

Original Article

A review of the impact of crime risk assessment reports in New South Wales, Australia

Garner Clancey*, Daren Fisher, Adam Lyons and Murray Lee
Law School Building (F10), Sydney Institute of Criminology, The University of Sydney, Eastern Avenue, Sydney, Camperdown Campus, NSW 2006, Australia
E-mails: garner.clancey@sydney.edu.au; dgfisher@umd.edu; alyo3915@uni.sydney.edu.au; murray.lee@sydney.edu.au

*Corresponding author.

Abstract Crime risks assessment reports are prepared for some specific new proposed developments in New South Wales (NSW), Australia. These assessments aim to identify crime risks and should include reference to how the design of the proposed development minimises or mitigates crime risks. In 2010, Clancey *et al* (2011, 2012) reviewed the content of 33 crime risk assessment reports prepared in NSW. In order to investigate the impact of these crime risk assessments on the subsequent development process, site visits were conducted in February 2015 to 23 locations for which original crime risk assessment reports had been prepared. These site visits sought to determine if developments had been completed, and if so, whether potential crime risks were evident (or not) from a review of the key physical features of the site. It was found that 10 out of these 23 sites (43.5 per cent) had not been developed or construction was still being undertaken, demonstrating the lengthy development process. Of those developments that had been built, they represented a variety of functions which raises questions about the utility of generic crime risk assessment guidelines. For example, the crime and security issues of a major hospital are vastly different to a small suburban residential development. While access control measures were ubiquitous across the diverse sites, greater attention might have been given to natural ladders and the function and maintenance of communal areas. The findings from this research have implications for ongoing policy development in this area.

Crime Prevention and Community Safety (2016) 18, 73–90.

doi:10.1057/cpcs.2016.1

Keywords: crime risk assessment; crime prevention through environmental design (CPTED); site audit; planning; development application

Introduction

Crime prevention through environmental design (CPTED) has been incorporated, in various ways, into numerous planning regimes in different jurisdictions around the world (Office of the Deputy Prime Minister, 2004; New Zealand Ministry of Justice, 2005; Scottish Executive Planning Department, 2006; Schneider and Kitchen, 2007; Armitage and Monchuk, 2013; Monchuk and Clancey, 2013; Cozens, 2014) and across Australia (Australian Capital Territory Government, 2000; South Australian Department of Transport and Urban, 2004; Victorian Department of Sustainability and Environment, 2005; Western Australian Planning Commission, 2006; Queensland Government, 2007). The manner in which crime risks arising from the built environment are assessed and dealt with differ, but the common objective of the various planning instruments incorporating CPTED is to ensure that crime is prevented or minimised as new developments are built or modified.

In New South Wales (NSW), Section 79c Guidelines of the *Environmental Planning and Assessment Act 1979* (S79c Guidelines) were introduced in April 2001. These S79c Guidelines, amongst other things, introduced a requirement for crime risk assessments to be undertaken for some proposed developments, such as large scale residential developments with more than 20 dwellings and new or refurbished shopping centres. The crime risk assessment would then form part of the development application submitted to the relevant consent authority (local or state government depending on the size and nature of the development). In theory, the identification and non-mitigation of crime risks of a proposed development could prevent a development application from being approved (although interviews conducted by Clancey *et al* (2014) with local government planning officials suggest that a development application being rejected due to crime risks is an unlikely outcome).

The S79c Guidelines focus on four key principles of CPTED. These become the basis for assessing crime risks in NSW developments. These four principles include access control, surveillance, territorial reinforcement and space management (NSW DUAP, 2001). Buttressing many depictions and descriptions of CPTED, these principles have emerged as the core foundations of CPTED (Cozens *et al*, 2005). Access control measures prevent access to properties or locations; surveillance ensures that people are monitored (by other people, by cameras or by security personnel); territorial reinforcement strives to give people a sense of ownership over an area so that informal social control is exercised; and space management ensures that an area is well maintained so that there are signs of capable guardianship. A more complete description of these principles can be found in the NSW Guidelines (NSW DUAP, 2001).¹

Since the introduction of these Guidelines, there has been limited analysis of their impact. To partially address this gap in our understanding of the application

of the NSW Guidelines, Clancey *et al* (2011, 2012) undertook an analysis in 2010 of 33 publicly available crime risk assessment reports. These reports were prepared for appreciably different developments, ranging from small suburban residential projects to substantial mixed-used urban renewal projects. The quality of these crime risk assessment reports and objective analysis of crime risks was queried. For example, it was found that one development company prepared almost identical crime risk assessment reports irrespective of the site and dynamics of the proposed development, and that crime data analysis relied on large geographic areas not especially relevant to the development of very specific parcels of land. These and other limitations, such as the narrowness of using just four CPTED principles, were highlighted in Clancey *et al* (2011, 2012) and Lee *et al* (2014). These authors further questioned whether the use of the S79c Guidelines in development applications were, in many cases, simply satisfying or paying lip service to broader administrative and political discourses around crime prevention and risk (Lee *et al*, 2014).

To build on this earlier work, site visits were conducted in February 2015 to 23 of the original 33 sites covered by crime risk assessment reports. This current study aimed to identify how the developments did, or did not, adhere to the CPTED principles espoused in the S79c Guidelines and how the guidelines themselves might offer limited guidance given the diversity of facilities and developments.

Research Methods

Seeking to explore the medium-term impacts of the crime risk assessment process in Sydney, NSW on building developments subsequent to application approval and to observe the outcomes of future commitments made as part of this process, the present study drew upon the sample previously collected in Clancey *et al* (2011, 2012) that analysed the crime risk assessment process in NSW. The original sample from this earlier study was comprised of 33 major building projects from NSW. These projects were drawn from a purposive criterion sample of the available reports that had been lodged to the NSW Department of Planning between 1 January 2007 and 31 October 2010 (Kalton, 1983). The selected developments represented all of the major developments in NSW that had an identifiable and publicly available crime risk assessment report within this time period.

Owing to the geographic size of NSW (809 444 km²), and the geographic spread of these sites across the state, sites for the present study were selected based on their proximity to the Sydney Central Business District (CBD). As such, while the previous study sought to draw its sample from the entire state of NSW, the present study limits its focus to the Sydney Metropolitan area. This does limit the potential generalisability of any findings, by focusing on these

more urban based sites. Across the 33 sites that were included in Clancey *et al* (2011, 2012), the average distance to these sites was 40.8 km, with the furthest site in the original sample being located 308km away from the Sydney CBD. Owing to the limited resources of the present project, all sites that were within a driving distance of 35 km from Sydney (approximately 1 hour of driving in any direction) were selected for the present sample. Twenty-four out of the original 33 sites fell within this range. One of these 24 sites was, however, excluded because of its geographic isolation, leaving a final sample of 23 sites. After excluding this site from the present sample, the average distance to the sampled sites was 9.6 km and the average distance to those not sampled was 103.2 km.

The S79c Guidelines define a crime risk assessment as: ‘a systemic evaluation of the potential for crime in an area. It provides an indication of both the likely magnitude of crime and likely crime type. The consideration of these dimensions (crime amount and type) will determine the choice and appropriate mix of CPTED strategies’ (NSW DUAP, 2001, p. 3). Although this description does not provide much practical direction for the crime risk assessment process, this is the only guideline provided in the NSW Guidelines.

Visits were conducted to each of the 23 sampled sites. During these site visits, the original crime risk assessment was revisited and a number of observations were made, and notes taken. These observations were designed to identify any amendments undertaken, how the development did (or did not) adhere to the CPTED principles espoused in the assessment, how in general the sites met the CPTED guidelines, and finally how the guidelines themselves might offer limited guidance given the diversity of facilities and developments. Each site was accorded approximately 30 min of onsite observations, and this was supplemented by the collection of photographs to enable the accurate and more complete analysis of crime risks to be conducted and compiled off site.

These processes are broadly reflective of the steps undertaken by authors of crime risk assessments (see Clancey *et al*, 2015). It would also have been ideal to include a series of interviews with users, owners and other stakeholders who use these spaces, but this was beyond the resources of the current project.

Crime Data

In order to identify relevant crime risks and to assess the generalisability of the selected sample to the original state-wide sample, crime data for each site in the sample were collected via the NSW Bureau of Crime Statistics and Research’s publicly available Crime Tool (crimetool.bocsar.nsw.gov.au/bocsar/). Using the crime hot spot maps for the 2013–2014 period, a four-point scale was constructed for each street address (0 – not in a hot spot, 1 – low density hot spot, 2 – medium density hot spot, 3 – high density hot spot). This information was gathered for eight offences,² and the average hot spot score can be seen in

Figure 1 for the sites in the present sample and for the sites that were omitted from the present sample that were included in Clancey *et al* (2011). Across the eight offences, the sites that were included in the sample had an average hot spot score of 1.8 out of a maximum of 3.0, and those that were not included in the present sample had an average hot spot score of 1.33, and this difference was marginally statistically significant ($t = 1.64, P < 0.056$).

The sites that were included in the sample had numerically higher hot spot scores for every offence type with the exception of malicious damage to property (2.17 in the sample and 2.20 in the excluded sites). Figure 1 displays that particular differences can be seen in steal from person offences (1.22 in the sample and 0.00 in the excluded sites), and robbery (1.65 in the sample and 0.70 in the excluded sites). Indeed, across the 33 sites included in Clancey *et al* (2011), there is a negative relationship between the distance from the Sydney CBD and the average hot-spot score ($\beta = -0.05, P < 0.04$). A similar but more marked finding was also evident for the sites in the present sample as well ($\beta = -0.106, P < 0.001$). As expected, based on these crime data, it appears that the sites that were included in the sample were exposed to more crime over the past 2 years compared with those omitted from the present sample.

For the sites in the present sample, the highest average hot spot scores were for steal from dwelling (2.22) and malicious damage to property (2.13). Fifteen out of the 23 sites (65.2 per cent) in the sample were within high density hot spots for malicious damage to property, and 14 out of the 23 sites (60.8 per cent) were within high density hot spots for steal from dwelling offences over the past 2 years. Further, four sites within the present sample were located

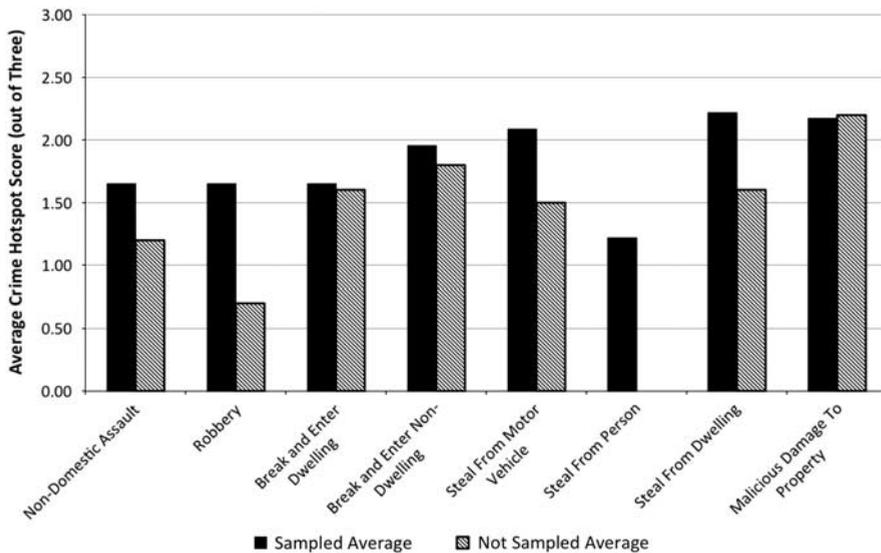


Figure 1: Average hot spot score for sample sites and non-sampled sites.

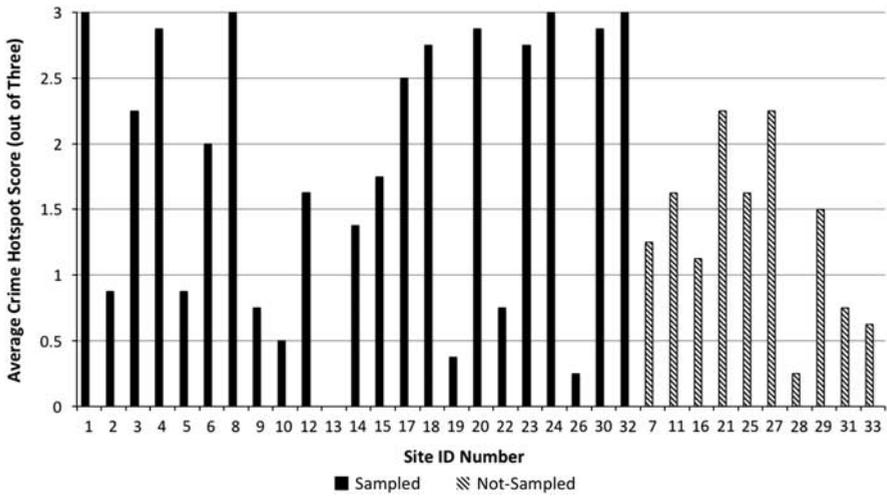


Figure 2: Individual hot spot scores for sample sites and non-sampled sites.

within high density hot spots for all eight offences, and an additional four sites were located within high density hot spots for seven out of these eight offences. Despite this, there is variation within the sample with regard to proximity to crime hot spots (Figure 2). As some of the sites were only in crime spots for a small number offences and often were only in low density hot spots,³ this observation strengthens Clancey *et al*'s (2014) finding that investment in CPTED in NSW is not solely based on the presence or absence of crime within the immediate vicinity of the development.

Findings from Site Visits

A number of findings emerge from the site visits. Despite the limitations of the methods employed here, the following findings further add to the CPTED literature and our understanding of the operationalisation of CPTED concepts.

Non-commenced or incomplete development

Ten of the 23 (43.5 per cent) had not been developed or constructed at the time of the site visits. An indication of the time passed between planning permission and development of each site is provided in Table 1. Given that the crime risks assessments originally reviewed had been lodged between 1 January 2007 and 31 October 2010, the lack of or slow development was somewhat surprising, particularly given the desire for an expedient turn-around expressed by other key players in the development application process (Clancey *et al*, 2014).

Table 1: Status of development as at February 2015

<i>Site number</i>	<i>Date of report</i>	<i>Type of development</i>	<i>Development status</i>
20	February 2007	Residential	Not started
12	November 2007	Mixed use	Not started
32	January 2008	Residential	Completed
4	June 2008	Public open space	Not started
24	June 2008	Mixed use (redevelopment)	Completed
8	April 2008	Mixed use	Majority completed
19	October 2008	Mixed use	Partly developed
2	November 2008	Hospital (redevelopment)	Completed
3	November 2008	Mixed use (redevelopment)	Completed
6	March 2009	Mixed use	Not started – part of application approved
30	June 2009	Mixed use	Completed
5	October 2009	Residential	Completed
18	March 2010	Mixed use	Completed
9	May 2010	Residential	Completed
14	May 2010	Mixed use	Not started
15	June 2010	Mixed use	Under construction
13	June 2010	Residential	Completed
10	July 2010	Residential	Completed
17	July 2010	Mixed use	Completed
1	October 2010	Mixed use	Majority completed
26	October 2010	Residential	Development application refused
22	October 2010	Residential	Under construction
23	October 2010	Mixed use	Construction to commence in mid-2015

There are many potential reasons for the lack of development. Some developments might not have achieved all approvals required to make the project financially viable or credit problems might have ensued following the lodgement of the development application because of macroeconomic conditions. Irrespective of the reasons, it was a striking feature of the site visits that many had yet to commence or to be completed.

This should not be taken to suggest that development is necessarily a more protracted process in Sydney or NSW more broadly than other Australian jurisdictions. As Gurrán and Phibbs (2013) have shown, there is some evidence to suggest that development application approval times are in fact shorter in Sydney than Melbourne metropolitan areas, for example. Therefore, the protracted development timeframes speak to the nature of development, rather than to something idiosyncratic about Sydney and NSW planning regimes.

The length of the development application process and the duration of the period before a development is finalised have implications for the relevance of any crime data analysis included in the report. Crime data and trends in a local area in which a development is proposed might change considerably over the course of the development application and construction phases. Given the significant falls in some crime types in NSW in recent years (Weatherburn and

Holmes 2013a, b; Clancey and Lulham, 2014), there is a real chance that previous crime statistics would inflate potential crime risks when compared with more recent data.

Diverse site functions

The site visits highlighted the marked differences of the functions and purposes of the various developments. Without providing information that might identify an individual site, it is possible to state that developments included small suburban residential developments, student accommodation, significant vertical residential communities, re-development of part of a hospital, a cultural space, and mixed use developments containing residential towers, retail outlets (including licensed venues) and commercial suites. As a consequence, the potential crime risks and CPTED implications of each site varied markedly across the sample. This raises questions about the utility of generic guidelines.

Fisher and Piracha (2012) reported findings from various actors involved in the development of the S79c Guidelines. One key actor suggested that generic guidelines have the flexibility to respond to idiosyncratic and diverse issues and to ‘stand the test of time’ (Fisher and Piracha, 2012, p. 82). In contrast to this perspective, there has been a move towards the development of site or function-specific guidelines.

Numerous design guidelines exist that specifically address crime risks arising from particular site functions or land uses. For example, the Victorian Department of Justice has developed ‘Design Guidelines for Licensed Venues’. Design guidance is provided on issues such as entries and exits, patron activity areas, toilets and outdoor drinking facilities (Victorian Department of Justice, 2009). The Association of Chief Police Officers (recently replaced by the National Police Chiefs’ Council) through its Secured by Design initiative, previously developed numerous function-specific design guides. Their guides covered new homes, new schools, commercial developments, hospitals, youth shelters and secure railway stations (among others). These guides address specific issues arising in the design of these different facilities, which ensures that specific details are considered relevant to the nature of the development, rather than just focusing on generic issues.

Numerous texts also contain function-specific guidance. Atlas (2008) provides detailed commentary on designing out crime risks of school campuses, parks, parking lots, office buildings, convenience stores; Fennelly (2004) includes information on hospitals, libraries and high-rise apartments; while Fennelly and Crowe (2013) include numerous checklists for particular developments including malls, public housing and gas stations. Without commenting on the sophistication of these different design guides or checklists, this demonstrates how differential land use and development functions have been addressed by numerous authors and government agencies. Many more examples could be presented showing that



Figure 3: Glass balconies oriented towards centre of complex allow for natural surveillance of common area and landscaping.

consideration does and can be given to specific developments, as opposed to just relying on generic design guidelines.

At the time of writing, apart from the S79c Guidelines, the only publicly available guideline in NSW was the ‘NSW Car Park Guidelines for Crime Prevention’ (NSW Department of Justice, n.d.). This 10-page guide employs the same four CPTED principles included in the S79c Guidelines, but unlike the S79c Guidelines, a number of photos are included to illustrate particular observations. This leaves considerable gaps in guidance in relation to designing various other developments.

Using the guideline principles to assess crime risks

In order to engage directly with the S79c Guidelines, it was decided that the four key principles of the NSW Guidelines would be the basis for analysis at each site. In addition to providing a basis for direct comparison with the original crime risk assessments, this approach was selected in order to further determine the relative merits of adopting these principles to analyse crime risks.

In practice, it proved quite difficult to meaningfully employ the broad principles as the basis of a site assessment. Given the number of discrete elements of a large development, it is difficult to determine whether a principle such as surveillance applied to all aspects or just parts of a development, and if there could be grounds to reject or query a development application on that basis. By way of example, a number of the high-rise residential developments had numerous features that are consistent with notions of surveillance (see Figure 3). Glass allows for natural surveillance from balconies and active rooms; entrances are adjacent to key activity areas; landscaping ensures that sightlines are not obscured.

However, emergency egress areas were explicitly identified in three sites (Sites 9, 18 and 32) as being positioned in a manner that would enable them to be used to hide in wait for passers-by and were inconsistent with natural surveillance principles. Indeed, two of these three sites were within high-density crime hot-spots for both steal from person and non-domestic assaults. Consequently, unintended design features such as these may be exacerbating existing crime risks or creating new opportunities for crime. This concern was identified in one of the three crime risk assessments that covered these sites, and methods for potentially addressing these risks were also suggested:

There is concern over the fire exit recesses particularly in [REDACTED] Street. Ordinarily CCTV coverage would not be applicable where the fire doors are electronically locked. Irrespective of that rationale, the recesses could conceal one or more persons. Cameras should therefore be considered

(Site 18: 15).

Given the general inclination towards positively identifying CPTED strengths of the development in crime risk assessments, however (Clancey *et al*, 2011), it was not surprising that discussion of potentially problematic design elements such as these were neglected in the other two crime risk reports in favour of more positive commentary. Indeed, this reinforces the claim that simply being seen to deploy a risk instrument, and to go through the process of submitting a crime risk assessment can operate in practice as an end in itself (Lee *et al*, 2014).

Assessment of which crime risks?

As is well known, there are a multitude of crime categories listed in various statutes (Brown *et al*, 2015). Which crime categories should be considered in crime risk assessments is not established in the Guidelines, which makes it difficult to determine which crimes should be closely considered in a crime risk assessment. Residential developments are more likely to experience burglary, motor vehicle theft, theft from motor vehicle and domestic violence than non-residential properties (Atlas, 2008). However, the manner in which particular crime types are prioritised and then analysed is not clear from the Guidelines. This, as was illustrated in Clancey *et al* (2011), can result in crime data on stock (that is, livestock) theft being included in a crime risk assessment report for a development in a central business district of Sydney or the attachment of publicly available crime reports that run to many pages listing data for a lengthy list of crime categories for the relevant local government area. The utility of these lengthy lists, which can contain offences that have little or no relationship to the proposed development, is questionable.

Consequently, it would be beneficial for some guidance to be provided to ensure that offences that are directly related to the function of a proposed

development receive particular attention. The Crime Impact Statements developed by Greater Manchester Police provide an interesting comparison with the situation in NSW. A dedicated crime analyst from Greater Manchester Police compiles a crime pattern analysis for a 1 km² area surrounding the proposed development focusing on burglary, criminal damage, theft (various forms), robbery and wounding (Monchuk and Clancey, 2013). This crime data analysis is included in the Crime Impact Statement. While there are significant differences in geography and implementation of CPTED through planning procedures between NSW and Manchester, it is nonetheless worthwhile considering the parameters for and mechanisms of crime data analysis in these two jurisdictions.

Space management and on-site security

Space management is an all-encompassing concept that can relate to choices about robust building materials to prevent rapid degradation, to cleaning regimes, to activation of spaces through the use of performers or musicians (Cozens *et al*, 2005). Many of the decisions about space management considerations are generally not made during the development application process. Consequently, Clancey *et al* (2012) argued that the generally future-oriented nature of space management meant that it could not be properly assessed at the time a development application is lodged.

Site visits revealed that degradation and damage had already occurred in some sites. Visible damage to newly constructed residential dwellings, for example, does not auger well for its future appearance or maintenance. The follow-up period post-construction was too short to give the properties an extended period to demonstrate how they will fare into the future. Further site visits will help to determine if the use of particular building materials and maintenance practices have a negative impact on the visual presentation and perception of particular developments.

During the site visits, it became apparent that nine of the sites had on-site security or caretaker personnel. These staff provide 'capable guardianship' (Cohen and Felson, 1979), surveillance and contribute to the ongoing site management. Their presence is a significant additional benefit to preventing crime risks from arising. However, it was not possible to probe the ongoing plans for these personnel to determine if their presence was associated with the post-development phase or was an ongoing concern.

Another feature of space management that might be critically analysed is the relevance of communal areas incorporated into some developments. There were examples of ambiguous communal areas that were poorly managed and with little obvious purpose (see Figure 4). These spaces seemed to be poorly thought through and appeared to have been bolted onto developments without much consideration of how they would be utilised.



Figure 4: An ambiguous communal area with only one access point that highlights the impracticality of such spaces as well as the potential for offenders to ‘trap’ residents. Not well shown by this photo is the dead space at the end of this area. There is little obvious purpose for people to traverse this area and there are no fixtures or features designed to encourage use.

Ubiquitous access control

Site visits were hampered by the ubiquitous nature of access control measures operating at the majority of sites. Swipe card, PIN, and other forms of electronic access operated at all sites that had private space. Physical access control measures also operated to prevent access to particular parts of some developments, including through the use of landscaping. This aspect of CPTED has been firmly embraced and is now ubiquitous in the built environment.

The ubiquity of access control measures raises some questions about the broader ideological implications of CPTED practice. Preventing access is now made easy with the diversity of access control devices and technologies. However, this has obvious implications for public access. Many commentators have highlighted the exclusionary tendencies of CPTED measures linked to access control. Flusty (1994) has referred to the proliferation of these exclusionary tendencies as a movement towards ‘interdictory spaces’. Moreover, those that have the means to purchase security devices, and to live in gated communities or more affluent suburbs, enjoy the benefits of privatised security. This alignment with market conditions means that people are excluded from the ‘club good’ (Zedner, 2009) or the ‘clubbing of private security’ (Hope, 2000). Similarly, Loukaitou-Sideris and Ehrenfeucht (2009) suggest that ‘wealthy citizens have ensured local security by gating neighbourhoods, privatising streets, and employing security guards’ (pp. 234–235). Installation of access control measures might be simply achieved, but consideration needs to be given to the wider ramifications.



Figure 5: A water metre box acts as natural ladder.



Figure 6: A natural ladder formed by a low-lying brick wall and parallel wooden fence leading to a walkway shade that provides easy access to the first floor balcony.

Natural ladders

Natural ladders have been identified in the CPTED literature as providing potential opportunities for crime (WA Planning Commission, 2006). Natural ladders can come in many forms, from the erection of two structures close enough to enable a would-be offender access to the desired target, to the presence of locks or mailboxes that provide easy foot holds for would-be offenders to easily scale and or defeat access control measures.

As can be seen in Figures 5 and 6, numerous natural ladders were identified during the site visits. As the S79c Guidelines do not specifically mention natural ladders, there is no reason for these issues to be captured in crime risk assessments or considered by consent authorities.

Development context

A final consideration arising from the site visits was the narrow focus of individual developments compared with a deeper understanding of the interaction and intersection of the impacts of multiple developments in the same area. Invariably, crime risk assessment processes focus on only those risks that might pertain to or impact on a particular development. That is, obviously the only scope required by a crime risk assessment.

Nonetheless, there is considerable merit in considering crime risks in a wider context. Thus, for example, it might ultimately be more important that an area receives development that is sympathetic to its surroundings and that local infrastructure can accommodate. In this way, some aspects of second-generation CPTED (Cleveland and Saville, 1998; Saville and Cleveland, 2008) such as social cohesion and threshold capacity, and the more recently heralded third-generation CPTED (United Nations Interregional Crime and Justice Research Institute, 2010; Thorpe and Gamman, 2013),⁴ might be more relevant than narrow constructions of crime risks associated with surveillance in a particular part of a particular development.

This poses considerable administrative and policy challenges. At a time when there is pressure on trimming planning regulations rather than enhancing them (Moore and Dyer, 2012; Hazzard, 2013; Rummig and Davies, 2014), a movement to considering this wider context is unlikely to gain much traction. There should, however, be greater discussion of the merits of crime risk assessments as they stand and what might better perform the function of minimising crime risks arising from new developments or re-development of the built environment.

Conclusion

CPTED was incorporated into the NSW planning regime via Section 79c Guidelines in 2001. This has resulted in the need for crime risk assessments to be undertaken on new developments or re-developments of a particular size. Clancey *et al* (2011) reviewed 33 publicly available crime risk assessment reports and found that reports varied in their engagement with specific CPTED issues. Questions were raised about the merits of features of the Guidelines, including the use of very broad crime principles that provided little opportunity for consent authorities to question the contents of the crime risk assessment reports, and the limited guidance on what constitutes a good crime risk assessment. Given the ways in which these assessments are routinely passed and/or ignored, we would question whether they play a largely symbolic role in a broader crime risk discourse (Lee *et al*, 2014).

This initial analysis was a desk-top exercise. Content analysis of the text contained in the report was the basis for identifying the common components and features of the crime risk assessment reports, the methods underpinning the

development of these reports (where it could be ascertained), and any recommendations made regarding the mitigation of crime risks. While beneficial in probing an aspect of CPTED practice that had previously received little attention, this exercise was limited by the lack of familiarity with site-specific details and dynamics.

In February 2015, two research team members conducted visits and basic assessments of a sample of 23 of the original 33 sites to build upon earlier research and explore the impact of the crime risk assessment process on building developments subsequent to their completion. While limited by the inaccessibility of some parts of some sites, and no engagement with residents or relevant site or local agency staff, these site visits provided insights into numerous issues associated with the production of crime risk assessment reports. As it has been outlined, 10 sites had not commenced construction or been completed in the years following the lodgement of the development application. This not only shows the length of the development pipeline, but raises some questions about the utility of crime data analysis at a point many years before the completion of the development. In the context of the crime decline, legitimate questions can be posed about the relevance of crime data analysis so many years before the completion of a project. The diverse functions of the sites also pose challenges for generic guidelines. Site-specific considerations are not necessarily considered, which infers potential for the development and concentration of high-risk locations and developments as a better way of addressing crime risks than through generic principles and guidelines applied more broadly.

Moreover, access control technologies were ubiquitous across the sites, suggesting that this aspect of CPTED practice has been adopted by the development industries and a number of sites had on-site security or caretaker staff. These ‘capable guardians’ are not often contracted when a development application is being developed. Consequently, it is difficult to know how their presence can be considered in the crime risk assessment process (if at all). And yet, they provide a significant form of capable guardianship that is an important crime and security asset.

While access control and some on-site capable guardians bolster security, the presence of natural ladders at numerous sites might be worthy of greater attention. The erection of particular structures that enable would-be offenders to defeat access control measures such as walls, gates and fences, was noted at numerous sites, especially residential developments. Greater focus on this aspect of CPTED is warranted given what was observed during site visits.

As previously observed by Clancey *et al* (2012), the generic nature of the CPTED principles captured in the S79c Guidelines makes it difficult to assess actual crime risks. The principles informed the basis of analysis undertaken at each site. All sites, irrespective of size, have multiple dimensions that militate against easy summaries of conformity or otherwise of a site to the principles. Consistent with previous suggestions, the S79c Guidelines need to be more specific to enable their application.

Finally, there is some question about the utility of the Guidelines given the narrow focus on specific developments. Local context and the interaction between particular developments and buildings are not well captured. Crime risk is understood in a narrow context; one that is associated with property and land ownership. Crime risks are unlikely to comply to such arbitrary boundaries. Rather, it is likely to be a number of factors interacting in an area that result in increased crime. Consequently, finding innovative ways to consider these wider characteristics will ultimately be more fruitful than such a narrow construction of crime risks.

Notes

- 1 These brief definitions leave aside the important debates about the variety of terms and definitions used in CPTED literature and by CPTED practitioners, as highlighted by Ekblom (2011) and Johnson *et al* (2014).
- 2 The eight offences were; non-domestic assault, robbery, break and enter dwelling, break and enter non-dwelling, steal from motor vehicle, steal from person, steal from dwelling, and malicious damage to property. These offences were selected as they present a variety of crimes that were either directly related to the built environment (damage to property, steal from dwelling, and break and enter crimes), or public crimes that may also be influenced by the built environment (non-domestic assault, steal from person) (Atlas, 2008).
- 3 This finding was also evident when hot spot maps were collected going back up to 7 years, before the original sample was collected. This suggests that these crime differences were likely evident when the original reports were being compiled rather than being differences that emerged since the development application was reviewed.
- 4 Definitions of third-generation CPTED seem to differ across these references, so it should not be considered that necessarily the same concepts are captured by this phrase/concept.

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