



21/05/2024

LIVERPOOL CIVIC PLACE BTR.

CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN REPORT

REPORT INFORMATION

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1 Introduction

This report offers a preliminary perspective on the Crime Prevention Through Environmental Design (CPTED) considerations for the Phase B Liverpool Civic Place Build-to-Rent (BTR) Project, emphasising its potential impact on safety and security. While not a comprehensive on-site assessment, it provides key insights to inform design discussions and align the Project with the core security objectives.

The Phase B BTR Project is a significant addition to the local area, aimed at addressing the growing needs of commercial, retail, and residential space in Liverpool, located south-west of the Sydney CBD. This report encourages the client, designers, and security subject matter experts to consider these high-level points as a foundation for more detailed assessments and CPTED integration within the final design.

The information and recommendations outlined herein aim to create a secure, and welcoming environment, aligning with the Liverpool Civic Place's CPTED goals. It serves as a starting point for broader discussions, enabling the integration of CPTED principles into the final design and operation.

1.1 Project Overview

The Liverpool Civic Place BTR Project involves the construction of 304 apartments, ground floor retail, basement level car parking and amenities to service the residents. The residential tower will be constructed adjacent to the newly constructed council office building and public library.

The site is located between Scott and Terminus Streets. The following figure shows the aerial view of proposed development location.



Figure 1: Site Location, Source - Briefing Pack [Liverpool Civic Place - Presentation - Rev A (002)]

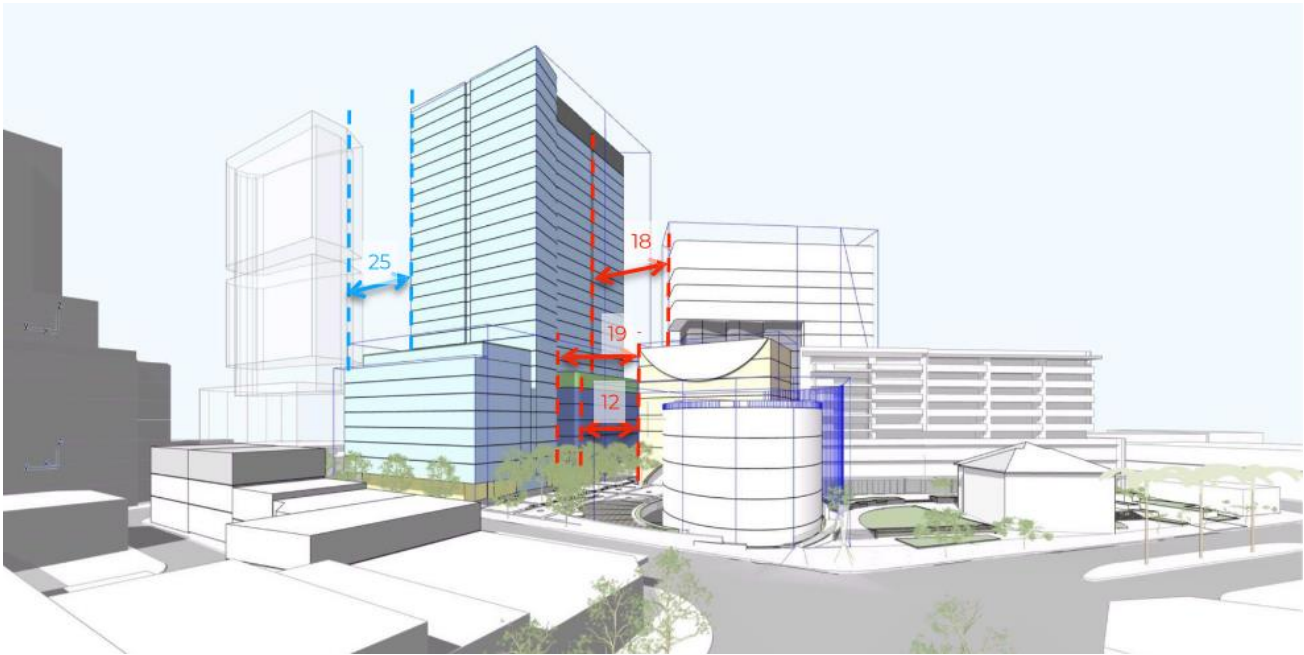


Figure 2: BTR Envelope, Source - Briefing Pack [Liverpool Civic Place - Presentation - Rev A (002)]

1.2 Scope of Works

The brief scope of works is as follows:

- LCI to undertake a high level CPTED review of the Phase B BTR Project.
- Source and review existing standards, design guides, and other relevant information.
- Desktop review of WIP architectural plans, dated 05 Dec 2023.
- Produce a draft CPTED report for review and comment, including project overview, standards, and guidelines, brief crime assessment, CPTED principles including key elements stated in the '*Crime Prevention and the Assessment of Development Applications*', key areas of concern or potential vulnerabilities, and recommendations in terms of 'designing out' opportunities for crime to inform the architect, landscape architect, and relevant engineering disciplines.
- Assess feedback and comments received from key stakeholders.
- Incorporate feedback in a final report, as necessary.

1.3 Disclaimer and Limitations

- The CPTED assessment is for the Phase B Project only.
- A Security Risk Assessment (SRA) has not been undertaken for this project and, therefore, this report is not intended to provide an exhaustive examination of all security related risks as they may pertain to the Project. The recommendations contained within the report are, for the most part, in relation to CPTED approaches only and should not be deemed sufficient to provide a comprehensive risk-based framework for all security decisions, including the security systems requirements, nor to define a holistic protective security strategy, for the whole of Project.
- Assessed and Evaluated the Crime Statistics Data provided by NSW Bureau of Crime Statistics and Research (BOCSAR). Crime assessment undertaken here are based on information furnished in BOCSAR website.

1.4 Acronyms

The following abbreviations are referred to throughout this report.

Abbreviation	Description
AS	Australian Standard
AS/NZS	Australian and New Zealand Standard
BCA	Building Code of Australia
BOCSAR	Bureau of Crime Statistics and Research
BTR	Build-to-Rent
CPTED	Crime Prevention Through Environmental Design
DiD	Defence in Depth
EACAS	Electronic Access Control and Alarm System
LGA	Local Government Area
NCC	National Construction Code
SRA	Security Risk Assessment
SRM	Security Risk Management
TR	Territorial Reinforcement
VAAW	Vehicle as a Weapon
VSS	Video Surveillance System

Table 1: Acronyms

2 Standards, Guidelines and Project Inputs

2.1 Australian Codes and Standards

This CPTED report has been based on the following Australian Codes and Standards:

- ISO 22341:2021(en) Security and Resilience – Protective Security – Guidelines for Crime Prevention Through Environmental Design.
- Crime Prevention and The Assessment of Development Applications (by NSW Department of Urban Affairs and Planning).
- Building Code of Australia (BCA) / National Construction Code (NCC) 2022.
- AS2201:2008 Intruder Alarm Systems, Parts 1-5.
- AS62676:2020 Video surveillance systems for use in security applications, Part 1.1, Part 1.2, and Part 4.
- AS60839:2019 Alarm and electronic security systems, Part 11.1.

2.2 Project Inputs

- Briefing Pack Liverpool Civic Place – Presentation – Rev A (002).
- Liverpool Civic Place WIP Architectural Drawings, dated 05 Dec 2023.
- Liverpool Civic Place BTR Overall Floorplans Draft, dated 10 Oct 2023.
- Liverpool Civic Place Feasibility Report, 20230059-AR-SK001 Revision [A], dated 16 Oct 2023.
- LCI Building Services Brief Preliminary, dated 06 Nov 2023.
- Planning Secretary's Environmental Assessment Requirements (SEAR) for Build-to-rent housing – assessment requirements.

3 Crime Statistics

LCI conducted a high-level analysis of crime data spanning five years using the information published on the BOCSAR website for the Sydney Southwest region that includes Liverpool, Canterbury, Bankstown, Camden, and Campbelltown.

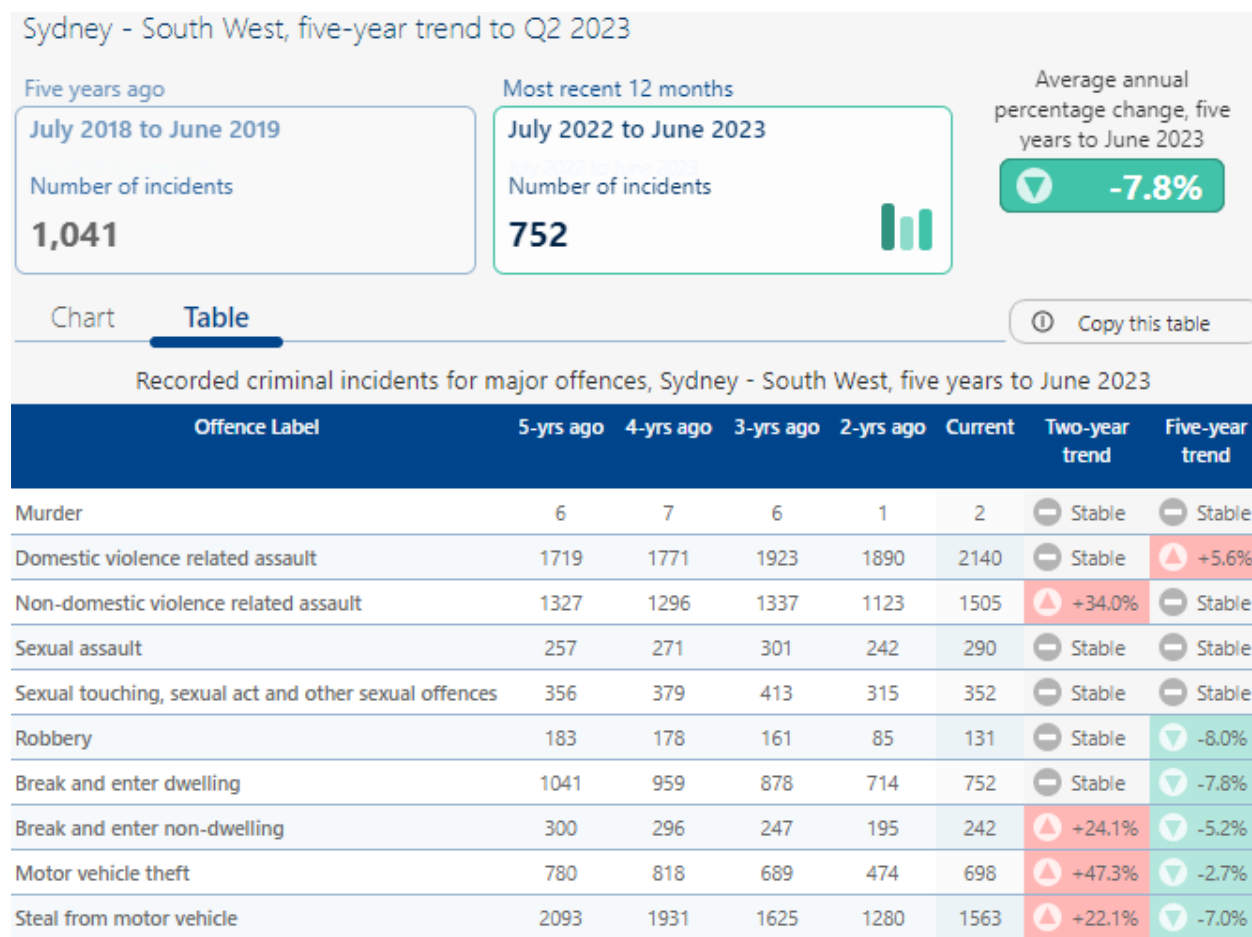


Figure 3: Source - NSW Bureau of Crime Statistics and Research, recorded incidents in Sydney Southwest region till June 2023

Further to this, the following table provides detailed information on various trends and patterns in criminal incidents recorded by the NSW Police Force in the Liverpool Local Government Area.

Description	Jul 2018 – Jun 2019	Jul 2019 – Jun 2020	Jul 2020 – Jun 2021	Jul 2021 – Jun 2022	Jul 2022 – Jun 2023	Rate per 100,000 population Jul 2022 – Jun 2023	2 year trend and annual % change	5 year trend and annual % change
Murder *	3	5	2	0	2	0.9	nc	nc
Domestic violence related assault	870	975	1094	1029	1228	524	Stable	Up 9.0%
Non-domestic violence related assault	745	735	762	669	904	385.7	Up 35.1%	Stable
Assault Police	67	84	57	70	79	33.7	Stable	Stable

Description	Jul 2018 – Jun 2019	Jul 2019 – Jun 2020	Jul 2020 – Jun 2021	Jul 2021 – Jun 2022	Jul 2022 – Jun 2023	Rate per 100,000 population Jul 2022 – Jun 2023	2 year trend and annual % change	5 year trend and annual % change
Sexual assault	146	144	168	154	163	69.5	Stable	Stable
Abduction and kidnapping	6	8	12	10	9	3.8	nc	nc
Robbery without a weapon	40	45	50	25	42	17.9	Stable	Stable
Robbery with a firearm	4	9	2	3	8	3.4	nc	nc
Blackmail and extortion	4	4	6	0	30	12.8	nc	nc
Other offences against the person	31	35	41	62	51	21.8	Stable	Up 13.3%
Break and enter dwelling	671	629	561	450	501	213.8	Up 11.3%	Down 7.0%
Break and enter non-dwelling	166	174	136	118	140	59.7	Stable	Down 4.2%
Receiving or handling stolen goods	338	448	325	268	310	132.3	Stable	Down 2.1%
Motor vehicle theft	422	441	413	288	414	176.6	Up 43.8%	Stable
Steal from retail store	735	571	472	448	564	240.6	Up 25.9%	Down 6.4%
Steal from dwelling	446	427	372	365	409	174.5	Stable	Down 2.1%
Steal from person	65	52	47	31	42	17.9	Stable	Down 10.3%
Stock theft	3	2	2	3	2	0.9	nc	nc
Arson	124	125	106	78	61	26	Stable	Down 16.3%
Malicious damage to property	1383	1317	1296	1144	1204	513.7	Stable	Down 3.4%
Resist or hinder officer	119	174	145	126	141	60.2	Stable	Stable
Prohibited and regulated weapons offences	446	526	448	405	382	163	Stable	Down 3.8%
Trespass	218	264	135	134	143	61	Stable	Down 10.0%
Other offences against justice procedures	45	80	44	79	96	41	Stable	Up 20.9%
Other offences	352	526	885	3437	277	118.2	Down 91.9%	Stable

Table 2: Source - NSW BOCSAR, reference LGA_trends23Q2

Note: Significant upward trends are highlighted in red; significant downward trends are highlighted in yellow. 'Stable' indicates there was no significant upward or downward trend and 'nc' indicates that the number of incidents recorded was too small for a reliable trend test to be performed.

In summary, while most types of crime in the Liverpool LGA remained relatively stable or decreased over the years, few exhibited notable upward trend including domestic and non-domestic violence related assault, other offences against the person, break and enter dwelling, motor vehicle theft, steal from retail store and other offences against justice procedures.

4 Security and CPTED Principles

4.1 Principles of Security

The four basic objectives of any protective security programme are to:

- **Deter** using physical barriers, and the risk of detection and prosecution of offenders.
- **Delay** with effective physical construction methods.
- **Detect** using electronic security systems and human observation.
- **Respond** utilising alarm response and private security guards and/or public police force.

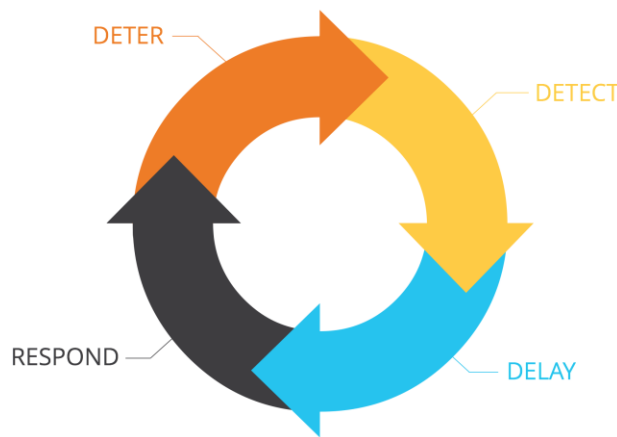


Figure 4: Principles of Security

4.2 Defence-in-Depth

Defence-in-Depth (DiD) involves the design and implementation of multiple layers of security designed to protect people, physical assets, and information. The physical barriers used in a DiD approach are often complemented through the application of psychological barriers (CPTED principles) to improve the overall effectiveness of the protective security strategy.

The first layer of physical security at a given facility is often a perimeter fence that defines the site boundary and is intended to deter unauthorised access by defining a legal boundary and enabling management to take appropriate responsive action, in the event of trespass occurring.

Additional layers in a DiD strategy typically include:

- Clear open spaces between fences and building perimeters or other assets.
- Physically secure building perimeters.
- Internal security zones.
- Secure equipment enclosures, including safes, vaults, communication racks etc

4.3 Crime Prevention Through Environmental Design

CPTED is the use of design and space management concepts to influence human behaviour; specifically, criminal, and anti-social behaviour, and the use of psychological security concepts in a built environment can have positive effects on the surrounding area. CPTED is an approach to preventing crime with the objective of improving security by limiting criminal opportunity and intensifying the perceived likelihood of being caught while committing a criminal act. By designing the built environment to take advantage of CPTED techniques, the perception of safety and security can be reinforced, by reducing the likelihood of opportunistic crime occurring, using passive techniques, in addition to standard, equipment-based, crime prevention measures, such as video surveillance system and electronic access control. CPTED approaches, when applied in combination with these more traditional protective security measures, help to achieve optimal security outcomes.

Four overlaying principles of CPTED can influence the way the physical environment is perceived by an individual. These are:

- Access Control.
- Surveillance.
- Territorial Reinforcement.
- Space Management (or Maintenance).

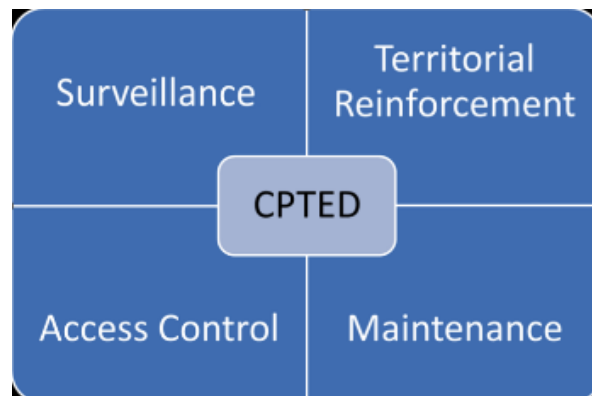


Figure 5: Crime Prevention Through Environmental Design Approaches

4.3.1 Access Control

Access Control involves the use of the built and natural environments to influence how people move around a site, or in and around buildings to support security and safety objectives. This may have the effect of restricting access to certain areas, while creating a perception of detection and increased effort required by an offender with nefarious intent.

Influencing the ways in which people gain access to, and move around a site, enables greater control of the space. Lighting is an effective method of supporting access control strategies, designed to regulate the movement of people, as individuals are attracted to brightly lit areas at night. Effective lighting can be employed to direct pedestrian movements eg along designated pedestrian pathways, through tunnels and over bridges. Well-lit areas can deter crime, as there is a greater chance of an offender being observed in areas that are illuminated eg the external walls/doors of buildings, paths, fence lines, stair wells and carparks.

Other measures that can assist access control include signage, purposefully designed landscaping, and both natural and manmade pathways, that influence the movement of pedestrians. Physical and psychological barriers can be used to attract, channel, or restrict the movement of people, and in turn, minimise opportunities for crime.

Examples of Access Control include:

- Ensuring buildings are clearly identified by street number.
- Providing clear entry points.
- Using the built environment to channel pedestrians into target areas.
- Using landscaping and other vegetation as natural barriers to deter unauthorised access.
- Using building materials/security hardware that reduces the opportunity for intruder access.
- Designing public spaces to encourage appropriate and lawful gatherings.
- Signage and wayfinding for parking areas and other spaces.

4.3.2 Surveillance

By reducing opportunities for concealment, Surveillance is enhanced, and a person's perceived risk of detection is increased, and this is, therefore, an effective crime deterrent. Well maintained landscaping with low shrubbery, uniform lighting, and wide-open spaces, will improve surveillance in external areas of any given site.

As an additional benefit, the effectiveness of video surveillance system is further increased when natural surveillance techniques are employed, by providing clear and open sight lines between cameras and target areas.

Effective surveillance can reduce the attractiveness of crime targets by enabling people to observe what others are doing, thereby deterring likely offenders from perpetrating criminal acts.

From a design perspective, surveillance can be enhanced by:

- Providing clear sightlines between public and private spaces.
 - Avoiding blind corners along pedestrian pathways, and other trafficked areas.
 - Enabling clear oversight of communal and public areas.
 - Locating building entry points so they are clearly visible from the street.
 - Designing barriers that maximise surveillance from the street to the building and from the building to the street and minimise opportunities for intruders to hide.
 - Installing security grilles, shutters and doors that allow natural observation of the street from within buildings.
 - Installing effective lighting in public places that does not produce glare or dark shadows.
- Ensuring that landscaping does not impede surveillance or provide a place to hide or entrap victims.

4.3.3 Territorial Reinforcement

Territorial Reinforcement (TR) is achieved through physical design of the built environment, with the aim of cultivating a sense of 'territoriality' or 'ownership' in the legitimate users of the space, which further enhances the level of perceived risk to an offender. This can be achieved through the prompt removal of graffiti, repair or replacement of broken/vandalised property, and routine garden maintenance, which will give the impression of a frequently used/occupied space that is respected, appreciated, and cared for. This approach is often referred to as the 'Broken Windows' theory of crime prevention, which proposes that crime escalates in areas that are poorly maintained, as they are deemed more attractive to potential offenders.

4.3.4 Space Management (or Maintenance)

In CPTED, space management or maintenance is crucial for ensuring the effectiveness of the principles implemented. Regular space management and maintenance help to uphold the designed environment's functionality and overall safety features. This shall include repairing broken lights, maintaining landscaping, and promptly addressing any vandalism. Neglecting maintenance can diminish the effectiveness of CPTED principles and strategies and potentially create opportunities for criminal activity.

5 CPTED Recommendations

This section provides an overview of CPTED measures that have been tried and proven effective at reducing opportunities for crimes to be committed in residential apartments and high-rise style building settings, similar in nature to the Liverpool Civic Place Phase B development.

5.1 Places of Concealment

Entrapment spots and blind corners provide opportunities for crimes to be committed, including assault, vandalism, arson, and other malicious damage. As such, the following mitigation strategies should be considered:

- Entrapment areas should be designed out, wherever possible.
- Provide clear sight lines along pedestrian pathways.
- External seating should be in areas that are clearly visible with unobstructed views from surrounding areas.
- Barriers and other architectural features, including landscaping, fencing etc, should not restrict a person's ability to manoeuvre away from potential harm, because of entrapment.
- Mirrors should be installed, where appropriate, to provide visibility around corners.
- Stairwells should be designed with surveillance objectives in mind ie open stairwells, or with glazing or other viewing panels.
- Avoid the placement of seating in the immediate vicinity of high-risk areas, including toilets, and isolated locations, to reduce opportunities for loitering.

5.2 Lighting

As previously indicated, lighting plays an important role in crime prevention as it reduces the likelihood of criminal activity being committed. The following is recommended in relation to the use of lighting as a means of reducing crime:

- All areas intended to be used at night should be provided with lighting, as required, to enhance visibility.
- Pedestrian pathways, lane ways and common access routes in external, publicly accessible areas, should be appropriately illuminated in accordance with relevant standards.
- Lighting should be uniform and clearly illuminate the faces of users of pedestrian pathways.
- Lights should be directed towards entry and egress routes to illuminate approaching/loitering persons, rather than towards buildings.
- Lighting should consider all vegetation, and landscaping should be well maintained, so as not to impede its performance.
- Avoid lighting spilling over into neighbouring properties.
- Illuminate possible places of concealment.
- External areas should be lit to enable users to identify a face 15m away.
- All lighting should be well maintained and kept in clean, working condition, with prompt replacement of broken/burnt-out globes.

5.3 Landscaping

While landscaping can positively influence behaviours, and support access control objectives, it can also reduce surveillance opportunities by creating entrapment spots and reducing visibility around corners, which can facilitate crime. The following should be considered with respect to landscaping around the Phase B BTR site.

- Planting arrangements such as low hedges and shrubs, low height ground cover and tall trees with bare trunks, promote natural surveillance, as opposed to medium height vegetation with thick foliage.
- Trees and other vegetation should not conceal building entrances from the street or public use toilets etc.
- Landscaping should not impede artificial lighting.
- Trees should not provide a climbing aid to facilitate unauthorised access over fences, or into elevated windows, balconies etc.

5.4 Building Entrances

Key considerations for building entrances:

- Entrances should be at prominent positions and clearly visible and legible to the users.
- Design entrances to allow users to see into the building before entering.
- Entrances should be easily recognisable through design features and directional signage.
- Waiting/reception areas and entries to elevators/stairwells should be close to areas of frequent use and should be visible from main building entry points.
- Minimise the number of building entry points.

5.5 Territoriality

As noted, from a security and safety perspective, it is important that people have a sense of ownership of places where they live, work, or routinely frequent. Territorial Reinforcement, or Territoriality, can be promoted and enhanced through the following means:

- Ensuring that dwellings or groups of dwellings are readily recognizable by the residents using design features such as colouring, roof forms, vegetation, paving, artworks, fencing, furniture etc.
- Defining spatial areas and designated use zones, utilising physical and/or psychological barriers including roads, paths, fences, walls, landscaped gardens, and lawn areas.
- Beautification of common use areas, using landscaping, artworks, sculptures, street furniture and security features such as bollards, where appropriate.
- Repairing or replacing damaged or vandalised property.
- Prompt removal of graffiti.
- Use of appropriate signage as described below and provide wayfinding signage throughout the precinct to direct pedestrian movements and designate where appropriate what is private land and what is public.

5.6 Signage

Appropriate and effective signage can assist the security function by providing information and direction to users of the space, controlling access, and influencing both vehicular and pedestrian movements. Key considerations, with respect to signage, include the following:

- Signs should be clearly visible and legible, with strong colours, and easily recognisable symbols, consistent with relevant standards.
- Signs should be located near entrances and at intersections of roads, corridors, or paths.
- Signs should indicate how to report maintenance problems in the complex.
- Main pedestrian routes through large buildings, groups of buildings, or large public spaces, should be clearly identifiable by signage. Where entry and exit points are impacted after hours, or where gates, car parks and other areas are closed at certain times of the day, or night, this should be clearly indicated using signage.
- Wayfinding signs should deter access to private areas and direct pedestrian movements to desired/designated locations.

6 Additional Security Measures

Integrating thoughtful environmental design with additional security measures such as physical security that involves the use of tangible controls and barriers, electronic security that leverages technology like cameras, alarms, and access control systems, and operational security that focuses on policies, procedures, and personnel training, shall form a robust framework for fortifying against a diverse range of security risks.

6.1 Physical Security Measures

The following physical security measures should be considered further in the detailed design phase of the Project and implemented where practicable at the Phase B BTR site:

- Doors on building perimeters should be a minimum 45mm solid core timber. Outward opening doors should be fitted with hinge bolts to prevent the door from being removed from its hinges.
- Security grilles should be installed to secure relevant building penetrations, at ground level, and in other accessible areas, as required.
- Lockable services pits, masonry or concrete construction of critical plant rooms, steel door frames, solid core doors and high-quality locking and restricted keying solutions shall be considered as required.
- All perimeter doors, including fire stairs, should be provided with door closers and reed switches.
- Entry to basement car parks shall be secured using electronically controlled boom gates, roller doors or sliding gates as required.

6.2 Electronic Security Measures

6.2.1 Electronic Access Control and Alarm System (EACAS)

The EACAS should monitor and control the areas detailed within the relevant Project Brief documents including (but not limited to):

- Main entries (including basement carpark)
- Lifts
- Apartment entry doors
- Comms room/Security room
- Critical plant rooms (as required)

6.2.2 Intercom System

Intercom units should be provided at carpark entry points, inside every apartment, and on every fourth-floor fire stair facilitating re-entry into the building, to comply with BCA.

6.2.3 Video Surveillance System (VSS)

The Phase B BTR will be provided with Video Surveillance System (VSS) comprising of IP cameras and video recording devices in accordance with the Project Brief.

IP cameras shall provide coverage of:

- All entries and exits
- Building perimeter
- Main lobbies
- Lobby at each apartment level
- Main comms/Security room
- Lift cars/lift lobbies

6.3 Operational Security Measures

It is recommended that operational security treatment measures be implemented where appropriate to help lower the security risk profile of the Phase B BTR site, in conjunction with physical and electronic security measures. Ideally, an onsite security guard force should be engaged to monitor VSS, as well as access control and alarm systems, and to respond to security events in a timely manner. Where an onsite guard force is deemed impractical, due to budgetary or operational constraints, an external alarm monitoring and response company should be contracted.

Further to this, security awareness should cover the following areas as minimum:

- Security procedures and policies
- Personal safety measures
- Asset protection
- Reporting procedures to report:
 - Changes of circumstances
 - Incident reporting

7 Conclusion

LCI completed a desktop review of the architectural design drawings to identify any anomalies or major issues, from a CPTED perspective, and carried out a review of crime trends in Liverpool and surrounding suburbs in the 5-year period to June 2023. The assessment reveals a mixed landscape of crime trends. Some categories such as assault, offences against the person, break and enter dwelling, motor vehicle theft, steal from retail store and other offences against justice procedures exhibited a clear upward trend.

For the purposes of the SSDA submission, from a planning perspective, the primary considerations shall centre around the site layout and immediate surrounds, specifically in relation to the four core principles of CPTED - Surveillance, Access Control, Territorial Reinforcement and Space Management (or Maintenance). After reviewing the Phase B BTR design approach, it demonstrates a commendable integration of natural and built elements to establish both security and aesthetic appeal. The success of this design, however, also relies on factors such as maintenance, adaptability to local conditions, and community engagement.

Furthermore, lighting, landscaping, wayfinding, and signage shall be considered in accordance with the 'CPTED Recommendations, Section 5' of this report. Incorporating clear signage, landmarks, and well-placed lighting fixtures can significantly improve the user experience and contribute to the overall safety and functionality of the space. A review of relevant documentation will need to be undertaken in future design stages, to ensure the CPTED strategies are incorporated where necessary and practicable.

The CPTED measures described in this report form one component of the overall security function and should be supported by more traditional protective security approaches related to physical, electronic, and operational security as suggested in the previous section. These additional measures shall be considered, to the extent required, throughout the design development process for the Liverpool Civic Place Phase B BTR Project.

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