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Original Citation

Armitage, Rachel (2014) Crime Prevention Through Environmental Design. In: Encyclopedia of Criminology and Criminal Justice. Springer, London. ISBN 9781461456919

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Crime Prevention Through Environmental Design

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Overview

This chapter examines an approach to crime reduction which differs from many others in that it focuses, not on the offender or their reasoning for committing an offence, but upon the environment in which an offence takes place. This approach also differs in its consideration of who should hold responsibility for the reduction of crime, with a focus, not solely upon the traditional criminal justice system agencies, but also upon planners, architects, developers and managers of public space. The approach is based on the presumption that offenders will maximise crime opportunities, and therefore, those opportunities must be avoided (in the first place) or removed (following the emergence of a crime problem). In the 2001 publication 'Cracking Crime through Design', Pease introduces the concept of design as a means of reducing crime, but more importantly, the premise that it is the moral responsibility of many different actors and agencies to improve the lives of those who may fall victim to crime, those who live in fear of crime, and (less obviously) those who will, through the presentation of unproblematic opportunities, be tempted into offending. In the case of crime prevention through environmental design (CPTED), it is the planners, designers, developers and architects who risk acting (as Pease paraphrases the poet John Donne) as the gateway to another man's sin.

CPTED is an approach to crime reduction (that may be described as a measure, programme or intervention) which aims to reduce crime through the design and manipulation of the built (and sometimes natural) environment. It focuses predominantly upon 'designing out' opportunities for crime before they occur – for example at the pre-planning or planning stage – although some interventions take place post-development, in response to a crime problem which has emerged.

A commonly used formal definition is that used by Tim Crowe who defines CPTED as: *“The proper design and effective use of the built environment, that can lead to a reduction in the fear of incidence of crime and an improvement in quality of life...The goal of CPTED is to reduce opportunities for crime that may be inherent in the design of structures or in the design of neighbourhoods”* (Crowe, 2000, p. 46). Ekblom (2011) proposes a redefinition and presents the following alternative, which introduces several points not included within Crowe's definition, including the balance between security and contextually appropriate design and the possibility of intervening at different stages between pre-planning and post construction. Ekblom states that CPTED is: “Reducing the possibility, probability and harm from criminal and related events, and enhancing the quality of life through community safety; through the processes of planning and design of the environment; on a range of scales and types of place, from individual buildings and interiors to wider landscapes, neighbourhoods and cities; to produce designs that are 'fit for purpose', contextually appropriate in all other respects and not 'vulnerability led'; whilst achieving a balance between the efficiency of avoiding crime

problems *before* construction and the *adaptability* of tackling them through subsequent management and maintenance” (Ekblom , 2011, p. 4).

Early proponents of CPTED largely approached the subject from a planning, urban design and architecture perspective (Jacobs, 1961, Newman, 1973) with Jeffery coining the phrase ‘crime prevention through environmental design’ in his 1971 book of the same title. Whilst this period saw the development of what are still considered to be the key principles of CPTED, the main focus of these studies was upon the influence of the environment on human behaviour in general (Coleman, 1986) as opposed to the reduction of specific crime types.

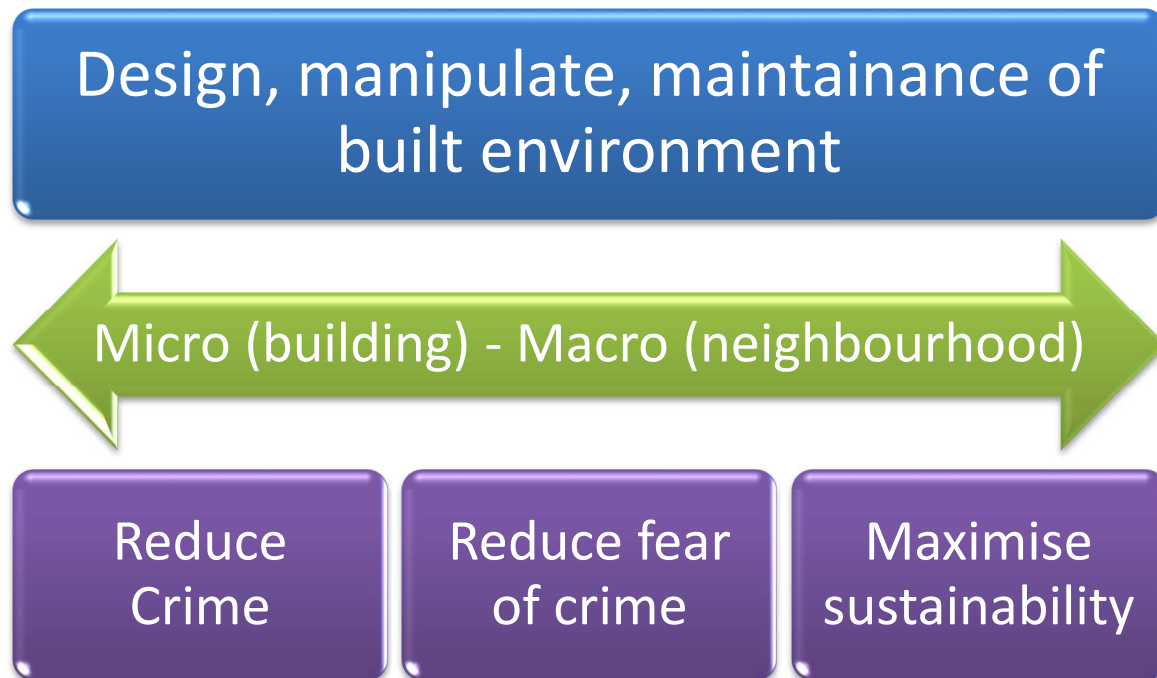
The move towards a practical application of the principles, focused largely upon the prevention of acquisitive crimes (such as burglary and car crime) and tailored towards crime reduction practitioners (through training and guidance), emerged in the 1980s with (amongst others) work conducted by Brantingham and Brantingham (1981), Poyner (1983) and Poyner and Webb (1991).

More recently, research within the field of CPTED has focused upon the *effectiveness* of both the individual and collectively applied principles of CPTED measures in reducing crime and the fear of crime (by authors such as Armitage, Hillier, Pascoe, Cozens and Kitchen), the *process* of applying CPTED principles within police and planning environments (by authors such as Kitchen and Monchuk), the development of CPTED

based *risk assessment tools* to predict (and prevent) risk (by authors such as Winchester and Jackson, Van der Voordt and Van Wegen and Armitage), and a wider approach to the potential benefits of such interventions including the impact upon environmental and social *sustainability* (by authors such as Cozens, Kitchen, Dewberry, Pease and Armitage and Monchuk).

Given a widening of the focus to include the process of application and consideration of benefits beyond crime reduction, such as social and environmental sustainability, a more appropriate definition of CPTED might be: The design, manipulation and management of the built environment to reduce crime and the fear of crime and to enhance sustainability through the process and application of measures at the micro (individual building/structure) and macro (neighbourhood) level. This definition is represented in figure 1 (below).

Figure 1: Crime Prevention through Environmental Design



Principles of CPTED

The principles of CPTED have been presented by several authors, including, but not exclusively Poyner (1983), Crowe (2000) and Cozens *et al* (2005) and adapted across different countries to form the attributes of safe places/environments within planning policy and guidance (for example, *Safer Places* within England and Wales). Poyner (1983) outlined the principles as surveillance, movement control, activity support and motivational reinforcement. Cozens *et al* (2005) extended this to include the seven principles of defensible space, access control, territoriality, surveillance, target hardening, image and activity support. The following summary presents a basic introduction to these terms.

Defensible space

Defensible space is the creation of buildings/enclosures/spaces which allow/facilitate/help the residents of that space to keep potential offenders out. The term was coined by Oscar Newman (1973) who suggested that the physical design of a neighbourhood can either increase or inhibit people's sense of control over the spaces in which they reside. Newman categorised space into public (for example, the road in front of a property), semi-public (for example, the front garden), semi-private (for example, the back garden) and private (inside the property). He argued that if space is defensible, it will be clear to the owner/user of that space, and to non-legitimate users, who should and who should not be in this space. CPTED interventions ensure that space is clearly demarcated, that it is clear who has control/ownership/rights over that space and that potential offenders have no excuse to be in that space (see discussion of 'permissions' in Wortley and Tilley, this volume). CPTED interventions would rarely achieve this through the installation of physical barriers; rather interventions would include the more subtle measures such as a change in road colour and texture or a narrowing of the entrance to the development to mark the area as private.

Territoriality

Territoriality involves the human emotion/response to the space which they define as their own. Physical responses to territoriality might include a resident marking an area as their own through the installation of a house sign or gate. Emotional responses to territoriality would include a resident's feelings of intrusion or infringement should a person enter what they consider to be their space. Thus, territoriality refers to the human motivation to control the space which they believe is theirs, be that through the legal ownership of that space or through their adoption and management of that space. Whilst Cozens *et al* (2005) separate defensible space and territoriality, a more concise

summary of CPTED principles might categorise defensible space alongside territoriality, given that the physical creation of defensible space aims to create territorial control over that space.

Access control

Access control refers to the design of buildings and space to actively keep people out. Whilst this principle has traditionally been referred to as 'access' control, perhaps due to its roots in more traditional situational crime prevention measures to restrict entry into buildings and rooms within buildings, within CPTED the aim is much wider. What has been referred to as access control encompasses the aims: 1) To limit the likelihood that offenders will become aware of that area as a potential target (see discussion of awareness space within Wortley and Tilley's summary of Crime Pattern Theory); 2) To make it more difficult for offenders to navigate into, out of and within an area should they select it as a target; 3) To increase the *physical* difficulty of entering a building/space should offenders become aware of the area as a target; 4) To increase the difficulty *psychologically* for offenders to enter and move around an area without feeling conspicuous, and 5) to remove any excuse for potential offenders to be within a private or semi-private space and maximise the legitimate users' confidence in challenging non-legitimate users of space. Given the wider aims of this principle, 'access control' would appear too limited a definition. A more appropriate term might be the 'limitation of access, egress and through movement'.

Surveillance

Surveillance refers to the way that an area is designed to maximise the ability of formal (security guards, police, employees) or informal (residents, passers-by, shoppers) users

of the space to observe suspicious behaviour. These formal and informal users are referred to in Routine Activity Theory as capable guardians. Within situational crime prevention more generally, surveillance may include the installation of CCTV or the use of formal security guards. Within CPTED, surveillance rarely relates to formal measures but refers more to the informal surveillance created through measures such as ensuring that dwelling entrances face the street, that rooms facing the street are active (such as the kitchen or living room) and that sightlines are not obstructed by shrubbery or high walls. Linked with territoriality, the principle of surveillance requires users of that space to realise that an individual is behaving in a suspicious manner (be that through their behaviour or simply their presence within a private/semi-private area) and to have the confidence to challenge them or intervene. Therefore, the term 'surveillance' includes the operational tasks of active (formal) and passive (informal) surveillance, the surveillability (Ekblom, 2010) of that space and the creation of the perception amongst offenders that they are being observed.

Target hardening

Target hardening is often referred to as physical security and includes the initial design, or retrofit upgrade, of doors, windows, fences and other physical structures to increase the difficulty for offenders in entering a building or space.

Image

Cozens *et al* (2005) use the term 'image', while others have used 'management and maintenance' to cover the principle of creating buildings/spaces which are physically free from litter, graffiti, vandalism and damage but are also areas without stigma or a poor social reputation. It is difficult to allocate a specific label to these concepts as

image refers to a state and management and maintenance to the activities which create that state.

Activity support

Activity support relates to the creation of an environment which increases the likelihood that legitimate users will make use of space and subsequently act as additional surveillance. Although activity support is included by many as a distinct principle of CPTED, the ultimate aim is to enhance surveillance and so the two principles can be combined.

Given this discussion of definitional issues and a desire to condense the list presented by Cozens *et al* (2005), the principles of CPTED might be summarised as:

- Physical security - securing buildings and spaces to a level which is appropriate to risk. Where possible products which are tested to the relevant security standards should be utilised.
- Surveillance - designing building and space to allow both formal and informal surveillance from users of that space and to create a feeling of unease amongst non-legitimate users of the space.
- Movement control - limiting access, egress and through movement.
- Management and maintenance - ensuring that buildings and the surrounding spaces are designed to create a positive image and to ease future maintenance of the space. Ensuring that programmed management and maintenance systems are in place.

- Defensible space – ensuring that spaces have a clearly defined ownership, purpose and role to enhance feelings of territoriality amongst residents and legitimate users.

Empirical Support for CPTED

Eckblom (2009) presents an excellent discussion of where CPTED needs to be improved both conceptually and practically and these are addressed in the conclusion to this chapter. One weakness identified by Eckblom is the need to improve the evidence upon which CPTED is based. Whilst it is acknowledged that there are still areas which require clarification, the evidence base has been strengthened over the last decade, with several rigorous examinations of the impact of individual design features on crime levels. Using the five principles defined above, the following section outlines the evidence base to support the efficacy of CPTED in reducing crime.

Physical security

Research on security measures as a means of preventing residential burglary is mixed, with several studies suggesting that the actual home break-in requires little in the way of technical sophistication and that physical security is a low priority for burglars when searching for targets (for example, Repetto, 1974). However, several studies suggest that with all other factors being equal, burglars would prefer to offend against properties with lower levels of physical security (Cromwell *et al*, 1991). Budd's (2001). Analysis of the British Crime Survey found that security devices are very effective in reducing the risk of burglary victimisation. Budd's study found that, in England and Wales in 1997, 15% of households without security measures were burgled, compared to 4% of households with basic measures in place and 3% with higher levels of security.

Surveillance

Research suggests that surveillance and visibility play a major part in offenders' decision making processes when selecting properties to offend against. Reppetto (1974) interviewed 97 convicted burglars and found that the most common reason for avoiding a target was that there were too many people around. Offenders stated that the possibility of neighbours watching them deterred them from selecting a property and that they would select targets where they felt less conspicuous and where there was less visual access from neighbouring properties. When assessing the design characteristics of victimised properties, several studies have identified a lack of surveillance or poor levels of visibility as key features of crime-prone homes (for example, Armitage, 2006; Brown and Altman, 1983; Winchester and Jackson, 1982).

Movement control

The efficacy of the principle of limiting movement is less clear-cut. Although the majority of research suggests that limiting through movement will reduce crime, some studies suggest that encouraging pedestrian and vehicular movement will provide informal surveillance of the area – something that Jacobs (1961) refers to as 'eyes on the street'. The mechanisms through which limiting movement might reduce crime are as follows. Firstly, that an area with high levels of through movement provides ease of entry/escape for offenders, and therefore, reducing through movement would decrease the risk of offending. This supposition is supported by interviews with offenders and analysis of victimisation levels within residential areas (for example, Poyner and Webb, 1991; Taylor and Gottfredson, 1987). The second mechanism suggests that an area with high levels of through movement is more likely to be within an offender's awareness

space. Offenders are likely to have passed through the area while conducting their day-to-day activities and to have become familiar with the suitability of targets. Limiting through movement would thus decrease the likelihood of offenders being aware of suitable targets. This supposition is supported by interviews with offenders and analysis of patterns of crime within residential areas (for example, Poyner and Webb, 1991; Wiles and Costello, 2000). The third rationale for limiting movement is based upon the premise that an area with high levels of through movement will allow offenders to feel less conspicuous and to blend in with the activities of legitimate users of the space. This is supported by several research studies (for example, Poyner and Webb, 1991; Taylor and Gottfredson, 1987).

Although there have been many studies into the impact of through movement on crime levels within residential areas, two particularly rigorous studies, conducted in England, have found that burglary is higher where properties are located within an area with a higher number of connections to other areas, and lower on what are referred to as 'true' culs-de-sac – those with no connecting roads or pathways (Armitage *et al*, 2010; Johnson and Bowers, 2010;).

In a review of the evidence relating to the impact of through movement on crime, Taylor (2002) concludes that: "*Neighbourhood permeability is ... one of the community level design features most reliably linked to crime rates, and the connections operate consistently in the same direction across studies: more permeability, more crime*" (Taylor, 2002 p. 419). However, this assertion is not universally supported as there is some research – particularly research conducted in the last decade and using Space Syntax techniques – have concluded that increased levels of through movement have a

beneficial impact upon crime. Several studies have concluded that crime is concentrated in more isolated and less accessible streets (for example, Hillier and Sahbaz, 2009). One explanation for the disparity in research findings is that, although Space Syntax allows a greater number of properties to be analysed (Hillier and Sahbaz looked at 101,849 properties), it also means that, for some aspects of layout (including particularly footpaths and through movement), presumptions are made about movement and patterns. For example, the remote assessment of a neighbourhood may show a cul-de-sac development with no connecting footpaths, and that would be labelled a true cul-de-sac. However, on physically assessing a development (i.e. completing an assessment on site - as was the case with research completed by Armitage *et al*, 2010), it may become apparent that, although there are no official footpaths, residents and users of the space have created informal footpaths because they connect the development to nearby shops.

Management and maintenance

Several studies have suggested that if low-level disorder such as vandalism and litter are not addressed, they can act as a catalyst for more serious crimes. Skogan (1990) refers to this as the contagion theory, suggesting that the "*presence of vandalism stimulates more vandalism*" (p.39). Wilson and Kelling (1982) refer to this contagious effect as the "*broken windows theory*" (p.16). Broken windows suggests that an area with existing deterioration such as graffiti and vandalism conveys the impression that a) nobody cares so apprehension is less likely and b) the area is already untidy so one more act will go unnoticed. This conclusion is supported by Taylor and Gottfredson (1987) who found that physical incivilities indirectly influence offenders' perception of risk in that they portray residents' level of care or concern for the area in which they

live, and thus act as an indicator for the likelihood that the residents will intervene if they detect an offence taking place. Armitage (2006) assessed 1058 residential properties in England and found that those which showed signs of poor management and maintenance had experienced higher levels of prior burglary.

Defensible space

As was discussed above, defensible space is a term used to describe the design features of an area that increase territorial behaviour amongst residents and users of that space. Specific defensible space measures include maximising the perception that a space is private or semi-private through subtle design features such as a narrowing of the road entrance or a change in road colour or texture. These environmental features are sometimes referred to as symbolic barriers as they do not physically keep people out. Brown and Altman (1983) and Armitage (2006) found that, compared with non-burgled houses, properties which had been burgled had fewer symbolic barriers, as well as actual barriers such as fences and locked gates, protecting private territory from public access. Brown and Bentley interviewed offenders, asking them to judge (from pictures) which properties would be more vulnerable to burglary. The results revealed that properties showing signs of territorial behaviour (such as the installation by of a gateway at the front of the property or a sign on the gate/door marking the area as private) were perceived by offenders to be less vulnerable to burglary.

Practical Application

Whilst CPTED is founded on an agreed set of theories and assumptions, the way that CPTED is applied varies across, and even within different countries. It is beyond the

scope of this chapter to cover the different international approaches to implementing CPTED. Therefore the focus in this section is upon the three countries England/Wales, Australia and the Netherlands. England/Wales has been chosen because it has developed a holistic approach to incorporating CPTED into the planning system – through the publication of specific planning policy and guidance, the promotion of an award scheme and the provision of specific police resources to ensure that CPTED is considered within local development. Australia, and specifically the state of New South Wales (NSW), is considered for two reasons. The first is that in NSW there is a legislative requirement for new developments to be assessed for crime risk; the second is that NSW has adopted a very different approach to implementing this requirement, one which involves very little police resources or even involvement, with crime risk assessments largely conducted by private crime reduction consultants. The Netherlands is considered for its comprehensive model of delivering CPTED within the planning system. The model includes legislative requirements, incentives and process of delivery.

Across England and Wales there are 43 police forces and within each of these there is at least one individual whose role involves reviewing the planning applications which are submitted to the local planning authority (within the local council), and offering CPTED advice to mitigate any potential crime risks associated with the proposed development. This role is referred to as Architectural Liaison Officer (ALO) or Crime Prevention Design Advisor (CPDA). The distinction is generally geographical, with northern police forces using the term 'ALO' and southern forces using the term 'CPDA'. Even within England and Wales (which share a government and associated laws and policies), the role of ALO/CPDA varies between police forces, with some ALO/CPDAs dedicated

entirely to this role whilst others have numerous additional roles. The role can also vary in terms of process, with some local planning authorities *requiring* pre-planning consultation (for example, the local authorities within Greater Manchester), whilst other forces have a more reactive response, with the consideration for crime prevention being entirely dependent upon the ALO/CPDA seeking out current planning applications and contacting the planning office to offer CPTED advice. Nationally, within England and Wales, the consideration for crime prevention within planning decisions is not a requirement. The planning system in England and Wales is guided by national policy - at the time of writing the National Planning Policy Framework. This policy states that local planning policies and decisions should aim to create developments which are (amongst other considerations) safe and where crime, disorder and the fear of crime do not undermine quality of life. This should be considered in local and neighbourhood planning decisions but is not a legislative requirement. England and Wales also has planning guidance which directs local planning authorities, and those working within the built environment profession, as to how to develop safe neighbourhoods. This guidance is entitled *Safer Places – The Planning System and Crime Prevention*. Whilst this is a typical model of delivery of CPTED within England and Wales, there is one police force which has taken a very different approach - this is Greater Manchester Police (GMP) in North-West England. The GMP approach to delivering the ALO/CPDA role involves a team of consultants who, whilst being civilian, are based within GMP Police Headquarters and have access to police recorded crime data, Neighbourhood Policing Teams (NPTs) and other relevant police intelligence. As was suggested above, the GMP approach also differs from other police forces in England and Wales in the emphasis placed upon pre-planning consultation between the planning authority, developers and the GMP team. Within the ten Greater

Manchester local authorities, where a client wishes to apply for planning permission, the application which is made to the local planning authority must adhere to national planning policy, but also to the requirements made by each local authority (through what is referred to as a Validation Checklist). Crucially, for Greater Manchester Police, each local authority requires that the submission of a major planning application be accompanied by a Crime Impact Statement (CIS) – a document which includes an analysis of crime statistics, reports from site visits and local policing knowledge of the area to highlight potential crime risk and to make CPTED recommendations to mitigate those risks. The final unique element is that the GMP team are able to charge for their service. This has helped to protect the provision of this service within the current economic climate, and whilst other ALO/CPDA services are seeing cuts, this team has managed to sustain its services, and even expand.

In addition to policy, guidance and allocation of police resources, England and Wales also implement an award scheme to encourage developers to design out crime at the planning, or pre-planning stage. The Secured by Design (SBD) scheme is managed by the Association of Chief Police Officers Crime Prevention Initiatives (ACPO CPI) and run on a day-to-day basis by local police ALOs or CPDAs whose role is to ensure that developments are designed and built to certain specifications. SBD is based upon the key principles of CPTED and the standards and guidance follow those principles of physical security, surveillance, access/egress, territoriality and management and maintenance. There have been five published evaluations of the effectiveness of the SBD scheme (see Armitage and Monchuk, 2011 for a review) each concluding that SBD confers a crime reduction advantage.

In countries such as Australia, delivery varies dramatically from state to state. The state of New South Wales is selected as an example for this chapter because of the model of delivery which includes a legislative requirement for a Crime Risk Assessment to be conducted for developments considered by the local council to pose a crime risk. Whilst this legislation shows a clear commitment to the importance of CPTED, the process of embedding this within the planning and policing system differs greatly to England and Wales. In New South Wales there is no equivalent of the ALO/CPDA role and the closest position to this is the Crime Prevention Officer. In a similar vein to the Crime Reduction/Prevention Officer role in England and Wales, the post includes a variety of roles and responsibilities. Within New South Wales, this post also has the additional burden of covering a large geographical area. This means that in practice, the Crime Prevention Officer cannot systematically assess all planning applications from a crime prevention perspective. Therefore, the role of conducting the required Crime Risk Assessment and recommending alterations based upon crime risk is conducted either by private crime prevention consultants, planning companies or the developers themselves. Clancey *et al* (2011) conducted a review of 33 Crime Risk Assessments submitted between January 2007 and October 2010 and found that these were conducted by 24 companies – 11 of which were planning firms, eight were social planning firms, seven were development companies, five were private crime prevention consultants and two were engineering firms. The review also identified that whilst the guidance specifies that Crime Risk Assessments should measure risk using police recorded crime data, hot-spot analyses and socio-economic data, only 16 of the 33 contained any reference to crime data, and for those which did, the analysis was broad and shallow with little indication of specific crime risk in terms of crime type, location or *modus operandi*. The New South Wales model of delivery has greater legislative

strength than that of England and Wales, with a requirement in legislation for Crime Risk Assessments to be conducted where a local council considers there to be a crime threat from a potential development. The process of delivering this also differs to the predominantly police-based model of England and Wales, with a greater responsibility placed upon external private consultants. Strengths of this method include legislative power to require consideration of crime as well and less pressure on police resources. Potential weaknesses relate to the threat to independence where a Crime Risk Assessment is conducted by a company who may have a vested interest in seeing the development go ahead with little or no alterations to the planning application.

The Netherlands has one of the most comprehensive approaches to embedding CPTED within the planning process, and this applies to regulation, award schemes and the process of delivery. In terms of regulation all new-built homes in the Netherlands have to comply with specific security regulations for windows and doors and from the 1st January 1999, planning permission could only be obtained if the application met the legal requirements for built-in security. The Netherlands also has an award scheme (similar to the UK's SBD scheme) entitled Police Label Secure Housing. Unlike the SBD scheme, this award (which was originally owned and managed by the police) is managed by the Dutch government who adopted the police label into their planning policy guidelines and (since 2004) every new estate or dwelling must be built in accordance with the police label or an equivalent label. Although the award was modelled on SBD, there are several distinctions which mark the two schemes apart. The first is that the label is split into three different certificates – Secured Dwelling, Secured Building and Secured Neighbourhood. These can be issued separately but together they form the Police Label Secure Housing award. The label is also less prescriptive than SBD

with more flexibility for developers aiming to achieve a secure development. The list of requirements are set out under five categories (urban planning and design, public areas, layout, building, dwelling) and these include performance requirements (what) and specifications which indicate the way in which those requirements will be met (how). As a means of encouraging creativity and avoiding the risk of developers 'designing down' to specific requirements, where a developer offers a solution which differs from that set out in the 'how', but can still demonstrate the same preventative effect, then this will be considered. The scheme also differs in that it is valid for ten years only and after this period, a re-assessment is required. In terms of the delivery of the scheme, the system is very similar to that within England and Wales. Until 2009, each police region had a number of Building Plan Advisors (Bouwplanadviseur) whose role was very similar to the ALO/CPDA role. As a response to budget cuts, the role has been civilianised and is run by the municipalities either through the employment of external consultants or civilian Building Plan Advisors located in-house.

A Critique of CPTED

Whilst many of the wider criticisms of situational crime prevention in general apply to CPTED, there remain some fundamental, unresolved weaknesses in the theory and application of this method of crime reduction. This chapter concludes with a brief presentation of the main criticisms of CPTED and a discussion of how these might be addressed.

Lack of flexibility: One area where CPTED has remained open to criticism is in the lack of flexibility in its principles and guidance as well as the application on the ground. This

lack of flexibility may, in part, relate to the agencies traditionally involved in delivering CPTED (police, security consultants, ex-police) whose professional background and training focuses upon the requirement to follow and not challenge instructions. It may also relate to a lack of confidence, training or experience amongst those carrying out the role of delivering CPTED that, in practice, leads to the rigid application of standards as opposed to adapting the design to fit a particular context.

Failure to clarify confusion on specific CPTED principles: This criticism relates to the confusion which has surrounded one particular CPTED principle - that being the impact of through movement on levels of crime. The debate centres upon the benefits of facilitating movement within an area weighed against the risks of potentially criminogenic design. For those who advocate increased connectivity, the rationale does not necessarily relate to crime reduction. The primary purpose of designing connected developments is to ensure that people can get from A and B without the need of a vehicle, thus reducing carbon emissions and the visibility of the car, and to avoid the need for residents to take unnecessarily lengthy routes. Whilst the *cul-de-sac* layout is favoured in the majority of the criminological literature on the subject, urban designers would argue that there are many negative features of this layout. It increases travel distance and therefore reliance upon the motor vehicle, it is an inefficient use of land and it increases the difficulty of ensuring that public transport can travel close to these residential properties. Whilst research will always present differing findings and subsequently viewpoints, this debate has led to polarised and often overstated statements regarding the crime risk of culs-de-sac versus through roads. Not only has such simplification proved unhelpful for those tasked with reducing crime through the

design and manipulation of the environment, it has also led to unnecessary confusion regarding a subject for which the academic evidence appears to be relatively unambiguous.

Non-standardised delivery: Perhaps linked to the lack of professionalization of the role of implementing CPTED at ground level, there is a concern regarding the considerable variation in the process of delivery, both nationally and internationally. Not only is there a difference in *who* is in the CPTED delivery role (England and Wales it being predominantly warranted police, Netherlands civilians based within municipalities and New South Wales security consultants), there is also a difference in *how* CPTED is being applied. Some countries have taken the approach of introducing legislation or building regulations to require the specific security standards within residential dwellings (Netherlands and Scotland), others have introduced legislation to require the consideration of crime risk (New South Wales) or incentivised the consideration for crime prevention with awards such as SBD (UK) and Police Label Secured Housing (Netherlands). Whilst it is understandable that the delivery will differ between countries, and even between states, there still remains a lack of consistency within countries such as England, which share the same legislation and regulations.

Lack of clarity in scope: Perhaps less of a criticism than a note of caution that the boundaries and scope of CPTED must be made clear. Whilst the principles cover design, build and future management and maintenance of an area, the extent to which CPTED interventions can realistically influence so many factors is debatable. As Ekblom (2009) clearly highlights: *“There is a tendency to use the label CPTED indiscriminately to cover*

everything that aims to prevent crime in the built environment...this is not conducive to focused thinking" (Ekblom, 2009, p.9). An example which highlights this is the principle of management and maintenance. The SBD scheme has historically stated that developments must have a programmed system in place to manage and maintain the area. Yet, unless this is social housing, how is this programme established, and more importantly, maintained? It appears to be a principle which fits well in theory, but cannot be consistently applied in practice. Whilst warning of the risks of extending its net too wide, there would be some merit in CPTED integrating the wider social approach addressed by, what has been labelled as Second Generation CPTED (see Saville and Cleveland, 2003).

Failure to align with other agendas: Although this criticism has begun to be addressed through work conducted by (amongst others) Cozens, Pease, Armitage and Monchuk, the CPTED community has been very slow to adapt their focus to fit with contemporary issues such as social, economic and environmental sustainability. Whilst the two agendas of minimising crime and maximising sustainability may appear distinct, achievement of one (reducing crime) ultimately contributes to the other (maximising sustainability). Crime is carbon costly. include the carbon costs of police mileage in response to a crime, the replacement of stolen and damaged property, the health and other costs to victims in high crime others, the costs of moving home in response to crime or fear of crime and the maintenance and refurbishment of void properties. Crime has a huge carbon footprint, and given the prominence which the carbon reduction agenda has been given in government policy, media attention, funding for research and the priorities of the general public, it would appear that there has been a missed

opportunity to enhance the priority afforded to the importance of the consideration for crime reduction within the built environment.

Failure to innovate and adapt to change: The final criticism relates to the failure of CPTED to respond to the social and economic environment both in terms of its model of delivery, the principles upon which it is based and its focus. The first example of the failure to innovate relates to the current economic crisis, and how this has impacted upon funding for public services such as the police. Of the 43 police forces within England and Wales, only one has adapted its model of delivery to, not only survive these cutbacks, but to thrive and grow through innovation. There has also been slow progress amongst CPTED research, policy and practice to adapt to the changing nature of crime, with the focus remaining on acquisitive crimes, whilst more common disorder issues have been sidelined.

Conclusions and Future Research

Whilst CPTED may lack some consistency in process and application, research suggests that the principles upon which it is based can work, both alone and combined with other interventions, to reduce crime, the fear of crime and to maximise social, environmental and economic sustainability. In moving forward, CPTED must evolve, but in the words of Ekblom (2009) it must lose its historical baggage first. Whilst there is always room for further research, the CPTED community can begin to confidently challenge some of the debates which have dominated this field and which extensive, independent and methodologically rigorous research has clarified. Attention should now be focused upon building upon examples of good practice both in terms of by *whom*

and *how* CPTED is delivered on the ground. Implementation should be adapted to context and designed to suit the social and economic challenges of different communities. Future thinking should focus upon new models of delivery which can be implemented with limited public funding and within political environments which favour restricted legislation, regulation and governmental interference. CPTED must also adapt to changing concerns regarding crime. The traditional focus upon acquisitive crime must widen to address public concern regarding low level crimes and anti-social behaviour and also governmental priorities such as terrorism and violent extremism. But these challenges can be seen as opportunities. Where there are problems, there is scope to develop solutions, and CPTED is a practical, cost effective crime reduction measure which, research has shown, can adapt to many different problems and contexts.

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