

Barangaroo Station

# Visual Amenity Management Sub Plan

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N217

BR COP

28 February 2023



## Project overview

**Project Site Address:**

Hickson Road  
Barangaroo  
NSW 2000

**BESIX Watpac State Division Address:**

Level 24, 44 Market Street  
SYDNEY  
NSW 2000

**Project Commencement Date:**

12 March 2021






**BESIX Watpac ABN:**

71 010 462 816

## Document Control

<b>Client:</b>	Transport for NSW – Sydney Metro
<b>Title:</b>	BARANGAROO STATION
<b>Subtitle:</b>	Visual Amenity Management Plan
<b>Owner / Approver:</b>	Planning & Environment Manager / Project Director
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## Revision history

Version	Date	Revision Description	Release Sign off
A	24/05/21	Submission for Review	 / Project Director
B	01/09/21	Submission for Review	 / Project Director
C	08/09/21	Submission for Review	 / Project Director
00	01/12/2022	6 month review and update	 / Project Director
01	28/02/2023	Updated following review and comments	 / Project Director

## BESIX Watpac Approvals

Name	Role & Title	Signature	Date
	Author / Planning & Environment Manager		28/02/2023
	Reviewer / Construction Manager		28/02/2023
	Reviewer / Project Director		28/02/2023

**Note:** A controlled copy of the Construction Environmental Management Plan (CEMP) will be distributed to the Sydney Metro Principal's Representative, Independent Certifier (IC) and other nominated stakeholders, and it will be made available to all BR COP employees and subcontractors in soft copy format through the project document control system.

The CEMP associated sub-plans and procedures, when printed, will be uncontrolled and it will be the responsibility of each user to confirm the currency of the plan through the project document control system.

## Acronym and Definitions

Acronym	Term and/or Definitions
AA	Acoustic Advisor
BR-CODD	Barangaroo 'Construct Only Delivery Deed'
BR-COP	Barangaroo Metro Station 'Construct Only Package'
BW	BESIX Watpac
CAR	Corrective Action Request
CCSBMP	Community Communications Strategy and Business Management Plan
CEMF	Construction Environmental Management Framework
CEMP	Construction Environmental Management Plan
CMP	Contract Management Plan
CoA	Conditions of Approval
CPTED	Crime Prevention through Environmental Design
DPE	Department of Planning and Environment (formerly DPIE)
DPIE	NSW Department of Planning Industry and Environment (now DPE)
EIS	The Sydney Metro City and Southwest Chatswood to Sydenham Environmental Impact Statement dated 3 May 2016 submitted to the Secretary seeking approval to carry out the CSSI and as revised if required by the Secretary under the EP&A Act.
EMS	The BESIX Watpac certified Environmental Management System
ER	Environmental Representative
GS	General Specification
HMP	Heritage Management Plan
INSW	Infrastructure New South Wales
KPI	Key performance Indicator
NVMP	Noise & Vibration Management Plan
N/A	Not applicable
PS	Particular Specification
SDPP	Station Design and Precinct Plan
SFAIRP	So Far As Is Reasonably Practicable (in terms of the RSNL, NSW)
SM	Sydney Metro
SME	Subject Matter Expert, a person with expert knowledge and competency in a specified subject or topic matter area.
SMP	Sustainability Management Plan
SMCSW	Sydney Metro City & Southwest (the overall program of works, which Barangaroo Station is part of)
SWMS	Safe Work Method Statement

Acronym	Term and/or Definitions
TfNSW	Transport for New South Wales ( <a href="https://www.transport.nsw.gov.au">https://www.transport.nsw.gov.au</a> )
VAMP	Visual Amenity Management Plan
WHS	Work Health and Safety

## Terms and Definitions

Glossary	Definitions and Responsibilities
Ancillary Facility	Temporary facility for construction e.g. site office, amenities and storage compound
Business Management Plan	the Business Management Plan required by the Project Planning Approval.
Contractor	Particular Specification (PS) must be read as a reference to the “BR Contractor” as defined in the BR-CODD
Contractors Activities	Particular Specification and General Specification must be read as a reference to the “BR Contractor’s Activities” as defined in the BR-CODD
Crisis Event	an event that may have an impact on the community, commuters, environment, personnel or subcontractors or has attracted or can reasonably be expected to attract the attention of the media, the Minister for Transport, a local Member of Parliament, local Authority or the local community. This includes emergencies, incidents or crises unrelated to the Contractor’s Activities that may be deemed to be caused by the Contractor’s Activities due to locality.
Design Documentation	Means the “Final Design Documentation” as defined in the BR-CODD.
Emergency Event	A situation in which there is an unacceptable risk, to the health and wellbeing of occupants, staff, or the general public, which needs intervention by staff or emergency services to control, limit escalation, suppress or address the risk and return to normal operations.
Environmental Aspect	Element of an organisation’s activities, products or services that interacts or can interact with the environment (AS/NZS ISO 140001:2016)
Environmental Impact	Change to the environment whether adverse or beneficial, wholly or partly resulting from an organisation’s environmental aspects
Environmental Policy	Statement by an organisation on its intention and principles for environmental performance
Inspection and Test Plan	Inspection and test plans prepared and implemented by the Contractor in accordance with the requirements in AS/NZS ISO 9001 Quality Management systems – Requirements.
Interface Contractors	Any contractor, consultant, artist, tradesperson or other person engaged by Sydney Metro that is carrying out ,or that will carry out Interface Work including: <ul style="list-style-type: none"> <li>• Tunnel and Station Excavation (TSE) Contractor</li> <li>• Train System, Operation and Maintenance (TSOM) Contractors</li> <li>• Metro Trains Sydney (MTS) The Operator</li> <li>• Line Wide (LW) Contractor</li> <li>• Electronic Ticketing System (ETS) Contractor</li> </ul>
Interface Work	Any activities undertaken by an Interface Contractor which interface with or affect, or are affected by, the Contractor’s Activities, the Project Works or the Temporary Works.
Non Compliance	Failure to comply with the requirements of the Project Approval or any applicable license, permit or legal requirements.
Non Conformance	Failure to conform to the requirements of project system documentation including this CEMP or supporting documentation

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# 1. Introduction

## 1.1 Purpose

This Visual Amenity Management Plan (VAMP) has been developed to manage and minimise the risk and impacts to the visual amenity during construction of the Barangaroo Metro Station Construct Only Package (BR-COP).

This VAMP has been developed in accordance with the Conditions of Approval (CoA) for the Critical State Significant Infrastructure Sydney Metro City & Southwest Chatswood to Sydenham Project. This VAMP has also been developed as a requirement of the Construction Environmental Management Framework (CEMF). The VAMP identifies visual amenity related measures that will be implemented to achieve objectives outlined within Section 0 of this plan including processes and measures that will be used to incorporate principles of Crime Prevention Through Environmental Design (CPTED) in the design and construction of temporary site facilities.

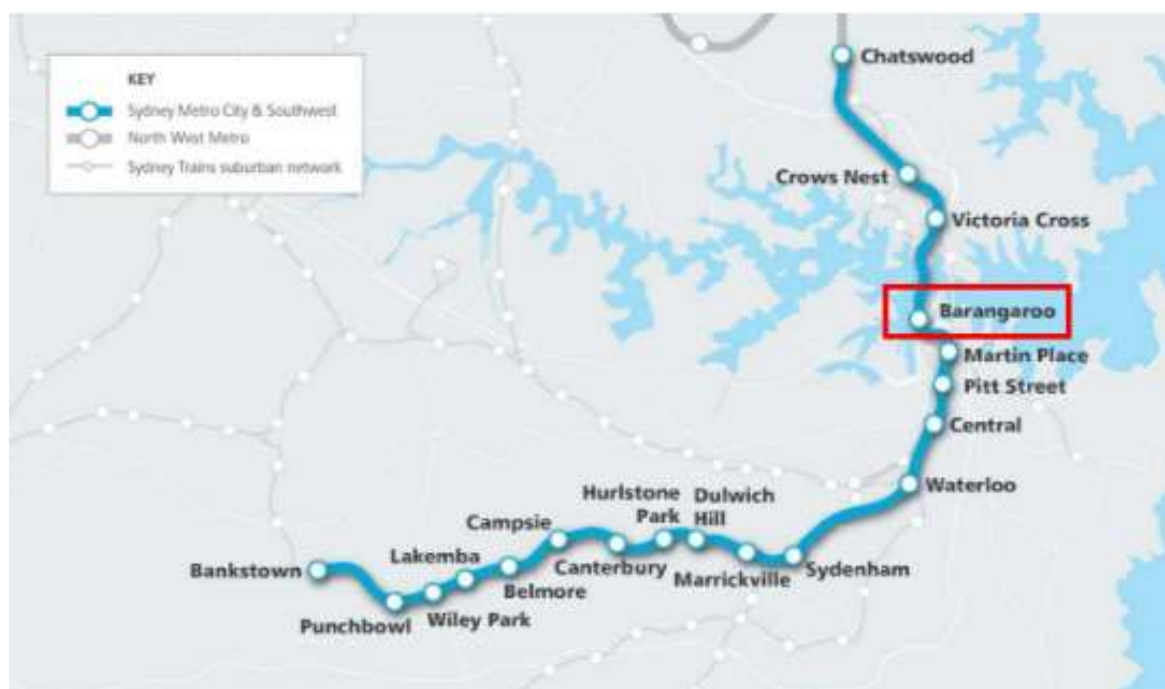
## 1.2 Project Background

BESIX Watpac have been engaged by Sydney Metro to build the Barangaroo Station Construct Only Package (COP), forming part of the broader Sydney Metro City & Southwest Chatswood to Sydenham project. Most of the station box primary structure has been completed by the Tunnel and Excavation Contractor (TSE), prior to Project commencement and BESIX Watpac will complete the station fit-out and associated civil and landscaping works.

## 1.3 Site Location

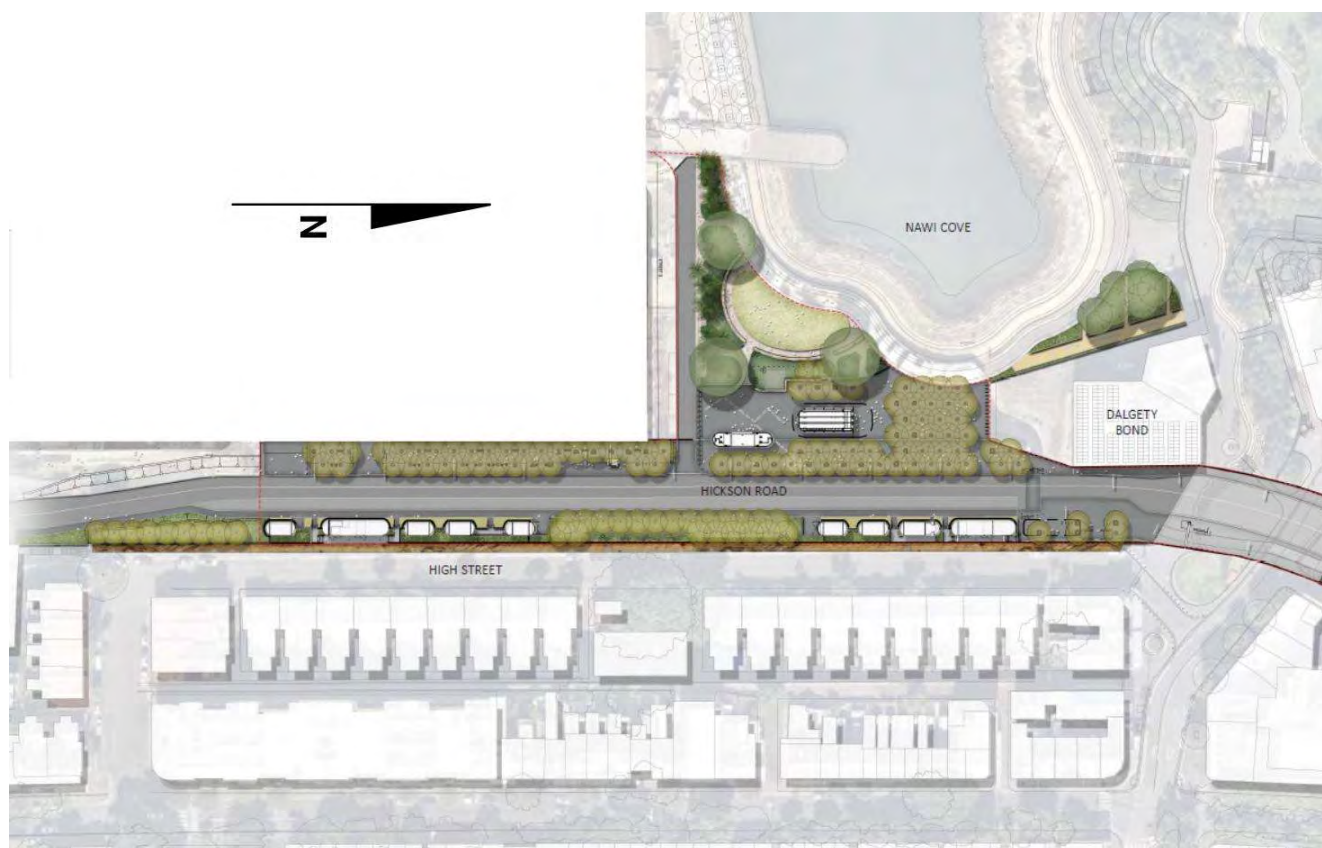
The Barangaroo Metro station is part of the Sydney Metro City & Southwest Chatswood to Sydenham project located between the future Victoria Cross and Martin Place stations as shown in Figure 1 below:

**Figure 1** City & Southwest Project – Barangaroo Station Context



The project site is located north of the Barangaroo precinct below Hickson Road on the North Western edge of the Sydney CBD and adjacent to Nawi Cove as per Figure 2. The station is the most northerly of the CBD stations.

**Figure 2**      **Location of Barangaroo Station**



## 1.4 Scope of Works

The Project consists of the following:

- Structural and civil completion works to the station box;
- Fitout, testing and commissioning of the new metro station;
- Stormwater trunk mains works from Hickson road precinct to the existing pit at western end of the Site;
- Installation of a cooling water system within the Barangaroo cutaway and associated trenching and pipework;
- Hickson Road precinct works including road, footpath, cycleway, landscaping, street lighting, stormwater, utilities works and ventilation pod risers;
- Backfilling and surface reinstatement of the temporary northern (Hickson Road) shaft; and
- Staging and temporary works required to deliver the permanent works, including removal of the temporary Hickson Road bridge structure.

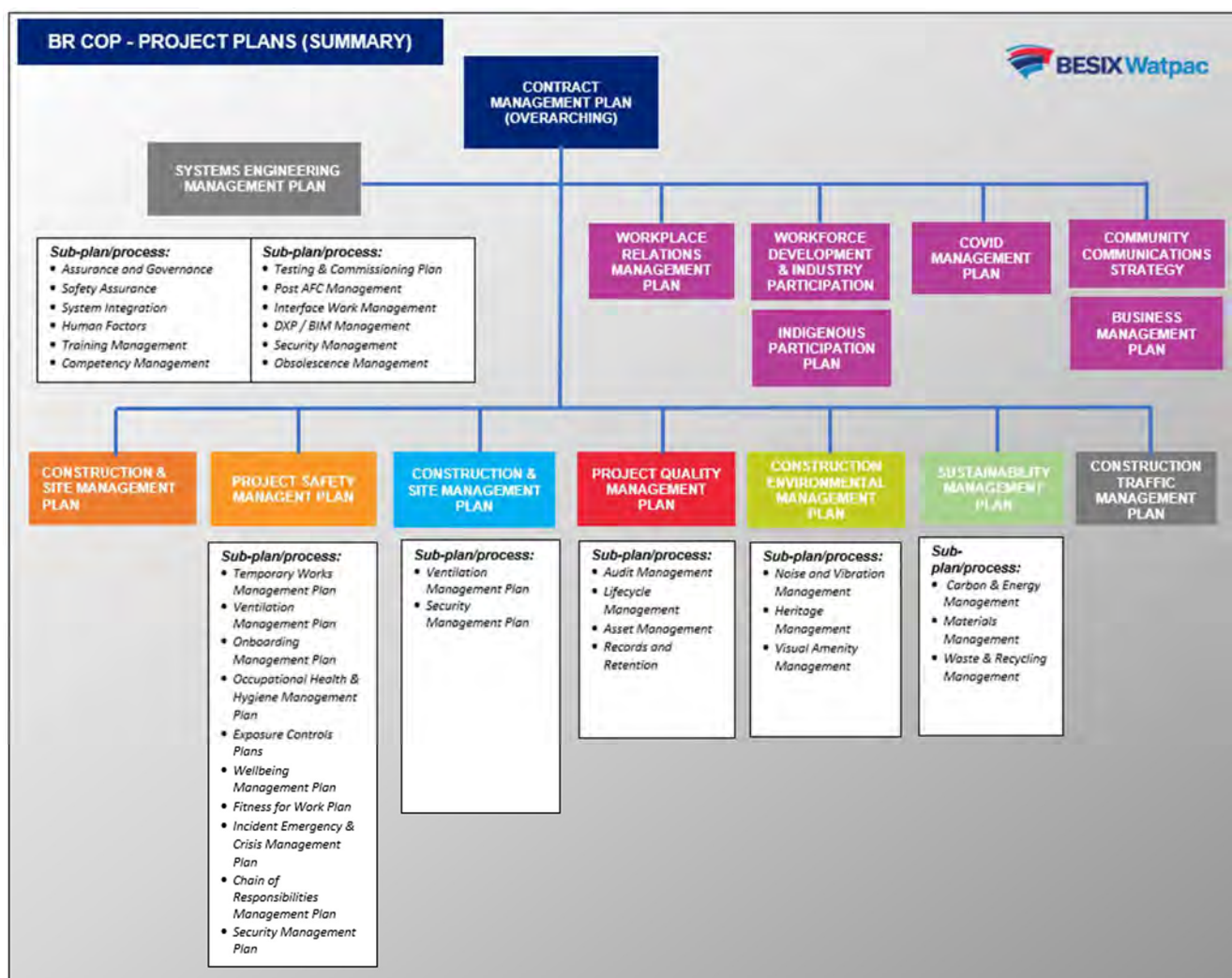
## 1.5 Project Plans

The Visual Amenity Management Plan exists as a sub plan to the Construction Environmental Management plan (CEMP).

The CEMP and its sub plans operate under the overarching Contract Management Plan (CM) as shown in Figure 3 below:



Figure 3 Project Management Plans



## 1.6 Construction Activities

Works will be staged within a constrained site located relatively close to Sydney Harbour, other development works and nearby existing heritage properties.

Detailed work components are listed in Section 1.6.1 below.

BESIX Watpac will implement The Station Design and Precinct Plan (SDPP), which has been prepared by Sydney Metro, in accordance with CoA E101 as it relates to the Barangaroo Metro station project.

### 1.6.1 Detailed Construction Activities

The delivery of Barangaroo Station will involve the following detailed activities outlined in Table 1. The civil works and the above ground station activities are the main consideration in this VAMP.

Table 1 Detail Construction Activities

Component	Description of Work
Civil	<ul style="list-style-type: none"> <li>Installation and maintenance of access routes within site</li> <li>Stormwater trunk drainage</li> <li>Demolition and reinstatement of Hickson Road</li> <li>Staged road, lane and footpath movements Hickson Road</li> <li>Civil works, trenching of in ground services</li> </ul>

Component	Description of Work
	<p>Demolition of perimeter capping beam and removal of steel girders, temp ramp</p> <p>Installation of waterproofing to station roof,</p> <p>Closure and backfilling to northern shaft</p> <p>Seawall diving, incl installation on stainless steel entry/exit cages and clearing of waterway entry/exits</p> <p>Main walkway, incl 2x chambers works, installation of pipe work connectors</p> <p>Headland Park – build and fit out seawater heat exchanger room, install pipes/systems, LV feeder cables and building services (mech, fire, lights etc)</p> <p>Headland to BR COP install supply/return chiller lines, LV feeder and control cables</p> <p>Landscaping (hard and soft), public plaza and precinct activation works</p> <p>Implementation of the Interchange Access Plan</p> <p>Provisions for advertising, Implementation of the Heritage Interpretation Plan and implementation of the Station Design and Precinct Plan</p> <p>Operation of the WTP and discharge into Sydney Harbour</p>
Site Establishment	<p>Establishment of a new site compound comprising temporary demountable site sheds, offices, toilets and showers, lunchrooms, change rooms, storage containers, rapid antigen testing and first aid sheds.</p> <p>Relocation of the existing TSE site compound for re-use by BESIX Watpac</p> <p>Establishment of site sheds, cranes, laydown areas, hoarding, refuelling areas and temp ventilation.</p> <p>Continual operation of the on-site Water Treatment Plant (WTP) which discharges to Sydney Harbour.</p>
Station Works	<p>Establishment of site sheds, cranes, laydown areas, hoarding, temp ventilation etc</p> <p>Construction of platform and over-track exhaust;</p> <p>Temp staging for installation of internal cladding and services fitout.</p> <p>Internal equipment and lifting gantries</p> <p>All station fit-out, including cladding, façade and entrance canopy, lift canopy and stair and ventilation pods</p> <p>Fitout trades, building services, including long run escalators and lifts</p> <p>Plant and equipment rooms;</p> <p>Back of house cleaners and waste rooms</p> <p>Public and staff toilets;</p> <p>Low-voltage electrical, earthing, fire, hydraulics, lighting and mechanical systems, including earthing and bonding as associated with works</p> <p>Building management control system;</p> <p>Select equipment and access provisions for Interface Contractors;</p> <p>Lifts and escalators;</p> <p>Signage and wayfinding;</p> <p>Landscaping (hard and soft), public plaza and precinct activation works;</p> <p>Bicycle parking facilities;</p> <p>Provisions for advertising, and public art;</p> <p>Operation of the Basement 3 de-pressurisation pumps.</p>
Electrical & Coms (including Interface Contractors works in station)	<p>Signalling and train control systems;</p> <p>Traction Power system;</p> <p>Track and tunnel services;</p> <p>Platform Screen Doors;</p> <p>Sydney Metro central control system;</p> <p>Sydney Metro communications system;</p> <p>Passenger information display systems;</p> <p>Public address systems;</p> <p>Audio frequency induction loop system;</p> <p>Sound system and intercom system for emergency purposes</p> <p>Closed circuit television systems;</p> <p>Help Point systems;</p> <p>Electronic access control systems;</p> <p>Local area networks;</p>

Component	Description of Work
	<ul style="list-style-type: none"> <li>UHF radio systems;</li> <li>UHF distributed antenna system;</li> <li>Train radio communication systems;</li> <li>Precise clocks system;</li> <li>Electronic access system;</li> <li>Fibre and copper backbone;</li> <li>High voltage power supply and distribution system;</li> <li>Tunnel Ventilation System;</li> <li>Tunnel ventilation nozzles; and</li> <li>Electronic ticketing system (ETS)</li> </ul>

## 1.7 Temporary Works

Temporary works considered in the VAMP include:

- Site facilities;
- Main tower crane;
- Mobile cranes;
- Temporary arrangements to divert and control pedestrians and traffic, including the Nawi Cove pedestrian diversion bridge;
- Construction hoardings;
- Access gates to various civil works zones;
- Water Treatment Plant (WTP) - both existing temporary plan and as relocated/replaced;
- Temporary service diversions attached to the Hickson Road wall; and,
- Temporary works to support trenching and utilities installation.

## 1.8 Site Compound Works

Site compound works including fencing, hoardings, maintenance access, utilities works, drainage, road and transport network works, temporary site office and welfare facilities, laydown areas and works sites to support construction activities.

## 1.9 Working Hours

Works are proposed to be carried out during standard working hours of 7 am to 6 pm Monday to Friday and 8 am to 6 pm Saturdays.

Works may be undertaken outside of these standard construction hours where those works have been described in CoA E48 (such as station and tunnel fitout and haulage and delivery of spoil and materials) and under the circumstances described in CoA E44 (refer CEMP Section 1.2.6 for further details).

## 1.10 Timing and Scheduling

Staged construction works are scheduled over the course of the Project. Portion 1, comprising of Site access and establishment was expected in Q3 2021 and occurred in Q4 2021. Portion 2, compromising station fit-out works and station utility works, and Portion 3, involving the finalisation of the external landscaping and public domain works with substantial completion scheduled for mid Q3 2023 and the balance of the works consisting mostly defects rectification and handover activities carried out until the end of Q4 2023.

Most activities associated with demolition and structural works were completed by end Q4 2022. Utilities services works were carried out in Q1 to Q3 2022.

## 1.11 Consultation with Stakeholders

The VAMP was submitted for review by Sydney Metro and endorsed by the Environmental Representative (ER) and will be reviewed by BESIX Watpac on a six monthly basis and re-issued if amendments are required.

Where identified in the Community Communications Strategy (CCS) and Business Management Plan (BMP) businesses impacted by the works may need appropriate signage. A study indicated that this is minimal due to the existing construction activities and that few businesses are located within the immediate proximity of the works.

## 2. Objectives & Targets

The objectives of the VAMP reflect those described in the Construction Environmental Management Framework and are as follows:

- Minimise impacts on existing landscape features as far as feasible and reasonable;
- Ensure the successful implementation of the Landscape Design; and
- Reduce visual impact of construction to surrounding community.

This plan aims to achieve the following:

- Compliance with the Conditions of Approval (CoA);
- Visual amenity management and controls that are effective and properly maintained at all times; and,
- Alignment of outcomes with Crime Prevention Through Environmental Design (CPTED) principles as required by section 12.2 (a)(v) of the CEMF.

## 3. Legislative and Other Requirements

**Table 2**      *Key legislative Requirements*

Legislation	Requirement	Project Obligation
Environmental Planning and Assessment Act 1979 (EP&A Act)	This Act establishes a system of environmental planning and assessment of development proposals for the State.	The approval conditions and obligations are incorporated into this VAMP. Section 79C provides Crime Prevention Legislative Guidelines. The guidelines contain two parts. Part A details the need for a formal crime risk assessment (Safer By Design Evaluation) to be done in conjunction with trained police, and Part B outlines basic CPTED principles and strategies that can be used by consent authorities to justify the modification proposals to minimise risk.

The BESIX Watpac Planning and Environment Manager will review legislative and regulation requirements at six monthly intervals during construction, as part of the management review of this VAMP and updated with any applicable changes. The Environment and Planning Manager will consult with internal legal advisors, SM and the ER to ensure new legislation is captured in review. Any changes made to the legal and other requirements registers will be communicated to the wider project team where necessary through toolbox talks, specific training and other methods detailed in Section 5.2. The BESIX Watpac Environment and Planning Manager will consult with internal legal advisors, SM and the ER to ensure new legislation is captured in the review.

### 3.1 Standards & Guidelines

Guidelines and standards relating to this VAMP include:

- AS 4282-1997 Control of the Obtrusive Effects of Outdoor Lighting;

- AS/NZ 1158 — Lighting for Roads and Public Spaces;
- Crime Prevent Through Environmental Design Principles; and
- Australian Standard AS4970 the Australian Standard for Protection of Trees on Development Sites and Adjoining Properties.
- Sydney Metro Brand Style Guidelines

## 3.2 Planning Requirements

This project falls under the construction and operation of the section between Chatswood and Sydenham known as “CSSI\_7400”. Approval was granted on 9 January 2017 followed by nine approved modifications;

- MOD 1 – Victoria Cross and Artarmon Substation (determined 18 October 2017)
- MOD 4 – Sydenham Station and Metro Facility South (determined 13 December 2017)
- MOD 2 – Central Walk (determined 21 December 2017)
- MOD 3 – Martin Place Metro Station (determined 22 March 2018)
- MOD 5 – Blues Point Acoustic Shed (determined 2 November 2018)
- MOD 6 – Administrative Changes (determined 21 February 2019)
- MOD 7 – Administrative Changes (determined 24 June 2020)
- MOD 8 – Blues Point Access Site (determined 25 November 2020)
- MOD 9 – Extension to standard construction hours (determined 30 June 2022)

BESIX Watpac will be required to comply with CSSI\_7400, including the relevant modifications to this approval, to the extent required by Sydney Metro.

The environmental assessments relevant to the project, which have been referenced during the preparation of this CEMP are:

- Sydney Metro City & Southwest – Chatswood to Sydenham – Environmental Impact Statement (May 2016). Referred as the ‘EIS’
- Revised Environmental Mitigation Measures (REMMs) which are updated with each approval modification

The compliance matrix of how the VAMP complies with CoA, REMMs, and the CEMF is included in Appendix A.

## 4. Roles and responsibilities

Roles and responsibilities reflect those outlined in the management and implementation of the CEMP (refer CEMP Section 5).

BESIX Watpac Planning and Environmental Manager is responsible for overseeing the implementation and compliance with the VAMP. The Planning and Environmental Manager reports to the Project Director and has authority to direct any team member to comply with the requirements of this plan.

The Environmental Coordinator (a site engineer) will be responsible for daily surveillance and monitoring of all visual amenity aspects including hoarding condition.

## 5. Existing Environment

Barangaroo is currently being redeveloped, with the area divided into three precincts:

- Barangaroo Reserve is located at the northern end of Barangaroo where it meets Millers Point. It is a six hectare foreshore park opened in 2015, designed as a contemporary interpretation of the pre-1836



headland, with bush walks, grassed areas, lookouts, walking and cycle paths. A plaza has been created at North Cove, marking a southern entry to the Reserve at Hickson Road

- Central Barangaroo is currently being planned. The site for the proposed station is in Central Barangaroo. It will be the cultural heart of Barangaroo and is expected to include civic and cultural attractions with recreational, residential, retail and commercial uses. Although the actual building heights, form and massing are not yet known, the planned site development envelopes allow for medium and high density urban form
- Barangaroo South is a major extension of the Sydney CBD with a number of high-rise buildings and stepping down to mid-rise development along the harbour foreshore. Planned as a mixed use precinct, it has office buildings, residential apartments, an international hotel, shops, cafes and restaurants, and a waterfront promenade. Transport for NSW has constructed a ferry hub at Barangaroo, which opened to customers in 2016.

The existing character of Barangaroo to consider during the construction stage is described in the Chatswood to Sydenham EIS Landscape character and visual amenity – Chapter 16.

*“Hickson Road forms the eastern boundary of the Barangaroo site. Hickson Road is located at the base of a distinctive cliff about four storeys high. The cliff is a local visual feature, with its exposed sandstone rock face and masonry, heritage railings and staircase cut into the stone. The cliff also creates a strong spatial ‘edge’ to the Barangaroo peninsular between Munn Street and the High Street stairs in the south, and a physical barrier to east–west movement. South of the High Street stairs, there are mixture of contemporary and heritage buildings which align with the line of the wall, addressing the road with a mix of commercial, offices and service entries. In this area, there is a second staircase, providing access to the upper levels of the peninsula along Kent Street. Hickson Road is currently two lanes with parking and an avenue of mature Fig trees on the western side, and a cluster of Livistona palms to the east, adjacent to the cliff, marking the stair entry on the eastern side of the road. High Street runs along the top of the escarpment, offering panoramic, open views across Barangaroo, and the harbour beyond. A line of heritage listed terrace houses (‘Terrace duplex group’ at 2–80 High Street) line the eastern side of High Street and are a visual feature in views towards the site, as well as in local streetscape views.”*

Further, during Construction, chapter 16.4.7 of the Chatswood to Sydenham EIS Landscape character and visual amenity document states in relation to Barangaroo that

*“During construction, there would be minor adverse landscape impact on Hickson Road due to the direct impacts of vehicular and pedestrian movement and the lack of mature street trees. However, it is expected that there would not be perceived change to the landscape quality of Barangaroo Reserve (resulting in negligible landscape impact) due to the context of the continuing development across the Barangaroo peninsular including works at Central Barangaroo”*

Representative Viewpoints during construction, extracted from the EIS are shown below in Figure 4.

**Figure 4 Representative Viewpoints during construction**



Viewpoints 4 to 8 have been assessed as having a minor to moderate adverse potential visual impact temporarily during construction, mainly due to the extension of current works east across Hickson Road (refer Table 16-28 from the EIS).

Views 5 and 6 are potentially valued by a major portion of public users of that area. Views 4, 7 and 8 are views more experienced by local residents.

The following potentially sensitive receivers have been identified locally as being impacted visually by the Barangaroo Metro Station during construction:

- Local residents along High Street, Hickson Road and Dalgety Roads in Millers Point
- KU Lance childcare centre on High Street
- Local businesses including, The Argyle bar, Hotel Palisade and the Langham Hotel

During construction the following activities and elements of the site would be visible to local sensitive receivers:

- Site hoarding generally and site access gates
- Temporary site construction compound
- The existing acoustic shed over the northern access shaft on Hickson Road
- Operation of plant and equipment including the tower crane and general construction plant and equipment
- Construction activities being carried out at surface level including demolition works, the reconfiguration of Hickson Road, civil works, the construction of the station entry pods, ventilation pods and egress stairs as well as general landscaping activities.

## 6. Crime Prevention Through Environmental Design (CPTED)

CPTED principles identify opportunities for natural surveillance, lighting, walkways, signage and landscape.

The principles of *Crime Prevention Through Environmental Design* will be incorporated throughout the design and construction of temporary and permanent facilities. The key principles adopted in relation to the public realm at the Project site include:

- 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 of resources which need to be expended.
- Reducing the potential rewards of crime minimising by removing or concealing “crime benefits”.
- Removing conditions that create confusion about required norms of behaviour.

Access control minimise opportunities for crime and increase the effort required to commit crime. By making it clear where people are permitted to go or not go, it becomes difficult for potential offenders to reach and victimise people and their property. Fence and barriers are required to be secure however not create a hostile environment.

Natural surveillance increases the threat of apprehension by taking steps to increase the perception that people can be seen. Natural surveillance occurs by designing the placement of physical features, activities and people in such a way as to maximize visibility and foster positive social interaction among legitimate users of private and public space. Potential offenders feel increased scrutiny and limitations on their escape routes.

Territorial reinforcement promotes social control through increased definition of space and improved proprietary concern. By using fences, pavement, signs, lighting and landscape to express ownership and define public, semi-public and private space, natural territorial reinforcement occurs. Territorial reinforcement measures make the normal user feel safe and make the potential offender aware of a substantial risk of apprehension or scrutiny. Display security system signage at access points.

## 7. Visual Amenity Management

### 7.1 BESIX Watpac responsibilities

Table 3 below lists out the visual amenity mitigation measures to be implemented by BESIX Watpac during construction:

**Table 3** Construction Visual Amenity Mitigation Measures

Item	Visual Amenity Mitigation Measures
General	In accordance with REMM LV4 visual mitigation would be implemented as soon as feasible and reasonable after the commencement of construction, and remain for the duration of the construction period
Temporary Site Hoardings	<p>In accordance with REMM LV6, the design and maintenance of construction site hoardings would aim to minimise visual amenity and landscape character impacts, including the prompt removal of graffiti. Public art opportunities would be considered.</p> <p>In accordance with E21(b)(i), opportunities to incorporate heritage interpretation from the Metro Heritage Interpretation Plan (HIP) into the site hoarding will be considered</p>

Item	Visual Amenity Mitigation Measures
Graffiti and Advertising Material	<p>Visible graffiti and advertising material will be dealt with in accordance with the following timeframes:</p> <p>Offensive graffiti will be removed or covered within 24 hours</p> <p>Highly visible graffiti will be removed or covered within 1 week</p> <p>Graffiti which is neither offensive or highly visible will be removed within 1 month</p> <p>Advertising material and bills posted on the site hoarding will be removed or covered within 1 week</p>
Site lighting	<p>In accordance with REMM LV3, lighting of the construction site would be oriented to minimise glare and light spill impact on adjacent receivers.</p> <p>Minimise glare and light spill impacts by ensuring lighting directed only downwards to work areas. Ensure compliance to AS4282:1997</p>
Site Compound	<p>Site sheds will be maintained to a high standard. The site office will be located within an existing adjacent building and maintained to a high standard.</p> <p>In accordance with CEMF Section 12.2(v), CPTED principles will be applied in the design of the temporary site sheds</p>
Loose rubbish/ litter	<p>Daily inspections and regular cleaning will be undertaken as well as toolbox talks highlighting the importance of a clean site to the work force</p>
Material and Plant / Equipment storage	<p>In accordance with REMM LV1, where feasible and reasonable, the elements within construction sites should be located to minimise visual impacts, for example materials and machinery would be stored behind fencing.</p> <p>Elements such as material stockpiles would be located to minimise visual impacts, where feasible and reasonable</p>
Temporary Works	<p>Temporary works, accessible to the general public, will be constructed to meet CPTED principles and have graffiti resistant coatings applied where required, such as on outward facing surfaces</p>
Water treatment plant	<p>When relocating existing plant, locate away from public site perimeter if reasonable and feasible to do so.</p>
Traffic	<p>Ensure minimised and in line with Construction Traffic Management Plan (CTMP). Ensure signage clearly defines designated areas with respect to use</p>
Vegetation & existing Landscaping	<p>In accordance with REMM LV2 existing trees to be retained would be protected prior to the commencement of construction in accordance with <i>Australian Standard AS4970</i>.</p> <p>As per REMM LV5, opportunities for the retention and protection of existing trees would be identified during detailed construction planning</p> <p>An Arboricultural Impact Assessment was undertaken for the trees near the Cutaway that concluded transplantation was not feasible. As per the Landscape plans these trees will be replaced with the same species or approved equivalent, which will result in no net loss of visual amenity at the conclusion of the works.</p>
Implementation of the Station Design and Precinct Plan (SDPP)	<p>Adherence to the SDPP produced for the Site.</p> <p>In accordance with CoA Condition E102, the SDPP must achieve a minimum visual impact rating of at least "Minor Benefit" as defined in the EIS for all design elements of the project, where feasible and reasonable.</p>

In accordance with Section 4.4 of the CEMF the design of all temporary works will require Sydney Metro approval in relation to urban design and visual impacts.

## 7.2 Sydney Metro visual amenity responsibilities

Sydney Metro are responsible for the design of the station and the establishment of the Design Review Panel (DRP) as per CoA E100, and the preparation and approval of the Station Design and Precinct Plan (SDPP) as per CoAs E101, E102 and E103. The construction of Barangaroo station is a construct only

contract for BESIX Watpac who are responsible for ensuring that Barangaroo station is constructed in accordance with the approved SDPP, as it relates to Barangaroo.

Sydney Metro are responsible for incorporating visual amenity mitigation measures into the design of Barangaroo Station as outlined in Table 4 below:

**Table 4**      *Design Visual Amenity Mitigation Measures*

Item	Visual Amenity Mitigation Measures
Lighting	In accordance with CoA E105, the placement of CCTV cameras associated with the CSSI must be undertaken in consultation with the relevant public authority and the NSW Police,
Lighting	In accordance with CoA E104, all permanent external lighting must be the minimum level of illumination necessary and must comply with AS:4282:1997 – <i>Control of the Obtrusive Effects of Outdoor Lighting</i> and relevant Australian Standards in the series AS/NZ 1158 – <i>Lighting for Roads and Public Spaces</i> .
Design	The SDPP is approved by NSW Department of Planning and the Environment and publically available.
Design	A Design Review Panel (DRP) will be established in accordance with CoA E100 to refine design objective for place making, public realm and urban and heritage interpretation

## 8. Training

As per CEMP Section 5.2, all relevant site personnel will undertake training via inductions and/or toolbox talks to support the VAMP.

This may include:

- Environmental awareness training and
- Specific relevant visual amenity issues such as
  - › Hoarding and fencing requirements
  - › Storage of materials and plant in laydown areas
  - › General housekeeping and litter collection
  - › Reporting graffiti, and procedures to clean up
  - › Lighting and effects on external parties
  - › Signage and effect of traffic and pedestrian users

## 9. Monitoring, Auditing and Reporting

As per CEMP Section 6 there will be daily surveillance of visual amenity aspects by the Environmental Coordinator. Weekly inspections will be carried out by the Planning and Environmental Manager.

Inspections are to identify both negative and positive issues and proposed actions required to rectify.

Result and outcomes will be reported together with CEMP each month.

Compliance record generation and management will be carried out as required by CEMP section 12.2(a)(vi) and 12.2(c).



## 10. Document control

The VAMP will be reviewed annually and updated as per the CEMP (refer Section 1.11). Minor amendments will be sent to the ER for approval.

## 11. Complaints and Incident Management

The VAMP will follow procedures in CEMP Section 7.6 and 8 respectively and Community Communications Strategy (CCS) and Business Management Plan (BMP).

The background image shows a modern building with a glass facade, partially obscured by green foliage. The building has a blue-tinted glass and a dark frame. The foliage is lush and green, with some leaves in the foreground being out of focus. The overall scene is bright and sunny, with shadows cast on the building and the foliage.

# Appendix A Visual Amenity Compliance Matrix

**Table 5 Compliance Matrix – CoAs, REMMs & CEMF**

Category	ID	Requirement	Reference
<b>Conditions of Approval – CSSI Sydney Metro City &amp; Southwest Chatswood to Sydenham</b>			
<b>Heritage Interpretation</b>	E21	<p>The Proponent must prepare a Heritage Interpretation Plan which identifies and interprets the key Aboriginal and Non-Aboriginal heritage values and stories of heritage items and heritage conservation areas impacted by the CSSI. The Heritage Interpretation Plan must inform the Station Design and Precinct Plan referred to in Condition E101. The Heritage Interpretation Plan must be prepared in accordance with the NSW Heritage Manual, the NSW Heritage Office's Interpreting Heritage Places and Items: Guidelines (August 2005), and the NSW Heritage Council's Heritage Interpretation Policy and include, but not be limited to:</p> <p>(a) a discussion of key interpretive themes, stories and messages proposed to interpret the history and significance of the affected heritage items and sections of heritage conservation areas including, but not limited to the Sydney Terminal and Central Railway Stations Group, Martin Place Station, Sydenham Station and Sydenham Pit and Drainage Pumping Station Precincts;</p> <p>(b) identification and confirmation of interpretive initiatives implemented to mitigate impacts to archaeological Relics, heritage items and conservation areas affected by the CSSI including;</p> <p>i. use of interpretive hoardings during construction</p> <p>ii. community open days</p> <p>iii. community updates</p> <p>iv. station and precinct design; and</p> <p>(c) Aboriginal cultural and heritage values of the project area including the results of any archaeological investigations undertaken.</p>	Section 7.1
<b>Urban Design</b>	E99	The CSSI must be constructed in a manner that minimises visual impacts of construction sites, including, providing temporary landscaping where appropriate to soften views of the construction sites, minimising light spill, and incorporating architectural treatment and finishes within key elements of temporary structures that reflect the context within which the construction sites are located.	This VAMP
<b>Design Review Panel</b>	E100	<p>The Proponent must establish a Design Review Panel (DRP) to refine design objectives for place making, public realm and urban and heritage integration applicable to the length of the project and provide advice on the application of the objectives to key design elements in relation to place making, architecture, heritage, urban and landscape design and artistic aspects of the CSSI.</p> <p>The DRP must:</p> <p>(a) comprise five members who are experts in one of the identified design elements;</p> <p>(b) include the NSW Government Architect as Chair (or their representative);</p> <p>(c) invite the Heritage Council (or delegate) to participate in meetings on matters that have been referred to it by the Proponent in consultation with the Heritage Office. The independent heritage architect must also be invited to advise on matters relating to other heritage issues where this capability is not held by one of the members referred to in (a) or (b);</p> <p>(d) invite relevant Council(s) and other key stakeholders (such as UrbanGrowth NSW) to participate in meetings to advise on local issues and applicability of design review outcomes as they relate to the local context of each station;</p> <p>(e) meet at least four times a year, or any other timeframe agreed by the DRP; and</p> <p>(f) keep meeting minutes and a schedule of action items arising from each meeting.</p>	Section 7.2
<b>Design Review Panel</b>	E101	Before commencement of permanent built surface works and/or landscaping, the Proponent must prepare Station Design and Precinct Plans (SDPP) for each station. The SDPP must be prepared by a suitably qualified and experienced person(s), in collaboration and consultation with relevant stakeholders including but not limited to relevant council(s), UrbanGrowth	Section 7.2



Category	ID	Requirement	Reference
		<p>NSW, the Department, Chambers of Commerce and the local community. The SDPP(s) must present an integrated urban and place making outcome for each station or end state element. The SDPP(s) must be approved by the Secretary following review by the DRP and before commencement of permanent aboveground work.</p> <p>Each SDPP must include, but not be limited to:</p> <ul style="list-style-type: none"> <li>(a) identification of specific design objectives, principles and standards based on - i. the project design objectives as refined by the DRP; ii. maximising the amenity of public spaces and permeability around entrances to stations; iii. local environmental, heritage and place making values; iv. urban design context; v. sustainable design and maintenance; vi. community safety, amenity and privacy, including 'safer by design' principles where relevant; vii. relevant urban design and infrastructure standards and guidelines (including relevant council standards, policies and guidelines); viii. minimising the footprint of the project (including at operational facilities);</li> <li>(b) opportunities for public art;</li> <li>(c) landscaping and building design opportunities to mitigate the visual impacts of rail infrastructure and operational fixed facilities (including the Chatswood Dive, Marrickville Dive, Sydney Metro Trains Facility South, Artarmon Substation, station structures and services, noise walls etc.);</li> <li>(d) the incorporation of salvaged historic and artistic elements onto the project design, including but not limited to the Tom Bass P&amp;O fountain, the Douglas Annand glass screen (if present), the Douglas Annand wall frieze and heritage fabric from Martin Place Station, unless otherwise agreed by the Secretary;</li> <li>(e) details on the location of existing vegetation and proposed landscaping (including use of endemic and advanced tree species where practicable). Details of species to be replanted/revegetated must be provided, including their appropriateness to the area and habitat for threatened species;</li> <li>(f) a description of the CSSI design features, including graphics such as sections, perspective views and sketches for key elements of the CSSI;</li> <li>(g) the location, design and impacts of operational lighting associated with the CSSI and measures proposed to minimise lighting impacts;</li> <li>(h) details of where and how recommendations from the DRP have been considered in the plan;</li> <li>(i) the timing for implementation of access, landscaping and public realm initiatives;</li> <li>(j) monitoring and maintenance procedures for vegetation and landscaping (including weed control), performance indicators, responsibilities, timing and duration and contingencies where rehabilitation of vegetation and landscaping measures fail; and</li> <li>(k) evidence of consultation with the community, local Councils and agencies in the preparation of on the SDPP(s) and how feedback has been addressed before seeking endorsement by the DRP.</li> </ul> <p>Elements covered by SDPP(s) must be complete no later than the commencement of operation of the Sydney Metro to paid services, unless otherwise agreed with the Secretary.</p> <p>Note: The SDPP may be submitted in stages to address the built elements of the CSSI and landscaping aspects of the CSSI</p>	
Design Review Panel	E102	The SDPP must achieve a minimum visual impact rating of at least "Minor Benefit" as defined in the EIS, as amended by the documents listed in A1, for all design elements of the project, where feasible and reasonable. Where it can be demonstrated, to the DRP's satisfaction, that a "Minor Benefit" is not achievable, then a "Negligible" visual impact rating must be achieved as a minimum	Section 7.2
Design Review Panel	E103	The Proponent must apply reasonable endeavours to negotiate with the Barangaroo Delivery Authority to integrate station ancillary components (i.e. traction substation, ventilation risers and skylights) associated with Barangaroo Station within the Barangaroo development complex. Should an integrated outcome for ancillary components not be achieved, the location and design outcome must be consistent with design objectives and endorsed by the DRP.	Section 7.2

Category	ID	Requirement	Reference
Lighting and Security	E104	All permanent external lighting must be the minimum level of illumination necessary and must comply with AS: 4282:1997 – Control of the Obtrusive Effects of Outdoor Lighting and relevant Australian Standards in the series AS/NZ 1158 – Lighting for Roads and Public Spaces.	Section 7
Lighting and Security	E105	The placement of CCTV cameras associated with the CSSI must be undertaken in consultation with the relevant public authority and the NSW Police.	Section 7.2
<b>REMMs compliance</b>			
Business	BI3	Appropriate signage would be provided around construction sites to provide visibility to retained businesses.	CCSBMP
Landscape	LV1	Where feasible and reasonable, the elements within construction sites would be located to minimise visual impacts, for example materials and machinery would be stored behind fencing.	Section 7
Landscape	LV3	Lighting of construction sites would be oriented to minimise glare and light spill impact on adjacent receivers.	Section 7
Landscape	LV4	Visual mitigation would be implemented as soon as feasible and reasonable after the commencement of construction and remain for the duration of the construction period.	Section 1.1
Landscape	LV6	The design and maintenance of construction site hoardings would aim to minimise visual amenity and landscape character impacts, including the prompt removal of graffiti. Public art opportunities would be considered.	Section 7
Landscape	LV7	The selection of materials and colours for acoustic sheds would aim to minimise their visual prominence.	Existing acoustic shed complies - , no change during construction
Landscape	LV10	Temporary impacts to public open space would be rehabilitated in consultation with the relevant local council and / or landowner.	Refer CTMP & CCSBMP
<b>CEMF Compliance</b>			
3.3	Construction Environmental Management Plan		
	d. As a minimum the CEMP will:		
	iii.	For each plan under the CEMP include a matrix of the relevant Conditions of Approval or Consent referencing where each requirement is addressed;	Appendix A
	iv.	For each plan under the CEMP, set objectives and targets, and identify measurable key performance indicators in relation to these;	Section 1.10
3.4	Construction Environmental Management Sub-Plans		
	a.	Subject to Section 3.3(b) and Section 3.2(b) the Principal Contractor will prepare issue- specific environmental sub plans to the CEMP and SMP which address each of the relevant environmental impacts at a particular site or stage of the project. Issue specific sub plans will include:	Title
	vii.	Visual amenity management;	This VAMP
4.4	Urban Design of Temporary Works		
	a.	Principal Contractors will ensure as a minimum:	Title
	i.	Temporary construction works including site hoardings and acoustic sheds consider urban design and visual impacts, including:	This VAMP
	s	Artwork, graphics and images to enhance the visual appearance of temporary works in high visibility locations;	Section 7 Hoardings
	-	Project information to raise awareness on benefits, explain the proposed works at each site and provide updates on construction progress;	Section 7 Hoardings & CCSBMP



Category	ID	Requirement	Reference
		- Community information, including contact numbers for enquiries / complaints;	Refer CEMP & CCSBMP
		- Signage and information to mitigate impacts on local businesses which may be obscured by the construction site;	This VAMP
		- Sydney Metro advertising / public awareness campaigns; and	This VAMP
		- Logos / branding, including Sydney Metro, NSW Government, and Contractor branding.	This VAMP
		b. The design of all temporary works will require TfNSW approval in relation to urban design and visual impacts.	Section 7
		c. Construction hoardings, scaffolding and acoustic sheds will be regularly inspected and kept clean and free of dust build up. Graffiti on construction hoardings, scaffolding or acoustic sheds will be removed or painted over promptly.	Section 7, 9
		d. The principles of Crime Prevention Through Environmental Design will be applied to all works, including temporary works, that have a public interface.	Section 6
12		Visual Amenity Management	Title
12.1		Visual Amenity Management Objectives	Title
		a. The following visual and landscape management objectives will apply to the construction of the project:	Title
		i. Minimise impacts on existing landscape features as far as feasible and reasonable;	Section 7
		ii. Ensure the successful implementation of the Landscape Design; and	Section 2
		iii. Reduce visual impact of construction to surrounding community.	Section 7
12.2		Visual Amenity Management Implementation	Title
		a. Principal Contractors will develop and implement a Visual Amenity Management Plan for temporary works which will include as a minimum:	
		i. The visual mitigation measures as detailed in the environmental approval documentation for construction;	Section 7
		ii. Input from an experienced Landscape or Urban Designer;	N/A due to existing site setup continuing
		iii. The maintenance of outward facing elements of site hoarding or noise barriers, including the removal of graffiti and weeds;	Section 7, CEMP Standard Procedures
		iv. Apply the principles of Australian Standard 4282-1997 Control of the obtrusive effects of outdoor lighting and relevant safety design requirements and detail mitigation measures to minimise lighting impacts on sensitive receivers for all permanent, temporary and mobile light sources;	Section 7
		v. Identify the processes and procedures that will be used for the incorporation of the principles of Crime Prevention Through Environmental Design (CPTED) in the design and construction of any temporary site facilities; and	Section 6
		vi. Compliance record generation and management.	Section 9
		b. Visual and landscape measures will be incorporated into the Principal Contractor's regular inspections including checking the health of retained vegetation around site boundaries, checking the condition of any site hoarding and acoustic sheds, and checking the position and direction of any sight lighting.	Section 7 & 9
		c. The Contractor will retain compliance records of any inspections undertaken in relation to visual and landscape measures.	Section 9

Category	ID	Requirement	Reference
12.3		Visual Amenity Mitigation	Title
		a. Examples of visual amenity mitigation measures include:	
		i. Wherever feasible and reasonable, vegetation around the perimeter of the construction sites will be maintained;	Noted Section 7
		ii. Temporary construction works will be designed with consideration of urban design and visual amenity as per Section 4.4; and	This VAMP
		iii. Temporary site lighting, for security purposes or night works will be installed and operated in accordance with AS4282:1997 Control of the Obtrusive Effect of Outdoor Lighting.	Section 7