

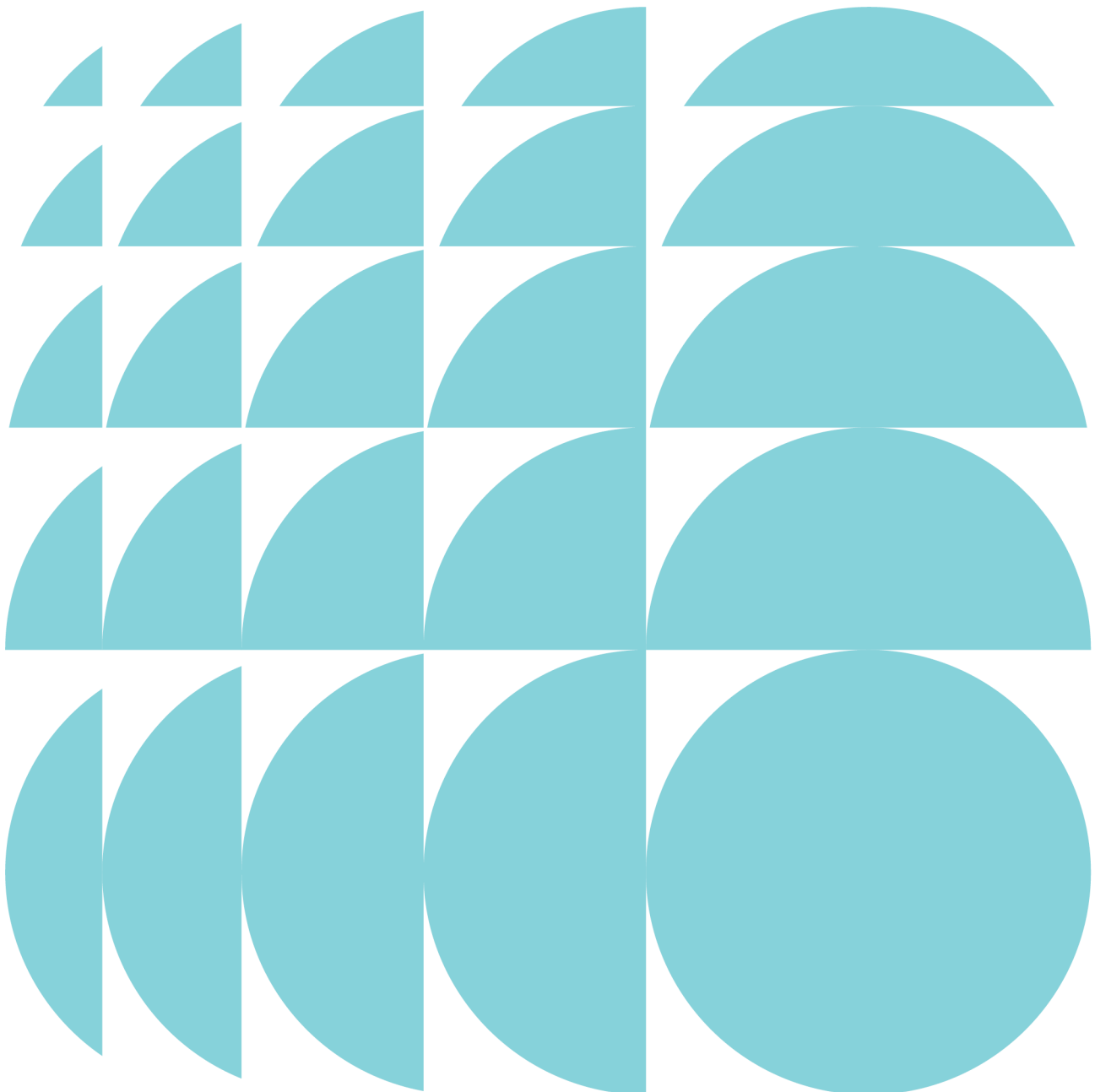
ETHOS URBAN

Crime Prevention Through Environmental Design Assessment

97-115 River Road, Greenwich
Greenwich Hospital Redevelopment
SSD 13619238

Submitted to Department of Planning and
Environment
On behalf of HammondCare

29 April 2022 | 2190376



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1.0 Executive Summary

This Crime Prevention Through Environmental Design (CPTED) assessment has been prepared to accompany SSD-13619238 State Significant Development Application (SSDA) for the redevelopment of Greenwich Hospital at 97-115 River Road, Greenwich (the site). From this assessment, recommendations are provided to reinforce the CPTED principles implemented in the design of the sites redevelopment and mitigate any potential risks.

The proposed redevelopment encompasses the demolition of the existing Greenwich Hospital and the construction of a replacement hospital building complex, into a new integrated health campus comprising hospital, residential aged care, seniors housing and overnight respite facilities.

The proposed development has been assessed against the four crime risk principles being surveillance, territorial reinforcement, activity and space management and access control.

In a general sense the layout of the proposal promotes clear sight lines, natural surveillance, ease of access and wayfinding. The layout of all access ways and walkways promotes sight lines for both ground level pedestrians and from upper floor balconies of both the seniors housing buildings and the hospital building. This layout avoids secluded areas and dead ends, which improves the safety of the site and mitigates the opportunities for crime.

The Crime Risk Assessment Rating of the proposed development is rated within the 'low' category.

A summary of the proposed recommendations is provided below:

- **Surveillance:** To ensure and maintain opportunities for natural and incidental surveillance through effective lighting, community creation and interaction and environmental maintenance.
- **Lighting and Technical Supervision:** All lighting throughout the private and public areas are to meet the minimum Australian Standard AS/NZ 1158 and the implementation of a CCTV network.
- **Territorial Reinforcement:** Clearly delineate between public and private space, CCTV signage and wayfinding signage throughout the site.
- **Design Definition and Designation:** Appropriate wayfinding signage integrated with the wider site.
- **Activity and Space Management:** An active management approach should be adopted for any public spaces on the site, to be implemented following issue of an Occupation Certificate.
- **Environmental Maintenance:** Ensure there are mechanisms for the ongoing maintenance of the building including a rapid removal policy for vandalism and removal of graffiti and vegetation maintenance.
- **Access Control:** Security access measures including gates/doors and swipe access between private and public spaces and appropriate security for the mailboxes.

The recommendations are provided at **Section 7.1** of this assessment. It is therefore considered that the proposed development has been designed consistent with CPTED principles and the proposed development is expected to be of low crime risk.

2.0 Introduction

This CPTED assessment has been undertaken to accompany SSD-13619238 State Significant Development Application (SSDA) for the redevelopment of Greenwich Hospital at 97-115 River Road, Greenwich (the site). A concept approval (SSD-8699) for the Greenwich Hospital redevelopment was approved by the Independent Planning Commission (IPC) on 10 November 2020. In accordance with the conditions of consent to Concept Approval SSD-8699, HammondCare now seek consent for the detailed design and construction of the new Greenwich Hospital which will provide a new integrated health campus comprising hospital, residential aged care, seniors housing and overnight respite facilities.

CPTED is a situational crime prevention strategy that focuses on the design, planning and structure of the environment. This assessment aims to identify any potential opportunities for crime which may be created by the proposed development through assessing the development in accordance with the 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 any 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 the architectural drawings prepared by Bickerton Masters. 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 assessment principles:
 1. Surveillance
 2. Territorial reinforcement
 3. Activity and Space Management
 4. Access control

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 represent 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 under the Security Industry Act 1997 is engaged to provide specific advice on the placement, installation, monitoring and maintenance of a CCTV network and other security measures such as bollard/barriers during the design development phase of the project.

3.0 Site Analysis

3.1 Site Context

The site is located in the suburb of Greenwich, within the Local Government Area (LGA) of Lane Cove Council. Surrounding land uses are predominantly of low-density residential uses with significant vegetation. The site's location in the context of its surroundings is shown in **Figure 1** below.

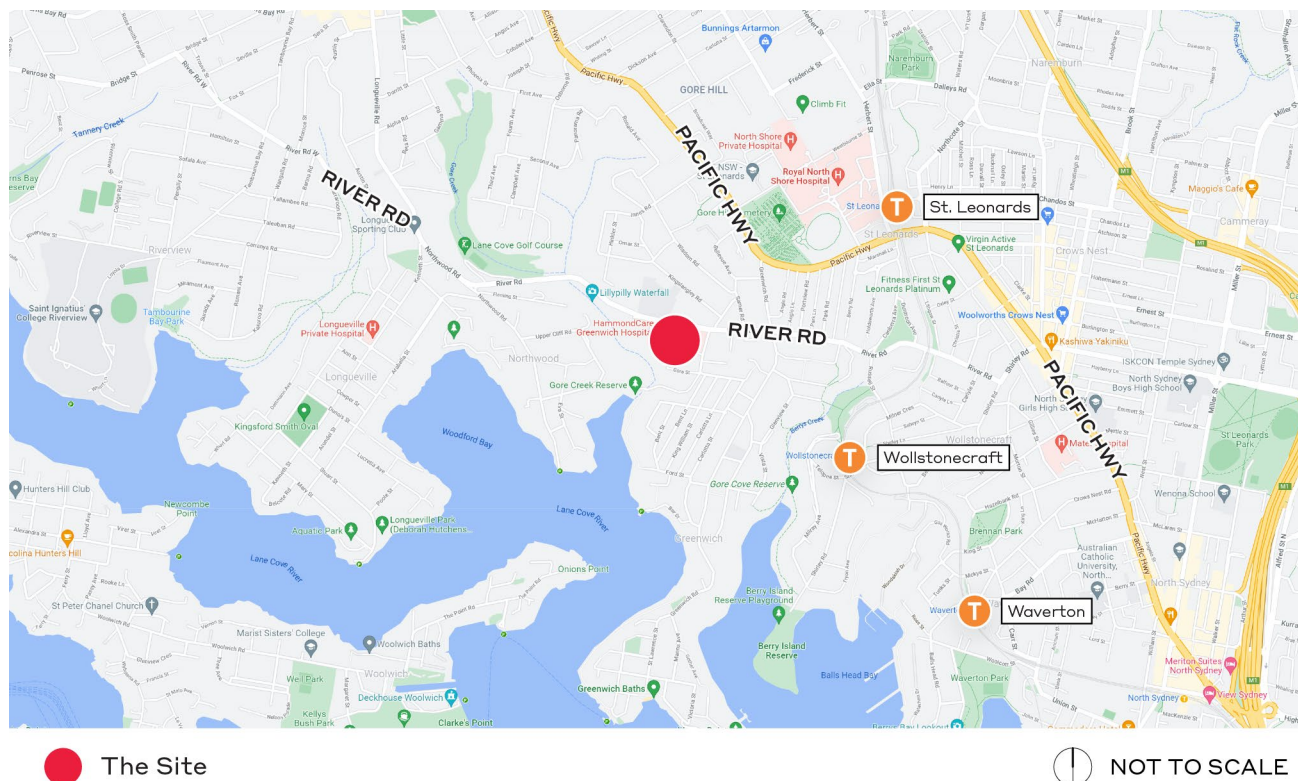


Figure 1 Location of the site in its surrounding context

Source: Google Maps, edits by Ethos Urban

3.2 Site Description

The site is known as 95-115 River Road, Greenwich. It comprises a total of two allotments, which are legally described as Lots 3 and 4 in DP584287, as shown in **Table 1** and **Figure 2** below. Lot 3 accommodates the existing Hospital building, and Lot 4 accommodates Pallister House. In total, the site is approximately 33,900m² in size and irregular in shape.

The site is bounded by River Road to the north, St Vincents Road to the east, and existing residential housing to the south and west. The site is characterised by a sloped and varied topography. Site levels rise towards the centre from its southwestern and south eastern boundaries, with a steep fall at the southwestern end, towards Gore Creek Reserve.

Table 1 Site legal description

Lot no. (Figure 3)	Address	Title	Approx. area (m ²)
1	97-115 River Road	Lot 3 / DP584287	22,500m ²
2	95 River Road	Lot 4 / DP584287	11,400m ²



Figure 2 Site aerial and subject lots

Source: Nearmap, edits by Ethos Urban

3.3 Existing Development

Existing development on the site comprises the current Greenwich Hospital complex. Existing buildings at the site range between 1-5 storeys in height and are interconnected through a series of internal corridors and external pathways. This includes the Main Hospital Building, which provides patient hospital beds, general healthcare, and palliative care services, the Riverglen building which provides mental health acute care services, and the Blue Gum Lodge, which is currently used for pain clinic healthcare services.

Near the southern end of the site, within Lot 4 in DP584287 is the State Heritage-listed 'Pallister House' building (SHR 00574). This two-storey Victorian house currently houses the hospital's dementia care, research facilities, and education facilities.

Significant existing vegetation is currently located on the site, especially concentrated at its eastern, western and southern boundaries. A number of hardstand parking areas are also integrated into the existing Greenwich Hospital campus.



Figure 3 Main Hospital Building, viewed from the main River Road entrance

Source: Ethos Urban



Figure 4 Riverglen Building, viewed from the rear carpark

Source: Ethos Urban



Figure 5 Blue Gum Lodge, viewed from River Road

Source: Ethos Urban



Figure 6 Pallister House

Source: Ethos Urban

3.4 Surrounding Development

Existing development surrounding the site comprises a predominantly low rise residential typology, which are generally separated from the Hospital building by on-site vegetation. The site's surrounding context are as follows:

- To the north of the site is River Road, across of which are low density detached dwellings, as well as the Greenwich Public School to the northwest;
- To the south of the site are low density detached dwellings along Gore Street. The Bob Campbell Oval public open space, which is part of Gore Creek Reserve, is located to the southwest.
- To the east of the site is a row of low density detached dwellings across St Vincents Road.
- To the west are additional detached residential dwellings.



Figure 7 Detached residential dwellings to the north
Source: Ethos Urban



Figure 8 Greenwich Public School to the northwest
Source: Ethos Urban



Figure 9 Residential dwellings to the south
Source: Ethos Urban



Figure 10 Bob Campbell Oval to the southwest
Source: Ethos Urban



Figure 11 Detached dwellings to the east
Source: Ethos Urban



Figure 12 Detached to the west, along River Road
Source: Ethos Urban

3.5 Transport and Access

The Greenwich Hospital site is well served by public transport. The 261 bus service along River Road provides frequent service between Chatswood and the Sydney CBD via the site, Lane Cove and North Sydney. The 265 bus along St Vincents and Kingslangley Road also provides access to Lane Cove and North Sydney.

The site is approximately 950m to the southwest of St Leonards railway station, and 800m to the northwest of Wollstonecraft station. River Road is a major road that provides access to the Pacific Highway, including the centres of St Leonards and North Sydney.

3.6 Risk Assessment of Existing Site

A site inspection and risk assessment of the subject site in its existing context and form has been undertaken on 17 February 2022 to assess the current site conditions, situational crime prevention measures and perceived safety of the existing environment. Overall, the Crime Risk Rating is considered “low”.

The existing factors that contribute to the “low” crime rating for the site which were observable at the time of site inspection include:

- Lack of pedestrian access points;
- Opportunities for passive/natural surveillance;
- Good orientation to the River Road streetscape;
- Clear delineation between public/private access and spaces; and
- Wayfinding signage.

The above factors demonstrate that whilst there are aspects of the site which can be improved from a CPTED perspective, overall the site is balanced by positive qualities and therefore justifies a “low” crime risk rating.

The detailed design proposed by SSD-13619238 will re-introduce and improve the security measures and high quality aesthetic built form with security components which have the ability to minimise opportunities for crime or unacceptable behaviour on site that were previously afforded by:

- Utilising high open style perimeter security fencing to communal areas.
- Introducing mixed-use ground floor components within each building, ensuring natural surveillance during business hours to both street frontages.
- Restricted vehicle access and large basement security gates.
- Clear delineation of space, with clear ownership of the inner areas.
- Enforcing a clear delineation of site boundaries using fencing.
- Enforcing a clear distinction between the level of security across the different uses within each building.
- Implementing several technical surveillance measures in place including CCTV and secured access points.

4.0 Description of the Development

The SSDA will propose the demolition of the existing Greenwich Hospital and the construction of a replacement hospital building complex, an integrated health campus, following concept approval for the project under SSD 8699.

Specifically, consent is sought for the following works:

- Demolition of the existing hospital building and associated facilities at the site;
- Construction of a new hospital facility and integrated healthcare campus comprising of hospital, residential aged care, seniors housing, and overnight respite, across:
 - A new main hospital building up to RL 80.0;
 - Two new seniors housing buildings, northern building up to RL 56.36, and southern building up to RL 60.65;
 - A new 2-3 respite care building up to RL 56.9;
- Construction of associated site facilities and services, including pedestrian and vehicular access, and basement parking;
- Site landscaping and infrastructure works; and
- Preservation of Pallister House which will continue to host dementia care and administrative functions.

As shown in the Architectural Drawings prepared by Bickerton Masters, the proposed construction works will be staged. This is to allow the hospital to continue operating during the redevelopment process, and to ensure that the most critical infrastructure (i.e. the new main hospital building) is delivered first before the serviced housing and respite care buildings are put into operation, as those uses cannot function without the new hospital. A summary of the proposed staging is provided below:

- **Stage 1:** Demolition of Blue Gum Lodge, Eastern Wing of the existing hospital, and associated carpark (Stage 1.1) and construction of the new main hospital podium and tower (Stage 1.2);
- **Stage 2:** Construction of the remainder of the new main hospital building;
- **Stage 3:** Demolition of remainder of the existing hospital building and Riverglen Unit (Stage 3.1) and construction of the southern seniors housing building (Stage 3.2);
- **Stage 4:** Construction of the northern seniors housing building; and
- **Stage 5:** Construction of the respite care building.

5.0 Nature of Recorded Crime

Crime statistics obtained from the NSW Bureau of Crime Statistics and Research (BOCSAR) represents criminal incidents recorded by NSW Police. A review of the local statistics for 2021 found that the most commonly occurring crimes relevant to CPTED within the Lane Cove LGA (rates per 100,000 persons) were:

- Break and enter dwelling;
- Steal from motor vehicle;
- Malicious damage to property;
- Intimidation, stalking, and harassment;
- Fraud; and
- Steal from dwelling.

The frequency of the above crimes in the Lane Cove LGA between January 2017 and December 2021 are detailed in **Table 2** below.

Table 2 Statistics of recorded crime in Lane Cove LGA between 2017 and 2021

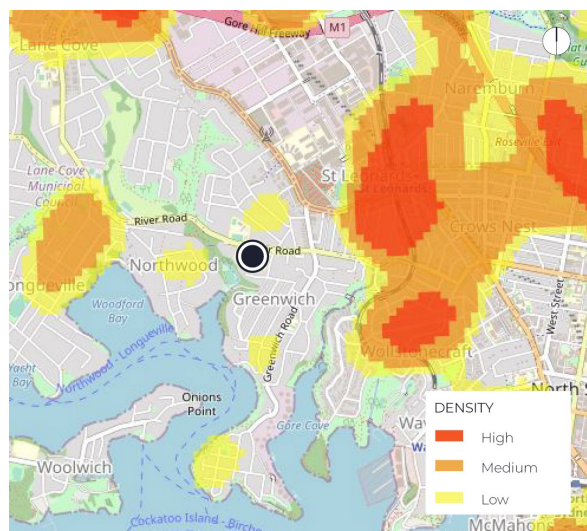
Crime	Jan – Dec 2017	Jan – Dec 2018	Jan – Dec 2019	Jan – Dec 2020	Jan – Dec 2021	60 month trend	Rate per 100,000 population	Rating Category
Break and enter dwelling	141	81	96	60	58	Decline	143.1	Very low
Steal from motor vehicle	119	97	142	72	89	Stable	219.6	Very low
Malicious damage to property	107	125	135	116	84	Stable	207.2	Very low
Intimidation, stalking, and harassment	46	64	29	49	62	Stable	153.0	Very low
Fraud	143	203	224	159	154	Stable	379.9	Very low
Steal from dwelling	57	69	70	70	64	Stable	157.9	Very low

Source: Bureau of Crime Statistics and Research NSW, 2022

As shown in **Table 2** above, the Lane Cove LGA is identified as having a low occurrence of crime relative to NSW averages. Based on the above data, breaking and entering of dwelling, malicious damage to property, intimidation, stalking and harassment, and theft from a dwelling may be crimes considered to be relevant to the proposed development due to their occurrence in the locality, however it is noted that these occur at very low levels relative to greater NSW.

Hotspots indicate areas of increased crime density (number of incidents per 50m x 50m) relative to crime concentrations across NSW. They are not adjusted for the number of residents and visitors in the area and thus do not reflect the risk of occurrences on a per capita basis. The figures below illustrate the proximity of these hotspots to the site of the proposed development. It is noted that these hotspot areas for these crimes are generally concentrated around public transport corridors and hubs, such as St Leonards Station and Wollstonecraft Station, which both see a high influx of persons travelling on public transport via the bus exchange and the railway station as well as utilising the services offered within the surrounding mixed-use precinct. The hotspots are all largely located to the east of the site.

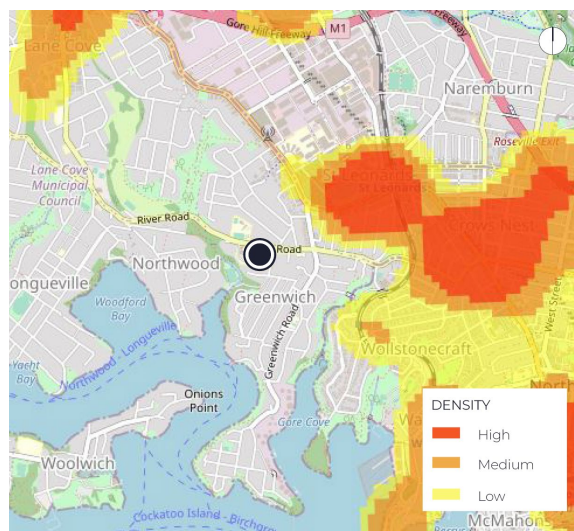
Given this, the design, layout and access points of the proposed development have been reviewed in line with CPTED principles, and recommendations are provided in Section 6.0 below to mitigate the opportunity for crime to occur.



● The Site Break and enter dwelling

Figure 13 Break and Enter Dwelling

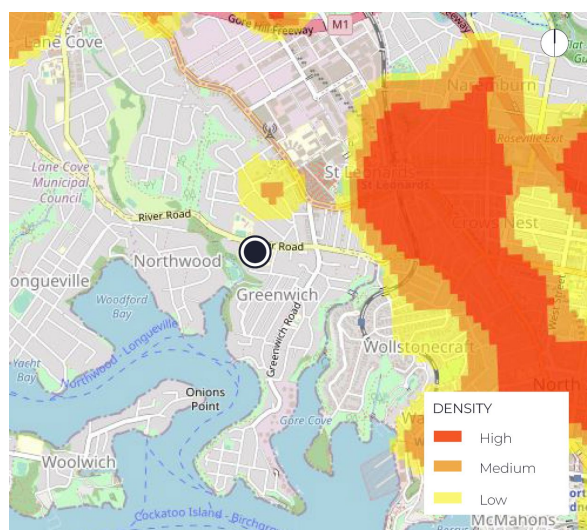
Source: BOSCAR / Ethos Urban



● The Site Malicious damage to property

Figure 14 Malicious Damage to Property

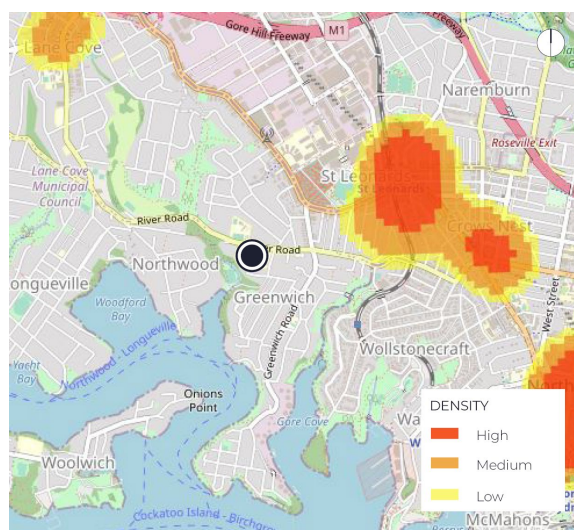
Source: BOSCAR / Ethos Urban



● The Site Steal from dwelling

Figure 15 Theft from Dwelling

Source: BOSCAR / Ethos Urban



● The Site Break and enter non-dwelling

Figure 16 Break and Enter Non-Dwelling

Source: BOSCAR / Ethos Urban

6.0 Matters for Consideration

Historically, and currently, Greenwich has a low rate of crime. Notwithstanding this, the site has been assessed with regard to the above-mentioned crimes in order to ensure the proposed design delivers a 'low' crime risk rating and provides a sense of general safety and security for residents and users upon occupation.

Potential perpetrators generally seek to take advantage of environments, with access and the opportunity for concealment significantly affecting the safety and perceived safety of an environment, breaking and entering of dwelling, malicious damage to property, intimidation, stalking and harassment, and theft from a dwelling have been identified as the most relevant offences to the subject site (despite their low risk of occurrence), the following provides an assessment of the proposed development's ability to mitigate opportunities for such crime.

In accordance with the conditions of consent to Concept Approval SSD-8699, HammondCare now seek consent for the detailed design and construction of the new Greenwich Hospital which will provide new health care and allied

health facilities and integrated, serviced housing. Understanding the contextual relationship of the proposed development with the surrounding area is essential in the creation of a sense of community ownership and informing recommendations for crime reduction. This context underpins an assessment of the proposed development in accordance with the CPTED principles.

All recommendations are collated and summarised in **Section 7.1**.

6.1 Surveillance

Effective natural and incidental surveillance can reduce the opportunities for crime. The principle indicates that individuals are often deterred from committing offences in areas with high levels of natural surveillance. The following design measures result in 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
- Minimal opportunity for offenders to conceal themselves

In a general sense the positioning and layout of the detailed design promotes clear sight lines, natural surveillance, ease of access and wayfinding. The precinct entry from River Road connecting to the internal set-down loop promotes natural surveillance from ground level pedestrians and also from upper floor balconies of the hospital building as well as the seniors housing buildings.

The proposed design and proximity to River Road provides natural surveillance both externally to the public domain and internally within the site. Furthermore, the sense of community ownership of open spaces and public spaces encouraged by the high natural surveillance environment that is proposed will help create a sense of safety and activity, thereby reducing the opportunities for crime.

Where possible all new landscaping should be maintained to enable sightlines. In this regard, ground floor planting and podium level planter boxes should be maintained as to not impede sightlines between balconies and the public realm.

Furthermore, to improve a sense of community ownership and interaction and ground plane activity, it is recommended that, where possible, the ground level frontage areas do not have high fencing or landscaping enclosing them to encourage natural surveillance and minimise a sense of enclosure.

The proposed design of the development in its current form is considered to increase the opportunities for natural surveillance, effective guardianship and community ownership that are crucial to the perceptions of safety and therefore a heightened sense of risk for potential offenders.

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 communal open space should meet the minimum Australian Lighting Standard AS/NZ 1158 specifically addressing the objectives for crime reduction.

High quality lighting throughout all publicly accessible areas should be adequate to permit facial recognition, allow for long sight lines and reduce dark shadowing which will in turn help reduce opportunity for predatory crime. The development is provided with the opportunity to consider the installation of a discrete CCTV system as part of the wider commercial and residential lobby potential CCTV system.

In this regard the placement of CCTV within the site should specifically focus on providing coverage to key access/egress points at both street frontages, and areas that have limited natural surveillance. For this reason, discrete CCTV should be considered near building entrances (including vehicle entrances) and pedestrian pathways where appropriate. However, as the neighbouring land uses are primarily residential, CCTV that monitors the entire site and beyond onto the road carriageway is not considered appropriate.

6.2 Territorial Reinforcement

Territorial reinforcement involves the perceived ownership of communal and public spaces. Users will be more inclined to visit and care for 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. Well maintained public space 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 presence of ground level natural surveillance on the site will be a deterrent to potential offenders and promote territorial reinforcement. Clear delineation between publicly accessible land and private land is considered of high importance, given the site's proximity to other publicly accessible areas such as Bob Campbell Oval and Greenwich Public School, which experience high pedestrian flows.

Clear delineation and territorial reinforcement of different land ownership and land use typologies ensures that the ambiguity of spaces and confusion of use are minimised. This promotes a confidence in seniors housing residents, hospital employees to take effective guardianship of spaces and reduces incidences of crime. Defined landscaping, fencing and glazing along these land ownership and user interfaces is provided for within the designed development in its current form. Business and building identification signage also assists in this regard to allow seniors housing residents and visitors to better understand delineations and separate the use of spaces.

The separation between publicly accessible accessways/space and privately accessible accessways/space inclusive of the car parking bays and servicing facilities should be made clear, with no uncertainty or ambiguity regarding the difference between the two and who the principal users of the space are. This could be enforced by restricting access to areas of privately accessible space, through doors, gates or barriers that can only be opened with an access card or similar.

Design, Definition, and Designation

The design of the proposed development reflects its purpose, and while potential perpetrators may seek to exploit areas with unclear spatial definition, the design of the proposed development generally benefits from achieving multiple principles of CPTED.

The site is benefitted by its presentation, configuration and orientation to River Road. Maintenance of the vegetation in the frontage to both River Road and St Vincents Road should occur to ensure that areas do not undermine the principles of CPTED, including access control, natural surveillance, effective lighting and technical surveillance.

Access arrangements will play a pivotal use in clearly delineating between the public and private uses on the site. The main pedestrian access points from River Road are to be clear and not ambiguous.

6.3 Activity and Space Management

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

The management of any publicly accessible areas and open space will be a key element in preventing the potential opportunity for crime and will also have a bearing on residential amenity with regard to restricting noise and light spill into dwellings. Furthermore, effective guardianship plays a critical role in the safety and perceived safety of the proposed development. The ability for HammondCare to conduct operations of the seniors housing buildings for future residents improves the sense of community ownership and effective guardianship of public and common spaces.

To address these items, the ongoing operations of the individual components of the site's redevelopment should be undertaken in a comprehensive and cohesive manner to allow for a proactive management approach to the public spaces for the site.

Environmental Maintenance

There is a strong association between environmental maintenance and the perceived fear of crime. General image can greatly affect an 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 development will improve the quality of the urban environment, appropriate lighting, and landscaping that will increase the level of activity across the site both during the day and at night. Given the quality and design of the proposed development, the proposal will enhance the image and activity of the site, thereby encouraging a sense of shared ownership.

The maintenance of the building and landscaping will be important to balance safety and aesthetics of the site and general area, each of which will contribute to the image of the wider area. It is recommended that the landscaping throughout the development be maintained for the purpose of conveying that the space is well cared for and diligently maintained in order to create and maintain a sense of safety and security. Ongoing maintenance of the site will encourage regular use, activity and resident pride which in turn will enhance the natural supervision and foster feelings of safety.

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, and reduce the possibility, to commit crime. Access control strategies are well considered and clearly evident in the proposed development.

The separation between publicly accessible space and privately accessible space should be made clear, with no uncertainty or ambiguity regarding the difference between the two. This should be enforced by restricting access to areas of privately accessible space, through doors, gates or barriers for the seniors housing buildings. Such access points could include:

- entrance into the private outdoor areas (i.e. access ways and communal open space areas) of the proposed development;
- entrance into the car park;
- access to each building's lift core;
- access to each building lobby;
- access to each building floor individually within the lifts;
- access to utility rooms; and
- access to each seniors residential apartment.

It is recommended that all private terraces and balconies are secured, and a clear delineation between public communal areas and resident-only areas is created through design aspects such as low fencing, landscaping, and/or subtle signage.

It is recommended that access to the shared basement is controlled via a secured access and physically divided (via secure doors or similar) into logical sections to separate public, staff, visitors and car share parking areas from the private resident parking areas. Also, each building lift well in the shared basement is recommended to have secured access, only allowing lift access for the relevant use of each particular building.

It is recommended that seniors residents and staff require an access card or similar to access the secure entries identified above.

To reduce the chance of potential fraud, all seniors housing mailboxes should be both secure and accessible for residents. Mailboxes should be located immediately adjacent to each building's entry to enable maximum surveillance to avoid mail theft. CCTV may also be considered appropriate to monitor these areas.

7.0 Crime Risk Rating and Recommendations

The Crime Risk Rating considers the development as proposed in architectural drawings prepared by Bickerton Masters, within the site's environment.

Acknowledging the site context and the matters discussed in Sections 3, 4 and 6, the Crime Risk Assessment Rating of the proposed development is rated within the "low" category. The proposal and the below recommendations will allow the site to maintain a Crime Risk Assessment Rating for the site in the "low" category placement, with many of these recommendations already considered and incorporated into the design of the Greenwich Hospital redevelopment.

Overall, it is considered that the proposed development will improve the safety and security of the local area and generally improve public perception.

Recommendations to ensure the safety and security of the proposed development are detailed below.

7.1 Surveillance

- Ensure opportunities for natural and incidental surveillance are maintained through effective lighting, access control and environmental maintenance.
- In the absence of technical supervision, ensure natural surveillance is maximised in areas of shared amenity, such as open spaces.
- Ensure opportunities for concealment are minimised by seeking to reduce any alcoves and recesses throughout building exteriors.
- Ensure driveways and pedestrian pathways do not lead to concealed spaces.
- The pedestrian entry/egress to/from the site from River Road are to be clearly defined and have an appropriate width, be appropriately lit and be provided with clear sight lines to ensure natural surveillance.
- Where possible all new landscaping and existing vegetation should retain and improve sightlines. In this regard, existing and proposed vegetation, shrubs and trees should not (as far as possible) impede sightlines for pedestrians and should be regularly maintained to minimise concealment opportunities throughout the site.

7.2 Lighting and Technical Supervision

- All lighting provided within and around the development, should meet or where possible exceed the minimum Australian Lighting Standard AS/NZ 1158 specifically addressing crime reduction.
- Consistent and uniform lighting is recommended throughout all publicly accessible areas and ground level communal areas (where appropriate) within the proposed development. This lighting should also aim to minimise light pollution and light spill on to surrounding residential dwellings.
- Lighting along publicly accessible pathways and the frontage to Albert Road should provide a lux level and uniformity level that is appropriate for urban areas. This shall be determined in consultation with an experienced lighting expert with experience in community safety principles.
- In the basement car park, lighting should provide a lux level and uniformity level that is appropriate for large shared basements that service functions. This shall be determined in consultation with an experienced lighting expert with experience in community safety principles. It is noted that a standby lower lux level is acceptable for power saving reasons, but this will brighten to full lux levels where motion is detected.
- Outdoor lighting is recommended to have a minimum Colour Rendering Index (CRI) of 60 for accurate identification of colour. All outdoor lighting within the proposed development should comply with AS4282-1997.
- A lighting design should be prepared by a suitably qualified and experienced lighting expert.
- The implementation of a CCTV network is recommended to be considered for the proposed development, consistent with the existing CCTV presence on site. Should a CCTV network be implemented it is recommended that a discrete style of camera (such as a small dome camera) that is integrated/attached to the street lighting or buildings. This is to minimise the perception of inherent insecurity associated with large and prominent cameras that can have a negative social effect.

- The CCTV network is suggested to cover the entrance/egress points of the site and the basement vehicle entrance/egress points.
- 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.

7.3 Territorial Reinforcement

- Maintain that the building entrance/s remains free of unnecessary clutter to ensure entry points are highly visible from River Road.
- Display CCTV security notice signs to convey that the site is under constant surveillance (if applicable).
- Clearly delineate between publicly and privately accessible areas along the boundary to River Road with dense landscaping and/or fencing. High landscaping and/or fencing is discouraged.
- Provide signage within internal pathways and the underground car park to direct pedestrian movements.
- In general, street boundary fencing should not visually enclose the site with high fencing for access control purposes, rather the fencing and associated gates should typically be a visual and physical cue not an intruder barrier.
- Where and when possible, ensure that pathways within lobbies and corridors are unobstructed to avoid blind spots.
- Provide wayfinding signage where appropriate to reinforce perceptions of safety and legibility and clearly define the use of the building.

7.4 Design, Definition, and Designation

- Appropriate wayfinding signage to be provided in and around the development to achieve a clear spatial definition and clarity.
- Clear wayfinding signage should be provided to the ancillary facilities such as the car park, storage spaces and garbage rooms within the basement to prevent unauthorised individuals from inadvertently or intentionally accessing these spaces

7.5 Activity and Space Management

- An active management approach should be adopted for any public spaces on the site, to be implemented following issue of an Occupation Certificate.
- Ensure building and wayfinding signage is appropriate to deter access to private spaces and direct pedestrian movements through the site.

7.6 Environmental Maintenance

- Ensure mechanisms are in place to facilitate the ongoing maintenance of the building, including the implementation of a rapid removal policy for vandalism repair and removal of graffiti. Anti-graffiti materials should be sourced, given the high evidence of graffiti, which is prevalent on site, even after removal.
- Consistently manage vegetation so that sight lines are maintained and opportunities for concealment are minimised.

7.7 Access Control

- It is recommended that all private terraces and balconies are secured, and a clear delineation between public communal areas (such as the green atrium) and resident-only areas is created through design aspects such as low fencing, landscaping, and/or subtle signage.
- The northern boundary of the site at River Road shall be enclosed and secured with appropriate fencing to restrict access to the western landscaped areas of the site to residents and maintenance workers only.

- Any publicly accessible parts of the car park (such as visitor car parking or a car share scheme), be located near the entry to the car park prior to the restricted access area, with the seniors housing and hospital staff car parking being secured.
- Access to the shared basements via a secured roller door with secured access is recommended. Furthermore, the shared basement (as far as possible and in accordance with the relevant statutory and code requirements) should be physically divided (via secure roller doors or the like) into logical sections to separate public, visitors and car share parking areas from the private seniors resident parking areas.
- Secure lift access for the building is recommended to ensure lift access is only provided to the seniors residents (and their guests) and for hospital patients and visitors.
- It is recommended that seniors residents and hospital staff will require an access card or similar to access the secure entries of the seniors residential buildings and the hospital building. It is further recommended that access is only provided to the relevant floor of each resident (except for floors with communal areas).
- All apartment mailboxes should be both secure and accessible for residents. Mailboxes should be located immediately adjacent to each building's entry to enable maximum surveillance to avoid mail theft. CCTV may also be considered appropriate to monitor these areas.