Exploring Community Perceptions of Crime and Crime Prevention through Environmental Design (CPTED) in Botswana

Paul Cozens, *Curtin University* and

Paul Melenhorst, *Ararat Rural City Council*

Abstract

Crime Prevention through Environmental Design (CPTED) is a place-based crime strategy located firmly within the perspectives of post-industrial Western societies. It has been implemented in many developed countries in the United Kingdom (UK), North America, Europe, Australia, New Zealand and in parts of Asia and the Middle East. However, CPTED has found limited formalised use in the developing world. This paper investigates the application of CPTED to a non-Western setting in the developing world. It explores to what extent local perceptions of community safety align with the Western principles of CPTED in a case study of Gaborone, Botswana. The findings suggest the Western CPTED Audit and the non-Western Setswana respondents in the Community Safety Survey both indicated there were low levels of CPTED features in the environment. However, the local respondents reported high levels of personal safety. The features of CPTED appear to be identified in similar ways but may not be linked to feelings of personal safety in a non-Western context in the same way. CPTED concepts appear to be intact - but their transferability as a crime prevention strategy remains in question.

Key Words: perceptions; Crime Prevention through Environmental Design (CPTED); hegemony; the metropole; Botswana.

Introduction

Crime Prevention through Environmental Design (CPTED) is an increasingly popular approach to reducing crime in Western, post-industrial societies. This place-based crime prevention strategy is located

firmly within the hegemony of the metropole – it is a dominant perspective, which emanates from Western cities. Its origins lay in North America and the UK and it has been implemented in many developed countries in Europe, Australia, New Zealand, South Africa and in parts of Asia and the Middle East (Cozens, 2014). However, CPTED has found limited formalised use in the developing world or in non-Western contexts (Ekblom *et al.*, 2013).

In 2010, the United Nations estimated that approximately 3.4 billion people lived in urban areas (United Nations, 2010). This represents around half of the world's population and urban populations are projected to rise to 60% by 2030 (van Ginkel and Marcotullio, 2007). The United Nations Population Fund (UNPF) estimated that 93% of this growth would occur in developing countries with 80% in Asia and Africa (UNPF, 2007). The problems associated with rapid global urbanization (including crime) are therefore increasingly more significant at the 'periphery' of the developing World. Research repeatedly indicates that safety and security are primary concerns for citizens in both developed and developing countries (Vandershueren, 1998).

The United Nations (UN) established the World Urban Forum in 2002 to examine the impacts of this rapid urbanization. The potential for increased levels of crime has been identified as an important issue along with the need for improved crime prevention, including more effective use and application of CPTED strategies. The UN promotes the use of CPTED via the United Nations Human Settlements Programme (2007) and the International Centre for the Prevention of Crime (ICPC, 2008). CPTED seeks to 'design out' opportunities for crime before urban spaces are constructed and to modify existing environments in order to reduce crime. However, it has been argued that many applications of CPTED fail to use CPTED as a process and instead, apply it as an outcome - irrespective of local context (Cozens, 2011; 2014). This situation has increased importance in relation to non-Western contexts. Ekblom et al. (2013: 94) observed, "understanding the role of context is challenging within familiar Western settings. Understanding CPTED in more radically different setting might seem harder still."

For Connell (2006: 262), "one of the problems about northern theory is its characteristic idea that theory must be monological" - where one theory allegedly has transferable application to every context. Further, in relation to First Nation peoples, Tauri (2012) has asked why so much Western criminological research is carried out on their behalf without engaging with their communities. In her keynote speech at the British Society of Criminology Conference, Connell (2014) highlighted the need to understand indigenous knowledge as a way to reconstruct a more democratic social science.

This paper moves beyond the metropole to the periphery, and explores the application of CPTED to a non-Western setting in the developing world. It investigates to what extent the local indigenous Setswana community perceptions of crime align with the Western

principles of CPTED, in a case study in the capital of Botswana, Gaborone (southern Africa). The research seeks to develop some 'peripheral vision' and 'openly explore and reflect' on geographical assumptions and the universality of current understandings and applications of CPTED (Aas, 2012).

CPTED and dominant Western hegemonies

On a global level, the criminal justice system (CJS) costs an estimated US$424 billion per year (Farrell and Clark, 2004) and, is arguably, largely reactive and ineffective. In the USA, for example, 68% of prisoners were arrested for a new crime within three years of release from prison (Durose et al., 2014). Crime prevention strategies that go beyond the deterrence, punishment and rehabilitation promised by the CJS therefore have increasing appeal.

Place-based crime prevention approaches, such as CPTED are more proactive and seek to reduce opportunities for crime before crimes are committed. CPTED asserts "the proper design and effective use of the built environment [can] lead to a reduction in the fear and incidence of crime, and an improvement in the quality of life" (Crowe, 2000: 46). Broadly, there are six interrelated concepts; territoriality, surveillance, image management, access control, target hardening and activity support.

Territoriality seeks to promote notions of proprietary concern and a "sense of ownership" in legitimate users of space, thereby reducing criminal opportunities by discouraging the presence of illegitimate users. It includes symbolic barriers (e.g. signage; subtle changes in road texture) and real barriers (e.g. fences or design that clearly defines and delineates between private, semi-private and public spaces).

Promoting surveillance is a long-established crime prevention strategy. Opportunities for residents to observe the street can be facilitated by the design of the street, the location of entrances and the placement of windows. This surveillance is considered as a form of capable guardianship, which can potentially reduce crime since offenders who perceive that they can be observed (even if they are not), are less likely to offend, in the light of the increased potential for intervention, apprehension and prosecution.

Image management seeks to promote a positive image and routine maintenance of the built environment to ensure the continued effective functioning of the physical environment and this also transmits positive signals to all users. Poorly maintained urban space can attract crime and deter use by legitimate users. For example, vacant premises have been found to represent crime "magnets" providing opportunities for a range of deviant and criminal offences. This also links with the concept of crime attractors (Brantingham and Brantingham, 1998).

Access control uses spatial definition to deny access to potential targets. It uses real or psychological barriers to discourage unwarranted intrusion by offenders. Real barriers include a picket fence, a brick wall or a

hedge, for example. Psychological barriers can be created by surface treatments, a flower garden or a change in ground level. Inside a building, psychological barriers can be created by something as simple as a change in floor colour. Access to neighbourhoods can be controlled by traffic re-routing or by using barriers to convert a gridded street into a cul-de-sac, for example.

Target hardening is a long-established and traditional crime prevention technique and seeks to improve building security. It focuses on denying or limiting access to a crime target through the use of physical barriers such as fences, gates, security doors and locks. Target hardening is often considered to be access control at a micro scale (e.g. individual buildings).

Activity support uses design and signage to encourage acceptable behaviour in the usage of public space and places 'unsafe' activities (such as those involving money transactions) in 'safe' locations (those with high levels of activity and with surveillance opportunities). Similarly, 'safe' activities serve as attractors for legitimate users who may then act to discourage offending. It promotes the creation of on-site facilities such as day-care centres and organised playgrounds. Care should be taken to avoid conflicting activities overlapping.

CPTED is a process, and in theory, it can be configured to suit a range of local conditions (Crowe, 2000; Cozens, 2011). However, it has been argued that CPTED concepts are too vague (Ekblom, 2009; 2011; Johnson et al., 2014) and it is often applied as an outcome, rather than a process based on crime risks in the local context (Cozens, 2014).

Although a detailed discussion is outside the scope of this paper, there are a range of criticisms, limitations and contradictions about CPTED (for a review see Cozens et al., 2001; 2005; Armitage, 2014).

Armitage (2014) maintains there is a lack of flexibility in the principles, guidance and application of CPTED. Standards are often rigidly applied rather than adapted to a specific context. This may be linked to the culture of agencies involved, such as police and security consultants, who do not traditionally challenge instructions. CPTED is also delivered in a non-standardised manner across and within most countries. This relates to both who is responsible and how CPTED is applied. This lack of consistency hinders comparison. There is also confusion in CPTED, relating to the impact of through movement on crime. On one side of the debate are those advocating increased connectivity, not for crime prevention reasons, but to promote pedestrian movements and reduce carbon emissions. Here, the grid network is the preferred option. On the other side, the criminological evidence supports the use of the cul-de-sac layout while many other negative non-crime-related issues are also linked to this layout. The polarised nature of this debate has oversimplified issues and resulted in unnecessary confusion on a topic for which there is largely unambiguous academic evidence. Armitage (2014) also raises a note of caution about the lack of clarity in the scope of CPTED and its definitions and meanings (Ekblom, 2009; 2011; Johnson *et al.*, 2014). Confusion can result from a

misunderstanding of what all the concepts actually mean, where they all begin and end and how they might sometimes work against each other. For example, a large brick wall at the front of a residential property provides access control – but also limits surveillance opportunities.

CPTED has also arguably failed to align with the objectives of other agendas such as sustainability, walkability and public health (Cozens, 2014; Armitage, 2014). CPTED can make valuable contributions here, but the crime prevention focus needs to be balanced alongside other agendas.
CPTED has also been accused of failing to innovate and adapt to change in terms of modes of delivery and focus. Following economic crisis, few of the forty-three police forces within England and Wales for example, have adapted in the light of cutbacks (Armitage, 2014). Adapting to the changing nature of crime, away from the traditional focus on acquisitive crimes is another CPTED weakness.
A further limitation of CPTED relates to the inconsistent empirical findings about the effectiveness of territoriality (e.g. see Cozens et al., 2001), partly due to the ambiguity and confusion at both the theoretical and conceptual levels. CPTED assumes that guardianship occurs in locations where opportunities for surveillance exist. However, this expression of territoriality is not automatic or universal.

There is a limited understanding of how specific CPTED concepts work in (or not) and in what context they work most effectively. Evaluations commonly focus on measuring CPTED features at a particular environmental setting and measure levels of crime before and after environmental design modifications. Others measure CPTED features at sites exhibiting crime (e.g. burglarized properties) compared with locations without crime (e.g. non-burglarized houses) and some studies investigate CPTED features and fear of crime (see Cozens et al., 2001 for a review). While useful, these studies do not provide insights in the precise mechanisms underpinning any reductions in crime.

Significantly, CPTED can be abused - and can result in highly negative outcomes. Firstly, too much CPTED can result in over-fortressification and environments with too much security, which detracts from the livability of a location. Secondly, good CPTED spaces, which are capable of being defended, can become 'undefended', where fear and community withdrawal discourage residents from acting to defend their neighbourhoods. CPTED can also be used for illegal purposes, where gangs/criminals use the concepts to protect their own illegal activities. This is known as 'offensible space' and along with 'undefended space', demonstrates how the social fabric of a place can reduce the functionality and effectiveness of CPTED features.

Importantly, Ekblom et al. (2013: 94) observed how "few studies exist of CPTED in non-Western contexts, and [there is] little international comparative research". Ekblom et al. (2013: 94) make the point "much of the concept's meaning may be conveyed through buried, unexamined cultural assumptions". They explored CPTED in the relatively westernised city of Abu Dhabi (United Arab Emirates) concluding "while transferring

CPTED requires significant cultural, country and climactic adaptations, the main concepts seem to be intact and universal" (Ekblom, et al., 2013: 110). The transferability of CPTED will be tested and revealed initially, by the success or failure of guidance based on these principles over the coming decades. In addition, its transferability will also be tested in the future in terms of whether the principles stand up in very different contexts, for example, in urbanising African cities. Ekblom and colleagues (2013) call for more research in these areas.

As part of the discourse on hegemonic imperialism, critics have disputed the validity of the internationality of planning and design strategies (including CPTED) (e.g. Tauri, 2012). In Botswana, some (e.g. Larsson and Larsson, 1984) have been critical of the appropriateness of 'other' planning paradigms being imposed on the African urban form. Urbanisation creates significant social change and Rajagopal (2010) argues; "design for social change is a pudding that takes a long, long, long time to bake. Inexperienced Western bakers trying to cook their first pudding in an Indian or African oven are unlikely to be successful, and will probably leave a bitter aftertaste".

CPTED has not thus far been formally utilised in Gaborone, Botswana. This research sought to explore its potential relevance and applicability. Reflecting on Rajagopal's analogy of baking a cake, an objective of the research was to ascertain if the Western CPTED ingredients were understood and were seen to be appropriate or not.

Background: Gaborone, Botswana

Botswana has an archaeological record of indigenous San and Bantu habitation spanning 100,000 years. It is a sparsely populated (c. 2 million), landlocked country of 581,000 square kilometres, in southern Africa. Botswana's urban settlements represent about 61% of the overall population, which is growing at 2.7% per year (World Bank, 2012). Along with the development of mining towns and regional centres, the urban conglomeration that has received most has been the capital, Gaborone, which has a population of around 200,000 (Johnson, 2006). It was created in the 1960s, and is a relatively stable and prosperous city with a mixture of informal, traditional and modern elements (Kent and Ikopoleng, 2011).

Grant (1995) has noted the Setswana spatial archetype - that agriculture has always been organised according to patterns of 'urban' settlement and the significant cultural achievement of the Botswana people is as community makers and town builders. Indeed, the first Europeans to visit Botswana in the early 1800s (including the missionary explorer David Livingstone) "invariably expressed both astonishment and pleasure at finding themselves amongst people who were creators of what they themselves termed 'towns'" (Grant, 1995: 61).

It is important to acknowledge these ideas of harmony and community as being intrinsic to an understanding of spatial safety and

crime prevention and important in understanding perceptions of community risk and safety. This research investigates how people perceive crime and their local spatial environments and how this may (or may not) be aligned with the principles of CPTED.

Rising crime has been an issue in Botswana (Johnson, 2006) and Table 1 compares rates for different types of crime with those in the USA and in Japan in order to provide some global context to some of the issues. Clearly, acquisitive crimes such as robbery, burglary and vehicle crime are not a major crime problem in Botswana. However, rape, assault and murder are extremely high. This may mean that in terms of CPTED, it might affect how important and relevant residents and policy makers see this type of intervention as being, since it directed primarily at acquisitive crime.

Table 1. A Comparison of recorded crime rates

	Crime rate per 100,000 people		
Type of Crime	Botswana (1996)	USA (2001)	Japan (2000)
Murder	12.87	5.61	1.1
Rape	68.46	31.77	1.78
Aggravated assault	369.30	318.55	23.78
Robbery	72.88	148.50	4.08
Burglary	7.65	740.80	233.6
Car theft	111.87	430.64	44.28
Combined rate for all offences	1,338.54	4,160.51	1,709.88

Source: Data derived from Interpol (Jackson, nd; Winslow, 2006)

There are obviously significant cultural differences between the three countries and also in how crime data is collected and analysed. However, this simplistic snapshot does reveal differences in terms of the proportion of crimes against the person and crimes against property. Lack of crime data at the scale of this precinct in Gaborone means it is impossible to say if these national trends are reflected locally.

The crime rate in Botswana has been referred to as being 'moderate compared to industrialized countries' (Jackson, nd). More detailed analysis of the spatial distribution of crime in Gaborone is certainly necessary, and would contribute much to our understanding of crime within the city.

The 'African Mall' (see Figure 1) is one of Gaborone's original retail precincts included in the first Development Plan (1963) which segregated housing into high, medium and low-cost precincts (Ministry of Local Government et al., 1991). Based on a grid layout, but less rigid, the African Mall has grown organically over the decades since independence (1966). The African Mall's built form is generally to human scale and is an eclectic mix of ad-hoc vernacular shelters; traditional boer-style thatched stoops; post-independence asbestos sheds and 1970s concrete modernist blocks.

The overall effect is poorly articulated with a visual illegibility that is often confusing and discordant.

Figure 1. The African Mall, Gaborone, Botswana
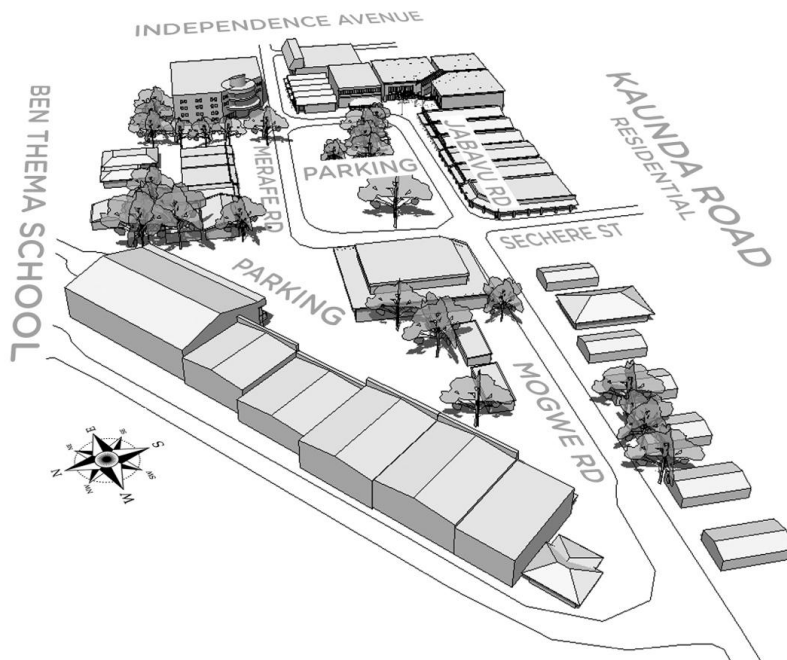
Research design and methodology

The aim of the study was to investigate if CPTED ideas were perceived in similar ways in a non-western-context. The research design was a case study approach of a location in and around a shopping mall in Gaborone, Botswana (see Figure 1). This was chosen due to its primacy as the capital city and one of the fastest growing urban centres in Botswana. The area of study is centrally located in the older part of Gaborone, is a well-established mixed-use precinct and is a transit node that is well patronized but has obvious amenity issues through poor design and minimal maintenance. The objectives of the research were to:

1. Investigate if non-Western local Setswana people perceive Western ideas about CPTED in similar ways.
2. Explore if CPTED is perceived to affect community safety in a non-Western context.

       The research design was composed of two methodologies. Firstly, a CPTED Audit was conducted on the case study area to measure the presence or absence of CPTED features (territoriality, surveillance, image / maintenance, access control, activity support and target hardening). The CPTED Audit was conducted by one of the authors, using observational analysis and photographic documentation undertaken late in 2012. An

overall CPTED Audit Score (expressed as a percentage) for the site was developed from these observations. The CPTED Audit represents the Western perspective of the site.

Secondly, a Community Safety Survey was conducted on the perceptions of personal safety, crime and CPTED of the local users of the area. Fifty random intercept surveys were completed and contained closed, binary, yes/no questions. Ninety-six percent of the respondents were of Setswana origin and these surveys were subsequently translated into English. Two questions focused on whether design promoted visibility and if intervention was perceived to be likely if a crime was observed. The Community Safety Surveys also asked eight questions broadly relating to CPTED. A CPTED Perceptions Index was generated from the composite scores from these responses, again creating a percent CPTED score. This represents the non-Western perspective of the site.

Both the data from the CPTED Audit and the CPTED Perceptions Index from the Community Safety Surveys are expressed as percentages to enable some comparability. This assisted in evaluating if/how the CPTED Audit observations linked in any way with the responses from the Community Safety Survey in terms of CPTED qualities and levels of personal safety.

The authors acknowledge several limitations to this study. Firstly, the findings are based on a survey of fifty respondents. A larger sample size and further work is therefore necessary to confirm or refute the reliability of the findings reported in this paper. Secondly, the site selected for study (the Mall area) may not be the most appropriate setting for analysis - particularly for measuring territoriality. Further studies could instead, investigate residential areas. Finally, the instruments for measuring used in the CPTED Audit and questions in the Community Safety Survey could be strengthened and tested. The CPTED Audit is largely subjective and reliability and repeatability tests could be applied to verify the efficacy of the audit tool. Finally, no local crime data could be gathered to link with the insights from the CPTED Audit and the Community Safety Survey.

Key Findings – The CPTED audit

One of the authors has visited the African Mall many times. The general impression is one of transience, fragmentation, poor maintenance and a disparate amenity that reinforces a lack of care and ownership. In terms of the CPTED Audit, observations on the six concepts are briefly discussed below.

1. Territoriality
The African Mall is a precinct consisting of freehold allotments, pedestrian thoroughfares and public parking spaces. Spatial delineations are not well defined with parking bays cutting across pedestrian thoroughfares; pedestrian walkways encroaching on private allotments; and private property that has amorphous connections to the road reserve. Despite

being embedded into a larger urban fabric and surrounded by residential neighbourhoods, a school and other commercial activity, the African Mall has an inward facing orientation, focusing on a central car park, which is the nucleus of the precinct.

There is poor street alignment with many building setbacks away from the street and the ends of many buildings are blank walls with no activity for passersby. There is no directional, locational and information way-finding system in the African Mall. Signage is limited to locational signs for business and commercial advertising. Many of these signs are handmade or very poorly maintained, which greatly impacts on the general visual amenity. General shop front design is also of a poor standard. There is no street furniture such as seating, water fountains, or ramps for the disabled.

2. Surveillance

Sightlines vary a great deal across the precinct with views along Mogwe Road generally above 50 metres. Other areas such as the pedestrian entrance to the north-east have very poor sightlines due to overgrown vegetation and visual discontinuities with buildings. All external building corners have limited lines of sight and are constructed from non-transparent materials such as brick or concrete, instead of glazing.

There is activity on the streets in the African Mall (commonly from 08.00am – 9.00pm), however this is mostly informal trading such as fruit, newspaper and mobile phone credit vendors, or loitering and delinquent activity. Most eateries (such as Nandos, Chicken Palace, Planet Sports Café, Barcelos, Gold Coin Restaurant) do not have outdoor eating areas, preferring to create eating environments that do not engage with the street. Whilst there are a number of two-storey buildings, they generally have poor surveillance as windows are small, there were no balconies and they were used by hairdressers, tailors, and other merchants, rather than for cafés and eateries, or for residential use.

Video surveillance is being used inside some shops, however there is no evidence of CCTV cameras or security guards in public areas. Public lighting consisted of eight halogen street lamps, which did not sufficiently light car parking and pedestrian areas. At the time of the audit there were two non-functioning lights (they appear not to have been vandalised). Pedestrian routes are also poorly lit with only ambient light from surrounding buildings illuminating the walkways. Shop interiors are mostly well-lit with fluorescent security lighting in public spaces.

3. Image management

Maintenance by Gaborone City Council, building owners and tenants is mostly poor. There was widespread litter, some graffiti, indications of vandalism on empty commercial properties and a general sense of urban decay with dirty buildings, potholed roads, faded and damaged signage and disintegrating paving. At the time of the audit there were a number empty office spaces, however there were no vacant shops. The African Mall has

five outlets serving alcohol and one bar. It is difficult to ascertain whether this acts as a tipping point for the overt drunkenness documented during the audit or whether drinking was happening elsewhere (for example, in 'shebeens' - unlicensed street bars). The conspicuous consumption of alcohol and displays of inebriation detract from the Mall's amenity and deter people from traversing areas where these people are.

4. Access control

The African Mall has very permeable access for pedestrians and limited access for vehicles. There is informal pedestrian access between buildings all around the periphery and from the public transport points along Independence Avenue and Kaunda Way. Vehicle access is also provided from these heavily-trafficked roads providing continual passive surveillance results from this congestion. The African Mall is also punctuated by 'leaking' walkways between many buildings that provide good escape routes as well as entrapment points for offenders to exploit and victims to be caught in. The African Mall adjoins Bontleng and White City, which are known to be crime generators, therefore poor access control allows potential offenders entry and exit points in the Mall.

5. Target hardening

Most ground floor shops in the African Mall have implemented defensive tactics to combat burglary. This includes chained and padlocked security bars and shutters on windows and doors and most shops have onsite security guards.

6. Activity support

The African Mall is a mixed-use retail and commercial precinct with about 60 shops and businesses, 10 restaurants, bars and a bottle shop. There is limited night-time use with activity generally between 8 am to 9 pm. Also, there are no residential properties in the Mall, which means there is no extended surveillance outside of these hours.

Generally, the African Mall has the spatial fundamentals to be a thriving public arena, yet has some core safety issues related to the presence of alleyways and entrapment spots, interrupted sightlines, poor levels of maintenance, drunkenness and delinquency and proximal crime attractors and crime generators. In addition to these general observations, the presence or absence of CPTED features were audited using a binary, yes/no framework. Across the six CPTED concepts, 24 questions were used in the audit to record the presence or absence of these elements in the built form. Although it is difficult to measure territoriality and the motivational aspects of space, legibility, way-finding, signage and the definition of zones are important elements to this concept.

There were five elements audited for 'Territoriality' (see Table 2). For 'Surveillance', the site was audited in terms of six elements, as set out in Table 3. For 'Image management', the site was audited in terms of six elements, as set out in Table 4. For 'Access control' (and target hardening),

the site was audited in terms of five elements, as highlighted in Table 5. Finally, for 'Activity support', the site was audited in terms of three elements, as highlighted in Table 6.

Table 2. Elements of Territoriality Audited

1. Are the pedestrian routes clear and legible?	N
2. Are entry points into the area visible and well-defined?	N
3. Are there signs to locate where you are?	N
4. Are there sufficient way-finding maps / signs to key destinations?	N
5. Are there confusing levels/zones?*	N

Note: * responses reverse coded

Table 3. Elements of surveillance audited

1. Generally, can you see clearly what is ahead of you?	Y
2. Are there areas where you can't be seen or heard?*	Y
3. Are there entrapment spots (e.g. stairwells / recesses)?*	Y
4. Are there places where offenders could easily hide and conceal themselves?*	Y
5. Are the footpaths well-lit?	Y
6. Can you identify a person's face at 15metres?	Y

Note: * responses reverse coded

Table 4. Elements of Image management audited

1. Does the aesthetics of the site attract people?	N
2. Is the site well-maintained and cared for?	N
3. Are there empty buildings or spaces at the site?	N
4. Is there a presence of drunkenness or nuisance?	N
5. Is there evidence of rubbish / graffiti / vandalism?	N
6. Is the surrounding area well-maintained and cared for?	N

Table 5. Elements of access control (and target hardening) audited

1. Are there multiple entrances and exits to and from the site?	Y
2. Are there pathways that lead to unpredictable places?	N
3. Is there a security / police presence at the site?	N
4. Are target hardening measures evident (e.g. locks / security grills)	Y

Table 6. Elements of activity support audited

1. Is the site vibrant and well-used?	N
2. Is there a diverse range of land-uses at the site?	N
3. Are there restaurants / cafes / cinemas / play areas to attract people?	N

Each of the elements for each of the CPTED concepts were scored (yes/no) and recorded, whereby positive responses scored 1 and negative responses

scored 0. As seen in Table 7, the African Mall scored 6 out of a possible 24, representing a CPTED Audit score of 25%.

Table 7. African Mall CPTED audit scores

CPTED Theme	Score
Territoriality	1 (out of 5)
Surveillance	3 (out of 6)
Image/management	0 (out of 6)
Access control (and target hardening)	2 (out of 4)
Activity support	0 (out of 3)
Total CPTED Audit Score	6/24 (25%)

The data in this table reveal that, overall, the African Mall did not score particularly highly in terms of the presence of several CPTED features. According to the CPTED audit, the built form did not promote or use CPTED concepts very extensively. It scored poorest in terms of the CPTED concepts of image/management and activity support and there were not high levels of territoriality observed at this site. Some evidence of access control/target hardening was in evidence and surveillance opportunities were most evident in the area of African Mall.

Key findings – Community safety survey

Part of the community safety survey asked respondents if they felt safe. For the fifty respondents, perceived overall safety was reported at 82% (n=41) and 52% (n=26) after dark. Interestingly, perceived daytime safety was 100% (n=50). This is arguably a critical finding in the light of the low levels of CPTED qualities observed in the Western CPTED Audit.

The respondents were also asked what sorts of crime they felt were taking place in the area. Sixty-six percent of respondents (n=33) felt drunken nuisance was common while 50% (n=25) perceived pick-pocketing to be an issue. Of slightly less concern were theft (36%, n=18), common nuisance (32%, n-16) and burglary (24%, n=12). Finally, a smaller proportion of respondents felt that assault (16%, n=8), vandalism (12%, n=6) and prostitution (6%, n=3) occurred in the area.

Given these concerns, it is perhaps surprising that the respondents reported such high levels of perceived safety. Exploring the respondents' perceptions of CPTED features could provide some insights into this point.

For the fifty community safety surveys, in addition to perceived safety and perceived crime, eight yes/no (binary) questions probed key elements of CPTED. These questions and the responses to them are listed in Table 8. These questions covered a range of CPTED qualities that could be compared to some degree with the findings from the CPTED Audit.

These perceptions have some similarities with the observations in the CPTED Audit. Fifty percent of respondents observed litter/rubbish/graffiti, while 60% witnessed people urinating/rough sleeping. This was mirrored by the observations in the CPTED Audit, where the CPTED concept of 'image/management' scored zero. Sixty-eight percent of respondents surveyed indicated that there were places for offenders to potentially conceal themselves, which also was observed in the CPTED Audit.

In terms of surveillance – both the CPTED audit and the community safety surveys appear to align to some degree. The surveillance element scored highest in the CPTED audit and most respondents in the community safety survey felt that if they were being threatened, people would see/notice them and potentially assist.

A lack of access control to the site and absence of police/security was also observed in the CPTED audit and by respondents in the community safety survey.

Table 8. Community safety survey – Perceptions of CPTED

	% Yes	% No	% Don't know
If you were being threatened, do you think other people would see/notice you?	60	8	32
Do you think people would assist you if they noticed a crime-taking place?	58	16	26
Are properties protected with burglar bars, alarms and security features?	42	24	34
Have you noticed any security cameras in the African Mall?	12	70	18
Is the mall free from places where criminals could hide?	12	68	20
Have you seen any security guards or police in the mall today?	22	78	0
Is the area clean and free from rubbish and graffiti?	46	50	4
Is the area free of nuisance activities (e.g. people urinating, rough sleeping, street kids)?	28	60	12
Total (average % scores)	35	47	18
CPTED Perceptions Index		35%	

Reflecting on the overall CPTED scores, the CPTED audit scored the site at 24%, while the community safety survey recorded a CPTED Perceptions

Index of 35%. Clearly, both data sets reveal that CPTED features were perceived to exist at low levels at the site. Crucially, in the community safety survey, the Setswana reported high levels of perceived personal safety in an environmental setting with low perceived levels of CPTED. This may indicate CPTED concepts remain intact in that they were seen to be low in the CPTED audit and the community safety surveys. However, given the high levels of personal safety, CPTED concepts may not be as transferable in terms of their crime reductive potential.

This difference could reflect the fact that the fifty local respondents were more familiar with the site. To some extent, they might not have noticed, were less fearful and were more accepting of some of the visual cues which the Western CPTED audit highlighted as being problematic.

Conclusions

This paper has explored the perceptions of fifty indigenous Setswana citizens of Gaborone of the Western hegemonic concept of CPTED. The findings suggest that traditional CPTED principles are not being implemented within the design and built form of this area. The CPTED audit and the community safety surveys both reported low levels of CPTED features within the environment. Although exploratory, these findings suggest CPTED is identified within the environment in similar ways by a Western CPTED audit and by the non-Western citizens in the community safety survey. What is interesting is that the lack of CPTED did not equate to reduced levels of perceived safety. Given the differences in crime profiles, this may mean the potential transferability of CPTED to the non-Western context of Gaborone, Botswana is highly questionable. Further research is certainly needed to corroborate these findings using more qualitative approaches such as in depth interviews and focus groups.

Traditional Setswana settlement patterns and spatial structures are based on a familiar hierarchy of private/semi-private/semi-public/public spaces (see Figure 2). The Setswana hut (the 'rondavel') is the basic spatial unit which is enclosed by a 'lolwapa', a transitional space defined by a low decorated wall. Beyond this is the 'patlelo', the communal area formed by the horseshoe configuration of allotments around which people live and interact.

Further research could also be directed at investigating these more traditional Setswana settlements. It could explore how hierarchies of space are used and how traditional norms and behaviour are played out. This could potentially be contrasted with Western ideas about CPTED and defensible space.

Figure 2. Traditional Setswana settlement patterns and spatial structures
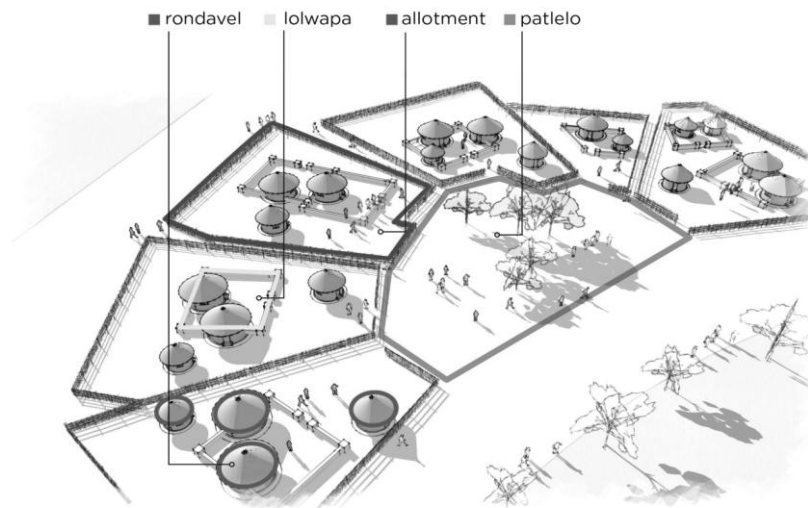
Exploring Setswana perspectives on what local crime problems are and how they might be tackled is also a potential area for further enquiry. A comparative study of the surrounding 'crime generators' of Bontleng, Old Naledi and White City may also shed some light on this complexity. Finally, future work could also utilise local crime data to ascertain if the data correlates in any way with the CPTED audit and/or the community safety survey.

In terms of the future, participatory processes, particularly important in the African context, are essential in the development and application of CPTED. For Connell, (2006: 263) "From the periphery, the metropole often appears as a solid block, edged with privilege". This research has sought to breach this barrier and explore Setswana ideas about crime, CPTED and urban space in Gaborone, Botswana. Returning to Rajagopal's pudding analogy (2010), some of the CPTED ingredients appear to be 'intact' and recognised. However, they may not be universal and their transferability is highly questionable and in need of further detailed investigation.

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PAUL COZENS is a Senior Lecturer in the Department of Planning and Geography, Curtin University, Perth, Western Australia. Email: P.Cozens@curtin.edu.au

PAUL MELENHORST is an Urban Planner at Ararat Rural City Council in Victoria, Australia.