MUSEUMS DISCOVERY CENTRE EXPANSION
ENVIRONMENTAL IMPACT STATEMENT

APPENDIX AA
CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN REPORT

Ethos Urban

NSW GOVERNMENT

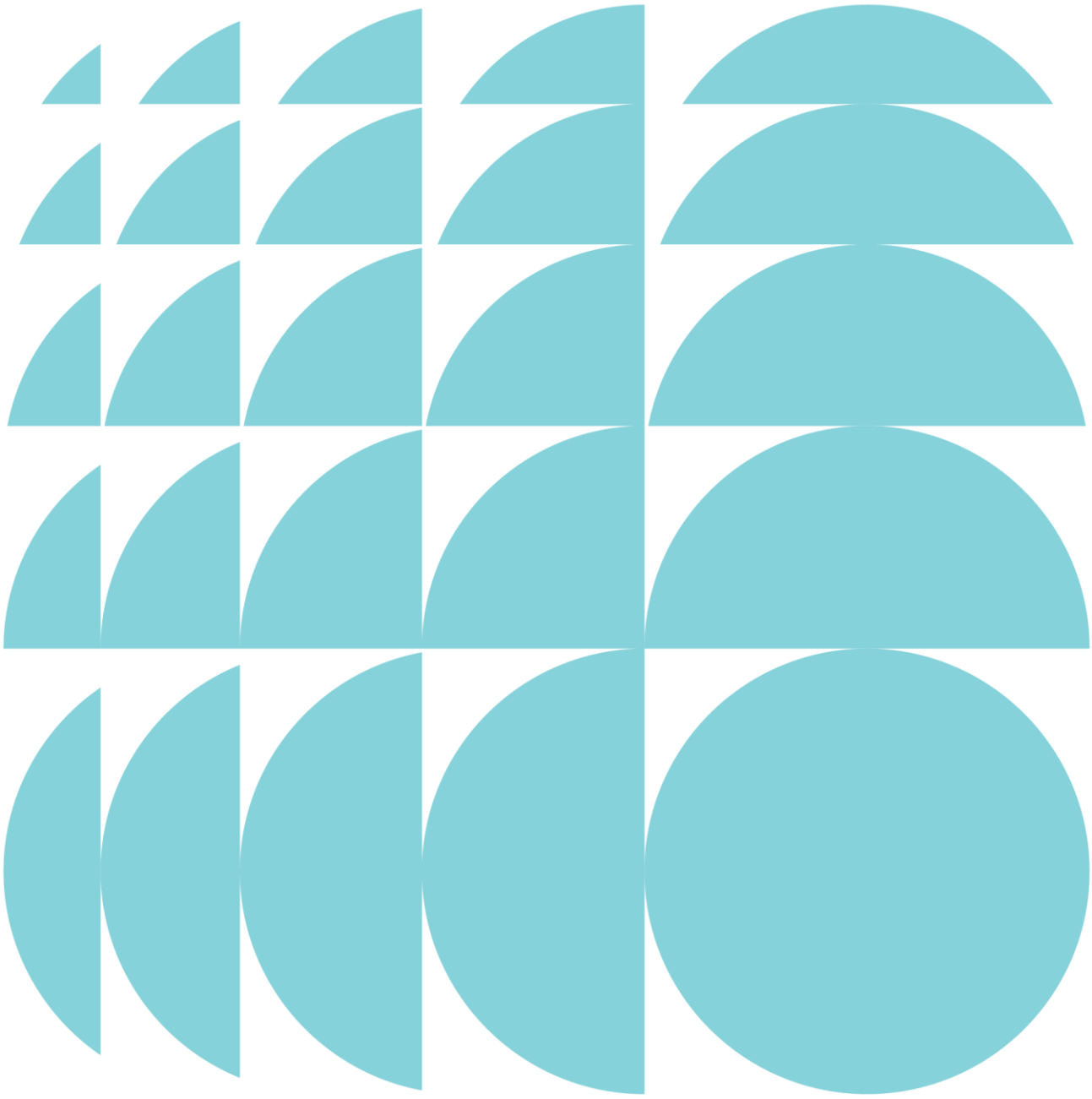
ETHOS URBAN

Crime Prevention Through Environmental Design

Museums Discovery Centre
2 Green Road, Castle Hill

Submitted to the Department of Planning, Industry and Environment
On behalf of Create Infrastructure

26 August 2020 | 2200461



CONTACT

Daniel West	Associate Director	dwest@ethosurban.com	0411 570 394

This document has been reviewed by:

Daniel West 26 August 2020

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Ethos Urban Pty Ltd
ABN 13 615 087 931.
www.ethosurban.com
173 Sussex Street, Sydney
NSW 2000 t 61 2 9956 6952

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1.0 Background

The MDC is owned and operated by the Museum of Applied Arts and Sciences (MAAS) and features exhibitions and displays in collaboration with Australian Museum and Sydney Living Museums, who also maintain collection storage and conservation facilities on the site. The MDC is located at 172 Showground Road, Castle Hill. There are six buildings primarily providing collection storage as well as areas for displays and education and public programs, accessible to visitors (Building E). During 2017-2018 a total of 17,481 persons visited the MDC site.

The MDC Expansion is part of the renewal of the Museum of Applied Arts and Sciences, known as the Powerhouse Program, that includes:

- **Powerhouse Parramatta**: A new benchmark in cultural placemaking for Greater Sydney that will be a symbol of a new approach to creative activity and engagement.
- **Powerhouse Ultimo**: The NSW Government recently announced that the Museum's Ultimo site will be retained, and the Museum will operate over four sites across the Greater Sydney area.
- **Powerhouse Collection Relocation and Digitisation Project**: The relocation of the Powerhouse collection and digitisation of around 338,000 objects, enhancing the collection's accessibility for local, national and international audiences.

The MDC expansion is an integral component of the Powerhouse Program and will provide the opportunity to increase visitation to the site, forming an important and significant cultural institution within The Hills Shire. In addition to the storage component of the proposal, the expansion will increase access to the Powerhouse collection through a range of spaces for visible storage, research and viewing of the collection, as well as flexible spaces for education and public programs, workshops, talks, exhibitions and events.

1.1 Secretary's Requirements

The Department of Planning, Industry and Environment have issued Secretary's Environmental Assessment Requirements (SEARs) to the applicant for the preparation of an Environmental Impact Statement for the proposed development. This report has been prepared having regard to the SEARs as follows:

Table 1 Relevant Secretary Requirements

SEARs	Where Addressed
3. Built form and urban design The EIS shall: - address Crime Prevention Through Environmental Design Principles (CPTED)	**Sections 6 and 7**

2.0 Introduction

This Crime Prevention Through Environmental Design (CPTED) Assessment has been undertaken to assess the potential opportunities for crime and the perceived fear of crime that may be associated with the proposed construction and use of a new building to facilitate the expansion of the Museums Discovery Centre (MDC) site at 2 Green Road, Castle Hill, as envisaged in Environmental Impact Statement (EIS) to which this report is appended.

The primary objective of the SSD Application is to provide expanded facilities to accommodate the Powerhouse collection including spaces for storage, conservation, research and display and spaces to facilitate increased public access to the collection through education, public programs, workshops, talks, exhibitions and events. The expansion of the existing MDC facility within the site at 2 Green Road Castle Hill will integrate with the existing MDC site located at 172 Showground Road, Castle Hill and its operations on a permanent basis.

The proposal is a type of *"Information and Education Facility"* with a Capital Investment Value (CIV) in excess of $30 million and is classified as SSD under Schedule 1 Clause 13 of the State Environmental Planning Policy (State and Regional Development) 2011 (State and Regional Development SEPP).

CPTED is a situational crime prevention strategy that focuses on the design, planning and structure of the environment. This assessment aims to identify the potential opportunities of crime created by the proposed development by assessing the development in accordance with design and place management principles of CPTED. Ethos Urban has prepared this assessment in accordance with the methods and resources of the NSW Police Force *Safer by Design Course*.

This assessment has been prepared and reviewed by experienced CPTED professionals, following their completion of the NSW Police Force *Safer by Design Course*. The assessment uses qualitative and quantitative measures to analyse the physical and social environment in which the proposed development is located and recommends actions to mitigate crime opportunity in accordance with the Australian and New Zealand Risk Management Standard AS/NZS 31000:2009.

In accordance with the NSW Department of Planning and Environment's guidelines (2001) the aim of the CPTED strategy is to influence the design of buildings and places by:

- increasing the perception of risk to criminals by increasing the possibility of detection, challenge and capture;
- increasing the effort required to commit crime by increasing the time, energy or resources which need to be expended;
- reducing the potential rewards of crime by minimising, removing or concealing 'crime benefits'; and
- removing conditions that create confusion about required norms of behaviour.

The Crime Risk Rating considers the development as proposed in Architectural Plans and Design Report prepared by Lahznimmo Architects and Landscape Plans prepared by ASPECT Studios.

The following tasks were undertaken in the preparation of this assessment:

- review of the *Safer By Design Manual* by the NSW Police Force;
- collection and analysis of local and NSW State crime statistics from the Bureau of Crime Statistics and Research (BOCSAR); and
- a crime risk assessment, in accordance with the current NSW policy and practice, of the following regulation and four principles of CPTED:
    1. Surveillance (including lighting and technical supervision)
    2. Territorial reinforcement
    3. Activity and Space Management (including environmental maintenance)
    4. Access control

A site inspection was undertaken on 22 July 2020 between the hours 12pm and 1pm to assess the current site conditions, situational crime prevention measures and perceived safety of the existing environment.

This CPTED report is submitted as part of the development application for the proposed construction and use of a new building to facilitate the expansion of the Museums Discovery Centre (MDC) site at 2 Green Road, Castle Hill.

Create Infrastructure is the proponent of the SSD Application.

2.1 Disclaimer

CPTED strategies must work in conjunction with other crime prevention strategies and police operations. By using the recommendations contained in this assessment, a person must acknowledge that:

- there is no definitive measure of 'safety'. Therefore, this assessment cannot be used as proof of a definitive measure of safety;
- this assessment does not ensure complete safety for the community, and public and private property;
- assessment and recommendations are informed by information provided, with observations made at the time the document was prepared;
- this document does not guarantee that all risks have been identified, or that the area assessed will be free from criminal activity if recommendations are followed; and
- this assessment has been undertaken on behalf of the applicant and does not represents the opinions and expertise of the NSW Police Force.

The principles of CPTED aim to minimise the opportunity for crime, but it is recognised that environmental design cannot definitively eliminate opportunities for crime, or prevent a determined perpetrator from committing such crimes.

We note that Ethos Urban are not specialist security consultants and therefore cannot comment on specific security measures or system requirements. Therefore, it is recommended that a security consultant with a Class 2A licence or appropriately qualified person under the Security Industry Act 1997 is engaged to provide specific advice on the placement, installation, monitoring and maintenance of the CCTV network and other security measures such as bollard/barriers as recommended in the mitigation measures.

3.0 The Site

3.1 Site Description and locational context

The proposed Building J site is located within the property known as 2 Green Road, Castle Hill which comprises a single lot legally described as Lot 102 DP 1130271. The site is generally square in shape with a splay corner to the intersection of Green Road and Showground Road and a total area of approximately 3.8ha. The site has a primary frontage of approximately 183m to Green Road and a secondary frontage of approximately 186m to Showground Road (Refer to **Figure 2**)**.** The location of the proposed new MDC building (to be known as "Building J") is located on the western end of the site and is marked on **Figure 2** in a dashed black line (referred as the Building J Site). The overall site contains large institutional buildings set within a landscaped setting featuring a high tree canopy.

The overall site is a TAFE campus that caters for approximately 400 enrolled students, and provides courses on business and financial services, hospitality, general education, community services, health, nursing, carpentry, building and retail. The site currently includes TAFE buildings, car parking and vegetated open space areas. A dam is situated in the north eastern part of the site.

The MDC site is located immediately west of the existing TAFE site at 172 Showground Road, Castle Hill. A subdivision application (included within this SSD Application) will consolidate the site of the proposed Building J with the existing MDC site. The main public vehicle access to the MDC site is via Windsor Road. There is also a vehicular access point to the MDC on Showground Road. The MDC and TAFE have a longstanding arrangement, that permits vehicle access to the MDC site from Green Road, allowing vehicles to traverse across the TAFE site to access the MDC site.

Figure 1 Existing Site Layout Plan and Proposed Development Site

Source: Lahznimmo Architects

3.2 Site Description

3.2.1 Existing Site Conditions/Landform

The site has a gradual fall from Windsor Road (west) to Green Road (east). Landscaping on the site comprises of trees and low level planting throughout the site.

3.2.2 Existing Site

The location where Building J is proposed comprises of trees, low level planting and an at grade car park (refer to **Figures 2** to **9**) and is bound by the network of internal roads. The location of the site where the new car park will be located comprises of trees and low level planting and is bound by an internal roads and Green Road.

Figure 2 Southern part of site

Source: Ethos Urban

Figure 3 Southern part of site

Source: Ethos Urban

Figure 4 Central / northern part of site

Source: Ethos Urban

Figure 5 Northern part of the site

Source: Ethos Urban

Figure 6 Site and adjacent land looking north

Source: Ethos Urban

Figure 7 Site and adjacent land looking south

Source: Ethos Urban

Figure 8 Site and adjacent site looking south

Source: Ethos Urban

Figure 9 Northern part of site

Source: Ethos Urban

3.3 Access and security

Pedestrian access to the site is provided from the Green Road exit and entrance. There are four vehicle access points:

- A bus and loading access is provided from Windsor Road;
- A secured access is provided from Showground Road;
- A vehicle entry for students and staff of the TAFE is provided from Green Road; and
- A vehicle exit for students and staff of the TAFE is provided from Green Road.

The TAFE NSW site is bounded by a low level open style fence along the eastern, western and southern boundaries with gates located at each of the vehicle entries and exits and a 1.8m high wooden fence along the northern boundary. A security office is located on the MDC site and there are on-site security services for both the TAFE and MDC.

3.4 Surrounding development

North and East

Development surrounding the site to the east, and north consists of established residential neighbourhoods generally comprising two storey detached dwellings.

South

Opposite the site to the south east and south west are a mix of warehouses, industrial units, and large format bulky goods retail premises. Views into the TAFE and MDC site from the surrounding roads is obscured by dense trees and vegetation along the perimeter of the sites.

North

A public park and children's playground is adjacent to the north of the site that is bound by Sunderland Avenue to the east and Castlegate Place to the west. The dwellings along Sunderland Avenue and the southern side of Pentonville Parade are the nearest residential properties to the proposed Building J site.

3.5 Risk Assessment of the Existing Site

A Risk Assessment of the Site in its existing context form has been undertaken. The guidelines prepared by the former NSW Department of Urban Affairs and Planning titled “Crime Prevention and the assessment of development applications” remains a relevant resource document for the assessment of CPTED under section 4.15 of the Environmental Planning and Assessment Act, 1979, together with other relevant publications such as the Crime Prevention Handbook for local government prepared by the Australian Institute of Criminology.

Furthermore, it is noted that a Crime Risk Assessment against the principles of CPTED was physically undertaken on site in accordance with the NSW Police Force publication dated February 2016 that provides a criteria of questions against each CPTED principle. The Crime Risk Rating assessment rated the site in its context as having a ‘Low’ risk of crime.

The key positive elements of the site are:

- The site is currently used by TAFE NSW and the MDC with staff and students providing opportunities for natural surveillance and effective guardianship.
- The site is a secure and well-cared for site, with high levels of environmental maintenance.
- The site’s location adjoins low-density residential development.
- The site where Building J and the new car park will be located adjoins several buildings and car parks providing opportunities for natural surveillance.

Other key elements of the site are:

- The site not considered to be a high activity site when it was inspected.
- The large format buildings located on the MDC site create long expanses of building wall with minimal natural surveillance.

4.0 Proposed Development

The successful delivery of this SSD project supports a priority cultural infrastructure project and is a NSW Government 2019 election commitment (Powerhouse Precinct at Parramatta). This application will deliver a significant cultural institution for Castle Hill and The Hills Shire.

The proposed Building J will offer many opportunities for public engagement as part of a desire to increase public access to the Powerhouse collection. The renewal of the site offers a range of opportunities to increase public access including visible storage facilities, booked tours, Open Days, public and education programs, workshops, talks and other events. The facilities in Building J will serve the needs of a variety of user groups including staff, volunteers, education groups, researchers, artists, scientists, industry partners and the general public.

The SSD Application seeks consent for the delivery of the MDC expansion as a single stage, comprising:

- Site preparation works, including the termination/relocation and installation of site services and infrastructure, tree removal (337 trees in total), earthworks, and the erection of site protection hoardings and fencing.
- Demolition of existing car park and vehicle accessway along the eastern and north eastern parts of the site. A new at-grade car park is proposed to be constructed on the eastern side of the TAFE site and will accommodate 24 car parking spaces removed from the Building J site.
- Construction of the proposed new Building J. The proposed new Building J will cater for the following uses:
  - Storage for the Powerhouse collection and archives (both collected archives and institutional archives).
  - Flexibles spaces for education and public programs, workshops, talks, exhibitions and events.
  - Suites of conservation laboratories and collection work spaces.
  - Photography, digitisation and collection documentation facilities.
  - Work space for staff, researchers, industry partners and other collaborators. This will include amenities, meeting and storage rooms, collection research and study areas as well as other ancillary facilities.
  - Components of the image and research library.
  - Object and exhibition preparation, packing, quarantine and holding areas.
- Construction of new vehicle accessways to maintain connectivity to the MDC and TAFE sites.
- Subdivision of the proposed Building J site from the TAFE site including creation of right-of-carriageway easement to facilitate access over the new realigned accessway by TAFE vehicles and consolidation to form a single lot with the existing MDC site.

Architectural Drawings package which includes floorplans are included in the DA package, with the ground floor replicated at **Figure 10.**

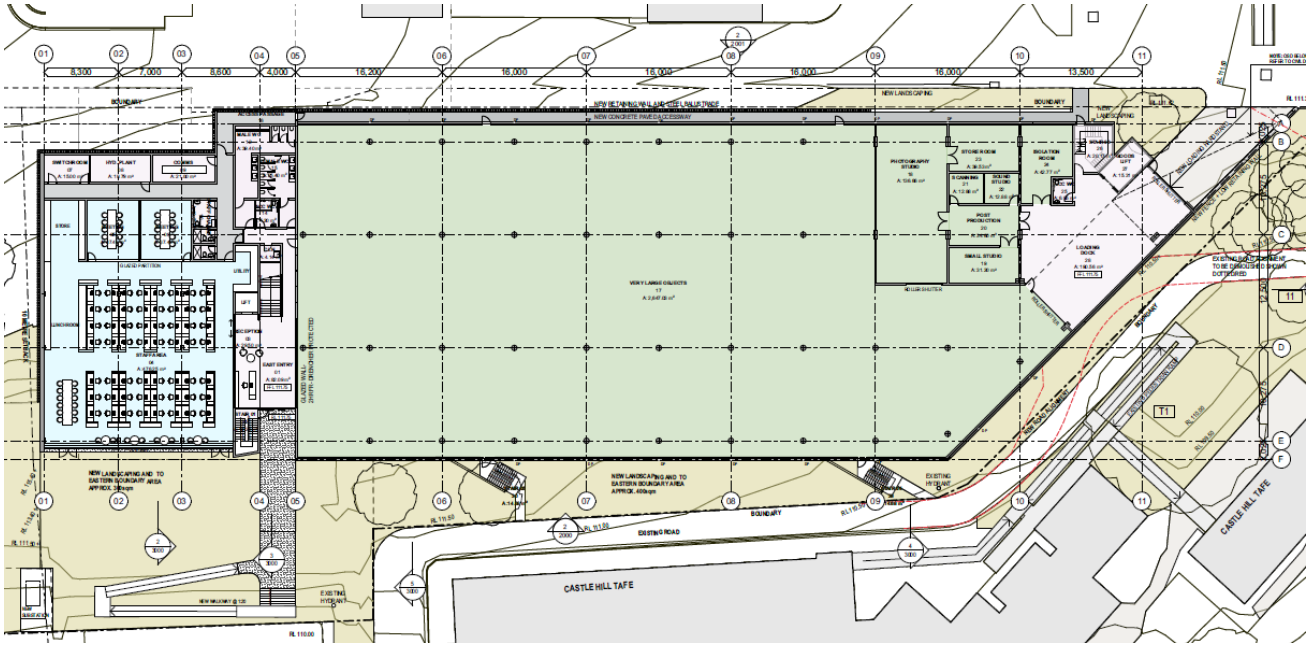

Figure 10 Proposed Lower Ground Floor

Source: Lahznimmo Architects

4.1 Pedestrian Access

Pedestrian access will be provided from a walkway and pathway that links the eastern road to Building J. Pedestrian access to the new car parking will be provided from the western internal road.

4.2 Vehicular Access

The proposal seeks consent for loading dock that is accessed from the internal road to the west which will utilise the existing truck and loading vehicle entry and exit along Windsor Road. The new carpark within the front setback of Green Road will be accessed from the east, south and west internal roads which will utilise the existing student and staff entry and exit from Green Road.

4.3 Landscaping

The Landscape Drawings have prepared by ASPECT Studios. Landscaping has been incorporated within the setbacks of Building J and the car park.

5.0 Nature of Recorded Crime

Crime Statistics obtained from the NSW Bureau of Crime Statistics and Research (BOSCAR) represents criminal incidents recorded by NSW Police. A review of the local statistic for 2020 found that the crimes most relevant to the proposed development and CPTED within the suburb of Castle Hill are:

- Non-domestic violence related assault;
- Robbery;
- Break and enter non-dwelling;
- Motor vehicle theft;
- Steal from motor vehicle; and
- Malicious damage to property.

Frequency of the above crimes in the suburb of Castle Hill, between 2016 and 2020 is detailed in **Table 2** below.

Table 2 Statistics of recorded crime in Castle Hill (suburb) between 1 April 2016 and 31 March 2020

Crime	April 2016-March 2017	April 2017-March 2018	April 2018-March 2019	April 2019-March 2020	2016-2020 Trend	Rate per 100,00 Population	Rating Category
Non-domestic violence related assault	91	109	82	92	Stable	222.1	Very Low
Robbery	5	2	7	7	Stable	16.9	Very Low
Break and enter dwelling non-dwelling	38	17	21	28	Stable	67.6	Very Low
Malicious damage to property	146	123	123	107	Decreasing	258.3	Very Low
Motor vehicle theft	34	35	29	34	Stable	82.1	Very Low
Steal from motor vehicle	126	106	98	115	Stable	277.6	Very Low

Source: Bureau of Crime Statistics and Research NSW, 2020

It is noted that all recorded crime of the abovementioned categories in Castle Hill is within the 'very low' rate per 100,000 population category. As illustrated in **Figures 11** to **16**, the BOCSAR database indicates that the Site is not located within a 'hotspot'. It is noted that crimes relating to malicious damage to property, break and enter-non dwelling, motor vehicle theft and steal from vehicle have been recorded within the surrounding area.

Hotspots indicate areas of high crime density (number of incidents per 50m by 50m) relative to crime concentrations across NSW. They are not adjusted for the number of residents and visitors in the area and thus may not reflect the risk of victimisation. In addition, we note that the BOCSAR statistics are included within these hotspot areas.

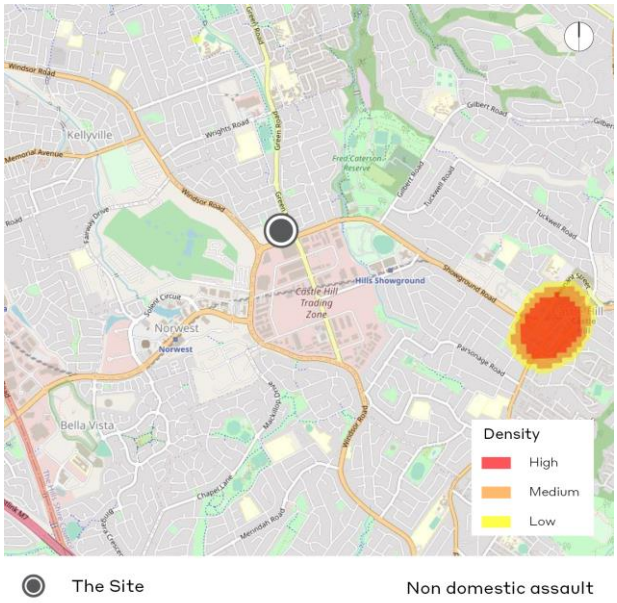

Figure 11 Non-domestic related assault

Source: BOCSAR, Ethos Urban

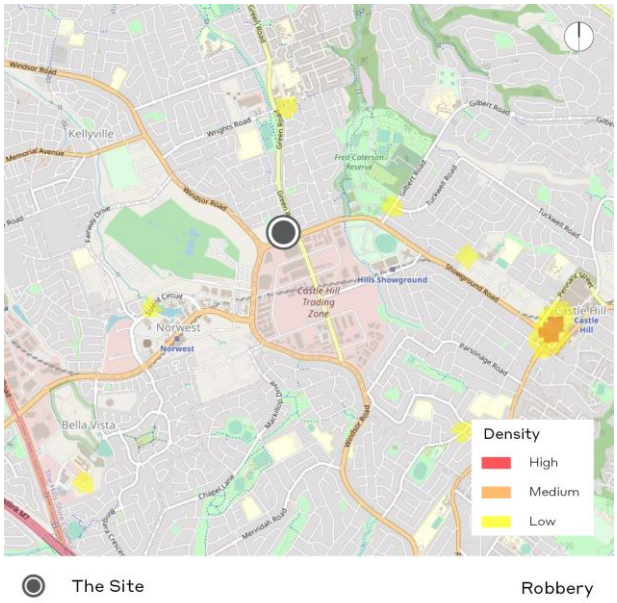

Figure 12 Robbery

Source: BOCSAR, Ethos Urban

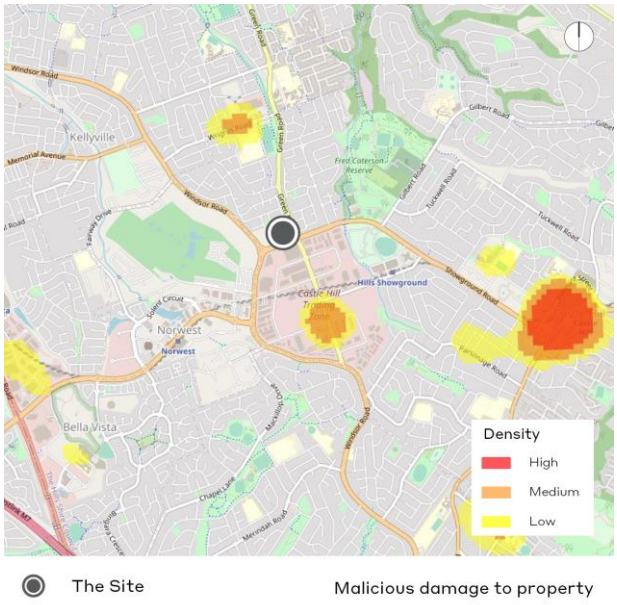

Figure 13 Malicious damage to property

Source: BOCSAR, Ethos Urban

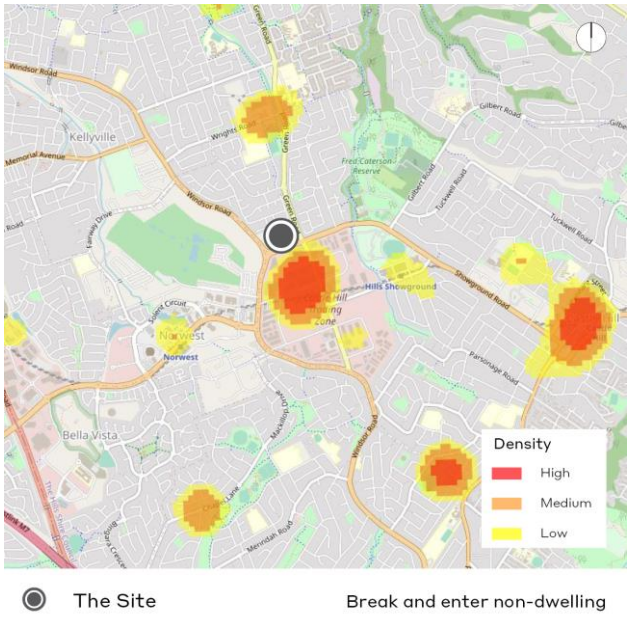

Figure 14 Break and enter non-dwelling

Source: BOCSAR, Ethos Urban

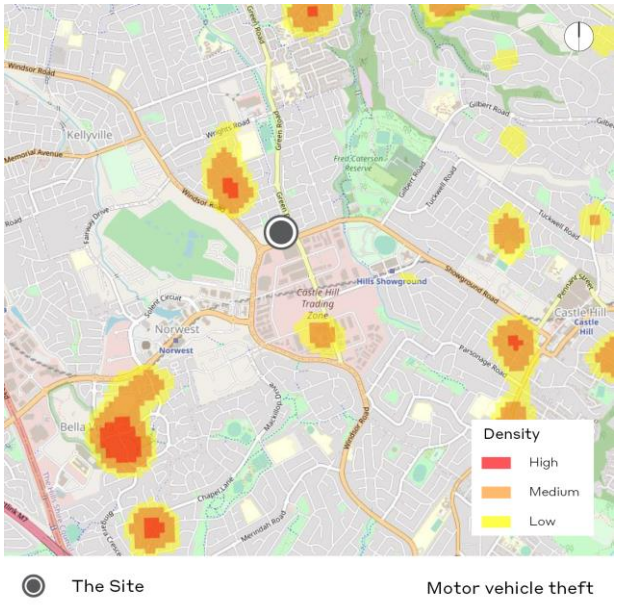

Figure 15 Motor vehicle theft

Source: BOCSAR, Ethos Urban

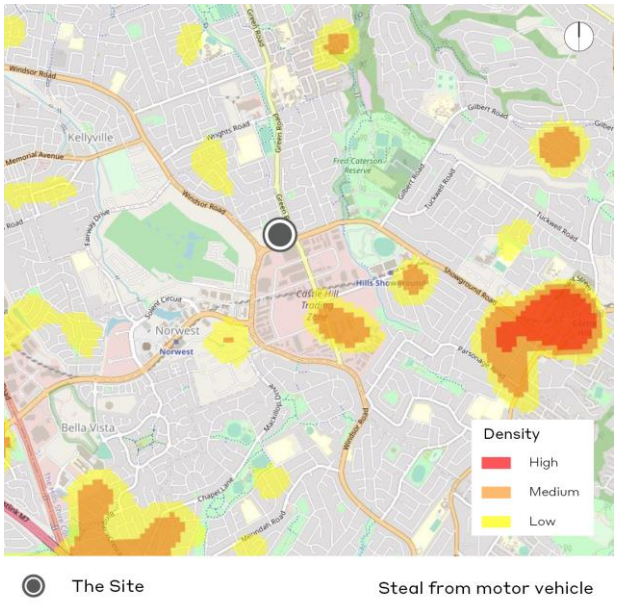

Figure 16 Steal from motor vehicle

Source: BOCSAR, Ethos Urban

The Site is not identified as being within a hotspot of any relevant crime category as seen above, however is located within the vicinity of “Break and enter non-dwelling”, which affects the Victoria Avenue industrial/business area on the southern side of Showground Road (refer to **Figure 14**). Recommendations in **Section 7.0** have taken into account this adjacent hotspot. It is noted however that “Break and enter non-dwelling” remains in the very low category for the suburb of Castle Hill, and the suburb is and historically has been a very low crime area.

6.0 Matters for Consideration

A potential perpetrator can take advantage of the environment, with access and the opportunity for concealment significantly affecting the safety and perceived safety of an environment. Given that the Site is identified as being within proximity to the 'break and enter non-dwelling' hot spot the assessment and recommendations below takes into consideration the site's vulnerability to this crime and other related crimes.

The principles of CPTED are surveillance inclusive of lighting and technical supervision, territorial reinforcement, activity and space management inclusive of environmental maintenance and access control inclusive of design, definition and designation. An assessment of the proposal in accordance with the four CPTED principles is provided below.

6.1 Surveillance

Effective natural and incidental surveillance can reduce the opportunities for crime. The principle indicates that offenders are often deterred from committing a crime in areas with high levels of natural surveillance.

The following design interventions promote optimal natural surveillance:

- clear sight lines between public and private places and maximising natural surveillance;
- appropriate lighting and effective guardianship of communal and/or public areas; and
- minimal opportunity for offenders to conceal themselves or entrap victims.

The proposed Building J comprises of large storage, packing and flexible exhibition spaces with associated work studios and museum related laboratories. Accordingly, the proposed design is a product of its function which is a large modern industrial warehouse with minimal external windows for natural surveillance for a large proportion of the proposed building.

The proposed design is not considered particularly problematic from a CPTED perspective given that the immediate areas surrounding the proposed building will not typically be frequented by the public and is within a secure site, with multiple building egress points and a loading dock the only places of potential staff activity along the western, northern and eastern elevations.

The proposal provides good natural surveillance opportunities at the main entrance of the building with the reception and large staff office area immediately adjacent with a glazed eastern elevation wall overlooking the entry on the ground and lower ground levels.

The strategic location of the reception, staff and building supervisors increases risk to offenders and crime effort. It is commonly thought that supervision provided by staff is more effective as a crime deterrent than surveillance provided by passers-by as they naturally provide a guardianship function. The proposed development will substantially increase the number of employees on site therefore, this will naturally increase risk to potential offenders.

Landscaping can also provide shade, shelter and add to the attraction of environments, however, if not designed or maintained appropriately can offer concealment opportunities. The proposed development provides substantive deep soil planting of ground cover, shrubs and trees around the perimeter of Building J.

The plant and tree species proposed within the landscaping concept for the buffer area should be determined to ensure that the proposed planting does not impact upon sightlines and surveillance opportunities in key pedestrian areas. In order to maintain sight lines and reduce concealment opportunities, all existing and proposed vegetation should be regularly maintained. A general guide is selecting species that are less than approximately 0.5m in height for shrubs and trees having a canopy that achieves a minimum underside height of 2m if possible.

Recommendations relating to surveillance are provided in **Section 7.1**.

Lighting and Technical Supervision

Effective lighting and discrete technical supervision can reduce fear, increase community activity, improve visibility and increase the likelihood of offenders being detected. Lighting and technical supervision are integral in increasing safety and perceived safety. All lighting provided within and around the development, including the through site links and laneway should ideally exceed the minimum Australian Lighting Standard AS/NZ 1158 for public streets, car parks and pedestrian areas, specifically addressing the objectives for crime and fear reduction.

Lighting and technical supervision is particularly important for the proposed building given the minimal natural surveillance generated from the building along its western, northern and (most of its) eastern elevations.

High quality lighting throughout all publicly accessible areas, the loading dock and the perimeter of the building should be adequate to permit facial recognition, long sight lines and reduce dark shadowing which in turn will help reduce opportunity for predatory crime. An external lighting strategy is recommended with minimum lighting lux levels and lighting uniformity levels as recommended in **Section 7.1**.

Outdoor lighting is recommended to have a minimum Colour Rendering Index (CRI) of 60. A condition of development consent is recommended for this lighting to comply with AS4282-1997. Any emergency lighting shall also be installed in accordance with the relevant Australian Standards.

A CCTV system is recommended that covers the perimeter of the building, the loading dock and the entrances/approaches to the building. It is recommended that live footage from the CCTV cameras are fed to a central location that is monitored by security guards. Also, all CCTV footage is to be recorded and kept for a minimum of 4 weeks.

A security consultant with a Class 2A licence or appropriately qualified person under the Security Industry Act 1997 is recommended to be engaged to provide specific advice on the placement, installation, monitoring and maintenance of the CCTV network.

Recommendations relating to lighting and technical supervision are provided in **Section 7.1**.

6.2 Territorial Reinforcement

The *NSW Police Safer by Design Guidelines* note that people generally recognise areas that are well cared for and areas that display strong ownership cues are less likely to be improperly used than those that do not. In particular, ownership cues are heightened and fear can be reduced amongst patrons through the personalisation, marking, maintenance, and decoration of a building.

Territorial reinforcement involves the perceived ownership of public spaces. Users will be more inclined to visit areas that are maintained and to which they feel they have a vested interest in. Designing with clear transition between public and private spaces, and clear design cues indicating the intended use of space is critical. A well maintained public domain is critical in encouraging occupancy of space, both in the interior and exterior of the development.

The clear definition of public and private territory, and the introduction of a greater number of people on the site will increase the risk to an offender and promote territorial reinforcement, as criminals do not want to be detected, challenged or apprehended. Clear delineation of external public/visitor areas and staff areas will be an important aspect of the proposed development. Landscaping cues and signage are important measures to reinforce this.

As noted above, the significant increase in capable guardians being the staff and the patrons, will deter offenders and crime effort. Wayfinding is also important for visitors and the general public. Knowing how and where to enter, exit and find assistance can impact perceptions of safety, victim vulnerability and crime opportunity.

To reinforce the principles of wayfinding and provide patrons of the site with greater confidence, wayfinding signage is recommended. Adequate wayfinding signage will also assist in helping to reduce the opportunities for people to find excuses to gain unauthorised access and/or to loiter in areas of the proposed building.

Recommendations relating to territorial reinforcement are provided in **Section 7.1**.

6.3 Activity and Space Management

Similar to environmental maintenance, there is a strong association between activity and space management, and the fear or perceived fear of crime. Unlike environmental maintenance, this principle endeavours to manage the more dynamic activity and use of space.

The effective management of activity and space includes an analysis of the proposed uses and the areas in which they are located. Management of activity and space within the proposed development is critical given the various uses that will occupy the Site. The management of the MDC will be a key element in preventing the opportunity for crime and Building J should be included within the wider MDC Plan of Management.

Image can also impact upon feelings of safety and danger, influence local confidence and individual decisions to either withdraw or engage in community life. The proposed development is considered to further build upon the importance, capacity and activity of the MDC and therefore enhance the image of the site.

Recommendations relating to surveillance are provided in **Section 7.1**.

Environmental Maintenance

There is a strong association between environmental maintenance and the fear or perceived fear of crime. General image can greatly affect the individual's desire to enter and engage with a space. Environmental maintenance and territorial reinforcement are co-dependent in achieving a safer space and are integral in achieving optimal natural surveillance. The maintenance of the built form, landscaping and lighting will assist in communicating care and the presence of effective guardianship. Routine maintenance is a strong indicator of area management and safety.

The proposed building has incorporated deep soil landscaping around its perimeter with ground cover, shrubs and trees. This landscaping must be regularly maintained and also pruned to minimise concealment opportunities and maintain sight lines.

Image can impact on feelings of safety and danger, influence local confidence and individual decisions to withdraw or engage in community life. The proposed development is considered to enhance the MDC by increasing its importance, capacity and activity with a new large museum facility. This in turn is considered to improve the image of the MDC site generally.

The ongoing maintenance of the proposed buildings, facilities and landscaping is important to balance the safety and aesthetics of the development. Also key to this principle is the rapid removal of graffiti and repair of any damage. Well maintained spaces encourage regular use, which in turn creates natural supervision of publicly accessible areas. High quality materials should be used for construction to lessen the likelihood of damage and help to reduce maintenance costs.

Recommendations relating to environmental maintenance are provided in **Section 7.1**.

6.4 Access Control

Access control strategies restrict, channel and encourage the movement of people and vehicles into and through designated areas. Unauthorised entry is reduced by physical and technical barriers, as they increase the effort required to commit crime. Access control strategies are well considered and clearly evident in the proposed development. The proposed development includes multiple types of access, these include:

- Primary– access to publicly accessible areas. The proposed Building J provides one main entrance to the building for staff and visitors.
- Secondary – access to semi-public areas and private areas. This includes the loading dock area.

Access control is very well considered in the proposed development. The design includes minimal entries that follow logical paths of pedestrian movement with a single main entrance on the eastern elevation that is adjacent to the staff office section of the building and an access point for staff and visitors on the western side. The proposed location of the main entrance provides substantial natural surveillance and effective guardianship of the building.

There are various fire egress points from the building, any other entries to the building should surety controlled with swipe card / access code or the like to restrict access to staff only. The long and narrow egress/access way along western elevation of the building could be a potential entrapment location, it is recommended to restrict access to this area by a security door at its entrance/exit point.

The loading dock should be able to be appropriately secured, with all adjacent entrances and rooms also being appropriately secured to restrict access to MDC staff only.

Recommendations relating to access control are provided in **Section 7.1**.

Design, Definition and Designation

The design of a proposed development reflects its purpose, and while perpetrators will often exploit areas with unclear spatial definition. The design of the development reflects its purpose, however, given it will cater to visitors, potential offenders may be able to make excuses for their presence and potential actions. Opportunistic criminals will often exploit areas with unclear spatial definition, borders and boundaries, therefore such areas should incorporate other crime prevention principles, such as increased surveillance and wayfinding mechanisms to act as crime deterrents.

Provided the recommendations in **Section 7.1** are undertaken and implemented it is considered that the opportunities for offenders to commit crime are diminished to an acceptable level for a proposed development of this kind.

Recommendations relating to design, definition and designation are provided in **Section 7.1**.

7.0 Crime Risk Rating and Recommendation

The Crime Risk Rating considers the development as proposed in Architectural Plans and Design Report prepared by Lahznimmo Architects and Landscape Plans prepared by ASPECT Studios.

Acknowledging the site context and the issues discussed in Sections 2, 4 and 5, the Crime Risk Assessment Rating of the proposed development is rated within the low category. An assessment of the proposal using the CPTED principles has found that the proposed development would remain within the 'low' category with implementation of the below recommendations.

Overall, it is considered that the proposed development of Building J will facilitate the development of the site to accommodate increased capacity and importance of the MDC, whilst improving the safety and security of the local area and generally increasing the image of the area.

In informing the Conditions of Consent, recommendations to further improve the safety and security of the proposed development are detailed in **Section 7.1**.

7.1 Recommendations

Surveillance

- Ensure opportunities for natural and incidental surveillance are maintained through effective lighting, access control and environmental maintenance.
- Ensure opportunities for concealment are minimised by reducing alcoves and recesses throughout building exteriors.
- The pedestrian walkway/path providing pedestrian connection from Showground Road to the front entrance should be obvious, open and provide clear site lines. Consideration should be given to it being widened and splay/rounded corners being provided for its right angle corners.
- All new landscaping and existing vegetation should improve sightlines and minimise concealment opportunities throughout the site. As a general guide, shrub species should be less than approximately 0.5m in height and trees should achieve a minimum canopy height (underside) of approximately 2m when mature. Regular maintenance should occur to ensure vegetation does not encroach upon sightlines or lead to concealment opportunities.

Lighting and Technical Supervision

- All lighting provided within and around the development, should meet or ideally exceed the minimum Australian Lighting Standard AS/NZ 1158 for outdoor areas, specifically addressing crime and fear reduction.
- Consistent and uniform lighting is recommended throughout all external areas immediately surrounding the proposed building (where appropriate). This lighting should also aim to minimise light pollution and light spill on to adjacent land.
- An external lighting strategy is recommended to all external areas immediately surrounding the building. As a guide, lighting is recommended to achieve a minimum of 25 lux and a lighting uniformity between 0.3-0.4 Uo. Lighting for the external back of house areas, such as the loading dock, should achieve a minimum of 50 lux and a minimum lighting uniformity of 0.4 Uo.
- Outdoor lighting is recommended to have a minimum Colour Rendering Index (CRI) of 60 and comply with AS4282-1997. Any emergency lighting shall also be installed in accordance with the relevant Australian Standards.
- The main light switches for all lights on site and power boards must be placed in secure locations.
- A lighting strategy should be developed by or in consultation with a suitably qualified and experienced lighting expert.
- CCTV network is considered necessary and which adequately covers the immediate exterior to the building and access/egress points. Of particular note are the main entrance, back of house areas that includes the loading dock, fire egress points etc.

- Live footage from the CCTV cameras are feed to a central location that is monitored by security staff of the MDC. Also, all CCTV footage is to be recorded and kept for a minimum of 4 weeks.
- The CCTV network is recommended to use a discrete style of camera (such as a small dome camera). This is to minimise the perception of inherent insecurity associated with large and prominent cameras that can have a negative social effect.
- It is recommended that a security consultant with a Class 2A licence under the Security Industry Act 1997 is engaged to provide specific advice on placement, installation, monitoring and maintenance of the CCTV network.

Territorial Reinforcement

- Maintain that building entrances remain free of clutter to ensure entry points are highly visible.
- Display CCTV security notice signs to convey that the site is under constant surveillance.
- Clearly delineate public/private land along the main entrance and around the perimeter as necessary with dense landscaping and/or open style fencing.
- Provide signage within the pedestrian pathways to direct pedestrian movements.

Activity and Space Management

- There are no recommendations for activity and space management.

Environmental Maintenance

- Ensure mechanisms are in place to facilitate the ongoing maintenance of Building J and its surrounds, including the implementation of a rapid removal policy for vandalism repair and removal of graffiti.
- Consistently manage vegetation so that sight lines are maintained and opportunities for concealment are minimised.
- Consideration should be given to graffiti resistant materials/surfaces in high graffiti risk areas.

Access Control

- All non-public areas of the proposed Building J (including external back of house areas such as the loading dock) be appropriately secured to stop access by the general public.
- All windows and skylights should be lockable to prevent after hours break and enter.
- All entrances/exits be security access doors that open outwards and are only accessible by security card/key.
- Ensure that landscaping does not give rise to concealment opportunities and does not restrict sightlines.
- Garbage bay areas must be secured to restrict unauthorised access.
- The long access/egress way located along the western elevation should be provided with a security door at its entrance/exit point to restrict access.

Design, Definition and Designation

- Clear wayfinding signage should be provided throughout the proposed development both internally and externally including a map of the complex and directions to centre management. Way finding signage should be provided in all publicly accessible areas and back of house areas.
- Clear signage that designated what is staff only areas both internally and externally should be provided.

8.0 Conclusion

Overall, the proposed Building J will improve the safety and security within the site and the local area. In particular it is considered that the development:

- will provide the opportunity to ensure suitable technical supervision, lighting and access control mechanisms can be provided;
- will provide opportunities for environmental improvements to the site and immediate locality be enlarging the capacity and increasing the importance of the MDC. Which in turn will in turn increase the perception of the area as a high quality and safe environment; and
- will ensure the design clearly divides intended uses providing strong ownership cues.

As such our assessment finds that the design of the proposed development is consistent with the principles of CPTED and will improve the security and perceptions of safety for the site and within the area.

9.0 Summary of Mitigation Measures

Table 3 Mitigation Measures

Proposed Measure	Timing
All new landscaping and existing vegetation should improve sightlines and minimise concealment opportunities throughout the site. As a general guide, shrub species should be less than approximately 0.5m in height and trees should achieve a minimum canopy height (underside) of approximately 2m when mature.	Prior to issue of a Construction Certificate.
A lighting strategy should be developed by or in consultation with a suitably qualified and experienced lighting expert.	Prior to issue of a Construction Certificate.
All lighting provided within and around the development, should meet or ideally exceed the minimum Australian Lighting Standard AS/NZ 1158 for outdoor areas, specifically addressing crime and fear reduction.	Prior to issue of a Construction Certificate.
An external lighting strategy is recommended to all external areas immediately surrounding the building. As a guide, lighting is recommended to achieve a minimum of 25 lux and a lighting uniformity between 0.3-0.4 Uo. Lighting for the external back of house areas, such as the loading dock, should achieve a minimum of 50 lux and a minimum lighting uniformity of 0.4 Uo.	Prior to issue of a Construction Certificate.
Outdoor lighting is recommended to have a minimum Colour Rendering Index (CRI) of 60 and comply with AS4282-1997. Any emergency lighting shall also be installed in accordance with the relevant Australian Standards.	Prior to issue of a Construction Certificate.
It is recommended that a security consultant with a Class 2A licence under the Security Industry Act 1997 is engaged to provide specific advice on placement, installation, monitoring and maintenance of the CCTV network.	Prior to issue of a Construction Certificate.
Consideration should be given to graffiti resistant materials/surfaces in high graffiti risk areas.	Prior to issue of a Construction Certificate.
The long access/egress way located along the western elevation should be provided with a security door at its entrance/exit point to restrict access.	Prior to issue of a Construction Certificate
Garbage bay areas must be secured to restrict unauthorised access.	Prior to occupation of the development.
Clear wayfinding signage should be provided throughout the proposed development both internally and externally including a map of the complex and directions to centre management. Way finding signage should be provided in all publicly accessible areas and back of house areas.	Prior to occupation of the development.
The MDC Operational Management Plan is to be updated to include Building J and include (but not exclusive to): a security management plan; incident procedures; fire evacuations, after hours security and access control both during operating hours and after hours, on-going building and landscaping maintenance, vandalism repair/graffiti removal etc.	Prior to occupation of the development.
All non-public areas of the proposed Building J (including external back of house areas such as the loading dock) be appropriately secured to stop access by the general public.	Prior to occupation of the development.
Regular maintenance should occur to ensure vegetation does not encroach upon sightlines or lead to concealment opportunities.	Ongoing after occupation of the development.
Live footage from the CCTV cameras are feed to a central location that is monitored by security staff of the MDC. Also, all CCTV footage is to be recorded and kept for a minimum of 4 weeks.	Ongoing after occupation of the development.
Maintain that building entrances remain free of clutter to ensure entry points are highly visible.	Ongoing after occupation of the development.
Consistently manage vegetation so that sight lines are maintained and opportunities for concealment are minimised.	Ongoing after occupation of the development.