

Crime Prevention Through Environmental Design Report



Royal Prince Alfred Hospital

Application for a Multi-Storey Staff Car Park

Submitted to the Department of Planning and Environment
On Behalf of Health Infrastructure NSW

June 2016 ■ 16069

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This report has been prepared by:



Alyse Phillips

17/05/2016

This report has been reviewed by:



Brendan Hoskins

18/05/2016

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1.0 Introduction

This Crime Prevention Through Environmental Design (CPTED) assessment has been undertaken to assess the elements of crime, and the fear of crime that may be associated with the proposed Multi-Storey Staff Car Park at the Royal Prince Alfred (RPA) Hospital Campus on Missenden Road, Camperdown.

CPTED is a situational crime prevention strategy that focuses on the design, planning and structure of the environment. It aims to reduce opportunities for crime by employing design and place management principles that minimise the likelihood of essential crime ingredients.

This assessment has been prepared by a Certified NSW Police Risk Assessor, and uses qualitative and quantitative measures of the physical and social environment to analyse and suggest treatments 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.

Architectural Drawings prepared by Cardno and Landscape Drawings prepared by Sturt Noble Associates have been reviewed as part of this assessment.

In addition, the following tasks were undertaken in the preparation of this assessment:

- review of key literature on CPTED by the Department of Attorney General and Justice Crime Prevention;
- collection and analysis of local and NSW State crime statistics from the Bureau of Crime Statistics and Research (BOSCAR); and
- a crime risk assessment, in accordance with the current NSW policy and practice, of the following regulation and assessment principles:
 1. Surveillance
 2. Lighting/technical supervision
 3. Territorial reinforcement
 4. Environmental maintenance
 5. Activity and Space Management
 6. Access control
 7. Design, definition and designation.

A site inspection was conducted on 12 May 2015 between the hours of 10.30am and 11.30am to assess the current site conditions and situational crime prevention measures and safety impacts.

Disclaimer:

CPTED strategies must work in conjunction with other crime prevention strategies and police operations. By using recommendations contained within this document, any person who does so must acknowledge that:

- it is not possible to make areas assessed completely safe for the community and their property;*
- recommendations are based upon information provided to, and observations made at the time the document was prepared; and*
- this document does not guarantee that all risks have been identified, or that the area evaluated will be free from criminal activity if its recommendations are followed.*

2.0 The Site

2.1 Site Description

The Site is located within the grounds of the RPA Hospital Campus, located on Missenden Road, Camperdown. The grounds of the RPA Hospital cover an area of 12 hectares (refer to **Figure 1**).

The Site is within the City of Sydney Local Government Area (LGA) and is located four kilometres south-west of the Sydney Central Business District (CBD).

The Site is located within the North-West Precinct of the RPA Hospital and is bounded by Lucas Street to the north, an internal hospital road to the east, Brodie Street and the Queen Mary student accommodation building to the south, and Church Street to the west. Site photos are provided at **Figure 2**.

The Site currently comprises:

- a single storey brick building (a former site office) on the eastern end of the Site;
- an at-grade car park for use by hospital staff with restricted access via a boom gate;
- a single storey brick childcare centre and associated outdoor playing area;
- a two storey brick building; and
- mature trees.

Key elements of the Site are described below.

2.1.1 Access

Vehicular access to the Site is currently provided from a number of points including Brodie Street (a one way street accessed off Missenden Road, Lucas Street (a one way street) and the internal hospital road. Pedestrian linkages are available within the RPA Hospital site and along both sides of Lucas Street and Church Street via segregated pathways.

2.1.2 Security

CCTV was observed around the Consulate General of the People's Republic of China and on Lucas Street (opposite the Site). The focus of these cameras appears to be towards Lucas Street. No physical guards or patrols were sighted during the site visit.

Lighting is provided along the northern side of Lucas Street, specifically along the boundary fencing of the Consulate building and in the form of street lighting. Barbed wire and spikes were also observed along the boundary fence of the Consulate building.

A range of fencing typologies are provided along the Site's frontage to Lucas Street, including solid, palisade, and lower scale fences. Barbed wire was observed along a portion of the fencing. Generally, no fencing was observed on the southern and eastern frontages and the built form on the site is built-to-boundary on the western frontage.

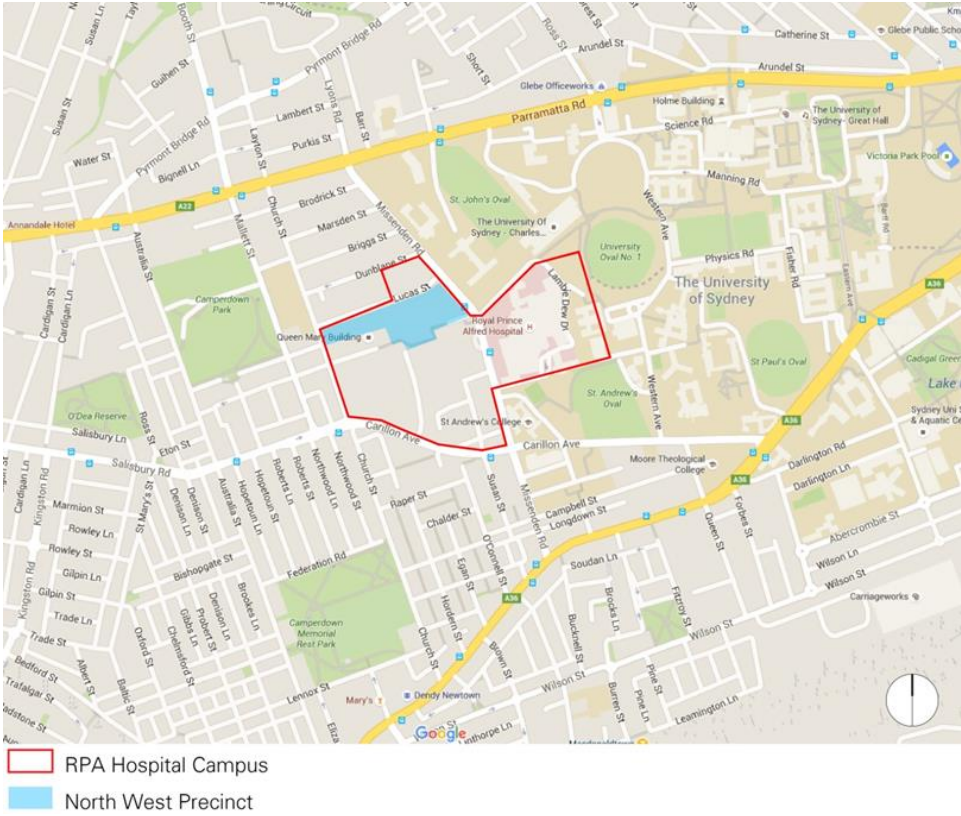


Figure 1 – Site location/context map
Source: JBA



View of the site office and existing car park, viewed for Lucas Street



View of the carpark, viewed from the adjoining site office



View of on street parking on Lucas Street



View of the car park and Child Care centre



View of The Lucas Street Child Care Centre



View of two storey building on the Site, viewed from Church Street, looking north east

Figure 2 – Photos of the existing dwellings on the site
Source: JBA

2.2 Surrounding Development

Being located on the periphery of the north-western precinct of the RPA Hospital Campus, the subject Site is surrounded by a variety of different uses external to the health campus. Details of the surrounding development within the vicinity of the site is described below and illustrated in **Figure 3**.

Along the northern boundary of the Site is Lucas Street. On the opposite side of the street is the Consulate General of the People's Republic of China. The Consulate is surrounded by a high scale solid fence topped with barbed wire and spikes. CCTV security hardware was observed around the Consulate.

The Marie Bashir Centre is located to the east of the Site along Lucas Street. This building is approximately 7-9 storeys in height with sections that overhang the internal road. The Centre has a basement car park with 30 spaces that is accessed from a driveway on Lucas Street.

The Queen Mary student housing building is located to the south of the Site. This building is presently owned and operated by the University of Sydney as student housing. The building is located on an elongated 'E' in plan and consists of 11 storeys above basement and ground floor levels with the main entrance at Grose Street. The Queen Mary building contains 720 single and 41 double bedrooms (802 beds), two (2) retail tenancies fronting Grose Street and car parking for 30 vehicles. This building is constructed with red brick and has balconies on a portion of the north and south facades and wrap-around balconies on the eastern and western facades.

Church Street is located to the west of the Site. On the opposite side of the street, there are a number of different uses across a variety of lower scale built forms.



Consulate General building viewed from the western end of Lucas Street



Consulate General building viewed from the eastern end of Lucas Street



The Marie Bashir Centre viewed from Lucas Street



Commercial/retail tenancies on Church Street



Queen Mary Building viewed from Lucas Street

Queen Mary Building adjoining the Site

Figure 3 – Surrounding development

Source: JBA

2.3 Site Risk Assessment

Overall, the Crime Risk of the site is considered to be 'medium.'

The key positive elements of the Site are:

- the existing buildings are constructed with robust materials;
- the existing buildings on the Site receive adequate surveillance from the Queen Mary Student housing building located to the south of the Site; and
- CCTV cameras were observed on the boundary of the Consulate building providing surveillance over Lucas Street.

The key negatives elements of the Site are:

- the fencing along Lucas Street ranges from solid fencing, metal palisade fencing and low scale fencing. The provision of these different fences around the Site on the Lucas Street side restricts sightlines to and from the Site;
- the land uses on Site are not clearly identifiable and it is hard to differentiate individual ownership;
- the buildings and vegetation on the Site, particularly the two storey brick building on the corner of Church Street and Lucas Street is not well maintained; and
- street lighting is not evenly distributed along both sides of Lucas Street providing uneven lighting on this street.

3.0 The Proposed Development

The EIS prepared by JBA provides a detailed description of the proposed development. In summary, the proposed development comprises a new multi-storey staff car park as illustrated in **Figure 4**. The proposal seeks consent for the following key elements:

- clearance of all existing vegetation;
- site preparation and excavation works;
- construction and use of a nine storey car park for 24 hours/7 days per week, comprising:
 - 996 car parking spaces (including 10 accessible spaces);
 - Associated access from the new east hospital road via Brodie Street, and egress onto Lucas Street and Church Street; and
 - relevant security measures to restrict access for hospital staff.
- associated landscaping works;
- 24/7 operation 7 days a week, in accordance with the hours of operation for the RPA Hospital.

Key features of the proposal relevant to this assessment are outlined below.

3.1.1 Access

The proposed car park will have a number of pedestrian access points onto Church Street, Lucas Street and Brodie Street. One vehicular access point will be provided off the new extension to Brodie Street, and two egress points to Church Street and Lucas Street will be provided at the ground level.

3.1.2 Landscaping

The landscaping proposed for the Site includes:

- concrete path along the perimeter of the multi-storey car park incorporating circle designs;
- climbing plants as a green design feature on the northern façade of the multi-storey car park fronting Lucas Street;
- shrub planting within the western setback;
- a feature angophora tree in the north western corner of the Site.



Figure 4 – Photomontage of the proposed development
Source: Pixalate

4.0 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 statistics for 2015¹ found that the most commonly occurring crimes within the Sydney LGA were:

- fraud;
- assault-non domestic violence related;
- malicious damage to property;
- stealing from a retail store;
- stealing from a motor vehicle;
- stealing from person; and
- stealing from dwelling.

As shown in **Figures 5 – 12**, the BOSCAR database indicates that the site is located within or on the periphery of a hotspot for the following crimes:

- breaking and entering into dwelling;
- breaking and entering into non-dwelling;
- domestic assault;
- non-domestic assault;
- malicious damage to property;
- stealing from dwelling; and
- stealing from motor vehicle.

Notwithstanding the above, 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.

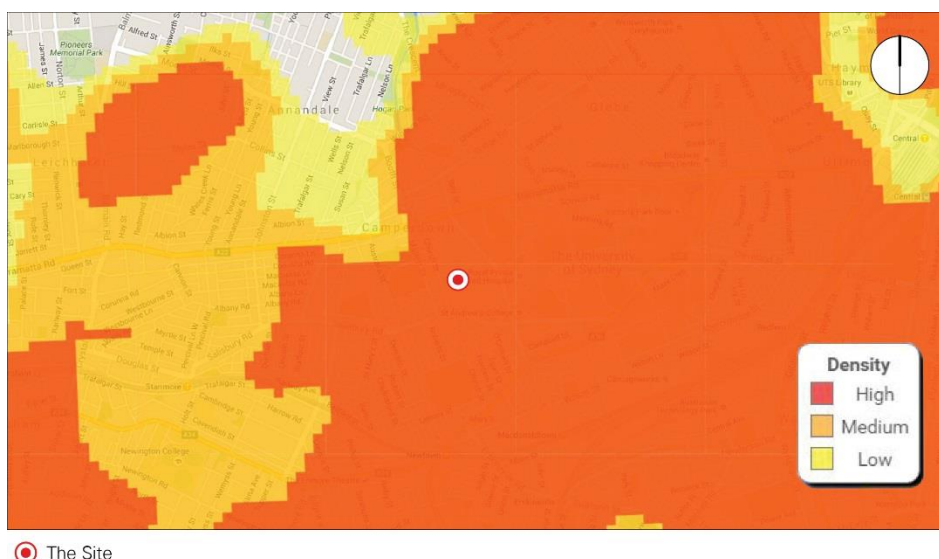


Figure 5 – Hotspot map – breaking and entering into a dwelling
Source: BOSCAR

¹ The most recent crime data available in relation all crimes affecting the Site/Sydney LGA is 2014

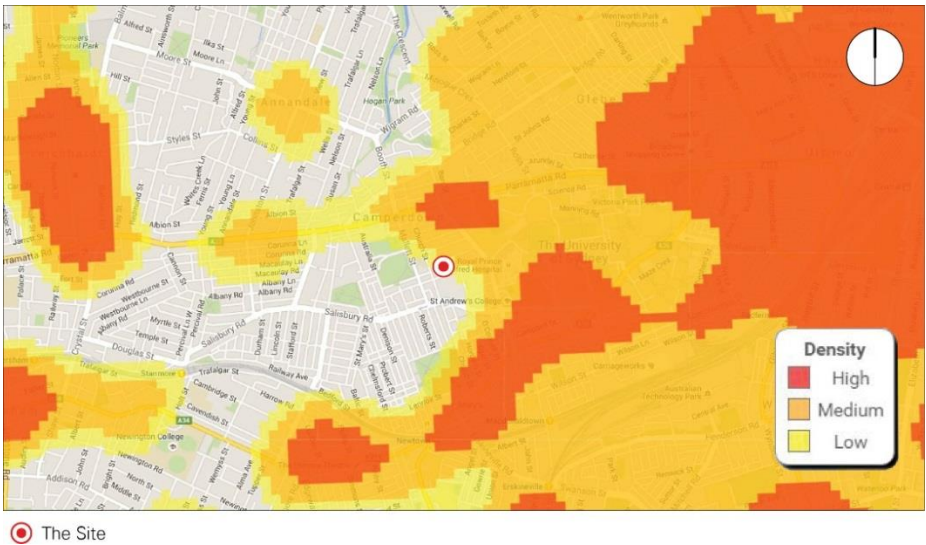


Figure 6 – Breaking and entering into non-dwellings
Source: BOSCAR

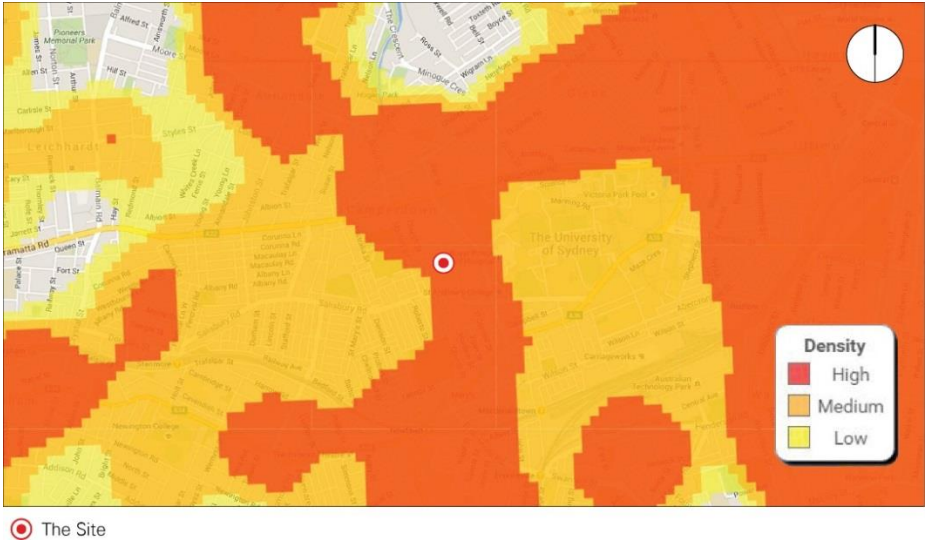


Figure 7 – Domestic assault
Source: BOSCAR

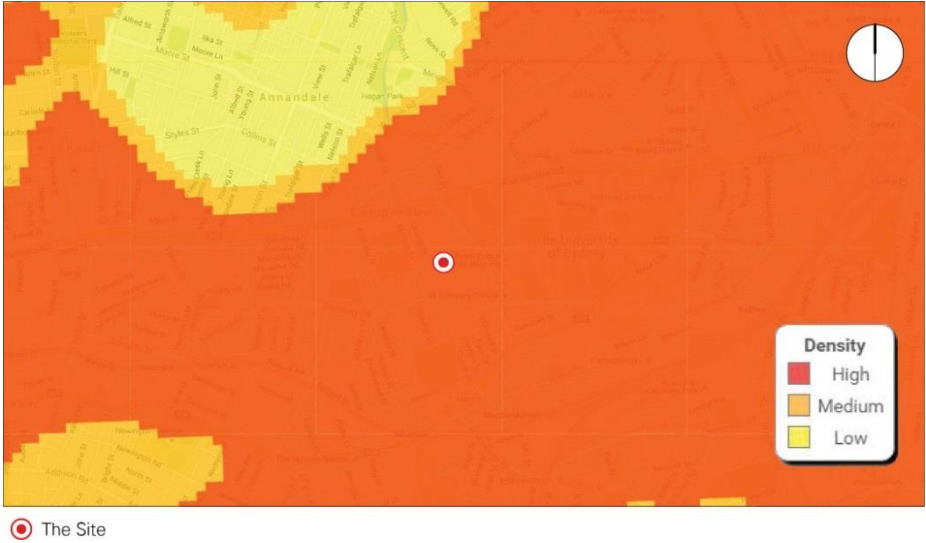


Figure 8 – Malicious damage to property
Source: BOSCAR

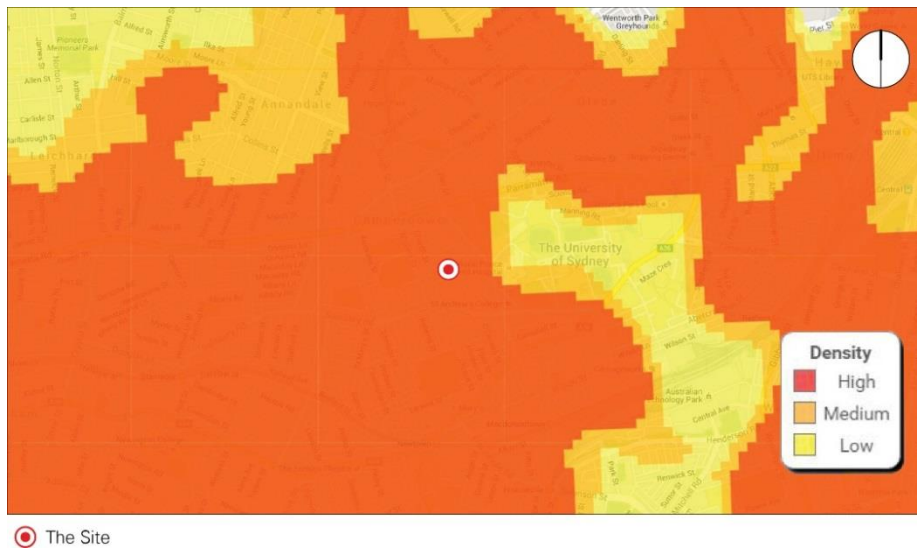


Figure 9 – Motor Vehicle Theft Hotspot Map
Source: BOSCAR

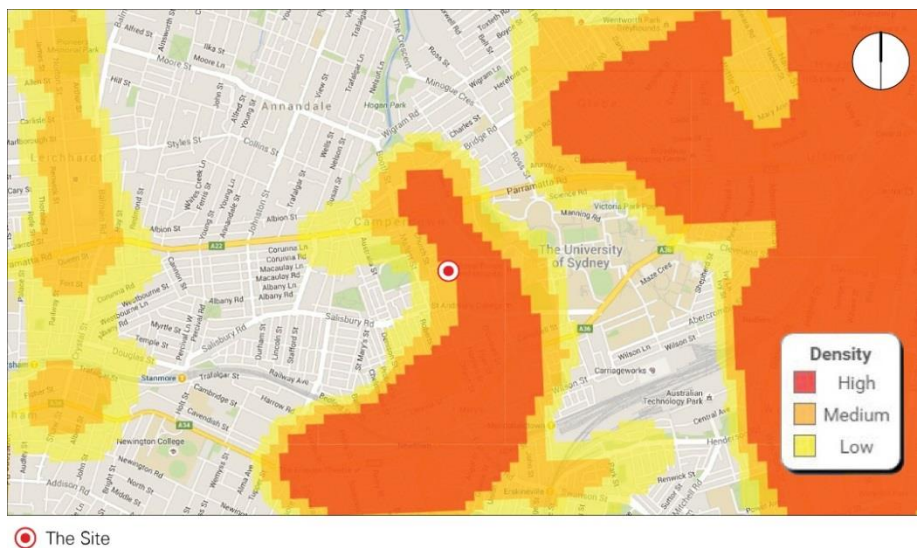


Figure 10 – Non-domestic Assault Hotspot Map
Source: BOSCAR

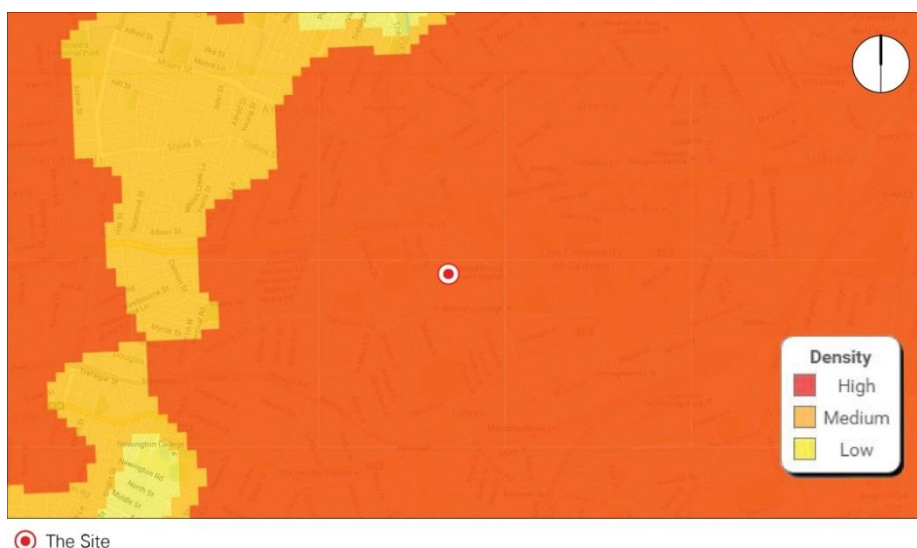
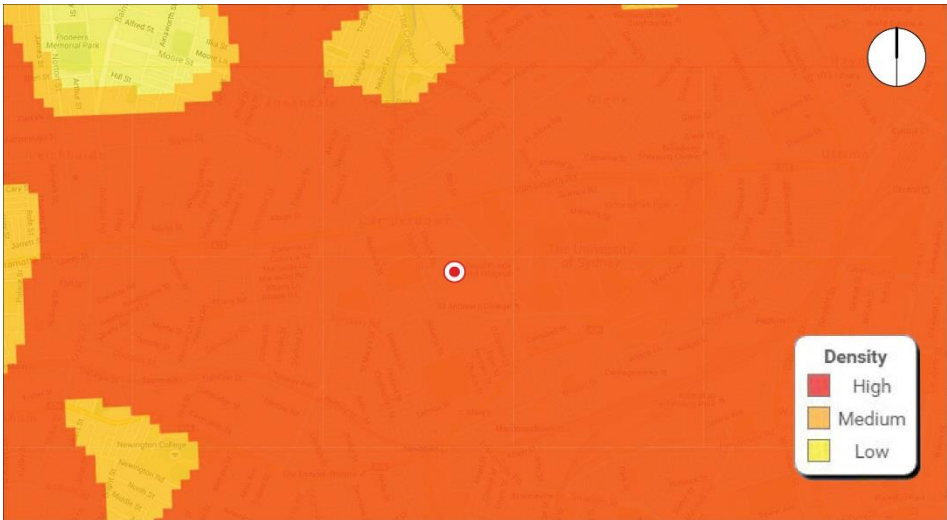


Figure 11 – Stealing from dwelling Hotspot Map
Source: BOSCAR



○ The Site

Figure 12 – Stealing from Motor Vehicle Hotspot Map
Source: BOSCAR

5.0 Matters for Consideration

5.1 Surveillance

The proposed car park will have a number of pedestrian access points onto Church Street, Lucas Street and Brodie Street. One vehicular access point off the new extension to Brodie Street, and two egress points to Church Street and Lucas Street will be provided at the ground level. Given these access points and the intended use of the car park for hospital staff, there is expected to be a moderate level of natural surveillance from users of the car park around the western end of the ground level boundaries of the new car park.

Surveillance opportunities from the existing surrounding development to the north and west are limited, with the surrounding buildings at a low scale and limited window openings which appear utilised. Moderate surveillance opportunities are available from the Consulate General of the People's Republic of China along Lucas Street, yet the orientation of this building varies, therefore inconsistent sightlines are available.

Moderate surveillance opportunities are also available from the Marie Bashir Centre, with some window openings orientated over the Site. The most notable presence of sightlines over the Site is from the Queen Mary building. The height and orientation of the Queen Mary building will allow for sight lines into all levels of the proposed car park structure.

In light of amenity considerations, however, the façade of the car park has been designed to distribute sightlines through the use of curved perforated aluminium panels. This design will in turn prevent direct overlooking into, and from, the car park. Whilst the car park façade design limits surveillance, distributed sightlines are still available from the Queen Mary building, ensuring passive surveillance opportunities are present.

Furthermore, the presence of the Queen Mary building will increase the perception of natural surveillance within the car park. The perception of users and potential perpetrators is a significant influence on crime. Through increasing the perception of surveillance, criminal and anti-social activities are less likely to occur as the risk of offence is heightened.

Within the proposed car park, structures such as concrete columns, solid internal walls, service rooms and enclosed fire exits can create significant visual obstruction in car parks. The proposed linear car parking layout and location of services and solid structures on the periphery of the car park will ensure internal sightlines are generally unimpeded. Whilst not illustrated on the architectural drawings, adequate lighting which is well distributed through the car park should be provided in the detailed design of the development. It is also recommended that if a painted finish is to be applied to the internal car park structure, a light finish should be selected to enhance reflections of light.

The location of stairs throughout the floor plate on each level will ensure that there are clear sightlines to ingress/egress points and pedestrians should feel safe circulating the car park. Given the scale of the car park and its operation 24 hours a day/7 days a week, passive surveillance will be enhanced from users when compared to the existing situation.

The layout of the car park will provide a legible environment, however directional signage should be provided to reinforce this principle and enhance feelings of safety. Way finding in large environments, such as the proposed multi storey car park, can be confusing. Knowing where and how to enter and exit, and find assistance within the car parking facility can impact perceptions of safety.

It is recommended that colour coding, naming, numbering or a similar method of identification and differentiation between levels is adopted. This will assist in wayfinding and enhance feelings of safety and purpose within the car park.

To further enhance feelings of safety, it is recommended that signage be provided in an appropriate location to advertise the specific security measures available on-site and emergency contact details such as '000'.

It is recommended that CCTV cameras be used to provide formal surveillance on Site to increase the perceived risk of capture to potential offenders. CCTV cameras should be placed at key entries and exits and in other strategic areas to provide maximum surveillance. It is also recommended that communication measures such as intercom systems are installed in key locations for users to call for assistance in an emergency or when feeling unsafe. Intercom systems are simple and easy to use measures to ensure that users can call security if they feel unsafe or are in trouble.

The provision of formal security with regular patrols around the Site and surrounding streets should also be considered to help increase surveillance opportunities. This method of formal surveillance would significantly enhance feelings of safety amongst car park users and would be a key measure in deterring crime.

Furthermore, whilst landscaping can provide shade, shelter and add to the attraction of environments, if it is not designed properly or maintained appropriately it can offer concealment opportunities and reduce the opportunity for surveillance. The streetscape plant and tree species proposed within the boundaries of the Site will need to be determined to ensure that they do not impact upon sightlines and surveillance opportunities in key pedestrian areas.

5.2 Lighting/ Technical Supervision

Effective lighting can reduce fear, increase community activity, improve visibility and increase the likelihood of offenders being detected. It is recommended that lighting be provided in and around the car park structure, particularly at the main entries and exits to facilitate surveillance opportunities and reduce the opportunity for predatory crimes, malicious damage and other offences. It is important to position lighting to ensure that there are no shadows between cars and to minimise the contrast between shadows and illuminated areas.

Given the nature of the car parking facility in supporting the operations of the RPA Hospital, it is recommended that a review be undertaken of the lighting provided between the car park and the various buildings on the RPA Hospital campus. This review should examine the lighting available along key pedestrian desire lines, and if necessary, identify any upgrades which need to occur to ensure appropriate paths of travel are well lit.

All lighting proposed within this development, and subject to the further review, should meet the minimum Australia and New Zealand Standards and objectives for crime and fear reduction as outlined in Australian Lighting Standard AS/NZ 1158 for public streets, car parks and pedestrian areas. Lighting should be adequate to permit facial recognition, informal surveillance and reduce the threat of predatory crime.

CCTV cameras should be installed to cover the key areas of the car park. These cameras must be vandal resistant and have the ability to clearly identify and record faces, shapes and colours.

5.3 Territorial Reinforcement

People generally recognise and respect a well-cared for area. Spaces that display strong ownership cues are less likely to be improperly used than those that do not contain these cues. Ownership cues are heightened and fear can be reduced amongst residents and visitors through the personalisation, marking, maintenance and decoration of a property.

The provision of the new car park structure and landscaping scheme on the Site will enhance the area image when compared to the existing situation. Appropriate identification signage, such as building name or street address signage, is recommended at key points of the car parking structure to identify the car park as a facility associated with the RPA Hospital.

Clearly defining the public and semi-private territory and the introduction of a greater number of people on the Site (i.e. users of car parking spaces) will increase the territorial reinforcement of the Site. The boundary landscaping scheme will also contribute to reinforcing the transition between public and semi-private domain.

Suitable wayfinding signage at all ingress/egress points of the car park is recommended to help reduce the opportunities for people to find excuses to gain unauthorised access and/or to loiter in areas of the car park or immediately adjacent to entries. It is recommended that suitable way finding signage is provided in the detailed design of the development.

5.4 Environmental Maintenance

The image of an area can impact upon feelings of safety and danger; influence local confidence; and affect individual decisions to withdraw or engage in community life. The ongoing maintenance of the car park and its surroundings, in particular the proposed landscaping scheme, is important to help balance safety and aesthetics.

Well maintained spaces encourage regular use and activity, which in turn creates natural supervision of public areas and enhances feelings of safety. The use of high quality materials for construction and well established planting where possible should be used to lessen the likelihood of damage and to help reduce maintenance costs.

5.5 Activity and Space Management

The introduction of a greater number of people on Site through the use of the car park will increase activity within the area during both the day and night. This greater level of pedestrian activity around the Site will likely increase surveillance and natural community policing.

The boundary landscape planting proposed around the car park should be continually maintained to ensure that the quality of the frontage is improved from the current condition. As a greater number of people will be utilising the local pedestrian network, it is important that the environment feels safe and welcoming. This will be achieved through regular maintenance of both landscaping, built form structures and lighting.

5.6 Access Control

Access control strategies restrict, channel and encourage the movement of people and vehicles into and around designated areas. Physical barriers increase the effort required to commit crime. Generally, secure access appears to be achievable for pedestrians in the proposed development except in locations where open access is required for vehicles (i.e. the entry/egress ramps). It is recommended that secure boom gates are provided at the vehicular entry/exit points to the car park, ensuring that access is regulated. These boom gates should be equipped with an electronic system which allows for restricted access for vehicles.

Restricted access, such as electronic security measures at other key pedestrian entry/exit points is also recommended where possible, noting the need for a level of open pedestrian access to upper levels. It is understood that fire exists will be available for pedestrians to egress from the car park structure. Doors at these points should remain closed and open outwards for pedestrians egressing from the car park structure. The doors should remain externally locked and only be available to open via electronic access/key or similar security hardware.

The dedicated off-street parking proposed as part of the development will contribute to limiting the number of crimes associated with 'stealing from a motor vehicle', especially compared to the existing situation where car parking is provided with minimal security mechanisms in place. The provision of parking within a structure that contains security measures, such as access control and crime deterrents including CCTV cameras, will ensure that the risk of capture for offenders is heightened, discouraging criminal activities.

5.7 Design, Definition and Designation

The design of the development reflects its purpose, which makes it difficult for potential offenders to make excuses about their presence and actions. It is recommended that CCTV and high quality lighting be used to increase surveillance opportunities and act as crime deterrents. The integrated approach of providing landscaping with the car park structure should be executed in a manner which reinforces the boundaries of the new development and designates the borders between public and semi-private space.

6.0 Crime Risk Rating and Recommendations

Combining the area context and the site opportunity rating of the issues discussed in previous sections of this report, the Crime Risk Assessment of the proposed development is 'medium'.

Notwithstanding this, recommendations to further improve the safety and security of the development include:

- If a painted finish is to be applied to the internal car park structure, consider a light finish to enhance reflections of light.
- Colour coding, naming, numbering or a similar method of identification and differentiation between levels within the car park should be adopted. This will assist in wayfinding and enhance feelings of safety and purpose within the car park.
- The following types of signage should be provided:
 - Appropriate identification signage, such as building name or street address signage, at key points of the car parking structure to identify the car park as a facility associated with the RPA Hospital;
 - Signage in an appropriate location to advertise the specific security measures available on-site and emergency contact details such as '000';
 - Suitable wayfinding signage should be provided at all ingress/egress points of the car park to help reduce the opportunities for people to find excuses to gain unauthorised access and/or to loiter in areas of the car park or immediately adjacent to entries. It is recommended that suitable way finding signage is provided in the detailed design of the development.
- CCTV cameras should be installed at key entries and exits and in other strategic areas to provide maximum surveillance. These cameras must be vandal resistant and have the ability to clearly identify and record faces, shapes and colours.
- Communication measures such as intercom systems should be installed in key locations for users to call for assistance in an emergency or when they feel unsafe.
- The provision of formal security with regular patrols around the Site and surrounding streets should also be considered to help increase surveillance opportunities.
- Lighting should be provided in and around the car park structure, particularly at the main entries and exits to facilitate surveillance opportunities and reduce the opportunity for predatory crimes, malicious damage and other offences. It is important to position lighting to ensure that there are no shadows between cars and to minimise the contrast between shadows and illuminated areas.
- All lighting proposed within this development, and subject to the further review, should meet the minimum Australia and New Zealand Standards and objectives for crime and fear reduction as outlined in Australian Lighting Standard AS/NZ 1158 for public streets, car parks and pedestrian areas. Lighting should be adequate to permit facial recognition, informal surveillance and reduce the threat of predatory crime.

- A review should be undertaken of the lighting provided between the car park and the various buildings on the RPA Hospital campus. This review should examine the lighting available along key pedestrian desire lines, and if necessary, identify any upgrades which need to occur to ensure appropriate paths of travel are well lit.
- Secure boom gates should be provided at the vehicular entry/exit points to the car park to ensure that access is regulated. These gates should be equipped with an electronic system which allows for restricted access. Access control strategies, such as electronic security measures should be positioned at pedestrian entry/exit points where possible.
- Fire doors should remain closed and open outwards for pedestrians egressing from the car park structure. The doors should remain externally locked and only be available to open via electronic access/key or similar security hardware.
- Ensure mechanisms are in place for ongoing maintenance of the car park including the rapid removal policy for vandalism and the removal of graffiti.
- Use high quality materials for construction to lessen the likelihood of damage and help to reduce maintenance costs.