



Sydney Football Stadium Redevelopment

Stage 2 Environmental Assessment CPTED Review



28 August 2019

V1.0 (Draft)

SECURITY-IN-CONFIDENCE

IR DISCLAIMER

All reasonable care has been taken in the research and preparation of this CPTED Review Report. Intelligent Risks Pty. Ltd. is not responsible for any non-disclosure by the client, its agents or contractors; or by regulatory authorities or other persons IR has interviewed during the preparation of this report. Similarly, Intelligent Risks Pty. Ltd. is not responsible for any misleading or false disclosure by the client, its agents or contractors; or by regulatory authorities or other persons IR has interviewed or sought to interview during the preparation of this report.

By commissioning this report, the client acknowledges all such documents require accurate information to inform the detailed assessments and IR is neither responsible nor liable for any omission or error in its reporting unless professional negligence is proven. Furthermore, no report is definitive, and IR can only make recommendations for further consideration by the client.

Document revision history

Version	Date	Author	Summary of changes
1.0	28 August 2019	Intelligent Risks (TH & ET)	Draft
1.1	28 August 2019	Intelligent Risks (AM)	Internal Review & Quality Assurance
1.2	29 August 2019	Intelligent Risks (ET)	Final with revisions

TABLE OF CONTENTS

1 EXECUTIVE SUMMARY.....	3
2 INTRODUCTION.....	4
2.1 PURPOSE	4
2.2 SSDA REQUIREMENTS.....	4
2.3 REFERENCES.....	5
3 PROJECT OVERVIEW	6
3.1 BACKGROUND	6
3.2 OVERVIEW OF PROPOSED DEVELOPMENT	7
3.3 SITE DESCRIPTION.....	7
3.4 TRANSPORT CONNECTIONS.....	9
3.5 SITE USAGE AND MODES	9
4 CRIME RISK ANALYSIS	11
4.1 OVERVIEW.....	11
4.2 ASSAULT.....	11
4.3 MALICIOUS DAMAGE	13
4.4 THEFT	13
4.5 ANTI-SOCIAL BEHAVIOUR.....	14
4.6 THREATS & HOAXES	14
4.7 TERRORISM.....	14
5 CPTED ANALYSIS.....	15
5.1 CPTED PRINCIPLES.....	15
5.2 CPTED DESIGN ELEMENTS	16
5.3 ALLOW FOR CLEAR SIGHT LINES	16
5.4 SUPPORTIVE LANDSCAPING.....	17
5.5 ADEQUATE LIGHTING.....	17
5.6 MINIMISE CONCEALED AND ISOLATED ROUTES	18
5.7 AVOID ENTRAPMENT	18
5.8 REDUCE ISOLATION.....	19
5.9 CREATE A SENSE OF OWNERSHIP THROUGH MAINTENANCE MANAGEMENT ...	19
5.10 REDUCE UNDESIRABLE ACTIVITY	20
5.11 PROVIDE SIGNS AND INFORMATION.....	21
5.12 BUILDING ORIENTATION	22
5.13 REDUCE OPPORTUNITIES FOR UNAUTHORISED ACCESS.....	23
5.14 HOSTILE VEHICLE MITIGATION.....	23
5.15 GOOD HOUSEKEEPING.....	23

1 Executive Summary

The purpose of this Crime Prevention Through Environmental Design (CPTED) Report is to support the Stage 2 State Significant Development (SSD) Development Application (DA) for the Sydney Football Stadium. It considers how the proposed design and operation can achieve the principles of CPTED to maximise the design contribution to the minimisation of crime across the site. It also provides recommendations to enhance CPTED outcomes during the detailed design phase.

The application of CPTED principles provides the foundation for reducing the opportunity for crime by addressing crime risks at the design phase of a project. It is based on an analysis of the crime risk and the application of the following principles:

- Natural surveillance;
- Natural access control;
- Territorial reinforcement; and
- Space management.

This CPTED Report has been prepared in response to the SEARs requirement for a report to accompany the Stage 2 environmental impact assessment addressing:

- Review of the proposed design with regard to CPTED principles; and
- Recommendations for consideration on how best to achieve each principle.

A comprehensive assessment of security risks is detailed in the *SFS Redevelopment Security & Risk Assessment Strategy*. Application of CPTED principles in the stadium and precinct design plays an important key role in mitigating security risks from crime (including the conduct of terrorism-related acts) identified in the Strategy.

Intelligent Risks (IR) documented a number of practical means of maximising CPTED outcomes within the project's initial security design brief. These design elements provide the basis for the analysis and recommendations in relation to the design's application of the CPTED principles below.

2 Introduction

This report supports a SSD DA for the redevelopment of the Sydney Football Stadium, which is submitted to the Minister for Planning pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The redevelopment is being conducted in stages comprising the following planning applications:

- **Stage 1** (approved) – Concept Proposal for the stadium envelope and supporting retail and functional uses as well as development consent for the carrying out of early works, including demolition of the existing facility and associated structures.
- **Stage 2** (under assessment and the subject of this Report) – detailed design, construction and operation of the stadium and supporting business, retail and functional uses.

Development consent was granted for the Concept Proposal and detailed approval to carry out early works and demolition (SSD 18_9249) by the Minister for Planning on 6 December 2018.

This report relates to the Stage 2 SSD DA and considers the detailed design, construction and operation of the new Sydney Football Stadium pursuant to the approved Concept Proposal.

Infrastructure NSW is the proponent of the Stage 2 DA.

2.1 Purpose

The purpose of this CPTED Report is to support the Stage 2 SSD DA application by reviewing the design of the proposed Sydney Football Stadium redevelopment to consider how it achieves the principles of CPTED to maximise the design contribution to the minimisation of crime across the site. It also provides recommendations to enhance CPTED outcomes during the detailed design phase.

The application of CPTED principles provides the foundation for reducing the opportunity for crime across a development by addressing crime risks at the design phase of a project. It is based on an analysis of the crime risk and the application of the following principles:

- Natural surveillance;
- Natural access control;
- Territorial reinforcement; and
- Space management.

2.2 SSD DA Requirements

The *Crime Prevention and Assessment of Development Applications – Guidelines under Section 79C of the Environmental Planning and Assessment Act 1979* published by the NSW Department of Urban Affairs and Planning provides more guidance on how CPTED Reports should be prepared.

The Department of Planning, Industry and Environment has issued final Secretary's Environmental Assessment Requirements (SEARs) for the redevelopment for the preparation of an Environmental Impact Statement for the proposed development. This CPTED Report has been prepared in response to the SEARs requirement for a report to accompany the Stage 2 environmental impact assessment addressing:

SECURITY-IN-CONFIDENCE

- Review of the proposed design in regards to CPTED principles; and
- Recommendations for consideration on how best to achieve each principle.

The Report also addresses *Condition 53* in the State Significant Development Consent SSD 9249 that states:

“All future development applications for the site must include the following:

- a. A Crime Prevention Through Environmental design (CPTED) assessment, which details measures to maximise patron, worker, pedestrian and public safety through the implementation of the CPTED Principles”*

Final Mitigation Measures have also been addressed within this Report pertaining to:

- **CP_SEC1 Safety and Security:** *A Crime Prevention Through Environmental Design Assessment Report is to be prepared by a qualified crime risk assessor based upon the detailed stadium, public domain and landscaping design and is to be submitted with the Stage 2 Development Application.*

2.3 References

In preparing this CPTED Report, Intelligent Risks has reviewed the following project documentation:

- SFS Redevelopment Security & Risk Assessment Strategy (full report)
- SFS Stage 2 DA Architectural Design Statement
- SFS SSD DA Application Landscape and Public Domain Statement
- SFS SSD DA Application Urban Design Report
- SFS SSD DA Application Wayfinding and Signage Strategy
- SFS SSD DA Application Event Management Strategy
- SFS SSD DA Application Anti-Social Behaviour Strategy
- SFS SSD DA Application Lighting Statement
- *Crime Prevention and Assessment of Development Applications – Guidelines under Section 79C of the Environmental Planning and Assessment Act 1979*

3 Project Overview

3.1 Background

The Sydney Football Stadium (SFS) is a significant component of the sports facilities that comprise the Sydney Cricket and Sports Ground. Completed in 1988, the SFS has hosted numerous sporting events in its 30 years of operation for a number of sporting codes including football (soccer), rugby league and rugby union as well as occasional music concerts.

The NSW Stadia Strategy 2012 provides a vision for the future of stadia within NSW, prioritising investment to achieve the optimal mix of venues to meet community needs and to ensure a vibrant sports and event environment in NSW. A key action of the strategy included development of master plans for Tier 1 stadia and their precincts covering transport, integrated ticketing, spectator experience, facilities for players, media, corporate and restaurant and entertainment provision. SFS is one of three Tier 1 stadia within NSW, the others being Stadium Australia (Olympic Park) and the Sydney Cricket Ground.

In order to qualify for Tier 1 status, a stadium is required to include:

- Seating capacity greater than 40,000;
- Regularly host international sporting events;
- Offer extensive corporate facilities, including suites, open-air corporate boxes and other function/dining facilities; and
- Be the home ground for sporting teams playing in national competitions.

On 6 December 2018, development consent was granted for the Concept Proposal and Early Works/ Demolition stage of the SFS redevelopment (SSD 18_9249). This consent permitted the completion of demolition works on the site and established the planning and development framework through which to assess this subsequent Stage 2 application. Specifically, State Significant Development Consent SSD 18_9249 encompassed:

1. A Concept Proposal for:

- A maximum building envelope for the stadium with capacity for 45,000 seats (55,000 patrons in concert mode) and 1,500 staff.
- Urban Design Guidelines and a Design Excellence Strategy to guide the detailed design of the stadium at Stage 2.
- General functional parameters for the design and operation of the new stadium, including:
 - Range of general admission seating, members areas, premium box/terrace, function/lounge and corporate suite options;
 - Administration offices;
 - New roof with 100% drip-line coverage of all permanent seating;
 - Flood lighting, stadium video screens and other ancillary fittings;
 - Food and beverage offerings;
 - Facilities for team, media, administration and amenity such as changing rooms, media rooms and stadium; and
 - Provision for ancillary uses within the stadium and surrounds.

- Principles and strategies for transport and access arrangements.
- Indicative staging of the development.

2. Detailed consent for the following works:

- The demolition of the existing SFS and ancillary structures, including the existing Sheridan, Roosters, Waratahs and Cricket NSW buildings down to existing slab level.
- Site and construction management, including use of the existing MP1 car park for construction staging, management and waste processing, and provisions for temporary pedestrian and vehicular access management.
- The protection and retention of Tree 125 (Moreton Bay Fig adjacent to Moore Park Road) and Tree 231-238 cluster (Hills Weeping Fig and others near Paddington Lane) and all existing street trees located outside of the site boundary, with the removal of all other vegetation within the proposed future building footprint.
- Works to make the site suitable for the construction of the new stadium (subject to this separate Stage 2 application).

3.2 Overview of Proposed Development

The Development Application represents the next phase in the SFS redevelopment. It seeks consent for the detailed design, construction and operation of the new stadium as 'Stage 2' of the redevelopment, which includes:

- Construction of a new stadium with up to 45,000 seats (55,000 capacity in concert-mode), including playing pitch, grandstands, sports and stadium administration areas, food and drink kiosks, corporate facilities and all other aspects of a modern stadium;
- Operation and use of the stadium and surrounding site area for a range of sporting and entertainment events;
- Vehicular and pedestrian access and circulation arrangements, including excavation to deliver a partial basement level for storage, internal loading, direct vehicular connection to the Bradman-Noble Stand and servicing at the playing pitch level;
- Reinstatement of the MP1 car park following the completion of construction, including enhanced vehicle rejection facilities and direct vehicular connection to the new stadium basement level;
- Public domain improvements within the site boundary, including hard and soft landscaping, to deliver a range of publicly accessible, event and operational areas;
- Provision of new pedestrian and cycling facilities within the site;
- Signage, including building identification signage, business identification signage and a wayfinding signage strategy; and
- Extension and augmentation of physical infrastructure/ utilities for the development within the site.

The proposed development is consistent with the approved Concept Proposal pursuant to State Significant Development Consent SSD 9249.

3.3 Site Description

The site is located at 40-44 Driver Avenue, Moore Park within the Sydney Cricket Ground Precinct. It is bound by Moore Park Road to the north, Paddington Lane to the east, the

SECURITY-IN-CONFIDENCE

existing SCG stadium to the south and Driver Avenue to the west. The site is located within the City of Sydney local government area.

The site is legally described as Part Lots 1528 and 1530 in Deposited Plan 752011 and Lot 1 in Deposited Plan 205794. The site is Crown Land, with the SCSGT designated as the sole trustee under the *Sydney Cricket and Sports Ground Act 1978*. The site is wholly contained within designated land controlled by the Sydney SCSGT under Schedule 2A of the *Sydney Cricket and Sports Ground Act 1978*.

In a broader context, the site is largely surrounded by Centennial and Moore Parks, the Entertainment Quarter and the densely-populated residential suburb of Paddington. Located approximately 3km from the Sydney CBD and approximately 2km from Central Station, the site is connected to Sydney's transport network through existing bus routes and will benefit from a dedicated stop on the soon to be completed Sydney CBD and South East Light Rail.

The locational context of the Site is shown in **Figure 1**, whilst the site boundaries and existing site features are shown in **Figure 2**.



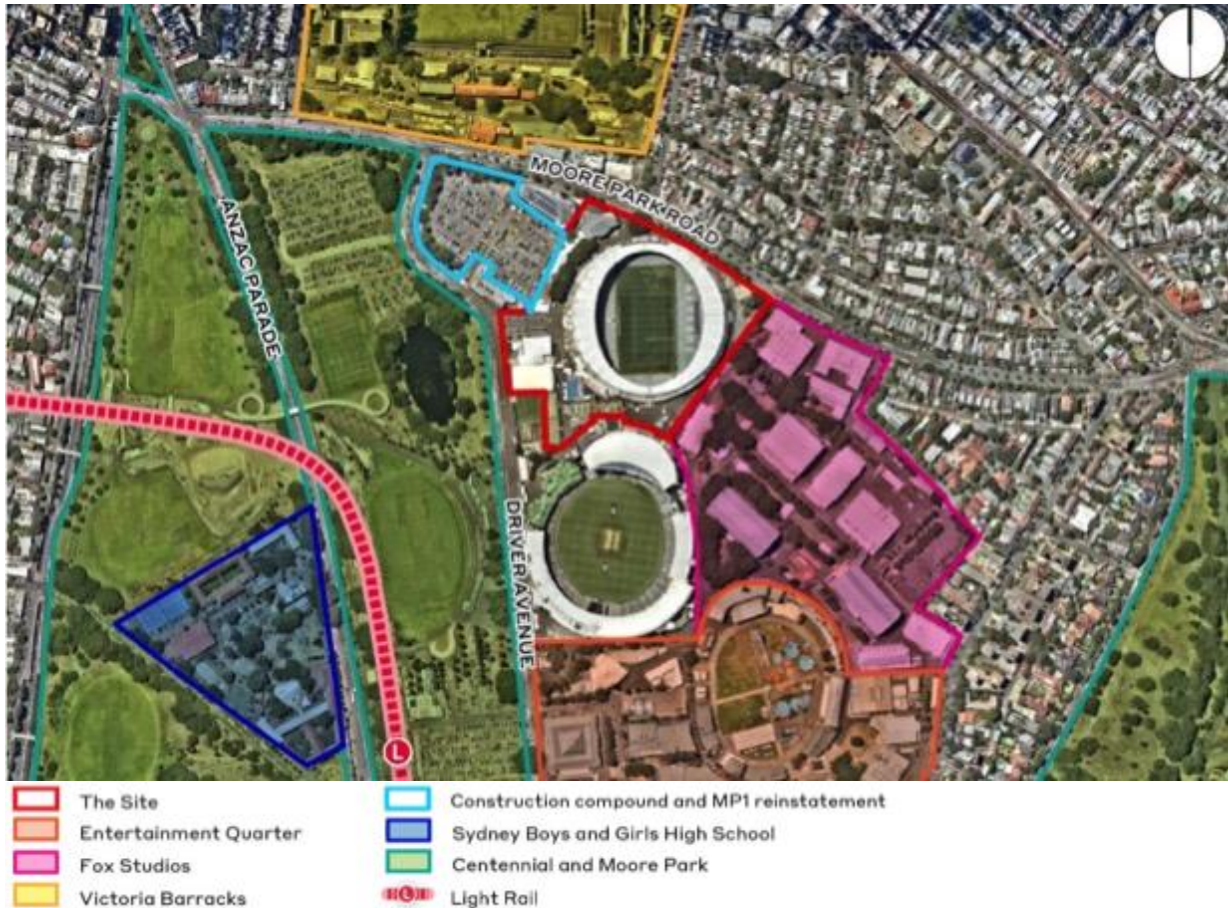


Figure 2 - Site area and local context

3.4 Transport connections

The SFS site will be serviced by a number of existing and future transport connections, including:

- Bus services along Anzac Parade;
- Bus services along Oxford Street;
- Event shuttle buses from Eddy Avenue (Central Station);
- Cycle connections along Anzac Parade;
- Future separated cycleway along Moore Park Road; and
- A Light Rail stop at Moore Park along Anzac Parade.

Of particular note, the new light rail connection is likely to result in additional pedestrian use of the Stadium precinct to transit from Paddington to the light rail connection.

3.5 Site Usage and Modes

The redeveloped SFS will continue to host sporting events, but is also designed to facilitate a number of other organised and informal uses of the Precinct, including:

- Concerts;
- Members area uses;

SECURITY-IN-CONFIDENCE

- Public fitness and games (Busby's Corner);
- Public pedestrian thoroughfare connecting Paddington to Moore Park;
- Car parking facilities for members;
- Stadium administration;
- Café; and
- Merchandise retail outlet.

With this blend of uses, the Precinct will operate in two primary modes, event mode and non-event (everyday) mode. These modes will be characterised by very different visitation numbers. This CPTED report considers CPTED principles in relation to both these modes and their unique crime risk profiles.

4 Crime Risk Analysis

4.1 Overview

This Crime Risk Analysis provides an overview of the crime risk as it relates to informing the application of the CPTED principles and recommendations outlined in the CPTED Analysis. A more detailed Security Risk Assessment has been produced for the Project by Intelligent Risks, which was referenced in the preparation of this report.

Crime statistics for most Australian jurisdictions have been in long-term decline. In general, NSW crime levels are currently at their lowest point in 20 years, although crimes against the person, such as assault, have increased over the past 18 months.

For crime reporting purposes, the SFS is located in the Sydney City Local Government Area (LGA), however is also bordered by the Woollahra and Randwick reporting areas. In raw numbers and on a per capita basis, Sydney LGA experiences the highest incidence of crime (although, the prevalence of crime in CBD areas of any city is typically higher than for suburban areas). This is due to the high population density of the area, high levels of activity at all hours, and the presence of more licensed premises than other areas. Nevertheless, crime levels in the Sydney City LGA dropped significantly from 2016 to 2018.

Trend analysis shows crime levels fluctuate reasonably significantly in all three reporting areas (Sydney City, Woollahra and Randwick), with overall crime levels in 2018 comparable to 2015 levels.

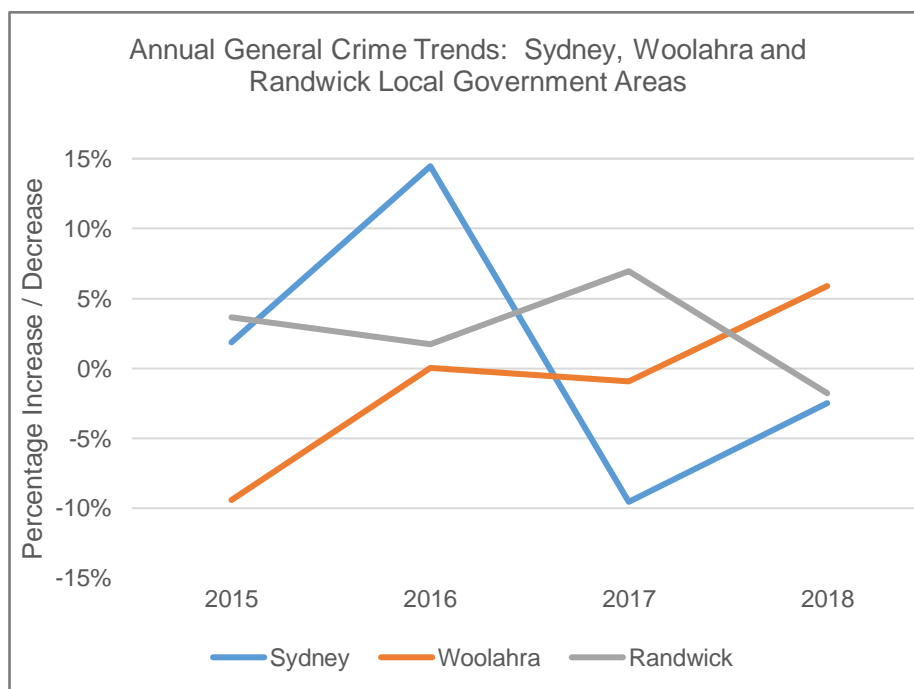


Figure 3: Local Government Areas in SFS environs – year on year overall crime trends

4.2 Assault

Sydney City LGA experiences a high level of assault when compared to other areas of metropolitan Sydney. The assault rates below (excluding domestic violence) reflect the incident levels in the Sydney City LGA, surrounding areas and, for comparison purposes, the

Parramatta Local Government Area which takes in the Sydney Olympic Park and its event venues.

Comparison: Assault Rates per 100,000 people				
	Sydney	Woollahra	Randwick	Parramatta
Non-domestic violence related assault	1433.9	188.7	365.1	360.5
Assault Police	139.6	17.2	25.5	28.9
Indecent assault, act of indecency and other sexual offences	202.0	41.2	74.4	78.3

Figure 4: Assault rates (Jan 2018-Dec 2018)

Areas immediately surrounding the SFS are predominantly residential, parkland and entertainment areas (including the SCG). The Stadium will share a similar crime profile to Allianz Stadium (prior to demolition) and the adjacent SCG. The NSW Bureau of Crime Statistics and Research (BOCSAR) produces hotspot crime mapping. This indicates a medium density of incidents around the Sydney Football Stadium area in 2018, consistent with levels of assault associated with the combination of crowds and alcohol associated with sporting events.

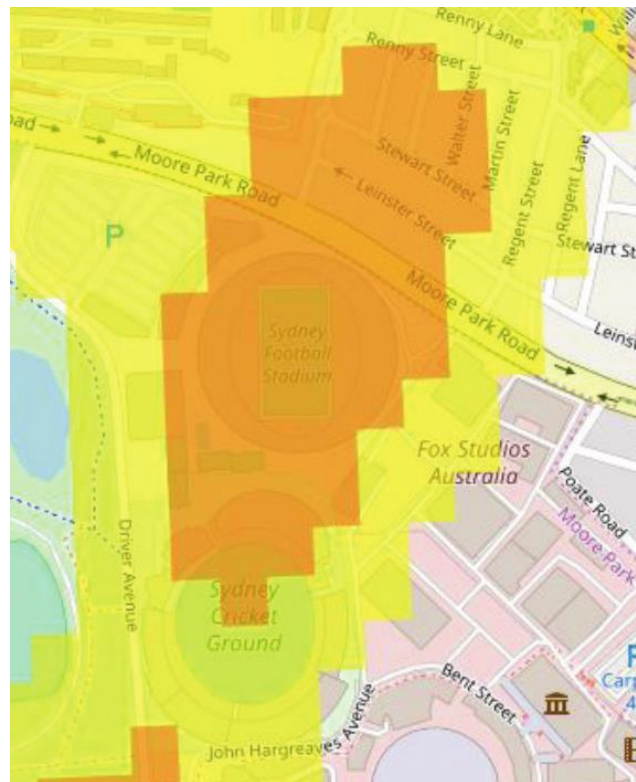


Figure 5: BOSCAR Crime Hotspot Map: Non-domestic Assault (Jan 2018-Dec 2018)

At all entertainment venues, including stadium environments, violent acts and assaults are often related to alcohol consumption and anti-social behaviour, which manifests as being physical or verbal in nature. There is a propensity for assaults to occur as at the conclusion of events.

Assaults are also more likely to occur during event mode rather than non-event mode. However; public access to the precinct during non-event times as a public-use recreational

space and pedestrian thoroughfare must also be considered in the development of the design. In non-event mode, patronage is low and security must minimise the opportunities for an assailant to take advantage of low patronage (and the associated sense of isolation and absence of surveillance) to commit an offence undetected. The application of CPTED principles and site security systems will reduce the vulnerability of members of the public utilising these public areas in low-patronage periods.

4.3 Malicious Damage

Overall, the Sydney LGA experiences a reasonably consistent level of malicious damage incidents. Incidents are most heavily concentrated in the west of the reporting area, in George Street, the Rocks and other CBD areas, rather than in the Moore Park area of the LGA.

Minor malicious damage can be expected to occur at the SFS during events, potentially by intoxicated persons. However, the likelihood and degree of damage will be far less than other areas of the city. Property damage can include damaging glazed surfaces and general destructive vandalism to structures and items in the venue's public domain. Graffiti and other vandalism in non-event mode is also possible. The stadium security overlay (i.e. deployment of security and stewarding personnel) will be at a reduced level in non-event mode, with potential opportunities to misuse public facilities unseen. This emphasises the need for effective CPTED strategies to deter adverse behaviours.

4.4 Theft

Large events, such as sporting events and concerts are attractive to thieves who seek to use them to target personal belongings from other patrons or venue assets. Theft in the LGA has slowly decreased over the period from 2014 to 2018, with an average of approximately four incidences of petty theft and under two incidences of vehicle theft reported on a daily basis of that period. Targeting of personal belongings may also occur on non-event days in public recreational spaces. Facilities such as the bike parking areas adjacent to Moore Park Road may be highly attractive to thieves, similarly, car park design should consider criminal targeting of vehicles for theft or break-in: this is more likely in non-event modes when the SFS does not have a full security overlay and large numbers of people in attendance.

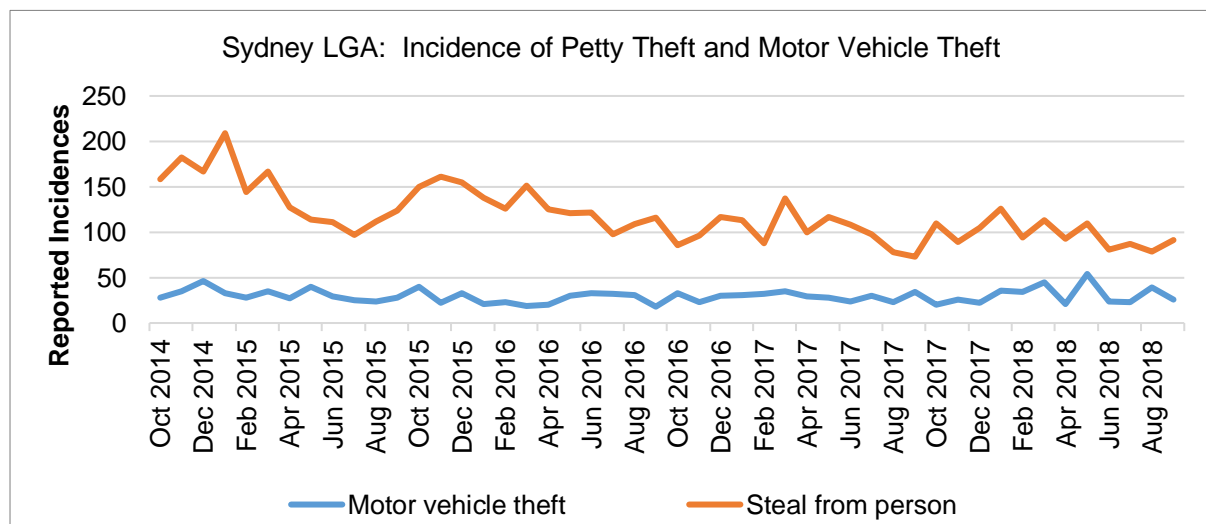


Figure 6: Theft incidents (Oct 2014-Sep 2018)

4.5 Anti-Social Behaviour

Anti-social behaviour generally refers to nuisance or disorderly acts that result in annoyance, harassment or distress to a patron or staff member and ultimately detract from the patron and spectator experience. Adverse crowd behaviours are often tied to alcohol consumption. While the frequency of potential anti-social acts is high, stadiums around Australia (including the SFS and SCG) have instituted a range of measures that effectively manage the number and impact of such events resulting from intoxication.

In non-event mode, other forms of anti-social may include loitering in areas intended for other activities, such as the recreation spaces, littering, consumption of alcohol and social issues such as vagrancy. Such incidents are common in urban environments and likely to occur at some point in the venue's life. CPTED is specifically intended to address such behaviours in publicly accessible spaces.

4.6 Threats & Hoaxes

Threats and hoaxes can be an effective tactic to disrupt operations. In the NSW sporting stadia context, threats and hoaxes are uncommon. However, the SFS site also houses the headquarters of the NRL, Rugby Australia and other sporting administrative bodies. These have been subject to, and may to be subject to threats and hoaxes in the future.

Any threat or hoax that may target the SFS is likely to be nuisance in nature and designed to disrupt an event. This motivation could be disgruntled fans or individuals that have a grievance against the venue, event, team, performer etc. Although these would be rare events, in the current security context it remains a genuine risk to operations until proven otherwise. The implementation of proper protective security measures and response procedures – particularly to initially determine the credibility of the threat – can considerably lessen the impact of such threats. CPTED strategies that enhance natural surveillance – combined with other security systems such as CCTV – can support response and assessment of items and activities that may initially appear to pose a threat to safety and security.

4.7 Terrorism

Terrorist targeting of sporting and entertainment events and venues internationally, and the ongoing agitation by terrorist groups to encourage 'lone wolf attacks' on sporting stadia, clearly demonstrates venues are legitimate terrorist targets.

The publicly accessible areas of the precinct, which are not subject to the same degree of overt protective security measures as the stadium itself, are attractive for targeting. International experience (e.g. Stade de France and Manchester Arena) has highlighted the propensity for attacks to occur external to venues. As such, CPTED strategies can significantly contribute to the detection and deterrence of hostile reconnaissance and preparations for attack. Any terrorist attack is more likely to target the stadium precinct during an event due to terrorism motivations being strongly based in achieving maximum impact (in terms of casualties, media coverage, imagery and generation of fear).

5 CPTED Analysis

5.1 CPTED Principles

Crime prevention through environmental design (CPTED) seeks to influence the design of buildings and precincts to:

- Maximise risk to offenders (increasing the likelihood of detection, challenge and apprehension);
- Maximise the effort required to commit crime (increasing the time, energy and resources required to commit crime);
- Minimise the actual and perceived benefits of crime (removing, minimising or concealing crime attractors and rewards); and
- Minimise uncertainty about appropriate behaviour and use of spaces.

The following CPTED principles have been applied as part of the design process:

- Natural surveillance;
- Natural access control;
- Territorial reinforcement; and
- Space management.

Natural surveillance refers to the ability for actions to be both actively and passively observed. Both natural and technical surveillance (CCTV) reduce a site's vulnerability to crime. Surveillance serves to both deter and detect criminal activity, and will enable response actions to be initiated where it does occur. Natural surveillance includes clear sightlines, effective lighting, and landscaping that does not provide offenders opportunities for concealment or entrapment of victims.

Natural access control includes physical and symbolic barriers used to attract, channel or restrict the movement of people. Technical access control systems are important security features of facilities like stadiums, but are also supported by design elements that make it clear where the public is permitted to access and channel site users into preferred locations, while discouraging unauthorised access.

Territorial reinforcement promotes the sense of ownership of public spaces by the community. Effective design contributes by encouraging people to gather in public space and to feel a shared responsibility for its use and condition. This is most effective when clear transitions and boundaries exist between public and private space combined with clear design cues on appropriate use of spaces.

Space management refers to the effective management and maintenance of a site. Spaces that are attractive, well-maintained and well-managed are more likely to attract greater usage. This in turn supports security by reducing opportunities for criminal activity to go undetected and increasing public interest in preserving the space and reporting crime. Space management strategies include activity coordination, site cleanliness, rapid repair of vandalism and graffiti and faulty lighting, and the removal or refurbishment of decayed or poorly maintained infrastructure.

5.2 CPTED Design Elements

In order to examine the design's incorporation of CPTED principles, this report has reviewed the following design elements (which represent the practical application of CPTED principles) outlined by IR in the project's security brief:

- Allow for clear sight lines;
- Supportive landscaping;
- Adequate lighting;
- Minimise concealed and isolated routes;
- Avoid entrapment;
- Reduce isolation;
- Create a sense of ownership through maintenance management;
- Reduce undesirable activity;
- Provide signage and information;
- Building orientation;
- Reduce opportunities for unauthorised access;
- Hostile vehicle mitigation; and
- Good housekeeping.

5.3 Allow for Clear Sight Lines

Sight lines are defined as the desired line of vision in terms of breadth and depth. The inability to see ahead and along a route can be a serious impediment to natural surveillance. Wherever possible, sharp corners, walls, earth berms, fences, bushes or pillars on or near pedestrian routes in the Precinct have been minimised.

DESIGN ELEMENT	CPTED ANALYSIS
Allow for clear sight lines	<ul style="list-style-type: none"> • Clear sight lines have been used on the main concourse surrounding the stadium to reinforce the perception of a high likelihood of detection among potential offenders and support stadium and precinct users general observation and awareness of their immediate surrounds. • Landscaping, including public seating and tree plantings, has been focussed around the edges of the concourse to maintain sight lines. • Clear sight lines have been maximized along main pedestrian routes, stadium access/egress points and internal stadium spaces, both service areas and the bowl. • Ground cover foliage will be kept sufficiently low to avoid impeding observation. • Taller vegetation and tress will be pruned at lower levels to support observation and awareness of immediate surrounds. • Walls or barriers in in public areas around the stadium are typically limited to 600mm to enhance passive surveillance and will have permeable panels or fencing above 400mm where possible to enable sight lines. • The use of 'open plan' design has been maximised for internal stadium spaces
RECOMMENDATION	
	<ul style="list-style-type: none"> • Technical and physical surveillance measures be considered in the SFS Security Management Plan to provide coverage in areas where stadium design does not permit maintenance of clear sight lines

5.4 Supportive landscaping

Landscaping plays a major role in modifying behaviour, both of stadium patrons and potential offenders. Well designed landscaping will support the actual and perceived sense of safety and security when moving within the precinct.

DESIGN ELEMENT	CPTED ANALYSIS
Supportive landscaping	<ul style="list-style-type: none"> Landscaping has been focussed on the extremities of the concourse to create a sense of high risk of detection among potential offenders and as such discourage criminal activity. The use of plants in the landscape design has been encouraged to soften boundary treatments and introduce visual interest, but care must be taken to ensure that there is plenty of opportunity for surveillance of buildings and pedestrian routes from within and beyond the site. Landscaping will be used to assist with defining boundaries and pedestrian wayfinding by subtly guiding the movement of pedestrians throughout the precinct.
RECOMMENDATIONS	
	<ul style="list-style-type: none"> Plant growth between 600mm and below 2.4m should be limited or carefully selected to provide a window of surveillance, but this does not preclude the use of hedging plants and feature shrubs and trees, providing surveillance opportunities are maintained. Placement of trees should be considered in relation to: <ul style="list-style-type: none"> The impact on CCTV fields of view; Any reduction in illumination provided by surrounding lighting; The ability to use trees as a climbing aid over boundaries or onto buildings. Species selection of trees and shrubs should take account of their future maintenance, as poor maintenance can impact on site security. Precinct landscaping should encourage dispersal of stadium patrons to multiple areas throughout external public spaces. Areas encouraging gathering of large crowds at predictable times should be avoided where possible. Landscaping – including as an alternative to overt hostile vehicle mitigation measures – should support separation of pedestrian and vehicular traffic along major access routes.

5.5 Adequate Lighting

Lighting plays a major role in discouraging criminal activity, both during event modes and non-event periods. Lighting also supports a feeling of safety and security from stadium staff, patrons and general public when transiting through the stadium precinct.

DESIGN ELEMENT	CPTED ANALYSIS
Provide adequate lighting	<ul style="list-style-type: none"> The Lighting Strategy provides general guidance on the application of lighting through the precinct.
RECOMMENDATIONS	
	<ul style="list-style-type: none"> A basic level of lighting should allow the identification of a face from a distance of approximately 10 metres for a person with normal vision. Lighting should ensure a realistic chance that there will be witnesses to an intrusion. Intruders should be made to feel vulnerable to detection and at an increased risk of being challenged. Conversely, installing lighting which cannot achieve this effect, such as the lighting of an elevation that cannot be observed by potential witnesses or CCTV, may actually assist an intruder. Lighting should be used in line with each mode of stadium use to ensure main pedestrian and stadium access routes have adequate lighting to support both individual

	<p>observation and awareness of their own surrounds and physical and technical surveillance measures.</p> <ul style="list-style-type: none"> • Lighting should be designed to provide illumination of key pedestrian access routes without blinding individuals or technical surveillance measures. Lighting should illuminate areas immediately surrounding public areas and pedestrian pathways as well as the locations themselves to avoid creating low-light zones immediately adjacent to these areas that may provide concealment for potential offenders. • MP1 East and West car parks require sufficient lighting to discourage criminal activity, particularly during event modes and early evening after business hours to support safety and security of staff using these car parks. • Outside event modes lighting should be used to discourage vagrancy or illegal, particularly drug related, activity throughout the publicly accessible areas of the stadium precinct. • Bicycle and pedestrian pathways are to be provided with illumination levels sufficient to ensure a sense of personal security is maintained throughout the Precinct at all hours of the day. • Lighting must support the conduct of searching and screening activities prior to entry into the stadium, including where the screening plazas for major events may be located further away from the building façade.
--	--

5.6 Minimise Concealed and Isolated Routes

Concealed or isolated routes are often predictable routes that do not offer an alternative for pedestrians. An attacker can predict the routes pedestrians will take once they are on the path.

DESIGN ELEMENT	CPTED ANALYSIS
Minimise concealed and isolated routes	<ul style="list-style-type: none"> • The south end of the stadium on the boundary with the Sydney Cricket Ground and the stepped multi-functional play and recreation space on the north east boundary creates the potential for a degree of concealment. These areas have the potential to encourage vagrancy or criminal activity, particularly during non-event modes, however planned fencing and natural barriers will restrict access to these locations. • The use of a clear signage and wayfinding strategy reduces the likelihood of visitors straying into less populated locations, or locations prone to concealment, by ensuring people are able to locate their destination using routes with high usage levels, good lighting and good natural surveillance.
RECOMMENDATIONS	
	<ul style="list-style-type: none"> • Use lighting, landscaping and physical features to channel pedestrians away from concealed or isolated areas. • Use technical and physical surveillance to actively monitor these areas during both event and non-event modes if stadium and precinct design cannot avoid creating such spaces. • Ensure adequate lighting, physical and technical surveillance between the Sydney Football Stadium and Sydney Cricket Ground during all modes, and particularly during night hours in non-event mode.

5.7 Avoid Entrapment

Entrapment areas are small, confined areas near or adjacent to well-travelled routes that are shielded on multiple sides from observation and surveillance. Examples are lifts, tunnels or bridges, enclosed and isolated stairwells, alcoves and recessed areas on a building façade (e.g. for emergency exits).

DESIGN ELEMENT	CPTED ANALYSIS
Avoid entrapment	<ul style="list-style-type: none"> Multiple entry/egress routes reduce the potential for entrapment of staff and patrons during event modes. This supports the efficiency of patron dispersal at the completion of events, or in the event of evacuation of the stadium through multiple egress routes large enough to cater for expected pedestrian flows. Pedestrian access routes for access to and from the stadium, as well as internal stadium thoroughfares, have been designed to provide sufficient width and avoid creating choke points to the maximum extent possible. Stadium design will incorporate limited isolated areas and exits from these areas in the event of emergency.
RECOMMENDATION	
	<ul style="list-style-type: none"> Technical and /or physical security measures should be used to provide surveillance of potential entrapment areas where stadium and precinct design are unavoidable.

5.8 Reduce Isolation

People (precinct users and staff) are at greater risk in isolated areas especially if signs of distress will not be seen or heard. Natural surveillance within the local environment, adjoining rooms and buildings helps mitigate isolation and reduces the likelihood that malicious activity will go unnoticed

DESIGN ELEMENT	CPTED ANALYSIS
Reduce isolation	<ul style="list-style-type: none"> Areas of staff and public interface should be placed in view of entrances and general circulation areas to deter anti-social or aggressive behaviour. Signage is strategically located across the Precinct to provide orientation upon entry to the site and throughout the pedestrian routes across the site. This assists to encourage visitors and patrons to remain in well-populated, well-lit areas by supporting them to transit the precinct in an optimal manner. Public spaces have been dispersed through the precinct to encourage public usage across all non-restricted areas, decreasing the likelihood of individuals becoming isolated.
RECOMMENDATIONS	
	<ul style="list-style-type: none"> Employ technical surveillance systems where stadium design precludes or limits passive observation. Maximise the use of supportive landscaping to minimise areas of potential isolation.

5.9 Create a Sense of ownership Through Maintenance Management

Sense of ownership, or territoriality, is an important factor since it encourages people to take responsibility for their environment, resulting in them being more likely to report suspicious activity. Security design can support this by using building design and landscaping to support delineation between private, controlled, and public spaces. Well-maintained spaces that incorporate high quality materials encourage a sense of guardianship in those that use the space and discourage vandalism and anti-social behaviours.

DESIGN ELEMENT	CPTED ANALYSIS
Create a sense of ownership through maintenance and management	<ul style="list-style-type: none"> A well-maintained Precinct will increase use and a sense of community protectiveness of the venue and Precinct. The site has been designed to serve as a community gathering point and a pedestrian access route, both on event and non-event days. This provides the opportunity for territoriality to be developed in:

	<ul style="list-style-type: none"> ○ Venue and other Precinct tenant Staff; ○ Patrons of the Light Rail that utilise the site as a pedestrian route; ○ Local residents utilising the recreational areas; and ○ Patrons attending the venue for events. <ul style="list-style-type: none"> • Without proper maintenance, people are unlikely to be drawn to use the space, may not feel safe using the space, and are much less likely to take a vested interest in its care or to report undesirable or prohibited behaviours. • Scheduled maintenance of fixtures and landscaping is essential for a well-maintained Precinct, along with rapid remediation of graffiti and other damage caused by vandalism to deter further degradation. This must be supported by active monitoring of the environment to identify and swiftly rectify any damage and routine cleaning and other support functions. • High quality materials will be utilised throughout the Precinct, which assists in reducing degradation and managing maintenance requirements. This would be further supported by the use of graffiti resistant materials. An attractive precinct that evokes pride in the community, history and future will support community buy-in and encourage reporting of damage or vandalism. The use of public art – as is planned for the precinct – can also discourage vandalism and encourage community territoriality of the space. • Placement of adequate waste disposal, clear lines of sight across publicly accessible facades and other surfaces across the precinct, and clear guidance via signage and demarcation on where certain activities may take place (such as smoking) will support a clean and tidy Precinct. This adds to the overall perception of good maintenance and reduces the likelihood of lazy public behaviours (such as littering) contributing to the Precinct appearing poorly maintained and becoming a less valued community space that may be more prone to antisocial behaviours and vandalism. • Maintenance of public recreation equipment outside the Stadium will be important in retaining regular users and ensuring public safety. This facility is designed to draw the local community into the Precinct and will support territoriality for the local resident. Equipment that falls into disrepair is likely to reduce general use and risks Busby's Corner being used by elements less likely to have a positive custodial effect on the area and make it more susceptible to anti-social behaviours and vandalism.
--	--

RECOMMENDATIONS

	<ul style="list-style-type: none"> • The site's management plan must ensure routine maintenance is conducted and any faults or damage rectified expeditiously. • The stadium should, where possible, utilise graffiti-resistant materials or coatings to make maintenance of the space easier, and remediation of any associated vandalism easier. • The site should include adequate (and appropriately designed to minimise the opportunity for concealed items) waste and recycling disposal, including in public areas. • Public fitness and games equipment should be maintained to a high standard at all times and any damage or loss of functionality swiftly remediated.
--	---

5.10 Reduce Undesirable Activity

Design of the precinct activity areas promotes multiple and complementary uses, but measures have been taken to minimise activity, such as skateboarding on installed seating and handrails, that is undesirable or contrary to the intended purpose.

DESIGN ELEMENT	CPTED ANALYSIS
Reduce undesirable activity	<ul style="list-style-type: none"> • Public access has been maintained for non-event modes via ease of pedestrian access and bike paths to encourage appropriate activities. • The publicly accessible retail outlets on the north-western side of the stadium will encourage regular public usage and provide passive observation of undesirable activities. • Bike parking facilities have been grouped along Moore Park Road adjacent to the proposed bike path to support passive surveillance in this area.

	<ul style="list-style-type: none"> • Three key public spaces at Moore Park Steps, Fig Tree Place and Busby's Corner have been designed to encourage public usage of the precinct during non-event modes. • Public activities will be introduced at the site including outdoor fitness and informal games to encourage public usage and passive observation
RECOMMENDATION	
	<ul style="list-style-type: none"> • Encourage active public usage of the precinct during non-event modes.

5.11 Provide Signs and Information

Well designed, strategically located signs and maps contribute to a feeling of security. All users must be able to understand which routes they use and be able to quickly orient themselves and locate amenities. Good signage and wayfinding strategies reduce vulnerabilities by assisting people to use the safest routes and reduce ambiguity around legitimate access and use.

DESIGN ELEMENT	CPTED ANALYSIS
Provide signs and information	<ul style="list-style-type: none"> • The Wayfinding and Signage Strategy outlines the design approach to ensure that signage and wayfinding is effective across the site. The proposed signage placement has taken into consideration likely patron flows resulting from the stadium precinct design and future public transportation flows. • Naming of gates and locations within the precinct will support user orientation by including geographic or landmark-based names (such as East Gate, Moore Park Steps, Fig Tree Place – the final naming will be determined following consultation processes), while using the sites' history to evoke a community attachment to the site. Naming of gates will move away from traditional lettering to avoid previous confusion caused by duplication of naming with the SCG and Fox Studios Entertainment Precinct. • The signage strategy includes: <ul style="list-style-type: none"> ○ Signage that is consistent with the broader area to support seamless integration with external signage for surrounding sites, public transportation and City of Sydney street wayfinding signage. ○ Standardised signage palette across the site for consistency; ○ Use of a range of signage including signage on the building, information pylons and finger directional signs. ○ Use of maps with a "heads up" orientation to assist guide patrons based on their current orientation; ○ Signage located at strategic locations including orientation and decision-making points at entries to the site; visitor entrance and egress points, along the concourses, and at meeting points. ○ Use of pictograms for key amenities to remove language barriers and make for easily and quickly identified paths to amenities such as toilets and lifts. ○ Digital panels on the concourse to allow relevant event-specific messages to be displayed. ○ Clearly visually differentiated signage for vehicle, compared with pedestrian entrances, which is easily readable from vehicles. • The site will utilise interpretive signage to provide visitors with information about the history and cultural heritage of the site and to celebrate cultural and sporting heritage. This will provide points of interest to support congregation and activation of key areas, and enhance community ownership of the site, in line with the CPTED principle of territorial reinforcement. • Within the Stadium, clear signage supports patrons to navigate to their seats, concessions, amenities etc. in the most effective manner and reduces conflict arising from confusion, or an inability to access amenities or facilities in a timely manner. • Signage that provides clear guidance, including pictorial guidance on prohibited activities will complement interpretive and wayfaring signage and remove ambiguity around correct usage of public areas. This may include, for example, signage to ensure

	<p>skateboards are not utilised on furniture, pedestrian-only areas are observed and carriage of prohibited items is restricted.</p> <ul style="list-style-type: none"> • Signage should also support precinct campaigns to encourage the reporting of any suspicious activity, including providing appropriate numbers and/or online options for reporting. This should be supported by visible signage indicating that areas are under constant visual surveillance. This will have the dual impact of deterring criminal activity and supporting the community to feel safe using the precinct, including as a pedestrian transit point after hours.
RECOMMENDATIONS	
	<ul style="list-style-type: none"> • Signage indicating prohibited activities should be included as part of the signage strategy for the site. • Signage should be implemented encouraging the reporting of suspicious activity (and advising users of the means to do so). • Signage should be implemented at strategic locations advising that the area is under CCTV surveillance.

5.12 Building Orientation

The orientation of a building can have a significant impact on its performance to protect its occupants. The proximity of a vulnerable façade to a parking area or unscreened area outside a secure perimeter can greatly contribute to its vulnerability.

DESIGN ELEMENT	CPTED ANALYSIS
Building orientation	<ul style="list-style-type: none"> • The Stadium is surrounded by a publicly accessible concourse that is accessible by the general public on both non-event and event days. The exception to this is the Members area at the South of the site that is not accessible on non-event days, and is accessed through security control points on event days (with members only access on Double Header events). This requires that natural and technical surveillance and access control be implemented to monitor activity in vicinity of the entrances along the publicly accessible façade and ensure that unauthorised access is prevented or detected and appropriately responded to. This should be supported by adequate lighting to illuminate activity along the perimeter and ensure visibility from main pedestrian routes through the site, and to support effective CCTV operation. • The Stadium is set back as much as possible within the envelope in order to maximise the public space. The activation of this site in both event and non-event modes will support security of the building, increase the likelihood of suspicious activity being detected by the public and decrease the likelihood that offenders will perceive attempts at unauthorised access or other criminal activity such as graffiti or vandalism as low risk of detection or challenge. The location of public use sites near the site entries and venue entrances in the design supports the congregation of people in areas with a view of the entrances. The external carpark does not abut the Stadium and will be security controlled. • The design of the Stadium includes provision for limiting public access to the entire site for specific events (such as international matches) where the risk may be higher. This overlay can also be utilised for regular events in a situation of heightened threat, or where specific information indicates a threat against a particular event or the SFS.
RECOMMENDATIONS	
	<ul style="list-style-type: none"> • Building façades (including the Stadium) should have no publicly accessible voids or alcoves that are not visible through natural surveillance. • Natural and technical Surveillance should be maintained of all Stadium entrances that are accessible from the public external concourses (as well as CCTV across all entrances/exits)

5.13 Reduce opportunities for Unauthorised Access

In concert with optimising natural surveillance and lighting of vulnerable points, Stadium and precinct design must seek to reduce opportunities to gain unauthorised access through use of climbing aids

DESIGN ELEMENT	CPTED ANALYSIS
Reduce opportunities for unauthorised access	<ul style="list-style-type: none"> A security check point at the MP1 carpark service vehicle access point will ensure only authorised vehicles are permitted access to the basement service road. Security gates are proposed for the south west and south east corner of the stadium to control access to the restricted area between the stadium and SCG.
RECOMMENDATIONS	
	<ul style="list-style-type: none"> Stadium design should maximise natural and physical features providing a clear distinction between public and restricted areas, including, landscaping, fencing, lighting and signage. Where fencing is necessary, close aperture, high tensile mesh (not chain-link) should be used to provide rigidity and longer useful life. Trees, bins, vehicles or other enablers should be placed away from fencing and structures.

5.14 Hostile Vehicle Mitigation

DESIGN ELEMENT	CPTED ANALYSIS
Hostile Vehicle Mitigation	<ul style="list-style-type: none"> The stadium precinct design achieves a high level of hostile vehicle mitigation through the use of stairs and level changes between the precinct and Moore Park Road and Driver Avenue. This will be enhanced through the installation of bollards along these roads and the Moore Park-SCG access road where physical design does not provide the required level of mitigation. Bollards will be used to physically separate pedestrians and vehicular traffic along the boundary of Moore Park Road, Driver Avenue and the Moore Park-SCG access road in accordance with the assessed vehicle-as-a-weapon resilience requirements where physical features or landscaping cannot be employed. Use of the underground access road for service vehicles from the MP1 carpark to the basement ring road ensures separation of these vehicles from large gatherings of people during the preparation for and during events. Further detail on the proposed HVM strategy is contained in the <i>Security & Risk Assessment Strategy</i>.
RECOMMENDATION	
	<ul style="list-style-type: none"> Maximise the use of landscaping and physical design features, such as stairs and level changes, to physically separate pedestrian and vehicular traffic during all stadium modes. Particular attention should be given to areas where patrons gather in large numbers to access the stadium during event modes.

5.15 Good Housekeeping

DESIGN ELEMENT	CPTED ANALYSIS
Good housekeeping	<ul style="list-style-type: none"> Rubbish bins will not be placed in the vicinity of critical/vulnerable areas i.e. near glazing, support structures, or where they can be used to assist climbing or the contents could be used to start a fire.

- Clear waste bags, not contained within a solid enclosure, will be used to improve visual examination of waste contents for suspicious items.
- Where a solid, non-permeable enclosures are required, the bin's opening will provide cleaners and security guards with the ability to view inside the bin to visually detect any significant suspicious item or device placed within the bin.
- Horizontal flat surfaces will be avoided to the extent possible in publicly accessible areas to reduce opportunities to leave items including rubbish, bags or malicious devices. Sloping surfaces visible to users, including on vending machines (if used), are highly preferred.

RECOMMENDATIONS

- Minimise and where possible avoid the use of compactors, wheelie bins and metal bins to store rubbish within service areas, in goods areas or near crowded entrances.
- The site's management plan should ensure public areas are kept clear of clutter and rubbish to support passive and active surveillance measures and maximise the likelihood of detection suspicious items and activity.