Appendix N

CPTED Report

Sydney Metro West

Sydney Olympic Park Over and Adjacent Station Development Crime Prevention Through Environmental Design Assessment

Appendix N

July 2022

NSW GOVERNMENT

sydney METRO

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Glossary

Term	Definition
ASD	Adjacent Station Development
CBD	Central Business District
Concept and Stage 1 Approval	Application SSI-10038, including all major civil construction works between Westmead and The Bays, including station excavation and tunnelling, associated with the Sydney Metro West line
Concept SSDA	A concept development application as defined in section 4.22 of the EP&A Act. It is a development application that sets out the concept for the development of a site, and for which detailed proposals for the site or for separate parts of the site are to be the subject of a subsequent development application or applications
Council	City of Parramatta
CPTED	Crime Prevention Through Environmental Design
CSSI	Critical State Significant Infrastructure
DPE	Department of Planning and Environment
EP&A Act	*Environmental Planning and Assessment Act 1979*
GFA	Gross floor area
LGA	Local Government Area
OSD	Over Station Development
SCEC	Security Construction and Equipment Committee
SEARs	Secretary's Environmental Assessment Requirements
SME	Subject Matter Expert
SSD	State Significant Development
SSDA	State Significant Development Application
SSI	State Significant Infrastructure
Stage 2 CSSI Application	Application SSI-19238057, including major civil construction works between The Bays and Hunter Street Station
Stage 3 CSSI Approval	Application SSI-22765520, including rail infrastructure, stations, precincts and operation of the Sydney Metro West line
Sydney Metro West	Construction and operation of a metro rail line and associated stations between Westmead and the Sydney CBD as described in Section 1.1
The site	The site which is the subject of the Concept SSDA

Executive summary

This Crime Prevention Through Environmental Design (CPTED) assessment report supports a Concept State Significant Development Application (Concept SSDA) submitted to the Department of Planning and Environment (DPE) pursuant to part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The Concept SSDA is made under section 4.22 of the EP&A Act.

Sydney Metro is seeking to secure concept approval for an over station development (OSD) and adjacent station development (ASD) on an area defined as Site 47 within the Central Precinct of Sydney Olympic Park (referred collectively as the 'proposed development'). The proposed development will comprise of one new commercial and retail building (Building 1) above the Sydney Olympic Park metro station and two residential accommodation buildings (Buildings 2 and 3) with retail and commercial space, adjacent to the Sydney Olympic Park metro station.

The Concept SSDA seeks consent for a building envelope and mixed-use purposes, maximum building height, a maximum gross floor area (GFA), pedestrian and vehicular access, circulation arrangements and associated car parking and the strategies and design parameters for the future detailed design of development.

This CPTED report responds specifically to the Secretary's Environmental Assessment Requirements (SEARs). It provides a desktop assessment of the concept architectural plans for the proposed development. The report provides an assessment against the six key principles of CPTED which are natural surveillance, natural access control, territorial reinforcement, image and management/ maintenance, activity support and site/target hardening. The assessment found that the concept design proposed has already incorporated a number of CPTED principles and provides adequate opportunity for the implementation of further CPTED principles in the future design. Mitigation measures for consideration during the preparation of the subsequent design stages are summarised below.

Natural surveillance

The proposed development land uses have an opportunity to create formal lobby areas with manned concierge / security personnel that can provide surveillance of their respective developments in addition to the adjacent public realm areas. By extension, the design of these ground floor areas, and immediate floors above, should maximise surveillance opportunities.

Natural access control

An effective lighting strategy is required for the proposed development that will contribute to public perception by reducing fear, increasing community activity and increasing the chance that offenders will be detected and apprehended.

Territorial reinforcement

Signage and wayfinding concept is required for the proposed development as effective wayfinding systems contribute to a sense of well-being, safety, and security. Furthermore, synergy and integration between the developments and precinct wide signage and wayfinding to reduce any potential user confusion.

Image and management/maintenance

Ensure contractually the ongoing maintenance and upkeep of the proposed developments by the building managers which would include landscape and lighting maintenance, maintaining cleanliness of the site, removing and repairing vandalism or graffiti and promptly repairing/replacing any destruction to property and incorporating this into the contractual service level agreement.

Activity support

The internodal links between the new bus interchange on Figtree Drive and kiss and ride / taxi stands on Herb Elliot Avenue will encourage pedestrian flow. However, with this increased activity there is a high likelihood that this attracts increased level of loitering and vagrancy. Therefore, as a general rule, but particularly in this internodal link area, ensure the proposed development building designs limit spaces or dark areas where loitering and vagrancy can take place.

Site/target hardening

Define an access control strategy for both pedestrians and vehicles, with associated security measures, for the proposed development that delineates security zones such as public, semi-public, semi-private, private and restricted.

1 Introduction

1.1 Sydney Metro West

Sydney Metro West will double rail capacity between Greater Parramatta and the Sydney Central Business District (CBD), transforming Sydney for generations to come. The once in a century infrastructure investment will have a target travel time of about 20 minutes between Parramatta and the Sydney CBD, link new communities to rail services and support employment growth and housing supply.

Stations have been confirmed at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock, The Bays, Pyrmont and Hunter Street (Sydney CBD).

Sydney Metro West station locations are shown in Figure 1-1.

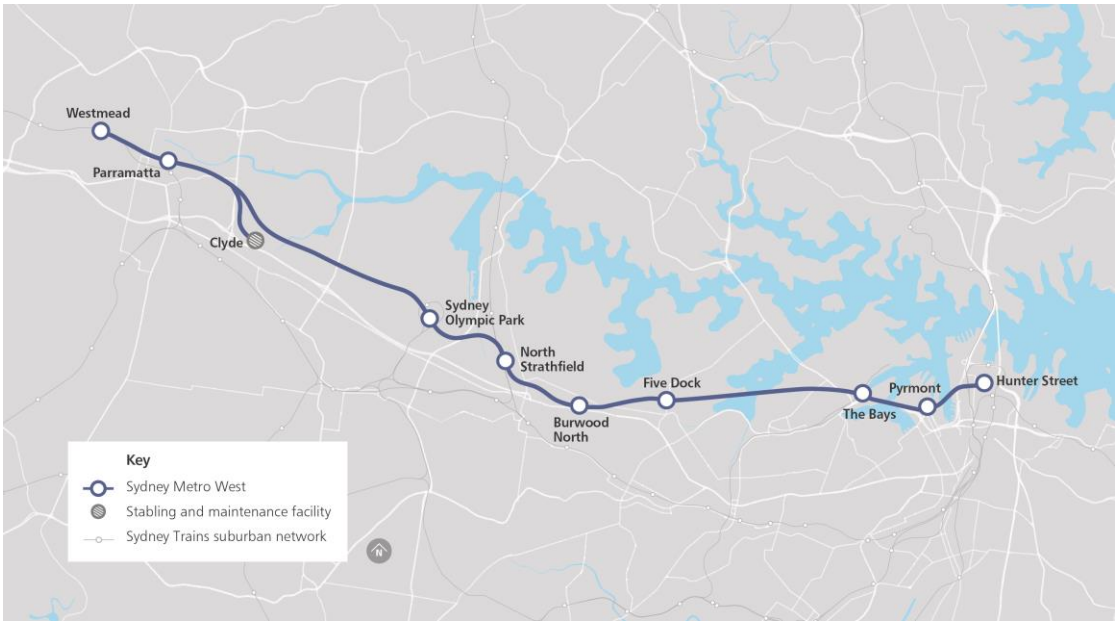

Figure 1-1 Sydney Metro West

1.2 Background and planning context

Sydney Metro is seeking to deliver Sydney Olympic Park metro station under a two-part planning approval process. The station fit-out infrastructure is to be delivered under a Critical State Significant Infrastructure (CSSI) application subject to provisions under division 5.2 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). While the over and adjacent station developments are to be delivered under a State Significant Development (SSD) subject to the provisions of part 4 of the EP&A Act.

1.2.1 Critical State Significant Infrastructure

The State Significant Infrastructure (SSI) planning approval process for the Sydney Metro West metro line, including delivery of station infrastructure, has been broken down into a number of planning application stages, comprising the following:

- Concept and Stage 1 CSSI Approval (SSI-10038) – All major civil construction works between Westmead and The Bays including station excavation, tunnelling and demolition of existing buildings (approved 11 March 2021)
- Stage 2 CSSI Application (SSI-19238057) – All major civil construction works between The Bays and Hunter Street Station (under assessment)

- Stage 3 CSSI Application (SSI-22765520) – Tunnel fit-out, construction of stations, ancillary facilities and station precincts between Westmead and Hunter Street Station, and operation and maintenance of the Sydney Metro West line (under assessment).

1.2.2 State Significant Development Application

The SSD will be undertaken as a staged development with the subject Concept State Significant Development Application (Concept SSDA) being consistent with the meaning under section 4.22 of the EP&A Act and seeking conceptual approval for a building envelope, land uses, maximum building heights, a maximum gross floor area, pedestrian and vehicle access, vertical circulation arrangements and associated car parking. A subsequent Detailed SSD/s is to be prepared by a future development partner which will seek consent for detailed design and construction of the development.

1.3 Purpose of the report

This Crime Prevention Through Environmental Design (CPTED) report supports a Concept SSDA submitted to the Department of Planning and Environment (DPE) pursuant to part 4 of the EP&A Act. The Concept SSDA is made under section 4.22 of the EP&A Act.

This report has been prepared to specifically respond to the Secretary's Environmental Assessment Requirements (SEARs) issued for the Concept SSDA on 18 February 2022 which states that the environmental impact statement is to address the following requirements:

SEARs requirement	Where addressed in report
6. Public space Illustrate the integration between station infrastructure and the development including: • any CPTED mitigation measures required that are related to the SSD.	Section 4 and 5
Address how CPTED principles are to be integrated into the development, in accordance with Crime Prevention and the Assessment of Development Applications Guidelines.	Section 3.2 and Section 4

This report provides a desktop assessment of the concept architectural plans for the proposed development located above and next to the Sydney Olympic Park metro station. The report provides an assessment against the six key principles of CPTED which are natural surveillance, natural access control, territorial reinforcement, image and management/maintenance, activity support and site/target hardening. The assessment found that the concept design proposed has already incorporated a number of CPTED principles and provides adequate opportunity for the implementation of further CPTED principles in the future design. Mitigation measures for consideration during the preparation of the subsequent design stages are summarised in section 5.

2 The site and proposal

2.1 Site location and description

The site is located within Sydney Olympic Park and is situated within the City of Parramatta Local Government Area. The site is in the Central Precinct of Sydney Olympic Park and defined as Site 47 in the Proposed Master Plan (Interim Metro Review). The broader metro site is bound by Herb Elliot Avenue to the north, Olympic Boulevard to the west and Figtree Drive to the south as shown in Figure 2-1.

Figure 2-1 Sydney Olympic Park metro station location precinct

As described in Figure 1-1, the site comprises part of Lot 59 in DP 786296 and Lot 58 in DP 786296, and comprises approximately 11,407m^2 of land.

Table 2-1 Site legal description

Street address	Legal description
5 Figtree Drive, Sydney Olympic Park	Lot 58 in DP 786296
7 Figtree Drive, Sydney Olympic Park	Lot 59 in DP 786296

2.2 Overview of this proposal

The Concept SSDA will seek consent for three building envelopes and the delivery of Precinct Street A as detailed in Table 1-2 and Figure 1-3.

Table 2-2 Sydney Olympic Park proposed development overview

Item	Description
Land use	**Building 1:** Commercial and retail **Building 2:** Commercial, retail and residential **Building 3:** Commercial, retail and residential
Building height (RL) / Number of storeys	**Building 1:** 120.20 / 21 storeys **Building 2**: 116.90 / 27 storeys **Building 3:** 171.50 / 45 storeys
Gross floor area (m^2)	**Building 1:** 28,517 **Building 2:** 12,089 **Building 3:** 27,384 **TOTAL: 68,000**
Car parking spaces	358

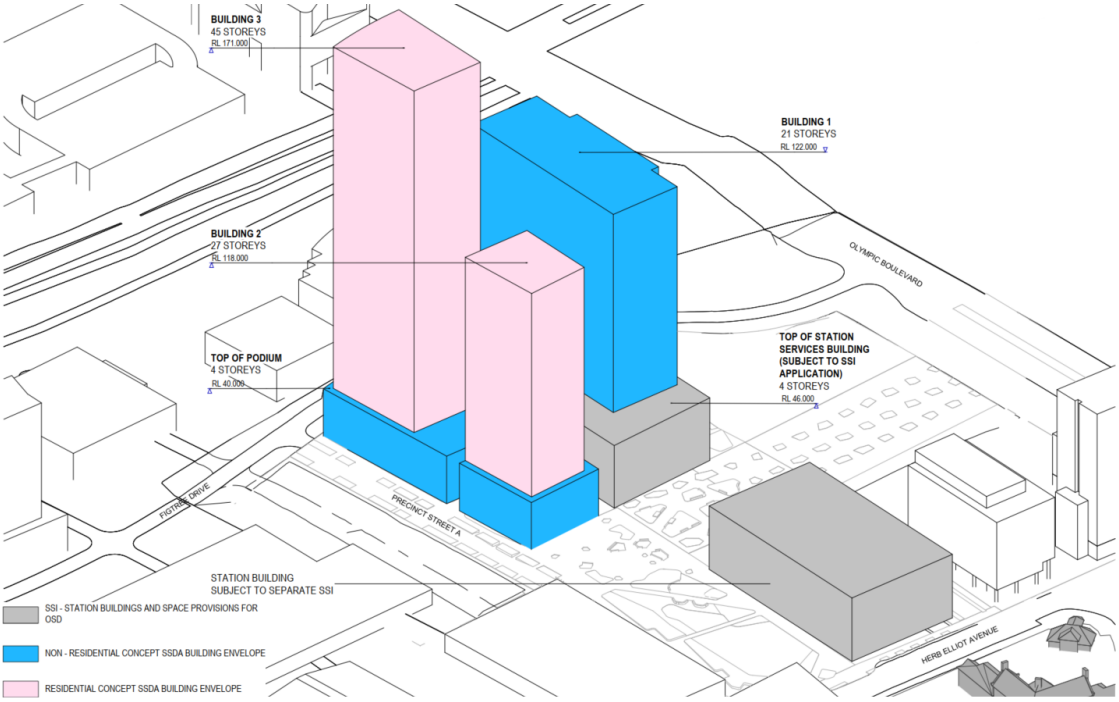

Figure 2-2 Proposed Concept SSDA development and CSSI scope

3 Scope of assessment

3.1 Context

This report provides a desktop analysis of the concept architectural plans for the proposed development including commercial, residential, car park and retail components above and adjacent to the Sydney Olympic Park metro station.

This report assesses the plans against the following six key principles of CPTED:

- natural surveillance
- natural access control
- territorial reinforcement
- image and management/maintenance
- activity support
- site/target hardening.

The purpose of CPTED is to utilise design and place-management principles which reduce both the likelihood of criminal acts occurring and the fear of crime.

This CPTED assessment has been prepared in accordance with the requirements detailed within:

- T MU SY 20001 ST Transport for New South Wales Physical Security Standards
- ISO 22341:2021 - Security and Resilience - Protective Security - Guidelines for Crime Prevention Through Environmental Design.

Note, a Security Risk Assessment will be included as part of the detailed SSDA that will consider the security and safety of all users of the broader precinct, particularly in event mode.

3.1.1 Assumptions

No assumptions have been made in preparing this CPTED assessment, where clarification may have a material change on the analysis and recommendations.

3.1.2 Constraints

The following constraints have been identified in preparing this CPTED assessment, where the limitation may have a material change on the analysis and recommendations:

- Certain aspects of the station/site design continue to evolve.
- It should be noted that the application of CPTED principles is not a guarantee that all criminal or anti-social behaviour can be prevented. While CPTED principles may not eliminate all criminal behaviour, application of the principles to a development can significantly reduce criminal and anti-social behaviour. Also, the application of such principles can heighten awareness and increase positive perceptions of personal and public safety.

3.1.3 Exclusions

The following items have been excluded from consideration in this CPTED assessment:

- Internal area of Sydney Olympic Park metro station.

3.2 Principles

CPTED is a strategy aimed at increasing the level of risk perceived by would-be-offenders, that they will be seen, challenged or caught. It simultaneously seeks to lower the risk perceived by legitimate users of space who feel safer due to positive CPTED characteristics being present. This also encourages use of space by legitimate users, who become available witnesses to offences which assists in deterring would-be-offenders.

3.2.1 Natural surveillance

Natural surveillance aims to create an actual and perceived risk of detection for antisocial and illegal activities. Natural surveillance can be achieved through ensuring and creating clear sightlines, generating more 'eyes on the street' by creating environments that encourage and attract legitimate users to a space for longer periods, and through adequate lighting to facilitate night-time activities. Areas with good natural surveillance ensure potential offenders are kept under observation from legitimate users of the space, oversight from neighbouring areas, or passing pedestrian and vehicular traffic, which deters and discourages criminal acts.

Natural surveillance aims to provide opportunities for people engaged in lawful activities to observe the space around them. Natural surveillance works by designing the placement of physical features, activities, and people in such a way so that maximum visibility and positive interaction occurs among legitimate users of the space.

3.2.2 Natural access control

Natural access control involves the use of physical or symbolic barriers to attract, channel, or restrict the movement of people. Natural access control can be achieved through the use of footpaths, landscaping, fencing and gates, lighting, signage, wayfinding, indicator boards, symbols, monuments, markers, or landmarks to direct and control pedestrian movement through an area, restrict access to assets, and to notify or symbolise building/precinct entries, boundaries or areas.

Effective natural access control decreases opportunities for crime by controlling access to a potential target, discouraging, or deterring potential offenders from entering certain areas, and by creating a perception of unacceptable risk to an offender.

3.2.3 Territorial reinforcement

The design concept of territorial reinforcement seeks to promote notions of proprietary concern and a sense of ownership by lawful users of a space, thereby reducing criminal opportunities by discouraging the presence of illegitimate users. It includes symbolic barriers (e.g. signage, subtle changes in road texture) and real barriers (e.g. fences or design elements that clearly define and delineate private, semi-private and public spaces).

3.2.4 Image and management/maintenance

Image and management/maintenance seek to promote a positive image and routine maintenance of the built environment to ensure the continued effective functioning of the physical environment, and this also transmits positive signals to all users. The physical condition and image of the built environment has the potential to affect the amount of crime and the fear of crime positively or negatively in an area.

Poorly maintained urban space can attract crime and deter use by legitimate users. Proper maintenance allows for the continued use of a space for its intended purpose and serves as an additional expression of ownership. Maintenance prevents the reduction of visibility from landscaping overgrowth and obstructed or inoperative lighting.

3.2.5 Activity support

Legitimate activity support uses design and signage to encourage acceptable behaviour in the usage of public space, and places unsafe activities (such as those involving money transactions) in safe locations (those with high levels of activity and with surveillance opportunities). Similarly, safe activities serve as attractors for legitimate users who could then act to discourage offending. This concept has clear links with those of territoriality, access control and surveillance.

3.2.6 Site/target hardening

Site/target hardening increases the effort and risk of offending and reduces the rewards associated with the commission of a crime and is a long-established and traditional crime prevention technique. It focuses on denying or limiting access to a crime target through the use of physical barriers such as fences, gates, security doors and locks. Site/target hardening is often considered to be access control on a micro scale.

3.3 Methodology

In undertaking the CPTED assessment for this location, the assessment used a risk-based approach and established CPTED design principles to enhance the inherent security and safety within the built environment. The CPTED approach used is in accordance with T MU SY 20001 ST Surface Transport Physical Security Standard, and ISO 22341:2021 - Security and Resilience — Protective Security — Guidelines for Crime Prevention Through Environmental Design.

The objective of this CPTED assessment is to identify opportunities for the design team to ‘design out’ security vulnerabilities and ‘design in’ risk mitigation measures by applying the six CPTED concepts mentioned above.

The methodology for this CPTED Review involved the following:

- review of the concept development proposal and associated documentation to identify opportunities to enhance CPTED for this project location
- development of a CPTED report including an introduction to CPTED, methodology used, references, project location demographics, crime assessment, observations from design package review and recommendations for enhancing CPTED.

3.4 Key inputs

The assessment has drawn on a range of primary sources to provide the evidence base for the assessment, including internal subject matter expertise, stakeholder expertise, expert opinion, threat intelligence, and open-source documentation to support our analysis.

3.4.1 CPTED assessment team

The CPTED assessment has been prepared by the resources shown in Table 3-1.

Table 3-1 Security Consulting Group CPTED assessment team

Resource	Delivery role
Matt Oyston (SCEC)	Principal Security Consultant, Project Lead
Simon West	Senior Security Consultant, Peer Review and QA, SME
Jeremy Batcheldor	Security Consultant, Peer Review and QA, SME

All members of the assessment team have experience in preparing CPTED assessments, hold current NSW Class 2A Security Licences at the time of the assessment and are providing security advice under NSW master security licence 000101614.

3.4.2 Stakeholder engagement

The following stakeholder engagements were undertaken in support of the threat assessment:

- Sydney Metro West Security Team
- Sydney Trains Security Intelligence Team
- New South Wales Police Force Counter-Terrorism Command, Adam Scanlon, 03/09/2021
- Workshops held with the security team from Sydney Olympic Park Authority on 23/09/2021 and 07/10/2021 to discuss security arrangements, road closures etc during large scale event in the overall Sydney Olympic Park precinct
- A number of operation and maintenance workshops held with the design team – 29/09/2021, 06/10/2021 and 13/10/2021

This engagement is ongoing and any further relevant information will be incorporated in subsequent updates to the threat assessment if required.

3.4.3 Reference regulations, standards, and relevant literature

The assessment team referred to the following references during the course of conducting this CPTED Assessment:

- T MU SY 20001 ST Surface Transport Physical Security Standard
- ISO 22341:2021 - Security and Resilience — Protective Security — Guidelines for Crime Prevention Through Environmental Design
- Sydney Olympic Park Authority – Master Plan 2030 Update – Safety & Security Strategy Central Precinct – Summary Report, 04 August 2021
- NSW Police Force Safer by Design Evaluation process.
- CPTED requirements of section 4.15 (formally 79C) of the EP&A Act
- NSW Crime Prevention and the Assessment of Development Applications Guidelines.

3.5 Future works

In order to demonstrate that the CPTED opportunities identified at this concept stage are captured in subsequent stages, as part of the assurance process, it is recommended as part of future Detailed SSDAs, a further CPTED assessment will need to be undertaken for the final design scheme.

3.6 Demographic characterisation

As Sydney Olympic Park is predominantly an entertainment and events precinct the demographic is fluid and highly diverse. Traditional statistical data, from the Australian Bureau of Statistics does not provide sufficient insight into the demographics which will use the station, as it is reflective of a resident population. We note that while there is some area zoned as residential (RE1), the recorded population is less than 2000 permanent residents.

The population within Sydney Olympic Park is expected to be mainly non-residents, with extreme numbers of people moving into, and out of the precinct via the Metro once it is operational.

The most significant increases in population are expected to be driven by the major events which are held in the various stadia and entertainment venues within the precinct. There may be multiple large-scale events occurring simultaneously at multiple venues within the precinct.

The precinct may, at times, attract highly homogenous crowds, in terms of a range of social factors, including age, ethnicity, religion, and socio-economic status. Though over time, and due to the range of different entertainment and events that will take place it is expected that the attending population will be highly diverse.

The transitory nature of this population also creates additional requirements for CPTED, as the ‘capable guardianship’ which is often provided by the resident community will not be present in the area. This is particularly relevant at times where no entertainment or events are taking place and the patronage at Sydney Olympic Park station is low.

While natural surveillance will still be effective deterrence at times of higher patronage, the transitory population may be less concerned with the maintenance of the space or contributing to the maintenance of acceptable behaviour.

3.7 Crime characterisation

Similar to the demographic characterisation, recorded crime within Sydney Olympic Park reflects a fluid and diverse population. There is little insight within the available crime data to correlate the incidence of crime with periods of higher or lower patronage, or specific event modes.

The breakdown of recorded crime in the suburb of Sydney Olympic Park shows that crime rates are low, relative to the broader service area. The event-driven nature of the Sydney Olympic Park precinct is expected to attract a different crime profile to typical stations. Disorderly conduct, theft, assault, property damage are expected to be the offences with higher annual incidence and consistent occurrence. This is due to the transient nature of the users of the Metro service who are attending the precinct for events, entertainment, and recreation.

The Sydney Olympic Park precinct does not have high density of licenced premises with late night operating hours. Late night alcohol consumption is a major driver of anti-social behaviour. There remains the possibility that major events where there is alcohol provided, could contribute to antisocial behaviour (including disorderly conduct, assault and property damage) within the station as commuters make their way from the precinct. There is the potential that this could escalate to assault or

property damage, particularly where there are mixing of groups which have conflicting allegiances or values (i.e., sports teams).

The very low levels of resident population or commercial with high value property reduces the potential for burglary generally, though non-event times and low volume pedestrian traffic moving from the station may increase the potential in the vicinity of the station. Similarly, theft of property is less likely within the station as commuters are not leaving their personal property unattended, and it is anticipated that Sydney Metro property is secured.

4 Assessment

The following sections make a general assessment of the CPTED strategy against the concept design followed by specific CPTED principles – natural surveillance, natural access control, territorial reinforcement, image maintenance/management, activity support and target hardening identified during the desktop design package review.

4.1 Natural surveillance

The following measures have been proposed in the concept design that enhance natural surveillance:

- building layouts not creating blind spots or concealment opportunities noting it is mainly in block planning stage and therefore it is important this concept is maintained through the subsequent design stages
- street frontages with glazed facades, offering opportunity for overlooking the surrounding public domain
- passive surveillance from the upper building levels to the surrounding public domain
- clear sight lines between the building entries and the public domain
- active frontages at ground level would help create an environment for people to be engaged in their normal behaviour while observing the space around them, essentially creating natural community policing of the precinct.

It is expected that the principle of natural surveillance would be carefully considered during the detailed design of the building, including glazing and entry design.

4.2 Natural access control

The following measures have been proposed in the concept design that enhance natural access control:

- Vehicular access routes have been coordinated to create a new pedestrian prioritised town centre, with vehicular access incorporated in both shared zones and slow street environments. These streets have been designed with adequate width for provision of street trees and water sensitive urban design, generous footpaths, cycle routes and vehicular turning movements. This will allow the streets to be important linear green spaces, linking the town centre to the surrounding parklands as the town centre is developed.

Figure 4-1 Pedestrian connections

- The ground plane features distinct and easily identifiable access points for individual users, serving to channel persons into the intended locations. Although the detailed internal layout is unknown at this concept stage, corridors within each building would also serve to funnel people to the intended locations. It is anticipated that the specific design of these measures would be developed at the detailed development application phase.
- It is anticipated signage and security doors would be used to control access to restricted areas. Boom gates would also be used to restrict access to loading dock and station basement areas.
- The development provides opportunity for organised access control including concierge desks in the lobbies, staff and facility managers. Though not directly employed for security purposes, these persons would provide surveillance in and around the development.

4.3 Territorial reinforcement

The following measures have been proposed in the concept design that enhance territorial reinforcement:

- The delineation between the public realm, semi-public, semi-private and private spaces within the proposed development buildings, along with the defined purposes of the buildings (i.e. commercial, residential and retail), is conducive of territorial reinforcement.
- At ground level, the proposed uses are clearly defined through the use of separate entries distinct from one another and from the station uses. The distinct entries would direct persons to the intended locations. The separate entries allow for the inclusion of various design cues at the detailed design stage, including colours, materials, landscaping, signage and other elements, to further reinforce the specific uses.

4.4 Image and management/maintenance

The following measures have been proposed in the concept design that enhance image and management/maintenance in the precinct:

- The concept proposal involves no impediments to proper environmental maintenance. It is presumed that ongoing maintenance would be provided by the future building manager.

4.5 Activity support

The following measures have been proposed in the concept design that enhance activity support:

- It is likely that the proposed active street frontages, including the station entries and proposed retail opportunities in addition to the various lobbies for the proposed development land uses, would naturally attract users and extend activity in the area beyond core business hours. Generally, mixed use developments also offer extended hours of trade and around-the-clock use of space. This increased activity increases the risks for potential offenders or intruders.

5 Mitigation measures

The following general recommendations have been provided to improve the safety and security of the future design development and its future users:

5.1 Natural surveillance

- The proposed development has an opportunity to create formal lobby areas with manned concierge / security personnel that can provide surveillance of their respective developments in addition to the adjacent public realm areas. By extension, the design of these ground floor areas, and immediate floors above, should maximise surveillance opportunities.
- Ensure all building layouts in the precinct are not creating blind spots or concealment opportunities.

5.2 Natural access control

- A strategy for security lighting for the proposed development and public realm has not yet been detailed. It is important this is defined and agreed with all stakeholders. The security lighting strategy must meet the Sydney Metro design requirements, which includes but is not limited to providing even distribution of lighting, supporting the public realm CCTV placement, assisting with differentiating between vehicle and pedestrian movements, improving general visibility, and defining activity spaces. An effective lighting strategy will contribute to public perception by reducing fear, increasing community activity and increasing the chance that offenders will be detected and apprehended.
- The selection of both hard and soft landscaping elements within the proposed development must support the overall CPTED principles.

5.3 Territorial reinforcement

- Signage and wayfinding have been considered in the concept design; however, it is noted that further development is required including stakeholder engagement with Transport for NSW. The design team should ensure this is developed through the proposed development and broader precinct design process, including synergy and integration between proposed development and precinct, as effective wayfinding systems contribute to a sense of well-being, safety, and security.

5.4 Image and management/maintenance

The design has considered image and maintenance to date; however, it will be important that contractually the ongoing maintenance and upkeep of the precinct is managed by the Operator of the public realm and building managers of the proposed development. Considerations should include, but not be limited to:

- Landscape and lighting maintenance.
- Maintaining cleanliness of the site.
- Removing and repairing vandalism or graffiti.
- Promptly repairing/replacing any destruction to property and incorporating this into the contractual service level agreement.
- The use of moveable elements such as seating and planting need to be considered with security in mind. There is the possibility these elements could be weaponised during a security incident or could become a source of shrapnel during a blast event, albeit unlikely. If moveable elements are to be used, they

should be adequately secured utilising custom fixings that should not be readily removed using standard hand tools.

5.5 Activity support

- As noted in the assessment section the internodal links between the bus interchange on Figtree Drive and kiss and ride/taxi stands on Herb Elliot Avenue will encourage pedestrian flow. However, with this increased activity there is a high likelihood that this attracts increased level of loitering and vagrancy. Therefore, as a general rule, but particularly in this internodal link area, ensure the building design for the proposed development limits spaces or dark areas where loitering and vagrancy can take place.

5.6 Site/target hardening

- Define an access control strategy for both pedestrians and vehicles, with associated security measures, for the proposed development that delineates security zones such as public, semi-public, semi-private, private and restricted.

5.7 Built environment

For CPTED principles to be successful three functions need to be considered - spaces within the built environment need to have a designated purpose, they need to have social, cultural, legal or physical definitions and need to be designed to support and control the function of the space.

Thus, the three functions of designation, definition and design all contribute to the concept of CPTED. In practical terms when executing the future proposed development for Sydney Olympic Park, it is recommended the following is considered for each space:

- s space should ‘belong’ or be designated to a person or group
- the intended use of a space should be clearly defined
- the physical design of a space should match its intended use
- the design of a space should provide means for normal users to naturally control the activities, to control access and to provide surveillance.

5. Conclusion

This report presents the results of a CPTED assessment on the proposed development at Sydney Olympic Park metro station.

This report has been prepared to outline the opportunities for reducing crime at the future development and to specifically respond to the SEARs issued for the Concept SSDA.

The assessment has found that the concept design proposed has already incorporated a number of CPTED principles and provides adequate opportunity for the implementation of further CPTED principles in the future design. The proposed mitigation measures should be considered during the preparation of the subsequent design stages.