Introduction to

Crime Prevention through Environmental Design (CPTED)

This introduction to CPTED is based on research conducted by CSIR Building and Construction Technology into the link between crime and spatial planning, urban and architectural design, and the use and management of the physical environment. The research involved international studies as well as primary research within the South African context, and as such the findings represent an interpretation particularly relevant to South Africa as well as developing countries in general.

1   INTRODUCTION

1.1   Background

The notion that the physical environment can either increase or reduce the opportunities for crime is not new. Internationally, it has been studied extensively over a number of decades. There is general consensus that if the environment is planned, designed and managed appropriately, certain types of crimes can be reduced. Environmental design has formed an integral part of many crime prevention initiatives in countries such as the UK, USA, Canada, The Netherlands and Australia.

The environment can play a significant role in influencing perceptions of safety. Certain environments can impart a feeling of safety, while others can induce fear, even in areas where levels of crime are not high. In this regard, planning and design measures can be utilised very successfully to enhance feelings of safety in areas where people feel vulnerable.

Despite the many benefits of CPTED, it should not be seen as a panacea and its limitations should be acknowledged. Environmental design interventions can only be implemented to address particular types of crime in particular locations. It is important to analyse each situation carefully before deciding on possible interventions. In many instances environmental design interventions are much more

effective if linked to other crime prevention measures. It is also important to consider ways of reducing the possibility of merely displacing crime.

1.2   The relationship between the environment and crime prevention

In order to understand the role of the environment in crime prevention, it is necessary to be aware of the elements of a criminal event. At the most basic level, the following are required in order for a criminal event to occur:

- a ready, willing and able *offender*;
- a vulnerable, attractive or provocative *target/victim*,
- a favourable *environment*; and

The person committing the crime is referred to as the *offender*. In a case where property is the target of an offence, this would be described as a *hard target*. If a person is the target, then she or he is the *victim*. The physical and social environment can either inhibit or enhance the opportunities for crime.

The basic elements of a crime can be reduced to three sets of characteristics, namely those of the **offender**, those of the potential **victim/target**, and those of the **environment** or the crime location (the physical location as well as the people and the activities that might deter or encourage the offender). These elements can be represented in the form of a "crime triangle" as illustrated in figure 1.

Victim/target
E.g. Middle aged man in luxury car

CRIME

Offender
E.g. 22 year old male with previous convictions

Crime location/environment
E.g. Poorly lit deserted driveway with overgrown roadside vegetation
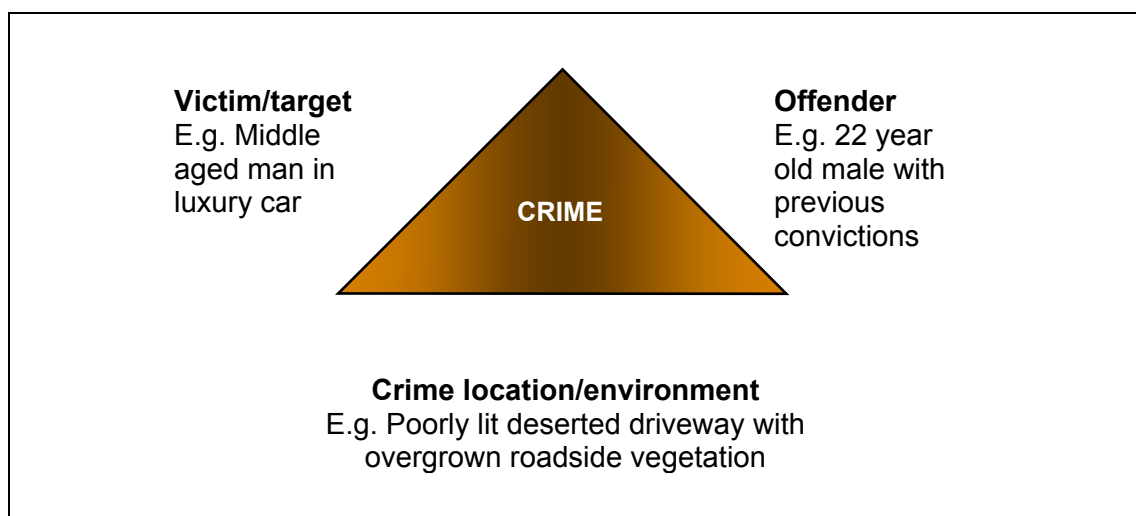
Figure. 1: *The basic elements of a crime*

Just as the occurrence of a specific crime depends on the presence of, and interaction between, the offender, the potential victim and the environment, so too does crime prevention involve a response to one or more of these elements.

Crime prevention could involve a number of actions that respond to a specific crime problem by using different approaches. Indeed, the more successful crime prevention strategies are those that focus on specific crime types (or a particular group of crimes) and then aim to address them through a combination of targeted interventions.

It is clear that the form and character of the built environment as the local setting of a crime can have as great an impact as each of the other two elements, namely the victim and the offender. A particular design feature or condition of the physical environment has the ability to hinder or enhance opportunities for crime to occur. It therefore follows that the role of the environment should be considered as part of any crime prevention initiative.

1.3   What is Crime Prevention through Environmental Design?

The study of the relationship between crime and the physical environment has resulted in various theoretical approaches and a number of schools of thought have emerged since the early 1960's. Some of the more familiar approaches include Crime Prevention through Environmental Design (CPTED, pronounced sep-ted), situational crime prevention and place-specific crime prevention. The CSIR CPTED team bases its work on a South African interpretation of international approaches as well as research conducted locally, and has defined CPTED as follows:

Crime Prevention through Environmental Design aims to reduce the causes of, and opportunities for, criminal events and address the fear of crime by applying sound planning, design and management principles to the built environment.

Within the South African context, it incorporates the following:

- physical **planning** and the planning approaches used at the strategic level;
- the detailed **design** of the different elements - for example, the movement system and the roads, the public open space system, individual buildings on their separate sites, etc., and
- the **management** of either the entire urban system or the different elements and precincts that make up the urban area.

Changes made to the built environment to reduce crime often elicit a response from offenders. People change their behaviour, crime shifts its locale, or the type of crime changes. Environmental design can therefore not always be totally preventive and for this reason crime prevention measures require constant review to continue to ensure their effectiveness.

It must also be remembered that what works in one situation might not be appropriate in another. Because numerous factors influence the type of crime that occurs, as well as where and when it occurs, it is necessary that planning and design principles work together with other crime preventive approaches. It is also essential to have a clear understanding of the possible causes of the different types of crime that are being addressed.

Some examples of CPTED initiatives

- Reducing the opportunities for crime through well-planned pedestrian routes, appropriately designed informal trading areas, mixed-use and extended hours of use of facilities.
- Limiting the potential danger posed by reducing and managing open spaces and vacant land.
- Providing appropriate lighting in parks, along streets and pedestrian routes etc.
- Providing adequate infrastructure and facilities such as roads and telecommunication so as to improve interaction between communities and the police.
- Managing the built environment efficiently, eg replacing light bulbs timeously, trimming trees and vegetation when and where required, collecting refuse regularly etc.

2   CPTED AT LOCAL LEVEL

2.1   Policy framework

In line with international thinking, South African legislation is geared towards *local level* crime prevention. It is acknowledged that crime needs to be addressed through the development of targeted, locally developed interventions that are based on an understanding of the local conditions where the crimes occur. Environmental design interventions, in particular, should be developed at a local level. In the majority of cases, the local authority will be in the best position to take the lead in this regard.

A number of policy documents frame the role of local government in supporting the SAPS with the development and implementation of crime prevention initiatives. In particular, the White Paper on Safety and Security, published in September 1998, clearly identifies local government as a key role-player in local level crime prevention.

Mechanisms such as Integrated Development Plans (IDP's) and Land Development Objectives (LDO's) compel local authorities to respond to the needs of their communities. Crime is often identified by communities as a priority problem, which places a particular responsibility on local authorities to provide safer living environments.

2.2   Stakeholders and participants

Environmental design initiatives should ideally be coordinated by the local authority in collaboration with the SAPS. Local authorities are responsible for most of the functions that relate directly to environmental design and are well positioned to adopt policies and introduce and enforce regulations in support of CPTED.

Key role-players within local government include professionals such as physical planners, urban designers, architects and landscape architects. In addition, those officials involved in transport and roads, parks and public open spaces, housing, as well as the strategic decision-makers and those involved with public safety, by-law enforcement etc. can also contribute significantly. Private sector practitioners involved with shaping the built environment also have an important role to play.

It is essential that local police stations are involved with environmental design initiatives, particularly crime prevention officers. They are usually able to identify problems related to the physical environment and they know where different types of crimes occur within there precinct.

Involve the users

Often the most important stakeholders in environmental design initiatives are the users of the spaces under consideration. These could be local residents, business people, pedestrians etc. These people are generally the most aware of the type of problems encountered in the areas that they use.

2.3 The role of planning and design professionals

When aligning local government functions with crime prevention objectives, officials involved with urban design, town planning, and architecture could be responsible for a number of activities. These include:

- developing and implementing design and urban planning guidelines aimed at reducing crime;
- designing retrospective improvements to physical environments in support of crime prevention;
- ensuring that building regulations are compatible with the principles of CPTED;
- promoting performance zoning in support of crime prevention and applying a flexible approach to zoning standards, for example reducing large areas of vacant land by identifying appropriate land uses;
- ensuring context-specific design and management of the built environment to reduce crime;
- contributing to the planning and implementation of integrated crime prevention strategies, especially with regards to aspects related to the physical environment; and
- assisting with the development of appropriate by-laws.

Communication between the different role players is essential. In particular, planning and design professionals should have a closer working relationship with the SAPS. Effective coordination of environmental design initiatives is also important. Due to the nature of their work, professionals involved with shaping the built environment generally have experience in coordinating the activities of various role-players. These professionals are therefore well placed to coordinate and drive environmental design initiatives.

3   THE PRINCIPLES OF CPTED

Based on international studies and guided by the local context, five principles have been identified which are crucial to establishing how the physical environment either reduces or increases the opportunities for crime. These principles are not in conflict with other sound planning and design principles. Although they are aimed at creating a safer physical environment, they also support the creation of well performing living environments in general. These are:

- surveillance and visibility;
- territoriality;
- access and escape routes;
- image and aesthetics; and
- target hardening.

- *Surveillance and Visibility*

Passive surveillance **is the casual observance of public and private areas by users or residents during the course of their normal activities.** *Active surveillance* **refers to surveillance by police or other agents whose express function is to 'police' an area.**

Passive surveillance is often referred to as the presence of 'protective eyes' or 'eyes on the street'. The extent of visual contact that people have with a space, together with the degree of their being visible to others, determines the extent to which they can intervene and whether the users feel safe. This depends on a range of factors that include windows, doors and other openings, the distances between buildings, the sizes of the public spaces, vacancy rates as well as the extent, degree and type of use that the space is put to. The zoning of areas of the city and the functionality of buildings are key elements in determining whether protective eyes are present day and night, or not.

Visibility is the degree to which an environment is made visible by elements such as lighting and uninterrupted lines of sight.

Surveillance is improved if there is good visibility. Dark or twisting streets, alleys, entrances and doorways can act as havens for potential offenders and increase residents' and visitors' fear of crime. The way in which lighting is designed and positioned, and the way roads and paths are laid out can obviate many of these problems and render both the physical environments as well as the users visible to others using the environment.

- **Territoriality**

Territoriality is a sense of ownership of one's living or working environments. Territoriality and people's sense of ownership are encouraged when residents identify with the spaces and where the space and its configuration are legible to them.

A sense of ownership and responsibility for a particular environment improves the likelihood of passive observers intervening (as modulators of a crime). Places should be designed and managed in ways that encourage owners/users to take responsibility for them and feel responsible for their use, upkeep and maintenance. Territoriality can be increased through clearly defining public and private spaces, utilising the human scale, limiting unused open space etcetera.

- **Access and Escape Routes**

Certain types of criminal events and sites are often deliberately chosen for their ease of access to escape routes by the offender prior to perpetrating the crime. Similarly, the availability of access and escape routes also add to the safety of potential victims.

Areas of refuge, such as vacant land, where people can hide and which have clear routes of escape from a crime are obvious havens for offenders. For example, houses or neighbourhoods near or adjacent to tracts of open land are often the targets of repeated burglaries. Car hijackings are often planned to allow quick escape. The layout of the transport routes and the juxtaposition of different types of space influence the ease of access and escape.

Clear signposting of streets, buildings and exit routes are important ways of assisting potential victims. The design of elements such as subways also needs to be considered carefully to reduce perceptions that one will not be able to escape from an offender.

Figure 2: *Vacant, overgrown land provides hiding place and easy access and escape routes for offenders*

- **Image and Aesthetics**

The image projected by a building or a public area in the city has been clearly linked to levels of crime and particularly to the fear of crime. This link is often referred to as 'crime and grime'.

Urban decay and its resultant degradation make people using these areas feel unsafe. Often this reduces the number of users, which could exacerbate the crime problem. The good design and the effective management of spaces in the city are necessary factors that prevent precincts from becoming actual or perceived 'hot spots' for crime. Vacant land that is not maintained or unoccupied buildings can both contribute to decay as do litter and the breakdown of services. The image of spaces can be improved by ensuring human scale in design, using attractive colours or materials, providing adequate lighting, and designing for high levels of activity.

Figure 3: *Derelict buildings impact negatively on the neighbourhood and can increase the fear of crime*

- **Target Hardening**

Target hardening reduces the attractiveness or vulnerability of potential targets by, for instance, the physical strengthening of building facades or boundary walls.

Walls around houses and burglar bars on windows are the most common examples of this principle. Target hardening is often the first solution that occurs to residents and designers because it often physically reduces opportunities for crime. However, the common mistake is that in so doing, other principles are violated. If target hardening of buildings obstructs lines of sight or provides havens that cannot be surveyed, the hardening is unlikely to be an effective crime prevention tool. Another form of target hardening that is becoming more prevalent in South Africa is the closing off of streets and neighbourhoods. However, this form of control has many adverse consequences that need to be considered and weighed up against possible benefits.

Figure 4: *High walls are a typical form of target hardening in South Africa. However, the principle of surveillance and visibility is violated.*

Figure 5: *A transparent fence allows for surveillance onto and from the street.*

Employing these principles in combination can increase the possibility of reducing crime. Each principle should not be viewed in isolation and the context within which it is to be applied should be taken into account. When applying any one of the principles the implications it has on any of the others must always be considered.

For instance, when building a high wall around a property (target hardening), the consequences of violating the principle of surveillance and visibility must be considered.

4   CONCLUSION

Environmental design is about more than the physical spaces – at its core lies community development in the broadest sense. The key to the success of any intervention that involves the planning and design of the physical environment lies in the extent to which the people using these environments are involved in the process.

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