Harris Crime Prevention Services

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14th August 2019

Mr Michael James
Project Manager - Building
Lendlease
Level 14, Tower Three, International Towers Sydney
Exchange Place, 300 Barangaroo Avenue
Barangaroo NSW 2000

Dear Michael,

Final Report: Crime Prevention Consulting Services for the Victoria Cross Over Station Development – OSD

Please find attached our final report for the above development. As per your comments, we have reviewed the report and made changes to wording, where appropriate.

Thank you for engaging Harris Crime Prevention Services.

Yours sincerely,

Leon L. Harris Dip.Sec.Studs.,CPP
Principal Consultant

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HARRIS CRIME PREVENTION SERVICES

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

Crime Risk and Crime Prevention Through Environmental Design (CPTED)

Final Report

re

Victoria Cross Station: Over-Station Development

for

Lendlease

August 2019

In Confidence

TO BE RELEASED AS CONTROLLED COPIES

Table of Contents

DETAILED SSD APPLICATION

INTRODUCTION

This report has been prepared to accompany a detailed State Significant Development (SSD) development application (DA) for a commercial mixed-use Over Station Development (OSD) above the new Sydney Metro Victoria Cross Station. The detailed SSD DA is consistent with the Concept Approval (SSD 17_8874) granted for the maximum building envelope on the site, as proposed to be modified.

The Minister for Planning, or their delegate, is the consent authority for the SSD DA and this application is lodged with the NSW Department of Planning, Industry and Environment (NSW DPIE) for assessment.
This report has been prepared in response to the requirements contained within the Secretary's Environmental Assessment Requirements (SEARs) dated 6 May 2019. Specifically, this report has been prepared to respond to the following SEARs:

This report has also been prepared in response to the following condition of consent for the State Significant Development Concept (SSD 8874) for the OSD:

Security and Crime Assessment

B7. Future detailed development application(s) shall be accompanied by a Security and Crime Risk Assessment prepared in consultation with NSW Police having regard to NSW Police publication "Safe Places" Vehicle Management: A comprehensive guide for owners, operators and designers and Crime Prevention Through Environmental Design (CPTED) principles.

The detailed SSD DA seeks development consent for:

- Construction of a new commercial office tower with a maximum building height of RL 230 or 168 metres (approximately 42 storeys).
- The commercial tower includes a maximum GFA of approximately 61,500sqm, excluding floor space approved in the CSSI
- Integration with the approved CSSI proposal including though not limited to:
  - Structures, mechanical and electronic systems, and services; and
  - Vertical transfers;
- Use of spaces within the CSSI 'metro box' building envelope for the purposes of:
  - Retail tenancies;
  - Commercial office lobbies and space;
  - 161 car parking spaces within the basement for the purposes of the commercial office and retail use;
  - End of trip facilities; and
  - Loading and services access.
- Utilities and services provision.
- Signage locations (building identification signs).
- Stratum subdivision (staged).

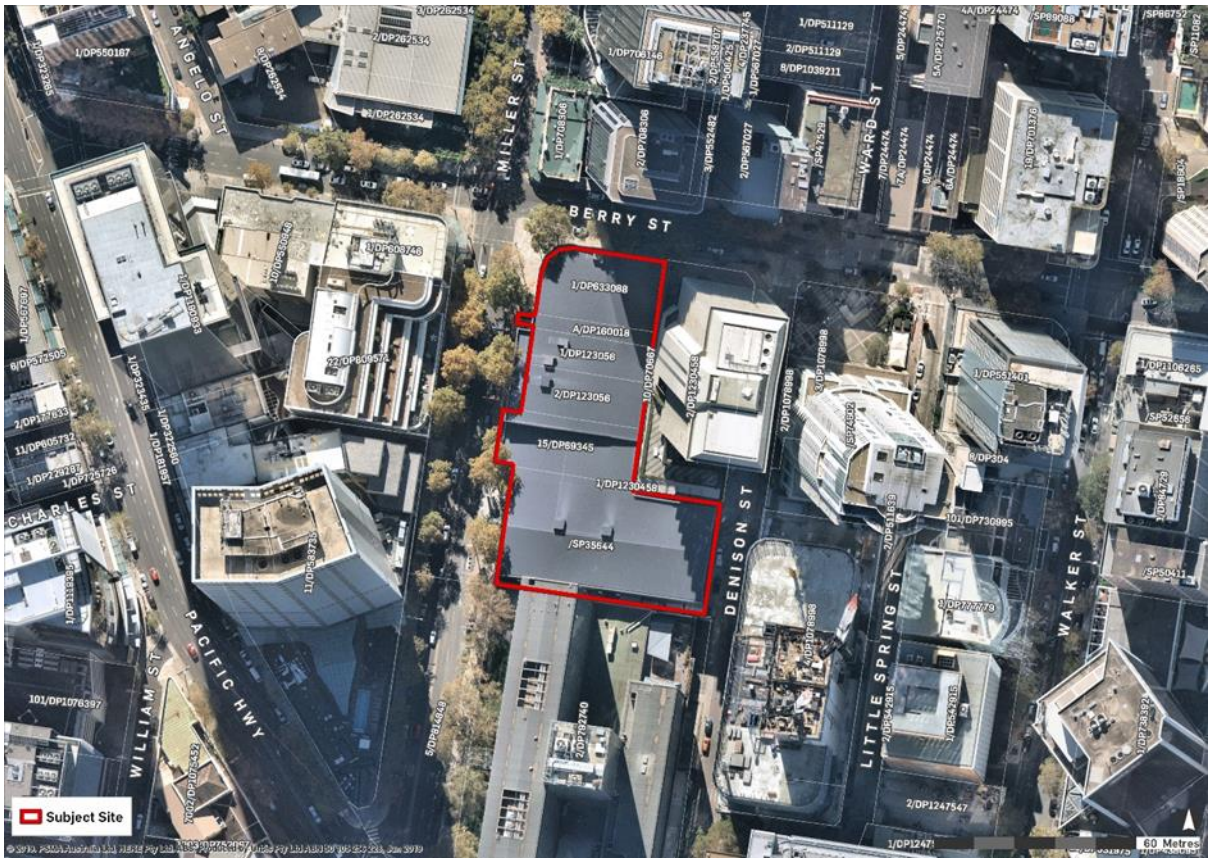
The Site

The site is generally described as 155-167 Miller Street, 181 Miller Street, 187-189 Miller Street, and part of 65 Berry Street, North Sydney (the site). The site occupies various addresses/allotments and is legally described as follows:

- 155-167 Miller Street (SP 35644) (which incorporates lots 40 and 41 of Strata Plan 81092 and lots 37, 38 and 39 of Strata Plan 79612)
- 181 Miller Street (Lot 15/DP 69345, Lot 1 & 2/DP 123056, Lot 10/DP 70667)
- 187 Miller Street (Lot A/DP 160018)
- 189 Miller Street (Lot 1/DP 633088)

- Formerly part 65 Berry Street (Lot 1/DP 1230458)

Figure 01 – Site Aerial



Sydney Metro Description

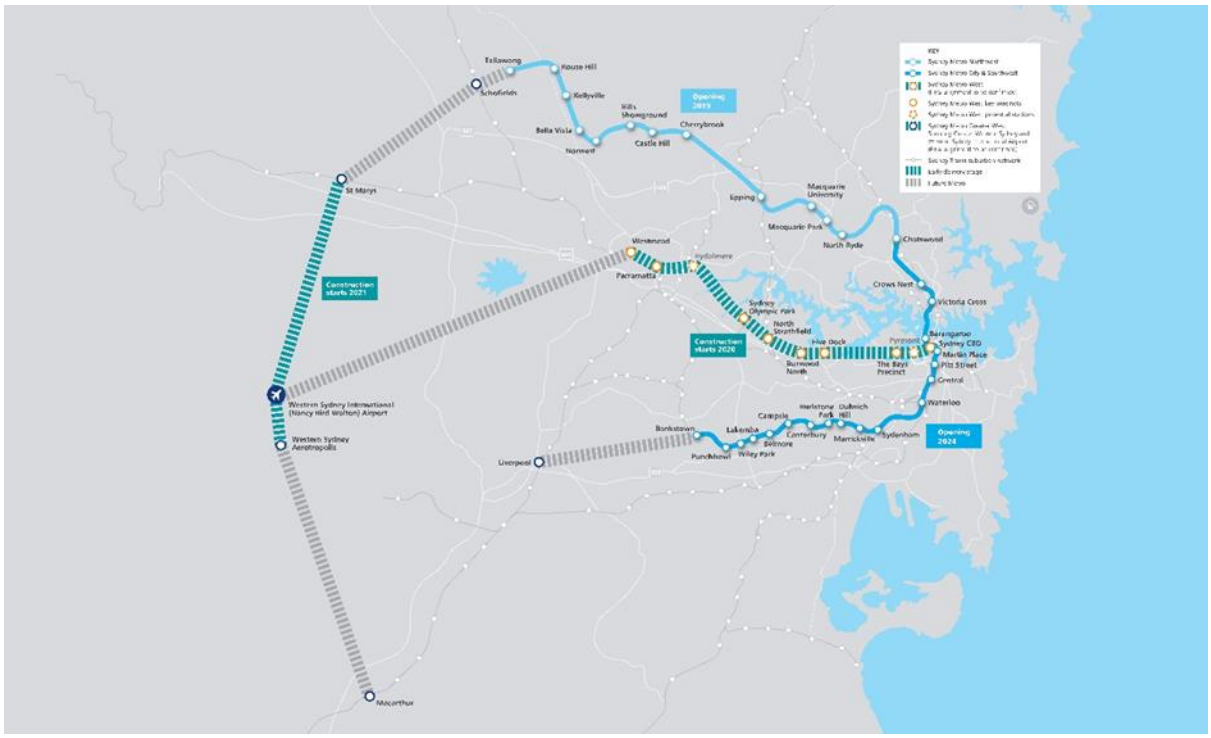
Sydney Metro is Australia's biggest public transport project. In 2024, Sydney will have 31 metro railway stations and a 66km standalone metro railway system – the biggest urban rail project in Australian history. The Sydney Metro Project is illustrated in the Figure below.

Services will start in 2019 in the city's north west with a train every four minutes in the peak. Sydney Metro will be extended into the CBD and beyond to Bankstown in 2024. There will be new metro railway stations underground at Crows Nest, Victoria Cross, Barangaroo, Martin Place, Pitt Street, Waterloo and new metro platforms under Central.

On 9 January 2017, the Minister for Planning approved the Sydney Metro City & Southwest - Chatswood to Sydenham project as a Critical State Significant Infrastructure project (reference SSI 15_7400) (CSSI Approval). The terms of the CSSI Approval includes all works required to construct the Sydney Metro Victoria Cross Station, including the demolition of existing buildings and structures on both sites. The CSSI Approval also includes construction of below and above ground works within the metro station structure for appropriate integration with the OSD.

With regards to CSSI related works, any component of the detailed design that is contained within the "metro box envelope" and public domain will be pursued in satisfaction of the CSSI conditions of approval and do not form part of the scope of the Detailed SSD DA for the OSD, unless otherwise specified in the SSD DA.

Figure 02 – Sydney Metro Alignment Map



Source: Sydney Metro

EXECUTIVE SUMMARY

Harris Crime Prevention Services (Harris) was commissioned to undertake a Crime Prevention Through Environmental Design (CPTED) Report in relation to the detailed State Significant Development (SSD) development application (DA) for a commercial mixed-use Over Station Development (OSD) above the new Sydney Metro Victoria Cross Station.

The 'Introduction' describes the site as 155-167 Miller Street, 181 Miller Street, 187-189 Miller Street, and part of 65 Berry Street, North Sydney (the site). The site occupies various addresses/allotments and is legally described as follows:

- 155-167 Miller Street (SP 35644) (which incorporates lots 40 and 41 of Strata Plan 81092 and lots 37, 38 and 39 of Strata Plan 79612)
- 181 Miller Street (Lot 15/DP 69345, Lot 1 & 2/DP 123056, Lot 10/DP 70667)
- 187 Miller Street (Lot A/DP 160018)
- 189 Miller Street (Lot 1/DP 633088)
- Formerly part 65 Berry Street (Lot 1/DP 1230458).

This Report's purpose is to address the potential for anti-social and criminal behaviour, based on assessed risks, specifically within (across) the development's public domain. Designing out these risks is the Report's mitigation focus and strategy.

Harris has considered, assessed, concluded and/or recommended architectural features of the public domain which could contribute to preventing anti-social and criminal behaviour throughout the footprint.

This is a prestige development, whose stakeholders are committed to 'welcoming and safe place' outcomes for all built form and public domain elements. Applying cost-effective and practical CPTED principles, where relevant, to these elements, aims to enhance safe place outcomes.

The Report's structure and content assesses potential crime risks and risk levels against the International Risk Management Standard's generic framework.

The influence and impact of the OSD's neighbouring context in relation to possible anti-social and criminal behaviour 'targeting' people and property is addressed. Informing crime data adds weight to possible underlying contextual influences. Five CPTED principles are explained (defined) and applied to the OSD.

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

Depending on the referenced CPTED literature, principles are identified under differing headings. Harris identifies and applies five CPTED principles. Applied strategically to development design, the collective outcomes should contribute to crime prevention outcomes, achieved without compromising architectural creativity or integrity.

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.

The conclusions and recommendations following are extracted verbatim from the Report's analysis, commentary and conclusions in Section 11.

CPTED PRINCIPLES	VICTORIA CROSS STATION OSD CONCLUSIONS AND/OR RECOMMENDATIONS
Principle 1 **Territorial Definitions** **(Report 11.1)**	The OSD perimeters are unmistakable. There is no confusion as to available from-perimeter access and circulation options. Definitions and location of built form, Station and other built form approaches, entrances and exits are clearly delineated in design development drawings. Spatial separation and purposes combine to maximise safe causal connectivity and site circulation 'control'. There is location and identification certainty (clarity) of built form and public domain intra-connectivity. Station and tower approaches, vehicle ingress portals, streetscape design and the public domain legibility, minimise the potential for opportunistic and/or targeted anti-social behaviour or criminal intent. Definitional precision regarding spatial relationships and purposes will be strengthened as design development of external lighting, landscaping and signage is considered. (Refer CPTED Principle 4.) There is no apparent internal or external form or function confusion. Intra-site and intra-building clarity reinforces safe pedestrian connectivity and circulation.
Principle 2 **Natural Surveillance** **(Report 11.2)**	The definitional identity, clarity and legibility of the ground plane, basement and upper levels of the Station approaches, perimeter, public domain, vehicle parking and pedestrian tower entrances, affords appropriate passive surveillance options in and around those spaces. Drawings foreshadow clear proximate and distant sightlines along each street perimeter. Appropriate landscaping and lighting will afford adequate perimeter surveillance along, in and around Miller, Denison and Berry Streets. Effective natural surveillance is expressed through adequate sightlines in and around the public domain, including the through-site link. The more vulnerable tower, retail entry spaces, car parks, public amenities approaches, loading dock and utilities infrastructure will require IP surveillance technology, signage and lighting (Principles 4 and 5) to reduce the temptation to entrap, to deface, to steal property and otherwise damage the buildings or other built form. These elements will be addressed in later design development.
Principle 3 **Access Control** **(Report 11.3)**	The nature and purposes of the site have the potential for one or more of the identified crime risks and risk levels to escalate. Risks can become threats or incidents where access control design or management compromises occur. Design development therefore requires coordinated multi-risk mitigation access control measures. Drawings indicate intentional separation of 'unrestricted' and 'restricted' circulation throughout the public domain, Station forecourt and built form spaces. We reiterate that controlled access through (CPTED) design, be supported by strict access management of the many identified vulnerable OSD spaces.

Principle 4 **Activity Support** **(Report 11.4)**	External lighting, landscaping and signage treatments for the OSD's external and internal way-finding and informal gathering spaces must reflect the vulnerability of (a) high pedestrian traffic to and through those spaces, generated simultaneously by varied circulation and activation purposes – Station, retail, public domain and tower access, interconnectivity with neighbouring streets, lanes and adjacent or nearby buildings. These elements will form part of future design development. Inter-disciplinary coordination of these three 'support elements' is essential to enhance the overall safety (security) of the OSD 'welcoming-and-safe-place' objectives.
Principle 5 **Target Hardening** **(Report 11.5)**	Target hardening treatment of the most vulnerable spaces should include high lux level, directional (4000K) lighting, help – alarm points, surveillance camera coverage and anti-graffiti coatings. Lend Lease Building will review these aspects during design development. Camera surveillance, public domain furniture design, help points, anti-graffiti façade protection and (desirably) the location of a high visibility security office, are all practical 'target hardening' measures recommended for relevant whole-of-site application, to 'strengthen' CPTED principles 1 to 4. Serious design consideration should be given to preventing hostile vehicle penetration, likely to target the more vulnerable open spaces, particularly: (a) public domain and Station forecourt spaces, (b) basement car park approaches and (c) building facades fronting street edges. Treatments need not be 'invasive'. We believe that design development drawings can specify combination solutions without creating a sense of fortressing.

Overall Assessment

In our professional opinion, the Victoria Cross Over-Station Development at North Sydney either has, or will, consider CPTED principles and their application prior to 90+% design development-detail. The inclusive multi-space concept should promote 'welcoming-and-safe' day-night circulation and activation across the footprint, for the benefit of all stakeholder-users.

Further, we are of the opinion that the OSD complies with regulation guidelines within the NSW Environmental Planning and Assessment Act, 1979, with the NSW Police Crime Prevention Check List and with the crime prevention policy of North Sydney Council.

THE REPORT

1. THE REPORT'S PURPOSE

Harris Crime Prevention Services (Harris) was commissioned to undertake a Crime Prevention Through Environmental Design (CPTED) Report in relation to the detailed State Significant Development (SSD) development application (DA) for a commercial mixed-use Over Station Development (OSD or the development), above the new Sydney Metro Victoria Cross Station. The development site is at 155-167 Miller Street, 181 Miller Street, 187-189 Miller Street, and part of 65 Berry Street, North Sydney. (Refer detailed site description in the 'Introduction' and 'Executive Summary'.)

The OSD's public domain is an important 'edge' of the Victoria Cross Station development. It is also an important element of North Sydney Council's planning to increase interconnected public space surrounding the development, thereby creating safe, legible and walkable activation as part of its CBD streets and lanes network. The public domain architecture will contribute significantly to this objective.

Therefore, preventing potential anti-social and criminal behaviour within the public domain footprint and, more broadly, throughout the entire OSD, is critical. Assessing and mitigating crime risks by applying CPTED principles is the Report's mitigation focus and strategy.

Harris has considered, assessed, concluded and/or recommended architectural features of the public domain which could contribute to preventing anti-social and criminal behaviour throughout the footprint. The Report's structure and content assesses potential crime risks and risk levels against the International Risk Management Standard's generic framework.

This is a prestige development, whose stakeholders are committed to 'welcoming and safe place' outcomes for all built form and public domain elements. Applying cost-effective and practical CPTED principles, where relevant, to these elements, aims to enhance safe place outcomes.

The influence and impact of the OSD's neighbouring context in relation to possible anti-social and criminal behaviour 'targeting' people and property is addressed. Informing crime data adds weight to possible underlying contextual influences. Five CPTED principles are explained (defined) and applied to the OSD.

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

Depending on the referenced CPTED literature, principles are identified under differing headings. Harris identifies and applies five CPTED principles. Applied strategically to development design, the collective outcomes should contribute to crime prevention outcomes, achieved without compromising architectural creativity or integrity.

Principle 1 Territorial definitions – clarity about spatial identity, separation, boundaries and purposes;
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Principle 5 Target hardening – adding specific and robust architecture and technology.

The conclusions and recommendations following are extracted verbatim from the Report's analysis, commentary and conclusions in Section 11.

2. OSD STAKEHOLDERS

The following area considered key stakeholders in creating and sustaining crime prevention aims.

(i) The NSW Government – Sydney Metro;
(ii) Lendlease;
(iii) Owner-occupiers of the OSD's built form;
(iv) Providers of contractual and emergency services;
(v) Users of the public domain;
(vi) North Sydney Council, and
(vii) NSW Police.

While each of the stakeholders will have different community safety (security) expectations, their broad expectations are similar in that personal and property safety is a 'given' of the renewal objectives.

3. STRUCTURE OF THE REPORT

The Report's structure:

(i) summarises the scope, outcomes, our approach and the referenced International Security Risk Standard;

(ii) reviews informing State legislation, regulation, Council and NSW Police instruments;

(iii) references the Risk Management Standard to assess OSD crime risk levels;

(iv) reviews contextual crime risks which may have bearing on the OSD's crime prevention aims;

(v) considers CPTED principles and their application to the OSD, against assessed risks;

(vi) assesses and affirms CPTED elements in and around the footprint, likely to blend with CPTED elements proposed for the OSD;

(vii) recommends CPTED solution options likely to strengthen 'safe place' outcomes, and

(viii) ensures CPTED solutions comply with informing legislation, regulation and policy instruments.

There are four supporting Appendices.

Appendix 1	NSW Bureau of Crime Statistics and Research (BOCSAR) - reported crime statistics for North Sydney suburb for the five years 2014 to 2018.
Appendix 2	Terminology
Appendix 3	International Risk Management Standard ISO 31000:2009 – schematic
Appendix 4	The Influence of CPTED in Re-designing Public Spaces for Safe and 'Liveable' Activation
Appendix 5	Expanded Explanation of Crime Prevention as a Design and Management Strategy.

4. CONSULTANCY AIM, SCOPE AND OUTCOMES

4.1 Consultancy Aim and Scope

4.1.1 Aim

The consultancy's aim is to address potential crime risks and crime risk mitigation through design for the development's public domain. The developer's expression of this aim, is to create a 'welcoming-and-safe' environment, contributed by relevant design elements of the OSD.

Crime Prevention Through Environmental Design (CPTED) is an acknowledged theoretical and practical framework to guide those elements. The aim and scope are assessed against that framework.

4.1.2 Scope Rationale

An architectural response depends on assessed contextual anti-social or criminal behaviour risks to the development's stakeholder-users. These risks are mostly opportunistic, although planned and deliberate criminal intent cannot be ruled out.

The assessment is underpinned by the International Risk Management Standard ISO 31000: 2009 is the acknowledged framework for (crime) risk assessment and management. In assessing specific crime risks and their treatment (mitigation), Harris has referenced the Standard's guidelines.

4.1.3 The Scope

In fulfilling the scope, the Harris consultants:

(i) met with the design team to clarify (crime prevention) issues and/or risks likely to impact the OSD development's commercial, retail and public domain objectives;

(ii) physically inspected the site to better understand the contextual, inter-site and intra-site relationships including approach and access points, retail, the Station connectivity, adjacent streetscapes and neighbouring properties;

(iii) reviewed relevant discipline drawings in relation to access control for pedestrian, cyclist and vehicle entry and parking, lighting, landscaping, security of utilities infrastructure, loading dock, storage, waste removal and/or engineering design characteristics that may 'encourage' the reduction and/or prevention of crime;

(iv) referenced current contextual anti-social and criminal behavioural patterns or trends likely to impact the development;

(v) completed a CPTED report.

4.1.4 Outcomes

Outcomes should

(i) enhance the architectural integrity and client objectives of the OSD;

(ii) holistically protect all assets – people, property, systems and infrastructure;

(iii) reinforce implementation of site-wide CPTED design and management solutions;

(iv) meet the expectations of secondary stakeholders, e.g. insurers, auditors;

(v) comply with the requirements of Section 79C of the EPA Act and with requirements of the State Significant Development Application (SSD).

Ideally, CPTED outcomes should complement and/or reflect the Station's crime prevention strategies and those of North Sydney Council, hopefully to expand broader integrated crime prevention solutions.

5. CONSULTANCY METHOD AND RATIONALE

5.1 The Harris Consultancy Approach

The Harris approach to crime prevention design and management encourages the integration of CPTED and Crime Prevention Through Environmental Management (CPTEM).

Creating 'welcoming and safe' place is the design aim of CPTED. Maintaining safe place is the on-going crime risk strategic management aim; CPTEM.

Harris defines 'welcoming and safe 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 an overall community safety reputation'.*

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.

5.2 Notes

Note 1: We have introduced and recommended a CPTED + CPTEM strategy (Section 6). Our research, practitioner knowledge and experience has informed this approach. We are convinced that design (CPTED) and management (CPTEM) strategies are interdependently and inexorably linked. Often, they are not and, in circumstances where (security) design has been overlooked, traditional operational security management and technology are substituted. CPTED without CPTEM becomes a costly counterproductive exercise.

Note 2: In part, our CPTED assessment, conclusions and recommendations are informed by legislation, regulation, policies and protocols. These are addressed in Section 6.

5.3 Exclusions and Disclaimer

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

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.

6. INFORMING PLANNING AND POLICY INSTRUMENTS

6.1 Informing Instruments The NSW Government

The NSW Environmental Planning and Assessment (EPA) Act 1979 allows provision for instruments to regulate or codify issues pertaining to environmental impacts of (normally) large scale and modest developments. Security (crime prevention) is one of the "*impacts*" allowed for.

Section 79C (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*".

Section 79 (1) (b) adds: "…*the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality*".

Section 79 (1) (e) adds: "…*the public interest*".

The 2001 amendments to the Interpretive Guidelines for this Section state: "…*Crime prevention falls under these subsections of 79C. Councils have an obligation to ensure that a development provides safety and security to users and the community.*"

The legislation's interpretive Guidelines were issued in 2001. Part A of the Guidelines requires (of local Councils) a risk assessment on sites/footprints to be developed and Part B outlines CPTED principles. The guidelines are relevant for State Significant Developments.

A second informing state government instrument is the Condition of Consent document SSD—8874.

Section B7 states "*Future detailed development application(s) shall be accompanied by a Security and Crime Risk Assessment prepared in consultation with NSW Police having regard to NSW Police publication "Safe Places" Vehicle Management: A comprehensive guide for owners, operators and designers and Crime Prevention Through Environmental Design (CPTED) principles";* the instrument referred to in the Introduction.

6.2 Informing Instruments North Sydney Council

North Sydney Council does not refer to safer-by-design or CPTED strategies in its 'safe community' policies. However, Council's vision is to transform significant parts of the CBD to interconnected safe public domain precincts. The vision foreshadows significant pedestrian-welcoming liveability and walkability through street and lane renewal. There is a 10+ year strategy to achieve the vision which ….. "*seeks to ensure that future growth in the CBD is complemented by public spaces that improve vibrancy, safety, amenity, and appeal of the centre for workers, residents, students, visitors and investors.*" (North Sydney Place Book, 2018)

The vision creates …. "*a high quality, authentic main street that connects people with places, history, landmarks, greenspace, activity attractors and transport on an interesting leafy, granite paved boulevard. The public domain should also provide places to gather and facilitate the movement of large numbers of people. There was also strong support for quality, activated pedestrian links that may require road closures or traffic changes.*"
Miller and Berry Streets are early considerations for renewal. Both 'edge' the OSD and Station footprints.

"Significantly, part of Miller Street becomes Miller Place, a proposed interconnected space linked to the proposed OSD public domain. The impetus is …. "*The delivery of the Victoria Cross Metro Station by the NSW Government provides transformational infrastructure that will improve access to the CBD***."**

In our view, CPTED solutions for the OSD public domain should align with, and 'model' best-practice solutions for, the foreshadowed safe pedestrianisation of Council's broader vision. We recommend providing Council with a copy of this Report.

6.3 Informing Instruments NSW Police

North Shore Police Area Command (PAC) crime prevention officers concur with the BOCSAR data. Their PAC data indicates that crime rates in North Sydney are comparatively low. On week-ends there are the usual 'disturbances' around clubs and the nearby hotel. They can escalate into criminal activity mostly in the categories of assault, graffiti damage or motor vehicle offences. There are no CBD crime 'hot spots'. (Refer Section 9 for specific PAC contextual comments).

However, NSW Police have developed a Crime Prevention Through Environmental Design (or Safer-by-Design) Check List. Specialist officers undertake CPTED and crime risk audits when requested to ensure developments take the application of CPTED principles seriously. The Harris Report covers relevant points from the Check List.

6.4 Informing Instruments Bureau of Crime Statistics and Research (BOCSAR)

Appendix 1 provides reported crime rate and crime category data from the Bureau for the five years, 2014 to 2018. The data reveals no significant changes throughout that period. Crime rates and trends are relatively stable and low compared to other local government areas.

Council's Community Safety Plan cites comparative BOCSAR data. "*North Sydney is a comparatively safe place to live, work and visit. In comparison to other local government areas in metropolitan Sydney, and other parts of NSW, North Sydney ranks in the safest half of all councils on all but 8 of the 27 crime categories reported by BOCSAR.*" (Community Safety Plan 2014 – 2017)

6.5 Contributing Documents – NSW Police and Mecone

In November 2018, the North Shore PAC undertook a crime prevention assessment of the proposed Crows Nest OSD. Their report makes CPTED recommendations around the need to define territory, electronic surveillance, access restrictions, external lighting, landscaping and signage – all based on CPTED principles being applied to this OSD.

Mecone Sydney's CPTED Assessment Report, May 2018, was undertaken prior to the proposed OSD modifications. Their report also addressed interconnectivity aspects of the OSD-public domain and Station entrances, following the 2017 Critical State Significant Infrastructure (CSSI) approval for the OSD.

The Mecone report also outlines opportunities for CPTED principles to be applied to near-Station entrances, various entry levels to the OSD building, safe precinct pedestrianisation and 'target hardening' for vulnerable access points. Recommendations included attention to lighting, signage, potential concealment zones, natural and camera surveillance.

Both documents have been referenced in relation to our Report.

7. THE RISK MANAGEMENT STANDARD IN CONTEXT

7.1 The Standard

Predicting anti-social and crime risks, patterns and trends within and around the development is 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. (Appendix 3)

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

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

Harris has adapted and applied the Standard by defining (crime) risks within the **context,** assessing **risk levels** and affirming and/or recommending appropriate CPTED treatment.
The collective term '**risk**' has been more widely defined as: ...'*the likelihood of something untoward happening and the consequence(s) if one or more risks become threats or incidents*.'

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

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

7.2 The Standard and Crime Risk Levels in the OSD Context

CPTED solutions should 'match' the adapted Standard's risk levels and categorised behaviours. Recommendations and/or affirmation of architectural solutions are proposed against this backdrop.

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

From the Informing Instruments (Section 6), our observations and police consultations, each of the above risk levels may be applied to the OSD's built form and public domain footprints.

The same observations, informing documents and consultations, indicate that offences within the 'low' to 'medium' risk levels are the most likely (or usual) for this context. Of course, this does not preclude 'high' and 'extreme' level threats and incidents.

The status of underground rail infrastructure and rolling stock makes them high-risk targets. The nature and status of the OSD and the surrounding public domain, arguably less so. However, the CPTED and post-construction operational (security) measures should consider cost-effective solutions to mitigate all (crime) risks and levels.

It is worth noting that even low risk levels and offensive behaviours can have serious consequences if not addressed. Creating and sustaining the welcoming-and-safe-place' reputation should assume the possibility of all risk levels and their crime categories.

8. OSD CRIME RISK SUMMARY

The following crime risk summary aligns with the above assessed risk levels. Both inform the application of CPTED principles to the OSD footprint. There are contextual factors influencing the assessed risk levels and application of the five CPTED principles. (Section 9)
There may be other interpretations of determining risk levels and the crimes associated with those levels. This is the Harris interpretation.

(i) Low Level categories

street or public domain-based disturbances, intimidation, and aggressive behaviour towards individuals or groups; graffiti and other minor property damage to the public domain street furniture, fixtures, fittings, paving, luminaires, plantings and signage.

(ii) Medium Level categories

escalating threatening behaviour leading to physical or sexual assault within the public domain, along its 'edges', in and around the tower's perimeters or within the Station precinct; drug dealing;

theft from persons and/or damage to personal property; damage to, or destruction of, public domain structures, unauthorised access, internal and/or external building damage, theft of corporate or personal property;

theft and/or damage to and/or theft of personal or corporate property from buildings, vehicles and/or vehicle theft.

(iii) High Level categories

'medium level' crime risks escalated to intentional (planned) personal harm and /or damage to public domain property, building facades, structures and/or property including plant and associated utilities infrastructure; damage could include arson or explosives.

(iv) Extreme Level categories

immediate and dangerous threats to people and/or public domain property, buildings and contents, vehicles, the Station or nearby structures and/or infrastructure, including bomb threats and hostile vehicle penetration, causing injury or death to persons, damage to, or destruction of, property, again including infrastructure, from targeted terrorist-style attacks.

9. CONTEXTUAL FACTORS INFLUENCING CRIME RISKS

9.1 Current Context

There are reliable contextual predictors likely to influence the 'low' to 'medium' risks and categories of anti-social and/or criminal behaviours.

North Sydney's CBD is a dynamic mix of high-rise commercial, residential and retail buildings, 'edged' by schools, churches, hotels, clubs, pocket parks and sporting venues. Streets and (historic) laneways surrounding the OSD site are bustling with working week, day-time pedestrian and vehicle traffic.

The CBD is adequately served by rail and bus transport. North Sydney Station hosts numerous and popular retail outlets, popular throughout the day, but largely closed after hours. There is limited anti-social behaviour around Greenwood Plaza and the Greenwood Hotel is under continual police attention mainly on weekends.

We are advised that weekend and night-time circulation and activation around the CBD and in the Station walkways is sparse. Night-time pedestrian circulation and activation is mainly confined to eateries, formal dining outlets, club and hotel patronage, spread beyond the immediate CBD blocks.

Police and Council advice (Section 6), indicates that most CBD streets and laneways are deserted at night and there are seldom any reports of anti-social or criminal behaviour targeting people or property. Late night alcohol or drug 'fuelled' behaviour leading to or from the Station is relatively minor and, if reported receives prompt police attention. There are no identified crime 'hot spots'.

From a Council perspective, there are no serious community safety issues around the CBD. There are community safety precinct committees who have the 'pulse' of crime issues.

There are occasional 'transit' trouble-makers who travel to North Sydney from the City's west and south west. Apart from tagging of trains, there is little evidence of criminality from such 'visitors'.

9.2 Future Context

The OSD site will be part of Council's public domain strategy, CBD transport master plan and laneways master plan. The visionary transformation proposals are inviting new stakeholders – residential, commercial, retail, educational, transport and recreational.

This level of urban renewal will support a broad crime prevention agenda. Walkable, legible and permeable pedestrian spaces will combine with new built form to generate community and stakeholder stewardship. The positive crime mitigation impacts will be evident.

Our conclusion is that the immediate contexts, activation dynamics and visionary renewal surrounding the OSD site will positively impact crime mitigation strategies. The OSD site can only benefit from, and contribute to, this outcome.

The OSD, coupled with Council's CBD renewal vision, will significantly add to the proposed day-night economy. The envisaged 24/7 circulation and activation, together with a suite of mixed-use, including residential options, will ensure welcoming, safe and walkable 'place'.

9.3 OSD Vulnerability

The site is (crime) vulnerable for three reasons. The Station entrances, concourse, platforms, infrastructure and rolling stock could be a 'high' to 'extreme' risk target, (refer Section 8).

The tower itself is a prestige building and is a crime risk target because of its 'status' and because it is new. In our experience, high-value developments become a 'challenge' to criminal elements, anxious to 'test' any access or systems weaknesses; how easy is the site to breach, cause property damage and/or harm occupants. (CPTED Principle 5 is relevant.)

10. CPTED – CPTEM DEFINITIONS AND PRINCIPLES

10.1 CPTED and CPTEM

It remains our long-held view that CPTED should not be applied in isolation. Crime prevention design measures must be managed (CPTEM) by persons who understand, and have awareness training in, what, how, when, where and why CPTED principles are being applied to different zones of the OSD precinct. (footprint).

CPTED addresses whole-of-site crime prevention design elements. CPTEM addresses the longer-term crime risk management, and CPTED maintenance, elements. CPTEM's implementation is the corollary of, and support for, CPTED solutions, thereby ensuring 'safe place' longevity.

Appendix 3 outlines the historic influence of CPTED in safe public domain (open space) design.

10.2 CPTED

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

Depending on the referenced CPTED literature, principles are identified under differing headings. 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.

We reinforce our view is that there is little point in designing-out-crime for the OSD unless that design is managed, maintained and evaluated against current and newly emerging risks. CPTEM encourages community and stakeholder understanding of the introduced CPTED measures, so that crime prevention (zero tolerance) ownership-stewardship of the Oval will be informal but intentional.

10.3 CPTEM

The five Harris identified 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, recording and reviewing;
Principle 5 New Crime Risks and Outcome Evaluation - impact of CPTED and CPTEM strategies.

In our view if CPTEM is delayed or ignored, CPTED's value could be seriously compromised. 'Safe place' reputational outcomes, including marketability and stakeholder duty-of-care must be sustained by intentional management.

CPTEM may fail if it is not approached strategically and responsibly. In worst cases, ad hoc and/or intermittent attention to CPTEM can negate CPTED's effectiveness and can leave owner-occupiers exposed to litigation in the event of threats or incidents occurring on any part of the OSD's footprint. We cannot overstate the obvious – the OSD and Metro developments are high value, high status and high (crime) risk projects; hence our CPTED + CPTEM recommendations.

Each (CPTEM) principle is interlinked. It is particularly important to be clear about security policies and procedures, strictly controlling access to buildings and associated infrastructure spaces, maintaining the perimeter as defined and 'controlling' that definition, managing and monitoring vehicle parking and ensuring security systems are fully operational.

Appendix 5 expands on the CPTED and CPTEM definitions.

11. THE CPTED CRIME RISK MITIGATION RESPONSES: PRINCIPLES, APPLICATIONS, CONCLUSIONS AND RECOMMENDATIONS

As with our other CPTED-focussed reports in this process, this report provides rationale for the application of CPTED principles to the scope and the explanation for that rationale.

All five principles are explained and applied to each of the site zones. Applications of proposed architecture and/or engineering have been reviewed and have either been *affirmed* or *recommendations* made to enhance CPTED outcomes.

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

The relevant headings are:

- **Explanation –** of principles and their relevance to the overall CPTED objectives,
- **Application –** of principles based on our assessment of drawing element relevance,
- **Conclusions –** as to the design elements likely to enhance crime prevention objectives and outcomes.
- **Recommendations** – affirming CPTED applications or recommending alternatives for design development consideration.

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

11.1 CPTED Principle 1 Territorial Definitions

11.1.1 Explanation

Defining territory boundaries, spatial separation and purposes are the elements of this first CPTED principle. Knowing (identifying) territorial sub-spaces, for example, buildings and uses, retail, commercial or social gathering spaces, pedestrian and vehicle access etc. encourages destination awareness and certainty, removing confusion of purpose and function.

Territorial confusion leads to circulation vulnerability, attracting opportunistic crime.
Territorial 'reinforcement' lessens vulnerability, heightening location and destination certainty.

Certainty increases safe purpose and legitimate user 'knowledge'. This heightens stakeholder and user awareness of, and/or alertness to, potential anti-social or criminal activity targeting these spaces.

11.1.2 Application – The OSD Footprint

There are four significant territorial zones – site perimeters, Station entrances, public domain, retail and functional building purposes and spaces; specifically, vehicle parking, ground plane entrances and location of infrastructure. CPTED architecture can assist in determining the crime risk level outcomes in these zones.

The aim is to create and sustain the 'low' crime risks for the categories outlined in Section 8. CPTED definitional strengths are foundational to effectiveness of the other four principles.

(i) Site Perimeters

The site's perimeter is defined by its streetscapes, neighbouring buildings vehicle and pedestrian entry points and landscaping. The perimeter edge points along Denison, Miller and Berry Streets are defined by building facades and off-street recesses cum set-backs, none of which create circulation uncertainty or vulnerability.

(ii) Station Access and Connectivity

Reviewed DA drawings (Revision 1.0) indicate approach and access-egress points from Miller and Denison Streets are readily identifiable. The approaches can be 'sight lined' from public domain or street edges. "*To create a more welcoming and intuitive environment, our design features a triple-height concourse illuminated by daylight, where connections to the public domain are visible from outside the gate line. Escalators to Miller and Denison streets align with their street-level orientations and lifts are rotated to align with the customer journey, creating greater legibility and increasing station efficiency.*" (BATESMART – Architectural Elements 2019)

The alternative Station access points indicate way-finding signage, directing commuters via distinctive 'billboard' style lettering. Miller Street offers the most prominent Station territorial recognition. The Street and the through site link are 'hub' Station locations.

The north entrance provides signage certainty with direct street interface. "*At ground level, a wall of windows delivers views to the street, increasing safety and security within the lift lobby.*" Revisions have increased activation between the Station and the street, with the aim of making the entrance more appealing and more easily identified.

From a definitional perspective, the north entrance design drawings propose a "*welcoming station plaza with increased activation between the station and the street is created with ticketing facilities located on the facade of the building, also limiting obstructions to the gate line and increasing human contact and*

safety. Adding a storey above the station entrance and two levels of fenestration enables a visual link to bicycle parking and the lift lobby, enhancing safety. A sweeping awning provides continuous street edge weather protection." (BATESMART op cit)

Defined safe territory is impacted by weather. The Station entrances minimise purposeful wayfinding through extensive use of awning architecture.

Sydney Metro has ensured the approaches and access into the Station ticketing, concourse and platforms promote location certainty. Their security arrangements beyond entrances are assumed and will complement above-ground (OSD) CPTED initiatives.

In CPTED terms, Station markers and cues invite design legibility and tactility. There will be continuous day time circulation and activation towards the Station. Unlike North Sydney Station, the OSD and adjacent planned developments, encouraging high rise residential take-up, will increase night-time circulation, not just to and from the Station, but to and from retail, building entrances and pocket social gathering spaces between buildings and within the public domain.

(iii) Public Domain Identify and Connectivity

The intra and inter-connective spaces are designed to locate and define circulation options, encouraging activity legitimacy. While there is a 'through' element to built form destinations, attractive landscaping, paving, grassed areas and retail shop fronts will become welcoming 'to' spaces.

The CPTED principles of surveillance and activity support should underpin landscaping, furniture and lighting design to ensure the safe (certain) 'through' and 'to' outcomes. The though-site link adds to informal but purposeful circulation legibility and walkability to and from Miller Street.

Precinct exploration and navigation within each of the public domain spaces is encourage by building façade edging. The concept provides certainty on approach to each domain space. There is no confusion as to location, spatial separation or domain purposes. Further certainty is assured through clearly identifiable entry statements of edge retail and seating spaces. There is an evident safe circulation seamlessness.

The public domain 'stay' points encourage safe social pausing along pocket green spaces. Together with attractive clearly defined circulation paths, both will create casual passive activity conducive to natural surveillance objectives (Principle 2)

(iv) Retail Definition and Building Connectivity

Ground plane and upper level retail locations become 'through' and 'to' attractors. They are integral to the location certainty and stewardship outcomes of interconnected activation. While tenancies are pending, the retail space design advantages (a) will increase informal observation (surveillance) and (b) deter potential offenders from opportunistic targeting because of observational and stewardship (space ownership) commitments.

Ground plane retail property is more vulnerable to damage and theft. In addition, Anti-social behaviour, including intimidation is more prevalent at ground plane activation. Drawings locate and appropriately define ground plane tenancies, upper level retail, and commercial offices, create additional access challenges for potential offenders, hence the need for careful and purposeful definition.

The interface of retail with the Station, ground and upper level office and commercial tenancy ingress-egress enhances legitimate circulation.

(v) Public Amenities

At ground, above ground and below ground public amenities are clearly identified. Design detail should ensure that, where possible toilet entrances should specify 'door-less' ingress-egress. (Individual toilet

cubicles within the Station precinct are the alternative option). Door-less designs minimise opportunities for concealment and entrapment. The design also facilitates rapid entry-exit in emergencies.

The more vulnerable approaches to amenities will require enhanced lighting, signage and IP Network surveillance and/or alarm (help) technology to enhance identification in the event of intimidating or targeted criminal behaviour in these spaces. (Refer CPTED Principles 4 and 5)

(vi) Tower Ingress and Egress

Tower basement, ground mezzanine and podium sky lobby access points are all clearly defined, as are their respective approaches. Public access to retail and commercial offices via escalators and lifts are appropriately located to promote safe approach circulation.

We concur with Mecone Sydney's summary: "*The OSD uses (lobby and retail) are clearly defined by their use of separate entries, which are distinct from the station uses. This clear delineation between OSD and non-OSD space will provide strong territorial cues to users*."

(vii) Vehicle Ingress and Egress

From a crime risk and crime prevention perspective, it is essential that all vehicle parking provide:

- approach visibility;
- easy and safe ingress and egress to avoid any way-finding uncertainty or confusion;
- safe internal legibility and circulation;
- circulation which, through design, deters anti-social and/or criminal activity, and
- an overall perception of day and night personal and vehicle security, through appropriate lighting, signage, visibility to, and connection with, lift lobbies.

Reviewed drawings confirm the above design criteria.

(viii) Utilities Infrastructure

Defining and securing all utilities infrastructure within throughout the OSD is a critical collective measure. Drawings indicate all infrastructure is secured internally with designated plant rooms, risers, tunnels and shafts appear to be appropriately located to prevent unauthorised access and tampering. Plant infrastructure is also located throughout the tower on designated floors. Unauthorised access to these (secured) spaces is a low-level risk. Nonetheless, legitimate access-vigilance is critical.

We have been advised that Fire and Rescue NSW have requested the provision of hydrant booster pumps for the OSD on Miller Street. These should also be enclosed and secured.

In our experience, gas and water mains including hydrants are increasingly becoming target opportunities.

(ix) Waste and General Storage

The OSD has a waste 'master plan' with coordinated loading and unloading facilities, general and waste storage allocated to designated levels and spaces. It is imperative that all waste storage be in enclosed rooms, rather than enclosed (open) space. Storage rooms should feature eye-level toughened clear glass panels to promote sight line certainty into and out of the room.

Waste storage rooms should be 'ordered' and kept free of clutter. Surveillance cameras should cover these zones, especially at the point of final collection. We are assuming that fire detection and suppression systems are being specified where practicable as, in our experience, even enclosed (secured) waste in bins and/or on storage pallets can be subjected to spontaneous, (accidental) or deliberately targeted damage including arson.

Attempted unauthorised access to these spaces cannot be discounted, especially when contractors or appropriate staff are entering to deposit or collect sensitive or general waste.

CPTED Principle 1 Conclusions and/or Recommendations

The OSD perimeters are unmistakable. There is no confusion as to available from-perimeter access and circulation options.

Definitions and location of built form, Station and other built form approaches, entrances and exits are clearly delineated in design development drawings.

Spatial separation and purposes combine to maximise safe causal connectivity and site circulation 'control'. There is location and identification certainty (clarity) of built form and public domain intra-connectivity. Station and tower approaches, vehicle ingress portals, streetscape design and the public domain legibility, minimise the potential for opportunistic and/or targeted anti-social behaviour or criminal intent.

Definitional precision regarding spatial relationships and purposes will be strengthened as design development of external lighting, landscaping and signage is considered. (Refer CPTED Principle 4.)

There is no apparent internal or external form or function confusion. Intra-site and intra-building clarity reinforces safe pedestrian connectivity and circulation.

11.2 CPTED Principle 2 Natural Surveillance

11.2.1 Explanation

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

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, for example landscaping, street furniture and external lighting, promotes natural surveillance from stakeholder/users along the streetscapes, from offices, vehicles, retail and mid to high rise dwellings. CPTED architecture should encourage sightlines and visual reference points in both contexts.

11.2.2 Application – Whole-of-Site Surveillance

In our view, the entire site promotes natural surveillance. Circulation, activation and legible sight lines are the positive contributing factors. There are heightened ground level surveillance points, in and around the Station entrances, at tower lobbies, at car park approaches and entrances, throughout the public domain, in and around retail outlets and along the streetscapes.

We agree with Mecone's observations: "*Effective natural surveillance in these locations can be achieved through the use of extensive glazing to the facades and lighting of the building and its surrounds appropriate*

to the design and users. These active, glazed areas will create an ideal environment for people to be engaged in their normal behaviour while observing the space around them, creating natural community policing of the area."

Upper level retail and commercial levels afford appropriate surveillance to mid and ground level activity from windows, outdoor and indoor eateries, lift lobbies and stairs.

Proximate and distant sightlines (natural) surveillance characterise edge and approach surveillance options to the site along Miller, Denison and Berry Streets.

The aim is to encourage 'eyes and ears' awareness of the usual and unusual. While there will be staff and contract security presence augmented by technical (camera) surveillance, the value of informal participant-user surveillance is (should be) acknowledged and promoted as an essential crime prevention element throughout critical public access points within the tower, to and from the Station and throughout the public domain.

Sightline gaps, especially at night, can increase risk levels. Lighting and activation are key to eliminating these gaps. IP Network installations will augment surveillance effectiveness (CPTED principle 5). These however should be part of a coordinated Metro, tenancy and Council strategy.

While tower foyers facilitate observation to and into various building entrances., it is essential that internal sightlines within key crime risk spaces be 'preserved', for example, in and around plant and storage facilities and throughout basement and above-ground car park layouts.

CPTED Principle 2 Conclusions and/or Recommendations

The definitional identity, clarity and legibility of the ground plane, basement and upper levels of the Station approaches, perimeter, public domain, vehicle parking and pedestrian tower entrances, affords appropriate passive surveillance options in and around those spaces.

Drawings foreshadow clear proximate and distant sightlines along each street perimeter. Appropriate landscaping and lighting will afford adequate perimeter surveillance along, in and around Miller, Denison and Berry Streets.

Effective natural surveillance is expressed through adequate sightlines in and around the public domain, including the through-site link. The more vulnerable tower, retail entry spaces, car parks, public amenities approaches, loading dock and utilities infrastructure will require IP surveillance technology, signage and lighting (Principles 4 and 5) to reduce the temptation to entrap, to deface, to steal property and otherwise damage the buildings or other built form. These elements will be addressed in later design development.

11.3 CPTED Principle 3 Access Control

11.3.1 Explanation

Access control is a consequential extension of defining territory (Principle 1) and natural surveillance (Principle 2). Open and/or restricted access must be (a) readily identified through the appropriate access architecture, electronic and mechanical furniture and (b) able to prevent and/or identify unauthorised access through the same means.

11.3.2 Application – The OSD Footprint

Controlling access to communal, semi-private and private zones is, in part, determined by the effectiveness of territorial definition and surveillance. Design development should ensure that there are no 'gaps' in CPTED design and none in the management of controlled spaces. (CPTEM). Often the latter raises crime risk levels to 'medium', 'high' and/or 'extreme' when electronic locking systems fail, when tenants and contractors fail to follow checking or monitoring procedures when entering controlled spaces.

Drawings indicate that proposals to adequately control access will take account of potential crime risks where design specifications include compromise options. The prestige of this development must include coordinated physical barriers, mechanical and electronic access control strategy, so that owner occupiers of the tower, contractors and retail tenants are as one in an awareness of how chosen control mechanisms interface.

The consequences of failing to monitor and manage mechanism and system interconnectivity will significantly increase crime risk levels. Opportunistic and planned criminal intent cannot be allowed to 'penetrate' any part of the OSD.

The OSD towers will house prestige commercial tenants. The tenants only will have access to the car parks. It is therefore important to ensure there be vehicle monitoring into the car parks.

Design development should express the following.

(i) There should be absolute clarity of who has access to each controlled and secure space;

(ii) There should be no compromises to controlling pre-access validation, access monitoring and camera surveillance of activities on approaches to, and/or activities within, secured loading spaces, utilities and communications infrastructure;

(iii) Our recommendation is to install split entry and exit roller doors which open on demand, to mitigate the risks of unauthorised vehicle entry or hostile vehicle penetration. We understand that boom gates are the barriers for access control by day. Roller doors will be operational after hours. Harris has been advised that Sydney Metro will manage the design of building entry in relation to potential risks associated with all forms of unauthorised entry.

Additional security could include number plate recognition technology at the entrances for registered authorised vehicles. Camera surveillance at the car park entrances and throughout the car parks should be a minimum requirement.

(iv) There should be controlled access for all back-of-house moveable plant and equipment storage;

(v) Strict access control of the loading docks and waste removal areas is essential, including doorways and corridors leading to and from drop-off points;

(vi) Throughout access controlled areas, coordinated signage, lighting and surveillance cameras should support all physical, mechanical, electronic and spatial access indicators. (Principles 4 and 5)

11.3.3 After-Hours Public Access

After-hours access should be restricted to designated ground plane and upper-level retail entrances. This will focus human and technical monitoring of authorised circulation.

CPTED Principle 3 Conclusions and/or Recommendations

The nature and purposes of the site have the potential for one or more of the identified crime risks and risk levels to escalate. Risks can become threats or incidents where access control design or management compromises occur. Design development therefore requires coordinated multi-risk mitigation access control measures.

Drawings indicate intentional separation of 'unrestricted' and 'restricted' circulation throughout the public domain, Station forecourt and built form spaces. We reiterate that controlled access through (CPTED) design, be supported by strict access management of the many identified vulnerable OSD spaces.

11.4 CPTED Principle 4 Activity Support

11.4.1 Explanation

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

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

  Differential lighting should avoid cross-over colour (temperature) clashes, maximising sightline legibility, to facilitate proximate-distant way-finding and the capacity to enhance surveillance identification of property and people.

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

- *Signage* supports way-finding and destination certainty, access limiting (controlling), warning and emergency awareness. Signage should have maximum day-night visual impact (including international pictorial signage). It should limit text and, ideally, should not be 'housed' (displayed) as high or wide column-pylon structures which can facilitate concealment or entrapment.

11.4.2 Application – The OSD Footprint

While coordinated internal and external application of the three measures is required, the focus is mainly on external spaces. Appropriate lighting, landscaping and signing of the site's walkable, informal gathering and outdoor recreation zones will add to the redevelopment's safe day-night activation objectives.

11.4.2.1 External and Internal Lighting

External lighting consistency is a critical 'support' for night-time 'welcoming and safe place' activation. (Too often, inconsistent lighting characteristics - colour rendition, luminaire types, illuminance, throw, spill and wash - create conditions of uncertainty at best, or confusion at worst. Shadowing or lighting clashes may therefore compromise surveillance or way-finding effectiveness.)

All external lighting will be implemented in accordance with relevant Standards. However, these Standards are a minimum requirement and CPTED seeks a Standards + approach to maximise way-finding certainty and general night-time legibility. Lighting 'corridors' should be the aim.

From a CPTED perspective, the site's lighting specifications should (ideally) blend with adjacent roadway lighting, particularly in relation to perimeter lighting along Miller, Denison and Berry Streets, spill lighting from retail and at high illumination spaces at Station entrances. The aim is to avoid colour inconsistencies (clashes). We acknowledge that this challenge will be resolved during design development, in conjunction with Council's street lighting policy.

External lighting will play a critical role in aesthetically 'wrapping' or washing the OSD perimeter, including where practicable, building facades; thereby eliminated dark perimeter gaps.

We recognise the importance of 'welcoming' lighting simultaneously creating safe circulation and activation through and to various public domain destinations, to informal pocket gathering spaces and alfresco cafes require combination 'corridor' pathway and decorative luminaires.

Way-finding lighting, tower entrances, the Station approaches and car parking entrances should specify consistent colour (temperature) incorporating luminaire styles that provide appropriate beam angles, throw, wash and spill of illumination. LED lighting is assumed and we suggest (+ -) 4000 Kelvin, as the most appropriate colour temperature to maximise proximate and distant observation (surveillance) and, where necessary, identification.

We are also of the view that the use of bollard and other forms of up lighting or low height spherical luminaires throughout all outdoor spaces should be avoided. They create glare and tend to interrupt sightline or way-finding certainty, Bollards are also prone to damage and can often be 'buried' by mid height plantings, should these be specified.

Additional lux levels should be considered at vulnerable access points – loading docks, building and basement lift lobbies.

As with external lighting, car park illumination should exceed minimum (Standard) lux levels and the layout should maximise sightline coverage to all corners of the parking and lift lobby zones. Highlighting disabled parking spaces and emergency exits is recommended. To increase illuminance, it is a general CPTED recommendation to paint walls and/or ceilings white.

11.4.2.2 Landscaping

Landscaping will define the attractiveness and safety of the public domain. We note planting mix including mature trees, grassed areas, shrubs and possibly raised planter boxes. From a surveillance perspective, under-canopies should provide sightline 'clearances'.

The informal gathering pockets will benefit from varietal plantings to identify and attract safe use of those spaces.

The main CPTED concerns relate to the height and density of shrub and boxed plantings in and around facades and/or at the approaches of, or alongside building walls.

It is important that landscaping promote sightlines and limit opportunities for concealment, both of which should be possible given the levels of day and night pedestrian flow and the varied planting options to promote safe way-finding and 'arrival' points.

Unfortunately, one of the more extreme risks relate to the dealing of drugs and the intention to cause maximum harm or property damage, especially in crowded spaces. (refer Section 8). Should above ground boxed or 'contained' plantings be considered, to avoid secreting drugs, other suspicious packages or potentially explosive devices in planter boxes, wire mesh might be placed at minimal depth below mulch both as a deterrent and detector of potential criminality.

This recommendation may seem extreme. However, given the 'high risk' and 'high consequences' categories, it is a smart and cost-effective risk mitigation practice.

11.4.2.3 Signage

The OSD will likely specify five types of *signage* - way-finding, destination, access limiting (controlling), warning and emergency. Therefore, all signage within and adjacent to the built form envelopes, should advise, notify, identify, guide, direct, clarify and challenge pedestrians and service/contractor vehicle drivers as to direction, location and access legitimacy. This includes all public domain spaces.

Signs should be colour coordinated, legible and visually 'readable' to cater for human height differences and should be disability inclusive. International pictorial signage is preferred. Regular users of the spaces will soon become familiar with signs and their purposes. Casual, or first-time visitors to the site, will find visually attractive orientation signage less confusing.

Harris favours interpretive signage 'fixed' at eye level, rather than column or pylon signage where text is dominant. However, we acknowledge that there are Council and Sydney Metro signage protocols in place, so alternatives may not be possible.

Emergency (including fire and exit) signage is subject to codified compliance. In addition to codified signs, consideration should be given to locating a series of 'help' or assistance signs which could incorporate appropriate contact technology.

Help points (under camera surveillance) provide a level of reassurance where people feel, or are, vulnerable, for example near car park lift lobbies. They may also act as a deterrent against anti-social or criminal behaviour. (Refer Principle 5). For 24/7 response coverage, security officers should be able to receive CCTV and help point calls on a Smart Phone or similar device.

CPTED Principle 4 Conclusions and/or Recommendations

External lighting, landscaping and signage treatments for the OSD's external and internal way-finding and informal gathering spaces must reflect the vulnerability of (a) high pedestrian traffic to and through those spaces, generated simultaneously by varied circulation and activation purposes – Station, retail, public domain and tower access, interconnectivity with neighbouring streets, lanes and adjacent or nearby buildings.

Inter-disciplinary coordination of these three 'support elements' is essential to enhance the overall safety (security) of the OSD 'welcoming-and-safe-place' objectives. These elements will form part of future design development.

11.5 CPTED Principle 5 Target Hardening

11.5.1 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 and operational 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. For example, intruder detection alarms or surveillance cameras are the more common target hardening measures. However, the principle's design goal is to avoid place 'fortressing'.

11.5.2 Application – Strengthening OSD Site Safety

Target hardening measures involve strengthening vulnerable spaces; specifically, loading dock and waste storage areas, approaches to public amenities, utilities and plant infrastructure, parking and non-glazed building facades. The aim is to reinforce 'welcoming and safe place' as a the 'norm' for all stakeholder users.

11.5.2.1 IP Network Surveillance Installations

Determining surveillance camera locations is ultimately a client matter. From our perspective we are cautious about 'blanketing' the site; rather we are recommending coverage of the most vulnerable and risk prone spaces; referred to in Principles 1, 2 and 3 above.

There is an independent Sydney Metro IP Network surveillance strategy for the Station development. A separate surveillance strategy is recommended throughout the public domain.

We reemphasise the vulnerability and crime risk areas of waste storage and loading zones, recommending additional surveillance and/or access control technology to 'capture' trucking (and pedestrian) activity. Loading dock and waste removal zones are criminal target opportunities and it is advisable to take extra precautions even though drawings and assurances indicate strictly controlled access.

11.5.2.2 Hostile Vehicles

A current 'extreme' crime risk is the possibility of a hostile vehicle attack, targeting the Station forecourt-entrances, building perimeters, vehicle entry ramps and the public domain. Vehicles can be used as a weapon, posing extreme danger to people and property in crowded places, that is spaces occupied by a critical mass of people at particular high-traffic times, with the aim of causing mass casualties and damage.

There are well-researched architectural and engineering solutions to prevent or mitigate such attacks, including retractable bollards, concrete barriers and the more aesthetically acceptable sculptured rock (sandstone) formations or 'bolted' planter boxes. There are creative options combining one or more solutions, for example non-retractable bollards secured within, and hidden by, planter boxes. Installations must take account of emergency vehicle access.

11.5.2.3 Public Domain Furniture and Fittings

Furniture and fittings should reflect one or both of the following. One CPTED argument recommends that all outdoor (public domain) tables and seating should be of robust design and 'anchored' to each desired location. The aim is to prevent structural damage and stop (loose) furniture being used to threaten, or actually assault, persons. The converse argument is to design 'softer' and moveable furniture to lessen the chances of successful assaults. The counter acknowledges that even less robust furniture can become a weapon. Design development should consider the arguments and design options.

11.5.2.4 Help Points

Given the usage scope, it is advisable to install help points and/or duress alarms in all car park lift lobbies and at more distant ends of the larger parking layouts.

This recommendation addresses the following scenarios (i) the possibility of breaching access control measures and (ii) the (remote) possibility of harassment, intimidation or assaults by persons with access privileges.

Specifying help points and /or duress alarms at 'end-of-trip' facilities, located on B2, is also recommended.

We reinforce the need for surveillance cameras to cover vulnerable car park and lift lobby spaces.

11.5.2.5 Building Facades

Where practicable, we recommend coating non-glazed facades with the latest anti-graffiti materials, to minimise the likelihood of defacing and other damage. Monitoring and management of facades, including camera surveillance, will assist in limiting and/or detecting graffiti tagging.

11.5.2.6 Security Office Location

It is important to locate any proposed security office in a prominent ground plane position and/or at the Sky Lobby. The office should be visible with appropriate signage in keeping with the surrounding signage architecture. There are three aims: (a) to deter, (b) to obtain assistance or way-finding help and (c) to create awareness of a security staff presence. The following points are relevant.

- In prestige developments there is always a tension between available real estate for security purposes and pressures for maximising real estate for commercial purposes. For the reasons outlined below and from our experience, visible security prominence in and around forecourts, entrances, high activation/prestigious public domain, is in our professional opinion, essential. Therefore, from a crime prevention and risk management perspective, a 'ground plane' office and visual presence is recommended. While the natural and technical surveillance are both designed to deter anti-social and criminal behaviour, both can only observe, report and/or view such behaviour during and after the fact.
- A visible and welcoming security office and staff are a 'go to' for information, way-finding and other forms of assistance.
- A ground plane security office and staff are an added layer of observation and deterrence.
- The office décor and staff attire should present a professional image. In-house or contract staff should have an intimate knowledge of the site and its surrounding context.
- Security staff should carry a 'smart' device for accessing camera images and responding to help point communications while on patrol.
- Security staff should be trained and recruited for multi-tasking, for example, responding to incidents, providing information, observation skills and equipment use capability, all consistent with the prestigious nature of the OSD and associated public domain.

CPTED Principle 5 Conclusions and/or Recommendations

Target hardening treatment of the most vulnerable spaces should include high lux level, directional (4000K) lighting, help – alarm points, surveillance camera coverage and anti-graffiti coatings.

Camera surveillance, public domain furniture design, help points, anti-graffiti façade protection and (desirably) the location of a high visibility security office, are all practical 'target hardening' measures recommended for relevant whole-of-site application, to 'strengthen' CPTED principles 1 to 4.

Serious design consideration should be given to preventing hostile vehicle penetration, likely to target the more vulnerable open spaces, particularly: (a) public domain and Station forecourt spaces, (b) basement car park approaches and (c) building facades fronting street edges.

Treatments need not be 'invasive'. We believe that design development drawings can specify combination solutions without creating a sense of fortressing.

12. CPTEM PRINCIPLES AND EXPLANATIONS

Harris has identified five CPTEM principles. We have not suggested any applications of the principles in this context as this is not the report's focus. The explanations below are the suggested 'triggers' for consideration and implementation, once the OSD becomes operational. We are reinforcing an holistic CPTED-CPTEM strategy.

12.1 CPTEM Principle 1 Design Maintenance

Explanation

Most CPTED initiatives require regular maintenance, testing, repair and/or replacement. Lights, signs, landscaping, window, door and outdoor furniture, fencing and gates should receive scheduled maintenance to ensure design integrity and purpose.

12.2 CPTEM Principle 2 Systems Management

Explanation

This involves the management of security technology systems as they integrate with fire and emergency systems to ensure holistic security and safety operational readiness, to affirm (design) capability and integrity. This includes electronic locking, alarm and IP Network surveillance camera systems. Each requires scheduled testing for reliability, obsolescence, redundancy, replacement and/or re-alignment.

12.3 CPTEM Principle 3 Policies and Procedures

Explanation

In a stewardship environment, all stakeholders should understand their respective policies and procedures related to preventing crime (security). Site owner-operators should accept responsibility for tenant, resident and, where necessary 'visitor' and contractor awareness training to follow a consistent approach to policies and security (crime prevention) procedures.

It is the responsibility of all site managers and operators to ensure compliance, through individual or team supervisors, so that all staff and occupants consistently apply procedures as they would other procedures (policies or practices).

There should be general stakeholder awareness of crime risks, how those risks are best managed and by whom. Council and the local police can assist stakeholders in conducting crime risk and crime prevention (security) awareness seminars. They and/or specialist security consultants can also assist in the development of policies and procedures.

12.4 CPTEM Principle 4 Threats and Incidents

Explanation

Knowing how to identify and respond to anti-social and crime threats and incidents is also critical. Security and/or facilities managers should develop and 'rehearse' responses covering the most common major or minor categories. Incident recording and reporting should be (i) factual, (ii) relevant, (iii) accurate, (iv) clear, and (v) complete.

12.5 CPTEM Principle 5 New Crime Risks and Outcome Evaluation

Explanation

Implementation of CPTEM and CPTED requires on-going reviews of crime risks and regular evaluation; to 'test' the relevance, cost-effectiveness and value (real and perceived) of both strategies to better 'model', replicate and/or improve future design and management outcomes.

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13. REFERENCES

BATESSMART, COX, et al, Architectural Drawings, Revision 1.0, 31st May 2019,

BATESSMART, COX, et al, General Arrangements Plan, Revision 1.0, 31st May 2019,

BATESSMART, COX, et al, Victoria Cross Station, OSD, 'For Tender' Revision 1.0, 31st May 2019,

Brammer M, Jan Gehl on *The Global Need for Liveable Cities*, 2015,

Brantingham P.L and Brantingham P.J, *Environmental Criminology,* Sage, 1991,

Kennedy D, *Architectural concerns regarding security and premises liability*, Journal of Architectural Planning and Research, Vol 10 No 2, 1993,

Jae Seung Lee, Sungjin Park, and Sanghoon Jung, *Effect of Crime Prevention through Environmental Design (CPTED) Measures on Active Living and Fear of Crime*, MDPI (Multidisciplinary Digital Publishing Institute),

Liggett R, Protecting Against Transit Crime: The Importance of the Built Environment, Journal of Environmental Psychology, Vo 13, 2004,

Mecone Sydney, Crime Prevention Through Environmental Design Report, Victoria Cross Station and OSD, 2018,

North Sydney Council, Community Safety Plan 2014-2017,

North Sydney Council; North Sydney Place Book Stage 1 – Public S[aces Vision, October 2018,

NSW Bureau of Crime Statistics and Research, Crime Statistics for the suburbs of Concord and Burwood NSW,2014 - 2018,

NSW North Shore Police Area Command, Crime Prevention Report for Crows Nest OSD, 2018,

NSW Department of Planning and Environment, *Crime Prevention and the Assessment of Development Applications: Guidelines under Section 79C of the Environmental Planning and Assessment Act, 1979,* April 2001,

State Significant Development Concept (SSD–1024 and SSD-8874*)* for Sydney Metro Victoria Cross OSD, Section B7, December 2018.

APPENDIX 1 CRIME STATISTICS

The crime statistics below from the NSW Bureau of Crime Statistics and Research (BOCSAR) are indicative of *reported* criminal activity from 2014 to 2018 for North Sydney suburb. Note the increases in drug offences and the decrease in malicious damage to property.

NSW Crime Statistics January 2014 to December 2018 North Sydney (Suburb)											
	5 Year Trend to December 2018	Year to Dec 2014 Count	Year to Dec 2014 Rate	Year to Dec 2015 Count	Year to Dec 2015 Rate	Year to Dec 2016 Count	Year to Dec 2016 Rate	Year to Dec 2017 Count	Year to Dec 2017 Rate	Year to Dec 2018 Count	Year to Dec 2018 Rate
Homicide	n.c.	0	0	0	0	0	0	0	0	0	0
Assault - domestic	n.c.	19	243	18	224	24	290.9	19	230.3	26	315.2
Assault - non Domestic	Stable	31	396.5	40	497.8	52	630.4	62	751.6	40	484.9
Sexual offences	n.c.	16	204.7	14	174.2	12	145.5	19	230.3	13	157.6
Indecent assault, act of indecency and other sexual offences	n.c.	11	140.7	11	136.9	11	133.3	14	169.7	6	72.7
Robbery without weapon	n.c.	5	64	0	0	3	36.4	3	36.4	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.	1	12.8	1	12.4	0	0	2	24.2	1	12.1
Intimidation , stalking & harassment	Stable	39	498.8	22	273.8	32	387.9	34	412.2	31	375.8
Other offences against the person	n.c.	3	38.4	2	24.9	3	36.4	1	12.1	0	0
Break & enter dwelling	n.c.	25	319.8	19	236.4	15	181.8	8	97	30	363.7
Break & enter non dwelling	n.c.	27	345.4	13	161.8	25	303.1	11	133.3	21	254.6
Motor vehicle theft	n.c.	6	76.7	3	37.3	4	48.5	6	72.7	5	60.6
Steal from motor vehicle	n.c.	33	422.1	32	398.2	17	206.1	26	315.2	13	157.6
Steal from retail store	n.c.	24	307	17	211.5	41	497	65	788	62	751.6
Steal from dwelling	n.c.	42	537.2	26	323.5	17	206.1	32	387.9	24	290.9
Steal from person	n.c.	20	255.8	9	112	8	97	13	157.6	8	97
Liquor offences	Stable	120	1534.9	234	2911.9	116	1406	158	1915	115	1394
Disorderly conduct	Stable	40	511.6	40	497.8	37	448.5	56	678.9	24	290.9
Disorderly conduct (trespass)	n.c.	7	89.5	7	87.1	7	84.9	22	266.7	8	97
Drug offences	Up 28.3% per year	109	1394.2	221	2750.1	277	3358	321	3891	312	3782
Malicious damage to property	Down 11.3% per year	110	1407	74	920.9	70	848.6	71	860.7	72	872.8
Prohibited and regulated weapons offences	n.c.	11	140.7	12	149.3	12	145.5	9	109.1	7	84.9
Arson	n.c.	1	12.8	2	24.9	0	0	0	0	1	12.1

APPENDIX 2 TERMINOLOGY

The report uses the following terms defined as:

2.1 Community Safety

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

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

2.2 Welcoming and Safe Environments or Place

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

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

2.3 Public Domain

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

2.4 Crime Prevention

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

2.5 Crime Prevention Through Environmental Design (CPTED)

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

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

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

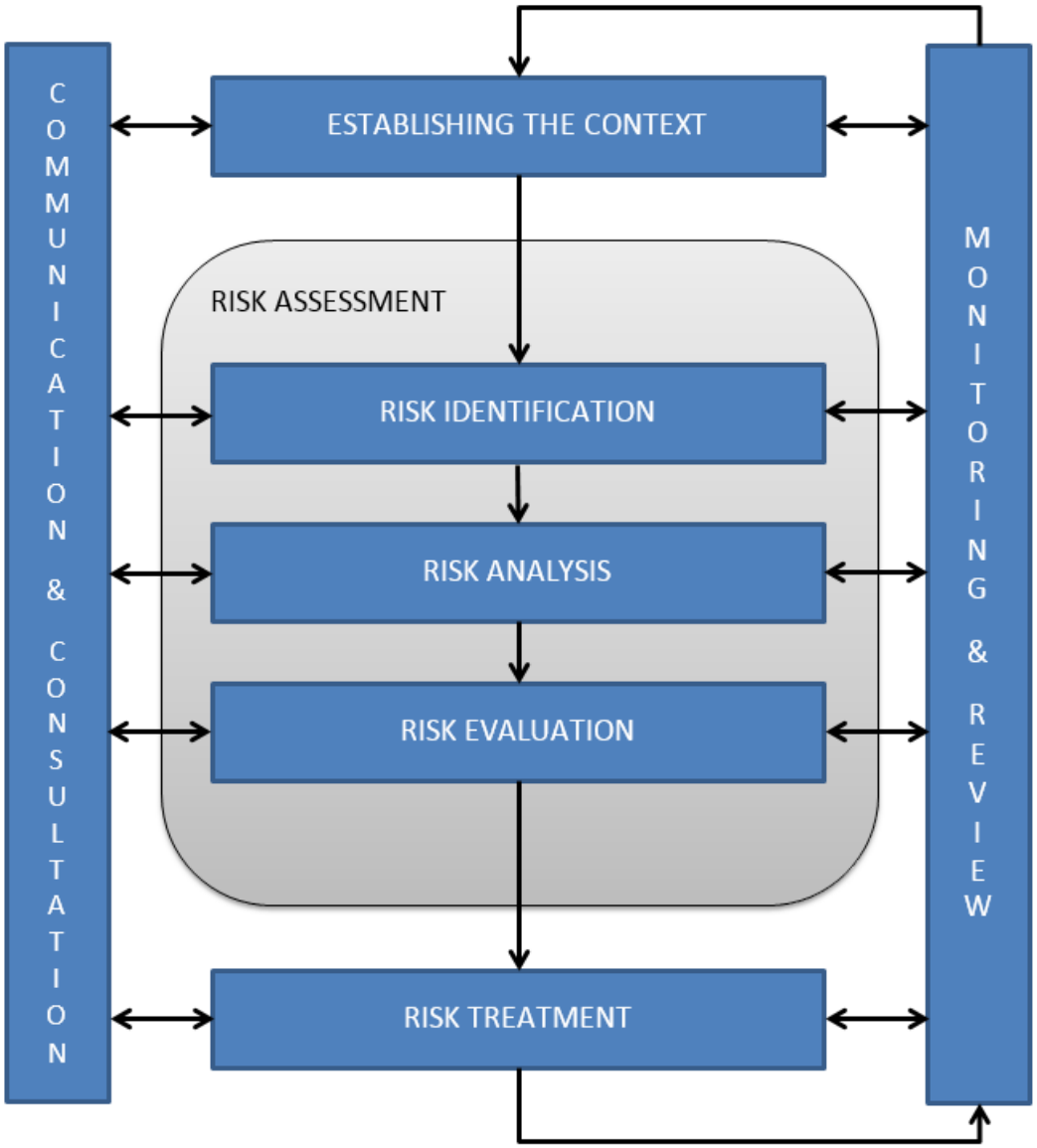
While acknowledging no architectural qualifications, we focus on the way creative design may be applied to CPTED principles for maximum community safety outcomes.

2.6 Crime Prevention Through Environmental Management (CPTEM)

Our view is to implement CPTED and CPTEM as an holistic strategy. There is no point in designing-out-crime for Wallsend for example, unless that design is managed, maintained and evaluated against current and newly emerging risks. CPTEM encourages community understanding of the introduced CPTED measures, so that crime prevention (zero tolerance) ownership-stewardship of communities will be informal but intentional.

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

APPENDIX 3 SCHEMATIC OF INTERNATIONAL RISK MANAGEMENT STANDARD



APPENDIX 4 THE INFLUENCE OF CPTED IN RE-DESIGNING PUBLIC SPACES FOR SAFE AND 'LIVEABLE' ACTIVATION

4.1 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.

4.2 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 5 EXPANDED EXPLANATION ON CRIME PREVENTION AS A DESIGN AND MANAGEMENT STRATEGY (CPTED PLUS)

A 5.1 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.

In 2001-2, the New South Wales Parliament assented to changes in guidelines under Section 79C of the EPA Act to include crime prevention as one of the “matters of public interest” which must be considered in approving development applications.

Increasingly, local authorities are introducing instruments and/or guidelines requiring ‘security’ to form part of DA documentation.

Notwithstanding local and State based regulatory 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.

A 5.2 Aims: Crime Prevention By Design

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

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

- To promote the legitimate and safe use of all natural and built environments by incorporating crime prevention or security design codes or guidelines into all development planning and approval processes.

- To enhance the reputation of developed environments by ensuring that crime prevention or security design criteria are integral to all architectural and engineering documentation submitted for review and approval by relevant authorities.

Oscar Newman (1972) coined the term. He developed the concept in relation to significant crime problems in high-rise ghetto type housing developments of New York City in the 1960s. Newman suggested that the urban design of inner city precincts was directly attributable to anti-social behaviour and high crime rates. Newman recognised that there were three spatial issues that should be addressed in all future urban planning – territoriality, surveillance and access control. Each can be linked with architectural and/or engineering documentation in a coordinated approach towards making public and private spaces relatively crime free.

A 5.3 CPTED Principles

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

A 5.4 The Principle of Territorial Definition

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

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

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

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

A 5.5 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, pathways, 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 (using a door contact) or movement (using a passive infrared detector) and transmitted real time to wireless hand held technology.

A 5.6 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 support 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, pathways, landscaping, low-line fencing, steps and doorways are obvious examples.

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

A 5.7 The Principle of Activity Support

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

A 5.8 The Principle of Target Hardening

Target hardening increases the efforts that 'offenders' must expend in their intent to disrupt legitimacy and put at risk legitimate activity. It is directed at denying or limiting access to potential criminal targets through

the use of more intentional and less subtle access control design including deliberate physical barriers such as security fencing, gates, locks and electronic alarms. However, the design goal is to avoid 'fortressing'.

A 5.9 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.

