



Station Design and Precinct Plan – Central Station

City & Southwest Chatswood to Sydenham project

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Glossary

This plan uses the following terms, abbreviations and definitions:

Table 1: Terms and definitions

Acronym/Term	Definition
CCD	Customer Centred Design
CPTED	Crime Prevention Through Environmental Design
CSM Works	Central Station Main Works
CSR	Combined Services Route
DRP	Design Review Panel
DPIE	Department of Planning, Industry and Environment
EIS	Environmental Impact Statement
ESR	Eastern Suburbs Railway
GBCA	Green Building Council of Australia
GRC	Glass Reinforced Concrete
HIP	Heritage Interpretation Plan
IS	Infrastructure Sustainability
ISCA	Infrastructure Sustainability Council of Australia
SCO	Sydney Coordination Office (division of Transport for NSW)
SLR	Sydney Light Rail (CBD and South East Light Rail)
SDPP	Station Design and Precinct Plan
SM	Sydney Metro
SPIR	Submissions and Preferred Infrastructure Report
SSI	State Significant Infrastructure
SYAB	Sydney Yard Access Bridge
TfNSW	Transport for NSW
WSUD	Water Sensitive Urban Design

Executive summary

This Station Design and Precinct Plan (SDPP) has been prepared to fulfil Condition E101 of the Chatswood to Sydenham project approval SSI 15_7400 for the Metro Station at Central Station.

Condition E101 requires that:

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), the Department, 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....

... Elements covered by the 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.

The Condition notes that the SDPP may be submitted in stages to address the building and landscaping elements of the project. This SDPP is for the Central Station Metro as defined in section 1.3. This SDPP has been prepared by the Lead Contractor for the Central Station Main Works project, Laing O'Rourke Australia, supported by specialist advisors EcoQuest Environmental and architects, Woods Bagot and John McAslan + Partners.

Separate SDPPs have been or are being developed for all other stations on the Sydney Metro City & Southwest alignment.

The scope of the CSM works is comprised of four key areas: The Northern Concourse; the Metro Box including the new canopies to platforms 12-14; the new Central Walk concourse; and the new Chalmers Street, Surry Hills entrance and Eastern Suburbs Railway (ESR) Concourse modifications.

The scheme amplifies the legacy of Central Station's existing architecture and reinforces its iconic status while new interventions signal a step-change in the station's functional, urban and cultural contributions to the city.

The design vision and approach place the customer experience at the centre of the transformation of Central Station into a multi-modal transport interchange. The creation of more open spaces such as the new Northern Concourse at key decision-making points significantly improves circulation and station legibility, with enhanced accessibility, permeability and connectivity across the station precinct, resulting in an intuitive and easily used station environment for all customers, irrespective of the mode of travel used.

Customers will also benefit from Sydney Metro's level platforms and platform screen doors for safety, accessibility and increased security.

Sydney Metro will move the centre and focus of Central Station from the Grand Concourse as intended in 1906/1921 to the intersection between Central Walk and the Metro Box. This will provide a new entrance to the Metro and, beyond that, the Central Walk concourse (via the reappointed Central Electric Building) and a new uncluttered walkway from Eddy Avenue.

Existing and future developments

This SDPP presents an integrated urban and place making outcome for the Central Station Metro. This SDPP notes that the wider Central Station Precinct Renewal (<https://www.transport.nsw.gov.au/projects/current-projects/central-precinct>) is under the jurisdiction of Transport for NSW and is not considered as part of this plan. The SDPP has been developed to ensure that the Central Station Metro public domain responds to aspects of the station's immediate context and provides a high quality setting for the station architecture. The Central Station Metro structure plan and intended future developments inform the precinct and architectural design.

Within the Central Station Metro site, development of the architectural and engineering response has accounted for future proofing of the scheme so as not to preclude three key future objectives of the brief:

- A new Western Concourse below the Intercity platforms, including provision of vertical transportation to each platform, and effectively completing a site-wide east-west connection via Central Walk below the Intercity and suburban platforms;
- A new Western Entrance and forecourt; and
- Extension of the canopy solution over the Intercity platforms including an interface with the existing Grand Concourse canopy.

None of the above future developments are part of the current Central Station project scope of work, and are not included as part of the CSM SDPP. Allowance has been made in the design of the North-South Concourse for the new Central Walk Concourse to extend west in the future. This extension is not part of the CSM scope of work.

Further safeguarding measures at the ESR Concourse and Chalmers Street, Surry Hills entrance include:

- Provision of a corridor “stub” to the east of the new ESR Concourse gate line, for a connection to Randle and;
- At street level, provision for a passage through the new Chalmers Street, Surry Hills entrance building from a future hotel on the eastern side of Randle Lane to Chalmers Street.

1. Introduction

1.1. Purpose of the Station Design and Precinct Plan

This report has been prepared to document the Station Design and Precinct Plan (SDPP) for the Central Station Metro (CSM) component of the Sydney Metro City & Southwest project. The plan has been prepared to present an integrated urban and place making outcome to guide the design of the permanent built surface works and landscaping associated with the project.

An integrated urban and place making outcome must be achieved through the consideration of existing and planned public domain and private developments adjacent to the project and effective consultation and collaboration with relevant stakeholders.

The preparation of the SDPP is a requirement of Condition E101 of the Chatswood to Sydenham project approval SSI 15_7400. Condition E101 allows the SDPP to be submitted in stages and, as identified in the Staging Report, staging of the project is represented on a precinct basis. Consistent with the requirements of Condition E101, this SDPP:

- Details specific design objectives, principles and standards
- Identifies design opportunities including incorporation of public art and salvaged elements
- Describes the key design features
- Outlines implementation of the plan, including maintenance and monitoring
- Provides evidence of consultation.

As required by Condition E101, the SDPP has been prepared by suitably qualified and experienced person(s). Key personnel include:

David Parkinson

Principal Consultant

EcoQuest Environmental

- Bachelor of Science (B.Sc) Environmental Science & Technology (1st Class Honour)
- Bachelor of Science (B.Sc) Environmental Protection (1st Class Honour)
- EPA Medal for Overall Highest Grade in B.Sc. Environmental Science & Technology
- Reviews, approval and preparations of multiple Reviews of Environmental Factors (REFs) for large scale infrastructure based projects.
- Reviews and approval of multiple Heritage Impact Assessments (HIAs) for large scale infrastructure based projects.

John Prentice

Principal, Woods Bagot

Project Principal in charge, design leader

- Bachelor of Architecture, University of Toronto, Canada
- Involved on a wide range of strategic planning and architecture projects

- Leader on a number of major projects in Sydney, including Wynyard Walk, the Gateway podium redevelopment at Circular Quay and the MLC Centre redevelopment at Martin Place

Meghan Nordeck

Senior Associate, Woods Bagot

Project leader

- Bachelor of Architecture, The University of Western Australia (Hons.)
- Registered architect (NSW)
- Project leader on a number of major transport infrastructure projects in the public domain

Note these CVs are provided in Appendix D.

1.2. Project overview

Sydney Metro is Australia’s biggest public transport project. In 2024, Sydney will have 31 metro railway stations and a 66km standalone metro railway system, revolutionising the way Australia’s biggest city travels.

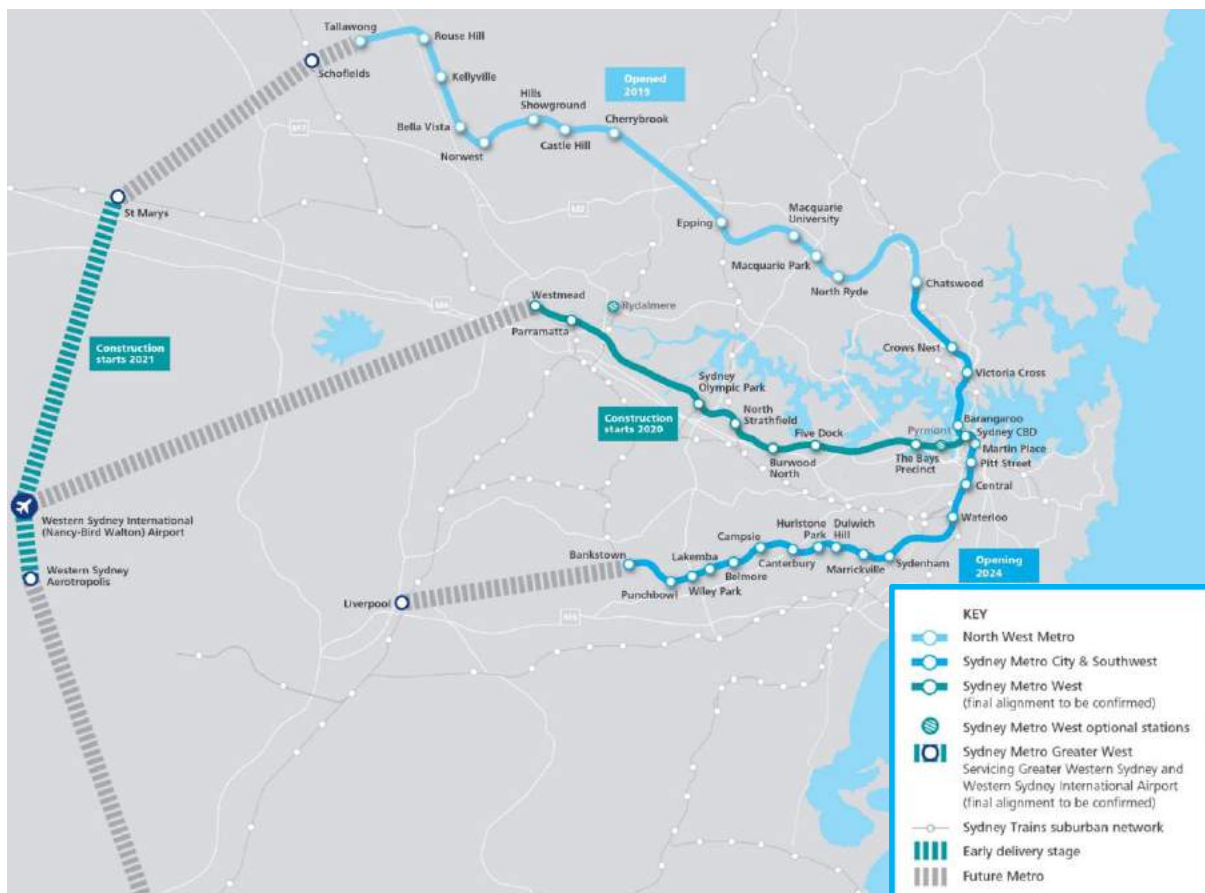


Figure 1 Sydney Metro alignment

There are four core components as seen in Figure 1:

(a) Sydney Metro Northwest (formerly the 36km North West Rail Link)

This project is now complete and passenger services commenced in May 2019 between Rouse Hill and Chatswood, with a metro train every four minutes in the peak. The project was delivered on time and \$1 billion under budget.

(b) Sydney Metro City & Southwest

Sydney Metro City & Southwest project includes a new 30km metro line extending metro rail from the end of Metro Northwest at Chatswood, under Sydney Harbour, through new CBD stations and southwest to Bankstown. It is due to open in 2024 with the ultimate capacity to run a metro train every two minutes each way through the centre of Sydney.

Sydney Metro City & Southwest will deliver new metro stations at Crows Nest, Victoria Cross, Barangaroo, Martin Place, Pitt Street, Waterloo and new underground metro platforms at Central Station. In addition, it will upgrade and convert all 11 stations between Sydenham and Bankstown to metro standards.

(c) Sydney Metro West

Sydney Metro West is a new underground railway between the CBDs of Parramatta and Sydney. This once-in-a-century infrastructure investment will transform Sydney for generations to come, doubling rail capacity between these two areas, linking new communities to rail services and supporting employment growth and housing supply between the two CBDs.

The locations of seven proposed metro stations have been confirmed at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock and the Bays Precinct.

The NSW Government is assessing optional stations at Rydalmere and Pyrmont and further planning is underway to determine the location of a new metro station in the Sydney CBD.

(d) Sydney Metro Greater West

Metro rail will also service Greater Western Sydney and the new Western Sydney International (Nancy Bird Walton) Airport. The new railway line will become the transport spine for the Western Parkland City's growth for generations to come, connecting communities and travellers with the rest of Sydney's public transport system with a fast, safe and easy metro service.

Additional information can be obtained from the Sydney Metro website at www.sydneymetro.info.

1.3. Scope of this Station Design and Precinct Plan

This SDPP presents an integrated urban and place making outcome for the following project scope elements:

- A new permanent vehicle access point into Sydney Trains Storage Yard from Regent Street (Sydney Yard Access Bridge – SYAB);
- New roof canopy above Northern Concourse, partly over sailing the Central Electric Building (Northern Concourse);
- New metro concourse below grade running north-south underneath the reinstated Intercity platforms (the North-South Concourse), and new metro platforms below the North-South Concourse (Metro Box);
- Reinstated Intercity platforms and new canopies, platforms 12-14 (platform canopies);
- New concourse below grade running east-west underneath the existing Suburban platforms 16-23, connecting the North-South Concourse with the existing below-grade Eastern Suburbs Railway (ESR Concourse - Central Walk);
- New rail station entrance at Chalmers Street level adjacent to the light rail station and connecting to the ESR Concourse below grade, and providing east-west access from Chalmers Street to Randle Lane via a single pass through at road level only (Chalmers Street, Surry Hills entrance);
- Vent structures for metro services at the north and south ends of platform 14;
- Associated back-of-house service areas, generally below grade.

The design and construction of the Sydney Yard Access Bridge (SYAB) was undertaken as a contract separate from the Central Station scope of work. The bridge provides a new vehicle access point to the Sydney Trains Storage Yard from Regent Street, and is located at the southern end of the site as can be seen in figure 2.



Figure 2 SYAB – Indicated by a red entry point from Regent Street. (Note: Central Walk West is not part of this scope of work)

The Central Station project works are located underneath and within the footprint of the existing Central Station terminus, concourses and platforms. The arrangement of the Central Station elements is shown below in figure 3.

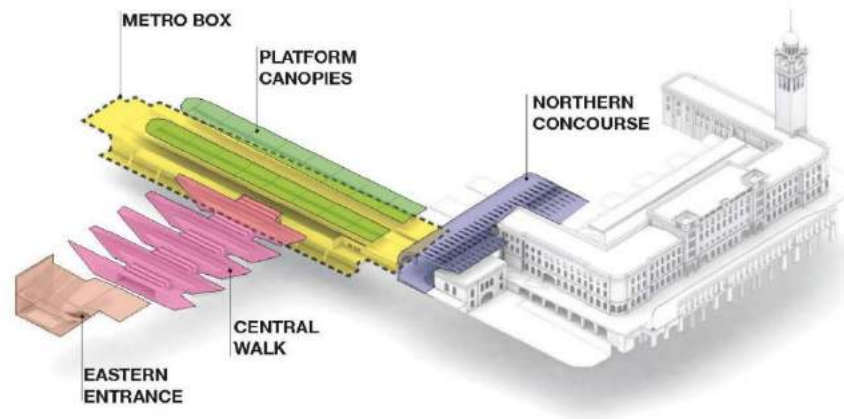


Figure 3 Arrangement of the elements comprising Central Station

Sydney Metro has considered the design and visual impacts of the permanent above ground infrastructure elements within the Central Station Metro Works and surrounding precinct that have not been identified in the dot points above, including:

- Track work and associated civil engineering works;
- Overhead wiring infrastructure;
- Electrical works including light poles on platforms;
- Safety and security fencing to platforms; and
- Screening to Combined Services Route (CSR).

However, the SDPP and associated design objectives and principles do not override the detailed design of these elements as their design requirements are governed by engineering and/or safety standards.

The study area has been identified to determine the key design drivers and influences of the broader urban context on the project. The SDPP boundary is shown in figure 4 and defines the key work areas.

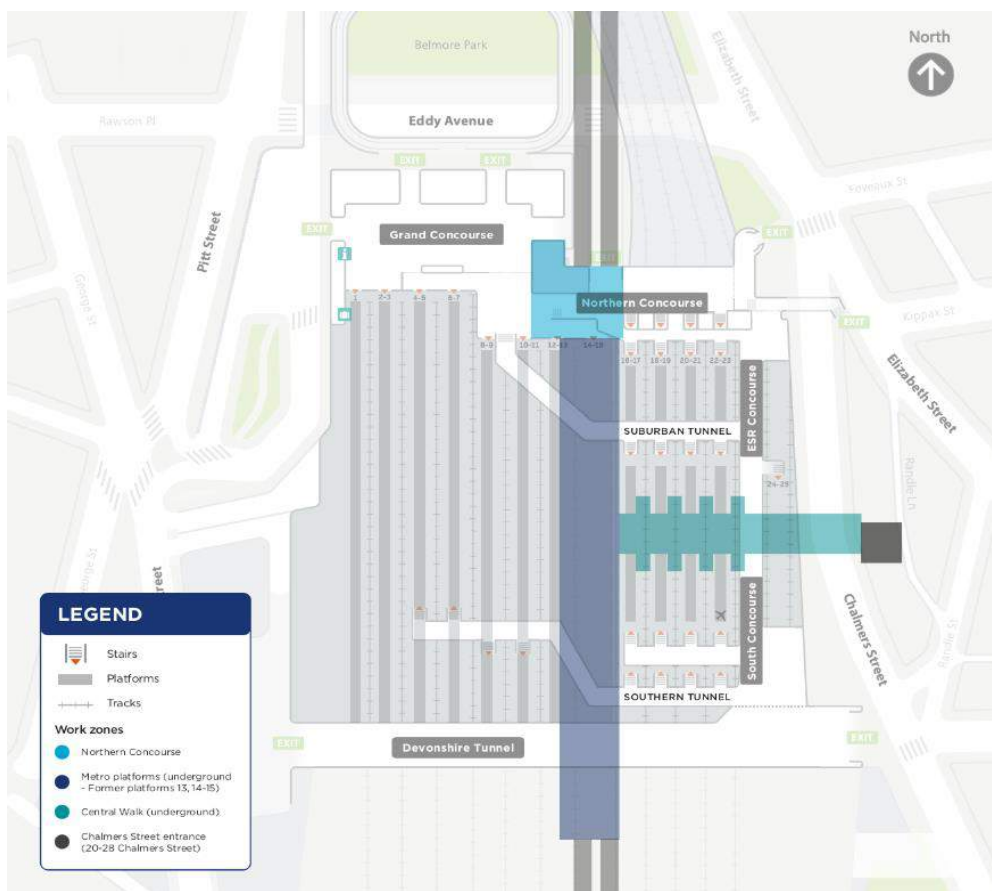


Figure 4 Study area and project boundary of the SDPP

1.4. Status of this Station Design and Precinct Plan

The information contained in this report is the latest available at the time of writing. The nature of the design process on a project of this scale is one that requires continuous development and refinement until the project is constructed. Notwithstanding this, the material herein provides a clear appreciation of the scale, nature and treatment of the facilities proposed and their interactions with the environment.

Where substantial changes to the design are made following the endorsement of this SDPP, an updated SDPP would be prepared for approval by the Department of Planning, Industry and Environment. This updated SDPP would be prepared at the conclusion of the Stage 3 design (refer to Section 2 for the overview of the design development process).

1.5. Structure of the Station Design and Precinct Plan

The SDPP has been structured as follows:

- Section 2: provides an overview of the design development process that has occurred for the project to date
- Section 3: outlines the consultation that has been undertaken during the preparation and review of this plan and how the feedback received has been addressed

- Section 4: identifies the design objectives, principles and standards specific to the relevant scope element of the plan
- Section 5: identifies design opportunities, including in regards to public art, heritage interpretation and use of salvaged elements
- Section 6: details the key features of the station/element design and the precinct/public realm plan
- Section 7: outlines the implementation phase including timing for delivery of access, landscaping and public realm initiatives and the monitoring and maintenance procedures for landscaping
- Section 8: provides an assessment of the visual impact for the relevant design elements and identifies if a ‘minor benefit’ rating (or at a minimum a ‘negligible’ rating) has been achieved.

1.6. Compliance with the Conditions of Approval

The following table identifies the requirements of the relevant conditions of approval of SSI 15_7400 and where these have been addressed in the SDPP.

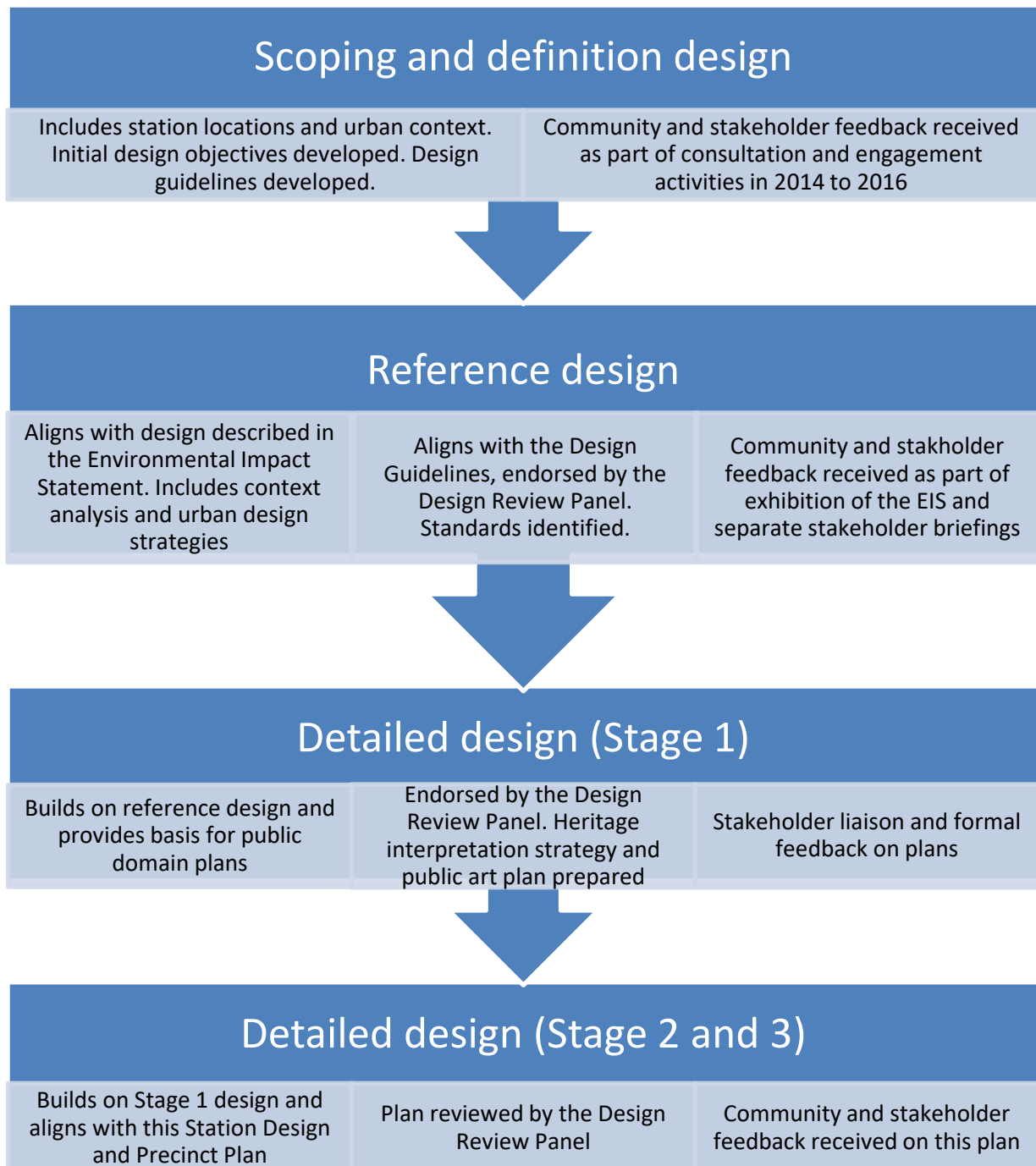
Requirement of the conditions of approval	Where addressed in the plan
Condition E93	
In developing the Interchange Access Plan(s), the Proponent must consider: <ul style="list-style-type: none"> a) traffic and accessibility requirements; and b) the Station Design and Precinct Plan(s) required by Condition E101. 	Section 4 identifies design objectives, principles and standards. Where these objectives principles and standards are relevant to the Interchange Access Plan(s), they would be considered in these plans. In addition, the Interchange Access Plan(s) would consider the relevant SDPP, including the station design and precinct plan details provided in Section 4, 6 and 7 of this plan.
Condition E21:	
... The Heritage Interpretation Plan must inform the Station Design and Precinct Plan referred to in Condition E101...	Opportunities identified in the Heritage Interpretation Plan considered in the SDPP have been identified in Section 4.3.
Condition E100:	
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. The DRP must: <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"> a. the NSW Government Architect as Chair (or their representative); b. 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. 	Section 3.2 details feedback that has been received by all members of the Design Review Panel following consultation regarding the SDPP. Appendix C provides a comprehensive breakdown of all consultation undertaken with the DRP to date, including where changes to the design or this plan are made (if changes were made).

Condition E101:	
Before commencement of permanent built surface works and/or landscaping, the Proponent must prepare Station Design and Precinct Plans (SDPP) for each station.	This plan.
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.	Section 1.1 details the qualifications and experience of the authors of the plan. Appendix D provides the CV's of all experienced person ('s). Section 3 details the consultation that has occurred during preparation of the plan. This is supported by the consultation evidence provided in Appendix B and C. Appendix E also provides the feedback received from the City of Sydney and how they were addressed.
The SDPP(s) must present an integrated urban and place making outcome for each station or end state element.	This plan, with a statement provided in Section 6.3.
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), the Department, 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.	The plan will be submitted to the Secretary for approval. Section 3 details the review undertaken by the DRP. Appendix C details the evidence of review by the DRP. Appendix S provides evidence of consultation with the City of Sydney.
Each SDPP must include, but not be limited to:	
<ul style="list-style-type: none"> a) identification of specific design objectives, principles and standards based on - <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) 	Section 4 identifies the design objectives, principles and standards.
<ul style="list-style-type: none"> 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, Sydney Metro Trains Facility South, 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; 	Section 5 details the design opportunities, including for public art, the incorporation of salvaged elements and opportunities to mitigate visual impacts.

<p>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;</p> <p>f) a description of the CSSI design features, including graphics such as sections, perspective views and sketches for key elements of the CSSI;</p> <p>g) the location, design and impacts of operational lighting associated with the CSSI and measures proposed to minimise lighting impacts;</p>	<p>Section 6 details the station design and precinct plans.</p> <p>The station/element design in Section 6.1 details the key design features, including station operational lighting. Section 6.2 details the absence of landscaping within the project boundary and discusses the operational lighting within the precinct.</p>
<p>h) details of where and how recommendations from the DRP have been considered in the plan;</p>	<p>Section 3 details the feedback from the DRP and where and how the recommendations have been considered. These are specified in greater detail in Appendix C.</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>Section 7 outlines the absence of landscaping on site, including timing, monitoring and maintenance requirements (if applicable).</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>Section 3 details the consultation that has occurred during preparation of the plan and how this feedback has been addressed. This is supported by the consultation evidence provided in Appendix A and B.</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>Refer to Section 7 which details implementation of the plan.</p>
<p><i>Note: The SDPP may be submitted in stages to address the built elements of the CSSI and landscaping aspects of the CSSI.</i></p>	<p>Refer to Section 1.3 for the scope elements considered as part of this SDPP. The SDPPs for other scope elements have been/would be considered as part of other SDPPs.</p>
<p>Condition 102:</p>	
<p>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.</p>	<p>Section 8 provides the visual impact assessment and identifies the rating achieved. Section 3.3 discusses relevant input from the DRP on this rating, while Section 8.1 in conjunction with Appendix C addresses how a negligible impact was achieved.</p>

2. Design development process

The design for the Sydney Metro City & Southwest has developed from an initial scoping design through to the detailed design (refer to flow chart below). At each stage a range of consultation and stakeholder engagement activities have occurred. This has also been supported by the development of design objectives, the Chatswood to Sydenham Design Guidelines and now this Station Design and Precinct Plan, all of which has been refined in consultation with the Sydney Metro Design Review Panel.



This Station Design and Precinct Plan draws upon the design work that occurred prior to obtaining planning approval (i.e. during the scoping, definition and reference design) for context, and then details the design work and associated consultation activities that have occurred since planning approval was obtained (i.e. during the detailed design stage).

It is noted that this SDPP relates to the Central Station Metro design and surrounding precinct subject to the SSI project approval SSI 15_7400. The approval and design of any residual or over station development component is subject to that relevant planning approval and associated design process.

3. Collaboration and consultation

The stakeholder and community consultation process for Sydney Metro City & Southwest has played an integral role in informing and scoping the design of the project since 2014. The consultation and engagement activities that occurred to inform the reference design was documented in the Chatswood to Sydenham Environmental Impact Statement (EIS) and the Chatswood to Sydenham Submissions and Preferred Infrastructure Report (SPIR).

Key issues raised during consultation on the reference design, the Central Walk Modification 2, as well as more recent consultation on the Stage 3 detailed design include:

- The need to construct Central Walk through to the western side of Central Station
- Impacts to heritage items e.g. the building at 20-28 Chalmers Street
- Compatibility with future plans around Railway Square
- Design and finishes of Central Walk
- Connection of Central Walk through to Randle Lane and/or Elizabeth Street
- Noise and vibration during construction.

Sydney Metro began consulting and engaging with key stakeholders prior to the preparation of the Environmental Impact Statement. This included:

- Stakeholder consultation following the announcement of Sydney Rapid Transit (now referred to as Sydney Metro) in June 2014
- Project scope consultation and engagement following the announcement of Sydney Metro City & Southwest in June 2015
- Industry consultation in June and December 2015
- Engagement following the project update announcement in November 2015.

Stakeholder meetings were accompanied by information distributed to the wider community through:

- Media releases
- Fact sheet – ‘Transforming Sydney’ (November 2014)
- Websites: Sydney Metro
- Community Information Centres: George Street, Sydney.

A number of issues arising from design, construction and operation of Central Station Metro and the wider area were identified during the consultation period, including:

- Haul routes
 - Consultation identified that haul routes should minimise traffic impacts in the Sydney CBD and avoid the use of the key bus routes along Elizabeth and Castlereagh streets as much as possible.
 - Haul routes in the Sydney CBD have been designed to exit the Sydney CBD as efficiently as possible.
 - Consultation identified that the use of heavy vehicles in the Sydney CBD should be minimised.

- Impacts to road space in the Sydney CBD
 - Consultation identified that the end-state design should not encroach into existing road space in the Sydney CBD.
 - Design of the station has avoided the use of pedestrian blisters into existing road space.
- Maintenance access at Central Station
 - Sydney Trains identified a need for permanent maintenance access into Sydney Yard.
 - The project includes the provision of a permanent access bridge known as the SYAB from Regent Street to Sydney Yard to provide dedicated maintenance access.
- Operations at Central Station during construction
 - Sydney Metro committed to continue ongoing consultation with Sydney Trains to ensure Central Station can continue to provide necessary services during construction with the removal of platforms 13 to 15.
- Heritage Advisory Panel (Sydney Trains, Department of Planning, Industry and Environment)
 - Three meetings were held with the Heritage Advisory Panel between June and October 2015.
 - Sydney Trains provided information regarding key heritage items and the importance of individual items. The potential key heritage impacts at Central Station were presented to the Panel. Sydney Trains highlighted the importance of the Lost Property Office at Central Station.
 - The design of Central Station metro concourse has aimed to limit direct impacts to the Lost Property Office
- Consultation with the City of Sydney
 - Consultation was carried out with City of Sydney in order to support their urban domain and strategic plans in the Sydney CBD. Integration with urban domain and strategic plans was a key focus for the City of Sydney
 - The primary responses from the City of Sydney in relation to the Central Metro Station were that the design of the station should have consideration for the following:
 - Supporting the longer term Central square vision through transport connectivity
 - Provision of active transport connections between station entries and existing links.

The Sydney Metro Chatswood to Sydenham Central Walk Modification 2 was exhibited from 21 June 2017 to 2 August 2017. During this time, consultation activities were carried out to engage key stakeholders and the community on information in the modification report, encourage participation in exhibition activities and provide guidance on the submissions process.

Stakeholder meetings were accompanied by information distributed to the wider community through:

- Postcard flyers
- Newspaper advertisements
- Websites: Sydney Metro

- Email alerts to the project mailing list
- Community Information Sessions held at the Rendezvous Hotel Sydney Central in June and July 2017, with 45 attendees in total.

A number of issues arising from design, construction and operation of Central Station Metro and the wider area were identified during the consultation period, including:

- Additional opportunities including the need for the concourse to be extended to the west and the creation of a new western entry, an additional entry to the concourse on the western side of Chalmers Street and additional entries to the east
- Quality of design and finishes
- Management of heritage impacts to the Bounce Hostel (former MGM building) and Central Station
- Potential increased construction noise and vibration impacts, particularly around the eastern entry
- The eastern entrance proposed at 20-28 Chalmers Street should open onto Randle Lane at the rear of the site as well as Chalmers Street to provide easy access to the area south-east of Central Station
- Considering the need for an undercover bike storage area at Central Station.

Consultation, with government agencies, councils, business groups and the community has continued throughout the development of the Stage 2 detailed design and preparation of this SDPP. The SDPP was submitted to the Sydney Metro Design Review Panel first on 19 November 2019 with subsequent reviews in December 2019 and January 2020. The consultation undertaken and how feedback has been addressed in the plan is detailed below and has been finalised in the final version of the plan, following all consultation being undertaken.

3.1. Consultation during preparation of the Station Design and Precinct Plan

This SDPP has been prepared in collaboration and consultation with the following relevant stakeholders:

- City of Sydney
- Department of Planning, Industry and Environment
- Surry Hills Creative Precinct (i.e. the local Chamber of Commerce)
- Design Review Panel (19 November and 3 December 2019; 21 January 2020)
- The local community.

The consultation process and outcomes for the Central Station Metro works during design and construction has been undertaken via a collaborative process agreed between Sydney Metro and Laing O'Rourke.

For the purposes of the SDPP, the community has been defined as those living or working within 500m of Central Station and who currently receive regular project updates as seen in figure 5.

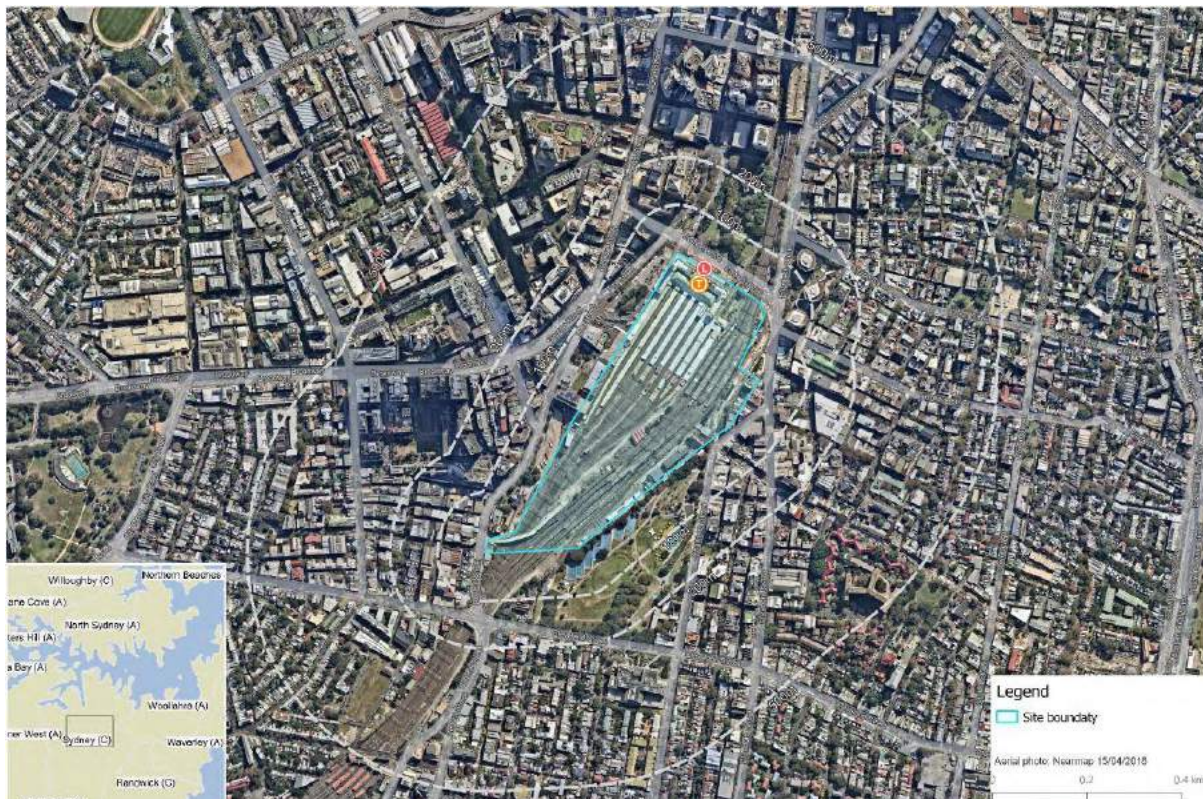


Figure 5 portrays a 500m radius of project site used to identify the ‘Community’.

Collaboration and consultation activities undertaken during development of the detailed design and preparation of this SDPP include:

- Community Forums held to date with local businesses, residents and members of the general public in the Surry Hills and Chippendale area, providing design and construction updates:

Date and location	No. of attendees	Key themes
Wednesday 29 August 2018, Adina Hotel	25	Operational changes to Central Station, project timeframes, how Central Station Metro and Central Walk fits into the broader Sydney Metro, view of the new Central Station roof structure.
Saturday 1 September 2018, Rendezvous Hotel	14	
Wednesday 7 November 2018, Haven Specialty Coffee	40	Eastern entrance visual, managing heritage, demolition impacts from 20-28 Chalmers Street, accessibility features of the station.
Wednesday 24 July 2019 (combined with tunnelling contractor), Centennial Tower A, 260 Elizabeth Street	65	Roof canopy material, number of future metro platforms, delivery access for businesses; acknowledging good communication received from project.

- Regular attendance at monthly Surry Hills Creative Precinct meetings since September 2018, providing project updates to business community members.

Public display of this plan occurred in Q4 2019 for a period of two weeks, with both the City of Sydney and the local community being invited to provide feedback. The availability of the plan for comment was promoted via:

- Letterbox drop to properties within a 500m radius of Central Station
- Advertisement in the local newspaper, Wentworth Courier
- Publishing the document online
- Email notification to those registered for CSM project updates.

Feedback received from the City of Sydney and the Community typically involved numerous requests which were largely out of the scope of the approved project, and therefore could not be adopted in the final review. Although discussed in greater detail in Appendix A, B and E, the key themes raised include:

- The addition of more bicycle parking facilities outside the project boundary
- Redesigning the façade of the new eastern entrance from Chalmers street
- Creating a shared zone on Randle Lane for pedestrians and vehicles
- Adopting international signage throughout the station
- Widening the Eddy Avenue bridge
- Improving pedestrian safety initiatives in the wider precinct around Central Station
- Introducing plantings inside the Station and Metro box

Central Station Main Works delivery phase: Customer-centred design (CCD) work

A number of research and testing activities to identify customer behaviours and elicit feedback and responses to the proposed design have been undertaken during the design delivery phases and are summarised below.

- Customer Centred Design (CCD) is an evidence-based process used to inform the design for an easy customer experience. It starts with understanding the people in which the space is being designed for and ends with a tailor-made design to meet the customer's needs and exceed their expectations.
- The CCD process for Central Station Metro has provided an opportunity to test and validate elements of the station design, optimising the design based on customer research and engagement, with the overall goal of placing the customer's needs at the centre of the design process.
- The process is iterative and flexible, obtaining findings and insights through a combination of site observations, customer and stakeholder engagement and design assessment by the project team. These inputs are then used to improve Central Station design and the CCD process itself.

- During each design stage the CCD Lead engaged in several research and testing activities to identify customer behaviours and elicit feedback and responses to the proposed design, including desktop research, site observations, customer intercepts, customer focus sessions, project team workshops (including TfNSW, Sydney Metro, the CSM Contractor, the architectural team and the CCD Lead), and customer co-design workshops. Results were presented to regular stakeholder and design team meetings and design responses developed.
- During the final design stage, the CCD Lead engaged in research and testing activities to confirm that the design as developed has responded to and resolved stakeholder and customer concerns.
- During Design Stage 1, research activities were undertaken to develop an understanding of how Central Station currently works and identify key areas of the site and surrounds to better focus further research and understand how the different elements of the design contribute to the overall customer outcomes. Sixty-five customer interviews and 16 in-depth interviews were undertaken, and 94 hours spent at Central Station.

Key findings and design responses for Design Stage 1 are summarised below.

Area	Finding	Response
Heritage	Customers see the heritage aspects of Central Station as an important aspect of the overall design. Customers think Central Station should be a Sydney landmark which embraces the heritage and history of the city.	Platform canopy heights adjusted to maintain sightlines to the heritage clock tower. Elements of the existing station such as the existing CENTRAL signs on Intercity platforms integrated into the new canopies and new signage concepts developed based on the hand-cut existing
Metro platforms	The Metro platform can feel cramped in places. The depth of the Metro Box creates challenges for people using the escalators; some customers felt excited by the height, others were worried and experienced vertigo.	Selection and detailing of materials, finishes, and lighting to mitigate. Mitigation of high escalators has included development of wall cladding design and material selections to reduce visual disturbance; positioning of light sources to make environment feel more open; provision of elements on the platforms to provide a true sense of scale and minimise vertigo; minimisation of reflective surfaces; and provision of extended run-off zones and alighting areas to escalators
Retail	Customers voiced a strong demand for expanded retail and service offerings within the paid zones of the Station. Customers want retail to solve daily convenience problems quickly.	Proposed retail locations and offers adjusted in response to customer feedback and revised layouts reviewed with stakeholders.
Dwell space	Customers use Central Station as a destination. Providing enough dwell and retail space across the Station is crucial to meeting this function. Customers want a variety of dwell and movement spaces.	Eddy Avenue gate line replanned to maintain runoff zones and prevent cross-flow contamination.
Furniture	Customers want a variety of seating and standing options. Customers expressed preferences for softer materials and integrated design.	Industrial design concepts for furniture, wind breaks and help points have been developed taking into consideration customer feedback regarding variety, materials selections, functionality and station environment/social use of furniture

Signage and wayfinding	Signage and wayfinding across Central Station has mixed efficacy. Temporary signage is seen as more effective, while permanent signage was often confusing. Lift identification is important to help customers navigate the station effectively; lifts should be clear, obvious, and describe what customers can reach through them.	Wayfinding information design updated in response to feedback Some escalator locations in new concourse areas revised to limit customers' tendency to move towards natural light and going to platforms rather than continuing through concourse Chalmers Street entrance ticketing moved to ESR gate line.
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- During Design Stage 2, customer interviews were undertaken to develop an understanding of how customers with a visual or auditory impairment as well as culturally or linguistically diverse (CALD) customers navigate environments like Central Station, and to test how effective the wayfinding signage was in assisting these customers navigate the environment.
- Customer workshops were held to uncover customer requirements for furniture and retail within the station, including the form, function and location of furniture items; the materiality of furniture items; the types of purchasing experiences that retailers should provide; the location of retailers; and specific types of retail offerings.
- Twenty-eight customer interviews and four customer workshops were undertaken for a total of 66 customers engaged.

Key findings were:

Theme 1: Accessibility		
Vision impairment	Tactile paths should lead to a safe and secure destination.	Tactile layouts developed in response to stakeholder feedback including consultation with Guide Dogs NSW.
	Tactile layouts developed in response to stakeholder feedback including consultation with Guide Dogs NSW.	Contrast of wall and floor finishes in conformance with accessibility standard requirements.
Hearing impairment	Internal finishes and fixtures need to be sound absorbing to ensure that sound doesn't reverberate.	Acoustic analysis recommendations incorporated into design so that environment complies with project acoustic requirements.
Vertical transport	Design glazing treatment that can be applied to glass lifts to ensure that visibility is maintained by sense of safety and privacy also accommodated.	Provision of modesty screens to lift car glazing.

Theme 2: Environmental Information Design		
(Note: No actions arising for architectural team from Theme 2: Directional Signs)		
Information kiosk	Investigate placing an information counter at the intersection of Central Walk and the North-South Concourse.	Digital information hub provided at the Central Walk/North-South Concourse intersection.

Theme 3: Environment		
General station environment	Maintain an open feel and natural light sources in the station environment. Maintain the difference in materials along Central Walk.	Light wells admit natural light into the North-South Concourse and Central Walk areas Wall finishes around thresholds to platform level on Central Walk have been specified as a contrasting finish structure at Grand

		Concourse has been designed to let in natural light as well as embracing the heritage aesthetic of the existing station buildings and clock tower.
Meeting points	Identify the locations of meeting points throughout the station.	Proposed placements of furniture and retail locations and the proposed public art provide opportunities for identifying meeting places Elements of the station architecture such as concourse entry portals also provide opportunities for identifying meeting places.

Theme 4: Furniture

Furniture locations	<p>Arrange furniture items to accommodate different user group sizes Locate seating in areas that are visible to customers without blocking traffic flow Ensure that seating encourages positive behaviour in the station Ensure furniture locations are placed to provide movement-impaired customers opportunities to rest when traversing the station.</p> <p>Review map of customer requested furniture locations and use this as a guide when allocating station furniture.</p>	Furniture locations based on project requirements, DDA and accessibility requirements, the Sydney Metro spatial hierarchy, pedestrian modelling considerations, identification of “fast” and “slow” zones, architectural design constraints and identified customer preference, and coordinated with project requirements for clear circulation paths.
Furniture function	Investigate how more functionality can be integrated into furniture items to make them more convenient and modern.	Industrial design concepts for furniture, wind breaks and help points developed taking into consideration customer feedback regarding variety, materials selections, functionality and station environment/social use of furniture
Furniture materials	Avoid using metal on main touch points of furniture. Furniture should have a level of sustainability that is obvious to the customer Use natural materials that have a tactile affinity when they come in contact with humans.	Industrial design concepts for furniture, wind breaks and help points developed taking into consideration customer feedback regarding variety, materials selections, functionality and station environment/social use of furniture.

Theme 5: Retail

Retail locations	Place retail offers outside of main pedestrian thoroughfares.	Proposed retail locations and offers adjusted in response to customer feedback and reviewed with TfNSW.
Retail offer	Provide customers with a variety of fast moving consumer goods retailers that meet general commuter needs. Choose retailers based on their affinity to the local area Avoid the introduction of big brands into the station.	Proposed retail locations and offers adjusted in response to customer feedback and reviewed with TfNSW.
Retail buying experience	Investigate retailers that don’t operate on a human-to-human service model Look to engage with retailers that provide fast and high quality customer service.	Proposed retail locations and offers adjusted in response to customer feedback and reviewed with TfNSW Retail pod design concepts developed that integrate customer needs and retail requirements.

- During Design Stage 3, the CCD Lead undertook two different public-facing tests to identify customer behaviours and elicit feedback on the proposed wayfinding system following delivery of an updated TfNSW Wayfinding Planning Guide to address specific wayfinding challenges within Central Station, focussing on signage legibility and proposed signage locations. Forty-one legibility intercepts and 25 location intercepts were completed for a total of 66 customers engaged.

Key findings were:

Theme 1: Signage location		
Location	Do not place complex directional information within intersections and ticket gate areas Make sure customers have directional information along their path of travel to confirm their journey.	Further review of signage locations for all customer journeys undertaken Adjustments made to signage allocations and messaging.
Innovation	Investigate how floor markings can be used to enhance customer navigation when using public transport Investigate the integration of temporary wayfinding as an educational tool that can be used when the station first opens and then removed when people become more familiar.	The use of floor markings and other interventions that can help improve the customer experience at Central Station is being investigated by the Sydney Metro CCD team.

Theme 2: Naming conventions		
Institution	Customers rely on the naming conventions to develop and deepen their understanding of the station environment. The signage needs to ensure that new naming conventions are kept to a minimum and provide clear and practical ways of comprehending the environment.	Signage and wayfinding integrates conventions established by the Wayfinding Planning Guide
Metro Platform numbers	Metro platform numbers should fit within a logical sequence for Central Station. If a logical sequence cannot be maintained, a different numbering system should be considered for the metro platforms.	Options for the numbering of the Metro platforms workshopped and will be subject to further review and consultation with the Operator

Theme 3: Signage legibility		
Layout	Three column signs need to provide a clearer information hierarchy to make it easier for customers to understand where they need to go Improve the legibility of the header text through graphic application.	Signage and wayfinding integrates layout established by the Wayfinding Planning Guide.
Wayfinding	Ensure that directional content pushes customers to multiple Metro platform entrances along the North South Concourse. Improve identification signage around metro platform entrances on the North-South Concourse so that customers can locate entrances when approaching from either direction.	Adjustments made to messaging and signage allocations.

Evidence of the collaboration and consultation undertaken is provided in section 3 and how the feedback received during this consultation has been addressed in the SDPP is provided in Appendix B.

3.2. Review by the Design Review Panel

This SDPP was submitted to the DRP in parts over 2018 and 2019 and were delivered over multiple presentations and or consultations.

A series of penultimate presentations delivered to the DRP between November and December 2019 provided insight into the overall appearance of Central Station following completion of the works, using the viewpoints identified in the EIS. These images used computer generated imagery to portray the overall design outcome of the station, comparing it to the existing appearance of the station, therefore highlighting the improved sight lines, natural lighting, and the new facets of Central Station.

Appendix C includes all consultation had with the DRP to date, including any consultation undertaken during the final presentations had with the DRP.

4. Design objectives, principles and standards

The development of the design and SDPP has been guided by a range of design objectives, principles and standards.

The Sydney Metro City & Southwest Chatswood to Sydenham Design Guidelines (June 2017), as included in the planning approval documents for SSI 15_7400, provide guidelines for the spatial and functional design of the urban and public domain in each station precinct as well as the urban form of associated project elements.

The Design Guidelines identifies the five project design objectives to help meet the transformational vision and world-class aspirations of the project. These are supported by design principles which describe the intent of the objectives for the design of the stations, station precincts and the wider metro corridor. The project design objectives and supporting principles, as reviewed and refined by the Design Review Panel, are detailed in Section 4.1. These include principles of improving customer accessibility and experience between modes of transports as detailed in the IAP – Central Station.

Sections 4.2 to 0 details the design principles relevant to the aspects identified in Condition E101(a) and scope of this SDPP. These have been captured from the Design Guidelines, relevant design reports that support the detailed design and other standards and guidelines listed in Section 4.8.

4.1. Project design objectives

Objective 1: Ensuring an easy customer experience

Principle – Sydney Metro places the customer first. Stations are welcoming and intuitive with simple, uncluttered spaces that ensure a comfortable, enjoyable and safe experience for a diverse range of customers.

The delivery of the project objectives has been supported by a number of key design strategies.

- Generous spatial amenity: Maximising volume, headroom and circulation widths;
- Integrated architecture, engineering and construction: Synthesizing architecture with structure, services and construction;
- Visually connected spaces: Optimising view lines for intuitive wayfinding;
- Natural light: Harnessing and diffusing sunlight into the subterranean concourses utilising curved soffits and canopies;
- High quality finishes: Allocating high quality finishes to maximise customer benefit within high use primary circulation zones;
- Consistent, concise and restrained use of materials: Deploying materials to connect spaces together for improved circulation legibility; and
- Recognizing the high value of Central Station’s heritage: Respecting heritage with a considered, sensitive and confident contemporary architectural approach premised on recognised rail typology and incorporating arches, vaults and material detailing consistent with Central’s historic built form.

The introduction of the North-South Concourse and Central Walk rationalises the current fragmented patterns within Central Station through a fundamental rearrangement of customer flows as seen in figure 6. Significant new orientation spaces have been provided at key nodes

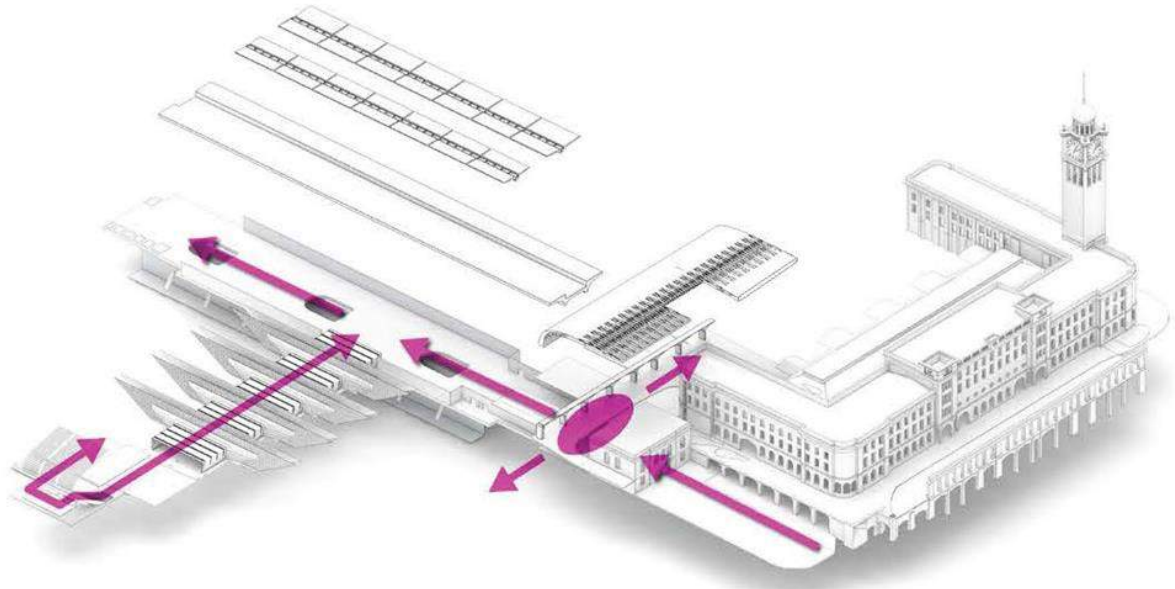


Figure 6 Customer flow paths through the new Central Station following the metro upgrade.

and thresholds, in particular the Northern Concourse, the Chalmers Street entrance and the North-South Concourse, creating generous, calm spaces for users to orientate themselves and creating clear legibility of the key circulation routes.

A palette and hierarchy of materials has been developed, comprising terrazzo floors, feature sandstone panelling, exposed concrete soffits, stainless steel void edges, and wall and soffit panels of prefinished panellised metal claddings or stainless steel claddings. Key expressive elements and materials are used at key thresholds or points of transition to reinforce an intuitive, legible wayfinding strategy to support overt signage messaging.

The material selection together with the creation of volumes and orientation spaces at key thresholds is a crucial part of creating a customer environment where circulation is legible and intuitive and does not rely on previous knowledge of the station or overt signage to navigate. The use of predominantly masonry materials all within a complementary colour tone range contributes to the creation of a calm environment that will improve the customer experience moving through the spaces. The selected materials also provide a high degree of consistency between spaces, including those in and around the existing station. Material accents at key thresholds, such as the introduction of textured walls or skylights are used to differentiate spaces rather than wholesale changes to the material palette.

Signage and wayfinding locations have been established in principle and tested during customer engagements. To maintain uncluttered environments, signage has been integrated into the architecture (for example, integrated into wall finishes or suspended from the ceilings). Floor mounted signage such as Passenger Information Displays are located near walls, out of the range of escalator runoffs, or placed in the “slow zones” along the centrelines of the concourses.

The design seeks to maximise the use of natural light, particularly in the below-grade elements of the scheme, to enhance the user experience. All key thresholds have elements of natural light introduced to assist orientation and intuitive wayfinding around the station. The natural

and artificial lighting design also seeks to highlight architectural features such as the textured stone walls, further enhancing the environment for users of the station.

Objective 2: Being part of a fully integrated transport system

Principle – Sydney Metro is a transit-oriented project that prioritises clear and legible connections with other public and active transport modes within the wider metropolitan travel network that intersect with this new spine.

Central Station will become the key multi-modal station within the public transport network, facilitating seamless intermodal connectivity between suburban and intercity rail, the metro, bus and light rail networks and active travel connections. Central Station is at the heart of Sydney's transport infrastructure, and a catalyst for future growth around this significant city precinct.

The transformation of Central Station to accommodate a new metro interchange has required the design of spatially and structurally efficient operational segments, and sophisticated, multi-level passenger flow strategies accommodated by insertions designed to accentuate and amplify the heritage qualities of the existing architecture. The metro and the new concourses are not stand-alone interventions, but rather support a holistic, fully integrated Central Station with precinct and intermodal connections.

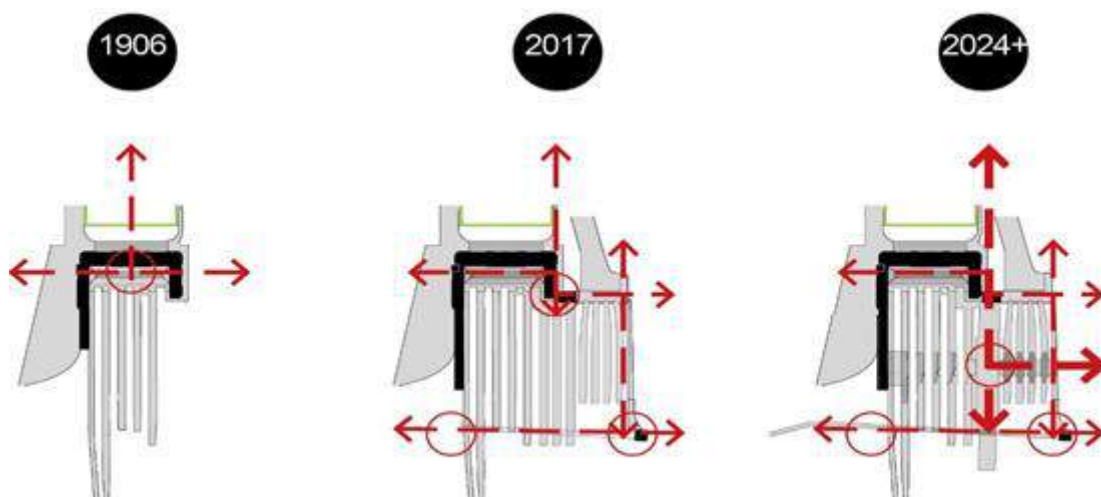


Figure 7 Diagram showing the incremental change in circulation patterns at Central Station.

Intermodal connections have been rationalised and simplified.

- At key nodes and thresholds, significant new volumetric spaces have been created that provide generous, calm spaces allowing customers to orient themselves and providing clear, intuitive, safe, uncongested and legible circulation routes.
- The new Chalmers Street, Surry Hills entrance is adjacent to the new Chalmers Street light rail stop.
- At the Eddy Avenue entrance, arriving customers can continue directly ahead to access the new metro via the North-South Concourse; or access the suburban platforms via Central Walk; or take the lift to the upper Intercity platforms.

The Central Station design recognises that the increased number of patrons who will use Central Station after the completion of construction of the Metro Box has major implications for passenger movements through, and around, the station as a whole.

Objective 3: Being a catalyst for positive change

Principle – Sydney Metro is a landmark opportunity to regenerate and invigorate the city with new stations and associated development that engage with their precincts, raise the urban quality and enhance the overall experience of the city.

Two of the key project design objectives are Destination and Gateway. The introduction of Sydney Metro to Central Station will not only be an opportunity for precinct regeneration. The significant upgrade of facilities, connections and amenities within the station will transform Central Station into a destination in its own right.

Central Station is a gateway both to and from Sydney. The design seeks to rejuvenate the station through careful treatment of the iconic historic building with new interventions that will make the station a fitting gateway to Sydney as a twenty-first century world city. The design recognises that users of the station will include visitors to Sydney as well as local users, which requires that the station perform equally for both groups of users.

Objective 4: Being responsive to distinct contexts and communities

Principle – Sydney Metro's identity is stronger for the unique conditions of centres and communities through which it passes. This local character is to be embraced through distinctive station architecture and public domain that is well integrated with the inherited urban fabric of existing places.

Central Station is a building of national importance. Constructed in two phases, Central Station was the first major rail terminus to be constructed in Australia. In addition to its historic importance, the Neo-Classical monumental sandstone façades have made the station one of Sydney's distinctive landmarks.

The design of the new interventions has been perceived as a family of related geometric forms, based on the geometry of the flattened arch which is a dominant feature of the historic station and approaching viaduct. This helps to create a harmonious composition where new and existing elements are distinct, but respectful of the station's historic character.

Design studies of heritage interpretation proposals to date have typically sought a design solution that is integrated into the architecture. An example is informing the tessellation patterns in the sandstone cladding (non-indigenous heritage) or forming a pattern in the architectural treatment proposed for the northern and southern vent structures on the reinstated Intercity platforms, based on a design provided by an indigenous consultant (indigenous heritage). Heritage integration has also included reuse of items such as the existing CENTRAL signs salvaged from the Intercity platforms. Pending confirmation of their suitability for reuse, the existing signs will be refurbished and returned to the reinstated platforms, as seen in figure 9.



Figure 9 Re-use of existing 'CENTRAL' signs that will be salvaged from the intercity platforms.

A simple palette of durable, self-finished materials of civic character has been assembled which is influenced by the material of the heritage buildings including the local Hawkesbury sandstone.

Key expressive structural elements or materials are utilised at key thresholds or points of transition to reinforce intuitive wayfinding. The design incorporates a series of north-south “cuts” much like archaeological excavations that delineate key areas of transition. These vertical slots are expressed in a profiled masonry material that reinterprets the texture, layering and craft of the historic sandstone facades, adding to the legibility of circulation and supporting intuitive navigation through the station environment.

The approach used for the integration of texture, craft and detailing of the existing buildings has been one of reinterpreting the heritage sandstone to create new textured feature walls in the below-grade concourses and platforms as seen in figure 10.

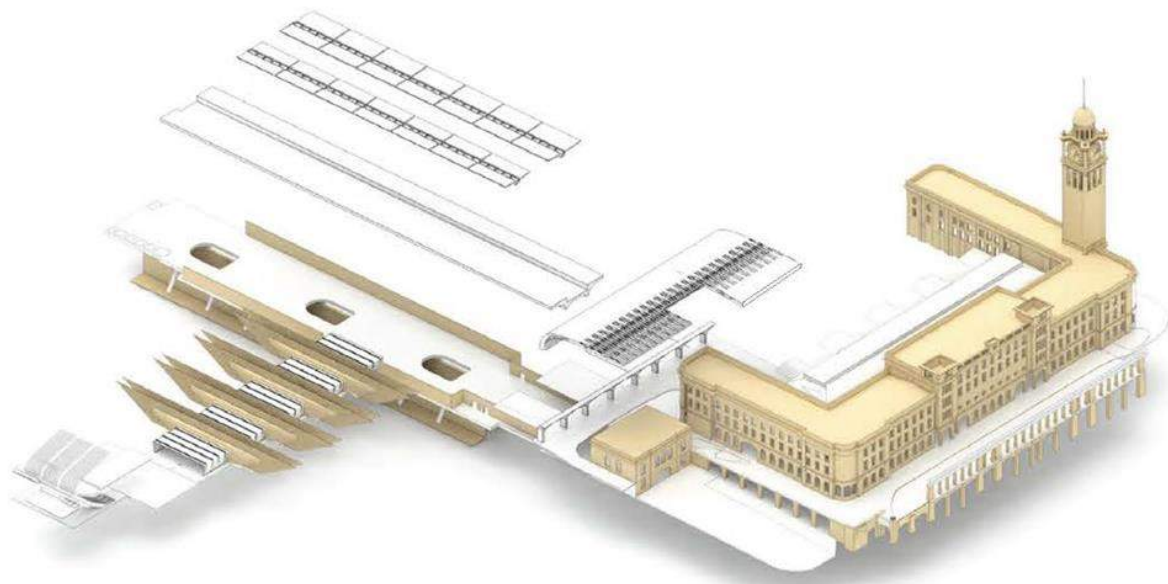


Figure 10 Key areas of Hawkesbury sandstone incorporation to retain the original aesthetic of Central Station.

Objective 5: Delivering an enduring and sustainable legacy for Sydney

Principle – Sydney Metro is a positive legacy for future generations. A high standard of design across the corridor, stations and station precincts, that sets a new benchmark, is vital to ensuring the longevity of the metro system, its enduring contribution to civic life and an ability to adapt to a changing city over time. The rebirth of the city terminus as a catalyst for regeneration and renewal can contribute to the ongoing success and growth of Sydney.

The introduction of high quality materials to customer areas elevates the Central Station facility as an internal exemplar of a multi-modal hub. The high quality finishes will introduce a step change in the way customers experience and perceive the new facility and provide a more fitting relationship with the historic station context.

Introducing simple, high quality and robust materials creates a framework that allows the design to respond to key future interfaces. For example, elements of the line-wide design and branding can be easily integrated. Similarly, the flexibility of the basic framework allows the future integration of additional retail or advertising elements and changes in accommodation and operations without diminishing the design intent, safeguarding both the customer experience in key spaces as well as design clarity and organisation.

4.2. Maximising amenity of public spaces and permeability around station entrances

The greater part of the Central Station Metro works are located within the Central Station precinct, and interfaces with the public domain are limited to two facades at Chalmers Street and Randle Lane in the eastern portion of the works, and the interface with the Central Electric Building facing the Eddy Avenue forecourt on the north side of the site. There is no scope of work in the public domain, as shown in the figure overleaf.

All of the public transport infrastructure is public space, so internal and external spaces of the station are public realm. Having a consistent theme binds the internal and external areas and helps the station to integrate within its local context. The station entrances need to engage with their local context to create welcoming landmarks in the urban environment.

The following design principles and guidelines were identified in the Chatswood to Sydenham Design Guidelines to ensure that the amenity of public spaces and permeability around station entrances is maximised.

- The design must create welcoming, secure and well maintained public domain spaces and station buildings with an attractive 'sense of place.'
- The stations are to be integrated with the urban design of the adjoining precinct to provide direct and safe accessibility to the station entry.
- Station plazas are to be designed as an extension of the internal station environment providing shelter, comfort, safety and security for customers and contributing positively to customer journey experiences. These spaces are to reflect the local public realm context and character. However, the design of station plazas is outside the current scope of works.
- Public spaces should be created which allow for spontaneous uses and activities by their occupants. The design should consider opportunities for temporary event, pop ups, retail spaces and the night time economy. However, the current scope of works for CSM does not allow for the development of public spaces.
- Integration of station precincts with the surrounding urban structure is to facilitate cross and through movements, enhancing precinct permeability and access to the transport interchange functions of the locality.
- Entry spaces are to be well lit, bright and welcoming to enhance customer experience providing a safe, open environment that has good permeability and clear sight lines from inside and outside the station.
- The design must provide adequate space to meet customer demands, including during peak periods and long-term patronage demands. Where constrained, this may be met by extending the public domain into the station forecourt.
- The design must provide legible, intuitive spaces to enhance customer journeys through efficient navigation and interchange.
- A system of appropriate pathway surfaces, widths and gradients is to provide safe and equitable pedestrian access throughout the public domain and to link transport modes
- Location, scale and articulation of external walls and fences are important elements of areas and corridor sites to minimise excessively long unarticulated lengths, inactive

bland and unappealing frontages in the public realm. Their design is to be an integral part of the urban design of the station.

- Station public spaces are to be designed with a consistent hierarchy of landscape treatments. The treatment of the spaces is to reflect local character and context, integrate with their settings and provide attractive space and streetscapes.
- The landscape design is an important component of a positive and appealing urban realm for Sydney Metro stations, however the landscape design is limited at Central Station.
- Public art is to be integrated into the station and building designs to enliven and enrich the public realm and contribute to this sense of place.

The following site-specific design principles and guidelines have also been identified to inform the development of the detailed design. The metro insertion must accentuate the key heritage qualities of the existing architecture, and introduce new, architecturally inspiring elements that will not disrupt the fundamental character of the Edwardian railway architecture. The clock tower, the original canopied concourse and the general architectural gravitas remain iconic, and any new interventions, however contemporary in architectural style, should elevate the station's unique historic status.

- The design of the new interventions is perceived as a family of related geometric forms, based on the geometry of the flattened arch which is a dominant feature of the historic station and approaching viaduct. This helps to create a harmonious composition where new and existing elements are distinct, but respectful of the station's historic character.
- The design seeks to maximise the use of natural light, particularly in the below-grade elements of the scheme, to enhance customer experience. All key thresholds have elements of natural light introduced to assist orientation and intuitive wayfinding around the station. The natural and artificial lighting design also seeks to highlight architectural features such as the textured stone walls, further enhancing the environment for station customers.

4.3. Local environmental, heritage and place making values

The station and precinct design must be developed with reference to the local environmental, heritage and place making values of the locality.

Central Station is set within a rich and diverse townscape. It is characterised by a concentration of low to medium scale (3–7 storey) heritage buildings and streetscapes juxtaposed with modern and contemporary office and apartment towers. The station contains a series of varied interrelated and historic open spaces, and a large mix of uses and activities, including commercial, industrial, institutional, residential and hotels.

The Central Railway Station known today has symbolic importance as the focus of the NSW rail system. The historic station complex was completed in 1921 with the addition of the clock tower, which today acts as a landmark contributing strongly to the visual prominence of the station and Railway Square. Railway Square is the major visual and functional gateway to the city from the west and south. The square includes sandstone walls and a ramping roadway, which reaches a colonnaded station entry. A 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 Eddy Avenue entrance is marked by a mature London Plane Tree. Several shopfronts flank this entry, located both within 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 northern concourse. Platforms 13 to 15 and a portion of platforms 4 to 23 are seen from adjacent platforms to both the east and west, and are characterised by their Victorian, corrugated iron roof canopies.

From the south, views across platforms 13, 14 and 15, include the main Central Station clock tower and associated sandstone buildings, and the city skyline beyond. Rail yards are located to the south of the platforms and are surrounded by several railway lines entering Central Station from the south and west.

To the southeast of the station along Chalmers Street is the 'Plaza Ibero Americana, which consists of two statues and 11 busts representing significant historical figures and Latin American national heroes set within a formal row of conifer trees.

Prince Alfred Park is a historic parkland located on the southern side of Central Station, within Surry Hills. This park is bounded by Chalmers Street, Cleveland Street and the rail yards. Trees and elements of the layout from the original 1870 design still exist on the site today including Moreton Bay fig trees arranged as an informal row along the boundaries. The central avenue of London plane trees and Brush box date from the inter-war period, as do the Washington Palms and Canary Island Date Palms. The park includes tennis and basketball courts, children's play areas and a swimming pool complex with cafe.

The SYAB currently provides access to Sydney Yard via Regent Street, which is a wide, heavily trafficked five lane road, located along the western side of Central Station. It connects Chippendale to the Pitt and George Street intersection.

The following design principles and guidelines were identified in the Chatswood to Sydenham Design Guidelines to ensure that the design responds to the local environmental, heritage and place making values: The design and location of public artworks is to be reflective of the distinctive character of each place:

- Sydney Metro is to be fully integrated within, and sensitive to, its heritage context.
- Canopies and entrances are to respond to the built form and character of the surrounding context in terms of scale, setbacks and characters, as well as heritage context where relevant.
- Where appropriate, the design of the rail corridor and station precincts are to integrate and conserve existing heritage items and mitigate any negative impacts.
- Where Sydney Metro intervenes in or interfaces with heritage places, design excellence is to be sought to support inventive, interpretive and contemporary responses to heritage values of that place. The design should take into consideration the siting, scale, form, materials and colour and details of the heritage items and places.

- The design should identify opportunities for heritage conservation to contribute to the celebration of local identity in station design.
- A positive precinct image is to be developed around the particular heritage values or a place or by the quality of the existing urban context.

Environmental values

- Harnessing both direct and indirect daylight to minimise energy consumption and create a light, airy ambience in stations and surface buildings;
- Utilising energy efficient lighting and lighting control systems;
- Incorporating climate change adaptation measures to ensure resilience;
- Incorporating opportunities to reduce heat island effects, including light coloured finishes, roofs and pavements;
- Utilising durable, climate resilient, long-life, healthy, low maintenance materials; and
- Minimising waste through efficient design and material selections.

Place making values

- Generous spatial amenity: Maximising volume, headroom and circulation widths;
- Visually connected spaces: Optimised view lines for intuitive wayfinding;
- Natural light: Sunlight harnessed and diffused deep within the below-grade concourse utilising curving soffits and canopies;
- High quality finishes: Allocated for maximum customer benefit within high use primary circulation zones including demarcating between concourses and platforms;
- Consistent, concise, restrained use of materials: Deployed to connect spaces for improved circulation legibility; and
- Recognising the high value of Central Station's heritage: Respecting heritage with a considered, sensitive and confident contemporary architectural approach premised on a recognized rail typology incorporating arches, vaults and material detailing consistent with Central's historic built form.

Heritage values

- Minimising adverse impacts on the significant heritage buildings and fabric that contribute to the overall significance of Central Station as a place listed on the NSW State Heritage Register. For example, the new Northern Concourse canopy roof over sails the Central Electric Building parapet, framing the existing building and announcing the new station entrance and axis through the Central Electric Building to the metro and Suburban and Intercity platforms;
- Maximising the retention and legibility of those heritage buildings and fabric that are individually significant and contribute to the overall significance of Central Station. For example, provision of a new sheltering structure between the platform canopies and the rear of the Central Electric Building enables the stripping away of much of the existing clutter around the Northern Concourse and Central Electric Building and reinstates the Central Electric Building as a prominent, stand-alone element; and

- Designing new buildings and other elements of the project work to complement retained significant heritage buildings, elements, fabric, spaces and vistas, and avoid outcomes that compromise the significance of these heritage items. For example, the new Northern Concourse canopy has been deliberately kept lower than the existing Grand Concourse roof; and the height of the new canopies on the reinstated Intercity platforms takes account of preserving views to the clock tower.

4.4. Urban design context

The urban and public domain design must be developed with reference to the existing urban context and infrastructure as well as planned initiatives in the locality.

Central Station is both a destination and the largest transport interchange in NSW, with connections to intercity and suburban heavy rail; metropolitan bus and coach services; Inner West Light Rail (IWLR) and Sydney Light Rail (SLR); and taxis.

The Central Station Metro is located within the existing Central Station precinct. Access to the metro station is via entrances from Eddy Avenue, Chalmers Street and the western forecourt.

Central Station provides access to retail and mixed-used precincts in the locality including Haymarket, Chinatown, Central Park and Surry Hills; and to educational facilities including the University of Technology Sydney (UTS); the University of Notre Dame, Australia; and Sydney Institute of Technology.

The following design principles were identified in the Chatswood to Sydenham Design Guidelines to ensure that the design responds to the urban design context. A positive precinct image is to be developed around the particular heritage values or a place or by the quality of the existing urban context

- Lighting is to reinforce the visibility of station entries as safe and welcoming elements, within the local context at night. Note that only the new Chalmers Street entrance is part of the Central Station Main Works scope; all other existing station entrances have not been considered.
- The design of station buildings, service facilities and public domain elements must respond to be the local context and environment.

The following site-specific design principles and guidelines have also been identified to inform the development of the detailed design for Central Metro Station:

- The design approach has sought to create a series of “urban rooms” or civic-scale spaces within the station realm. The new concourse network is of a scale equivalent to the Sydney CBD street grid and urban block scale. Fittings, fixtures and finishes must be of appropriate materiality and quality for a large-scale, civic environment.
- The Chalmers Street, Surry Hills entrance must be clearly identifiable at street level and from approaching pedestrian routes.
- The entry paths at street level are to enable safe crossing of the future Chalmers Street cycleway.

Bicycle parking

Two nominated locations for the provision of secure bicycle parking within the Eddy Avenue forecourt and at the Chalmers Street entrance are shown in figure 11. The Eastern Entrance at Chalmers Street interfaces directly with the SLR and the public domain. In Chalmers Street,

the proposed bicycle parking is comprised of 32 bicycle spaces adjacent to the Central Station Elizabeth Street entrance and 12 bicycle spaces comprising a shared bicycle parking zone of approximately five to seven spaces adjacent to the Devonshire Street entrance.

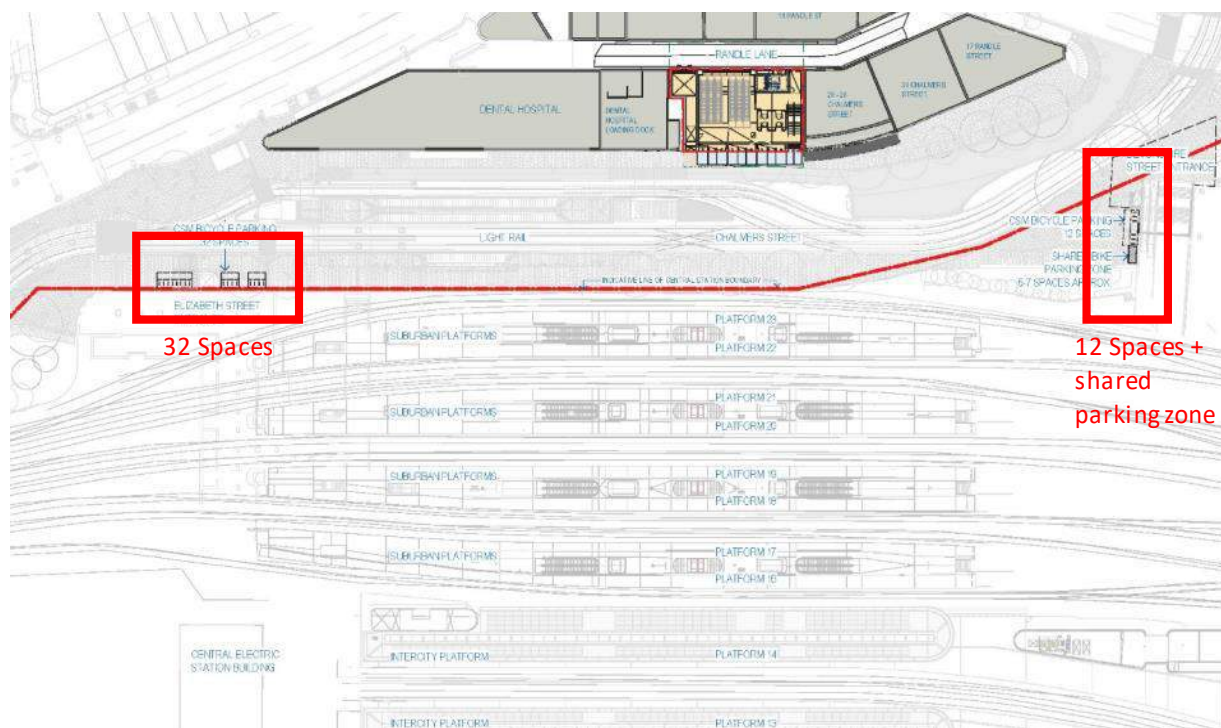


Figure 11 Location of bicycle parking facilities relative to the Chalmers street entrance to CSM

Two presentations specific to bike parking were delivered to the City of Sydney. The first delivered by Sydney Metro on 25 March 2019 focused on reviewing bike parking options and the second was delivered by LORAC (Woods Bagot) on 21 November 2019 and covered a bike parking allocation study.

These two key sessions included working with Council officers to understand available options, identify the challenges, determine what options should be further investigated, and develop the preferred feasible bike parking design solution (this is consistent with the response contained within the bike parking allocation study, IAP and SDPP) to be delivered by the project. In the early stages it should be acknowledged that over entrance bike parking was explored at both Devonshire Street tunnel entrance and the new Chalmers Street entrance and were identified to not be feasible. As such, the provision of further bike parking at Central Station would need to be considered in future Central Station renewal projects for the wider precinct.

The acceptance of this design outcome by stakeholders has been driven through:

- Extensive engagement as part of the project development process
- Acknowledgement of the limitations of the project’s scope and customer base, constraints within the recently upgraded Chalmers Street public domain, and the projects allocated spatial area

- Understanding the ability of the offering at Waterloo and other defined bike parking hubs to help manage, to offer an appropriate direct access and funnel cycle demand to the system, and avoid high activity areas
- Acknowledgement that the Central Precinct Renewal Program (CPRP) as a pathway that can offer a whole station solution and address this functional need for customers of Central Station in the medium to long term.

In terms of the Interchange Access Plan (IAP), this included a focused and comprehensive stakeholder consultation process, and the below table provides a summary of key sessions to demonstrate the level of stakeholder engagement, and how design process and outcome was informed.

Forum / Organisation	Meeting dates / focus
Design Review Panel <ul style="list-style-type: none"> • NSW Government Architect • Heritage Council • City of Sydney 	<ul style="list-style-type: none"> • 17/04/2018 – Workshop included a presentation and focused overall on the IAP, station access and pedestrian and bike movement • 05/02/2019 – N/A for bike parking • 09/04/2019 – N/A for bike parking
Traffic and Transport Liaison Group <ul style="list-style-type: none"> • TfNSW Greater Sydney Division (formerly RMS) • City of Sydney • Emergency Services 	<ul style="list-style-type: none"> • 27/02/2019 – IAP overview, challenges and actions/ responses including bike parking.
Sydney Trains	<ul style="list-style-type: none"> • 27/02/2019 – IAP and managing constraints and the integration of new Sydney Metro project bike parking within the existing Chalmers Street public domain.
TfNSW Greater Sydney Division (formerly RMS) / SCO Working Group	<ul style="list-style-type: none"> • 04/09/2019 – IAP overview, access challenges for pedestrians and cyclists, TfNSW and project delivery improvements and actions/ responses (includes other project items).
TfNSW Greater Sydney Division (Light Rail)	<ul style="list-style-type: none"> • 04/03/2019 – IAP overview, access and proposed Sydney Light Rail project bike parking provision in Chalmers Street.
TfNSW Infrastructure and Place (Central Precinct Renewal Program)	<ul style="list-style-type: none"> • TfNSW Infrastructure and Place (Central Precinct Renewal Program)
City of Sydney Council	<ul style="list-style-type: none"> • 26/02/2019 – IAP with outline of bike and pedestrian planning • 12/03/2019 – Conflict mapping, distribution and staging • 25/03/19 – Bike parking options, investigation and findings • 01/07/2019 – N/A for bike parking • 13/08/2019 – N/A for bike parking • 21/11/19 – Bike parking workshop with a focus on the investigation, a feasible design outcomes and numbers that the project can deliver, and the pathway for a whole of station precinct bike parking solution and offering

4.5. Community safety, amenity and privacy

Safety has been considered at all stages of design of the project, with the commitment to safety outlined in Section 1.6 of the Chatswood to Sydenham Design Guidelines. As described in the Interchange Access Plan (IAP), safety is of particular concern at interchange points between transportation modes; walking, bicycles, cars, light rail, buses, and differing trains modes. In light of this, the project will provide new pedestrian plazas and public domain to improve pedestrian amenity and safety.

The following design principles were identified in the Chatswood to Sydenham Design Guidelines to ensure that the design provides community safety, amenity and privacy:

Sydney Metro must provide safe interfaces between stations and the existing urban environment:

- The safe movement of customers, staff and contractors through the station areas needs to be facilitated through the provision of adequate circulation space, clear routes, adequate lighting and minimising obstructions.
- Station and station precinct design will identify and reflect current architectural and engineering best practice with respect to safety.
- The design must ensure stations and precincts provide a safe and secure environment and contribute to the overall public safety of urban places throughout the day and night.
- Safety issues are to be embedded in the design development process and optimised through the application of relevant Crime Prevention through Environmental Design (CPTED) principles and guidelines.
- The design must provide a comfortable environment that provides sufficient personal space and amenity and is well lit with effective and appropriate microclimate amenity for all users.
- Station entry orientation and design are to minimise adverse micro climate effects, including wind tunnel impacts. The urban heat island effects should be minimised through light coloured finishes, roofs and pavements, green walls, roofs and plantings.
- Customer weather protection outside the station is to be provided to ensure good levels of comfort are maintained and to provide useable spaces at ground level.
- A high level of amenity and security in waiting areas is to be provided.

The following site-specific design principles and guidelines have also been identified to inform the development of the detailed design for Central Station.

Station realm design

- Promote natural surveillance by enhancing visual transparency; designing out furtive spaces, blind spots, and dead ends; and coordinating designs with public domain elements and line of sight requirements to ensure passive surveillance opportunities are maintained.
- Control access and promote a sense of place by optimising pedestrian connectivity and activation of target areas in the public realm; design clearly defined routes for pedestrians supported with signage and wayfinding; and develop attractive public spaces.

- Promote territoriality to define ownership and the intended use of the space by establishing clear transitions between public and private space; coordinating materials and finishes with the public realm design so that station approaches are an integrated element of the streetscape; and use physical and symbolic barriers such as glazed balustrades and kerbs, changes in level and changes in materials, finishes or colours; and select robust, durable, vandal-proof materials and finishes, detailing for ease of maintenance and the repair and/or replacement of damaged elements and detailing for concealed services and tamper-proof fixings to promote the perception that a space is well maintained and cared for.

Maintenance strategies

- Integrate human factors as part of hazard analysis and safety processes.
- Select fittings, fixtures and materials to comply with design life requirements.
- Provide adequate spatial allowance for maintenance access and equipment replacement.
- Consider integrated support aspects such as the provision of ease of access for maintenance activities and inspections.

CPTED and Safer by Design

Crime Prevention through Environmental Design (CPTED) activities have been undertaken as part of the safety workshops and a separate CPTED report completed.

The incorporation of CPTED principles into the station design maximises the personal safety and security of customers. A range of passive measures are proposed, as well as the provision of active security measures such as the provision of CCTV and obvious, easily accessible Help Points.

Key CPTED principles underpinning passive measures include natural surveillance, natural access control, and territorial reinforcement.

Surveillance refers to the provision of clear lines of sight, encouraging opportunities for casual observation. Measures adopted to promote natural surveillance may include:

- Enhancing visual transparency;
- Designing out furtive spaces, blind spots and dead ends; and
- Coordinating softscape elements of the landscape design with line-of-sight requirements to ensure passive surveillance opportunities are maintained.

Access control refers to designing the urban environment so that a sense of place is communicated. Orientation and direction are reinforced so that users will easily know where they are and how to get to where they want to be. Measures adopted to control access may include:

- Planning to optimise pedestrian connectivity and activation of the target areas in the public realm;
- Designing clearly defined routes for pedestrians supported with signage and wayfinding; and
- Developing attractive public spaces.

Territorial reinforcement aims to define ownership and the intended use of the space. When the purpose is clear, illegitimate use is obvious and less likely to occur. Measures adopted to promote territoriality include:

- Sydney Metro Establishing clear transitions between public and private space;
- Coordinating materials and finishes with the public realm design so that station approaches are an integrated element of the streetscape;
- Using physical and symbolic barriers such as glazed balustrades and kerbs, changes in level and changes in materials, finishes or colours; and
- Selecting robust, durable, vandal-proof materials and finishes, detailing for ease of maintenance and the repair and/or replacement of damaged elements and detailing for concealed services and tamper-proof fixings to promote the perception that a space is well maintained and cared for.

Space/activity management strategies entail the effective use and maintenance of spaces to maximise community safety. Measures to support space/activity management include:

- Designing out furtive spaces;
- Designing to support maintenance and repair activities; and
- Collaboration with the station operators and integration of stakeholder operational requirements into the design.

In addition to the above passive measures, active measures such as CCTV, Help Points, and Electronic Access Control (EAC) and alarm systems are integrated into the design.

Several key design aspects that support CPTED principles have been provided in the Central Station Metro design.

- A larger void at the platform level in the Northern Concourse and vaulted soffits increases and extends sightlines which are supported by glazed balustrades at the intercity platform level as seen in figures 12 and 13.
- Existing structure at the Eddy Avenue entrance level is modified where practicable for improved sightlines. The canopy enables natural light to filter through to the Concourse, helping orient customers moving through the space (Figure 13).



Reference Design



Proposed

Figure 12 Natural light drastically increased in the Northern Concourse at the Eddy Avenue entrance level as a result of the new canopy.

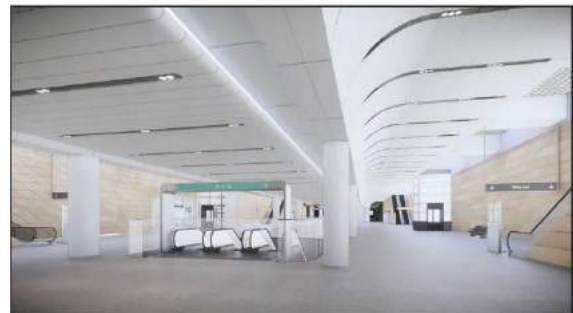


Reference Design

Proposed

Figure 13 Illustrates the open design provided at the Northern Concourse as a result of the new glazed balustrades.

- Ceiling heights have been increased in the North-South Concourse, the column spacing increased and the number of columns reduced. Skylights have been introduced to increase daylighting to the concourse as seen in figure 14.



Reference Design

Proposed

Figure 14 Increased spacing and natural light within the North-South Concourse.

- The proposed structure (column and beams) for the metro platforms is replaced with a concealed structure. There are no columns on the metro platform. Visual obstructions in the Metro Box have been minimised, supporting end-to-end visibility on the platforms and providing a platform environment that feels uncluttered and spacious (figure 15).



Reference Design

Proposed

Figure 15 Relocation of beam and column support structures to improve line of sight.

4.6. Sustainable design and maintenance

Section 1.7 of the Chatswood to Sydenham Design Guidelines outlines the commitment to sustainability and acknowledges that Sydney Metro would achieve new benchmarks in sustainability infrastructure delivery.

The design must ensure best practice sustainable design solutions are adopted for the public domain, stations and buildings to minimise environmental impacts and benefit customers and local communities.

All design elements have been designed to achieve either:

- An 'excellent' rating using the Infrastructure Sustainability Council of Australia (ISCA) Infrastructure Sustainability (IS) rating tool, or
- A 5-star rating using the Green Building Council of Australia (GBCA) Green Star Sydney Metro rating tool.

In addition, the Sydney Metro City & Southwest Sustainability Strategy 2017-2024 identifies examples of sustainable design initiatives being considered for the project.

Sustainability initiatives to be considered in the design and for maintenance include:

- Incorporate passive design solutions to optimise solar access, introduce daylight and maximise natural ventilation.
- Develop a low maintenance design, for example undertaking life cycle analysis of key materials proposed for the project.
- Select low volatile organic compound (VOC) materials where practicable.
- Use recycled and recyclable materials where possible.
- Ensure resilience to climate change.
- Include integration of renewable energy sources at stations and in the public domain where feasible.
- Provide water and energy efficient services.
- Provide water harvesting from the new Northern Concourse canopy.
- Provide photovoltaic arrays on new Intercity platform canopy roofs.

4.7. Minimising the project footprint

The following design principles were identified in the Chatswood to Sydenham Design Guidelines to ensure that the design minimises the project footprint:

- Provide integrated public art, lighting, signage and heritage interpretation to minimise the footprint.
- Integrating public art into the built structure of the Station, or placement in areas underutilised by public or staff, thereby minimising the need for additional space for the display of art
- Integration of the newly built structures into the existing fabric of the station;

- Incorporating principles of sustainable design throughout construction of Central Station Metro (i.e sandstone panels as opposed to sandstone blocks)
- Provision of natural lighting to below-grade concourses to reduce reliance on artificial lighting – thereby minimising energy usage and greenhouse gas emissions.
- Incorporation of photovoltaic panels on the reinstated intercity platform canopies.
- Integration of water efficient fixtures and utilisation of stormwater capture on site
- Re-use of original fabric and items that comprised Central Station into the final design for Central Station
- Incorporating Indigenous heritage into the architectural fabric, utilising robust and durable materials.

4.8. Relevant standards and guidelines

The following urban design and infrastructure standards and guidelines have been considered in developing the above design principles and the SDPP:

- Sydney Metro Chatswood to Sydenham Design guidelines
- Sydney Metro City & Southwest Sustainability Strategy
- Crime Prevention through Environmental Design
- Sydney Metro City & Southwest Central Station Main Works Scope of Works and Technical Criteria
- Sydney Streets Design Code
- Sydney Local Environmental Plan 2012
- Metro Art – Integrated and sculptural public artwork Expression of Interest information.

5. Design opportunities

5.1. Opportunities for landscaping and building design to mitigate visual impacts

Most of the Central Station Metro works are below ground, apart from the Chalmers Street, Surry Hills entrance facing onto Chalmers Street and Randle Lane; new canopies to platforms 12-14 and new services structures on the platforms; and the new canopy to the Northern Concourse; and the construction of the Sydney Yard Access Bridge (SYAB) seen in figure 16.

Sydney Yard Access Bridge



Figure 16 Sydney Yard Access Bridge (SYAB)

Under a separate contract with Laing O'Rourke Australia, the Sydney Yard Access Bridge was constructed to allow direct vehicle access into the Sydney Trains Storage area, known generally as Sydney Yard. Tied into the current CSM works CoA, the SYAB scope of works included permanent new infrastructure including a bridge substructure, and associated changes to local utilities, road pavement tie ins and the inclusion of vehicle, personnel and security measures to ensure the bridge can be used efficiently and safely tie into the local road network. As part of these works, two trees were removed, however were recorded and will be replaced in accordance with the Tree Report during Stage 2 Landscaping works.

Northern Concourse canopy

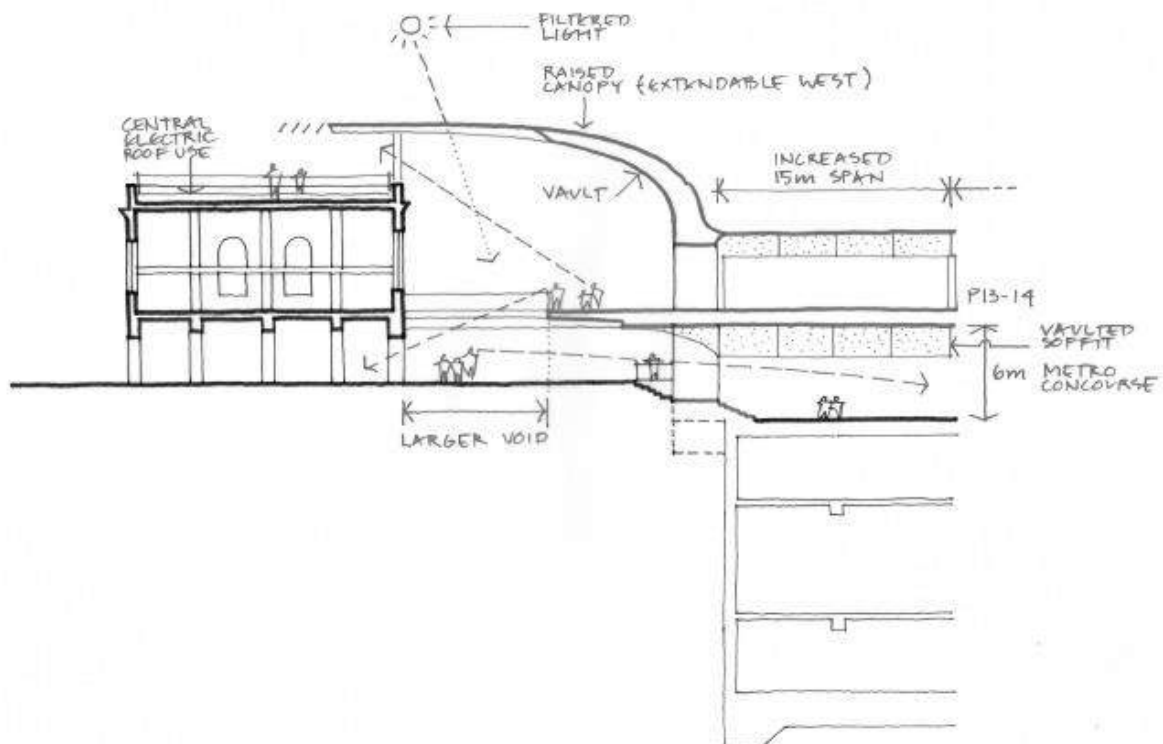


Figure 17 Model, Northern Concourse and Central Electric Building section.

The new Northern Concourse canopy is the only element that has any significant height in relation to the existing buildings. The canopy over sails the parapet of the Central Electric Building as this liberates the heritage façade from the Northern Concourse and provides visual coherence between new and existing structures. The height and form of the new canopy has been designed in order that it is sensitive to the existing heritage structures. It is significantly lower than the vault of the Grand Concourse, while still being visible from the Eddy Avenue plaza and announcing a new station entrance and rejuvenated Central Station through the Central Electric Building. See Figure 17 for a diagrammatic representation of the Canopy.

Chalmers Street, Surry Hills entrance



Figure 18 New Surry Hills entrance from Chalmers street into the Central Walk.

The Chalmers Street, Surry Hills entrance has been arranged as a simple switchback escalator arrangement within a grand double-height, column-free void that announces the entrance to the street. It uses improved scale and transparency and provides a curving soffit to “sweep” customers in and down to the Eastern Suburban Railway concourse and through to Central Walk. The entrance has been configured to allow access from both Chalmers Street and Randle Lane at road level (Figure 18).

The escalator position allows a clear alignment with the Central Walk concourse and improved circulation flow and sightlines.

Randle Lane, Surry Hills entrance (rear of Chalmers Street)



Figure 19 Future Randle Lane Façade and connection

The design incorporates a link which connects the station, Chalmers Street and Randle Lane as seen in Figure 19. The Randle Lane connection will be enabled by the project to provide customers with an alternative, safe path of travel out of the station to the east onto Randle Lane. As can be seen in Figure 20, the entrance from Randle lane requires passengers to take a flight of stairs into the Chalmers Street level entrance, before entering Central Walk concourse via a system of escalators.

Further, the design of the Chalmers street entrance safeguards an underground connection which will enable customers to reach the eastern side of Elizabeth Street, should this extension be constructed in future developments of Central Station.

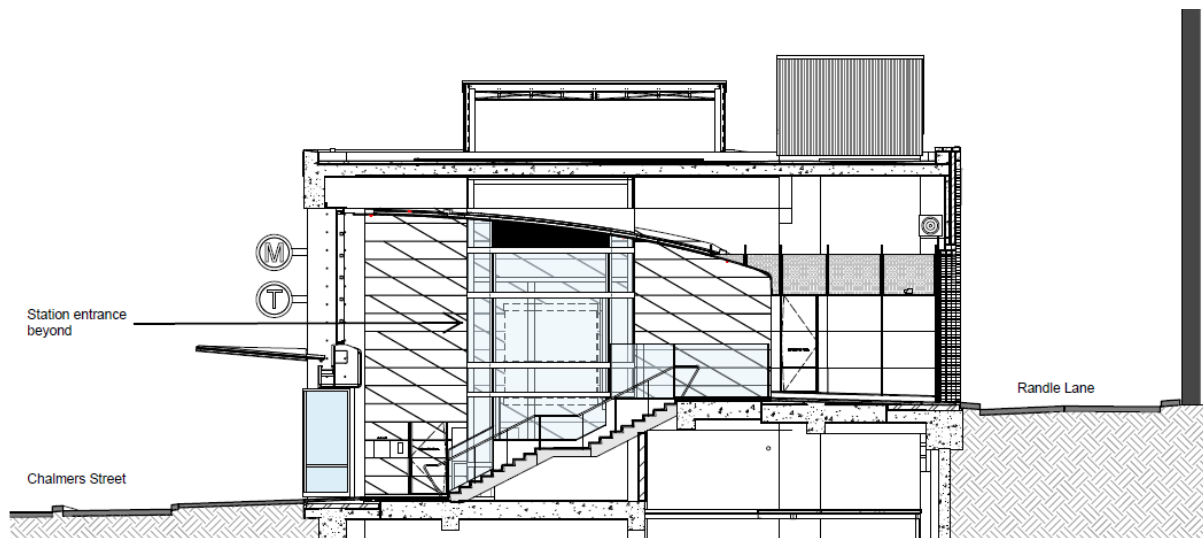


Figure 20 Eastern Entrance cross section – showing Chalmers Street and Randle Lane entrances.

Platform canopies and services structures

The proposed new canopies to Intercity platforms 12-14 have been designed to contribute positively to Central Station both on Day 1 operations but also in the event they are extended in the future to the remaining Intercity platforms. These new canopies can be envisioned in figure 21.

The canopy form has been kept simple so that they are sensitive to the historic significance of the terminus building. Their geometry is based on the flattened arch shape prevalent in the heritage architecture. This design brings a number of additional benefits:

- The new structures are set at the same height as the existing canopies so there is consistency in canopy heights on Day 1 operations.
- The new structures are supported on pairs of steel columns along the centreline of the platforms. Columns are at 15-metre centres to minimise the number of columns on the platforms and improve sightlines. In the event of future extension of the remaining Intercity platform canopies, the fabrication and installation of these canopies would be quite economical.

As part of the design of the Northern Concourse canopy an arched wall element has been introduced at the threshold of platforms 8-12, together with a smaller vault that connects to the Grand Concourse roof. This sets up a composition and scale of new elements that can be extended to all Intercity platforms in the future providing covered access from the Grand Concourse to all platforms.

Two services structures are proposed at platform 14 to accommodate services and vents from the new metro station. The smaller services vent structure is located at the north end of the platform adjacent to the new Northern Concourse canopy, and is integrated into the platform canopy. The southern vent structure is located at the south of the same platform. Both structures are located towards the centre of the site.

Architecturally designed claddings are proposed for both structures using textured finishes that are of appropriate quality and texture for a publicly accessible station environment.

The ends of the cladding of the southern vent structure have been curved in response to the geometry used in the rest of the project. Recesses with curved corners have been introduced to the façade to provide greater articulation of the façade and avoid large, flat wall expanses.



Figure 21 Reconstructed platform 14

5.2. Public art selection and collaboration activities

The CSW Metro Public Art Masterplan, (Masterplan) was prepared to ensure high-quality, integrated, and robust art for the 18 stations along the CSW Metro line. The program is guided by a curatorial theme 'Storylines'. The Masterplan sets out the program's Vision, Objectives, Principles and the process for selection and realisation of the artworks. Metro has an Internal Group; Sydney Metro Public Art Working Group, (PAWG) which includes membership from Create NSW that oversee the art selection and realisation. The program's vision is to "elevate the customer experience" and artworks are required to enhance; the experience of the station as a place, connection to surrounding precincts and be compatible with station's programs and functional requirements.

A 2 step process was developed for artwork selection. Step 1 being a public Expression of Interest, (EOI) open to Australian Artists and run in collaboration with Create NSW, from which a panel of art experts listed the best 21 artists, 3 artists for each of the 7 city stations.

Following, Metro prepares a Station specific Brief, with input from the Architects and the 3 artists are invited to a site visit and invited to prepare a concept artwork for the Station Artwork Competition. A second panel comprising art and design experts from Sydney Metro and the Station Delivery team, plus stakeholders from TfNSW and the City of Sydney selects the best of the 3 artworks.

For Central Station, Rose Nolan was the selected artist for her bold, vibrant and colourful work. The selection was endorsed by PAWG. The artwork has also been presented to Sydney Metro DRP twice during its subsequent development, and has been received positively. The DRP have also been supportive of the overall coordination achieved architecture, the art and the heritage Interpretation. A further presentation will be made to Sydney Trains for endorsement.

The artwork references existing heritage terrazzo floors at Central, and is highly integrated with the station architecture. It comprises a large terrazzo floor work in the Metro North South concourse and a sculptural text piece on the soffit of the entrance to Metro concourse (Refer to Figure 22 for a location of the artworks). The work encompasses location, journey and destination. Daily commuters become viewers and participants in a contemporary public artwork and unfolding experience as they move in and across the Sydney Metro concourse space.

The selected concept artwork has subsequently been developed in collaboration with the architectural and construction teams via regular meetings between the CSM Contractor, the architects and the artist's team, to confirm concept feasibility, refine and develop the initial concept and commence investigations in material selections and preliminary details to ensure the successful integration of the art into the architectural design and to ensure the artwork is coordinated with Wayfinding, Access and Interpretation. Collaboration activities have also included coding/scripting development to support quick modelling of the public art concept within the architectural models for space-proofing and coordination with structural and building services design; and consideration of operations and maintenance and accessibility requirements, among others, when selecting and evaluating materials.

The art has been coordinated with other publicly accessible, front-of-house areas of the station. Examples of how consideration of the public art concept has been further developed to harmonise with other requirements, whilst still meeting the artist's requirements include:

- Fabrication approach for the letters of the entry soffit to the North-South Concourse was changed to better coordinate with the construction program and work completed to date on site.
- Placement of the floor art in the North-South Concourse was adjusted so the public art naturally leads to the proposed heritage interpretation area in the south-east area of the North-South Concourse.
- Placement of the text in the floor art was informed by consideration of the views available to customers as they arrive at the North-South Concourse, including the views available to customers travelling down the escalators from the intercity platforms.
- Placement of the text has been coordinated with furniture and signage placement.

Following acceptance of the developed public art, the architectural team will complete the construction documentation of the artwork components and their integration into the architectural design, with oversight by the artist.

Please note, images of public art are not included as Sydney Metro’s policy is to not share images of artwork, outside of the project, the DRP and the governance structures whilst under development and until it is built - to protect the artist’s intellectual property and the final public reception.

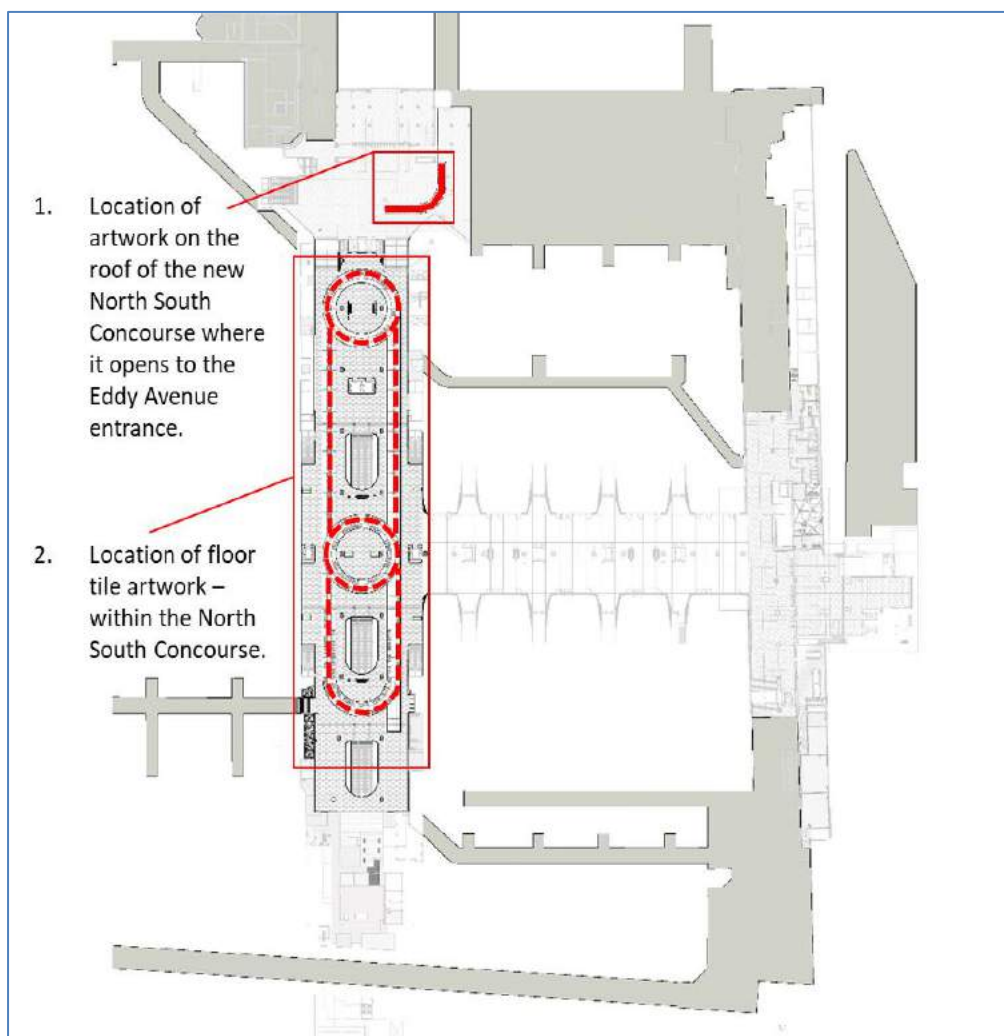


Figure 22
Indicative locations of public art within the North-South Concourse – indicated by the solid and dashed red line.

5.3. Opportunities identified in the Heritage Interpretation Strategy and draft Heritage Interpretation Plan

A Heritage Interpretation Strategy is being prepared for CSM works. The key aim of heritage interpretation would be to connect the contemporary experience of commuters and visitors with the diverse heritage of Central Station as seen in figures 23 - 26, by:

- Exposing the historic layers of place to the public view
- Explicitly embedding the past in the present through design
- Harnessing public interest to promote active engagement
- Providing a catalyst for realisation and conversation
- Facilitating meaningful community engagement with the project
- Highlighting heritage as a centrepiece in its own right.

Provision of interpretation is a 'value added' method of enriching visitor experiences and developing Central Station as a destination in its own right, encouraging return visits. The Interpretation Strategy constitutes the first stage in the development of an Interpretation Plan for the site.

In order to focus the interpretive structure and to provide some major anchor-points, two key interpretative themes were identified in the HIP for the CSM work area:

- Journeys
- Gatherings

These two interpretive focal points formed the basis for developing the content and structure of interpretive media as they:

1. May be applied both to the Aboriginal and the non-Aboriginal heritage aspects in interpretation;
2. May be applied to aspects of the past, present and future; and
3. Allow for other layers of interpretation to be developed at Central Station by others in conjunction with other projects and initiatives at the site.

For interpretation of Aboriginal heritage, consultation with RAPs would further refine these key interpretive stories, or highlight particular areas of significance or storylines which should also be considered.

The Heritage Interpretation Plan (HIP) will be finalised during the course of works as archaeological works are completed. The HIP will be submitted to Sydney Metro for approval prior to its implementation on site. This staged process facilitates a collaborative approach with relevant stakeholders in accordance with best practice. At present, the draft HIP identifies the following broad opportunities for heritage interpretation:

- Aboriginal heritage – more than 20,000 years of Gadigal history, a travel corridor (along Botany road) and rich in resources; a strong contemporary history of work opportunities and social activism. The interpretive elements would address Aboriginal heritage through a contemporary representation of the

site's values and meaning and also information on the stone artefact finds at Central Station.

- European history of the station – reference to the iconic clocks, the concept of time/travelling and the station building, as well as the archaeological finds of the turntable, gas works remains, cobble station yards of the first station and the cemetery (generally).
- The 'dark history' of the cemetery and its incomplete removal – both as an interpretive message and a commemorative story, which may be best addressed in a quieter, more appropriate location where a commemorative space can be created. Elements of consideration are shown in figure 25 with inspiration drawn from the cemetery.

Potential locations for interpretive media have been broadly identified however further refinement and identification of spaces is required, then the scale and media of possible interpretive elements can be explored. At this stage, some possibilities for early integration of design features are:

- Large scale design features in the built fabric with a focus on the theme 'Gatherings'.
- Digital installations or textural elements travelling down the Central Walk, with a focus on the theme 'Journeys'.

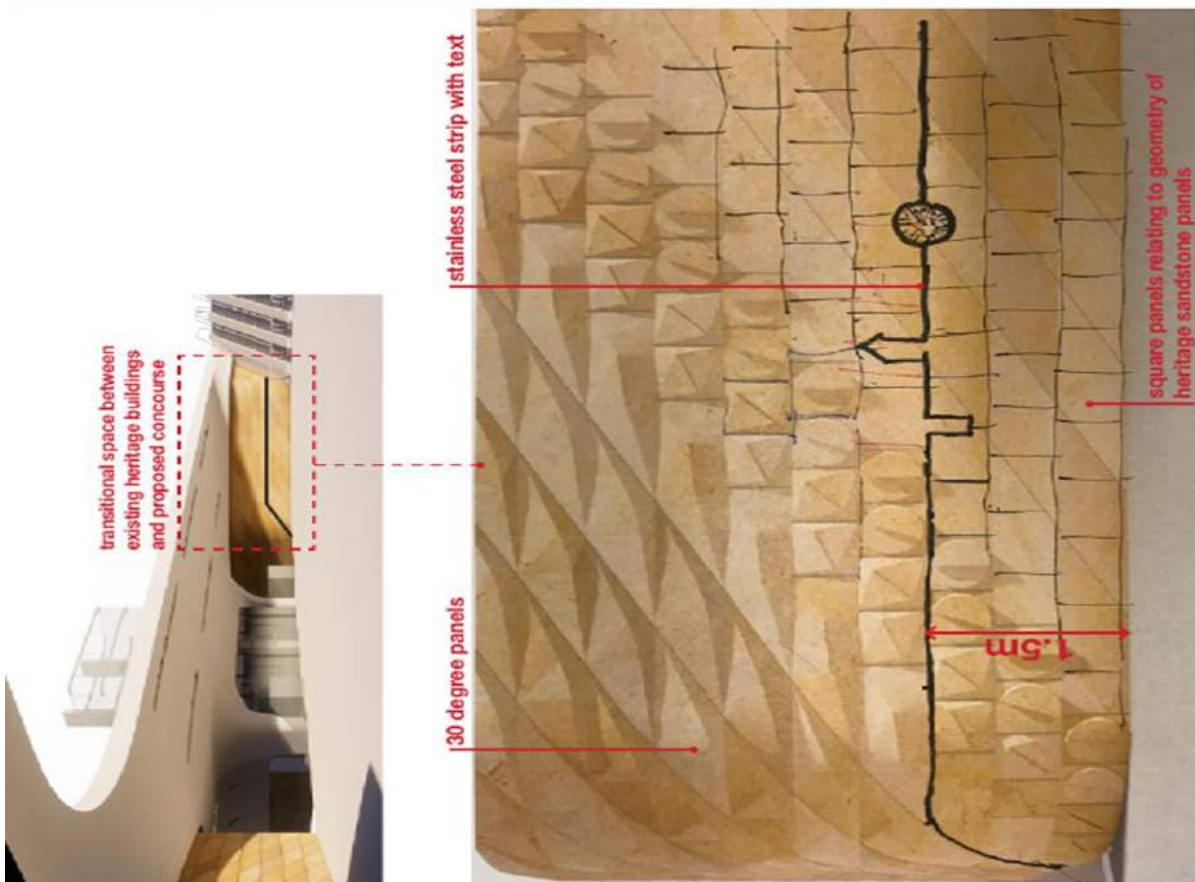
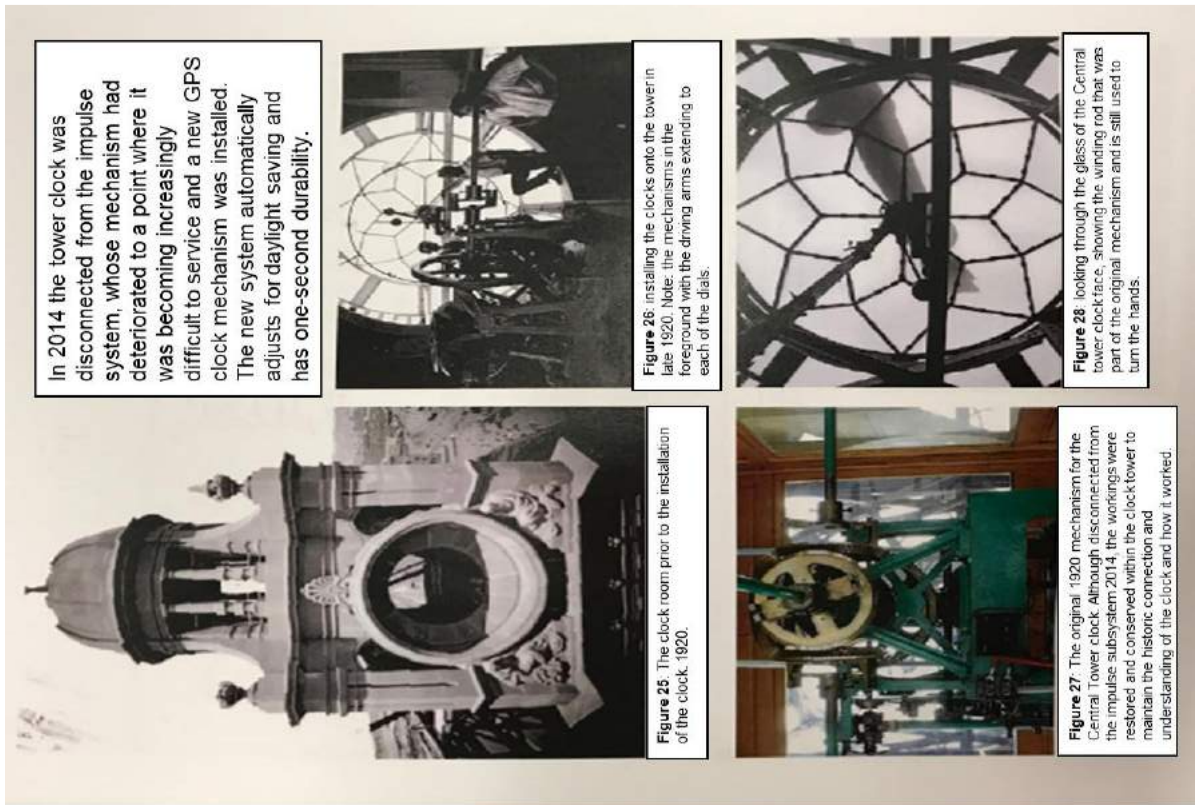


Figure 23 Concept European heritage interpretation (Image 1 of 3)



Figure 24 Concept European heritage interpretation (Image 2 of 3)



Figure 25 Concept European heritage interpretation (Image 3 of 3)



Figure 26 Concept Archaeological heritage interpretation for Central Station showing the Devonshire cemetery.

5.4. Opportunities for incorporating salvaged historic and artistic elements

Archaeological excavations are still continuing and further finds will inform the finalisation of the HIP. The Central Station Precinct is an area that has undergone significant changes, from aboriginal occupation, through to colonisation and the spread of European settlement. Given its history, there are remnants of major events in the history of Central Station. Aboriginal occupation is typically evident in the form of stone tools and equipment, often found in undisturbed virgin sand formations in the local geology. In contrast, European occupation and progression in the area is indicated by former land uses such as the Devonshire Cemetery, early gas works, first and second railway developments and expansions, as well as the Benevolent Asylum. Figure 27 identifies the key areas on site which have a potential to uncover items of archaeological significance.

As of 10 January 2019, the Archaeological Excavation finds include:

- Seven Aboriginal artefacts classified as rare or significant were found during archaeological excavation on site.
- 109 grave cuts and seven vaults have been uncovered on site.

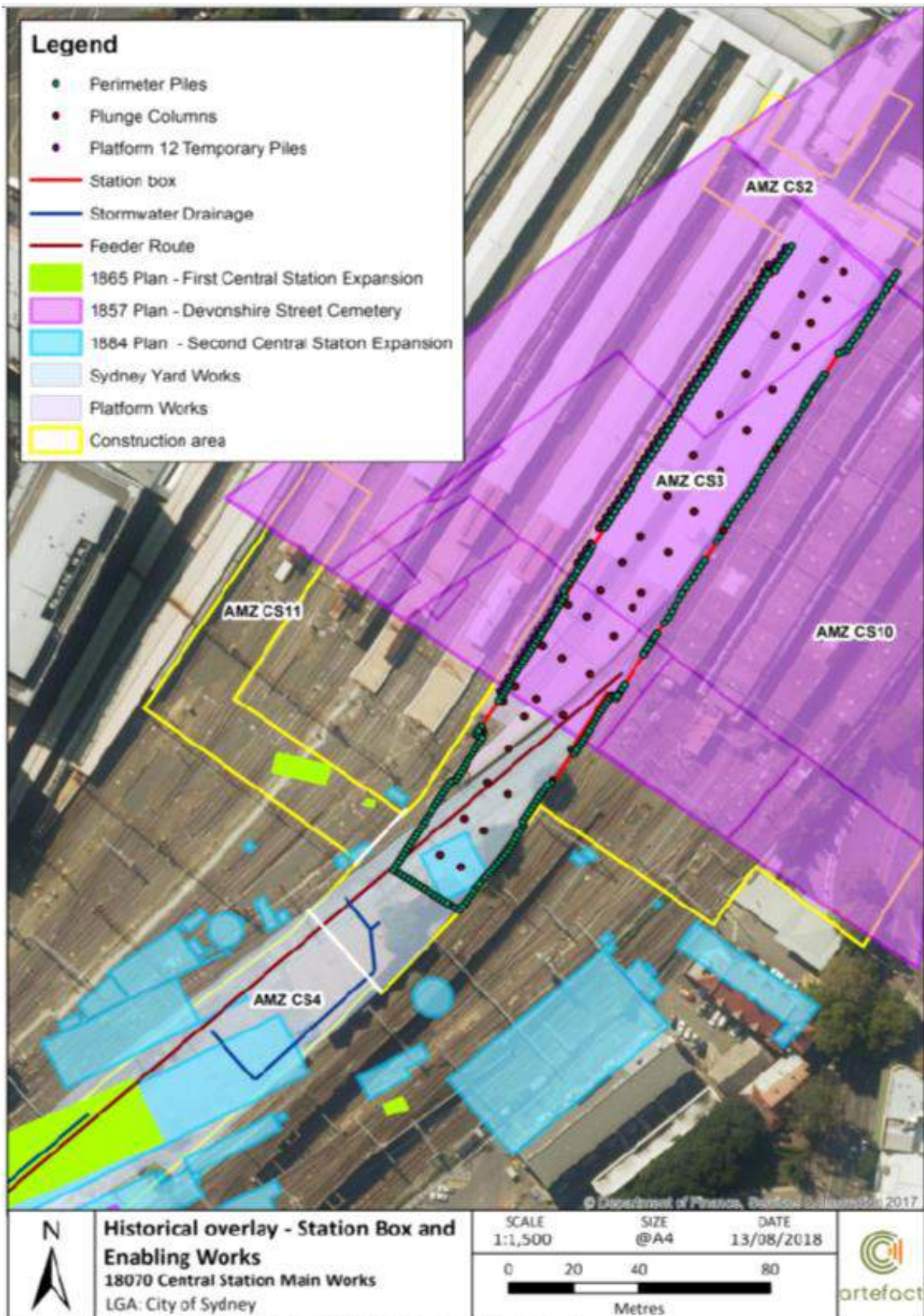


Figure 27 (Part 1 of 2) Identifies the key items of archaeological significance which are likely to be encountered by CSM.

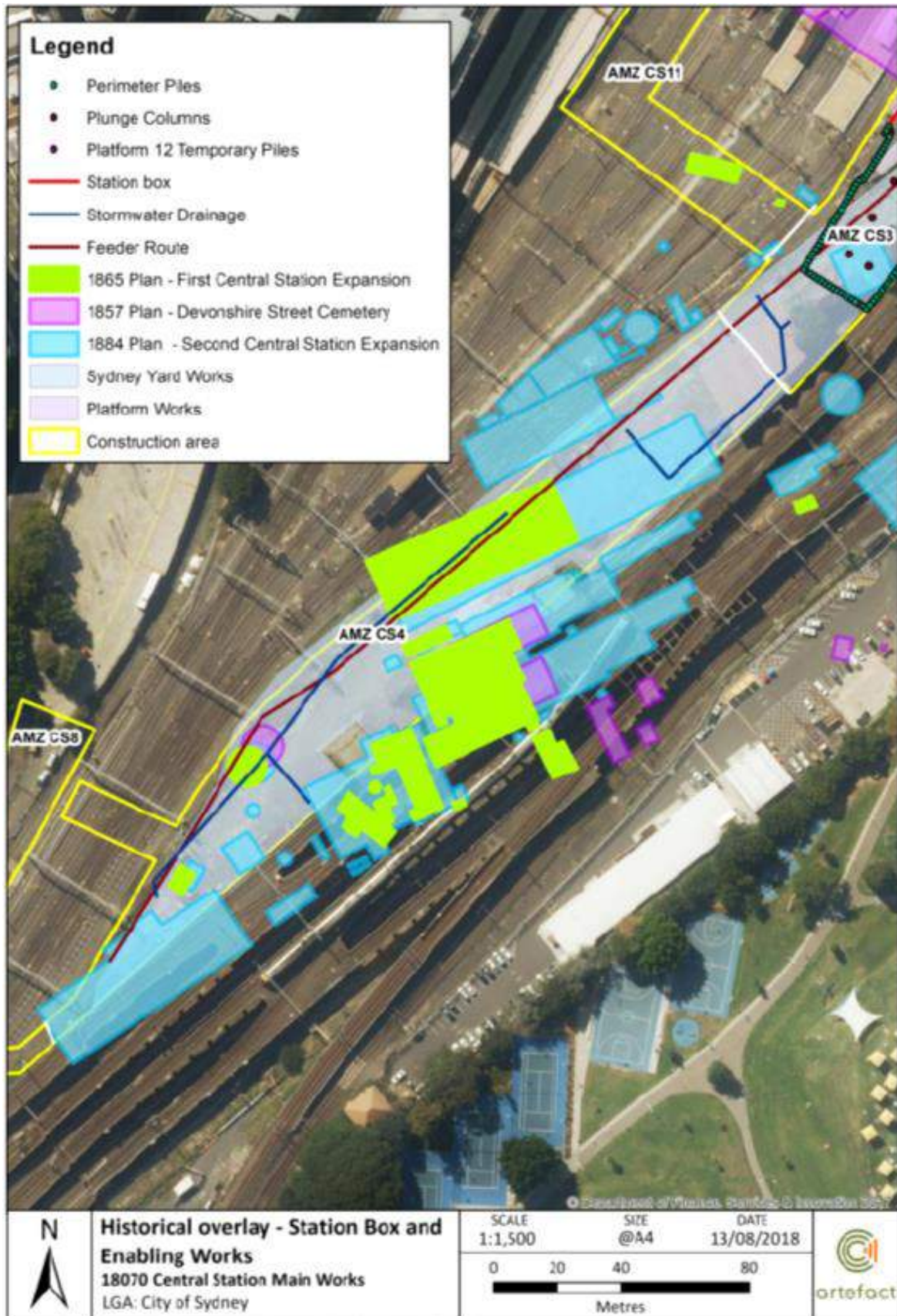


Figure 27 (Part 2 of 2) Identifies the key items of archaeological significance which are likely to be encountered by CSM.

6. Details of the Station Design and Precinct Plan

6.1. Station Element and design features

Introduction

The Central Station Metro scope involves the excavation and construction of two new metro platforms below the existing intercity platforms 13, 14 and 15, including two new underground concourses, one above the metro platforms and one constructed eastwards under the suburban platforms connecting to Chalmers Street to give access to all suburban platforms and enable passenger interchange between train services, new platforms and CBD and South East Light Rail.

Transport Interchange

Central Station is located at the southern end of the Sydney CBD, and is the busiest station in NSW. It is the primary destination for intercity and inter-state services. It currently provides connection with buses, taxis, light rail, cars and trains and in future will also allow the public to have access to two new metro lines. The design of the new station precinct consolidates the different modes of transport to deliver a safe, convenient and integrated transport interchange as seen in figure 28.

The Interchange Access Plan for Central Station was prepared in response to the construction and operation of the new metro stations, and therefore focuses on providing seamless integration and access between the newly constructed metro lines, Sydney Trains as well as the NSW Train Link services. The Interchange Access Plan – Central Station (IAP) will generally inform the precincts provisions for pedestrian, bus, train, metro, light rail, taxi, kiss and ride and cycle access to provide an integrated customer journey.

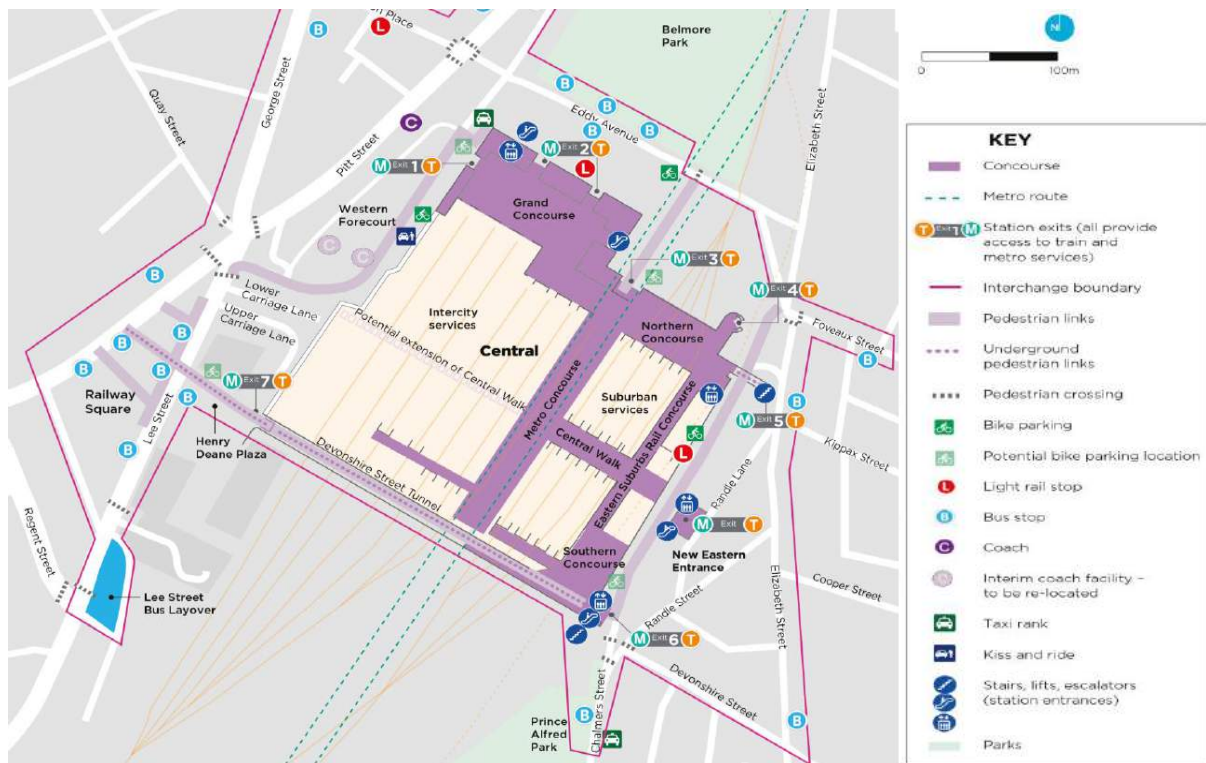


Figure 28 Illustrates the multiple modes of transport that intersect Central Station.

The Project Works are comprised of four categories of works and can be seen in Figure 29:

- Metro Station Works
- Central Station Works
- Central Walk Works
- Northern Concourse Works

Metro Station Works

The metro station works are the permanent works for a new underground metro station which will interface with the new train running tunnels and rail infrastructure, tunnel infrastructure, communication systems and control systems to be installed by interface contractors. The metro station works include the station box and all structural works and an island platform.

Central Station Works

The Central Station Works comprise new infrastructure and adjustments to existing infrastructure undertaken as a result of new construction and to provide consistency between existing platforms and proposed public areas. The CSM works include a new north-south concourse linking the new metro station with the existing north entrance and north concourse, a new east concourse and the existing southern baggage terminal; and adjustments to the existing Grand Concourse, Suburban tunnel, Northern Concourse and the northern entrance to Central Station.

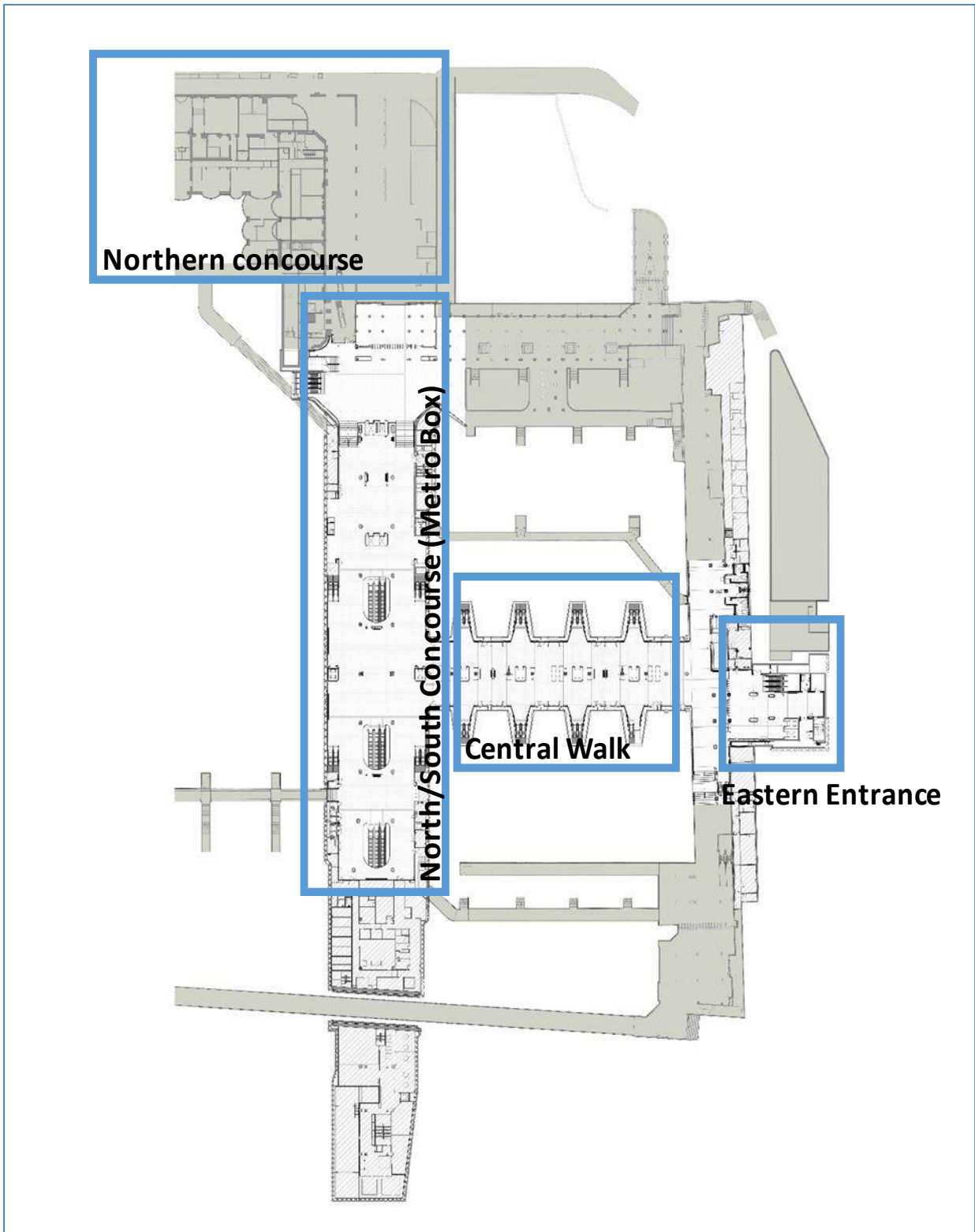


Figure 29 Extent of work boundary including the location of Central Walk.

Central Walk Works

The Central Walk Works comprise a new Chalmers Street, Surry Hills entrance for Central Station located on Chalmers Street; a new east concourse linking the new entrance, the new North-South Concourse connecting to the metro station, suburban platforms 16-23 and the existing Eastern Suburban Railway (ESR) concourse, and provision for a future potential extension of the Central Walk to a new west concourse and new western entrance to Central Station as a separate project (figure 29).

Northern Concourse



Figure 30 Northern Concourse canopy.

With a visually lightweight and clear span canopy dramatically oversailing the space between the Central Electric Building (figure 30) and the original historic façade of the station, the Northern Concourse gives the station a “front door” that faces Eddy Avenue and the city.

The Northern Concourse gives a new front door to the station through the Central Electric Building, simplifying the gateline into a single array at ground level. This leads directly into the vaulted triple height volume of the Northern Concourse, a space designed to provide direct visual connection to escalators and lifts providing vertical connection to the Intercity platforms and the Grand Concourse to the west, as well as a clear visibility through and up to platforms 12 to 14 above the Northern Concourse to assist orientation.

Visibility is equally balanced down to the North-South Concourse, with careful consideration of structural integration to best enable clear visibility into the concourse, which itself is articulated by daylighting to walls at each side.

The Northern Concourse canopy has been developed to reference the vaulted form which is a dominant architectural element in the historic building. The scale has been carefully

considered and is intentionally smaller than the Grand Concourse vault, to establish a clear hierarchy with the heritage building.

The structure has been rationalised and minimised to provide the maximum open space and deliver an uncluttered and generous public/civic space as well as a functional concourse for decision making and onward movement.

The concourse will be naturally lit with carefully controlled and diffused daylight, and it can be seen as a clearing and a place of calm within the wider station. The canopy form affords the opportunity to be fully acoustically treated to further enhance the sense of calm and assembly enabling decisions and orientation to be made easily.

The existing Central Electric Building is given room to breathe with space around it allowing the building to act as the key signifier and gatehouse for Sydney Metro and the wider Central Station.

Metro Box

The Metro Box is comprised of the new metro platform, the North-South Concourse above providing access to the platforms, and the upper rail platforms and canopies which will be demolished and reinstated to enable construction of the metro interchange at Central Station. The multi-level Metro Box combines a very pragmatic structure and positioning which, in plan, minimises disruption to mainline tracks. The Metro Box's multi-level connectivity, materiality, and fine detail is contemporary, but clearly draws inspiration from the historic architecture.

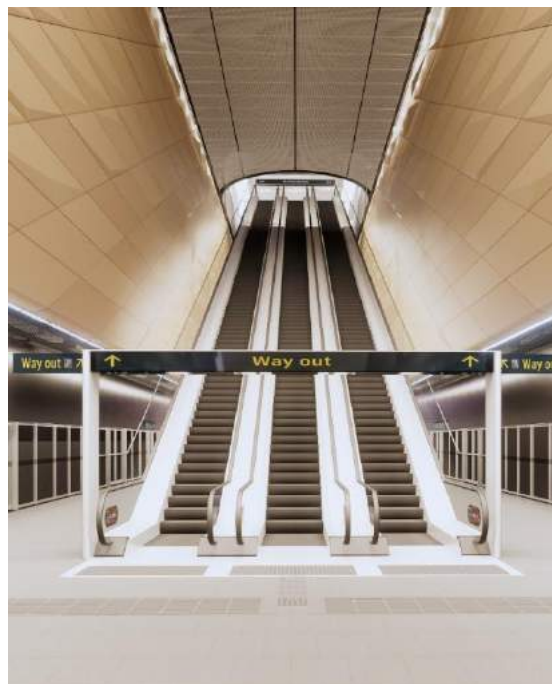


Figure 31 Broad field of view of the Metro Box

The metro platform is a twelve-metre wide, 150-metre long platform which will be the most generous on the Metro network. Three banks of three escalators ensure that operational continuity can be maintained with one up and one down escalator even during planned or unplanned maintenance as seen in figure 31. Full height platform screen doors (PSDs) – to be designed and installed by others – are provided for the length of both platform faces and dedicated tunnel walkways.

Two escape routes at each end of the platform lead to a scissor stair to ensure that one route is visible at the end of up and down platforms and that the scissor stair arrangement provides a clear and unambiguous route of escape.

The proposed platform finish is terrazzo referencing the naturally occurring matrix in the excavated sandstone and providing a civic quality to the space.

The vertical space through which the escalators ascend is a critical part of the metro experience, as it allows the passenger to travel the full height of the Metro Box space, and alongside the finely articulated feature wall on either side of the Metro Box. This journey is approximately 45 seconds from working point to working point and offers an opportunity to integrate artwork or advertising into the space through technologies such as image projection mapping via sources within easy reach. This is to be explored and may become incorporated into the design at a later stage.

The role of natural light within the Metro Box is crucial. Though the fundamental structure has been designed to be economical and straightforwardly buildable, ensuring the structure will allow as much natural light as possible to fall into the depths of the Metro Box has been a key consideration (See figure 32).



Figure 3212 Multiple levels of the Metro Box, divided by sets of escalators to provide swift navigation of Central Station.

Chalmers Street, Surry Hills entrance



Figure 33 Chalmers Street entrance into the Central Walk.

The Chalmers Street entrance on Surry Hills has been arranged as a simple switchback escalator arrangement within a grand double-height, column-free void (See figure 33). Its use of improved scale and transparency is designed to ‘sweep’ customers in and down to the Eastern Suburban Railway concourse which connects to the Central Walk. The entrance has been configured to allow access from both Chalmers Street and Randle Lane and can be visualised in figure 19.

The floor level of the new Eastern Entrance has matched the grade of the adjacent footpath as far as possible. The footpath has been refurbished as part of the Sydney Light Rail project, which also includes planting new trees along Chalmers Street as part of the urban design and landscaping works. Bollards are provided at the Eastern Entrance entry line to prevent hostile vehicle access, without impinging upon pedestrian use of the pavement.

Central Walk

Central Walk is a new concourse that runs east-west connecting the Chalmers Street, Surry Hills entrance with the North-South Concourse. Central Walk provides passenger access between transport modes and enables a central connection axis through the station to the city beyond. Central Walk legibly and seamlessly connects each spatial component of the new and existing concourse network with readily identifiable portal elements at the interfaces between the station elements.

The approach developed provides a unified, contemporary, architectural design approach drawing inspiration from the detailed craftsmanship of the historic Central Station building and approach viaducts.



Figure 34 Central Walk between Chalmers street and the Metro Box.

Along Central Walk, a hierarchy of finishes and materials including expressive structural elements is applied to demarcate primary vertical transitions from the concourse to the platforms, reinforcing the intuitive wayfinding strategy with the intent to minimise signage (See figure 34).

Lighting

The lighting of Central Station aims to create an environment that supports health and wellbeing, assisting in wayfinding and orientation, and responds to the iconic nature of the project.

The lighting design proposes little new exterior lighting, with public domain lighting in Chalmers Street being outside the scope of this project. The exterior lighting design that is part of this project includes lighting for the canopies, the reinstated Intercity platforms 12-14, and refurbished suburban platforms. Exterior lighting is located towards the centre of the site and is a continuation of existing conditions, taking into account the requirements of current standards such as AS 4282 and AS/NZS 1158.

Principle:

Functional

The creation of an appropriate lighting atmosphere that responds to the functional requirements is considered the highest priority for the purposes of lighting design. The lighting design has been guided not only by relevant codes and standards, design guides and international benchmarks, but also by the unique spatial characteristics of the architecture to contribute to a unique and engaging civic architecture.

Safety and amenity

When there are concerns about safety there is a tendency to over-light; however, too much light can be as detrimental as too little lighting.

The perception of safety is much more governed by night-time population and activity of an area as well as issues such as facial recognition, contrast ratio, glare and colour discrimination as well as the overall atmosphere created.

In design that embraces light and shade and subtle contrasts, it is more likely to achieve a safe distance solution than the distribution of light across the ground.

The perception of brightness and quality of the space including daylight, lighting of vertical elements and circulation backdrops are also important.

To ensure a successful public experience these aspects should be considered holistically when establishing the illumination level.

Experiential

- **Identity:** The lighting language is broadly consistent across all the spaces, promoting continuity and cohesion. The layers contributing to the lit appearance are tailored to express the unique identity of each area by emphasising elements such as materiality, form, scale, movement, verticality and heritage presence. Spatial identity can change from day to night.
- **Wellbeing:** Light can be used to influence the day and night experience by adjusting in response to human circadian cycles. Altering lighting intensity and/or light colour can assist in stimulating the circadian system for human centric lighting. The colour temperature selection of artificial lighting also considers the architectural materials, daylight apertures and desired spatial atmosphere. Colour tuneable white subtly responds to day and night cycles as well as seasonal changes, with the aim of easing the sense of oppression in underground spaces and modulating the user experience between internal and external spaces.
- **Changing nature:** Time based, seasonal adaptive lighting is a tool to communicate and engage with customers and enhance customer experience. Lighting intensity and shift colour tone change at different times to reflect changes in human activity use and changes between day and night.
- **Modulation of lighting levels:** The use of light and shade and varying intensities between light levels creates direction, focal points and definition of space, enhancing the user experience through an interesting and vibrant atmosphere. Light level modulation plays a role in the station wayfinding strategy, with key decision points, intersections and entry/exit zones lit with higher intensity to visually accent these areas within the surrounding space. Higher light levels are applied to platform edges for increased visual security and definition between transit and circulation zones.
- **Journey:** With many interconnecting spaces, there are many different journeys that will be taken by customers. Light plays an important role in supporting and narrating these experiences.

Sustainability

Energy efficiency and sustainability have been considered throughout the design process. The solutions implemented in the lighting design take into account choosing appropriate luminaire types and light sources to minimise energy consumption, maximise efficiency and obtain low maintenance expenses.

The selection of light-coloured and non-glossy surfaces improves the light distribution by multiple reflections and contributes to achieving required light levels (with the aim of requiring fewer luminaires or lower lamp wattages) while limiting contrast glare.

An appropriate and flexible lighting control system and related lighting equipment are to facilitate various modes and provide high flexibility and adaptability to cater for different times throughout the day.

Lighting equipment, mounting details and aiming will ensure the minimisation of spill light and glare as well as any impact on the night-time environment.

6.2. Precinct (public realm) plan

Urban Design and Landscape

The core project works are limited in the amount of physical landscape design possible. Most of the Central Station Metro scope is located within the Central Station precinct and is below grade. Public domain interfaces are comprised of two facades, one each at Chalmers Street and Randle Lane in the eastern portion of the works, and the interface with the Central Electric Building facing the Eddy Avenue forecourt to the north of the site. The Eastern Entrance at Chalmers Street interfaces directly with public domain works that are part of the SLR, or otherwise in the public domain.

Although landscaping is not part of the Central Station Metro scope of works due to restrictions associated with the project footprint, the project must provide replacement trees within or adjacent to the project footprint for all trees removed during construction in line with Condition E6. A total of 16 trees were removed during construction, and will be replaced with plants of a given species, and size, planted in a location agreed to with city of Sydney council and agreed to by the Secretary. Discussions with CoS regarding the detail of these plantings are yet to occur, however will be in accordance with Condition E6, rather than the landscaping requirements of E101(e).

Given that there is no landscaping scope for the current project, urban design and landscaping works are comprised of protecting any remaining vegetation and making good to areas disturbed during temporary works and the construction of Central Station Metro, including:

- Coordination with treatments within the station precinct;
- Integration with adjoining pavements at Chalmers Street and Randle Lane;
- Positive draining of surfaces for reinstated new public domain;
- Reinstatement of existing materials and street elements disturbed by the project works;
- Sourcing of Australian quarried stone and manufactured units;
- Compliance with City of Sydney design guidelines and AS specifications; and
- Planting trees as part of the SYAB completion works (See figure 35).

Both nominated locations for the provision of secure bicycle parking within Eddy Avenue Forecourt and at the Chalmers Street entrance are outside the project scope boundary. A study of potential locations for bicycle parking in Chalmers Street has been undertaken, and should this work proceed it will likely be undertaken as part of one of the projects associated

with the broader Central Station precinct. For further information, refer to section 4.2 in this report.



Figure 35 Details the location of landscaping relative to the SYAB entrance (areas of green).

6.3. Statement of integrated urban design and place making outcome

The design developed for the new metro and concourse interventions is purposeful, functional, sculpturally rich and synthesised with the historic qualities of the original station. This materiality establishes the design proposals within their local context and provides an enhanced civic quality to the new station works.

Each spatial component of the new and existing concourse network is legibly and seamlessly connected to each other, with readily identifiable portal elements at the interfaces between key spaces.

The unified, contemporary architectural design approach draws inspiration from the historic arches, structures, sandstone elements and detailed craftsmanship of the heritage Central Station terminus building and approach viaducts. A hierarchy of finishes and materials is applied to demarcate primary vertical transitions at concourse to platform environments to reinforce intuitive wayfinding; finishes have also been selected to reinforce the civic quality of the new station spaces.

The design approach provides a balance between the key elements of the historic architecture and the key interventions, resulting in vivid, flow-friendly spaces that are agreeable rather than competitive.

The scheme amplifies the enduring legacy of Central Station's existing architecture and reinforces its iconic status while new interventions signal a step-change in its functional, urban and cultural contributions to the city.

The design vision and approach places the customer experience at the centre of the transformation of Central Station into a multi-modal transport interchange. The creation of more open spaces such as the new Northern Concourse, and at key decision-making points, significantly improves circulation and legibility of the station, with improved accessibility, permeability and connectivity across the station precinct. This provides an intuitive and easily used station environment for all customers, irrespective of the mode of travel used.

7. Implementation

7.1. Timing

Condition E101 states that the:

...Elements covered by the 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.

Sydney Metro operations at Central Station are scheduled to commence in 2024. The proposed timeline of works can be seen in figure 36.

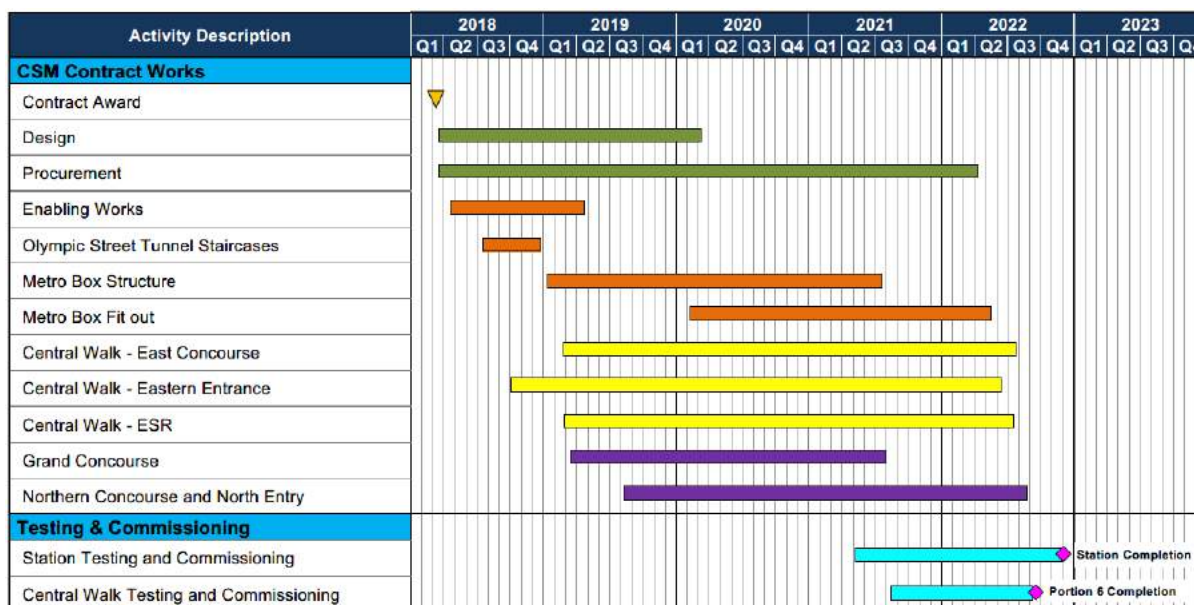


Figure 36 Indicative construction schedule for Central Station Metro.

7.2. Monitoring and maintenance of landscaping

Given the nature of the project, there will no scope for landscaping within the project boundary as has been requested by Condition E101 (e). In contrast, the project must endeavour to replace all 16 trees that have been removed throughout construction of the CSM works as part of the Sydney Metro Tree Impact Assessment Report and Condition E6.

16 trees have since been removed within Central Station to facilitate the CSM works and have been documented within the Sydney Metro Tree Impact Assessment Report. Of those, three trees were removed for the construction of the Combined Services Route identified in the EIS.

In accordance with Condition E6, replacement trees should be planted within the boundary of the CSSI in the first instance, or within close proximity to the CSSI where space is limited or elsewhere following consultation with the CoS. Similarly, the details associated with these replacement trees including their location, species used (endemicity), size, as well as any ongoing monitoring and maintenance costs will be agreed following consultation with the CoS.

As only 16 trees require replacement, a thorough landscaping plan for these plants will not be required, and instead will be managed and maintained accordingly by the project to meet requirements of Condition E6.

Horticultural practices used to maintain the replacement trees will be agreed to with the CoS, however general practices likely to be adopted include:

- Watering: provide plants with sufficient water to ensure sustenance.
- Weed and pest control: provide weeding where necessary to encourage plant establishment and growth.
- Fertilising as appropriate to encourage sustained growth.
- Replacement of plants that may perish, or are stolen to maintain minimum planting requirements.
- Provide mulch as necessary.
- Remove any litter on site: as per standard site maintenance and housekeeping.
- Pruning of vegetation for safety with regards to operations of rail line, safety of public domain and CPTED surveillance.

7.3. Interchange Access Plan – Delivery and Implementation Program

The IAP sets out the intended design and operating outcomes required for customers to achieve an easy, safe and seamless transfer between transport modes at Central Station. A number of actions have been identified to achieve these outcomes. Please refer to the Central Station IAP.

8. Visual impact assessment

A visual impact assessment was undertaken for the Chatswood to Sydenham project as part of the Environmental Impact Statement (EIS) and associated modification reports. This assessment was based on the concept design for the project. Figure 37 presents an overview of all viewpoints that visual assessments were taken from, with the proceeding section (8.2.3) of the document analysing the visual impact per viewpoint.

Condition E102 requires the SDPP to achieve a minimum visual impact rating of at least 'minor beneficial, 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 beneficial' rating is not achievable, then a 'negligible' visual impact rating must be achieved as a minimum.

The Environmental Impact Statement noted that there would be a range of visual impacts created by the project during construction including minor and moderate adverse visual impact. These impacts are due primarily to the sensitivity of views and the scale of works. In particular, the scale of the new built elements, including the Sydney Yards access bridge between Regent Street and the Sydney Yards laydown site.

During operation, there would be mainly negligible visual impact when the station platforms are reinstated. However, there would be moderate adverse visual impacts at Regent Street and from trains within the corridor where the Sydney Yards access bridge would be seen as it continues to be used for access to the Yards.

At night, there would be negligible visual impact during construction and operation of the project due to the existing lit context of E4: High district brightness.

The Central Walk Modification Report noted that in general, the proposed modification would not result in changes to impacts on the viewpoints assessed for the approved project. During construction, the proposed modification would cause a slight increase in adverse impacts from negligible to minor adverse to views northwest from the corner of Devonshire and Chalmers streets.

The proposed modification would also result in additional visual impacts at new locations than the approved project. Construction of the proposed modification would result in the following additional visual impacts:

- Minor adverse visual impacts on views northeast along Chalmers Street (viewpoint 12) and from residential areas on Chalmers Street and Randle Lane (viewpoint 13). This impact would be due to the establishment of a construction site in areas of neighbourhood and local sensitivity along Chalmers Street and Randle Lane. In particular, residential properties adjacent to the eastern entry construction site may have close proximity views to demolition and construction works
- Negligible visual impacts on viewpoints southwest along Randle Lane (viewpoint 11) and west from the service access at the Devonshire Street station entry (viewpoint 14) due to the lack of perceived change in the amenity of these views.

A further visual impact assessment of the design provided in this SDPP has been undertaken in accordance with the methodology identified in the EIS. This assessment concludes that the SDPP achieves a minimum visual impact rating of negligible for the Northern Concourse, the Metro Box and new platform canopies, Central Walk and the Chalmers Street, Surry Hills entrance from all viewpoints.

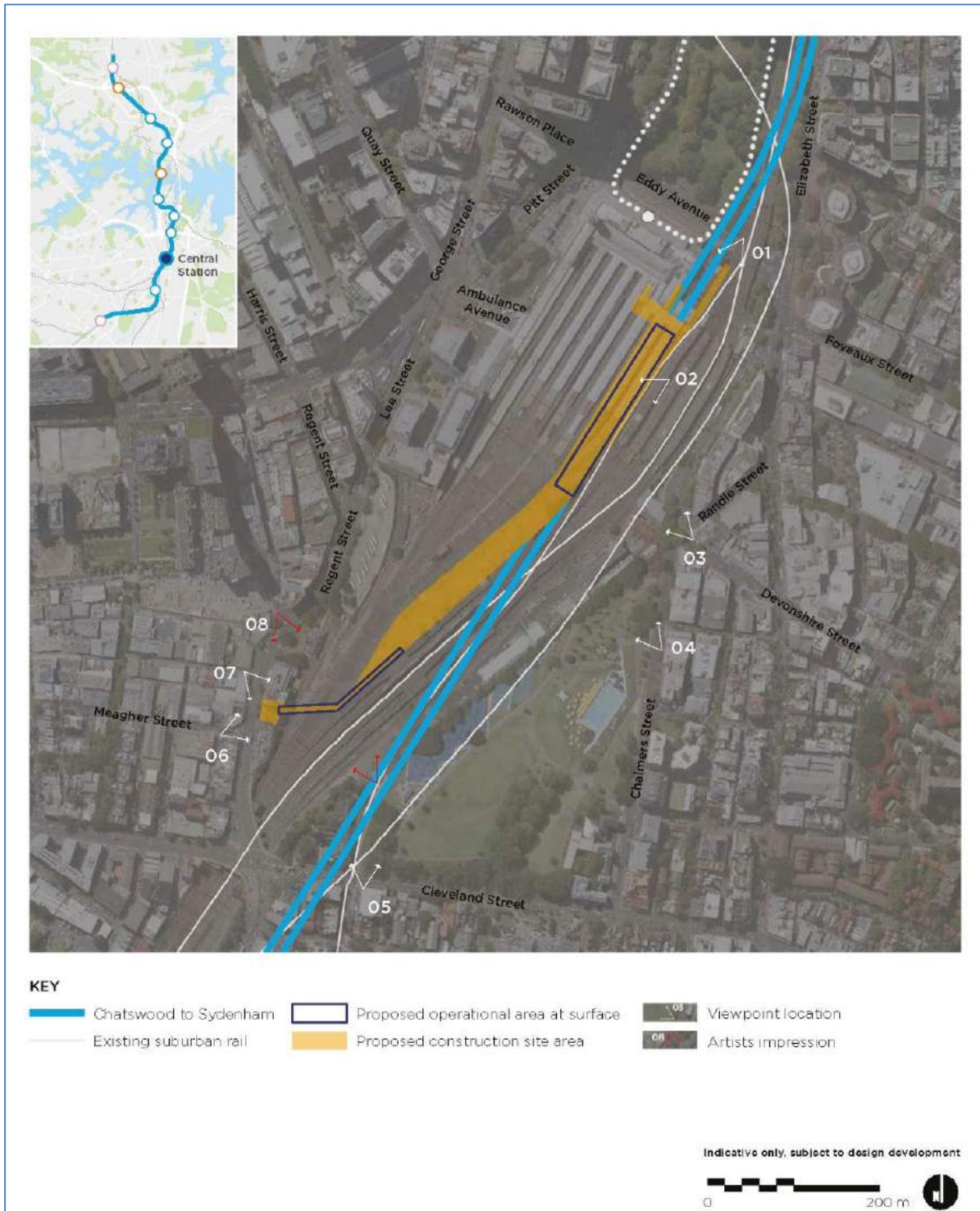


Figure 37 Location for viewpoints 1 - 8 for CSM from the EIS Visual assessment (image 1 of 2).

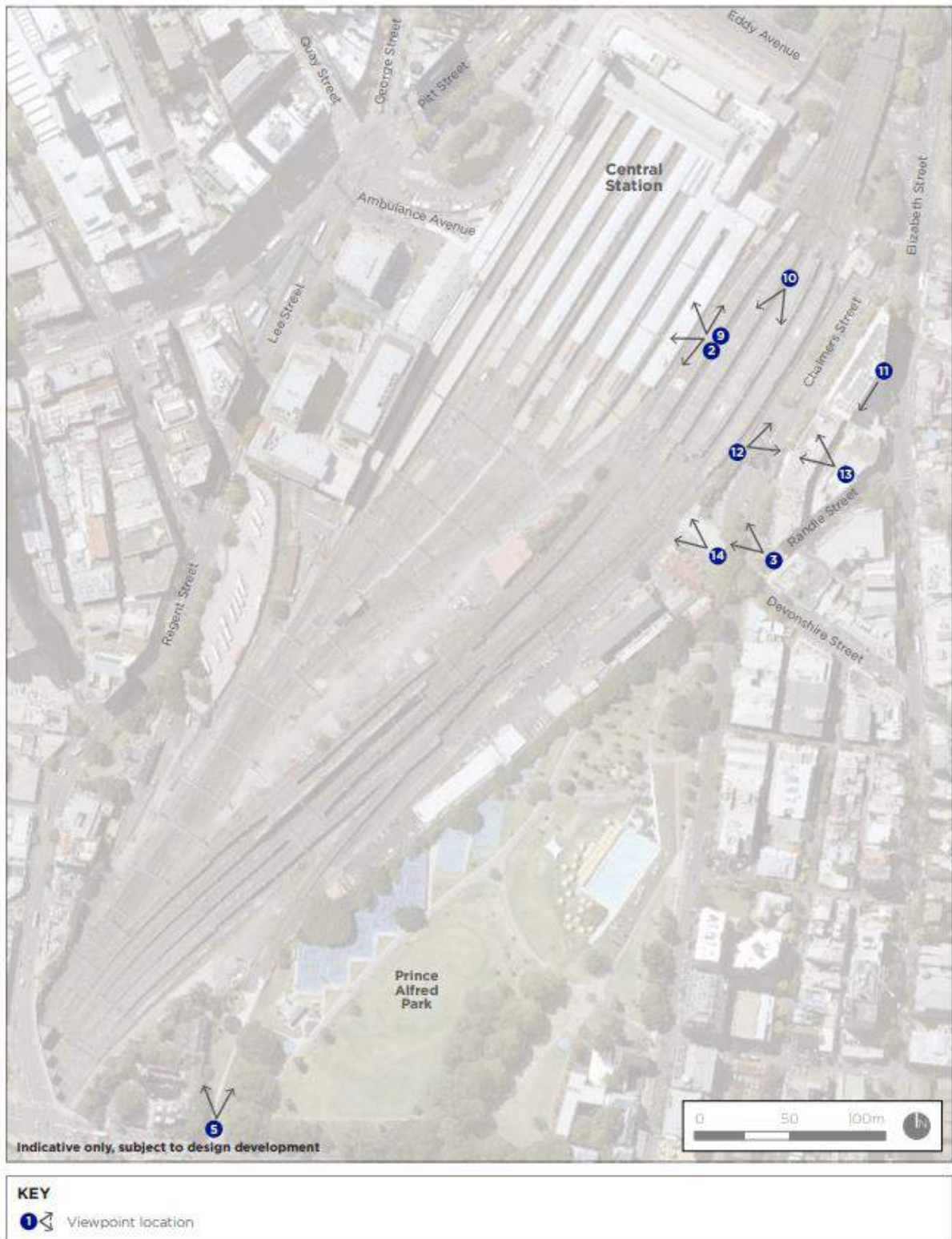


Figure 37 Location of viewpoints 9 - 14 for CSM from Mod 2 Visual Impact Assessment (image 2 of 2).

8.1. Visual impact assessment methodology

The Conditions of Approval (E102) require that 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. The DRP were presented with the viewpoints, their associated modification ratings and therefore the visual Impact ratings during DRP Presentation No.9 on November 19th 2019. The DRP accepted all visual impact viewpoints and is satisfied with the overall visual impact rating being Negligible, in accordance with Condition of Approval E102 (Refer DRP Minutes Appendix C item 9.1)

8.1.1. Landscape impact assessment

Landscape sensitivity levels, landscape modification levels and the landscape impact matrix are established by the EIS and summarised below.

Table 2 Landscape sensitivity levels

Visual sensitivity	Description
National	Landscape feature protected with national or international legislation, for example the Sydney Opera House World Heritage Listed building and its surrounding public realm.
State	Landscape feature or urban place that is heavily used and is iconic to the State, for example Martin Place and Hyde Park.
Regional	Landscape feature that is heavily used and valued by residents of a major portion of a city or a non-metropolitan region, for example Blues Point Reserve and the foreshores of Barangaroo.
Local	Landscape feature valued and experienced by concentrations of residents, and/or local recreational users. Provides a considerable service to the community. For example, it provides a place for local gathering, recreation, sport, street use by cafes and/or shade and shelter in an exposed environment, for example Richard Johnson Square on Hunter Street and Willoughby Road in Crows Nest.
Neighbourhood	Landscape feature valued and appreciated primarily by a small number of local residents, for example street trees in a local street. Provides a noticeable service to the community. For example, it provides a seat or resting place, passive recreation, and/or some shade and shelter in a local street, for example Unwins Bridge Road in Marrickville and Drake Street in Chatswood.

Table 3 Landscape modification levels

Visual modification	Description
Considerable reduction or improvement	Substantial portion of the landscape is changed. This may include substantial changes to parkland function, footpath continuity, building access, permeability of local streets, and / or street tree cover for example. Substantial changes to the level of comfort, vibrancy, safety and walkability, enhancement, connectivity, diversity, and enduring legacy of the public realm.
Noticeable reduction or improvement	A portion of the landscape is changed. This may include the alteration of parkland function, footpath continuity, building access, permeability of local streets, and / or street tree cover for example. Some alteration to the level of comfort, vibrancy, safety and walkability, enhancement, connectivity, diversity, and enduring legacy of the public realm.
No perceived reduction or improvement	Either the landscape quality is unchanged or if it is, it is largely mitigated by proposed public realm improvements. Does not alter or not noticeably alter the level of comfort, vibrancy, safety and walkability, enhancement, connectivity, diversity, and enduring legacy of the public realm.

Table 4 Landscape impact matrix

		Landscape sensitivity				
		National	State	Regional	Local	Neighbourhood
Visual modification	Considerable reduction	Very high adverse	Very high adverse	High adverse	Moderate adverse	Minor adverse
	Noticeable reduction	Very high adverse	High adverse	Moderate adverse	Minor adverse	Negligible
	No perceived change	Negligible	Negligible	Negligible	Negligible	Negligible
	Noticeable improvement	Very high beneficial	High beneficial	Moderate beneficial	Minor beneficial	Negligible
	Considerable improvement	Very high beneficial	Very high beneficial	High beneficial	Moderate beneficial	Minor beneficial

8.1.2. Visual impact assessment

Visual sensitivity levels, visual modification levels, the daytime visual impact matrix and the night-time visual impact matrix are established by the EIS and summarised below.

Table 5 Visual sensitivity levels

Visual sensitivity	Description
National	Heavily experienced view to a national icon, for example view to Sydney Opera House from Circular Quay or Lady Macquarie's Chair, or a view to Parliament House Canberra along Anzac Parade.
State	Heavily experienced view to a feature or landscape that is iconic to the State, for example view along the main avenue in Hyde Park, or a view to Sydney Harbour from Observatory Hill.
Regional	Heavily experienced view to a feature or landscape that is iconic to a major portion of a city or a non-metropolitan region, or an important view from an area of regional open space, for example views to the Sydney Town Hall from George Street, a Sydney CBD skyline view from Centennial Park, or views from Blues Point Reserve to Sydney Harbour.
Local	High quality view experienced by concentrations of residents and/or local recreational users, local commercial areas, and/or large numbers of road or rail users, for example view from Chatswood Park or Chifley Square.
Neighbourhood	Views where visual amenity is not particularly valued by the wider community such as views from local streets, pocket parks and small groups of residences.

Table 6 Visual modification levels

Visual modification	Description
Considerable reduction or improvement	Substantial part of the view is altered. The project contrasts substantially with surrounding landscape.
Noticeable reduction or improvement	Alteration to the view is clearly visible. The project contrasts with surrounding landscape.
No perceived reduction or improvement	Either the view is unchanged or if it is, the change in the view is generally unlikely to be perceived by viewers. The project does not contrast with the surrounding landscape.

Table 7 Daytime visual impact matrix

		Daytime visual sensitivity				
		National	State	Regional	Local	Neighbourhood
Visual modification	Considerable reduction	Very high adverse	Very high adverse	High adverse	Moderate adverse	Minor adverse
	Noticeable reduction	Very high adverse	High adverse	Moderate adverse	Minor adverse	Negligible
	No perceived change	Negligible	Negligible	Negligible	Negligible	Negligible
	Noticeable improvement	Very high beneficial	High beneficial	Moderate beneficial	Minor beneficial	Negligible
	Considerable improvement	Very high beneficial	Very high beneficial	High beneficial	Moderate beneficial	Minor beneficial

Table 8 Night-time visual impact matrix

		Night-time visual sensitivity			
		E1: Intrinsically dark landscapes	E2: Low district brightness	E3: Medium district brightness	E4: High district brightness
Visual modification	Considerable reduction	Very high adverse	Very high adverse	High adverse	Moderate adverse
	Noticeable reduction	Very high adverse	High adverse	Moderate adverse	Minor adverse
	No perceived change	Negligible	Negligible	Negligible	Negligible
	Noticeable improvement	Very high beneficial	High beneficial	Moderate beneficial	Minor beneficial
	Considerable improvement	Very high beneficial	Very high beneficial	High beneficial	Moderate beneficial

8.1.3. CSM visual impacts - daytime

Based on the selected viewpoints, the visual assessment in the EIS modification report identified that daytime visual impacts for CSM (operation) would result in mostly “negligible” impacts. The daytime visual impact assessments determined in the EIS modification report for the relevant viewpoints are summarised in the table below.

Viewpoints 5, 6, 7 and 8 as well as the view from the rail corridor are related to the Sydney Yard Access Bridge works, which were not part of the current project scope of works.

The plaza area shown in front of the new Eddy Avenue entrance is not part of the current project scope of works and is shown indicatively.

Daytime visual amenity impacts					
Location	Sensitivity rating	Construction impact		Operation impact	
		Modification rating	Impact rating	Modification rating	Impact rating
Viewpoint 1: View southwest from Eddy Avenue to the Northern Concourse	Local	Noticeable reduction	Minor adverse	Noticeable improvement	Minor beneficial
Viewpoint 2: View south from platform 16	Regional	Noticeable reduction	Moderate adverse	No perceived change	Negligible
Viewpoint 3: View northwest from the corner of Devonshire and Chalmers Streets	Local	Noticeable reduction	Minor adverse	No perceived change	Negligible
Viewpoint 4: View west from Chalmers Street	Local	No perceived change	Negligible	No perceived change	Negligible
Viewpoint 5: View west from Prince Alfred Park	Regional	No perceived change	Negligible	No perceived change	Negligible
Views from rail corridor	Regional	Noticeable reduction	Moderate adverse	No perceived change	Negligible
Viewpoint 6: View southeast along Regent Street	Local	Considerable reduction	Moderate adverse	No perceived change	Negligible
Viewpoint 7: View southeast from Meagher Street	Local	Considerable reduction	Moderate adverse	No perceived change	Negligible
Viewpoint 8: View east across Regent Street to Mortuary Station	Regional	Noticeable reduction	Moderate adverse	No perceived change	Negligible
Viewpoint 9 View from platform 16	Regional	Noticeable reduction	Moderate adverse	Noticeable reduction	Moderate adverse
Views from residential properties on Regent street	Neighbourhood			No perceived change	Negligible
Viewpoint 10	Regional	No perceived change	Negligible	Noticeable improvement	Moderate benefit

Daytime visual amenity impacts					
View north from platform 20/21 and 22/23					
Viewpoint 11 View southwest along Randle lane	Neighbourhood	NA	NA	Noticeable reduction	Negligible
Viewpoint 12 Views northeast along Randle lane	Local	NA	NA	No perceived change	Negligible
Viewpoint 13 Views from residential areas on Chalmers Street and Randle Lane	Neighbourhood	NA	NA	No perceived change	Negligible
Viewpoint 14 View west from the service access at the Devonshire Street station entry	Regional	NA	NA	No perceived change	Negligible
Views to power supply route works	Local	Noticeable reduction	Minor adverse	N/A	N/A

Viewpoint 1 View southwest from Eddy Avenue to the Northern Concourse

Sensitivity level	Visual Impact Assessment	
	Modification Rating	Impact Level
Local	Noticeable Improvement	Minor Beneficial

Sensitivity Level In the EIS Modification Report, Viewpoint 1 was assessed as **Local** in terms of visual sensitivity.

SDPP station design The SDPP station design from this viewpoint is a **Noticeable Improvement** to the existing Eddy Avenue view through:

- Provision of a refurbished entry to Central Station from Eddy Avenue, realigned to customer path of travel, located within the Central Electric Building.
- Provision of new canopy above Northern Concourse and part extended over the Central Electric Building.
- Provision of new glazed screen between east wing of Terminus building and Central Electric Building. Screen is full height at ground floor and extends to 1500mm above floor level at first floor level.
- No other changes proposed to Central Electric Building façade or Eddy Avenue plaza.

Visual Impact Assessment This results in a **Minor Beneficial** outcome compared to the existing condition.

EIS Viewpoint 1



Viewpoint location plan



Proposed Photomontage



Viewpoint 2 **View south from platform 16**

Sensitivity level	Visual Impact Assessment	
	Modification Rating	Impact Level
Regional	No Perceived Change	Negligible

Sensitivity Level In the EIS Modification Report, Viewpoint 2 was assessed as **Regional** in terms of visual sensitivity.

SDPP station design The SDPP station design from this viewpoint is **No Perceived Change** to the view from Platform 16 through:

- Reinstatement of Intercity platforms 12-14 very closely matching existing platform footprint.
- New Intercity platform canopies are of approximately the same height and extent as existing canopies.
- New southern vent services building located on the eastern side of platform 14 to minimise impacts upon views to the Mortuary Station and detailed to break down massing into three volumes and avoid large, flat expanses of wall.

Visual Impact Assessment This results in a **Negligible** outcome compared to the existing condition.

EIS Viewpoint 2



Viewpoint location plan



Proposed Photomontage



Viewpoint 3 **View northwest from the corner of Devonshire and Chalmers streets**

Sensitivity level	Visual Impact Assessment	
	Modification Rating	Impact Level
Local	No Perceived Change	Negligible

Sensitivity Level In the EIS Modification Report, Viewpoint 3 was assessed as **Local** in terms of visual sensitivity.

SDPP station design The SDPP station design from this viewpoint is **No Perceived Change** to the existing streetscape through:

- Where practicable matching scale of existing infrastructure such as existing platform canopies.
- Locating the new vent structures towards the centre of the Central Station site.
- Integrating the new northern vent structure into the platform canopy.
- New southern vent services building located on the eastern side of platform 14 to minimise impacts upon views to the Mortuary Station and detailed to break down massing into three volumes and avoid large, flat expanses of wall.

Visual Impact Assessment This results in a **Negligible** outcome compared to the existing condition.

EIS Viewpoint 3



Viewpoint location plan



Proposed Photomontage



Viewpoint 4 **View west from Chalmers Street**

Sensitivity level	Visual Impact Assessment	
	Modification Rating	Impact Level
Local	No Perceived Change	Negligible

Sensitivity Level In the EIS Modification Report, Viewpoint 4 was assessed as **Local** in terms of visual sensitivity.

SDPP station design The SDPP station design from this viewpoint is **No Perceived Change** to the existing streetscape through:

- Where practicable matching scale of existing infrastructure such as existing platform canopies.
- Locating the new vent structures towards the centre of the Central Station site.
- Keeping the height of the new Northern Concourse canopy below that of the existing Grand Concourse roof.

Visual Impact Assessment This results in a **Negligible** outcome compared to the existing condition.

EIS Viewpoint 4



Viewpoint location plan



Proposed



Viewpoint 5 **View west from Prince Alfred Park**

Sensitivity level	Visual Impact Assessment	
	Modification Rating	Impact Level
Regional	No Perceived Change	Negligible

Sensitivity Level In the EIS Modification Report, Viewpoint 5 was assessed as **Regional** in terms of visual sensitivity.

SDPP station design The SDPP station design from this viewpoint is **No Perceived Change** to the existing streetscape through:

- Where practicable matching scale of existing infrastructure such as existing platform canopies.
- Locating the new vent structures towards the centre of the Central Station site.
- Keeping the height of the new Northern Concourse canopy below that of the existing Grand Concourse roof.

Visual Impact Assessment This results in a **Negligible** outcome compared to the existing condition.

EIS Viewpoint 5



Viewpoint location plan



Proposed



EIS Viewpoint “View from the rail corridor”.

Sensitivity level	Visual Impact Assessment	
	Modification Rating	Impact Level
Regional	No Perceived Change	Negligible

Sensitivity Level In the EIS Modification Report, the view from the rail corridor was assessed as **Regional** in terms of visual sensitivity.

SDPP station design The SDPP station design from this viewpoint is **No Perceived Change** to the existing streetscape through:

- The new Sydney Yard access bridge.
- A new landscaped area adjacent to the Regent Street entrance.

Visual Impact Assessment This results in a **Negligible** outcome compared to the existing condition.

EIS Viewpoint



Viewpoint location plan



Current and Proposed



Viewpoint 6 **View southeast along Regent Street**

Sensitivity level	Visual Impact Assessment	
	Modification Rating	Impact Level
Local	No Perceived Change	Negligible

Sensitivity Level In the EIS Modification Report, Viewpoint 6 was assessed as **Local** in terms of visual sensitivity.

SDPP station design The SDPP station design from this viewpoint is **No Perceived Change** to the existing streetscape through:

- A new entrance to the rail yard from Regent Street and the new Sydney Yard access bridge.
- A new landscaped area adjacent to the Regent Street entrance.

Visual Impact Assessment This results in a **Negligible** outcome compared to the existing condition.

EIS Viewpoint 6



Viewpoint location plan



Existing and Proposed



Viewpoint 7 **View southeast from Meagher Street**

Sensitivity level	Visual Impact Assessment	
	Modification Rating	Impact Level
Local	No Perceived Change	Negligible

Sensitivity Level In the EIS Modification Report, Viewpoint 7 was assessed as **Local** in terms of visual sensitivity.

SDPP station design The SDPP station design from this viewpoint is **No Perceived Change** to the existing streetscape through:

- A new entrance to the rail yard from Regent Street and the new Sydney Yard access bridge.
- A new landscaped area adjacent to the Regent Street entrance.

Visual Impact Assessment This results in a **Negligible** outcome compared to the existing condition.

EIS Viewpoint 7



Viewpoint location plan



Existing and Proposed



Viewpoint 8 View east across Regent Street to Mortuary Station

Sensitivity level	Visual Impact Assessment	
	Modification Rating	Impact Level
Regional	No Perceived Change	Negligible

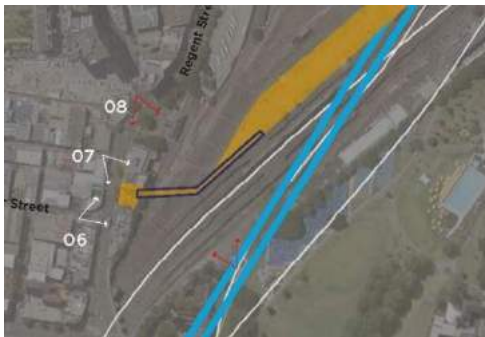
Sensitivity Level In the EIS Modification Report, Viewpoint 8 was assessed as **Regional** in terms of visual sensitivity.

SDPP station design The SDPP station design from this viewpoint is **No Perceived Change** to the existing streetscape through:

- The new Sydney Yard access bridge in the background passing behind the Mortuary Station.

Visual Impact Assessment This results in a **Negligible** outcome compared to the existing condition.

EIS Viewpoint 8



Viewpoint location plan



Existing and Proposed



Viewpoint 9

View north from platform 16

Sensitivity level	Visual Impact Assessment	
	Modification Rating	Impact Level
Regional	Noticeable improvement	Moderate beneficial

Sensitivity Level In the Central Walk Modification Report, Viewpoint 9 was assessed as **Regional** in terms of visual sensitivity.

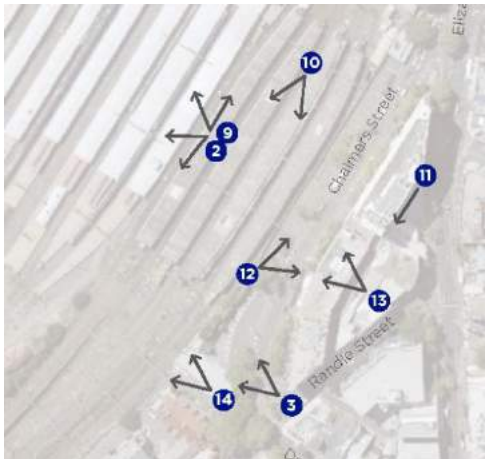
SDPP station design The SDPP station design from this viewpoint is a **Noticeable Improvement** to the view from platform 16 through:

- Removal of accretions around Central Electric Building.
- Introduction of new Northern Concourse canopy
- Introduction of new northern vent structure incorporating indigenous heritage treatment.

Visual Impact Assessment This results in a **Moderate beneficial** outcome compared to the existing condition.

EIS Viewpoint 9

No image provided in Modification Report



Viewpoint location plan

EIS Viewpoint “Views from residential properties on Regent Street”

Sensitivity level	Visual Impact Assessment	
	Modification Rating	Impact Level
Neighbourhood	No perceived change	Negligible

Sensitivity Level In the Central Walk Modification Report, the view from residential properties on Regent Street was assessed as **Neighbourhood** in terms of visual sensitivity.

SDPP station design The SDPP station design from this viewpoint is **No Perceived Change** to the views from residential properties on Regent Street through:

- Where practicable matching scale of existing infrastructure such as existing platform canopies.
- Locating the new vent structures towards the centre of the Central Station site.
- Keeping the height of the new Northern Concourse canopy below that of the existing Grand Concourse roof.
- A new entrance to the rail yard from Regent Street and the new Sydney Yard access bridge.
- A new landscaped area adjacent to the Regent Street entrance.

Visual Impact Assessment This results in a **Negligible** outcome compared to the existing condition.

EIS Viewpoint

No viewpoint location plan provided in the Central Walk Modification Report

No viewpoint provided in the Central Walk Modification Report

Viewpoint location plan

Viewpoint 10 **View north from platform 20/21 and 22/23**

Sensitivity level	Visual Impact Assessment	
	Modification Rating	Impact Level
Regional	Noticeable improvement	Moderate beneficial

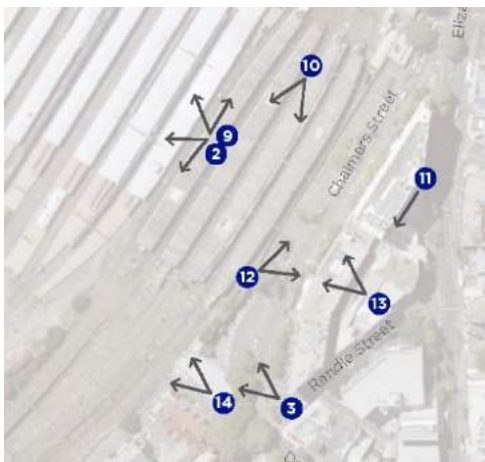
Sensitivity Level In the Central Walk Modification Report, Viewpoint 10 was assessed as **Regional** in terms of visual sensitivity.

SDPP station design The SDPP station design from this viewpoint is a **Noticeable Improvement** to the view from platform 20/21 and 22/23 through:

- Introduction of new glazed lift enclosures within the structure of the existing heritage platform canopies.
- Introduction of new escalators with glazed screens within the structure and footprint of the existing heritage platform canopies.
- Consolidation of new guard houses and CSA pods into single buildings located towards the centre of the platforms.

Visual Impact Assessment This results in a **Moderate beneficial** outcome compared to the existing condition.

EIS Viewpoint 10



Viewpoint location plan



Proposed



Viewpoint 11 View southwest along Randle Lane

Sensitivity level	Visual Impact Assessment	
	Modification Rating	Impact Level
Neighbourhood	No perceived change	Negligible

Sensitivity Level In the Central Walk Modification Report, Viewpoint 11 was assessed as **Neighbourhood** in terms of visual sensitivity.

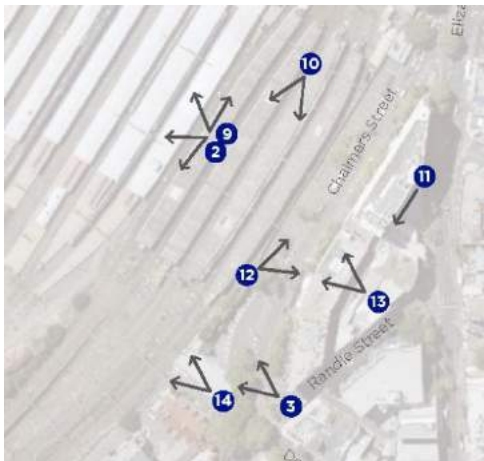
SDPP station design The SDPP station design from this viewpoint is **No Perceived Change** to the view from southwest along Randle Lane through:

- New Eastern Entrance building footprint matches that of the previous building on site and continues the street wall along Randle Lane.

Visual Impact Assessment This results in a **Negligible** outcome compared to the existing condition.

EIS Viewpoint 11

No image provided in Modification Report



Viewpoint location plan

Viewpoint 12 Views northeast along Chalmers Street

Sensitivity level	Visual Impact Assessment	
	Modification Rating	Impact Level
Local	No perceived change	Negligible

Sensitivity Level In the Central Walk Modification Report, Viewpoint 12 was assessed as **Local** in terms of visual sensitivity.

SDPP station design The SDPP station design from this viewpoint is a **Noticeable Improvement** to the views northeast along Chalmers Street through:

- New Eastern Entrance building footprint matches that of the Bounce Hostel.
- Entrance elevation finishes flush with the adjacent pavement.
- Façade is extensively glazed and open to the street.

Visual Impact Assessment This results in a **Negligible** outcome compared to the existing condition.

EIS Viewpoint 12



Viewpoint location plan



Proposed



Viewpoint 13 Views from residential areas on Chalmers Street and Randle Lane

Sensitivity level	Visual Impact Assessment	
	Modification Rating	Impact Level
Neighbourhood	Noticeable improvement	Negligible

Sensitivity Level In the Central Walk Modification Report, Viewpoint 13 was assessed as **Neighbourhood** in terms of visual sensitivity.

SDPP station design The SDPP station design from this viewpoint is a **Noticeable Improvement** to the views northeast along Chalmers Street through:

- Introduction of route from Randle Lane to Chalmers Street via the Eastern Entrance building.
- Proposed Randle Lane facade material selections are in keeping with existing adjacent buildings.
- Façade includes glazed elements so far as is practicable.

Visual Impact Assessment This results in a **Negligible** outcome compared to the existing condition.

EIS Viewpoint 13

No image provided in Modification Report



Viewpoint location plan

Viewpoint 14 **View west from the service access at the Devonshire Street station entry**

Sensitivity level	Visual Impact Assessment	
	Modification Rating	Impact Level
Regional	No perceived change	Negligible

Sensitivity Level In the Central Walk Modification Report, Viewpoint 14 was assessed as **Regional** in terms of visual sensitivity.

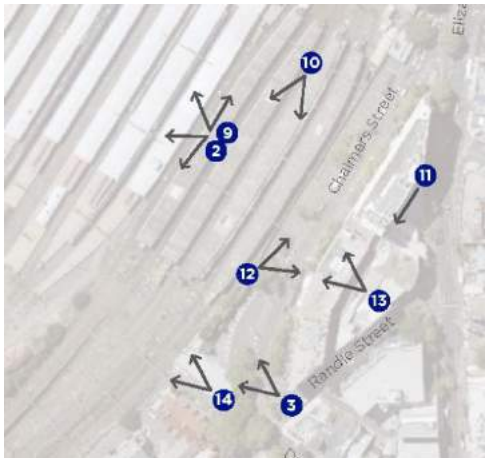
SDPP station design The SDPP station design from this viewpoint is **No perceived change** to the view from the service access at the Devonshire Street station entry through:

- Where practicable matching scale of existing infrastructure such as existing platform canopies.
- Locating the new vent structures towards the centre of the Central Station site.
- Integrating the new northern vent structure into the platform canopy.
- New southern vent services building located on the eastern side of platform 14 to minimise impacts upon views to the Mortuary Station and detailed to break down massing into three volumes and avoid large, flat expanses of wall.

Visual Impact Assessment This results in a **Negligible** outcome compared to the existing condition.

EIS Viewpoint 14

No image provided in Modification Report



Viewpoint location plan

8.1.4. CSM visual impacts – night-time

Central Station is identified as having high district brightness. On this basis, the visual assessment in the EIS modification report identified that modifications for CSM (operation) would result in mostly “negligible” night-time visual impacts. The night-time visual impact assessment determined in the EIS modification report is summarised below.

Night-time visual impacts					
Location	Sensitivity rating	Construction impact		Operation impact	
		Modification rating	Impact rating	Modification rating	Impact rating
Central Station site	E4: High district brightness	No perceived change	Negligible	No perceived change	Negligible

During operation, station lighting will be consistent with the high district brightness environment of the existing station. The station lighting has been designed in conformance with project requirements, including minimising glare and light spill and avoiding indirect glare from reflective surfaces.

The lighting will not create a perceived change in visual amenity, resulting in a negligible visual impact for this area.

8.1.5. CSM landscape impacts

Based on the selected viewpoint of the Northern Concourse, the visual assessment in the EIS modification report identified that landscape modifications for CSM (operation) would result in a “moderate beneficial” impact. The landscape impact assessment determined in the EIS modification report is summarised in the table below.

Landscape impacts					
Location	Sensitivity rating	Construction impact		Operation impact	
		Modification rating	Impact rating	Modification rating	Impact rating
Northern Concourse	Regional	Noticeable reduction	Moderate adverse	Noticeable improvement	Moderate beneficial

Northern Concourse

Sensitivity level	Visual Impact Assessment	
	Modification Rating	Impact Level
Regional	No Perceived Change	Negligible

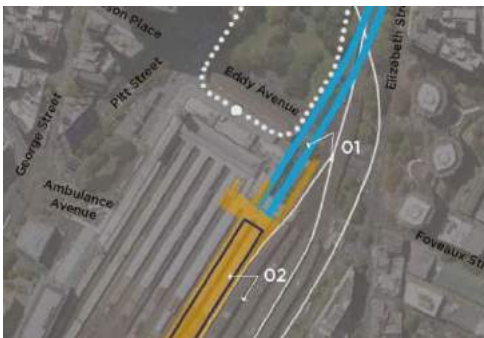
Sensitivity Level In the EIS Modification Report, the Northern Concourse was assessed as **Regional** in terms of visual sensitivity.

SDPP station design The SDPP station design from this viewpoint is **No Perceived Change** to the existing streetscape through:

- Provision of a refurbished entry to Central Station from Eddy Avenue, realigned to customer path of travel, located within the Central Electric Building.
- Provision of new canopy above Northern Concourse and part extended over the Central Electric Building.
- Provision of new glazed screen between east wing of Terminus building and Central Electric Building. Screen is full height at ground floor and extends to 1500mm above floor level at first floor level.
- No other changes proposed to Central Electric Building façade or Eddy Avenue plaza.

Visual Impact Assessment This results in a **Negligible** outcome compared to the existing condition.

EIS Viewpoint



Viewpoint location plan



Existing and Proposed



Appendix A Community Feedback Register

#	Theme/s	Feedback	Response
1	Wayfinding / Bike Parking / Landscaping	<p>Thank you for making this plan available for comment. After reviewing the draft document I would like to provide three suggestions:</p> <ol style="list-style-type: none"> All exit/entry points of Central Station should be visibly numbered, as they are shown in Figure 25. Users would be able to gain familiarity with that services and attractions are within the shortest distances of specific exits, simplifying wayfinding and shortening paths of travel. This is done on the Paris metro and is very helpful for tourists, particularly when attractions are able to identify the closest entry/exit points to visitors before they even board a train to the station. The provision for 32 bicycle parking spaces near the Chalmers Street entrance seems wholly insufficient for a transportation hub. If cycling trips increase, the station could become littered with bikes tied up along busy footpaths and at key pedestrian intersections. Live plantings should be used wherever possible, or wherever might be visible from the suburban / interstate platforms as the current station can feel like a concrete island in a concrete sea. 	<ol style="list-style-type: none"> Changing signage would not be in accordance with the TfNSW Wayfinding Planning Guide which is consistent across all NSW transport modes The wider precinct redevelopment is outside the scope of the current project. The TfNSW Central Precinct Renewal Program may consider inclusion of more bike parking facilities. https://www.transport.nsw.gov.au/projects/current-projects/central-precinct-renewal-program The station does not have the land or area for live plantings. This is outside the scope of the current project.
2	Bike parking	<p>Having reviewed the draft station design and precinct plan my view is that the provision for bicycle parking is wholly inadequate. In the 21st century when active transport is seen as an integral part of urban transport, to not have ANY inclusion of bicycle parking in the project, and simply to identify A VERY SMALL number of spaces OUTSIDE the scope of current plans and not to have a provision for their completion as part of the project is wholly unsatisfactory. Please amend the plans to include secure bicycle parking as part of the design, in areas which are in the scope of the design. This current design does not demonstrate holistic planning of active travel and should be amended so that it does.</p>	<p>As discussed in the SDPP, further bike parking facilities can only be accommodated outside the boundary of the Central Station Sydney Metro works and therefore can only be addressed by the TfNSW Central Precinct Renewal Program.</p>
3	Bike parking	<p>The draft station design and precinct plan needs effective integration, facilities and connectivity for active travel (walking and cycling). "A bicycle allocations study has been undertaken by the Central Station Metro team comprising a review of possible locations in the Chalmers Street public domain, as shown in the figure below. Should this work proceed, it will likely be undertaken as part of one of the projects associated with the broader Central Station precinct." The commitment to bicycle parking is good, but seems vague and non-committal. There is ongoing community scepticism that, as with previous TfNSW projects (eg. M5, Sydney</p>	<p>As discussed in the SDPP, further bike parking facilities can only be accommodated outside the boundary of the Central Station Sydney Metro works and therefore can only be addressed by the TfNSW Central Precinct Renewal Program.</p>

		Gateway, Sydney Light Rail), the connectivity and commitment to the cycling component will mysteriously disappear later in the project. It would be great to have a concrete commitment by the project to see these design and plans through to completion.	
4	Wayfinding	I constantly detect a feeling of stubborn refusal by transport - and traffic -authorities in Australia to adopt International signage. NSW - and Australia - claim to welcome overseas visitors, but the signage is hardly welcoming. Everything is in mono - lingual English text, International signs are used and understood worldwide, except Australia, which slavishly copies the USA. Even a [Way Out] sign could be made easier by simply adding the International symbol of an open-sided square with an arrow pointing outwards, [Way In] has the arrow pointing inwards. The [Way Out] text could remain, with an International symbol simply added over the existing arrow. Arrows pointing in all directions are of little use if visitors can't understand the text. Earlier this year, I was returning by train from Penrith. There were two couples in the car and one man was using a camcorder at various points of interest. Seeking to offer some local knowledge, I asked him how far they were going. "Sorry, no English", they were from the Czech Republic. His friend knew a little English, and with my limited German we made a little progress, but it implies a chauvinistic attitude where overseas tourists are all expected to speak English on perhaps a once in a lifetime visit, and if Australians visit other countries, they expect the locals to speak English. International signs are not cluttered with every language from Oslo to Osaka, they use pictorial symbols understood in every country.	International signage cannot be adopted by the current scope of works, as the existing signage is in accordance with the TfNSW Wayfinding Planning Guide which is consistent across all NSW transport modes. Varying signage within Central Station alone would require a modification to the TfNSW signage guidelines and is therefore outside the projects scope.
5	Design	Having perused the Design and Precinct Plan, I applaud the effort put into the detail of the internal architecture with the emphasis on spacious design and natural light. I appreciate that the main Grand Concourse will be preserved as a heritage building, as it should. However, the design of the Chalmers Street entrance is very disappointing. The word banal comes to mind as it looks like the entrance to a Westfield shopping centre. Surely the architects could have designed a façade that was more distinctive and complemented the main heritage entrance? If this development goes ahead with this design, I foresee that in the future, it will become rapidly depressed looking and dated and there will be pressure to redevelop it again. Why not design something unique and worth keeping now?	<p>The Station Design was developed in accordance with project specific architectural design principles and went through a detailed design review process in consultation with the Design Review Panel. Adding sandstone to the Eastern Entrance would not be consistent with the streetscape of Chalmers Street. Sandstone is from the original terminal buildings, however the neighbourhood of Chalmers Street is Art Deco and contemporary styling. Modifying the current façade of the Eastern Entrance would require an adjustment with currently approved designs and therefore further approval to ensure it aligns with the contract requirements and the SSI project approval SSI 15_7400.</p> <p>Revised comment 26/02/20: <i>The Eastern Entrance has been designed in the context of the surrounding buildings and the future over station development to ensure it aligns with the SSI project approval SSI 15_7400. The design has</i></p>

			<i>been through peer reviews and a rigorous approval process. It currently complies with all planning requirements.</i>
6	Wayfinding / Signage	<p>Thumbs up on the overall concept! The big thinking, the high, open spaces that cut through the whole design bringing natural light into lower parts of the station, that could easily feel cramped and dingy. MY ONE PIECE OF FEEDBACK IS A PLEA TO VASTLY IMPROVE SIGNAGE AND WAYFINDING</p> <p>1. Discontinue the use of meaningless signsThe current signage installed about 3-4 years ago is shockingly bad. There are signs pointing to “EXIT 4” or “EASTERN STEPS” or “NORTHERN CONCOURSE” or “GRAND CONCOURSE” — even locals who use the station every day would be hard pressed to know where Exit 4 led to, or to the meaning of the concourse nomenclature. How is a visitor supposed to figure it out? These are terms that security or station staff might use, they have no meaning to the travelling public. I noticed some additional signs that make more sense close to the exits now, probably after so many people complained. I see people who are obviously visitors asking staff directions every day, who enter the Surry Hills/Elizabeth entrance, who have no idea where their train leaves from, because there are simply no signs “TO INTERCITY AND INTERSTATE TRAINS” It’s as if the designers required a traveller to find a map of the station, orientate themselves on the map and figure out where Exit 5, or 6 actually led to, or even what Northern Concourse even means, instead of a sign simply stating “TO ELIZABETH AND CHALMERS STREETS” etc.</p> <p>2. More Train Information ScreensWhy are there no train schedule screens inside the Northern Concourse? Visitors go through the turnstiles then realise there’s no help on the inside and they have to go back out through the turnstiles to the Elizabeth St entrance to find their destination, platform and time of departure.</p>	<ol style="list-style-type: none"> 1. Signage and wayfinding within the Central Station Metro project integrates conventions established by the TfNSW Wayfinding Planning Guide which is consistent across all NSW transport modes. 2. Sydney Metro trains will have no fixed timetable, customers will just turn up and go, with trains operating approximately every 4 minutes. The placement of suburban and intercity train information screens within the Northern Concourse however is outside the scope of the metro project.
7	Project scope	<p>Action for Public Transport (NSW) is a transport advocacy group active in Sydney since 1974. We promote the interests of beneficiaries of public transport - both of passengers and the wider community. We make this submission on the draft Sydney Metro Station Design and Precinct Plan - Central Station revision E dated 11 November 2019.</p> <p>Our main concern is the absence of any plan for expanding the Devonshire Street pedestrian tunnel. The tunnel connects Railway Square with Chalmers St and the southern concourse of Central station. Recent decades have seen a huge growth in the number of people using it, most of them twice daily. It’s now better-lit and cleaner than it was in the 1950s but still no wider. It’s about 7 metres wide and 270 metres long. Thousands of people, most of them rail passengers, trudge through it every weekday. Most of them do so twice each weekday and</p>	The expansion of the Devonshire Street Tunnel is outside the scope of the approved project.

		<p>some of them have been doing it regularly for years.</p> <p>Steady growth in rail passenger numbers in recent years has seen pedestrian traffic in the tunnel reach a level where the authorities are probably reluctant to direct significant numbers of new users into the tunnel. But no plans to expand the tunnel's capacity, whether by widening it or duplicating it, have surfaced. When the design of the Sydney Metro station under Central was announced, we were surprised that the southern end of the Metro platform was not connected to the existing southern concourse even though it was only a few metres from it. And neither was connected directly to the Devonshire St pedestrian tunnel, only a few metres further away. They should be connected. Now that the Opal ticketing system is working, it should not be particularly difficult or costly to put Opal barriers in a new connection between the Devonshire St tunnel and the paid area. The best point would be near the foot of the steps down from the Redfern end of platforms 16 and 17, providing easy access from Metro and existing platforms alike. As noted above, now is the time to expand the Devonshire St tunnel. This would probably be a new tunnel immediately south of the existing tunnel and it should have provision for steps up to any development over the flyovers. The main benefit of this new work would be significantly less walking distance for thousands of rail passengers on many lines, especially the Bankstown line if it is diverted to use Metro platforms. Reducing the number of people in these tunnels and underground concourses also has obvious safety benefits. Interestingly, figure 7 on page 30 of revision E shows circulation patterns from 2024 consistent with amplifying and connecting the Devonshire St tunnel as outlined above. Yet figure 25 on page 58 shows the connection cut between 16 and 17 and the intercity platforms. Meanwhile, page 110 shows the City of Sydney's tabled concerns that "the project scope does not include the western extension of Central Walk, retaining connections between the suburban and country platforms and future proofing direct connections from Central Walk to the west side of Chalmers Street and from the Devonshire Street tunnel to the metro concourse." These concerns, which we agree with, are shown on page 110 as 'Noted' yet the rest of the SDPP seems to dismiss them. We recommend that the SDPP be revised to include expansion of the Devonshire St pedestrian tunnel with connections to the paid area around the southern ends of both the Metro platforms and suburban platform 16.</p>	
<p>8</p>	<p>Design / Project scope</p>	<p>Thank you for the chance of commenting. The intentions are bold and impressive, but I have two misgivings:</p> <ol style="list-style-type: none"> 1) The canopy over the northern concourse will stand over the original venerable building, belittling it and making it look foolish. 	<ol style="list-style-type: none"> 1) Although the new Northern Concourse canopy will sail over and around the Central Electric Building, its light coloured arched metal panels forming the soffit will provide a neutral planar backdrop against which the brick and

		<p>2) Secondly you should grasp this opportunity to widen and modify the bridge over Eddy Avenue to carry pedestrian traffic.</p>	<p>sandstone heritage masonry fabric will feature strongly. The overall effect will be enhanced by the introduction of natural light via the glazed feature of the oversailing concourse, and the newly widened entry from Eddy Avenue.</p> <p>2) Widening the bridge over Eddy Avenue is outside the scope of the approved project.</p>
<p>9</p>	<p>Station access</p>	<p>Dear Sir or Madam, I note that the draft design plan for Central Station to accommodate the Sydney Metro does not address how the customers leaving the train/metro stations to the various surrounding streets will be safe, in spite of the proposal's objectives (mentioned frequently including in commentary on figure 25). For the busiest rail station in Sydney multiple exits are essential (to manage traffic volume and unforeseen events) and the proposed Central Walk will be a welcome addition. As you would be aware Central Station is busy partly for the interconnection with other transport modes and partly due to the high density of surrounding destinations (work, residences, retail and education institutions). The Draft Design is focussed on movements within the station envelope and not movements through the precinct in which Central is located. I know the area and I know that most exits are into areas which have significant capacity for pedestrians and their subsequent dispersal. This is not the case for exits 4 and 5 - the north eastern exits (see figure 25 in the Draft Plan). Exits 4 and 5 handle both pedestrians entering and exiting Central as well as pedestrians walking along Eddy Avenue to Surry Hills ie pedestrians who are circumnavigating Central on its north frontier in an equivalent manner for pedestrians circumnavigating Central to the south who can use the Devonshire tunnel. Exits 4 and 5 have negligible buffer with road vehicles because they require crossing Elizabeth Street. The use of Exit 4 is about to become quite complicated once the light rail is operational. Pedestrians need to cross light rail tracks to a traffic island before making the Elizabeth Street crossing. Exit 5 also only delivers pedestrians to the same traffic island. The main issue with exiting Central on the Eastern side is the need to cross Elizabeth Street. As soon as the light rail commences operation, more commuters will arrive to either enter Central railway for trains or to walk to Surry Hills across Elizabeth Street. The proposed Central Walk may alleviate the pressure on the north east station exits in 3 years after it becomes operational in late 2022. Regardless of the impact and effect of the proposed Central Walk, some improvements are required to cross Elizabeth Street. One potential solution is to construct a pedestrian underpass under Elizabeth Street accessed from the Eastern Suburbs Rail Concourse.</p>	<p>The only 'entrance' that is part of the approved project and within the approved project boundary is the Central Walk eastern entrance. Bollards are included as part of the entrances safety initiatives. The North-eastern exits are outside the scope of the approved project and may be considered in the wider TfNSW Central Precinct Renewal Program.</p> <p>https://www.transport.nsw.gov.au/projects/current-projects/central-precinct-renewal-program</p>

		Of course if the Elizabeth Street was closed to through traffic, it would be safer to cross it.	
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Appendix B How feedback from consultation has been addressed

Key stakeholder consultation was undertaken for the Central Station Metro during the design stages. Comments were recorded in meeting minutes. Comments and actions were addressed in each design phase.

The following table lists the consultation and details how the feedback received from stakeholders and the community has been addressed in the SDPP.

Item	Date	Stakeholder	Key Themes/Issues Raised	How addressed in the plan
1	17/04/2018	Design Review Panel	<ul style="list-style-type: none"> Station design 	Comments minuted and addressed in the detailed design which informed this SDPP in section 6.
2	30/05/2018	Heritage Working Group	<ul style="list-style-type: none"> Historic context and development Conceptual approach Proposals Current heritage activities and next steps 	Feedback recorded and addressed in the detailed design which informed this SDPP in section 6.
3	13/06/2018	Community engagement by Customer Centred Design (CCD) team: Site observations: 12-3PM (inter-peak)	<ul style="list-style-type: none"> CCD activity establishing how customers navigate to and from key destinations on site 	Feedback recorded, analysed and included in formal submissions. Summary of key findings are provided in section 3.1. Development of the design continued using insights from engagement activities, which informed this SDPP in section 6.
4	17/06/2018	Design Review Panel	<ul style="list-style-type: none"> Timeline Station elements Materiality CCD Northern Concourse North-South Concourse Metro Box Platforms 12-15 Central Walk Eastern Entrance Heritage summary Heritage interface 	Comments minuted and addressed in the detailed design which informed this SDPP in section 6.
5	19/06/2018	Community engagement by CCD team: Site observations: 10AM-12PM, 3-7PM (inter-peak)	<ul style="list-style-type: none"> CCD activity establishing how customers navigate to and from key destinations on site 	Feedback recorded, analysed and included in formal submissions. Summary of key findings are provided in section 3.1. Development of the design continued using insights from engagement activities, which informed this SDPP in section 6.

Item	Date	Stakeholder	Key Themes/Issues Raised	How addressed in the plan
6	4/07/2019	Community engagement by CCD team: Site observations: 4.30-6.30PM (peak)	<ul style="list-style-type: none"> • CCD activity establishing how customers navigate to and from key destinations on site 	Feedback recorded, analysed and included in formal submissions. Summary of key findings are provided in section 3.1. Development of the design continued using insights from engagement activities, which informed this SDPP in section 6.
7	4/07/2019	Community engagement by CCD team: On site customer intercepts: 11AM-3PM (41 participants)	<ul style="list-style-type: none"> • CCD activity comprising a short questionnaire (3-5 minutes) talking about Central Station environment, navigation and facilities 	Feedback recorded, analysed and included in formal submissions. Summary of key findings are provided in section 3.1. Development of the design continued using insights from engagement activities, which informed this SDPP in section 6.
8	5/07/2019	Community engagement by CCD team: Site observations: 8-9.30AM (peak)	<ul style="list-style-type: none"> • CCD activity establishing how customers navigate to and from key destinations on site 	Feedback recorded, analysed and included in formal submissions. Summary of key findings are provided in section 3.1. Development of the design continued using insights from engagement activities, which informed this SDPP in section 6.
9	5/07/2019	Community engagement by CCD team: On site customer intercepts: 11AM-1PM (25 participants)	<ul style="list-style-type: none"> • CCD activity comprising a short questionnaire (3-5 minutes) talking about Central Station environment, navigation and facilities 	Feedback recorded, analysed and included in formal submissions. Summary of key findings are provided in section 3.1. Development of the design continued using insights from engagement activities, which informed this SDPP in section 6.
10	17/07/2018	Design Review Panel	<ul style="list-style-type: none"> • Timeline • Key concepts • Northern Concourse: Design context; planning optimisation and layout; optimising setout and structure; gateline positions and rationalisation; escalator/stair runoff; heritage interfaces and heritage visibility; rationalisation of material and form; Metro Box interfaces • Materiality: Design studies; Central Walk • Metro Box: Skylights; column on platform; proposed section 	Comments minuted and addressed in the detailed design which informed this SDPP in section 6.

Item	Date	Stakeholder	Key Themes/Issues Raised	How addressed in the plan
11	2/08/2019	Community engagement by CCD team: Focus group – 4 participants	<ul style="list-style-type: none"> • CCD activity comprising a walkthrough of the design using VR, renders and plans, and undertaking interview questionnaires 	Feedback recorded, analysed and included in formal submissions. Summary of key findings are provided in section 3.1. Development of the design continued using insights from engagement activities, which informed this SDPP in section 6.
12	3/08/2019	Community engagement by CCD team: Focus group – 4 participants	<ul style="list-style-type: none"> • CCD activity comprising a walkthrough of the design using VR, renders and plans, and undertaking interview questionnaires 	Feedback recorded, analysed and included in formal submissions. Summary of key findings are provided in section 3.1. Development of the design continued using insights from engagement activities, which informed this SDPP in section 6.
13	6/08/2018	Heritage Working Group	<ul style="list-style-type: none"> • Design timeline • Key concepts • Northern Concourse: Design context; planning optimisation and layout; setout and structure optimisation; gateline positions and rationalisation; escalator/stair runoff; improved heritage interfaces and heritage visibility; heritage interface elements; rationalisation of material and form • Project status next steps • Heritage salvage 	Feedback recorded and addressed in the detailed design which informed this SDPP in section 6.
14	9/08/2018	Community engagement by CCD team: Focus group – 3 mobility impaired participants	<ul style="list-style-type: none"> • CCD activity comprising a walkthrough of the design using VR, renders and plans, and undertaking interview questionnaires 	Feedback recorded, analysed and included in formal submissions. Summary of key findings are provided in section 3.1. Development of the design continued using insights from engagement activities, which informed this SDPP in section 6.
15	10/08/2018	Community engagement by CCD team: Focus group – 3 mobility impaired participants	<ul style="list-style-type: none"> • CCD activity comprising a walkthrough of the design using VR, renders and plans, and undertaking interview questionnaires 	Feedback recorded, analysed and included in formal submissions. Summary of key findings are provided in section 3.1. Development of the design continued using insights from engagement activities, which informed this SDPP in section 6.

Item	Date	Stakeholder	Key Themes/Issues Raised	How addressed in the plan
16	3/09/2018	Heritage Working Group	<ul style="list-style-type: none"> • HWG timeline • Architectural intent • Northern Concourse; Resolve key heritage interfaces; Northern Concourse roof engineering design; terminus building Eastern Range; Central Electric Building soffit • Platform canopies: Design development; services integration • Eastern Entrance and ESR: Design studies • Heritage interpretation • Heritage salvage • Construction start • Archaeological program 	Feedback recorded and addressed in the detailed design which informed this SDPP in section 6.
17	4/09/2018	Design Review Panel	<ul style="list-style-type: none"> • Design timeline • Northern Concourse: Roof engineering design – main column; roof finish; heritage interface; design development of entry view; treatment of terminus Eastern Range and Central Electric Building soffit; roof extension study; Eddy Avenue • Platform canopies: Purpose; materiality; design issues; design development; end typologies; 3m height • Central Walk East: Guard houses • Metro Box: Design development; services integration • ESR and Eastern Entrance: OSD; design issues; design studies; context 	Comments minuted and addressed in the detailed design which informed this SDPP in section 6.
18	23/10/2018	Community engagement by CCD team: Focus group – 12 participants in total over two days	<ul style="list-style-type: none"> • CCD activity comprising a walkthrough of the design using VR, renders and plans, and undertaking interview questionnaires, focusing on vision-, hearing-impaired and non-native English speakers. 	Feedback recorded, analysed and included in formal submissions. Summary of key findings are provided in section 3.1. Development of the design continued using insights from engagement activities, which informed this SDPP in section 6.

Item	Date	Stakeholder	Key Themes/Issues Raised	How addressed in the plan
19	23/10/2018	Community engagement by CCD team: Focus group – 12 participants in total over two days	<ul style="list-style-type: none"> • CCD activity comprising a walkthrough of the design using VR, renders and plans, and undertaking interview questionnaires, focusing on vision-, hearing-impaired and non-native English speakers. 	Feedback recorded, analysed and included in formal submissions. Summary of key findings are provided in section 3.1. Development of the design continued using insights from engagement activities, which informed this SDPP in section 6.
20	24/10/2018	Community engagement by CCD team: Focus group – 12 participants in total over two days	<ul style="list-style-type: none"> • CCD activity comprising a walkthrough of the design using VR, renders and plans, and undertaking interview questionnaires, focusing on vision-, hearing-impaired and non-native English speakers. 	Feedback recorded, analysed and included in formal submissions. Summary of key findings are provided in section 3.1. Development of the design continued using insights from engagement activities, which informed this SDPP in section 6.
21	29/10/2018	Community engagement by CCD team: Focus group – 17 participants in total over four days	<ul style="list-style-type: none"> • CCD activity comprising a walkthrough of the design using VR, renders and plans, and undertaking interview questionnaires, focusing on using the wayfinding signage to find a destination within the station. 	Feedback recorded, analysed and included in formal submissions. Summary of key findings are provided in section 3.1. Development of the design continued using insights from engagement activities, which informed this SDPP in section 6.
22	30/10/2018	Community engagement by CCD team: Focus group – 17 participants in total over four days	<ul style="list-style-type: none"> • CCD activity comprising a walkthrough of the design using VR, renders and plans, and undertaking interview questionnaires, focusing on using the wayfinding signage to find a destination within the station. 	Feedback recorded, analysed and included in formal submissions. Summary of key findings are provided in section 3.1. Development of the signage and wayfinding continued using insights from feedback, which informed this SDPP in section 6.
23	31/10/2018	Community engagement by CCD team: Focus group – 17 participants in total over four days	<ul style="list-style-type: none"> • CCD activity comprising a walkthrough of the design using VR, renders and plans, and undertaking interview questionnaires, focusing on using the wayfinding signage to find a destination within the station. 	Feedback recorded, analysed and included in formal submissions. Summary of key findings are provided in section 3.1. Development of the signage and wayfinding continued using insights from feedback, which informed this SDPP in section 6.
24	1/11/2018	Community engagement by CCD team: Focus group – 17 participants in total over four days	<ul style="list-style-type: none"> • CCD activity comprising a walkthrough of the design using VR, renders and plans, and undertaking interview questionnaires, focusing on using the wayfinding signage to find a destination within the station. 	Feedback recorded, analysed and included in formal submissions. Summary of key findings are provided in section 3.1. Development of the signage and wayfinding continued using insights from feedback, which informed this SDPP in section 6.

Item	Date	Stakeholder	Key Themes/Issues Raised	How addressed in the plan
25	1/11/2018	Signage and wayfinding and CCD: Stakeholder consultation	<ul style="list-style-type: none"> Architectural update Wayfinding strategy and scope completion briefing Wayfinding problem statement Next steps 	Feedback recorded and integrated into design development of signage and wayfinding, which informed this SDPP in section 6.
26	2/11/2018	Guide Dogs NSW/ACT Attended by representatives from architects and accessibility consultant	<ul style="list-style-type: none"> Directional and warning tactile ground surface indicators (TGSIs) placement in the station environment 	Feedback recorded and integrated into design which informed this SDPP in section 6.
27	7/11/2018	Community engagement by CCD team: Retail and seating co-design workshop – Two workshops held, 10 participants in each workshop	<ul style="list-style-type: none"> CCD activity comprising a walkthrough of the design using VR, renders and plans, and undertaking interview questionnaires, focusing on using the wayfinding signage to find a destination within the station. 	Feedback recorded, analysed and included in formal submissions. Summary of key findings are provided in section 3.1. Development of the design continued using insights from engagement activities, which informed this SDPP in section 6.
28	8/11/2018	Community engagement by CCD team: Retail and seating co-design workshop – Two workshops held, 10 participants in each workshop	<ul style="list-style-type: none"> CCD activity comprising a walkthrough of the design using VR, renders and plans, and undertaking interview questionnaires, focusing on using the wayfinding signage to find a destination within the station. 	Feedback recorded, analysed and included in formal submissions. Summary of key findings are provided in section 3.1. Development of the design continued using insights from engagement activities, which informed this SDPP in section 6.
29	5/12/2018	Sydney Trains Attended by representatives from Sydney Trains, Sydney Metro, LOR, architects and access consultant	<ul style="list-style-type: none"> Access and maintenance, Sydney Trains areas 	Formal comments received via project feedback process and addressed.
30	18/12/2018	Design Review Panel	<ul style="list-style-type: none"> Design timeline Spatial hierarchy and sequence: Circulation, runoffs, waiting zones, furniture, sightlines, daylight; wayfinding and signage; public art ad heritage interpretation; advertising; retail CCD outcomes Design updates: Northern Concourse; platform canopies; Central Walk; North-South Concourse and Metro Box; Eastern Entrance and ESR 	Comments minuted and addressed in the detailed design which informed this SDPP in section 6.

Item	Date	Stakeholder	Key Themes/Issues Raised	How addressed in the plan
31	4/02/2019	Heritage Working Group	<ul style="list-style-type: none"> • HWG timeline • Central Walk: Suburban platform lift overrun • Platform canopies: Services building on Intercity platform • Northern Concourse: Connection to heritage building facades; East Range skylight options and glazing details; access and maintenance; interface between existing Intercity platforms 8-11; plinth articulation of Central Electric Building; infill western stair void of Central Electric Building; door access and canopy to TCAC; assessment trend 	Feedback recorded and addressed in the detailed design which informed this SDPP in section 6.
32	19/02/2019	Technical Working Group Attended by representatives from Sydney Trains, Sydney Metro, LOR, AGJV, architects and lighting designers	<ul style="list-style-type: none"> • Low voltage – Front of house lighting 	Comments minuted and addressed in the detailed design which informed this SDPP in section 6.
33	6/03/2019	Technical Working Group Attended by representatives from Sydney Trains, Sydney Metro, LOR, AGJV, architects and signage and wayfinding designers	<ul style="list-style-type: none"> • SPI/PA – Signage and wayfinding 	Comments minuted and addressed in the detailed design which informed this SDPP in section 6.
34	26/03/2019 – 28/03/2019	Community engagement by CCD team: On site signage legibility intercepts – Wayfinding legibility intercepts, 10AM-2.30PM, Sydney Central Station, Grand Concourse (41 intercepts)	<ul style="list-style-type: none"> • CCD activity comprising legibility intercepts, where a customer is interviewed to understand their needs, wants and reactions to the proposed Central Station Metro design, using a combination of VR and printed materials. 	Feedback recorded, analysed and included in formal submissions. Summary of key findings are provided in section 3.1. Development of the signage and wayfinding continued using insights from feedback, which informed this SDPP in section 6.
35	26/03/2019 – 27/03/2019	Community engagement by CCD team: On site signage legibility intercepts – Wayfinding location intercepts, 10AM-2.30PM, Sydney Central Station, Grand Concourse (25 intercepts)	<ul style="list-style-type: none"> • CCD activity comprising location intercepts, where a customer is interviewed to understand their needs, wants and reactions to the proposed Central Station Metro design, using a combination of screen-based and printed materials. 	Feedback recorded, analysed and included in formal submissions. Summary of key findings are provided in section 3.1. Development of the signage and wayfinding continued using insights from feedback, which informed this SDPP in section 6.

Item	Date	Stakeholder	Key Themes/Issues Raised	How addressed in the plan
36	8/04/2019	Heritage Working Group	<ul style="list-style-type: none"> • HWG timeline • Services building on Intercity platform • Connection to heritage building facades - Update • East Range skylight and glazing details • Interface between existing Intercity platforms 8-11 - Update • Northern screen – Update • Door access and canopy to TCAC – Update • Heritage interpretation discussion 	Feedback recorded and addressed in the detailed design which informed this SDPP in section 6
37	9/04/2019	Design Review Panel	<ul style="list-style-type: none"> • Design timeline • Northern Concourse: CENA 68; roof relationship to Central Electric Building; formwork jointing and detailing • Platform canopies: Design development • Central Walk: Design development • North-South Concourse and Metro Box: Design development • Eastern Entrance and ESR: Design development • Project wide: Signage and wayfinding; public art; furniture; retail and advertising opportunities • Items for DRP endorsement: Materiality; public art; European heritage interpretation 	Comments minuted and addressed in the detailed design which informed this SDPP in section 6.
38	9/04/2019	Station Working Group Attended by representatives from Sydney Trains, Sydney Metro, LOR, AGJV, architects and lighting designers	<ul style="list-style-type: none"> • Lighting – Front of house lighting 	Comments minuted and addressed in the detailed design which informed this SDPP in section 6.
39	29/04/2019	Technical Working Group Attended by representatives from Sydney Trains, Sydney Metro, LOR and architects	<ul style="list-style-type: none"> • Signage and wayfinding – PIDs, CIDs and AFILS 	Comments minuted and addressed in the detailed design which informed this SDPP in section 6.

Item	Date	Stakeholder	Key Themes/Issues Raised	How addressed in the plan
40	20/05/2019	Sydney Trains Attended by representatives from Sydney Trains, Sydney Metro, LOR and architects	<ul style="list-style-type: none"> Rodent and vermin management strategy, Sydney Trains areas 	Formal comments received via project feedback process and addressed.
41	20/05/2019	Sydney Trains Attended by representatives from Sydney Trains, Sydney Metro, LOR, architects and access consultant	<ul style="list-style-type: none"> Access and maintenance strategy, Sydney Trains areas 	Formal comments received via project feedback process and addressed.
42	21/05/2019	Sydney Trains Attended by representatives from TfNSW, Sydney Trains, Sydney Metro, LOR, architects and signage and wayfinding consultant	<ul style="list-style-type: none"> CIDs placement workshop – Northern Concourse (Intercity platforms level), North-South Concourse and Central Walk East 	Feedback recorded and addressed in the detailed design which informed this SDPP in section 6
43	27/05/2019	Technical Working Group Attended by representatives from Sydney Trains, Sydney Metro, LOR and architects	<ul style="list-style-type: none"> Signage and wayfinding – PIDs, CIDs and AFILS 	Comments minuted and addressed in the detailed design which informed this SDPP in section 6.
44	29/05/2019	Technical Working Group Attended by representatives from Sydney Trains, Sydney Metro, LOR and architects	<ul style="list-style-type: none"> ETS – Ticketing and gatelines 	Comments minuted and addressed in the detailed design which informed this SDPP in section 6.
45	04/06/2019	Design Review Panel	<ul style="list-style-type: none"> Design timeline Spatial hierarchy Signage and wayfinding Public art Heritage interpretation (European) Heritage interpretation (indigenous) Northern screen Central Electric Building arch option Materiality: GRC Platform canopies: Slip resistance and durability of trafficable glass Integrating services 	Comments minuted and addressed in the detailed design which informed this SDPP in section 6

Item	Date	Stakeholder	Key Themes/Issues Raised	How addressed in the plan
46	26/06/2019	Technical Working Group Attended by representatives from Sydney Trains, Sydney Metro, LOR and architects	<ul style="list-style-type: none"> ETS – Ticketing and gatelines 	Comments minuted and addressed in the detailed design which informed this SDPP in section 6.
47	17/07/2019	Technical Working Group Attended by representatives from Sydney Trains, Sydney Metro, LOR, AGJV and architects	<ul style="list-style-type: none"> Lifts and escalators 	Comments minuted and addressed in the detailed design which informed this SDPP in section 6.
48	22/07/2019	Technical Working Group Attended by representatives from Sydney Trains, Sydney Metro, LOR and architects	<ul style="list-style-type: none"> Signage and wayfinding – PIDs, CIDs and AFILS 	Comments minuted and addressed in the detailed design which informed this SDPP in section 6.
49	24/07/2019	Technical Working Group Attended by representatives from Sydney Trains, Sydney Metro, LOR and architects	<ul style="list-style-type: none"> ETS – Ticketing and gatelines 	Comments minuted and addressed in the detailed design which informed this SDPP in section 6.
50	30/07/2019	Access and maintenance strategy review Attended by representatives from Metro Operator, Sydney Metro, LOR, architects and access and maintenance consultant	<ul style="list-style-type: none"> Access and maintenance strategy, Sydney Metro areas 	Comments minuted and addressed in the detailed design which informed this SDPP in section 6.
51	5/08/2019	Sydney Trains Attended by representatives from Sydney Trains, Sydney Metro, LOR and architects	<ul style="list-style-type: none"> Placement of Customer Information Display in the Intercity concourse 	Comments minuted and addressed in the detailed design which informed this SDPP in section 6.
52	8/08/2019	Guide Dogs NSW/ACT Attended by representatives from architects and accessibility consultant	<ul style="list-style-type: none"> Placement of directional tactiles in the station environment 	Feedback recorded and integrated into design which informed this SDPP in section 6.
53	19/08/2019	Technical Working Group Attended by representatives from Sydney Trains, Sydney Metro, LOR and architects	<ul style="list-style-type: none"> Signage and wayfinding – PIDs, CIDs and AFILS 	Comments minuted and addressed in the detailed design which informed this SDPP in section 6.
54	28/08/2019	Sydney Trains Attended by representatives from Sydney Trains, Sydney Metro, LOR and architects	<ul style="list-style-type: none"> Northern Concourse (Intercity level) PIDs 	Feedback recorded and integrated into design which informed this SDPP in section 6.

Item	Date	Stakeholder	Key Themes/Issues Raised	How addressed in the plan
55	16/09/2019	Technical Working Group Attended by representatives from Sydney Trains, Sydney Metro, LOR and architects	<ul style="list-style-type: none"> Signage and wayfinding – PIDs, CIDs and AFILS 	Comments minuted and addressed in the detailed design which informed this SDPP in section 6.
56	17/9/2019	Design Review Panel	<ul style="list-style-type: none"> Presentation of the Central Electric Building. Treatment of the Cena68 Stairs Northern concourse passenger information displays (PIDs) 	Comments minuted and addressed. The panel accepts all proposed design targets with no changes.
57	18/09/2019	Technical Working Group Attended by representatives from Sydney Trains, Sydney Metro, LOR and architects	<ul style="list-style-type: none"> ETS – Ticketing and gatelines 	Comments minuted and addressed in the detailed design which informed this SDPP in section 6.
58	14/10/2019	Technical Working Group Attended by representatives from Sydney Trains, Sydney Metro, LOR and architects	<ul style="list-style-type: none"> Signage and wayfinding – PIDs, CIDs and AFILS 	Comments minuted and addressed in the detailed design which informed this SDPP in section 6.
59	30/10/2019	Sydney Trains Attended by representatives from Sydney Trains, Sydney Metro, LOR and architects	<ul style="list-style-type: none"> Placement of furniture on Suburban platforms 	Feedback recorded and integrated into design which informed this SDPP in section 6.
60	5/11/2019	Sydney Trains Attended by representatives from Sydney Trains, Sydney Metro, LOR, architects and artist	<ul style="list-style-type: none"> Public art 	Feedback recorded and integrated into design which informed this SDPP in section 6.
61	19/11/2019	Design Review Panel	<p>Key themes addressed</p> <ul style="list-style-type: none"> Bicycle parking Public artwork Finished and accents of the final station Visual impact Further clarification regarding terrazzo floor tiles/platform canopies. Praise by the DRP on the final design outcomes. 	Feedback has been noted. Numerous comments raised during the presentation have been closed out during the presentation to the satisfaction of the DRP. See meeting minutes for detailed comments raised, and responses.
62	22/11/2019	City of Sydney consultation regarding the SDPP	<p>Key themes addressed</p> <ul style="list-style-type: none"> Consultation to date SDPP Bike parking 	Feedback recorded and responses provided. Refer Appendix E in this SDPP.

Item	Date	Stakeholder	Key Themes/Issues Raised	How addressed in the plan
63	3/12/2019	Design Review Panel	<p>Key themes addressed:</p> <ul style="list-style-type: none"> • Requests made by the CoS with improvements to the design. • Request to include OEH member to view the 3D model. 	All comments were closed out during presentation.
64	6/12/19	Community consultation of the SDPP	<ul style="list-style-type: none"> • New wayfinding signage • Increased bike parking facilities • Landscaping within the station. 	<p>No change to plan: Changing signage would not be in accordance with the TfNSW Wayfinding Planning Guide which is consistent across all NSW transport modes Landscaping/bike parking is not within the project scope and cannot be accommodated.</p>
65	6/12/19	Community consultation of the SDPP	<ul style="list-style-type: none"> • Increased bicycle parking. 	No change to plan: Not within the project boundary and therefore not part of the approved project.
66	6/12/19	Community consultation of the SDPP	<ul style="list-style-type: none"> • Increased bicycle parking. 	No change to plan: Not within the project boundary and therefore not part of the approved project.
67	6/12/19	Community consultation of the SDPP	<ul style="list-style-type: none"> • Adopting international signage 	No change to plan: Existing signage is in accordance with the TfNSW signage guidelines and cannot be varied for the current project alone.
68	6/12/19	Community consultation of the SDPP	<ul style="list-style-type: none"> • Re-designing the new eastern entrance. 	No change to plan: redesigning the eastern façade would not be possible without a change to the SSI Approval and relevant consultation with the DRP and relevant stakeholders. The current façade has been selected to match the neighbourhood of Chalmers Street, which is of Art Deco and contemporary styling.
69	6/12/19	Community consultation of the SDPP	<ul style="list-style-type: none"> • Varying the signage used in the station. 	No change to plan: signage used will be in accordance to the TfNSW signage guidelines.
70	6/12/19	Community consultation of the SDPP	<ul style="list-style-type: none"> • Expansion of Devonshire Street Tunnel. 	No change to plan: request is outside the scope of the approved project and cannot be delivered.

Item	Date	Stakeholder	Key Themes/Issues Raised	How addressed in the plan
71	6/12/19	Community consultation of the SDPP	<ul style="list-style-type: none"> Comment: Northern concourse canopy will belittle the Central Electric Building. Expand the Eddy avenue Bridge. 	<p>No change to plan: Oversailing canopy colour, texture, material, and finishing's have been selected to enhance the existing appeal of the architecture.</p> <p>Expanding Eddy Avenue bridge is outside the scope of the approved project.</p>
72	6/12/19	Community consultation of the SDPP	<ul style="list-style-type: none"> Improve pedestrian safety around the station. 	<p>No change to plan: The project boundary does not extend into the surround environment, except for the eastern entrance and therefore the request is outside the projects scope.</p>
73	21/01/20	Design Review Panel Presentation	<ul style="list-style-type: none"> Seeking endorsement of DRP for CoS and Community consultation of the SDPP. 	<p>Panel endorses evidence of consultation.</p>
74	24/01/20	Design Review Panel	<ul style="list-style-type: none"> DRP requests that Viewpoint 2 Modification rating and the Visual Impact level be downgraded. 	<p>Modification Rating was downgraded to No change, and Visual Impact was reduced to Negligible.</p>

Appendix C Evidence of review by the Design Review Panel

The architectural design team has undertaken regular consultation workshops with the Design Review Panel. Comments have been minutes and addressed in subsequent workshops with the Design Review Panel.

Minutes and Actions

Design Review Panel 17 April 2018

01 Central Station Metro		
01.1	Robert Nation declared a perceived interest with respect to GHD Woodhead's involvement as services engineer for the project; advising that he has no involvement in the project.	Noted.
01.2	The Panel noted that it was a very thorough and detailed presentation, acknowledging that future design presentations would likely update on elements as the design is developed. The proponent will supply a program of the focus for future design presentations so that the Panel has a program for regular future meetings.	Secretariat to coordinate program with Design Manager.
01.3	The Panel notes that there is substantial design development to occur. Particular points of interest raised that the Panel would like to be kept informed of are: 1. The relationship of the new vaulted form connecting the existing vault over the Grand Concourse and the return of the Terminal Building. The Panel recognises that the idea of vaulted openings is a key underlying concept of the proposed scheme and looks forward to following the progress of this defining element. 2. Wall treatments; rationale, design development and materiality. 3. The consideration of an escalator on northern concourse entry to augment the lift and stairs proposed. 4. The geometry of walls and arches which are not yet resolved and will need to be finessed.	Central Design Manager to review.
01.4	The Panel notes in particular; 1. Opportunities to stratify the materials/finishes used through the rise from platforms to the levels above and to further express the volumes/spaces created by the vertical pedestrian transport systems. 2. Potential challenges of cleaning large surface areas within a large volume of space.	Central Design Manager to review.

Design Review Panel 19 June 2018

02 Central Station Metro		
02.1	Materiality The Panel supports the use of sandstone but highlights the importance of not compromising quality. The Panel's preference is for sandstone to be used judiciously in select locations and to a standard of construction, quality and detail that is appropriate to the civic importance of the project. The selection of materials should be based on a clear design intent that is cognisant of the heritage context. The Panel is supportive of traditional materials like sandstone being used in a contemporary way and encourages an honesty and directness that is consistent with the design vision.	Update on materials at next presentation with the rationale for selection clearly articulated.

02 Central Station Metro		
02.2	<p>CCD</p> <p>The Panel notes the insights received from the customer testing and encourages the design team to continue striving for intuitive outcomes based on customer feedback.</p>	Secretariat to coordinate program with Design Manager.
02.3	<p>Northern concourse</p> <p>The structural support in the centre of the new vaulted space at the upper level is a poor outcome. Further investigations should canvass alternative structural solutions to enable the support to be removed.</p> <p>Relocating the stairs and escalators away from the heritage building is an improvement and offers benefits to the resulting space.</p> <p>The connection into the existing station is unresolved and requires further design work. The interface between the upper concourse and canopy roof should celebrate the purity of the forms and transition between old and new spaces.</p> <p>The Panel recommends customer testing to confirm the optimal arrangements for lifts/escalators between the lower and upper concourse area. Wynyard Walk may offer further insights to understand likely demand for lifts, escalators. The Panel's preference is for stairs given the volume of customer movements, design issues.</p>	Further design updates to be presented to the Panel.
02.4	<p>North-South concourse</p> <p>The Panel supports the work being done to maximise the penetration of natural light into the concourse.</p>	Noted.
02.5	<p>Summary comments</p> <p>The Panel acknowledges the progress that has been made by the project team noting that it is still a work in progress. Further work is encouraged to achieve a consistency across the work in how signage and lighting are articulated.</p> <p>The Panel is particularly interested in the relationship between Sydney Metro's CSM works, broader precinct works being led by other parts of TfNSW and potential future development proposals.</p> <p>Importantly, the CSM works need to be integrated with broader plans, particularly any future development above the station. This would be best managed by a working arrangement between Sydney Metro and the broader Central Station precinct team.</p> <p>Overall, the design is heading in a good direction but would benefit from a stronger, more confident design approach.</p> <p>The project would benefit from a physical working model at an appropriate scale to help understand and analyse the issues.</p>	<p>Sydney Metro to follow up TfNSW Central Precinct team to facilitate a stronger working relationship and ensure integration of CSM works with broader plans.</p> <p>Sydney Metro to consider a requirement for a physical model of the proposed works.</p>

Design Review Panel 17 July 2018

03 Central Station Metro		
03.1	<p>The Panel notes the considered work that has been undertaken and appreciates the advances that have been made in the design.</p> <p>The Panel commends the team for preparing a physical model and looks forward to seeing it at a future presentation.</p>	Noted.

03 Central Station Metro		
03.2	<p>The design team presented the tendered and revised designs explaining the rationale for the revised approach.</p> <p>The Panel supports the revised proposal, including the new column set-out. The scheme is an improvement and demonstrates good clarity while respecting the original design intent.</p> <p>The Panel recognises that this is a work in progress and that further design refinement will be undertaken. The following aspects should be considered as the design is developed:</p> <ul style="list-style-type: none"> • Views through to the Grand Concourse. • The nature of the interstitial flat roof between the Northern Concourse and adjacent heritage building. • Clearer understanding of the structural implications of the roof and how it might transition to the west and to any future potential elements proposed as part of the wider Central Station precinct works. • Consideration of solar control and opportunities for natural ventilation, particularly to the north and west of the new enclosure. • Maintainability. <p>The design team are encouraged to review the likely enhanced visibility of the Grand Concourse as a result of the proposal and implications to the condition of the existing Grand Concourse roof.</p>	<p>Further design development to consider:</p> <ul style="list-style-type: none"> • Views through to the Grand Concourse. • The interstitial flat roof section and its relationship to the heritage building. • Structural resolution of the roof, transitions to the west and to any future potential elements of the wider Central Station precinct works. • Solar control and natural ventilation, particularly to the north and west of the new enclosure. • Maintainability.
03.3	<p>Opportunities for unpaid east-west movements by customers should be maximised. The Panel advises the team to explore ways to meet these desire lines under the new roof in order to reduce pressures on the Grand Concourse.</p> <p>Analysis should be evidence based and illustrate numbers and desire lines in the short and long terms.</p>	<p>Investigate opportunities to maximise unpaid east-west customer movements under the new roof.</p>
03.4	<p>The Panel is concerned about the ability to source satisfactory quantities of good quality sandstone to meet the likely requirements of the project and encourages the team to actively investigate potential suppliers. Previous comments of the Panel about the judicious use of quality materials are reiterated.</p>	<p>Noted.</p>
03.5	<p>Any GRC panels used should have an off form finish and unpainted to reinforce the design intent.</p>	<p>Noted.</p>
03.6	<p>The Panel supports the addition of the column in the metro box platform primarily because it raises the volume of the platform space and will enhance the customer experience.</p>	<p>Noted.</p>
03.7	<p>Preliminary thinking on the use of skylights in Sydney Trains was presented. The Panel confirms it is interested in the skylights and requests further information. The presentation should include information about the proposed detailing, effectiveness as a source of daylight/amount of light that will penetrate into the box below, customer safety/slip characteristics and customer experience.</p>	<p>Presentation to the Panel on skylights.</p>
03.8	<p>The Panel re-affirms its concern about the broader precinct planning and connectivity for patrons and between modes and reiterates its request for a briefing on the broader precinct works demonstrating a coordinated long term vision.</p>	<p>Sydney Metro to arrange briefing by Precinct Team.</p>

Design Review Panel 4 September 2018

04 Central Station Metro		
04.1	The design team presented an update on the northern concourse roof, Central Walk East and the eastern entry. The team are commended on the presentation which was clear and informative.	Noted.
04.2	<p>Particular comments on the design work presented:</p> <ul style="list-style-type: none"> • The Panel supports the reduction in the number of columns in the Northern Concourse. • The Panel supports the Guard House Option 2 that separates the buildings on the suburban platforms recognising that these are needed to meet the operational requirements of Sydney Trains. However, further design development is required to reduce the visual impact of the buildings. • The optimisation of the skylights to the Northern Concourse to achieve regularity is appreciated. However, the geometry is not considered well resolved in relation to the end of the eastern range and should be re-presented to the Panel with clear images to identify the design development (comparison of previous to current). • The Panel requests more detailed cross sections of the north-south canopy across the northern concourse at the next presentation. • The variety of materials proposed is noted, particularly the variations in sandstone cladding. The Panel reiterates previous comments about the judicious use of sandstone and requests to be kept informed about how materiality will be used to manage acoustics, customer experience, advertising and wayfinding which could be informed by lessons learned at Wynyard Walk. • The next presentation should address the approach to replacement of the heritage canopies noting previous comments and feedback of the Panel. • Please include illustrations in the next update to clarify how the design development from previous presentations to assist the Panel. 	Matters to be addressed at next presentation.
04.3	<p>Central Station is the hub of Sydney’s public transport network and a critically important component of Sydney Metro. It is essential that the investment made by Sydney Metro is part of a unifying solution and the Panel commends the scheme for its consistency of design elements and endorses it as a way forward.</p> <p>However, the Panel notes that there are a number of technical studies required between Sydney Metro and TfNSW to understand the implications and constraints of current and future train operations and broader strategies for large scale renewal including potential future development scenarios at Central. This requires decisions at a high level.</p> <p>The Panel finds it difficult to make meaningful feedback on the Sydney Metro proposal without a full picture of the broader strategic context for Central. The Panel sees a unique opportunity to contribute to the outcomes at Central noting that this cannot occur without a holistic, coordinated approach across the projects. This should draw from work that has been done in recent years and be cognisant of the critical decisions that have been made that will effect operations at Central.</p> <p>The Panel calls on Sydney Metro’s executive to raise these concerns with their colleagues across the cluster to ensure the Sydney Metro design comprises the start of a unifying solution and is the best use of resources. The Panel is very concerned that its advice will have limited effect without a coordinated approach and governance across the current and proposed future works at Central.</p>	For consideration and action by Sydney Metro leadership.

Design Review Panel 18 December 2018

05 Central Station Metro		
05.1	<p>Northern Concourse</p> <p>The Panel supports the future removal of the CENA 68 room subject to confirmation that program issues can be managed. This would enable the stairs to be widened and the heritage wall to be revealed. In the interim, opportunities to make the roof trafficable for passive use are supported. The Panel does not consider this space suitable for activation or use as a cafe.</p> <p>Further work is encouraged to on the details of the interface canopy at the upper level to ensure the effective weather protection and that approach is the correct strategy for the space. This should consider how the works would integrate with future works that are beyond the Sydney Metro scope such as any extension of the canopy.</p>	Design roof of CENA 68 room as a trafficable space but not suitable for activation.
05.2	<p>Relationship to Central Electric Building</p> <p>Further work is required to refine the form and structure of the Northern Concourse roof and its relationship with the Central Electric Building. This should consider the location of columns and any screening treatments to the façade.</p>	Design development of Northern Concourse roof to consider relationship to Central Electric Building.
05.3	<p>Eastern Entrance</p> <p>The Panel supports the approach being taken to the design for the Eastern Entrance, particularly the design and materiality to Randle Lane. The visual connectivity from the lane into the station entry is a very positive outcome, as the design of the varied openings. The Panel supports a flush finish to the kerb if it can be achieved.</p> <p>The Panel reiterates the importance of design continuity across Central and considers the connection between Central Walk and the Eastern Suburbs line to be an area requiring particular attention.</p> <p>Sydney Metro is encouraged to continue discussions with Sydney Trains and other stakeholders to ensure a consistent and positive customer experience.</p>	<p>Sydney Metro to continue discussions with stakeholders to ensure consistent and positive customer experience at locations where there is transition between Sydney Metro scope and the broader station.</p> <p>Sydney Metro to identify future projects not within current scope that will need careful interface design.</p>
05.4	<p>Materials and finishes</p> <p>The materials and finishes strategy presented is considered admirable and strongly supported by the Panel. In particular, the proposed use of off-form concrete is strongly supported accepting that it may require a protective finish to ensure a good quality outcome.</p> <p>The Panel supports the use of GRC noting that there will be locations where the more civic outcome of sandstone would be appropriate. The Panel requests to review the 1:1 prototype prior to final acceptance.</p> <p>The work being undertaken to determine the optimal geometry of panels is noted. The Panel notes the importance of input from a range of stakeholders but strongly advises that the final design detailing should be determined by the architect. The potential for this aspect of the design to be viewed as an element of public art should not be underestimated.</p> <p>Further clarification on the approach to jointing and detailing including the formwork is requested.</p> <p>The Panel requests to be briefed on any substantial changes from the tendered design and advises Sydney Metro to seek a commitment from the contractor to the proposed materials strategy.</p>	<p>Panel to review 1:1 prototype of materials before they are accepted.</p> <p>Presentation to update Panel on jointing and detailing of formwork.</p> <p>Panel to be briefed on any substantial changes from tendered design / materials and finishes strategy.</p>
05.5	<p>Central Walk</p> <p>The Panel stresses the importance of retail pods being designed as integrated elements by the architects. This should be accompanied by Retail Guidelines that draw from the lessons learned at Wynyard Walk.</p> <p>The Retail Guidelines should be referred to the Panel for review.</p>	Noted.

05 Central Station Metro		
05.6	<p>Future presentations</p> <p>The Panel requests future presentations to cover:</p> <ul style="list-style-type: none"> • Signage and wayfinding • Public art • Furniture • Retail and advertising opportunities <p>Public art</p> <p>The Panel notes that the public art is robust and will require close collaboration with the design architects to ensure an integrated outcome. The Panel requests further information and involvement in design development.</p>	Noted.

Design Review Panel 9 April 2019

06 Central Station Metro		
06.1	<p>Treatment of the roof above the Cena 68 room as a trafficable space (open item)</p> <p>The Panel supports the revised design that has removed the constraint of the Cena 68 room noting the significant improvement for customers.</p>	Resolved Action from 18.02.18, Item 1.1
06.2	<p>Relationship to Central Electric Building</p> <p>The Panel acknowledges the design improvement of the roof extending over the Central Electric Building. This element is much more resolved on its eastern end. The supporting frame elements at Concourse level could have a more refined composition that is better related to the heritage item elevation.</p>	Noted.
06.3	<p>Materials and finishes</p> <p>The approach to materiality across the design elements is supported subject to prototyping. Final endorsement will be given after an inspection of the prototype, preferably including an assembly of the panels, and review of the supporting drawings.</p>	DRP or a quorum of the Panel to confirm endorsement after viewing the prototype and associated documentation. Action by Sydney Metro.
06.4	<p>Platform canopies</p> <p>The design for platform canopies continues to progress in a positive direction. Further consideration is required to confirm the slip resistance qualities and durability of the ceramic frit on the trafficable skylights.</p>	Confirm slip resistance and durability of trafficable skylights. Action by Design team.
06.5	<p>Project wide updates</p> <p>The use of a spatial hierarchy to determine circulation, run-offs and the location of seating, advertising and retail pods is supported.</p> <p>The need for different furniture designs at the key levels of the project was questioned but noted as an outcome the shared management with Sydney Trains.</p>	Noted.
06.6	<p>Advertising</p> <p>The strategy for placement of larger advertising signs in visible locations is supported as a preferable outcome than smaller signs in more scattered locations.</p>	Noted.

06 Central Station Metro		
06.7	<p>Public art</p> <p>The Panel encourages the Central team to continue working with the artist to minimise conflicts with heritage interpretation, wayfinding, signage and implications for visual impaired customers.</p> <p>An update at the next meeting.</p> <p>Request presentation from the artist with Buro North to help understand the wayfinding implications together with heritage interpretation (European and indigenous)</p>	<p>Secretariat to arrange update to next meeting on the integration of public art, heritage interpretation (European and indigenous) and wayfinding.</p>
06.8	<p>Integrating services (cameras, speakers)</p> <p>The Panel notes that the design team is concerned about integration of services and requests further detail on how this will be achieved.</p>	<p>Central design team to update the Panel on the integration of services into the design.</p>
06.9	<p>Role of DRP post Stage 3</p> <p>Sydney Metro to confirm the role of the DRP after approval of the Stage 3 design, potentially using Wynyard Walk as a model.</p>	<p>Sydney Metro to review and confirm role of the DRP post Stage 3.</p>

Design Review Panel 4 June 2019

07 Central Station Metro		
07.1	<p>Signage and wayfinding</p> <p>Buro North presented an update on the current approach to signage and wayfinding.</p> <p>The Panel notes the signage and wayfinding strategy and endorses reducing the visual impact of the structural supports of suspended signs where possible.</p> <p>The Panel noted that heritage signage was to be integrated into modern signage where appropriate.</p>	<p>Noted.</p>
07.2	<p>Public art</p> <p>Rose Nolan presented the rationale underpinning the concept proposal of 'Somewhere in a parallel universe'.</p> <p>The Panel acknowledged the value of hearing directly from the artist and requested to be consulted in the selection of the final colour and materiality of the installation by reviewing the prototypes prior to final selection.</p>	<p>Prototypes of terrazzo to be reviewed by Panel prior to final selection.</p>
07.3	<p>European heritage interpretation</p> <p>OCP presented the proposed strategy for European heritage interpretation.</p> <p>The Panel noted the strategy and looks forward to its further development.</p>	<p>Noted.</p>
07.4	<p>Indigenous heritage interpretation</p> <p>OCP presented the rationale for the aboriginal heritage interpretation as being based on integration of fabric and stories with the design of the station.</p> <p>Bronwyn Bancroft explained how her proposed artwork focuses on layers of ancestors and the concept of time travellers based on stories of aural history.</p> <p>The art would be built into the northern and southern vents using patterned brickwork.</p> <p>The Panel acknowledged the value of hearing directly from the artist and supports the proposed artwork. Consideration should also be given to options for appropriate interpretative material.</p>	<p>Noted.</p>

07 Central Station Metro		
07.5	<p>Northern screen</p> <p>The design option for a glazed screen connecting the Central Electric Building and the eastern wing of the Grand Concourse was presented. The screen would replace an existing intrusive canopy.</p> <p>The Panel supports the proposed glazed screen noting:</p> <ul style="list-style-type: none"> • Non-compliance with Sydney Metro's weather protection requirements. • Importance of ensuring an acceptable strategy for cleaning the balustrade. 	Noted.
07.6	<p>Central Electric Building</p> <p>An arched option for the Central Electric Building was presented. The option was developed in response to previous comments about aligning columns with the windows above.</p> <p>The arched option is supported in principle noting that further refinement is needed to strengthen the corners.</p>	<p>Further refinement of the arched option is required to strengthen the corners.</p> <p>By Design Team before end Design Stage 2.</p>
07.7	<p>Comments from CoS</p> <p>Comments from the City of Sydney were tabled noting concerns that the project scope does not include the western extension of Central Walk, retaining connections between the suburban and country platforms and future proofing direct connections from Central Walk to the west side of Chalmers Street and from the Devonshire Street tunnel to the metro concourse.</p>	Noted.

Design Review Panel 17th September 2019

08 Central Station Metro		
08.1	<p><u>Central Electric Building arch.</u></p> <p>The Panel supports with qualifications - the design approach subject to refinement of the jointing pattern of the voussoirs.</p>	Closed – no action required.
08.2	<p><u>Northern concourse Cena 68 stair</u></p> <p>The Panel appreciates the constraints of latent conditions and accepts the proposed</p>	Closed – no action required.
08.3	<p><u>Northern Concourse Passenger Information Displays</u></p> <p>The Panel accepts the proposed siting for the PID in the northern concourse noting concerns about the need to balance visibility for customers, sightlines and protection from vandalism.</p>	Closed – no action required.

Design Review Panel 19th November 2019.

09 Central Station Metro		
09.1	<p>The Panel endorses Viewpoint 1 impact rating; however, the Panel requires further information to review the impact ratings of Viewpoints 2, 3, 4, 5, 6, 7, and 8. The Project team is to present updated Viewpoints and impact ratings at next relevant DRP.</p>	<p>The Panel accepts all viewpoints. The Panel accepts all visual impact viewpoints presented by the Design Team, and is satisfied with the application of the visual impact ratings (Consistent with Condition E102.</p>

09 Central Station Metro		
09.2	Graphically differentiate between terms that are mandated/fixe d to those that have been applied by the Project team.	The panel has accepted the graphic differentiation and explanation of the viewpoint assessment terms.
09.3	Confirm that all existing photos used are from the EIS and to update impact ratings accordingly.	The panel states: All existing photos are noted to be updated. The Panel accepts that SYAB is to be considered as an existing element in proposed view assessments as it was approved under a separate Assessment.
09.4	Ensure all renders are montaged into the existing photos for accuracy of impact rating assessment.	The montaged renders were accepted by the panel as an accurate base to assess the view impact rating
09.5	The impact rating findings are recommended to be included on the same SDPP page as the viewpoint images.	Noted
09.6	The viewpoint key plan is recommended to be reviewed as there are inconsistencies between locations noted and photos included.	The viewpoints were accepted as being consistent with the key plan.
09.7	The Panel supports the current proposed bike parking locations.	Noted.
09.8	The Panel notes that there is a likely shortfall in bike parking numbers for the precinct and recommends the broader precinct bike parking strategy be reviewed.	Noted
09.9	SDPP to be updated to include the location of public art. Sydney Metro notes that no images of actual artwork to be included.	Noted – Concept and location of art will be released at a later date. Further details of artwork cannot be provided due Metro Policy and to protects the Artists Integrity.
09.10	The Panel recommends that the presentation be updated to include a comparison of the material selection from the bid stage to now, including developmental changes if necessary.	Noted.
09.11	The Panel recommends that all renders/CGIs included should be updated with all other materials existing and proposed so that the subject material can be reviewed in context.	Noted.
09.12	The Panel recommends that samples and final finishes be presented along with evidence of sign off by Sydney Metro on sealing and maintenance regimes. This includes but are not limited to: <ul style="list-style-type: none"> • Mocked-up GRC panel with sealant applied • Pink terrazzo sample • Grey terrazzo sample • White powder coated canopy with extent and gradation of perforations • Vitreous enamel finish 	Noted.

09 Central Station Metro		
09.13	The Panel notes and supports that there has been a shift to GRC panels throughout, with sandstone restricted to the Central Electric Building Arch, and this has previously been approved by the panel.	Noted
09.14	The Panel notes and supports the terrazzo tile floor expansion joint material and set-out internally and externally.	Noted
09.15	The Panel notes and supports the glass balustrade and fixing detail.	Noted
09.16	The Panel seeks further clarification regarding the final colour of the platform metal canopies with updated renders/CGIs and samples.	To be provided to the DRP.
09.17	The Panel notes and supports that all services are contained within the recesses along the canopy.	Noted
09.18	The Panel notes and supports the 3mm powder coated steel protection to columns in principle but seeks further clarification regarding the colour with updated renders/CGIs and samples.	Noted. Updated renders to be send to DRP once available.
09.19	The Panel notes the glazed floor panel design, and that they have a sacrificial slip resistance layer that can be replaced.	Noted.
09.20	The Panel notes the retention of sandstone in the arch and recommends that there be a separate session to review the arch detailing with the heritage Panel member.	Noted.
09.21	The Panel notes the brick material and precedents and the integration of the Indigenous Heritage Interpretation artwork on the South Vent.	Noted.

Design Review Panel 3rd December 2019

10 Central Station Metro		
10.1	<p>The Panel accepts Sydney Metro's responses to the below concerns raised by City of Sydney, and agree they are consistent with earlier discussions. Sydney Metro to liaise with the City of Sydney representatives.</p> <p>The concerns raised by CoS were:</p> <ol style="list-style-type: none"> 1. Central Walk West to Pitt Street in the first phase. 2. Cutting Existing Connections (Between the suburban and country platforms) 3. Solutions that Preclude Future Connections: <ol style="list-style-type: none"> a. Directly into Central Walk from the west side of Chalmers street. b. From the Devonshire Street Tunnel directly into the southern end of the Metro concourse 4. Pedestrian Safety - Chalmers Entry & Light Rail 	Closed – no action required.
10.2	The Panel requests that Heritage NSW nominee David Nix is invited to view the 3D model and background material.	Closed – no action required.


Design Review Panel 21st & 24th January 2020



11 Central Station Metro		
11.1	The panel endorses evidence of consultation with community, local councils and agencies in the preparation of the SDPP and how feedback has been addressed (Consistent with Condition E101K)	Noted – Closed.


11 Central Station Metro		
11.2	<p>The Panel does not accept the Visual Impact Assessment for Viewpoint 2 as “Noticeable Improvement” with an Impact Level of “Moderate Beneficial”. The reasons provided do not outline improvements, either maintaining the existing position, or are not valid as is the case with the final reason.</p> <p>The Panel suggests the Modification Rating be downgraded to No Perceived Change and the Visual Impact Level rating be reduced to Negligible.</p>	<p>Noted – Viewpoint 2 Modification Rating has been downgraded to “No perceived change”, and the Impact level reduced to “Negligible” as requested.</p>

Appendix D Qualifications and Experience of the key author(s) who prepared this plan





	<p>David Parkinson Principal Environmental Consultant</p> <p>David is a Senior Environmental Consultant with considerable international experience spanning multiple industry sectors, including aviation, transport, infrastructure and various large scale construction projects. He has a wealth of experience in facilitating environmental approvals across various State and regional legislative frameworks.</p> <p>David is currently the Principal Consultant at EcoQuest Environmental, a fast growing Environmental Consultancy with bases in both Ireland and Australia. He is currently providing environmental consultancy services to construction contractors on the Sydney Metro Project which is Australia’s largest public transport project.</p> <p>He has previously worked as the Senior Environment Advisor on a wide variety of construction projects at Sydney Airport where he was responsible for each phase of environmental management from the conception phase to regulatory approval and through to delivery.</p> <p>He has considerable experience in both the reviews and compilations of reviews of environmental factors (REFs), construction environmental management plans (CEMPs), preliminary site investigations (PSIs) and detailed site investigations (DSIs), constraints mapping, groundwater analyses and greenhouse gas (GHG) assessments associated with major developments.</p> <p>In addition to the experience listed above, David has also previously worked as an Environmental Consultant for multinational companies Genzyme and Aurecon. He also has a background in environmental analytical roles with NATA Accredited Laboratories such as Nalco and Sydney water.</p>
<p>Qualifications and Licenses Bachelor of Science (B.Sc.) Environmental Science & Technology (1st Class Honour)</p> <p>B.Sc. Environmental Protection (1st Class Honour)</p> <p>EPA Medal for Overall Highest Grade in B.Sc. Environmental Science & Technology</p> <p>IS Accredited Professional with the Infrastructure Sustainability Council of Australia</p> <p>RISI Card Holder White Card Inducted NSW Driving License PADI Certified Diver</p>	



<p>EcoQuest Environmental</p>  <p>From: September 2018 To: Present</p>	<p>Principal Consultant</p> <p>David is currently the Principal Consultant at EcoQuest Environmental, providing on-demand environmental services to clients on a short to medium term basis. He has assisted a wide variety of clients such as Laing O'Rourke, Aspect Environmental, Sydney Airport Corporation and the Web Warriors on a range of environmental disciplines and large-scale infrastructure projects.</p> <p>He is currently providing environmental advisory services on Australia's largest public transport project, the Sydney Metro. Environmental services provided on the Sydney Metro to date include compilation and reviews of contaminated land and groundwater reports, remediation action plans (RAPs), environmental management plans (EMPs), environmental constraints mapping with GIS and development of a project wide waste tracking system for all waste types.</p>
<p>Sydney Airport Corporation Limited</p>  <p>From: January 2015 To: September 2018</p>	<p>Senior Project Environment Advisor</p> <p>Having most recently worked for Australia's busiest Airport, David was the Senior Environment Project Environment Advisor for a wide range of construction projects and development approvals at Sydney Airport. The range of construction projects typically included large scale multimillion-dollar infrastructure projects such as new roads, bridges, hotels, taxiway and runway upgrades etc. A primary responsibility was to ensure that development consents were obtained and that potential environmental impacts from all developments were identified, assessed and mitigated throughout the life cycle of projects from the design phase to completion. The role involved stakeholder engagement with multiple parties including project managers, construction contractors, State and Federal Governments and local authorities. David's role involved multiple other tasks such as reviews of contaminated land reports, constraints mapping and assisting with the quantification of greenhouse gas (GHG) emissions resulting from the Airport's operations. Other responsibilities include providing environmental awareness training and undertaking environmental site inspections. Key projects across this role have included the following:</p> <ul style="list-style-type: none"> • Airport East Section of WestConnex • Main Runway 16L/3RL Resheet • Airside Perimeter Road Upgrade • Northern Airport Precinct and Nigel Love Bridge • Seventh St. Extension and Project 5 Road Expansion • AMG Mercedes Benz Show Room Development • Northern Pond Fuel Line and Apron Expansion • Mantra Hotel and Ibis Hotel Upgrades • T1 Bifurcation Project • Taxiway Tango Resheet

	<ul style="list-style-type: none"> • T1 Ground Access Solutions Departures Roads 2B and 2C • International Zone Substation (IZS) Upgrades • T2 Loading Dock Development • Taxiway Bravo, Golf and Lima Flanks Upgrades • T2 Pier B Retail Expansion • Butler Road Upgrade •
<p>Aurecon Australia</p>  <p>From: September 2011 To: January 2015</p>	<p>Environmental Scientist</p> <p>This role involved environmental management of multiple infrastructure projects across New South Wales for 3.5 years, including the following key projects:</p> <ul style="list-style-type: none"> • Greenhouse Gas Assessment for Glen Innes Wind Farm modification. • REFs for TransGrid in relation to updating six substation sites in NSW • REF for a fibre optic upgrade of a transmission line for Endeavor Energy. • Infrastructure Sustainability (IS) Accredited Professional with the Australian Green Infrastructure Council (AGIC) • Waste-to-energy feasibility study for SEROC-RRN. • REF and CEMP for 33 KV feeder, Blacktown to Toongabbie for Transport for NSW • Baseline Greenhouse Gas Assessment for the Gold Coast Airport • On-site Project Environmental Coordinator across multiple sites at the Novo Rail Alliance • Phase 1 and 2 Contaminated Land Investigations at Port Melbourne (VIC) and Alexandria (NSW) for confidential clients. • Review of Environmental Factors (REF) of Hurstville Overbridge Project for RailCorp • Greenhouse Gas Assessment of North Ryde Station Precinct for Transport for NSW • Greenhouse Gas Assessment of Penrith Substation for Transport for NSW • Greenhouse Gas Assessment of proposed TRUenergy Marulan gas fired power station. • National Greenhouse and Energy Reporting Act 2007 (NGERs) limited assurance audit for Delta Electricity • High Level Greenhouse Gas Assessment and work on Werrington Arterial Road REF for RMS • National Pollutant Inventory (NPI) reports for the Australian Defence Force (ADF) • Werrington Arterial Road REF Submissions Report for RMS. • Site development feasibility studies of contaminated sites in NSW and VIC (confidential client). • Carbon pricing analysis for the Henderson Waste Recovery Park • Old Wallgrove Road REF Submissions Report for RMS • EIA for 10 railway station upgrades across NSW for TfNSW



	<ul style="list-style-type: none"> • Ravensworth Void 4 water quality discharge analysis for Macquarie Generation • Review of environmental licenses and upgrade of legislation register for BATA.
<p>Global Scene Environmental Solutions</p>  <p>From: March 2011 To: August 2011</p>	<p>Environmental Consultant</p> <p>Working as an environmental consultant form Global Scene, key responsibilities included the following:</p> <ul style="list-style-type: none"> • Compiling environmental legislative reports concerning the National Greenhouse and Energy Reporting Act 2007 (NGERs) and Energy Efficiency Opportunities Act 2006. • Undertaking detailed energy audits at commercial and industrial sites in New South Wales and contributing to the compilation of energy audit reports. • Communicating with stake holders and business associates in implementing business strategies. • Compilation of business plans and development of new business sales techniques. • Training of new personnel and coordination of their smooth transition into Global Scene. • Compilation of carbon footprint reports. • Completion of new business proposals for clients relating to Level 2 Energy Audits. • Setup of a biodegradable waste solutions distribution network. • Contribution to the development of an energy monitoring and reporting system device.
<p>Nalco</p>  <p>From: June 2010 To: February 2011</p>	<p>Environmental Analyst</p> <p>Primary responsibilities included:</p> <ul style="list-style-type: none"> • Pit depth and corrosion analysis of mild steel, copper, brass and aluminium coupons. • Analysis of solids loss of boiler ash samples at 815° Celsius. • Trasar 2 colour analysis of industrial waste samples. • Analysis of quarantine, hazardous, trade wastes, river water and industrial effluent samples for total dissolved solids, turbidity, suspended solids and total solids. • Assisting with laboratory problem solving issues and implementing mitigation measures. • Training of new personnel in the aforementioned analyses.



<p>Sydney Water</p>  <p>From: March 2010 To: June 2010</p>	<p>Environmental Analytical Chemist</p> <p>Primary responsibilities included:</p> <ul style="list-style-type: none"> • Analysis of water and wastewater samples for pH, conductivity, alkalinity, fluoride, true and apparent colour, sample identification of unknown samples, turbidity suspended solids, total solids, fixed solids and volatile suspended solids. • Recording of results and data entry into labware networks. • Preparation of standard solutions for analyses such as conductivity and alkalinity. • Maintenance and calibration of instruments, updating quality control folders
<p>Genzyme</p>  <p>From: June 2007 To: August 2007</p>	<p>EHS Specialist</p> <p>Internship, primary responsibilities included:</p> <ul style="list-style-type: none"> • Updating and completing hazardous waste registers and audits. • Implemented an on-site electronic waste disposal system. • Carried out energy conservation surveys on computer and laboratory equipment. Provided presentations to on-site personnel relating to environmental topics.



John Prentice
Principal, Role

John is a Principal with 18 years experience 11 years with Woods Bagot, practicing architecture and urban design. Prior to joining Woods Bagot, John worked for an interdisciplinary firm in Toronto, Canada. He has been involved on a range of architecture, Urban Design and strategic planning projects.

John has experience leading several major civic projects across multiple sectors, including Wynyard Walk, the MLC Centre redevelopment at Martin Place, Nan Tien Educational Centre. Currently he is leading the Sydney Central Station Metro. John understands the value of collaboration and the integrating disciplines in the creation of meaningful and sustainable environments.

Experience

Education & Science

- Nan Tien Education & Cultural Centre, Wollongong, NSW, Australia: 6,000 sqm (64,600 sf)
- University of Sydney Engineering Faculty Master Plan, Sydney, NSW, Australia
- Kuwait University Master Plan and Infrastructure, Kuwait*
- University of Regina Masterplan, Canada*
- University of Calgary Masterplan, Canada*
- Carleton University Masterplan*
- Visual Arts Centre, Mississauga Canada*
- RCMP Campus Masterplan, Canada*

Workplace Architecture

- 44 Market Street Podium, Dexus, Sydney, Australia: 2,000 sqm (21,530 sf)
- 275 Kent St Podium Repositioning, Mirvac, Sydney, Australia.
- 2 Melbourne Quarter (2MQ), Melbourne, Vic, Australia: 51,7000 sqm (556,500 sf)
- The Gateway Podium Redevelopment Sydney, NSW, Australia: 12,000 sqm (129,200 sf)
- International Towers Lobby, Sydney, NSW, Australia
- Port Botany Shipping Headquarters, NSW Australia
- Green Square North Tower, Brisbane, Qld, Australia*

Transport

- Sydney Central Station Metro, Sydney, NSW, Australia
- Wynyard Walk, Sydney, NSW, Australia: 1,600 sqm (17200 sf)
- Rideau Canal Pedestrian Bridge, Ottawa Canada*

Hotel

- Sandstone Buildings, Sydney, NSW Australia

Retail

- MLC Centre Retail Redevelopment, Sydney, NSW, Australia: 6,500 sqm (70,000 sf)

Qualifications

- Bachelor of Architecture (Hons), University of Toronto

* Experience prior to Woods Bagot

Project imagery on the page that follows:

- 01 Sydney Central Station Metro
Sydney, Australia
- 02 2 Melbourne Quarter (2MQ)
Melbourne, Australia
- 03 Wynyard Walk
Sydney, Australia
- 04 Nan Tien Educational & Cultural Centre
Wollongong, Australia

WOODS BAGOT



Meghan Nordeck

Senior Associate

Over the last ten years Meghan has managed the architectural teams delivering large-scale projects including the Gold Coast Light Rail, Canberra Metro, and Sydney's Central Station Metro project.

Working in multi-package and multi-disciplinary projects Meghan has developed particular strengths in establishing a rigorous, systematic approach and developing project workflows that support the team production of high-quality design and delivery outcomes.

Experience

Transport

- Sydney Central Station Main Works, Sydney, NSW, Australia
- Capital Metro light rail, Stage 1 (delivery phase) *
- CBD and South East light rail Independent Certification/Independent Verification*
- Capital Metro light rail, Stage 1 (bid phase)*
- Gold Coast Rapid Transit (delivery phase)*
- Sydney light rail Inner West Extension, Stage 1 (bid phase)*
- Gold Coast Rapid Transit (bid phase)*

Residential

- Single LEAP project, Phase 2 (bid phase)*
- Ulladulla Retirement Village, Ulladulla, NSW*
- St Joseph's Home, Heme Bay, Auckland New Zealand*

Qualifications

- Bachelor of Architecture (Hons), The University of Western Australia, 1994

Professional Affiliations

- Registered Architect, NSW, No. 7708

* Experience prior to Woods Bagot

Project imagery on the page that follows:

01 Sydney Central Station Main Works
Sydney, Australia

02 Sydney Central Station Main Works
Sydney, Australia

WOODS BAGOT

Appendix E – Government Stakeholder Correspondence

Document Ref	City of Sydney (CoS) comment details	Response
Entire document	<ul style="list-style-type: none"> Amend the SDPP so that it adequately reflects the City's urban domain and strategic plans as this relates to movement and place 	<p>The key suggestions made by the CoS including:</p> <ul style="list-style-type: none"> that the SDPP capture the Cities urban domain and strategic plans, as well as; increasing the accessibility and available pathways to navigate the station; <p>Are both outside of the scope of the current approved project, and cannot be adopted.</p>
Section 4	<ul style="list-style-type: none"> comprehensively consider place making outcomes in the SDPP respond to the significant conflicts that will arise between transport customers and people walking in the Central area once Metro City & Southwest is operating at Central Station ensure that there are sufficient pathways and places for people, to meet the future movement and place requirements and expectations associated with Metro at Central Station. This is most important in the areas where Metro customers interface with other people walking in the surrounding public domain 	<p>Place making outcomes are required to be emplaced within the construction boundary, and intend on tying the newly developed sections of the station with the existing heritage fabric and aesthetic of the station and surrounding area. Extending place making outcomes beyond the project footprint is outside the scope of the current project and cannot be achieved.</p> <p>The project acknowledges the CoS's concern with overcrowding, however the project is confident that the open spaces created by the new North-South concourse and the 20 wide Central Walk will help significantly reduce congestion, improve wayfinding and avoid conflicts arising from customer interactions.</p>
Section 4.5	<ul style="list-style-type: none"> amend the SDPP so that it comprehensively covers function and operation of space including: sufficient pathways and places for people, to meet future needs and demands place outcomes 	<p>A key focus of the SDPP is to emphasise place making values, improve wayfinding and overall space and comfort. Key examples of how these objectives are being met are explored in section 4.5, in which end to end visibility, and improved sightlines for the newly revamped station are shown using clear images.</p> <p>It is important to note that the vast majority of the projects scope is limited to within Central Station with no scope within the public domain, apart from Central Walk's entrance on Chalmers Street.</p>
N/A	<ul style="list-style-type: none"> amend the works to make a direct connection from the north-south concourse to the Devonshire Street tunnel 	<p>Connecting the new North-South concourse to the Devonshire Street tunnel is not part of the approved project and cannot be achieved. The Devonshire Street tunnel can however be accessed from the Eastern Suburbs Railway Concourse.</p>
N/A	<ul style="list-style-type: none"> amend the works to make a direct connection from the north-south concourse to the southern passenger tunnel that serves the intercity trains and the suburban platforms 	<p>The introduction of Central Walk would provide a greater amount of space, and a more efficient connection between the intercity platforms and the suburban lines, than making an additional connection to the southern passenger tunnel.</p>

Document Ref	City of Sydney (CoS) comment details	Response
N/A	<ul style="list-style-type: none">amend the works to make an entry/exit on the west side of the light rail tracks on Chalmers Street	An additional entry/exit point on the west side of the light rail tracks on Chalmers Street is outside of the project boundary and therefore scope of works.
Section 5	<ul style="list-style-type: none">use solid sandstone, not an imitation or veneer, where sandstone is indicated on the illustrations and drawings	Using Solid sandstone blocks would not meet the performance criteria for the design of the project i.e Large panels, angular shapes and as a cladding.



Fil Cerone
Director of Sustainability, Environment and Planning
Sydney Metro
Level 43, 680 George Street
Sydney, NSW, 2000

07/05/2020

Dear Mr Cerone

**Sydney Metro Chatswood to Sydenham (CSSI 7400)
Station Design and Precinct Plan**

I refer to your submission dated 3 April 2020, and subsequent response to RFI 3265 received on 29 April 2020, requesting approval of the Station Design and Precinct Plan (SDPP) – Central Station, in accordance with condition E101 of CSSI 7400. I also acknowledge your response to the Department's review comments and requests for additional information.

I note that the Station Design and Precinct Plan – Central Station:

- has been prepared in consultation with the relevant stakeholders
- has been reviewed by Sydney Metro and there are no outstanding issues
- has been endorsed by the Design Review Panel
- has been prepared to guide the design of the permanent built works associated with the project
- contains the information required by the conditions of approval for CSSI 7400.

I also note that discussions regarding opening of the accessway onto Randle Lane are ongoing, and that further clarification regarding the timing for opening the accessway will be provided within the Central Station Interchange Access Plan.

As nominee of the Planning Secretary, I approve the Station Design and Precinct Plan: Central Station, Revision 5, dated 31 March 2020 pursuant to condition E101.

You are reminded that if there is any inconsistency between the approved document and the conditions of approval, then the requirements of the conditions of approval will prevail.

Please ensure that you make the Central Station Design and Precinct Plan publicly available on the project website.

If you have any questions, please contact Rebecca Eddington at Rebecca.eddington@planning.nsw.gov.au or on 02 8289 6702.

Yours sincerely

Erica van den Honert
Director, Infrastructure Management
Infrastructure Management

As nominee of the Planning Secretary

