April 2025

# Taronga Zoo Sky Safari

## Appendix M
## Crime Prevention Through Environmental Design Report (CPTED)
## RTS Revision 2

PREPARED BY

URBIS

PREPARED FOR

TARONGA
CONSERVATION SOCIETY AUSTRALIA
For the Wild

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17 April 2025

Anna Nowland
Principal Planning Officer
Department of Planning, Housing and Infrastructure
4 Parramatta Square
12 Darcy Street
Parramatta NSW 2150

Dear Anna,

# SSD-46807958 RESPONSE TO SUBMISSIONS – UPDATED CPTED ASSESSMENT REPORT

Urbis' Social Planning team undertook a Crime Prevention Through Environmental Design (CPTED) assessment to inform and accompany a State Significant Development (SSD) for the redevelopment of the Sky Safari at Taronga Zoo. The SSD (SSD-46807958) was lodged with the Department of Planning, Housing and Infrastructure (DPHI) and placed on public exhibition, which ended on 21 October 2024.

Following the public exhibition period the proposal was revised. In response, the CPTED Assessment report (attached) was updated to incorporate the amended project description (refer section 2.3) and some minor revisions to the assessment to in response to revisions to the station designs. The report conclusions and recommendations made previously remain relevant.

Yours sincerely,

Sarah Braund
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URBIS

# CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN ASSESSMENT

Taronga Zoo Sky Safari

Prepared for

**TARONGA CONSERVATION SOCIETY**

17 April 2025

**URBIS STAFF RESPONSIBLE FOR THIS REPORT WERE:**

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| Project Code | P0044936 |
| Report Number | Final |

**Urbis acknowledges the important contribution that Aboriginal and Torres Strait Islander people make in creating a strong and vibrant Australian society.**

**We acknowledge, in each of our offices, the Traditional Owners on whose land we stand.**

All information supplied to Urbis in order to conduct this research has been treated in the strictest confidence. It shall only be used in this context and shall not be made available to third parties without client authorisation. Confidential information has been stored securely and data provided by respondents, as well as their identity, has been treated in the strictest confidence and all assurance given to respondents have been and shall be fulfilled.

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# CONTENTS

# 1. EXECUTIVE SUMMARY

This Crime Prevention Through Environmental Design (CPTED) assessment has been prepared by Urbis Pty Ltd (Urbis) on behalf of Taronga Conservation Society Australia (TCSA) (the Applicant) to inform a State Significant Development (SSD) at Taronga Zoo. The TCSA seeks consent for the redevelopment of the existing Sky Safari.

Under Section 4.15 of the Environmental and Planning Assessment Act 1979, the likely impacts of a development are required to be considered and assessed as part of the planning process. This includes the impacts on the natural and built environments, as well as the social and economic impacts in the locality, including in relation to safety.

This CPTED assessment has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) which was issued on 11 August 2022 (SSD-46807958).

## CPTED ASSESSMENT

A CPTED assessment is a specialist study undertaken to help reduce opportunities for crime by using design and place management principles. The NSW Police Safer by Design Guidelines direct that a CPTED assessment consider four key principles:

- Surveillance
- Access control
- Territorial reinforcement
- Space and activity management.

## 1.1. KEY FINDINGS AND RECOMMENDATIONS

Urbis has undertaken a CPTED assessment for the proposed development against the four CPTED principles and has identified potential risk areas and recommendations to help reduce crime risk and enhance safety. The assessment has been informed by a review of relevant local and State policies, as well as demographic and crime data. The assessment found that the proposed development overall generally aligns with CPTED principles.

The project has effectively addressed active and natural surveillance measures by redesigning the site in a way which improves site lines, and increases movement and activity, especially outside normal daylight hours. Furthermore, the station will have ample CCTV coverage which increase perceived safety.

The PoM outlines a number of controlled access measures which minimise opportunities for crime and increase the effort required to commit crime. These Sky Safari Stations have clear physical and symbolic barriers which are used to attract, channel or restrict the movement of people through operational and non-operational periods.

New and attractive design as well as routine maintenance of both Stations ensure they foster visitor activity which facilitates a sense of communal ownership over a space. Places that feel owned and cared for are likely to be used, revisited and protected. The new design scheme also ensures clear and intuitive unidirectional circulation for passengers and encourages regular use through shelter provisions. Greater activation at site entrances will contribute to making the area less attractive to potential offenders due to the higher risk of being observed.

To further increase safety and reduce crime risk, recommendations are provided against each of the four principles.

**Surveillance**

*Signage*:

- Ensure that signage is designed for universal legibility to help visitors navigate spaces. During future detailed design stages, develop a comprehensive signage plan. New signage should:
  - Be compatible with existing Taronga Zoo signage.

  - Utilise symbology and visual elements to accommodate visitors of diverse abilities and linguistic backgrounds.
  - Be thoughtfully positioned and well-lit to ensure visitors can safely read and understand directions at night.
  - Use CCTV and alarm signage to deter criminal and anti-social behaviour, while reinforcing the existing levels of mechanical surveillance.

*Gardens and landscaping:*

- Balance aesthetics and safety in the landscaping around the new station sites, pylons, pathways, and access ramps. Select plant species based on their height, bulk, and shape to maintain sightlines, visual connection and safety:
  - Ensure lower tree limbs are above average head height.
  - Keep planting below eye level to maintain clear sightlines, especially below the coastal path below the lower station platform and lower station native garden beds.

*Lighting:*

- Ensure lighting meets minimum Australian Standards. Implement gradual transitions in lighting brightness to reduce discomfort and visual impact when moving between differently lit areas. Lighting provision should pay particular attention to the transition lighting between the new station structures and the surrounding public areas, in particular along the publicly accessible 'Coastal Path' below the lower station.

*Operator houses:*

- Utilise glazing in the façade of the operator house at the top station to facilitate natural and organised surveillance both inside and outside the stations.

**Access Control**

*Clear boundaries and directional signage:*

- Areas with unclear boundaries or movement cues are susceptible to trespassing. 'No Go Zones' adjacent to new stations should be clearly identifiable with signage, symbolic and physical boundaries (fencing, landscaping) to prevent shortcutting through these spaces.
- Use on-ground directional signage or design cues on the 'one-way ramps' to direct pedestrian flow and avoid confusion and congestion.
- Use clear signage, stationed staff, and/or one-way turnstiles to restrict entrance to the pedestrian egress ramps.

*Anti-Climbing measures:*

- Ensure that building and pylon surfaces do not include elements that can serve as footholds or handholds that could enable unauthorised access or climbing.

**Territorial reinforcement**

- Use materials that reduce opportunities for vandalism and graffiti on external surfaces. Avoid large flat surfaces prone to graffiti. Instead, opt for highly articulated surfaces, glazed areas, and green screens or climbing plants.

**Space and activity management**

*Early consultation:*

- Engage with Mosman Council and Transport NSW early in the process to clarify roles and responsibilities for management and crowd control at the interchange of the ferry wharf, bus stop, and Sky Safari lower station at Athol Wharf Road.

*Maintenance responsibilities:*

- Establish and formalise maintenance responsibilities for all new assets, fixtures, and landscaping. These should be incorporated into Taronga Zoo's existing PoM or a new PoM specifically for the Sky Safari.

*Operational roles:*

- During operation, designate Taronga Zoo employees to:
  - Provide direction and control access from the ferry wharf and bus stop to the lower station entrance, particularly during high visitor peak periods.
  - Manage movement and queuing of visitors and ensure Zoo patrons do not obstruct the Bondi to Manly 'Coastal Path,' which runs to the south of the site and beneath the lower station structure.

# 2. INTRODUCTION

This Crime Prevention Through Environmental Design (CPTED) assessment has been prepared by Urbis Pty Ltd (Urbis) on behalf of Taronga Conservation Society Australia (TCSA) (the Applicant) for the redevelopment of the Sky Safari at Taronga Zoo. The site is legally described as Lot 22 on Deposited Plan 843294 and is Crown Land managed by the Taronga Conservation Society Australia (TSCA).

Under Section 4.15 of the *Environmental and Planning Assessment Act 1979*, the likely impacts of a development are required to be considered and assessed as part of the planning process. This includes the impacts on the natural and built environments, as well as the social and economic impacts in the locality.

This CPTED assessment has been prepared in accordance with requirements contained within the Secretary's Environmental Assessment Requirements (SEARs) dated 11 August 2022 and issued for SSD-46807958.

The Taronga Zoo Sky Safari proposal (SSD-46807958) was lodged with the Department of Planning, Housing and Infrastructure (DPHI) and placed on public exhibition for 28 days between 24 September to 21 October 2024. Since lodgement, the project team refined the proposal to address comments from public agencies and the public as well as ongoing design development. The proposed refinements include updates to the top and lower stations to improve queuing and visitor experience and the pylon design to reflect inputs from the cable car contractor. This CPTED Assessment report was then updated to reflect the revised proposal.

This CPTED assessment assesses the proposal against the four CPTED principles outlined in Section 2.1.

## 2.1. AIM OF THE ASSESSMENT

A CPTED assessment is a specialist study undertaken to help reduce opportunities for crime by using design and place management principles. A CPTED assessment employs four key principles as shown in **Figure 1.**

Where CPTED risks are identified in the proposed design, recommendations are made within this report to help reduce the likelihood of crime from occurring.

Figure 1 CPTED principles

## 2.2. METHODOLOGY

The methodology for completing this CPTED has included three main stages.

| Local context analysis | Proposal analysis | Recommendations |
|---|---|---|
| ▪ Review of surrounding land uses and site visit<br>▪ Review of relevant state and local policies to understand the strategic context and approach to crime and community safety<br>▪ Analysis of relevant data to understand the existing context and crime activity. | ▪ Review of site plans and technical assessments<br>▪ Review of consultation documents which discuss potential crime and safety risks<br>▪ proposal against CPTED principles. | ▪ Design recommendations<br>▪ Draft and final reporting. |

## 2.3. THE PROPOSAL

Taronga Zoo is one of Australia's most popular attractions, and together with Taronga Western Plains Zoo hosts more than 1.8 million visitors annually. The Zoo has evolved over time from a Zoo that simply provides the traditional visitor experience of viewing animals in exhibits, to a Zoo that focusses on wildlife conservation, animal welfare and providing a range of visitor learning experiences.

Within Taronga Zoo, the Sky Safari is one of Taronga's most loved experiences and has transported more than 20 million passengers since it was first installed in 1987 and upgraded in 2000. The former Sky Safari was an ageing asset and was formally retired in January 2023. The redevelopment of the existing Sky Safari will allow the Zoo to update the now obsolete infrastructure on site and provide new facilities which improve accessibility, ease increased demand and assist the public in moving around the Zoo.

**Upgraded Experience**

The reimagined cable car experience introduces approximately 20-25new cable cars that are accessible to visitors with prams and larger wheelchairs, to ensure all visitors to the zoo have a safe and dignified experience in utilising the Sky Safari. The new cable cars are also larger in capacity than existing cable cars to meet current and future visitor demand to visit the Zoo.

The infrastructure associated with the cable cars will incorporate approximately 6 pylon towers (previously 9 pylon towers with the retired Sky Safari) ranging in height from 5.9m to 36.5m. The route itself has been carefully located to minimise impact on remnant bushland, existing trees and the archaeological and built heritage as well as scenic values of the Zoo.

Overall, the route of the upgraded Sky Safari maintains the existing footprint of the Sky Safari, however, will require the cable car corridor to increase from 9m to 12.5m.

**Cable Car Stations**

A new station is proposed at each end of the new cable car route allowing for visitors to enter and exit at both the top and bottom of the Zoo site.

Top Station is proposed to replace the existing storage facility adjacent to the Main Entrance Plaza. The new station will provide Zoo guests with direct access to the Sky Safari via the existing Main Entrance plaza. The station provides covered queuing within the heritage building and associated landscaping and shading provided in the plaza space.

Lower Station is proposed to replace the existing lower station near the Taronga Ferry Wharf. The station aims to improve existing queuing on site by incorporating fully equitable queuing areas with shade and amenity in order to enhance the visitor’s arrival experience. The Lower Station will have improved accessibility through the new ramping system up to the station which will make the station easily accessible for those in wheelchairs and with prams. In addition, level access into the station when re-queuing to use the cable car to go back to the Top Station, removing the existing stairs. A lift will also be provided to access the

platform if required by guests. The station will also be supplemented with toilet amenities and a ticketing booth.

There are six pylons, one located at each station (top and lower) and four within zoo. There are no pylons outside of the Zoo grounds.

Pylon 1 (5.9 m) – located in close proximity to the existing and proposed Lower station;

Pylon 2 (10.12 m) – located by existing Pylon 2;

Pylon 3 (26.2m) – located by the Food Court;

Pylon 4 (35.70 m) – in front of the Savannah toilet facilities;

Pylon 5 (36.5 m) – located to the north of the Helmore lawns; and

Pylon 6 (6.5m) – located in close proximity to the existing and proposed Top station.

**Hours of Operation**

The Zoo is currently in operation 24/7. It is intended that the Sky Safari will continue to operate within the following indicative hours to activate the site and create a new immersive experience to educate visitors on the work of the TCSA. These hours fluctuate from time to time:

Indicative Sunrise & Early Morning Sessions

- Daylight savings (AEDT): 6:00am to 9:30am
- Non-daylight savings (AEST): 5:00am to 9:30am

Zoo Operating Period

- 9:30am to 5:00pm (September to April)
- 9:30am to 4:30pm (May to August)

Indicative Sunset & Twilight Sessions

- Daylight savings (AEDT): 5:00pm to 9:00pm
- Non-daylight savings (AEST): 5:00pm to 7:00pm

Indicative Special Events (i.e. Vivid): 5:00pm to 12:00am

To meet safety standards, and comply with manufacturer specifications, commissioning, and maintenance will occur between 6:00pm – 6:00am.

*The architectural plans for both the top and lower stations are included in Appendix B.*

# 3. SITE CONTEXT

## 3.1. CONTEXT DESCRIPTION

Taronga Zoo is located at Bradleys Head Road, Mosman and is situated in the Mosman Local Government area (LGA). The site is bounded by Bradleys Head Road to the east, Athol Wharf Road and Sydney Harbour to the south, Little Sirius Cove to the west and Whiting Beach Road to the north.

Taronga Zoo is legally described as Lot 22 on DP843294 and is Crown Land managed by the TCSA (the Zoological Park Board). Taronga Zoo has been subject to numerous upgrades and redevelopment schemes over time, to stay compliant with contemporary regulations, meet contemporary animal welfare and contemporary visitor experience expectations.

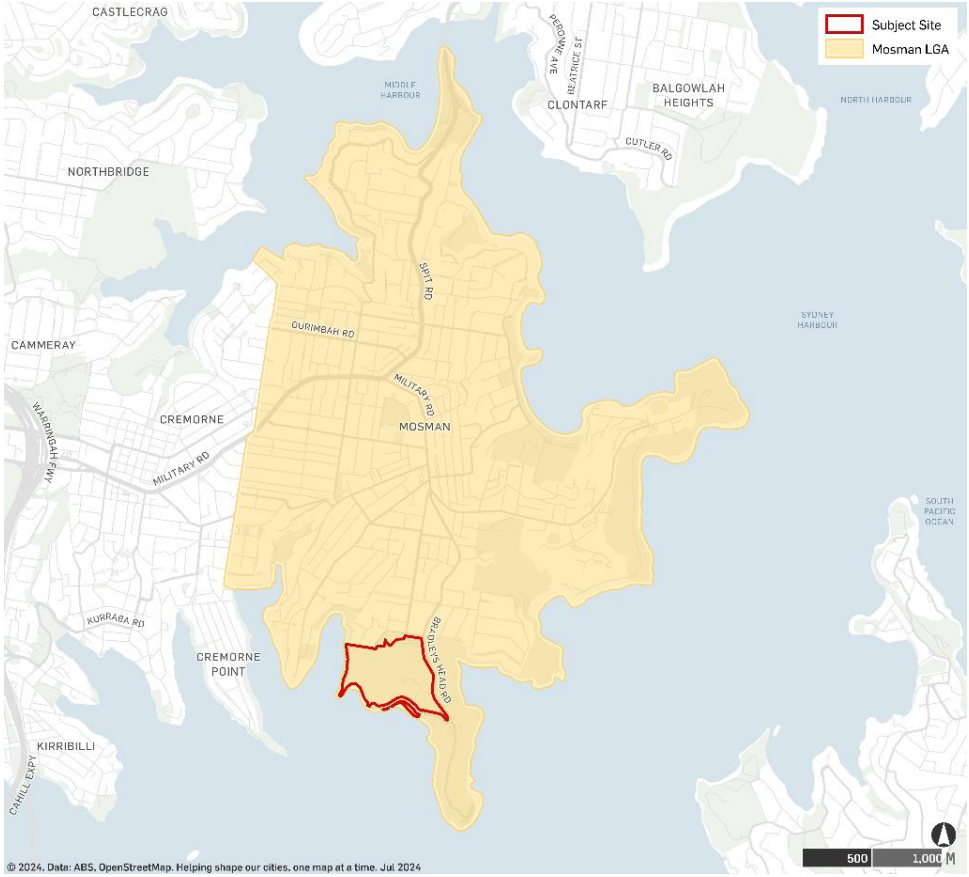
Taronga Zoo has evolved over time from a Zoo that simply provides the traditional visitor experience of viewing animals in exhibits, to a Zoo that focuses on wildlife conservation, animal welfare and providing a range of visitor learning experiences. Taronga Zoo is one of Australia's most popular attractions, and together with Taronga Western Plains Zoo hosts more than 1.7 million visitors annually.

The existing (not operational) Sky Safari is an ageing asset within the Zoo that was retired on 31 January 2023. The former Sky Safari route is a lineal route of 450 metres with each one-way journey taking approximately 4 minutes.

The retired Sky Safari was open to all Zoo visitors generally between the hours of 9.30am – 4.15pm as well as on special occasions such as VIVID or to transport guests to conference facilities. The majority of trips were only one way from the lower station near the Taronga Zoo Ferry Wharf as visitors entered the Zoo or from the top station near the top plaza (main entrance) as Visitors exited the Zoo.

The former Sky Safari cable cars had a maximum capacity of six guests and could accommodate wheelchairs up to a width of 610mm. Prams or wheelchairs which did not fold could not be transported given space restraints.

Figure 2 Site context




*Source: Urbis, 2024*

## 3.2. SITE VISIT OBSERVATIONS

A site visit was conducted by Urbis on 6th of June (Tuesday) 2023 in the afternoon. The site visit was used to understand the existing activity and layout of the site and the interface between surrounding land uses.

The site visit found that:

- The site is well activated with a high number of people walking throughout all parts of the Zoo.
- As visitors enter the main Zoo entry and move towards the ticketing station, there is a notably lesser amount people walking or ambling near the entrance to the top station.
- The location of the lower station provided less activation for zoo visitors, however moderate foot traffic along the ‘Coastal Path’ and at Taronga Zoo Wharf was observed.
- Wayfinding signs and maps have been installed for visitor guidance throughout the site.
- There was no evidence of graffiti or damaged property within or around the site.

Figure 3 Site photos

Picture 1 View of nature station plaza and top entrance to cable car.

Picture 2 View of top station entrance from plaza

Picture 3 View of cable car route from inside Taronga Zoo

Picture 4 View of lower station entry pathway from Athol Wharf Road

Picture 5 View of lower station at Athol Wharf Road

Picture 6 View of lower station at Athol Wharf Road

*Source: Urbis*

# 4. POLICY CONTEXT

The following section provides a summary of relevant state and local policies in relation to crime and safety.

### NSW Crime Prevention and Assessment of Development Applications (2001)

In April 2001, the NSW Department of Infrastructure, Planning and Natural Resources (now the Department of Planning, Housing and Infrastructure) introduced the Crime Prevention Legislative Guidelines (the Guidelines) to Section 4.15 (formerly Section 79C) of the *Environmental Planning and Assessment Act 1979*. These guidelines require consent authorities to ensure that development provides safety and security to users and the community.

The Guidelines introduce the four CPTED principles introduced in Section 1. These are: surveillance, access control, territorial reinforcement and space management.

The Guidelines aim to help councils implement and consider the CPTED principles. CPTED assessments seek 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'
- Removing conditions that create confusion about required norms of behaviour.

### Mosman City Council, Open Space and Infrastructure Development Control Plan (2012)

Chapter 7.4 of Mosman City Council's Open Space and Infrastructure Development Control Plan (DCP) (2012) outlines five specific objectives that integrate crime prevention methods into development design. The objectives and controls are included in the following table.

Table 1 Mosman Open Space & Infrastructure Development Control Plan, 4.7 Crime Prevention

| Objective | Controls |
|---|---|
| To have provision for the personal and property security of occupants and visitors and enhance community safety. | Development is to be designed in accordance with the Crime Prevention through Environmental Design (CPTED) principles (surveillance, access control, territorial reinforcement and space management), while also taking into consideration of urban design objectives for the built form and the streetscape context, landscaping and privacy. |
| To have adequate lighting to provide a sense of security for the occupants and visitors to buildings and to the public areas around the building. | Lighting is to be provided to public and private spaces such as entries of buildings, driveways, parking areas, pedestrian walkways and the underside of awnings, to promote safety and security during periods of low natural light.<br><br>Lighting should not create glare, dark shadows or nuisance to neighbours, and may need to be hooded, shielded or directed away from adjacent premises to minimise impact.<br><br>To control light spill, outdoor lighting should be designed consistent with AS 4282-1997 Control of the Obtrusive Effects of Outdoor Lighting. |
| To have buildings and spaces designed so that the relationship to and around buildings and | Development should incorporate design elements that contribute to the creation of a sense of community ownership of public spaces by: |

| Objective | Controls |
|---|---|
| spaces engenders a sense of ownership and territorial reinforcement. | ▪ encouraging people to gather in public spaces and feel some responsibility for its use and condition<br>▪ clearly define transitions and boundaries between public and private spaces e.g. through fencing, gardens, varying textured surfaces etc<br>▪ clearly defined public spaces. |
| To have buildings designed and orientated so as to provide opportunities for passive and active surveillance. | Development should be designed to provide or enhance effective surveillance and safety by:<br>▪ locating active uses adjacent to streets or public places so occupiers of the building can observe the area<br>▪ orientating the main building entrance towards the street<br>▪ providing clear sightlines between public and private places e.g. no blind corners<br>▪ establishing landscaping that makes places attractive but does not provide offenders with a place to hide or entrap victims e.g. avoid medium height vegetation with top to bottom foliage. |
| To have appropriate building forms and materials which minimise opportunities for vandalism. | Avoid large blank walls facing or abutting the footpath/street which prevent surveillance and encourage graffiti. Where these are unavoidable use planting to screen the wall, anti-graffiti paint or modulate the wall.<br>Use vandal resistant materials and finishes in areas where graffiti is likely to be a problem.<br>For external lighting and other fixtures such as communal or street furniture, use hard wearing, vandal resistant materials. |

*Source: Mosman City Council*

# 5. SOCIAL BASELINE

## 5.1. DEMOGRAPHIC PROFILE

The profile of a community can influence the type and likelihood of crime that may impact a development. The following section contains a brief analysis of the characteristics of Mosman LGA ('Mosman') based on data from the Australian Bureau of Statistics (ABS) and the Department of Planning, Housing and Infrastructure (DPHI). The demographic characteristics of Greater Sydney have been used, where relevant, to provide a comparison.

In 2021, there were 28,329 people living in Mosman. Key characteristics of this community are provided below.

### Middle aged adults

Mosman has a high median age of 45, compared to Greater Sydney (36). The age groups with the largest proportion of residents were parents and home builders aged 35 to 49 (20%) and older workers and pre-retirees aged 50 to 59 (14%).

### Established community

A high proportion of Mosman residents owned their home outright (38%), compared to Greater Sydney (28%). Between 2011 and 2021, 45% of Mosman residents remained in the same home.

### High proportion of voluntary work

One fifth (20%) of Mosman residents did voluntary work through an organisation or group within a 12-month period. This is a higher proportion than in Greater Sydney (12%).

### Culturally and linguistically homogenous

Most Mosman residents were born in Australia (62%) and only speak English at home (80%), compared with 57% and 57% respectively for Greater Sydney. The top three countries of birth other than Australia were England (9%), New Zealand (3%) and China (3%).

### High levels of socio-economic advantage

Mosman had a high median weekly household income ($2,892), compared to Greater Sydney ($2,077). Mosman was ranked in the 2nd most advantaged LGA of all LGAs in NSW and Australia on the SEFIA Index of Relative Socio-Economic Advantage and Disadvantage.

### Slow population growth

The population in Mosman was expected to increase by 0.07% per annum between 2021 – 2041 from 30,783 to 31,208 people.

## 5.2. CRIME PROFILE

Crime data from the Bureau of Crime Statistics and Research (BOCSAR) was analysed to identify the crime profile at Mosman suburb/LGA area. Data for NSW average has been used to help assess risk compared to statewide averages. The full crime profile is contained in Appendix A.

Key findings relevant to this assessment include:

- BOCSAR produces hotspots to illustrate areas of crime density relative to crime concentrations across NSW. The site is not in a hotspot for any relevant crimes.
- Mosman has lower rates of crime per 100,000 people compared to NSW for all relevant crimes.
- Two-year crime trends from April 2021 to March 2023 indicate that crime is consistently low in Mosman. However, 'Trespass' has increased by 45% per year, compared to an increase of 11% per year in NSW.

## 5.3. KEY IMPLICATIONS

The high socio-economic status, low levels of transience, and slow population growth, as indicated in the demographic profile, may be key contributors to lower crime rates in Mosman. As a key tourist destination, Taronga Zoo attracts visitors to the area from a very wide catchment. It will be important that any developments at Taronga Zoo further enhance safety and continue to support low rates of crime in the local area, including through the adoption of CPTED principles.

# 6. CPTED ASSESSMENT

This section provides an assessment of the proposal against Mosman Council, Open Space and Infrastructure Development Control Plan (2012) and the four the CPTED principles: surveillance, access control (and movement), territorial reinforcement and space management.

An assessment of the proposal has been made against each of the four CPTED principles as described above. Recommendations are provided for each CPTED principle to minimise any crime risk.

## 6.1. SURVEILLANCE

Places that are well supervised through passive, mechanical or organised surveillance are less likely to attract criminal behaviour. Important considerations for passive surveillance are building orientation and location, design of spaces, landscaping, and lighting. Technical surveillance is achieved through measures such as CCTV. Organised surveillance is achieved through measures such as security guards and staff members.

**Assessment of proposed development**

The proposal incorporates the following measures in accordance with Crime Prevention Through Environmental Design (CPTED) principles:

*Mechanical surveillance:*

- To enhance surveillance in areas where passive methods are challenging, the Plan of Management (PoM) includes the installation of CCTV at both stations in multiple locations, ensuring comprehensive surveillance coverage and increasing perceived safety.

*Active surveillance:*

- Taronga Zoo site benefits from 24-hour security based at the Whiting Beach Road entrance (corner of Prince Albert Street), which significantly enhances active surveillance across the site.
- According to the PoM, a designated Chief Warden will be responsible for coordinating after-hours emergencies outside of Taronga Zoo's operating hours.

*Design elements:*

- The design, placement, and orientation of amenities of both stations ensure they are easily accessed and supervised by visitors and adjoining station staff within the station plazas.
- The lower station plaza is designed to face Athol Wharf Road, maximising natural surveillance and increasing the risk to potential offenders.
- Thoughtful use of angles and curves throughout the new design widens view corridors and sightlines, enhancing natural surveillance of public areas. The space is well designed, with rounded edges and clear sight lines, and limited blind corners and spaces.
- Entrances to the stations are clearly visible, unobstructed, and easily identifiable from the street and surrounding buildings, enhancing passive surveillance and natural wayfinding for residents.
- The 'bark skin' façade design of the new stations to be visually permeable at average human eye level. This allows for natural surveillance both into and out of these structures.
- Lower station seating faces the staff and visitor amenities, providing opportunities for activation and natural surveillance.

**Recommendations and design considerations**

The following recommendations are proposed to further enhance safety and reduce risk of crime:

*Signage*:

- Ensure that signage is designed for universal legibility to help visitors navigate spaces. During future detailed design stages, develop a comprehensive signage plan. New signage should:
  - Be compatible with existing Taronga Zoo signage.
  - Utilise symbology and visual elements to accommodate visitors of diverse abilities and linguistic backgrounds.
  - Be thoughtfully positioned and well-lit to ensure visitors can safely read and understand directions at night.
  - Use CCTV and alarm signage to deter criminal and anti-social behaviour, while reinforcing the existing levels of mechanical surveillance.

*Gardens and landscaping:*

- Balance aesthetics and safety in the landscaping around the new station sites, pylons, pathways, and access ramps. Select plant species based on their height, bulk, and shape to maintain sightlines, visual connection and safety:
  - Ensure lower tree limbs are above average head height.
  - Keep planting below eye level to maintain clear sightlines, especially below the coastal path below the lower station platform and lower station native garden beds.

*Lighting:*

- Ensure lighting meets minimum Australian Standards. Implement gradual transitions in lighting brightness to reduce discomfort and visual impact when moving between differently lit areas. Lighting provision should pay particular attention to the transition lighting between the new station structures and the surrounding public areas, in particular along the publicly accessible 'Coastal Path' below the lower station.

*Operator houses:*

- Utilise glazing in the façade of the operator house at the top station to facilitate natural and organised surveillance both inside and outside the stations.

## 6.2. ACCESS CONTROL AND MOVEMENT

Access control involves the designing of spaces to control who enters and to prevent unauthorised access. Important crime prevention considerations for access control include wayfinding measures, desire lines and the provision of formal and informal routes. Natural design measures include building configuration, definition of formal and informal pathways, landscaping, fencing and gardens. Implementation of security hardware, such as swipe cards and on-site security officers, are technical and formal considerations for access control.

**Assessment of proposed development**

The proposal incorporates the following CPTED principles:

*Controlled access:*

- As outlined in the PoM, access to the site outside Taronga Zoo opening hours is controlled by Taronga's access control system. Entry and exit are permitted only at designated points and monitored by Taronga's security staff.
- Access to each station will be via key provided by supplier and held by TCSA security.
- Each station will be 'closed' in non-operational hours. A non-climbable, high palisade type screen / fence and pivot gates will secure the lower station after hours. The top station is enclosed within the secure bounds of the Zoo entry plaza.

- Gates and fences increase the effort required for offenders to access preferred areas. An access gate on the existing top path adjacent to the lower station decreases the potential for unauthorised entry.
- Consideration has been given to 'No Go Zones,' which are identified in the concept plans.

*Transitional buffer:*

- The lower station is elevated, creating a 'transitional buffer' between the Sky Safari, the arrival plaza and the street.

**Recommendations and design considerations**

The following recommendations are proposed to further enhance safety and reduce risk of crime:

*Clear boundaries and directional signage:*

- Areas with unclear boundaries or movement cues are susceptible to trespassing. 'No Go Zones' adjacent to new stations should be clearly identifiable with signage, symbolic and physical boundaries (fencing, landscaping) to prevent shortcutting through these spaces.
- Use on-ground directional signage or design cues on the 'one-way ramps' to direct pedestrian flow and avoid confusion and congestion.
- Use clear signage, stationed staff, and/or one-way turnstiles to restrict entrance to the pedestrian egress ramps.

*Anti-Climbing measures:*

- Ensure that building and pylon surfaces do not include elements that can serve as footholds or handholds that could enable unauthorised access or climbing.

## 6.3. TERRITORIAL REINFORCEMENT

Territorial reinforcement is defined by the way in which a community demonstrates ownership over a space. Places that feel owned and cared for are likely to be used, revisited and protected. People who have a sense of guardianship over a space are more likely to protect it and intervene in crime, compared to passing strangers. The use of actual and symbolic boundary markers, spatial legibility and environmental cues are ways to connect people and encourage communal responsibility over spaces

**Assessment of proposed development**

The proposal incorporates the following CPTED principles:

*Vibrant public areas:*

- People are attracted to vibrant public areas. The proposed design of the Sky Safari structures incorporate elements inspired by the surrounding environment and principles of culture, Country, connection, conservation, education, and place, articulated through the physical forms of the station buildings.
- New and upgraded surfaces, materials, and fixtures will improve the site's appearance and enhance perceptions of safety.

*Increased activity:*

- The presence of staff located at the lower station will act as a clear signifier of ownership, reducing improper use of space and deterring potential offenders.

- Increased activity and routine maintenance associated with the proposed uses will provide environmental cues that the area is well-used and cared for, enhancing perceptions of safety and activity around the site.

**Recommendations and design considerations**

The following recommendations are proposed to further enhance safety and reduce risk of crime:

*Material selection:*

- Use materials that reduce opportunities for vandalism and graffiti on external surfaces. Avoid large flat surfaces prone to graffiti. Instead, opt for highly articulated surfaces, glazed areas, and green screens or climbing plants.

## 6.4. SPACE AND ACTIVITY MANAGEMENT

Space and activity management involves monitoring site usage, managing site cleanliness and repairing vandalism and broken physical elements to decrease fear of crime. Spaces that are regularly used by the community are less likely to be vandalised.

**Assessment of proposed development**

The proposal incorporates the following CPTED principles:

*Increased movement and activity:*

- The project is likely to increase movement and activity throughout the Zoo, particularly if it operates outside of normal daylight hours. Active streets and public spaces can increase the actual and perceived risk for offenders, reducing crime.
- The design of the lower station provides 80% undercover shelter for queuing visitors, seating and bathroom amenities which encourages regular use and high levels of activation during all weather conditions.

*Clear embarkation and disembarkation:*

- The design ensures clear and intuitive unidirectional circulation for passengers embarking and disembarking from cable car gondolas at each station.

*Cleaning and waste maintenance:*

- TCSA will develop, implement and maintain a cleaning schedule for all area which will be updated on an annual basis.
- The cable cars will be washed down to prevent degradation and a cleaning regime will be implemented including washing of windows, seats, and flooring internally. These measures ensure that the gondolas, as well as the stations, will be well maintained, encouraging regular use, which in turn, creates natural supervision of public areas.
- According to the PoM, Taronga will work with the Waste Management Contractor to incorporate specific Sky Safari requirements into the site management plan. The PoM also outlines that TCSA will provide an adequate number of waste bins in communal areas around the site to encourage cleanliness and upkeep of these spaces.

**Recommendations and design considerations**

The following recommendations are proposed to further enhance safety and reduce risk of crime:

*Early consultation:*

- Engage with Mosman Council and Transport NSW early in the process to clarify roles and responsibilities for management and crowd control at the interchange of the ferry wharf, bus stop, and Sky Safari lower station at Athol Wharf Road.

*Maintenance responsibilities:*

- Establish and formalise maintenance responsibilities for all new assets, fixtures, and landscaping. These should be incorporated into Taronga Zoo's existing PoM or a new PoM specifically for the Sky Safari.

*Operational roles:*

- During operation, designate Taronga Zoo employees to:
  - Provide direction and control access from the ferry wharf and bus stop to the lower station entrance, particularly during high visitor peak periods.
  - Manage movement and queuing of visitors and ensure Zoo patrons do not obstruct the Bondi to Manly 'Coastal Path,' which runs to the south of the site and beneath the lower station structure.

# 7. KEY FINDINGS

Urbis has undertaken a CPTED assessment for the proposed development against the four CPTED principles and has identified potential risk areas and recommendations to help reduce crime risk and enhance safety. The assessment has been informed by a review of relevant local and State policies, as well as demographic and crime data. The assessment found that the proposed development overall generally aligns with CPTED principles.

The project has effectively addressed active and natural surveillance measures by redesigning the site in a way which improves sight lines, and increases movement and activity, especially outside normal daylight hours. Furthermore, the stations will have ample CCTV coverage which increase perceived safety.

The PoM outlines a number of access control measures which minimise opportunities for crime and increase the effort required to commit crime. The proposed Sky Safari stations will have clear physical and symbolic barriers which are used to attract, channel or restrict the movement of people through operational and non-operational periods.

New and attractive designs, as well as routine maintenance of both stations, will encourage activation and a sense of communal ownership over a space. The design scheme also incorporates clear, intuitive unidirectional circulation for passengers and encourages greater levels of use through the incorporation of adequate shade and shelter. Greater activation at the site entrances will contribute to making these area less attractive to potential offenders due to the higher risk of being observed.

To further increase safety and reduce crime risk, recommendations have been provided against each of the four principles.

# 8. DISCLAIMER

This report is dated 17 April 2025 and incorporates information and events up to that date only and excludes any information arising, or event occurring, after that date which may affect the validity of Urbis Pty Ltd **(Urbis)** opinion in this report. Urbis prepared this report on the instructions, and for the benefit only, of Taronga Conservation Society **(Instructing Party)** for the purpose of CPTED **(Purpose)** and not for any other purpose or use. To the extent permitted by applicable law, Urbis expressly disclaims all liability, whether direct or indirect, to the Instructing Party which relies or purports to rely on this report for any purpose other than the Purpose, and to any other person which relies or purports to rely on this report for any purpose whatsoever (including the Purpose).

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All surveys, forecasts, projections and recommendations contained in or associated with this report are made in good faith and on the basis of information supplied to Urbis at the date of this report, and upon which Urbis relied. Achievement of the projections and budgets set out in this report will depend, among other things, on the actions of others over which Urbis has no control.

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This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading, subject to the limitations above.

# APPENDIX A CRIME DATA

Table 2 Crime rates per 100,000 people, March 2023 – March 2024

| Crime type | Mosman LGA | NSW |
|---|---|---|
| Assault (non-domestic) | 145.8 | 447.1 |
| Assault (domestic) | 99.0 | 423.0 |
| Break and enter dwelling | 106.7 | 249.1 |
| Break and enter non-dwelling | 7.1 | 105.5 |
| Liquor offences | 17.8 | 83.5 |
| Malicious damage to property | 295.1 | 605.3 |
| Motor vehicle theft | 85.3 | 177.8 |
| Steal from dwelling | 163.6 | 197.1 |
| Steal from motor vehicle | 170.7 | 350.9 |
| Steal from person | 21.3 | 26.6 |
| Steal from retail store | 120.9 | 335.8 |
| Trespass | 103.1 | 151.0 |

*Source: BOCSAR*

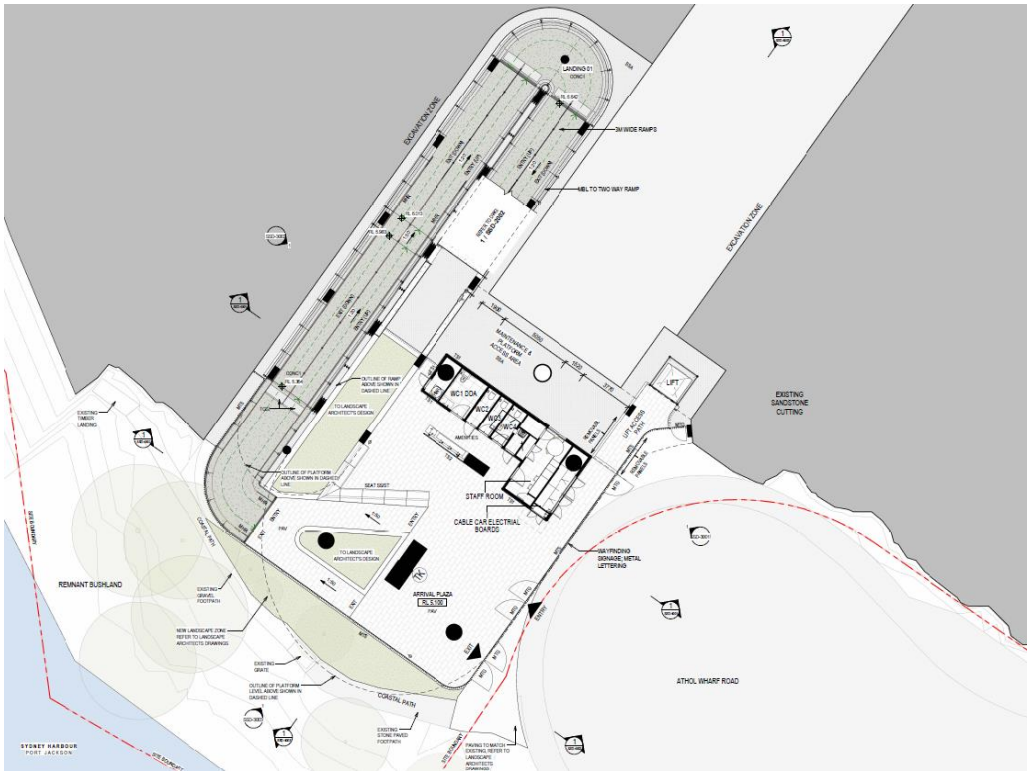
Table 3 Two-year crime trend, March 2022 – 2024

| Crime type | Mosman LGA | NSW |
|---|---|---|
| Assault (non-domestic) | Stable | Up 6.6% per year |
| Assault (domestic) | Stable | Up 5.5% per year |
| Break and enter dwelling | Stable | Up 7.0% per year |
| Break and enter non-dwelling | n.c | Up 13.9% per year |
| Liquor offences | n.c | Down 30.6% per year |
| Malicious damage to property | Stable | Up 0.7% per year |
| Motor vehicle theft | n.c | Up 12.9% per year |
| Steal from dwelling | Stable | Up 5.3% per year |
| Steal from motor vehicle | Stable | Stable |
| Steal from person | n.c | Up 6.3% per year |
| Steal from retail store | Stable | Up 12.6% per year |
| Trespass | Up 45.0% per year | Up 11.0% per year |

*Source: BOCSAR, n.c – Not Calculated*

# APPENDIX B PROPOSAL PLANS

Figure 4 Lower station ground floor plan

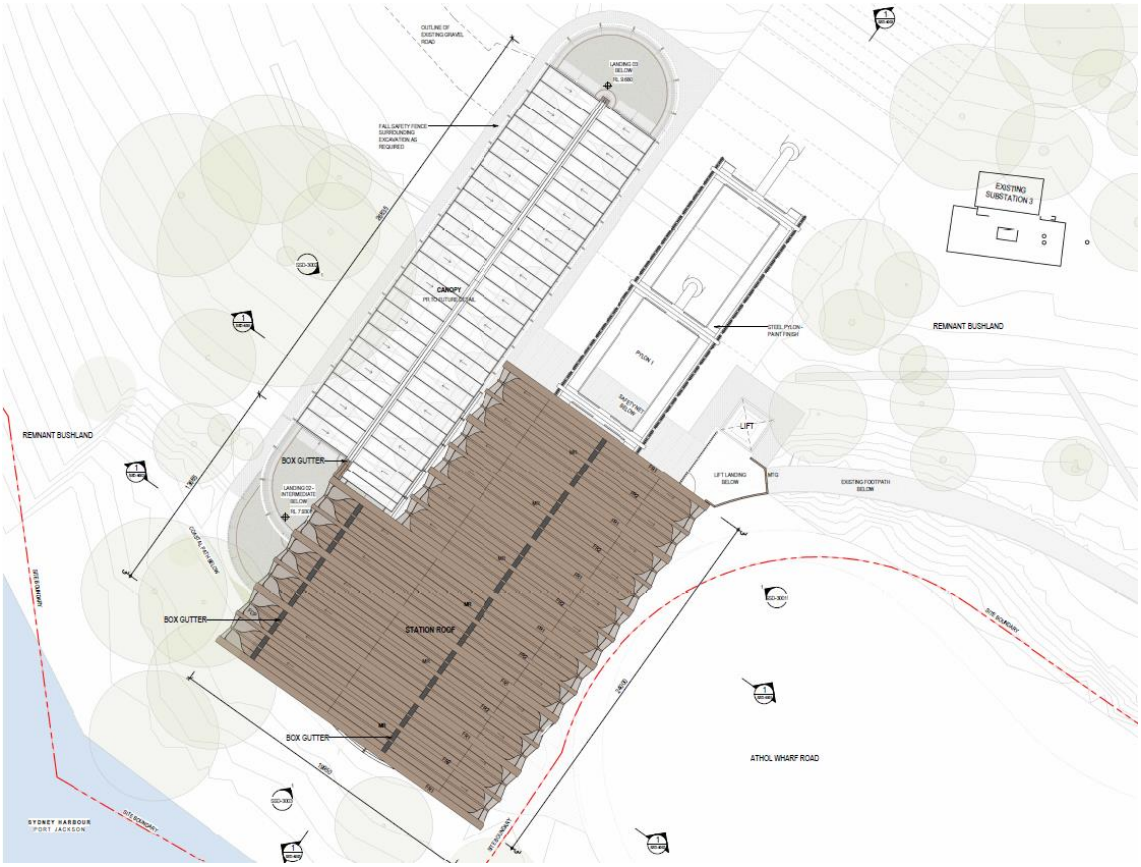



*Source: Scott Carver*

Figure 5 Lower station platform level

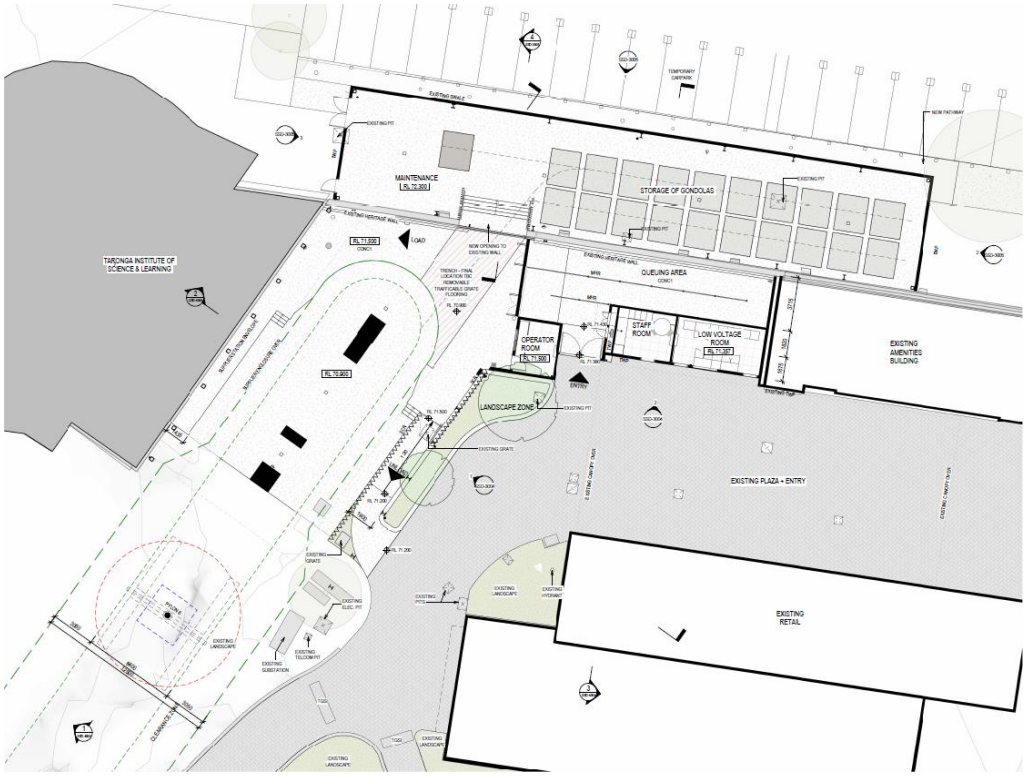
*Source: Scott Carver*

Figure 6 Lower station roof level



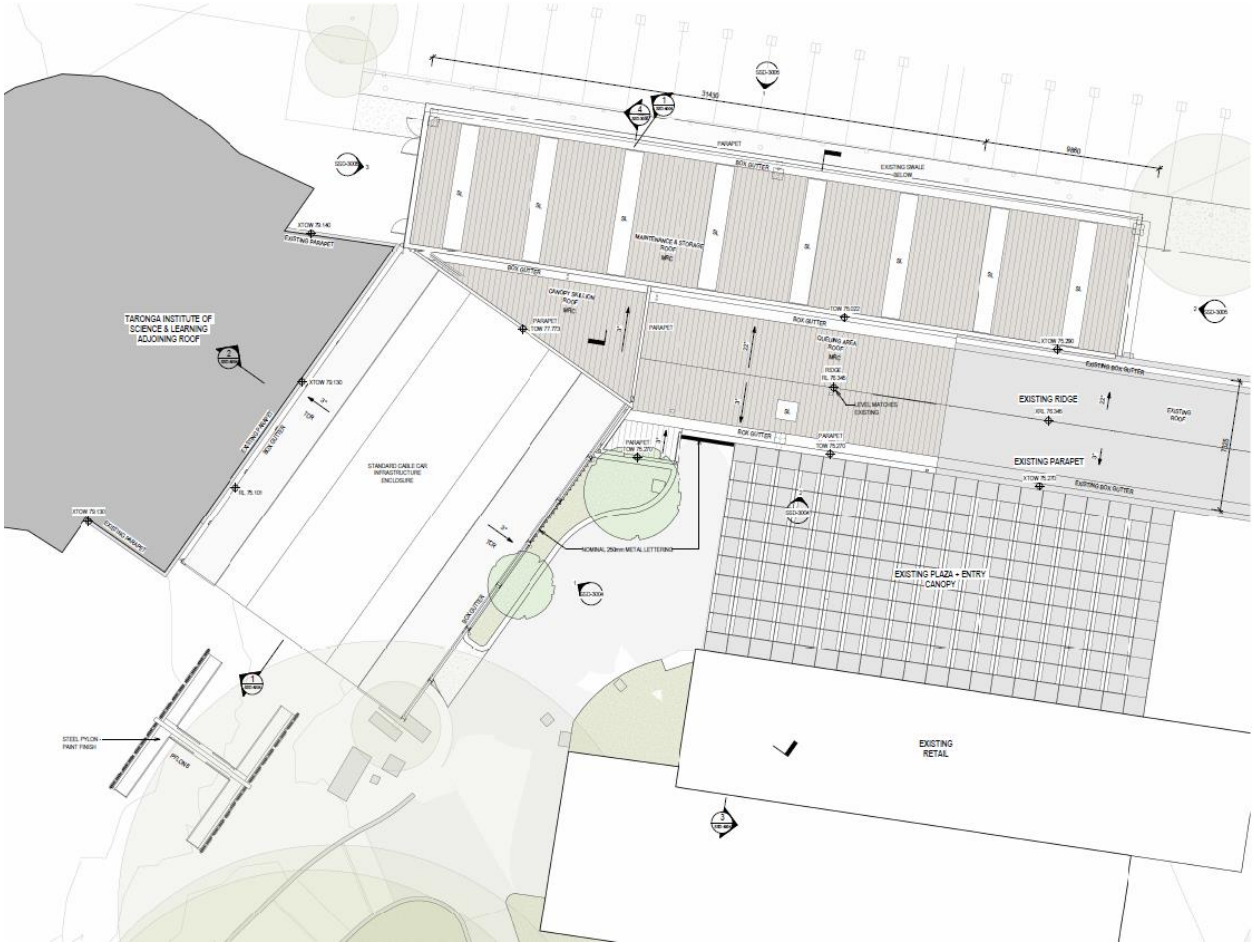

*Source: Scott Carver*

Figure 7 Top station ground level



*Source: Scott Carver*

Figure 8 Top station roof level




*Source: Scott Carver*

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