Evaluation and Crime Prevention:

An Investigation of Evaluation and Monitoring of Crime Prevention Through Environmental Design Initiatives in New Zealand.

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Abstract

Crime Prevention Through Environmental Design (CPTED) has become an increasingly popular tool for local authorities to adopt in their effort to reduce and prevent crime. Scholars have drawn attention to the shortcomings of crime prevention approaches including the proliferation of negative side-effects, its adoption for political reasons, and its role in causing social exclusion, all of which undermine the credibility of such approaches. However, the effectiveness of CPTED is rarely questioned by practitioners who commonly consider that it is guaranteed to produce positive results. As such, the practice of evaluation is largely a forgotten process whereby its value to a more informed, ethical, and effective delivery of CPTED remains untapped.

The purpose of this research was to investigate the evaluation and monitoring process of CPTED projects and initiatives by local authorities in New Zealand. This was achieved by adopting an interpretive-qualitative research approach in order to gain the views and opinions of those experienced with the use of CPTED.

The findings of the research suggest that issues which undermine the effectiveness of CPTED exist in the New Zealand context including examples of negative side effects and the common perception among practitioners that results will always produce positive results. Unsurprisingly, the research found that evaluation remains a neglected element of CPTED delivery in New Zealand, however, practitioners illustrated that they were aware of the benefits that evaluation can provide. Importantly, the findings suggest that there is a growing interest in undertaking evaluation among New Zealand practitioners however a number of barriers and limitations restrict opportunities to do so. These barriers included reliability and availability of crime statistics, lack of knowledge, loss of knowledge, fear of failure, limited resources, and the importance of service delivery.

This research has identified several ways in which CPTED evaluation can be facilitated and encouraged throughout New Zealand. This includes providing training for

evaluation and including evaluation as a prerequisite of funding provision. Additionally, evaluation can be encouraged through the promotion of methods and measures which are sympathetic to the realities and restrictions that practitioners face in their daily routines. Finally, greater central guidance is required which could be facilitated through the establishment of a professional CPTED body and a centre for information providing access to research findings and information allowing practitioners to learn from past, and each other's, experiences. Through these means a better indication of CPTEDs effectiveness can be gained. By facilitating the adoption of CPTED evaluation practitioners can work towards a more informed, effective, ethical, and sustainable delivery of CPTED throughout New Zealand.

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Abbreviations

ACC	Auckland City Council
CCTV	Closed Circuit Television
CPTED	Crime Prevention Through Environmental Design
ICA	International CPTED Association
LGA	Local Government Act
LTCCP	Long Term Council Community Plan
MoJ	Ministry of Justice
RMA	Resource Management Act
WCC	Wellington City Council

1

Introduction

There is a growing feeling that the world beyond the front door is a hostile world of vandalism and aggression, where we feel threatened rather than at home. Yet to take this widespread feeling as the point of departure for urban planning would be fatal

Herman Hertzberger, 2005: 48

1.1 Crime, Fear, and the City

Throughout history human settlements have aimed to provide for the security, safety and well-being of their citizens (Cozens, 2008a). These aims are clearly evident when one looks at the geographic location and physical design of older settlements and cities worldwide. However, following the processes of industrialisation and urbanisation cities have been exposed to a range of new threats to urban safety, security and public well-being (Cozens, 2007a; Low, 2006). The unplanned expansion of cities in the 20th century has contributed to growing levels of poverty, disease, overcrowding, pollution, and crime (Cozens, 2007a). As such, cities have been increasingly regarded as locations of problems in addition to places of excitement, opportunity, and vitality (Cozens, 2007a). Beyond this, globalisation, in particular, has weakened existing social relations and helped to erode traditional ways of maintaining social order, contributing to a fear of crime on an international scale (Low, 2006; Smets, 2009).

Today crime and the fear of crime are "pervasive and endemic concerns" for planners and city officials alike (Cozens *et al*., 2005: 328). One of the most significant causes of insecurity and fear is crime and violence, particularly in urban areas (United Nations Human Settlements Programme [hereafter referred to as United Nations], 2007). The incidence of crime on a global scale has increased steadily; rising 30% in the period

1980-2000 (United Nations, 2007). As a global average, two out of three citizens of cities are victimised by crime once in a five year period (United Nations, 2004). While crime rates in Western countries are higher than they were 30-40 years ago, in recent years they have often been cited as decreasing or stabilising (United Nations, 2004). Despite decreases in some types of crime, others, such as domestic abuse, homicide, assault, and sexual abuse are increasing worldwide (United Nations, 2004; Statistics New Zealand, 2011).

Societal fears of crime, and crime itself, have many negative effects ranging from impacts at the city-wide level to the local and individual level (Beall and Fox, 2009). At the city level widespread insecurity can create a culture of fear in some cases leading to segregation and social exclusion (Beall and Fox, 2009). At the local level fear and crime undermines public confidence in an area and can also destabilise community cohesion, solidarity, and discourage both public and corporate investment (Colquhoun, 2004; Beall and Fox, 2009). As alluded to above, the social consequences of crime and fear are widespread; influencing people to restrict movement, avoid leaving home at night, and manipulate decisions such as where they live, work, and what school their children attend (Colquhoun, 2004; Beall and Fox, 2009). In addition, crime and fear can also influence people to remove themselves from society altogether, retreating into gated communities; one of the more significant spatial trends in urban development since 1980 (Low, 2006). While there are numerous documented reasons for this 'retreat', crime and the fear of crime are certainly two causal factors influencing the creation and support of gated developments (Smets, 2009; Low, 2006).

The above points illustrate that safety, security and growing anxieties in terms of fear are of global concern. Planners are central to this concern, as the opening quotation of this chapter suggests (Ziegler, 2007). Under the Resource Management Act (1991) and Local Government Act (2002) local authorities in New Zealand are required to provide for the social, economic, and cultural well-being of communities as well as their health and safety. Planning authorities, therefore, have an important part to play in the reduction of crime and fear of crime (Doeksen, 1997).

To address the concern of crime, and the fear of crime, numerous crime prevention strategies have evolved over the last few decades; the details of which will be further outlined in Chapter 2 of this thesis. Crime Prevention Through Environmental Design

(commonly referred to as CPTED) has developed as one of the most popular and "fashionable" crime prevention approaches in the Western world (Reynald, 2011; Cozens, 2008b: 168). The following section of this chapter provides an introduction to CPTED in order to frame the research aims and objectives.

1.2 An Introduction to CPTED and Research Aim.

CPTED has its roots in the seminal works of planning theorists Jane Jacobs, Oscar Newman, and C. Ray Jeffery, who brought attention to the relationship between crime, anti-social behaviour, and the built environment (Parnaby, 2007). CPTED is most commonly defined as:

> "The proper design and effective use of the built environment, that can lead to a reduction in the fear of and incidence of crime and an improvement in the 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: 46).

As the above definition suggests, CPTED is based on the notion that the built environment can be strategically transformed to render it less facilitative to crime and anti-social behaviour (Parnaby, 2007). CPTED is a proactive strategy that seeks to prevent crime before it happens (Minnery and Lim, 2005).

In New Zealand, CPTED is promoted through national guidelines developed and released by the Ministry of Justice (MoJ) in 2005. A number of New Zealand local authorities now promote CPTED through statutory and non-statutory methods (Blackford *et al*., 2006; Klein and Walker, 2005). Despite the worldwide adoption of CPTED, research into its effectiveness has produced mixed results and inconclusive findings (Reynald, 2011). These results illustrate that CPTED needs to be viewed critically to determine whether it actually achieves what it promotes. Currently one of the major gaps in the CPTED literature is the lack of research focusing on the evaluation process of CPTED initiatives. This gap is noted by a number of scholars; Crawford (1998: 196), for example, states that evaluation and monitoring is often "the weakest element of most crime prevention programmes"; similarly, Schneider and Kitchen (2007: 225) state that "too much of the [CPTED] debate takes the form of 'never mind the facts, here are my opinions'. The primary need, therefore, is...a much more solid basis of effective evaluation". To address these gaps this thesis will

investigate local authorities' experience in evaluation and monitoring of CPTED projects and initiatives in New Zealand. A more detailed rationale for this choice in topic will be outlined following provision of the research objectives which are provided in the section below.

1.3 Research Objectives

The aim of the thesis is to investigate the evaluation and monitoring process of CPTED projects and initiatives by local authorities in New Zealand. To achieve this aim the following research objectives have been formulated.

1. To measure the extent to which evaluation and monitoring of CPTED initiatives is undertaken by local authorities.
2. To examine practitioner perceptions of CPTED's effectiveness.
3. To evaluate practitioner perceptions regarding the value of evaluation.
4. To examine any issues experienced during evaluation and barriers preventing evaluation.
5. To investigate factors that may facilitate, or enhance, evaluation.

These five research objectives provide structure to the following chapters of this thesis; the details of which are provided in section 1.6 of this chapter.

1.4 Rationale for Evaluative Research in New Zealand

There has been very little research on CPTED in the New Zealand context. Of the research that has been undertaken most has focused on the implementation of CPTED rather than the evaluation process; this trend seems to be mirrored in the international experience (Clancey, 2011). One of the most recent studies, undertaken by McCauley and Opie (2007), revealed that local authority awareness of CPTED is growing as is its adoption around New Zealand, however, many local authorities acknowledged that they were unable to assess whether projects were successful or not. One of the main conclusions of this research highlighted that councils "require assistance to determine the ways in which to assess and evaluate the effectiveness of their projects" (McCauley and Opie, 2007: 38). Similar recommendations were provided by a recent report on crime and criminal justice which highlighted the need to determine the effectiveness of

crime prevention projects and develop best-practice examples through evaluation (Statistics New Zealand, 2009).

The lack of evaluation means there is very little knowledge in terms of which interventions work, under what conditions there is success or failure, and whether certain interventions are potentially transferable across different social and demographic contexts (Crawford, 1998). Ultimately this means local authorities throughout New Zealand fail to learn from each other's experiences. The consequence of this issue is that planners and other professionals engaged in CPTED initiatives may be "continually reinventing the wheel or, more problematically, embarking on wasteful and misconceived adventures" (Crawford, 1998: 197). There is a need, therefore, to investigate the evaluation and monitoring process of CPTED initiatives in the New Zealand situation.

1.5 Research Design

To address the research objectives the study adopted an interpretive-qualitative approach. This was important in order to analyse the perceptions and experiences of those involved with CPTED and its use. Additionally, the interpretive paradigm allowed for an understanding of current CPTED practice and evaluation, as well as an analysis of stakeholder motivations for conducting, or neglecting, the evaluation process. The study also draws elements from Flyvbjerg's (2001; 2004) model for phronetic planning research. While a qualitative approach allowed for an analysis of experiences and perceptions from diverse actors using CPTED, the phronetic research approach allowed for this analysis to be focused on practice. By adopting elements from the phronetic research approach opportunities, problems, risks, and potential solutions relating to CPTED evaluation could be identified.

The cases of Auckland and Wellington were selected as appropriate locations to conduct research. The use of case studies in terms of the research approach was particularly helpful due to their in depth nature and, accordingly, their ability to extract detailed information about the evaluation process, the barriers preventing evaluation, and what might be needed to facilitate evaluation of CPTED initiatives. While specific details of case study selection are provided in Chapter 4, Wellington and Auckland

offered the best opportunity to find examples of CPTED evaluation and, therefore, gain insights from those most experienced with its execution.

The phases of research involved both primary and secondary data collection. The first stage of data collection involved a comprehensive review of existing CPTED knowledge and theory. This review covered the history and theory behind CPTED, CPTED principles and practice, CPTED's effectiveness, evaluation, and CPTED in the New Zealand context. The review played a primary role in the determination of the research problem, the formulation of research aims and objectives, and the contextualisation between the present study and existing CPTED research and theory. The second stage of data collection involved a series of key informant interviews with council staff and private practitioners in both case study locations. These interviews were conducted using an open-ended, semi-structured framework. Following the completion of the primary data collection phase interviews were transcribed and coded into themes highlighted by the literature. Coded data was then used to answer the research objectives provided above.

1.6 Thesis Structure

The thesis is presented in nine chapters, the structure of which has been organised to best address the five research objectives. The current chapter has identified the research problem, introduced the concept of CPTED, and briefly outlined the research design.

Chapter 2 provides a review of existing theory and literature on crime prevention, CPTED, and evaluation, in order to outline the significant concepts and arguments informing the current area of research.

Chapter 3 analyses CPTED in the New Zealand context. This chapter provides an overview of national legislation, non-statutory motivations, plans, guidance documents, and specific examples of how CPTED is implemented at the local level. This chapter also provides a review of the existing CPTED research undertaken in New Zealand, building upon the international literature analysed in Chapter 2, which provides further clarification and justification for the focus of the current study.

Chapter 4 presents the methodological framework guiding the current research. This chapter describes the research approach as well as the methods of data collection and

analysis including justification for the selection of these methods. Additionally, this chapter identifies and discusses the limitations of the current research.

The research findings are presented and discussed in Chapters 5 to 8. Chapter 5 addresses the second research objective by evaluating practitioner perceptions regarding the effectiveness of CPTED and exploring issues which may actively undermine CPTED's effectiveness. Chapter 6 addresses the first and third research objectives by discussing practitioner opinions regarding the importance of evaluation and measuring the extent to which evaluation of CPTED initiatives is undertaken. Chapter 7 builds upon the previous results chapters by examining the current barriers preventing the undertaking of evaluation, therefore, addressing research objective four. The final results chapter reflects upon Chapters 5 to 7 in order to answer the fifth research objective, investigating factors that may facilitate, or enhance, the practice of CPTED evaluation.

Chapter 9 provides a conclusion for the thesis with a discussion of key themes and findings, the contribution the current research has made, and suggestions regarding areas for future research.

2

Literature Review

2.1 Introduction

Chapter 2 provides a review of existing literature regarding the link between design and crime prevention in order to set the present research within the context of existing knowledge. From this a theoretical foundation can be developed and, importantly, key concepts and gaps within the literature can be used to guide the formation of research aims and objectives. Section 2.2 provides the initial context for the present research with an overview of the rise of crime prevention as an alternative to punishment and deterrence in crime control. This is followed by section 2.3 which provides a summary of the theories which have collectively formed the foundation of contemporary CPTED. Section 2.4 introduces the strategy of CPTED, its primary principles, and how it is commonly applied and implemented in practice. Section 2.5 then shifts focus to exploring the effectiveness of CPTED in practice and highlights some the core criticisms and issues which surround its application. Finally, section 2.6 examines the use of evaluation in crime prevention including the extent of its utilisation, its importance, the debates as to how it should be undertaken, and the factors which contribute to either its adoption or desistance.

2.2 The Rise of Crime Prevention

Crime continues to represent a significant and problematic concern of post-industrial society (Cozens, 2002). People have been experiencing crime at first or second hand in growing quantities over the last 50 years despite the fact that crime rates appear to be stabilising or, in some cases, decreasing (Shaftoe, 2004). Garland (2000: 355) notes that

high crime rates have become ingrained within modern Western culture and consciousness to the point that they are "a normal social fact". It should come as no surprise then that freedom from crime and the fear of crime are consistently high on the agendas and needs of people globally (Glasson and Cozens, 2011). Explanations as to why crime has increased so rapidly are varied and subject to heated debate. These reasons range from moral degeneration, unemployment and broken homes to video games, bad genes and junk food (Shaftoe, 2004). Irrespective of these explanations, the high rate of crime and increasing fear of crime has helped to ensure that criminal justice remains high on many political agendas (Crawford, 1998).

Traditional approaches to crime control have primarily relied upon models of deterrence, punishment and rehabilitation (Crawford, 1998). During the post-war period these approaches, and their respective institutions, were increasingly criticised for their apparent inability to control crime and the increasing public expenditure associated with it (Crawford, 1998). Jeffery (1977) argued that the persistence of crime was self-evident proof that the criminal justice system (policing, courts, prisons) did not work. He challenged the punitive nature of crime control insisting that prevention should be the focus rather than revenge and retribution (Jeffery, 1977). Shelley (1981) adds that the increasing demand on the criminal justice system, particularly in the United Kingdom, sharpened scrutiny of the system itself which appeared to have no capacity for greater impact. The growing disenchantment with the traditional criminal justice system and realisation of its shortcomings led many researchers, practitioners and policy makers to investigate alternative ways to combat crime (Shelley, 1981; Garland, 2001).

These events marked a number of changes in society's response to crime which are largely responsible for the rise of crime prevention (Heal, 1992). Since the 1980s there has been considerable growth of crime prevention in policy and practice (Crawford, 1998). The adoption and growth of crime prevention is considered by many 'analysts' to represent what Tuck (1988) has called a 'major shift in paradigm' of crime control. As part of this 'shift' there has been growing recognition that crime is a multi-faceted phenomenon whereby various social and economic factors influence, and are influenced by, its occurrence (Crawford, 1998). The bipartite cause-effect relationship between crime and these social and economic factors led to a realisation that prevention

responsibilities should extend beyond the police to architects, local governments, communities, urban designers, housing and social services, schools, and planners (Crawford, 1998; Schneider and Kitchen, 2007). Contemporary practice of crime prevention promotes and depends upon partnerships and inter-agency cooperation between these groups to deliver effective results (Crawford, 1998).

More recently planners have been highlighted as having a significant role to play in crime prevention. Schneider and Kitchen (2002: 7) state that urban planning is essentially "concerned with the linkage between knowledge and organised action…[which] is aimed at influencing future activities and events that measurably improve the quality of life". Urban planning is therefore a forward-thinking process that is highly compatible with crime prevention (Schneider and Kitchen, 2002). Additionally, although crime prevention has not always represented a meaningful focus of the sustainability agenda, research over the last decade has clearly identified synergies between sustainability and crime prevention (Cozens *et al.*, 2005). As arguably the primary guiding concept of contemporary planning practice, sustainability dictates that planners must address issues and threats to the long-term health, vitality, personal safety and security of both the built environment and people (Cozens and Love, 2009; Cozens, 2008a). Planners, therefore, have a significant responsibility, if not an ethical obligation, to prevent crime and help safeguard the communities they serve from both crime and the fear of crime (Schneider and Kitchen, 2002). Crime Prevention Through Environmental Design represents a popular approach resulting from this 'shift' and its influence has spread around the world being adopted by planners, architects, urban designers and decision makers alike. CPTED is therefore one of the primary tools that planners utilise to help prevent crime. The next section of this review will explore the history and theory behind this popular and widely adopted approach.

2.3 Crime and the Built Environment: History and Theory

CPTED is commonly perceived as a relatively new phenomenon, however, the basic premise of utilising the built environment to provide security and protection has a long and rich history (Shaftoe, 2004; Cozens, 2008a). Basic CPTED techniques are as old as civilisation itself (Crowe and Zahm, 1994). Therefore, it should be noted that the

emergence of CPTED in the last few decades is representative of the discovery of new and different ideas to prevent crime as well as a more sophisticated understanding of the relationships between the built environment and criminal activity, rather than the foundation of its rationale (Shaftoe, 2004; Kitchen and Schneider, 2005).

Although the term CPTED was first coined by Jeffery in 1971, the recent link between crime and environmental design can be traced to a number of different disciplines (Cozens *et al*., 2001; Shaftoe and Read, 2005). The emergence of CPTED is commonly attributed to the evolving field of environmental criminology (Brantingham and Brantingham, 1981; Glasson and Cozens, 2011). Environmental criminology views crime as the culmination of four interrelated elements which need to be present for any crime to take place, these are: a law, an offender, a target, and a place (Wortley and Mazerolle, 2008; see Figure 2.1). Environmental Criminology concerns itself with what is commonly referred to as the 'fourth dimension' of crime, or the study of crime, criminality, and victimisation as they relate to place (Brantingham and Brantingham, 1981; Glasson and Cozens, 2011).

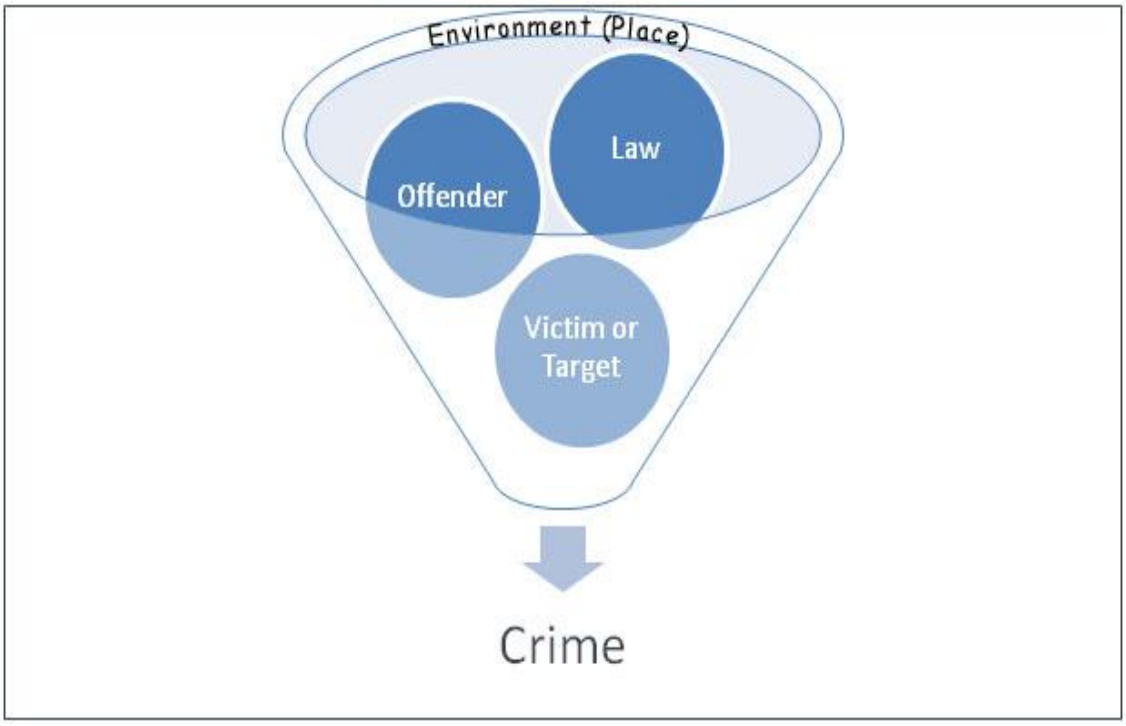

Figure 2.1: Factors leading to crime occurrence.

Traditional criminological theories focused heavily on criminality, or the study of offenders. The majority of these studies were concerned with social and biological factors which "created" offenders as the occurrence of crime was argued to be largely a function of an offender's acquired deviance (Wortley and Mazerolle, 2008: 2). This perspective viewed time and place of criminal acts as generally irrelevant aspects of crime occurrence (Wortley and Mazerolle, 2008). It was not until the mid 20th century that the first published studies highlighted links between crime and the environment (Sorensen *et al.*, 2008). Shaw and McKay (1942), for example, illustrated that characteristics of the urban environment are important to explain the emergence of crime in certain communities and rejected the prevailing consensus that individuals are sole causal agents of crime (Sorensen *et al.*, 2008; Eck and Weisburd, 1995). With the introduction of victimisation surveys in the 1960s and 1970s a new impetus was provided for researchers to focus on the study of offense locations (Cozens *et al.*, 2001). Although most of these early studies were of a broad or 'macro' nature, focusing on regions, states, cities and communities rather than the specifics of places themselves, there was a growing recognition of the causal relationship between crime and the environment (Eck and Weisburd, 1995). Consequently, a number of criminologists and planning theorists (Jacobs, 1961; Jeffery, 1971; Newman, 1972; Wilson and Kelling, 1982) narrowed their focus of inquiry to urban design. Through both speculation and practical experiments these individuals established and explored the concept of preventing crime through environmental modifications.

The seminal work of Jane Jacobs provided the first investigation of a specific link between urban design and crime. In her book *The Death and Life of Great American Cities*, Jacobs (1961) pointed the finger at professional city planners stating that crime and urban decay were partially caused by poor design. Living in Greenwich Village Jacobs noted that completely different social environments could be found juxtaposed only a few city blocks from each other. Through observation and anecdote Jacobs highlighted the negative relationship between crime and contemporary planning practice through the interaction and relationship of sidewalks, streets and houses. She noted that the traditional relationship between streets, sidewalks and houses were being eroded by the concentration of high-rise buildings and single-use zoning. Jacobs realised that informal social control through surveillance and activity levels could have a positive impact on safety and crime rates; from this she suggested three potential

ways to prevent crime. First, there needs to be a clear delineation between public and private space in order to define areas in need of surveillance. Second, there is a need for "eyes upon the street" whereby residents can survey their street, including building frontages orientated towards the street (Jacobs, 1961: 35). Finally, there must be continuous use of the sidewalk, to add to the numbers of 'eyes on the street' and encourage residents to survey the street. This latter point, Jacobs noted, could be encouraged through a mix of uses (residential, commercial, leisure) promoting a more continuous flow of activity in an area (Jacobs, 1961).

A decade later, Oscar Newman, a planner and architect, built upon Jacobs' ideas with his concept of 'defensible space' (Newman, 1972). Newman's theory is often considered the most influential study in terms of the link between crime and environmental design (Marzbali *et al.*, 2011: Cozens *et al.*, 2001). Newman's study was a specific response to high crime rates in urban America and the perception that there were limited solutions available at the time (Cozens, 2002). Similar to Jacobs, he believed that the deterioration of urban inner city areas, particularly post-war housing estates, was partially caused by poor design (Parnaby, 2006). Where Newman (1972) differed from Jacobs was that his study was empirically based; a comparative study of housing estates in New York, each with similar social features but variations in architectural design.

From his results Newman (1972) argued that aspects of physical design in these housing estates prevented residents from exercising social control and encouraged criminality. Through the application of defensible space principles Newman, conversely, proposed that environmental design could encourage social control and reduce criminality. Newman (1972: 3) defined defensible space as "a surrogate term for the range of mechanisms – real and symbolic barriers, strongly defined areas of influence, and improved opportunities for surveillance – that combine to bring an environment under the control of its residents". By creating a defensible space Newman argued that residential areas could attain the goal of creating an environment whereby territoriality and sense of community provide a safe, productive, and well maintained living space. In doing so, criminals perceive this living space as an area controlled by its residents and are easily recognised as intruders. The publication of *Defensible Space* convinced many that there is significant merit in designing out crime, gaining favour

with policy-makers, politicians, and receiving considerable praise from the media (Mawby, 1977; Mayhew, 1979; Cozens *et al*., 2001).

It should be noted that although Jeffery (1971) coined the term CPTED, and is considered an important figure in its development, modern day CPTED bears little resemblance to his original ideas and instead is closer to an adaptation of Newman's 'defensible space' (Schneider and Kitchen, 2007). The works of both Jacobs (1961) and Newman (1972) represent unique contributions to the evolution of CPTED theory (Parnaby, 2007). However, when considered collectively they aided a shift in conventional criminological thinking highlighting the built environment's role and impact on crime and deviance (Parnaby, 2007).

2.4 Principles and Practice of CPTED

Since the seminal works of Jacobs and Newman CPTED has evolved into its own sub-category within criminology and, more recently, urban planning (Cozens, 2002). Crowe (2000: 35) states that environmental design, in terms of CPTED, is "rooted in the design of the human/environment relationship" which embodies a number of concepts. In this case, the term environment includes people as well as their physical and social surroundings (Crowe, 2000). Crowe adds that the term design includes social, physical, managerial, and law enforcement directives which seek to affect human behaviour as people interact with their surrounding environment. Through environmental design CPTED aims to prevent certain crimes as well as the fear associated with these crimes within a defined environment. This perspective moves CPTED away from the traditional 'target hardening' approach to crime prevention because CPTED considers the needs of users, the intended and expected uses of space, as well as the predictable behaviour of users and offenders (Crowe, 2000). The emphasis on certain crimes is also important and it should be noted that CPTED cannot be seen as a panacea to crime (Shaftoe and Read, 2005). CPTED can influence a wide range of opportunistic crimes such as vandalism, burglary, theft and assault but it is not concerned with other criminal offences such as fraud, family violence and white collar crime (Vito *et al.*, 2007; Shaftoe and Read, 2005).

Conceptually CPTED maintains that through manipulation the physical environment can produce behavioural effects that will reduce both the incidence and fear of crime,

consequently, improving quality of life (Crowe, 2000). To achieve this goal CPTED has two principal aims. CPTED's primary aim is to modify the built environment in order to manipulate the selection of targets by motivated criminal offenders (Del Carmen and Robinson, 2000). In doing so CPTED purports to reduce or eliminate the probability of criminal offences by reducing the opportunities to commit crime and increasing the risk for offenders (Del Carmen and Robinson, 2000). Beyond manipulating actual crime incidences, CPTED places equal importance on the perceptions of safety and the quality of life (Jeffery, 1971). Key to this second aim is reducing the fear of crime which in some cases has been the sole target of programmes (Shaftoe, 2004). Fear of crime can have enduring effects on communities and individuals as it can significantly influence individual behaviour patterns (Crawford, 1998). For example, a crime audit of central Nottingham in the United Kingdom found that retail and leisure services in the central city were losing £24 million annually due to people avoiding the area as they felt it was unsafe and were fearful of becoming crime victims (Shaftoe, 2004). Furthermore, research has also shown that there is often a weak correlation between levels of fear and actual risk of victimisation (Shaftoe and Read, 2005). Improved street lighting, for example, is generally considered to help reduce fear but often does not reduce actual crime levels (Shaftoe and Read, 2005). The impacts that fear of crime can have, and the dissimilar relationship between fear and victimisation, illustrates why reducing fear is equally important as reducing crime itself (Zedna, 1997; Shaftoe and Read, 2005).

CPTED has evolved considerably over the last two decades. The ongoing refinement of CPTED through research and practice has arguably produced a more rigorous approach to applying CPTED. This refined approach has replaced what is now termed 1st generation CPTED with 2nd generation CPTED (Cozens, 2008b; Schneider and Kitchen, 2007). This new and refined approach broadens implementation beyond the focus of physical design to include social factors (Cozens, 2008b). Proponents of 2nd generation CPTED believe that the physical modifications are only the first step for reduced crime opportunities and argue that additional social changes are needed to maintain the impact of those modifications (Cozens, 2008b). Saville and Cleveland (2008) note that including social factors acknowledges that people are unlikely to have strong territorial feelings unless they care about the people and place in which they live and work. Therefore, there is a need to develop more opportunities for friendships and

families within neighbourhoods while maintaining personal space and security needs (Saville and Cleveland, 1998). Some ways in which 2nd generation CPTED incorporates these social factors are by improving and encouraging residents' responsibility, residents' participation, social interaction and cohesion, and youth activities (Saville and Cleveland, 1998; 2008).

Like Newman's defensible space, CPTED operates in practice by employing a number of principles. These principles are considered a refined version of defensible space representing a more holistic and community-based approach (Cozens, 2002). It should be noted that the number, labelling, and descriptions of these principles vary from text to text (Ekblom, 2011). However, five primary principles that are most commonly included in CPTED strategies are; territoriality, surveillance, activity support, access control, and target hardening (Cozens, 2002). A further concept often considered an important aspect of CPTED is continuous maintenance and management (Sorensen *et al.*, 2008). These concepts are illustrated in Figure 2.2 and are explored below.

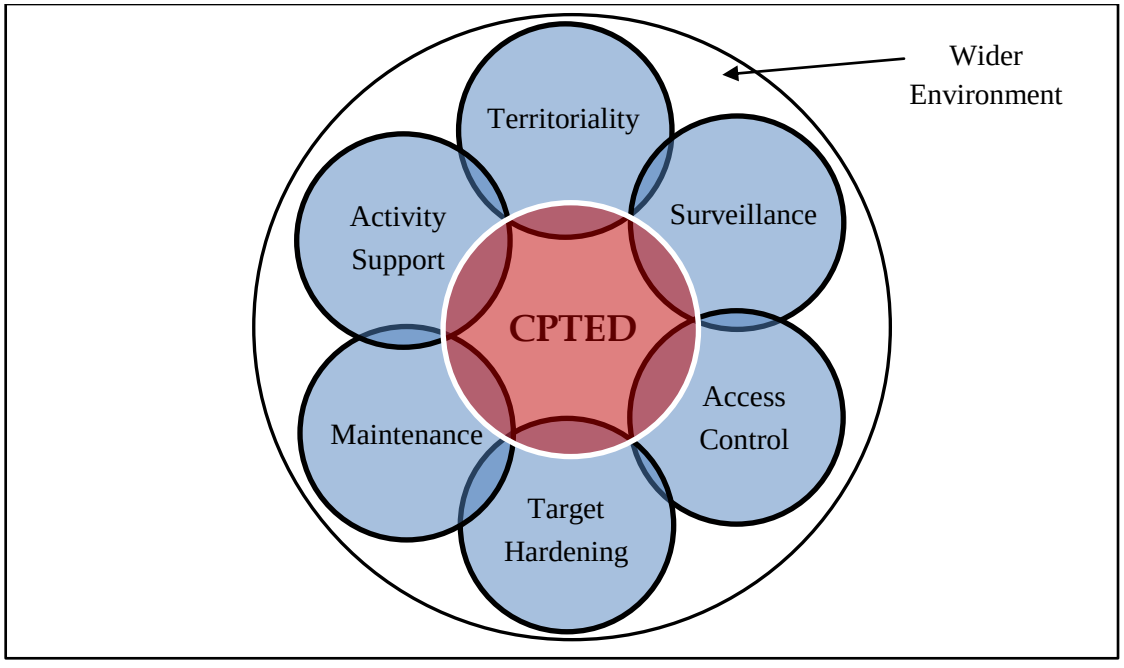

Figure 2.2: Key concepts of CPTED (adapted from Cozens, 2008a).

2.4.1 **Territoriality**

Territoriality is the notion that space which is clearly defined as private or public will be safer (McCormick, 2006). This is due to the assumption that people will protect areas which are defined as their own (Cozens, 2002). The aim of encouraging territoriality is to convey to users of a space that the space is owned and cared for by someone. This is an extremely important aspect as certain features indicative of a lack of ownership, such as offensive graffiti and dilapidated environments, can contribute to the notion that the space is hostile and can become inviting to the criminal element (Sorensen *et al.*, 2008).

2.4.2 **Surveillance**

By definition surveillance is essentially aimed at maximising visibility in a public space or area and it can be natural or mechanical (Carter, 2002; Sorensen *et al.*, 2008). Sorensen *et al.* (2008: 62) describes surveillance as the "ability to look into an area, and the ability to look back out". People generally feel safer when they are being watched, or when their actions provide the potential to be watched by others in public space, particularly at night (Carter, 2002). With enhanced visibility, opportunities for potential offenders are reduced as they may perceive the risk of getting caught or the effort of undertaking a certain crime is too great (Cozens, 2002). Measures to encourage surveillance include ensuring that windows of surrounding buildings face public space, lighting is adequate, trees and shrubs are not overgrown, and that there is removal of physical structures which provide hiding places (Sorensen *et al.*, 2008). In addition, mechanical surveillance is often provided through the installation of closed circuit television cameras (CCTV) (Cozens, 2002).

2.4.3 **Access Control**

As its name suggests access control is concerned with limiting access to a park, neighbourhood, parking lot or building (Cozens, 2002). This can be an effective method to prevent crime as many criminals look for an easy escape, therefore, reducing could-be escape routes enhances the perceived risk of committing a crime (Sorensen *et al.*, 2008). Generally access control capitalises on circulation patterns and focuses on clarifying acceptable routes of entry and exit into a park through the use of fences,

shrubbery, landscaping, artificial obstacles, and the strategic placement of signs and lighting to help channel users of a space (Carter, 2002; Sorensen *et al.*, 2008).

2.4.4 **Activity Support**

Activity support aims to encourage legitimate use of public space through physical design by filling an area with legitimate users (Cozens, 2002). Sorensen *et al.* (2008) note that by filling an area with legitimate users, deviant users will leave. To achieve activity support in public spaces certain activities can be encouraged, for example, events that involve the community, such as community barbeques or sports events, can characterise and promote a space for a certain use (Sorensen *et al.*, 2008). Cozens (2002) provides the example of a basketball court in a public park as it provides recreational space for the young but also makes strangers more obvious by encouraging natural surveillance and ownership. Other examples include incorporating seating areas, porches and picnic areas into open areas so that legitimate users are encouraged to maintain ownership (Sorensen *et al.*, 2008).

2.4.5 **Target Hardening**

CPTED also includes the more general principle of target hardening. Target hardening is widely considered as the traditional approach to crime prevention (Cozens, 2002). It aims to increase the effort for offenders to commit crime by denying and restricting access through the use of such features as fences, gates, locks, and security alarms (Sorenson *et al.*, 2008). Considerable debate exists as to whether target hardening should be considered as a component of CPTED primarily due to the notion that it can contribute to a "fortress mentality" leading to the creation of gated communities (Cozens *et al.*, 2005: 338). Self-segregation of communities and individuals damage the 'self-policing' capacity of the built environment which works against the aims of CPTED (Cozens *et al.*, 2005: 338). Sorenson *et al.* (2008) argue that the target hardening approach tends to overlook opportunities for access control and surveillance which can prevent crime through less destructive means.

2.4.6 **Maintenance and Management**

Beyond the above concepts it should be noted that maintenance and management are two critical factors which also need to be considered in order to achieve security in

public space and ensure that CPTED is successful (McCormick, 2006). For example, maintenance can lead to improving aspects outside of urban design such as altering the social reputation and stigma of a space (Cozens *et al.*, 2005; Blackford *et al*., 2006). Ultimately, these principles aim to allow for public space to continue to be used as it was intended through cleanliness, maintenance and ensuring it is adaptable when social conditions or other factors change (Carter, 2002; Sorensen *et al.*, 2008).

Overall, the six principles listed above provide an overview of the elements that are typically used in CPTED strategies and are intended to provide understanding and context for the present study. The next section will examine how CPTED is implemented by practitioners and local authorities.

2.4.7 CPTED in Practice

Although implementation is not the focus of this review, details regarding the use of CPTED in practice are considered important to provide a context and understanding of how it is used by practitioners and local authorities. Throughout this review it has been noted that CPTED is widely adopted and serves as an increasingly popular approach to crime prevention. Britain, USA, France, Australia, Canada, Japan, South Africa, Sweden, the Netherlands and New Zealand are all countries that have operational CPTED strategies, although there is often considerable variation between and, in some cases, within these countries (Reynald, 2011; Cozens, 2002; Kitchen, 2009). Additionally, CPTED is increasingly being applied across an ever growing range of micro-environments which include residential neighbourhoods, commercial areas, public spaces and parks, transportation hubs, car parks and stadiums (Reynald, 2011; Cherney, 2006).

CPTED is often applied to local contexts through the development of guidelines and design codes for planners, urban designers and builders (Crowe, 1991). Guidelines are generally developed through either a national agency or local authority and often provide an overview of CPTED principles as well as guidance regarding how to apply them in different situations (Cherney, 2006; Schneider and Kitchen, 2007). In some cases, CPTED principles become regulatory through insertion into local planning documents or plans and have to be considered when assessing development applications (Klein and Walker, 2005; Kitchen, 2009). These guidelines are often

supplemented with training courses, seminars and publications (Monteiro, 2010; Schneider and Kitchen, 2007). Collectively these measures aim to ensure that the criminogenic potential of new urban development is considered and reduced before any physical changes take place (Cozens, 2008a).

Beyond the provision of guidelines and training a number of other factors play a crucial role in enhancing the implementation and efficiency of CPTED. Among these are:

- the importance of a multi-agency approach
- the role of 'champions' and local authorities
- public participation (Crowe, 1991; 2000).

As mentioned in section 2.2 the multi-agency approach encourages collaboration between all relevant stakeholders and is an important element to appropriately address the multi-faceted nature of crime (Goris and Walters, 1999). Equally important from the CPTED point of view is the need for an organisation to spearhead crime prevention efforts in order to provide direction and coordination for stakeholders involved with projects and programmes (Crowe, 2000). Research has indicated that local authorities are in the most appropriate position to fulfil this role due their regulatory and planning functions (Blackford, 2005). 'Champions', or leaders within agencies and stakeholder groups with good knowledge and understanding of CPTED, are also considered vital in order to endorse and facilitate CPTED adoption and implementation (Blackford, 2005). Finally, public participation, in the form of consultation and input, is considered essential as members of the public are not only major stakeholders but often are an accurate source for information regarding their local surroundings (Shaftoe and Read, 2005).

This section of the review has aimed to provide an overview of the principles that make up the CPTED approach and illustrate how CPTED strategies are implemented in practice. While the focus of this review is not to offer descriptive accounts of CPTED components and its practice, these elements are important to outline in order to understand how CPTED is applied in practice. The next section of this review will explore the effectiveness of CPTED.

2.5 CPTED: the Application of Science or an Act of Faith?[1]

Having established the theory behind CPTED, and the application of CPTED in practice, the focus of this review now shifts to exploring its effectiveness. Despite the popular adoption and application of CPTED around the world it is not without its critics. Comprehensive evidence supporting CPTED as an effective crime prevention strategy is considered the weakest component in terms of its practice (Schneider, 2005). Of the studies that have investigated the effectiveness of CPTED many have produced mixed results and inconclusive findings (Reynald, 2011). Other scholars are quick to point out that there seems to be little or no obligation among local authorities or private consultants to demonstrate success, commonly seeing CPTED techniques as "self-evident" and scientifically proven (Pease, 1997: 976; Shaftoe and Read, 2005).

The effectiveness of CPTED to reduce or prevent crime is clearly a contentious issue (Mair and Mair, 2003). Beyond the extent to which it reduces crime rates, issues such as implementation side-effects as well as social, ethical and political orientated criticisms have been widely documented. This section will highlight some of these issues and criticisms. It should be noted, however, that it is beyond the scope of this review to provide an exhaustive account of the shortcomings of crime prevention and CPTED, rather, the purpose of this section is to introduce a critical perspective and illustrate that CPTED's effectiveness is not absolute or beyond query.

2.5.1 Displacement

A core criticism of environmental crime prevention strategies, including CPTED, is the issue of displacement (Cozens *et al.*, 2005). Displacement is when an intervention or project aimed at preventing a certain crime, or crimes, results in the shifting of crime to another location or target (Mair and Mair, 2003). Bennett and Wright (1984) have argued that displacement can be understood as a short term psychological process occurring when alternative offences are committed after being prevented from offending against the original target. Critics of both CPTED and other environmental crime prevention strategies have used displacement as "a conventional stick with which

1 This title was adapted from a similar article title by Shaftoe and Read (2005).

to attack proponents of situational approaches" (Crawford, 1998: 81). It would be wrong to dispel critical responses towards displacement as its existence signifies a danger whereby all that is being achieved by crime prevention projects is that offenders are being moved around without ever reducing the occurrence of criminal events. Indeed, Crawford (1998: 80) states that displacement "probably constitutes the most telling criticism for situational crime prevention, in that it addresses its own terms of reference and claims to success". There has been considerable theoretical debate and empirical enquiry regarding displacement (Crawford, 1998). However, the types of displacement that can take place are quite substantial; Table 2.1 provides a description of these different forms.

Table 2.1: Types of displacement (adapted from Crawford, 1998)

Type of displacement	Definition
Spatial/geographic	Displacement occurs where the same crime is committed in a different place
Temporal	Displacement involves the same crime on the same target but at a different time
Tactical	Displacement involves the same crime on the same target but by a different means or a different way
Target	Displacement where the same crime is committed but against a different target in place of the original (for example, a shift from robbing a local dairy to robbing a bank)
Type of crime	Displacement occurs when there is a shift in the nature of criminal activities from the type of crime originally intended (for example, a shift from robbing a local dairy to street mugging)

Although there is general consensus that levels of displacement are largely the product of design based crime prevention approaches/projects, displacement is not an inevitable outcome (Crawford, 1998). Shaftoe and Read (2005) expand on this by noting that critics of design-based crime prevention strategies have tended to over emphasise the extent to which displacement occurs. It should also be acknowledged that displacement is not always a negative function of design based crime prevention strategies.

Figure 2.3 illustrates a range of impacts that can result from crime prevention initiatives whereby following an initial reduction in crime two secondary impacts (benign displacement and diffusion) are contended by a number of scholars as positive and acceptable side effects. Barr and Pease (1990), for example, have argued that displacement can be benign or even desirable. This benign displacement can include an offender downgrading to less serious crime, a crime that has less serious consequences, or even shift to non-criminal acts (Barr and Pease, 1990). Indeed, further studies have noted that the direct opposite of displacement can occur, otherwise known as diffusion (Weisburd *et al.*, 2006). This is where the positive effects of a particular crime prevention project are much greater than was initially anticipated, for example, influencing more types of crime or a larger geographic area (Shaftoe and Read, 2005; Clarke and Weisburd, 1994). The above highlights that the view of displacement as an outright undesirable consequence may not be absolute.

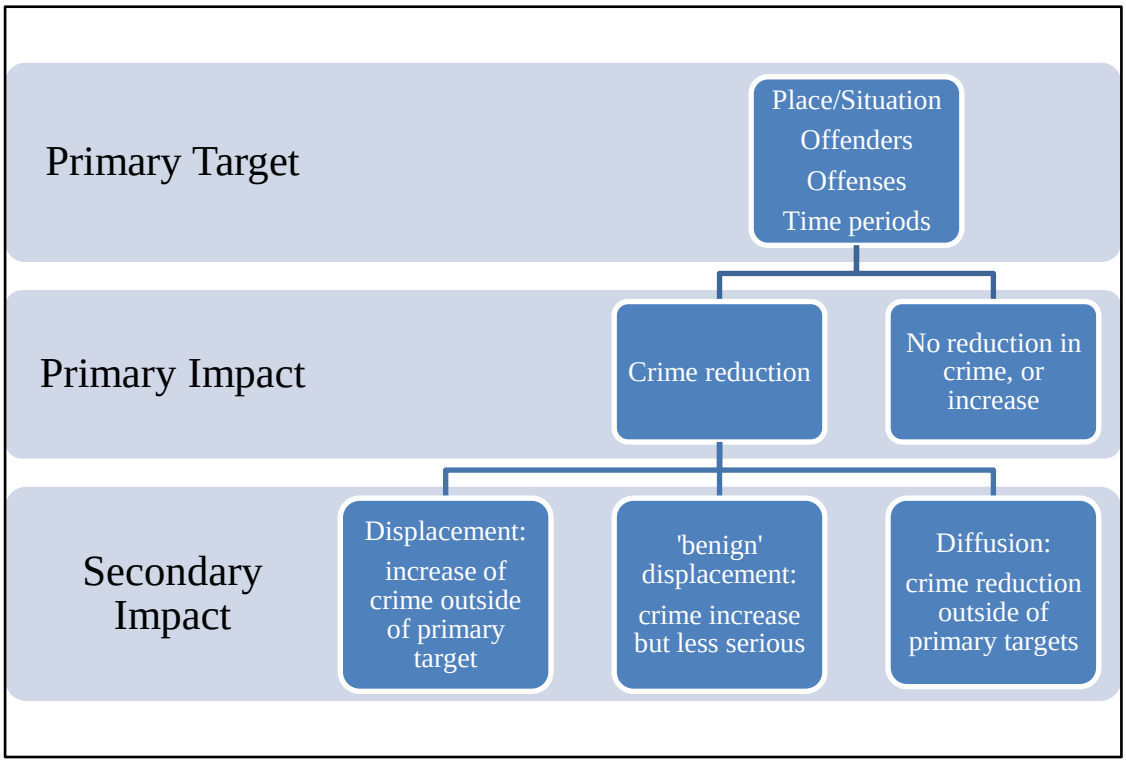

Figure 2.3: Primary and Secondary impacts of CPTED (adapted from Clarke and Weisburd, 1994)

Although positive aspects of displacement exist the real problem is that, in practice, displacement largely remains an ignored side-effect of crime prevention strategies (Vito *et al.*, 2007). This may not be surprising as most people would likely be content if crime rates reduced in their own neighbourhood, regardless of the fact that crime may have shifted to another area (Vito *et al.*, 2007). Overall this raises the issue of social justice and the fact that crime has social costs for everyone regardless of location, this theme will be explored further in the next section of this chapter (Vito *et al.*, 2007).

2.5.2 **Social Exclusion and Social Justice**

Another criticism of CPTED is that it encourages and intensifies social exclusion. A number of scholars have made note of the possibility that rather than 'designing out' crime CPTED and such situational approaches are 'designing out' people perceived to be troublesome regardless of their criminality (Midtveit, 2005; Crawford, 1998; White and Sutton, 2001). Conceptually, CPTED is neutral in terms of who benefits from, and who should be targeted by, an initiative (White and Sutton, 1995). However, White and Sutton (1995) contend that in practice, CPTED has a greater impact on certain groups, particularly those more marginalised in society; the poor, young, unemployed and indigenous. They argue that the effect, and often the intention, of CPTED initiatives are not only a reduction in crime opportunities but the reduced presence of certain groups in public/semi-public spaces (White and Sutton, 1995).

From an equally critical viewpoint Midtveit (2005) notes that despite the potential of CPTED as a critical response to gated communities and the 'fortress mentality', the two can have similar results in terms of social exclusion. She argues that although the 'soft' measures employed by CPTED are perceived to be positive alternatives to walls and gates they essentially have the same intention. Midtveit (2005) provides the example of opera music which is sometimes used in public spaces to make certain groups feel uncomfortable, such as drug addicts and homeless people, consequently reducing their presence in public spaces despite the fact that these groups may not have committed any crime. Additionally, her observations revealed that while certain measures, such as the use of opera music, may deter some unwanted users from occupying certain areas, they can equally have no effect on others or even dissuade 'legitimate' users/customers; consequently "such crime-preventing strategies may possibly make the city environment less pleasant regardless of which people they affect" (Midtveit, 2005: 36).

White and Sutton (1995) expand Midtveit's (2005) argument beyond the focus of targeted groups, claiming that CPTED responses to crime problems reflect the social interests and financial capacities of dominant economic groups. As an example they state that shopping centres may employ CPTED to protect shop owners from shoplifting and vandalism yet ignore thefts of, or from, customers' cars in car parks. Another example is the targeting of 'crimes' of behaviour in city centres, or commercial areas, perceived as inhibiting the retail transaction process such as public drinking, noisy groups, loitering youths, or skateboarders. Midtveit (2005: 36) argues that the targeted removal of certain groups from public spaces represents a "serious ethical dilemma" which reproduces distinct power relations in society.

The above examples raise the question of social cost and justice; CPTED may render a certain area or community relatively safe but simultaneously increase the vulnerability of marginalised groups who often do not have the social, economic or political power to counteract the impacts on them (White and Sutton, 1995). Furthermore, the spaces these groups are excluded from may be the primary areas that provide them with social and recreational opportunities. Social justice is also questioned when the issue of displacement is considered; to what extent can a local authority justify providing some citizens with greater security than others? Should equality be just as important as the perceived benefits of reducing crime and fear (Duff and Marshall, 2000)? Crawford (1998) argues that the social value of crime prevention is often taken for granted and rarely questioned which highlights a need to balance crime prevention needs against ethical issues as well as other social and human costs.

2.5.3 **Politics of Crime Prevention**

Another major factor which casts doubt on CPTED's efficacy concerns the politics of crime prevention. Lab (2004) suggests that politics can sometimes stand in the way of progress in crime prevention as policy maker's work within a political setting where those in political power dictate and determine much of what they do. This is a reason why arrests, prosecution, punishment, and increased police presence are common approaches to crime control; these approaches are regarded as common sense by the general public (Lab, 2004). Shaftoe (2004: 182) states that "the fact that none of this [the above approaches] is supported by research evidence is a minor inconvenience that can be dismissed as the whingeing of out-of-touch academics". The implementation of

crime control and prevention strategies despite the lack of evidence proving efficacy is well documented (Lab, 2004; Pease, 1997; Shaftoe, 2004; Cherney, 2006). For example, in the late 1990s the British Home Office allocated 80% of total government expenditure on crime prevention towards one dimensional CCTV schemes; this was based on public faith rather than any hard evidence that CCTV altered outcomes (Pease, 1997; Shaftoe, 2004). Local authorities who wished to apply for crime prevention funding were asked to submit proposals for CCTV schemes; prevention schemes that may be more effective would not get funding, encouraging local authorities to be cynical towards approaches that may be of better service to the communities they serve (Pease, 1997).

One reason that CPTED has been so widely adopted can, to some degree, be attributed to the fact that many politicians and policy makers have seen it as a "silver bullet" that could solve several crime problems and provide safer streets and neighbourhoods (Taylor, 2002; 417). Following this, it is unsurprising that CPTED has been called a "fashionable" approach to crime prevention (Cozens, 2008b: 168). Situational crime prevention, including CPTED, has a political advantage in the sense that it is highly visible, immediate, and provides photogenic evidence of a commitment to reduce crime; "these are all important factors for politicians eagerly searching for the next press release and photo-opportunity" (Shaftoe, 2004: 181; Cozens, 2008b). In this environment the visible output that CPTED produces is often perceived as a successful result in itself with little attention paid to efficacy or wider impacts (Cherney, 2006; Shaftoe, 2004). Equally problematic is the fact that policy makers commonly insist that CPTED and the design-crime relationship is simplistic and is guaranteed to have effective results (Taylor, 2002; Shaftoe and Read, 2005). Investment and resources, therefore, are injected into strategies that are unproven or, more ominously, do not work, principally in the name of political expediency and short-term thinking (Shaftoe, 2004).

2.5.4 Conflict with Contemporary Planning Principles

Although crime prevention should be considered an important goal of social and urban policy, it is not the only goal, and there is a need to balance it with overarching principles such as sustainability (Shaftoe and Read, 2005). While the synergies between CPTED and sustainability have been well documented there has also been considerable

debate surrounding some contemporary principles of sustainability and crime prevention (Cozens, 2007b, Gamman and Thorpe, 2009). Much of this debate is focused on the promotion of new urbanist principles. Permeability (a new urbanist objective) has generally been at the centre of this debate, however, it has also extended to density and mixed use (Kitchen, 2009; Cozens and Love, 2009; Schneider and Kitchen, 2007). Cozens and Love (2009: 348) indicate that in the United Kingdom the shift in planning policy to more permeable street designs has resulted in "confusion, conflict and contradiction" largely due to crime prevention advice advocating for minimal permeability. Others, such as Kitchen (2009) and Shaftoe and Read (2005) have documented that conflicting advice between new urbanist principles and crime prevention creates major difficulties for planners and planning committees when making judgements on proposals and projects. Both points of view are passionately defended by their advocates whereby each "believe strongly that they are in the right" and without much evidence supporting one position or another planners are left in the difficult position of deciding which to endorse (Kitchen, 2009: 340).

The aim of this review is not to advocate for one approach or the other but to illustrate that the theories and philosophies outlined above compete within planning practice. This is problematic given that, in terms of crime prevention, few approaches have significant evidence to support their adoption (Schneider and Kitchen, 2007; Hillier and Sahbaz, 2009). Failure to gather evidence in order to resolve the above conflicts achieves very little as projects could produce more costly results both from an economic and social perspective creating what Hillier and Sahbaz (2009: 164) have called a "new dimension of unsustainability" (Kitchen, 2009). Competing theories and philosophies and the lack of evidence to support such theories highlights the need for answers to improve the provision of crime prevention in practice (Kitchen, 2009).

It would be misleading to state outright that CPTED is not an effective crime prevention strategy. While some commentators maintain that definitive empirical proof regarding CPTED's effectiveness remains elusive (Schneider, 2005), there are a number of studies which have shown promising and positive results (Cozens *et al*., 2005). One of the most recent and comprehensive reviews of CPTED research indicated that studies supporting the effectiveness of CPTED are "clearly accumulating" (Cozens *et al.*, 2005: 343). The title of Taylor's (2002) article sums up

this uncertainty well; 'Crime Prevention through Environmental Design (CPTED): Yes, No, Maybe, Unknowable, and All of the Above'. Taylor (2002) maintains that the latter of these propositions is the right answer and suggests that it is largely dependent upon how thorough the evidence needs to be, and how complete an answer one needs.

This section has established that there are potentially serious issues regarding the side-effects of CPTED as well as the ethical and political reasoning behind its adoption or implementation. The review only highlights some questions and shortcomings brought up by CPTED critics and advocates. Collectively these issues do provide reason to doubt CPTED's efficacy. This doubt is only compounded by the fact that those who use and advocate for CPTED in practice are rarely concerned with efficacy. Although there can be some certainty that CPTED has the ability to reduce crime and the fear of crime "what is less certain is precisely how CPTED and its component parts work, where it works best and how to systematically evaluate its effectiveness" (Cozens *et al.*, 2005: 344). Similarly, Crawford (1998: 98) asserts that there can be a positive impact on "certain crimes, committed by certain criminals, in certain places, at certain times under given conditions. The exact nature of this impact remains open to question". What has resulted from much of this uncertainty is a near universal call for evaluation of CPTED strategies and projects (Tilley, 2002). Evaluation of crime prevention and CPTED, therefore, will be the subject of the next section of this review.

2.6 Evaluation and Crime Prevention

As a process evaluation explores how effective, or useful, an exercise or phenomenon is (Lab, 2010). In terms of crime prevention, evaluation refers to investigating the impact of an intervention or specific technique on crime levels, the fear of crime, or other projected outcomes (Lab, 2010). Superficially it would seem that the universal call for evaluation of crime prevention initiatives has meaningfully transpired into practice. Material covering evaluation and how to undertake it is increasingly being made available for practitioners, particularly in the form of reports, journals, and guides/handbooks (Shaftoe, 2004; International Centre for the Prevention of Crime, 2010). For example, in England the publication of the *Passport to Evaluation* provides basic information and techniques needed to undertake evaluation on the ground (Shaftoe, 2004; Berry, 2009). This publication is supported by content on the Home

Office's website including examples of evaluated work and checklists for evaluators (Shaftoe, 2004). Despite the universal call for evaluation, and the increasing guidance available, evidence of its undertaking is relatively scarce, particularly within the field of urban planning (Crawford, 1998; Shaftoe, 2004; Cherney, 2006). In some ways this may not be surprising as planning has commonly been criticised for the apparent lack of evaluation in practice despite the two concepts being termed 'inseparable' (Khakee, 1998; Oliveira and Pinho, 2010: 346).

It should be noted that for this section of the review literature relating to evaluation within the general crime prevention field has been consulted as there is very little research or literature which relates directly to the evaluation of CPTED. This gap, however, does not mean that evaluation is an unimportant element in CPTED's practice. Indeed, some scholars have highlighted that major concern surrounds the absence of evaluation in practice and have stressed the importance of its adoption and encouragement (Zahm, 2005; Atlas and Saville, 2008). It is considered that while evaluation literature relating specifically to CPTED is scarce, the debates, limitations, recommendations and examples provided within the broader crime prevention literature offer valuable insight for the present research.

2.6.1 **Why Undertake Evaluation?**

Evaluation of crime prevention programmes and initiatives is commonly regarded as an important aspect to promote in practice by many leading scholars in the crime prevention field (Schneider and Kitchen, 2007; Eck, 2005; Burns-Howell and Pascoe, 2004; Crawford, 1998; Zahm, 2005). Atlas and Saville (2008: 503) reason that evaluation is the key to moving CPTED forward "as a science and not just an art form". Schneider and Kitchen (2007: 239) add that "the primary way forward for the field consists of learning from careful research, evaluation and reporting...more evidence-based, and less swayed by unproven ideas". There are a number of reasons why evaluation of crime prevention programmes should be undertaken by practitioners and local authorities. It is perhaps obvious that the primary reason is the need to show that an initiative has had an effect on crime (Eck, 2002; Berry, 2009). However, it is worth noting that evaluation can serve a wide range of functions.

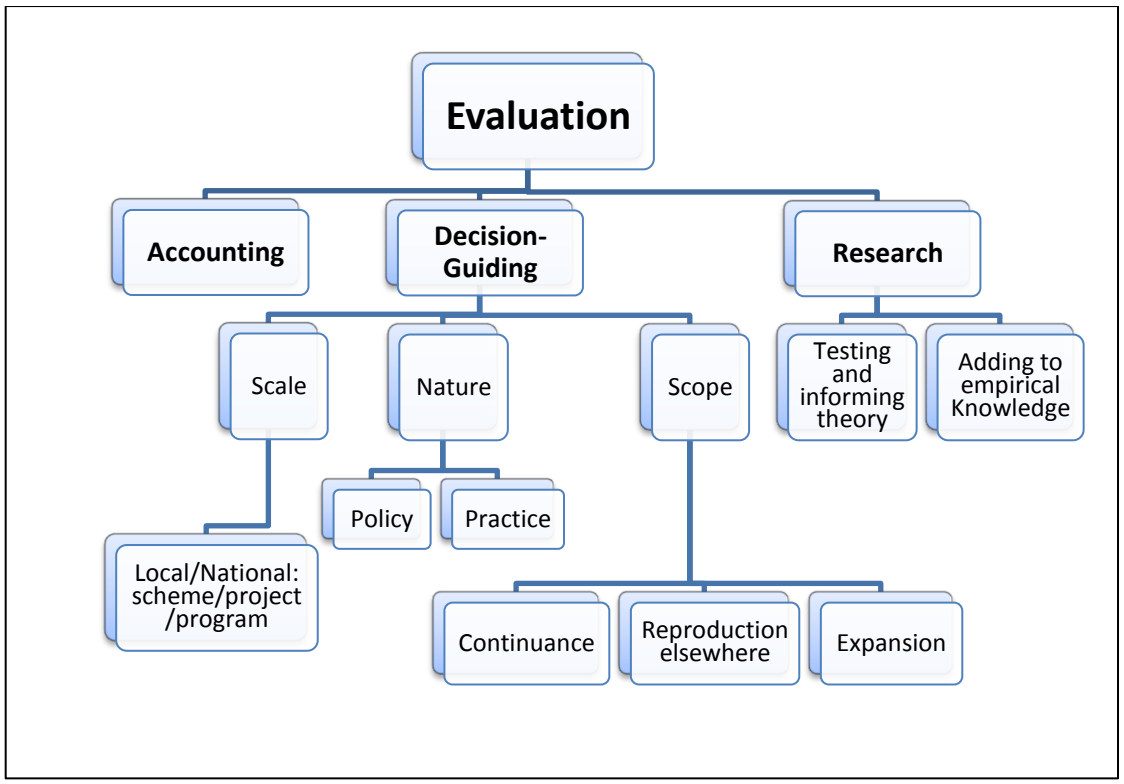

Figure 2.4: Flowchart illustrating the range of evaluation functions. (adapted from Ekblom and Pease, 1995)

Figure 2.4 illustrates the range of functions that evaluation can serve. Accounting evaluations aim to check whether money for a project has been properly spent and assess the value that has been gained from investment (Ekblom and Pease, 1995). Research evaluations are sometimes referred to as a by-product of decision guiding evaluation and often aim to test theory and add to empirical knowledge (Ekblom an Pease, 1995). Decision-guiding evaluations aim to inform, and sometimes help decide upon, practice or policy (Ekblom and Pease, 1995). These decision-guiding evaluations can be undertaken at various scales whereby the scope can range from verifying an initiative works to reproducing a scheme in a different, or similar, context (Ekblom and Pease, 1995). Evaluations can also identify aspects that may have worked well, or others that did not, and illustrate why certain results were achieved (Berry, 2009). More importantly, they can allow for modifications to projects which may not be working and provide vital lessons for future practice (Tilley, 2002; Berry, 2009).

Beyond efficacy and lesson learning there are economic and ethical motivations behind encouraging evaluation. Armstrong and Francis (2003) state that the evaluation of

crime prevention programmes is becoming increasingly important in Australia due to the rising cost of crime; estimated to be $11 billion per year. With growing costs there is a need to ensure that government resources are afforded to those initiatives and programmes which can achieve the desired outcomes and meet the requirements for funding (Armstrong and Francis, 2003; Eck, 2002). It has also been argued that there are ethical obligations to undertake evaluation of crime prevention strategies (Schneider and Kitchen, 2002). As mentioned in section 2.2 urban planners and designers in many countries are obligated to uphold public health and safety as it is widely accepted that, beyond protection from flood, fire, or hazards, citizens have a right to be free from crime and fear (Schneider and Kitchen, 2002). This illustrates that as part of the process for providing sustainable, safe, and secure environments there is a need to provide accountability for actions beyond fiscal costs.

Without evaluation there is little knowledge about which forms or aspects of an intervention work or what circumstances provides success or failure. There are also wider implications from failing to evaluate crime prevention interventions which extend beyond the contextual arena in which they were applied. Crawford (1998) states that without knowledge of what works and the specifics of how something works there is little chance for transferability of initiatives across different social and demographic contexts. More importantly, it also means that crime prevention practitioners fail to learn from each other's experience which means they "may be continually reinventing the wheel or, more problematically, embarking on wasteful and misconceived adventures" (Crawford, 1998: 197). There is clearly much merit and importance in undertaking evaluation, the following section will examine the extent to which these ideas have permeated into practice.

2.6.2 Evaluation: Its use in Contemporary Practice and Crime Prevention

It has already been established in section 2.5 that the efficacy of crime prevention approaches is often of little concern to practitioners, policy makers, and politicians. The extent to which evaluation is undertaken is, in many ways, reflected by the level of this concern. Despite its importance most academics and researchers reporting on crime prevention agree that evaluation in practice is a rare occurrence (Crawford, 1998; Shaftoe, 2004). Shaftoe (2004: 178) states that regardless of the problems associated

with evaluation, whether they are methodological or the perceived difficulty, quite often it comes down to "nobody bothering to evaluate or, indeed, evaluation being deliberately avoided". Burns-Howell and Pascoe (2004: 528) hold a similar view stating that despite the significant costs attached to single projects, or an aggregate of smaller ones, there has been a "failure to exploit the crime prevention knowledge that these projects could provide". In other cases evaluation is considered after an initiative or project has been completed which negates the collection of potentially vital information before and during implementation (Cherney, 2006).

There are a number of reasons why evaluation is largely a forgotten aspect of the crime prevention process. However, the majority of these reasons are by no means exclusive to crime prevention but planning practice in general. For example, a study undertaken by Seasons (2003) explored the factors that facilitate and impede planning evaluation in order to identify the apparent gap between theory and practice. His findings illustrated that while there was considerable interest and support for undertaking evaluation the constraints faced by practitioners and local authorities far outweighed these positive intentions (Seasons, 2003). Principal among these constraints was lack of time, staff skills and financial resources (Seasons, 2003). Respondents of Seasons' (2003) research revealed that resources were heavily concentrated upon the review and facilitation of development proposals rather than research or policy development, leaving little time for evaluation. Burns-Howell and Pascoe (2004) note that funding for crime prevention projects have been increasing and more recently evaluation has been a requirement of receivership. Unfortunately, similar to Seasons' (2003) findings, Tilley (2009: 160) notes that even when funding is available there is little consideration given to evaluation primarily due to the perception that delivery of service is more important; "spending on evaluation is deemed to divert attention from the more important business of service delivery". If it is required, evaluation is more often than not considered at the end of a project (Tilley, 2009).

Moving beyond the neglect of evaluation Minnery *et al.* (1993) provide some insightful observations in their review of the use of evaluation in the Australian planning system. They believe that the demise of master planning and comprehensive planning as the core paradigms for urban planning has caused a shift in focus towards process and a reduced concern about the impact of projects or policies (Minnery *et al.*, 1993). In

evaluative terms Minnery *et al.* (1993) state that this has led to a focus on process evaluation, concerned with how a policy or programme is implemented, rather than impact evaluation which assesses the effects and the extent to which a programme or project has achieved its goals. The consequence is that "concentrating on process rather than either content or impact is a concern for intentions rather than for reality. Never mind the quality; feel the way we got there" (Minnery *et al.*, 1993: 10). This assessment is supported by Ekblom and Pease (1995) as well as Lab (2010) who state that even when evaluation is undertaken it often is focused towards implementation or output rather than impact and outcomes. In some ways this highlights the impact that managerialism and the increased use of performance indicators has had on evaluation in practice (Crawford, 1998). Crawford (1998) argues that these factors often allow for organisationally defined goals rather than those more focused on impact or social goals. He notes that outputs which are defined by performance indicators are very different from outcomes experienced by the community and threaten to reduce evaluation to auditing (Crawford, 1998).

Other constraints identified by Seasons' (2003) research were the fear of failure or embarrassment and the lack of appropriate staff skills in planning departments. A number of authors have found that there is a resistance towards evaluation due to the possibility that findings could embarrass local authorities by highlighting shortcomings, errors, or failure, of an initiative (Seasons, 2003; Tilley, 2000; Tilley, 2009). Related to this Tilley (2009: 161) notes that there is sometimes considerable pressure to produce success stories in order to please bosses, funding bodies, or justify policy decisions, and the interpretation of findings can exhibit a great deal of "wishful thinking" (Crawford, 1998). In addition to the concern over potential embarrassment, Tilley (2009) asserts that often those attempting to undertake evaluation lack the necessary skills and experience to reduce the chance of basic errors in both measurement and method. The above contention is used as a reason for the poor quality of evaluation, however, it may equally have a part to play in the avoidance of its adoption. To expand on the latter point, Seasons (2003) identified that a number of local authorities perceived evaluation to be lengthy, complicated and in some cases difficult. The difficulty of evaluation in crime prevention is by no means an uncommon theme in the literature. The main reason for this perceived difficulty is due to the multidimensional nature of crime and the many intervening variables which can affect the outcomes of crime prevention efforts

(Shaftoe, 2004). What has resulted is considerable and heated debate surrounding the methodologies and concepts that should underpin evaluation.

2.6.3 Types and Methods of Evaluation.

There is a great range of evaluation methods and models that are used in practice. However, within the crime prevention literature, one of the core themes has been the debate surrounding the extent to which evaluation methods need to be systematic and rigorous. In many ways these core debates centre around the importance and weight applied to internal and external validity (Eck, 2002). Internal validity relates to the extent that a drop in crime rate can be causally attributed to an intervention, eliminating alternative explanations for a drop in crime (Ekblom and Pease, 1995). External validity, relates to the extent that an intervention is generalisable enabling the possibility of its reproduction in different contexts (Eck, 2005). There is a huge variety of influences which can manipulate the outcome of crime prevention initiatives and, in particular, threaten internal validity; a summary of these threats are supplied the table presented in Appendix A. This table illustrates the range of factors that can influence evaluation results and, as Tilley (2009) contends, highlights the need for practitioners to be attentive towards the side effects of interventions.

Systematic evaluation techniques and experimental methods are often cited as the preferred approach to crime prevention evaluation. Schneider and Kitchen (2007) for example contend that more systematic and rigorous evaluation techniques are required to move the field forward. Some claim that only evaluations using "true" experimental design are worthy of consideration when judging the effectiveness of interventions (Lab, 2010: 42). Such authors advocate evaluation models akin to those used in the physical sciences using random allocation to control groups and experimental groups (Lab, 2010). These models allow for systematic comparisons between groups that have been subjected to an intervention and those who have not (International Centre for the Prevention of Crime, 2010). Generally, proponents of experimental methods see this approach as ensuring the production of factual information about the impact of an intervention (International Centre for the Prevention of Crime, 2010). Indeed, experimental design has become what is commonly referred to as the "gold standard" in evaluation (Lab, 2010: 42). In both the United Kingdom (Home Office, 1998) and the United States (Sherman *et al.,* 1997) meta-studies of crime prevention evaluations have

been produced providing information about the effectiveness of interventions and their elements. Sherman *et al.* (1997), for example, make claims about what works, what is promising, what is unknown, and what does not work based on a weighting system relating to the scientific rigour and the extent of experimental methods used in evaluations. The work of Sherman *et al.* (1997) has been particularly influential in advocating for, and relying upon, experimental approaches to evaluation in crime prevention (Lab, 2010).

However, although the experimental approach is widely advocated, when evaluation is actually undertaken it normally follows a different prescription. Generally, the quality of evaluations in terms of their technical rigour is considered poor (Tilley, 2000). Ekblom and Pease (1995: 585) state that there is a "great deal of self-serving unpublished and semipublished work that does not meet even the most elementary criteria of evaluative probity". One of the more common evaluation methods used in practice is before and after comparisons (Ekblom and Pease, 1995). This approach often focuses on the change in crime rates by comparing measurements taken before and after an intervention has been implemented (Farrington, 2003). Before and after comparisons have been widely criticised due to the fact that they often fail to consider issues relating to internal validity (Crawford, 1998). Furthermore, Crawford (1998) states that they imply evaluation has an end point whereby an artificial time span neglects the fact that interventions have ongoing effects.

Not all crime prevention scholars advocate experimental methods. Eck (2002; 2006) for example, argues that such rigorous evaluations can actually hinder learning in some cases. He believes that less scientific methodologies can serve important functions and are more realistic in terms of what is achievable in practice (Eck, 2006). He states that place-focused interventions, like CPTED, are highly context sensitive whereby an intervention designed for one area may be ineffectual in another. Additionally, almost all of these interventions are small-scale, aimed at reducing crime in specific places such as specific shops, specific public spaces and specific public parking lots. From this observation Eck (2002) argues that most place-focused interventions differ considerably from interventions in other crime prevention domains which often address universal problems across variable contexts and populations, for example, the Drug Abuse Resistance Education (DARE) programme and Neighbourhood Watch. Eck

(2002: 111) claims that when evaluating these small-scale interventions "adherence to rigorous evaluation criteria is misguided". Internal validity, for example, should be of secondary importance to the initial decline in crime; not all rival causes need to be eliminated because contextual specificity provides no assurance for effective replication (Eck, 2002). These less rigorous approaches, which include simple before and after comparisons, are useful and practical for practitioners because:

- They are less expensive;
- They require less expertise allowing local consultants or in-house staff to conduct them;
- They can be conducted when there are no similar groups or areas to provide a control, which is common in place-based interventions;
- They can be applied when there are limited time periods available for data collection/analysis (Eck, 2006; International Centre for the Prevention of Crime, 2010).

Overall, Eck (2006: 349) claims that less rigorous evaluations "are not just better than nothing. Rather, they have a positive value". In many ways Eck's (2002; 2006) assertions are supported by the realities in practice which often work against the possibility of undertaking rigorous evaluation. However, less rigorous evaluations are often excluded from influential meta-studies and systematic reviews such as those discussed above. Consequentially, some academics have criticised this exclusion due to the fact that less rigorous evaluations are more common, more achievable, and more importantly, contain valuable knowledge (Hope, 2005; Eck, 2006). Others, while advocating that experimental methods are preferable, admit that there is a place for both forms of evaluation (Schneider and Kitchen, 2002). Similarly, Cherney and Sutton (2007) state that an insistence on experimental or even quasi-experimental approaches can create dilemmas for practitioners and in some cases lead them to refrain from undertaking evaluation. Instead they propose that methods need to be tailored to local circumstances, their capacities, and the nature of the projects being undertaken (Cherney and Sutton, 2007).

2.6.4 General Problems in Undertaking Evaluation

In addition to the issues surrounding funding, time and methodological accuracy there are a number of other factors that can negatively influence the undertaking of evaluation and its outcomes. One of the most frequently cited of these factors is data quality. It is widely publicised that not all crime is reported or recorded which limits the accuracy of findings (Cozens, 2002). Additionally, records of victims, incidents and offenders are often prone to contain errors and inconsistencies, for example, the exact location of the crime or the circumstances surrounding it (Atlas and Saville, 2008; Tilley, 2009). These inconsistencies and errors are often the result of victim testimony or methods and categorisation techniques in which police collect and present data (Tilley, 2009). These factors can limit the accuracy of any evaluation as data regarding the location or type of crime can be crucial for understanding the impact an initiative has had (Tilley, 2009).

Another key issue is the ability to capture and measure side-effects which may result from interventions. Crime displacement and diffusion are often of central concern in terms of side-effects, however, it is sometimes difficult to measure whether these have, or have not, occurred (Crawford, 1998; Ekblom and Pease, 1995). For example, some displaced crime could extend beyond an area, or type of crime, being studied, alternatively displacement could be dispersed so wide that it is undetectable (Barr and Pease, 1990).

Monitoring is another crucial component of evaluation. Record keeping during the implementation of interventions is often poor (Tilley, 2009). Tilley (2009) adds that interventions are rarely implemented exactly as planned, therefore, changes made can have significant impacts on outcomes. In addition to this the recording of additional changes made outside of the intervention, such as police patrols, which can impact the crime patterns associated with an intervention, are often overlooked (Tilley, 2009). The issues highlighted above collectively impact the results of any evaluation.

2.6.5 A Way Forward: Synthesis of Factors which Enhance and Encourage Evaluation

Although there is a large degree of criticism and debate within the crime prevention literature a number of factors have been identified which can help to enhance and

encourage the use of evaluation. The first of these is to encourage evaluation to be built into the planning process of an intervention rather than added as an afterthought (Armstrong and Francis, 2003; Cherney, 2006). Burns-Howell and Pascoe (2004) note that although evaluation can be costly the costs can be significantly higher if it is considered post-implementation. Funding is also an issue; evaluation is more likely to be undertaken when there is a commitment to providing resources for its undertaking (Cherney, 2006). In addition to this commitment, adding conditions to funding is one potential way to ensure that evaluation is adopted before an intervention is undertaken helping to reduce the consideration of evaluation after a project has been completed (Burns-Howell and Pascoe, 2004; Cherney, 2006).

Another way that has been proposed to enhance and encourage evaluation is to be more open to qualitative forms of data (Cozens, 2002; International Centre for the Prevention of Crime, 2010; Crawford, 1998). Often there has been reluctance among researchers in crime prevention to use qualitative data for evaluation (Crawford, 1998). Crawford states that evaluations need to supplement quantitative methodologies with qualitative research as it can help to provide greater insights and draw better conclusions from interventions. This recommendation is also supported by the International Centre for the Prevention of Crime (2010) who state that the most promising crime prevention initiatives are not solely concerned with crime rates but the wider issues related to crime such as fear of crime and the feeling of safety. They conclude that evaluation "cannot be limited to measuring reductions in crime and victimization rates...but must take into account a larger number of variables and indicators" (International Centre for the Prevention of Crime, 2010: 178). Reynald (2011) provides similar conclusions in relation to the evaluation of CPTED. He states that one way to build CPTED's evidence base is to use "multiple methods of investigation and supplement these data with other forms of data collection and analysis" such as observations and interviews (Reynald, 2011: 79). He concludes that this approach might help to gain a more holistic perspective regarding weaknesses and how the effectiveness of CPTED can be improved (Reynald, 2011).

A final element for improving the evaluation of crime prevention relates to the need for support from central government. Beyond the provision of resources Cherney and Sutton (2007) state that there is a need for the sharing of experience and the pooling of

knowledge. Similar aspirations were advocated in the United Kingdom's Home Office consultation document *Getting to Grips with Crime: A New Framework for Local Action* (Home Office, 1997). This document highlighted the importance of information sharing and examined the possibility of a national information/resource centre:

> "This is a challenging but very worthwhile objective which, if successful, could make a significant difference to practitioners. An effective means of gathering and exchanging reliable information about what works in what circumstances - and what does not - could at last start to tackle the "re-inventing the wheel" syndrome which has bedevilled crime prevention for too long" (Home Office, 1997: n.p.).

In addition to the possibility of a national resource centre, the Home Office (1997) highlighted the importance of training to equip practitioners to conduct evaluation. Such an approach is also supported by Ekblom and Pease (1995) who state that training for evaluation, as well as access to a professional advisory group or support team, can help to improve the practice of evaluation. In relation to the above points Cherney and Sutton (2007) illustrate the potential importance of setting up practitioner networks. They claim that practitioner networks can promote cultures of learning by sharing knowledge about both successes and failures (Cherney and Sutton, 2007).

In summary, evaluation is widely considered to be an important element in crime prevention practice. Evaluation provides an illustration of the impact an initiative is having and identifies whether an initiative has achieved its aims and objectives. Furthermore, it can identify whether changes are needed, identify problematic side effects, and provide lessons for future practice. However, evaluation remains an undervalued element in practice, particularly those concerned with impact and outcomes. The reasons for this include the lack of resources, staff skills, the impact of managerialism, and the perceived difficulty in undertaking evaluation. These limitations and issues are compounded by debates surrounding what constitutes 'good' evaluation and how to undertake it. Despite these issues, factors such as national information centres, practitioner networks, training, and utilising qualitative forms of data have been identified as aspects which can help to enhance as well as encourage the use of evaluation.

2.7 Conclusion

This chapter has illustrated that a recent shift in criminological thinking has led to the rise of preventative measures in crime control. CPTED is widely regarded as the most popular contemporary approach resulting from this shift which is manifested by its widespread adoption throughout the world. This review has also identified that local authorities, particularly planning departments, have frequently been portrayed as having a crucial and obligatory role to play in the reduction and prevention of crime. While CPTED has gained support from many local authorities wishing to fulfil this role, this review has illustrated that the effectiveness of CPTED has been questioned, and therefore, its effectiveness should not be considered as guaranteed. In addition, this review has identified a notable lack of evaluation in practice and a deficiency in evaluative literature specific to CPTED. In recognising that evaluation is considered a vital component for demonstrating effectiveness and beneficial to improved practice this chapter has illustrated the importance of research that can encourage and enhance the practice of CPTED evaluation by local authorities.

CPTED has been adopted by many local authorities within New Zealand, therefore, a study of practice and perspectives relating to evaluation is considered important for the successful and effective implementation of CPTED across New Zealand. The review of existing theory and practice has found that evaluation is either ignored or undertaken after a project has been implemented. Furthermore, the review identified a number of barriers pursuant to the implementation of evaluation. These included a lack of resources, time, staff skills, prioritisation of process and the perceived difficulty in undertaking evaluation. Conversely, the review also identified factors which can enhance and facilitate evaluation in practice. They include national information centres, practitioner networks, funding, training, and utilising qualitative forms of data. In addition to aspects which may discourage or enhance evaluation the review also illustrated that considerable debate surrounds appropriate methods in which to conduct evaluation.

This study will focus on expanding the current literature base to include the New Zealand context by measuring the extent of CPTED evaluation, examining the barriers to and, investigating factors that may facilitate or enhance, CPTED evaluation. As a prerequisite to the above objectives, this study also aims to examine the effectiveness of

CPTED in New Zealand. The factors outlined in the paragraphs above will help to guide the research and provide a framework whereby comparisons can be made with existing theory. Criterion provided in the corresponding sections of this review will be used to make judgements of the use, and evaluation, of CPTED in New Zealand and will serve to verify or challenge the existing literature base or provide new and progressive ideas for future research.

3

Context

3.1 Introduction

The current chapter provides a link between the previous analysis of research already undertaken in the field of CPTED, crime prevention and evaluation, and the current thesis, identifying how CPTED is promoted and adopted in the New Zealand context as well as reviewing New Zealand based CPTED research. While this study is focused towards evaluation of CPTED initiatives it is important to provide context for the present research by illustrating how CPTED is implemented in the New Zealand context before highlighting the deficiencies and gaps of CPTED related research in New Zealand.

The chapter begins by examining relevant national legislation that establishes the obligations of New Zealand local authorities to actively prevent crime, highlighting the importance of adopting strategies such as CPTED. The second section of the chapter identifies non-statutory motivations, plans, and guidance documents, which have played a significant role in the adoption of CPTED across New Zealand. The third section then examines how CPTED is applied in the local New Zealand context by looking at examples of CPTED application in two New Zealand cities. The final section of the chapter then reviews the existing CPTED research undertaken in New Zealand, building upon the international literature analysed in Chapter 2, which provides further clarification and justification for the focus of the current study.

3.2 Relevant National Provisions

3.2.1 *Resource Management Act 1991*

The *Resource Management Act 1991* (RMA) is the guiding legislative framework for managing and protecting the New Zealand environment. As set out by Part 2 of this statute, local authorities have a statutory obligation to "promote the sustainable management of natural and physical resources" (s5 (1)). Section 5 of the RMA defines 'sustainable management' as:

> **s5 Purpose**
> (2) In this Act, **sustainable management** means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while—
>
> (a) sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and
> (b) safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and
> (c) avoiding, remedying, or mitigating any adverse effects of activities on the environment.

By way of definition 'sustainable management' indicates that the health and safety of people and communities is a specific objective, and sought outcome, for which those acting under the RMA need to provide. Additionally, the RMA requires local authorities to pay particular regard to "the maintenance and enhancement of amenity values" (s7(c)). Part 1 of the RMA provides definitions of key terms for interpretation and application, here, amenity values are defined as "those natural or physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes". Safety is recognised as an important prerequisite for people to appreciate the pleasantness, aesthetic coherence, and attributes of an area or space (MoJ, 2005b).

As illustrated above, local authorities are also required to avoid, remedy, or mitigate any adverse effects of activities on the environment. In relation to this, the meaning of effect is described as:

s3 Meaning of effect
In this Act, unless the context otherwise requires, the term **effect** includes—
(a) any positive or adverse effect; and
(b) any temporary or permanent effect; and
(c) any past, present, or future effect; and
(d) any cumulative effect which arises over time or in combination with other effects—
regardless of the scale, intensity, duration, or frequency of the effect, and also includes—
(e) any potential effect of high probability; and
(f) any potential effect of low probability which has a high potential impact.

Adverse effects on the environment can include both the fear of crime as well as the potential for crime to occur. Therefore, in fulfilling the purpose of the RMA, local authorities and other persons performing duties under the Act must avoid, remedy, or mitigate, crime related effects that may result from activities.

Importantly, the meaning of effect also includes future effects, cumulative effects over time, or cumulative effects that arise in combination with other effects. This suggests that local authorities must also be attentive towards the effects of crime prevention activities themselves, whether these are present or future effects, positive or negative effects, or cumulative effects. This highlights the importance and potential for evaluation of CPTED initiatives and indicates that local authorities are required to undertake evaluation of these initiatives in achieving the purpose of the RMA.

3.2.2 *Local Government Act 2002*

In tandem with the RMA, local authorities are also responsible under the *Local Government Act 2002* (LGA) for promoting "the social, economic, environmental, and cultural well-being of communities, in the present and for the future" (s10 (b)). Under the LGA local authorities are required to identify community outcomes whereby safety, including freedom from crime and fear, is an important factor. To achieve these outcomes local authorities are required to undertake consultation with the communities they serve and prepare long-term, and annual, plan initiatives.

In accordance with s93 of the LGA, local authorities must prepare a Long-Term Council Community Plan (LTCCP). The purpose of an LTCCP includes, but is not restricted to, describing community outcomes, providing a long-term focus for decisions and activities, and providing a basis for accountability of the local authority

to the community (s93 (6)). This process enables local authorities, central government agencies, and the local community to work together in order to determine what they feel is important to them. Therefore, LTCCPs play an important role in the facilitation of crime prevention, and CPTED, initiatives and projects. Of further significance, the LGA prescribes a strong emphasis on monitoring, and reporting upon, community outcomes which local authorities are obliged to undertake once every three years.

3.3 Non-statutory Motivations and Guidance

While the statutory provisions introduced above illustrate the need for local authorities to address concerns of crime and fear of crime, other non-statutory commitments and plans have provided, and continue to provide, further motivation for councils to address these issues, some of which place a specific emphasis on place-based crime prevention initiatives.

3.3.1 *New Zealand Urban Design Protocol (2005)*

The Urban Design Protocol, set up by the Ministry for the Environment, is a voluntary commitment to specific design initiatives by those who become signatories. Any organisation or company involved in some form of planning, design, building, or management of New Zealand towns and cities can become a signatory of The Protocol. More than 180 organisations and companies have become signatories, spanning local government, central government, design professionals, educational institutes and other sector groups. The Protocol's vision is to make "New Zealand towns and cities more successful through quality urban design" (Ministry for the Environment, 2005: 5). The Protocol recognises that quality urban design can enhance safety, and reduce both the incidence of crime and fear of crime. Consequently, The Protocol encourages signatories to appreciate the links between urban design and the incidence, and fear, of crime as well as promote the application of crime prevention principles within their local contexts. This is important for the current research as it provides an indication of the amount of New Zealand towns and cities that have committed to promoting crime prevention within their local contexts.

3.3.2 *Safer Communities: Action Plan to Reduce Community Violence and Sexual Violence (2004)*

The Safer Communities Action Plan, developed by the MoJ, is a further non-statutory document which promotes the adoption and use of CPTED by local authorities and the private sector. This Action Plan is an evolving plan subject to review and updated in the years after its introduction, although no specifics are given as to when it will be updated. Despite this commitment, the plan is relatively dated now, however, it has played a major role in promoting CPTED adoption across New Zealand and therefore it is necessary to acknowledge it in providing the context for the present research.

The Action Plan aims to contribute to reductions in community and sexual violence throughout New Zealand by addressing four priority areas; alcohol related crime, violence in public places, sexual violence, and attitudes to violence. Within each priority area the Action Plan outlines the government's current and planned initiatives to reduce violence. Furthermore the plan identifies gaps in current initiatives and illustrates how these gaps are to be filled which places particular emphasis on crime prevention and improving local level responses. To prevent violence in public places the Action Plan introduces the following objectives:

- Reduce opportunities for violent behaviour to occur in public places
- Improve the design and management of public places
- Improve local level responses to violence in public places

The adoption of CPTED is promoted throughout the Action Plan in achieving the above objectives. Key actions provided include; encouraging local councils and the private sector to incorporate CPTED principles into planning, design, and management of their localities, and provide CPTED training and qualifications for urban planners, architects, and other relevant professionals. Importantly, this plan also encourages evaluation and monitoring and highlights the role these processes play in effective delivery of initiatives. Despite the emphasis on evaluation, the Action Plan contains no provisions or guidance in terms of undertaking it.

3.3.3 *National Guidelines for Crime Prevention through Environmental Design in New Zealand (2005)*

One of the more significant CPTED developments in the New Zealand context was the publication of CPTED guidelines which were launched by the MoJ in 2005. The guidelines were developed following a series of workshops between 2004 and 2005 which involved a number of agencies and actors including: the Ministry for the Environment, Local Government New Zealand and the Police, along with those who would benefit from their development such as local authorities, the crime prevention workforce, urban designers and architects (Monahan, 2006).

The guidelines were specifically designed for planners and designers working for local authorities (MoJ, 2005a; 2005b). While the MoJ were aware that many local authorities used CPTED concepts before the publication of these guidelines, their aim was to provide all local councils with the opportunity to implement CPTED as well as tailor CPTED concepts to the New Zealand context (MoJ, 2005a). The guidelines are split into two parts respectively focusing on principles and implementation. While there is no mention of evaluation in these guidelines it is important to acknowledge their role in encouraging CPTED adoption and application throughout New Zealand.

Part One of the guidelines is entitled *Seven Qualities of Safer Places* which introduces the adapted CPTED principles (MoJ, 2005a). Figure 3.1 illustrates these principles (in blue) and depicts the corresponding relationship each has with the primary CPTED principles established in Chapter 2. While there is difference in the labelling of the various principles they are generally very similar to original CPTED principles. The only variation is the introduction of 'layout' which shares attributes, and potentially aids, with both surveillance and access control as it encourages legible signposting, clear entrances and exits, and that the layout of space encourages sightlines and activity (MoJ, 2005a).

Part One also provides descriptions of each of these principles and provides design options which might be worthy of consideration under each of the seven headings. For example, under 'surveillance and sightlines' one design consideration involves the encouragement of active frontages and windows overlooking pedestrian areas:

> "Places that could be vulnerable to crime should be overlooked by buildings that are busy at all times, or places that are activity generators. Windows and activities in buildings should be directed to overlook pedestrian routes, open spaces and car parks at ground level." (MoJ, 2005a: 16).

In addition to 'consideration' notes, each principle is supplemented with photos which are intended to provide good examples of the corresponding principles and design considerations in practice (MoJ, 2005a).

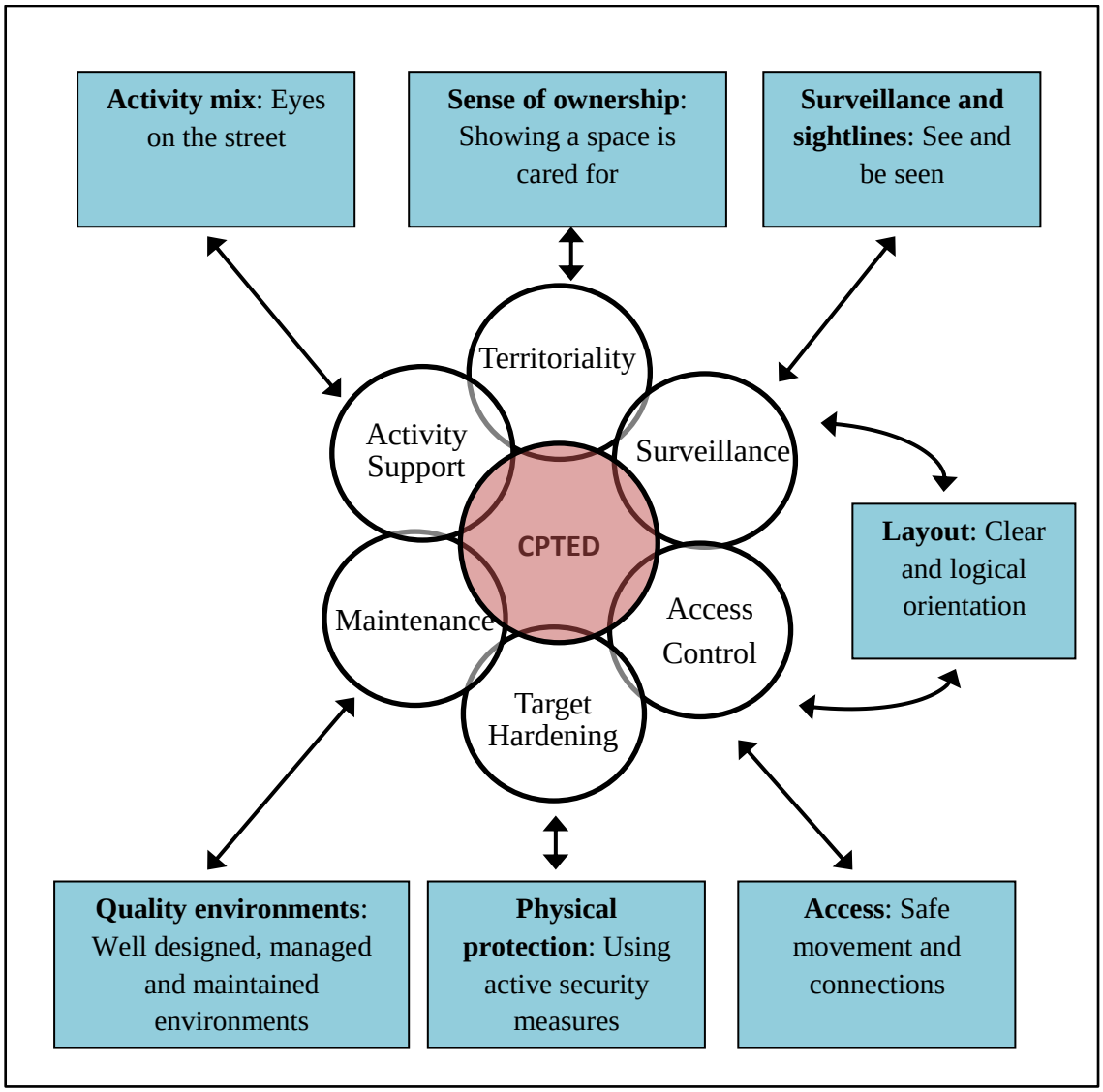

Figure 3.1: Relationship between original CPTED principles and the New Zealand CPTED guidelines.

Part Two of the national guidelines are aimed at advising and educating practitioners in CPTED implementation (MoJ, 2005b). The majority of Part Two explains the merits and proper conduct of safety audits and site assessments which are two common methods used to determine CPTED measures and design applications for an area or space (MoJ, 2005b). Additionally, Part Two encourages the insertion of CPTED provisions to district plans and outlines different approaches by which local authorities can achieve this; examples of these different approaches are illustrated further in section 3.4 of this chapter.

Overall, the publication of the national guidelines has served to increase the adoption, and implementation, of CPTED in local planning practices throughout New Zealand. While these guidelines have served to promote CPTED implementation there is no mention or promotion of evaluation in these guidelines. This is problematic in the sense that the guidelines were developed to promote CPTED across New Zealand and without mention of evaluation, or its importance, local authorities may feel that evaluation is not needed or may be misguided as to its importance in effective CPTED implementation.

3.3.4 **CPTED Training**

CPTED training is supplied by a number of actors and institutes; the International CPTED Association (ICA) and International Security Management and Crime Prevention Institute offer periodic CPTED training workshops with further opportunities for training provided by resident experts in the CPTED field. Further support is provided through conferences which are occasionally held by the International CPTED Association allowing for the sharing of knowledge and new ideas.

In summary, legislative responsibilities under both the Resource Management Act and Local Government Act have meant that local authorities are paying increasing attention to the criminogenic effects of the built environment and greater adoption of crime prevention measures in achieving community outcomes. These actions have been further motivated through non-statutory commitments such as the Urban Design Protocol and the Safe Communities Action Plan. Complementary to these provisions and commitments has been the development of CPTED guidelines which have served to facilitate the adoption of CPTED in planning practice throughout New Zealand.

Having outlined those factors influencing the adoption of CPTED in New Zealand the following section provides an account of how CPTED is applied in the local New Zealand context.

3.4 CPTED at the Local Level

District Plans are the primary documents which local authorities produce to enable the management of land uses and development. These documents are a mandatory requirement for all local authorities acting under the RMA and are commonly considered the most relevant place for CPTED to be situated. As previously noted, CPTED has been adopted by numerous local authorities across New Zealand, however, two of the more interesting cases are Wellington and Auckland. These two cities provide examples of how CPTED is applied in New Zealand through the District Plan and Long Term Council Community Plan. While no indication as to CPTED evaluation is provided in either city's district plan it is important to provide an overview of how CPTED is implemented in each to provide context and background to the case studies of the present research. While the district plans of each case study contain the most significant reference in terms of CPTED both case study locations also refer to CPTED in their respective LTCCPs which provide details about how the Councils monitor safety related community outcomes.

3.4.1 **Wellington City**

In 1999 the Wellington City Council Residents' Satisfaction Survey revealed that only 30% of residents felt safe in the city at night (Coggan and Gabites, 2007). Following this a number of separate incidents, including murder, sexual assaults, and negative media reports, led Wellington City Council (WCC) to take action towards improving safety in the city (Coggan and Gabites, 2007). The adoption of CPTED as a crime prevention tool was one among many initiatives adopted by the WCC.[2] As a result, Wellington City became an accredited World Health Organisation Safe Community on the 14th of June 2006 (Coggan and Gabites, 2007). Interestingly, to become a 'Safe Community' cities must meet seven criteria (Safe Communities Foundation New Zealand, 2011). Of central importance to this study is criterion five which states that

2 Although Coggan and Gabites (2007) state that the use of CPTED increased in this period, according to Klein and Walker (2005) CPTED guidelines were first inserted into the District Plan in 1994.

there needs to be "evaluation measures to assess programmes, processes and the effects of change" (Safe Communities Foundation New Zealand, 2011). This indicates that Wellington should provide some evidence of CPTED evaluation.

Long Term Council Community Plan 2009-19

CPTED is referred to in two different strategy areas of the Wellington City's LTCCP; Urban Development, and Social and Recreation (WCC, 2009). A summary of the relevant objectives in each of these sections is provided by Table 3.1. Both of these strategy areas make similar references to crime prevention through urban design measures where it is considered an important component in protecting and improving public safety throughout the city.

Table 3.1: Overview of CPTED related Aims and Objectives in Wellington City's Long Term Council Community Plan.

Strategy/section	Priority area/activity	LTCCP text
5. Social and Recreation	5.4 Public Health and Safety	We also contribute through urban design work: safety is enhanced by well designed and well lit buildings and public spaces.
6.Urban Development	6.5 Public spaces development	Overall, our work in this activity aims to make the city more liveable and visually appealing. We also aim to improve public safety. Urban design can prevent crime and improve safety and the perception of safety.

As was previously noted in this chapter, local authorities are required to monitor their progress in achieving community outcomes. Wellington City Council states that to assess whether they are achieving the aims and objectives above they will monitor "the number of crimes recorded in the city" and conduct surveys regarding "resident perceptions of safety in the city at various times of the day" (WCC, 2009: 120). These actions are the only indication that any form of monitoring or evaluation regarding crime prevention takes place and no reference is given to any specific project-based evaluation methods.

Wellington City District Plan

The Wellington City District Plan is spread across three volumes; Volume One sets out objectives, policies, and rules, pertaining to specific geographic areas within the city; Volume Two offers numerous design guides and guidelines; while Volume Three provides maps of the city illustrating zoning boundaries for which certain policies and rules apply. Throughout these volumes the District Plan provides various objectives and policies specific to CPTED implementation across the city.

Direct reference to the use of CPTED is provided in the different zoning chapters in Volume One of the Plan. A summary of these objectives, the policies adopted to achieve these objectives, and the methods employed, are provided below.[3] As Table 3.2 illustrates, WCC aims to promote and use CPTED throughout the residential, suburban and central areas of the city.

Table 3.2: CPTED related Objectives, Policies and Methods in Wellington City District Plan.

Plan Chapter	Objective	Policy	Method
Volume 1, 4: Residential Areas	4.2.10: To promote the development of a safe and healthy city	4.2.10.1: Improve the design of developments to reduce threats to personal safety and security	Advocacy (crime prevention design guidelines)
Volume 1, 6: Suburban Centre's	6.2.9: To promote the development of a safe and healthy city	6.2.9.1: Improve the design of developments to reduce the actual and potential threats to personal safety and security	Advocacy (crime prevention design guidelines)
Volume 1, 12: Central Area	12.2.9: To promote the development of a safe and healthy city	12.2.9.1: Improve the design of developments to reduce the actual and potential threats to personal safety and security	Advocacy (crime prevention design guidelines)

3. For the sake of clarity and the reduction of repetitiveness it should be noted that the same objectives, policies, and methods, provided in Table 3.2 have been extended to Chapter 8: 'Institutional Precincts' and Chapter 14: 'Rural Area' of the WCC (2000).

The District Plan also supplies an explanation for why the above objectives and policies have been adopted. In all three of the above plan chapters the WCC illustrate that urban design measures "can be adopted to minimise actual or potential threats to personal safety and security" they also add that "guidelines for design against crime have been prepared and these will be used by Council to advocate the development of a safe city" (WCC, 2000: 4/27). Through the use of these guidelines the WCC believe that the environmental result will be that both buildings and spaces are designed to avoid, remedy or mitigate the incidence of crime.

The guidelines referred to in the methods above (see Table 3.2) are provided in Volume Two of the District Plan. These guidelines outline the intention of the guide to apply principles of CPTED to all new development as well as alterations to existing buildings and public spaces (WCC, 2000). It should be noted that the guidelines are labelled as 'Non-Statutory: For Guidance Only' (WCC, 2000). The guide lists eight principles and each is explained in detail before providing associated objectives. Table 3.3, below, provides a list of these guideline principles and illustrates their associated objectives.

Table 3.3: Summary of Wellington City Council 'Crime Prevention Design Guidelines'.

Guideline principles	Objectives
Informal Surveillance	To maximise the opportunity for the informal surveillance of publicly accessible space in residential, commercial and public areas both by people in buildings nearby and people in public open space going about their normal daily activity.
Formal Surveillance	To promote and assist formal surveillance activities both from within buildings and from nearby public space.
Lighting	To provide lighting to illuminate those parts of urban public space that people commonly use at night, including building entrances, exits and other main routes of travel.
	To light in a way and to a level that allows pedestrians to be identified and reduces the opportunity for concealment.
Concealment	To reduce or eliminate opportunities for concealment in, or at the edges of, frequently used publicly accessible spaces and facilities.
Entrapment	To eliminate any small, semi-enclosed spaces that may be used for entrapment purposes.

Robustness	To ensure that publicly accessible parts of buildings and public spaces resist damage from vandalism or inappropriate use while maximizing the opportunity for legitimate public activities and uses to occur.
Maintenance	To ensure that building fronts, lighting and public space are well maintained.
	To ensure that damage is promptly repaired.

Further guidance is provided by guidelines listed under each objective, these number anywhere between three and twelve for each objective, and give further details about specific ways in which objectives can be met. What the above objectives, policies, and guidelines illustrate is that the WCC have adopted a limited-statutory approach to CPTED implementation whereby there are no directly associated rules or assessment criteria incorporated into the District Plan. This contrasts significantly to Auckland City Council's approach to CPTED which is the focus of the next section of this chapter.

3.4.2 **Auckland City.**

It should be noted that Auckland City Council has been disestablished as the seven existing city and district councils were integrated as one unitary council (Auckland Council) on the 1st November 2010. However, for the purpose of this chapter existing Auckland City Council plans are used as examples to illustrate how CPTED is used at the local level within Auckland.

Auckland City Council's 10-year Plan 2009-2019 **(LTCCP)**

Before providing details regarding Auckland City Council's District Plan a brief summary of the Auckland City Council's LTCCP is provided. Within the latter plan the Auckland City Council (ACC) outlines seven strategies that the city seeks to achieve over a ten year period. One of these strategies, 'Strong and Healthy Communities', outlines the council's objectives for ensuring public health and safety and reducing crime (ACC, 2009: 53). Of the five objectives listed under this strategy the promotion of CPTED is referred to under Objective 4: 'support safe communities'. As such, one of the listed priorities of this objective is "design features in public areas and facilities to minimise crime" (ACC, 2009: 54). In order to monitor their progress towards achieving this priority the council indicate that they will "monitor crime committed and resolved" and measure "residents' views of the safety of our communities" (ACC, 2009:75).

Much like Wellington's LTCCP this is the only indication that any form of monitoring or evaluation regarding crime prevention takes place and similarly no reference is given to any specific project-based evaluation methods.

Auckland City Council District Plan

According to Klein and Walker (2005) ACC became the first council in the country to incorporate substantial CPTED requirements directly into the District Plan. In 2004 the ACC introduced a CPTED Plan Change to the Isthmus section of the Auckland City Council District Plan (Klein and Walker, 2005). The Auckland City Council District Plan is split into three sections, each pertaining to particular areas of the city; Central Area, Isthmus, and Hauraki Gulf. Figure 3.2 provides a clearer indication of each of these areas and their respective district plan sections.

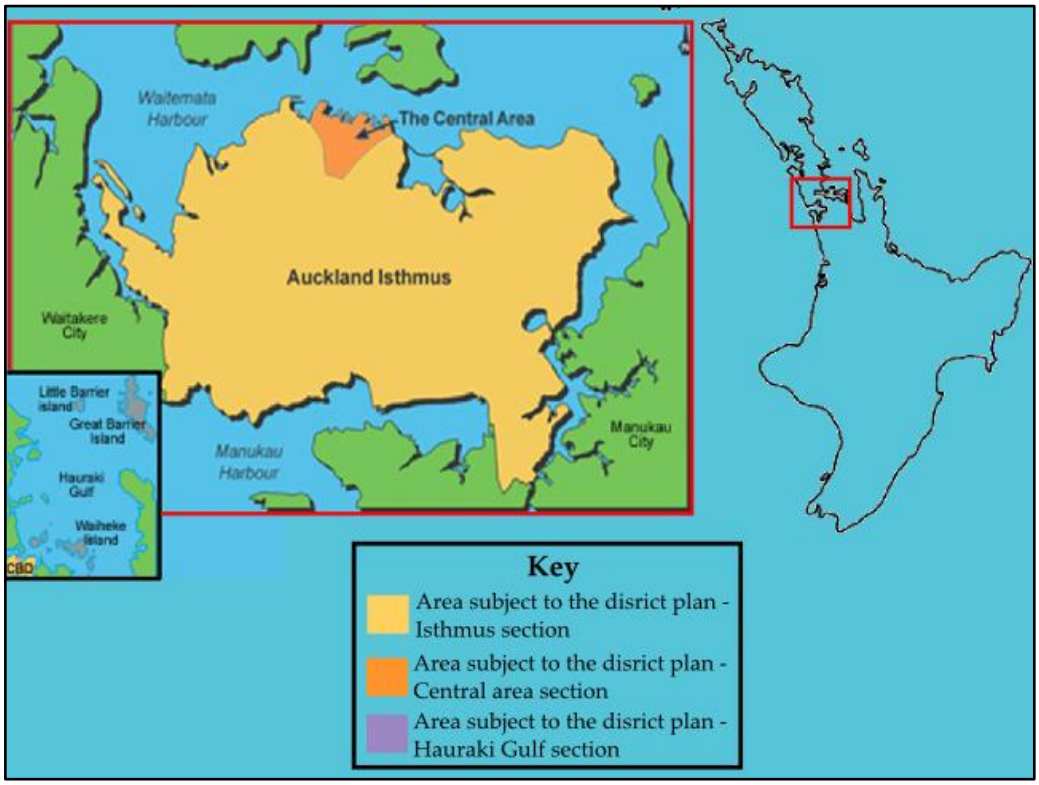

Figure 3.2: Map of Auckland City illustrating the geographic areas to which different district plan sections apply (adapted from ACC, 2011).

Like the Wellington City District Plan each of these sections contain objectives, policies, and rules, relating to significant resource management issues enabling the management of land uses and development. Both the Isthmus and Central Area sections of the District Plan have specific objectives, policies, and rules relating to CPTED. However, unlike the Wellington City District Plan, the CPTED components in the Auckland City Council District Plan have statutory effect. Part Six, 'Human Environment', of the Isthmus section of the Plan is the most significant. Table 3.4 presents the CPTED related provisions provided in Part Six where the design of the physical environment is recognised as a legitimate means to create fewer opportunities for crime to occur and decrease levels of fear.

Table 3.4: Part 6.2.10 of the Auckland City Council District Plan - Isthmus section.

Safety: 6.2.10	
Issue: 6.2.10.1	The need to ensure a safer environment for the community through the design of buildings, public places and the interfaces between them.
Objective: 6.2.10.2	To enhance public and personal safety through reducing opportunities for crime to occur.
Policy: 6.2.10.2	By ensuring that certain people-generating activities (such as larger scale business and residential developments as well as public facilities such as parks, transportation and car parking facilities) are designed to: - encourage the natural surveillance of public and semi-public spaces from surrounding activities and buildings; and - ensure that there is a clear distinction between public, semi-public and private areas through the use of design techniques; and - encourage a sense of community guardianship of public areas so that these areas are well- used and maintained.

An expected outcome of the above provisions is that developments and places "will be designed in such a manner so that people feel safe when visiting them and that the occurrence of crime is reduced through employing certain design techniques" (ACC, 1999: Part 6: 6). Part 6.2.10.5 also provides assessment criteria, largely derived from safety guidelines supplied in Annexure 16 of the District Plan, whereby development proposals are to be assessed against their ability to prevent crime through design, layout and ongoing management (ACC, 1999). Following assessment, conditions may be imposed upon development proposals in relation to the assessment criteria.

While Part Six illustrates the most detailed and significant reference to CPTED, other parts of the Plan also refer to the consideration of CPTED principles. These include: Residential, Business, Special Purpose, Open Space and Transportation parts of the Plan. Some of these parts provide cross-reference to Part Six while others require CPTED assessment, or consideration, for certain activities, such as those classified as controlled or discretionary.

CPTED is also referred to in the Central Area section of the District Plan (ACC, 2004). Part 5, 'Activities', of the Plan introduces CPTED assessment, under the heading of safety, as a requirement for all discretionary activities. Other parts of the Central Area section require CPTED assessment for new developments, additions or alterations to existing buildings and spaces, certain residential activities and car park buildings and spaces, as well as consideration within open space areas and within certain precincts and quarters (ACC, 2004). Two different sets of guidelines are also provided within the District Plan.[4] These, like Wellington's, provide principles accompanied by general explanations, objectives, policies and guideline points to assist planners and developers in the assessment process (ACC, 1999; 2004).

Overall, both Auckland and Wellington City Council's acknowledge that public health and safety are key priorities and recognised community outcomes which they seek to improve or enhance. As such, the WCC and ACC have adopted and inserted CPTED into their respective planning documents. Importantly, the only indication of evaluation or monitoring of CPTED initiatives was each council's aim to monitor crime levels and survey residents' perceptions of safety. Little indication outside of these measures has been identified or documented despite the recognised statutory obligation to assess the specific effects of crime prevention initiatives under the RMA.

3.5 CPTED Research in New Zealand

Research focused upon the use of CPTED in New Zealand has been limited. Of the studies that have been undertaken all have focused on the implementation of CPTED with little consideration of the evaluation process or the questions that surround CPTED's effectiveness. Blackford (2005), for example, investigated the levels of

4 Annex 6 for the Central Area section and Annex 16 for the Isthmus section of the Auckland City Council District Plan.

CPTED awareness and implementation methods of local authorities. Others such as Klein and Walker (2005) have highlighted the benefits and weaknesses of statutory and non-statutory methods of CPTED implementation.

More recently, McCauley and Opie (2007) undertook a national review of the use of CPTED by local authorities. Their study found that awareness of CPTED is growing as is use around New Zealand, however, many local authorities are unable to assess whether their projects are successful or not (McCauley and Opie, 2007). One of the main conclusions of their research highlighted that councils "require assistance to determine the ways in which to assess and evaluate the effectiveness of their projects" (McCauley and Opie, 2007: 38). Similar recommendations were provided by a recent report on crime and criminal justice which highlighted the need to determine the effectiveness of crime prevention projects and develop best-practice examples through evaluation (Statistics New Zealand, 2009). Overall, research in the New Zealand context has illustrated that there is a significant gap surrounding evaluative research particularly in regard to CPTED.

3.6 Conclusion

This chapter aimed to provide a context for CPTED development, implementation, and related research, in New Zealand. As such, the chapter has shown that New Zealand local authorities are increasingly utilising CPTED as a crime prevention tool which is illustrative of the recognition that crime prevention responsibilities should extend beyond that of the police. Beyond the adoption of CPTED, the chapter has also established that evaluation of crime prevention activities are a statutory requirement for local authorities. In addition to this requirement, evaluation's importance is acknowledged in, and adoption advocated by, non-statutory documents such as the Safer Communities Action Plan. Despite these obligations, and the recognised importance, towards evaluation the only indication of its undertaking relates to the monitoring of crime rates and public safety perception surveys with no indication of specific project-based evaluation procedures.

While CPTED research in the New Zealand context has focused upon the implementation of CPTED practice, this chapter has identified that evaluation remains an undervalued and unexamined focal point of research. Despite the lack of evaluative

research, findings from studies such as McCauley and Opie (2007) and Statistics New Zealand (2009) have shown that the extent to which CPTED is effective remains unclear. Additionally, local authorities have been identified as needing assistance in terms of undertaking CPTED evaluation.

The above findings further justify the need to investigate the effectiveness of CPTED, the extent to which evaluation is undertaken, what factors may inhibit the evaluation process, and how this process might best be encouraged and improved upon for the benefit of local authorities, and the communities they serve, across New Zealand. Complementary to Chapter 2, this chapter has set the context for the primary research. The following chapter describes how the primary research will be conducted, providing details and justification for the research approach and methods of data collection and analysis.

4

Methodological Framework

4.1 Introduction

The current chapter discusses the methodological framework employed in this thesis. The purpose of this chapter is to provide an outline of the research process and explain the rationale behind the research methods employed in this study. Following this introduction, the second section will clarify and provide justification for the chosen research approach and design. Section 4.3 then provides details pertaining to the research process and discusses the methods employed for data collection. Following this, section 4.4 introduces the techniques adopted for data analysis. Finally, section 4.5 provides critical reflections and recognised limitations of the research. Overall, this chapter aims to provide a link between the context for this study, as articulated in the last three chapters, and the primary results of the research, presented in Chapters 5 to 8.

4.2 Research Approach and Design

This study aims to investigate both perceptions of, and evaluation processes employed by, council professionals and private consultants using CPTED in practice. To achieve these aims the study adopts an interpretive-qualitative approach, drawing elements from Flyvbjerg's (2001, 2004) model for phronetic planning research. An explanation and justification for the adoption of these approaches is given below.

4.2.1 **Qualitative Approach.**

Qualitative research focuses on studying people or phenomena within their natural settings, or the 'real world', in an effort to interpret the perceptions and experiences which people associate with these settings (Leedy and Ormrod, 2001; Tolich and Davidson, 2011). Unlike quantitative approaches to research, qualitative researchers reject the notion that there is one single, ultimate truth to be discovered. Conversely, they hold the view that there may be multiple perspectives held by each individual involved in the study, all of which are seen as having equal validity (Leedy and Ormrod, 2001).This makes qualitative research important as it seeks to explore diverse and complex social relations by describing and interpreting reality as it is experienced by informants (Sarantakos, 2005). The present study focuses on both experiences and perceptions of key stakeholders involved with the use of CPTED in everyday practice. A qualitative research approach, therefore, was considered the most appropriate method for the current study as it provides a framework for which perceptions and experiences of those involved with CPTED and its use can be analysed.

4.2.2 **Phronetic Framework**

The study also incorporates elements of the phronetic planning research approach developed by Flyvbjerg (2001; 2004). Phronetic research is an approach based on a modern interpretation of the classical Greek, or Aristolean, concept of phronesis (Flyvbjerg, 2004). Aristotle distinguishes knowledge as a tripartite consisting of episteme, techne and phronesis (Schram, 2004). Episteme is generally translated as 'science' or 'scientific knowledge' and is concerned with universals and the production of knowledge regarding general truths or laws (Flyvbjerg, 2004). Techne can be translated to mean 'art' in the sense of 'craft' and concerns the application of technical knowledge and skills orientated towards production (Flyvbjerg, 2004). Conversely, phronesis has been translated to mean practical wisdom, practical judgement, or common sense, and was considered by Aristotle as the most important of the three forms of knowledge outlined above (Flyvbjerg, 2004).

Flyvbjerg (2004) argues that planning research as well as other social sciences have been dominated by the ideal of producing scientific knowledge (episteme). He states that phronesis is concerned with values and is commonly involved in practices of

planning, correspondingly, "any attempts to reduce planning research to episteme or techne or to comprehend planning practices in those terms are misguided" (Flyvbjerg, 2004: 285). Therefore, when compared with episteme and techne, phronesis is considered to be most relevant to practice. It places focus on what is variable and specific cases which requires deliberation, judgement, and choice, but beyond all else requires experience (Flyvbjerg, 2004).

In procedural terms, research adopting a phronetic planning approach focuses on everyday practice and practical knowledge rather than the theoretical 'know why' or the technical 'know how' (Flyvbjerg, 2004;). Flyvbjerg (2004: 296) states that this may be practices which are "common or highly specialized, or rarefied, which constitute a given field of interest, regardless of whether these practices constitute the UNDP headquarters, a local planning office, or a particular plan or project...". Through exploration and deliberation phronetic researchers examine current practices looking at opportunities, problems, risks, and potential solutions, in order to illustrate ways practice may be improved (Grybovych *et al*., 2011; Healy, 2008). At its core, phronetic research aims to address four key value-rational questions:

1. "Where are we going?"
2. "Who gains and who loses, and by which mechanisms of power?"
3. "Is this development desirable?"
4. "What, if anything, should we do about it?" (Flyvbjerg, 2004: 289-290).

Flyvbjerg (2004) states that researchers who ask and answer these four questions produce a study which reflects on where a certain issue or process may be going in the future and whether or not anything needs to change. Flyvbjerg (2004) stresses that no one has enough wisdom or experience to fully answer all four questions but phronetic researchers should attempt to develop partial answers that may contribute to an ongoing dialogue about the problems, possibilities, risks, and potential solutions of the topic central to the research. It should be noted that Flyvbjerg (2004) also provides a set of methodological guidelines for which phronetic research may follow.[5] These include placing power at the core of analysis, focusing on values, and studying cases and contexts, among others. However, Flyvbjerg (2004: 290) states that these methodological guidelines "should not be seen as imperatives" but only as potential

5 For a full explanation of methodological guidelines see Flyvbjerg (2004: 290-302).

indication for the direction of research. Additionally, "the questions can be answered in many different ways for a given area of concern. Thus, there exists neither one fixed methodology for doing phronetic social science nor only one type of examples of such work" (Flyvbjerg, 2001: 162). In essence the primary issue for phronetic research is to answer the four value-rational questions outlined above (Flyvbjerg, 2004).

The phronetic research approach was considered an appropriate method to adopt for this study, particularly due to its concern and focus on practice. While the adoption of the qualitative approach allows for an analysis of experiences and perceptions from diverse actors using CPTED, the phronetic research approach allows for this analysis to be focused on practice, and frames the research around the four value-rational questions illustrated above. In addition to this the phronetic research approach allows for an analysis of values and introduces the concept of power as a point of investigation. It should be noted that this study does not place power at the core of analysis, as advocated by Flyvbjerg (2004), and therefore, does not aspire to follow the methodological guidelines provided by Flyvbjerg (2004) religiously. While it is recognised that power is certainly an important issue relating to CPTED and its impacts, it is not the central issue of enquiry for this particular study.

Despite the above diversion, this study still seeks to develop answers to the four phronetic questions. This will be achieved through the research objectives provided in Chapter 1, Figure 4.1 provides an illustration regarding how each of the research objectives provides answers to the four phronetic questions. As Figure 4.1 illustrates, this study seeks to analyse current practices, as well as practitioner values, in an effort to both understand what is happening in terms of CPTED evaluation as well as determine what may be done to improve practice. Additionally, this study aims to investigate perceptions of CPTED's effectiveness, which in addition to identifying the extent of evaluation, should provide insights into 'who gains and who loses' which is invariably concerned with the issue of power. Therefore, it is considered that this study meets the requirements of phronetic planning research as provided by Flyvbjerg (2004).

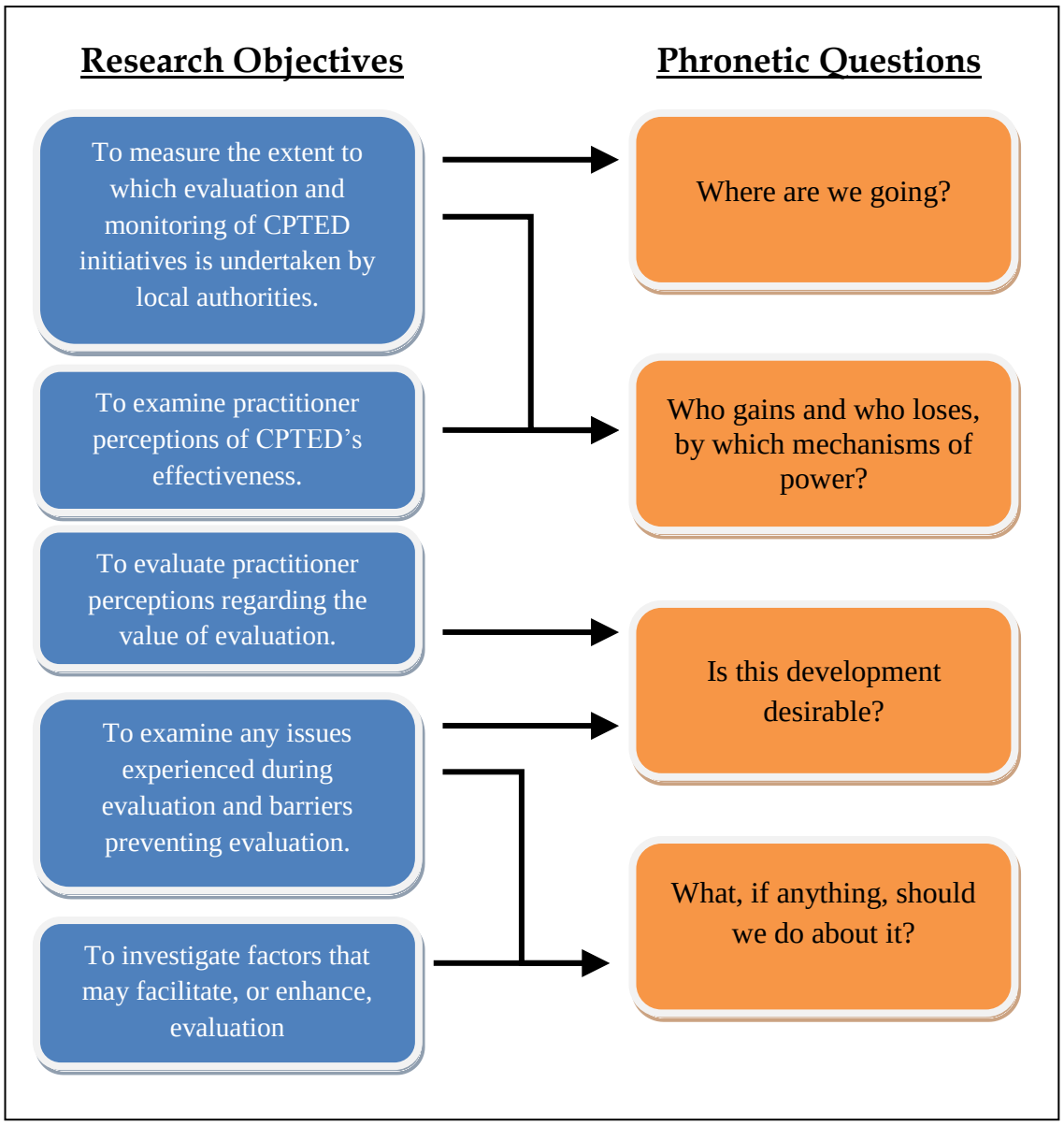

Figure 4.1: How research objectives relate and answer the four phronetic questions.

4.2.3 Research Paradigm

According to Sarantakos (2005: 30) a paradigm is a "set of propositions that explain how the world is perceived". It is a philosophical standpoint which contains a worldview, breaking down real world complexities and guides the researcher by illustrating what might be important, what is legitimate and what is reasonable (Sarantakos, 2005). In doing so a paradigm informs the methodology and guides the research process. This study employs an interpretive paradigm which aims to 'interpret and understand' human behaviour and action, as well as the motivations behind such behaviours and actions, within the context of a particular social activity (Sarantakos,

2005: 42). The interpretive paradigm has a long standing relationship with qualitative research, however, Willis (2008) states that the interpretive paradigm is also very compatible with phronetic research. This paradigm was, therefore, seen as an appropriate philosophical viewpoint from which to undertake this study. This is because it allows for an understanding of current CPTED practice and evaluation, as well as an analysis of stakeholder motivations for conducting, or neglecting, the evaluation process.

4.2.4 Case Study Approach

Case studies focus on either one or a few instances of a particular phenomenon. The purpose of case study research is to provide an "in-depth account of events, relationships, experiences or processes" occurring in these particular instances (Denscombe, 2007: 35). While some researchers focus on one case it is more common to direct inquiry towards two or more cases in an effort to make comparisons, propose generalisations, or build upon existing theory (Leedy and Ormrod, 2001). According to Leedy and Ormrod case studies are particularly suitable for learning about a little known subject or poorly understood situation. In general, the logic behind the case study approach is that there may be insights to be gained from looking at particular cases which, correspondingly, can have wider implications and may not be noticeable or gathered from research methods which focus on large numbers of instances such as surveys (Denscombe, 2007). In short, researchers employing the case study approach aim "to illuminate the general by looking at the particular" (Denscombe, 2007: 36).

Given the above insights, the case study approach was considered particularly applicable for the investigation of CPTED and its evaluation as it is an area which has not been investigated in any depth within the New Zealand context. In addition to this the in-depth nature of case study research was considered a necessary component for this research because it has the ability to extract detailed information about the evaluation process, the barriers preventing evaluation, and what might be needed to facilitate evaluation of CPTED initiatives.

In terms of case study selection, Denscombe (2007) states that the researcher is required to make deliberate and conscious choices regarding which cases to investigate (Denscombe, 2007). Rather than random selection, cases are often selected with regard

to their known attributes and their relevance to the practical problems or theoretical issues being researched (Denscombe, 2007). The current study focuses on the cases of Auckland and Wellington, reasons for which are provided below. Initially, Palmerston North was considered as a potential third case study, however, due to unforeseen circumstances this case was unable to be examined in detail.[6] Figure 4.2 provides an illustration of the location for each of these cities in New Zealand.

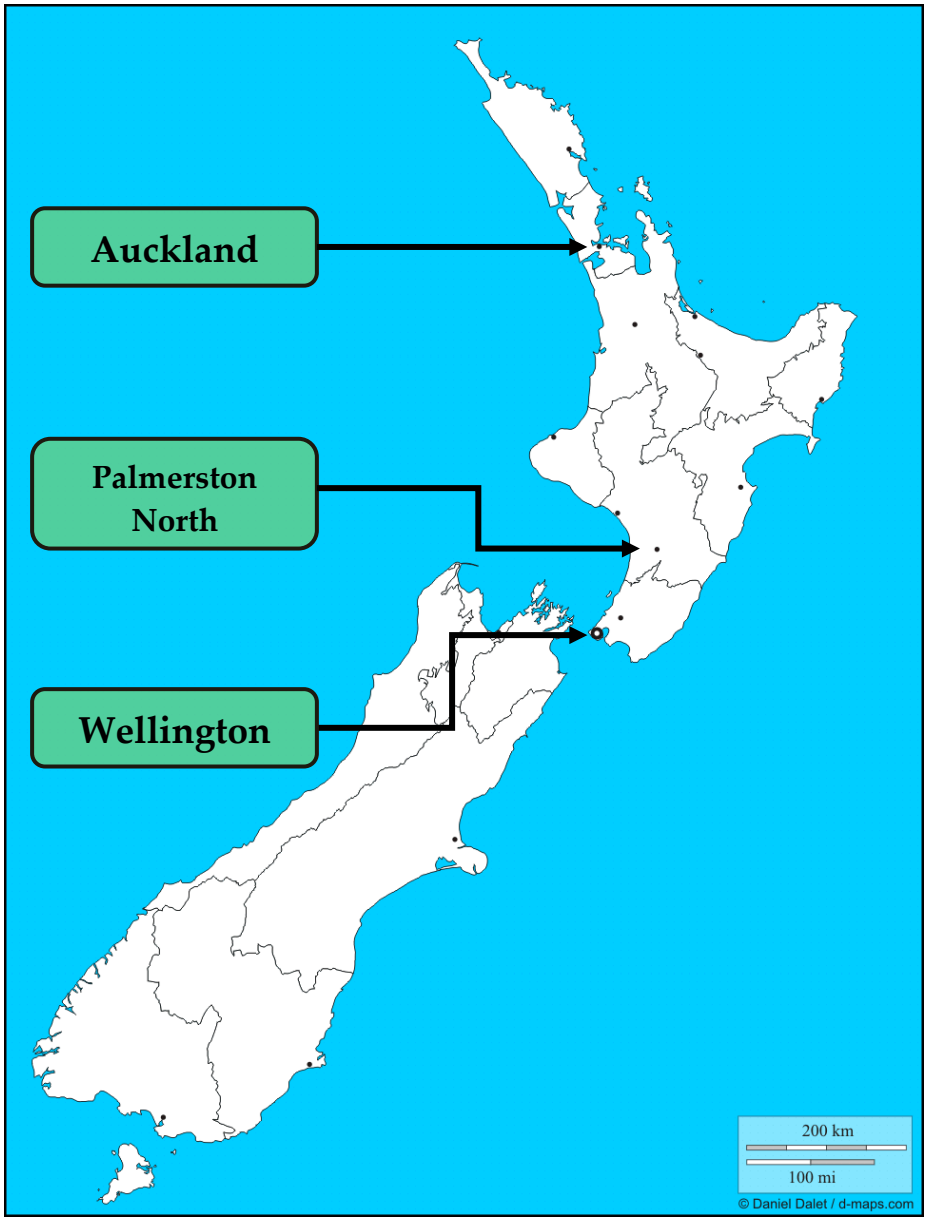

Figure 4.2: Locations of selected New Zealand case studies (Source: Dalet, 2011).

6 Further details regarding these circumstances are provided in section 4.5, research limitations and reflections, of this chapter.

The former two cases (Auckland and Wellington) were selected because of their size and their reasonably long association, in New Zealand terms, with the use of CPTED. Additionally, both Auckland and Wellington are considered large cities in New Zealand with considerable resources at their disposal which highlighted the possibility of CPTED being used regularly and at various scales within each context. It was considered that the above factors would provide the greatest opportunity to find examples of CPTED evaluation and, therefore, gain insights from those most experienced with its execution.

Palmerston North, like Auckland and Wellington, had documented use of CPTED and was chosen on the grounds that it might provide contrast to the norm and an illustration of CPTED evaluation in a smaller scale context (Denscombe, 2007). It should be noted that Christchurch was also considered as a possible case study primarily due to its well documented use of CPTED, unfortunately, following the earthquake of February 22nd it was judged that most potential informants would be busy with more pressing, and important, matters facing the city, therefore it was not considered any further.

4.3 Research Process and Methods of Data Collection

This study utilised both primary and secondary data collection methods in order to address the research aims and objectives. The first phase of the research involved an in-depth literature review in order to determine the research problem and the aims and objectives of the study. In order to analyse perceptions of CPTED's effectiveness, measure the extent to which evaluation is taking place, and examine barriers to, and facilitating factors of, the evaluation process, semi-structured key informant interviews were selected as an appropriate data collection method. The majority of these interviews were recorded by digital audio tape-recorder then transcribed for data analysis. Analysis involved a coding process whereby key themes recurrent in the research were separated into unique categories and later compared to key themes and topics in the initial review of the literature. Figure 4.3 provides an illustration of the research process, highlighting the different stages of the research, the role of primary and secondary data in each stage, and shows how each of the research objectives will be addressed as a result. The rest of this section provides a more in-depth account of the research process, the methods of data collection, and justification for the use of these

methods.

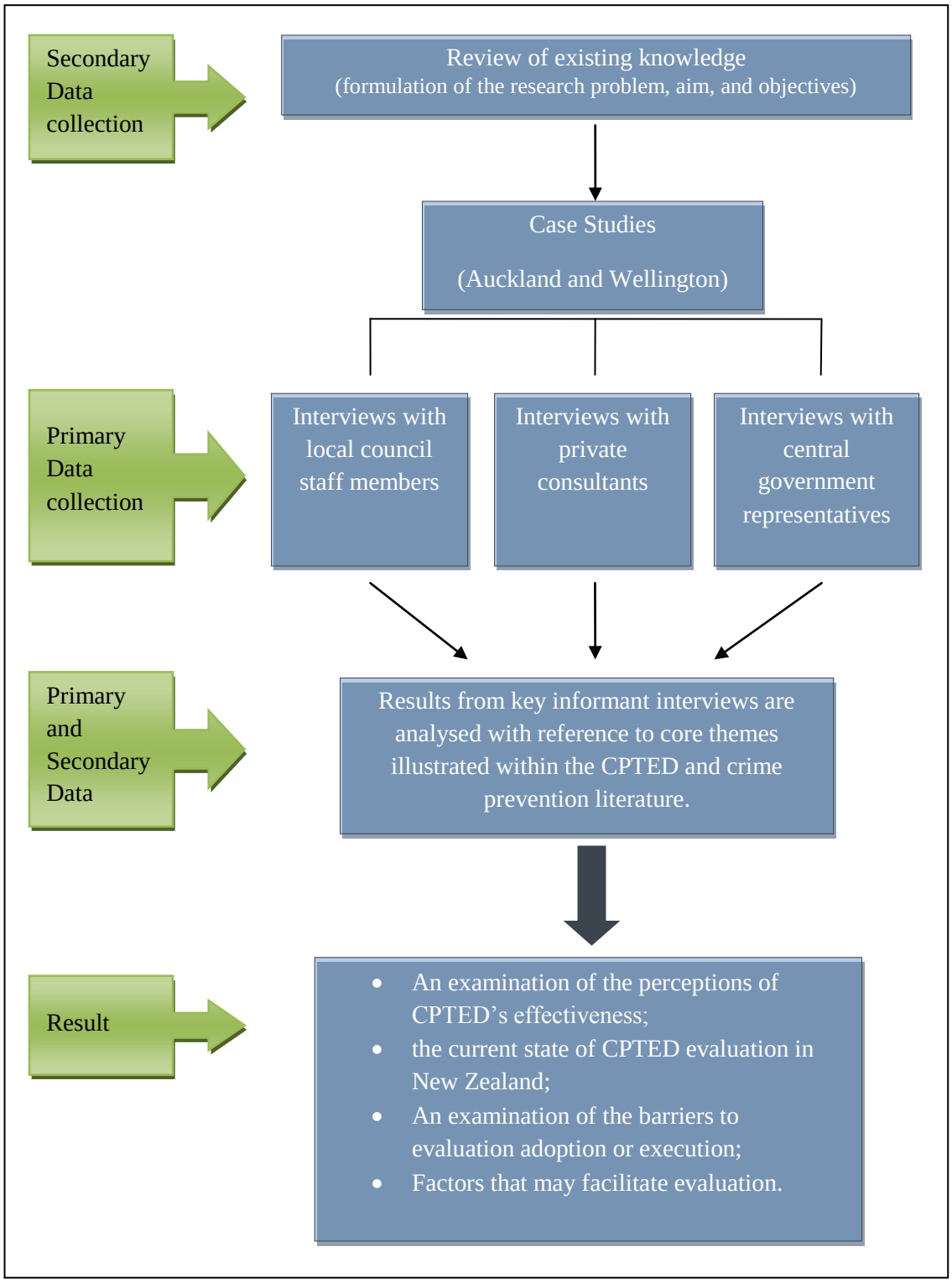

Figure 4.3: The research process illustrating how each research objective will be addressed.

4.3.1 **Literature Review**

It is often noted that for research to be considered valuable and valid it needs to be situated within the context of both past and existing knowledge (O'Leary, 2004). The first stage of data collection involved a comprehensive review of existing CPTED knowledge and theory, as presented in Chapter 2. This was achieved through a comprehensive examination and discussion of literary sources which related to the research topic; these included books, scholarly articles, journals, government documents, and the internet.

The structure of the literature review was divided into five key themes in order to provide a focused account of both the necessary background information and the key debates and issues surrounding CPTED, these included; the history and theory behind CPTED, CPTED principles and practice, CPTED's effectiveness, evaluation, and CPTED within the New Zealand planning context. This review helped to establish the theoretical background of the study and identified gaps in existing knowledge providing avenues for further investigation (Kumar, 2011). Subsequently, the literature review played a primary role in the determination of the research problem, the formulation of research aims and objectives, and the preparation of key informant interview questions. Additionally the review allowed for contextualisation between the present study and earlier research and theory. This enabled the consolidation and integration of results to contribute to the current knowledge base of CPTED.

4.3.2 **Key Informant Interviews**

Key informant interviews were selected as the main method of primary data collection. While the collection of straightforward facts may best be served through means of a questionnaire, interviews are a more appropriate method when the researcher needs to gain insights into opinions and experiences (Denscombe, 2007). The use of interviews is particularly useful when the research requires a depth of information, often considered a requirement when eliciting opinions and experiences, allowing the researcher to gain valuable insights based on the wisdom of key informants (Denscombe, 2007). This was considered the most appropriate method for collecting data from council staff as well as private practitioners due to the fact that CPTED is a

specialised, and specific, topic whereby detailed information regarding opinions, insights, and experiences would be needed for research objectives to be addressed.

Selecting key informants

The aim for this study was to include informants from local government, central government and private practice, in both case study locations, who use or have experience with CPTED. Before any details are provided it should be noted that finding and securing informants for this study was a difficult and lengthy process, which was not envisioned or expected at the commencement of this research.

Initial contact with Auckland Council and Wellington City Council was made through email to their respective information desks. An example of this email is provided in Appendix B. This email outlined my research details and highlighted my interest in interviewing Council staff involved with CPTED or its use. In one case the reply recommended only one staff member while in another case resulted in no response. In the latter case contact was made by phone which resulted in a further email being sent and forwarded around relevant council departments. This resulted in the suggestion of one contact who was employed in the private industry without any suggestions of in-house staff. Contact was also made with the Chairman of the International CPTED Association through email following a similar composition as that outlined above; however, it asked for recommendations in terms of potential informants. This resulted in one further contact.

After identifying informants an email was addressed to each, again, highlighting the details of my research and inviting them to contribute through an interview if they had the time. The majority of those contacted responded favourably and were happy to be interviewed while others indicated they were too busy due to current events such as the Rugby World Cup. Given that relatively few contacts were provided by both councils a snowball sampling technique was adopted.

Snowball sampling relies on social networking and offers an informal method for gaining access to the required population (David and Sutton, 2004). According to David and Sutton snowball sampling, or ‘snowballing’, is often a useful technique when the target population is hidden, unknown, or difficult to identify (Tolich and Davidson, 2011). Generally ‘snowballing’ involves the researcher contacting one

informant from the targeted population who is then asked to provide recommendations regarding other possible informants within the same target population (Tolich and Davidson, 2011). Therefore the researcher starts by identifying a relatively small band of respondents who then generate contact with other people who are associated or involved with the activity in which the researcher is interested (Tolich and Davidson, 2011). Sarantakos (2005) states that in many cases snowball sampling is the only way of securing a sample for a study. This technique was considered to be the only way of securing access to a larger sample population during the research process.

Following initial contact, and in some cases after interviews, informants were asked if they could recommend other potential contacts that may be relevant to the study. In total this resulted in the identification of ten further contacts including Auckland Council staff, Wellington City Council staff and private practitioners. Those recommended through 'snowballing' were all knowledgeable in the field of CPTED, however, their positions and experience within Council or Private Practice was varied which offered a wide range of views and insights into CPTED within the New Zealand context. These potential informants were contacted by email or phone depending on the information supplied. Of these ten contacts, five were able to contribute to the study. Following interest and willingness to contribute to the research interview times and places were organised with interviewees at their preference. Due to limitations of time, funding, and the difficulty in finding informants, all except two of the Wellington based interviews were conducted over the phone, which removed the need to organise a location for the interviews. Interviews lasted between 30 and 60 minutes and all except two were audio tape-recorded; one by request of the informant and one due to equipment malfunction. This information was then transcribed at the conclusion of interviews for coding and data analysis.

4.3.3 Interview Structure and Questions

This study adopted a semi-structured interview format. A semi-structured approach to interviews still allows the researcher to have a predefined set of issues and questions to be answered. However, the semi-structured approach offers flexibility in terms of what order questions and topics are considered and allows the interviewee to expand upon ideas and issues posed by the researcher (Denscombe, 2007). This was considered as both important and appropriate for the current study as it provides enough structure to

ensure that fundamental questions pertinent to the aim of the study are answered whilst allowing both the researcher to probe issues and the informant to expand upon themes and opinions which may lie outside of the predefined set of questions.

Interview questions were generated from key themes and findings from the initial literature review. These questions were unstandardised allowing informants to formulate responses in their own way (Sarantakos, 1998). The aim was to keep the questions posed to informants as general as possible in order to allow for a considered and open response. Additionally this allowed for further exploration of new ideas or themes that may have not been identified within the literature. The questions for all informants were centred on their perceptions of CPTED's effectiveness, their knowledge of the evaluation process, barriers to this process, and their thoughts on what might encourage evaluation. Appendix C offers a list of the questions asked during interviews.

It was considered that the broad nature of the interview questions could cause partial or incomplete answers and create potential difficulty in providing answers (Sarantakos, 1998). For these reasons a probing technique was adopted during the course of interviews. This technique was used in order to gain more information, stimulating the extension or exemplification of a given response. Additional consideration was given to the possibility that semi-structured interviews with open-ended questions create the potential for omission of certain topics and reduce the comparability of results due to variations in the wording of responses (Sarantakos, 1998; Burns, 2000). Despite this limitation, the open-ended nature of questions was considered the most appropriate question structure in order to gain in-depth responses about issues and themes relating to the research objectives. To further reduce the possibility of the above limitations occurring, interviews were conducted with care and vigilance to keep interviews focused on topics and themes relevant to the present study.

4.3.4 **Ethical Considerations**

Consideration of proper ethical conduct while undertaking research is an important and necessary prerequisite of field work. Potential ethical complications can arise when researchers fail to supply informants with clear details of the study, its purpose, the methods employed, and how their identity and input will be administered in terms of the results (Sarantakos, 2005; Davidson and Tolich, 2011). To avoid complications this study aimed to adhere to Davidson and Tolich's (2011) five key principles for ethical conduct by social researchers. These are:

- Voluntary participation
- Informed consent
- Do no harm
- Avoid deceit
- Confidentiality or anonymity

These principles were adhered to throughout the research process. In addition to these principles the University of Otago requires that research gain ethical approval before any form of fieldwork commences. This study complied with all of the University of Otago's ethical standards. In adhering to the above principles informants were supplied with an information sheet which provided full details of the current study. Additionally, informed consent was gained through consent forms which granted the use of data acquired from interviews for results sections of this thesis and ensured informant anonymity. A copy of this consent form and information sheet is supplied in Appendix D.

For telephone interviews there was slight variation from the above procedure. Informants were verbally informed, if they had not been already through email, about the details covered by the information sheet such as the details of the study, the use of the results and matters of anonymity. Furthermore, informants were told that if at any time they felt uncomfortable with questions, or the interview, they could stop at any time. Informants were also asked if they had any queries or questions before the interview commenced in case email exchanges were forgotten or they wished to know further details of the research. Anonymity was guaranteed to all informants whereby their name and position would not be disclosed; instead, each informant has been

prescribed a number for use in the write up of results as well as their affiliation within each case study. Appendix E provides a list of key informants along with their associated number's and their affiliation with each case study. It should be noted that key informant attributes such as area of expertise (such as urban designer, landscape architect, planner) have been excluded to protect anonymity within the small sample population which this research targeted.

4.4 Data Analysis

As noted above the majority of interviews were recorded by an audio tape-recorder, except in two cases; one where the respondent did not wish to be recorded, and another where there was an equipment malfunction. In the latter two cases detailed notes were taken during the course of the interview.

Following each interview the audio data was reviewed and transcribed by hand, for those interviews that were not recorded the notes taken during the interview were subject to a similar process and rewritten. Through this process transcribed data could be compared and contrasted to the themes established in the literature review.

Burns (2000) notes that during the analysis stage of the research process the researcher aims to find meaning in the data collected. To achieve this aim the data needs to be organised in order to illustrate comparisons, contrasts and insights (Burns, 2000). To identify meaning and expose themes a common practice in qualitative research is to undertake a coding exercise (Burns, 2000). By coding transcriptions from interviews, data can be categorised into themes, topics, issues, or propositions, making analysis more manageable. For the present study, data from interviews were coded under key themes and topics which were recurrent in the research. This data was then collated into large document's representing each specific code. This process made it easier to analyse data and provided a framework on which to structure the results chapters.

After the initial coding process had been completed data was compared to relevant or corresponding themes evident in the literature. The established objectives and themes presented in Chapters 1 and 2 allowed for this analysis to be focused, therefore, allowing connections and contrasts to be made between the present research and

existing knowledge, theory, and practice. From this the conclusions provided in Chapters 5 to 9 could be made.

4.5 Research Limitations and Reflections

A number of limiting factors restricted the overall outcome of the field work for this study. As mentioned earlier one of the major limitations of this research was finding key informants. The initial search for informants returned very few contacts and therefore a reliance on these few key informants was needed to provide further contacts for the research. This process was lengthy and time consuming and resulted in the data collection phase of the research taking much longer than was initially expected. Securing interviews with potential informants was another limiting factor. While it is recognised that this is a reality of all research, current events such as the Rugby World Cup and Christchurch earthquakes, further impinged on securing key informant interviews, and in other cases, made interviews impossible until the conclusion of such events. Attention should also be directed to the possibility of sampling bias within this research given the reliance on snowball sampling. As discussed previously in this chapter, this was a necessary method to adopt in order to find key informants. This could cause potential bias in that the sample obtained is not representative of the larger population from which it was drawn (Heckathorn, 1997). Despite these limitations, given that CPTED is quite a small and specialised field, it is not considered that the results of this research are unrepresentative, especially given the relatively small sample population which this research targeted.

As was previously noted, Palmerston North was originally one of the chosen case study locations and it was envisaged that this could provide valuable insights to CPTED use and evaluation in a smaller-scale municipality, contrasting to the likes of Wellington and Auckland. Palmerston North is home to one of the most notable CPTED projects in New Zealand; the central square which was redeveloped using CPTED between 2001 and 2005. It was therefore identified as a good candidate for case study selection as the likelihood of finding people or council staff who had experience with CPTED's use was high. Unfortunately, after talking to a number of Palmerston North Council staff no contacts could be found in the Council with CPTED experience. Additionally, while one informant later identified two Palmerston North Council Staff who were involved

with CPTED projects, these staff members had moved on to other jobs or positions and were unable to be contacted. It should be noted that while the above circumstances are considered a limitation, for the purposes of this research, they are also considered 'results' which will be discussed further in the following chapters.

A further limitation can be attributed to the interview approach. It was acknowledged that adopting a semi-structured approach to interviews and developing open ended questions had the potential to distort results. This was due to the fact that this approach provides the potential for key informants to deviate from the topic of discussion, consequently, causing the omission of certain issues or data and potentially reducing the comparability of results due to variations in the wording of responses (Burns, 2000). Despite efforts to mitigate these potential issues, it is important to acknowledge that results may be affected by such influences. Other issues such as interviewer bias also need to be addressed. Both the personality of, and interactions between, researcher and interviewee can cause bias throughout the course of data collection (Neuman, 2000). An interviewer's visible characteristics, race, gender, or political beliefs can both cause bias during interviews as well as cause unintentional misrepresentation of results (Sarantakos, 1998; Burns, 2000). Since interviews generally allow the researcher to have a great deal of control the above issues were considered and carefully negotiated in order to reduce potential bias.

Like most research, limited time and resources restricted the scope of the present study. Time, in particular, was restricted due the amount that was invested in finding and securing informants for interviews. As mentioned above there was also significant amounts of time between various interviews based on the availability of key informants, therefore, it was not financially feasible to travel back and forth to the case study locations for each. This meant that there was a reliance on phone interviews which have their own potential biases. Hague (1993) states that during telephone interviews respondents can potentially avoid long, discursive responses, and the lack of personal contact means that the interviewer is unable to assess responses and obtain the feeling of accuracy. Despite this limitation, it was assessed that interviews went well and respondents often stated that the time needed for the interview was not a problem, which indicated that they were engaged and not avoiding answering questions in full.

4.6 Conclusion

This chapter has supplied a description and justification of the methods and techniques utilised for the purpose of this research. The research focused on the case studies of Auckland and Wellington and adopted an interpretive-qualitative approach which drew elements from Flyvbjerg's (2004) phronetic planning research model. This approach allowed the research to gather multiple narratives through experiences, perceptions, and values, with a focus on practice and practical experience. Data collection involved an in-depth review of existing theory and practice and a series of semi-structured interviews with key informants from each case study location. Data analysis techniques included transcribing interviews and coding each in relation to key themes recurrent in the research and similar or contrasting themes identified in the review of existing theory and practice. It is through the culmination of the above approaches and processes that results were gathered, interpreted, and organised. Chapter 5 begins the presentation and discussion of these results.

5

Results and Discussion: Effectiveness of CPTED

5.1 Introduction

Before results are presented a brief explanation for the structure of result chapters is offered including justification for integrating discussion with results. Result chapters have been structured in relation to specific research objectives. Each presents the major themes and findings of the primary research which are then discussed and compared with existing theory. The primary reason for integrating results and discussion is to provide a more succinct presentation of findings and due to the close relation between identified themes within the academic literature, research objectives, and results, allowing for a natural progression of ideas and conclusions. As such, Chapters 5 to 8 follow a structure informed by the literature review enabling the integration of research findings for comparison and the identification of findings that are unique to this study.

The current chapter examines practitioner perceptions of CPTED's effectiveness. It also explores issues which may actively undermine the effectiveness of CPTED. Specifically, this chapter addresses Research Objective 2; '*To examine practitioner perceptions of CPTED's effectiveness*'. To answer this objective interviews with key informants were analysed with particular reference to core themes regarding CPTED effectiveness identified in the academic literature presented in Chapter 2. As such, this chapter is split into two sections. The first examines general perceptions of CPTED effectiveness held by informants, while the second section explores issues which may undermine, or compromise, the effectiveness of CPTED relating specifically to key

themes within the academic literature. By analysing these perceptions and issues a conclusion can be made relating to whether there is a need for evaluation of CPTED initiatives to be promoted and undertaken in the New Zealand context.

5.2 General Perceptions

As was illustrated in Chapter 2, many scholars have shown concern about CPTED's effectiveness, particularly due to the fact that local authorities and private practices have demonstrated little or no commitment to gauging the success of CPTED (Pease, 1997; Shaftoe and Read, 2005). This lack of regard towards the demonstration of success is often attributed to practitioner perceptions of CPTED. Internationally, practitioners commonly see CPTED techniques as "self-evident", common sense, or guaranteed to produce an effective result (Pease, 1997: 976; Shaftoe and Read, 2005; Atlas and Saville, 2008). An Auckland informant provided evidence that similar perceptions as those illustrated above may be held by CPTED practitioners in New Zealand:

> "I think it's really, really, effective. I think it's great, I think it's easily applicable and it's something that people can understand, like it sort of makes common sense really...and I'm definitely of the mind that if you apply CPTED it's going to make an improvement" (key informant 5).

This was the only response among informants to refer to CPTED as "common sense" adding that "you don't really need to do the training" unless someone wants to understand it better (key informant 5). Three Wellington informants provided a contrasting viewpoint to the response above, as presented in Table 5.1, by expressing that CPTED is not simplistic, nor is it guaranteed to produce effective results, illustrating that accepting these notions is largely dependent upon the knowledge and understanding of practitioners.

Table 5.1: Perceptions of CPTEDs complexity and the expertise of CPTED practitioners.

Supporting Comments	Informant
"in terms of effectiveness, it is multi-faceted and extremely complex...one major problem is that practitioners and police, once they have 30 minutes of training, think they are experts. This is a recipe for failure and will give CPTED a bad name...this can do some really bad damage because they all think it's simple but in reality there's no simple solutions".	key informant 6
"that CPTED expertise, is yeah, pretty hard to find. So understanding the complexity of CPTED and how to do it well is probably not very well understood by very many people".	key informant 2
"CPTED's never going to be a magic bullet. All I'm saying is just because you make a good design doesn't mean to say that the sorts of problems that you might be trying to address are going to disappear overnight. It's a bit like CCTV...everybody says it's going to solve all your problems; well that's crap!".	key informant 4

Key informant 6 and 4's comments were supported by a number of other Wellington and Auckland practitioners, all of whom felt that the effectiveness of CPTED was contingent upon practitioner knowledge and understanding (key informant 1; 2; 3; 7). For example, a private consultant from Auckland noted that "it can be very effective provided that the people involved in it know what they are doing and understand what is needed because obviously with CPTED there are no hard and fast rules" (key informant 7).

The responses indicate that the majority of practitioners interviewed understand that the design-crime relationship is complex and CPTED techniques are not simplistic or scientifically proven. However, a key finding that has emerged from these responses indicates that there are practitioners implementing CPTED in New Zealand who consider CPTED to be an effective crime prevention approach regardless of the level of knowledge or expertise one has. This result correlates with the broader academic literature where it is widely considered that practitioners view CPTED techniques as "self evident" and are often not concerned with the subject of effectiveness (Pease, 1997: 976). As was noted by key informant 6, this result has further significance as it indicates that some CPTED projects in New Zealand may in fact produce negative

effects and highlights the potential importance that evaluation can play in assessing CPTED's effectiveness. The following section of this chapter provides a closer analysis of practitioner opinions, including examples, regarding both negative side-effects as well as issues which may compromise the effectiveness of CPTED initiatives.

5.3 Issues Undermining Effectiveness

During interviews, informants were asked to share their thoughts on what issues they felt compromised the effectiveness of CPTED and whether any projects they had been involved with had unforeseen side effects. While the majority of informants believed that CPTED was an effective crime prevention tool, some still illustrated aspects and issues which compromise its effectiveness, all of which closely relate to the core criticisms and issues pertaining to the effectiveness of CPTED within the crime prevention literature. These responses included the issues of displacement, social exclusion, and conflict in regard to competing interests, which are presented and discussed below.

5.3.1 **Displacement**

One of the core criticisms of crime prevention strategies is the issue of displacement (Cozens *et al.*, 2005). Crawford (1998: 80) argues that displacement "probably constitutes the most telling criticism" of crime prevention strategies. The issue of displacement represents a valid concern held by many critics of CPTED as its occurrence may weaken CPTEDs effectiveness by simply shifting crime problems to other areas or targets without reducing the number of criminal events (Crawford, 1998). A number of informants were aware of the issue of displacement. Key informant 2, for example, thought that displacement was definitely a side-effect which can result from CPTED implementation, however, admitted that most people who have an understanding of CPTED just accept that it can occur:

> "I think some people understand that you will get that sometimes but umm...some people who have a pretty good understanding of CPTED sort of just accept that there will be some displacement sometimes. But that...maybe that's not such a big deal" (key informant 2).

This informant expanded upon the comment above noting that in some cases the crime problem might not be completely displaced, or that the problem may be dispersed to the

extent that it is unnoticeable, and felt that it should not be a major issue if the benefits accruing from a place where CPTED has been used are significant enough (key informant 2). In contrast, an Auckland informant claimed that they did not think that any negative side-effects result from CPTED implementation (key informant 5). Similarly, an Auckland consultant felt that displacement would only be an issue resulting from "more comprehensive projects" such as large regeneration schemes utilising CPTED (key informant 7). These varied and contrasting opinions illustrate that CPTED practitioners are generally unsure about the extent, or impact, of displacement.

Despite the above opinions, other practitioners conveyed examples of situations where different forms of displacement had occurred as a result of CPTED implementation. Key informant 3 provided an example regarding a number of CPTED initiatives implemented within the retail centre of Newtown, Wellington, where there were problems with anti-social behaviour and violence in the main street. When explaining the Newtown example this informant noted that CPTED could have potentially shifted crime problems to other suburbs or areas:

> "That issue just moved to the suburbs next door a little bit...but whether it has come back into the area? Umm, I don't think so. But has it shifted the problem? Potentially. Also in Newtown they are having a real spike in graffiti and that wasn't one of the main issues during the audit" (key informant 3).

This "shifting" of crime provides an example of what Crawford (1998: 81) has termed 'spatial' displacement, where the same crime is committed but in a different place or area. Of further significance is the indication that graffiti had increased following CPTED implementation. The increased graffiti occurrences in surrounding areas following CPTED implementation suggest the possibility of an additional form of displacement, specifically, 'type of crime' displacement whereby there is a shift in the nature of criminal activity; in this case a possible shift from violence to graffiti as graffiti was not a major issue at the time of CPTED implementation (Crawford, 1998: 81).

Another example of spatial displacement was provided by key informant 1 who referred to the introduction of CCTV and other CPTED measures along the extent of Courtenay Place in central Wellington. This informant stated that due to the fact that Courtenay Place is occupied by many bars and nightclubs there were often issues with intoxicated people, fights and other forms of violence. To combat these crime issues

CCTV cameras and "a whole lot of other design changes" were introduced to specific areas along Courtenay Place including lighting and the removal of obstacles to increase surveillance of the area (key informant 1). Figure 5.1 provides a street map of central Wellington with red dots marking the locations where these CCTV cameras and design changes have been introduced.



Figure 5.1: Locations of CCTV installations and CPTED design changes in Wellington (Source: Burgess, 2009)

Key informant 1 felt that the changes introduced have had a positive effect in terms of preventing violence, however, also indicated that "some of the issues sort of go up other streets, like Tory Street and what have you". As can be seen in Figure 5.1 Tory Street is located near locations where CCTV and CPTED design changes have been implemented which suggests that crime issues have been displaced from Courtenay Place and into other surrounding streets.

The above results illustrate that CPTED practitioners generally have some form of knowledge regarding displacement, however, most are unsure of its extent or impact

and in most cases consider it as an often acceptable side-effect. This result correlates with the international experience where displacement is generally ignored as a side-effect of crime prevention strategies (Vito *et al.,* 2007). Having made this statement, it should be noted that Shaftoe and Read (2005) argue that caution should be taken not to overemphasise the extent to which displacement occurs or to accept that it is an inevitable, and negative, outcome as illustrated in section 2.5.1. However, failing to anticipate side-effects such as displacement is problematic as it not only compromises the effectiveness of CPTED but ignores the fact that displaced crime has social costs for those outside of the targeted location (Vito *et al.,* 2007). This fact raises the question of social justice as it is unlikely that local authorities operating under the RMA can justify providing some citizens with greater security than others. It should be noted that while these results make no effort to overemphasise the extent, or nature, of displacement its occurrence is evident in New Zealand CPTED practice which illustrates the need for practitioners to be more attentive towards the possible impacts, whether positive or negative, and the extent of side-effects resulting from CPTED implementation. It is also of interest to note that displacement can be a positive side-effect, whereby the impact of crime prevention initiatives can be greater than anticipated, either affecting a larger geographic area or reducing certain crimes which were not targeted by the initial project (Clarke and Weisburd, 1994).

The significance of these findings is that they illustrate that evaluation could potentially play an important role in identifying side effects of CPTED initiatives as well as reducing the impact any such negative side-effects have on those who may be affected by CPTED implementation. Furthermore, the fact that positive side-effects can result from CPTED projects indicates that local authorities may reduce costs, if positive effects are diffused to other areas, by reducing the potential need for further design changes in nearby locations or spaces.

5.3.2 **Social Exclusion**

The issue of social exclusion was also a prominent theme within results. Conceptually, CPTED is neutral in terms of who benefits from, and who should be targeted by, initiatives (White and Sutton, 1995). However, a number of crime prevention scholars have contended that in practice, CPTED has a greater impact on specific groups, such as the poor, young, and homeless, who are often targeted to reduce their presence in

public and semi-public spaces (White and Sutton, 1995). In these cases CPTED has been criticised for 'designing out' people, rather than 'designing out' crime, irrespective of their criminality (Midveit, 2005; Crawford, 1998). The above problem impacts CPTED as an effective crime prevention approach and raises serious questions surrounding social justice. Interviews with key informants revealed that CPTED has potentially been utilised for the purposes of designing out people, however, informants also provided some contrasting opinions as to the relationship between CPTED and social exclusion.

When asked about their thoughts surrounding the effectiveness of CPTED key informant 4 provided an example which they felt represented a positive and effective example of CPTED's use. The example provided was Glover Park, a small internal pocket-park located in central Wellington, which was recently redeveloped using CPTED principles. An illustration of Glover Park following its redevelopment is provided in Figure 5.2 below.



Figure 5.2: The newly redeveloped Glover Park (Source: Wellington Daily Photo, 2010).

Key informant 4 stated that before its redevelopment people did not feel safe in or around the park and were hesitant to use it noting that "there were a whole lot of design

features which made it bloody awful". However, this informant added that another reason Glover Park was a "bad place" was due to the fact that a group of "local lags" (the definition of which is given below) used the space. Following the park's redevelopment this informant talked to the affected group who stated; "'why would we come back here? It's bloody awful now…you've done all these things that are unacceptable to us'" (key informant 4).

Key informant 1 provided an additional, and conflicting, viewpoint regarding the redevelopment of Glover Park; rather than an example of effective CPTED use this informant felt that the redevelopment was an example of how CPTED can be utilised for unethical ends. This respondent contended that the park was occupied by a number of homeless people, the aforementioned 'local lags', who would often congregate and socialise in the space. While key informant 1 admitted that the original park probably did not meet many CPTED principles due to the existing design features, such as high walls, poor lighting and thick vegetation, the primary motivation behind the redevelopment was not to make the space safer:

> "But what was sort of happening was, I mean there was a little bit of crime there, but the main reason was to remove the homeless people, umm, so a project was proposed to basically...'make the park safer'" (key informant 1).

This motivation, according to key informant 1, caused some tension between stakeholders involved with the redevelopment stating that "we sort of put up a bit of an argument saying is that the right, umm, sort of solution, because if you do that those people have to go or be somewhere". In direct contrast to the Glover Park example, an Auckland practitioner illustrated that CPTED is in the process of being applied to certain spaces in order to reduce social exclusion of marginalised groups. They held the belief that excluding people is not "what CPTED is about, CPTED is about the opposite" (key informant 5). In illustrating this point key informant 5 provided the example of a square which serves as an exit point for Newmarket Railway Station, located within the suburb of Newmarket, Auckland.



Figure 5.3: Newmarket Railway Station Square (Source: Auckland Transport and Urban Design, 2011).

Figure 5.3 depicts Newmarket Railway Station Square which features low-rise residential units on three sides of the square with approximately fifty retail outlets occupying the ground floor (key informant 5). Key informant 5 stated that thousands of youths, particularly school children, pass through the area every day and often congregate in the square while waiting for their trains. Furthermore, when the square was originally built signs were erected restricting activities such as "no ball playing, no skating, no, no, no, you know, no breathing" (key informant 5). It is these factors which have led to increased levels of vandalism and "mischief" as the "kids are not allowed to do anything...they don't feel welcome, they feel marginalised" (key informant 5). Additionally, other recent events have been perceived to cause the space to deteriorate, such as stabbings and assaults, and there is growing tension between youths using the space and store owners who feel "intimidated". Interestingly, key informant 5 indicated that the space could be reinvigorated by CPTED in an inclusive way which would be beneficial to all users who use the square as well as make it safer.

The results presented above illustrate that practitioners have differing and competing viewpoints regarding the relationship between the use of CPTED for crime preventative means and social exclusion. One positive aspect of these results was provided by the

Auckland example of Newmarket which illustrates the use of CPTED as a socially inclusive tool, without targeting groups who are seen as a problem. However, the example provided by Glover Park in Wellington suggests that CPTED may potentially be used to target specific groups which represents what Midveit (2005: 36) has called a "serious ethical dilemma". While the extent to which CPTED is used in this manner remains unclear, it still raises the question of social cost and justice; whereby CPTED may render a certain area or community relatively safe but also increases the vulnerability of marginalised groups. These findings reinforce Crawford's (1998) contention that the social value of crime prevention is often taken for granted and highlights a need to balance crime prevention aims against ethical issues as well as other social and human costs. Of equal significance, these findings provide justification for evaluation and monitoring to be undertaken in order to assess if CPTED outcomes are having the desired effect as well as promoting the accountability of those implementing projects which may have undesirable social costs.

5.3.3 **Balancing Priorities**

During interviews informants were asked if they felt that CPTED principles had the potential to conflict with contemporary principles of sustainability. These potential conflicts are a core theme within the crime prevention literature where considerable debate surrounds a number of contemporary principles of sustainability and those of design-based crime prevention (Cozens and Love, 2009; Kitchen, 2009). The majority of this debate is focused upon the promotion of new urbanist principles, such as permeability, mixed-use and density (Schneider and Kitchen, 2007). In practice, these conflicts have been documented as causing "confusion, conflict, and contradiction" as planning policy may promote one principle, such as permeability, and crime prevention advice advocates another, for example minimal permeability (Cozens and Love, 2009: 348).

In responding to the above question most informants did not feel that there are conflicts between CPTED principles and contemporary principles of sustainability, however, they did reveal there is potential for CPTED design changes to be compromised due to competing interests involved with different spaces and areas. For example, a Wellington informant indicated that the effectiveness of CPTED can sometimes be undermined when there are "competing interests" in designing or developing a space

(key informant 6). This informant gave the example of Wellington waterfront, where CPTED recommendations included improving lighting in order to make the space safer at night. However, these recommendations were opposed by other planners and designers because "they didn't want to drown out the views" of Petone and other harbour areas (key informant 6).

In contrast, key informant 1 felt that CPTED should be one of many considerations when designing a space noting that "if you are only coming at it from a CPTED perspective, you're not necessarily going to get a quality sort of place". This informant provided an example of a corner site near the Basin Reserve in Wellington where a proposition was developed for a small park purely from a CPTED perspective. This informant felt that the proposition "wasn't a good way of handling that site in terms of a landscape architecture perspective" and more consideration should have been given to creating a 'good place' rather than a 'safe place' (key informant 1). A similar point was made by an Auckland consultant who acknowledged that there can be competing interests, or compromises, regarding design changes to spaces, however, understood that this is a necessity to ensure that spaces are sensitive to values and interests outside of CPTED or be flexible in terms of future development (key informant 7).

While the above examples and opinions do not relate directly to a conflict between principles, they do illustrate that design changes, which may be required to enhance effective safety levels, are occasionally not implemented due to conflict with other interests. The significance of this issue is not that conflicts exist, rather, it highlights the importance for review and evaluation of design changes to see if the impact of these changes has still had the desired effect without an entire range of recommendations being introduced.

5.4 Conclusion

The results presented in this chapter illustrate that the effectiveness of CPTED to prevent crime, or be used in a manner to produce such ends, is not beyond question. Overall informants believed that CPTED was an effective tool providing that those who use it have a good knowledge and understanding of its application, and accept that it is not a simplistic concept nor is it guaranteed to produce effective results. Some of the responses above also demonstrate that CPTED is potentially implemented by those who

assume that implementation is guaranteed to have effective results regardless of the level of knowledge or expertise practitioners have. This fact was identified as problematic by a number of informants as it may compromise the effectiveness of CPTED outcomes, and alternatively, cause more harm than good. This result provides conclusions similar to that of the broader crime prevention literature where is it considered that CPTED's effectiveness is often taken for granted and rarely questioned as many practitioners perceive it to be a simplistic and self-evident concept (Shaftoe and Read, 2005; Pease, 1997).

Of further significance, this chapter has also identified that a number of issues and side-effects exist which may compromise the effectiveness of CPTED beyond that of practitioner perceptions. Specifically, these recognised issues were displacement, social exclusion, and conflicts in relation to competing interests and the balancing of priorities attached to particular spaces and places. The existence of these issues illustrates that CPTED practice in the New Zealand context is subject to similar problems and issues as those identified in the academic literature and raises legitimate doubts about CPTED's ability to prevent crime, or be utilised in a manner to achieve such results ethically.

It is important not to claim that CPTED is ineffective, as representing it in such a way is ill-founded and unjustified. While some commentators maintain that definitive empirical proof regarding CPTED's effectiveness remains elusive, comprehensive reviews of CPTED research indicate that it can prevent crime and studies supporting its effectiveness are "clearly accumulating" (Schneider, 2005; Cozens *et al.*, 2005: 343). When considered together, the above results provide justification for adopting and promoting evaluation of CPTED initiatives in New Zealand. Evaluation could, and can, play an important role to further understand, reduce, and address, the extent and impacts of displacement and social exclusion in the New Zealand context. Through these actions practitioners who are less knowledgeable in terms of the complexities surrounding the crime-design relationship, and how this interacts with CPTED, can become more informed and attentive towards the impacts to which their projects or initiatives may have. The next chapter explores the extent to which evaluation of CPTED projects is undertaken in practice and examines practitioner perceptions regarding the importance of evaluation for CPTED in New Zealand.

6

Results and Discussion: Extent and Importance of Evaluation

6.1 Introduction

The current chapter presents and analyses the research findings that address Research Objective 3; '*to evaluate practitioner perceptions regarding the value of evaluation*', and Research Objective 1; '*to measure the extent to which evaluation and monitoring of CPTED initiatives is undertaken by local authorities*'. The chapter begins by presenting the different perspectives held by practitioners surrounding the importance and value of evaluation. The second section then establishes the extent to which evaluation of CPTED initiatives is undertaken by practitioners and local authorities. The results are analysed with particular reference to the literature on crime prevention evaluation in order to identify those findings that support, challenge, or extend the existing literature.

6.2 Importance and Value of Evaluation

During interviews, key informants were asked how important they felt evaluation was for the practice of CPTED in New Zealand. The responses given by key informants indicated that most were quite knowledgeable regarding the importance and value of evaluation. Figure 6.1 illustrates the responses given by key informants where perceptions of the importance of evaluation ranged from confirming that an initiative

has worked, the recognition of issues, identifying whether additional design modifications were needed, to building an evidence base for future reference.

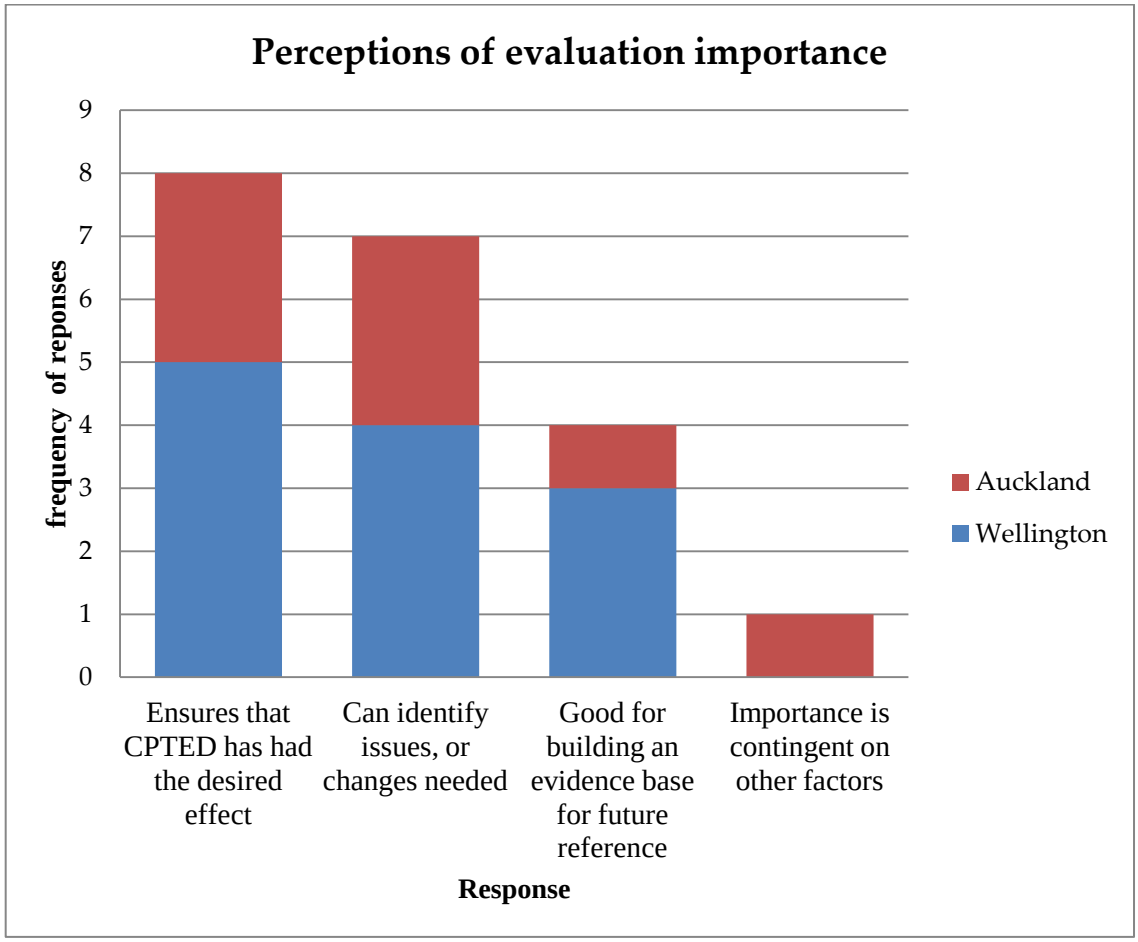

Figure 6.1: Practitioner perceptions of evaluation's role and importance.

As was illustrated in Chapter 2, Eck (2002) argues that the primary importance of crime prevention evaluation is to show that an initiative has had an effect on crime (Eck, 2002). While this may be a primary outcome in order to prove that an initiative has worked, Berry (2009) contends that equal significance should be afforded to the fact that evaluation can identify aspects of an initiative that have worked well, others that have not, and can illustrate why certain results were achieved. One of the key themes coming through in interviews was the sentiment that evaluation can be particularly beneficial to identifying changes or issues within a space following CPTED implementation and in affirming that design changes have been successful. Key informant 3, for example, felt that it was important to conduct evaluation in order to

ensure that money was well spent and that the CPTED design changes made were having the desired effect:

> "I think it's really important because, you know, there's no point going in there and doing work and spending a lot of money in some cases, umm…if it's not going to make a difference because, you know, you may need to do further work, you may not need to do as much work, you know. So it's so important to monitor it all the way through and get those evaluations at the end because you might have spent an awful lot of money and made not a drop of difference. And then the same problems are going to crop up in six months time or a few years time you're going to be getting the same complaints or the same crime" (key informant 3).

The majority of informants shared this view, illustrating that there are lessons to be learnt from all evaluations and that when it is undertaken it can often identify problems with the final design, signal aspects in need of change, and issues which are not easily recognisable to practitioners such as displacement. These viewpoints were supported and expanded upon by an Auckland informant who stressed that evaluation's importance lay in its ability to find the "true outcomes" of projects as it is often unclear what the exact impact CPTED changes are having no matter how rigorously one has followed design guidelines or research literature:

> "Evaluation can be quite effective in terms of identifying other issues or perhaps things that didn't go so well. Because you never know…when you propose something for a particular environment whether that's going to be necessarily successful, you may be following your model to a T or, you know, the research literature to a T, but you may not get a result" (key informant 7).

While the above perspectives illustrate the importance of evaluation at a local or project-based scale a further theme which emerged in the results was the role that evaluation can play at the national level. Expanding upon this theme, many informants believed that evaluation could best be utilised as a tool for building an evidence base for CPTED. This theme is similar to that advocated by Crawford (1998) who states that evaluation can play an important role in allowing for the transferability of ideas across different social and demographic boundaries. The sharing of knowledge is also important to allow practitioners to learn from each other's experiences, reducing the need for "reinventing the wheel" and decreasing the incidents of "wasteful and misconceived adventures" (Crawford, 1998: 197).

Support for an evidence base was provided by a Wellington informant who stated that while he did not think that CPTED originated from a scientific background he maintained that having a greater scientific base in terms of evidence would be of "incredibly great value" for both local projects and others throughout New Zealand (key informant 4). Key informant 1 added that this is particularly important due to the fact that every space is different and every design "comes out of different needs and wants and dealing with certain issues" whereby evaluation can only but help expand the improvement and understanding about how different spaces work. While no informants were opposed to the idea of adopting and promoting evaluation, one expressed the concern that evaluations will only have wider value if they were made publicly available or published (key informant 7). Through the dissemination of information provided by evaluations key informants 4 and 7 felt that not only would the use of CPTED increase but the practice of evaluation would be encouraged too.

Overall, the results above indicate that CPTED practitioners have a fairly strong idea about the functions and benefits that evaluation can offer CPTED in practice. This result directly relates to the benefits and motivations associated with undertaking evaluation within the crime prevention literature. While it can be concluded that CPTED practitioners generally understand the merits and importance of evaluation, this knowledge does not ensure, or indicate, that evaluation is currently undertaken. The next section of this chapter examines the extent to which this knowledge has permeated into practice.

6.3 Extent of current Evaluation Practice

Much uncertainty surrounds CPTED's claims to prevent and reduce crime (Taylor, 2002; Crawford, 1998). As was established in Chapter 2, there are a number of factors which actively undermine the effectiveness of CPTED. Chapter 5 confirmed that many of these undermining factors are evident within the New Zealand context. What has resulted from much of this uncertainty is a near universal call for evaluation of CPTED strategies and projects (Tilley, 2002). Atlas and Saville (2008: 503) reason that evaluation is the key to moving CPTED forward "as a science and not just an art form". Similar sentiments are provided by Schneider and Kitchen (2007: 239) who believe that the "primary way forward for the field" consists of learning, research, evaluation and

reporting, and a more evidence based approach that is less influenced by unproven ideas. To examine the extent to which these contentions have permeated into practice informants were asked if evaluation of CPTED projects is ever undertaken. Figure 6.2 provides a collated overview of responses in relation to the above question.

As Figure 6.2 illustrates, the majority of informants indicated that evaluation of CPTED projects following implementation does not take place. Some informants, however, were hesitant to state outright that it does not occur while in other cases informants remarked that there were anecdotal and informal ways by which they sometimes assess the impact CPTED has had after it has been implemented.

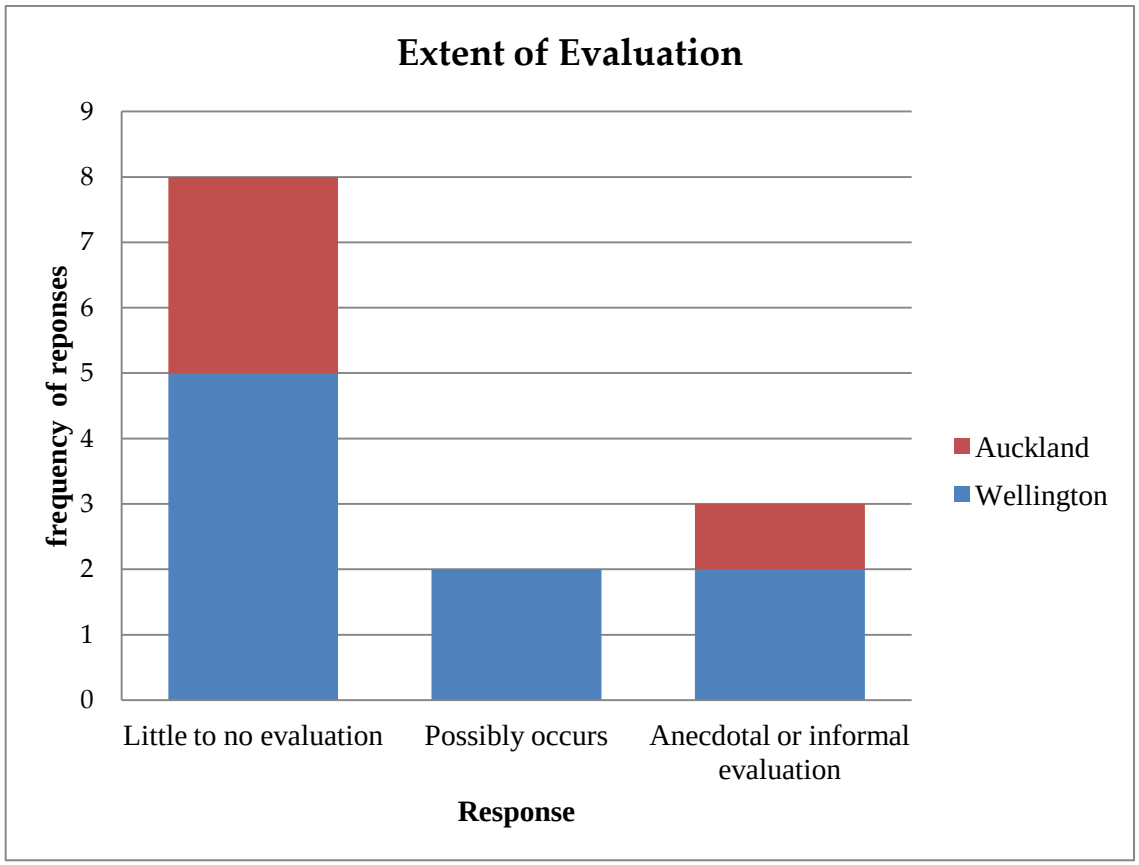

Figure 6.2: Practitioner responses regarding the extent to which evaluation is undertaken

When interviewed, most informants conceded that evaluation is generally a forgotten element of CPTED practice. Table 6.1, below, details the responses of those informants who indicated that evaluation does not take place. In stating that evaluation was

'limited' or 'rarely done' informants seemed hesitant to proclaim that evaluation was never undertaken, however, when asked for examples none were able to recall or provide details as to a particular instance in terms of its occurrence or use. In relation to the point above, key informant 2 stated that there may be some evaluations which are unpublished encouraging caution not to "assume that if they are not on the internet they don't exist". Similar comments were made by key informant 6 who proposed that while evaluation, in the traditional sense, is rarely undertaken it may well be conducted in more of an "ad-hoc" fashion, stating that these might take the form of an aesthetic review, or perhaps general observations by those who implemented CPTED measures, often under the national guideline principles. A Wellington practitioner confirmed this notion as they noted that there is often a broad outcome which is more of an "aesthetic evaluation...something like, we had a bad design now we have a good design that looks good" (key informant 4).

Table 6.1: Practitioner views regarding the deficiency of evaluation in practice

Supporting Quote	Informant
"I don't think it occurs very much"	key informant 4
"Evaluation is rarely done"	key informant 6
"The quick answer is umm….no, I don't think we possibly do enough of that sort of work"	key informant 1
"There's probably a lot of really cool stuff happening if you actually went and visited a lot of councils and walked around there cities and towns...but it's just not being evaluated"	key informant 2
"Evaluation?...no, I don't know, I've never done anything like that"	key informant 5
"I'd say ahh…fairly limited, particularly in New Zealand…a follow up review, or assessment of the benefits that have been undertaken, I think…umm, is fairly light. I know it has been done in some places, particularly overseas, but it's one of those areas that's lacking quite a bit"	key informant 7

Some practitioners felt that this lack of evaluation is a New Zealand wide issue and in some cases an international problem. For example, key informant 2 revealed that this situation may be representative of New Zealand as a whole by stating that "At a very general level, umm…I don't think we do evaluation, umm…very well with these types

of initiatives." key informant 7 added that the benefits of CPTED "haven't been very well spelt out through evidence" and that while this was certainly an issue in the New Zealand context they felt that it also extended beyond New Zealand to the international context.

Despite the majority of informants expressing the opinion that little to no evaluation was being undertaken, some referred to anecdotal and informal ways in which they occasionally assess outcomes or effects of projects. Key informant 3 stated that they occasionally base the success of a project upon statistics, looking at whether crime has gone down. While this seems positive in terms of attention being paid to outcomes and the effects of initiatives when this informant was asked about the methods in which they employed they stated that they do not do any formal evaluation. This informant then added that the majority of the time they rely upon community feedback, primarily through complaints, as an indicator of success noting that "it's the community that is really vocal about it so we rely on them a lot to tell us if it has been successful or not" and that if something has not worked the community will "keep on us about doing something about it" (key informant 3).

Interestingly, another Wellington informant who previously declared that no evaluation takes place revealed ways in which they informally assess outcomes of projects. This informant noted that they went to a park which was redesigned using CPTED principles and talked to those using it, making general observations regarding people's behaviour, and stating that as a result of CPTED "the park became used a lot more by people that just went in there during lunch times and the likes, and sat down and had their lunch and enjoyed the environment" (key informant 4). These actions, however, seem to be a rare occurrence as this informant felt that most of the time "you pick that up through sorts of things like the quality of life surveys and resident satisfaction surveys" undertaken by the council every couple of years (key informant 4). This viewpoint was reinforced by an Auckland practitioner who stated that they partially attribute results from the five yearly 'perception of safety survey' as a relevant measure of CPTED's effectiveness (key informant 5).

The results provided above are comparable with the international experience where it is widely held that evaluation in practice is rarely undertaken (Shaftoe, 2004; Crawford, 1998). While there are instances where practitioners have illustrated that informal and

anecdotal forms of evaluation have been undertaken, they were not undertaken in any detail or afforded any serious deliberation. Therefore, this research has not found any conclusive evidence that evaluation is being, or has been, undertaken by local authorities.

As Kitchen and Schneider (2002) indicate, local authorities in many countries are required to uphold public health and safety as it is widely accepted that citizens have a right to be free from crime and fear. Similarly, in New Zealand local authorities have a statutory obligation under the RMA to promote public health and safety, which includes the issues of crime and fear of crime. As indicated in Chapter 3, local authorities are also obligated to undertake evaluation of crime prevention initiatives in achieving the purpose of the RMA and LGA. While some informants referred to annual city safety surveys as a relevant measure of CPTED efficacy these are not relevant substitutes for evaluation of specific crime prevention strategies, or projects, as they collect data from a wide geographic area. As such, this research has found that local authorities in New Zealand are not providing accountability for their actions.

Overall, the lack of evaluation is detrimental to the practice of CPTED in New Zealand. Beyond the general impact CPTED has on crime, without evaluation there is little knowledge about aspects of interventions that have worked well, others that have not, or why certain results were achieved (Berry, 2009). Furthermore, local authorities fail to learn from past experiences which may provide important lessons for future practice (Tilley, 2002). Similarly, failure to evaluate ignores potential negative side-effects that may result from initiatives which, as established in Chapters 2 and 5, can have significant social costs (Vito *et al.*, 2007; Duff and Marshall, 2000).

6.3.1 **Growing Interest in Evaluation**

A more optimistic and encouraging theme which emerged throughout interviews was that there seems to be a growing interest in evaluation. While the above results reveal that little evaluation is taking place, some informants expressed both their own interest and others' interest in undertaking evaluation of CPTED initiatives.

An Auckland informant, for example, explained that they were interested in the impact that CPTED has had on a number of regenerated streets in Auckland's central business district which have recently been converted into shared spaces (key informant 5). An

example of one such street referred to by this informant is provided by Figure 6.3 which depicts the before and after stages of the redevelopment. This informant noted that the streets in question were "particularly bad for alcohol related harm...leading to fighting and disorderly behaviour" and wanted to know whether introducing CPTED and converting them into shared spaces has had any effect (key informant 5).



Figure 6.3: Before and after comparison of Darby Street shared space redevelopment, Auckland (Sources: Top: Auckland Transport Blog, 2010; Bottom: Auckland Council, 2011).

A Wellington informant expressed similar sentiments, however, commented that people have occasionally asked about the evidence surrounding CPTED's effectiveness, which has sparked conversations about the potential for evaluation:

> "you know, every now and then someone says 'oh, you know, this CPTED stuff is great but how do we know that it works?' and they might want to do an evaluation, but like, I couldn't point you to…I couldn't say have you seen this paper, have you read this study" (key informant 2).

The above responses illustrate that there is seemingly a growing interest in the impacts and outcomes of CPTED. While there may be a general interest in assessing effects of CPTED related projects all informants indicated difficulties in doing so. The barriers to evaluation identified are presented and discussed in the following chapter.

6.4 Conclusion

The wide range of evaluation benefits identified by key informants indicates that CPTED practitioners from both case study locations have a good understanding in terms of the importance and value of evaluation. As such, the identified benefits of evaluation include revealing whether an initiative has had the desired effect, it can illustrate if design changes are needed if the desired effect has not been achieved, it can identify any issues resulting from an initiative and, can contribute to an evidence base that can assist with future decisions and projects. This is a positive finding as responses regarding these benefits matched those presented throughout the crime prevention literature. Thus, the present research extends the current literature by acknowledging that the assertions regarding the value of evaluation provided by Crawford (1998), Tilley (2002), and Berry (2009), as noted in section 2.6.1, extend to the field of CPTED and the New Zealand context.

However, despite practitioner's recognition regarding the value of evaluation, no informants were able to recall any instances where evaluation has been undertaken; either by themselves or any other actors involved with CPTED initiatives. Given that both of the selected case studies are large cities with sizeable budgets and considerable experience with CPTED it is probable that the results presented in this chapter are representative of the New Zealand context. This generalisation was supported by a

number of key informants who have knowledge of CPTED's use beyond the contexts of the defined case study locations.

This lack of evaluation confirms Crawford (1998) and Shaftoe's (2004) contention that evaluation of crime prevention initiatives is rarely undertaken in practice. This result is problematic as local authorities in New Zealand have a statutory obligation to undertake evaluation of crime prevention initiatives in achieving the purpose of, and therefore their duties under, the RMA. This chapter, like that expressed by Berry (2009) and Tilley (2002), has established that without evaluation there is little knowledge about aspects of interventions that have worked well, others that have not, why certain results were achieved, and removes any opportunity for local authorities to learn from past experiences.

Despite these negative findings an important theme that this chapter has identified is that there is seemingly growing interest in undertaking evaluation among practitioners, however, a number of perceived barriers and limitations have restricted opportunities to do so. These barriers are explored further in the following chapter.

7

Results and Discussion: Barriers to Evaluation

7.1 Introduction

Chapter 7 builds upon the previous chapter to address Research Objective 4: '*To examine any issues experienced during evaluation and barriers preventing evaluation*'. Specifically, this chapter classifies generic factors that may impede the adoption and undertaking of evaluation identified by CPTED practitioners. To determine whether findings support, challenge, or extend existing theory, impeding factors have been analysed in relation to the existing crime prevention literature. As such, this chapter identifies six factors that serve to impede the process of evaluation; specifically, these are; reliability and availability of crime statistics, lack of knowledge, loss of knowledge, fear of failure, limited resources, and the importance of service delivery. Each of these factors are presented and discussed in separate sections. The findings of the current chapter are particularly important for CPTED practice within the New Zealand context as no research has been undertaken relating to CPTED evaluation or the barriers that may restrict its adoption and undertaking.

7.2 Reliability and Availability of Crime Statistics

One of the primary barriers to evaluation identified by key informants was the availability, accuracy, and reliability of crime statistics. Key informant 2 suggested that crime statistics are a "potentially fantastic source" to use for evaluation. However, this practitioner noted that in their experience they were often found to be unreliable and inaccurate which may affect the validity of evaluation findings. The inaccuracy of this crime data was associated with the procedure of geo-coding, which is the process of presenting crime data through maps revealing where certain crimes have been committed and subsequently prioritising areas where design changes may be needed. In Wellington, council staff are often presented such maps in meetings by police whereby "little stars" are attached to specific areas and spaces in the city where "burglaries and stuff are happening" (key informant 2). Despite the potential usefulness of such maps and crime data, key informant 2 expressed scepticism regarding their accuracy:

> "But when you dig into it and you go there and talk to people the, umm, address that they had put in that relates to where that star pops up on the map can be really, umm, loose in terms of where something actually occurred. There's no way of knowing often, whether it's actually where the star is or whether it was 500 metres down the road or around the corner. So if you wanted to do an evaluation or an analysis at a, umm, very tight small scale in terms of incidents or in a particular space, your conclusions that you can draw will always be limited by that" (key informant 2).

Other Wellington and Auckland informants endorsed the above statement. An Auckland practitioner, for example, referred to police measurements and the accuracy of crime statistics as "not that great" while a Wellington practitioner stressed that the use of statistics has to be approached with caution "because they can vary so much due to multiple reasons" (key informant 5; key informant 3). These findings mirror those criticisms highlighted within the academic literature whereby records regarding victims, incidents, and offenders, are commonly noted to contain errors and inconsistencies (Atlas and Saville, 2008; Tilley, 2009). This result supports Cozens (2002) contention that one of the primary factors limiting the undertaking, and outcomes, of evaluation is the quality of data.

Related to the reliability of crime statistics, one informant also noted that another limiting factor was practitioners' ability to interpret crime data. Beyond the potential inaccuracy of such data, key informant 3 contended that caution must be applied when

interpreting crime data as this data can reflect outcomes which were not produced by the CPTED initiative itself:

> "the other thing with crime statistics...I mean in regards to graffiti, we know it goes up in summer and school holidays so, you know, if you happen to do a whole lot of work that coincided with the end of school holidays you could say it's a massive success when really the kids have just gone back to school and it's now raining in winter. So you've got to be careful with the crime stat side of things" (key informant 3).

The above comment strongly relates to the 'threats to evaluation validity' noted in section 2.6.3 and presented in Appendix A. Specifically, key informant 3 refers to the threats of 'seasonality', where outcomes may be representative of regular fluctuations throughout the year rather than design changes; and 'regression', where crime was at an extreme (high or low) when an intervention was implemented therefore evaluation findings may illustrate a greater, or lesser, impact attributed to a natural return to the normal rather than the intervention (Eck, 2005). While this finding supports a number of Eck's (2005) stated threats to evaluation validity it also extends Cozens (2002) contention, provided above, by illuminating that not only is evaluation impacted by the quality of data but even when crime statistics are accurate there is a need for practitioners to be aware of wider issues, such as normal fluctuations in crime rates associated with seasonality, or school holidays, which may distort evaluation outcomes.

In addition to the reliability of crime data, one of the more significant, and surprising, themes identified by informants was the availability of crime statistics. As Chapter 6 identified, there is evidence that interest in CPTED evaluation is growing in New Zealand. One of the examples illustrated in Chapter 6 was that provided by key informant 5 who indicated that they wanted to evaluate the impact that CPTED has had on a number of regenerated streets within central Auckland. Despite this interest, key informant 5 felt that they could not conduct an evaluation because of the difficulty regarding the availability of crime statistics; "I've been trying to get information from the police, about whether the statistics, the crime statistics, have shown any difference, and you know, getting the information out is really hard". Key informant 7 reinforced this comment claiming that "it's very hard to get some of those statistics from police".

The above finding is unique because although crime prevention scholars often question the reliability of crime statistics, less concern is expressed within the academic

literature regarding their availability. This is a surprising, and critical, result as 'effective' CPTED implementation is often claimed to rely on multi-agency partnerships and collaboration particularly between local authorities and police (Goris and Walter, 1999; Blackford, 2005). This finding extends the existing literature as it suggests that there is a breakdown of partnerships following the implementation of CPTED initiatives and this has been recognised as a further barrier to CPTED evaluation.

7.3 Lack of Knowledge

Another key barrier identified in the data analysis was the lack of practitioner knowledge. This barrier is comprised of two themes within the results; knowledge regarding how to undertake evaluation, and the perceived difficulty of evaluation. Table 7.1 provides extracts from key informant interviews which support the above contention that a lack of practitioner knowledge is one barrier restricting the undertaking of evaluation.

Table 7.1: Views towards the lack of practitioner knowledge

Supporting Comments	Informant
"I think one of the main reasons evaluation is rarely done is because no one knows how"	key informant 6
"I suppose partly training of people who might be doing it…how do you set it up and all those sort of things"	key informant 1
"I think perhaps, ahh, as I said, the expertise in the research and evaluation process, ensuring that they know how to get it done appropriately"	key informant 7
"I guess its understanding the importance of evaluation and then ensuring that they know how to set it up properly"	key informant 2

Tilley (2009) asserts that those attempting to carry out evaluation often lack the necessary skills and experience to reduce the chance of basic errors in both measurement and method. As Table 7.1 illustrates comments provided by informants reflect similar concerns as they show that practitioner's are often unaware of how to conduct evaluation of CPTED initiatives. However, it should be noted that Tilley (2009) uses his assertion to justify the poor quality of evaluation in practice. While a lack of knowledge may produce poor quality evaluations, this only applies if evaluation is currently undertaken which, as Chapter 6 has identified, in the New Zealand context it is not, therefore, the current study expands upon Tilley's (2009) contention by highlighting that a lack of skills and experience is also a barrier to the adoption and undertaking of evaluation.

During interviews, other informants mentioned that they felt evaluation was 'difficult' to undertake. While these concerns might be taken to represent a further barrier, they also support those comments provided in Table 7.1 as they represent the exact 'lack of knowledge' referred to above by key informant 6; 7; 1; and 2. A Wellington practitioner, for example, stated that it was hard to measure whether CPTED is successful or not and demonstrated that they are not clear about how to conduct evaluation:

> "I think it's hard, like any crime prevention approach, to measure whether it's successful or not successful…In my own mind I'm not clear about what evaluation you would do really…its quite hard to do other than a general statement that people use the park or the area" (key informant 4)

Further evidence exemplifying this 'lack of knowledge' and the perceived difficulty of evaluation was provided by an Auckland informant. This practitioner noted that "actually defining how to measure" an initiative as well as "going ahead and measuring it" is "quite hard" (key informant 5). Shaftoe (2004) argues that the main reason for the perceived difficulty of evaluation is due to the multidimensional nature of crime and the many intervening variables which can affect outcomes of crime prevention efforts. In contrast, the informants who expressed that evaluation was 'difficult' made no reference to crime as a complex phenomenon. This interpretation is supported by results provided in Chapter 5, as key informant 5, in particular, felt that CPTED was a simplistic, "common sense", concept. While the notions of 'difficulty' and 'lack of knowledge' interrelate, the above comments relating to evaluation as a difficult process

to engage in have been interpreted as examples of a 'lack of knowledge' among practitioners rather than a standalone barrier. Therefore, this finding supports the previous contention that skills and experience are key barriers to the adoption and undertaking of evaluation.

7.4 Loss of Knowledge

In addition to a lack of knowledge the current study has also found that a loss of knowledge is a further limiting factor restricting evaluation. The primary theme within results relating to this loss of knowledge regards the movement of staff. As was noted in section 4.5, in addition to Auckland and Wellington, a smaller municipality (Palmerston North) was considered as a potential third case study for this research. Given that Palmerston North had documented use of CPTED, the likelihood of finding people or council staff that had experience with CPTED was considered to be high. However, during the process of finding informants no contacts could be found within the Palmerston North City Council. Later in the research process one key informant identified two Palmerston North Council staff who had been involved with CPTED initiatives. However, these staff members had moved on to other jobs or positions and were unable to be contacted. While this experience has been noted as a limitation of the current study it also illustrates a loss of knowledge which may impede the evaluation of CPTED initiatives. The movement, or loss, of staff was also indicated as a potential barrier to evaluation by a Wellington practitioner. Key informant 2 noted that "by the time you get to the point" where an evaluation may be possible "the people have moved on" and that this is "an ongoing challenge" within councils.

The above finding represents a 'loss of knowledge' as a potential barrier to evaluation; when key staff leave, they take the knowledge associated with local CPTED initiatives with them, and therefore the information that may be vital for any potential evaluation (Tilley, 2009). While the above finding highlights that a 'loss of knowledge' may be more acute in smaller municipalities, key informant 2's comment suggests that this may also be a barrier to evaluation within larger councils. This result is unique to this study as it is seemingly unparalleled in the crime prevention literature. However, it also highlights the importance of monitoring and record keeping before, during, and after, an initiative has been implemented in order for information to be available to staff who

were less involved with a CPTED project or to those who are filling a gap left by a former staff member (Tilley, 2009).

7.5 Limited Resources

A lack of time and funding were two further factors identified by key informants as barriers to evaluation. Both Auckland and Wellington practitioners highlighted that funding, in particular, was a limiting factor restricting the undertaking of evaluation (key informant 1; 3; 4; 7). Key informant 7 summarised responses well in stating; "Primarily funding, that would have to be at the top of the list. And that would probably stretch right from the private sector to the public sector". Other respondents also noted that there was difficulty in securing adequate funding for CPTED related projects, and this difficulty covered funding from central government agencies as well as internal funding (key informant 3; 4). A Ministry of Justice representative stated that they do provide "some" funding for CPTED projects with a number of initiatives funded for up to three years through a contestable funding round for general crime prevention and community safety initiatives in 2010 (key informant 8). However, a Wellington practitioner noted that "we do get funding from the Ministry Of Justice for crime prevention...but the money we get from the Ministry of Justice has been cut quite significantly" (key informant 3). As a result, this practitioner noted that they "don't have, sort of, one CPTED pool of money" and "it's often a matter of scrambling around and trying to shoulder tap the different business units" within the council to secure funds (key informant 3). The above findings strongly correlate with those found by Seasons (2003) who noted that a principal constraint faced by practitioners willing to undertake evaluation was the financial resources available. As informants of the current study suggest, this constraint extends to the New Zealand context and while it restricts opportunities for evaluation, it clearly impacts the implementation of initiatives also.

In addition to financial limitations, Seasons' (2003) research identified that time was a further constraint that practitioners recognised as restricting the undertaking of evaluation. The results of the current research revealed similar findings as a number of respondents revealed that they did not have the time to conduct evaluation. This was best expressed by an Auckland practitioner who stated; "there's absolutely no time, like, we are always looking forwards not back sort of thing, I mean there's always more

coming in, more coming in" (key informant 5). This response was reinforced by a Wellington informant who noted that "it's just a matter of time really" (key informant 3). Overall, a limitation of resources in the form of time and funding have been identified as curtailing efforts for undertaking evaluation of CPTED initiatives.

7.6 Importance of Service Delivery

An underlying theme was identified during data analysis which directly relates to the restrictions of time and funding discussed above. Specifically, this theme is the perception regarding the importance of service delivery over evaluation. One informant provided evidence that some practitioners may be unwilling to undertake evaluation due to the perception that implementation and service delivery is more important. As such, this informant noted that spending money on a "nice survey" or other form of evaluation could "be an issue" because "that money could be better spent doing the actual work as opposed to doing an actual evaluation" (key informant 3). This result finds parallel with Seasons' (2003) findings whereby resources of time and money were heavily concentrated upon the delivery of service rather than research or policy development, leaving little time or funds for evaluation. While this finding is restricted to one informant, it does present the possibility that similar attitudes are directed towards evaluation in New Zealand and offers partial support of Tilley's (2009: 160) contention that "spending on evaluation is deemed to divert attention away from the more important business of service delivery".

7.7 Fear of Failure

Another constraining factor that may limit embracing evaluation as common practice is the fear of failure. As was illustrated in Chapter 2, a number of crime prevention scholars have found that there is often a resistance towards evaluation due to the possibility that findings could embarrass practitioners and local authorities by highlighting shortcomings, errors, or failure, of an initiative (Seasons, 2003; Tilley, 2009). One Wellington informant alluded to the possibility of this being a "big issue" within local councils as negative findings could impact the amount of funding CPTED practitioners receive:

> "I guess risks could be if you were doing a lot of evaluation and they were showing up that they were having absolutely no impact that could be a big risk to funding. I can certainly see within councils funding quite often is based on a need and if people are saying well you're spending all of this money and doing all this work and it's not making any difference we are not going to give you any more. So I would say that could be a big issue within councils" (key informant 3).

In recognising that evaluation may not be carried out due to the possibility of negative findings, and the associated impact this may have on the delivery and funding of CPTED initiatives, this study supports the findings of Seasons (2003); that evaluation is often ignored due to its potential to illustrate failures and shortcomings which may embarrass local authorities.

In addition, the above comment could also be considered as a potential limiting factor in relation to the validity of evaluation results. This notion has been highlighted by Crawford (1998) and Tilley (2009) who claim that there is often considerable pressure on local authorities to produce success stories in order to justify the decision to implement crime prevention projects or please funding bodies. As a result, when evaluation is undertaken, the interpretation of findings can exhibit a great deal of "wishful thinking" often proclaiming success despite evaluation findings illustrating otherwise (Tilley, 2009: 161). The comments given by key informant 3, therefore, signify a danger whereby if evaluation were to be undertaken negative findings could be misreported by local authorities or practitioners in order to protect their CPTED funding and delivery.

7.8 Conclusion

Chapter 7 has built upon the findings presented in the previous chapter in order to identify the reasons why evaluation of CPTED initiatives is not undertaken. This chapter has confirmed that many impeding factors to evaluation in New Zealand are similar to those experienced internationally. These include the accuracy of crime statistics, lack of practitioner knowledge, fear of failure, importance of service delivery, and the lack of time and funding. The identification of these factors is of primary significance as it expands upon McCauley and Opie's (2007) findings by revealing the reasons why New Zealand local authorities may be experiencing trouble in assessing the effectiveness of CPTED initiatives.

While these findings extend the current literature by identifying and confirming barriers to CPTED evaluation in the New Zealand context, they also have expanded the current literature by identifying factors which have not been previously documented. First, this study has noted the availability of crime statistics is a potential limitation which may indicate a possible breakdown in multi-agency partnerships between local authorities and police post CPTED implementation. This finding highlights the value of longer-term partnerships and the importance of cooperation between stakeholders beyond the implementation stage of any CPTED development.

Secondly, this study has extended Cozens (2002) contention noting that beyond the quality and accuracy of crime statistics, there is a need for practitioners to be aware of processes and influences which may distort crime statistics such as fluctuations in crime rates due to seasonality or school holidays. A final identified barrier that is unique to this research is the loss of practitioner knowledge; where practitioners who change jobs or positions take specific CPTED knowledge of local projects and expertise with them. This barrier highlights the importance of monitoring and record keeping of different CPTED initiatives in order to retain, and provide access to, local CPTED knowledge and expertise. Chapter 8 now analyses some of the potential ways in which CPTED evaluation can be improved and encouraged in New Zealand highlighting how the barriers identified throughout this chapter can be overcome.

8

Results and Discussion: Facilitating Evaluation

8.1 Introduction

The current chapter builds upon Chapters 6 and 7 by investigating ways in which evaluation may be promoted and facilitated within the New Zealand context. As such, the current chapter addresses Research Objective 5; '*To investigate factors that may facilitate, or enhance, evaluation*'. Facilitating factors identified by key informants have been divided into three main categories, each representing primary themes revealed during data analysis and by reference to the crime prevention literature. Specifically, these categories are knowledge and funding, promoting 'practical' methods and measures, and the establishment of a professional body and centre for information. References to previous chapters are provided throughout the present chapter to emphasise which identified barriers different factors overcome and the extent to which these factors support, challenge, or extend existing theory.

8.2 Education and Funding

In addressing those barriers identified in Chapter 7 two key themes pertaining to the facilitation of CPTED evaluation revolved around the issues of education and funding. Specifically, respondents highlighted that there is a need to increase the knowledge and capacity of practitioners through training, while responses related to funding included ensuring that evaluation is built into the planning process of an initiative and that

evaluation should be made a requirement of funding provided for CPTED implementation. These facilitating factors are discussed below.

8.2.1 **Training**

As was identified in section 7.3, there is a lack of knowledge among CPTED practitioners regarding how to conduct evaluation. While section 8.3 and 8.4 of the current chapter identify some ways in which this 'lack of knowledge' can be addressed, the undertaking of evaluation may be facilitated by improving the knowledge and capacity of practitioners through training (key informant 6). This finding supports the United Kingdom's Home Office (1997) and Ekblom and Pease (1995) who contend that the practice of evaluation may be facilitated by offering training to practitioners in order to equip them with the necessary skills to conduct evaluation. CPTED training workshops and conferences are already provided in New Zealand by the International CPTED Association and the International Security Management and Crime Prevention Institute. While workshops offered by these organisations are generally focused towards the implementation of CPTED, key informant 2 and 4 felt that there is potential for these organisations to also provide evaluation training for CPTED practitioners. Section 8.4 provides more information about other potential avenues for the provision of evaluation training.

8.2.2 **Funding**

Funding has already been identified as a current barrier to the adoption of CPTED evaluation. Informants noted that beyond increasing the funding for CPTED projects two options that could encourage evaluation were; ensuring that evaluation is built into the planning process of an initiative, and; making evaluation a required element of any funding provided for CPTED implementation.

Key informant 4 illustrated that "part of the problem" relating to the funding available for evaluation was that practitioners and local authorities "should be thinking about evaluation at the front end as part of the overall process". This comment was reiterated by key informant 2 who stated that evaluation needs to be "set up properly from the start and that includes...staff time and money built in to what you plan to do". While setting up evaluation during the pre-implementation stage of development may ensure that it is undertaken it can also reduce the cost of the evaluation process. Burns-Howell

and Pascoe (2004) contend that the costs associated with evaluation can be significantly higher if evaluation is considered post-implementation. This contention was reinforced by a Wellington practitioner who felt that if evaluation was built into the "front end" of the planning process then the costs "in the context of most public place developments and redevelopments" would be "infinitesimal in terms of what you're planning to spend anyway" (key informant 4).

The above finding is important as encouraging evaluation to be built into the planning process of CPTED developments can help reduce costs, therefore, reducing the demand upon already limited CPTED finances. Of similar importance, promoting this approach also encourages a monitoring process to be undertaken whereby information which may be vital to assessing the impacts of an initiative is collected before, during, and after, the implementation phase of a CPTED development (Tilley, 2009). In light of the identified loss of knowledge in the previous chapter, it should also be noted that such monitoring, and evaluation process, should be physically recorded or reported in order to be available to those staff who were less involved with a CPTED project or to those who are filling a gap left by a former staff member.

As noted in section 2.6, evaluation is more likely to be undertaken when there is a commitment to providing resources for its undertaking (Cherney, 2006). Beyond this commitment, Cherney (2006) and Burns-Howell and Pascoe (2004) recommend that evaluation should be a required element attached to funding receivership. As section 7.5 identified, some funding is provided for CPTED projects by the MoJ, however, a Ministry of Justice representative noted that "evaluation is not a requirement of funding". A number of practitioners suggested that evaluation should be a requirement for funding provision and thought that it may be beneficial for local authorities to extend this condition to internal (in-house) funding requirements also (key informant 2, 4, and 7). While there is evidence of evaluation becoming a requirement of funding provision overseas, this study has found no such evidence in the New Zealand context (Burns-Howell and Pascoe, 2004). The findings above suggest that to facilitate CPTED evaluation, funding provided for CPTED projects needs to place conditions requiring the undertaking of evaluation and advocate that this evaluation process is considered and incorporated during the planning stage of CPTED projects.

8.3 Promoting 'practical' Methods and Indicators

Key informants also stressed that evaluation as a process needs to be tailored so that it is practical and achievable for practitioners who, as Chapter 7 identified, are often limited by time and resources. During interviews, the primary themes highlighted by informants were the extent to which evaluation should be rigorous, the value and adoption of more qualitative forms of data, and the potential for developing a structured form or guide to evaluation for CPTED practitioners.

8.3.1 Making Evaluation 'practical'

As was noted in the previous chapter, the reliability, accuracy and availability of crime statistics has been a key barrier in undertaking evaluation. The previous chapter also noted that practitioners' ability to carry out evaluation is limited by time and funding. In response to these inhibiting factors, the majority of respondents felt that evaluation methods needed to be sensitive towards the 'practical realities' in which they work (key informant 4). As such, Table 8.1 presents a selection of informant views which indicates that rigorous methods towards evaluation are seen as inappropriate as they require considerable time and financial resources.

Table 8.1: Practitioner views to rigorous evaluation.

Supporting Comments	Informant
"I don't think it needs to be rigorous, my personal view is that...it's great to have statistics but then it's also better to back that up with what locals are feeling, I mean the whole reason for doing it is usually peoples safety or an areas safety...but if I had to choose only one from our point of view as a council it would be qualitative feedback, that would be most important, I would say"	key informant 3
"Well I think generally speaking, you know, most local authorities would be more interested in having a practical view of what works and what doesn't work as opposed to being too detailed...you know, it needs to be achievable"	key informant 4
"I don't think evaluation has to be rigorous, mainly because there are other indicators that can provide good information"	key informant 6
"I think that a less rigorous approach is beneficial...to ensure that there may be a process there that's a lot easier to undertake so we are actually getting something done, you know, rather than nothing"	key informant 7

As was noted in Chapter 2, considerable debate exists between crime prevention scholars regarding the extent to which evaluation needs to systematic and rigorous (Schneider and Kitchen, 2007; Crawford, 1998; Eck, 2006). The preference for less rigorous techniques held by informants provides support to Eck's (2002; 2006) contention that less scientific techniques can serve important functions and are more realistic in terms of what is achievable in practice. This finding makes no attempt to challenge the importance of systematic evaluation, advocated by many crime prevention scholars, as these forms of evaluation are valued for ensuring the production of scientific evidence regarding the impacts of an intervention (Lab, 2010; International Centre for the Prevention of Crime, 2010). Despite this importance, undertaking systematic evaluation has been found by this research to be unattainable for CPTED practitioners.

To expand upon those views provided in Table 8.1 respondents felt that promoting more qualitative measures in evaluation rather than focusing on crime rates was a positive way in which evaluation may be easier to conduct in a less resource intensive manner. Beyond the indication that such adoption would facilitate the undertaking of evaluation, practitioners considered that utilising qualitative data provided important and valuable information that statistics cannot in terms of assessing the outcomes of CPTED initiatives. A Wellington practitioner alluded to this fact noting that in their experience "sometimes an increase in actual crime is a good thing" and felt that systematic evaluation techniques which focus on "crime statistics and establishing that causal link" neglects the fact that "you're designing for people" (key informant 6). An Auckland informant provided similar insights to the value of qualitative data and further illustrated the limitations of relying solely on statistics;

> "I mean if you are looking specifically at crime rates, umm, that might tell you something completely different than if you spoke to someone on the street and said does this place feel safer? For example, if you were to upgrade the lighting in a particular area due to a couple of assaults taking place, umm, you may have come back with zero assaults or you might come back with another couple of assaults or three or four assaults, so you're not actually lowering the number of assaults in that particular area. But if you spoke to people generally and asked what is your perception of safety and crime in this area they might say, you know, the lighting has improved that dramatically and we feel great" (key informant 7).

The majority of practitioners stressed that crime statistics still had an important role to play in establishing "hard facts" and "showing effectiveness", however, even these informants tended place more importance on qualitative forms of data (key informant 1; 3; 4; 7). These findings reiterate those recommendations provided by the International Centre for the Prevention of Crime (2010) who declare that evaluation cannot be limited to measuring reductions in crime, instead, evaluations should take into account a larger number of variables and indicators. This result also supports Reynald's (2011) claim that the best way to build CPTED's evidence base, identify weaknesses, and illustrate how CPTED can be improved, is to employ multiple methods of investigation that are supplemented by other forms of data collection and analysis such as observations and interviews.

As was identified in Chapter 3, the Long-Term Council Community Plans of both Auckland and Wellington City specifically refer to CPTED in their efforts to provide for community safety. However, within each of these plans the respective measures for community safety only cover broad resident safety perceptions and the general number and rate of different crimes for the city as a whole. As such, these measures are not fit for effectively evaluating crime prevention initiatives. While it is positive that councils are attentive to community safety, these long-term plans could offer a potential avenue to promote evaluation of CPTED initiatives and a wider range of qualitative measures at the project level through additional outcome measures.

Overall, key informant data suggests that less rigorous evaluation methods should be adopted by CPTED practitioners that include an analysis of qualitative indicators and measures. Promotion of these methods and measures may help to reverse the limitations of crime data accuracy, and availability, by offering other indications of success as well as help encourage evaluation when practitioners face restrictions of time and funding.

8.3.2 Template for Evaluation and Guidance Documents

Having expressed the importance surrounding the promotion of less rigorous evaluation techniques and the importance for adopting more qualitative indicators, a number of informants expressed the value of producing a structured evaluation template and guide. In particular, key informants wanted to see a comparison of different evaluation techniques, including what indicators and measures might best be considered for

analysis (key informant 2; 3; 4; 7). Additionally, a guide to evaluation may also provide an important channel to educate practitioners about the side-effects and other issues that undermine the effectiveness of CPTED initiatives identified in Chapter 5. Key informant 7 felt that the production of such material would give "people the tools that they need to conduct it [evaluation] in a reasonably timely manner so that people aren't having to recreate the dam thing over and over again".

A Wellington informant noted that this template should not be "too detailed" as different "form's or type's of evaluation" would be needed depending on the nature of individual project's (key informant 3). Similarly, an Auckland practitioner added that "the questions that are going to be asked would generally have to be quite broad so you aren't pigeonholing your particular development" (key informant 7). Importantly, informants felt that such an approach to evaluation could also offer a way to identify the impacts different CPTED principles have as the "community or users of a particular space could be asked about specific design changes" that they think makes the space "safer or better" (key informant 4). As was illustrated in Chapter 2, guidance for evaluation, including the production of templates and guides, are increasingly being made available to crime prevention practitioners overseas (Shaftoe, 2004; International Centre for the Prevention of Crime, 2010). The findings above illustrate that production of similar guidance for New Zealand practitioners would be beneficial for encouraging the undertaking of CPTED evaluation, educating practitioners about how to undertake evaluation, the benefits and lessons that can be gained from project failures, as well as informing practitioners about what issues to be aware of, such as displacement, the potential of social exclusion, and threats to evaluation validity.

8.4 Professional Body and Information Centre

Beyond the promotion of less rigorous evaluation techniques and guidance documents informants noted that the creation of an information centre and professional CPTED body may encourage the undertaking of evaluation. Importantly, these two possibilities were specifically noted as beneficial to CPTED practice and evaluation across New Zealand as they would be services that are accessible to all local authorities. Additionally, both the information centre and professional body were seen by practitioners as the primary channels through which knowledge and capacity of

practitioners and the application of appropriate evaluation methods might be actively promoted, provided, and advocated for.

A number of practitioners indicated that there is a lack of support from central government agencies for CPTED, particularly in relation to the production or dissemination of information and guidance. Key informant 2, for example stated that "there's no home perceptive in New Zealand, where do you go? Where's the clearing house for evaluations and research and project write-ups?...there's a big gap". As the above comment suggests, there is no place, or organisation, within the New Zealand context that practitioners can find guidance or information regarding CPTED evaluation. While the MoJ was responsible for the production of CPTED guidelines, and provides some funding for CPTED projects, a number of informants felt that it did not fill this role as a 'home' for CPTED (key informant 2; 7; 3).

Practitioners generally agreed that one way that this gap could be filled was through a professional body for CPTED who could take responsibility for the production and dissemination of information and guidance (key informant 3; 2; 7). Key informant 7, for example, stated that there "has been some talk, or some desire at least to see a national sort of CPTED body set up". However, informants were less decisive as to how or who would set such a professional body up. Key informant 4 stated that the International CPTED Association already offered a means for a "central clearing house" and "receptacle for information". In contrast, key informant 2 felt that the International CPTED Association did not fill this 'gap' due to their commitments overseas and the irregularity in their communications:

> "I don't think the International Association fills the gap at all, because they are an international association...there's no regularity to their communication, they do it according to their timetable of the international team. I say they do it, I mean run workshops and conferences and stuff, they are done on a regional basis with Australia. But for like 6 months of the year you might hear nothing from them and they are not resourced to answer questions" (key informant 2).

Key informant 2 added that they did not think this body needed to be a separate organisation but could potentially be attached as a "branch" of an existing organisation such as the New Zealand Institute of Landscape Architects or Local Government New Zealand.

Despite the contrasting views about who should run this professional body, or centre for information, informants were in general agreement about the benefits of such developments. Central to these benefits was "getting the message out about why we need evaluation" including the publishing of material enabling practitioners to learn from examples, others' experience, and to "understand what good evaluation is" (key informant 7; 2; 4). The findings above strongly correlate with those facilitating factors outlined in the academic literature. Ekblom and Pease (1995) and Cherney and Sutton (2007), for example, promote the establishment of professional bodies as they can play a key role in facilitating evaluation, improving the practice of evaluation, and promote cultures of learning by sharing knowledge about successes and failures.

Overall, the establishment of a professional CPTED body has been identified as an important development in order to promote evaluation of CPTED projects. Through this body information and guidance can be made available to practitioners in order to not only facilitate the process of evaluation but also to improve the evidence base associated with what works and what does not. While this research has focused on the cases of Auckland and Wellington, wider recognition should be given to the impact that a professional CPTED body can have for other municipalities in New Zealand. In particular, smaller, less resourced, councils may benefit from this development as it can provide access to information and expertise otherwise unattainable and may lead to a more informed delivery of CPTED. Furthermore, this body could play a primary role in organising and providing training workshops for evaluation, and implementation, of CPTED throughout New Zealand given the irregular and spontaneous nature of workshops and conferences offered by the International CPTED Association.

8.5 Conclusion

This chapter has identified potential ways in which evaluation of CPTED initiatives can be encouraged and facilitated. The range of facilitating factors noted by informants suggests that there are numerous avenues for which CPTED evaluation can be encouraged within New Zealand. Collectively, the provision and promotion of training, funding requirements, practical methods and measures, and the development of a professional CPTED body, all assist in overcoming the barriers to evaluation identified

in Chapter 7, and support similar recommendations provided throughout the crime prevention literature.

The findings presented in this chapter have also expanded upon the literature and knowledge relating to CPTED practice in New Zealand. Specifically, this chapter has added value to McCauley and Opie's (2007) findings; rather than identifying that local authorities and practitioners require assistance to undertake evaluation the current chapter has moved this contention forward by highlighting specific factors and developments which can provide this assistance.

Reflecting upon the findings presented in Chapters 5 and 6 there are numerous benefits for ensuring that the facilitating factors identified in this chapter are followed. Collectively, they provide for a greater understanding of CPTED, its associated positive and negative effects, and encourage practitioners to learn from past, and each other's, experiences. Through these means a better indication of CPTED's effectiveness can be produced and an evidence base identifying what works, what does not, and why, can finally begin to accumulate. Through the facilitation of CPTED evaluation not only are local authorities fulfilling their duties under the RMA but they are actively working towards a more informed, effective, ethical, and sustainable, delivery of CPTED.

9

Conclusion

9.1 Introduction

CPTED has become a popular tool for local authorities to adopt in their effort to prevent crime and to protect and enhance community health, safety and security. While the popularity, and consequential adoption, of CPTED continues to grow, there are outstanding questions surrounding the extent to which it is effective. Congruently, evaluation of crime prevention initiatives, including CPTED, has been noted as deficient, even lacking, in practice, leaving the impact of specific initiatives and projects open to interpretation. Thus, the aim of this research was to investigate the evaluation and monitoring process of CPTED projects and initiatives by local authorities in New Zealand.

To achieve the research aim five research objectives were developed. Research Objective 2 aimed to evaluate the perceptions held by practitioners pertaining to the effectiveness of CPTED in order to identify whether CPTED is considered an effective crime prevention tool and to determine whether any doubts surround its efficacy. This objective provided context to the first and third research objectives which aimed to measure the extent to which evaluation is carried out by local authorities and what values they associated with its undertaking. Research Objectives 4 and 5 were set out to build upon the results of the previous research objectives in order to examine what potential barriers inhibit the evaluation process and to investigate possible solutions to these barriers. The following section of this chapter provides a summary of the research findings under each respective research objective. Following this, reflection on the

research process and the value of the results is provided before areas for future research are specified and concluding comments offered.

9.2 Synthesis: Addressing the Research Objectives

The findings of this study highlight that evaluation can make valuable contributions to the practice and efficacy of CPTED delivery. As results indicate, the effectiveness of CPTED in preventing crime, or be utilised for such ethical ends, is not beyond question, providing an impetus for the adoption and undertaking of evaluation to better understand the impacts CPTED has. However, this study has found that, much like the international experience, evaluation of CPTED projects remains an undervalued and largely neglected process in practice.

The study confirmed that a number of barriers exist which reduce and inhibit the evaluation process. Similarly, the study found that there are a number of potential solutions which can overcome most of these barriers in order to encourage and facilitate the undertaking of evaluation by New Zealand local authorities. A synthesis of the main research findings is provided below under each respective research objective.

9.2.1 **Practitioner Perceptions of CPTED's Effectiveness.**

The research found that the effectiveness of CPTED is perceived to be largely dependent upon the level of knowledge and expertise practitioners have. Findings also suggest that some CPTED practitioners in New Zealand assume that CPTED implementation is guaranteed to have effective results regardless of the level of knowledge or expertise. This was recognised as problematic because it may compromise the effectiveness of CPTED outcomes, and alternatively, cause more harm than good.

The research has also found that a number of negative side-effects can result from CPTED implementation which may compromise its ability to prevent crime. These included displacement, social exclusion, and conflicts in relation to competing interests and the balancing of priorities attached to particular spaces and places. The existence of these issues raises legitimate doubts regarding CPTED's ability to prevent crime, or be utilised in a manner to achieve such results. Overall, the findings confirm that while CPTED has the ability to prevent crime, its effectiveness is compromised when those

implementing CPTED consider it as simplistic and guaranteed to have positive results. In turn, practitioners may fail to consider the wider effects, including negative impacts, that their projects may be producing. These findings have provided an impetus for promoting and undertaking evaluation of CPTED initiatives to better understand the impacts CPTED has.

9.2.2 Importance of Evaluation

The findings have illustrated that CPTED practitioners generally have a good understanding regarding the importance and value of evaluation. These results were consistent with identified benefits illustrated throughout the crime prevention literature. Notably, this study has found that evaluation can identify whether an initiative has had an effect in terms of crime reduction, illustrate whether further design changes are needed, pinpoint issues resulting from an initiative such as displacement or social exclusion, and can contribute to an evidence base assisting in future decisions and projects.

9.2.3 Extent of CPTED Evaluation

The study has found that evaluation remains a neglected element of CPTED practice. While some examples of informal evaluation were noted, such as observations, these forms of evaluation were rare in terms of occurrence and not subject to any serious deliberation. The research also indicated that these findings are most likely representative of the national experience, therefore, potentially extend to other large cities and smaller municipalities. This is a problematic finding as it illustrates a form of neglect by local authorities due to the fact that evaluation is required for those carrying out their duties under the RMA and LGA. The identified lack of evaluation further compounds questions surrounding the effectiveness of CPTED and is to the detriment of advancing CPTED practice as it fails to take advantage of the potentially valuable knowledge that can be gathered from different initiatives.

Importantly, the research found that despite the lack of evaluation there seems to be growing interest to adopt and undertake it which highlights the need to overcome any barriers inhibiting the evaluation process.

9.2.4 Barriers to Evaluation

There are a number of factors that inhibit the adoption and undertaking of CPTED evaluation. The research has found that local authorities often lack the time, funding, or knowledge, required to undertake evaluation. Lack of knowledge, in particular, has been identified as a major restricting factor as practitioners are often unaware of different evaluation methods or the process for implementing them.

Another barrier that the research identified was the reliability and availability of crime statistics. This issue highlights the danger of relying on crime statistics as an indication of CPTED's success as well as the need for practitioners to be aware of factors, such as seasonality or school holidays, which can distort the accuracy of crime statistics and therefore evaluation results. Furthermore, this research has found that problems securing access to crime statistics signifies that in some cases multi-agency partnerships, particularly between local authorities and police, breakdown following the implementation phase of an initiative.

Fear of failure is a further barrier for evaluation as practitioners can choose not to undertake evaluation as potential negative findings may bring reductions to funding for future projects. A final barrier identified by the research was the mentality that service delivery is more important than evaluation whereby some practitioners perceive spending on the implementation process as more important than assessing outcomes. Collectively, these findings illustrate the underlying reasons for the lack of CPTED evaluation in New Zealand.

9.2.5 Factors that may Facilitate or Enhance Evaluation

The research identified a range of factors they can facilitate the adoption and undertaking of evaluation as well as overcome previously noted barriers. Education and funding is important. Training and guidance documents were two key mechanisms identified for increasing the knowledge and capacity of practitioners. Beyond increasing the amount of funding for CPTED initiatives the research also found that evaluation can be facilitated if the funding provided for CPTED projects comes with conditions requiring the undertaking of evaluation and advocates that this evaluation process is considered and incorporated during the planning stage of CPTED projects.

Evaluation can also be facilitated through the promotion of more practical methods and the adoption of qualitative indicators. Systematic, or rigorous, evaluation methods have been identified as unrealistic for practitioners. The findings suggest that less systematic evaluation techniques and methods that include a range of qualitative indicators and measures are the best practical option for practitioners as they can help overcome the limitations of crime data accuracy and availability, and time and funding, by providing alternative indicators of success with less resource intensive methods. As such, potential exists for the production of structured evaluation templates and guidance documents to indicate different measures, questions, and methods to be used in evaluations. Such templates and guides have also been identified as important for educating practitioners about the benefits and lessons that can be gained from project failures, the issues to be aware of, such as displacement and social exclusion, and the possible threats to evaluation validity.

The research also recognised that the development of a professional CPTED body and information centre would be beneficial for encouraging CPTED evaluation. Importantly, these developments would have national significance as they would be accessible to all local authorities. While these developments may advocate evaluation, they also serve as a platform for which information and guidance can be disseminated, including the organisation and delivery of training workshops. The development of a professional CPTED body and information centre has also been acknowledged as important for improving the evidence base associated with what works and what does not through the pooling of knowledge and evaluation findings. This development would allow practitioners from around New Zealand to benefit and learn from each other's experience.

9.3 Value of Research Findings and Evaluation of the Research Process

This study is the first research carried out in the New Zealand context to investigate the evaluation of CPTED initiatives. As such, all of the findings of the research have value as they have contributed to an unexplored area of CPTED research and contributed to the CPTED knowledge base within New Zealand. While this was the first research of its kind in New Zealand, this study has built upon previous New Zealand CPTED

research which needs to be acknowledged and further exemplifies the value of the results provided by the current thesis. In particular, this study has expanded upon McCauley and Opie's (2007) findings, illustrating the reasons why local authorities have difficulty assessing the effectiveness of CPTED initiatives. The study has also advanced and expanded upon McCauley and Opie's (2007) suggestion that local authorities require assistance evaluating CPTED initiatives by identifying specific factors and developments which can facilitate and assist the undertaking of evaluation.

The findings of the research largely reflect and confirm similar contentions, conclusions, and recommendations provided in the broader crime prevention literature. However, the study has also made contributions to the wider crime prevention literature particularly through the expansion of previous contentions and the identification of new barriers to the evaluation process. Specifically, this study has expanded Cozens (2002) claim that the quality of data is the primary factor limiting the undertaking, and outcomes, of evaluation by illustrating that even when crime data is accurate there is a need for practitioners to be aware of wider issues, such as normal fluctuations in crime rates associated with seasonality, which may distort evaluation findings. Furthermore, this study has extended Tilley's (2009) contention noting that limited knowledge and experience should not only be associated with the production of poor quality evaluations because they also serve as barriers to the adoption and undertaking of evaluation. Finally, this study has found that the availability of crime statistics can impact the undertaking of evaluation which is a barrier that had not been identified in previous research. As was previously mentioned, this is an important finding as it suggests that there is a breakdown in multi-agency partnerships, commonly considered vital for effective CPTED implementation, between local authorities and police after the implementation phase of CPTED initiatives.

Reflecting on the research process, the in depth nature of the research approach and concentration on two primary case studies enabled this research to be successful. The approach allowed for the extraction of perceptions, opinions, and experiences from a range of practitioners who are experienced with CPTED and its use, ensuring valid and practice-orientated findings. While a number of limitations and difficulties were encountered during this process the conclusions that the research provides are considered to offer meaningful and important contributions to the limited CPTED

knowledge base in the New Zealand context. Nevertheless, the limited time and resources restricted the scope of the current study. As such, this study provides a platform on which future research can expand, directions for which are outlined in the following section.

9.4 Directions for Future Research

Four primary areas for future research have been identified. First, there is a need for research regarding the specifics of evaluation techniques. While this study confirms that less systematic and rigorous evaluation techniques are preferred there is still a need to identify or develop particular evaluation methods suitable for CPTED practitioners. Similarly, research is needed to develop suitable qualitative measures and indicators as well as the mechanics of a structured evaluation template and guidance documents.

Further research into different cities and towns in New Zealand is also important. This study was restricted to two large cities as case studies, therefore, research into other cities, and particularly, smaller municipalities, around New Zealand could reveal further details and insights that are important for the development of CPTED evaluation.

Another possible direction for future research is to investigate the development and process of multi-agency partnerships with particular attention directed towards when and why these collaborations cease or breakdown. Further value from such studies could be gained by investigating what role these partnerships might play in the evaluation process.

A final direction for future research relates to the development of a professional CPTED body and information centre. Specific details regarding the best way that these developments might be set up, run, and where they might be housed, are needed.

9.5 Concluding Comments

The thesis has contributed to the existing body of CPTED literature through an investigation of the evaluation process of CPTED initiatives by New Zealand local authorities. It has highlighted that evaluation is an important element of any crime prevention strategy, illustrated that the effectiveness of CPTED should not be taken for granted, and subsequently noted that evaluation should always be undertaken. Importantly, it has documented the barriers that impede, and the factors that can facilitate, evaluation in practice providing avenues for future research and areas for local authorities to improve upon in order to encourage the adoption and undertaking of CPTED evaluation across New Zealand. Through the facilitation of CPTED evaluation a better understanding of CPTEDs impacts can be gained and local authorities can finally work towards a more informed, effective, ethical, and sustainable, delivery of CPTED projects and initiatives in their communities.

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Appendix A: Threats to Evaluation Validity

The following table provides a summary of a number of threats to evaluation validity. It should be noted that this list is not exhaustive; however, it illustrates the extent and range of threats that evaluation is subject to.

Threat	**Explanation**
Regression	Crime was at an extreme (high or low) when the intervention was implemented. Crime rates naturally fluctuate so the observed improvement may be crime rates returning to normal rather than cause by the intervention.
Seasonality	Changes may be representative of regular fluctuations throughout the year unrelated to the measures implemented.
History	External changes outside of the intervention are responsible for change.
Instrumentation	The methods used for measurement change and create the impression that change has occurred when there is none.
Selection	Cases that received intervention treatment are systematically different from those that did not. When comparisons are made these differences may have caused the outcome.
Maturation	Normal changes over time were responsible for the outcome
Combinations of the above	A number of the above threats combine to cause the observed outcome.

(Source: adapted from Tilley, 2009; Eck, 2005)

Appendix B: Letter to Key Informants

Dear _____

My name is Stephen Dennis, currently I am undertaking a thesis as part of the Master of Planning degree at the University of Otago. My research focuses on the effectiveness, evaluation and monitoring of crime prevention through environmental design (CPTED) in New Zealand. Currently I am seeking council staff and CPTED consultants/experts as potential candidates for my research.

I am writing to ask you if you would like to participate in a short interview, of approximately 30-40 minutes duration, in relation to CPTED and the use of evaluation and monitoring of CPTED initiatives in New Zealand. I have attached an information sheet for participants to this email if you would like further information on my research and what an interview will involve.

If you are willing to participate in an interview, I would be very grateful.

Yours Sincerely,

Stephen Dennis

Appendix C: Interview Questions

The list below provides the general questions asked during key informant interviews. Due to the semi-structured format, these questions primarily served as a guide as interviews evolved depending on informant responses.

General Questions

- What is the general process within council, or your firm, when using CPTED?
- In your opinion, is the frequency of CPTED's use increasing or decreasing?

Effectiveness

- Do you think CPTED is an effective crime prevention tool?
    - If so, what makes it effective?
- What factors do you think reduces or compromises its effectiveness?
- Have you come across any examples of negative, or positive, side effects resulting from CPTED initiatives?
    - Do you think these are common occurrences, or problems, in terms of incidence?
    - How are they detected?
- Do you think any conflict exists between CPTED principles and broader principles of sustainability and new urbanism?
    - Is so, do you think this is an issue?

Evaluation

- In your knowledge, to what extent is evaluation of CPTED initiatives undertaken?
    - If so, why?
    - If not, why not?
- If it were to occur, do you think the council is in the best position to undertake it?
- What are your thoughts in terms of the value of evaluation?
    - Do you think it could be valuable to the practice of CPTED in New Zealand?
- What do you perceive as the strengths and weaknesses of evaluation, with regard to CPTED?
- In your opinion, what are the current barriers in terms of conducting, or adopting, evaluation?
    - Why?
- What factors, or developments, do you think are needed to facilitate evaluation?
    - How do you think this can be achieved?

Appendix D: Information Sheet and Consent Form for Participants

Evaluation and monitoring of crime prevention through environmental design projects
INFORMATION SHEET FOR PARTICIPANTS

Thank you for showing an interest in this project. Please read this information sheet carefully before deciding whether or not to participate. If you decide to participate we thank you. If you decide not to take part there will be no disadvantage to you and we thank you for considering our request.

What is the Aim of the Project?

This project is being undertaken as part of the requirements for a Master of Planning degree from Otago University. The aim of this research is to gain a better understanding of the role that evaluation and monitoring plays in relation to crime prevention through environmental design (CPTED) projects and initiatives. It is hoped that the research gathered will identify the extent of evaluation practice, the different approaches taken by local authorities, the strengths and weaknesses of these approaches and the barriers or issues preventing evaluation in order to improve implementation, evaluation, and monitoring of CPTED initiatives nationwide.

What Type of Participants are being sought?

The research seeks to gather the perspectives of around 10-15 people within the planning and police professions. The names of participants contacted will be obtained based on their job position or through referral from other participants. Once completed the research will be available to participants on request.

What will Participants be Asked to Do?

Should you agree to take part in this project, you will be asked to consent to a semi-structured interview. During the course of the interview, questions relating to the topic of the research will be asked. Interviews will be around 25-40 minutes long and will be arranged to be at a time that is convenient to you. If at any stage you feel uncomfortable you may refuse to answer the question(s) or request that the interview be terminated. Please be aware that you may decide not to take part in the project without any disadvantage to yourself of any kind.

What Data or Information will be Collected and What Use will be Made of it?

The data that will be collected is expected to be from a number of semi-structured interviews. The semi-structured interviews will make use of any knowledge and opinions that you may have on planning, evaluation and CPTED practice locally or New Zealand in general. No commercially or politically sensitive information is required for the purposes of this study. Your responses to questions will be recorded using audio tapes and then transcribed at a later date.

The data collected will be used to complete a thesis in order to fulfil the requirements of the

University of Otago Master of Planning Programme. Information collected from the semi-structured interviews will be used to identify key themes within the research which will contribute to the completion of the final document.

The data collected will be securely stored in such a way that only those directly involved in the undertaking or supervision of the research will be able to gain access to it. This will be Stephen Dennis and Michelle Thompson-Fawcett. At the end of the project any personal information will be destroyed immediately except that, as required by the University's research policy, any raw data on which the results of the project depend will be retained in secure storage for five years, after which it will be destroyed.

The research is not externally funded and so it is not expected that there will be any commercial use of the data. However in the event of a request for commercial use, this will only be granted subsequent to further consent being obtained by yourself and the other participants.

On the Consent Form you will be given options regarding your anonymity. Please be aware that should you wish we will make every attempt to preserve your anonymity. However, with your consent, there are some cases where it would be preferable to attribute contributions made to individual participants. It is absolutely up to you which of these options you prefer.

This project involves an open-questioning technique where the precise nature of the questions which will be asked have not been determined in advance, but will depend on the way in which the interview develops. In the event that the line of questioning does develop in such a way that you feel hesitant or uncomfortable you are reminded of your right to decline to answer any particular question(s) and also that you may withdraw from the project at any stage without any disadvantage to yourself of any kind. Participants may also withdraw information and data they have supplied if they would prefer it not be included as part of the research.

The results of the project may be published and will be available in the University of Otago Library (Dunedin, New Zealand). You will be able to request a copy of the research once it has been completed.

This proposal has been reviewed and approved by the Department of Geography, University of Otago.

Can Participants Change their Mind and Withdraw from the Project?

You may withdraw from participation in the project at any time and without any disadvantage to yourself of any kind.

What if Participants have any Questions?

If you have any questions about our project, either now or in the future, please feel free to contact either:-

Stephen Dennis	and/or	Michelle Thompson-Fawcett
Masters of Planning Student		Department of Geography
Telephone: (03) 479 4216		Telephone: (03) 479 8762
denst969@student.otago.ac.nz		mtf@geography.otago.ac.nz

This study has been approved by the Department stated above. If you have any concerns about the ethical conduct of the research you may contact the Committee through the Human Ethics

Committee Administrator (ph 03 479-8256). Any issues you raise will be treated in confidence and investigated and you will be informed of the outcome.

CONSENT FORM FOR PARTICIPANTS

I have read the Information Sheet concerning this project and understand what it is about. All my questions have been answered to my satisfaction. I understand that I am free to request further information at any stage.

I know that:

1. My participation in the project is entirely voluntary;
2. I am free to withdraw from the project at any time without any disadvantage;
3. I am aware of the nature and extent of my involvement in this research project and that the interview process will take approximately 20 minutes of my time;
4. Personal identifying information will be destroyed at the conclusion of the project but any raw data on which the results of the project depend will be retained in secure storage for at least five years after which it will be destroyed;
5. This project involves a semi-structured questioning technique, where although the questions have been arranged in advance, the interview will develop in an open-ended fashion based on the responses you give. In the event that the line of questioning develops in such a way that I feel hesitant or uncomfortable I may decline to answer any particular question(s) and/or may withdraw from the project without any disadvantage of any kind;
6. There are no known or anticipated risks to participating in this study;
7. There is no remuneration for participating in this study;
8. The results of the project may be published, and will be made available only to the researchers, the academic staff of the Department of Geography, University of Otago, and those participants that request a copy of the research. Every attempt will be made to preserve my anonymity if I choose to remain anonymous;
9. I grant/ do not grant * permission to allow the research audio record my interview;
10. I grant/ do not grant * permission to allow the research to use my identity.

*Please indicate by circling

I agree to take part in this project

…… ……

(Signature of participant) date

……. ……

(Signature of researcher, acknowledging receipt) date

Appendix E: List of Key Informants

Key informant number	Role/Case study location
1	Private consultant - Wellington Previous experience at Wellington City Council and Auckland City Council
2	Previous experience at Wellington City Council.
3	Wellington City Council
4	Wellington City Council International CPTED Association
5	Auckland Council
6	Private consultant - Wellington
7	Private consultant – Auckland Previous experience at Auckland Council
8	Ministry of Justice