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**IN CONFIDENCE**

15<sup>th</sup> October 2019

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Dear Julia,

**Final Crime Prevention Through Environmental Design (CPTED) Report  
Summit Care, Casula Development.**

Following our Draft report dated 23<sup>rd</sup> September 2019, we now have pleasure in submitting this final report for the above development.

Thank you for engaging Harris Crime Prevention Services for this project.

Yours sincerely,

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## **HARRIS CRIME PREVENTION SERVICES**

crime risk reviews | security master planning | designing out crime | 'safe place' management

# **Crime Risk and Crime Prevention Through Environmental Design (CPTED)**

## **FINAL REPORT**

**in relation to the**

## **SUMMITCARE DEVELOPMENT**

**at**

**18 Randwick Close Casula NSW**

**for**

**Centurion Project Management**

**October 2019**

**In Confidence**

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## EXECUTIVE SUMMARY

Harris Crime Prevention Services (Harris) was commissioned by Besol Pty Ltd to provide a Crime Prevention Through Environmental Design (CPTED) consultancy for the SummitCare Casula Aged Care Development (the development) at 18 Randwick Close, Casula NSW. The development comprises:

- (i) 92 x 1, 2 and 3-bedroom apartments over 3 x 5 level buildings;
- (ii) communal spaces and interconnecting walkways;
- (iii) 144 RACF rooms in Building A;
- (iv) 137 resident and visitor car spaces in the basement level;
- (v) basement parking for ambulance, waste collection, loading bay, maintenance and other services;
- (vi) 4 neighbourhood retail shops.

The site is located at the end of Randwick Close amongst residential dwellings. The local neighbourhood includes the Casula Mall, liquor outlets, schools and the South Western Motorway (M5).

The Report's analysis outlines the development's possible, and actual, crime risks and architecturally-focused crime prevention solutions. Conclusions and recommendations have been extracted (verbatim) from the Report for this summary. The analysis, conclusions and recommendations aim to enhance 'welcoming and safe environment' outcomes for all stakeholders.

Underpinning this consultancy's method and scope is CPTED, an acknowledged theoretical and practical crime prevention framework.

Harris defines CPTED as '*applying aspects of architecture, engineering and technology to all urban development proposals (projects) as an intentional environmental crime prevention strategy*'.

The Report's analysis is based on five (Harris adapted) CPTED principles:

- Principle 1 Territorial definition – clarity about spatial identify, separation, boundaries and purposes;
- Principle 2 Natural surveillance – architecture facilitating strong sightlines for ground plane, basement and/or upper-level observation and surveillance;
- Principle 3 Access control – access-egress definitions - who goes where, when and why;
- Principle 4 Activity support – the supportive influences of (external) lighting, landscaping and signage;
- Principle 5 Target hardening – adding specific and robust architecture and technology.

Crime Prevention Through Environmental Management (CPTM) is a desirable, but less well known, framework, which aims to monitor and sustain applied CPTED solutions. The Report outlines five CPTM principles which could (should) form an operational security awareness and stewardship regime for on-going CPTED management. (Section 8) of the Report briefly explains these principles which SummitCare may wish to pursue on occupancy.

The Report has four (supporting) appendices:

- Appendix 1 NSW Bureau of Crime Statistics and Research (BOCSAR) - reported crime statistics (trends and patterns) for Casula suburb for the five years 2015 to 2019.
- Appendix 2 Terminology.
- Appendix 3 The Influence of CPTED in Re-designing Public Spaces for Safe and 'Liveable' Activation.
- Appendix 4 Expanded Explanation of Crime Prevention as a Design and Management Strategy.

**The following CPTED Conclusions and/or Recommendations are extracted verbatim from Sections 6 and 7 of the Report:**

<b>CPTED PRINCIPLES AND COMPLIANCE</b>	<b>SUMMITCARE CASULA DEVELOPMENT CONCLUSIONS AND/OR RECOMMENDATIONS</b>
<b>Principle1</b>  <b>TERRITORIAL DEFINITIONS</b>  <b>(Section 6.1)</b>	<p>Definitions and purposes of built form and communal spaces are clearly delineated in reviewed design development drawings.</p> <p>Spatial separation and purposes combine to maximise safe causal connectivity, footprint circulation and 'knowledge'.</p> <p>Ground plane and basement identification certainty (clarity) of buildings and their functions, site entrances, vehicle parking, perimeter edging, including whole-of-site Palisade style fencing, tenancies, walkways and legible communal space allocation, all minimise the potential for opportunistic and/or targeted anti-social behaviour and/or criminal intent.</p> <p>There is no evident internal or external form or function confusion. Intra-site legibility reinforces safe pedestrian and vehicle circulation around and throughout the site.</p> <p>Activity Support, (CPTED Principle 4) should strengthen definitional certainty, as landscaping, external lighting and signage design elements are incorporated.</p> <hr/>
<b>Principle 2</b>  <b>NATURAL SURVEILLANCE</b>  <b>(Section 6.2)</b>	<p>The site's architecture promotes multi-angle, proximate-distant sightlines significantly enhancing crime risk mitigation, including deterring unauthorised pedestrian or vehicle access. In our view, the architecture facilitates and maximises whole-of-site surveillance opportunities, encouraging day-night 'eyes and ears' awareness of the usual and unusual.</p> <p>Specifically, we conclude that there is ample opportunity for natural (passive or informal) surveillance:</p> <ul style="list-style-type: none"> <li>(i) along and around each building's perimeter;</li> <li>(ii) along all four boundaries,</li> <li>(iii) at and towards the Kurrajong Road and Randwick Close approaches,</li> <li>(iv) approaching, and at, the basement ramp,</li> <li>(v) within the basement parking, loading, waste storage, lift lobby and activity spaces,</li> <li>(vi) at and around the main entrance, reception foyer and retail tenancies,</li> <li>(vii) at and within ground and upper level apartments and residents' rooms, and</li> <li>(viii) from walkways and communal spaces.</li> </ul> <p>We affirm the overall architecture maximises natural surveillance opportunities throughout the site, reducing the temptation for unauthorised entry to damage property or harm occupants.</p> <hr/>

<p><b>Principle 3</b></p> <p><b>ACCESS CONTROL</b></p> <p><b>(Section 6.3)</b></p>	<p>Drawings indicate intentional access control measures for the following:</p> <ul style="list-style-type: none"> <li>(i) vehicles entering the basement in line with our access-egress roller shutter relocation and operational advice,</li> <li>(ii) after-hours pedestrian site access from Randwick Close,</li> <li>(iii) day-night access to Buildings A, B and C,</li> <li>(iv) specific ground plane day-night access to Building A's reception foyer and back-of-house facilities,</li> <li>(v) day-night access to residents' apartments, rooms, lifts, offices, activity areas, including communal spaces, upper level terraces and all back-of-house facilities,</li> <li>(vi) to the retail tenancies,</li> <li>(vii) to plant and other utilities infrastructure.</li> </ul> <p>It is important that access control measures be strictly adhered to as 'operating procedures' in order that the development maintains a 'crime free' reputation; (Refer CPTM Section 8).</p> <p>The development has a high visibility profile around the entire perimeter, with 'low to medium' risks of access breaching at ground plane. However, new residential developments and neighbourhoods are regularly targeted to 'test' the adequacy and integrity of access control measures and the maintenance of those measures.</p> <p>We recommend that the proposed electricity sub-station (kiosk) supplying the development be Palisade- style fenced (with lockable gate) to reduce opportunity for 'tagging' or other forms of kiosk façade damage or concealment.</p>
<p><b>Principle 4</b></p> <p><b>ACTIVITY SUPPORT</b></p> <p><b>(Section 6.4)</b></p>	<p>External lighting treatments for the development's perimeters, walkways, building 'porches', reception driveway, basement, ground plane communal spaces and upper level terraces, should follow consistent luminaire, lux level at 4000K colour temperature patterns.</p> <p>We recommend overhead pole luminaires covering ground plane perimeters, communal areas, off-street approaches to the main entry and basement, with sufficient throw, spill and (where appropriate) wash, located to eliminate, shadowing and dark gaps, mindful of privacy concerns.</p> <p>We further recommend additional-to-Standard -recessed down-light lux levels for building entrances and exits (porches and stairwells), for the under-awning drop-off point, for the driveway turn-out and retail forecourt. Basement ceiling lighting should cover all basement zones, maximising lux levels at 4000K and ensuring lift lobbies and activity areas are highlighted.</p> <p>Maturing plantings should not obstruct surveillance sightlines around the development's perimeter fences and should minimise opportunities for concealment or entrapment along walkways and within communal spaces. Mature trees should not be proximate to upper level balconies.</p> <p>Way-finding signage should feature back lighting, for night-time clarity, similar to the coded requirements for exit and emergency signs.</p> <p>Inter-disciplinary coordination of these three 'support elements' is essential to enhance the overall safety (security) of the development. Design development should detail inter-disciplinary solutions.</p>

<p><b>Principle 5</b></p> <p><b>TARGET HARDENING</b></p> <p><b>(Section 6.5)</b></p>	<p>The most vulnerable spaces are recommended (as a minimum) for camera surveillance – building, basement and main ground plane entrances, walkways, communal areas, reception entry and foyer, retail and café zones and basement precinct, including activity spaces, plant, comms. waste storage-loading and utilities infrastructure.</p> <p>From a crime prevention perspective, treatments recommended are not 'invasive'. We believe that design development drawings can specify combination solutions without creating a sense of fortressing.</p>
<p><b>COMPLIANCE WITH POLICY AND PLANNING INSTRUMENTS</b></p> <p><b>(Section 7)</b></p>	<p>In compliance terms, we are of the view that the planning and design development of the proposed multi-level SummitCare development at 18 Randwick Close, Casula NSW has considered the crime prevention requirements of:</p> <ul style="list-style-type: none"> <li>(i) Section 4.15 of the NSW EPA Act, 1979, as amended;</li> <li>(ii) The NSW Police Crime Prevention Checklist; and</li> <li>(iii) Liverpool City Council's Crime Prevention Plan 2019 – 2021.</li> </ul> <p>Subject to on-going design development, the reviewed drawings support development consent, as that consent relates to required incorporation of CPTED principles.</p>

## Overall Assessment Summary

In our professional opinion, the mixed-use development proposed by SummitCare, either has, or will, consider CPTED principles and their application, as assessed, or recommended, prior to 90+% design development-detail.

The development complies with State Government's 'social impact' and 'public interest' requirements, under Section 4.15 of the EPA Act, and the CPTED requirements of NSW Police.

We affirm that the completed development should promote a 'welcoming-and-safe' day-night circulation and activation footprint for residents, staff, visitors, tenant occupants, visiting health care professionals and contractors.

Our assessment indicates that the development should make a positive crime prevention contribution to Liverpool City Council's broader 'community safety' objectives set out in their Crime Prevention Plan 2019 – 2021. CPTED architecture is a contributor to that Plan. The development's CPTED-focused architecture could 'model' future similar developments promoted and/or approved by the Council.

# THE REPORT

## 1 INTRODUCTION

Harris Crime Prevention Services (Harris) was commissioned by Besol Pty Ltd to provide a Crime Prevention Through Environmental Design (CPTED) consultancy for the SummitCare Development (the development) at 18 Randwick Close, Casula NSW. The development comprises:

- (i) 116 x 1, 2 and 3-bedroom apartments over 3 x 5 level buildings;
- (ii) communal spaces and interconnecting walkways;
- (iii) 144 RACF rooms in Building A;
- (iv) 216 resident and visitor car spaces in the basement level;
- (v) basement parking for ambulance, waste collection, loading bay, maintenance and other services;
- (vi) 4 neighbourhood retail shops.

The site is located at the end of Randwick Close amongst residential dwellings. The local neighbourhood includes the Casula Mall, liquor outlets, schools and the South Western Motorway (M5).

### 1.1 Preventing Crime Within the Development Footprint

From a crime prevention perspective, the aim is to provide a 'welcoming-and-safe environment (secure place)', where anti-social and criminal behaviour risks are identified, prevented and/or mitigated, by applying appropriate architecture and technology as lasting solutions. Applying CPTED principles is an acknowledged platform or framework to drive the crime prevention objectives and outcomes.

CPTED also considers the surrounding (neighbourhood) context which may or may not positively or negatively influence the crime prevention aims and solution outcomes.

Crime risks to the development vary depending on:

- (i) the surrounding context's potential to provide opportunities ('attract') anti-social or criminal behaviour;
- (ii) time of day or night for such opportunities;
- (iii) the intended targets – people and/or property; and
- (iv) how easy or difficult it is to unlawfully gain access to the site to 'target' property or people.

The aim therefore is to minimise opportunistic or planned criminality through design which leads to an integrated reputational 'safe environment' whole, particularly relevant given the profile and visibility of the development within the Casula community.

The ultimate goal is to create and sustain a 'zero tolerance' of anti-social and/or criminal behaviour where *risks* and not the crime itself are identified, reduced and prevented. Application of CPTED architecture contributes to that goal.

An important post-construction corollary to CPTED is Crime Prevention Through Environmental Management (CPTM); something Harris regards as essential to address on-going operational crime risks.

From a commercial perspective, preventing crime risks and their behavioural outcomes through design will, in our view, enhance the development's marketing and take-up reputation.

## 2 REPORT STRUCTURE, SCOPE AND STAKEHOLDERS

### 2.1 Structure of the Report

The Report has analysed the proposed development under six section (point) headings, specifically:

- (i) reviewing the local and surrounding neighbourhood contexts (the footprint 'edges') and their likely crime risk impacts on the development – Section 3;



- (ii) potential crime risks to, or resulting from, the development's operational goals – Section 4;
- (iii) an outline of CPTED principles – Section 5;
- (iv) the application of CPTED-focused architecture to mitigate identified crime risks (Section 4); to also affirm and/or recommend solutions – Section 6;
- (v) the development's compliance with State and Council planning and/or policy instruments. The informing legislation and/or policies are identified as the collective underpinning 'authority' for a CPTED strategy – Section 7;
- (vi) the link between, and value of, a combined CPTED and CPTEM strategy. Creating 'welcoming and safe place' is the *design* objective of CPTED. Maintaining safe place is the *management* objective of CPTEM – Section 8.

Sections 1 to 7 summarise conclusions, affirmations and/or recommendations, as per the scope. These are extracted to form part of the Executive Summary.

Section 8 has been included to provide generic explanations of CPTEM for future operational (management) consideration.

The Report therefore takes an holistic approach to the development's crime prevention goals; an approach which underpins the Harris methodology in addressing the consultancy scope.

Successful CPTED application aims to assist the Liverpool City Council (the Council) to 'show case' the development as an intentional promotion of, and contribution to, their wider community safety objectives.

There are four Appendices. They support the Report's analysis, conclusions and/or recommendations.

- Appendix 1 NSW Bureau of Crime Statistics and Research (BOCSAR) - reported crime statistics for Casula suburb for the five years 2015 to 2019.
- Appendix 2 Terminology.
- Appendix 3 The Influence of CPTED in Re-designing Public Spaces for Safe and 'Liveable' Activation.
- Appendix 4 Expanded Explanation of Crime Prevention as a Design and Management Strategy.

## 2.2 Scope and Scope Outcomes

The scope addressed 'safe environment' objectives for residents, visitors, care staff, visiting professional staff, management and contractors. Our review focused on:

- the development's 'care' philosophy reflected through the overall design parameters;
- meeting the architects to clarify the development's crime risk parameters;
- undertaking a physical inspection of the site and neighbourhood to better understand the development's relationship with its surroundings;
- reviewing internal and external sightlines to address safe day-night circulation and inter and intra-site connectivity;
- reviewing the location and application of CCTV (IP Network) and communication systems.
- evaluating basement access and parking, back of house facilities including plant and waste storage and removal, lift lobbies, emergency vehicle parking and the loading bay;
- reviewing entry/reception lobby and resident access, communal spaces, balconies, landscaping, external lighting and signage;
- ensuring the security of utilities and communications infrastructure; and,
- providing a Crime Prevention Through Environmental Design (consultancy) report.

Harris believes that the entire development should 'model' a welcoming-and-safe-environment reputation which would:

- enhance the architectural integrity, client and Council objectives of the development;
- holistically protect all assets – people, property, systems and infrastructure;
- reinforce the site's implementation of site-wide CPTED design and management solutions;

- meet the expectations of secondary stakeholders, e.g. insurers, auditors;
- comply with the crime prevention requirements of the State government, the Council and NSW Police.

In our view therefore, it is critical that the development embrace a whole-of-site CPTED philosophy, incorporating CPTED principles into its creative form, function and marketable reputation.

## 2.3 The Harris Consultancy Approach

The Harris approach to crime prevention design and management incorporates aspects of CPTED architecture to create the 'welcoming and safe environment' objective. Harris defines CPTED as '*applying aspects of architecture, engineering and technology to all urban development proposals (projects) as an intentional environmental crime prevention strategy*'.

Harris defines 'welcoming and safe environment' as: '*built form and public space environments where crime prevention has been a consideration of concept, master-planning, design development and construction processes and where safe place outcomes enhance an overall community safety reputation.*'

These definitions and our approach view the development as one which: '*seamlessly welcomes, defines, guides, directs, encourages, regulates and limits legitimate and safe activity; appropriate to functional objectives.*' In this way, the development aims to override opportunistic and deliberate anti-social and criminal behaviour.

A (collective) urban development community safety (crime prevention) objective is summarised by Harris as: '*creating and sustaining living, working, recreation and social environments through appropriate urban design, direct stakeholder management and broader community stewardship.*' It is a partnership approach.

## 2.4 Key (Development) Stakeholders

Key stakeholders include:

- (i) Liverpool City Council;
- (ii) Jackson Teece architects;
- (iii) residents, staff, visitors, health care professionals and contractors accessing all three buildings the grounds and the basement;
- (iv) NSW Police.

While each stakeholder will have different crime prevention, (security) expectations, there is a broad similarity in that personal and property safety is a 'given' of the designing-out-crime objectives.

## 2.5 Exclusions and Notes

**Note 1** Harris' consultancy services are provided independently; i.e. we are not affiliated with, nor receive benefits from, any organisation that supplies security hardware, installs security systems, monitors alarm systems or provides guarding/patrol services. This independence is critical to the way we approach security solution options and recommendations.

**Note 2** The scope excluded the development/provision of a technical security brief, security systems design and specifications or lighting brief and specifications.

**Note 3** We have introduced and recommended a CPTED + CPTM strategy (Section 6). Our research, practitioner knowledge and experience has informed this approach.

Our experience suggests that design (CPTED) and management (CPTM) strategies are interdependently and inexorably linked. Often, they are not and, in circumstances where (security) design has been overlooked, traditional operational security management and technology are substituted. CPTED without CPTM becomes a costly counterproductive exercise.

**Note 4** In part, our CPTED assessment, conclusions and recommendations are informed by compliance with legislation, regulation, policies and protocols. (These are addressed in (Section 7).

## 2.6 Disclaimer

The commentary, assessment, conclusions and recommendations outlined in the report are based on information provided to Harris Crime Prevention Services at the time of this assignment. Our research and experience suggest certain design and policy approaches can be adopted to reduce opportunities for crime. It is not possible to guarantee that actual crime will be reduced or eliminated if these suggestions and/or recommendations are implemented.

## 3 CONTEXTUAL FACTORS AND POTENTIAL IMPACTS

SummitCare is developing the complex within an established residential neighbourhood. The site is proximate to the M5, with nearby access to the Casula Shopping Mall, from Kurrajong Road, the development's main entrance. The nearest residential streets are, Guise Avenue, Sandown Close and Rosehill Close – also established residential areas.

There two local open community spaces – Gandangara Park and Daruk Park (between the site and Casula Mall). The latter can be lit for night-time activities. Both spaces provide appropriate recreational opportunities. Daruk is a sports-play area.

Casula Shopping Mall has been established for over 20 years. It provides ground plane vehicle and pedestrian access, with major and minor retail outlets. Buses and taxis service the Mall which is the nearest alternative to Liverpool's Westfield complex.

There are eight established retirement complexes within a 5 to 10-kilometre radius of the site, the nearest of which is Aveo's Maple Grove, less than 1 kilometre away. Maple Grove is an independent living facility, established over 20 years ago. We understand that the facility has experienced occasional anti-social behaviour, incidents of unlawful access, property damage and theft.

Casula's population demographic has been progressively changing. The suburb boasts of single, and often substantial two storey, dwellings. Casula continues to offer residential (housing) choices for a growing western Sydney urban and mobile population. Randwick Close provides examples of the differing architectural housing styles.

The neighbourhood's residential, recreational and retail landscape should, of themselves, have little impact on the proposed development. However, levels of anti-social and criminal behaviour have occurred according to police and residents, over many years, mainly centred around or within the Casula Mall and mainly late at night, usually fuelled by alcohol or other drugs.

Land between the M5 and the western site boundary could provide 'cover' for persons 'casing' site vulnerability. CPTED perimeter treatment should deter potential intruders.

Vehicle theft, unlawful driving and street-based anti-social behaviour, again mainly at night, continue to sporadically trouble the neighbourhood. Police, the Council, residents and the Mall operators are mindful of sustaining a zero-tolerance of negative behaviours.

Unfortunately, retirement complexes throughout Sydney and beyond have experienced increased opportunistic criminality. Offenders 'choose' the known vulnerability of elderly residents in independent and assisted living single or multi-level complexes.

Ground plane and the basement car parks are particularly vulnerable; hence the need to 'strengthen' the CPTED architecture of those spaces. Police advise their concern about increasing theft from exposed and/or unsecured mailboxes; a consideration for this development.

We acknowledge that this development's surrounding context is never going to be exempt from opportunistic crime. All community and residential stakeholders are keen to prevent any increases in criminal behaviour, including an often-noticed tendency to apply graffiti to accessible walls.

Graffiti vandalism could become an issue for the boundary-facing perimeter walls, although the proposed Palisade fencing should deter that option.

Normalising neighbourhood activation through welcoming integrated streetscape design around the development's perimeter will increase levels of passive surveillance and will indicate a 'stewardship intent'. The site's intra-design elements should increase natural surveillance and deter, though not eliminate, unlawful access.

In one sense, increased resident, staff, visitor and contractor circulation and activation throughout the site will provide informal site-wide 'eyes-and-ears'. In another sense, the site is vulnerable to potential offenders 'testing' opportunities to target people and property.

The New South Wales Bureau of Crime Statistics and Research (BOCSAR) reports significant *decreases* in reported patterns and trends for key crime categories in the suburb of Casula for the period April 2014 to March 2019; (Refer Appendix 1).

BOCSAR cites decreases in domestic violence (down 6.8%), intimidation stalking and harassment (down 10.7%), break-and-enter dwellings (down 12%), motor vehicle theft (down 14.4%), drug offences (down 14.4%) and malicious damage to property (down 8.5%).

While these statistics are encouraging, they are decreases against a backdrop of what are perceived as high levels of actual offence numbers in the above and many other categories, as Appendix 1 outlines. We reiterate that BOCSAR statistics are based on crimes reported to police. There are numerous offences that go unreported.

Our experience is that potential offenders within and outside the neighbourhood context will 'target' the complex, particularly if they calculate opportunities to breach vulnerable spaces. Hence the aim to mitigate risks through design and on-going vigilance-management.

## 4 IDENTIFYING CRIME RISKS, TRENDS AND PATTERNS

Accurately predicting anti-social and crime risks, patterns and trends within and around the development will always be problematic. There are no risk and mitigation absolutes or guarantees. However, the International Standard - ISO 31000:2009 provides a helpful framework to identify and manage any organisational risks, including crime risks.

Identifying and mitigating *crime* risks is a legitimate application of the Standard. The Standard provides a theoretical and practical framework whereby contexts, risks, levels and consequences can be identified and managed.

The Standard defines generic risk as... "*the effect (impact) of uncertainty on objectives*" (ISO 31000 Clause 2.1). The Standard's objective is to identify and remove or manage the uncertainty so as not to negatively impact on organisational objectives.

Harris has adapted and applied the Standard by defining (crime) risks within the **context**, assessing **risk levels** and affirming and/or recommending appropriate CPTED treatment.

The collective term '**risk**' has been more widely defined as: *...the likelihood of something untoward happening and the consequence(s) if one or more risks become threats or incidents.'*

Threats and incidents are progressive in their definitions. If risks remain unidentified and untreated (unmanaged), they can rapidly and easily become threats or incidents.

A '**threat**' may be defined as *'unacceptable and escalating behaviour stemming from one or more 'uncontrolled' risks, which if not urgently managed, is likely to lead to harm or damage with negative consequences or outcomes.'*

An '**incident**' may be defined as *'an uncontained threat with likely negative harm or damage consequences.'*

## 4.1 A (Crime) Risk Level Matrix

CPTED solutions should 'match' the adapted Standard's risk levels and assessed categorised behaviours. Recommendations and/or affirmation of architectural solutions are proposed against this backdrop. This table identifies typical risk levels that may apply to this specific development.

The following table outlines generic risks and risk levels, potentially applicable to the development.

<i>Low Level Risks</i>	disturbances, intimidation, and aggressive behaviour towards individuals or groups; graffiti and other minor property damage to the façades or street fixtures, fittings, paving, luminaires, plantings and signage
<i>Medium Level Risks</i>	escalating intimidating or threatening behaviour leading to assault, and/or damage to personal property; unauthorised access, damage to and/or theft of property from the building, vehicles and/or vehicle theft
<i>High Level Risks</i>	'medium level' crime risks escalated to intentional (planned) personal harm and /or damage to building facades and structures and/or property including plant and associated utilities infrastructure
<i>Extreme Level Risks</i>	immediate and dangerous threats to people and/or property, including the building and contents, vehicles, and/or nearby structures and/or utilities infrastructure, including bomb threats and hostile vehicle penetration

Our assessment of crime risk levels for retirement living complexes catering for independent, assisted living and/or high dependency, lies between the 'low' to 'medium' range. Our risk assessment for the Casula complex is within that range. This development falls within our general assessment.

Unfortunately, we cannot rule out the potential for 'high' level risks with the development. It is worth noting that even 'low' risk levels can have serious consequences if not addressed.

Potential offences targeting the development are common to many retirement and aged care complexes. In this case, the three separated buildings, communal spaces, interconnecting walkways and basement increase the overall 'area of vulnerability'.

## 4.2 Likely Crime Categories Targeting the Development

The following offences (i) to (vi) are likely to target any of those areas, particularly after-hours. While they are listed as 'low' to 'medium' risk, we reiterate that the consequences of any of the categories 'succeeding' are serious.

- (i) person or property-focussed anti-social and/or intimidating behaviour within or around the site;
- (ii) physical and/or sexual assaults within or around the site;
- (iii) unauthorised access to, and theft from, units, offices, rooms or other facilities;
- (iv) unauthorised access to the car park and theft of, or from vehicles;
- (v) unauthorised access to, and damage to, plant and utilities infrastructure;
- (vi) theft of personal or corporate property anywhere on site.

**Note:** Offence categories (vii) to (ix) are at the 'high' to 'extreme' risk level range. They are almost certainly unlikely, but cannot be totally dismissed, given recent and worrying trends, deliberately targeting built form, collective waste storage areas and utilities infrastructure.

- (vii) deliberate damage or destruction of, property, including utilities infrastructure;
- (viii) arson or explosion(s);
- (ix) injury or death to persons, damage to, or destruction of, property, again including infrastructure, often resulting from drug-alcohol 'fuelled' or terrorist-style attacks.

In our experience, the 'prime' targets for unlawful access and subsequent offending behaviours (i) to (vii) are the occupant-stakeholders. We assess the most vulnerable spaces as the perimeters, the basement, open (communal) spaces around the site, intra-connecting walkways, balconies and reception. These are the usual breach points and are the focus of the five CPTED principles.



## 5 CPTED PRINCIPLES

CPTED has been defined variously through the decades under common, but slightly varied, themes. Harris defines CPTED as *'applying aspects of architecture, engineering and technology to all urban development proposals (projects) as an intentional environmental crime prevention strategy'*.

Harris identifies and applies five CPTED principles:

- Principle 1 Territorial definitions – clarity about spatial identity, separation, boundaries and purposes;
- Principle 2 Natural surveillance – architecture facilitating natural observation and surveillance;
- Principle 3 Access control – who goes where, when and why;
- Principle 4 Activity support – the supportive influences of (external) lighting, landscaping and signage;
- Principle 5 Target hardening – adding specific and robust architecture and technology.

Explanation of these (short) definitions and each principle's application to the development follows. All five principles are explained and applied to each of site zone – perimeter, buildings and their functions, the basement and communal-social gathering spaces.

Applications of proposed architecture and/or engineering have been reviewed and have either been *affirmed* or *recommendations* made to enhance CPTED outcomes.

In summary, the principles are applied to support architectural intent, 'strengthening' the personal and property safety (security) of the form and function impacts, to ensure positive reputational outcomes.

We reiterate that CPTED encourages stakeholder understanding of the introduced CPTED measures, so that crime prevention (zero tolerance) ownership-stewardship of the development will be holistically intentional. Appendix 4 expands on the CPTED and CPTED definitions.

The development's context (Section 3), identified crime risks and offence categories (Section 4) have informed the analysis of CPTED treatments, our conclusions, affirmations and/or recommendations.

The Executive Summary collates the conclusions, affirmed or recommended CPTED treatments (applications) extracted from this Report.

## 6 CPTED EXPLANATIONS AND APPLICATIONS

### 6.1 CPTED Principle 1 Territorial Definitions

#### 6.1.1 Generic Explanation

Defining territorial boundaries, spatial separation and purposes are the elements of this first CPTED principle. The aim is to maximise built form and public domain 'knowledge certainty' for all who have day-night access to a site.

Stakeholder, occupant, visitor or contractor knowledge (identification) of territorial sub-spaces increases destination and circulation confidence; (for example, design of building entrances, public and communal spaces in mixed-use sites, sporting, retail, commercial or social gathering places, pedestrian corridors and vehicle entrances).

When 'place' form and function are easily identified, it removes confusion of purpose, enhances safe circulation and maximises alertness to any surrounding risks or threats.

#### 6.1.2 Application – The Development's Footprint and Perimeters

The site is bounded by Kurrajong Road (north), Daruk Park (east), the M5 (west) and Randwick Close (south). It is a fully 'stand-alone' footprint with unambiguous boundary definitions.

The architecture promotes definitional and circulation certainty. Buildings A, B and C have unmistakable definitional clarity, as do the Kurrajong Road main entrance, basement access, pedestrian access from Kurrajong Road and Randwick Close, communal spaces and intra site walkways connecting the buildings.

Edge boundaries clearly indicate distances from adjoining properties, vacant 'buffer' land, Daruk Park and the frontage to Kurrajong Road.

There are appropriate built form and site set-backs from the four boundaries, allowing 'around-the-site' perimeter observation which is a deterrent for ground plane loitering, concealment or entrapment. The proposed Palisade style perimeter fence 'secures' the site and accentuates the precise footprint.

### **6.1.3 Application – Ground Plane Definitions**

The ground plane definitions – reception foyer, vehicle drop-off points, building profiles, administration, café, meeting rooms and retail outlets – afford separation and location visibility.

The legibility of the Kurrajong Road vehicle and pedestrian entrances encourages destination clarity, minimising 'approach confusion', particularly for anyone unfamiliar with the site. (It may seem implausible, but confusion and destination hesitancy provide assault opportunities for potential opportunistic offenders, who, in this case can access the site at any time).

### **6.1.4 Application – The Basement**

The basement provides entry ramp and parking bay certainty. The layout promotes way-finding vehicle circulation and parking bay arrangements are clear. Ramping and aisle traffic design avoids opportunity for 'in-basement' concealment or entrapment.

Parking bays are well separated and there is uncluttered access to the lift lobby and stairwells. The disabled parking bays are appropriately located opposite a lift core. There are good visual links around basement zones and no obvious concealment or entrapment points. Resident storage is clearly indicated.

The basement provides many functions – a theatre, kitchen, laundry, plant, storage, staff rooms, toilets, loading bay, bus parking and waste storage. We don't notice any parking for emergency vehicles, a desirable if not necessary inclusion. This increases basement activation significantly, having both a positive and negative impact. Activation in and around basement spaces facilitates observation. Conversely, as a multi-functional space, if breached by vehicle or pedestrian tailgating, it leaves occupants, vehicles and property vulnerable to targeting.

The lift lobbies are well positioned, with proximate access to passenger and service lifts. The lobbies have appropriate visual connections with the parking and facilities spaces.

### **6.1.5 Application – Utilities Infrastructure**

Defining and securing all utilities infrastructure within the footprint is essential. While plant rooms are basement-secured, the securing of hydrants, mains and booster pumps gas and water mains should either be in recessed secure cabinets, or, if visible from the edges, appropriately caged. (Externally located unsecured infrastructure is vulnerable to seal-breaking, allowing hydrants or meter taps to be turned on or off. An extreme risk would be the 'taping' of an explosive device to visible and unsecured gas or water main pipes.)

### **6.1.6 Application – Apartment, Room and Back-of-House Design**

From a CPTED perspective, there are no design issues with ground-plane or upper level apartments, rooms, corridors, lift lobbies for intra-level connections, retail tenancies, nurse stations, offices, back-of-house service areas or communal spaces.

Design definitions of location, separation and purpose certainty throughout the site heightens stakeholder and user awareness of, and/or alertness to, potential anti-social or criminal activity.

## **CPTED Principle 1      Conclusions and/or Recommendations**

Definitions and purposes of built form and communal spaces are clearly delineated in reviewed design development drawings.

Spatial separation and purposes combine to maximise safe causal connectivity, footprint circulation and 'knowledge'.

Ground plane and basement identification certainty (clarity) of buildings and their functions, site entrances, vehicle parking, perimeter edging, including whole-of-site Palisade style fencing, tenancies, walkways and legible communal space allocation, all minimise the potential for opportunistic and/or targeted anti-social behaviour and/or criminal intent.

There is no evident internal or external form or function confusion. Intra-site legibility reinforces safe pedestrian and vehicle circulation around and throughout the site.

Activity Support, (CPTED Principle 4) should strengthen definitional certainty, as landscaping, external lighting and signage design elements are incorporated.

## **6.2 CPTED Principle 2      Natural Surveillance**

### **6.2.1 Generic Explanation**

The principle of natural (aka informal or casual) surveillance encourages (i) the observation of built form and public domain spaces and purposes by user/stakeholders and (ii) the observation and notation within or around spaces of usual or unusual activity and behaviour, potentially (or actually) leading to anti-social or criminal threats and incidents.

Natural surveillance is purposeful observation. Maximum surveillance impact requires sightline certainty, facilitated by clear proximate-distant and longitudinal-latitudinal fields. The aim is to know who or what is within a surveillance field and to observe specific unlawful action or intent.

Legible and permeable architecture should ordinarily promote natural surveillance in and around clear reference fields. CPTED surveillance-focused architecture adds a crime prevention 'layer' to legible and permeable circulation and activation creativity.

Natural surveillance may be augmented (supported) by the (target hardening) installation of IP Network (CCTV) systems – Principle 5.

### **6.2.2 Application – Whole-of-Site Surveillance**

The appropriateness of territory-defining architecture has facilitated inter and intra-site sightlines and general legibility; the key to maximising effective natural surveillance. Our review of the drawings indicates intentional design for natural but purposeful pedestrian observation either side of the (transparent) perimeter fence and towards pedestrian and vehicle entrance approaches from Kurrajong Road and Randwick Close.

The separation of Buildings A, B and C provides surveillance opportunities along and around each axis. There are good ground plane proximate and distant surveillance sightlines within communal spaces, towards each building entrance and along interconnecting walkways.

### **6.2.3 Application – Main Entrance Circulation Surveillance**

The Kurrajong Road main entry's width and depth promote multi-angular surveillance of the driveway, drop-off zone, vehicle turn out, the retail precinct and along interconnecting walkways leading to easily observed communal spaces.



Staff manning the appropriately laid out reception foyer permit 'office hours' surveillance of the main door, lift lobby, the north facing café with knowledge of who gains access to corridors leading to ground plane rooms and dining spaces.

Similarly, retail tenants are able to observe circulation around that zone, including main entrance vehicle and pedestrian movements.

Appropriate lighting and CCTV (IP Network) surveillance cameras combined intercom with secure main door access, will benefit from the multi-angled sightline advantages within the vehicle drop-off and turn out precinct.

## 6.2.4 Application – The Basement

Principle 1 outlined the appropriateness of the definitional design. It encourages surveillance of the approach ramp and entrance, the basement layout, along and around the internal basement aisles and between vehicle parking spaces.

Basement lift lobbies and stairwells promote good sightlines facing most parking spaces. As mentioned above, the basements themselves are 'open' and each basement zone facilitates surveillance.

## 6.2.5 Application – Apartment Balcony and Room Surveillance

The architecture encourages informal resident surveillance from ground plane and upper level apartment balconies and room windows; albeit we acknowledge the latter may unlikely due to age and/or health factors. However, staff circulating on all levels could be alerted to ground plane noise and would be able to 'investigate' from perimeter-facing rooms, from upper level communal and/or function terraces.

### CPTED Principle 2 Conclusions and/or Recommendations

The site's architecture promotes multi-angle, proximate-distant sightlines significantly enhancing crime risk mitigation, including deterring unauthorised pedestrian or vehicle access. In our view, the architecture facilitates and maximises whole-of-site surveillance opportunities, encouraging day-night 'eyes and ears' awareness of the usual and unusual.

Specifically, we conclude that there is ample opportunity for natural (passive or informal) surveillance:

- (i) along and around each building's perimeter,
- (ii) along all four boundaries,
- (iii) at and towards the Kurrajong Road and Randwick Close approaches,
- (iv) approaching, and at, the basement ramp,
- (v) within the basement parking, loading, waste storage, lift lobby and activity spaces,
- (vi) at and around the main entrance, reception foyer and retail tenancies,
- (vii) at and within ground and upper level apartments and residents' rooms, and
- (viii) from walkways and communal spaces.

We affirm the overall architecture maximises natural surveillance opportunities throughout the site, reducing the temptation for unauthorised entry to damage property or harm occupants.

## 6.3 CPTED Principle 3 Access Control

### 6.3.1 Generic Explanation

Access control is a consequential extension of defining territory (Principle 1) and natural surveillance (Principle 2). Open and/or restricted access must be: (a) readily identified through the appropriate built form (approach) architecture, (b) supported by the physical access control system (pacs) and (c) able to prevent and/or identify unauthorised access.

### 6.3.2 Application – Kurrajong Road and Randwick Close Pedestrian Access

There are three pedestrian access points – from Kurrajong Road, from Randwick Close and from the basement via the access ramp. The latter is only likely to be accessed by persons seeking to obtain unlawful access.

Kurrajong Road is the 'entry statement', accessing the main reception, retail and café zones. It is also access to each building's front and/or rear entrances, via way-finding walkways. This entrance is un-gated and 'open' 24/7.

Randwick Close permits access to, and egress from, the rear of Buildings A, C and to other intra-site locations. We understand that this off-street access will not be available after-hours and will be gate-locked. Harris supports this intention.

The site's internal walkways provide ground plane circulation to and from the three buildings, communal spaces and are also trafficable paths for fire and emergency exits.

### 6.3.3 Application – Building Access

Access to all built-form spaces by residents, visitors, staff and contractors will be specified and controlled electronically. This includes lift access from the basement and ground to upper levels.

### 6.3.4 Application – Ground Plane and Basement Vehicle Access

Vehicles entering at ground plane must be appropriately identified and will either enter the 'drop-off cum collect' zones or will be making deliveries. Either way, parking will be limited to those purposes.

Vehicles entering the basement must also be appropriately identified. The basement is vulnerable in that it is relatively easy to breach either by vehicle or pedestrian 'tailgating', each time the perforated access roller shutter is opened.

The design of the walled ramp and access roller shutters is critical, as is their location. To avoid concealment or entrapment, the closer the access roller shutter is to Kurrajong-Road, the better, particularly if the roller shutter fails to open. This increases visibility to and from the road. The set-back should allow for two vehicles with 'split' transparent roller shutters – separated for access and egress. The recommended relocation of the roller shutters would see the remaining ramp area fully enclosed, with the roof as a continuation of the surfaced north-east corner.

We recommend 'split' roller shutters to deter vehicle 'tail-gating'. There will be vehicle boom gate separation to designate basement access for residents, staff and public/retail. To deter and/or identify unauthorised (tailgating), facial and/or number plate recognition technology will be installed. The recognition technology may also deter or detect pedestrian tailgating.

After hours access-egress will be facilitated by the physical access control system (PACS) operating the (recommended) split roller shutters. Boom gates should remain operational 24/7.

Both roller shutters should always be capable of remote operation and/or via intercom and camera identification to duty staff.

### 6.3.5 Application – Mailbox Location

Mail theft is a growing concern. The NSW Police are advising all residential developers to ensure that mailboxes are secured to a masonry or solid timber frame or are located within foyer spaces, with keyed access by Australia Post, if required. We encourage appropriate 'anchoring' and clustering to minimise this rising risk.

### 6.3.6 Application – Storage, Plant, Waste and Utilities Infrastructure Access

Plant and comms rooms, general waste and bin storage spaces are appropriately secured within the basement. We reinforce the need to enclose metres, hydrants and booster pumps should either be secured in recessed secured cabinets or 'caged' if externally located.

All internal waste storage areas should remain 'ordered' and kept free of surrounding (near doorway or gateway) clutter. Ideally, for waste storage and plant rooms, the secure entry doors should have 'eye level' glass panels to enable external observation of these spaces by security and other relevant staff. The area should be protected by fire detection suppression systems to in case of unintended fire or, arson.

#### CPTED Principle 3 Conclusions and/or Recommendations

Drawings indicate intentional access control measures for the following:

- (i) vehicles entering the basement in line with our access-egress roller shutter relocation and operational advice,
- (ii) after-hours pedestrian site access from Randwick Close,
- (iii) day-night access to Buildings A, B and C,
- (iv) specific ground plane day-night access to Building A's reception foyer and back-of-house facilities,
- (v) day-night access to residents' apartments, rooms, lifts, offices, activity areas, including communal spaces, upper level terraces and all back-of-house facilities,
- (vi) to the retail tenancies,
- (vii) to plant and other utilities infrastructure.

It is important that access control measures be strictly adhered to as 'operating procedures' in order that the development maintains a 'crime free' reputation; (Refer CPTM Section 8).

The development has a high visibility profile around the entire perimeter, with 'low to medium' risks of access breaching at ground plane. However, new residential developments and neighbourhoods are regularly targeted to 'test' the adequacy and integrity of access control measures and the maintenance of those measures.

We recommend that the proposed electricity sub-station (kiosk) supplying the development be Palisade-style fenced (with lockable gate) to reduce opportunity for 'tagging' or other forms of kiosk façade damage or concealment.

## 6.4 CPTED Principle 4 Activity Support

### 6.4.1 Generic Explanation

CPTED activity support applies (external) lighting, landscaping and signage architecture to a footprint's form and function design, 'supporting' definitional clarity, passive and technical surveillance and access control (Principles 1 to 3).

- *External Lighting* should reflect 'purpose' consistency: way-finding, destination, social gathering and decorative-aesthetic. Each requires differing luminarie styles, lighting types, spread, throw, spill, wash and lux levels, to accord with lighting Standards and architectural briefs.

CPTED lighting applications can (should) often exceed those Standards and briefs so as to highlight spaces and circulation - activation 'corridors'.

Differential lighting should avoid cross-over colour (temperature) clashes to enhance surveillance identification of property and people. All external lighting should optimise sightline legibility, to facilitate proximate-distant way-finding and destination confidence.

- *Landscaping* should combine aesthetics and purpose with an intent to prevent concealment or entrapment.

- *Signage* supports way-finding and destination certainty, access limiting (controlling), warning and emergency awareness.

Signage should have maximum day-night visual impact (including international pictorial signage). It should limit text and, ideally, should not be 'housed' (displayed) as high or wide column-pylon structures which can facilitate concealment or entrapment.

#### 6.4.2 Application – External, Entrance, Basement and Roof Lighting

The development requires extensive but privacy-sensitive external lighting treatment. CPTED-focused lighting will support safe 24/7 night-time resident and staff circulation-activation, especially along walkways and towards building approaches.

Pole lighting should cover each perimeter axis with appropriate beam angles, throw, spill and, (where appropriate) wash onto facades. We reiterate that the perimeters are vulnerable and, despite the Palisade fencing, opportunistic offending is possible. Perimeter lighting should eliminate shadowing or dark gaps. LED installations of 4000 Kelvin is the recommended ground plane and basement colour temperature.

Similar pole lighting should illuminate the Randwick Close entry and the Kurrajong Road main and basement entries.

Recessed down lights should highlight building entrances and exits, the drop-off reception and driveway, retail forecourt and the off-road entry statement and basement approach.

Roof-recessed 'down' lighting should feature throughout all basement zones to maximise visual certainty. The ramp, basement lift lobbies and parking bay installations should exceed minimum lux levels in order to spread basement-wide illumination consistency and certainty as to object and personal identity. Additional lux levels (illumination) could be considered for disability spaces and the approaches to basement activation zones.

We acknowledge that upper level communal and terraced spaces will follow decorative and varying luminaire options. The areas are secure and lend themselves to creative lighting enhancement.

**Note:** The white-natural light spectrum around 4000 Kelvin has advantages over blue, orange or yellow colour output. From a crime prevention perspective, yellow, orange and blue renditions distort natural colour profiles and features. White light installations strengthen contrasting colours and identify individual (personal) features more distinctly.

This 'right' colour selection within the footprint supports natural surveillance and will assist witnesses in identifying persons who may be intentionally loitering, and/or engaging in anti-social or criminal behaviour, even along the immediate entrances off Kurrajong Road or Randwick Close.

The use of bollard and wall-mounted installations are not recommended as way-finding or 'safe illumination' solutions. They are prone to vandalism (even within secure areas), they provide limited lighting throw and spill, even at ground level, causing contrast problems. They can cause glare and can become hidden by maturing landscaping. Wall-mounted lighting also causes glare and potential momentary way-finding uncertainty.

#### 6.4.3 Application – Landscaping

It is important that landscaping promote sightlines and limit opportunities for concealment. Planting choices should support levels of day and night walkway and communal space surveillance.

From a CPTED perspective, it is important that any tree under-canopy not restrict surveillance sightlines. Drawings don't indicate mature trees close to upper level balconies. Where mature trees are proximate to balconies, 'tree climbing' can lead to easy unauthorised access to upper-level apartments.

#### 6.4.4 Application – Signage

There are no issues in relation signage. The development site will be appropriately identified, including back-lit numbering. Emergency and warning signs in basement areas will be specified as per BCA codes.

## **CPTED Principle 4      Conclusions and/or Recommendations**

External lighting treatments for the development's perimeters, walkways, building 'porches', reception driveway, basement, ground plane communal spaces and upper level terraces, should follow consistent luminaire, lux level at 4000K colour temperature patterns.

We recommend overhead pole luminaires covering ground plane perimeters, communal areas, off-street approaches to the main entry and basement, with sufficient throw, spill and (where appropriate) wash, located to eliminate, shadowing and dark gaps, mindful of privacy concerns.

We further recommend additional-to-Standard -recessed down-light lux levels for building entrances and exits (porches and stairwells), for the under-awning drop-off point, for the driveway turn-out and retail forecourt. Basement ceiling lighting should cover all basement zones, maximising lux levels at 4000K and ensuring lift lobbies and activity areas are highlighted.

Maturing plantings should not obstruct surveillance sightlines around the development's perimeter fences and should minimise opportunities for concealment or entrapment along walkways and within communal spaces. Mature trees should not be proximate to upper level balconies.

Way-finding signage should feature back lighting, for night-time clarity, similar to the coded requirements for exit and emergency signs.

Inter-disciplinary coordination of these three 'support elements' is essential to enhance the overall safety (security) of the development. Design development should detail inter-disciplinary solutions.

Inter-disciplinary coordination of these three 'support elements' is essential to enhance the overall safety (security) of the development. Design development should detail inter-disciplinary solutions.

## **6.5      CPTED Principle 5      Target Hardening**

### **6.5.1      Generic Explanation**

Target hardening is often called 'situational' crime prevention. It aims to reinforce other CPTED principles and to proactively 'strengthen' form, infrastructure, structures, fixtures, fittings and furniture in and around identified vulnerable spaces. Target hardening design is an added crime risk defence layer.

Design measures aim to increase the efforts intending offenders must expend attempting to damage property and/or harm or injure people.

Target hardening can apply additional physical, mechanical, structural and electronic treatments to deny or limit access. Electronic alarms or surveillance cameras are the more common target hardening measures. However, the principle's design goal is to avoid place 'fortressing'.

### **6.5.2      Application – IP Network (CCTV) Installations**

CCTV (IP Network) surveillance of vulnerable spaces is recommended. Coverage should include perimeter axes, all ground plane building entrances and exits, the Kurrajong main entry and basement approach, the Randwick Close approach and each walkway.

Basement coverage should include the roller shutters, the approach ramp, general and disabled parking bays, lift lobbies, plant room, comms and other utilities infrastructure doors, waste storage and waste loading bay.

The exact location of surveillance cameras will be client-identified. However we recommend laying cable to all proposed coverage areas to facilitate additional camera installations, while avoiding additional cabling costs later.

### 6.5.3 Application – Basement Help Points

Although it may seem an extreme measure, consideration should be given to installing *monitored* help points at disabled parking bays and/or adjacent to basement lifts. Help points should be within view of surveillance cameras. The condition of installing help point technology is that the ‘feed’ would need to go to a manned terminal; possibly an additional expense or, Smart device, e.g. phone/tablet. If our basement lighting recommendations are adopted, cameras will easily identify persons requiring assistance.

### 6.5.4 Application – Building and Wall Façade

The perimeter-facing walls are prime targets for ‘tagging’. While no masonry coatings can guarantee protection from graffiti damage, we recommend investigating and applying the latest protective material, to minimise likely defacing. Protective coatings should be applied to all other non-glazed surfaces.

Given the ‘exposure’ of the development, the ‘it-is-there-and-is-new’ challenge is likely to tempt offenders and ‘test’ attention to security. Causing wall or building damage is a relatively easy option.

Design development should aim to minimise this possibility by coordinating Principles 4 and 5 measures.

#### **CPTED Principle 5      Conclusions and/or Recommendations**

The most vulnerable spaces are recommended (as a minimum) for camera surveillance – building, basement and main ground plane entrances, walkways, communal areas, reception entry and foyer, retail and café zones and basement precinct, including activity spaces, plant, comms. waste storage-loading and utilities infrastructure.

From a crime prevention perspective, treatments recommended are not ‘invasive’. We believe that design development drawings can specify combination solutions without creating a sense of fortressing.

## **7 INFORMING LEGISLATION, REGULATION AND/OR POLICY INSTRUMENTS**

CPTED in New South Wales is a compliance requirement for specified mid to large developments falling with State and/or local government planning or policy instruments.

### 7.1 New South Wales Government

Consideration of crime prevention for mid to large scale developments in New South derives from Section 4.15 (1) (e), of the NSW Environment Planning and Assessment (EPA) Act, (as amended).

The Act allows provision for instruments to regulate or codify issues pertaining to the evaluation of environmental impacts of developments. Social “*impacts*” fall within this Section. Under the heading ‘Evaluation’, Section 4.15 (1) states:

(a) *“In determining a development application, a consent authority is to take into consideration such of the following matters as are of relevance to the development the subject of the development application:*

(b) *the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,*

(c) *the suitability of the site for the development,*

(d) *any submissions made in accordance with this Act or the regulations,*



(e) *the public interest.*"

In the case of 'green' or 'brown' field developments, interpretation of "*social impacts*" and "*the public interest*" includes stakeholder proponents, post-development occupants and, by extension, the wider community.

Local Government authorities in NSW are required to consider the various impacts within S.4.15 when evaluating developments. Councils recognise the importance of mitigating anti-social and criminal behaviour within their constituencies. Many have incorporated the Crime Prevention Through Environmental Design framework into Development Control Plans and/or Crime Prevention Plans, requiring crime prevention considerations as a specific development consent condition.

The social impact and public interest interpretations aim to ensure CPTED-relevant architecture creates and promotes 'safe place' outcomes, i.e. to prevent anti-social and/or criminal behaviour which could put at risk people and property associated with a new development footprint.

Ordinarily, the *public interest* is limited to a development footprint. However, public space approaches to, or 'edges' of a development's surrounds, may be considered as an extension of the social and public interest impacts (S.4.15 (b) and (e); for example, the simultaneous up-grading of adjoining streetscapes, roadway or footpath lighting.

The NSW Police have developed their own Guidelines – a Safer-By-Design Checklist, also derived from S.4.15 of the Act. These Guidelines are based on CPTED principles.

## 7.2 Liverpool City Council

Liverpool City Council's broader 'community safety' objectives are set out in their Crime Prevention Plan 2019 – 2021. CPTED architecture is a contributor to that Plan. However, there is no requirement by Council in other policy or planning instruments to include CPTED.

## 7.3 NSW Police

The NSW Police Force has appointed crime prevention officers (CPOs) to most of the State's Area Commands. Their role is to proactively review (a) anti-social and criminal behaviour 'hot spots' with a view to risk amelioration through increased police or security presence and/or through situational crime prevention measures –physical modification of (usually) external built form, applying CPTED principles.

Where applicable, this Report has been 'matched' against that Check List.

Instrument Compliance	Conclusions and/or Recommendations
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<p>In compliance terms, we are of the view that the planning and design development of the proposed multi-level SummitCare development at 18 Randwick Close, Casula NSW has considered the crime prevention requirements of:</p>	
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- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>(i) Section 4.15 of the NSW EPA Act, 1979, as amended;</li> <li>(ii) The NSW Police Crime Prevention Checklist; and</li> <li>(iii) Liverpool City Council's Crime Prevention Plan 2019 – 2021.</li> </ul> |  |
|--|--|

<p>Subject to on-going design development, the reviewed drawings support development consent, as that consent relates to required incorporation of CPTED principles.</p>	
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## 8 CPTED PRINCIPLES AND (GENERIC) EXPLANATIONS

CPTED is a post-construction platform whose principles complement and support CPTED. It is an occupancy management initiative which maintains embedded (security) design and monitors 'place' crime

risk to sustain a safe (secure) built form environment. The objective is to sustain a development's on-going reputation as 'welcoming and safe place'.

While the Report's scope and our engagement is CPTED-focussed, we recommend an intentional and integrated CPTED and CPTM strategy for the development. Harris is of the view that security design (CPTED) and security management (CPTM) strategies are interdependently and inexorably linked.

CPTM is often over-looked to the detriment of a development's reputation outcomes – marketability and stakeholder duty-of-care. In our opinion, on-going security management should become the norm. Where CPTM has been overlooked, the benefits of CPTED can be compromised.

Ad hoc and/or intermittent attention to CPTM can negate CPTED's effectiveness and can leave owner-occupier stakeholders exposed to litigation in the event of threats or incidents occurring on any part of a development's post-occupancy footprint.

Managing and measuring occupancy (operational) crime risks need not be onerous. A body corporate for example would add CPTM to their responsibilities. In the short and longer term, it is a stakeholder stewardship-educational move, aimed at site-wide cooperative community safety (security) awareness.

The Harris identified five CPTM principles are:

- Principle 1 Design maintenance - checking for design obsolescence, redundancy, replacement;
- Principle 2 Systems management - testing for operational capability of support technology;
- Principle 3 Policies and procedures – knowing and following (security) policies and procedures;
- Principle 4 Threats and Incidents – recognising, responding, reporting and recording;
- Principle 5 New Crime Risks and Outcome Evaluation – reviewing impacts and benefits of CPTED and CPTM strategies.

The following generic explanations are the suggested 'triggers' for implementation, once a development becomes 'operational'. We are reinforcing an holistic CPTED-CPTM strategy. We have not suggested any applications of the principles in this context as this is not the report's focus.

## **8.1 CPTM Principle 1 Design Maintenance**

### **Generic Explanation**

Most CPTED initiatives require regular maintenance, testing, repair and/or replacement. Awning, porch and all external lights, signs, landscaping, security window and door-locking furniture, fencing and gates should receive scheduled maintenance to ensure security design integrity and purpose.

## **8.2 CPTM Principle 2 Systems Management**

### **Generic Explanation**

This involves the management of security technology systems, to affirm (design) capability and integrity. This includes physical (electronic) access control, alarm and IP Network (CCTV) surveillance systems. Each requires scheduled testing for reliability, obsolescence, redundancy, replacement and/or re-alignment.

## **8.3 CPTM Principle 3 Policies and Procedures**

### **Generic Explanation**

In most commercial, retail, recreational, industrial and institutional premises, there are policies and procedures to be understood and complied with in the event of fire and other emergencies. Policies and procedures should also include security threats and incidents in mid to high rise apartment buildings; and would be a body corporate or strata management responsibility.

In a crime prevention stewardship environment, all stakeholders should be aware of 'what-to-do-in-the event-of...' scenarios. Owner-occupiers should complete a policies-procedures induction and, if



appropriate training, to ensure 'what-to-do' compliance, similar to awareness of, and procedures for, fire and other emergencies.

To support policies and procedures, there should be general stakeholder awareness of crime risks, how those risks are best managed and by whom. Councils and local police crime prevention officers can assist stakeholders in conducting crime risk and crime prevention (security) awareness seminars. They can also assist in the development of policies and procedures.

## 8.4 CPTEM Principle 4 Responding to Threats and Incidents

### Generic Explanation

Knowing how to identify and respond to anti-social and crime threats and incidents is critical. Security and/or facilities managers, strata managers etc. should develop and 'rehearse' agreed responses covering the most common major or minor crime categories.

Depending on the circumstances, crime or security-related post-threat or incident reports are submitted by emergency services, police and/or insurers. However, they rely on input from those impacted or witnessing the threat or incident. It is important that these statements follow a consistent procedural pattern.

While it may seem obvious, recording and reporting threats and incidents to authorities must be (i) factual, (ii) relevant, (iii) accurate, (iv) clear, (v) concise and (vi) complete, (in so far as circumstances permit).

## 8.5 CPTEM Principle 5 CPTED Risk Mitigation Evaluation and New Crime Risks

### Generic Explanation

Implementation of CPTEM and CPTED requires on-going reviews of crime (security) risks and regular evaluation of both strategies to 'test' the relevance, cost-effectiveness, impact and value (real and perceived), for replication and/or improvement to future (security) design and management outcomes.

## 9 REFERENCES

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## 10 APPENDICES

### APPENDIX 1 CRIME STATISTICS FOR THE SUBURB OF CASULA NSW

The following crime statistics are supplied by the NSW Bureau of Crime Statistics and Research. They are indicative of reported crime only and can only be taken as a guide to actual crime occurring in Casula over the (reported) 5-year period, April 2014 – March 2019.

NSW Crime Statistics April 2014 to March 2019 Casula (Suburb)											
	5 Year Trend to March 2019	Year to March 2015 Count	Year to March 2015 Rate	Year to March 2016 Count	Year to March 2016 Rate	Year to March 2017 Count	Year to March 2017 Rate	Year to March 2018 Count	Year to March 2018 Rate	Year to March 2019 Count	Year to March 2019 Rate
Homicide	n.c.	1	6.3	0	0	0	0	0	0	0	0
Assault - domestic	Down 6.8% per year	74	464.5	79	490.4	86	527.4	65	393.4	58	351.1
Assault - non Domestic	Stable	32	200.9	48	297.7	46	282	35	211.9	50	302.6
Sexual offences	n.c.	5	31.4	5	31	16	98.1	8	48.4	7	42.4
Indecent assault, act of indecency and other sexual offences	n.c.	12	75.2	10	61.8	16	97.9	11	66.6	17	102.9
Robbery without weapon	n.c.	0	0	2	12.5	3	18.3	1	6.1	1	6.1
Robbery with a firearm	n.c.	0	0	1	6.2	0	0	0	0	0	0
Robbery with weapon not a firearm	n.c.	6	37.7	2	12.5	1	6.2	3	18.2	3	18.2
Intimidation , stalking & harassment	Down 10.7% per year	76	476.8	88	546.9	61	373.3	59	357.1	50	302.6
Other offences against the person	n.c.	3	18.8	2	12.5	8	49	0	0	3	18.2
Break & enter dwelling	Down 12.0% per year	74	464.5	60	372.1	51	312	57	345	46	278.4
Break & enter non dwelling	n.c.	15	94.2	14	86.9	14	85.8	12	72.6	6	36.3
Motor vehicle theft	Down 14.4% per year	54	338.5	37	229.6	27	165.2	33	199.7	30	181.6
Steal from motor vehicle	Stable	115	722	97	602.1	100	611.9	118	714.2	103	623.4
Steal from retail store	Stable	102	638.9	132	818.9	135	827.6	118	714.2	131	792.9
Steal from dwelling	n.c.	29	181.5	36	223.6	31	190.2	19	115	39	236.1
Steal from person	n.c.	6	37.7	10	62.2	10	61.1	11	66.6	4	24.2
Liquor offences	n.c.	1	6.3	2	12.5	18	110.7	7	42.4	7	42.4
Disorderly conduct	n.c.	8	50.1	21	130.4	22	134.9	8	48.4	12	72.6
Disorderly conduct (trespass)	n.c.	6	37.6	11	68.4	14	85.8	5	30.3	5	30.3
Drug offences	Down 19.5% per year	78	489.4	93	576.5	71	435.5	45	272.4	34	205.8
Malicious damage to property	Down 8.5% per year	114	715.8	87	540.4	83	508.7	57	345	83	502.4
Prohibited and regulated weapons offences	Stable	21	132	21	130.5	28	171.9	22	133.2	23	139.2
Arson	n.c.	11	68.9	5	31	4	24.5	3	18.2	4	24.2

## APPENDIX 2 TERMINOLOGY

The report uses the following terms defined as:

### 2.1 Community Safety

This term is commonly applied to the collective personal and property security of a street, neighbourhood, town or city. Crime prevention options to keep communities 'safe' relate to the identification, prevention and mitigation of anti-social and crime risks, threats and incidents.

The term is often confused with 'safety' linked to health contexts.

### 2.2 Welcoming and Safe Environments or Place

A welcoming and safe environment (place) may be defined in design terms as '*an environment where crime prevention (community safety/security) has been considered as part of master-planning, design development and construction processes and where outcomes enhance community safety reputations*'. (Harris). To this end, crime prevention architecture or security design becomes the desired foundational platform which should:

- add to a development's creative form and function goals;
- be unobtrusive and minimalist in overall impact;
- consider the specific (security) needs of all user/stakeholders;
- be cost-effective;
- contribute to the security (community safety) expectations of individuals and communities.

### 2.3 Public Domain

In the context of this consultancy, public domain is Council and/or community-designated open (green) space – streets, parks, buildings and associated facilities or infrastructure, where individuals and groups may meet, share and enjoy as an amenity.

### 2.4 Crime Prevention

Crime prevention is the fifth part of a sequence. First, identifying, then containing, controlling, reducing and finally preventing crime. The goal is then a sustained 'zero tolerance' environment, where *risks* and not the crime itself are identified, contained, controlled, reduced and prevented – a holistic risk mitigation strategy.

### 2.5 Crime Prevention Through Environmental Design (CPTED)

The design measure is one of several initiatives in the crime containment, control, reduction and prevention sequence – law enforcement, intelligence gathering, preventative policing, individual and community stewardship, special community programs and design. This consultancy focuses on design.

CPTED has been defined variously through the decades under common themes. Harris defines CPTED as '*applying aspects of architecture, engineering and technology to all urban development proposals (projects) as an intentional environmental crime prevention strategy*'.

Harris identifies and applies five CPTED principles - territorial definition, natural surveillance, access control, activity support and target hardening (Appendix 4). These principles are defined throughout the report.

While acknowledging no architectural qualifications, we focus on the way creative design may be applied to CPTED principles for maximum community safety outcomes.

### 2.6 Crime Prevention Through Environmental Management (CPTEM)

Our view is to implement CPTED and CPTEM as an holistic strategy. There is no point in designing-out-crime unless that design is managed, maintained and evaluated against current and newly emerging risks.



CPTM encourages community understanding of the introduced CPTED measures, so that crime prevention (zero tolerance) ownership-stewardship of communities will be informal but intentional.

Unfortunately, in our experience, CPTM is seldom implemented, partly because those responsible for owning and operating 'welcoming and safe place' have not 'inherited' the underpinning architectural application of CPTED principles.

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## APPENDIX 3 THE INFLUENCE OF CPTED IN RE-DESIGNING PUBLIC SPACES FOR SAFE AND 'LIVEABLE' ACTIVATION

### 3.1 Preventing Crime in Urban Public Spaces

The question of activating and sharing large or small urban public spaces has been occupying city planners globally for the past 40 + years. Prior to 'motorism' public spaces were primarily for pedestrians in major cities, towns and centres. The immediate general question is whether public spaces can and should be designed or re-designed to accommodate the contemporary emphasis on pedestrianisation. Obviously, the answer depends on historic and existing use, and the willingness of stakeholders to change the use.

In this Century, urban public space renewal and re-sharing is becoming a priority. Vehicle take-overs are being challenged by governments, corporations and communities. Pedestrianisation is making its collective presence felt.

There are many reputable architects and planners in numerous countries helping facilitate the urban space-occupancy challenges. Prominent among them is Jan Gehl, a world-renowned architect who, for the past 50+ years has devoted his career, professionally and passionately, to raising issues and solutions for small and large public precinct renewal.

Gehl has written compellingly on (public) spatial sharing versus separation - defining and designing for both options. His research has concluded overwhelmingly that people should re-claim city, town and suburban spaces.

*"It's no secret that we have always built cities for people until cars started to invade our lives. So by studying old cities you can get a lot of inspiration for what would also be a good solution for today by looking at people more than we look at making the cars happy." (Gehl 2015)*

The added contemporary element in urban reclamation and renewal is *security (crime prevention)*, an all-too-broad a word with many confusing interpretations. CPTED interprets 'security' through design, harnessing architecture and/or engineering to collaboratively *reduce or prevent* anti-social and criminal behaviour.

Harris defines this collaboration to provide 'welcoming and safe (secure) place' as: *'built form and public space environments where crime prevention has been a consideration of concept, master-planning, design development and construction processes and where safe place outcomes enhance a community's overall reputation'*.

CPTED is also referred to as designing-out-crime and/or safer-by-design, defined by Harris as *'applying aspects of architecture, engineering and technology to all urban development proposals as an intentional environmental crime prevention strategy'*. CPTED is a globally recognised designing-out-crime framework. It is our preferred framework for these projects.

### 3.2 The Influence of CPTED on Community Safety

CPTED's application to, and influence on, urban community safety has a 40+ year track record. Published books and papers began from CPTED's emergence in the 1970s.

Liggett (2004) quotes Greenberg, Rohe and Brantingham and Brantingham in that historical context.:

*"The design of the built environment can affect crime through its effect on the degree of access, ease of entrance and exit, and surveillability (Greenberg and Rohe, 1984). For example, alleys and mid-block connections increase the number of escape routes, open a block or a neighborhood to exploration, and aggravate the criminal risk for residential or commercial establishments (Brantingham and Brantingham, 1993).*

Kennedy (1993):

*"While there have been several notable exceptions (eg Rand, 1983, 1984), most architectural literature pertaining to security deals primarily with the immediate physical structure itself. Criminogenic aspects of the physical environment have not been routinely selected for analysis by design teams... As professional architecture continues to evolve, however, the profession must incorporate those findings of other disciplines which relate so directly to its mission of creating a safe environment."*

Contemporary Korean criminologists Jae Seung Lee, Sungjin Park, and Sanghoon Jung (2016) observe:

*"Crime prevention through environmental design (CPTED) is one of the most popular urban planning strategies for improving safety in cities. The major purpose of CPTED is to deter potential criminals by modifying urban environments. It is based on the urban design and environmental psychology belief that human behaviour can be*

*influenced by the surrounding environment. CPTED is often used to renovate declining neighbourhoods that suffer from crime."*

CPTED principles should be applied where there is a *primary* intention to create re-development 'attractors' aimed at bringing people into separate or shared social gathering spaces where CPTED supports architecture and engineering in promoting safe activation, reducing or preventing anti-social behaviour and the likelihood of crime.

CPTED is therefore best applied when safe people spaces are the goal, either in the absence of vehicles or at the very least, where vehicle flow and parking are separately defined.

Definitional clarity of place purpose, activation and circulation will determine the application and potential benefits of CPTED in both centres. CPTED emphasises 'welcoming and safe place' in a potentially 24/7 activation environment.

The five CPTED principles – territorial definition, natural surveillance, access control, activity support and target hardening – have informed this report's assessment, conclusions and recommendations.

**SUMMARY: CPTED PRINCIPLES SHOULD BE APPLIED WHEN SPACES AND PLACES ARE IDENTIFIED, SEPARATED OR SHARED AND DESIGNED FOR STAKEHOLDER-AGREED PURPOSE(S) WITH AN EMPHASIS ON PEOPLE AND PROPERTY PROTECTION (COMMUNITY SAFETY AND/OR SECURITY).**

## **APPENDIX 4 EXPANDED EXPLANATION ON CRIME PREVENTION AS A DESIGN AND MANAGEMENT STRATEGY (CPTED PLUS)**

### **A 4.1 Rationale**

Crime prevention has been linked to urban design since the late 1970s. The concept originated in the United States and Canada when sociologists, criminologists and architects began to link criminal behaviour in public spaces with poor design and layout of those spaces.

Today, there are four broadly defined models of crime prevention. They may be implemented individually, although ideally initiatives derived from each will overlap. The four models are:

*Crime Prevention By Social Intervention* – a model that sustains the integrity and safety of (often disadvantaged) communities through government and corporate and local support for programs, development initiatives and improvements to infrastructure.

*Crime Prevention By Community Development* – a model that encourages settled communities to develop partnerships in accepting responsibility for protecting personal and neighbourhood assets through a commitment to networking and sharing responsibility for community development goals.

*Situational Crime Prevention* – a model that focuses on place-specific crimes, targeting offences and offenders by pro-active and responsive security or law enforcement strategies.

*Crime Prevention By Environmental Design* – a model that incorporates aspects of architecture, engineering and technology to enhance the form, function and reputation of the built environment as “safe space”.

Crime Prevention Through Environmental Design (CPTED) is a coined version of the Crime Prevention By Design model; one that takes a specific approach to reducing and preventing crime by applying architectural design principles to urban developments which focus on territoriality, surveillance and access control. CPTED and the other models have largely been adopted throughout the developed world as legitimate crime prevention strategies.

Throughout the 1980s and 1990s, State and local authorities within Australia, responsible for urban development approvals, have been gradually adopting the CPTED or similar crime prevention (design) concepts when approving both large and small scale development applications.

Within Australia, there is recognition by all stakeholders involved in urban development, (however the term is defined) that designing out crime should form part of *mandated* development application criteria.

Consideration of crime prevention for mid to large scale developments in New South Wales derives from Section 4.15 (1) (b) and (e), of the NSW Environment Planning and Assessment (EPA) Act, 1979 as amended. The Act allows provision for State and Local instruments to regulate or codify issues pertaining to the evaluation of environmental impacts of developments. “Social impacts” and “the public interest” fall within this Section under (b) and (e) respectively. Crime risks and crime risk mitigation (crime prevention) are relevant to these provisions.

Increasingly, local authorities are introducing instruments and/or guidelines requiring ‘security (safety or crime prevention) by design’ to form part of DA documentation.

Notwithstanding local and State based instrument requirements, it would seem prudent that developers seek to incorporate crime prevention-by-design guidelines to all projects, especially given the marketing and legal emphases on personal and community safety (security) in Australia.

It is conceivable that, if built environments can be “secured” by adopting agreed crime prevention design guidelines, (protocols, etc.), then such guidelines will in time become mandatory in much the same way as Building Codes and Occupational Health and Safety standards have been adopted.



Incorporation of crime prevention architecture and engineering into relevant planning documentation throughout the design-and-construct stages is the ideal way to ensure compliance with local and State requirements.

#### **A 4.2 Aims: Crime Prevention By Design**

The broad aim of crime prevention design principles is to create and sustain safer communities by incorporating crime prevention design initiatives into all urban development.

From the literature, it is possible to identify two specific aims:

- To promote the legitimate and safe use of all natural and built environments by incorporating crime prevention or security design codes or guidelines into all development planning and approval processes.
- To enhance the reputation of developed environments by ensuring that crime prevention or security design criteria are integral to all architectural and engineering documentation submitted for review and approval by relevant authorities.

Oscar Newman (1972) coined the term. He developed the concept in relation to significant crime problems in high-rise ghetto type housing developments of New York City in the 1960s. Newman suggested that the urban design of inner-city precincts was directly attributable to anti-social behaviour and high crime rates.

Newman recognised that there were three spatial issues that should be addressed in all future urban planning – territoriality, surveillance and access control. Each can be linked with architectural and/or engineering documentation in a coordinated approach towards making public and private spaces relatively crime free.

#### **A 4.3 CPTED Principles**

Crime Prevention Through Environmental Design (CPTED or security design) is based on five principles – territorial definition, access control, natural surveillance, activity support and target hardening.

#### **A 4.4 The Principle of Territorial Definition**

Crowe (2003) suggests that the right physical design contributes to a positive sense of territorial use and ownership – a sense of territorial influence. In urban developments, territory may be defined or classified as public space, semi-private or communal space, restricted space and private or secure space.

Mixed use sub-divisions are particular cases in point. Each such development concept should flag spatial use and spatial hierarchy. This hierarchy should be evident as concepts, principles and foreshadowed specifics at DA stage, followed by detail submitted throughout relevant aspects of design documentation.

The DA stage and design documentation architecture (and engineering) of vehicle or pedestrian corridors, commercial, retail, recreational, institutional, and residential precincts is as important as the architecture of the buildings that will eventually occupy those precincts. One without the other contributes to a sense of territorial confusion where territorial clarity is required.

Early on in the designing-out-crime research, Geason and Wilson (1989:5) claimed that well designed housing projects make it clear which spaces belong to whom – some being completely private, some being shared and some public. Architects and developers of course claim that these aspects are always part of concept design, master-planning and detailed documentation. The difference is that they are seldom designed to standards or principles aimed at repelling crime.

#### **A 4.5 The Principle of Surveillance**

Spatial design should maximise opportunities for surveillance – formal and informal. The design principle here is to increase the number and length of sight lines; the capacity of people and technology to observe movement and activity at distance.



The location, mass, height, proximity and form of buildings therefore become critical design features. The relationship of buildings to all open spaces and to roads, walkways, cycle-ways, parks and other streetscape forms, is equally critical. There are three agreed forms of surveillance that should be encouraged: *natural, social and technological*.

*Natural surveillance* encourages casual observation and monitoring of all users and owners of known and defined urban space.

*Social surveillance* encourages casual observers, through natural surveillance, to routinely monitor, challenge or report suspicious pedestrian and vehicle movements through precincts or into buildings.

*Technological surveillance* employs CCTV and other monitoring devices to alarm premises or spaces to deter/detect and respond to unlawful access or unlawful behaviour. In the past, analogue CCTV surveillance technology consumed personnel resources including managing the recording, e.g. replace tapes of these early systems.

Network cameras and network video recording (NVR's) offers a more cost-effective alternative. Modern fast moving 'dome' cameras, which respond to alarm pre-set positions can be utilised. The 'alarm' may be a help call button being activated, a secured door being opened with alarm and images transmitted real time to portable wireless technology.

#### **A 4.6 The Principle of Access Control**

Debate continues about ways to control, restrict or prevent access to buildings and to open precincts. The deployment of technology has been the recent favoured design strategy. This (in our view) over-reliance on technology has tended to limit creative physical design alternatives.

In the mid-1980s a significant study was carried out in the UK into some of England's (often referred to as) notorious or infamous housing estates – high and medium rise ghettos where crimes against property and people has been running rife. Later studies have supported these claims.

The point of all physical (built environment) design from a crime perspective is to define and indicate purpose. For example, a gate to a property must be positioned to indicate whether or not it is a main entry and, if so by signage, mechanical, electronic or other means, entry is generally allowed or is by permission only. A gate's design and integration with a fence or adjoining building gives some indication of who and how entry is to be gained.

While gates (and similar barriers) present as recognised objects for territorial definition and separation, crime prevention-by-design principles encourage broader and less intrusive definitional architecture; architecture which not only restricts or halts access, but which encourages entry, access and movement. Lighting, walkways, landscaping, low-line fencing, steps and doorways are obvious examples.

By applying crime prevention design principles to housing estates, to commercial, institutional and industrial complexes, to retail and recreational outlets and to transport infrastructure, there is more than one opportunity to clearly define appropriate entry and movement corridors.

#### **A 4.7 The Principle of Activity Support**

This involves the use of creative signage, (external) lighting and other landscaping way-finding design to encourage intended patterns of usage, generating activity certainty or liveliness, particularly in the public domain. The activity support principle reinforces activity purpose and location security.

#### **A 4.8 The Principle of Target Hardening**

Target hardening increases the efforts that 'offenders' must expend in their intent to disrupt legitimacy and put at risk legitimate activity. It is directed at denying or limiting access to potential criminal targets through the use of more intentional and less subtle access control design including deliberate physical barriers such as security fencing, gates, locks and electronic alarms. However, the design goal is to avoid 'fortressing'.

#### **A 4.9 Crime Prevention Through Environmental Management (CPTEM)**

The application of CPTED design principles (A 2.4 to A 2.8) must be reinforced by the place management of identified security (anti-social and criminal behaviour) risks. The two strategies complement each other. Design seeks to reduce risks through creative physical intervention.

Management seeks to build on the design outcomes by monitoring and managing on-going risks through stakeholder awareness protocols, through technology maintenance and renewal and through cooperative place management by police, security and facilities operatives.

There are five CPTEM Principles:

- Principle 1 Design maintenance - checking for design obsolescence, redundancy, replacement;
- Principle 2 Systems management - testing for operational capability of support technology;
- Principle 3 Policies and procedures – knowing and following (security) policies and procedures;
- Principle 4 Threats and Incidents – recognising, responding, reporting, recording and reviewing;
- Principle 5 New Crime Risks and Outcome Evaluation - impact of CPTED and CPTEM strategies.

Each principle is part of a CPTEM 'whole'.

CPTEM is often over-looked to the detriment of a development's reputation outcomes – marketability and stakeholder duty-of-care. On-going security management may fail if it is not approached strategically and responsibly. Ad hoc and/or intermittent attention to CPTEM can negate the design strategy and can leave owner-occupiers exposed to litigation in the event of threats or incidents occurring on any part of a development's footprint.

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