



HORNSBY PARK EMBELLISHMENT WORK CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED) REPORT

FINAL DRAFT

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CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN REPORT



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Introduction



Quarry Void • Hornsby Quarry Embellishment Visulisation by Arterra Interactive

INTRODUCTION

THE PURPOSE OF THIS REPORT

This report has been prepared to specifically demonstrate how the project design team is applying Crime Prevention Through Environmental Design (CPTED) to create safer, attractive, and enjoyable public open spaces at the former Hornsby Quarry site.

WHAT IS THE CPTED DESIGN

According to the CPTED Guidelines under section 79C of the Environmental Planning and Assessment Act 1979, the Crime Prevention Through Environmental Design (CPTED) is a multi-disciplinary approach to prevent criminal activities that uses urban and architectural design and the management of built and natural environments, which consists of the below four strategies: **Surveillance, Territorial Reinforcement, Access control and Space/Activity Management**, used in the design to minimise the opportunity for crime.

THE SITE AND LOCALITY

Access and Security

Hornsby Park is bound to the west by Berowra Valley National Park, to the north and south by residential lots and to the east by Hornsby Town Centre. The Park is located, close to the Town Centre and a major public transport node. Vehicle access to the park is via Bridge Road off Peats Ferry Road, and via Quarry Road.

Significant changes in elevation between the site and Town Centre create challenges in providing accessible pedestrian access to the park. The Hornsby Park site is a significantly altered terrain. More than 100 years of quarrying has resulted in a landform with vertical cliffs, steep gradients and degraded areas not generally conducive to easy access. Universal access to parts of the site will not be viable due to program. Existing circulation within the site is primarily via remnant quarrying access roads, including recent NorthConnex fill roads connecting onto Bridge and Quarry Roads. Bush trails and mountain bike tracks are located around the periphery of the site. The main existing access points are walking trails via Peats Ferry Road and from Berowra Valley National Park and vehicular roads via Bridge Road and Quarry Road.

Topography and Landscape

Hornsby Park is a complex landscape. Quarry operations resulted in the creation of a 130 metre deep pit in the middle of the site. Exposed rock walls are a key feature of the site, in particular the Diatrema wall is unique in Sydney for its geological heritage. Spoil from the quarry operations poses an ongoing risk along the Northern Mound of the quarry that is being actively managed. The quarry is naturally charged via ground water while a series of engineered structures ensure stormwater is diverted around the site before connecting into the natural waterway network.

Surrounding Environment

Hornsby Park and the former quarry site lie barely half a kilometre from Hornsby Train station. This close proximity to a CBD and major public transport is most unusual for a major post-industrial landscape and consequently offers some unique opportunities in this adaptive re-use as a park.

The site forms an easterly extension of the bushland valley that leads to Berowra Creek and Berowra Valley National Park. Falling away from the ridgeline of Hornsby Town Centre



Proposed Cableway Bridge • Hornsby Quarry Embellishment Visulisation by Arterra Interactive

PROJECT BACKGROUND

THE PROJECT DEVELOPMENT

The Hornsby Park site is comprised of 59 hectares of bushland and cleared open land with the principal physical features of the site today being comprised of the below precincts are included in this REF submissions:

Old Mans Valley (OMV)

OMV is first and foremost a welcome and orientation space for the entire park and secondly as an active and passive recreation hub in the park. Given its proximity to the Town Centre, it will necessarily cater to visitor recreation needs. Visitors arriving in OMV will be able to move out from this point to other precincts within the park via shuttle services, bikes or the path network. Small scale and local events and activities are the ideal scale for OMV.

The Quarry Void

Given its dramatic scale and character, the Quarry Void is the major draw card of the Park offering a unique experience unrivalled in the Sydney Region. Diatrema wall is a geological feature of heritage significance that cannot be found anywhere else in Australia and it creates a dramatic backdrop to the Quarry Void. The Quarry Void is ideally suited to special events that may be a draw card for district and regional visitors and tourists.

The Crusher Plant

A large industrial structure that is suitable for adaptive recreational re-use within the park. Opportunities for passive recreational use of space to ensure the Precinct is able to provide an anchor to the park along its southern edge. Direct pedestrian access from Hornsby Station within a 15 minutes walk is a significant factor in the opportunities for the Crusher Plant.

The Quarry West

The gateway to the Berowra Valley National Park. Perched on the western rim of the quarry and featuring a smaller scale community or commercial centre, the Quarry West Precinct offers prime views to the east and west. To the east is the Diatrema wall and to the west through the naturally formed valley is the Berowra Valley National Park. This precinct will act as the bridge between the National Park and Hornsby Park.

The Northern Mound

The Northern Mound would ultimately form part of the Bushland Precinct after significant earth works are completed to make the mound safe. Made entirely from quarry spoil the mound is extremely unstable, without topsoil, as evidenced by no bush regrowth 30 years after the quarry stopped using the mound for dumping.

The existing Heritage Park and Canopy Skywalk

As the main pedestrian arrival point and thoroughfare via Hornsby Town Centre to Hornsby Quarry, it requires the existing park entry to be upgraded to have an opened-up welcoming entry that can assist in increasing the use of the wider Hornsby quarry and the existing park, by creating an accessible path that leads into the entry plaza of the Skywalk connection, via which can provide accessible links to the wider Hornsby quarry.

The below precincts are excluded from this REF submissions:

The Higgins Family Cemetery

A small heritage-listed cemetery completely surrounded by bushland, It offers a rich connection to the pre quarry European history of the site and helps anchor the various historic features across the park through the interpretation strategy.

The South West Precinct

The South West Precinct provides a space for accommodation, learning and adventure recreation. Located in one of the most remote locations of the Park and close to the Berowra Valley National Park, access to this precinct is difficult, but this remote location also offers opportunities to better connect to the bush and the National Park.

(For precinct locations, refer to the page 12-13, Hornsby Quarry Embellishment Overall Precinct Plan)

While the public has been excluded from the majority of the site for reasons of safety - and to permit the recent partial filling of the quarry base to facilitate its future use as a park – there remain tracks within the bushland (including the heritage listed Depression Steps) that have been used for bushland trails, linking Hornsby and the Berowra Valley National Park, as well as a formal Mountain Bike trail network.

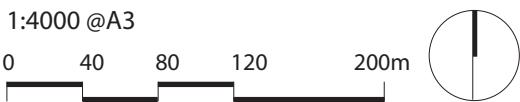
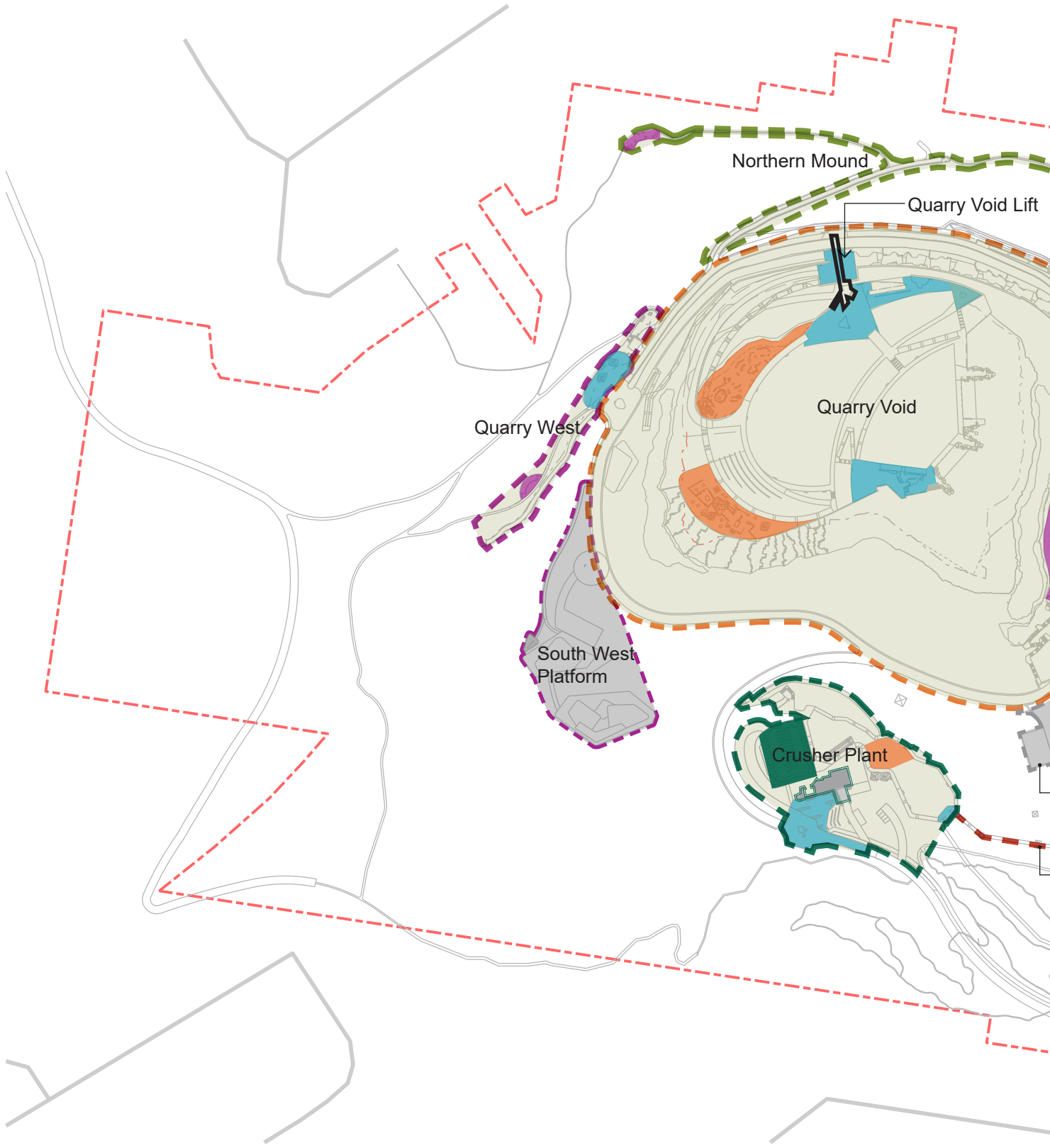
In addition to offering an extraordinary bushland experience and a wide range of popular parkland activities, the site lends itself well to hosting local community and regionally attractive events, celebrations and festivals. The quarry and its remnant infrastructure also offer an ideal venue for adventure recreation experiences.

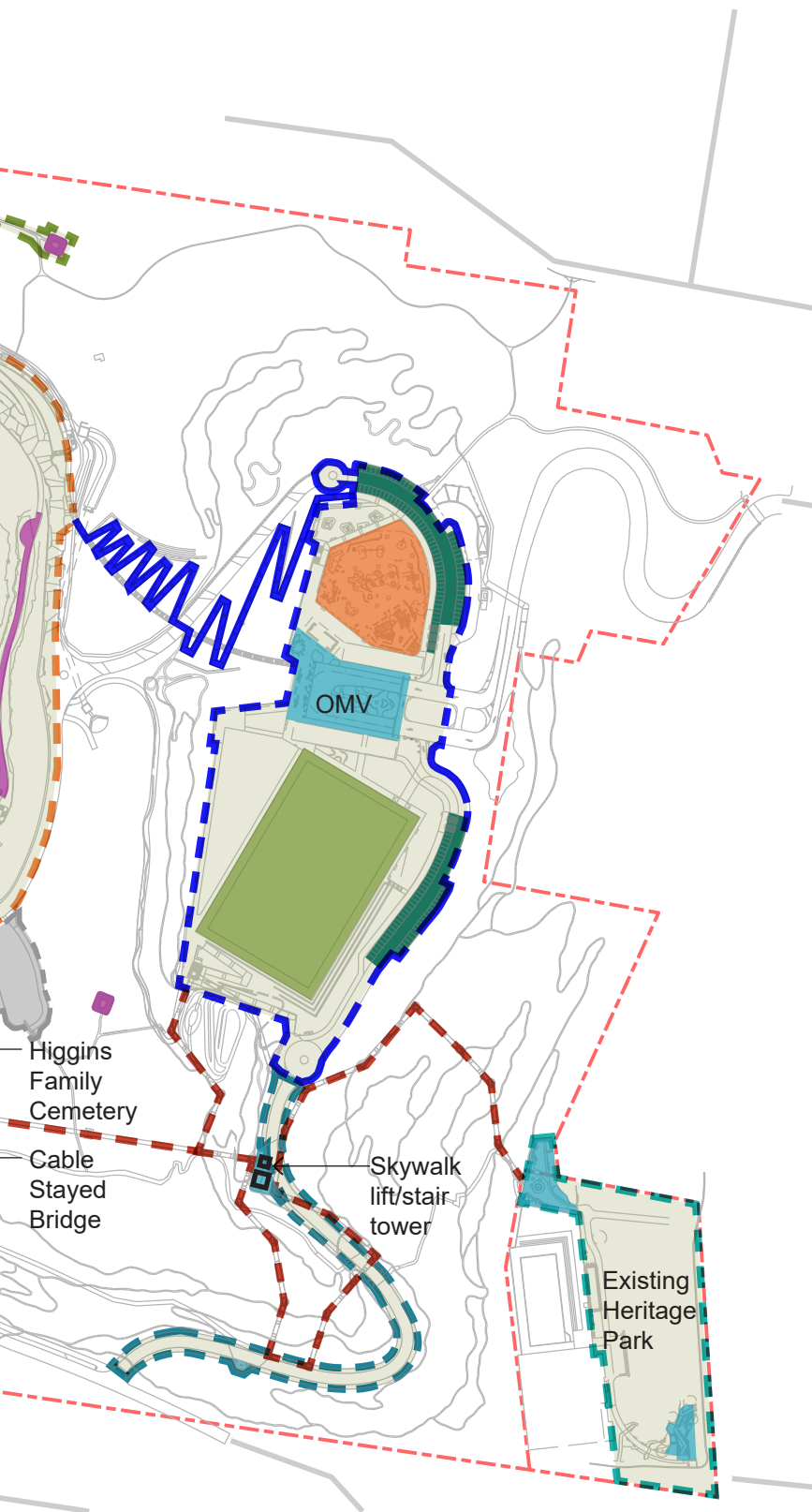
With the prospect of significant future growth in the Hornsby CBD, Hornsby Park will be ideally placed to meet the open space and recreational needs of the current and future population, all within walking distance.

With these current and future demands in mind the design for Hornsby Park will seek to:

- Restore and enhance the unique bushland within the site
- Protect and celebrate its Aboriginal and Non-Aboriginal heritage
- Ensure that the quarry character is retained
- Offer a variety of recreation opportunities including passive, active and adventure recreation
- Provide easy access throughout via a network of walking and bike paths
- Integrate upgraded connections between the park and surrounding area including Hornsby Town Centre, Berowra Valley National Park and local streets and trails
- Cater for the long-term evolution and growth of Hornsby and surrounding communities and populations
- Secure Council's long-term management and maintenance of the park.







Legend

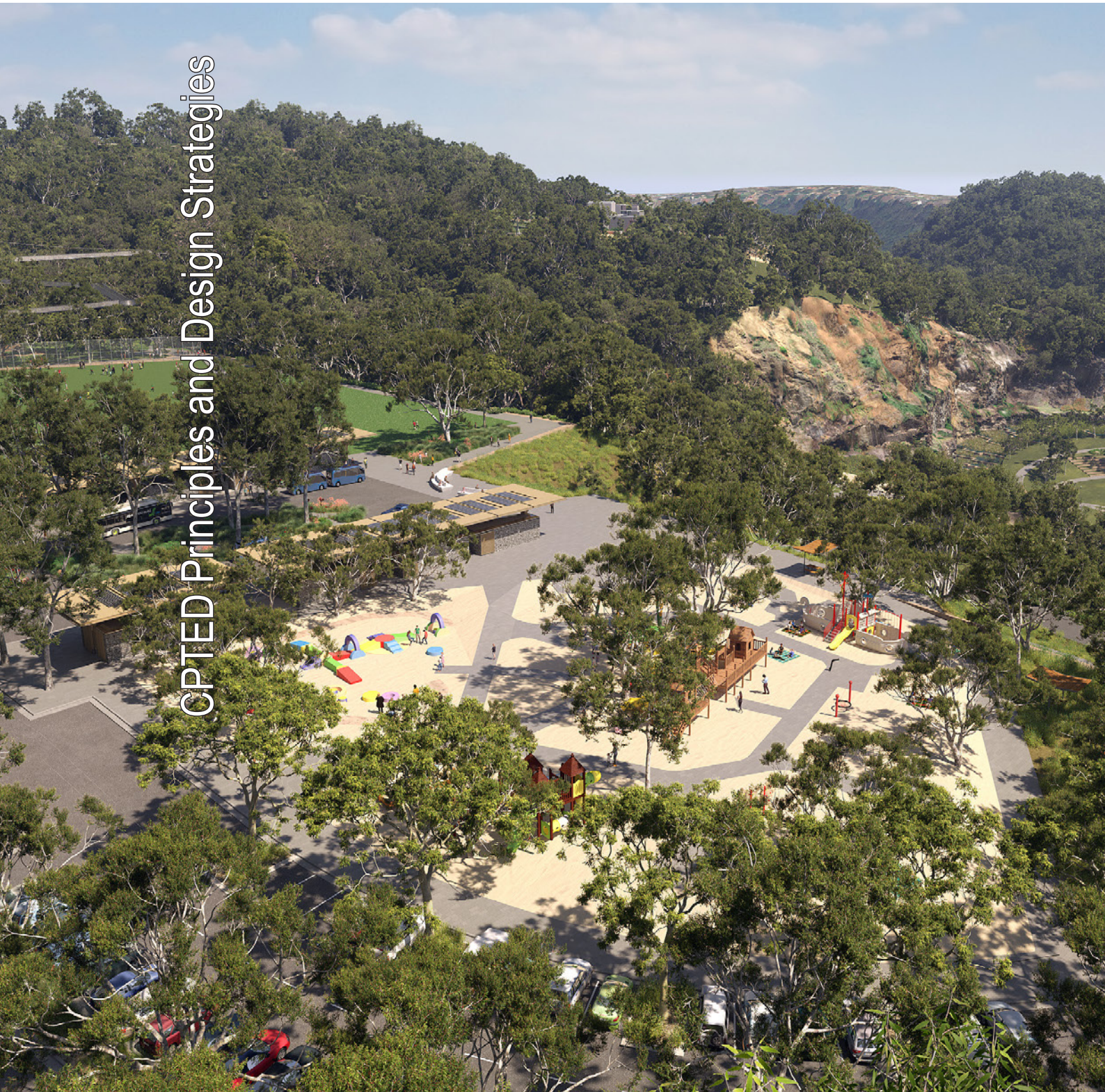
- Old Mans Valley
- Quarry Void
- Quarry West
- Northern Mound
- Crusher Plant
- Existing Heritage Park
- Skywalk and Cable Stayed Bridge
- Circulation - Fire Trails
- Play area
- Plaza
- Sportsfield
- Greenline
- Bird hides/ lookouts
- General open areas
- Carpark

Excluded from REF

- Higgins Family Cemetery
- South West Precinct
- Crusher Plant buildings

Hornsby Quarry Embellishment Overall Precinct Plan

CPTED Principles and Design Strategies



Proposed Cableway Bridge • Hornsby Quarry Embellishment Visualisation by Arterra Interactive

CPTED PRINCIPLES AND DESIGN STRATEGIES

In NSW, CPTED is administered by Safer By Design, a co-operative made up of NSW Police, local councils, government departments and private sector organisations. CPTED NSW structures its CPTED reports according to Safer By Design guidelines.

Safer By Design identifies four key principles can guide the design strategies and response:

- **Surveillance (S)** – The attractiveness of crime targets can be reduced by providing opportunities for effective surveillance, both natural and technical.
- **Access Control (AC)** – Physical and symbolic barriers can be used to attract, channel or restrict the movement of people. They minimise opportunities for crime and increase the effort required to commit crime.
- **Territorial Reinforcement (TR)** – Community ownership of public space sends positive signals. People often feel comfortable in, and are more likely to visit, places which feel owned and cared for. Well used places also reduce opportunities for crime and increase risk to criminals
- **Space/activity management (SAM)** – Popular public space is often attractive, well maintained and well used space. Linked to the principle of territorial reinforcement, space management ensures that space is appropriately utilised and well cared for.

CPTED Guidelines under section 79C of the Environmental
Planning and Assessment Act 1979, excerpt from: www.police.nsw.gov.au

CLOUSTON Associates and the project design team understand the aforementioned principles of CPTED and has thoroughly applied the four principles to guide the design process and provide cohesive design responses, aiming to create a sense of belonging, welcoming and inclusiveness to the wider community which aids in minimising the criminal activities and anti-social behaviour within the future Hornsby park.

The relatively more remote areas such as mountain bike tracks, bush trails and bird hides will be challenging to manage and provide direct passive surveillance due to the nature of the locations within the dense bushlands. For the bird hides, it is suggested surveillance can be managed by providing a solution such as CCTV camera or motion sensor to monitor the activities that take place within the structure with appropriate control access at certain hours; and for the track and trails, as it is indicated in the visitation model in the **Hornsby Park Adventure Recreation Experience Assessment Report** dated April 2020, high visitation are expected that will be visiting the park daily after the opening, the passive surveillance of the tracks and trails will rely on the high traffic of Mountain bikes and bush walkers coming and going frequently during a short period of time.

The suitable design implementations in different areas responding to the site context and conditions and also to achieve CPTED design outcome, refer to the Table 1 - CPTED Principle Alignment and Table 2: CPTED Design Response by Location below:

Table 1: CPTED PRINCIPLE ALIGNMENT

CPTED PRINCIPLES	CPTED DESIGN RESPONSES	LOCATION
Surveillance (S)	- Have proposed a clear layout of the open spaces with signage to ensure people can find their way - Have proposed clear sightlines between places - Have allowed permeable view corridors at different directions within spaces to ensure clear lines of sight at all time - Have considered even use of spaces to minimise out-of-the-way spaces by providing seating and picnic spots spread throughout the park - Have provided low planting along paths and permeable view corridor within areas for casual surveillance - Have avoided concealed and isolated routes in the proposed path networks and unusable spaces - Have considered and used landscaping that makes places attractive, but does not provide offenders with a place to hide or entrap victims. - Have specified the controllable lighting with motion activated lights and directed lighting, turned on from dusk until dawn at key activity areas and accessible paths - Have proposed passive lighting to light the paths and support the function of the spaces at night time	OMV - PLAY AREA, PLAZA, PICNIC, GENERAL OPEN AREAS AND PATHS, SPORTSFIELD, CARPARK, GREENLINE, BIRD HIDE. QUARRY VOID - PLAZA, PLAY AREAS, GENERAL OPEN AREAS AND PATHS, LOOKOUT AND WALKWAYS QUARRY WEST - PLAZA, PICNIC, GENERAL OPEN AREAS AND PATHS, BIRD HIDE. NORTHERN MOUND- PATHS, BIRD HIDE. CRUSHER PLANT PLATFORM- ARRIVAL PLAZA, PLAY, GENERAL OPEN AREAS AND PATHS SKYWALK LIFT AND STAIR TOWER PLAZA SKYWALK AND CABLE STAYED BRIDGE FIRE TRAIL LANDSCAPE EXISTING HERITAGE PARK- PLAZA, GENERAL OPEN AREAS AND PATHS OVERALL SITE ENTRY PLAZA OVERALL TRACK AND TRAILS

CPTED PRINCIPLES	CPTED DESIGN RESPONSES	LOCATION
Access Control (AC)	- Have proposed strong connections between spaces and multiple pathways of travel throughout the site with no dead ends - Landscapes and physical locations have been designed that channel and group pedestrians into target areas - The spaces have been designed which attract, rather than discourage people from gathering - Controlled access entries have been proposed to some areas that requires closure at certain period of time - Wayfinding and directional signage will be designed as per the future Wayfinding Signage and Interpretation Strategy - The well-connected path networks have been provided to different spaces from the carpark	OMV - PLAY AREA, PLAZA, PICNIC, GENERAL OPEN AREAS AND PATHS, SPORTSFIELD, CARPARK. QUARRY VOID - PLAZA, PLAY AREAS, GENERAL OPEN AREAS AND PATHS, LOOKOUT AND WALKWAYS QUARRY WEST - PLAZA, PICNIC, GENERAL OPEN AREAS AND PATHS NORTHERN MOUND - PATHS CRUSHER PLANT PLATFORM- ARRIVAL PLAZA, PLAY, GENERAL OPEN AREAS AND PATHS SKYWALK LIFT AND STAIR TOWER PLAZA SKYWALK AND CABLE STAYED BRIDGE EXISTING HERITAGE PARK- PLAZA, GENERAL OPEN AREAS AND PATHS
Territoriality Reinforcement (TR)	- Using the presence of design features to connect visitors to the site and foster a sense of ownership - Have proposed high quality materials and facilities including shelters, BBQ's, etc to cater to the wider community not just nearby residents - Having the park act not only as a destination but as a thoroughfare and link as part of the wider open space strategy throughout the Berowra Valley National Park. - Proposed the open space design that encourages people to gather in public space and to feel some responsibility for its use and condition - Have designed with clear transitions and boundaries between space	OMV - PLAZA QUARRY VOID - PLAZA, PLAY AREAS, GENERAL OPEN AREAS AND PATHS, LOOKOUT AND WALKWAYS QUARRY WEST - PLAZA, PICNIC, GENERAL OPEN AREAS AND PATHS CRUSHER PLANT PLATFORM- ARRIVAL PLAZA, PLAY, GENERAL OPEN AREAS AND PATHS SKYWALK, LIFT AND STAIR TOWER PLAZA AND CABLE STAYED BRIDGE FIRE TRAIL LANDSCAPE EXISTING HERITAGE PARK- PLAZA, GENERAL OPEN AREAS AND PATHS OVERALL SITE ENTRY PLAZA OVERALL TRACK AND TRAILS

CPTED PRINCIPLES	CPTED DESIGN RESPONSES	LOCATION
Space/ Activity Management (SAM)	• Have plans for ongoing and regular maintenance to be undertaken in different areas catering for the use of open spaces to the wider community. • Have plans for repair of vandalism and graffiti and removal of decayed physical elements • Have provided High-quality and robust detailing and furniture selections • Park will be managed and shut down during any major natural disaster event • Have proposed well-defined lawns and planting beds with species suitable to Hornsby Shire and a changing climate • Have designed the well-connected spaces and opportunities for diverse programmed activities to attract people and activate spaces • The main activity spaces have been located along an “active edge” or to the key accessible path to ensure accessibility is achieved visitors don’t feel cornered in the spaces • The main events spaces have been located on ground level to reduce the sense of fear and ensure visitors feel safe in the spaces	OMV - PLAY AREA, PLAZA, PICNIC, GENERAL OPEN AREAS AND PATHS, SPORTSFIELD, CARPARK, GREENLINE, BIRD HIDE. QUARRY VOID - PLAZA, PLAY AREAS, GENERAL OPEN AREAS AND PATHS, LOOKOUT AND WALKWAYS QUARRY WEST - PLAZA, PICNIC, GENERAL OPEN AREAS AND PATHS, BIRD HIDE. NORTHERN MOUND- PATHS, BIRD HIDE. CRUSHER PLANT PLATFORM- ARRIVAL PLAZA, PLAY, GENERAL OPEN AREAS AND PATHS SKYWALK, LIFT AND STAIR TOWER PLAZA AND CABLE STAYED BRIDGE EXISTING HERITAGE PARK- PLAZA, GENERAL OPEN AREAS AND PATHS OVERALL SITE ENTRY PLAZA OVERALL TRACK AND TRAILS



Table 2: CPTED Design Response by Location:

LOCATION	Surveillance	Territorial Reinforcement	Space/Activity Management	Access Control
OMV PLAY AREA	Yes	-	Yes	Yes
OMV PLAZA	Yes	Yes	Yes	Yes
OMV PICNIC, GENERAL OPEN AREAS AND PATHS	Yes	-	Yes	Yes
OMV SPORTSFIELD	Yes	-	Yes	Yes
OMV CARPARK	Yes	-	Yes	Yes
OMV GREENLINE	Yes	-	Yes	-
OMV BIRD HIDE	Yes	-	Yes	-
QUARRY VOID PLAZAS	Yes	Yes	Yes	Yes
QUARRY VOID PLAY AREAS	Yes	Yes	Yes	Yes
QUARRY VOID GENERAL OPEN AREAS AND PATHS	Yes	Yes	Yes	Yes
QUARRY VOID LOOKOUTS/ WALKWAYS	Yes	Yes	Yes	Yes
QUARRY WEST PICNIC AND GENERAL OPEN AREAS AND PATHS	Yes	Yes	Yes	Yes
QUARRY WEST PLAZAS?	Yes	Yes	Yes	Yes
QUARRY WEST BIRD HIDES	-	-	Yes	-
NORTHERN MOUNDS LOOKOUT AND BIRD HIDES	-	-	Yes	-
NORTHERN MOUNDS PATHS	Yes	-	Yes	Yes
CRUSHER PLANT PLATFORM ARRIVAL PLAZAS	Yes	Yes	Yes	Yes
CRUSHER PLANT PLAY	Yes	Yes	Yes	Yes

Table 2: CPTED Design Response by Location

LOCATION	Surveillance	Territorial Reinforcement	Space/Activity Management	Access Control
CRUSHER PLANT PLATFORM GENERAL OPEN AREAS AND PATHS	Yes	Yes	Yes	Yes
SKYWALK LIFT AND STAIR TOWER PLAZA	Yes	Yes	Yes	Yes
SKYWALK AND CABLE STAYED BRIDGE	Yes	Yes	Yes	Yes
FIRE TRAIL LANDSCAPE	-	Yes	Yes	-
EXISTING HERITAGE PARK GENERAL OPEN AREAS AND PATHS	Yes	Yes	Yes	Yes
EXISTING HERITAGE PARK PLAZA	Yes	Yes	Yes	Yes
OVERALL SITE ENTRY PLAZA	Yes	Yes	Yes	Yes
OVERALL TRACK AND TRAILS	Yes	Yes	Yes	Yes

Summary



Existing Crusher Plant Building • Hornsby Quarry

4 SUMMARY

The Hornsby Park project has considered Crime Prevention Through Environmental Design principles in its design and planning. The design has sought to create a welcoming, attractive and safe environment for the community. It is hoped that it will be a place to enjoy time with family, friends and loved ones. CPTED principles have been applied to mitigate potential criminal activities and anti-social behaviour.

