Harris Crime Prevention Services

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IN CONFIDENCE

3rd December 2020

Monterey Equity Pty Ltd
c/o Centurion Project Management
Level 25, 88 Phillip Street
Sydney NSW 2000

Dear Julia,

Final Crime Prevention Through Environmental Design (CPTED) Report
SummitCare Development at 119 Barton Street, Monterey NSW

Please find our attached final report for the above development. Thank you for engaging Harris Crime Prevention Services and for your assistance during the consultancy.

Yours sincerely,

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HARRIS CRIME PREVENTION SERVICES

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

Crime Prevention Through Environmental Design (CPTED) Final Report

in relation to the

SummitCare's Monterey Development

for

Centurion Project Management Pty Ltd

on behalf of

Monterey Equity Pty Ltd

December 2020

Commercial-In-Confidence

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EXECUTIVE SUMMARY

Harris Crime Prevention Services (Harris) was commissioned by Centurion Project Management on behalf of Monterey Equity to provide a Crime Prevention Through Environmental Design (CPTED) consultancy for the SummitCare Development (the Development or Project) at 119 Barton Street Monterey NSW.

The consultancy's scope is to support SummitCare's aim to provide 'welcoming-and-safe-place' for residents, visitors, staff, health care professionals, maintenance contractors and emergency personnel.

CPTED is an acknowledged designing-out-crime framework, applying architectural elements as an intentional crime risk minimisation and prevention strategy in line with SummitCare's aim.

The Development was formerly a bowling club. A church centre is at the rear of the property. The Development will replace the disused existing facility.

The Development site fronts Barton Street Monterey with east-west boundaries abutting residences. It is nestled amongst single and two-storey residential dwellings. It is a short distance to Kite Beach with walking links to the Brighton-Le-Sands beach, commercial, retail and recreation precinct.

Applying CPTED to the Development is also in line with Bayside Council's broader 'community safety' objectives detailed in their Development Control Plan (DCP) and their Community Safety policy.

Drawings identify 137 rooms accommodating 153 single and double beds. In summary, the Development covers four levels – basement, ground, first and second floors, outlined as follows.

(i) The basement is a multi-functional space accommodating 42 car spaces, an ambulance space, plus a (waste) loading-delivery zone, laundry, general and waste storage, kitchen and associated facilities, secure lift lobby, staff rooms, general plant, maintenance workshop, holding and education rooms,
(ii) The ground floor has 52 single and 8 double rooms, main (pedestrian) entry, a reception and lift foyer, offices, staff stations, open plan lounge and dining areas, serveries, café, quiet sitting areas, back-of-house facilities, common and secure gardens,
(iii) The first floor has 53 single and 8 double rooms, staff stations, lift foyer, dining, lounge, sitting, storage and other back-of-house facilities, beauty salon, balconies and consulting rooms,
(iv) The second floor has 16 single rooms, lift foyer, lounge and dining facilities, balconies, roof deck, function and multi-purpose rooms, storage and a staff station.

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.

We have included commentary on Crime Prevention Through Environmental Management (CPTEM), a desirable, but less well known, framework, which aims to monitor and sustain applied CPTED solutions.

Five CPTEM principles are outlined which could (should) form an operational security awareness and stewardship regime for on-going CPTED management. **Section 7** of the Report briefly explains these principles which SummitCare may wish to pursue on occupancy.

Supporting our assessment, conclusions, affirmations and/or recommendations are four appendices:

Appendix 1 NSW Bureau of Crime Statistics and Research (BOCSAR) - reported crime statistics for the suburb of Monterey for the five years July 2015 to June 2020,

Appendix 2 The Risk Management Standard as relevant to the development,
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.

Executive Summary conclusions and recommendations have been extracted verbatim from Sections 5 and 6 of the Report.

CPTED Principle 1 Conclusions and/or Recommendations

From a CPTED perspective, we conclude that:

(i) the proposed development footprint successfully addresses definitional issues, specifically in terms of off-street and adjacent dwelling boundary definitions,

(ii) internal boundary-to-building open spaces are clearly and legibly defined,

(iii) vehicle and pedestrian approaches invite wayfinding and purpose clarity,

(iv) the basement, ground floor, first floor and second floor layouts indicate clear spatial separation and designated purposes.

Definitional certainty leads to safe circulation certainty and, in turn, safe activation within and around each floor and open space. The design provides overall purposeful wayfinding 'knowledge'.

There is no evident internal or external form confusion. Intra-site open space and secure garden landscaping reinforces welcoming-and-safe pedestrian and vehicle access and gathering.

Functional specifics are also unambiguous for residents, visitors, staff, health care professionals and contractors. This includes entrances, vehicle parking, internal corridors, offices, salon, gymnasium-physio, lounge-dining spaces and all back-of-house operations. Definitional legibility and purpose minimise the potential for opportunistic and/or targeted anti-social behaviour and/or criminal intent.

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

CPTED Principle 2 Conclusions and/or Recommendations

Internal and external architecture facilitates site-wide natural surveillance opportunities.

Externally, the landscaping master plan invites safe social gathering options, introducing multi-dimensional proximate and distant sightlines. Off-Street approach, boundary pathway and designated ground plane social activity spaces, increase day and night 'eyes-and-ears' opportunities to observe and hear usual and unusual activity.

Internally, the overall design maximises adequate-to-strong sightlines on each floor, assisted primarily by the openness and centrality of lift foyer, reception, office spaces, balconies, function and multi-purpose spaces. Natural surveillance within the building zones is further enhanced by visually 'open' and purposeful interconnected corridors.

The site's boundary pathway architecture accentuates natural surveillance opportunities along each building axis.

We therefore affirm maximum natural surveillance opportunities throughout the site's external and internal spaces/zones, thereby reducing the temptation for unauthorised entry aimed at damaging property or harming occupants.

CPTED Principle 3 Conclusions and/or Recommendations

We conclude there are adequate access control measures throughout the Development's footprint. Drawings indicate intentional site-wide access control measures. However, we make the following recommendations to 'strengthen' access control measures.

(i) Vehicles entering the basement should be number plate 'identified' as an added security precaution, especially in the event of a tailgated security breach.

(ii) Should the perimeter be breached, for added security of outdoor spaces, consideration should be given to installing additional gates along the boundary pathway to 'lock off' those spaces.

(iii) All external-facing windows and doors should be fitted with security rated screens, especially those fronting balconies.

(iv) Water meters, and other externally installed plant should be enclosed and secured.

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 CPTEM Section 7).

CPTED Principle 4 Conclusions and/or Recommendations

The Development will benefit from the 'open' and clearly defined ground plane footprint (Principle 1).

The external lighting plan should aim to meet continuous (no gaps or shadowing) safe wayfinding and identification objectives along the boundary pathway, at open social gathering and garden spaces, along building facades, the off-street driveway and main entry approaches.

External lighting treatments should follow consistent luminaire and lux levels, applying LED 4000K colour temperature patterns. Where practical, we recommend overhead pole luminaires and/or under-eave luminaires; all with appropriate beam angles to provide sufficient throw, spill and (where appropriate) wash, to eliminate, shadowing and dark gaps, mindful of privacy concerns.

Internal basement lighting should follow the same Kelvin-LED recommendations, applying ceiling recessed fittings to maximise back-of-house doorways, lift lobbies, receiving and parking bays.

The landscaping package takes account of the need to ensure safe wayfinding while inviting safe activation of garden and social gathering spaces.

Proposed maturing and grassed plantings should support natural surveillance and should not obstruct sightlines around the development's perimeter fencing and/or walls. They should minimise opportunities for concealment or entrapment within the site, including designated garden areas. Mature trees should not be proximate to the first or second floor 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.

CPTED Principle 5 Conclusions and/or Recommendations

Target hardening is recommended for the most vulnerable zones/spaces within and around the ground plane building, perimeters, outdoor and internal spaces.

First, camera surveillance should cover:

(i) the basement including, approaching, and at, the roller shutter, the ramp, all parking bays, the loading-receiving door, both sides of the lift foyer, facing storeroom and plant room doors and covering back-of-house entrances,

(ii) the off-Street pathway to and around the main entry and including the coastal garden and sun deck,

(iii) the three boundary axes and interconnecting social gathering pathways,

(iv) vulnerable internal zones on the three residential floors as identified by SummitCare, mindful of privacy concerns.

Secondly, we recommend specifying security rated window and door screens for exposed balconies and bedroom windows. Consideration also should be given to install one or more basement 'help' points.

Thirdly, non-glazed surfaces should be anti-graffiti coated and social gathering (garden) furniture designed to deter the potential for damage or harm.

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.

CPTED Compliance Conclusions and/or Recommendations

Our assessment concludes that the planning and design detail of the SummitCare Development at 119 Barton Street Monterey NSW, complies with, or will comply with,

(i) Section 4.15 of the NSW EPA Act, 1979, as amended,

(ii) Section 37 (a), (b) and (c) of the NSW State Environmental Planning Policy, (Housing for Seniors For People with a Disability), 2004, as revised,

(iii) The NSW Police Crime Prevention Checklist; and

(iv) Bayside Council's Development Control Plan (DCP) 2013, Part 31.

Subject to on-going design development, the reviewed drawings support development consent, as that consent relates to required incorporation of CPTED principles.

OVERALL CPTED ASSESSMENT SUMMARY

In our professional opinion, the SummitCare Development at 119 Barton Street Monterey NSW either has, or will, consider CPTED principles and their application, as assessed, or recommended, prior to 90+% design development-detail.

The Development's design complies with State Government's 'social impact' and 'public interest' requirements, under Section 4.15 of the EPA Act, the requirements under Section 37 of the SEPP 2004 and the CPTED requirements of NSW Police. It also complies with Part 31 of Bayside Council's Development Control Plan, 2013.

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

Our assessment indicates that the development should make a positive crime prevention contribution to Bayside Council's broader 'community safety' objectives set out in the abovementioned documents. The Development's CPTED-applied 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 Centurion Project Management on behalf of Monterey Equity to provide a Crime Prevention Through Environmental Design (CPTED) consultancy for the SummitCare Development (the Development or Project) at 119 Barton Street Monterey NSW.

The consultancy's scope is to support SummitCare's aim to provide 'welcoming-and-safe-place' for residents, visitors, staff, health care professionals, maintenance contractors and emergency personnel.

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The Development site fronts Barton Street Monterey with east-west boundaries abutting residences. It is nestled amongst single and two-storey residential dwellings. It is a short distance to Kite Beach with walking links to the Brighton-Le-Sands beach, commercial, retail and recreation precinct.

Applying CPTED to the Development is also in line with Bayside Council's (the Council) broader 'community safety' objectives detailed in their Development Control Plan (DCP) and their Community Safety policy. Part 31 of the DCP states: "*The purpose of CPTED is to manage, design and manipulate the environment to reduce the opportunity for crime to be committed. This includes reducing opportunities for crime against people and property and extends beyond a house and into adjoining public spaces*."

1.1 Project Overview

Drawings identify 137 rooms accommodating 153 single and double beds. In summary, the Development covers four levels – basement, ground, first and second floors, outlined as follows.

(i) The basement is a multi-functional space accommodating 42 car spaces, an ambulance space, plus a (waste) loading-delivery zone, laundry, general and waste storage, kitchen and associated facilities, secure lift lobby, staff rooms, general plant, maintenance workshop, holding and education rooms,
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Five CPTEM principles are outlined which could (should) form an operational security awareness and stewardship regime for on-going CPTED management. **Section 7** of the Report briefly explains these principles which SummitCare may wish to pursue on occupancy.

2 REPORT STRUCTURE, SCOPE AND OUTCOMES

There are no national or international mandated or codified methods or Standards to 'bind' a particular approach to CPTED assessments or reports. This Report's structure is written against the community safety (security) aims of SummitCare, local crime risk intelligence and the Development's context.

2.1 Structure of the Report

The structure provides a scope assessment cum analysis based on the available crime risk information. CPTED principles are applied to mitigate perceived or actual risks and/or past local incidents. The Report is structured as:

(i) the introduction and project overview – **Section 1**

(ii) the report structure, scope, outcomes, stakeholders and approach – **Section 2**

(iii) crime intelligence and crime data – **Section 3**

(iv) crime risks to the development – **Section 4**

(v) CPTED definition, principles, applications, conclusions and recommendations – **Section 5**

(vi) compliance with State and Council planning and/or policy instruments – **Section 6**

(vii) the link between, and value of, a combined CPTED and CPTEM strategy. Creating and maintaining 'welcoming-and-safe-place' is the interdependent objective – **Section 7**

(viii) references – **Section 8**

(ix) supporting appendices – **1 to 4**

2.2 Agreed Scope

The consultants have:

(i) conducted an initial concept design review,

(ii) clarified with the architect/client regarding the Development's crime risk parameters,

(iii) undertaken a physical inspection of the site and neighbourhood to better understand the development's relationship with its surroundings,

(iv) assessed potential day-night crime risk 'disruption' to site-wide safe activation and circulation,

(v) reviewed and assessed crime risks against CPTED principles including, form definition, internal and external surveillance sightlines, access control, lighting, landscaping and signage and any 'target hardening' measures, required to address safe day-night activation and circulation,

(vi) evaluated the security of utilities and communications infrastructure; and

(vii) provided a Crime Prevention Through Environmental Design (consultancy) DA report.

2.3 Expected Scope Outcomes

Harris believes that the Development should 'model' a welcoming-and-safe-place reputation which would:

(i) enhance the architectural integrity and client objectives of the development,
(ii) holistically protect all assets – people, property, systems and infrastructure,
(iii) reinforce the site's implementation of CPTED design (and management) solutions,
(iv) meet the expectations of secondary stakeholders, e.g. insurers, auditors,
(v) comply with the crime prevention requirements of Section 4.1.5 of the EPA Act, Bayside Council and the NSW Police.

2.4 Key (Development) Stakeholders

Key stakeholders include:

(i) SummitCare,
(ii) Boffa Robertson Group,
(iii) residents, staff, visitors, health care professionals and maintenance contractors,
(iv) Bayside Council,
(v) the neighbouring Monterey community,
(vi) NSW Police.

While each stakeholder will have different community safety expectations, their broad expectations are similar in that personal and property safety is a 'given' of the designing-out-crime objectives.

2.5 Appendices

Supporting our assessment, conclusions, affirmations and/or recommendations are four appendices:

Appendix 1	NSW Bureau of Crime Statistics and Research (BOCSAR) - reported crime statistics for the suburb of Monterey for the five years July 2015 to June 2020,
Appendix 2	The Risk Management Standard as relevant to the Development,
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.

2.6 Approach

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.'*

This definition underpins out approach 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.

2.7 Notes and Disclaimer

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 included commentary on Crime Prevention Through Environmental Management (CPTEM), a desirable, but less well known, framework, which aims to monitor and sustain applied CPTED solutions.

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 6**.

Note 5 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 LOCAL CRIME INTELLIGENCE AND CRIME DATA

3.1 Setting the Crime Risk and CPTED 'Scene'

This Development provides SummitCare with another opportunity to prevent and/or mitigate crime-related risks associated with the vulnerability of retirement and aged care facilities. By applying CPTED, designing-out-crime architecture complements SummitCare's operational policies, procedures and practices in caring for residents, their visiting family and friends, staff teams, visiting health professionals and contractors.

CPTED solutions also consider the surrounding (neighbourhood) context, which might positively or negatively impact SummitCare's crime prevention objectives.

From a care-excellence perspective, preventing crime through design will enhance the Development's marketing and take-up reputation. Success in sustaining that reputation is more likely if on-going operational crime risks are effectively managed. The abovementioned CPTED + CPTEM will strengthen crime prevention outcomes.

From our research and experience, residential aged care facilities are increasingly becoming 'crime risk vulnerable'. Designing out opportunistic or planned crime within these contexts is therefore critical; hence the incorporation of CPTED into relevant aspects of aged care architecture as a preventative measure.

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.

Crime risks to the Development (**Section 4**) have been sourced from, and informed by, the following:

3.2 Neighbourhood Context Observation and Research

Monterey has developed as a desirable residential address over the last three decades. It's desirability stems from the proximity to Botany Bay and its many recreational attractions. The suburb has undergone an evolutionary transition with smaller 20th Century cottages making way for more up-market architecture as single and double storey dwellings.

The Development's broader neighbourhood context focuses on the Grande Parade, a busy north-south roadway servicing the many recreational and retail precincts along that route. Barton Street sits at a mid-point between Ramsgate and Brighton-Le-Sands, with easy access to both suburbs. To the west, Scarborough Park is intersected by Barton Street.

The neighbourhood has 'evolved' throughout the mid to late 1900s. There is little recreational or passive green space in the immediate area. The architecture varies, reflecting the evolving demographic, housing design preferences and affordability.

The neighbourhood therefore comprises a local and visiting pedestrian-vehicle mix in response to the beachfront and retail (especially café and restaurant) attractions. There is a strong sense of neighbourhood along, and surrounding, Barton Street. There is no evidence of intentional criminal damage to surrounding properties targeting dwelling frontages, facades or fences.

Although the contextual crime 'scene' and potential risks might be low, we caution that there are never guarantees about anti-social and crime outbreaks. Monterey's property stakeholders are keen to prevent and preserve a crime-free environment. This Development aims to respect and contribute to that goal.

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 remains vulnerable to potential offenders 'testing' opportunities to target people and property.

3.3 The NSW Bureau of Crime Statistics and Research (BOCSAR)

Reported crime is one measure of neighbourhood criminal risks. However, the amount of reported crime varies depending on whether victims come forward to ensure a crime is recorded and investigated.

The NSW Bureau of Crime Statistics and Research (BOCSAR) categorises reported crime from each police area command, looking at actual offences and year-on-year trends.

BOCSAR's five-year data indicates 'no change' to all the categories of crime listed in the **Appendix 1** table.

While there were no increases or decreases in all categories, some offences remain high in both raw numbers and in percentage terms; for example, domestic assaults, stalking, intimidation and harassment, malicious damage to property, steal from motor vehicle and drug offences. Local police advise there are on-going programs to reduce raw numbers and percentages across all categories.

We reiterate from our other reports, any existing and new retirement complexes remain vulnerable to crime, particularly if potential offenders 'calculate' opportunities to damage or deface property and/or gain unlawful access. Hence the aim to mitigate risks through design and on-going management.

3.4 NSW Police – St George Police Area Command

The Command's Crime Prevention Officer has advised that crime risks around the neighbourhood's residential, recreational and retail landscape don't flag any 'hot spots'. Police intelligence aligns with BOCSAR's data in terms of crime categories and offence numbers.

Vehicle theft, unlawful driving and street-based anti-social behaviour, mainly at night and on weekends, continue to sporadically trouble the neighbourhood. However the locus of these behaviours is mostly concentrated along Grand Parade, with some minor 'spill' into connecting streets, including Barton Street.

Anti-social behaviour is often a precursor to committing offences. As with most Sydney beach-side suburbs, opportunistic crime is likely on weekends, holiday times, with summer nights a 'spike' predictor. From time to time, there are predictable 'outbreaks' of noise-generated street-based behaviour in and around licensed premises or fast-food outlets, again mainly on weekends.

Police, the Council and concerned residents are mindful of the need to maintain efforts to reverse current offence numbers.

We note that SummitCare has procedures in place to contact local police should an urgent or investigative response be required. Police are mindful of the vulnerability of residents and staff in this and other retirement complexes within their command.

4 CRIME RISKS TO THE DEVELOPMENT

4.1 The Risk Management Standard

The above crime intelligence and crime statistics are a 'guide' to levels of actual criminality. Accurately predicting anti-social and criminal behaviour in any neighbourhood will always be problematic, including risk categories, patterns, trends and times within and around the Development.

There are no risk and mitigation absolutes or guarantees to rely on or 'model'. However, the International Standard - ISO 31000:2009 provides a helpful framework to identify and manage any organisational risks, including crime risks. **Appendix 2** outlines a (crime) risk framework adapted from the Standard.

Crime risks and offence categories often follow a predictable pattern, based on context, personal, social, educational and economic circumstances. Opportunism is often a 'trigger'. Offenders target people and property where and when those targets are most vulnerable.

The Standard guides the risk assessment and risk management processes, adaptable to crime risks. It generically assigns 'levels' and 'consequences' in identifying and mitigating risks.

4.2 Crime Risk Variables

While it may be possible to predict contextual and personal circumstances leading to opportunistic crimes, there are other variables to consider. These variables can determine what CPTED solutions are most appropriate when, where and how they should be applied.

When and how easily these offences are committed may vary depending on:

(i) the surrounding context's potential to '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.

Our assessment of the foreseen (predictable) crime risks to the Development has considered the above variables in conjunction with the BOCSAR data and local police intelligence.

4.3 Determinants of Crime Risks to the Development

As the Risk Management Standard cautions, determining *potential* risks, offence categories, levels and likelihood must be balanced against the '*consequences*' of a breach and an *actual* incident. Even the most minor offence in this setting can have major consequences. Hence the need to give priority to all categories as potentially serious.

Graffiti vandalism could target the Development's building frontages, although the proposed fencing should deter that option. Graffiti offenders 'test the new' to see what opportunities exist for tagging vulnerable built form. Gaining (unauthorised) access to the first floor is unlikely, given 24/7 lift access authorisation technology.

The most likely targets for unlawful access are the perimeters, basement, exposed balconies and reception foyer, including waiting spaces and offices. These 'breach points' are a focus of the five CPTED principles.

4.4 Assessed Crime Risks to the Development

BOCSAR statistics (**3.3 above**), local police intelligence (**3.4 above**) and our own contextual observations, assess crime risks to the Development as:

(i) defacing and/or other vandalising damage to property including infrastructure,
(ii) gaining unlawful access to the basement and other floors,
(iii) intimidating behaviour towards residents, staff, visitors, health care professionals and contractors,
(iv) physical and/or sexual assaults targeting persons on or near the site,
(v) theft of property from the basement, ground, first and second floors.

Based on the Standard, categories (i) to (v) are assessed at the 'low' to 'medium' risk levels.

There are two additional 'high to extreme risk' categories which, while unlikely, have serious consequences. These are:

(vi) arson or explosions(s),
(vii) injury or death to persons, damage to, or destruction of, property, from targeted and potentially, terrorist-style attacks, which may or may not be drug or alcohol 'fuelled'.

It is the Development's operational vulnerability as an aged care facility which prompts our cautious inclusion of these risks.

Each of the above risks may be linked in some way, for example, 'unlawful access' would probably lead to attempted theft, property damage and/or assault.

5 CRIME RISK SOLUTIONS: CPTED DEFINITIONS, PRINCIPLES AND APPLICATIONS

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

CPTED principles have been defined variously through the decades under common, but slightly varied, themes, adopted, amended and adapted by jurisdictions as they interpret specific applications.

While acknowledging the various (global) interpretations, Harris has consistently applied Moffat's model. Moffat (1983) introduced six principles, the last of which was 'image maintenance'. Harris has re-located that as a CPTEM (non-design) principle. The NSW Government CPTED Guidelines (2001) have informed the Moffat-Harris adaptation.

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.

We restate that CPTEM 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 CPTEM definitions.

5.1 CPTED Principle 1 Territorial Definitions: clarity about spatial identity, separation, boundaries and purposes.

5.1.1 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.

5.1.2 Application – Footprint Perimeters Pedestrian and Vehicle Entry

The footprint is 'L' shaped and is surrounded by dwellings fronting the Barton Street, Jones Avenue, Scarborough Street and the Grand Parade quadrant.

The perimeter adjoining dwellings will be appropriately metal-fenced with inside ground plane set-backs around the entire site, providing definitional clarity along each perimeter axis.

Pedestrian and vehicle approaches and entries are clearly defined. Both are legible from Barton Street, with appropriate wayfinding separation.

The pedestrian entry follows a covered pathway, edged by a pocket park. Wayfinding from the Street avoids definitional uncertainty. Entry arrival is marked by a forecourt and adjacent sun deck, as part of the park. The entry is welcoming and low planting landscaping should 'invite' without any opportunity for concealment or entrapment.

Similarly, the vehicle approach and entry definitions promote clear wayfinding.

From a CPTED perspective, the site's three other internal boundary (open) spaces facilitate natural and electronic surveillance along the three axes, minimising the likelihood of unobserved unlawful access. The Barton Street perimeter is the most vulnerable unlawful access point.

5.1.3 Application – Basement Definitions

The basement is a multi-functional space. In essence, it is separated into two zones – vehicle parking, delivery and loading and various back-of-house operations. First, it defines parking for 42 vehicles, ambulance, loading and delivery bays. Secondly it defines the other back-of-house zone whose functions include (secured) plant, kitchen, cool rooms, education room, waste storage, laundry, general storage, maintenance workshop and toilet facilities. Each operational zone and room is clearly defined as to location and purpose (function).

The two lift foyers define purpose for the dual function lifts. The foyers appropriately face the vehicle bays and services functions. Entry to the foyers permits 'as approved' lift access.

The zones promote legible wayfinding, with no definitional ambiguity and no obvious concealment or entrapment points.

Parking bays are well separated and there is uncluttered access to the (secure) lift lobby and stairwells. The disabled parking bays are appropriately located opposite a lift core.

In summary, there are strong visual links around the 'zones'. They promote safe wayfinding multi-functional circulation and awareness of spatial separation and purposes. Parking bay arrangements are clear. Ramping and aisle traffic design avoids opportunity for 'in-basement' concealment or entrapment. There is no sense of clutter or confusion in the defined spaces.

5.1.4 Application – Internal Ground Floor Definitions

The pedestrian entry is identified by an airlocked foyer with reception desk, manager's and general offices. Navigation beyond reception leads legibly to other functional spaces and purposes. General 'traffic' flows to the lift foyer, café, dining, servery, staff station and lounge areas. Clearly defined corridors 'guide' residents, staff and visitors to each wing and (resident's) room and associated quiet spaces.

All ground floor definitions reflect safe multi-functional purposes. The floor has high circulation and rooms, offices etc have either business-hours reception-admission, or after-hours security and/or staff response access.

Boundary landscaping, the pocket park, café spill-out, other enclosed gardens, social spaces and pathways are designed as welcoming and secure but informal gathering spaces.

5.1.5 Application – First Floor Definitions

The first floor layout is similar to the ground floor. Replacing the ground floor entry zone is an area accommodating a salon, gym-physio, staff station, servery, dining area and balconies. Residential wings, also feature two additional dining areas, with associated lounge and/or sitting spaces, all clearly defined as to unambiguous space and purpose.

As with the ground floor, the layout supports clear staff, resident and visitor wayfinding from the lift foyer. There are no foreseen security issues with the definitional spaces and zones.

5.1.6 Application – Second Floor Definitions

The 16 single rooms are accessed from the lift foyer through lounge, dining and servery area. The floor also features a roof deck, multi-purpose and function rooms, with break-out balconies and separate toilet facilities. These functional spaces have strong visual links to the lift foyer.

5.1.7 Application – Residents' Room Security

From a CPTED perspective, there are no design issues with ground, first or second floor rooms, corridors and lift lobby locations. Intra-floor connectivity is secure.

5.1.8 Application – Utilities Infrastructure

The utilities infrastructure within the basement footprint and at the off-street ground plane are clearly indicated. Plant, maintenance and the hydrant-booster pump rooms are appropriately located in secured basement spaces. The kiosk and water meter are the only indicated ground plane installations. The water meter in particular should be a 'caged' installation.

(We are always concerned at the vulnerability and crime risks associated with unsecured or plant infrastructure. It is open to seal-breaking, allowing hydrants or water 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. (Refer to **4.4 above**. The definition of these spaces in this case significantly reduce vulnerability.)

5.1.9 Application – Waste Storage and Management - All Levels

Basement space allocated for general storage, waste collection and disposal is defined as 'secure' within that footprint. SummitCare has well developed protocols in managing waste and drawings indicate these protocols will be followed in this complex.

CPTED Principle 1 Conclusions and/or Recommendations

From a CPTED perspective, we conclude that:

(i) the proposed development footprint successfully addresses definitional issues, specifically in terms of off-street and adjacent dwelling boundary definitions,

(ii) internal boundary-to-building open spaces are clearly and legibly defined,

(iii) vehicle and pedestrian approaches invite wayfinding and purpose clarity,

(iv) the basement, ground floor, first floor and second floor layouts indicate clear spatial separation and designated purposes.

Definitional certainty leads to safe circulation certainty and, in turn, safe activation within and around each floor and open space. The design provides overall purposeful wayfinding 'knowledge'.

There is no evident internal or external form confusion. Intra-site open space and secure garden landscaping reinforces welcoming-and-safe pedestrian and vehicle access and gathering.

Functional specifics are also unambiguous for residents, visitors, staff, health care professionals and contractors. This includes entrances, vehicle parking, internal corridors, offices, salon, gymnasium-physio, lounge-dining spaces and all back-of-house operations. Definitional legibility and purpose minimise the potential for opportunistic and/or targeted anti-social behaviour and/or criminal intent.

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

5.2 CPTED Principle 2 Natural Surveillance: architecture facilitating informal observation and surveillance.

5.2.1 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.

5.2.2 Application – Perimeter and External Ground Plane Surveillance

Internal boundary-to-building setbacks provide adequate sightlines along each abutting residential axis. There is a continuous (boundary) pathway around the entire site. None of the setbacks and building angles preclude or impede natural surveillance opportunities along this pathway.

The ground plane vehicle and pedestrian (off-Street) entry points indicate strong approach sightlines. Internal pathways branch into social gathering, active corner and BBQ zones, all able to be observed from various ground, first and second floor rooms, balconies or lounge-sitting areas. The boundary pathway is the main sightline strength for all other informal gathering spaces.

To ensure uninterrupted (perimeter) sightlines, proposed landscaping should specify grassed and/or low shrub plantings -**refer 5.4.5**. The gardens provide additional 'at location' surveillance legibility.

5.2.3 Application – The Basement

Surveillance sightlines throughout the basement are strong. There are visual links between parking bays, around the internal loading-delivery zone and towards the lift foyer. There are no evident internal spaces likely to conceal or entrap within the vehicle zone.

Casual observation is possible from the service lift foyer to each back-of-house zone. Back-of-house allocations – plant, storage, kitchen, cool rooms, maintenance, staff room and toilet facilities – are purposefully separated, providing good sightlines to each room or space.

To ensure uninterrupted surveillance of the lift from the car park, we recommend that the secure lift foyer doors specify glass installations – sliding doors and structural glass surrounds.

Location of the roller shutter as close as possible to Barton Street above aims to maximise strong street-edge approach sightlines while complying with BCA requirements. Natural surveillance opportunities on approach to the roller shutter and within the ramp should be augmented with CCTV (IP Network) technology –**Principle 5.**

5.2.4 Application – Ground Floor

The entrance foyer becomes the central security 'check point' for authorised access. The (business hours) reception counter can observe any person approaching the airlock. Observation will be enhanced if design detail specifies structural glass surrounds and sliding entry doors.

There are legible and strong sightlines from the reception and administration offices to the café servery, lounge and dining areas and corridors leading to resident's rooms, additional lounge, dining, outdoor and other functional spaces. Residents and staff can observe from windows, lounge and sitting spaces, social lane gardens, the pocket park and towards the driveway entry.

5.2.5 Application – First and Second Floors

First floor offices, dining, activity and associated back-of-house areas leading from the lift foyer are readily observed. Sightlines to rooms, dining and sitting areas are adequate along -back-of-lift corridors. Sightlines along corridors provide wayfinding safely to dining and lounge areas, balconies and residents' rooms.

Second floor surveillance from the lift foyer flows to the multi-purpose and function rooms. Corridors from the lift foyer provide good sightlines to and through the lounge dining area to the staff station, residents' rooms, sitting areas and the roof deck. The deck and associated balconies serving the multi-purpose and function areas will afford additional surveillance opportunities.

The architecture encourages informal resident, visitor and/or staff surveillance of the external ground plane from ground, first and second floor bedroom windows and other observation points along both floors.

In general, staff circulating on all three floors could be alerted to 'unusual' noise and would be able to 'investigate' from perimeter-facing rooms, quiet communal spaces, dining, lounge, balconies and gardens.

CPTED Principle 2 Conclusions and/or Recommendations

Internal and external architecture facilitates site-wide natural surveillance opportunities.

Externally, the landscaping master plan invites safe social gathering options, introducing multi-dimensional proximate and distant sightlines. Off-Street approach, boundary pathway and designated ground plane social activity spaces, increase day and night 'eyes-and-ears' opportunities to observe and hear usual and unusual activity.

Internally, the overall design maximises adequate-to-strong sightlines on each floor, assisted primarily by the openness and centrality of lift foyer, reception, office spaces, balconies, function and multi-purpose spaces. Natural surveillance within the building zones is further enhanced by visually 'open' and purposeful interconnected corridors.

The site's boundary pathway architecture accentuates natural surveillance opportunities along each building axis.

We therefore affirm maximum natural surveillance opportunities throughout the site's external and internal spaces/zones, thereby reducing the temptation for unauthorised entry aimed at damaging property or harming occupants.

5.3 CPTED Principle 3 Access Control: who goes where, when and why

5.3.1 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) more easily 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.

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.

5.3.2 Application – Vehicle Access

Vehicles entering the basement should also be appropriately identified prior to activating the roller shutter. All basement zones are the most susceptible to 'successful' breaching, mostly by tailgating.

Each basement zone is appropriately secured, including the lift foyer, plant, hydrant-booster pump installations, bulk, general and waste storage, all other back-of-house operational spaces including the educational and maintenance spaces.

5.3.3 Application – Ground, First and Second Floors

The pedestrian entry is monitored during business hours by management and reception staff. After-hours access will be secured and controlled via the air-lock. All other ground floor spaces are appropriately secured to allow staff, visitor and contractor access as required.

Lift and stair access will be strictly controlled to the first and second floors. Individuals will either be escorted or issued with a proximity card, programmed to their approved location.

Secure internal perimeter and (external) garden spaces is a given. Fencing and lockable gates should be installed along the boundary pathway if required. Gates at the (northern) pedestrian entry point and at the over-ramp wall are mandatory to prevent unauthorised access to residents' rooms, gardens and the remaining boundary pathway.

The lift and internal stairs are secured, mitigating against unauthorised access to the first and second floors. As an extra precaution, we recommend installation of security rated screens for doors and windows, especially rooms and function spaces with balconies, including the roof deck.

5.3.4 Application – Storage, Plant, Waste and Utilities Infrastructure Access

Critical infrastructure in the basement, IT, comms distribution boards, other plant, and hydrant-booster pumps, are all appropriately secured, as is bulk, general and waste storage, loading and delivery rooms.

(Our reports usually emphasise that internal waste storage areas should remain 'ordered' and kept free of surrounding (near doorway or gateway) clutter. This is particularly relevant for the basement, given its relatively high multi-functional circulation volumes.)

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 areas should be protected by fire detection and suppression systems in case of unintended fire or, arson.

CPTED Principle 3 Conclusions and/or Recommendations

We conclude there are adequate access control measures throughout the Development's footprint. Drawings indicate intentional site-wide access control measures. However, we make the following recommendations to 'strengthen' access control measures.

(i) Vehicles entering the basement should be number plate 'identified' as an added security precaution, especially in the event of a tailgated security breach.

(ii) Should the perimeter be breached, for added security of outdoor spaces, consideration should be given to installing additional gates along the boundary pathway to 'lock off' those spaces.

(iii) All external-facing windows and doors should be fitted with security rated screens, especially those fronting balconies.

(iv) Water meters, and other externally installed plant should be enclosed and secured.

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 CPTEM Section 7).

5.4 CPTED Principle 4 Activity Support: the supportive influences of lighting, landscaping and signage to reduce spatial vulnerability

5.4.1 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: wayfinding, 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 wayfinding and destination confidence.

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

- *Signage* supports wayfinding 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.

5.4.2 Application – External Perimeter and Main Entry Lighting

From an activity support perspective, external and internal lighting is critical for Monterey. It is a large site, with numerous vulnerable indoor and outdoor spaces. External lighting is a critical surveillance support element in all the external spaces.

First, the aim of external lighting is to illuminate the site's boundary pathway to (a) provide a continuous 'corridor' of pathway lighting while (b) preventing any throw or spill into neighbouring premises or residents' rooms. The (internal) perimeter lighting objective is to deter potential anti-social and/or unauthorised access or loitering anywhere within the ground plane.

In our view, the building and landscape architecture lends itself to creative pole and/or under-eave lighting solutions. The pathways and social gathering pockets, the main entry and vehicle ramp approach, coastal garden and sun deck can be appropriately lit with either or both luminaire types. This solution facilitates location, wayfinding and identification objectives.

To maximise wayfinding, personal and object identification, all external lighting should specify colour (temperature) consistency. LED installations of 4000 Kelvin is the recommended ground plane (and basement) colour temperature. 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.

Secondly, perimeter and pathway lighting would 'wash' against ground plane building facades and associated landscaping, adding to the total coverage. Some facades may require additional under-eave lighting to ensure there is 'no gap' coverage.

Note: Bollard and wall-mounted installations are not recommended as '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.

5.4.3 Application – Internal Lighting: Basement

Particularly within the basement, the objective is to ensure all areas are lit. The lighting layout should eliminate all potentially dark spaces or lux level gaps. LED design should specify luminaire styles, beam angles, throw spread and/or wash. Roof-recessed 'down' lighting should feature throughout maximising visual certainty. Again, the preferred colour option is 4000 Kelvin throughout, the most effective for identification and observation (surveillance) purposes.

Given the high-traffic multi-functional footprint, the ramp, lift lobbies, parking bays, approaches to the multi-purpose and back-of-house zones, should exceed minimum lux levels, to spread basement-wide illumination consistency and for object and personal identification. To reiterate, there should be no shadowing or dark spaces (gaps) in any part of the basement.

5.4.4 Application – Internal Lighting: Ground, First and Second Floors

All internal lighting is being designed to Standard and will promote identification options. There are no foreseen issues around lighting and signage on all floors.

5.4.5 Application – Landscaping

The landscaping master plan and species distribution 'wraps' the complex, encouraging 'welcoming-and-safe-place' circulation and activation. The main entry invites exploration of beyond. There are six zones – entry-coastal garden, central hub, sensory lane-productive garden, active corner, the fernery-quiet zone, BBQ and social lane.

There are extensive and appropriately varied deep soil and supporting decorative grass and shrub plantings across these spaces. The plan also provides extensive and appropriate perimeter screening, boundary and interconnecting pathway coverage.

Each zone will encourage resident, visitor and staff participation in each outdoor space. The boundary pathway is also important as a boundary security access 'buffer'.

From a crime prevention (CPTED) perspective, there are a number of key objectives.

(i) Where practical, all trees should facilitate under-canopy proximate and distant sightlines.

(ii) Trees should not be located near upper floor balconies as they can be used to gain access.

(iii) We support grassed and low plantings, set back from any fence line screening and along the boundary and interconnecting garden and gathering pathways, particularly aimed at complementing night-time lighting sightline solutions.

5.4.6 Application – General 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.

Appropriate signage should indicate restricted areas and provide safe and certain wayfinding for staff, residents, visitors and contractors.

CPTED Principle 4 Conclusions and/or Recommendations

The Development will benefit from the 'open' and clearly defined ground plane footprint (Principle 1).

The external lighting plan should aim to meet continuous (no gaps or shadowing) safe wayfinding and identification objectives along the boundary pathway, at open social gathering and garden spaces, along building facades, the off-street driveway and main entry approaches.

External lighting treatments should follow consistent luminaire and lux levels, applying LED 4000K colour temperature patterns. Where practical, we recommend overhead pole luminaires and/or under-eave luminaires; all with appropriate beam angles to provide sufficient throw, spill and (where appropriate) wash, to eliminate, shadowing and dark gaps, mindful of privacy concerns.

Internal basement lighting should follow the same Kelvin-LED recommendations, applying ceiling recessed fittings to maximise back-of-house doorways, lift lobbies, receiving and parking bays.

The landscaping package takes account of the need to ensure safe wayfinding while inviting safe activation of garden and social gathering spaces.

Proposed maturing and grassed plantings should support natural surveillance and should not obstruct sightlines around the development's perimeter fencing and/or walls. They should minimise opportunities for concealment or entrapment within the site, including designated garden areas. Mature trees should not be proximate to the first or second floor 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.

5.5 CPTED Principle 5 Target Hardening: adding specific and robust architecture and/or technology

5.5.1 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'.

5.5.2 Application – IP Network (CCTV) Installations and Help Points

IP Network (CCTV) camera installations should complement natural surveillance measures. Installations are recommended for:

(i) the basement including, approaching, and at, the roller shutter, the ramp, all parking bays, the loading-receiving door, both sides of the lift foyer, facing storeroom and plant room doors and covering back-of-house entrances,

(ii) the off-Street pathway to and around the main entry and including the coastal garden and sun deck,

(iii) the three boundary axes and interconnecting social gathering pathways,

(iv) vulnerable internal zones on the three residential floors as identified by SummitCare, mindful of privacy concerns.

Consideration should be given to installing monitored 'help points' in the basement at both lift foyers. 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 terminal or to a portable device, for example a smart phone or tablet. Help points would be integrated with the duress alarm system to be installed throughout the Development.

5.5.3 Application – Rooms and Balconies

We reinforce our recommendation to install security rated screens on all rooms on all floors, especially rooms with balconies and/or dining or function doors connected to balconies. The aim is to prevent potential unauthorised access to rooms and spaces via balconies.

5.5.4 Application – Garden Furniture

There have been instances where external garden furniture and fittings have been used to threaten residents or staff in retirement complexes by individuals who have breached site security. Our recommendation encourages a design combination of 'soft' removable furniture with fixed robust installations to minimise potential damage or harm.

5.5.5 Application – Building and Wall Façades

Applying the latest protective material, and/or coatings will minimise likely defacing of masonry areas and facilitate ease of graffiti removal.

CPTED Principle 5 Conclusions and/or Recommendations

Target hardening is recommended for the most vulnerable zones/spaces within and around the ground plane building, perimeters, outdoor and internal spaces.

First, camera surveillance should cover:

(i) the basement including, approaching, and at, the roller shutter, the ramp, all parking bays, the loading-receiving door, both sides of the lift foyer, facing storeroom and plant room doors and covering back-of-house entrances,

(ii) the off-Street pathway to and around the main entry and including the coastal garden and sun deck,

(iii) the three boundary axes and interconnecting social gathering pathways,

(iv) vulnerable internal zones on the three residential floors as identified by SummitCare, mindful of privacy concerns.

Secondly, we recommend specifying security rated window and door screens for exposed balconies and bedroom windows. Consideration also should be given to install one or more basement 'help' points.

Thirdly, non-glazed surfaces should be anti-graffiti coated and social gathering (garden) furniture designed to deter the potential for damage or harm.

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.

6 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.

6.1 NSW Environmental Planning and Assessment Act

Consideration of crime prevention for mid to large scale developments in New South 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 government instruments to regulate or codify issues pertaining to the evaluation of environmental impacts of developments. Social "*impacts*" (b) and "*the public interest"* (e) fall within this Section. Under the heading 'Evaluation', Section 4.15 (1) states:

"*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 "*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 CPTED framework into Development Control Plans and/or Crime Prevention Plans, requiring crime prevention considerations as a specific development consent condition.

The *public interest* interpretation aims 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.

6.2 NSW State Environmental Planning Policy (SEPP) 2004

Section 37 of the SEPP (Housing for Seniors or People with a Disability) 2004, states:

"*The proposed development should provide personal property security for residents and visitors and encourage crime prevention by—*

(a) site planning that allows observation of the approaches to a dwelling entry from inside each dwelling and general observation of public areas, driveways and streets from a dwelling that adjoins any such area, driveway or street, and

(b) where shared entries are required, providing shared entries that serve a small number of dwellings and that are able to be locked, and

(c) providing dwellings designed to allow residents to see who approaches their dwellings without the need to open the front door."

CPTED Principle 2 outlines the development's adherence to 'natural' surveillance' opportunities to and from rooms, to and from balconies, to and from communal spaces, within basement zones, along site axes, around and within landscaped gardens and at pedestrian and vehicle approaches, in compliance with the relevant SEPP requirements.

6.3 Bayside Council

Council's 2013 DCP is, relevant to this Development and requires SummitCare to comply with Part 31 of that Plan. This Part details particular applications of CPTED principles, factoring design intent through architecture into site layouts, building design, landscaping and lighting, car parking areas, public domain, open space and pathways.

The preamble to these requirements states in part: *"Safety and security are the critical components in the function and operation of the urban environment. By creating a safe and secure environment, it will encourage activities during the day and at night by reducing the opportunities of crime and violent behaviour and making places more user-friendly. ….. The challenge for planners, designers and property owners is to create lively and interesting urban places without being feeling "locked in" or consistently being monitored."*

We have reviewed these requirements (and "challenges") and have addressed them under each of the five (Harris-adapted) CPTED principles. Our conclusion is that SummitCare has considered, complies with, and/or will comply with at design detail stages, relevant elements of Part 31.

6.4 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: (a) review anti-social and criminal behaviour 'hot spots' with a view to risk mitigation through increased police or security presence and/or (b) advocate situational crime prevention measures; that is physical modification of (usually) external built form and public space by applying CPTED principles.

The Police have developed their own CPTED (or Safer-by-Design) guidelines as a 'Check List'. This Report has been undertaken with reference to relevant parts of the guidelines which are based on CPTED principles, specifically around surveillance, lighting and target hardening.

CPTED Compliance Conclusions and/or Recommendations

Our assessment concludes that the planning and design detail of the SummitCare Development at 119 Barton Street Monterey NSW, complies with, or will comply with,

(i) Section 4.15 of the NSW EPA Act, 1979, as amended,

(ii) Section 37 (a), (b) and (c) of the NSW State Environmental Planning Policy, (Housing for Seniors For People with a Disability), 2004, as revised,

(iii) The NSW Police Crime Prevention Checklist; and

(iv) Bayside Council's Development Control Plan (DCP) 2013, Part 31.

Subject to on-going design development, the reviewed drawings support development consent, as that consent relates to required incorporation of CPTED principles.

OVERALL CPTED ASSESSMENT SUMMARY

In our professional opinion, the SummitCare Development at 119 Barton Street Monterey NSW either has, or will, consider CPTED principles and their application, as assessed, or recommended, prior to 90+% design development-detail.

The Development's design complies with State Government's 'social impact' and 'public interest' requirements, under Section 4.15 of the EPA Act, the requirements under Section 37 of the SEPP 2004 and the CPTED requirements of NSW Police. It also complies with Part 31 of Bayside Council's Development Control Plan, 2013.

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

Our assessment indicates that the development should make a positive crime prevention contribution to Bayside Council's broader 'community safety' objectives set out in the abovementioned documents. The Development's CPTED-applied architecture could 'model' future similar developments promoted and/or approved by the Council.

7 CPTEM PRINCIPLES AND (GENERIC) EXPLANATIONS

CPTEM 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 CPTEM strategy for the development. Harris is of the view that security design (CPTED) and security management (CPTEM) strategies are interdependently and inexorably linked.

CPTEM 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 be become the norm. Where CPTEM has been overlooked, the benefits of CPTED can be compromised.

Ad hoc and/or intermittent attention to CPTEM 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 CPTEM 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 CPTEM 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 CPTEM strategies.

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

7.1 CPTEM 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.

7.2 CPTEM 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.

7.3 CPTEM 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.

7.4 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).

7.5 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.

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APPENDICES

APPENDIX 1 CRIME STATISTICS FOR THE SUBURB OF MONTEREY 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 Monterey over the (reported) 5-year period, July 2015 – June 2020.

NSW Crime Statistics July 2015 to June 2020 Monterey (Suburb)											
	5 Year Trend to June 2020	Year to June 2016 Count	Year to June 2016 Rate	Year to June 2017 Count	Year to June 2017 Rate	Year to June 2018 Count	Year to June 2018 Rate	Year to June 2019 Count	Year to June 2019 Rate	Year to June 2020 Count	Year to June 2020 Rate
Homicide	n.c.	0	0	0	0	0	0	0	0	0	0
Assault - domestic	n.c.	35	726.1	23	472.9	23	463.4	11	219.9	29	579.8
Assault - non Domestic	n.c.	6	124.7	5	102.9	6	121.7	9	179.9	7	139.9
Sexual offences	n.c.	1	20.7	0	0	3	60.7	1	20	0	0
Indecent assault, act of indecency and other sexual offences	n.c.	1	20.9	0	0	2	40.3	1	20	2	40
Robbery without weapon	n.c.	0	0	1	20.7	1	20	1	20	0	0
Robbery with a firearm	n.c.	0	0	0	0	0	0	0	0	0	0
Robbery with weapon not a firearm	n.c.	0	0	2	41.1	0	0	0	0	1	20
Intimidation , stalking & harassment	n.c.	13	269.9	12	245.3	17	342	20	399.8	18	359.9
Other offences against the person	n.c.	0	0	2	41.1	0	0	0	0	0	0
Break & enter dwelling	n.c.	9	187.1	7	143.6	14	282	6	120	9	179.9
Break & enter non dwelling	n.c.	0	0	0	0	3	61.1	1	20	1	20
Motor vehicle theft	n.c.	8	166.3	3	61.4	5	100.7	10	199.9	8	159.9
Steal from motor vehicle	n.c.	22	457.8	14	286.4	22	444.1	9	179.9	11	219.9
Steal from retail store	n.c.	1	20.9	0	0	0	0	0	0	0	0
Steal from dwelling	n.c.	10	207.7	6	122.8	5	101	5	100	9	179.9
Steal from person	n.c.	0	0	0	0	0	0	0	0	1	20
Liquor offences	n.c.	0	0	0	0	0	0	0	0	0	0
Disorderly conduct	n.c.	4	83.3	2	41.1	2	40.3	2	40	2	40
Disorderly Conduct (criminal intent)	n.c.	1	20.9	0	0	0	0	0	0	0	0
Disorderly conduct (trespass)	n.c.	3	62.4	1	20.7	2	40.3	2	40	1	20
Drug offences	n.c.	12	249.7	6	123.2	4	81	9	179.9	12	239.9
Malicious damage to property	n.c.	24	499.1	26	534.3	18	363.8	24	479.8	37	739.7
Prohibited and regulated weapons offences	n.c.	3	62.4	2	41.1	4	80.7	1	20	3	60
Arson	n.c.	0	0	2	41.1	0	0	1	20	1	20

APPENDIX 2 APPLYING THE RISK MANAGEMENT STANDARD TO IDENTIFYING CRIME 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*.'

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*.'

Threats and incidents are progressive in their definitions. If risks remain unidentified and untreated (unmanaged), they can rapidly and easily become threats or incidents. CPTED solutions should 'match' the adapted Standard's risk levels and assessed categorised behaviours. Recommendations and/or affirmation of architectural solutions should be proposed against this backdrop.

The following table outlines generic risks and risk levels, potentially applicable to any assessment of crime risks in an urban or rural neighbourhood.

Low Level Risks	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
Medium Level Risks	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
High Level Risks	'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
Extreme Level Risks	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

The question always arises as to how to respond to each risk level. Responses through design are an important determinant. CPTED principles can be matched against risk levels and solutions, mindful of the consequences of responding or not responding to each 'level'.

Crime risk mitigation through design must be matched with other post-occupancy responses (for example CPTEM) to ensure a coordinated and integrated management approach to both creating and maintaining 'crime free' environments.

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)

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 of 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 is 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 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) 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.

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.

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.

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.

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.

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.

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.

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'.

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.