CHAPTER 4

CRIME PREVENTION MODEL FOCUSSING ON THE MILIEU OF THE VICTIM

4.1 INTRODUCTION

The mechanical and physical milieu crime prevention model addresses the crime situation by focussing on the victim and target hardening of the physical milieu of the potential victim. It does not focus on the potential offender *per se* but rather the influence that the environment has on human behaviour (Waller *et al.* 1997:3; Newman 1972:xii). Thus, the model strives to reduce the opportunities for crime (Gardner 1995:1).

In this Chapter an overview will be given of the mechanical and physical crime prevention model whilst the origin and concepts of the crime prevention through environmental design theory (CPTED) will be addressed in depth. The growth of CPTED and the background thereof in South Africa will also be discussed briefly.

4.2 THE MECHANICAL AND PHYSICAL MILIEU CRIME PREVENTION MODEL

Historically the concept of using the environment as a defence mechanism is not new. Even in medieval times it was standard procedure to ensure the safety of big cities by building walls around it. Caves placed on high ridges with only one entrance and canals dug around castles served as further examples of how people during the ages made use of the environment in making their dwellings more defensible (O’Block 1981:299; Gardner 1995:1).

During the last thousand years every culture developed its own architectural building techniques to define the territoriality of their dwellings. In the beginning of the twentieth century these principles of building and inherited ways of life were largely lost due to the development of large mega cities and residential areas, as found in America where the old traditional styles of design were not applicable (Newman 1972:6-7).

Interest in these principles was rekindled by studies done by the Chicago School, such as the concentric zone model and the social disorganisation theory, wherein they introduced the link between crime and the environment. This applied social ecology influenced a large number of countries in the western world, during the 1950's, to shift their crime prevention approach from the personality structure
of the offender to that of the crime situation (Meyer & Qhobela 1998:8).

4.2.1 Pioneers

In the United States the interest in specifically making use of the environment as a defence mechanism was rejuvenated during the 1960's, by people with an architectural background such as Elizabeth Wood, Jane Jacobs and Oscar Newman (Meyer & Qhobela 1998:13). In the early sixties Elizabeth Wood and Jane Jacobs identified the need for change in the planning of environments, Jacobs initiated the built-environment approaches, although it was Newman who popularised and fully developed this concept through his early work in the 1970's (O'Block 1981:300; Meyer & Qhobela 1998:3).

Elizabeth Wood

During the early sixties Elizabeth Wood, coming from a housing background, developed the social design theory, advocating the importance of physical design considerations in achieving social objectives (Newman 1973:119; Davidson 1981:82; Meyer & Qhobela 1998:13). She proposed that public housing should be designed internally and externally, providing areas for exercise, play and strolling. These areas would be private, but still providing residents with surveillance opportunities (O'Block 1981:299-300).

A primary design aim of her theory is the improvement of visibility, advising that children’s recreation areas and adults’ sitting areas should be placed within view of the apartments themselves. Another design aim proposed by her is the development of areas for recreation and relaxation. Wood’s concept of social control is based on the presence of and natural surveillance by residents. Areas out of sight is seen as areas out of control. She realised that spontaneous social control could be eliminated by negligent design (Newman 1973:122).

During her years with the Chicago Housing Authority, Elizabeth Wood focussed on creating more fulfilling environments for low-income populations, advocating for recreational facilities, meeting places of all types, shops, churches and centres to be accommodated within the housing project grounds (Newman 1973:119-122; Meyer & Qhobela 1998:13). She also developed an important set of guidelines for improving the security of low-income residential environments (Newman 1973:122). Although she did not attempt to address the growing crime issue in urban areas directly, her work emphasised the need for natural surveillance by inhabitants. She regarded areas that are out of sight as areas out of control (Newman 1973:127; Meyer & Qhobela 1998:13).
Jane Jacobs

Jane Jacobs (1961) contributed to this research field with her book “Death and Life of Great American Cities”. In this book she describes the inadequacies of the city planning and rebuilding methods followed in her time. She attacks the principles and aims that have shaped modern orthodox city planning and rebuilding, and attempts to introduce new principles of city planning and rebuilding (Jacobs 1961:1; Poyner 1983:1; Gilling 1997:47). Jane Jacobs introduced in-depth discussions on the peculiar nature of cities, the conditions for city diversity, forces of decline and regeneration and lastly on how to make use of different tactics in addressing the problems that cities face (Jacobs 1961).

She studied ways of making streets a safe part of the environment and made the following suggestions. Public and private spaces should be clearly demarcated from one another. These two types of spaces should also not be allowed to run into each other as they normally do in suburban settings or projects. There must be eyes on the street, belonging to the natural proprietors of the street. The buildings on a street, enabled to handle strangers and to insure the safety of both residents and strangers, must be orientated towards the street. They cannot be placed with their backs or blank sides on it, thus leaving it blind. The sidewalks should have a continuous flow of pedestrians to increase the number of effective eyes on the street as well as inducing the people in buildings along the street to watch the sidewalk in adequate numbers (Jacobs 1961:35; Bannister 1991:14). She also suggested the shortening of city streets to better surveillance (Newman 1973:127; Meyer & Qhobela 1998:13; Poyner 1983:1).

Jacobs (Davidson 1981:82; Gilling 1997:48) also believed that the public, rather than the police, is a critical factor in controlling crime. This sentiment made her unpopular with the criminal justice community as her proposals did not require their participation. Even though her work is not without its limitations it has contributed to the reorientation of criminology’s field of study (Gilling 1997:48). Meyer and Qhobela (1998:13-14) is of the opinion that “... [s]he highlighted the importance of an informal means of social control through the diversity of land-use. Although the work referred to crime issues, it was more as a harsh judgement on the city planners of the day, accusing them of responsibility for the removal of the soul of the American city.”

Oscar Newman

At this point in time the crime prevention through environmental design debates took place in isolation.
until Oscar Newman popularised the concept in the early seventies with his attempts of improving the living conditions of the poor in American housing estates (Meyer & Qhobela 1998:14-15). Newman was the first person to link crime reduction directly with design changes. He developed the concept of **defensible space**, which aims to place all the spaces in a city and/or community under observation and local control that will inhibit or decrease crimes of opportunity (Newman 1972:3). According to Bannister (1991:13) this concept suggests that environmental design has the capacity to nourish a latent feeling of territoriality amongst residents which might in turn encourage them to act against criminals and criminal acts in their community.

Although defensible space is sometimes regarded as a mere extension of Jane Jacobs’s ideas, Coleman states that Newman’s contribution focuses upon buildings and architecture rather than urban planning. He does not only describe how the ideal place should look but has undertaken quantitative analysis of the relation between specific design features and crime, also being involved in implementing change through the introduction of design modifications in housing projects (Clarke 1992:6; Bannister 1991:14-17).

- **Defensible space**

Newman (1973:1; 1996:9) says that the term **defensible space** was born during the spring of 1964, at the Washington University in St. Louis when a group investigating ghetto life in the public housing project, Pruitt-Igoe, began inquiring into the possible effects of the architectural setting on the social well-being of the community and on the crime and vandalism prevailing there. This group consisted of two sociologists; Lee Rainwater and Roger Walker; two architects; Oscar Newman and Roger Montgomery as well as members of the St. Louis Police Academy. They tried to identify or isolate the physical characteristics which, in the midst of social disintegration and fear, create a safe living environment (Newman 1973:1; O’Block 1981:300; Newman 1996:9). The group studied the plans of secluded, well functioning groupings of apartments, within the Pruitt-Igoe complex to determine what the physical components were that made them workable (Newman 1973:1-2). They came up with four categories of physical mechanisms for achieving defensible space, namely territoriality, natural surveillance, safe areas and image and aesthetics (Newman 1973:1-2; Gilling 1997:49; Bannister 1991:16; Jeffery 1977:37).

- **Territoriality** is the division of the residential environment into different spheres of territorial influence wherein occupants can easily adopt proprietary attitudes,

- **Natural surveillance** improves the natural ability of residents and their agents to observe the
inside and the outside of public areas within their residential environment,

- **Safe areas** indicates intensively used communal facilities, which strategic geographic location will enhance the safety of adjoining areas,

- **Image and aesthetics** is the ability of building materials, architectural composition and site planning to reduce the perception of peculiarity - the vulnerability, isolation and stigma of housing projects and their residents towards crime (Newman 1973:2).

Over a period of 25 years Oscar Newman’s Institute for Community Design Analysis has been involved in projects where residents are enabled in taking control of their neighbourhoods, reduce crime and stimulate private reinvestment by means of defensible space technology. These defensible programs aim to restructure the physical layout of communities in order for residents to control the areas around their homes, including the streets and grounds outside their buildings as well as the lobbies and corridors within. Defensible space programmes are not depending on the government intervention as it relies on self-help in the form of resident involvement in the reduction of crime and the removal of the presence of criminals (Newman 1996:9).

- **Criticism**

Oscar Newman’s approach was widely criticised in criminological circles after its release, although considered by architects and designers to comprise very good housing design principles (Meyer & Qhobela 1998:15; Bannister 1991:17). Meyer and Qhobela (1998:15) summarised some of the criticism as follows:

- The causal links between defensible space modifications and crime reduction have never been directly demonstrated.
- Design cannot operate independently from other social and economic factors.
- Newman’s study only pertains to public housing environments.
- Cutting up space and making it private in order to territorialise it, cannot be done in urban public spaces that must be accessible to a large number of people.
- Newman’s early work does not deal specifically with the issue of fear of crime.
- This approach concentrated on reducing property crimes, without taking into account that violent crimes also take place in public areas.
- The quick-fix solutions that were favoured by property developers, contractors and building owners, alienated the resident communities and tenants.
Newman ignored the need of long term involvement of the relevant stakeholders as well as the communities.

O’Block (1981:302) also states that environmental security will have little to no effect on white-collar crime such as embezzlement of money, gambling and different types of fraud. Cisneros (1995:11) answers this criticism by stating that nobody (especially the supporters of the concept) claims that the defensible space concept or any other technique is the sole answer to all the problems. The use of multi-dimensional strategies is necessary in any case, and the aggressive application of the defensible space concept as part of these strategies will decrease the incidence of crime.

Poyner (1983:3) points to the fact that physical crime prevention prevents economical and street crime but that it is less effective in the case of violent crimes and rapes, where the victim and the perpetrator in many cases know one another. In the case of highly emotional crimes such as murder, physical barriers will have little to no effect on the perpetrator. During the commission of the crime he or she gives little thought to what they can gain or loose. Furthermore, there is not always enough money to secure an already existing environment effectively and economically.

Although Newman’s theory (defensible space) has its shortcomings, it is generally the starting point of most crime-prevention initiatives in the USA. The writings of Jane Jacobs and Oscar Newman also influenced crime prevention strategies in the United Kingdom, Netherlands and other countries (Meyer & Qhobela 1998:14-15).

4.2.2 Further developments

Gardner (1995:1) regards the crime prevention through environmental design (CPTED) concept as relatively new although he agrees that making use of the physical environment in protecting oneself is not new. It is however only until recently that the problem of creating a defensible space was simultaneously approached from the physical and psychological angle. He regards the mix of these two disciplines as the essence of the CPTED concept. Dr C Ray Jeffery, is responsible for coining the term of CPTED in his book “Crime Prevention Through Environmental Design”, which encompassed a broader set of techniques than defensible space and extending beyond the residential context (Clarke 1992:6). Bannister (1991:32) regards CPTED as a broader crime prevention initiative, which not only refers to changes in the physical environment but also to that of the social environment.

Even though the individual elements of CPTED are common security techniques its distinctiveness and success originates from the manner in which these techniques are integrated with, and applied
to the architectural building process (Gardner 1995:1).

4.3 CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

Although the criticisms against Oscar Newman’s theory were fierce and plentiful the basics of his theory were good and solid enough to be built on through a period of 30 years by various academics, architects, police departments etc. The following paragraphs depict Newman’s concepts as described in one of his first publications “Defensible space; crime prevention through urban design”, as well as some of the inputs and add-ons done by various international experts in the field of CPTED.

4.3.1 Territoriality, defensible space

Territoriality provides two basic elements which are needed for a healthy lifestyle, namely security and identity (Built Environment ...s.a.:2). According to Gardner (O’Block 1981:18) this concept is one of the most renowned theories which connect the physical environment with criminal activities. Newman (1973:13) accords the high rate of crime to be found in cities to the erosion of territorially defined spaces, which are needed as a co-worker in the establishment of social order. Davidson (1981:82) further alleges that spaces which are neither public or private are highly perceptive to crime.

To establish territoriality, information about the following must be collected: The dwelling place of the victim, the dwelling place or origin of the offender as well as the location where the crime was committed. This information will supply the geographical surroundings where the crime took place, as well as the reason the offender and the victim came into contact with each other (O’Block 1981:18). The designing and managing of locations can also be done in such a way that it encourages ownership or let users take responsibility for it (Napier et al. 1998:42). There are also different levels of territoriality and Gardener (1995:1-2) divides all areas into three types of zones, namely public, semi-private or private.

Public zones

Areas that are accessible to the general public and regarded as the least secure of the three zones. This type of zone is especially vulnerable to crime when it is located within a building or in an area with uncontrolled access or little or no opportunity for close surveillance.
Semi-private zones

A semi-private zone consists of areas which act as a buffer between public and private zones and/or serve as common use spaces, such as interior courtyards. Although these areas are still accessible to the general public they are set off from the public zone. This division is accomplished with design features that establish definite transitional boundaries between the zones.

Private zones

Restricted entry is characteristic of this area, where access is controlled and limited to specific groups or individuals. Gardner regards a private residence as a good example of private zone.

Defining mechanisms are used to create boundaries between these different zones. It can help to define the transition from a private zone to a more public zone or it can create a type of barrier between the different zones. These barriers are divided into symbolic and physical barriers (Newman 1972:63; Gardner 1995:2).

Symbolic and physical barriers

There are symbols or barriers that define borders and lay claim to a piece of ground. These symbols that define borders are interruptions in the flow of movement, creating perceivable zones of transition from a public to a private space (Newman 1972:63).

The symbols can be divided in symbolic and physical barriers. Physical barriers can be u-shaped buildings, bushes and hedges, high walls and fences, locked gates and doors (includes target hardening). Symbolic barriers will be open gate posts, illumination, a short flight of stairs, and a change in texture of pavements (Newman 1972:63; Gardner 1995:2). Both symbols have the same goal, namely to inform a person that he is moving from a public space where his presence is not questioned to a more private space where his presence will be questioned (Newman 1972:63).

According to Newman (1972:63-64) the success of symbolic and physical barriers depends on the following four conditions:

- The intruder’s ability in interpreting the symbols correctly.
- The ability of the residents of a particular internally defined space in asserting control, and the strengthening of the symbolic barriers through surveillance.
- The internally defined space must have a low tolerance for questionable use.
• The ability of residents and their agents to act immediately and correctly, if the need arises.

Jointly these conditions will create an effective barrier. The type of barrier used in a given situation will depend upon the environment and the property that needs protection (Coetzer 2001).

The following mechanisms can be used to achieve the division and identification of subunits.

**External mechanisms**

External mechanisms are used for the subdivision of a neighbourhood to define a certain building’s zones of influence (Newman 1972:53).

• **Building site**

The site and the buildings should be designed as a whole. All the leftover space between buildings should be kept to a minimum with all the spaces having a particular purpose. When all of the space around a building have a definite use, the site is recognised by both users and passers-by as a protected territory and not dead space (Napier *et al.* 1998:123, Newman 1972:54).

When leftover space between buildings do not have surveillance (from the outside of the site or inside from the building), it can easily become a hiding place for criminals or the setting for criminal acts (Napier *et al.* 1998:123).

• **Layout of streets**

The city can be divided into territorially defined blocks by already existing streets. Residents of a particular neighbourhood can inhibit the use of parts of a street system for the use of the residents alone. The movement of vehicles is not stopped but restricted. This distinction is important because access to vehicles provides natural surveillance and gives opportunity for formal patrolling by police officials. In other instances the middle of the street was changed in such a way as to slow down vehicle movement through the street (Newman 1972:60-61). White, Beaven and Brantingham (Eck s.a.:27) say that research suggests that areas with easy access have higher crime rates then areas where the outlay of the street prohibits easy access. Blocking some of the streets and alleys as well as installing fences make it harder to drive into an area or to make a quick getaway.

Projects were implemented in Finsburg Park and Streatham neighbourhoods, London, to curb
prostitution. In both cases the closure of the streets and the usage of detours came in effect with an increase in police involvement. Observation of Finsburg Park showed that most of the prostitutes left the area and were not displaced to adjacent neighbourhoods. At Streatham there was a decrease in prostitution activities, although some of the activities have moved to adjacent neighbourhoods (Eck s.a.:28).

From 1990 the Los Angeles Police Department implemented “Operation Cul-De-Sac” in which they erected traffic barriers in 14 south central streets of a Los Angeles neighbourhood. This neighbourhood had a high rate of drug trafficking, drive by shootings and homicide. During the two years the barriers were in place homicide decreased with 65%. The other violent crimes also decreased. After the removal of the barriers the amount of violent crimes increased greatly, contrary to adjacent neighbourhoods whose crime levels stayed the same during this time period. The blocking of streets makes it difficult for offenders to make a quick getaway (Eck s.a.:28).

Offenders drive around in circles to pick up prostitutes or to shoot at their target from a moving vehicle. Possible criminal activity is thwarted when streets are made into dead ends which prohibit the circling by vehicles. However, Mathew (Eck s.a.:28) say that the closure of streets must be done in conjunction with the increase in police involvement. These tactics will only be applicable to certain circumstances in open city areas to decrease violent crimes.

Some critics (Oklahoma:1995:2-5) are of the opinion that the closure of streets leads to the development of slums and the obstruction of emergency vehicles in their work. Speed bumps can also be used as an alternative to control drug trafficking. Therefore it is up to the CPTED user to decide which method is applicable in every situation.

4.3.2 Surveillance and visibility

Providing opportunities for informal surveillance can serve as deterrence for crime, decreasing the anxiety of residents or the users of a particular area and serve to create a picture of a safe environment (Newman 1972:80; Woman in Cities International 2002:2). Gardner (1995:2) even goes so far as describing surveillance as the “principle weapon in the protection of defensible space”. However, the mere observance of a crime will not necessarily induce the observer to intervene. Intervention is determined by the extent of visual contact people have with a space, whether their presence is visible and if the users feel safe (Napier et al. 1998:41).

Newman (1972:80) broadly categorises glazing, lighting, the placement of public areas and access
routes that can be used by residents and formal authority, as mechanisms in facilitating surveillance from within or from the outside of a building. Napier et al. (1998:41) say that passive surveillance depends upon windows, doors and other openings, the distances between buildings, the sizes of public spaces, vacancy rates and degrees and types of use.

External layout

- **Pathways and access routes**

In urban parks care must be taken to ensure straight lines of sight along primary routes in order to enhance the user’s feelings of comfort and security (Urban Parks 2001b:3). Twisting pathways with dense bushes, sharp corners, storage sheds and low hanging trees obscures the direct line of sight, providing cover for potential offenders and criminal activities (Napier et al. 1998:105; Urban Parks 2001b:3). If an access way to an apartment building is built in this manner, residents and visitors will feel unsafe and patrolling by the policing authorities will not be so effective (Napier et al. 1998:105).

Making use of trees that branch out more than 1,5 metre above ground and placing shrubs and trees in such a manner as not to obstruct the line of vision or provide hiding places is advisable. Prickly types of vegetation can be used in order to discourage potential offenders from using it as a hiding place (Napier et al. 1998:105). Access routes must lead in straight lines from the point of access to the building or through an urban park in order to provide the users of the access route the opportunity in surveying his/her surroundings before making use of the path. Users will then be enabled to see and anticipate possible dangers (Napier et al. 1998:105; Urban Parks 2001b:4).

- **Lighting**

Improved lighting can increase the possible detection and reporting of a crime by members of the public. Crimes like vandalism, burglaries and mugging can be prevented by lighting (O’Block 1981:314; Urban Parks 2001b:4). Napier et al. (1998:73) also state that statistics reveal that certain crimes (e.g. theft of motor vehicles) increase under the cover of darkness between the hours of 18:00 and 20:00. The lighting of public spaces such as public streets and entrances to buildings is therefore important and will improve surveillance and visibility by enabling users to see and anticipate possible dangers (Napier et al. 1998:73; Gardner 1995:3). Potential hiding places and vulnerable spots must be illuminated more brightly than areas designed for normal activity (Gardner 1995:3).

Lighting can also be used to guide people along safer routes. The pools of light emitted by streetlights
should overlap with one another to form an uninterrupted band of light along pedestrian routes and in front of entrances. The position of streetlights should also coincide with bus stops. Streetlights and floodlights serve as common examples of external lighting (Napier et al. 1998:73). As far as feasible, a constant level of light, producing good visibility should be preserved at night (Gardner 1995:3).

The application of external lighting to illuminate shrubs that are placed at strategic points such as entrances and pavements are advised. Although it is not necessary to illuminate every tree and shrub. Trees should also be trimmed regularly as not to obscure lights. Dark alleys and parking areas must also be illuminated well. Lighting can also be used inside a building or an apartment to give an empty apartment the illusion of being occupied (O'Block 1981:314). On a final note it must be noted that the correct type of illumination are also of importance and will vary from application to application, take for example a neon type of light that would give a more even illumination sphere than that of a normal globe (Coetzer 2001; Gardner 1995:3).

• **Windows**

Windows provide residents of a building the opportunity of passive surveillance. It also gives the casual passerby or formal policing agents the opportunity to observe the activities that are taking place within the building. This will serve in making the building and its surroundings safer (Newman 1972:80; Napier et al. 1998:41). Constant opportunity for surveillance by residents can be provided in apartment blocks by placing the apartment windows next to stairs, hallways as well as the outside (Newman 1972).

**Internal layout**

The internal space of a block of flats comprises of a lobby, hallways, fire escapes and elevators which are open to the general public. These spaces differ from other public spaces for example the street because constant surveillance supplied by passers by is not provided. Most of the crimes in apartment blocks also take place in the abovementioned public spaces. It is therefore preferable that all internal areas be designed in such a manner that it can be easily observed from the outside (Newman 1972:86).

• **Lobby and hallways**

A lobby can be designed in such a manner that all its activities, such as waiting for the elevators and collection of post, can be surveyed from the street (Newman 1972:87). Placing the hallway on the side of the building will also make it observable from the outside and is preferable to a double-sided corridor,
which can only be observed from the inside users of the building.

- **Fire escapes and lifts**

In large apartment blocks the fire escapes are usually sealed off, which cuts off any sounds and opportunity for surveillance. Fire regulations require that buildings with lifts have fire escapes that are encapsulated in fire proof shafts, which has led to the widely used scissor stairs. An activity taking place in these areas is cut off from the rest of the building, making it the ideal place for the commission of crimes such as rape. An offender would grab his victim in the more used areas such as the lobbies, lifts and hallways and drag them to the fire escape where the commission of the crime can commence undisturbed. This problem can be rectified by the placement of windows at the end of each hallway as well as at each landing of the fire escape (Newman 1972:89).

Newman (1972:89) describes the Breukelen Housing complex as an example of the correct way of designing fire escapes, as it is provided with large glass panels in the lobby area, internal hallways and on the outside. Residents in this housing project make more use of the stairs and feel a lot safer than those sketched in the first scenario.

Smith (Oklahoma: 1995:5) is of the opinion that stairs and lifts encapsulated in glass aid surveillance, even though the implementation of glass lifts in already existing buildings is very expensive and difficult. She is of the opinion that the transparency provided by glass will make a huge difference in the possibility of surveillance.

### 4.3.3 Location

When evaluating the safety and defensibility of a particular structure or space, the environment in which it is placed (location), must be taken into consideration. Numerous factors can play a major role in the type of security measures that will be applicable in a certain situation. Examples of environmental factors to be taken into consideration can be as follows: socio-economic class, political environment, unemployment, weather, education, characteristics of population, public transport for example taxis, busses and trains, public services available and the condition of the road (Coetzer 1999:5).

If the same type of building was placed in a city centre, a residential area or a dessert, the security
measures for everyone would be different because of the location. For example, the tendency is for houses on the edges of a residential area to have a higher incidence of burglaries than houses situated in the middle of the area. Burglars need easily accessible routes to transport the stolen goods (Redelinghuys 1998).

Coetzer (1999:12) divides location into a macro and micro level. Location on a macro level can for example be the placement of a whole neighbourhood next to a busy highway. The location of the residential neighbourhood next to the highway can influence the occurrence of certain crimes such as residential burglary and must be taken into consideration when drawing up a crime prevention strategy. However, it is not really possible to change the location of the neighbourhood or the highway in order to address the crimes. Therefore the location of these two places is a given, meaning that it is something that is very difficult to change, which needs to be worked around and not changed in itself. When looking at location at a micro level, it would mean that it is the location of something that can be possibly moved to address a certain crime or fear of crime. An applicable example would be the shebeen placed next to the school as described by Napier et al. (1998). In this case it would be possible to close down or remove the shebeen to address the problem created by the shebeen’s specific location.

**Positioning of areas next to one another**

An apartment block can be designed in such a way that it provides residents with natural surveillance of routes, entrances to the building and play and sit-areas on the premises, that are used by everybody during the execution of their daily household activities (Newman 1972:91).

Newman (1972:91) studied the Breukelen complex (apartment buildings), and found that the architects placed the kitchen windows of the apartments in such a way that it looks out on the building entrances as well as the play- and park areas situated next to the entrances. Because adults spend much of their time in the kitchen and eating area, they can easily survey their children playing outside. The movement of residents and strangers in and out of the building, can also be monitored. This means that activity areas inside apartments, for example the kitchen, can be placed next to external public areas such as playgrounds and parks to facilitate surveillance from the inside. Taylor (1988:259) also says that the manner in which people make use of outdoor space next to their residence impacts on territorial functioning. When people spend more time outdoors they will distinguish more easily between strangers and other residents. Thus enhancing Jane Jacobs’ suggestion of “eyes on the street”. The presence of people outdoors is also perceived as a risk factor by offenders (Taylor 1988:259-260). Although Shortland and Goodland (Taylor 1988:260) point to the
fact that the mere presence of people will not ensure their willingness to react if something does happen. This concurs with Newman’s (1972:64) fourth condition of the ability of residents to react immediately and correctly when the need arises, for the success of symbolic and physical barriers.

Positioning certain areas next to one another can also aid natural surveillance. A park situated next to a busy public road will benefit from the constant stream of pedestrians and vehicles passing by. However, Napier et al. (1998:75) stress that surveillance by pedestrians are more effective than passing vehicles because people are directly influenced by the presence of others.

Newman and Davidson (Coetzer 1998:75) also discovered that if some city areas, - streets or roads are recognised as safe, the juxta positioned areas will profit from this safety by means of association. It is then possible to raise the security of a residential area by placing their public zones and exits to face areas that are considered safe. Public streets that carry heavy traffic and pedestrian loads will be identified safe areas. An area situated against such a street, will benefit from this safety. The juxta positioning of residential areas with other “safe” functional facilities; commercial, industrial and entertainment, will benefit the first named areas.

Parks and playgrounds erected in residential areas can also become a potential breeding ground for crime if they are situated apart and isolated from the rest of the area. When designing public facilities such as parks, the environment should be taken into account along with the security and entertainment factors. For example, a public park situated next to an abandoned lot will be more vulnerable than a park situated against busy public roads and houses that supply opportunity for surveillance. A park should then be designed in such a way that it provides surveillance opportunities for the private sector and is easily accessible for patrolling by police. When adjacent buildings or routes provide the opportunity of surveillance, the chance that the park will be used as a hiding place by offenders will diminish (Newman 1972; Davidson 1981; Napier et al. 1998).

**Dimensions of areas**

The dimensions of places that are positioned next to one another also play a big role. If the dimensions of an area, for example a park or a golf course, are very large, the juxta positioning with a safe public street will only ensure the safety of the outer parameter. The sheer size of the park will limit the ability of surrounding residents, pedestrians and vehicles from surveying activities taking place inside the grounds. Napier et al. (1998:91) are of the opinion that big open areas often only feel safe when they are full of people promoting a sociable and lively atmosphere. These busy times occur only during weekends and holidays. They therefore suggest that smaller open spaces or small parks linked
through the street network, be used to allow people to stop and chat. The establishment of more small spaces, rather than a few large unmanageable ones are encouraged.

Evening square

Schlomo Angel was the first person to suggest the concept of the “evening square” in his book “Discouraging crime through city planning”. This is a multi-purpose space, which could be used day and night. He was also the first person to use the design determinism approach. Concentrating chiefly on planning issues, he underscored the functional approach to surveillance design. Without authenticating his claims he argued that insistent use of an area deters crime by providing large numbers of effective witnesses. Surveying the past, this approach can be seen as simplistic, however it contributed significantly to the CPTED debate at that time (Meyer & Qhobela 1998:14). Opportunities for passive surveillance are increased by designing community buildings and commercial buildings to accommodate a variety of compatible functions that can be used for different activities at different times of the day (Napier et al. 1998:127). This will ensure the movement and presence of the public during different times of the day as they make use of the different facilities.

4.3.4 Image and aesthetics

Taylor (1988:261) says that potential offenders most likely have the same ability as residents in “reading” the territorial markers in a location, for example the improvement and maintenance of a building in order to determine the willingness of residents to act should an incident happen. When these signs of improvement and maintenance are absent a potential offender will come to the conclusion that the residents are vulnerable. Shaftoe (s.a.:1) also points out the fact that cheap-finish, mass solutions have proved to be costly, financially as well as criminologically, in the long run. Good quality materials signal a respect for the intended users, and this respect is generally given in return by residents. Woman in Cities International (2002:1) also share this viewpoint by stating the opinion that well-designed and built environments might reduce the possibilities for crime and enhance the feeling of safety of the general public and women.

Fear of crime

Napier et al. (1998:42) also say that the image projected by buildings or public areas in cities has been linked to the fear of crime. Bannister (1991:90) defines the fear of crime “...as an emotional response to a threat, whether the threat is actual or perceived”. Often this link has been referred to as the “crime and grime” principle. People feel unsafe when they make use of spaces that are decaying and slowly degrading. As Gary Chapman (Cooper 1997:1), a Detroit police officer and CPTED trainer, states
"perception is reality". By this he means that if a neighbourhood is neglected, dirty and some apartments are empty with only a few people hanging around, outsiders may perceive it as a dangerous place. The sense of abandonment and the absence of natural surveillance by other people makes a person feel like a potential victim of crime. If no effort is made to clean up an area it says to an onlooker that nobody cares and/or will react if something happens. Such factors will elevate the fear of crime.

Neighbourhood and environmental design features are not the only sources of fear of crime, as the knowledge of other people’s victimisation by means of a neighbour or the television can elevate the fear of crime within a community (Bannister 1991:91; Grabosky 1995:2). This phenomena are underscored by a city victim survey conducted in Pretoria by Antoinette Louw (1998:67-68) from the Institute for Security Studies (ISS) in Pretoria, where non-victims of crime feel almost as unsafe as victims when walking in their area at night. According to Louw this is an indication of the extent to which fear has permeated in the general society. The particular crimes that people feared most were that of residential burglary and murder, although people of Pretoria feared the physical consequences of a crime more than the economic consequences thereof. Louw (1998:74) stresses that although the fear of crime might not always match the actual risk of becoming a victim these fears should not be regarded as illogical as the Home Office have determined that fears are the greatest in areas where chances for victimisation are the highest. In Pretoria, women, the aged and people living in the poorer parts of the city such as townships and informal areas tend to be more fearful of crime than the other groups. These findings concur with other victim surveys done in South Africa and abroad, take for example Australia where females, the elderly and lower income groups also report higher levels of fear of crime than their counterparts (Grabosky 1995:2).

Clear signposting on streets and buildings as well as at parks, that provide information and direction will tell people where they are if they are strangers to a vicinity (Napier et al. 1998:71; Women in Cities International 2002:1; Urban Parks 2001a:1). Clear signposting will also enhance the identity of a neighbourhood by providing visible and consistent signs that provide essential information to all users. These signs can even be used in directing people along certain routes and to increase the level of activity on these routes (Napier et al. 1998:71; Urban Parks 2001a:1; Urban Parks 2001b:2). In urban parks, signage in the form of maps and descriptive text will also achieve the same goals as the users will feel increased control over their environment (Urban Parks 2001a:1). When a stranger to a vicinity is faced with inadequate or non existent signposting, he/she might get fearful of this vicinity and avoid it altogether, robbing this vicinity of a possible opportunity of informal surveillance (Coetzer 2001:12).

The types of signs used should also be applicable to the main group of users, for example children or
the visually impaired. The graphics of these signs must also be large enough to be read and the wording must be non-ambiguous (MacMinner 1996:1-2). Lastly, the signs must be placed correctly by placing them at decision making areas such as entrances, lobbies, elevators, corridor intersections and entrances of urban parks (MacMinner 1996:1-2; Urban Parks 2001a).

Chapman (Cooper 1997:1) further states that even if CPTED doesn’t directly reduce crime, it certainly creates a perception of safety. This underlines the importance of designing and managing spaces in the city in such a way so that it does not become actual or perceived “hot spots” for crime. Vacant land and unoccupied buildings contribute to decay in the same way as uncleared litter and the breakdown of services do. Improvement of the image of buildings and urban design can be achieved by using attractive colours or materials, providing adequate lighting, and designing for high levels of activity (Napier et al. 1998:42).

The following concept was coined by Poyner as a principle of CPTED. One can argue that Oscar Newman didn’t classify access as a CPTED principle in his original work, although he did touch upon its impact on the environment.

4.3.5 Access control

Access control can be used at the entrances or exits of buildings or at access and escape routes (Coetzer 2001:22). According to the Peel CPTED Advisory Committee (1999:5) the primary aim of natural access control is to deny access to the crime target and to create a perception of risk in the potential offender.

Entrances to buildings and grounds

The number of entrances to a building or grounds can have an influence on crime prevention. In the Republic of Ireland a sample of 50 convicted burglars were interviewed by Nee and Taylor (Bannister 1991:65) in order to determine the factors significant in a burglar’s target selection. Seventy-six percent of this sample group commonly attacked “middle class” targets. The burglars were asked to identify the most important situational cues in their assessment of whether or not to burgle a property. The existence of two escape routes, one at the front and one at the rear, were regarded as the most important situational cue. Current fire and safety regulations must always be kept in mind. About half of the sample considered the lack of occupancy as very important and the only apparently effective deterrents were the presence of dogs and alarms. It was also discovered that dogs and alarms do affect the choice of targets, whereas the presence of a high quality bolt does not.
Public buildings and shops with a large number of entrances will also have practical security difficulties such as the diversion of manpower. For example, a city council building in Gauteng designed on an open plan scale has 85 outer doors. This leads to ineffective security by the number of security guards that have to be on duty (Coetzer 2001:22).

Entrances to a building should also be built in such a way as not to provide hiding places for potential offenders. Hiding places can be provided by recessed entrances (sunken or space set back in the wall) unless they are designed to prevent this. Making use of bright lighting and windows in the door or recess will increase safety. Doorways can also be monitored by CCTV cameras (Napier et al. 1998:129).

People will find the correct entrance easier if it is brightly lit and clearly marked, making the street feel safer (Napier et al. 1998:129).

The service entrances and yards of buildings should also be given special thought. Usually situated in dark, dead-end alleys located on the side of the building it can provide shelter for offenders as well as locations for attacks and escape routes. Service alleys and yards should be designed with clear lines of sight, making provision for the whole service yard to be viewed from the entrance, providing no hiding places (Napier et al. 1998:135).

**Access and escape routes**

Access routes can be the pedestrian and automobile street patterns and outlets for the traffic flow into and out of neighbourhoods (Bureau of Justice Assistance 1993:59). Though a potential victim can be safe in areas with high levels of passive surveillance and public visibility, which act as a safe space, it must be kept in mind that access and escape routes can be used by both the offender and the victim (Barrister 1991; Napier et al. 1998:42).

The number of entrances and access routes will have an influence on crime prevention. A large number of access routes to a park or area will make the policing thereof more difficult because of the division of manpower as well as practical reasons. Pierre van Ryneveld in Pretoria serves as a prime example of how a small number of entrances can make a residential area more secure. This area has only two main access routes which can be easily blocked off to catch a fleeing criminal.

The sites of certain types of criminal events are often chosen beforehand by the offender according to escape routes. Offenders who hijack cars will often choose a location with a plan for quick escape
in mind (Napier et al. 1998:42). Napier’s statement is underscored by some of the findings made in the Quarterly Report 3/98 as published by the Crime Information Management Centre (CIMC) of the South African Police Service on hijacking hot spots in each province. The sentence reads as follows: “In the majority of cases the hot spot areas in metropolitan areas have a vast number of escape routes available to hijackers and a large selection of possible targets to choose from.” (CIMC 1998:61)

- **Transport routes**

  The design of transport routes and the placement of different types of space next to one another will have an influence on the ease of access and escape. Areas with no specific use, which provide clear routes of escape from a crime scene are regarded as areas of refuge and are obvious havens for offenders. Tracts of open or agricultural land, which are placed near a neighbourhood and where stolen goods from thefts can be hidden, serve as an example of such areas of refuge (Napier et al. 1998:42)

In former years (1970) it was practice to build houses in residential areas on the grid roster pattern, which provided potential offenders with a large number of escape routes. These days the streets are laid out in the form of *cull-de-sacs*, which decreases the number of possible exits dramatically.

- **Pedestrian routes**

  When planning routes through open spaces (e.g. parks and open parking lots) the needs and desires (e.g. shortcuts) of the pedestrian should be taken into account. It must provide opportunity for surveillance, for example a pedestrian route in a park must be placed within seeing distance from the public road and pavement (Napier et al. 1998:107; Urban Parks 2001b:4).

  Where the safety of pedestrians cannot be assured, such a route must be closed if possible, or the use of it discouraged (Napier et al. 1998:107). The illumination of safe routes will encourage people to use it at night, although the open spaces alongside safe routes should also be lit so as not to increase the vulnerability of pedestrians using them. Keep in mind that lighting used on its own will not make a route safe in a deserted area (Napier et al. 1998:107; Urban Parks 2001a:1; Urban Parks 2001b:4-5).

  Clarke and Mayhew (Poyner 1983:12) list target hardening as one of the effective situational measures in the fight against crime. Poyner (1983:13) also regards target hardening as a neglected aspect of environmental crime prevention.
4.3.6 Target hardening

Target hardening is usually the first step taken when residents and designers want to reduce crime, because it often physically reduces the opportunities for crime. Most of the time the other principles are violated in the process. If target hardening in or around buildings obscures the line of sight or provides unsurveyed spaces, such a target hardening strategy will probably not be effective as a crime prevention strategy in the long term. For example, the building of a two metre high brickwall around a property for protection will inhibit natural surveillance from the street. A transparent barrier, palisade or trellis fence will serve a dual function by protecting and giving opportunity for natural surveillance from within and without the property (Napier et al. 1998:43).

Target hardening will increase the time it takes to commit a crime (e.g. burglary) and will therefore make the detection and capturing of offenders more successful. It can also reduce the vulnerability of a target by making it more difficult for offenders to penetrate a barrier, or by reducing the possible returns from an offence (e.g. a jeweller removing the jewellery display from the windows and locking it up in a safe overnight) (Napier et al. 1998:43). Measures for target hardening can consist of the following: fences, strengthened doors, burglar proofing of doors and windows, padlocks, guard dogs, intercom systems, closed circuit television (CCTV) cameras, alarms, laminated windows, security gates and video phones.

These are only a few physical measures that can be used in the safeguarding of a property or area. The quality of the measures used will also play a significant role. De Gruchy and Hansford (Bannister 1991:57) investigated the burglary and vandalism committed in four shopping complexes in Brisbane, Australia. They came to the conclusion that most of the burglaries occurred at night, rear windows being the most common point of entrance. The poor quality of the locks, doors and windows were considered significant in enabling a robbery, as was poor lighting.

However, target hardening does not involve only the installation of security devices, but also their diligent use by residents. For example, an open gate or unlocked door, whatever the quality of the gate or lock, will not prevent access to a home (Coetzer 2001). Poyner (1983:48) has however noted that researchers are of the opinion that traditional ideas of improving the locks on doors, placing locks on openable windows and adding locks and chains does not have a big impact as crime prevention measures.

The aforementioned paragraphs have touched upon Newman’s concepts as well as some of the inputs and add-ons of the CPTED principles. Even though these principles are discussed separately the
reader must realise that they overlap with one another. Making use of all the principles in the prevention of crime will provide the best result in the fight against crime, rather than merely making use of one principle to address crime. CPTED is still growing and changing as different countries adapt it to their own special needs and unique circumstances. Since its re-establishment and conception in 1970 numerous international studies and projects have been conducted in this field, enriching the original concepts.

South Africa only jumped on the international bandwagon in making use of CPTED during the late 1990s. However, this is to the advantage of South Africa who now does not need to work through 30 years of trial and error like the other countries had to do. They can take the best of all the research and findings and make it applicable to their own situation as the CSIR and the Institute for Security Studies (ISS) did in their projects such as “Environmental design for safer communities in South Africa”. Meyer and Qhobela (1998:1) are of the same opinion, stating that even though the concept of CPTED is a somewhat new field of research in South Africa, international research concerning this subject has been done to such an extent that it (CPTED) is widely accepted as inherent part of most crime prevention strategies in Canada, the United Kingdom, the United States of America and the Netherlands.

A brief overview of some of these international developments will be given. The development of CPTED in the Netherlands will be discussed in a more detail than the other countries as it had a bigger influence on guiding the direction in which CPTED has developed in South Africa than the other countries.

4.4 BACKGROUND ON THE DEVELOPMENT OF CPTED IN SOUTH AFRICA

4.4.1 United States

Shaw and McKay of the Chicago School, Elizabeth Wood and Jane Jacobs of the Romantic School and Oscar Newman of the Defensible Space Theory represent the beginning of the CPTED movement in the USA. Jeffery’s concept of CPTED also influenced and encouraged the Home Office team and have been developed in projects undertaken by some of his former students and associates such as Patricia and Paul Brantingham, representatives of the Spatial School in the USA (Clarke 1992:7). Since then, environmental design has been included in most of the crime prevention initiatives in the USA. According to Kruger, Meyer, Napier, Pascalo, Qhobelo, Shaw, Louw, Oppler and Niyabo (1997:7) crime prevention is approached in three ways: tackling the root causes of crime by making use of greater law and order, making use of Safer City initiatives and focussing on partnerships between national
government, cities, neighbourhoods and citizens. The last strategy introducing CPTED at local authority level.

4.4.2 The United Kingdom

Ronald V Clarke, former Head of the British Head Office Research and Planning Unit, is responsible for the development and growth of the situational approach in the United Kingdom, which started during the 1970s (Gilling 1997:60). Clarke (1992:5) points out that although the concepts of defensible space and CPTED preceded the development of situational prevention, it had not been the spur of its development because of a trans-Atlantic delay in the distribution of ideas.

Carefully designed research studies were initiated by the Home Office Research Unit, situated in London, during the same time frame as the demonstration projects were done in the United States on the same subject. Clarke and Mayhew published a book called “Designing out crime” in the 1980s, containing these early studies. Further studies have been done, which have more specific implications for the design of the environment. The Home Office Research Unit (later renamed the Research and Planning Unit) based their approach on a wide range of situational factors including public campaigns aimed at changing victim behaviour and different types of patrols (Poyner 1983:12)

The situational measures regarded as effective by the editors (Clarke & Mayhew) are summarised as follows (Poyner 1983:12):

- target hardening
- target removal
- removing the means to crime
- reducing the pay-off
- formal surveillance
- natural surveillance
- surveillance by employees
- environmental management.

Poyner (1983:12) is of the opinion that this new subject area has not developed to full maturity but that there is now enough research material for setting down and organising this knowledge in usable format for use by administrators, managers, practitioners and researchers as provided in his book “Design against crime, beyond defensible space”.

4.4.3 The Netherlands
Faced with a large number of difficulties such as badly damaged infrastructure and a huge housing shortage after World War Two, Dutch townplanners, architects and housing associations erected approximately two million dwellings between 1945 and 1970. After enjoying some of the lowest crime rates in the world from 1945 until the sixties, the crime rates started to climb, dramatically increasing between 1975 and 1985 and steadily growing after 1985. This resulted in the Netherlands shooting up from a low crime ranking country to a high level crime country (Van Soomeren & Woldendorp 1997:1-6).

The learning years

Despite the alarming increase in crime, the Netherlands only started addressing the problem during the 1980’s by means of two simple solutions, namely the police trying to fight crime in a more repressive manner and the individual members of society implementing target hardening. The Dutch came to the conclusion that a more integrated approach was needed to deal with the crime problem and therefore the repressive approach was combined with a pro-active approach (Van Soomeren & Woldendorp 1997:6).

In 1985 the government issued the “Society and Crime” policy plan, which contained the following three policy directions (Van Soomeren & Woldendorp 1997:6).

1. The surveillance of potential offenders are advanced and opportunities for crime is reduced through the modification of the physical design of urban environments.
2. Reinstate persons, who as part of their job descriptions (shop assistants, train and bus conductors, janitors, park wardens, etc) do surveillance, into vulnerable environments, for example, shopping malls, public transport, and high rise buildings.
3. Strengthen the bonds between the younger generation and society by means of family, the school, leisure activities, and employment.

Van Soomeren and Woldendorp (1997:6) regard this strategy more inclusive than the crime prevention strategies of other countries that only targeted the technical and physical defence of buildings. The abovementioned strategy was formed after the Dutch Departments of Housing, Urban Planning and the Environment, and Justice and Internal Affairs did extensive research on the issue of environmental crime prevention. Drawing from a considerable pool of international research they identified seven theoretical schools of thought on the subject, forming the basis of environmental crime projects in the years to come. The schools are summarised as follows:
• the Chicago School (1920), USA, spearheaded by Shaw and McKay
• Romantic School (1961), USA, spearheaded by Jacobs and Woods
• Newman the Young (1972), USA
• Newman the Purified (1980), USA
• Situational Approach (1980), UK, spearheaded Clarke, Mayhew and others
• Spatial School (1990), USA, Brantingham and Brantingham and others
• Rock Hard School, World Wide School since 10,000 B.C. (Van Soomeren & Woldendorp 1997:7-9).

The Dutch are known for making use of victim surveys as part of basing target hardening on scientific risk assessment. These studies led them to the important determination that it is vital to include the viewpoint of the offender in the environmental approach. Based on this determination the National Crime Prevention Bureau started an action research program in partnership with the police on burglary and burglars in dwellings. Apprehended burglars were also interviewed during this project, to determine how they selected their targets, and which cues and features they preferred or disliked (Van Soomeren & Woldendorp 1997:9). According to Van Soomeren and Woldendorp (1997:9) this project demonstrates the typical Dutch approach whereby the social and physical environment which influences offender behaviour and perceptions are merged.

Checklist and counselling approach

Never forgetting the offender’s perspective, more than 200 projects were rolled out between 1985 and 2000, based on all the topics referred to in the policy plan. Two approaches were mainly followed during this period, namely the checklist approach and the counselling approach. The checklist approach comprised of summarising good and bad design features consisting of do-’s and don’ts suitable for use on small scale and technical solutions like target hardening and lighting by crime prevention officials such as police officers. Whereas the counselling approach comprised of design teams, which contained crime prevention counsellors with a strong academic background and practical background in planning and architecture, suitable for use on the higher scale levels such as urban/district planning, neighbourhood design and landscaping. Both of these approaches have their strong and weak points, the detailed checklist approach working better on the small scale developments and the flexible counselling approach more applicable to the highest level as well as abstract level of planning (Van Soomeren & Woldendorp 1997:10).

Note must be taken of the fact that during the 6th Annual International CPTED Conference, which was held in Brisbane, Australia during 24 - 27 September 2001, criticism was raised against blindly using
checklists as a way in evaluating the physical environment. Some of the experts in CPTED have even gone so far as disregarding the use of checklists completely. However, there will always be a place for checklists in CPTED as long as the user thereof realises that it is not the only tool to be used in the prevention or reduction of crime. Van Soomeren and Woldendorp (1997:10) also state that it was realised in the Netherlands that both approaches (checklist and counselling) have to be taken into consideration to construct a model that is effective in environmental fear and crime reduction. Thus, the Dutch environmental approach to crime can “...be summarized as practical but also comprehensive, taking into account the offenders, victims, and people controlling the environment (from residents to police officers)” (Van Soomeren & Woldendorp 1997:11).

The Delft checklist serves as an example of the lists drawn up by the Dutch and can be used as a checklist in the development and assessment of designs and is set out as follows (Meyer & Qhobela 1998:11).

(* A positive criterium is indicated with a plus (+) on the lefthand side, and a negative criterium with a minus (-).)

“Criteria for the development and assessment of Designs in the Netherlands”

1. “Presence of potential offenders
   - Concentration of problem groups in vulnerable places.
   - Presence of undesirable elements such as drug addicts and vagrants.
   - Concentration of households with children (vandalism) and youngsters up to 25 years (burglary)."

2. “Presence of protective eyes
   + Actual presence of people, depending on the distance of houses and facilities, the degree of functional heterogeneity and the type of routes (busy/quiet; through route/only local traffic).
   + Tangible presence of people, depending on the extent of visual contact between buildings and public space, as well as vacancy rate.
   + Formal supervision (police patrol).
   + Semi-formal supervision (supervisors, doormen)."

3. “Visibility
   + Sufficient lighting both in daytime and at night.
   + Uninterrupted lines of sight from (the interiors of) buildings to extensively used spaces, and visa versa.”

4. “Involvement and responsibility
   + Acquaintance with fellow residents, depending on the scale of the buildings (number of housing units to
each entrance, number of units to each block, total number of blocks).
+ Private area.
+ Sense of belonging: the perception of a place as part of one’s own street or neighbourhood, depending on
the distance to the house and on socio physical characteristics.
+ Clarity on responsibilities (sharp division of private and public territories).
+ User participation in planning, design and management.
- High frequency of house removals.”

5. “Attractiveness of environment
+ Congruency between user preferences and characteristics of built environment.
+ Human scale.
+ Lively atmosphere.
+ Attractive colours and materials.
+ Adequate lighting.
- Deterioration filthiness.
- Nuisance (smell, noise).”

6. “Accessibility and escape routes
+ Clear distinction between public and private spaces.
+ Closing-off of private and semi-public spaces as entrance halls, basement passages, walkways.
+ Security devices such as quality locks or alarms.
+ Escape routes for potential victims.
- Large number of easily accessible entrances.
- Escape routes for trespassers.”

7. “Attractiveness of a potential target
- Presence of money and/or valuables in homes, shops, offices.
- Concentration of targets (people pickpocketing, purse snatching, violence, bicycles: vandalism, theft: cars
vandalism, theft from/of cars).”

8. “Physical vulnerability of a potential target
+ Awareness/defensive attitude of a potential target (e.g. target hardening).
+ Physical protection of a target against theft/burglary by means of a safe-deposit (money), solid locks, or
warning devices (cars, bicycles).
- Places frequented by women or elderly people passing alone, especially at night.”

According to Meyer and Qhobela (1998:10) the success of the Delft checklist has not been tested yet
on large scale as is has not been in use for very long. About 1 500 copies have been sold to
developers, architects, townplanners, housing corporations, user organisations and police departments.

**Police quality label for secure design**

The late 1980's saw the end of the tremendous housing shortage experienced after the Second World War, which led to the new demand driven housing market wherein residents could specify their own requirements such as a safe and secure environment which featured high on the preference list (Van Soomeren & Woldendorp 1997:12; Meyer & Qhobela 1998:11; Kruger et al. 1997:11).

During the same time-span the Dutch police made contact with the Sussex Police in the United Kingdom whereby they where exposed to their Secured by Design (SBD) system. Seeing this as an opportunity to get more structural influence in the planning process, the packaging of the system was adopted. Realising that the SBD scheme in the UK did not really include the higher levels of urban, district and landscaping planning, the offender perspective was missing and not flexible enough to be used in a site- or environment specific way, a new content was developed for using the SBD label (Van Soomeren & Woldendorp 1997:12; Meyer & Qhobela 1998:10).

Making use of previous research and the pattern language developed by Christopher Alexander, Ishikawa and Silverstein in “A pattern language” 1977, the pattern language for the Dutch Safe Housing label was formed. In the Safe Housing Label Manual, 55 patterns of design elements are summarised, ranging from the high to the small scale levels (Van Soomeren & Woldendorp 1997:13; Meyer & Qhobela 1998:10). The patterns contained in the manual can be divided into five levels, namely (Van Soomeren & Woldendorp 1997:13):

1. “**district planning** (size of the district, density, height and scale, access to the district by car and bicycle)”
2. “**building lay out** (estates, semi-detached houses, single-family terraced houses in block allotment or strip allotment, inner grounds, enclosed squares)”
3. “**specific functions within the residential environment** (parking in open air, private garages, playing facilities, tunnels and subway busstops, backpassages etc)”
4. “**residents' participation and responsibility** (neighbourhood management, home watch, maintenance, supervision, etc)”
5. “**building design** (orientation living rooms, low roofs, main entrance, target hardening, etc).”

For a building project to carry the logotype of a Police Label Safe Housing, the police must approve
by making use of the manual in a flexible manner by awarding points to the design so that it can qualify for the quality mark. The manual is structured and works according to a point system, but is still flexible enough for negotiations with architects and planners by the police officers. The manual is seen as a continuing process, adapting to the changing crime patterns, perception and working methods of the criminals as well as the changes in planning, architecture and building, rather than a finished product (Van Soomeren & Woldendorp 1997:16; Meyer & Qhobela 1998:12).

4.5 SOUTH AFRICA

South Africa has the moot distinction of successfully applying environmental design on large scale, aspired at controlling the movement and lifestyles of certain sectors of society, rather than ensuring the safety and security of all citizens. This approach on planning has led to a typical city structure, which has a profound impact on the patterns of crime (Kruger et al. 1997:15). Kruger et al. (1997:15) broadly sum up the characteristics of cities influenced by apartheid planning as follows:

- “low-density sprawl
- fragmentation, with development not being spatially continues but rather in discrete pockets or cells
- separation in terms of land use, income group and race and
- a central core where most employment opportunities are located, and a distant periphery where dormitory residential areas are situated.”

4.5.1 Overview of crime trends in South Africa

Although sharp increases in the incidence of serious crime have been observed in South Africa since 1994, the ratios of a considerable number of serious crimes at present seem to be stabilising, albeit at high levels. Expressed as a ratio per 100,000 of the population, seven crime trends actually experienced decreases over the period 1994 - 2000, namely murder, attempted murder, housebreaking at business premises, stock-theft, the theft of motor vehicles, arson and driving under the influence of alcohol or drugs. Between 1999 and 2000 the most significant decreases were observed with regard to murder (-11.06%), arson (-13.5%) and theft of motor vehicle (-5.5%), according to figures released by the Crime Information Analysis Centre (CIAC) of the SAPS during July 2001. The CIAC figures indicate that an additional seven crime trends stabilised between 1994 and 2000, namely rape, shoplifting, theft out of/from motor vehicles, commercial crime, malicious damage to property, illegal possession of firearms and drug related crime (CIAC 2001).
Six crime trends experienced increases over the period under consideration, including common assault, assault with the intent to do grievous bodily harm and the category defined as “other thefts”. In addition, housebreaking at residential premises increased by 3.4 percent between 1999 and 2000, with the most disturbing increases being observed with regard to the incidence of other robbery (18.5%) and robbery with aggravating circumstances (11.06%). The latter includes robberies at residential premises, which frequently hits the news headlines.

The high crime rates in South Africa have prompted a response from both government and the community at large. This has inter alia found expression in policy documents and guidelines like the White Paper on Safety and Security and the National Crime Prevention Strategy (NCPS).

4.5.2 National Crime Prevention Strategy (NCPS)

South Africa has joined the international field of CPTED in making use of environmental design in reducing crime with such documents as the National Crime Prevention Strategy (NCPS) that was released in 1996 (South Africa 1996:8-9; Naudé 2000:1). The NCPS attempts to correlate the activities of government departments, other tiers of government and non-state agencies in crime prevention. Approximately 20 implementation programmes have been devised under the NCPS, each falling under one of four pillars, namely:

- the criminal justice process
- environmental design
- community values and education and
- transnational crime.

Pillar two, as stated in this document, asks for the reduction of crime through environmental design and is perceived as fundamental to the broader approaches in crime prevention and management (South Africa 1996:9; Kruger et al. 1997:3; Napier, du Plessis, Lieberman, Kruger, Shaw, Louw & Opler 1998:viii; Department of Correctional Services 1996: 67-68; Naudé 2000:4). The objective is to extend the employment of security based designs to residential buildings and shopping centres, ensuring that safety and crime prevention considerations are applied in the development of new and the upgrading of old structures, as well as creating awareness of environmental design as a means to reduce crime (Department of Correctional Services 1996: 67-68).

It is the opinion of the CSIR and ISS (Kruger et al. 1997: 15) that environmental design programmes are unlikely to succeed on their own, therefore making the co-implementation with other initiatives such
as effective policing and local governance vital.

**Criticism**

Professor Beaty Naudé (2000:5-9), of the Criminology Department at the University of South Africa, identifies the shortcomings of the NCPS as follows:

- The implementation of crime prevention programmes will be difficult as a lack of infrastructure and information sources exist.
- Even though the local authorities are identified as prominent participants it is unclear what the nature of their responsibilities will be.
- Graham and Bennet suggest that possible problems may arise when different departments and institutions must work together in order to develop, implement and manage crime prevention programmes. They list conflicting priorities, poor coordination and a lack of knowledge about each stakeholder’s role and responsibility as some of the possible problems.
- An absence of in-depth training for key-government persons tasked with the planning, implementation, effective budgeting and evaluation of crime prevention programmes. Naudé suggests that an information document be drafted, encompassing information on international and national crime prevention programmes in order to demonstrate what works and what not. She also underscores that programmes that are successful in developed countries may not be effective in developing countries.
- Against the background of inadequate human resources and finances in a relatively poor country such as South Africa, it is questionable that all the envisaged programmes will materialise.
- The funding of these planned programmes are also deemed problematic as the future funding of these projects will be derived from the budgets of the participating departments and provincial governments. Naudé is doubtful if these stakeholders will regard crime prevention programmes as a top priority. Two hundred million of the awarded 500 million rand to the NCPS has already been spent on the implementation of just 14 projects.
- The NCPS is not bound to a time frame, which can be damaging to the implementation of much needed programmes. This can induce the public in losing faith in the NCPS as they regard the prevention of crime as an important priority.
- Even though specific factors which contribute to the crime situation in South Africa have been identified by the NCPS, it was not linked with the four crime prevention pillars. According to Naudé these four crime prevention pillars are policy driven and do not focus on the causes of crime in South Africa. Crime is therefore managed but not prevented.
• Measured against global crime prevention models the NCPS is not as comprehensive as it claims to be.
• Taking the high degree of violent crime among the youth in South Africa, sparse attention is given to it in the NCPS.
• Universally recognised contributing factors to crime are largely ignored by the NCPS, even though they are present in South Africa. These factors are economic strain and deprivation, low educational levels, high rates of urbanism, multicultural population, high levels of gun ownership, high levels of alcohol abuse, outgoing lifestyle, a large proportion of young people, repeat victimisation risk and a country being in socio-economic and political transition.

Even though Prof Naudé (2000:9-10) has raised many criticisms against the NCPS she still regards it as an important policy document that reflects the government’s willingness to review its crime prevention strategy, which will hopefully enhance their capacity to prevent crime in South Africa. One of the first comprehensive studies that was conducted for the NCPS, was undertaken by the CSIR’s Division of Building Technology and the Institute for Security Studies (ISS). In their project they addressed the role of environmental design and made recommendations for the design of safer cities and towns in South Africa. For the latter they provided practical design recommendations (e.g. location of liquor outlets) for use by planning and design professionals as well as local government officials and councillors (Napier, et al. 1998:viii; Kruger 2001:189-197). In 2000 a manual was also publicised by the ISS and CSIR for community based crime prevention titled “Making South Africa Safe”. It explains why a community crime prevention strategy is needed, identifying the different role-players namely,

• law enforcement agencies
• municipalities
• community and business
• NGOs (non government organisations).

The manual guides the intended role-players in the development of a community crime prevention strategy, showing them how to plan and implement their crime prevention strategy in four stages. The first stage consists of a community audit, stage two the development of a strategy, the third entails the management of the strategy and the last stage the monitoring and evaluation of the strategy (Liebermann, Landman, Louw & Robertshaw 2000:iii).

The CSIR’s Division of Building Technology has since continued with further studies in the field of CPTED, striving to implement and adapt these principles to the South African situation. Together with the South African Police Service’s Social Crime Prevention Division they have designed a manual for crime prevention through planning and design. The manual contains practical recommendations on
how to plan, design and manage the physical environment to reduce crime (Kruger 2001:189-190).

The development for such manuals was necessary as every country faces a different situation, which influences how CPTED will be applied. The CSIR and ISS made use of research conducted by international institutes and their publications such as the UK Home Office, the US Department of Justice and US National Crime Prevention Council (NCPC), as well as the Canadian Department of Justice and the International Centre for the Prevention of Crime (ICPC) of Canada to form the foundation of their studies (Liebermann et al. 2000:ii).

4.5.3 National Crime Combating Strategy (NCCS)

The Crime Information Analysis Centre of the South African Police Service has also developed a training manual on the basic concepts of CPTED and its practical application thereof by the crime information analyst at provincial, area and station level (Coetzer 1999). Since 1999 it has been presented as a module of the Crime Information Analysis Course (CIMAC), which runs over a period of four weeks and 2 000 analysts have subsequently been trained in this concept.

The inclusion of the CPTED module in the CIMAC course is an outflow of the National Crime Combating Strategy (NCCS) of the South African Police Service. The NCCS is based on the NCPS as set out by the government and contains two strategies namely the geographic approach and the organised crime approach in the combatting of crime. The organised crime approach focusses on the identification of crime syndicates and Organised Crime Project Teams were established to neutralise these syndicates. In the geographical approach the geographical hot spots clustered in crime combatting zones are addressed (Strategic Management [s.a.]:30-31; Holtzhausen 2000:1-3). CPTED falls under the geographic approach to crime combatting.

The operationalism of the NCCS began on 22 June 2000 with the implementation of Operation Crackdown starting in Sunnyside, Pretoria. Its aim was the stabilisation of crime in crime ridden areas. The NCCS is executed throughout South Africa in 68 crime combatting zones, which include 219 police stations. These stations were chosen according to the following criteria (Holtzhausen 2000:1-2):

- areas where more then 50 percent of the more serious crimes occurred
- stations requiring a multi-agency approach in dealing with their crime situation
- stations with specific crime tendencies, for example bank robberies, cash-in-transit heists, attacks on farms and small holdings, possession of illegal firearms, taxi-violence and crimes against women and children
stations with security related areas such as urban terrorism
areas with civil disorder.

The boundaries of these crime combatting zones did not necessarily adhere to that of existing police station boundaries, even containing two or more police areas or provinces. The reason for this is that these zones include station areas next to the identified hot spots to prevent crime from spilling over to adjacent police stations (Holtzhausen 2000:1-2).

Napier et al. (1998) state that according to victimisation surveys, the fear of becoming a victim of crime amongst all South Africans are relatively high. Levels of fear among victims and non-victims are equally high as opposed to findings in other countries. This portrays how the fear of crime has infiltrated the whole South African society (Kruger 2001:191).

In Thinus Kruger’s paper “Bad guys don’t read the manual: CPTED in a developing country” he discusses the difficulties and opportunities associated with the implementation of CPTED in South Africa as a developing country. Kruger (2001:193) agrees that many of the problems experienced in South African cities and towns may not be different from those experienced in other countries. However, some of these problems might be more severe or unique than those experienced in other countries, influencing the impact and effectiveness of CPTED interventions applied in South Africa. These specific problems include the relatively high levels of poverty, the history of violence and the high levels of fear and crime. The biggest problem, however, is the attitude of many of the criminals who sometimes behave as if they will not get caught or do not care that they will get caught. Many criminals are also not afraid of using violence in the commissioning of a crime. These factors making the CPTED interventions in some cases of little use or null and void since criminals act with such impunity because of the threat they pose using violence (Kruger 2001:193).

4.6 CONCLUSION

The mechanical and physical milieu crime prevention model was examined in this Chapter to determine its applicability to serve as a foundation for the new theory of crime prevention in neighbourhoods. (See Table 4.1)

The mechanical and physical focus milieu crime prevention model is focussed on the situation wherein the victim work and lives. This model also falls under the new criminology, namely environmental criminology also known as situational crime prevention. It functions from the outset that criminals and crime will always be a part of human society. Thus the reduction and/or prevention of crime are
accomplished by means of changing the milieu of the victim whilst the criminal is only made part of the research process to determine why one environment is more attractive than another. This model started off by studying the distinctive and diverse nature of cities and housing estates and the types of planning and design which made them more susceptible to crime. Recommendations were made to change these susceptibilities, which led to the development of new theories such as the social design theory, defensible space concept and crime prevention through environmental design. Research in this field has broadened the scope and applicability of CPTED, ranging from the prevention of retail theft, prostitution, drug dealing, mugging, highjackings, theft of vehicles and residential burglary.

Countries such as the United Kingdom and the Netherlands have taken the principles of these theories and adapted them to suit their specific needs with South Africa following suit by the publication of manuals such as “A Manual for Community-based Crime Prevention: Making South Africa Safe”.

Table 4.1 Crime prevention model focussing on the milieu of the victim
MECHANICAL AND PHYSICAL MILIEU FOCUS

1. Pioneers

Elizabeth Wood
- Social design theory
- Typology
  - Improvement of visibility
  - Development of recreational areas

Jane Jacobs
- Demarcation between private and public space
- Provision for “eyes” on the street
- Relationship between crime and usage of space

Oscar Newman
- Defensible space theory
- Typology
  - Territoriality
  - Natural surveillance
  - Safe areas
  - Image and aesthetics

2. Further developments

- CPTED
- Typology
  - Territoriality
  - Surveillance and visibility
  - Location
  - Image and aesthetics
  - Access
  - Target hardening

3. Crime prevention and punishment

- Focus on the milieu of the victim to reduce the causes and opportunity for crime, as well as reducing the fear off and incidence of crime

The pliable nature of CPTED and its history of being applied in residential areas has made the mechanical milieu model deemed the most applicable for guiding the research on the crime prevention in neighbourhoods. Even though environmental design for crime prevention is not the only answer to
the prevention of crime it does in fact contribute to the prevention and reduction of crime as well as fear in the physical environment of the resident. CPTED can thus be used as a helpful tool in the prevention of crime in a residential neighbourhood together with other initiatives.

CPTED was consequently chosen as the foundation in addressing crime prevention in a residential neighbourhood. In Chapter 5, different aspects of residential neighbourhoods and the safeguarding thereof will be discussed to serve as a background for the HONC model. The characteristics of the three chosen neighbourhoods for the research namely, the Prairie Estate, Glossa Estate and Woodlands Lifestyle Estate will also be described.