

Central Station Main Works Project
Construction Visual Amenity and Landscape
Management Plan

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Sydney Metro City and Southwest, Central Station Main Works Project

Construction Visual Amenity and Landscape Management Plan

Central Station Main Works Project

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Project name	Central Station Main Works
Client	Sydney Metro City & South West – Sydney Metro)
Client contract number	CSMW
Laing O'Rourke contract number	K51

Revision history

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2	31/05/18	Revised following Sydney Metro / independent review / ER comments	CD / DC		CM
3	08/06/18	Revised following Sydney Metro comments / Environmental Representative	CD / DC		CM
4	15/06/18	Revised following Sydney Metro comments / Environmental Representative	CD		

Management reviews

Review Date	Reviewed By	Details	Initial	Date

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Terms and Definitions

The following terms, abbreviations and definitions are used in this plan.

Terms	Explanation
AHD	Australian Heritage Datum
ARI	Average Rainfall Intensity
AS	Australian Standard
Assurance Application	Laing O'Rourke's Online Tool to manage Non-Conformances
CAR	Corrective Action Request
CBD	Central Business District
CEMP	Construction Environmental Management Plan
CoA	Conditions of Approval
CBMP	Construction Biodiversity Management Plan
CPESC	Certified Practitioner in Erosion and Sediment Control
CPTED	Crime Prevention Through Environmental Design
CSSI	Critical State Significance Infrastructure
CSMW	Central Station Main Works Contract Package
CVALMP	Construction Visual Amenity and Landscape Management Plan
DPE	Department of Planning & Environment
ECM	Environmental Control Map
EIS	Environmental Impact Statement (Sydney Metro City and Southwest Chatswood to Sydenham dated 3 May 2016 submitted to the Secretary seeking approval to carry out the CSSI and as revised as required by the Secretary under the EP&A Act)
EPL	Environment Protection Licence
ER	Environmental Representative
ERSED Control	Erosion and Sediment Control
ISO	International Standardization Organisation
Laing O'Rourke	Laing O'Rourke Australia Construction Pty Limited
Minister	NSW Minister for Planning
OEH	Office of Environment and Heritage
PEM	Project Environmental Manager
RTS	Response to Submissions
SDS	Safety Data Sheet
SDPP	Station Design and Precinct Plans
SM	Sydney Metro (Transport for NSW)
SMCSW	Sydney Metro City and Southwest
SWMS	Safe Works Method Statement
TfNSW	Transport for New South Wales

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1. Introduction

1.1 Purpose

This Construction Visual Amenity and Landscape Management Plan (CVALMP) outlines the Central Station Main Works (CSMW) Project's (the Project) approach to managing impacts in accordance with Laing O'Rourke Construction Pty Limited's (Laing O'Rourke) legal, planning and contractual requirements and environmental management system. This CVALMP has been developed in compliance with Sydney Metro's requirements, Laing O'Rourke's environmental management system and the Minister's Conditions of Approval (CoA). The Plan incorporates the requirements of the Visual Amenity Management (as detailed in the Construction Environmental Management Framework).

1.2 Background

Sydney Metro City & Southwest – Chatswood to Sydenham Project is a new 30km metro line extending metro rail from the end of Sydney Metro Northwest at Chatswood under Sydney Harbour, through new CBD stations and southwest to Bankstown. It is due to open in 2024 with the capacity to run a metro train every two minutes each way through the centre of Sydney. The Project forms part of the Sydney Metro City & Southwest – Chatswood to Sydenham Project and includes the construction of new underground platforms at Central Station and new related pedestrian access ways. The works will be undertaken by Laing O'Rourke. The Project consists of the Metro Station Works, the Central Station Works and the Central Walk Works which are described in the sections below.

1.3 Planning Approval

The Project has been assessed by the Department of Planning and Environment under Section 115ZB of the *Environmental Planning and Assessment Act 1979* (EP&A Act) as Critical State Significant Infrastructure (CSSI). The Project, its impacts, consultation and mitigation were documented in the following suite of documents:

- Critical State Significant Infrastructure Application SSI 15_7400;
- Sydney Metro – Chatswood to Sydenham –Environmental Impact Statement (Jacobs/Aracadis/RPS, 2016);
- Sydney Metro – Chatswood to Sydenham –Response to Submissions and Preferred Infrastructure Report (Jacobs/Aracadis/RPS 2016); and

The Planning Assessment Commission granted Approval for the Project on 9 January 2017 and the Laing O'Rourke scope of works is subject to the Minister's Conditions of Approval.

Following approval of the Sydney Metro City and Southwest – Chatswood to Sydenham Project, a modification (SSI Mod 2: Central Walk) was assessed by the Department of Planning and Environment and subsequently approved on 21 December 2017 under section 115ZI of the EP&A Act.

The consolidated Conditions of Approval's for the Sydney Metro City and Southwest have been defined from the following approval modification documents.

- CSSI 7400 MOD 1 – Victoria Cross and Artarmon Substation (determined 18 October 2017)
- CSSI 7400 MOD 4 – Sydenham Station and Metro Facility South (determined 13 December 2017)
- CSSI 7400 MOD 2 – Central Walk (determined 21 December 2017)

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- CSSI 7400 MOD 3 – Martin Place Metro Station (determined 22 March 2018).

1.4 Overview of the Project

The Metro Station Works include the installation of new platforms that will be constructed using sophisticated excavation techniques to create a cavern with an island platform, beneath Central Station's existing heavy-rail platforms 12, 13, 14 and 15.

The Central Station Works include new infrastructure and the adjustments to existing infrastructure at Central Station to construct, operate and maintain the Metro Station Works. The key features of the Central Station Works include:

- a new north-south concourse for Central Station which will link the new metro station with the existing northern entrance and north concourse, a new concourse entitled 'the Central Walk'; and
- adjustments to the existing Paid Intercity Concourse, Olympic Tunnel, north concourse and northern entrance to Central Station.

The Central Walk Works include the provision of other infrastructure to provide improved connectivity and other operational enhancements throughout Central Station. The key features of the Central Walk Works include:

- a new eastern entrance for Central Station at Chalmers Street level;
- a new eastern concourse for Central Station beneath existing platforms 16 to 23 (the 'Central Walk'), which will link the new eastern entrance, the new north south concourse, existing platforms 16 to 23 and the existing Eastern Suburbs Railway (ESR) concourse; and
- provisions to enable the future construction (by others) of an extension of the Central Walk through a new west concourse and a new western entrance for Central Station.

1.5 Project Scope of Works

1.5.1 Permanent Works

The permanent new infrastructure to be constructed includes:

- Shortening of platforms 9 to 14 at the northern end, and a corresponding lengthening at the southern end;
- Demolition of platforms 13 to 15 and re-instatement of platforms 13 to 14 to accommodate the construction of the new metro station;
- Reinforcement of Platform 12 and demolition of exiting canopies of Platform 12;
- Minor existing canopy modifications for Platform 14 for lift risers and suburban platforms refreshing;
- Station excavation requiring the removal of approximately 230,000 cubic metres of spoil;
- Demolition of the 'Bounce Hostel'
- Construction of the new eastern pedestrian portal, the eastern concourse and related station access arrangements to existing platforms.
- Construction of power supply from Belmore Park substation to the CSM site; and

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1.5.2 Ancillary works

Ancillary works include fencing, maintenance access, utilities works, drainage, noise barriers, road and transport network works and temporary site office, laydown and work sites to support construction.

1.5.3 Power Supply Works

A new power temporary supply will be required to the site from the Belmore Park sub-station. Associated works will include:

- Establishing a new 11kV High Voltage Connection along Hay St, Elizabeth St and Eddy Ave;
- Removing the existing 4 x 5kV cables in existing 100mm conduits;
- Open trench from corner of Elizabeth St and Eddy Ave along Eddy Ave then road crossing Eddy Ave to a private site; and
- Install a new HV cable to the CSM site.

A new padmount substation will be installed in Sydney Yard to power the Sydney Yard Access Bridge and the construction of the Project. This will include temporary feeders from Chalmers Street and Sydney Yard West substations and a permanent feeder from Lee Street Substation.

1.5.4 Construction Hours

In accordance with Condition of Approval (CoA) – E36 - Construction, except as allowed by Conditions E47 and E48 (excluding cut and cover tunnelling), must only be undertaken during the following standard construction hours:

- 7:00am to 6:00pm Mondays to Fridays, inclusive;
- 8:00am to 1:00pm Saturdays; and
- at no time on Sundays or public holidays.

CoA E37 places further restriction on the hours that 'high noise impact' generating activities may occur. Conditions E44 and E45 also allows construction outside of scheduled hours under a range of conditions such as emergency works, where a negotiated agreement has been reached with a substantial majority of sensitive receivers who are within the vicinity of and may be potentially affected by the particular construction, etc.

Condition E47 requires an out of hours work protocol be developed and implemented for work outside of the above standard construction hours (refer also to Section 1.8.1 below). Condition E48 specifies that the following activities may occur 24 hours per day seven days a week, subject to Condition E47:

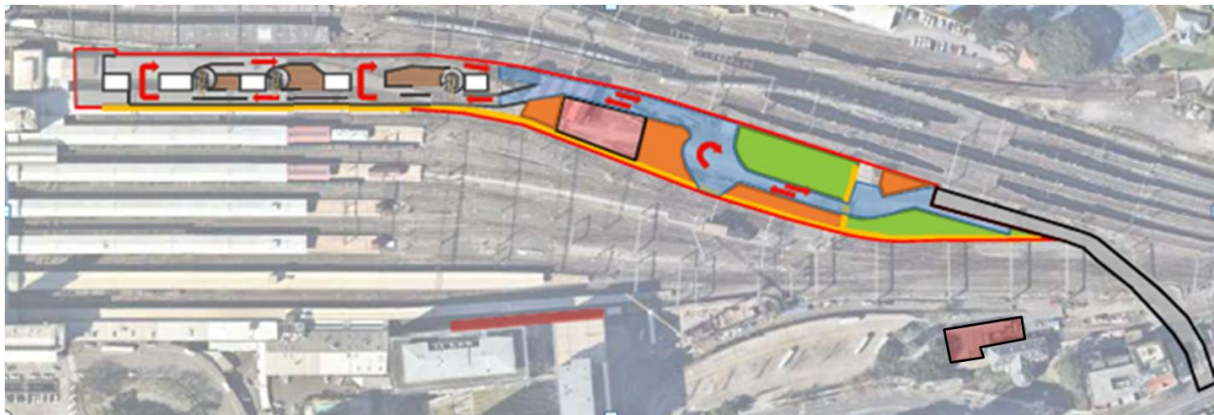
- a) tunnelling and associated support activities (excluding cut and cover tunnelling);
- b) excavation within an acoustic enclosure;
- c) excavation at Central without an acoustic enclosure (excluding Central Walk works at 20-28 Chalmers Street, Surry Hills);
- d) station and tunnel fit out; and
- e) haulage and delivery of spoil and materials.

1.6 Works Location and Site Layout

The Project location and site layout is highlighted in Figure 1.1 **Error! Reference source not found.** and Figure 1.2.

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Legend

- | | | | |
|-----------------------------|----------------------|-----------------------------------|----------------------|
| Worksite area and boundary | Accommodation area | Emergency evacuation muster point | Spoil load out areas |
| Laing O'Rourke laydown area | Pedestrian footpaths | Sydney Trains laydown | Access haul roads |

Figure 1.1: The Project

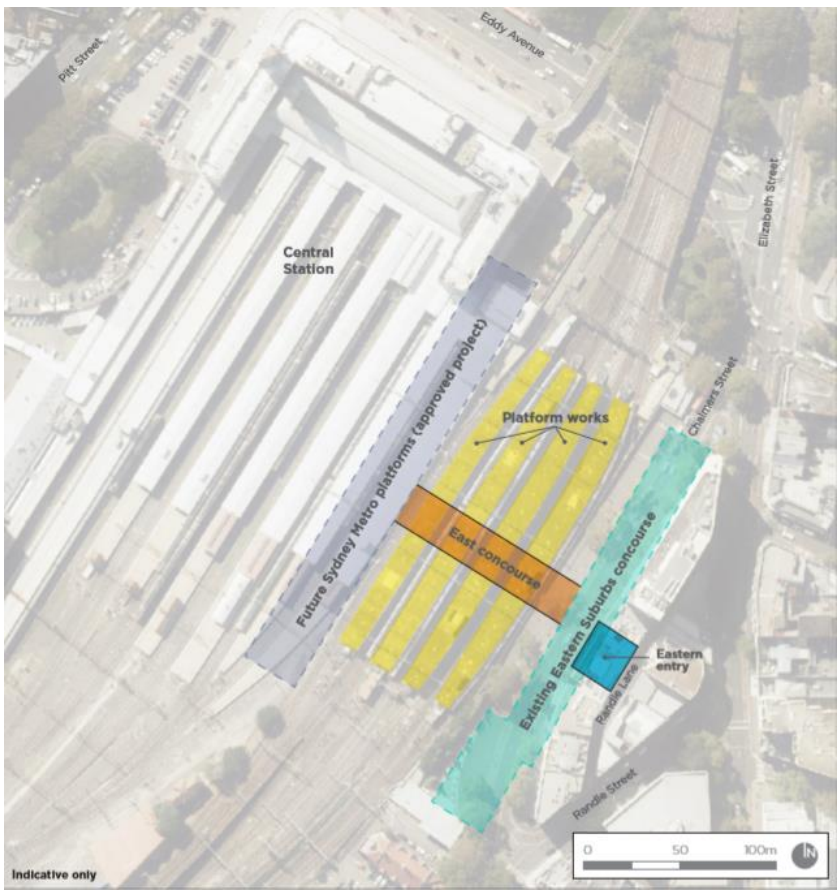


Figure 1.2: The Project - East

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2. Objectives and Targets

The objectives of the CVALMP 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.

These objectives conform to TfNSW's objectives as described in the Construction Environmental Management Framework.

This plan aims to achieve the following.

- Comply with the specific Ministerial Conditions of Approval (COAs) regarding visual amenity.
- Visual amenity management controls are to be effective and properly maintained at all times.
- Achieve compliance with statutory requirements for principles of Crime Prevention Through Environmental Design (CPTED).

This CVALMP has been developed in accordance with C2S SSI 15_7400 COA – C1 to detail how the performance outcomes, commitments and mitigation measures specified in Chapter 11 of the PIR will be implemented and achieved during construction. This CVALMP has also been developed as a requirement within the Construction Environmental Management Framework (CEMF).

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3. Legal and Other Requirements

Table 3-1 below details the legislation and applicable planning instruments considered during development of this Plan.

Table 3-1: Legislation and Planning Instruments

Legislation	Description	Relevance to this CSWMP
<i>Environmental Planning and Assessment Act 1979 (EP&A Act)</i>	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 CVALMP. 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.
<i>Protection of the Environment Operations Act 1997 (POEO Act)</i>	This Act includes all the controls necessary to regulate pollution and reduce degradation of the environment, provides for licensing of scheduled development work, scheduled activities and for offences and prosecution under this Act.	This plan defines how Laing O'Rourke will manage works to comply with this Act. The works will be conducted in accordance with the requirements of the Environmental Protection Licence (EPL). The CSMW project early works will initially be completed under the Sydney Trains EPL. until Laing O'Rourke will obtain an EPL prior to commencement of construction for the project..

3.1 Planning Requirements

The CVALMP addresses the following requirements:

- Sydney Metro City and Southwest - Chatswood to Sydenham Conditions of Approval (CoA) (SSI 15_7400) as modified – dated 9 January 2018;
- The Sydney Metro City and Southwest - Environmental Impact Statement, dated 3rd May 2016;
- The Sydney Metro City and Southwest – Submissions and Preferred Infrastructure Report, dated October 2016;
- The Sydney Metro City and Southwest – Chatswood to Sydenham Modification 2 – Central Walk – Sydney Metro City and Southwest – (SSI Mod 2) – Determined on 21 December 2017.
- Sydney Metro City & Southwest - Chatswood to Sydenham Staging Report;
- The Sydney Metro Construction Environmental Management Framework (CEMF) v3; and
- Infrastructure Sustainability Council of Australia - IS Technical Manual V1.2.

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The Compliance Matrix in Appendix A provides an analysis of how the CVALMP complies with CoAs, Revised Environmental Mitigation Measures (REMMs) and the CEMF (and by virtue Sydney Metro's objectives), as well as including any cross references with the Construction Environmental Management Plan (CEMP) that has been prepared in accordance with the CEMF.

3.2 Guidelines

Additional guidelines and standards relating to visual amenity and landscape management 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; and
- Australian Standard AS4970 the Australian Standard for Protection of Trees on Development Sites and Adjoining Properties.

3.3 ISCA

The Project will pursue a rating under the IS Rating Scheme V1.2. This plan relates to several of the IS credits.

3.3.1 Dis – 5

Measures to prevent light spill during construction have been identified and implemented.

For construction activities, the sensitive receivers should be identified as defined within AS4282, and luminaires be aimed away from these areas. Direct views from these areas towards luminaires should also be minimised. Evidence should show how mitigation measures for any sensitive receptors have been applied for any construction related light sources and a night time audit must be undertaken during the construction phase. Additionally, where complaints have been received, evidence must show that these have been appropriately managed, including implementing mitigation measures.

4. Roles and Responsibilities

The roles and responsibilities of key internal and external Project personnel with respect to visual and landscape measures are as follows in Table 4-1

Table 4-1: Roles and Responsibilities

Project Director	Managing the delivery of the Project including overseeing implementation of visual and landscape management measures. Act as Contractor's Representative.
Project Environment Manager	Oversee the implementation of all visual and landscape management initiatives. Responsible for managing ongoing compliance with the CoA and environmental document requirements.
Commercial Manager	Ensure that relevant visual and landscape management requirements are considered in procuring materials and services.

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Construction Managers Site Superintendent	Manage the delivery of the construction process, in relation to visual and landscape management across all sites in conjunction with the Project Environment Manager.
Sustainability Manager	Track and report visual and landscape elements against sustainability targets.
Environment Coordinator	Manage the on-ground application of visual and landscape management measures during construction. Monitor and report on visual and landscape management during construction.
Project Engineer	Design the relevant sections of the project that ensure incorporation of architectural treatments and finishes within key elements of temporary structures. Implement visual and landscape management activities during construction works.
Environmental Representative	Provide a review and endorsement role to this plan Conduct regular inspections to review and monitor implementation of this plan
TfNSW	Provide a review and endorsement role to this plan
DPE	Provide approval of the plan in order to commence construction activities
Heritage Council	Provides a review and approval capacity of the Heritage Implementation Plan
City of Sydney Council	Provides a review and approval capacity of the Heritage Implementation Plan

5. Existing Environment

The information in this section of the CVALMP is summarised from the Chatswood to Sydenham EIS.

Central Station is set within a rich and diverse townscape. It is characterised by a concentration of low to medium scale (three to seven storey) heritage buildings and streetscapes juxtaposed with modern and contemporary office and apartment towers, a series of varied interrelated and historic open spaces, and a large mix of uses and activities, including commercial, industrial, institutional, residential and hotels.

Railway Square is the major visual and functional gateway to the city from west and south. The intersection of George and Pitt streets is one of Sydney's busiest and largest intersections and has traditionally dispersed traffic and pedestrians into and out of the city. Railway Square itself includes sandstone walls and a ramping roadway, which reaches a colonnaded station entry. Parkland occupies the main square, with a wide footpath leading to the station entry flanked by trees, framing views to the main station buildings and clock tower.

Opposite the station on a wedge of land created by Lee and George Streets is a plaza that is also called Railway Square. This plaza is the main bus interchange area for the station and is connected to the station by underground pedestrian tunnels.

The U-shaped Central Station building faces Eddy Avenue and is the location of one of the main station entrances. This includes a ramped entry leading from Eddy Avenue. The entrance is marked by a mature London plane tree. Several shopfronts flank this entry, located both within

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the ground floor of the former Lost Property building and alongside an elevated sandstone rail bridge. This pedestrian plaza provides a transition from the vehicular dominated Eddy Avenue to the station entry and concourse. The central rail yard is surrounded by several rail lines entering Central Station from the south and west, giving it an open, working railway character. This area of the station merges visually with the surrounding rail lines, characterised by corridors of ballast, and overhead wiring equipment.

Prince Alfred Park is an historic parkland south of Central Station, within the suburb of Surry Hills. The park is bounded by Chalmers Street, Cleveland Street and the railway. Trees and elements of the layout from the original 1870 plan of the park still exist on the site today, including Moreton Bay fig trees arranged as an informal row along the boundaries.

Regent Street is a wide, heavily trafficked five-lane road, located along the western side of Central Station, connecting Chippendale to the Pitt Street / George Street intersection. Adjacent to Central Station, Regent Street incorporates five terrace style houses, a two-storey petrol station, a Masonic Temple, a three-storey contemporary residential building and the heritage Mortuary Station.

The visual character around Central Station (including areas along Eddy Avenue and Chalmers Street) is expected to change following the introduction of the CBD and South East Light Rail, which will introduce a light rail stop on Chalmers Street, light rail tracks and associated infrastructure.

During construction the project would have a moderate adverse landscape impact at the northern concourse due to impacts on pedestrian connectivity and activation of this plaza due to the loss of retail tenancies and construction activity. Daytime visual impacts would primarily be due to the sensitivity of views and the scale of construction activities, particularly the demolition of buildings (including heritage buildings and historic character buildings), the removal of trees, and the proposed scale of new built elements. There would be negligible night-time visual impacts during construction of the project.

6. Aspects and Potential Impacts

The key aspects and potential impacts associated with the management of visual and landscape measures during the delivery of works are listed in Table 6-1. The full extract of visual amenity risks from the CEMP has been included as Appendix B.

These identified risks have been taken into account in the development of the visual amenity and landscape management strategy and site-specific procedures for the works.

Table 6-1: Aspects and Potential Impacts

Aspects	Potential impacts/opportunities
Not identifying appropriate approvals, licenses or permits required and proceeding without them.	<ul style="list-style-type: none"> • Works delayed, infringements, poor community relations and reputational loss.
Temporay storage containers	<ul style="list-style-type: none"> • Surrounding aesthetic temporary altered during construction
Plant and equipment movement	<ul style="list-style-type: none"> • Lighting towers used during out of hours works may spill on nearby residents • Poor integration of landscape design

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Aspects	Potential impacts/opportunities
Lighting Landscape Design CPTED	<ul style="list-style-type: none"> Poor Environmental Design for the prevention of crime.
Impact to Central Railway Station Group	<ul style="list-style-type: none"> Damage to Central Railway Station Group fabric by the Project and construction traffic. Visual impacts.

7. Visual and Landscape Management

The following subsections outline the proposed specific management measures to be implemented in order to minimise the impact of the project on visual amenity and landscaping to the public. These specific management measures relate to:

- Hoardings and Fences;
- Graffiti and Bill Posters;
- Crime Prevention Through Environmental Design (CPTED);
- Tree Pruning and Removal; and
- Lighting.

Further to the specific subsections, the following general management measures will also be implemented throughout the project in minimising to the greatest extent possible any impacts upon visual and landscape amenity:

- Where feasible and reasonable, the elements within construction sites will be located in positions to minimise visual impacts, i.e. machinery and material storage behind fencing or visual barriers;
- 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 impacts to public open space would be rehabilitated in consultation with the relevant local council and / or landowner;
- Temporary construction works will be designed with consideration of urban design and visual amenity; and
- Wherever feasible and reasonable, vegetation around the perimeter of the construction sites will be maintained

7.1 Hoardings and Fences

Hoardings and fences are required in a number of Project locations to soften views from publicly accessible areas into construction or operational zones, including:

- For the installation of temporary offices to house Sydney Trains staff (location TBC).
- To demarcate the construction activities associated with the metro station box on platforms 12/13 and 14/15 and also the construction of the Olympic Stairs on Platform 20/21 and 22/23.
- The construction of the Central Walk from the Suburban island platforms 16/17, 18/19, 20/21 and 22/23.

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- The demolition of the existing control rooms and standby guards rooms on the suburban island platforms 16/17, 18/19, 20/21 and 22/23.
- The construction of new standby guards rooms and safe rooms on the existing suburban island platforms 16/17, 18/19, 20/21 and 22/23.
- The refreshing of the finishes and furniture to all suburban island platforms.
- The operational construction site in Sydney Yard.
- Temporary site offices adjacent to Mortuary Station.
- Work sites in Chalmers Street in the vicinity of the Chalmers Street entry, substation and parking area, along the western side of the Central Station rail corridor.

Where possible, the use of interpretative hoardings will be installed in accordance with the Heritage Interpretation Plan following consultation with the Heritage Council and City of Sydney Council.

The installation and ongoing monitoring of the hoarding and fencing will be undertaken in accordance with the following measures:

- (a) The production and installation of any site hoarding and fencing banners including vinyl (on solid hoarding), shade cloth or other material on the external face of any hoarding or fence will occur within 30 days of Project establishment where access has been granted to that part of the Project.
- (b) Site hoarding and fencing banners will be replaced as required to ensure they remain clean and appropriate for their intended use.
- (c) All banner artwork print proofs will be submitted to and approved by Sydney Metro (SM) prior to being used in the production of banner artwork. SM will be given a minimum of five business days to review the banner artwork print proofs. Laing O'Rourke will address all of SM's comments on the print proofs to the satisfaction of the SM's Representative, prior to being approved.
- (d) Installation plans for all hoardings or fencing banners, including shade cloth or other material on the external face of any hoarding or fence, will be submitted to and approved by the SM's Representative prior to being erected by Laing O'Rourke. SM's Representative will be given a minimum of 10 business days to review and comment on banner installation plans. Laing O'Rourke will address SM's comments on the submitted Documents to the satisfaction of SM's Representative, prior to them being approved.
- (e) Viewing holes and transparent panels will be provided in the hoardings at various locations, to be determined by SM's Representative in consultation with the Contractor.
- (f) Where temporary offices and/or structures are installed to house Sydney Trains staff, the façade will be designed to be sympathetic to the heritage context of Central Station.
- (g) The installation of temporary potted plants will also be considered in the vicinity of the temporary work sites to soften the visual appearance.
- (h) Temporary structure hoarding or fencing colours will be chosen to avoid standing out in their situational context with focus on blending in to the surrounding environment.
- (i) Where possible, artwork, graphics and images will be used to enhance the visual appearance of temporary work hoardings in high visibility locations.

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- (j) Appropriate signage will be provided around construction sites to provide visibility to retained businesses.

7.2 Graffiti and Bill Posters

- (a) Hoardings, site sheds, fencing, acoustic walls around the perimeter of the Project and any other structures built as part of the Project will be maintained free of graffiti and any advertising not authorised by SM.
- (b) Laing O'Rourke will carry out daily inspections for graffiti and unauthorised advertising and will remove or cover any such graffiti or unauthorised advertising identified within the following timeframes:
- i. offensive graffiti will be cleaned or covered within 24 hours;
 - ii. highly visible yet non-offensive graffiti will be cleaned or covered within one week;
 - iii. graffiti that is neither offensive nor highly visible will be cleaned or covered during normal operations within one month; and
 - iv. any advertising material including bill posters will be removed or covered within 24 hours.

7.3 Crime Prevention Through Environmental Design

The NSW Government Crime Prevention through Environmental Design guidelines have been adapted for this Project as outlined in Table 7-1. As there is no public access to the Project construction sites, the principles have been modified to apply to the surrounds of the temporary construction worksites.

Table 7-1: Crime Prevention Through Environmental Design Guidelines

Crime Prevention Through Environmental Design Principle	Relevant requirement
Natural surveillance	<p>Openings in site boundary are located and designed to overlook public places to maximise casual surveillance.</p> <p>The main entry to the site should face the street.</p> <p>An external entry path to a site must be direct to avoid potential hiding places.</p> <p>Entry areas to and from car parking areas in Sydney Yard should be transparent, allowing viewing into and from these.</p> <p>Pedestrian access should be well lit and maximise sightlines.</p>
Active surveillance	CCTV system must cover all high risk areas including all entry areas.
Access control	<p>Entry points are secured outside business hours.</p> <p>Access to the sites is to be controlled at the entry points. Only security cleared personnel may enter.</p>
Territorial ownership	Site planning provides a clear definition of territory and ownership of all private, semi- public and public property.
Lighting	<p>Both natural and artificial lighting is used to reduce poorly lit or dark areas to deter crime.</p> <p>Lighting must be provided to the following areas of a temporary site to promote safety and security at night:</p> <p>external entry path,</p>

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	<p>foyer, driveway; and car parking area</p>
	<p>The lighting in a car parking area must conform to Australian Standards 1158.1, 1680, 2890.1.</p>
	<p>Use of lighting fixtures, and vandal resistant, high mounted light fixtures, which are less susceptible to damage in the boundary areas of the temporary sites.</p>
Maintenance and housekeeping	<p>Maintenance regimes should be implemented which ensure all public areas are well maintained.</p>
	<p>Cleaning regimes should be implemented which ensure all main public areas are free of rubbish.</p>
	<p>Graffiti removal regimes should be implemented to ensure graffiti is promptly removed.</p>

7.4 Tree pruning and removal

The Sydney Metro City & Southwest – Tree Impact Assessment Report Chatswood to Sydenham (Sydney Metro, 20 April 2018) has been prepared in accordance with Condition E6:

The Tree Report documents that all eleven trees on the CSMW site will be removed to allow for the truck access route and construction of the station box. Additionally, two trees will also be removed outside of the 'Bounce Hotel'. Due to the highly constrained nature of these sites, there were no opportunity to retain these trees.

The locations of trees that are required to be removed are included in the Tree Report which is appended to Construction Biodiversity Management Plan (CBMP). The Tree Report will be updated to include the two additional trees required to be removed from outside of the 'Bounce Hotel'.

In the event that tree removal cannot be avoided, replacement trees are to be planted within, or in close proximity to the CSSI or other location in consultation with City of Sydney with any replacement trees no smaller than a 75 litre pot size.

7.5 Lighting

Permanent, temporary or mobile site lighting for both security purposes and night works will be installed and operated in accordance with AS4282:1997 Control of the Obtrusive Effect of Outdoor Lighting to ensure outdoor lighting does not impact upon sensitive receivers. Furthermore, the lighting of construction sites would be orientated to minimise glare and light spill impacts upon adjacent receivers.

8. Training

All site personnel shall undergo site specific induction training, which will include environmental awareness and visual and landscape management training. Through the environmental induction, construction staff will be made aware of:

- hoarding and fence requirements;
- graffiti and bill posters management requirements; and

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The logo for Laing O'Rourke, featuring the company name in white capital letters on a black rectangular background with yellow and red horizontal lines above and below the text.

- landscape plan implementation strategy.

Toolbox meetings will be undertaken as and when required and may be triggered by the detection of excessive graffiti and bill posters or vandalism (for example) or in the event that additional visual and landscape control measures are required to be implemented.

Personnel directly involved in implementing visual and landscape control measures on site will be given specific training in the various measures to be implemented.

Records of all training are to be filed in accordance with the project filing system.

9. Monitoring, Auditing and Reporting

Laing O'Rourke will regularly review the CVALMP, including Appendix A and B to ensure compliance with the Project, CEMP and relevant project visual and landscape conditions. Typical records generated would include the information captured during:

- (a) Daily visual inspections by Site Supervisors including inspection of the following:
 - i. Construction site hoarding and perimeter site areas (including vegetation)
 - ii. Scaffolding, acoustic sheds, and other site structures
 - iii. Lighting structures
- (b) Weekly joint environment inspections attended by the Environment Representative, the Independent Certifier, and representatives from TfNSW. This will include inspection of the following:
 - i. Health of retained vegetation around site boundaries
 - ii. The condition of any site hoarding
 - iii. Position and direction of any site lighting
 - iv. Litter
 - v. Graffiti

Inspection reports will be prepared following weekly site inspections to document any relevant observations made and identify any issues to be rectified in relation to visual amenity and timing for rectification. Any identified issues will be noted in the Environmental Inspection Checklist and included in the Environmental Action Register which will be distributed to the relevant Project Manager, the Construction Manager and the Environment Project Manager for action. The ER will prepare independent report which will include any outcomes of the inspection.

Results and outcomes of inspections, monitoring and auditing will be reported internally on a monthly basis. Six-monthly construction compliance reports will be prepared to report on compliance with the Project Approval.

A copy of the updated strategy and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure outlined within Section 2 of the CEMP.

10. Review and Improvement

The CVALMP will be reviewed and updated at least annually. Laing O'Rourke will undertake the ongoing development, amendment and updating of the CVALMP to ensure it remains consistent with Project priorities, risk management, client requirements and Project objectives, taking into account:

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- The status and progress of Laing O'Rourke's activities;
- Changes in the design, delivery and operations processes and conditions;
- Lessons learnt during delivery and operations;
- Changes in other related Project Plans;
- Requirements and matters not covered by the existing Project Plans;
- Changes to Project Plans as directed by TfNSW's Representative under the Deed; and
- Where deemed appropriate in relation to items raised within inspections or audits.

11. Enquiries, Complaints and Incident Management

Environmental incidents and complaints are to be investigated, reported, documented, actioned and closed out as per the details provided in the CEMP. Should any visibility or landscape-related incident that is designated as an Environmental Incident occur, the EPA would be notified immediately (as per EPL requirements) and the Secretary also notified as soon as possible within 24 hours of the incident occurring and include the time and date, details of the incident and any non-compliance with the Project's approval. The actions taken to address the incident would be undertaken within the timeframe determined by the Secretary or relevant public authority.

All relevant information would also be included within the Community Consultation Strategy once this has been finalised and completed for the Project.

Proactive incident planning issues, responses and responsibilities are included in Table 11-1.

Table 11-1 Incident planning and response

Issue	Response	Responsibility
Graffiti	Laing O'Rourke will engage a cleaning contractor to maintain and clean graffiti	Construction Manager
CCTV installations	Laing O'Rourke will engage a security contractor to manage CCTV installations	Construction Manager
Lighting	Laing O'Rourke will engage a services contractor to ensure vandalised and un-serviced lighting is maintained	Construction Manager

Furthermore, a telephone number, postal address and email address to collect community enquiries and complaints will be published in a newspaper circulating in the local area and on site hoarding at each construction site before commencement of construction and published in the same way again before commencement of operation.

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Appendix A: Construction Visual Amenity and Construction Landscape Management Compliance Matrix

No.	Measure	Timing	Requirement	Responsibility	Reference
Project Approval – Specific Management Plan Requirements					
1	<p>From commencement of construction until completion of construction, the approved ER must:</p> <ul style="list-style-type: none"> (a) receive and respond to communications from the Secretary in relation to the environmental performance of the CSSI; (b) consider and inform the Secretary on matters specified in the terms of this approval; (c) consider and recommend any improvements that may be made to work practices to avoid or minimise adverse impact to the environment and to the community; (d) review all documents required to be prepared under the terms of this approval, ensure they address any requirements in or under this approval and if so, endorse them before submission to the Secretary (if required to be submitted to the Secretary) or before implementation (if not required to be submitted to the Secretary) (e) regularly monitor the implementation of all documents required by the terms of this approval for implementation in accordance with what is stated in the document and the terms of this approval; (f) notify the Secretary of an incident in accordance with Condition A41 of this approval; (g) as may be requested by the Secretary, help plan, attend or undertake Department audits of the CSSI, briefings, and site visits; (h) performance of the CSSI, follow the procedure in the Community Communication Strategy approved under Condition B3 of this approval to attempt to resolve the conflict, and if it cannot be resolved, notify the Secretary; (i) review any draft consistency assessment that may be carried out by the Proponent, and provide advice on any additional mitigation measures required to minimise the impact of the work; (j) consider any minor amendments to be made to the CEMP, CEMP 	During construction	C2S SSI 15_7400 COA – A24	Environmental Representative	This plan. Refer to Section 4

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No.	Measure	Timing	Requirement	Responsibility	Reference
	<p>sub-plans and monitoring programs that comprise updating or are of an administrative nature, and are consistent with the terms of this approval and the CEMP, CEMP sub-plans and monitoring programs approved by the Secretary and, if satisfied such amendment is necessary, approve the amendment. This does not include any modifications to the terms of this approval;</p> <p>(k) assess the impacts of minor ancillary facilities as required by Condition A18 of this approval; and</p> <p>prepare and submit to the Secretary and other relevant regulatory agencies, for information, a monthly Environmental Representative Report detailing the ER's actions and decisions on matters for which the ER was responsible in the preceding month (or other timeframe agreed with the Secretary). The Environmental Representative Report must be submitted within seven (7) days following the end of each month for the duration of works and construction of the CSSI, or as otherwise agreed with the Secretary.</p>				
2	The Secretary must be notified as soon as possible and in any event within 24 hours of any incident.	During Construction	C2S SSI 15_7400 COA – A41	Project Environmental Manager	This plan. Refer to Section 11
3	Notification of an incident under Condition A41 of this approval must include the time and date of the incident, details of the incident and must identify any non-compliance with this approval.	During Construction	C2S SSI 15_7400 COA – A42	Project Environmental Manager	This plan. Refer to Section 11
4	Any requirements of the Secretary or Relevant Public Authority (as determined by the Secretary) to address the cause or impact of an incident reported in accordance with Condition A41 of this approval, must be met within the timeframe determined by the Secretary or relevant public authority.	During Construction	C2S SSI 15_7400 COA – A43	Project Environmental Manager	This plan. Refer to Section 11
5	If statutory notification is given to the EPA as required under the POEO Act in relation to the CSSI, such notification must also be provided to the Secretary for information within 24 hours after the notification was given to the EPA.	During Construction	C2S SSI 15_7400 COA – A44	Project Environmental Manager	This plan. Refer to Section 11

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No.	Measure	Timing	Requirement	Responsibility	Reference
6	The telephone number, postal address and email address required under Condition B9 of this approval must be published in a newspaper circulating in the local area and on site hoarding at each construction site before commencement of construction and published in the same way again before commencement of operation. This information must also be provided on the website required under Condition B15 of this approval	Prior to Construction	C2S SSI 15_7400 COA – B10	Project Environmental Manager	This plan. Refer to Section 11
7	The ongoing maintenance and operation costs of urban design and landscaping items and works implemented as part of this approval must remain the Proponent's responsibility until satisfactory arrangements have been put in place for the transfer of the asset to the relevant entity. Before the transfer of assets, the Proponent will maintain items and works to the design standards established in the Station Design and Precinct Plan required by Condition E101.	During Construction and Operation	C2S SSI 15_7400 COA – D10	Project Environmental Manager Project Director	Section 7 and the Station Design and Precinct Plan
8	<p>The CSSI must be designed to retain as many trees as possible and provide replacement trees such that there a net increase in the number of trees. The Proponent must commission an independent, experienced and suitably qualified arborist to prepare a comprehensive Tree Report before removing any trees as detailed in the EIS, as amended by the PIR and the terms of this approval. The Tree Report must include:</p> <ul style="list-style-type: none"> (a) a visual assessment to note the condition of the tree(s) with inputs from the Design Review Panel, landscape architect, and construction team; (b) consideration of all options to avoid tree removal, including relocation of services, redesign or relocation of ancillary components (such as substations, fencing etc.) and reduction of standard offsets to underground services; and (c) (c) measures to avoid tree removal, minimise damage to, and ensure the health and stability of those trees to be retained and protected. This includes details of any proposed canopy or root pruning, root protection zone, excavation, site controls on waste disposal, vehicular access, materials storage and protection of public utilities. <p>In the event that tree removal cannot be avoided, then replacement trees</p>	During Construction	C2S SSI 15_7400 COA – E6	Project Environmental Manager Project Director Project Engineer	Section 7 and the Tree Report appended to the Construction Biodiversity Management Plan

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No.	Measure	Timing	Requirement	Responsibility	Reference
	<p>are to be planted within, or in close proximity to the CSSI or other location in consultation with the Relevant Councils and agreed by the Secretary. Replacement trees will be no smaller than a 75 litre pot size. A copy of the Tree Report must be submitted to the Secretary before the removal, damage and/or pruning of any trees, including those affected by the site establishment works. All recommendations of the Tree Report must be implemented by the Proponent, unless otherwise agreed by the Secretary.</p> <p>The Tree Report may be prepared for the entire CSSI or separate reports may be prepared for individual areas where tree removal and/or pruning is proposed</p>				
9	<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>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 interpretative hoardings during construction</p>	During Construction	C2S SSI 15_7400 COA – E21	Project Environmental Manager	Section 7.1 and Section 5.2.13 of the Construction Heritage Management Plan
10	<p>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.</p>	During Construction	C2S SSI 15_7400 COA – E99	Project Environmental Manager Project Director Project Engineer	This plan. Refer to Section 7
11	<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</p>	During Construction	C2S SSI 15_7400 COA – E100	Project Director Project Engineer	Section 7.4 and Section 5.2.2 of the Construction

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No.	Measure	Timing	Requirement	Responsibility	Reference
	<p>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> <ul style="list-style-type: none"> (a) comprise five members who are experts in one of the identified design elements; (b) include: <ul style="list-style-type: none"> i. the NSW Government Architect as Chair; ii. a representative from the Heritage Council, (c) meet at least four times a year, or any other timeframe agreed by the DRP; and (d) keep meeting minutes and a schedule of action items arising from each meeting. <p>Relevant Council(s) and other key stakeholders such as UrbanGrowth NSW and must be invited to participate in DRP meetings to advise on local issues and applicability of design review outcomes as they relate to the local context of each station location.</p>				Heritage Management Plan
12	<p>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 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"> (a) identification of specific design objectives, principles and standards based on - 	During Construction	C2S SSI 15_7400 COA – E101	Project Director Project Engineer	Refer to the SDPP.

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No.	Measure	Timing	Requirement	Responsibility	Reference
	<ul style="list-style-type: none"> 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); 				
	(b) opportunities for public art;				
	(c) landscaping and building design opportunities to mitigate the visual impacts of rail infrastructure and operational fixed facilities (including the Chatswood Dive, Marrickville Dive, Artarmon Substation, station structures and services, noise walls etc.);				
	(d) the incorporation of salvaged historic and artistic elements onto the project design, including but not limited to the Tom Bass P&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;				
	(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;				
	(f) a description of the CSSI design features, including graphics such as sections, perspective views and sketches for key elements of the CSSI;				
	(g) the location, design and impacts of operational lighting associated				

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No.	Measure	Timing	Requirement	Responsibility	Reference
	<p>with the CSSI and measures proposed to minimise lighting impacts;</p> <p>(h) details of where and how recommendations from the DRP have been considered in the plan;</p> <p>(i) the timing for implementation of access, landscaping and public realm initiatives;</p> <p>(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</p> <p>(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.</p> <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>				
13	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. 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.	During Construction	C2S SSI 15_7400 COA – E102	Project Environmental Manager Project Director Project Engineer	Refer to the SDPP.
14	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.	During Construction and Operation	C2S SSI 15_7400 COA – E104	Project Engineer	This plan. Refer to Section 7.5
Revised Environmental Management Measures and Environmental Performance Outcomes					
15	Appropriate signage would be provided around construction sites to provide visibility to retained businesses.	During Construction	C2S EIS REMM – B13	Project Environmental Manager	This plan. Refer to Section 7.1

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No.	Measure	Timing	Requirement	Responsibility	Reference
				Project Engineer	
16	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.	During Construction	C2S EIS REMM – LV1	Project Environmental Manager Project Engineer	This plan. Refer to Section 7.1
17	Existing trees to be retained would be protected prior to the commencement of construction in accordance with Australian Standard AS4970 the Australian Standard for Protection of Trees on Development Sites and Adjoining Properties	During Construction	C2S EIS REMM – LV2	Project Environmental Manager	This plan. Refer to Section 3.1
18	Lighting of construction sites would be oriented to minimise glare and light spill impact on adjacent receivers	During Construction	C2S EIS REMM – LV3	Project Environmental Manager Project Engineer	This plan. Refer to Section 7.5
19	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.	During Construction	C2S EIS REMM – LV4	Project Environmental Manager Project Engineer	This plan. Refer to Section 7.5
20	Opportunities for the retention and protection of existing trees would be identified during detailed construction planning.	During Construction	C2S EIS REMM – LV5	Project Engineer	This plan. Refer to Section 7.4
21	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	During Construction	C2S EIS REMM – LV6	Project Environmental Manager	This plan. Refer to Section 7.1
22	Temporary impacts to public open space would be rehabilitated in consultation with the relevant local council and / or landowner.	During Construction	C2S EIS REMM – LV10	Project Environmental Manager	This plan. Refer to Section 7

Construction Environmental Management Framework

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No.	Measure	Timing	Requirement	Responsibility	Reference
23	<p>Key NSW Legislative Requirements</p> <p>The following legislative requirements should be adhered to throughout construction works with regular reviews to be undertaken by TfNSW and its contractors.</p> <ul style="list-style-type: none"> • Environmental Planning and Assessment Act (1979) - Sydney Metro must adhere to mitigation measures and conditions within the planning approval documentation. The proponent and their contractors must endeavour to deliver in a consistent manner within the assessed scope of works. • Protection of the Environment Operations Act (1997) - Where Sydney Metro projects are scheduled activities under Schedule 1 of the Act an Environment Protection Licence (EPL) must be obtained. 	During construction	CEMF Section 2.1	Project Director Project Manager Project Environmental Manager	This plan. Refer to Section 3
24	<p>Construction Environmental Management Sub-Plans</p> <p>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:</p> <ul style="list-style-type: none"> - Visual and Amenity Management 	Prior to construction	CEMF Section 3.4	Project Manager Project Environmental Manager	This plan. Refer to Section 2
25	<p>Register of Hold Points</p> <p>Principal contractors will identify hold points, beyond which approval is required to proceed with a certain activity. Example activities include vegetation removal and water discharge. Hold points will be documented in relevant CEMPs.</p>	During Construction	CEMF Section 3.8	Project Manager Project Environmental Manager	Construction Environmental Management Plan
26	<p>Training, Awareness and Competence</p> <p>a) Principal Contractors will be responsible for determining the training needs of their personnel. As a minimum this will include site induction, regular toolbox talks and topic specific environmental training as follows:</p> <p>The site induction will be provided to all site personnel and will include, as a minimum:</p> <ul style="list-style-type: none"> • Training purpose, objectives and key issues. 	During Construction	CEMF Section 3.9	Project Environmental Manager Project Manager	This plan. Refer to Section 8 and Construction Environmental Management Plan

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No.	Measure	Timing	Requirement	Responsibility	Reference
	<ul style="list-style-type: none"> • Contractor’s environmental policy and key performance indicators. • Due diligence, duty of care and responsibilities. • Relevant conditions of any environmental licence and/or the relevant conditions of approval. • Site specific issues and controls including those described in the environmental procedures. • Reporting procedure for environmental hazards and incidents. • Communication protocols. <p>b) Toolbox talks will be held on a regular basis in order to provide a project or site wide update, including any key or recurring environmental issues.</p> <p>c) Topic specific environmental training, eg erosion and sediment control training will be undertaken for relevant site personnel as determined by the Principal Contractor.</p> <p>d) Principal Contractors will conduct a Training Needs Analysis which:</p> <ul style="list-style-type: none"> • Identifies the competency requirements of staff that hold environmental roles and responsibilities documented within the Construction Environmental Management Plan and sub-plans. • Identifies appropriate training events and the frequency of training to achieve and/or maintain these competency requirements. • Implements a documented training schedule which plans attendance at training events, provides mechanisms to notify staff of their training requirements, and identifies staff that fail to attend scheduled training events or who have overdue training requirements. • Identifies that all staff are to receive an environmental induction and undertake environmental incident management training. 				
27	<p>Emergency and Incident Response</p> <p>a) Principal Contractors will develop and implement a Pollution Incident Response Management Plan, in accordance with the requirements of the POEO Act. Contractors’ emergency and incident response procedures will also be consistent with any relevant TfNSW</p>	During Construction	CEMF Section 3.9	Project Environmental Manager Project Manager	This plan. Refer to Section 11 and Construction Environmental Management Plan

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No.	Measure	Timing	Requirement	Responsibility	Reference
	<p>procedures and will include:</p> <ul style="list-style-type: none"> • Categories for environmental emergencies and incidents. • Notification protocols for each category of environmental emergency or incident, including notification of TfNSW and notification to owners / occupiers in the vicinity of the incident. This is to include relevant contact details. • Identification of personnel who have the authority to take immediate action to shut down any activity, or to affect any environmental control measure (including as directed by an authorised officer of the EPA). • A process for undertaking appropriate levels of investigation for all incidents and the identification, implementation and assessment of corrective and preventative actions; • Depending on the nature of the incident the EPA, DP&E or OEH will be notified by the Principal Contractor or TfNSW as appropriate. <p>b. The Contractor will make all personnel aware of the plan and their responsibilities.</p>				
28	<p>Independent Environmental Representatives</p> <p>a) TfNSW will engage Independent Environmental Representatives (ERs) to undertake the following, along with any additional roles as required:</p> <ul style="list-style-type: none"> • Review, provide comment on and endorse (where required) any relevant environmental documentation to verify it is prepared in accordance with relevant environmental legislation, planning approval conditions, relevant standards and this CEMF. • Monitor and report on the implementation and performance of the above mentioned documentation and other relevant documentation. • Provide independent guidance and advice to TfNSW and the Contractors in relation to environmental compliance issues and the interpretation of planning approval conditions. • Be the principal point of advice for the DP&E in relation to all questions and complaints concerning the environmental performance 	During Construction	CEMF Section 3.11	Project Environmental Manager	This plan. Refer to Section 4 and Construction Environmental Management Plan

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No.	Measure	Timing	Requirement	Responsibility	Reference
	<p>of the project.</p> <ul style="list-style-type: none"> • Ensure that environmental auditing is undertaken in accordance with all relevant project requirements. • Recommend reasonable steps, including 'stop works', to be taken to avoid or minimise adverse environmental impacts. 				
29	<p>Roles and Responsibilities</p> <p>a) In relation to Roles and Responsibilities the CEMP will:</p> <ul style="list-style-type: none"> • describe the relationship between the Principal Contractor, TfNSW, key regulatory stakeholders, the independent environmental representative and the independent certifier. • Describe the Principal Contractors environment, sustainability, and approvals team structure. • For each role that has environmental accountabilities or responsibilities provide a tabulated description of the role, accountabilities, responsibilities, lines of communication, minimum skill level requirements and their interface with the overall project organisation structure. • Provide details of each specialist environment, sustainability or planning consultant who is employed by the Principal Contractor including the scope of their work. • Provide an overview of the role and responsibilities of the Independent Environmental Representative, the Independent Certifier and other regulatory stakeholders. <p>b) All sub-contractors engaged by the Principal Contractor will be required to operate within the EMS documentation of that Principal Contractor.</p>	During Construction	CEMF Section 3.12	Project Environmental Manager	This plan. Refer to Section 4 and Construction Environmental Management Plan
30	<p>Environmental Monitoring, Inspections and Auditing</p> <p>a) Issue specific environmental monitoring will be undertaken as required or as additionally required by approval, permit or licence conditions.</p> <p>b) The results of any monitoring undertaken as a requirement of the EPL will be published on the Principal Contractor's, or a project specific,</p>	During Construction	CEMF Section 3.13	Project Environmental Manager	This plan. Refer to Section 8 and Construction Environmental Management Plan

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No.	Measure	Timing	Requirement	Responsibility	Reference
	<p>website within 14 days of obtaining the results.</p> <p>c) Environmental inspections will include:</p> <ul style="list-style-type: none"> • Surveillance of environmental mitigation measures by the Site Foreman • Periodic inspections by the Principal Contractor's Environmental Manager (or delegate) to verify the adequacy of all environmental mitigation measures. This will be documented in a formal inspection record. <p>d) Regular site inspections by the ERs and TfNSW representatives at a frequency to be agreed with the Principal Contractor.</p> <p>e) Principal Contractors will be required to undertake internal environmental audits. Internal audits will include:</p> <ul style="list-style-type: none"> • Compliance with approval, permit and licence conditions • Compliance with the E&SMS, CEMP, SMP, sub-plans and procedures • Community consultation and complaint response • Environmental training records. • Environmental monitoring and inspection results. <p>f) TfNSW (or an independent environmental auditor) will also undertake periodic audits of the Principal Contractor's E&SMS and compliance with the environmental aspects of contract documentation, including the Construction Environmental Management Framework.</p>				
31	<p>Environmental Non-compliances</p> <p>a) Principal Contractors will document and detail any non-compliances arising out of the above monitoring, inspections and audits. TfNSW will be made aware of all non-compliances in a timely manner.</p> <p>b) Principal Contractors will develop and implement corrective actions to rectify the non-compliances and preventative actions in order to prevent the re-occurrence of the non-compliance. Contractors will also maintain a register non compliances, corrective actions and preventative actions.</p>	During Construction	CEMF Section 3.14	Project Environmental Manager Project Manager	This plan. Refer to Section 8

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No.	Measure	Timing	Requirement	Responsibility	Reference
	c) TfNSW or the Environmental Representative may raise non-compliances against environmental requirements.				
32	<p>Environmental Records and Compliance Reporting</p> <p>a) Principal Contractors will maintain appropriate records of the following:</p> <ul style="list-style-type: none"> • Site inspections, audits, monitoring, reviews or remedial actions. • Documentation as required by performance conditions, approvals, licences and legislation • Modifications to site environmental documentation (eg CEMP, sub-plans and procedures) • Other records as required by this Construction Environmental Management Framework. <p>b) Records will be retained onsite for the duration of works.</p> <p>c) Additionally records will be retained by the Principal Contractor for a period of no less than 7 years in total. Records will be made available in a timely manner to TfNSW (or their representative) upon request.</p> <p>d) Compliance reports detailing the outcome of any environmental surveillance activity including internal and external audits (refer to Section 3.13) will be produced by the Principal Contractors Environmental Manager or delegate. These reports will be submitted to TfNSW at an agreed frequency.</p>	During Construction	CEMF Section 3.15	Project Environmental Manager Project Manager	This plan. Refer to Section 8 and Construction Environmental Management Plan
33	<p>Review and Improvement of the E&SMS</p> <p>a) Principal Contractors will ensure the continual review and improvement of the E&SMS. This will generally occur in response to:</p> <ul style="list-style-type: none"> • Issues raised during environmental monitoring, inspections and audits. • Significant environmental incidents. • Environmental non-conformances. <p>b) A formal review of the E&SMS by the Principal Contractor's</p>	During Construction	CEMF Section 3.16	Project Environmental Manager Project Manager	Construction Environmental Management Plan

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No.	Measure	Timing	Requirement	Responsibility	Reference
	Senior Management Team will also occur on an annual basis, as a minimum. This review will generate actions for the continual improvement of the E&SMS and supporting management plans.				
34	<p>a) Principal Contractors will develop and implement a Landscape and Temporary Works Management Plan for their scope of works. The Landscape and Temporary Works Management Plan will ensure as a minimum:</p> <ul style="list-style-type: none"> • Temporary construction works including site hoardings and acoustic sheds consider urban design and visual impacts, including: • Artwork, graphics and images to enhance the visual appearance of temporary works in high visibility locations. • Project information to raise awareness on benefits, explain the proposed works at each site and provide updates on construction progress. • Community information, including contact numbers for enquiries / complaints. • Signage and information to mitigate impacts on local businesses which may be obscured by the construction site. • Sydney Metro advertising / public awareness campaigns. • Logos / branding, including Sydney Metro, NSW Government, and Contractor branding. <p>b) The design of all temporary works will require TfNSW approval in relation to urban design and visual impacts.</p> <p>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.</p> <p>d) The principles of Crime Prevention Through Environmental</p>	During Construction	CEMF Section 4.4	Project Environment Manager	This plan. Refer to Section 7.

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No.	Measure	Timing	Requirement	Responsibility	Reference
	Design will be applied to all works, including temporary works, that have a public interface.				
35	<p>Visual Amenity Management Objectives</p> <p>a) The following visual and landscape management objectives will apply to the construction of the project:</p> <ul style="list-style-type: none"> Minimise impacts on existing landscape features as far as feasible and reasonable. Ensure the successful implementation of the Landscape Design. Reduce visual impact of construction to surrounding community. 	During Construction	CEMF Section 12.1	Project Environmental Manager	This plan. Refer to Section 7 and Section 9
36	<p>Visual Amenity Management Implementation</p> <p>a) Principal Contractors will develop and implement a Visual Amenity Management Plan for temporary works which will include as a minimum:</p> <ul style="list-style-type: none"> The visual mitigation measures as detailed in the environmental approval documentation for construction. Input from an experienced Landscape or Urban Designer The maintenance of outward facing elements of site hoarding or noise barriers, including the removal of graffiti and weeds. 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. Apply the principals of the NSW Government Crime Prevention through Environmental Design guidelines. Monitoring requirements. 	During Construction	CEMF Section 12.2	Project Director Project Environmental Manager	This plan. Refer to Section 7 and Section 9

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No.	Measure	Timing	Requirement	Responsibility	Reference
	<ul style="list-style-type: none"> Compliance record generation and management. 				
36	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.	During Construction	CEMF Section 12.2	Project Environmental Manager	This plan. Refer to Section 9
36	c) The Contractor will retain compliance records of any inspections undertaken in relation to visual and landscape measures.	During Construction	CEMF Section 12.2	Project Environmental Manager	This plan. Refer to Section 7 and Section 9
36	Visual Amenity Mitigation a) Examples of visual amenity mitigation measures include: <ul style="list-style-type: none"> Wherever feasible and reasonable, vegetation around the perimeter of the construction sites will be maintained. Temporary construction works will be designed with consideration of urban design and visual amenity as per CEMF Section 4.4. 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. 	During Construction	CEMF Section 12.3	Project Environmental Manager	This plan. Refer to Section 7

Appendix B: Construction Visual Amenity and Landscape Risk Assessment

The full project-wide environmental risk assessment is included within Appendix C of the CEMP. All environmental issues have been assessed in accordance with the table below:

<u>Probability:</u>	<u>Consequence:</u>
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5 = Certain 4 = Likely 3 = Possible 2 = Unlikely 1 = Rare
 5 = Severe 4 = Major 3 = Moderate 2 = Minor 1 = Incidental

1- 4 Acceptable 5 - 9 Acceptable with control measures 10 - 16 Requires the implementation of best practice 17 and Above = UNACCEPTABLE

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
		P X	C =	Risk		P X	C =	Risk
Approvals and Licensing								
Not identifying appropriate approvals, licenses or permits required and proceeding without them.	Works delayed, infringements, poor community relations and reputational loss.	3	3	9	Review the project EIS and statutory documentation for requirements relevant to the CSM works. Identify and implement approval requirements within sub-plans. Check contract documentation. Identify and implement requirements from the Contract. Establish a register of approvals, licenses, permits. Identify areas or works outside of project boundary and prepare Consistency Assessment to assess impact and / or requirement for further Planning Assessment.	1	3	3
Visual Amenity and Landscaping								
Temporay storage containers Plant and equipment movement Lighting Landscape Design CPTED	Surrounding aesthetic temporary altered during construction Lighting towers used during out of hours works may spill on nearby residents Poor integration of landscape design Poor Environmental Design for the prevention of crime.	3	2	9	The work area shall be maintained in an orderly manner Any graffiti on outward facing elements of site hoarding or noise barriers will be removed in a timely manner Lighting required during night works shall be directed towards the work area and away from adjacent sensitive receivers Apply the principles of AS 4282-1997 Control of the obtrusive effects of outdoor lighting Incorporation of the principles of Crime Prevention Through Environmental Design Weekly Inspections	2	2	4

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Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
Heritage								
Impact to Central Railway Station Group	Damage to Central Railway Station Group fabric by CSM works and construction traffic. Visual impacts.	4	3	12	General inductions toolbox training on heritage management protocols. Label any known heritage items on Environmental Control Maps. Work within the safe working distances nominated in the CSM CNVMP. Undertake vibration compliance monitoring as per the CSM CNVMP. Clearly highlight no-go zones on the ECM and communicate requirements to construction personnel during pre-start briefs, inductions and tool-box talks. Demarcation of worksites and communicate clearly with all construction personnel. Independent review of the CSM detailed design by appropriately qualified and experienced heritage architect.	2	3	6

Stuart Hodgson
Director
Program Sustainability Environment & Planning
Sydney Metro
Transport for NSW
PO Box K659
HAYMARKET NSW 1240

20 June 2018

Ref: CSMW VAMP

Dear Stuart

RE: Endorsement of Sydney Metro City and Southwest, Central Station Main Works Project - Construction Visual Amenity and Landscape Management Plan

Thank you for providing the following documents for Environmental Representative (ER) review and endorsement as required by the Condition of Approval A24 (d) of the Sydney Metro City & Southwest project (SSI – 15_7400 January 9 2017).

- Sydney Metro City and Southwest, Central Station Main Works Project - Construction Visual Amenity and Landscape Management Plan Revision 4 (15 June 2018)

As an approved ER for the Sydney Metro City & Southwest project, I have reviewed and provided comments on this document and now consider it appropriate for implementation.

Yours sincerely



Annabelle Reyes
Environmental Representative – Sydney Metro – City and South West