

**CRIME PREVENTION
THROUGH
ENVIRONMENTAL
DESIGN REPORT**

APPENDIX BB





Sydney Metro City & Southwest

Pitt Street South Over Station Development:

Crime Prevention Through Environmental Design Report

Applicable to:	Sydney Metro City & Southwest
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Executive summary

This Crime Prevention Through Environmental Design (CPTED) Audit includes the Pitt Street South over station development (OSD) primarily with further consideration to the neighbouring property, the Edinburgh Castle Hotel.

This report identifies security concerns in and around the areas, in accordance with Section 1.3 Scope of CPTED Audit. Assumptions made are based on information provided at the date of this audit report.

With the adoption of industry standard crime principles and security practices, the report has recommended moderate changes to the design, which have been accepted, and implemented in the current concept design.

Considering the functional nature of the immediate areas of use, the surrounding demographics and the local historic crime statistics, the recommendations in this report have been integrated into the existing architectural and engineer designs.

This report shall also be used to provide the respective engineering and architectural disciplines with guidance to the recommended CPTED and security requirements for all future stages of design.

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1.0 Introduction

1.1 Background

This report supports a concept State Significant Development Application (concept SSD Application) submitted to the Department of Planning and Environment (DPE) pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The concept SSD Application is made in accordance with Section 4.22 of the EP&A Act.

Sydney Metro is seeking to secure concept approval for a building envelope above the southern portal of Pitt Street Station, otherwise known as the over station development (OSD). The concept SSD Application seeks consent for a building envelope, maximum building height, land use options, pedestrian and vehicular access, circulation arrangements and associated car parking as well as the strategies and design parameters for the future detailed design of development.

Sydney Metro proposes to procure the construction of the OSD as part of an Integrated Station Development package, which would result in the combined delivery of the station, OSD and public domain improvements. The station and public domain elements form part of a separate planning approval for Critical State Significant Infrastructure (CSSI) approved by DPE on 9 January 2017.

As the development is associated with railway infrastructure and is for residential or commercial premises with a Capital Investment Value of more than \$30 million, the project is State significant development (SSD) pursuant to Schedule 1, Clause 19(2)(a) of the *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP). The full extent of the proposed development can also be considered to be SSD by virtue of Clause 8(2) of the SRD SEPP.

This report has been prepared to specifically respond to the Secretary's Environmental Assessment Requirements (SEARs) issued for the concept SSD Application for Pitt Street South on 30th November 2017 which state that the Environmental Impact Statement (EIS) is to address the following requirements:

Crime Prevention Through Environmental Design

1.1. Overview of the Sydney Metro in its context

The New South Wales (NSW) Government is implementing *Sydney's Rail Future*, a plan to transform and modernise Sydney's rail network so that it can grow with the city's population and meet the needs of customers in the future. Sydney Metro is a new standalone rail network identified in *Sydney's Rail Future*.

Sydney Metro is Australia's biggest public transport project, consisting of Sydney Metro Northwest, which is due for completion in 2019 and Sydney Metro City & Southwest, which is due for completion in 2024.

Sydney Metro West is expected to be operational in the late 2020s (refer to Error! Reference source not found.).



Figure 1: Sydney Metro alignment map

Sydney Metro City & Southwest includes the construction and operation of a new metro rail line from Chatswood, under Sydney Harbour through Sydney’s Central Business District (CBD) to Sydenham and on to Bankstown through the conversion of the existing line to metro standards.

The project also involves the delivery of seven new metro stations, including at Pitt Street. Once completed, Sydney Metro will have capacity for 30 trains an hour (one every two minutes) through the CBD in each direction - a level of service never seen before in Sydney.

On 9 January 2017, the Minister for Planning approved the Sydney Metro City & Southwest - Chatswood to Sydenham application lodged as a Critical State Significant Infrastructure project (reference SSI 15_7400), hereafter referred to as the CSSI Approval.

The CSSI Approval includes all physical work required to construct the CSSI, including the demolition of existing buildings and structures on each site. Importantly, the CSSI Approval also includes provision for the construction of below and above-ground structures and other components of the future integrated station development (including building infrastructure and space for future lift cores, plant rooms, access, parking and building services, as relevant to each site). The rationale for this delivery approach, as identified within the CSSI

Application, is to enable the integrated station development to be more efficiently built and appropriately integrated into the metro station structure.

The EIS for the Chatswood to Sydenham component of the Sydney Metro City & Southwest project identified that the OSD would be subject to a separate assessment process.

Since the CSSI Approval was issued, Sydney Metro has lodged four modification applications to amend the CSSI Approval as outlined below:

- Modification 1- Victoria Cross and Artarmon Substation which involves relocation of the Victoria Cross northern services building from 194-196A Miller Street to 50 McLaren Street together with inclusion of a new station entrance at this location referred to as Victoria Cross North. 52 McLaren Street would also be used to support construction of these works. The modification also involves the relocation of the substation at Artarmon from Butchers Lane to 98 – 104 Reserve Road. This modification application was approved on 18 October 2017.
- Modification 2- Central Walk which involves additional works at Central Railway Station including construction of a new eastern concourse, a new eastern entry, and upgrades to suburban platforms. This modification application was approved on 21 December 2017.
- Modification 3 - Martin Place Station which involves changes to the Sydney Metro Martin Place Station to align with the Unsolicited Proposal by Macquarie Group Limited (Macquarie) for the development of the station precinct. The proposed modification involves a larger reconfigured station layout, provision of a new unpaid concourse link and retention of the existing MLC pedestrian link and works to connect into the Sydney Metro Martin Place Station. This modification application was approved on 22 March 2018.
- Modification 4 - Sydenham Station and Sydney Metro Trains Facility South which incorporated Sydenham Station and precinct works, the Sydney Metro Trains Facility South, works to Sydney Water's Sydenham Pit and Drainage Pumping Station and ancillary infrastructure and track and signalling works into the approved project. This modification application was approved on 13 December 2017.

Given the modifications, the CSSI Approval is now approved to operate to Sydenham Station and also includes the upgrade of Sydenham Station.

The remainder of the City & Southwest project (Sydenham to Bankstown) proposes the conversion of the existing heavy rail line and the upgrade of the existing railway stations along this alignment to metro standards. This portion of the project, referred to as the Sydenham to Bankstown Upgrade, is the subject of a separate CSSI Application (No. SSI 17_8256) for which an Environmental Impact Statement was exhibited between September and November 2017 and a Response to Submissions and Preferred Infrastructure Report was submitted to the NSW Department of Planning & Environment (DPE) in June 2018 for further exhibition and assessment.

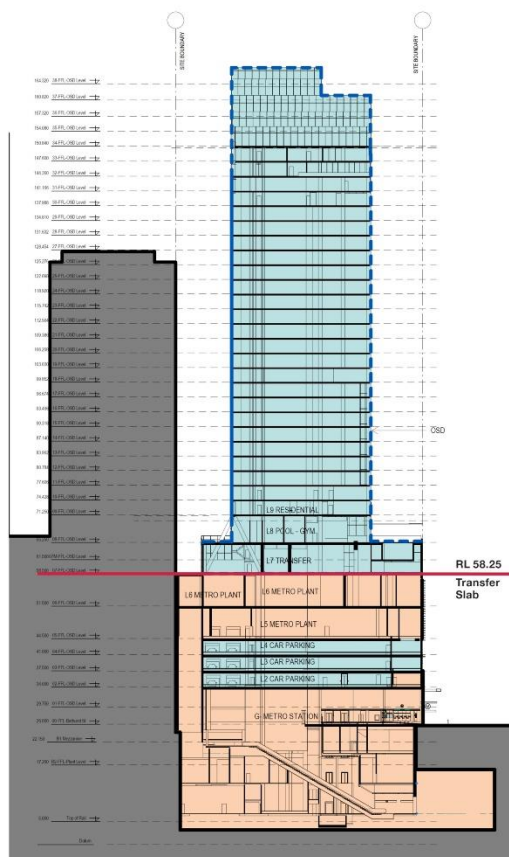
1.2. Planning relationship between Pitt Street Station and the OSD

While the southern portal of Pitt Street Station and the OSD will form an integrated station development, the planning pathways under the *Environmental Planning and Assessment Act 1979* involve separate approval for each component of the development. In this regard, the approved station works (CSSI Approval) are subject to the provisions of Part 5.1 of the EP&A Act (now referred to as Division 5.2) and the OSD component is subject to the provisions of Part 4 of the EP&A Act.

For clarity, the approved station works under the CSSI Approval included the construction of below and above ground structures necessary for delivering the station and also enabling construction of the integrated OSD. This included but is not limited to:

- demolition of existing development
- excavation
- station structure including concourse and platforms
- lobbies
- retail spaces within the station building
- public domain improvements
- station portal link (between the northern and southern portals of Pitt Street Station)
- access arrangements including vertical transport such as escalators and lifts
- structural and service elements and the relevant space provisioning necessary for constructing OSD, such as columns and beams, space for lift cores, plant rooms, access, parking, retail and building services.

The vertical extent of the approved station works above ground level is defined by the 'transfer slab' level (which for Pitt Street South is defined by RL 58.25), above which would sit the OSD. This delineation is illustrated in Error! Reference source not found. below.



Section North-South - CSSI Podium Approval below RL 58.25

Figure 2: Delineation between station and OSD

The CSSI Approval also establishes the general concept for the ground plane of Pitt Street Station including access strategies for commuters and pedestrians. In this regard, pedestrian access to the station would be from Bathurst Street and the OSD lobby would be accessed from Pitt Street.

Since the issue of the CSSI Approval, Sydney Metro has undertaken sufficient design work to determine the space planning and general layout for the station and identification of those spaces within the station area that would be available for the OSD. In addition, design work has been undertaken to determine the technical requirements for the structural integration of the OSD with the station. This level of design work has informed the concept proposal for the OSD. It is noted that ongoing design development of the works to be delivered under the CSSI Approval would continue with a view to developing an Interchange Access Plan (IAP) and Station Design Precinct Plan (SDPP) for Pitt Street Station to satisfy Conditions E92 and E101 of the CSSI Approval.

The public domain improvement works around the site would be delivered as part of the CSSI Approval.

1.3. The Site

The Pitt Street South OSD site is located near the corner of Pitt Street and Bathurst Street, comprising four individual allotments but excluding the Edinburgh Castle Hotel, above the southern portal of the future Pitt Street Station. The context of the site is demonstrated at Error! Reference source not found. below.

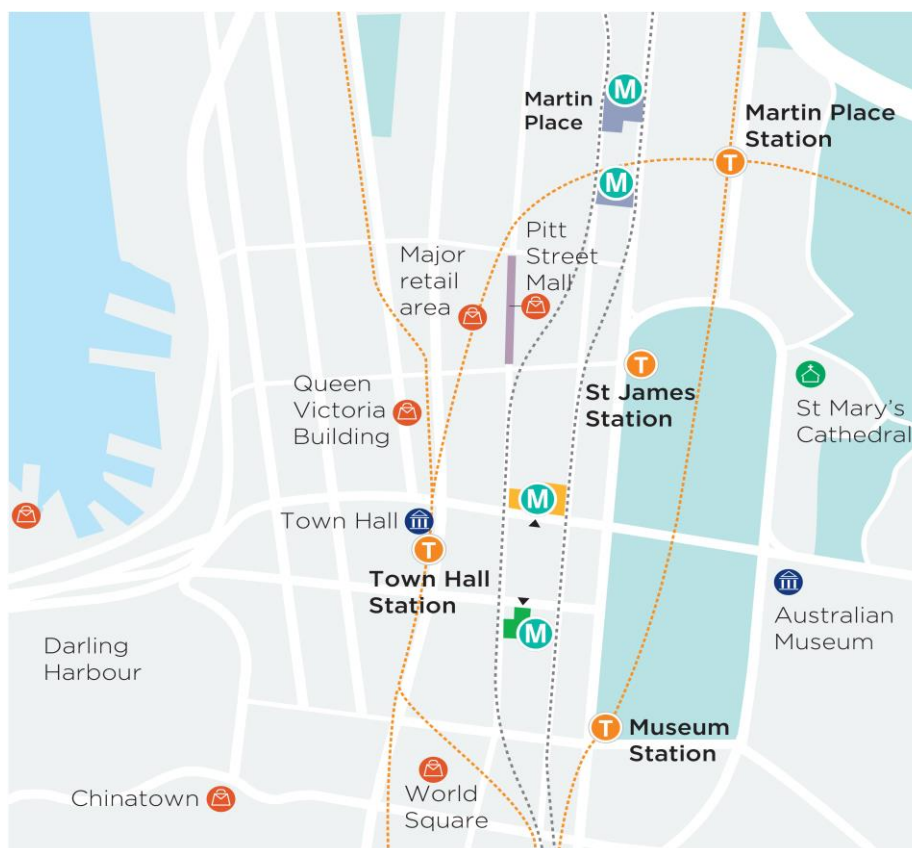


Figure 3: Pitt Street Station location plan

The site is located in the City of Sydney Local Government Area. The site (refer to **Figure 4** below) is irregular in shape, has a total area of approximately 1,708 square metres and has street frontages of approximately 32 metres to Pitt Street and 24 metres to Bathurst Street.

The Pitt Street South site comprises a number of individual properties which front Bathurst Street and Pitt Street. Specifically, the site comprises the following:

- 125-129 Bathurst Street, Sydney (Lot 1 in DP60293)
- 131-135 Bathurst Street, Sydney (Lot 1 in DP59101)
- 296-300 Pitt Street, Sydney (Lot 1 in DP436359)
- 302 Pitt Street, Sydney (Lot 1 in DP62668)

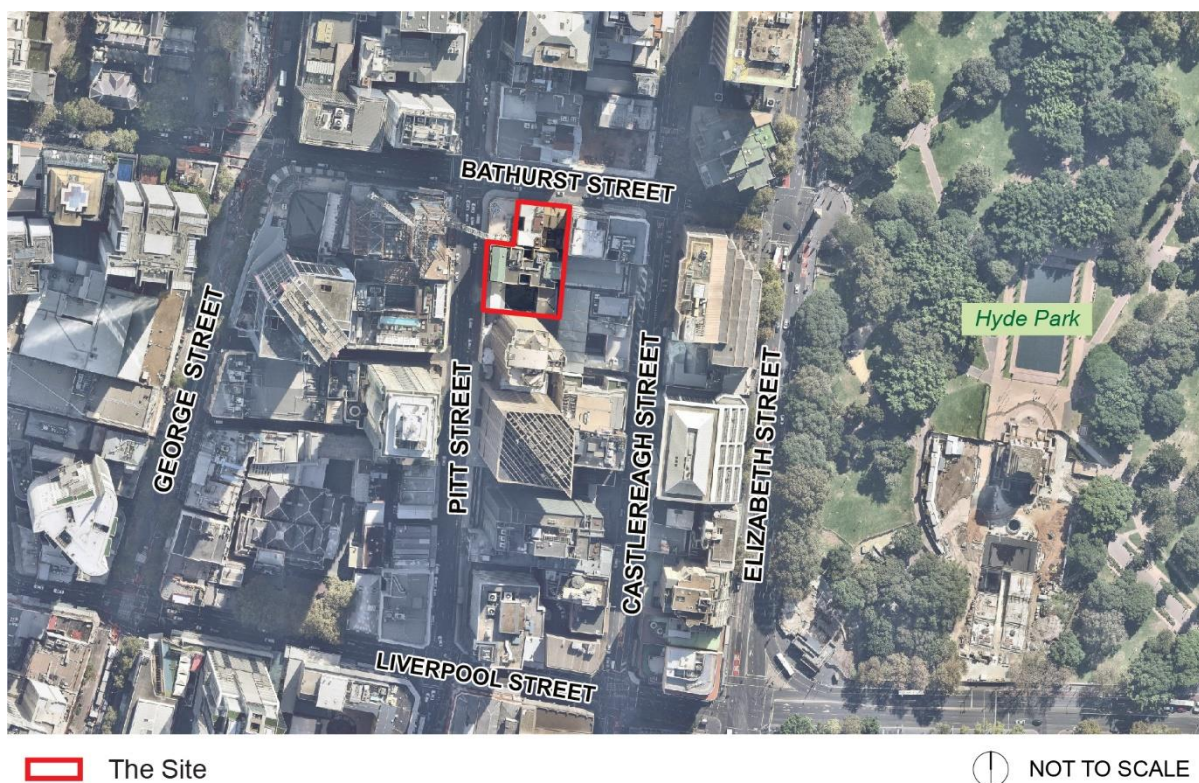


Figure 4: Aerial photo of Pitt Street South

1.4. Overview of the proposed development

This concept SSD Application comprises the first stage of the Pitt Street South OSD project. It will be followed by a detailed SSD Application for the design and construction of the OSD to be lodged by the successful contractor who is awarded the contract to deliver the integrated station development.

This concept SSD Application seeks approval for the planning and development framework and strategies to inform the future detailed design of the OSD. It specifically seeks approval for the following:

- a building envelope
- a maximum envelope height of Relative Level (RL 171.6) which equates to approximately 35 storeys, including the podium height of RL 71.0 which equates to approximately 8 storeys above ground
- use for the OSD component of the development for uses, subject to further detailed applications, which could include:
 - residential accommodation; or
 - commercial premises

- use of the conceptual OSD space provisioning within the footprint of the CSSI Approval (both above and below ground), including the OSD lobby areas, podium car parking, storage facilities, services and back-of-house facilities
- car parking for a maximum of 34 spaces located across three levels of the podium
- loading, vehicular and pedestrian access arrangements from Pitt Street
- strategies for utilities and service provision
- strategies for the management of stormwater and drainage
- a strategy for the achievement of ecologically sustainable development
- indicative future signage
- a strategy for public art
- a design excellence framework
- the future subdivision of parts of the OSD footprint (if required)

As this concept SSD Application is a staged development pursuant to section 4.22 of the EP&A Act, future approval would be sought for detailed design and construction of the OSD. Concept indicative designs showing potential residential and commercial building form outcomes at the site have been provided as part of this concept SSD Application at Appendix E and Appendix F, respectively.

Pitt Street Station is to be a key station on the future Sydney Metro network, providing access to the Sydney CBD. The proposal combines the metro station with an OSD component. The OSD would assist in strengthening the role of Central Sydney as the key centre of business in Australia and would contribute to the diversity, amenity and sustainability of the CBD.

It is noted that Pitt Street Station northern portal OSD is subject to a separate application, and does not form part of this concept SSD Application.

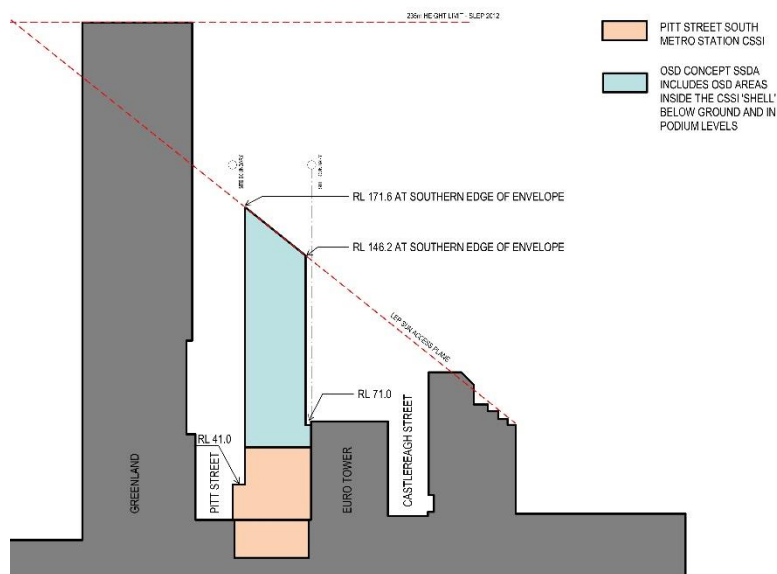


Figure 5: Pitt Street South OSD envelope, including OSD components (Blue) and station box (Orange)

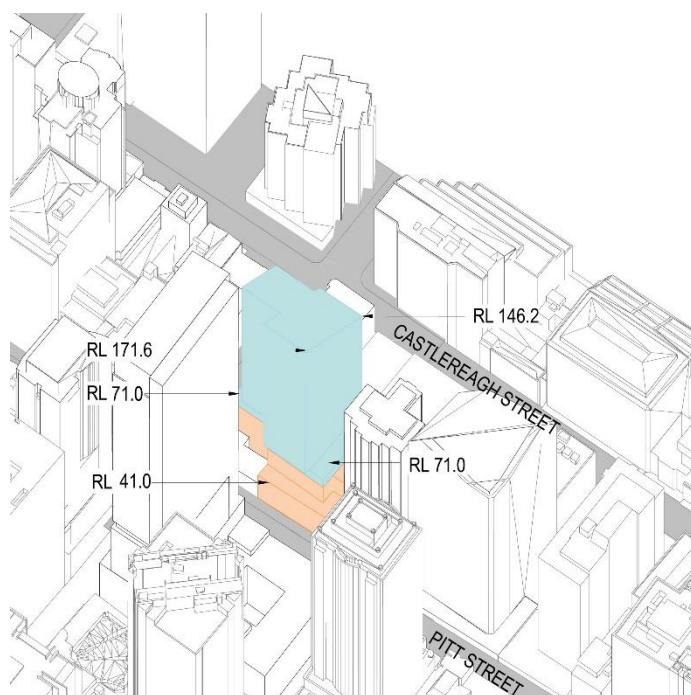


Figure 6: Pitt Street South OSD axonometric diagram, as seen from the south-west

1.5. Staging and framework for managing environmental impacts

Sydney Metro proposes to procure the delivery of the Pitt Street South integrated station development in one single package, which would entail the following works:

- station structure
- station fit-out, including mechanical and electrical

- OSD structure
- OSD fit-out, including mechanical and electrical.

Separate delivery packages are also proposed by Sydney Metro to deliver the excavation of the station boxes/shafts ahead of the integrated station development delivery package, and line-wide systems (e.g. track, power, ventilation) and operational readiness works prior to the Sydney Metro City & Southwest metro system being able to operate.

Three possible staging scenarios have been identified for delivery of the integrated station development:

1. Scenario 1 – the station and OSD are constructed concurrently by constructing the transfer slab first and then building in both directions. Both the station and OSD would be completed in 2024.
2. Scenario 2 – the station is constructed first and ready for operation in 2024. OSD construction may still be incomplete or soon ready to commence after station construction is completed. This means that some or all OSD construction is likely to still be underway upon opening of the station in 2024.
3. Scenario 3 – the station is constructed first and ready for operation in 2024. The OSD is built at a later stage, with timing yet to be determined. This creates two distinct construction periods for the station and OSD.

Scenario 1 represents Sydney Metro's preferred option as it would provide for completion of the full integrated station development and therefore the optimum public benefit at the site at the earliest date possible (i.e. on or near 2024 when the station is operational). However, given the delivery of the OSD could be influenced by property market forces, Scenarios 2 or 3 could also occur, where there is a lag between completion of the station component of the integrated station development (station open and operational), and a subsequent development.

The final staging for the delivery of the OSD would be resolved as part of the detailed SSD Application(s).

For the purposes of providing a high level assessment of the potential environmental impacts associated with construction, the following have been considered:

- Impacts directly associated with the OSD, the subject of this SSD Application
- Cumulative impacts of the construction of the OSD at the same time as the station works (subject of the CSSI Approval)

Given the integration of the delivery of the Sydney Metro City & Southwest metro station with an OSD development, Sydney Metro proposes the framework detailed in Error! Reference source not found. to manage the design and environmental impacts, consistent with the framework adopted for the CSSI Approval.

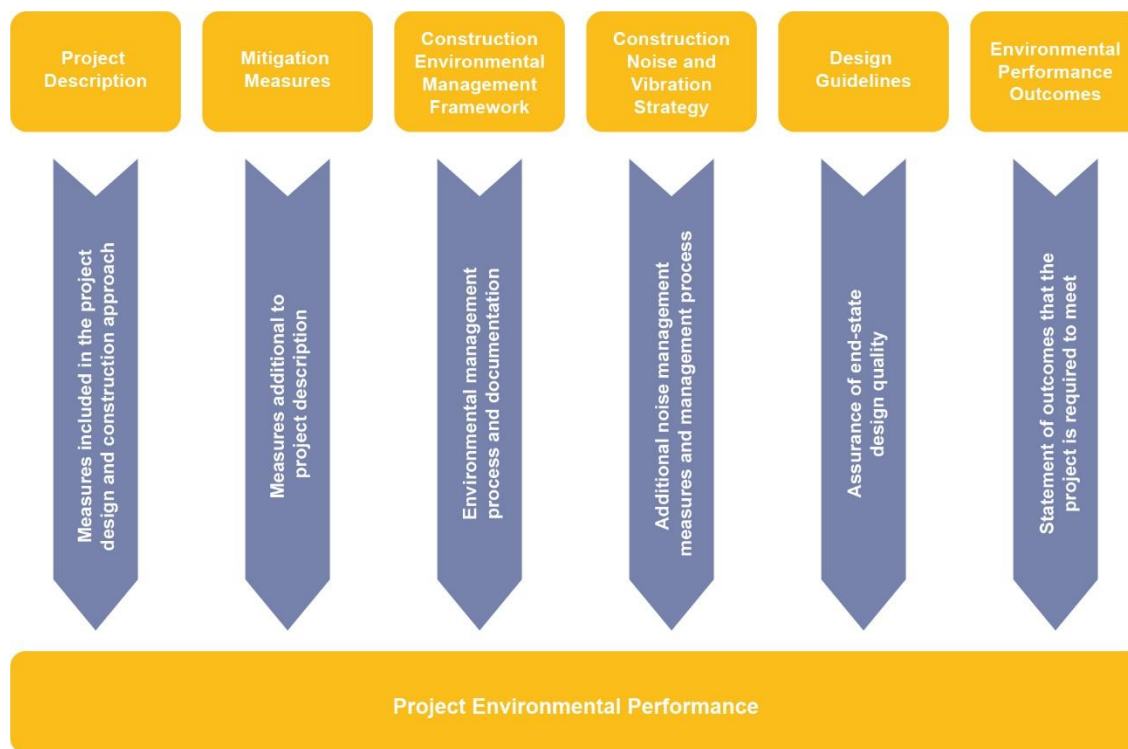


Figure 7: Project approach to environmental mitigation and management

Sydney Metro proposes to implement a similar environmental management framework where the integrated delivery of the CSSI station works and the OSD occur concurrently. This would ensure a consistent approach to management of design interface and construction-related issues.

Sydney Metro proposes this environmental management framework would apply to the OSD until completion of the station and public domain components of the integrated station development delivery contract (i.e. those works under the CSSI Approval). Should the OSD be constructed beyond the practical completion and opening of the station, standard practices for managing construction related environmental impacts would apply in accordance with the relevant guidelines and Conditions of Approval for the detailed SSD Application(s).

2.0 Audit

2.1. Abbreviations

Abbreviation	Meaning
CPTED	Crime Prevention Through Environmental Design
CCTV	Closed Circuit Television
OSD	Over Station Development

2.2. Commission

GHD has been commissioned by Sydney Metro to conduct a CPTED review of the concept design to satisfy the SEARs requirement for a CPTED Assessment. This report has been developed and completed by qualified Security Consultants who are licensed by New South Wales Police.

GHD otherwise disclaims responsibility to any person other than Sydney Metro arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD. GHD disclaims liability arising from any of the assumptions being incorrect.

2.3. Legislation, Standards, Regulations and Guidelines

The following Australian Standards and guidelines have been used to manage and develop the design review:

- *Crime prevention and the assessment of development applications guidelines under section 79C of the Environmental Planning and Assessment Act (1979)*
- *Security and Related Activities (Control) Act 1996*
- *Security and Related Activities (Control) Regulations 1997*
- *Designing out Crime: Planning Guidelines (2006)*
- *Crime and Unwanted Behaviour Risk Assessment Help-Sheet*

- *Safer Design Guidelines Stage 5 (2004)*
- *ACT Crime Prevention & Urban Design Resource Manual (2000)*

2.4. Information provided by others

GHD has prepared this report on the basis of information provided by Sydney Metro.

The following documents have been provided to assist the development of the CPTED review:

- *Concept Design Drawings:*
 - 25561 A99 through A107.
 - 25561 SK1001 through SK1010.
 - 25561 A131, 25561 A164 through A166.

2.5. Consultations with services authorities

The following authorities were consulted as to the existing crime types that were experienced in the project area in the previous 36 month period.

The crime statistics indicate potential future crime trends/activity:

NSW Police (City of Sydney crime statistics – **Figure 9** below).

2.6. Scope of CPTED review

2.6.1. Area of Review

The scope of the CPTED review comprises of the following Pitt Street South OSD boundaries only, shown in the below. This review has excluded the Bathurst Street station entry but has considered the Edinburgh Castle Hotel due to its proximity to the OSD.

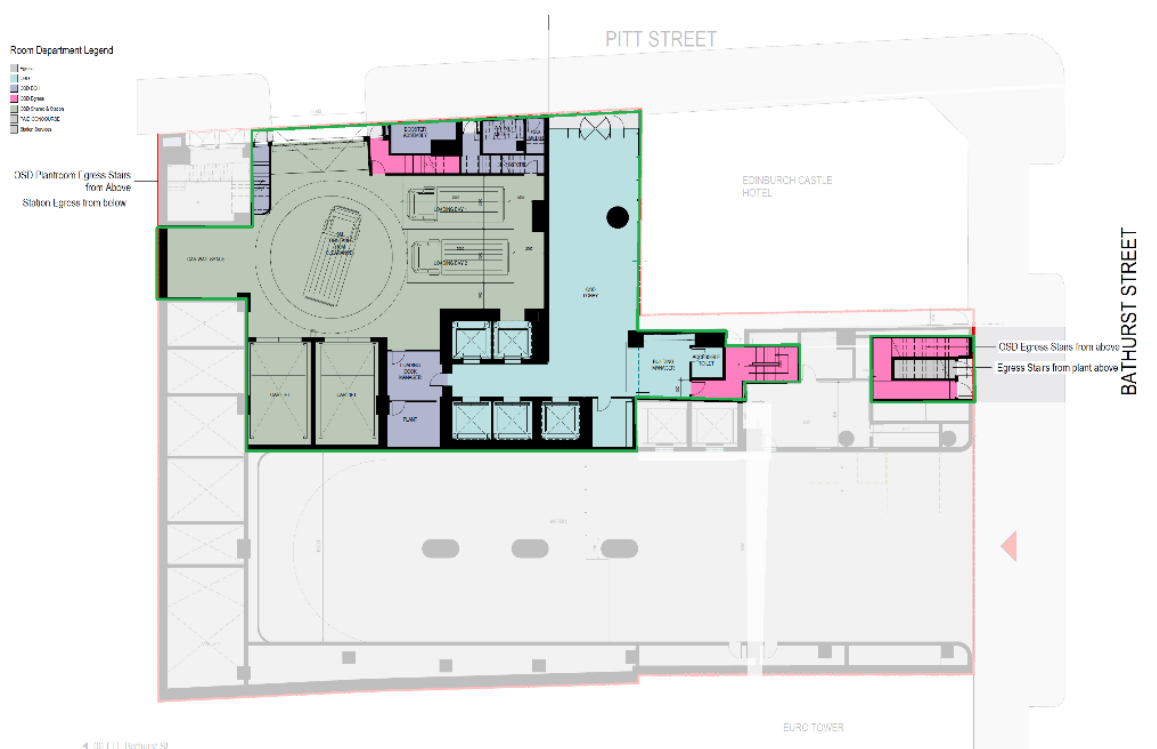


Figure 8: Pitt Street South OSD Ground Plane Plan

Source: GHD Woodhead

2.6.2. Maintenance and Management

The CPTED principles of Maintenance & Management have been considered as part of this scope. Maintenance schedules will be part of the owner/managers administrative controls and therefore will impact the future engineering and architectural design.

2.7. Recommendations

All recommendations relevant to the concept design stage have been incorporated in the concept SSD Application. Some recommendations will be addressed in future detailed design stages. These recommendations include but are not limited to the following:

- *Natural Surveillance and clear site lines from within the ground floor lobby area to the outside Pitt Street area and similarly from the outside street area to inside the lobby area.*
- *Wayfinding and emergency exit signs in and around the ground floor lobby area to promote Territorial Reinforcement and assist residents and visitors to navigate throughout the building.*
- *No entrapment areas in or around the ground floor lobby or lift foyer areas*
- *Adequate lighting in all common areas including, lifts, lift lobbies, foyer area and all external entry points.*

- *(Future) Electronic Access Control System (EACS) on all ground floor entry doors including lobby and car park doors, Building Managers Office and pedestrian and vehicle lifts doors to control access throughout the building and promote security in depth.*
- *(Future) Video Intercom and Closed Circuit Television (CCTV) at all entry points.*
- *(Future) Emergency call point in the ground floor lobby area adjacent to concierge desk*

3.0 Crime Prevention Through Design Methodology

3.1. Security Treatment Objectives

The “3DR” approach to security is used throughout all stages of the CPTED audit. The main objectives of security treatment in relation to crime are to:

- **Deter** an offender from committing a crime
- **Detect** if and when a crime has been committed
- **Delay** an offender from committing a crime with maximum time to allow for interception
- **Respond** to an offence prior to a crime is committed

The strategies of CPTED are used to achieve the overall objectives of the security function.

3.2. CPTED strategies

3.2.1. Natural Surveillance

Natural Surveillance is about maximising opportunities for surveillance by legitimate users of the space. For example, the design of a space should allow users to easily see who is around and ahead of them as they move through the space. This can have several beneficial effects. It contributes towards a legitimate user’s perceived safety and increases the risk perceived by would-be-offenders. This is because offenders feel more likely to be seen, challenged or caught.

When a space does not have good Natural Surveillance, it can provide opportunities for crime and unwanted behaviours to occur unnoticed, and can contribute to an increased negative safety perception (and actual increased risk) for users, particularly for certain higher-risk user groups (eg. young children and the elderly).

Natural Surveillance also assists formal surveillance (CCTV), by providing clear sightlines. This may also minimise the number of CCTV cameras required to cover an area.

3.2.2. Territorial Reinforcement

Territorial Reinforcement is about facilitating ownership of space, ensuring that users of a space are given clear indicators of what is public space, semi-private space and private space, and providing indicators of what are acceptable behaviours in each space.

When space does not have clear signs of ownership, clear indicators of what is public space, semi-private space and private space and clear indicators of what are acceptable behaviours in each space, it provides excuses for unwanted behaviour. This in turn makes it more difficult to deter unwanted behaviour, and to encourage legitimate users to challenge or report unwanted behaviours.

3.2.3. Natural Access Control

Natural Access Control is about limiting or deterring admittance to spaces (by individuals or vehicles) through the design of physical elements of the space. This can be achieved in numerous ways, for example: using elements of the 'built environment' to act as barriers and limiting the number of entry/exit points. It should be used to channel users of a space into areas (or thoroughfares) with good Natural Surveillance.

3.3. Additional Security Strategies

3.3.1. Target Hardening

Target hardening is the physical securing of a space generally through use of formal security treatments such as locks, barriers, etc. Target hardening is an overt method of securing an area which may not be as aesthetically agreeable as the more natural methods of CPTED as described above.

Target hardening should be used sparingly in public areas and only to fill any gaps that cannot be treated using more fundamental CPTED treatments.

3.3.2. Electronic Security

Electronic Security may also be required to compliment Target Hardening and may include an Electronic Access Control System (EACS), Electronic Alarm System (EAS) and or Closed Circuit Television (CCTV) Surveillance System. Like Target Hardening these systems should be used sparingly so as not to promote the perception of a high risk area.

3.4. CPTED Principles

The following CPTED principles are relevant to the Pitt Street South OSD. These principles guide the review and provide practical application of CPTED strategies based on the built environment. These principles are:

- Lighting
- Ownership of Space
- Signage
- Movement Predictors and Sightlines
- Entrapment
- Landscaping
- Maintenance and Management

3.5. Design Elements

Elements that form part of the Pitt Street South OSD include:

- Building Design (Construction elements)
- Building Access (Vehicles)
- Building Access (Pedestrians)

As per **Figure 8** above, these elements of design are within the scope of review and recommendations in this Audit are therefore limited to these areas.

Other CPTED elements have been considered in terms of the flow-on traffic and criminal activity from surrounding areas; however they are not within the boundary lines of the Pitt Street South OSD. These include:

- **Edinburgh Castle Hotel**
- **Bathurst Street Entry of Pitt Street Metro Station**

3.6. Crime Issues

3.6.1. General

This section outlines specific crime risks in the Sydney Central Business District (CBD) area. It includes crime statistics that are helpful in highlighting the types and level of crime issues that are typical in the vicinity of the project precinct. Statistics also identify specific crimes that are more prevalent than others.

Local demographics and adjacent lots are taken into consideration when assessing the crime statistics of the general Sydney CBD area. Consideration has been given to the adjacent Edinburgh Castle Hotel in particular due to its proximity to the OSD.

3.6.2. Crime Types

- **Assault:** This group is made up of non-aggravated sexual assault, non-aggravated assault and aggravated assault
- **Robbery:** This group is made up of non-aggravated robbery, aggravated robbery (firearm) and aggravated robbery (other)
- **Malicious Damage of Property:** A person who intentionally or recklessly destroys or damages property belonging to another
- **Burglary (Dwelling):** To enter or attempt to enter any building, structure, tent, or conveyance other than a dwelling without the owner's consent, with intent to commit an offence such as to steal property
- **Theft of Motor Vehicle:** Unlawfully using a motor vehicle without the consent of the owner or the person in charge of that motor vehicle

3.6.3. Police Crime Statistics

The NSW Police crime statistics below show the number of verified criminal offences from June 2015 to June 2017 in Sydney CBD.

Verified offences are all offences reported to or known to police within the relevant time period that have not been determined to be falsely or mistakenly reported. The number of verified offences in the given month were not necessarily committed in the period indicated.

These statistics provide a general background on the types of crime issues and the number of reported occurrences in the Sydney CBD.

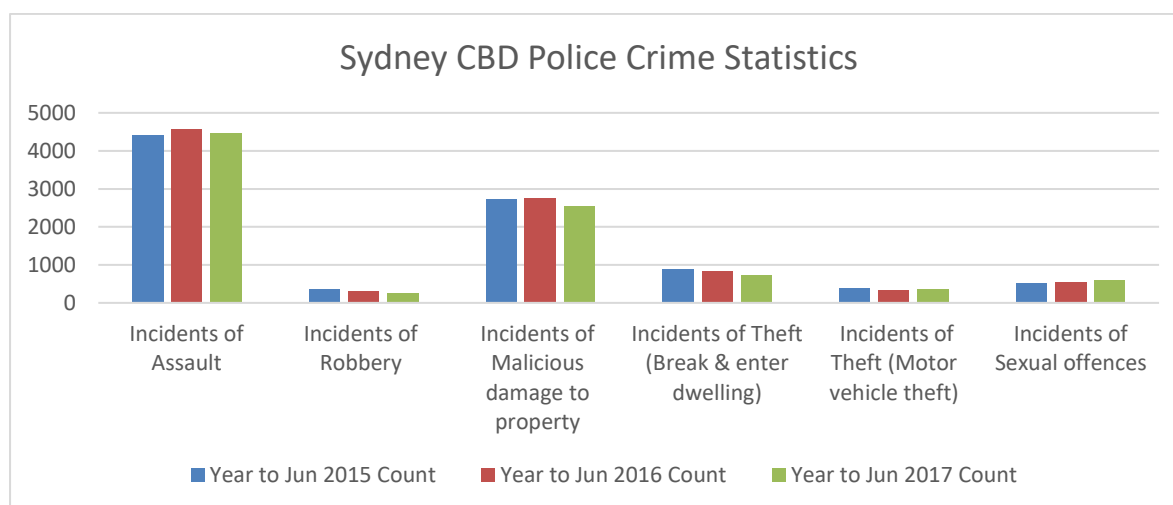


Figure 9 – Sydney CBD Police Crime Statistics Source: NSW Police

Incidents	Year to June 2015 Count	Year to June 2016 Count	Year to June 2017 Count
Incidents of Assault	4423	4566	4450
Incidents of Robbery	369	305	262
Incidents of Malicious damage to property	2724	2755	2547
Incidents of Theft (Break & enter dwelling)	890	840	722
Incidents of Theft (Motor vehicle theft)	397	318	344
Incidents of Sexual offences	501	546	606

Table 1 – Crime Incidents Source: NSW Police

3.6.4. Observations

Crime statistics in the Sydney CBD area indicate that assault is the main risk in the immediate areas and has remained stable over the past three years.

Incidents of malicious damage to property is the secondary risk that is highlighted through the statistics and prevalent in all surrounding areas to the CBD, with a slight decline shown over the past three years.

Incidents of sexual offences although low statistics have indicated a slight increase over the last three years.

Sydney CBD crime statistics indicate that assault and altercations are higher risks in and around heavily dense areas of pedestrian movement, in particular, areas of congregation and transit. It can also be seen that intoxication (illicit substances) is likely to be a contributing factor to such criminal behaviour.

These historical and ongoing statistics are considered in all areas of the CPTED Audit.

4.0 CPTED Principles and Recommendations

4.1. Lighting

4.1.1. General

Sufficient lighting during the day (natural) and night (artificial) is important so that people can see and be seen. On average, around 40 percent of night time street crime occurs when lighting is at 5 lux or below. The aim is to increase the real and perceived safety of the environment in areas where safe activity is encouraged. The emphasis should include lighting for vehicle traffic (parked and transit) and pedestrians.

4.1.2. Analysis and Recommendations

Entry to the Pitt Street OSD (vehicle and pedestrian) and footpath area may be vulnerable to loitering and antisocial behaviour due to the adjacent Edinburgh Castle Hotel. Adequate lighting (minimum 20 lux) is recommended in and around all entry, lobby and car park areas.

4.2. Ownership of Space

4.2.1. General

Defining ownership of the site indicates to users and potential offenders the purpose and intent of the building or space. Defining ownership may include clear signage acknowledging the purpose of the space or area. Clear border definition and transitional zones will also assist to promote ownership of space.

4.2.2. Recommendations

Signage of the building name clearly visible from areas of approach towards the building including the Pitt Street footpath is recommended.

The front entry recess indicates a clear transitional zone into the building from the outside Pitt Street footpath area.

4.3. Signage

4.3.1. General

User knowledge of where they are located and which way they need to transit contributes to a sense of security and therefore increases use by legitimate users. Signage creates a sense of place and gives messages of orientation, direction and desired/restricted behaviours.

Way-finding is the use of visual cues and signage to help navigate users through areas, to guide appropriate use of the space and make inappropriate use obvious to others and response personnel. Signage shall clearly identify the purpose of the area and may also contain emergency contact details.

4.3.2. Recommendations

General signage should include areas that assist building users and visitors to navigate through the building including, lifts, car parking spaces, and fire exits etc. Security or restricted access signage for areas restricted from the public should also be installed in plant room areas off car park and lobby areas.

4.4. Movement Predictors and Sightlines

4.4.1. General

Movement predictors enable offenders to easily identify the route taken by users where choice is limited. This can include pathways, stairwells, underpasses, laneways, and corridors. This is problematic in areas where there is limited surveillance and the path of travel ends in an entrapment point.

Designs need to facilitate good sightlines so that the ability to see ahead and around the path of travel by pedestrians is not compromised. This is sometimes referred to as 'visual permeability'.

4.4.2. Recommendations

Natural Surveillance and clear sightlines have been achieved due to the front façade of the OSD consisting of transparent glass (including glassed doors) for clear visibility from within the ground floor lobby area to the outside Pitt Street area and similarly from the outside area to the inside lobby. This will ensure building users and visitors have clear sightlines to assist with the detection of unauthorised users of the space.

4.5. Entrapment Spots

4.5.1. General

Entrapment spots are small confined areas adjacent to or near a pedestrian or cycle route that is shielded on three sides by a barrier. Entrapment spots impair the sense of safety because the sense of unknown and concealment continue through the path of travel.

4.5.2. Recommendations

As previously mentioned under **Section 4.1** the front façade area should be well lit to deter entrapment at areas where the building is recessed from the property building line. Consideration should be given to reduce or design out any or all of the recessed areas of the front façade, in particular, the fire escape and booster assembly area. It is also recommended that CCTV cameras are installed to deter and detect acts of crime at the front of the building between Pitt Street and the building façade.

4.6. Landscaping

4.6.1. General

Landscape treatments are an essential element of building user spaces. Inappropriate placing of plants and structures can cause and create spaces that accommodate antisocial and criminal behaviour.

Quality environments contribute to community pride, ownership and encourage the use of legitimate public users. This aids the aims of natural surveillance and access control.

4.6.2. Recommendations

Although landscape and footpaths are not part of this approval process, these design elements will need to be integrated during the detailed design phase and therefore require consideration.

Any footpath landscaping such as street trees or furniture shall consider the pedestrian access pathway to deter acts of crime such as ambush or entrapment for building users or visitors entering or exiting the Pitt Street South OSD.

However, as public domain landscaping is not within the scope of the OSD approval, this issue will be covered by the CSSI Approval.

5.0 Conclusion

The CPTED principles referenced in this report are in line with industry standards such as HB 167-2006 and include the following design considerations:

- Appropriate lighting levels to deter criminal acts and increase the use by appropriate users.
- Clearly defined building and general signage to define ownership, acknowledging the purpose of the space or area.
- Transparent glazing including glassed doors on the OSD façade to improve natural surveillance and clear sightlines.
- No recessed areas on the property boundary to reduce the risk of ambush or criminal activity.
- Consideration of placement of streetscape elements such as street trees and furniture on the pedestrian access pathway (part of the CSSI Approval) to deter acts of criminal activity such as ambush or entrapment.

The CPTED principles and recommendations as mentioned in section four of this report have been agreed with the project team and used to inform the architectural design and built elements for the Pitt Street South OSD.