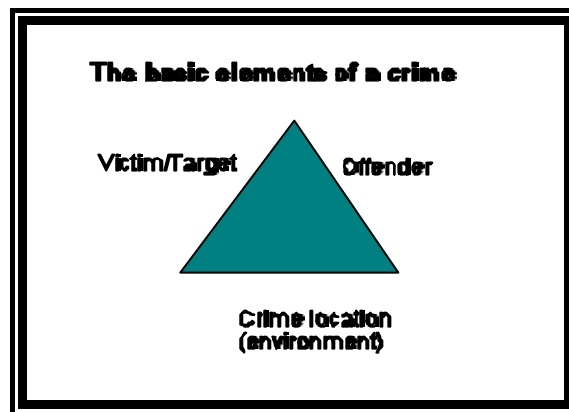
1.4.5 Definitions

For the benefit of the reader the terms that are used on a regular basis in this research are defined as follows:

Crime prevention

In order to prevent crime, one must be able to understand what causes crime in the first place. Liebermann and Landman (2000:4) say that crime is caused by a combination of many factors and that the probability of a crime taking place usually rests on the presence of three sets of characteristics. These characteristics are the presence of an offender, a victim or potential target and the environment wherein the crime is likely to be committed. "The environment includes the physical location, the people, and activities in an area that might deter or encourage the offender in his or her actions.... Just as a specific crime depends on the interaction and presence of these three elements, preventing crime also concerns the three components" (Liebermann & Landman 2000:4).

Image 1.8



According to the Crime Prevention Digest, 1997 (Waller, Welsh & Sansfycon 1997:3) crime prevention can be described as "... anything that reduces delinquency, violence and insecurity by successfully tackling the scientifically identified causal factors." Lab (1997:19) depicts crime prevention as "... any action designed to reduce the actual level of crime and/or the perceived fear of crime."

Primary crime prevention

Primary crime prevention, or the mechanical approach as it is otherwise known, are from the perspectives of CPTED, measures that are taken to deny the opportunity for the criminal to commit a crime (Crowe 1991:22; Jeffery 1977:37). Methods are employed to create barriers or obstacles between the criminal and the target. These methods also include the use of natural strategies to increase the perception of surveillance and access control, which in turn can deter a potential offender (Crowe 1991:22).

Secondary crime prevention

Crowe (1991:22) describes secondary crime prevention as based on legal presumptions that crime can be controlled or prevented if a punishment is meted out which fits the crime. Thus the implementation of a criminal justice and crime control system is emphasised, which will guarantee the eventuality of detection, apprehension and punishment. This approach is also known as the punitive approach. This is a classical criminal model, which depends on the offence being detected and swift punishment.

Tertiary crime prevention

In a nutshell the tertiary approach is concerned with the causes of criminal behaviour and the treatment or rehabilitation of offenders. This is why this approach is also known as the corrective approach. Attention is focussed on the so-called social, economic, and political causes of crime (Crowe 1991:22).

For the purposes of this research the following definitions of neighbourhoods, closed off neighbourhoods, enclosed neighbourhoods, gated communities and security villages from South African sources will be used:

Open neighbourhood

A traditional open plan residential neighbourhood with no access control at access points. No fences or booms are placed over existing roads to act as access control points.

Gated communities

These include enclosed neighbourhoods and security villages (Landman 2000:1). Blakely and Snyder (Burke 2001:141) define gated communities as residential areas where public spaces are privatised, access is restricted and with designated perimeters usually in the form of fences or walls to exclude non-residents. In this definition they also include new developments as well as older areas retrofitted with gates and fences, located from the inner cities into the outer suburbs, ranging from the richest to the poorest neighbourhoods. Burke (2001:142) adds to this definition by defining these type of communities as residential estates, which are clearly separated from the surrounding community and are totally private entities, with private streets, private parks and private facilities. The management of these assets are usually handled by the developer or a homeowner or community association.

Security villages

A security village refers to an area which is designed by a private developer. This area is then physically walled off and usually access control is applied by means of a security gate or a controlled access point with/without a security guard. The roads within these developments are private. Normally the management and the maintenance are done by a private management body. Examples of security villages are secured golf estates, townhouse complexes and office parks (Landman 2000:1).

Enclosed neighbourhood

According to Landman (2000:1) it is an already existing neighbourhood, which employs access control by means of gates or booms across already existing roads.

Defensible space

The Bureau of Justice and Assistance (1993:59) describes defensible space as "... a residential or other environment for living whose physical attributes make it possible for residents to defend it, toward which its residents or workers take a protective territorial attitude, and in which an intruder perceives its residents are in control". Stated simply, defensible space is about the traditional hardening of targets (for example lock, bolts and bars) as well as getting residents more involved in the safeguarding of their community (Newman 1972:3; Jeffery 1977:224).

Crime Prevention Through Environmental Design (CPTED)

Timothy D Crowe (1991:1), a practical practitioner of CPTED and a former Director of the National Crime Prevention Institute, USA states Crime Prevention Through Environmental Design (CPTED) as "... the proper design and effective use of the built environment can lead to a reduction in fear of crime and the incidence of crime, and to an improvement in the quality of life".

Napier *et al.* (1998:40) define CPTED as "... the implementation of measures to reduce the causes of, and opportunities for, criminal events, and to address the fear of crime through the application of sound design and management principles to built environments".

The following definitions are of concepts used in defensible space and crime prevention through environmental design, namely territoriality, informal and formal surveillance, image, access control and

target hardening.

Territoriality

King (2001:1) generalises territory as a "... pattern of boundaries imposed on something by individual decision or group agreement" and divides territory into psychological territories (plans, dreams, philosophies, etc.), social territories (family, peer groups, cultural groupings, etc.) and physical territories (the physical body, real and personal property). In this research the last mentioned category of territory will be applicable.

Napier *et al.* (1998:42) see territoriality as a sense of ownership of one's living or working environment. It can also be regarded as laying claim to a certain location and/or geographical area by one or more individuals (Taylor 1988:84; Jazwinski 2002:1). Whilst Dr Marc Goldstein (2002:2) explains it as "... a pattern of behavior and attitudes held by an individual or group that is based on perceived, attempted or actual control of a definable physical space, object or idea that may involve habitual occupation defence, personalization and marking of it." Newman (1972:51) describes territoriality as the subdivision of a residential environment into zones, to which adjacent/neighbouring residents can easily develop a sense of ownership.

Surveillance

Surveillance can be classified into informal or formal surveillance. Informal surveillance is the casual observance of activities by passers by or residents during their normal day to day activities (Newman 1972:80). Formal surveillance refers to surveillance by police and/or other agents whose special function it is to police an area and are normally used when natural surveillance alone cannot sufficiently protect an area (Napier *et al.* 1998:41; Gardner 1995:3).

Image

Image of a built environment (meaning the building and it's surroundings) means the mental picture that is formed in the onlooker's mind when he/she looks at a building and its surroundings. If this image is negative the building and its residents can be victimised and treated according to this negative image (Newman 1972:102). On the other hand an appealing environment will create a sense of pride and ownership (Gardner 1995:3).

Access control

Access control is the regulation of the movement of people and vehicles into a particular space (Coetzer 2001:21; Hanlon Security [s.a.]:1). These include, parking lots, public buildings, shops or privately owned buildings. Simplex Grinnell Security (2002:1) summarises it as the prevention of unauthorised access to facilities. Access control can be achieved by a wide range of measures such as guard dogs, fences and gates, electronic booms at the entrance of parking lots, security guards etc. Peel CPTED Advisory Committee (1999:5) regards access control as a design strategy which is aimed at decreasing the opportunity for crime.

Target hardening

Design measures used for target hardening are aimed at increasing the technical difficulty or stopping a crime from being committed. Such measures might either deter the potential offender, or the particular design modification will act as an impenetrable barrier to an offence (Bannister 1991:57; Gardner 1995:4). In short, target hardening can be described as the rigging of barriers to slow down or stop an intruder from coming into a certain area. Napier *et al.* (1998:43) describes it as “...the physical strengthening of building facades or boundary walls to reduce the attractiveness or vulnerability of potential targets.”

Manual pin mapping

Manual mapping is when a police department has large maps against their office wall where upon different crimes, presented by a certain colour pin, are physically mapped to determine the particular crime patterns of a particular time period in the represented area. Detailed information such as the date, time and nature of the incident cannot be displayed on such a map, due to the limitation of space. Such a manual wall map must also be updated each month, meaning that the previous month's pins must be removed in order to make space for the next month's information. Comparing the crime data of the different months or time periods with one another is difficult unless a photo is taken of the previous month's information. The maps also deteriorate because of the numerous pins stuck into it and removed on a regular basis (Boba 2001:18).

In some of the South African Police Stations they have covered the map with plastic overlays where upon the month's crime data is mapped with different transparency pens. When they start with a new month a new plastic overlay is put over the map and the old one removed and filed. If they want to make a comparison of the crime patterns of each month they will simply put the plastic overlays over one another.

Geographic Information System (GIS)

Boba (2001:19) defines the Geographic Information System (GIS) as "...a set of computer-based tools that allow a person to modify, visualize, query, and analyse geographic and tabular data". The GIS is one of many different types of software packages in existence. It enables the analyst to view the data behind the geographical features, perform statistical functions and to manipulate the data and maps according to their analysis needs.

The South African Police Service has also obtained a GIS system to be used as a crime analysis tool. The implementation of the system in the 340 priority police stations across South Africa started in March 2001. The priority stations are those stations whose weighted crime forms the top half of the crime volume of a given province (Boettcher 2003).

The GIS system of the SAPS uses as its main source system all the registered crimes from the Crime Administration System (CAS). All crimes that are reported at the community service centre of a police station are registered on the CAS system. The GIS system automatically maps crimes from the CAS system, which contains street names, numbers and suburbs. If the original registered crime does not contain the correct physical address, the crime information analysis officer at station level can manually map the specific crime on the GIS system (Van Jaarsveld 2002:12-14).

Crime weights

To apply weights to a set of data is a general statistical practice. Rape is regarded as a more serious crime than that of theft of a motor vehicle and will therefore be given a higher weight than the last mentioned crime. However, theft of a motor vehicle is more serious than shoplifting and shoplifting more serious than littering. This principle of seriousness thus forms the basis of the weights applied to crime. Rape has a weight of 3, theft of motor vehicle 2, shoplifting 1 and littering 0. This means that rape will be multiplied by 3 eg. $27 \times 3 = 81$. Theft of motor vehicle will be multiplied by 2 eg. $29 \times 2 = 58$. Shoplifting will be multiplied by 1 eg. $31 \times 1 = 31$ and littering will not have a weight eg. $14 \times 0 = 0$. Therefore littering will not form part of the basis of the weights (Boettcher 2003).

The Crime Information Analysis Centre Head Office, South African Police Service, who acts as the custodian of all crime statistics has a standard format of 20 serious crimes, which are given to its Senior Management on a continuous basis. The following three crimes are not reflected, namely drug related crimes, illegal possession of firearms and ammunition, as well as driving under the influence of alcohol and drugs. The reporting figures of these crimes will rise when police take action for example

having road blocks or searching people at night clubs and are therefore excluded (Boettcher 2003).

Crimes with a weight allocation of 3 are murder, attempted murder, robbery with aggravating circumstances and rape. Whereas crimes with a weight allocation of 2 are assault with the intent to inflict grievous bodily harm, burglary at residential premises, burglary at non-residential premises, other robbery (common), stock-theft, theft of motor vehicles and motorcycles, theft out of or from motor vehicles, other thefts, commercial crime (fraud), arson and malicious damage to property. Crimes with a weight allocation of 1 are common assault and shoplifting. Crimes not mentioned are excluded in the compilation of crime weights. The application of crime weights in the SAPS are implemented to determine the priority/crackdown stations (Boettcher 2003).

1.5 HYPOTHESES

“A hypothesis is a conjectural statement of the relation between two or more variables” (Kerlinger 1986:17). These variables should be measurable or potentially measurable and the hypotheses specify how these variables are related. The aim of a hypothesis is to direct an investigation (Kerlinger 1986:17).

Guy *et al.* (1987:121-124) identify the following characteristics to which a hypothesis must answer:

- “Hypothesis should be objectively worded.”
- “Hypothesis must be specific and precise.”
- “Hypothesis must be testable.”
- “Hypothesis should provide an answer to the research question.”

Additional characteristics identified by Smith (1985:20) are as follows:

- Hypothesis should be affordable.
- Hypothesis should be logical and simplistic.
- Formulation of hypothesis should be done in such a way that it can be solved by the available investigation techniques.
- A hypothesis should be related to a collection of empirical appearances.

Smith (1985:20) distinguishes between two types of hypotheses namely: the experimental or theoretical hypothesis and the operational hypothesis.

Theoretical hypothesis

Smith (1985:20) describes a theoretical hypothesis as the preliminary solution demarcating the research field, giving direction to the research. Furthermore it is not necessary for the theoretical hypothesis to be stated in measurable terms.

Operational hypothesis

The operational hypothesis is formulated in terms of the certain research actions that must be done (Smith 1985:20). Thus, an operational hypothesis must be formulated in empirical measurable statements.

The following operational hypotheses were used to guide the research:

Hypothesis 1: Healthy lifestyle

- H_0 : Social cohesion amongst the residents of a neighbourhood has no relation to the occurrence of residential burglary.
- H_a : Social cohesion amongst the residents of a neighbourhood is related to the occurrence of residential burglary.

Hypothesis 2: Healthy lifestyle

- H_0 : Social cohesion amongst the residents of a neighbourhood has no relation to the occurrence of attempted residential burglary.
- H_a : Social cohesion amongst the residents of a neighbourhood is related to the occurrence of attempted residential burglary.

Hypothesis 3: Healthy lifestyle

- H_0 : Social cohesion amongst the residents of a neighbourhood has no relation to the occurrence of theft from premises.
- H_a : Social cohesion amongst the residents of a neighbourhood is related to the occurrence of the occurrence of theft from premises.

Hypothesis 4: Healthy lifestyle

- H_0 : Social cohesion amongst the residents of a neighbourhood has no relation to the occurrence of theft out of or from a motor vehicle .
- H_a : Social cohesion amongst the residents of a neighbourhood is related to the occurrence of theft out of or from a motor vehicle.

Hypothesis 5: Healthy lifestyle

- H_0 : Social cohesion amongst the residents of a neighbourhood has no relation to the occurrence of theft of motor vehicle.
- H_a : Social cohesion amongst the residents of a neighbourhood is related to the occurrence of the occurrence of theft of motor vehicle.

Hypothesis 6: Healthy lifestyle

- H_0 : Participation in outdoor activities within a neighbourhood has no relation to the occurrence of residential burglary.
- H_a : Participation in outdoor activities within a neighbourhood is related to the occurrence of residential burglary.

Hypothesis 7: Healthy lifestyle

- H_0 : Participation in outdoor activities within a neighbourhood has no relation to the occurrence of attempted residential burglary.
- H_a : Participation in outdoor activities within a neighbourhood is related to the occurrence of attempted residential burglary.

Hypothesis 8: Healthy lifestyle

- H_0 : Participation in outdoor activities within a neighbourhood has no relation to the occurrence of theft from premises.
- H_a : Participation in outdoor activities within a neighbourhood is related to the occurrence of theft from premises.

Hypothesis 9: Healthy lifestyle

- H_0 : Participation in outdoor activities within a neighbourhood has no relation to the occurrence of theft out of or from a motor vehicle .
- H_a : Participation in outdoor activities within a neighbourhood is related to the occurrence of theft out of or from a motor vehicle.

Hypothesis 10: Healthy lifestyle

- H_0 : Participation in outdoor activities within a neighbourhood has no relation to the occurrence of theft of motor vehicle.
- H_a : Participation in outdoor activities within a neighbourhood is related to the occurrence of theft of motor vehicle.

Over and above the above hypotheses the research was also guided by the following principles.

Guiding principles

- The nature aspect of a neighbourhood influences the patterns of crime.
- The usage of information technology in a neighbourhood influences the patterns of crime.
- The security of a neighbourhood influences the patterns of crime.
- The location of a neighbourhood influences the patterns of crime.
- The usage of physical barriers in a neighbourhood influences the patterns of crime.
- The usage of symbolic barriers in a neighbourhood influences the patterns of crime.
- Surveillance in a neighbourhood influences the patterns of crime.
- Access control in a neighbourhood influences the patterns of crime.

These principles could not be tested as hypotheses for various reasons. The influence of the nature element of the HONC model can only be tested if the impact of nature on the incidence of crime could be quantified in a larger number of (eg. 20) different neighbourhoods. The impact of CPTED applied in the neighbourhood as a whole can also only be done when the findings of more than three different neighbourhoods are correlated with one another. The influence of information technology in the neighbourhood can only be tested after it has been in place in Woodlands Estate for a period of one year or more.

1.6 THE RESEARCH PROCESS

1.6.1 Data collection and data analysis

Literature study

A literature study was conducted to determine what research has already been done and this information then acts as a guide for the researcher on what to do (Guy *et al.* 1987:39; Barret 1998:21). It provides the researcher with insight into his/her own research problem, showing him/her how other researchers handled methodological and design issues. Methods of dealing with problem situations may be similar to those problems experienced by the researcher. The researcher also gains a historical and associational perspective in relation to earlier approaches to the same problem. Literature study can also provide new ideas and approaches not thought of before (Leedy 1997:71; Barret 1998:21-22). He/she is also provided with the opportunity of identifying some gaps in previous related research and to fill this with his/her own proposed study (Marshall & Rossman 1995:29).

Thus, a literature review is more than a mere reproduction of literature, as it contains the researcher's own insight into the current literature (Leedy 1997:81). Keeping this in mind, a literature study was done to gain background information in terms of crime prevention. A short overview of current crime prevention programmes, found in the literature, is also given. This overview is given with the aims of this study being kept in mind and is therefore not a complete factual study of each model. Crime prevention in neighbourhoods is discussed in depth before moving on to the elements of the HONC model. The internet was also scanned to provide the newest information about crime prevention in neighbourhoods. Only literature relevant to the research goals was selected.

Reference method

In this research report use was made of the abbreviated Harvard reference technique, as prescribed in the publication of Burger, M. 1992. "Reference Techniques, Eighth revision". Pretoria: University of South Africa. The university does not have any prescribed rule for information obtained from the internet yet, therefore the basic guidelines as given by Harnack and Kleppinger (1996:5) were used and adapted in this research report.

Empirical investigation

The researcher, working in the field of crime prevention since 1999, has been part of the development team of Woodlands Lifestyle Estate in an advisory capacity on the security measures to be applied in

this neighbourhood development. She also takes national responsibility for the crime prevention desk of the South African Police Service.

- **Interviews**

Semi-structured interviews were held with the developers of Woodlands Lifestyle Estate and representatives of Prairie Estate and Glossa Estate, as well as police officials of Garsfontein Police Station to add additional information to the literature study and empirical quantitative data. Interviews with the developers and representatives of the estates were aimed at finding out what their vision for the concerned neighbourhood were and how they set about to achieve it. The Crime Information Analysts at Garsfontein Police Station were able to provide information on 17 January 2003 on the location of informal settlements, shebeens, taxi and bus ranks, parks, golf ranges and shopping centres in Morelettapark in relation to the three targeted neighbourhoods. This information was imperative for the correct completion of the checklists for each neighbourhood.

An informal interview was conducted on 15 July 2002, with Mr. Renier van Rensburg, Estate Manager of Woodlands Lifestyle Estate, to determine how many households were already living at the Estate and how many houses were in the process of being built. At that stage 52 houses were already occupied and 83 dwellings were in the process of being built. In this interview it was clear that the guidelines as set out by the developers, Atterbury Properties, were strictly adhered to, even though the managing of the estate was handed over to the Home Owners Association on 3 December 2001. Some of the guidelines, such as club regulations and security matters are reflected in the newsletter of the Estate, "The Woodward", which is published bi-monthly under the editorship of Francois Aucamp (Aucamp 2002).

Use was also made of natural observation (non participant) to look at the physical environment of each neighbourhood in terms of milieu, image, nature, architecture and lifestyle. This knowledge, as well as all relevant maps, were integrated with the previous acquired knowledge.

- **Pilot study**

During June 2002 the preliminary questionnaire was presented to the statistical department of the University of South Africa for scrutiny. This was done to ensure that the variables and format of the questions would enable meaningful cross-tabulations to be done with the data collected. Input was also received on how to make the questionnaires more user friendly for the data typists (eg. the adding of coding blocks at the right hand side of the page and numerically numbering thereof). After applying

their suggestions to the questionnaire a pilot study was conducted from 15 - 18 July 2002 to test the questionnaire in the field as Babbie (1990:225) regards the preliminary testing of individual aspects of the research design and analysis as very important. Five questionnaires were completed at Woodlands Lifestyle Estate and another five were completed in the open neighbourhood, Glossa Estate. The last mentioned neighbourhood was deemed fit for the study because of its geographical placement, diagonally across Woodlands Lifestyle Estate, thus sharing De Villebois Mareuil Road and the Moreletaspruit as boundaries. The western side is formed by Wekker Road. This neighbourhood contains 211 stands of which 196 are lived in.

The amount of questionnaires completed, namely ten, are on par with Huysamen's (1995:198) suggestion that a small group of individuals, representative of the universum, be used to test the intended survey questionnaires. The pilot study is also very important when the measuring instrument (in this instance the questionnaire) is specifically developed for the purpose of the research project. The instrument then has to be tested beforehand to uncover possible flaws before beginning with the full scale research study (Huysamen 1995:197).

- **Questionnaire**

As the questionnaire contains two different types of information it was decided to divide the questionnaire in two sections. The first section, containing 56 questions, were written in the form of a checklist to be completed by the interviewer him- or herself and the second half of the questionnaire, containing 37 questions, was written as an interview schedule to be answered by the resident of the household. During the pilot study it became clear that although the checklist suffered from minor linguistic errors the face-to-face interviews with the residents were problematic in nature. Not only were most of the residents only available at night, most of the dwellings were barricaded behind high walls with vicious dogs and no intercom systems. This forced the researcher to stand outside these premises and wait until the barking of the dogs attracted the attention of the residents. Monetary constraints also started playing a role as the statisticians of the University of South Africa (UNISA) advised the researcher to work with the universum of each of the three neighbourhoods to obtain statistically viable data. This meant that the researcher would have to train field workers in taking down the foreseen 646 questionnaires, costing R30.00 per completed questionnaire adding up to a total of R19 380.00.

This state of affairs led to the second half of the questionnaire being converted to a telephone interview, as the actual interview only took seven minutes. Guy *et al.* (1997:248) and the American Statistical Association (1999:2) also regard the telephone interview a cost reducing alternative to the face-to-face

interview, as it envelops a bigger geographical area at relative lower costs and cuts out travelling costs. The first half of the questionnaire would still be completed by the researcher plus a minimum of three field workers during the day and the second half of the questionnaire completed at night by four field workers, overseen by the researcher herself. As the telephone interviews were conducted from a central office at night, the safety of the researcher and the field workers could be guaranteed as opposed to visiting and interviewing residents at night on a one-on-one basis in unfamiliar territory. In the end the changes to the questionnaire were only to make the questions read more fluently, not actually removing or adding new ones.

To overcome the hostility factor connected to telephone interviews it was decided to prepare the residents of the three chosen neighbourhoods by making use of the local media. A5 flyers, informing respondents of the project and the subsequent telephone interview were drawn up and distributed. This mentally prepared the respondents for the forthcoming interviews. On 13 January 2003 the flyers for the Woodlands Lifestyle Estate were given to the Estate Manager for distribution, together with placards containing the same information, to be placed on the notice board at the community centre. On the same date the researcher and two fieldworkers physically distributed the flyers at every house in the Prairie Estate with a placard containing the exact information to Mr. B. Distribution of the flyers in the open neighbourhood was held back till a later date, namely 12 and 13 February 2003, as they were chosen to be the last neighbourhood to be visited by the fieldworkers. This was done to ensure that the receipt of the flyers and the actual completion of the telephone interviews were not too far apart from each other, assuring that respondents would not forget about the information in the flyers. Together with these flyers the neighbourhood's newsletter was also distributed, which validated the study and summarised the information of the flyers.

Although each of the neighbourhoods were given the exact same questionnaire, their front pages differed as it contained the applicable street names for each neighbourhood in precoded form in order to save completion time by the fieldworkers. To distinguish more easily between the questionnaires used for each of the three neighbourhoods it was decided to make use of three different colours for the front page. After finding this a too expensive venture to follow it was forfeited in favour of distinguishing coloured dots being placed on the front page. Telephone numbers of the residents in the two gated neighbourhoods were obtained from the Security Managers and the telephone list for the open neighbourhood was obtained from their security leader, Charles Lance.

The completion of the checklists and the telephone interviews were scheduled for a period of one month, starting on 20 January 2003 and ending on 14 February 2003. Training for the two fieldworkers in the completion of the checklists were given by the researcher on 20 January 2003 within Woodlands Lifestyle Estate. The actual completion of the checklists commenced on 21 January 2002. An average of 40 checklists were completed daily between 08:30 and 13:30. Summer conditions and temperatures

ranging between 29° C and 35° C as well as the rainy days experienced once or twice a week during this period determined the working hours.

The training of the four telephone interviewers were also done on 20 January 2003, the same date as that of the checklists, by the researcher, who was also assisted by Dr. C.P. de Kock, a seasoned researcher with lots of practical experience in telephone interviewing. It was decided to limit the telephone interviews to only three days in the week, namely Tuesdays, Wednesdays and Thursdays.

Mondays were deemed unfit as families had to recover their normal routine after the weekend and Fridays were also eliminated as people were inclined to be tired after work on a Friday night, want to forget the strenuous week that has passed and not in the mood to answer questions about their daily routine and crime. A time limit was also imposed and phoning was only done from 18:00 till 20:30 at night. This gave respondents the chance to reach their homes at night after work before the telephone interviews began, and ensured that people were not disturbed in their sleep.

The checklists for Woodlands Lifestyle Estate were completed without any major hiccups. Residents would only stop and ask the fieldworkers what they were busy with and be satisfied. Some of the residents even went so far as to invite the fieldworkers in for a cold drink and a chat about their neighbourhood. With regard to the telephone interviews the residents were also friendly and only two residents refused to participate in the telephone interviews. After completing the telephone interviews with the Woodlands residents, the Prairie Estate was the next group of respondents to be phoned.

The fieldworkers also received amiable responses from the residents as well as beverages for the hot summer conditions. However, during the last day of fieldwork, 7 February 2003, in the Prairie Estate the fieldworkers ran into some problems as one of this neighbourhood's residents verbally accosted one of the fieldworkers. The researcher then tried to defuse the situation by going to the contact person, Mr B. It was decided to leave that particular street until a later date and to finish the completion of the checklists in the rest of the neighbourhood. Fieldwork and the telephone surveys within this neighbourhood was stopped with immediate effect after this incident to guard against any possible prejudice against the research contaminating the results of this study. The last 11 houses' checklists of that particular street were then left uncompleted even though some of the matching telephone interviews had already been completed. The information of these telephone interviews was still used and forms part of the total of 192 questionnaires for this Estate. Questions pertaining to the detail of these particular dwellings reflected as missing values during the cross-tabulations.

The researcher was asked to attend the committee meeting of the Prairie Estate on 13 February 2003. The committee raised several questions about the fieldwork that was unclear to them. As the pamphlet that they received said that the researcher would be the project leader, they assumed that the researcher would be the only person walking around on the premises filling out the checklists and doing

the telephone interviews. The researcher pointed them to the fact that it would be practically impossible to conduct approximately 200 telephone interviews by herself and fill in 200 checklists by herself during the day. The committee then decided that communication was at fault.

One of the committee members also suggested that the researcher should have telephonically made appointments with each of the residents before going to them to have the interview in person with them. They were informed that this was difficult as most of the target population was not at home during the day, forcing the interviewers to move from house to house at night, which was more dangerous than making a telephone call from a safe location. They were also reminded of the fact that most people were busy with their family routines at night.

The committee also raised the concern of the residents that the information might be sold to crime syndicates for their use.

The researcher was allowed to continue her study at the Prairie Estate after the following conditions were agreed upon: namely that (1) the neighbourhood's name not be mentioned anywhere in the study (2) the street names in the map be changed as not to be identified (3) the street names and neighbourhood's name on the questionnaire and the street names be taken off the questionnaires. And lastly the condition that the study was agreed upon in the first place, namely that they would see any of the information gathered from the questionnaires that would be written about their neighbourhood, before publication would still be adhered to.

During the week of 17 - 21 February 2003 an example of the adapted questionnaire was sent to this committee. A letter in which it was stated that the subsequent changes have been brought on to these questionnaires was also e-mailed to this committee to show the compliance of the researcher with the demands of the committee.

The completion of the checklists for Glossa Estate was done in the week of 17 - 21 February 2003. The telephone interviews started on 18 February 2003 and continued until 31 March 2003. To safeguard against the problems that were experienced at the previous neighbourhood, the researcher phoned each of the street representatives on 17 February 2003 to remind them of the telephone interviews that would start the following night and the fact that the fieldworkers were busy with the checklists in their neighbourhood. On their public meeting on 20 February 2003 the residents were yet again made aware of the fact that they would be phoned for a telephone interview during the following weeks. Five of the checklists in this neighbourhood could not be completed as these dwellings formed their own mini gated community within the larger Glossa Estate, fencing themselves off with one central entrance point which is gated off, fieldworkers were not able to gain access to the street in front

of these premises.

The weather conditions, together with problems experienced at one of the neighbourhoods, moved the actual completion date of the checklists of all the neighbourhoods to 28 February 2003. The telephone interviews ended on 31 March 2003.

1.6.2 Processing of data

The completed questionnaires could only be ready for data capturing after the street names and names of the Prairie Estate had been erased from the already completed questionnaires. The adapted questionnaires were then coded and given to the data-typists for capturing on the database. The captured data was “cleaned” and the necessary statistical information was retrieved by making use of SPSS 11.5 (Statistical Package for Social Sciences).

1.6.3 Data analysis and interpretation

The analysis of data must be done in such a way that the results of the research can be presented in a convincing and easily understandable format, the hypothesis must be tested thoroughly or the research questions be answered. The aim of statistical analysis is to help with the explanation of social manifestations by means of description, explanation and prediction. Descriptive statistics are only a representation of how the data “looked”, whereas explanation and prediction is more complicated getting its backing from calculations and explanations (Bailey 1987:370). Descriptive statistics were used in Chapter 7 to portray the differences found between the three estates and their crime situations. Inferential statistics were also made use of to compare the occurrence of crime with the elements of the HONC model. The statistical calculations were used to determine if correlations existed between the dependant and independent variable. Use was made of various statistical techniques to analyse and interpret the collected data. These techniques were classified as descriptive and inferential statistics (Smit 1985:212).

Descriptive statistical techniques

The biographical data of the three estates are represented in graphic outlay. Frequency tables are used after frequency analysis was performed on the statistics gathered from these three estates. By means of logical deduction these frequencies are integrated to determine points of correlation. Descriptive and explanatory analysis was thus accomplished by means of the frequency analysis.

Inferential statistics

Hypothesis are tested by means of explanatory statistical techniques (Smit 1995:217). Pearson's chi-square statistics (χ^2) is the statistical criteria which is used to test the hypothesis. In this study use was made of the χ^2 -test to test independence of association. Independence implicates that the result of the random variable was not influenced in any way by another random variable (Wegner 1993:248-249).

The test for independence of association is divided into five steps (Wegner 1993:250-253).

- **Step 1: The formulation of the nought and alternative hypothesis**

H_0 : There is no difference or relation between the subgroups. (In other words, the variables are independent of one another.)

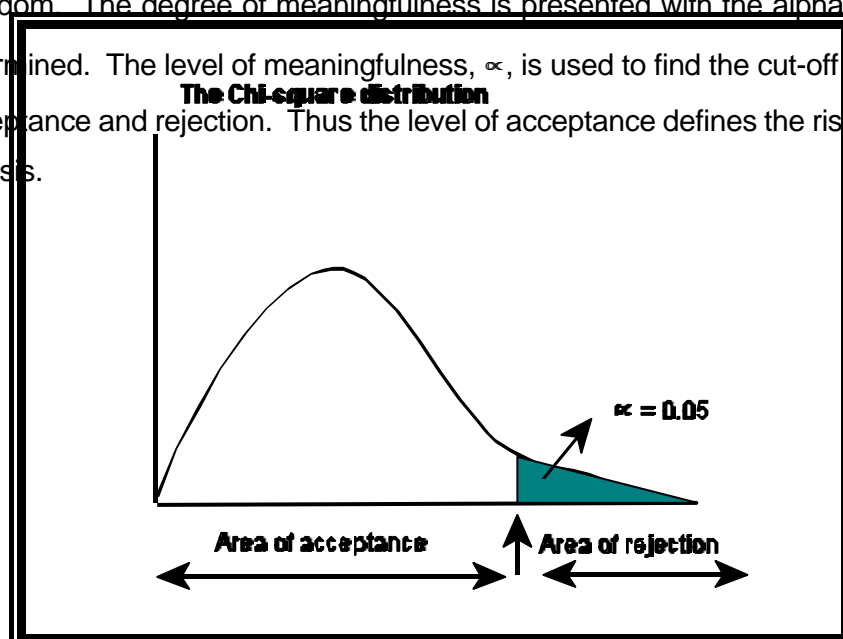
H_a : There is a meaningful correlation or difference between the subgroups. (In other word, the variables are dependent on one another.)

The nought hypothesis (H_0) always assumes that the two categories of random variables to be independent of each other, meaning that nought correlation exists.

- **Step 2: Determining the level of acceptance or reliability**

The applicable cut-off value for the chi-square is determined by the level of meaningfulness and the degrees of freedom. The degree of meaningfulness is presented with the alpha symbol (α) and is usually predetermined. The level of meaningfulness, α , is used to find the cut-off point that separate the area of acceptance and rejection. Thus the level of acceptance defines the risk in rejecting a real nought hypothesis.

Image 1.9



The degrees of freedom is a value that correlates with the size of the contingency table. A contingency table has r rows and c columns

$$(r - 1)(c - 1)$$

- **Step 3: Determination of the decision rule**

In this study it was decided to work with a 5 percent level of significance. This means that a 95 percent chance exists of being correct. H_0 will be rejected if the value of the significance is smaller than $\alpha = 0.05$.

- **Step 4: Compare the statistics with the area of acceptance**

Test the decision rule.

- **Step 5: Conclusion**

Accept H_0 at the 5 percent level of significance.

In this research all the data processing was done with the Statistical Package for the Social Sciences (SPSS).

1.7 PROBLEMS ENCOUNTERED DURING THE RESEARCH

- Finding three similar neighbourhoods that were developed in the same timeframe proved difficult.
- The second part of the questionnaire had to be converted from an interview schedule to that of a telephone schedule as it was very difficult to gain access to premises in the open neighbourhood, Glossa Estate.

- Monetary constraints also made a telephone interview more economically viable than that of face-to-face interviews.
- The refusal rate of residents to do the telephone interviews was frustrating.
- Obtaining the telephone numbers of the residents situated on the boundaries of Glossa Estate proved to be a difficult task.
- The non-listing of cell phone numbers in telephone directories slowed the process down.
- Previous home owners “moving” their landline telephone numbers with them to their new premises.
- The summer temperatures experienced during fieldwork were trying.
- Fieldworkers being verbally accosted by the residents of Prairie Estate was humiliating.
- The residents of Prairie Estate did not understand the research process.
- The scepticism and fears of residents hampered the data gathering.
- Residents not knowledgeable about research ethics complicated the data gathering.
- Approximately 14 checklists were not completed for Prairie Estate.
- All the victims of crime were not reached in the research as they were not at home, not willing to complete the interview or their telephone numbers were not available. Interviewers heard the same line from respondents “No I was not a victim of crime, but speak to my neighbour he/she has been hijacked, burgled etc.”.
- The delay in the processing of the data as a third of the questionnaires had to be adapted by having their street names and Estate name removed.

1.8 COMPILATION OF THIS REPORT

The research is depicted as follows:

Chapter 1	Orientation and problem statement
Chapter 2	Crime prevention models focussing on the criminal
Chapter 3	Crime prevention model focussing on the environment of the criminal
Chapter 4	Crime prevention model focussing on the milieu of the victim
Chapter 5	Aspects of safe neighbourhoods
Chapter 6	Empirical findings and the HONC model
Chapter 7	Summary, conclusions and recommendations

1.9 CONCLUSION

This Chapter serves as an introduction of the whole to the research, containing the reasons chosen for the research as well as the goal and rational of the study. The research process, hypotheses and a short description of concepts that were used are also included. The compilation of this report was also given to provide the reader with the direction of the research.

An overview of criminological crime prevention models and theories, which focus on the criminal are given in Chapter 2. Chapter 3 will contain the models and theories pertaining to the criminal's environment. This will serve as background and springboard for the need of developing the HONC model.